

# THRIFTY OIL CO.

RO-004

March 28, 2003

Ms. Eva Chu

BC

Alameda County Health Care Services  
Department of Environmental Health  
1131 Harbor Bay Parkway, 2nd Floor  
Alameda, CA 94502

Alameda County  
APR 04 2003  
Environmental Health

O.32807  
Local #4057  
RWQCB #01-1478  
Global ID #T0600101365  
Confirmation #8892761588

RE: **Former Thrifty Oil Co. Station #049**  
**ARCO Products Company Station #9535**  
3400 San Pablo Avenue  
Oakland, CA 94612  
*1st Quarter 2003, Status Report*

Dear Ms. Chu:

Presented herewith is the First Quarter 2003, Status Report for former Thrifty Oil Co. Station #049 located at 3400 San Pablo Avenue, Oakland, California.

If you have any questions or comments, please contact the undersigned in this report or myself at (562) 921-3581.

Sincerely,



---

Chris Panaitescu  
General Manager  
Environmental Affairs

c: BP West Coast Products LLP; Ms. Kateri Luka  
File



13116 Imperial Highway, Santa Fe Springs, CA 90670 • (562) 921-3581

# THRIFTY OIL CO.

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Alameda County Health Care Services  
Department of Environmental Health  
1131 Harbor Bay Parkway, 2nd Floor  
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RE: **Former Thrifty Oil Co. Station #049**  
3400 San Pablo Avenue  
Oakland, CA 94612  
*1st Quarter 2003, Status Report*

Dear Ms. Chu:

Presented herein is the First Quarter 2003, Status Report prepared for former Thrifty Oil Co. (Thrifty) Station #049 located at 3400 San Pablo Avenue, Oakland, California (**Figure 1**). This report presents the results of the site monitoring and remedial activities conducted during the first quarter of 2003. Thrifty has retained the services of Earth Management Company (EMC) to conduct quarterly monitoring and sampling, and remediation system monitoring activities at this site.

## Groundwater Monitoring

Depth to groundwater is measured in each monitoring well on a quarterly basis. In general, groundwater occurs beneath the station at depths ranging from 2.45 feet below surface grade (bsg) in monitoring well MW-1 to 8.43 feet bsg in monitoring well MW-2 (**Appendix A**). A groundwater elevation contour map based on the January 29, 2003 data is presented in **Figure 2**. Groundwater elevation data indicates that groundwater flow is toward the west under a groundwater gradient of approximately 0.04 feet/foot. Recovery well RW-1 was not used to calculate the gradient presented on **Figure 2**, because the extraction of groundwater from this well lowers the water table to anomalous levels.

## Quarterly Groundwater Sampling

As part of the ongoing groundwater-monitoring program, EMC obtained groundwater samples were obtained from monitoring wells MW-1 through MW-7 on January 29, 2003. Groundwater samples were obtained by EMC and delivered in a chilled state following strict Chain-of-Custody procedures to a state-certified laboratory and analyzed for total petroleum hydrocarbons (TPH-g) by EPA method 8015 modified for gasoline. Volatile organic compounds of benzene, toluene, ethylbenzene, xylenes (BTEX), and MTBE were analyzed by EPA method 8021B. A summary of historical analytical sampling results for TPH-g, BTEX, and MTBE is provided in **Table 1**. Copies of the EMC Field Status Reports are presented in **Appendix A**, and copies of the laboratory analytical reports are contained in **Appendix B**.

The TPH-g, benzene and MTBE isoconcentration maps are presented in **Figures 3, 4, and 5**, respectively. Laboratory results indicate the highest concentration of TPH-g, benzene, and MTBE were found in monitoring well MW-2; 22,100 ug/L, 746 ug/L, and 8,220 ug/L, respectively.



### Remediation Status

Site remedial activities were initiated in April 1991. Presently, the remediation system consists of a Groundwater Treatment System using activated carbon, with groundwater extraction from recovery well RW-1. System operational data is included in **Table 2** and **Appendix C**. During this reporting period, the groundwater treatment system processed 29,780 gallons of groundwater, and has treated approximately 1,445,088 gallons of groundwater since start up (April 1991) through March 14, 2003. The system was shut down for carbon changeout on January 3, 2003, and restarted on January 10, 2003. It was again shutdown for another carbon changeout and maintenance on February 14, 2003. The system is expected to be restarted the first week of April 2003 following maintenance to the system.

Inlet, intermediate 3, intermediate 2, intermediate 1, and outlet water samples were collected on January 17, 2003, from the treatment unit. The samples collected by EMC were sent to a state certified laboratory for analysis, and were analyzed for TPH-g, BTEX, and MTBE by EPA methods 8015M and 8021B, respectively. All analyzed outlet samples were below the laboratory detection limits, except xylenes at 1.1 ug/L. Inlet water sample results indicated concentrations of 32,400 ug/L TPH-g, 11 ug/L benzene, and 706 ug/L MTBE. Copies of the laboratory analytical reports are included in **Appendix D**.

### Other Activities

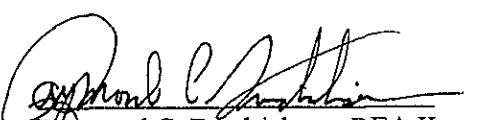
Thrifty received of the Alameda County Health Care Agency (ACHCA) fax letter dated December 18, 2002, which requested submittal of an addendum to the Thrifty's workplan dated December 9, 2002. In response to this request, Thrifty submitted an Addendum to Workplan for Additional Site Assessment and Remedial System Upgrade on February 28, 2003. Upon approval of the amended work plan, Thrifty will retain a consultant to implement the approved scope of work for both the groundwater well installation and the remedial system upgrade.

The groundwater monitoring wells, and the treatment unit, will be monitored and sampled during the next quarter. All site monitoring/sampling data generated during the next quarter will be reported in the second quarter 2003 monitoring report.

All interpretations expressed in this report are based solely upon data collected be EMC, and laboratory analyses conducted by Associated Laboratories.

Written by:

Reviewed by:

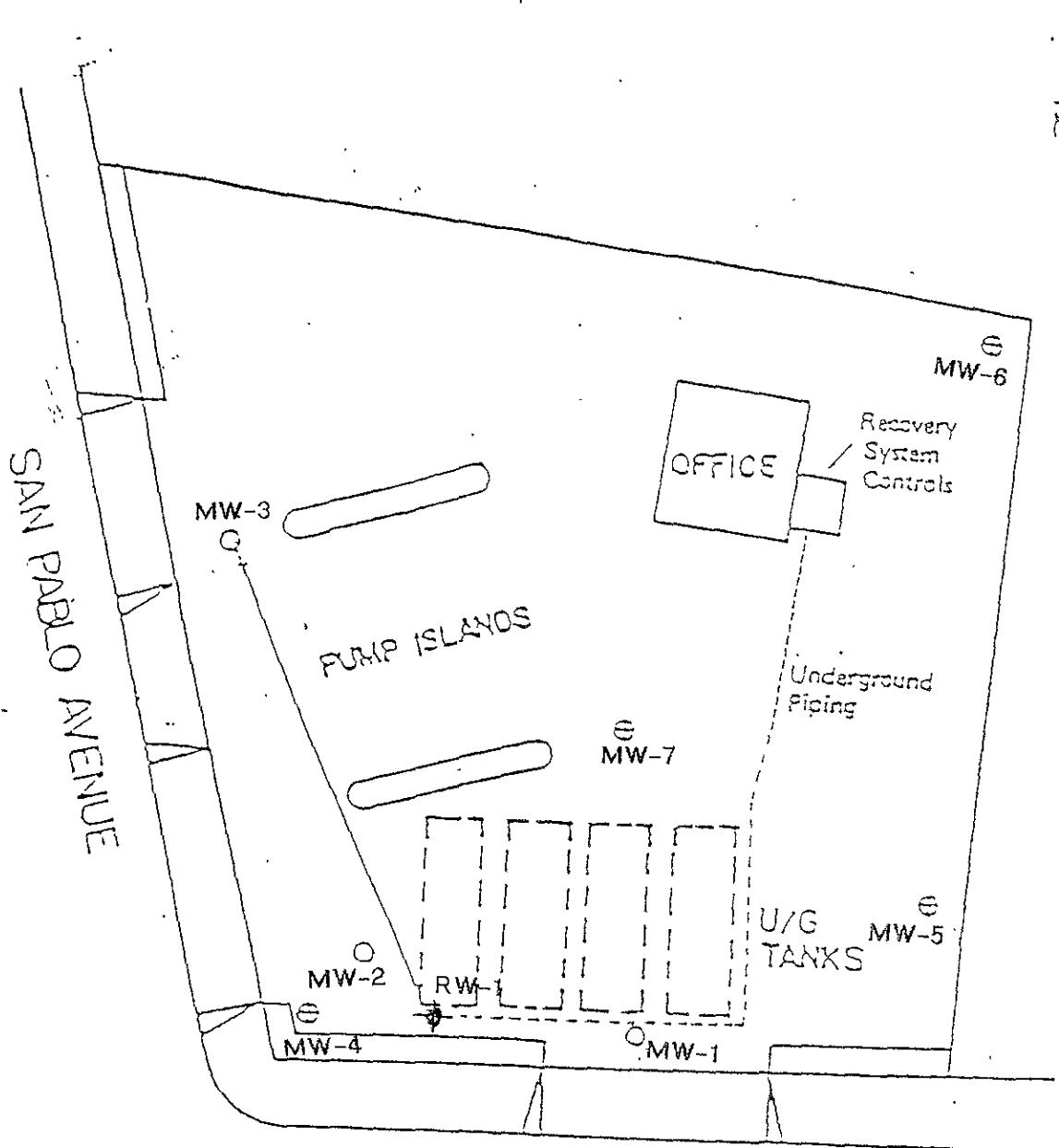


Raymond C. Friedrichsen, REA II  
Project Manager, MBA  
Senior Environmental Hydrogeologist



Larry Higinbotham  
Registered Geologist #54971  
  
REGISTERED GEOLOGIST  
LARRY HIGINBOTHAM  
Exp. 04/30/07  
No. 54971  
STATE OF CALIFORNIA

# **FIGURES**



34th STREET

SITE PLAN AND RECOVERY SYSTEM LOCATION  
THRIFTY SERVICE STATION NO. 49  
3400 SAN PABLO AVE.  
OAKLAND, CA

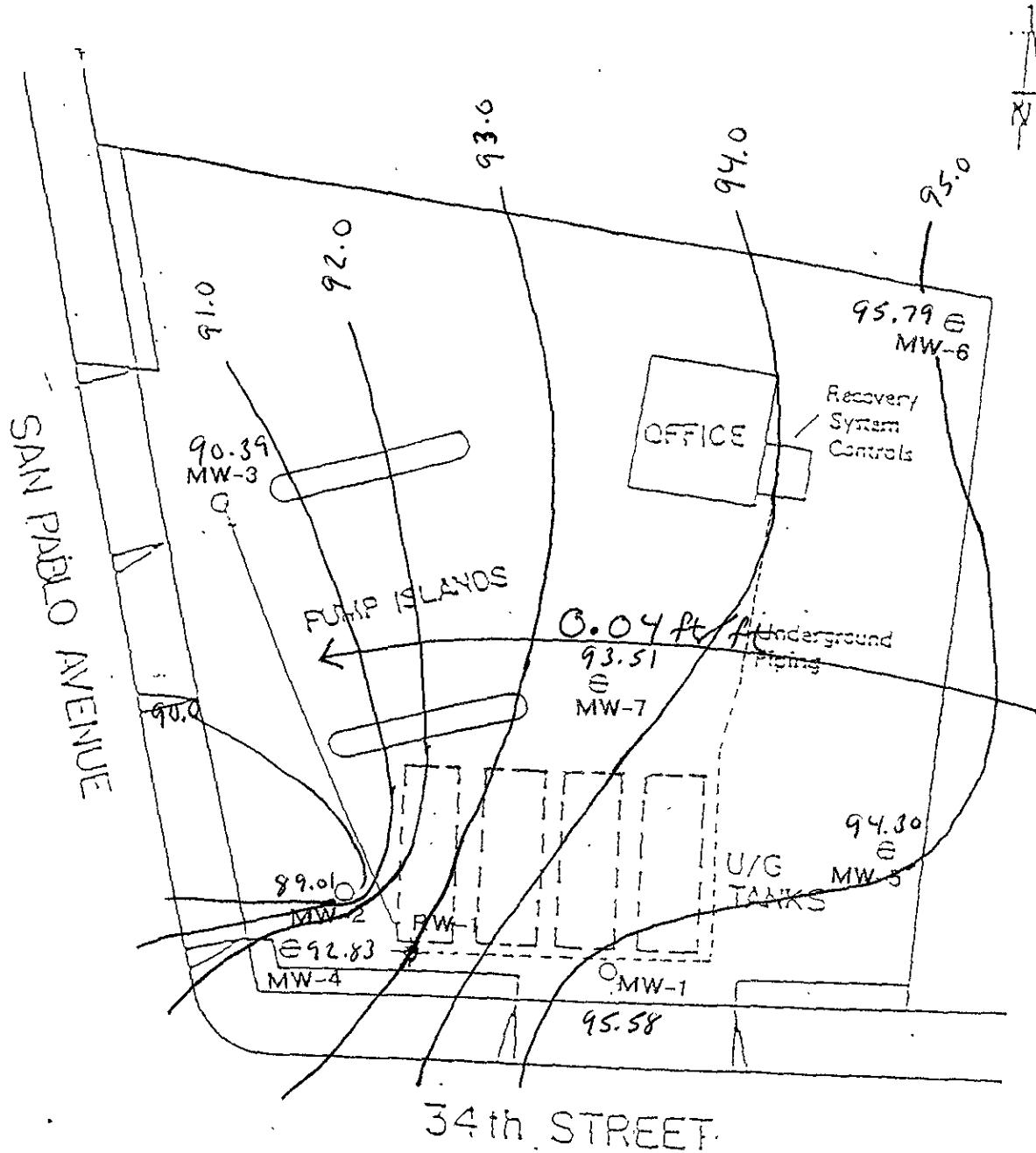
LEGEND

- MW1 - GT MONITORING WELLS
- ⊕ MW4 - WCC MONITORING WELLS
- RW-1 - PROPOSED RECOVERY WELL



1/29/03

FIGURE 1



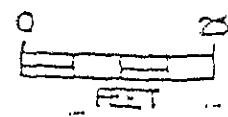
GROUNDWATER CONTOUR MAP  
THRIFTY SERVICE STATION NO. 49  
3400 SAN PABLO AVE.  
OAKLAND, CA

LEGEND

OMW1 - GT MONITORING WELLS (95.58) = A MSL

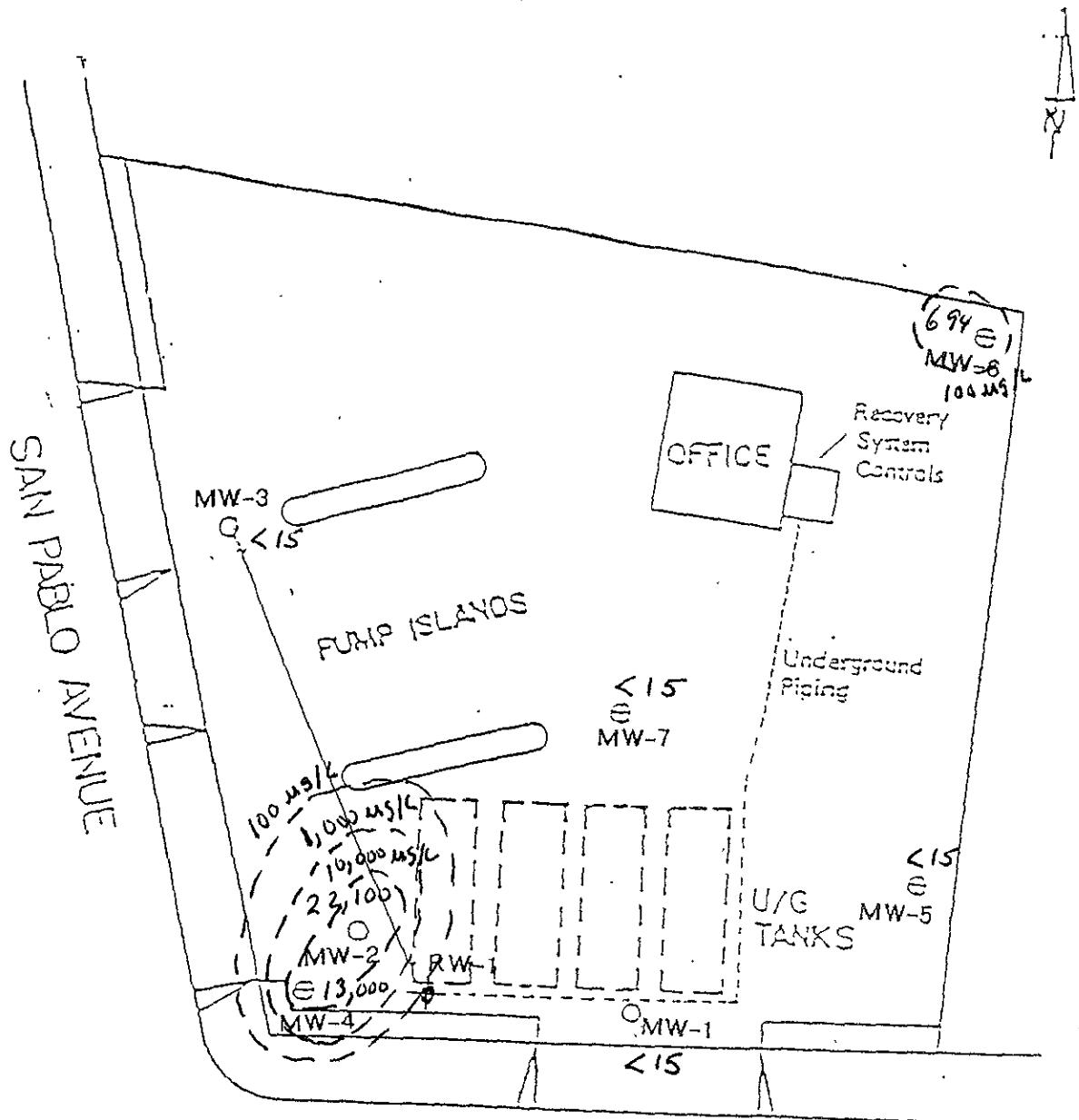
SMW-4 - WCC MONITORING WELLS

RW-1 - PROPOSED RECOVERY WELL



1/29/03

FIGURE 2



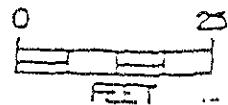
34th STREET

TPH ISOCONCENTRATION MAP ug/L  
THRIFTY SERVICE STATION NO. 49  
3400 SAN PABLO AVE.  
OAKLAND, CA

LEGEND

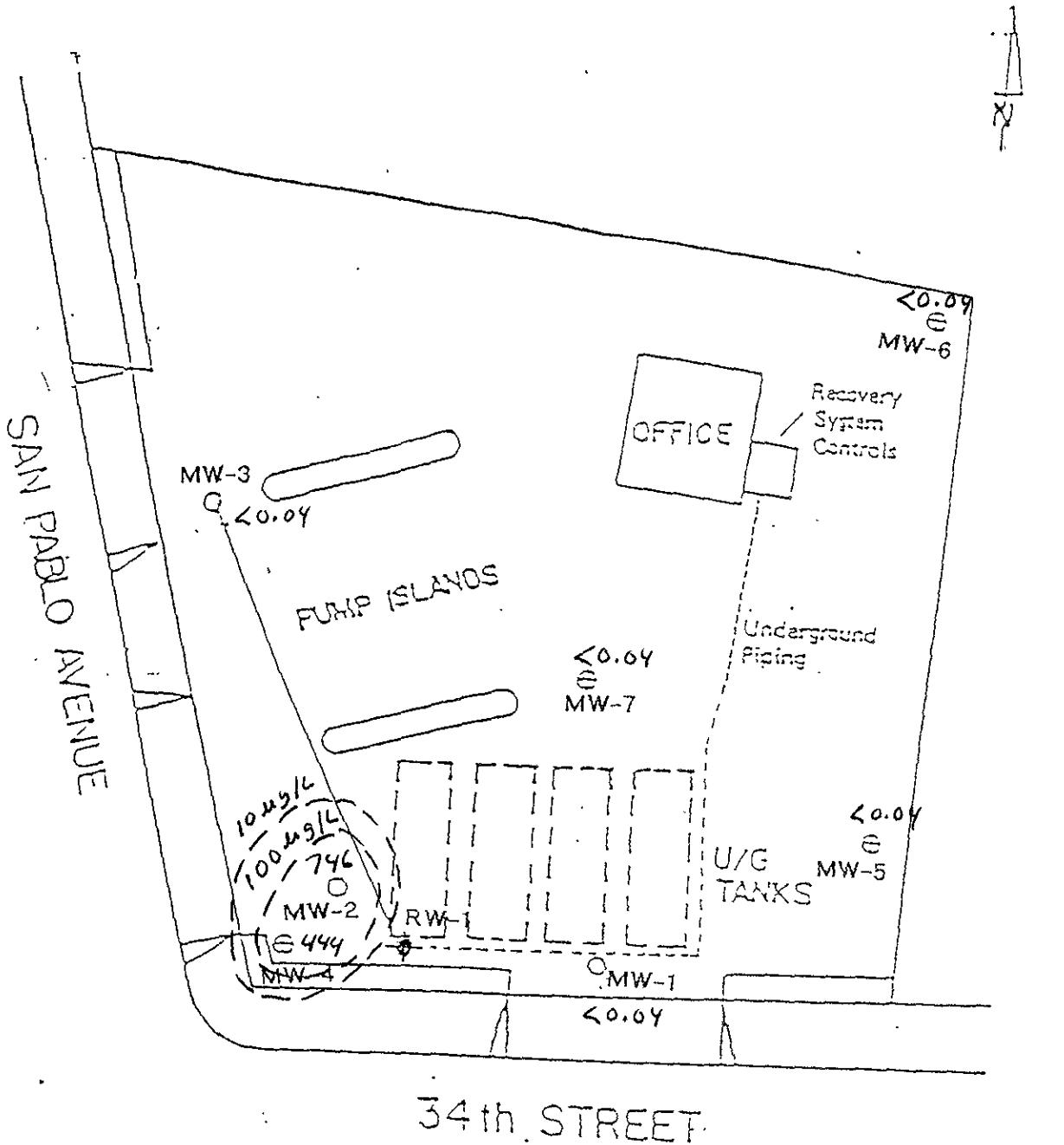
○ MW-1 - GT MONITORING WELLS      Units = ppm  
● MW-4 - WCC MONITORING WELLS

◆ RW-1 - PROPOSED RECOVERY WELL



1/29/03

FIGURE 3



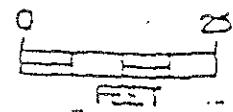
BENZENE ISOCONCENTRATION MAP ug/L  
 THRIFTY SERVICE STATION NO. 49  
 3400 SAN PABLO AVE.  
 OAKLAND, CA

LEGEND

OMW1 - GT MONITORING WELLS UNITS = ppb

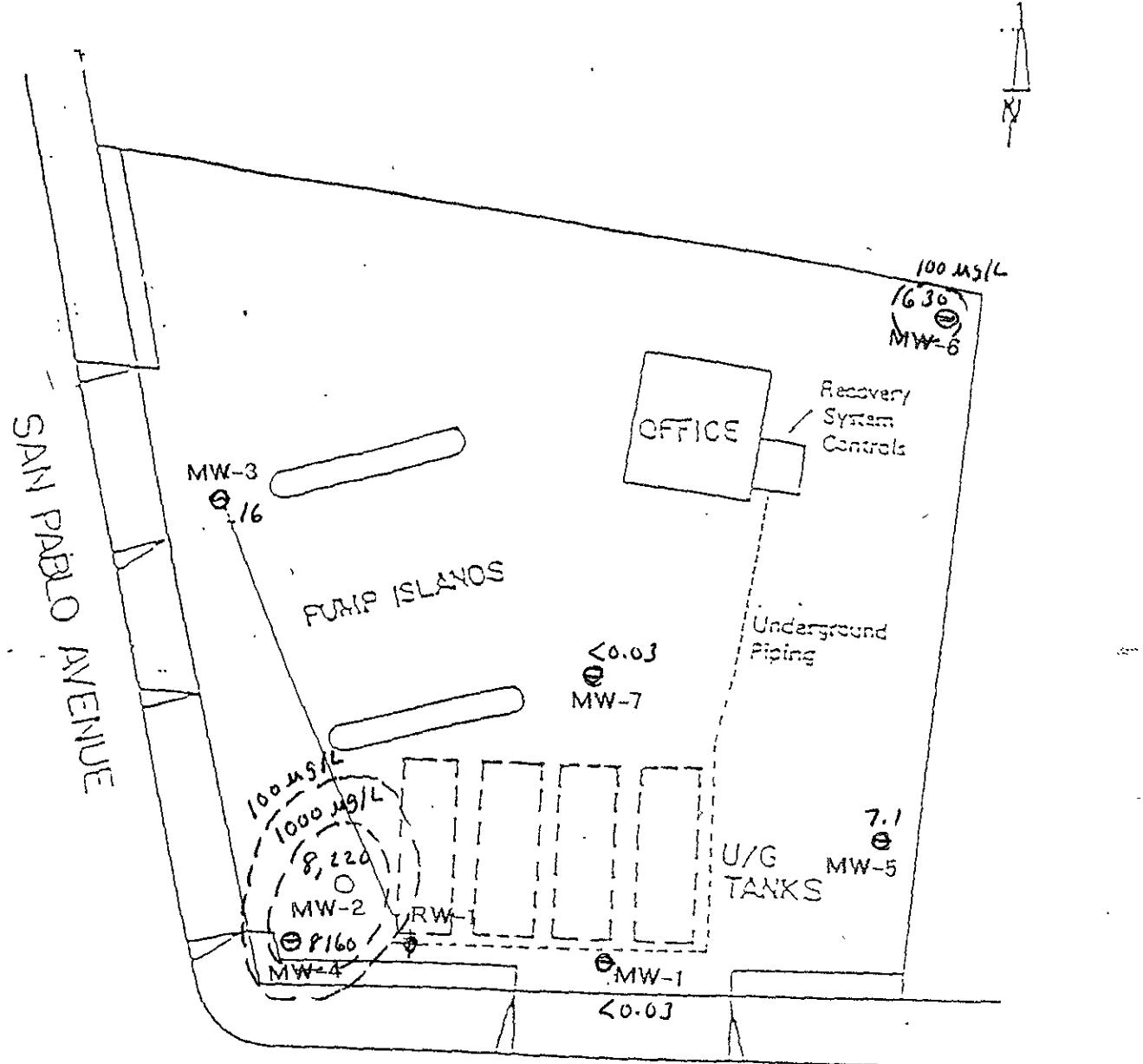
MW-4 - WCC MONITORING WELLS

RW-1 - PROPOSED RECOVERY WELL



1/29/03

FIGURE 4



34th STREET

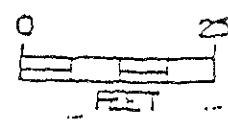
MTBE ISOCONCENTRATION MAP ug/L  
THRIFTY SERVICE STATION NO. 49  
3400 SAN PABLO AVE.  
OAKLAND, CA

LEGEND

OMW1 - GT MONITORING WELLS      UNITS = ppb

⊕ MW-4 - WCC MONITORING WELLS

∅ RW-1 - PROPOSED RECOVERY WELL



1/29/03

FIGURE 5

# **TABLES**

**TABLE 1**  
**GROUNDWATER DATA**  
**THRIFTY OIL STATION #049, OAKLAND, CA.**

DATE SAMPLED	ANALYTICAL PARAMETERS						DEPTH TO GROUNDWATER (feet)	DEPTH TO PRODUCT (feet)	PRODUCT THICKNESS (feet)	CASING ELEVATION (feet)	GROUNDWATER ELEVATION (feet)
	TPH (ug/L)	BENZENE (ug/L)	TOLUENE (ug/L)	EthylBenzene (ug/L)	XYLENE (ug/L)	MTBE (ug/L)					
<b>MONITORING WELL #MW-1</b>											
01/09/92	-	-	-	-	-	-	5.54	NP	0.00	98.03	92.49
04/13/92	-	-	-	-	-	-	5.86	NP	0.00	98.03	92.17
10/05/92	-	-	-	-	-	-	9.39	NP	0.00	98.03	88.64
01/06/93	-	-	-	-	-	-	4.76	NP	0.00	98.03	93.27
04/26/93	-	-	-	-	-	-	4.96	NP	0.00	98.03	93.07
01/04/94	-	-	-	-	-	-	7.00	NP	0.00	98.03	91.03
04/05/94	-	-	-	-	-	-	6.44	NP	0.00	98.03	91.59
10/09/95	44,000	4,500	4,300	1,700	10,000	-	-	-	-	98.03	-
01/08/96	21,000	1,200	150	34	4,800	-	6.15	NP	0.00	98.03	91.88
04/08/96	4,700	80	110	10	910	-	5.40	NP	0.00	98.03	92.63
07/22/96	7,000	280	130	<3	2,100	440	5.50	NP	0.00	98.03	92.53
10/16/96	120	<0.3	<0.3	<0.3	<0.5	180	6.02	NP	0.00	98.03	92.01
01/22/97	160	<0.3	<0.3	<0.3	<0.5	360	4.40	NP	0.00	98.03	93.63
04/21/97	20,000	420	140	5.8	840	55,000	6.30	NP	0.00	98.03	91.73
07/14/97	13,000	<0.3	<0.3	<0.3	<0.55	30,000	5.92	NP	0.00	98.03	92.11
10/07/97	-	-	-	-	-	-	7.71	7.70	0.01	98.03	90.33
01/15/98	<50	0.3	<0.3	<0.3	<0.5	-	4.40	NP	0.00	98.03	93.63
04/23/98	540	<0.3	<0.3	<0.3	<0.5	<20	8.10	NP	0.00	98.03	89.93
07/20/98	<50	<0.3	<0.3	<0.3	<0.5	<5	5.55	NP	0.00	98.03	92.48
10/14/98	50	1.4	0.56	<0.3	11	22	7.05	NP	0.00	98.03	90.98
01/21/99	<50	0.59	<0.3	<0.3	<0.5	<5	4.10	NP	0.00	98.03	93.93
04/15/99	<50	<0.3	<0.3	<0.3	<0.5	<5	4.30	NP	0.00	98.03	93.73
07/26/99	<50	<0.3	<0.3	<0.3	<0.5	<5	5.54	NP	0.00	98.03	92.49
10/13/99	<50	<0.3	<0.3	<0.3	<0.5	<5	6.13	NP	0.00	98.03	91.90
01/20/00	<50	<0.3	<0.3	<0.3	<0.5	<5	6.04	NP	0.00	98.03	91.99
04/05/00	<50	<0.25	<0.25	<0.25	<0.5	<5	4.03	NP	0.00	98.03	94.00
07/19/00	<50	<0.3	<0.3	<0.3	<0.6	<5	4.00	NP	0.00	98.03	94.03
10/18/00	<50	<0.18	<0.14	<0.18	<0.26	<0.24	5.53	NP	0.00	98.03	92.50
01/17/01	<50	<0.18	<0.14	<0.18	<0.26	<0.24	3.97	NP	0.00	98.03	94.06
04/19/01	<50	<0.18	<0.14	<0.18	<0.26	<0.24	3.98	NP	0.00	98.03	94.05
07/18/01	<50	<0.18	<0.14	<0.18	<0.26	<0.24	5.51	NP	0.00	98.03	92.52
10/10/01	<50	<0.18	<0.14	<0.18	<0.26	<0.24	3.97	NP	0.00	98.03	94.06
01/30/02	<50	<0.18	<0.14	<0.18	<0.26	<0.24	3.95	NP	0.00	98.03	94.08
04/17/02	<50	<0.18	<0.14	<0.18	<0.26	<0.24	2.42	NP	0.00	98.03	95.61
07/31/02	<50	<0.18	1.3	<0.18	<0.26	<0.24	5.49	NP	0.00	98.03	92.54

**TABLE 1**  
**GROUNDWATER DATA**  
**THRIFTY OIL STATION #049, OAKLAND, CA.**

DATE SAMPLED	ANALYTICAL PARAMETERS						DEPTH TO GROUNDWATER (feet)	DEPTH TO PRODUCT (feet)	PRODUCT THICKNESS (feet)	CASING ELEVATION (feet)	GROUNDWATER ELEVATION (feet)
	TPH (ng/L)	BENZENE (ug/L)	TOLEUENE (ug/L)	EthylBenzene (ug/L)	XYLENE (ug/L)	MTBE (ng/L)					
11/14/02	<50	<0.08	<0.18	<0.17	<0.4	16	6.13	NP	0.00	98.03	91.90
01/29/03	<15	<0.04	<0.02	<0.02	<0.06	<0.03	2.45	NP	0.00	98.03	95.58
<b>MONITORING WELL #MW-2</b>											
01/09/92	-	-	-	-	-	-	5.35	NP	0.00	97.44	92.09
04/13/92	-	-	-	-	-	-	7.42	NP	0.00	97.44	90.02
10/05/92	-	-	-	-	-	-	12.15	NP	0.00	97.44	85.29
01/06/93	-	-	-	-	-	-	5.46	NP	0.00	97.44	91.98
04/26/93	-	-	-	-	-	-	5.15	NP	0.00	97.44	92.29
01/04/94	-	-	-	-	-	-	9.45	NP	0.00	97.44	87.99
04/05/94	-	-	-	-	-	-	8.23	NP	0.00	97.44	89.21
10/09/95	33,000	6,000	390	1,700	4,900	-	-	-	-	97.44	-
01/08/96	<50	0.32	<0.3	0.41	2.1	-	5.60	NP	0.00	97.44	91.84
04/08/96	10,000	490	210	210	830	-	5.43	NP	0.00	97.44	92.01
07/22/96	60,000	6,500	1,000	1,500	10,000	8,500	5.65	NP	0.00	97.44	91.79
10/16/96	6,500	12	0.34	0.72	110	4,700	5.82	NP	0.00	97.44	91.62
01/22/97	3,200	<0.3	0.46	0.37	<0.5	8,000	4.30	NP	0.00	97.44	93.14
04/21/97	66,000	5,300	1,000	2,300	14,000	30,000	5.80	NP	0.00	97.44	91.64
07/14/97	17,000	1.8	4.6	4.6	350	24,000	8.92	NP	0.00	97.44	88.52
10/07/97	220,000	5,200	1,700	3,800	15,000	-	6.80	NP	0.00	97.44	90.64
01/19/98	25,000	5.4	2.2	2.1	240	-	8.50	NP	0.00	97.44	88.94
04/23/98	7,700	<0.3	0.55	0.38	4.9	28,000	7.60	NP	0.00	97.44	89.84
07/20/98	430,000	4,200	10,000	5,400	28,000	77,000	6.94	NP	0.00	97.44	90.50
10/14/98	27,000	<0.3	4.5	4.1	4.6	65,000	8.45	NP	0.00	97.44	88.99
01/21/99	16,000	7.6	9.8	4.2	310	* 49,000 / 42,000	6.95	NP	0.00	97.44	90.49
04/15/99	20,000	<0.3	<0.3	<0.3	<0.5	* 31,000 / 30,000	8.45	NP	0.00	97.44	88.99
07/26/99	6,700	<6	<6	<6	<10	* 11,000 / 15,000	6.94	NP	0.00	97.44	90.50
10/13/99	7,600	<3	3.7	<3	11	11,000	5.48	NP	0.00	97.44	91.96
01/20/00	7,500	<6	<6	<6	<10	* 14,000 / 16,000	5.84	NP	0.00	97.44	91.60
04/05/00	10,400	<0.25	<0.25	<0.25	<0.5	* 10,000 / 14,400	5.41	NP	0.00	97.44	92.03
07/19/00	130	<0.3	<0.3	<0.3	<0.6	* 9,620 / 6,520	5.40	NP	0.00	97.44	92.04
10/18/00	150	<0.18	<0.14	<0.18	<0.26	* 9,090 / 6,560	6.91	NP	0.00	97.44	90.53
01/17/01	75	<0.18	2	2	3	* 8,650 / 9,710	5.41	NP	0.00	97.44	92.03
04/19/01	4,380	<0.18	<0.14	<0.18	<0.26	8,890	5.40	NP	0.00	97.44	92.04
07/18/01	3,260	<0.18	<0.14	<0.18	2	* 7960 / 1,710	6.92	NP	0.00	97.44	90.52

**TABLE 1**  
**GROUNDWATER DATA**  
**THRIFTY OIL STATION #049, OAKLAND, CA.**

DATE SAMPLED	ANALYTICAL PARAMETERS						DEPTH TO GROUNDWATER (feet)	DEPTH TO PRODUCT (feet)	PRODUCT THICKNESS (feet)	CASING ELEVATION (feet)	GROUNDWATER ELEVATION (feet)
	TPH (ug/L)	BENZENE (ug/L)	TOLUENE (ug/L)	EthylBenzene (ug/L)	XYLENE (ug/L)	MTBE (ug/L)					
10/10/01	1,760	<0.18	<0.14	<0.18	<0.26	*2,980 / 2,600	3.87	NP	0.00	97.44	93.57
01/30/02	1,770	<0.18	1	1	2	*2,560 / 1,590	8.45	NP	0.00	97.44	88.99
04/17/02	1,470	1	<0.14	<0.18	<0.26	*2,460 / 2,080	8.45	NP	0.00	97.44	88.99
07/31/02	3,910	<0.18	1.2	<0.18	2.1	*2,090 / 1,740	9.98	NP	0.00	97.44	87.46
11/14/02	39,400	1,680	728	173	5,120	8,270	5.40	NP	0.00	97.44	92.04
01/29/03	22,100	746	76	<1.0	2,840	8,220	8.43	NP	0.00	97.44	89.01
<b>MONITORING WELL #MW-3</b>											
01/09/92	-	-	-	-	-	-	17.60	NP	0.00	97.69	80.09
04/13/92	-	-	-	-	-	-	17.40	NP	0.00	97.69	80.29
10/05/92	-	-	-	-	-	-	17.35	NP	0.00	97.69	80.34
01/06/93	-	-	-	-	-	-	17.40	NP	0.00	97.69	80.29
04/26/93	-	-	-	-	-	-	17.90	NP	0.00	97.69	79.79
01/04/94	-	-	-	-	-	-	17.60	NP	0.00	97.69	80.09
04/05/94	-	-	-	-	-	-	16.25	NP	0.00	97.69	81.44
01/08/96	-	-	-	-	-	-	7.11	NP	0.00	97.69	90.58
04/08/96	8,800	610	31	530	900	-	7.20	NP	0.00	97.69	90.49
07/22/96	38,000	4,100	1,500	1,600	5,400	2,600	6.82	NP	0.00	97.69	90.87
10/16/96	2,400	<0.3	<0.3	<0.3	<0.5	3,800	6.84	NP	0.00	97.69	90.85
01/22/97	2,200	<0.3	<0.3	<0.3	<0.5	5,500	4.80	NP	0.00	97.69	92.89
04/21/97	15,000	1,500	36	260	710	11,000	9.40	NP	0.00	97.69	88.29
07/14/97	5,400	0.45	<0.3	<0.3	<0.5	14,000	10.92	NP	0.00	97.69	86.77
10/07/97	8,800	0.39	<0.3	<0.3	0.88	-	11.95	NP	0.00	97.69	85.74
01/19/98	22,000	1,300	15	20	310	-	7.85	NP	0.00	97.69	89.84
04/23/98	9,200	3.9	3.1	5.7	9.8	16,000	11.20	NP	0.00	97.69	86.49
07/20/98	750	0.41	1.4	0.47	1.8	2,800	7.36	NP	0.00	97.69	90.33
10/14/98	750	<0.3	<0.3	<0.3	<0.5	15,000	11.95	NP	0.00	97.69	85.74
01/21/99	4,700	0.32	<0.3	<0.3	<0.5	* 12,000 / 16,000	10.45	NP	0.00	97.69	87.24
04/15/99	7,900	0.59	0.69	<0.3	0.94	* 11,000 / 14,000	7.86	NP	0.00	97.69	89.83
07/26/99	5,200	<3	<3	<3	<5	*9,600 / 11,000	10.40	NP	0.00	97.69	87.29
10/13/99	<50	<0.3	<0.3	<0.3	<0.5	<5	7.09	NP	0.00	97.69	90.60
01/20/00	<50	<0.3	<0.3	<0.3	<0.5	<5	6.86	NP	0.00	97.69	90.83
04/05/00	<50	0.8	<0.25	<0.25	<0.5	*5.6 / <5	8.85	NP	0.00	97.69	88.84
07/19/00	<50	<0.3	<0.3	<0.3	<0.6	<5	8.86	NP	0.00	97.69	88.83
10/18/00	<50	<0.18	<0.14	<0.18	<0.26	<0.24	7.32	NP	0.00	97.69	90.37

**TABLE 1**  
**GROUNDWATER DATA**  
**THRIFTY OIL STATION #049, OAKLAND, CA.**

DATE SAMPLED	ANALYTICAL PARAMETERS						DEPTH TO GROUNDWATER (feet)	DEPTH TO PRODUCT (feet)	PRODUCT THICKNESS (feet)	CASING ELEVATION (feet)	GROUNDWATER ELEVATION (feet)
	TPH (ug/L)	BENZENE (ug/L)	TOLUENE (ug/L)	EthylBenzene (ug/L)	XYLENE (ug/L)	MTBE (ug/L)					
01/17/01	<50	<0.18	2	<0.18	1	*39 / 39	5.40	NP	0.00	97.69	92.29
04/19/01	<50	<0.18	<0.14	<0.18	<0.26	<0.24	8.87	NP	0.00	97.69	88.82
07/18/01	<50	<0.18	<0.14	<0.18	<0.26	<0.24	7.32	NP	0.00	97.69	90.37
10/10/01	<50	<0.18	<0.14	<0.18	<0.26	<0.24	8.87	NP	0.00	97.69	88.82
01/30/02	<50	<0.18	<0.14	<0.18	<0.26	<0.24	5.78	NP	0.00	97.69	91.91
04/17/02	<50	<0.18	<0.14	<0.18	<0.26	<0.24	7.31	NP	0.00	97.69	90.38
07/31/02	138	1.1	1.2	<0.18	<0.26	<0.24	5.76	NP	0.00	97.69	91.93
11/14/02	<50	<0.08	<0.18	<0.17	<0.4	21	5.73	NP	0.00	97.69	91.96
01/29/03	<15	<0.04	<0.02	<0.02	<0.06	16	7.30	NP	0.00	97.69	90.39

**MONITORING WELL #MW-4**

01/09/92	-	-	-	-	-	-	5.25	NP	0.00	97.33	92.08
04/13/92	-	-	-	-	-	-	6.40	NP	0.00	97.33	90.93
10/05/92	-	-	-	-	-	-	9.95	NP	0.00	97.33	87.38
01/06/93	-	-	-	-	-	-	4.10	NP	0.00	97.33	93.23
04/26/93	-	-	-	-	-	-	4.84	NP	0.00	97.33	92.49
01/04/94	-	-	-	-	-	-	9.05	NP	0.00	97.33	88.28
04/05/94	-	-	-	-	-	-	8.10	NP	0.00	97.33	89.23
10/09/95	63,000	9,000	2,100	2,500	9,600	-	-	-	-	97.33	-
01/08/96	23,000	2,200	830	880	3,600	-	5.57	NP	0.00	97.33	91.76
04/08/96	56,000	5,000	2,500	2,600	11,000	-	5.36	NP	0.00	97.33	91.97
07/22/96	33,000	3,700	1,600	1,400	6,000	2,400	4.80	NP	0.00	97.33	92.53
10/16/96	2,800	7.8	0.60	0.41	52	2,000	5.47	NP	0.00	97.33	91.86
01/22/97	1,400	<0.3	<0.3	<0.3	<0.5	3,100	5.15	NP	0.00	97.33	92.18
04/21/97	-	-	-	-	-	-	6.36	5.30	1.06	97.33	91.77
07/14/97	-	-	-	-	-	-	5.24	5.21	0.03	97.33	92.11
10/07/97	-	-	-	-	-	-	7.82	7.80	0.02	97.33	89.53
01/15/98	-	-	-	-	-	-	6.68	6.60	0.08	97.33	90.71
04/23/98	-	-	-	-	-	-	6.36	5.30	1.06	97.33	91.77
07/20/98	<50	<0.3	<0.3	<0.3	<0.5	<5	6.05	NP	0.00	97.33	91.28
10/14/98	3,100	86	23	2.0	520	1,100	6.85	NP	0.00	97.33	90.48
01/21/99	9,100	3.2	5.6	1.8	130	* 24,000 / 17,000	6.10	NP	0.00	97.33	91.23
04/15/99	14,000	<0.3	0.71	<0.3	<0.5	* 20,000 / 22,000	6.05	NP	0.00	97.33	91.28
07/26/99	4,500	<6	<6	<6	<10	* 8,700 / 9,800	6.07	NP	0.00	97.33	91.26
10/13/99	410	<0.3	0.63	<0.3	<0.5	660	5.54	NP	0.00	97.33	91.79

**TABLE 1**  
**GROUNDWATER DATA**  
**THRIFTY OIL STATION #049, OAKLAND, CA.**

MW4

DATE SAMPLED	ANALYTICAL PARAMETERS						DEPTH TO GROUNDWATER (feet)	DEPTH TO PRODUCT (feet)	PRODUCT THICKNESS (feet)	CASING ELEVATION (feet)	GROUNDWATER ELEVATION (feet)
	TPH (ng/L)	BENZENE (ng/L)	TOLUENE (ng/L)	EthylBenzene (ng/L)	XYLENE (ng/L)	MTBE (ng/L)					
01/20/00	770	<0.3	<0.3	<0.3	<0.5	*2,400 / 1,900	5.49	NP	0.00	97.33	91.84
04/05/00	61,200	0.9	<0.25	<0.25	<0.5	*18,500 / 21,900	5.30	NP	0.00	97.33	92.03
07/19/00	96,600	1,770	1,760	2,690	8,730	21,900 / 9,740 J	5.29	NP	0.00	97.33	92.04
10/18/00	34,900	698	1,010	607	4,130	*27,800 / 15,900	6.02	NP	0.00	97.33	91.31
01/17/01	29,100	799	930	614	3,400	*24,300 / 31,400	4.88	NP	0.00	97.33	92.45
04/19/01	103,000	4,880	3,980	3,260	11,800	66,900	4.89	NP	0.00	97.33	92.44
07/18/01	52,200	3,320	2,090	440	5,520	*55,500 / 16,800	6.04	NP	0.00	97.33	91.29
10/10/01	8,580	6.1	14	5.3	70	*40,100 / 30,000	4.51	NP	0.00	97.33	92.82
01/30/02	36,500	<0.18	3	1	3	*43,000 / 24,900	4.51	NP	0.00	97.33	92.82
04/17/02	12,900	8	1	<0.18	1	16,000 / 13,600	4.51	NP	0.00	97.33	92.82
07/31/02	19,300	<0.18	1.2	1.5	2.6	*13,200 / 10,100	5.26	NP	0.00	97.33	92.07
11/14/02	36,200	1,720	940	235	6,190	8,280	5.27	NP	0.00	97.33	92.06
01/29/03	13,000	444	39	<0.4	1,200	8,160	4.50	NP	0.00	97.33	92.83

**MONITORING WELL #MW-5**

01/09/92	-	-	-	-	-	-	5.32	NP	0.00	98.85	93.53
04/13/92	-	-	-	-	-	-	4.82	NP	0.00	98.85	94.03
10/0/92	-	-	-	-	-	-	8.78	NP	0.00	98.85	90.07
01/06/93	-	-	-	-	-	-	3.46	NP	0.00	98.85	95.39
04/26/93	-	-	-	-	-	-	4.66	NP	0.00	98.85	94.19
01/04/94	-	-	-	-	-	-	6.36	NP	0.00	98.85	92.49
04/05/94	-	-	-	-	-	-	5.94	NP	0.00	98.85	92.91
07/12/95	<100	<0.5	<0.5	<0.5	<1	-	-	-	-	98.85	-
10/09/95	440	31	11	19	84	-	-	-	-	98.85	-
01/08/96	<50	<0.3	<0.3	<0.3	<0.5	-	6.63	NP	0.00	98.85	92.22
04/08/96	<50	<0.3	<0.3	<0.3	<0.5	-	5.22	NP	0.00	98.85	93.63
07/22/96	<50	<0.3	<0.3	<0.3	<0.5	<20	6.62	NP	0.00	98.85	92.23
10/16/96	<50	<0.3	<0.3	<0.3	<0.5	<20	6.12	NP	0.00	98.85	92.73
01/22/97	<50	<0.3	<0.3	<0.3	<0.5	<20	5.17	NP	0.00	98.85	93.68
04/21/97	73	2.5	0.34	0.74	3.8	21	6.64	NP	0.00	98.85	92.21
07/14/97	<50	<0.3	<0.3	<0.3	<0.5	<20	6.67	NP	0.00	98.85	92.18
10/07/97	130	<0.3	<0.3	<0.3	<0.5	-	8.20	NP	0.00	98.85	90.65
01/19/98	85	<0.3	<0.3	<0.3	<0.5	-	1.55	NP	0.00	98.85	97.30
04/23/98	220	0.39	<0.3	<0.3	<0.5	350	8.10	NP	0.00	98.85	90.75
07/20/98	<50	<0.3	<0.3	<0.3	<0.5	<5	6.30	NP	0.00	98.85	92.55

**TABLE 1**  
**GROUNDWATER DATA**  
**THRIFTY OIL STATION #049, OAKLAND, CA.**

DATE SAMPLED	ANALYTICAL PARAMETERS					DEPTH TO GROUNDWATER (feet)	DEPTH TO PRODUCT (feet)	PRODUCT THICKNESS (feet)	CASING ELEVATION (feet)	GROUNDWATER ELEVATION (feet)
	TPH (ng/L)	BENZENE (ug/L)	TOLUENE (ug/L)	EthylBenzene (ug/L)	XYLENE (ug/L)					
10/14/98	<50	<0.3	<0.3	<0.3	<0.5	<5	7.65	NP	0.00	98.85
01/21/99	<50	<0.3	<0.3	<0.3	<0.5	*6.7 / <5	6.15	NP	0.00	98.85
04/15/99	<50	<0.3	<0.3	<0.3	<0.5	<5	1.60	NP	0.00	98.85
07/26/99	<50	<0.3	<0.3	<0.3	<0.5	<5	6.13	NP	0.00	98.85
10/13/99	<50	<0.3	<0.3	<0.3	<0.5	<5	6.61	NP	0.00	98.85
01/20/00	<50	<0.3	<0.3	<0.3	<0.5	<5	6.14	NP	0.00	98.85
04/05/00	<50	0.5	<0.25	<0.25	<0.5	*5.4 / <5	4.58	NP	0.00	98.85
07/19/00	<50	<0.3	<0.3	<0.3	<0.6	<5	4.59	NP	0.00	98.85
10/18/00	<50	<0.18	<0.14	<0.18	<0.26	<0.24	6.28	NP	0.00	98.85
01/17/01	<50	<0.18	<0.14	<0.18	1	*5 / 4.8	4.58	NP	0.00	98.85
04/19/01	<50	<0.18	<0.14	<0.18	<0.26	<0.24	4.58	NP	0.00	98.85
07/18/01	<50	<0.18	<0.14	<0.18	<0.26	<0.24	6.12	NP	0.00	98.85
10/10/01	<50	<0.18	<0.14	<0.18	<0.26	<0.24	4.58	NP	0.00	98.85
01/30/02	<50	<0.18	<0.14	<0.18	<0.26	<0.24	4.48	NP	0.00	98.85
04/17/02	<50	<0.18	<0.14	<0.18	<0.26	<0.24	4.58	NP	0.00	98.85
07/31/02	<50	<0.18	<0.14	<0.18	<0.26	<0.24	6.10	NP	0.00	98.85
11/14/02	<50	<0.08	<0.18	<0.17	<0.4	9	6.11	NP	0.00	98.85
01/29/03	<15	<0.04	<0.02	<0.02	<0.06	7.1	4.55	NP	0.00	98.85

**MONITORING WELL #MW-6**

01/09/92	-	-	-	-	-	-	6.30	NP	0.00	99.67	93.37
04/13/92	-	-	-	-	-	-	5.47	NP	0.00	99.67	94.20
10/05/92	-	-	-	-	-	-	9.85	NP	0.00	99.67	89.82
01/06/93	-	-	-	-	-	-	4.16	NP	0.00	99.67	95.51
04/26/93	-	-	-	-	-	-	5.75	NP	0.00	99.67	93.92
01/14/94	-	-	-	-	-	-	7.20	NP	0.00	99.67	92.47
04/05/94	-	-	-	-	-	-	6.76	NP	0.00	99.67	92.91
07/10/95	<100	<0.5	0.9	<0.5	1.1	-	-	-	-	99.67	-
10/09/95	250	4.8	5.6	11	58	-	-	-	-	99.67	-
01/08/96	<50	<0.3	<0.3	<0.3	<0.5	-	6.16	NP	0.00	99.67	93.51
04/08/96	230	4.6	4.7	3.2	33	-	4.60	NP	0.00	99.67	95.07
07/22/96	<50	<0.3	<0.3	<0.3	<0.5	<20	7.30	NP	0.00	99.67	92.37
10/16/96	<50	<0.3	<0.3	<0.3	<0.5	<20	5.82	NP	0.00	99.67	93.85
01/22/97	<50	<0.3	<0.3	<0.3	<0.5	<20	4.40	NP	0.00	99.67	95.27
04/21/97	130	<0.3	<0.3	<0.3	<0.5	<20	7.10	NP	0.00	99.67	92.57

**TABLE 1**  
**GROUNDWATER DATA**  
**THRIFTY OIL STATION #049, OAKLAND, CA.**

DATE SAMPLED	ANALYTICAL PARAMETERS						DEPTH TO GROUNDWATER (feet)	DEPTH TO PRODUCT (feet)	PRODUCT THICKNESS (feet)	CASING ELEVATION (feet)	GROUNDWATER ELEVATION (feet)
	TPH (ug/L)	BENZENE (ug/L)	TOLUENE (ug/L)	EthylBenzene (ug/L)	XYLENE (ug/L)	MTBE (ug/L)					
07/14/97	<50	<0.3	<0.3	<0.3	0.70	<20	7.35	NP	0.00	99.67	92.32
10/07/97	<50	0.78	0.3	<0.3	<0.5	-	6.98	NP	0.00	99.67	92.69
01/23/98	<50	<0.3	<0.3	<0.3	<0.5	-	2.35	NP	0.00	99.67	97.32
04/23/98	<50	<0.3	<0.3	<0.3	<0.5	<20	6.90	NP	0.00	99.67	92.77
07/20/98	<50	<0.3	1.1	<0.3	1.4	<5	5.45	NP	0.00	99.67	94.22
10/14/98	<50	<0.3	<0.3	<0.3	<0.5	<5	4.95	NP	0.00	99.67	94.72
01/21/99	<50	0.35	0.62	<0.3	<0.5	<5	3.90	NP	0.00	99.67	95.77
04/15/99	<50	<0.3	<0.3	<0.3	<0.5	<5	2.35	NP	0.00	99.67	97.32
07/26/99	1,000	<0.3	<0.3	<0.3	<0.5	*2,300 / 3,900	3.93	NP	0.00	99.67	95.74
10/13/99	<50	<0.3	<0.3	<0.3	<0.5	<5	6.15	NP	0.00	99.67	93.52
01/20/00	<50	<0.3	<0.3	<0.3	<0.5	*42 / 41	5.84	NP	0.00	99.67	93.83
04/05/00	4,600	338	2.8	1.2	55.2	*282 / 230	3.89	NP	0.00	99.67	95.78
07/19/00	60	1	2	<0.3	<0.6	*87 / 76	3.07	NP	0.00	99.67	96.60
10/18/00	-	-	-	-	-	-	-	-	-	99.67	-
01/17/01	103	<0.18	2	<0.18	3	*78 / 106	3.87	NP	0.00	99.67	95.80
04/19/01	<50	<0.18	<0.14	<0.18	<0.26	<0.24	3.86	NP	0.00	99.67	95.81
07/18/01	<50	<0.18	<0.14	<0.18	<0.26	<0.24	5.40	NP	0.00	99.67	94.27
10/10/01	<50	<0.18	<0.14	<0.18	<0.26	<0.24	3.86	NP	0.00	99.67	95.81
01/30/02	<50	<0.18	<0.14	<0.18	<0.26	<0.24	3.86	NP	0.00	99.67	95.81
04/17/02	<50	<0.18	<0.14	<0.18	<0.26	<0.24	3.86	NP	0.00	99.67	95.81
07/31/02	<50	<0.18	<0.14	<0.18	<0.26	<0.24	5.40	NP	0.00	99.67	94.27
11/14/02	140	3.2	<0.18	5.2	<0.4	111	5.42	NP	0.00	99.67	94.25
01/29/03	694 J	<0.04	<0.02	<0.02	<0.06	630	3.88	NP	0.00	99.67	95.79
<b>MONITORING WELL HMW-7</b>											
01/09/92	-	-	-	-	-	-	6.30	NP	0.00	99.02	92.72
04/13/92	-	-	-	-	-	-	6.68	NP	0.00	99.02	92.34
10/05/92	-	-	-	-	-	-	9.60	NP	0.00	99.02	89.42
01/06/93	-	-	-	-	-	-	13.90	NP	0.00	99.02	85.12
04/26/93	-	-	-	-	-	-	5.55	NP	0.00	99.02	93.47
01/04/94	-	-	-	-	-	-	7.58	NP	0.00	99.02	91.44
04/05/94	-	-	-	-	-	-	6.66	NP	0.00	99.02	92.36
10/09/95	27,000	2,400	140	1,700	2,700	-	-	-	-	99.02	-
01/08/96	13,000	800	42	540	860	-	6.94	NP	0.00	99.02	92.08
04/08/94	9,100	840	31	690	1,200	-	5.48	NP	0.00	99.02	93.54

**TABLE 1**  
**GROUNDWATER DATA**  
**THRIFTY OIL STATION #049, OAKLAND, CA.**

DATE SAMPLED	ANALYTICAL PARAMETERS						DEPTH TO GROUNDWATER (feet)	DEPTH TO PRODUCT (feet)	PRODUCT THICKNESS (feet)	CASING ELEVATION (feet)	GROUNDWATER ELEVATION (feet)
	TPH (ug/L)	BENZENE (ug/L)	TOLEUENE (ug/L)	EthylBenzene (ug/L)	XYLENE (ug/L)	MTBE (ug/L)					
07/22/96	11,000	1,700	22	660	700	840	6.60	NP	0.00	99.02	92.42
10/16/96	180	<0.3	<0.3	<0.3	<0.5	270	6.42	NP	0.00	99.02	92.60
01/22/97	130	<0.3	<0.3	<0.3	<0.5	470	5.70	NP	0.00	99.02	93.32
04/21/97	10,000	1,400	27	820	490	1,100	5.30	NP	0.00	99.02	93.72
07/14/97	8,200	660	15	230	270	560	7.90	NP	0.00	99.02	91.12
10/07/97	7,700	480	15	8.4	350	-	7.70	NP	0.00	99.02	91.32
01/19/98	1,400	20	0.74	0.46	4.4	-	6.05	NP	0.00	99.02	92.97
04/23/98	590	<0.3	<0.3	<0.3	<0.5	1,700	7.60	NP	0.00	99.02	91.42
07/20/98	4,900	570	150	300	500	1,500	5.30	NP	0.00	99.02	93.72
10/14/98	1,100	1.0	<0.3	<0.3	5.3	2,000	8.60	NP	0.00	99.02	90.42
01/21/99	570	0.32	<0.3	<0.3	<0.5	* 1,500 / 1,700	6.70	NP	0.00	99.02	92.32
04/15/99	770	<0.3	<0.3	<0.3	<0.5	* 1,400 / 1,200	6.07	NP	0.00	99.02	92.95
07/26/99	500	<0.3	<0.3	<0.3	<0.5	*710 / 950	7.86	NP	0.00	99.02	91.16
10/13/99	<50	<0.3	0.44	<0.3	0.62	<5	6.93	NP	0.00	99.02	92.09
01/20/00	<50	<0.3	<0.3	<0.3	<0.5	*5 / <5	6.44	NP	0.00	99.02	92.58
04/05/00	5,670	415	19	1.7	60.1	*329 / 194	7.86	NP	0.00	99.02	91.16
07/19/00	1,350	14	<3	<3	10	*237 / 120	7.10	NP	0.00	99.02	91.92
10/18/00	<50	<0.18	<0.14	<0.18	<0.26	*63 / 41.1	5.28	NP	0.00	99.02	93.74
01/17/01	<50	<0.18	<0.14	<0.18	3	*57 / 81	5.27	NP	0.00	99.02	93.75
04/19/01	<50	<0.18	<0.14	<0.18	<0.26	66	7.86	NP	0.00	99.02	91.16
07/18/01	<50	<0.18	<0.14	<0.18	<0.26	*9 / 3.5	6.30	NP	0.00	99.02	92.72
10/10/01	<50	<0.18	<0.14	<0.18	<0.26	*9.4 / 7.9	8.23	NP	0.00	99.02	90.79
01/30/02	2,590	40	9	8	6	*45 / 22	5.14	NP	0.00	99.02	93.88
04/17/02	51	<0.18	<0.14	<0.18	<0.26	*58 / 45	5.53	NP	0.00	99.02	93.49
07/31/02	<50	<0.18	<0.14	<0.18	<0.26	*39 / 33	5.93	NP	0.00	99.02	93.09
11/14/02	<50	<0.08	<0.18	<0.17	<0.4	6.8	5.92	NP	0.00	99.02	93.10
01/29/03	<15	<0.04	<0.02	<0.02	<0.06	<0.03	5.51	NP	0.00	99.02	93.51

**MONITORING WELL / RW-1**

01/09/92	-	-	-	-	-	-	14.00	NP	0.00	-	-
04/13/92	-	-	-	-	-	-	14.00	NP	0.00	-	-
10/05/92	-	-	-	-	-	-	15.05	NP	0.00	-	-
01/06/93	-	-	-	-	-	-	5.43	NP	0.00	-	-
04/26/93	-	-	-	-	-	-	13.20	NP	0.00	-	-
01/04/94	-	-	-	-	-	-	14.30	NP	0.00	-	-

**TABLE I**  
**GROUNDWATER DATA**  
**THRIFTY OIL STATION #049, OAKLAND, CA.**

DATE SAMPLED	ANALYTICAL PARAMETERS						DEPTH TO GROUNDWATER (feet)	DEPTH TO PRODUCT (feet)	PRODUCT THICKNESS (feet)	CASING ELEVATION (feet)	GROUNDWATER ELEVATION (feet)
	TPH (ng/L)	BENZENE (ng/L)	TOLUENE (ng/L)	EthylBenzene (ng/L)	XYLENE (ng/L)	MTBE (ng/L)					
04/05/94	-	-	-	-	-	-	14.13	NP	0.00	-	-
01/08/96	-	-	-	-	-	-	14.22	NP	0.00	-	-
04/08/96	-	-	-	-	-	-	14.33	NP	0.00	-	-
07/22/96	8,100	530	84	120	860	-	14.27	NP	0.00	-	-
10/16/96	-	-	-	-	-	-	13.10	NP	0.00	-	-
01/22/97	-	-	-	-	-	-	16.97	NP	0.00	-	-
10/07/97	-	-	-	-	-	-	14.20	NP	0.00	-	-
01/15/98	-	-	-	-	-	-	15.60	NP	0.00	-	-
04/23/98	81,000	0.72	1.4	3.2	5.7	270,000	14.20	NP	0.00	-	-
07/20/98	-	-	-	-	-	-	14.30	NP	0.00	-	-
10/14/98	-	-	-	-	-	-	11.20	NP	0.00	-	-
01/21/99	-	-	-	-	-	-	-	-	-	-	-
04/15/99	-	-	-	-	-	-	13.10	NP	0.00	-	-
07/26/99	4,400	<3	<3	<3	<5	*6,800 / 9,000	13.83	NP	0.00	-	-
10/13/99	-	-	-	-	-	-	-	-	-	-	-
01/20/00	-	-	-	-	-	-	13.22	NP	0.00	-	-
04/05/00	-	-	-	-	-	-	-	-	-	-	-
07/19/00	-	-	-	-	-	-	13.25	NP	0.00	-	-
10/18/00	-	-	-	-	-	-	11.14	NP	0.00	-	-
01/17/01	-	-	-	-	-	-	11.12	NP	0.00	-	-
04/19/01	-	-	-	-	-	-	-	-	-	-	-
07/18/01	-	-	-	-	-	-	11.20	NP	0.00	-	-
10/10/01	-	-	-	-	-	-	11.20	NP	0.00	-	-
01/30/02	-	-	-	-	-	-	12.30	NP	0.00	-	-
04/17/02	-	-	-	-	-	-	14.30	NP	0.00	-	-
07/31/02	-	-	-	-	-	-	14.21	NP	0.00	-	-
11/14/02	-	-	-	-	-	-	14.13	NP	0.00	-	-
01/29/03	-	-	-	-	-	-	13.12	NP	0.00	-	-

NOTE: \* MTBE 8020 / 8260

ND = Nondetectable

NP = No free hydrocarbon product

" - " = Not analyzed / Not available

Benzene, toluene, ethylbenzene, and xylene analyzed by EPA method 8020.

Total petroleum hydrocarbons (TPH) analyzed by EPA method 8015 modified for gasoline

Methyl-tert Butyl Ether (MTBE) analyzed by EPA method 8020 or 8260

**TABLE 2**  
**GROUNDWATER REMEDIATION SYSTEM MONITORING PROGRAM**  
 Thrifty Oil Co. Station No 049, OAKLAND, CA

Date	Totalizer (gallons)	Total/Cum. Discharge (gallons)	Flow (gal/day)	Total H-C Removed (lbs)	EFFLUENT (ug/L)						INFLUENT (ug/L)					
					TPH-g	B	T	E	X	MTBE	TPH-g	B	T	E	X	MTBE
4/8/91	1,310	0	-	0 000	-	<0.3	<0.3	<0.3	<0.9	-	-	910	2000	160	2000	-
4/15/91	1,434	124	18	0 049	-	<0.3	<0.3	<0.3	<0.3	-	-	2800	4600	310	5000	-
4/22/91	1,510	200	11	0 078	-	<15	<15	<15	<45	-	-	3100	3300	<15	2800	-
4/29/91	1,660	350	21	0 137	-	<0.3	<0.3	<0.3	<0.9	-	-	3600	4500	300	5000	-
5/6/91	1,740	430	11	0 168	-	<0.3	<0.3	<0.3	<0.9	-	-	3600	3500	300	3800	-
5/13/91	1,880	570	20	0 223	-	<0.3	<0.3	<0.3	<0.9	-	-	3300	3200	230	3900	-
5/20/91	2,010	700	19	0 274	-	<0.3	<0.3	<0.3	<0.9	-	-	3300	3400	260	5100	-
5/28/91	2,050	740	5	0 290	-	<0.3	<0.3	<0.3	<0.9	-	-	2900	3000	230	4200	-
6/3/91	2,110	800	10	0 313	-	<0.3	<0.3	<0.3	<0.9	-	-	2500	2100	110	2800	-
6/10/91	2,160	850	7	0 333	-	<0.3	<0.3	<0.3	<0.9	-	-	1800	1700	120	2100	-
6/17/91	2,219	909	8	0 356	-	<0.3	<0.3	<0.3	<0.9	-	-	2100	1900	170	2700	-
6/24/91	2,263	953	6	0 373	-	<0.3	<0.3	<0.3	<0.9	-	-	2100	1800	150	2700	-
07/01/91	2,313	1,003	7	0 393	-	<0.5	<0.5	<1	<1	-	-	2,700	2,000	150	2,900	-
07/08/91	2,700	1,390	55	0 544	-	<0.5	<0.5	<1	<1	-	-	4,000	2,500	130	4,400	-
07/15/91	2,872	1,562	25	0 611	-	<0.5	<0.5	<1	<1	-	-	3,100	1,900	140	3,200	-
07/22/91	3,144	1,834	39	0 718	-	<0.5	<0.5	<1	<1	-	-	3,400	2,100	110	2,800	-
07/29/91	3,220	1,910	11	0 748	-	<0.5	<0.5	<1	<1	-	-	5,100	2,200	180	2,700	-
08/05/91	3,348	2,038	18	0 798	-	<0.5	<0.5	<1	<1	-	-	5,100	3,900	400	4,200	-
08/12/91	3,472	2,162	18	0 846	-	<0.5	<0.5	<1	<1	-	-	11,000	6,200	440	8,400	-
08/19/91	3,548	2,238	11	0 876	-	<0.5	<0.5	<1	<1	-	-	4,500	2,400	130	2,600	-
08/26/91	3,655	2,345	15	0 918	-	<0.5	<0.5	<1	<1	-	-	4,400	2,500	260	3,600	-
09/09/91	3,822	2,512	12	0 983	-	<0.5	<0.5	<1	<1	-	-	5,200	3,000	390	3,700	-
09/16/91	3,884	2,574	9	1,007	-	<0.5	<0.5	<1	<1	-	-	4,100	2,000	460	4,900	-
09/23/91	4,013	2,703	18	1 058	-	<0.5	<0.5	<1	<1	-	-	4,600	1,600	710	6,400	-
09/30/91	4,092	2,782	11	1,089	-	<0.5	<0.5	<1	<1	-	-	5,700	2,000	380	6,200	-
10/07/91	4,131	2,821	6	1 104	System shut down						-	-	-	-	-	-
10/14/91	4,195	2,885	9	1 129	-	<0.5	<0.5	<1	<1	-	-	4,400	2,000	370	8,100	-
10/21/91	4,406	3,096	30	1 212	-	<0.5	<0.5	<1	<1	-	-	2,300	1,100	190	4,200	-
10/28/91	4,474	3,164	10	1 238	-	<0.5	<0.5	<1	<1	-	-	6,400	4,100	620	6,100	-
11/03/91	4,613	3,303	23	1 293	-	<0.5	<0.5	<1	<1	-	-	6,100	2,800	200	5,600	-
11/11/91	4,700	3,390	11	1 327	-	<0.5	<0.5	<1	<1	-	-	6,500	2,300	<30	4,900	-
11/18/91	4,867	3,577	27	1 400	-	<0.5	<0.5	<1	<1	-	-	5,600	2,500	300	4,600	-
11/25/91	5,042	3,732	22	1,461	-	<0.5	<0.5	<1	<1	-	-	5,400	2,800	230	5,700	-
12/03/91	5,263	3,953	28	1 547	-	<0.5	<0.5	<1	<1	-	-	7,200	3,300	490	5,500	-
12/09/91	5,362	4,052	17	1 586	-	<0.5	<0.5	<1	<1	-	-	4,400	1,700	140	3,900	-
12/16/91	5,486	4,176	18	1,635	-	<0.5	<0.5	<0.5	<0.5	-	-	4,700	2,300	310	4,600	-
12/23/91	5,516	4,206	4	1 646	-	<0.5	<0.5	<0.5	<0.5	-	-	4,000	2,200	290	5,900	-
12/30/91	5,575	4,265	8	1 669	-	<0.5	<0.5	<0.5	<0.5	-	-	5,200	2,500	350	5,800	-
01/15/92	5,720	4,410	9	1 726	-	<0.5	<0.5	<0.5	<0.5	-	-	3,400	1,900	300	6,300	-
02/10/92	6,264	4,954	21	1 939	-	<0.5	<0.5	<0.5	<0.5	-	-	5,800	2,800	320	7,200	-
03/09/92	8,520	7,210	81	2,822	<200	<0.5	1 6	<0.5	<0.5	-	47,000	7,100	4,800	630	10,300	-

**TABLE 2**  
**GROUNDWATER REMEDIATION SYSTEM MONITORING PROGRAM**  
 Thrifty Oil Co. Station No 049, OAKLAND, CA

Date	Totalizer (gallons)	Total/Cum. Discharge (gallons)	Flow (gal/day)	Total H-C Removed (lbs)	EFFLUENT (ug/L)						INFLUENT (ug/L)					
					TPH-g	B	T	E	X	MTBE	TPH-g	B	T	E	X	MTBE
04/13/92	22,888	21,578	411	7,369	<200	<0.5	<0.5	<0.5	<0.5	-	29,000	4,500	2,200	160	4,800	-
05/11/92	24,920	23,610	73	7,800	<200	<0.5	<0.5	<0.5	<0.5	-	22,000	4,300	1,500	130	3,800	-
06/01/92	28,330	27,020	162	8,368	<200	<0.5	<0.5	<0.5	<0.5	-	18,000	3,400	1,500	660	4,200	-
07/13/92	72,675	27,020	-	8,368	-	<0.5	<0.5	<0.5	<0.5	-	-	1,800	750	150	5,600	-
07/13/92	72,675	27,020	-	8,368	The system pumped air and flowmeter jumped from 30,000 gallons to 70,000 gallons											
08/17/92	75,046	29,391	68	8,724	-	<0.5	<0.5	<0.5	<0.5	-	-	1,100	350	200	1,100	-
09/14/92	75,582	29,927	19	8,804	-	<0.5	<0.5	<0.5	<1	-	-	2,100	520	<25	3,500	-
10/05/92	75,680	30,025	5	8,819	<200	<0.5	<0.5	<0.5	<1	-	19,000	1,700	270	<25	4,000	-
11/09/92	77,280	31,625	46	9,072	-	<0.5	<0.5	<0.5	<0.5	-	-	4,000	1,400	120	5,900	-
12/14/92	79,420	33,765	61	9,411	-	<0.5	<0.5	<0.5	<1	-	-	7,300	4,900	1,800	16,000	-
01/04/93	84,720	39,065	252	10,250	-	<0.5	<0.5	<0.5	<1	-	-	5,400	2,100	450	7,800	-
02/15/93	102,689	57,034	428	14,739	<200	<0.5	<0.5	<0.5	<1	-	41,000	6,600	3,200	260	9,600	-
02/22/93	146,430	57,034	-	14,739	The system pumped air and flowmeter jumped from 102,689 gallons to 146,430 gallons											
03/08/93	147,500	58,104	76	15,104	-	<0.5	<0.5	<0.5	<1	-	-	7,400	3,400	56	11,000	-
04/26/93	151,200	61,804	76	16,291	<100	<0.5	<0.5	<0.5	<1	-	36,000	4,300	2,200	420	8,300	-
04/26/93	151,200	61,804	-	16,291	Shut down system for repair											
07/21/93	151,240	61,844	0	16,303	Restart the system											
08/11/93	151,650	62,254	20	16,426	-	<0.5	<0.5	<0.5	<1	-	-	6,500	2,300	390	6,200	-
09/16/93	154,005	64,609	65	17,200	<60	<0.3	<0.3	<0.3	<0.6	-	43,000	2,300	320	<4.4	2,900	-
10/04/93	154,896	65,500	50	17,482	<60	<0.3	<0.3	<0.3	<0.6	-	33,000	2,900	470	6.9	3,500	-
11/05/93	157,431	68,035	79	17,989	<50	<0.3	<0.3	<0.3	<0.5	-	15,000	1,100	27	<0.3	920	-
12/03/93	159,324	69,928	68	18,233	<50	<0.3	<0.3	<0.3	<0.5	-	18,000	1,100	88	<6.6	2,300	-
01/06/94	166,440	77,044	209	19,181	-	<0.3	<0.3	<0.3	<0.5	-	-	3,800	730	<13	1,200	-
02/03/94	170,720	81,324	153	19,752	-	<0.3	<0.3	<0.3	<0.5	-	-	3,600	610	<4.4	4,800	-
03/03/94	178,168	88,772	266	20,744	-	<0.3	<0.3	<0.3	<0.5	-	-	2,800	2,000	270	3,400	-
04/07/94	185,670	96,274	214	22,056	<50	<0.3	<0.3	<0.3	<0.5	-	26,000	2,200	550	<6.6	1,900	-
05/12/94	188,840	99,444	91	22,460	<50	<0.3	<0.3	<0.3	<0.5	-	4,600	100	10	8.4	280	-
06/16/94	194,680	105,284	167	22,684	<50	<0.3	<0.3	<0.3	<0.5	-	<50	<0.3	<0.3	<0.5	-	
07/11/94	199,135	109,739	178	22,832	<50	<0.3	<0.3	<0.3	<0.5	-	4,000	220	<2.6	<2.6	320	-
08/04/94	200,910	111,514	74	22,919	<50	<0.3	<0.3	<0.3	<0.5	-	7,800	480	6.2	<0.3	630	-
09/15/94	203,450	114,054	60	23,036	<50	<0.3	<0.3	<0.3	<0.5	-	3,200	150	2.4	2.6	170	-
10/10/94	205,210	115,814	70	23,059	<50	<0.3	<0.3	<0.3	<0.5	-	1,300	8.6	1.5	1.1	15	-
11/07/94	206,060	116,664	30	23,074	<50	<0.3	<0.3	<0.3	<0.5	-	170	1.5	<0.3	<0.5	0.5	-
12/05/94	207,093	117,697	37	23,075	<50	<0.3	<0.3	<0.3	<0.5	-	75	1.3	<0.3	<0.5	<0.5	-
01/09/95	207,293	117,897	6	23,075	<50	<0.3	<0.3	<0.3	<0.5	-	<50	<0.3	<0.3	<0.5	<0.5	-
02/01/95	207,650	118,254	16	23,075	<50	<0.3	<0.3	<0.3	<0.5	-	<50	<0.3	<0.3	<0.5	<0.5	-
02/06/95	207,810	118,414	32	23,075	<50	<0.3	<0.3	<0.3	<0.5	-	<50	2.7	<0.3	<0.5	<0.5	-
03/10/95	208,430	119,034	19	23,076	<100	<0.5	<0.5	<0.5	<1	-	<100	<0.5	<0.5	<0.5	<1	-
04/10/95	208,564	119,168	4	23,079	<100	<0.5	<0.5	<0.5	<1	-	3,300	180	7.6	2.1	150	-
05/08/95	208,608	119,212	2	23,082	<100	<0.5	<0.5	<0.5	<1	-	11,000	640	9.2	<5	1,100	-
06/05/95	208,926	119,530	11	23,103	<100	<0.5	<0.5	<0.5	<1	-	5,100	270	2.2	<0.5	49	-

**TABLE 2**  
**GROUNDWATER REMEDIATION SYSTEM MONITORING PROGRAM**  
 Thrifty Oil Co. Station No 049, OAKLAND, CA

Date	Totalizer (gallons)	Total/Cum. Discharge (gallons)	Flow (gal/day)	Total H-C Removed (lbs)	EFFLUENT (ug/L)						INFLUENT (ug/L)					
					TPH-g	B	T	E	X	MTBE	TPH-g	B	T	E	X	MTBE
07/10/95	214,182	124,786	150	23,500	<100	<0.5	<0.5	<0.5	<1	-	13,000	1,600	120	24	1,300	-
08/07/95	221,876	132,480	275	24,332	Shut down system for repair						-	-	-	-	-	-
08/28/95	221,997	132,601	6	24,346	Restart the system						-	-	-	-	-	-
09/06/95	222,003	132,607	1	24,346	<100	<0.5	<0.5	<0.5	<1	-	2,300	<0.5	<0.5	<0.5	<1	-
10/09/95	222,343	132,947	10	24,352	<100	<0.5	<0.5	<0.5	<1	-	2,000	5.6	0.77	0.66	3.8	-
11/06/95	222,704	133,308	13	24,360	<50	0.3	0.31	<0.3	0.68	-	3,000	27	1.7	3.7	48	-
12/11/95	223,792	134,396	31	24,387	<50	<0.3	<0.3	<0.3	<0.5	-	<50	<0.3	<0.3	<0.3	0.96	-
01/08/96	224,661	135,265	31	24,400	970	<0.3	<0.3	<0.3	0.67	-	1,800	39	<0.3	<0.3	<0.5	-
02/12/96	227,812	138,416	90	24,467	<50	10	0.37	<0.3	0.53	-	3,300	190	<7.5	<7.5	20	-
03/12/96	229,301	139,905	51	24,504	<50	<0.3	<0.3	<0.3	<0.5	-	2,700	250	2.3	<1.5	<2.5	-
04/08/96	242,320	152,924	482	24,704	<50	<0.3	<0.3	<0.3	<0.5	-	1,000	90	5	<0.3	67	-
05/06/96	247,840	158,444	197	25,072	100	<0.3	<0.3	<0.3	<0.5	-	15,000	2,200	600	32	2,400	-
06/03/96	248,423	159,027	21	25,145	Shut down system for carbon change						-	-	-	-	-	-
08/08/96	248,423	159,027	-	25,145	Start-up system						-	-	-	-	-	-
08/20/96	248,630	159,234	17	25,149	<50	<0.3	<0.3	<0.3	<0.5	-	2,100	24	<0.3	<0.3	49	-
09/23/96	259,030	169,634	306	25,417	<50	<0.3	<0.3	<0.3	<0.5	-	4,100	260	<3	<3	34	-
10/16/96	263,610	174,214	199	25,547	<50	<0.3	<0.3	<0.3	<0.5	-	2,700	220	3.8	<0.6	44	-
11/19/96	263,986	174,590	11	25,553	<50	<0.3	<0.3	<0.3	<0.5	-	1,200	<0.3	<0.3	<0.3	<0.5	-
12/16/96	264,210	174,814	8	25,581	<50	<0.3	<0.3	<0.3	<0.5	-	29,000	410	2,300	120	1,100	-
01/22/97	266,220	176,824	54	26,393	<50	<0.3	<0.3	<0.3	<0.5	-	68,000	<0.3	<0.3	<0.3	<0.5	-
02/24/97	267,030	177,634	25	26,794	<50	<0.3	<0.3	<0.3	<0.5	-	51,000	3,500	3,200	390	2,200	-
03/17/97	267,230	177,834	10	26,911	<50	<0.3	<0.3	<0.3	<0.5	-	89,000	<6	11	<6	14	-
04/21/97	267,415	178,019	5	27,026	<50	<0.3	<0.3	<0.3	<0.5	-	61,000	730	18	130	360	-
05/22/97	276,535	187,139	294	29,375	<50	<0.3	<0.3	<0.3	<0.5	-	850	1.3	<0.3	0.4	4.6	-
06/23/97	281,214	191,818	146	29,408	-	-	-	-	-	-	-	-	-	-	-	-
07/14/97	284,210	194,814	143	29,501	<50	<0.3	<0.3	<0.3	<0.5	-	6,600	<0.3	0.59	<0.3	9	-
08/18/97	298,610	209,214	411	30,293	-	-	-	-	-	-	-	-	-	-	-	-
09/15/97	301,043	211,647	87	30,427	-	-	-	-	-	-	-	-	-	-	-	-
10/07/97	333,480	244,084	1,474	44,014	<50	<0.3	<0.3	<0.3	<0.5	-	94,000	<0.3	<0.3	<0.3	<0.5	-
11/17/97	334,286	244,890	20	44,645	-	-	-	-	-	-	-	-	-	-	-	-
12/08/97	334,382	244,986	5	44,720	-	-	-	-	-	-	-	-	-	-	-	-
12/12/97	334,382	244,986	-	44,720	Shut down system due to stolen equipment						-	-	-	-	-	-
04/08/98	334,382	244,986	-	44,720	<50	<0.3	<0.3	<0.3	<0.5	<20	3,100	12	1	<0.3	490	2,600
05/11/98	334,382	244,986	-	44,720	-	-	-	-	-	-	-	-	-	-	-	-
06/22/98	334,382	244,986	-	44,720	-	-	-	-	-	-	-	-	-	-	-	-
07/20/98	334,382	244,986	-	44,720	<50	<0.3	<0.3	<0.3	<0.5	-	52,000	8	0.52	0.83	1.5	-
08/03/98	346,521	257,125	867	49,977	Shut down system for carbon canisters replacement						-	-	-	-	-	-
09/17/98	354,985	265,589	188	53,642	-	-	-	-	-	-	-	-	-	-	-	-
10/14/98	358,015	268,619	112	54,338	<50	<0.3	<0.3	<0.3	1.6	-	3,100	45	13	3.5	350	-
11/05/98	359,600	270,204	72	54,378	System shut down due to vandalism and stolen equipment						-	-	-	-	-	-
11/20/98	359,600	270,204	-	54,378	Restart						-	-	-	-	-	-

**TABLE 2**  
**GROUNDWATER REMEDIATION SYSTEM MONITORING PROGRAM**  
 Thrifty Oil Co. Station No 049, OAKLAND, CA

Date	Totalizer (gallons)	Total/Cum. Discharge (gallons)	Flow (gal/day)	Total H-C Removed (lbs)	EFFLUENT (ug/L)						INFLUENT (ug/L)					
					TPH-g	B	T	E	X	MTBE	TPH-g	B	T	E	X	MTBE
12/11/98	369,452	280,056	469	54,633	-	-	-	-	-	-	-	-	-	-	-	-
12/24/98	-	280,056	-	54,633	No reading, meter broken						-	-	-	-	-	-
01/15/99	0	280,056	-	54,633	Replaced Flowmeter started at 0						-	-	-	-	-	-
01/21/99	985.5	281,042	164	54,636	57	<0.3	<0.3	<0.3	0.76	-	380	6.2	1	<0.3	9.1	-
02/12/99	1,971.0	282,027	45	54,639	-	-	-	-	-	-	-	-	-	-	-	-
03/12/99	4,390.0	284,446	86	54,647	-	-	-	-	-	-	-	-	-	-	-	-
04/15/99	8,595.0	288,651	124	54,661	<50	<0.3	<0.3	<0.3	<0.5	<5	410	1.6	0.78	<0.3	5	*580 / 330
05/04/99	9,410.0	289,466	43	54,663	-	-	-	-	-	-	-	-	-	-	-	-
05/18/99	9,410.0	289,466	-	54,663	Shut down system for pump controller repair by manufacturer						-	-	-	-	-	-
09/20/99	9,411.0	289,467	0	54,663	Restart the system						-	-	-	-	-	-
09/24/99	9,412.4	289,468	0	54,663	-	-	-	-	-	-	-	-	-	-	-	-
10/13/99	9,509.8	289,566	5	54,666	<50	<0.3	<0.3	<0.3	<0.5	<5	6,000	<0.3	<0.3	<0.3	<0.5	13,000
11/12/99	9,701.9	289,758	6	54,676	-	-	-	-	-	-	-	-	-	-	-	-
12/17/99	9,893.7	289,950	5	54,685	-	-	-	-	-	-	-	-	-	-	-	-
01/20/00	10,052.1	290,108	5	54,693	<50	<0.3	<0.3	<0.3	<0.5	-	<50	<0.3	<0.3	<0.3	<0.5	-
02/17/00	10,156.6	290,213	4	54,698	-	-	-	-	-	-	-	-	-	-	-	-
03/13/00	10,354.7	290,411	8	54,708	-	-	-	-	-	-	-	-	-	-	-	-
04/05/00	10,545.7	290,602	8	54,897	72.7	1.8	4.1	0.7	6.7	-	119,000	2,360	6,440	6,240	25,200	*30,800 / 21,800
05/19/00	11,071.7	291,128	12	55,419	Shut down system for carbon drum replacement						-	-	-	-	-	-
06/05/00	11,075.4	291,131	0	55,419	Restart the system											
06/14/00	11,131.6	291,188	6	55,474	<50	<0.3	<0.3	<0.3	<0.6	<5	<1,000	<6	<6	<6	14	24,500
07/06/00	11,362.0	291,418	10	55,703	Shut down system for carbon replacement											
07/17/00	0.0	291,418	-	55,703	Restart the system after carbon change, repipe and flowmeter change (starting at 0.0)											
07/24/00	411.0	291,829	59	55,907	<50	<0.3	<0.3	<0.3	<0.6	<5	205	<0.3	1	<0.3	<0.6	*99 / 104
08/21/00	8,193.0	299,611	278	55,920	-	-	-	-	-	-	-	-	-	-	-	-
09/18/00	27,251.0	318,669	681	55,953	-	-	-	-	-	-	-	-	-	-	-	-
10/18/00	54,280.0	345,698	901	96,155	<50	<0.18	<0.14	<0.18	<0.26	<0.24	357,000	2,380	2,960	1,280	6,850	9,630
10/30/00	64,610.0	356,028	861	126,867	-	-	-	-	-	-	-	-	-	-	-	-
11/27/00	79,870.0	371,288	545	172,235	-	-	-	-	-	-	-	-	-	-	-	-
12/22/00	99,240.0	390,658	775	229,823	-	-	-	-	-	-	-	-	-	-	-	-
01/17/01	101,250.0	392,668	77	233,018	<50	<0.18	<0.14	<0.18	<0.26	<0.24	24,700	783	373	2	3,480	15,000
02/23/01	144,120.0	435,538	1,159	241,836	-	-	-	-	-	-	-	-	-	-	-	-
03/30/01	195,400.0	486,818	1,465	252,385	-	-	-	-	-	-	-	-	-	-	-	-
04/06/01	199,090.0	490,508	527	253,144	System shut down for carbon replacement, Replaced on 4/11/01, restart on 4/13/01.											
04/20/01	207,050.0	498,468	569	255,172	88	<0.18	<0.14	<0.18	<0.26	93	36,500	855	716	659	1,570	11,400
04/27/01	210,640.0	502,058	513	256,263	System shut down for repair/replacement of compressor's pressure switch and exhaust valve											
04/30/01	210,640.0	502,058	-	256,263	<0.18	<0.14	<0.18	<0.26	*337 / 60	7,620	268	22	10	124	*13,600 / 9,130	
05/11/01	210,640.0	502,058	-	256,263	Replaced pressure switch on 5/7/01, system still off for carbon replacement											
05/21/01	210,640.0	502,058	-	256,263	Restart the system											
05/30/01	226,830.0	518,248	1,799	263,289	<50	<0.18	<0.14	<0.18	<0.26	<0.24	96,600	4,980	1,660	2,770	11,300	*53,600 / 41,600
06/29/01	267,230.0	558,648	1,347	295,790	-	-	-	-	-	-	-	-	-	-	-	-

**TABLE 2**  
**GROUNDWATER REMEDIATION SYSTEM MONITORING PROGRAM**  
 Thrifty Oil Co. Station No 049, OAKLAND, CA

Date	Totalizer (gallons)	Total/Cum. Discharge (gallons)	Flow (gal/day)	Total H-C Removed (lbs)	EFFLUENT (ug/L)						INFILUENT (ug/L)					
					TPH-g	B	T	E	X	MTBE	TPH-g	B	T	E	X	MTBE
07/11/01	310,010.0	601,428	3,565	341,855	<50	<0.18	<0.14	<0.18	<0.26	<0.24	162,000	<0.18	4,140	4,760	24,000	<0.24
08/17/01	441,270.0	732,688	3,548	518,940	-	-	-	-	-	-	-	-	-	-	-	-
09/28/01	498,310.0	789,728	1,358	595,894	-	-	-	-	-	-	-	-	-	-	-	-
10/03/01	503,930.0	795,348	1,124	600,424	<50	<0.18	<0.14	<0.18	<0.26	<0.24	31,600	<1.8	150	294	5,280	<2.4
11/12/01	664,700.0	956,118	4,019	642,733	-	-	-	-	-	-	-	-	-	-	-	-
12/28/01	706,300.0	987,718	904	653,680	-	-	-	-	-	-	-	-	-	-	-	-
01/11/02	721,050.0	1,012,468	1,054	657,562	System shut down for carbon replacement											
01/21/02	721,050.0	1,012,468	-	657,562	Restart the system											
02/01/02	731,320.0	1,022,738	934	658,963	<100	<0.3	<0.3	<0.3	<0.6	<5	1,172	1	1	1	6	<5
02/22/02	751,340.0	1,042,758	953	659,159	-	-	-	-	-	-	-	-	-	-	-	-
03/27/02	813,240.0	1,104,658	1,876	659,763	-	-	-	-	-	-	-	-	-	-	-	-
04/12/02	835,170.0	1,126,588	1,371	660,975	<50	<0.18	<0.14	<0.18	<0.26	<0.24	12,100	5	1	<0.18	<0.26	18,400
04/26/02	918,670.0	1,210,088	5,964	669,389	System shut down											
05/10/02	918,680.0	1,210,098	1	669,390	Restart											
05/17/02	928,670.0	1,220,088	1,427	670,397	-	-	-	-	-	-	-	-	-	-	-	-
06/03/02	-	-	-	-	-	<0.5	<0.7	<0.8	<3.3	-	Outlet sampling results from EBMUD (sample collected by EBMUD inspector)					
06/03/02	-	-	-	-	<50	<0.18	<0.14	<0.18	<0.26	<0.24	Split-sample results (sample collected by us)					
06/07/02	971,240.0	1,262,658	2,027	674,686	-	-	-	-	-	-	-	-	-	-	-	-
06/28/02	1,012,150.0	1,303,568	1,948	678,809	-	-	-	-	-	-	-	-	-	-	-	-
07/15/02	1,045,670.0	1,337,088	1,972	681,977	<50	<0.18	<0.14	<0.18	<0.26	3.3 J	10,600	<0.18	<0.14	<0.18	<0.26	10,000
07/31/02	1,052,380.0	1,343,798	419	682,569	System shut down for carbon replacement											
08/16/02	1,052,390.0	1,343,808	1	682,569	Restart											
08/30/02	1,057,310.0	1,348,728	351	683,004	-	-	-	-	-	-	-	-	-	-	-	-
09/20/02	-	-	-	-	Sample results from EBMUD nor received yet						Outlet sampling results from EBMUD (sample collected by EBMUD inspector)					
09/20/02	1,061,730.0	1,353,148	210	683,394	<50	<0.1	<0.15	<0.06	-	-	Split-sample results (sample collected by us, analysis by EPA 624 & 8015M)					
09/27/02	1,064,020.0	1,355,438	327	683,596	-	-	-	-	-	-	-	-	-	-	-	-
10/04/02	1,069,130.0	1,360,548	730	683,787	<50	<0.18	<0.14	<0.18	<0.26	<0.24	4,600 J	<0.18	<0.14	<0.18	<0.26	2,570
10/25/02	1,082,500.0	1,373,918	637	684,289	-	-	-	-	-	-	-	-	-	-	-	-
11/29/02	1,108,680.0	1,400,096	748	685,270	-	-	-	-	-	-	-	-	-	-	-	-
12/27/02	1,123,890.0	1,415,308	543	685,840	-	-	-	-	-	-	-	-	-	-	-	-
01/03/03	1,128,910.0	1,420,328	717	686,028	System shut down for carbon replacement											
01/10/03	1,128,970.0	1,420,388	9	686,030	Restart											
01/17/03	1,132,560.0	1,423,978	513	686,999	<50	<0.14	<0.07	<0.08	1.1	<2.0	32,400	11	64	<0.8	6,050	706
01/31/03	1,143,290.0	1,434,708	766	689,460	<15	<0.04	0.58	<0.02	1.1	<0.03	22,700	14	34	18	5,160	550
02/14/03	1,153,670.0	1,445,088	741	691,423	System shut down for carbon replacement											
03/14/03	1,153,670.0	1,445,088	-	691,423	System still shut down for maintenance and upgrade											

WD PERMIT LIMITS:

NE      5.0      5.0      5.0      5.0      NE

**TABLE 2**  
**GROUNDWATER REMEDIATION SYSTEM MONITORING PROGRAM**  
 Thrifty Oil Co Station No 049, OAKLAND, CA

Date	Totalizer (gallons)	Total/Cum. Discharge (gallons)	Flow (gal/day)	Total H-C Removed (lbs)	EFFLUENT (ug/L)					INFLUENT (ug/L)					
					TPH-g	B	T	E	X	TPH-g	B	T	E	X	MTBE

Note: < = less than laboratory detection level indicated

- = no sample / not analyzed

NE = Permit Limit not established

In February 2000, the total cumulative discharge amount was corrected to reflect all system maintenance and flowmeter changeouts since the startup of the system. The total number may be different from previous versions of this table.

Total Hydrocarbons Removed = From 4/8/91 to 2/10/92, the influent TPHg is assumed to be 47,000 (3/9/92)

TPH is analyzed by EPA Method 8015 M

BTEX is analyzed by EPA Method 602 or 8020

\*MTBE 8020/8260

# **APPENDIX A**



**EARTH MANAGEMENT CO.**

Environmental Remediation

**PROJECT STATUS REPORT**

SITE: THRIFTY OIL CO. #049

ADDR: 3400 SAN PABLO AVENUE  
OAKLAND, CA.

DATE: 01.29.03

PERSON: SERBACI,

OBSERVATION WELLS

WELL ID	DTP (FT)	DTW (FT)	DTB (FT)	PT (FT)	DIA (IN)	PURGE (GAL)	ODORS			FP		COMMENT					
							Y	N	S	Y	N						
<b>MONTHLY</b>																	
MW-1	2.45	18.74				10	X			X							
MW-2	8.43	23.78				10	X			X							
MW-3	7.30	24.16				11	X			X							
MW-4	4.50	13.60				24	X			X							
MW-5	4.55	13.76				6	X			X							
MW-6	3.88	13.06				6	X			X							
MW-7	5.31	13.56				21	X			X							
RW-1	13.12	24.37				0	X			X							
FREE PRODUCT REMOVED: APPROX							WATER REMOVED: APPROX										
							88 GALLONS										
<b>REMARKS:</b>																	
Q.W.S.																	

**EXPLANATION:**

DTP= DEPTH TO PRODUCT FROM TOP OF CASING, DTW= DEPTH TO WATER FROM TOP OF CASING

DTB= DEPTH TO BOTTOM FROM TOP OF CASING, PT= PRODUCT THICKNESS, S= SLIGHT

13415 Carmenita Road/P.O. Box 2129, Santa Fe Springs, CA 90670 • (562) 923-9876 Fax (562) 861-9796

PAGE \_\_\_\_ OF \_\_\_\_

**FIELD DATA - GROUNDWATER SAMPLING PROGRAM**

Site:	td 049	Date:	01.29.03
Address:			
Personnel:	SERBAN,	Weather:	SUNNY DAY
Well No:	MW-1	Equip:	BAPVER

Before Purging:			
Total Well Depth: (ft)	17.74	Well Diameter	24
Depth to Water (ft)	2.45	Est. Purge Volume:	10

Sampling Data:							
Initial Turbidity:	Final Turbidity:						
Time	9:36	9:37	9:39	9:40	9:42	9:43	9:45
EC	1200	1240	1230	1230	1270	1270	1270
pH	6.10	6.03	5.93	5.91	5.83	5.97	5.93
Temp	71.2	71.1	70.9	70.7	70.7	70.6	70.5
Gal.	1	2	4	5	7	8	10
Time							
EC							
pH							
Temp							
Gal.							

After Purging/Before Sample Collection			
Depth to Water (ft)	6.30	Total Well Depth (ft)	17.74

**FIELD DATA - GROUNDWATER SAMPLING PROGRAM**

Site:	# 049	Date:	01. 29. 03
Address:			
Personnel:	SERBAN,	Weather:	SUNNY Day
Well No:	MW-2	Equip:	BAILER

Before Purging:			
Total Well Depth: (ft.)	23.78	Well Diameter	24
Depth to Water (ft)	8.43	Est. Purge Volume:	10

Sampling Data:							
Initial Turbidity:				Final Turbidity:			
Time	11:06	11:07	11:09	11:10	11:12	11:13	11:15
EC	1830	1820	1810	1790	1760	1730	1740
pH	6.13	6.18	6.20	6.18	6.30	6.31	6.30
Temp	21.1	21.0	21.1	20.9	20.8	20.8	20.6
Gal.	1	2	4	5	3	8	10
Time							
EC							
pH							
Temp							
Gal.							

After Purging/Before Sample Collection	
Depth to Water (ft.)	12.03
Total Well Depth(ft.)	23.78

## FIELD DATA - GROUNDWATER SAMPLING PROGRAM

Site:	EL 049	Date:	01. 29. 03
Address:			
Personnel:	SE RBAI,	Weather:	SUNNY DAY
Well No:	MW - 3	Equip:	BARRIER

Before Purging:			
Total Well Depth: (ft)	24.16	Well Diameter	24
Depth to Water (ft)	7.30	Est. Purge Volume:	11

Sampling Data:							
Initial Turbidity:				Final Turbidity:			
Time	9:50	9:52	9:53	9:55	9:56	9:58	10:00
EC	480	960	970	920	1110	1130	1120
pH	6.04	5.93	5.91	5.90	5.93	5.89	5.91
Temp	21.3	21.1	20.8	20.7	20.7	20.5	20.4
Gal.	1	3	4	6	7	9	11
Time							
EC							
pH							
Temp							
Gal.							

After Purging/Before Sample Collection	
Depth to Water (ft.)	11.03
Total Well Depth(ft.)	24.16

**FIELD DATA - GROUNDWATER SAMPLING PROGRAM**

Site:	SL 049	Date:	01.29.03
Address:			
Personnel:	SERRAN	Weather:	SUNNY DAY
Well No:	MW-4	Equip:	BAPLER

Before Purging:			
Total Well Depth: (ft.)	13.60	Well Diameter	44
Depth to Water (ft)	4.50	Est. Purge Volume:	24

Sampling Data:							
Initial Turbidity:				Final Turbidity:			
Time	10:39	10:42	10:46	10:49	10:53	10:56	11:00
EC	1320	1330	1370	1380	1390	1410	1340
pH	6.32	6.30	6.31	6.30	6.20	6.18	6.20
Temp	21.3	21.4	21.6	21.6	21.7	21.8	21.8
Gal.	3	6	10	13	17	20	24
Time							
EC							
pH							
Temp							
Gal.							

After Purging/Before Sample Collection	Total Well Depth(ft.)
Depth to Water (ft.)	13.60

**FIELD DATA - GROUNDWATER SAMPLING PROGRAM**

Site:	044	Date:	01.29.03
Address:			
Personnel:	DERBY	Weather:	SUNNY DAY
Well No:	MW-5	Equip:	BARRIER

**Before Purging:**

Total Well Depth: (ft.)	13.76	Well Diameter	2.7
Depth to Water (ft)	4.55	Est. Purge Volume:	6

**Sampling Data:**

**Initial Turbidity:**

Time	9:24	9:25	9:26	9:27	9:28	9:29	9:30
EC	1110	990	110	960	980	970	990
pH	6.13	6.11	6.09	6.08	6.03	6.03	6.01
Temp	21.3	21.1	20.9	20.8	20.8	20.7	20.5
Gal.	0.5	1.5	2	3	4	5	6

Time

EC

pH

Temp

Gal.

**After Purging/Before Sample Collection**

Depth to Water (ft)

7.03

Total Well Depth(ft).

13.76

**FIELD DATA - GROUNDWATER SAMPLING PROGRAM**

Site:	2049	Date:	01.29.03
Address:			
Personnel:	SERBALI,	Weather:	SUNNY DAY
Well No:	MU - G	Equip:	BAILER

Before Purging:			
Total Well Depth: (ft.)	13.06	Well Diameter	24
Depth to Water (ft)	3.88	Est. Purge Volume:	6

Sampling Data:							
Initial Turbidity:	Final Turbidity:						
Time	10:04	10:05	10:06	10:07	10:08	10:09	10:10
EC	1340	1320	1340	1320	1310	1330	1310
pH	5.93	5.81	5.80	5.83	5.81	5.79	5.80
Temp	71.4	71.1	70.9	70.7	70.7	70.5	70.3
Gal.	0.5	1.5	2	3	4	5	6
Time							
EC							
pH							
Temp							
Gal.							

After Purging/Before Sample Collection			
Depth to Water (ft.)	6.10	Total Well Depth(ft.)	13.06

**FIELD DATA - GROUNDWATER SAMPLING PROGRAM**

Site:	# 049	Date:	OK. 29. 03
Address:			
Personnel:	SERBAN,	Weather:	SUNNY Day
Well No:	MW - 7	Equip:	BARRIER

<b>Before Purging:</b>			
Total Well Depth: (ft.)	13.56	Well Diameter	4.4
Depth to Water (ft)	5.51	Est. Purge Volume:	22

<b>Sampling Data:</b>							
Initial Turbidity:				Final Turbidity:			
Time	10:16	10:19	10:22	10:25	10:28	10:31	10:35
EC	1210	1240	1240	1230	1260	1230	1240
pH	6.14	6.04	6.14	6.11	6.13	6.11	6.09
Temp	21.4	21.2	21.2	20.9	20.7	20.7	20.7
Gal.	3	6	9	12	15	18	22
Time							
EC							
pH							
Temp							
Gal.							

<b>After Purging/Before Sample Collection</b>	
Depth to Water (ft.)	Total Well Depth(ft.).
13.56	

# **APPENDIX B**



**ASSOCIATED LABORATORIES**  
806 North Batavia - Orange, California 92868 - 714/771-6900

**FAX 714/538-1209**

CLIENT	Thrifty Oil Co.	(8871)	LAB REQUEST	105944
	ATTN: Jeff Suryakusuma		REPORTED	02/10/2003
	13116 Imperial Hwy.		RECEIVED	02/04/2003
	P.O. Box 2128			
	Santa Fe Springs, CA 90670			

PROJECT Station #049  
3400 San Pablo Ave., Oakland

SUBMITTER Client

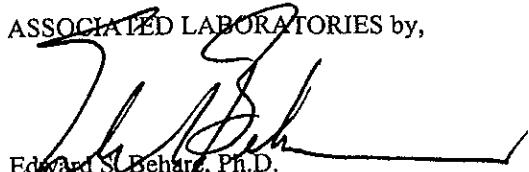
**COMMENTS**

This laboratory request covers the following listed samples which were analyzed for the parameters indicated on the attached Analytical Result Report. All analyses were conducted using the appropriate methods as indicated on the report. This cover letter is an integral part of the final report.

<b>Order No.</b>	<b>Client Sample Identification</b>
409525	TOC #049, MW-5
409526	TOC #049, MW-1
409527	TOC #049, MW-3
409528	TOC #049, MW-6
409529	TOC #049, MW-7
409530	TOC #049, MW-4
409531	TOC #049, MW-2
409532	TOC #049, Trip Blank
409533	Laboratory Method Blank

Thank you for the opportunity to be of service to your company. Please feel free to call if there are any questions regarding this report or if we can be of further service.

ASSOCIATED LABORATORIES by,

  
Edward S. Beharz, Ph.D.  
Vice President

*NOTE: Unless notified in writing, all samples will be discarded by appropriate disposal protocol 30 days from date reported.*

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**TESTING & CONSULTING**  
*Chemical  
Microbiological  
Environmental*

Order #: 409525  
Matrix: WATER

Client Sample ID: TOC #049, MW-5  
Date Sampled: 01/29/2003 Time Sampled: 13:30

Analyte	Result	DF	PQL	MDL	Units	Date/Analyst
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**8021B BTEX**

Benzene	ND	1	0.3	0.04	ug/L	02/06/03 LZ
Ethyl benzene	ND	1	0.3	0.02	ug/L	02/06/03 LZ
Methyl t - butyl ether	7.1	1	5	0.03	ug/L	02/06/03 LZ
Toluene	ND	1	0.3	0.02	ug/L	02/06/03 LZ
Xylene (total)	ND	1	0.6	0.06	ug/L	02/06/03 LZ

**8015M - Total Petroleum Hydrocarbons**

Gasoline	ND	1	50	15	ug/L	02/06/03 LZ
<b>Surrogates</b>	<b>Units</b>					
a,a,a-Trifluorotoluene	88			%	55 - 156	

PQL = Practical Quantitation Limit, MDL = Method detection limit, DF = Dilution Factor  
ND = Not detected below indicated MDL, J=Trace



Order #: 409526  
Matrix: WATER

Client Sample ID: TOC #049, MW-1  
Date Sampled: 01/29/2003 Time Sampled: 13:40

Analyte	Result	DF	PQL	MDL	Units	Date/Analyst
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**8021B BTEX**

Benzene	ND	1	0.3	0.04	ug/L	02/06/03 LZ
Ethyl benzene	ND	1	0.3	0.02	ug/L	02/06/03 LZ
Methyl t - butyl ether	ND	1	5	0.03	ug/L	02/06/03 LZ
Toluene	ND	1	0.3	0.02	ug/L	02/06/03 LZ
Xylene (total)	ND	1	0.6	0.06	ug/L	02/06/03 LZ

**8015M - Total Petroleum Hydrocarbons**

Gasoline	ND	1	50	15	ug/L	02/06/03 LZ
Surrogates				Units	Control Limits	
a,a,a-Trifluorotoluene	86			%	55 - 156	

PQL = Practical Quantitation Limit, MDL = Method detection limit, DF = Dilution Factor  
ND = Not detected below indicated MDL, J=Trace



Order #: 409527

Matrix: WATER

Client Sample ID: TOC #049, MW-3

Date Sampled: 01/29/2003 Time Sampled: 13:50

Analyte	Result	DF	PQL	MDL	Units	Date/Analyst
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**8021B BTEX**

Benzene	ND	1	0.3	0.04	ug/L	02/06/03 LZ
Ethyl benzene	ND	1	0.3	0.02	ug/L	02/06/03 LZ
Methyl t - butyl ether	16	1	5	0.03	ug/L	02/06/03 LZ
Toluene	ND	1	0.3	0.02	ug/L	02/06/03 LZ
Xylene (total)	ND	1	0.6	0.06	ug/L	02/06/03 LZ

**8015M - Total Petroleum Hydrocarbons**

Gasoline	ND	1	50	15	ug/L	02/06/03 LZ
Surrogates					Units	Control Limits
a,a,a-Trifluorotoluene	89			%	55 - 156	

PQL = Practical Quantitation Limit, MDL = Method detection limit, DF = Dilution Factor  
 ND = Not detected below indicated MDL, J=Trace



Order #: 409528

Matrix: WATER

Client Sample ID: TOC #049, MW-6

Date Sampled: 01/29/2003 Time Sampled: 14:00

Analyte	Result	DF	PQL	MDL	Units	Date/Analyst
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**8021B BTEX**

Benzene	ND	1	0.3	0.04	ug/L	02/06/03 LZ
Ethyl benzene	ND	1	0.3	0.02	ug/L	02/06/03 LZ
Methyl t - butyl ether	630	20	100.0	0.03	ug/L	02/06/03 LZ
Toluene	ND	1	0.3	0.02	ug/L	02/06/03 LZ
Xylene (total)	ND	1	0.6	0.06	ug/L	02/06/03 LZ

**8015M - Total Petroleum Hydrocarbons**

Gasoline	694 J	20	1000.0	15	ug/L	02/06/03 LZ
<b>Surrogates</b>						
a,a,a-Trifluorotoluene	94			%	55 - 156	

PQL = Practical Quantitation Limit, MDL = Method detection limit, DF = Dilution Factor  
 ND = Not detected below indicated MDL, J=Trace



Order #: 409529

Client Sample ID: TOC #049, MW-7

Matrix: WATER

Date Sampled: 01/29/2003 Time Sampled: 14:10

Analyte	Result	DF	PQL	MDL	Units	Date/Analyst
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## 8021B BTEX

Benzene	ND	1	0.3	0.04	ug/L	02/06/03 LZ
Ethyl benzene	ND	1	0.3	0.02	ug/L	02/06/03 LZ
Methyl t - butyl ether	ND	1	5	0.03	ug/L	02/06/03 LZ
Toluene	ND	1	0.3	0.02	ug/L	02/06/03 LZ
Xylene (total)	ND	1	0.6	0.06	ug/L	02/06/03 LZ

## 8015M - Total Petroleum Hydrocarbons

Gasoline	ND	1	50	15	ug/L	02/06/03 LZ
Surrogates					Units	Control Limits
a,a,a-Trifluorotoluene			89		%	55 - 156

PQL = Practical Quantitation Limit, MDL = Method detection limit, DF = Dilution Factor  
 ND = Not detected below indicated MDL, J=Trace



Order #: 409530

Matrix: WATER

Client Sample ID: TOC #049, MW-4

Date Sampled: 01/29/2003 Time Sampled: 14:20

Analyte	Result	DF	PQL	MDL	Units	Date/Analyst
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8021B BTEX

Benzene	444	20	6.0	0.04	ug/L	02/06/03 LZ
Ethyl benzene	ND	20	6.0	0.02	ug/L	02/06/03 LZ
Methyl t - butyl ether	8160	200	1000.0	0.03	ug/L	02/06/03 LZ
Toluene	39	20	6.0	0.02	ug/L	02/06/03 LZ
Xylene (total)	1200	20	12.0	0.06	ug/L	02/06/03 LZ

8015M - Total Petroleum Hydrocarbons

Gasoline	13000	20	1000.0	15	ug/L	02/06/03 LZ
Surrogates				Units	Control Limits	
a,a,a-Trifluorotoluene	95			%	55 - 156	

PQL = Practical Quantitation Limit, MDL = Method detection limit, DF = Dilution Factor  
ND = Not detected below indicated MDL, J=Trace



Order #: 409531  
Matrix: WATER

Client Sample ID: TOC #049, MW-2  
Date Sampled: 01/29/2003 Time Sampled: 14:25

Analyte	Result	DF	PQL	MDL	Units	Date/Analyst
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**8021B BTEX**

Benzene	746	50	15.0	0.04	ug/L	02/06/03 LZ
Ethyl benzene	ND	50	15.0	0.02	ug/L	02/06/03 LZ
Methyl t - butyl ether	8220	500	2500.0	0.03	ug/L	02/06/03 LZ
Toluene	76	50	15.0	0.02	ug/L	02/06/03 LZ
Xylene (total)	2840	50	30.0	0.06	ug/L	02/06/03 LZ

**8015M - Total Petroleum Hydrocarbons**

Gasoline	22100	50	2500.0	15	ug/L	02/06/03 LZ
<b>Surrogates</b>				<b>Units</b>	<b>Control Limits</b>	
a,a,a-Trifluorotoluene	105			%	55 - 156	

PQL = Practical Quantitation Limit, MDL = Method detection limit, DF = Dilution Factor  
ND = Not detected below indicated MDL, J=Trace



Order #: 409532  
Matrix: WATER

Client Sample ID: TOC #049, Trip Blank  
Date Sampled: 01/29/2003 Time Sampled: 13:30

Analyte	Result	DF	PQL	MDL	Units	Date/Analyst
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**8021B BTEX**

Benzene	ND	1	0.3	0.04	ug/L	02/07/03 LZ
Ethyl benzene	ND	1	0.3	0.02	ug/L	02/07/03 LZ
Toluene	ND	1	0.3	0.02	ug/L	02/07/03 LZ
Xylene (total)	ND	1	0.6	0.06	ug/L	02/07/03 LZ

**8015M - Total Petroleum Hydrocarbons**

Gasoline	ND	1	50	15	ug/L	02/07/03 LZ
<b>Surrogates</b>				<b>Units</b>	<b>Control Limits</b>	
a,a,a-Trifluorotoluene	91			%	55 - 156	

PQL = Practical Quantitation Limit, MDL = Method detection limit, DF = Dilution Factor  
ND = Not detected below indicated MDL, J=Trace

**ASSOCIATED LABORATORIES**

Analytical Results Report  
Lab Request 105944 results, page 8 of 9



Order #: 409533

Client Sample ID: Laboratory Method Blank

Matrix: WATER

Analyte	Result	DF	PQL	MDL	Units	Date/Analyst
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**8021B BTEX**

Benzene	ND	1	0.3	0.04	ug/L	02/07/03 LZ
Ethyl benzene	ND	1	0.3	0.02	ug/L	02/07/03 LZ
Methyl t - butyl ether	ND	1	5	0.03	ug/L	02/07/03 LZ
Toluene	ND	1	0.3	0.02	ug/L	02/07/03 LZ
Xylene (total)	ND	1	0.6	0.06	ug/L	02/07/03 LZ

**8015M - Total Petroleum Hydrocarbons**

Gasoline	ND	1	50	15	ug/L	02/07/03 LZ
<b>Surrogates</b>				<b>Units</b>	<b>Control Limits</b>	
a,a,a-Trifluorotoluene	85			%	55 - 156	

PQL = Practical Quantitation Limit, MDL = Method detection limit, DF = Dilution Factor  
 ND = Not detected below indicated MDL, J=Trace



**ASSOCIATED LABORATORIES**  
**QA REPORT FORM**

QC Sample: LCS/LCSD

Matrix: WATER

Prep. Date: 02/06/03

Analysis Date: 2/6/03-2/7/03

ID#'s in Batch: LR 105944, 105880

Reporting Units = ug/L

**PREPARATION BLANK / LAB CONTROL SAMPLE RESULTS**

Test	Method	LCS	PREP BLK	Value	Result	True	%Rec	L.Limit	H.Limit
			ND						
TPH	8015M-G	LCSD	ND	511	500	102	80%	120%	

*LCS Result = Lab Control Sample Result*

*True = True Value of LCS*

*L.Limit / H.Limit = LCS Control Limits*

**SURROGATE RECOVERY**

Sample No.	AAA-TFT
QC Limit	55-200
Method Blank	85
LCS	155
LCSD	158

\* Outside QC Limits

**ASSOCIATED LABORATORIES**  
**LCS REPORT FORM**

QC Sample: LCS / LCSD

Matrix: WATER

Prep. Date: 02/06/03

Analysis Date: 02/06/03

LAB ID#'s in Batch: LR 105944, 105880

REPORTING UNITS = ug/L

**PREPARATION BLANK / LAB CONTROL SAMPLE RESULTS**

Test	Method	PREP. BLK	LCS			LCSD	
		Value	Result	TRUE	%Rec	Result	%Rec
Benzene	8021	ND	19.5	20	98	18.6	93
Toluene	8021	ND	19.3	20	97	18.7	94
Ethylbenzene	8021	ND	19.2	20	96	18.4	92
Xylenes	8021	ND	57.0	60	95	54.8	91

*LCS = Lab Control Sample Result*

*TRUE = True Value of LCS*

*L.LIMIT / H.LIMIT = LCS Control Limits*

<i>L.Limit</i>	<i>H.Limit</i>
80%	120%

**SURROGATE RECOVERY**

Sample No.	AAA-TFT
QC Limit	55-156
Method Blank	85
LCS	100
LCSD	93

*AAA-TFT = a,a,a-Trifluorotoluene*



# **APPENDIX C**



OK

DATE: 03.21.03

### START-UP/SHUT DOWN REPORT

STATION NO.: 049

SYSTEM TYPE: CARBON (GW)

#### START-UP REPORT:

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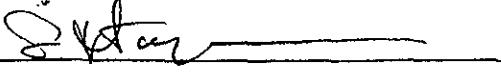
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#### SHUT DOWN REPORT:

System shut down for upgrade.

SIGNATURE: 



**EARTH MANAGEMENT CO.**  
Environmental Remediation

049

DATE: 03.14.03

START-UP/SHUT DOWN REPORT

STATION NO.: 049

SYSTEM TYPE: GWC

START-UP REPORT:

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SHUT DOWN REPORT:

System shut down for maintenance  
and upgrade -

FLOW = 1153670 c

SIGNATURE: R. Stoye

049

THRIFTY OIL CO. SERVICE STATION #049

GROUNDWATER EXTRACTION/TREATMENT SYSTEM INSPECTION FORM

NAME OF INSPECTOR: SERBATO, D.P.E.

DATE OF INSPECTION: 03.07.03

OBSERVATIONS AND COMMENTS: System shut down -

FLOW METER READING: 1153670

SAMPLES OBTAINED: 1/1

PRESSURE GAUGE READING UP STREAM OF THE BAG FILTER:

PRESSURE GAUGE READING DOWN STREAM OF THE CARTRIDGE FILTER:

PRESSURE GAUGE READING DOWN STREAM OF THE PRIMARY GAC UNIT:

PRESSURE GAUGE READING DOWN STREAM OF THE SECONDARY GAC UNIT:

PRESSURE GAUGE READING DOWN STREAM OF THE THIRD GAC UNIT:

INSPECTOR'S SIGNATURE: D. Nistazis



**EARTH MANAGEMENT CO.**

Environmental Remediation

049

DATE: 03.07.03

START-UP/SHUT DOWN REPORT

STATION NO.: 049

SYSTEM TYPE: G.W.C.

START-UP REPORT:

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SHUT DOWN REPORT:

System shut down -

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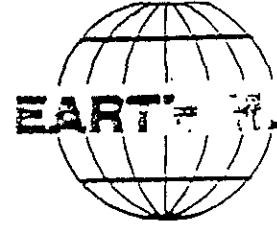
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SIGNATURE: D. J. Stoye



EARTH MANAGEMENT CO.

Environmental Services Division

DATE:

02.21.03

049

START-UP/SHUT DOWN REPORT

STATION NO.: 049

SYSTEM TYPE: CARBON (WATER)

START-UP REPORT:

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SHUT DOWN REPORT:

SYSTEM SHUT DOWN FOR CARBON CHANGE

FLOW # -11536%

SIGNATURE: R. Stoyan

THRIFTY OIL CO. SERVICE STATION #649

GROUNDWATER EXTRACTION/TREATMENT SYSTEM INSPECTION FORM

NAME OF INSPECTOR: SERBAT POPE SW

DATE OF INSPECTION: 02.16.03

OBSERVATIONS AND  
COMMENTS: SHUT DOWN FOR CHANGE CARBON

FLOW METER READING: -1153670 -

SAMPLES OBTAINED: 1/1

PRESSURE GAUGE READING UP STREAM OF THE BAG FILTER: \_\_\_\_\_

PRESSURE GAUGE READING DOWN STREAM OF THE CARTRIDGE FILTER: \_\_\_\_\_

PRESSURE GAUGE READING DOWN STREAM OF THE PRIMARY GAC UNIT: \_\_\_\_\_

PRESSURE GAUGE READING DOWN STREAM OF THE SECONDARY GAC UNIT: \_\_\_\_\_

PRESSURE GAUGE READING DOWN STREAM OF THE THIRD GAC UNIT: \_\_\_\_\_

INSPECTOR'S SIGNATURE: S. Stoyan



# EARTH MANAGEMENT CO.

Environmental Remediation

DATE:

02.14.03

049

## START-UP/SHUT DOWN REPORT

STATION NO.: 049

SYSTEM TYPE: CARBON WATER

### START-UP REPORT:

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### SHUT DOWN REPORT:

SYSTEM SHUT DOWN FOR CHANGE  
CARBON.

FLOW #1153670 -

SIGNATURE: S. Stoyan

THRIFTY OIL CO. SERVICE STATION #049

GROUNDWATER EXTRACTION/TREATMENT SYSTEM INSPECTION FORM

NAME OF INSPECTOR: SERBAN DOFEA

DATE OF INSPECTION: 02.07.03

OBSERVATIONS AND  
COMMENTS: CHECK OIL, BELT, HOSES, CLEAN WATER

FILTER BAG, CHANGE CARTRIDGE WATER FILTER,  
DRAINT COMPRESSOR TANK,

FLOW METER READING: -1148490-

SAMPLES OBTAINED: N/A

PRESSURE GAUGE READING UP STREAM OF THE BAG FILTER: 13

PRESSURE GAUGE READING DOWN STREAM OF THE CARTRIDGE FILTER: 11

PRESSURE GAUGE READING DOWN STREAM OF THE PRIMARY GAC UNIT: 1.0

PRESSURE GAUGE READING DOWN STREAM OF THE SECONDARY GAC UNIT: 0.9

PRESSURE GAUGE READING DOWN STREAM OF THE THIRD GAC UNIT: 0.6

INSPECTOR'S SIGNATURE: D. Stoyan

## THRIFTY OIL CO. SERVICE STATION #049

## GROUNDWATER EXTRACTION/TREATMENT SYSTEM INSPECTION FORM

NAME OF INSPECTOR: SERBA POPOESW

DATE OF INSPECTION: 01.31.03

OBSERVATIONS AND  
COMMENTS: ADD OIL, CHECK BELT, HOSES, CLEAN  
WATER FILTER BAG, REPLACE CARTRIDGE FOR WATER  
FILTER, DRAIN COMPRESSOR TANK,

FLOW METER READING: 143290

SAMPLES OBTAINED: N/A

PRESSURE GAUGE READING UP STREAM OF THE BAG FILTER: 13

PRESSURE GAUGE READING DOWN STREAM OF THE CARTRIDGE FILTER: 11

PRESSURE GAUGE READING DOWN STREAM OF THE PRIMARY GAC UNIT: 1.0

PRESSURE GAUGE READING DOWN STREAM OF THE SECONDARY GAC UNIT: 0.8

PRESSURE GAUGE READING DOWN STREAM OF THE THIRD GAC UNIT: 0.6

INSPECTOR'S SIGNATURE: S. J. Stojan

THRIFTY OIL CO. SERVICE STATION #049

## GROUNDWATER EXTRACTION/TREATMENT SYSTEM INSPECTION FORM

NAME OF INSPECTOR: SERBA & POPPERDATE OF INSPECTION: 01. 24. 03OBSERVATIONS AND  
COMMENTS: ADD OIL, CHECK BEAT, (088E), DRUMSCONNECTIONS, DRAINTL COMPRESSOR TANK, CLEAN  
WATER FILTER BAG, REPLACE CARTRIDGE WATER  
FILTER,FLOW METER READING: —1136780—SAMPLES OBTAINED: N/APRESSURE GAUGE READING UP STREAM OF THE BAG FILTER: 13PRESSURE GAUGE READING DOWN STREAM OF THE CARTRIDGE FILTER: MPRESSURE GAUGE READING DOWN STREAM OF THE PRIMARY GAC UNIT: 1.0PRESSURE GAUGE READING DOWN STREAM OF THE SECONDARY GAC UNIT: 0.8PRESSURE GAUGE READING DOWN STREAM OF THE THIRD GAC UNIT: 0.6INSPECTOR'S SIGNATURE: S. Popper

oh9

THRIFTY OIL CO. SERVICE STATION #049

GROUNDWATER EXTRACTION/TREATMENT SYSTEM INSPECTION FORM

NAME OF INSPECTOR: SERBIA POPOVIC

DATE OF INSPECTION: 01/12/03

OBSERVATIONS AND  
COMMENTS: ADD OIL, CHECK BELT, PTOSSER, DRUMS

CONNECTIONS, CLEAN WATER FILTER BAG; DRAIN  
COMPRESSOR TANK;

FLOW METER READING: -1132560 -

SAMPLES OBTAINED: SYSTEM WATER SAMPLING

PRESSURE GAUGE READING UP STREAM OF THE BAG FILTER: 13

PRESSURE GAUGE READING DOWN STREAM OF THE CARTRIDGE FILTER: 11

PRESSURE GAUGE READING DOWN STREAM OF THE PRIMARY GAC UNIT: 1.1

PRESSURE GAUGE READING DOWN STREAM OF THE SECONDARY GAC UNIT: 0.8

PRESSURE GAUGE READING DOWN STREAM OF THE THIRD GAC UNIT: 0.6

INSPECTOR'S SIGNATURE: Popovic

THRIFTY OIL CO. SERVICE STATION #649

GROUNDWATER EXTRACTION/TREATMENT SYSTEM INSPECTION FORM

NAME OF INSPECTOR: SERBIA POPOVIC

DATE OF INSPECTION: 01.10.03

OBSERVATIONS AND  
COMMENTS: RESTART SYSTEM

FLOW METER READING: 112 8970

SAMPLES OBTAINED: ~1A

PRESSURE GAUGE READING UP STREAM OF THE BAG FILTER: 13

PRESSURE GAUGE READING DOWN STREAM OF THE CARTRIDGE FILTER: 11

PRESSURE GAUGE READING DOWN STREAM OF THE PRIMARY GAC UNIT: 1.1

PRESSURE GAUGE READING DOWN STREAM OF THE SECONDARY GAC UNIT: 0.9

PRESSURE GAUGE READING DOWN STREAM OF THE THIRD GAC UNIT: 0.6

INSPECTOR'S SIGNATURE: D. K. Stoy



**EARTH MANAGEMENT CO.**  
Environmental Remediation

(OK)

DATE: 01.03.03

**START-UP/SHUT DOWN REPORT**

STATION NO.: 049

SYSTEM TYPE: WATER(CARBON)

**START-UP REPORT:**

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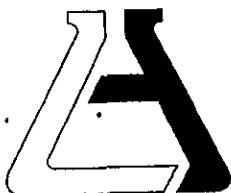
**SHUT DOWN REPORT:**

SHUT DOWN FOR CHANGE CARBON DRUMS -

# -1128910 -

SIGNATURE: S. Muthu

# **APPENDIX D**



**ASSOCIATED LABORATORIES**  
806 North Batavia - Orange, California 92868 - 714/771-6900

FAX 714/538-1209

CLIENT	Thrifty Oil Co. ATTN: Jeff Suryakusuma 13116 Imperial Hwy. P.O. Box 2128 Santa Fe Springs, CA 90670	(8871)	LAB REQUEST	105323
			REPORTED	01/28/2003
			RECEIVED	01/20/2003

PROJECT Station #049

SUBMITTER Client

COMMENTS

This laboratory request covers the following listed samples which were analyzed for the parameters indicated on the attached Analytical Result Report. All analyses were conducted using the appropriate methods as indicated on the report. This cover letter is an integral part of the final report.

<u>Order No.</u>	<u>Client Sample Identification</u>
406722	TOC #049, Outlet PSP#1
406723	TOC #049, Int-1
406724	TOC #049, Int-2
406725	TOC #049, Int-3
406726	TOC #049, Inlet
406727	Laboratory Method Blank

I thank you for the opportunity to be of service to your company. Please feel free to call if there are any questions regarding this report or if we can be of further service.

ASSOCIATED LABORATORIES by,

Edward S. Behare, Ph.D.  
Vice President

*NOTE: Unless notified in writing, all samples will be discarded by appropriate disposal protocol 30 days from date reported.*

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TESTING & CONSULTING  
Chemical  
Microbiological  
Environmental

Order #: 406722  
Matrix: WATER

Client Sample ID: TOC #049, Outlet PSP#1  
Date Sampled: 01/17/2003 Time Sampled: 09:00

Analyte	Result	DF	PQL	MDL	Units	Date/Analyst
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**8021B BTEX**

Benzene	ND	1	0.3	0.14	ug/L	01/23/03 LZ
Ethyl benzene	ND	1	0.3	0.08	ug/L	01/23/03 LZ
Methyl t - butyl ether	ND	1	5	2.0	ug/L	01/23/03 LZ
Toluene	ND	1	0.3	0.07	ug/L	01/23/03 LZ
Xylene (total)	1.1	1	0.6	0.35	ug/L	01/23/03 LZ

**8015M - Total Petroleum Hydrocarbons**

Gasoline	ND	1	50	50	ug/L	01/23/03 LZ
<b>Surrogates</b>				<b>Units</b>	<b>Control Limits</b>	
a,a,a-Trifluorotoluene	91			%	55 - 156	

PQL = Practical Quantitation Limit, MDL = Method detection limit, DF = Dilution Factor  
ND = Not detected below indicated MDL, J=Trace



Order #: 406723  
Matrix: WATER

Client Sample ID: TOC #049, Int-1  
Date Sampled: 01/17/2003 Time Sampled: 09:10

Analyte	Result	DF	PQL	MDL	Units	Date/Analyst
<b>8021B BTEX</b>						
Benzene	ND	1	0.3	0.14	ug/L	01/23/03 LZ
Ethyl benzene	ND	1	0.3	0.08	ug/L	01/23/03 LZ
Methyl t - butyl ether	5.7	1	5	2.0	ug/L	01/23/03 LZ
Toluene	ND	1	0.3	0.07	ug/L	01/23/03 LZ
Xylene (total)	2.0	1	0.6	0.35	ug/L	01/23/03 LZ
<b>8015M - Total Petroleum Hydrocarbons</b>						
Gasoline	ND	1	50	50	ug/L	01/23/03 LZ
<b>Surrogates</b>						<b>Units</b>
a,a,a-Trifluorotoluene	91			%		55 - 156

PQL = Practical Quantitation Limit, MDL = Method detection limit, DF = Dilution Factor  
ND = Not detected below indicated MDL, J=Trace



Order #: 406724  
Matrix: WATER

Client Sample ID: TOC #049, Int-2  
Date Sampled: 01/17/2003 Time Sampled: 09:20

Analyte	Result	DF	PQL	MDL	Units	Date/Analyst
<b>8021B BTEX</b>						
Benzene	ND	1	0.3	0.14	ug/L	01/23/03 LZ
Ethyl benzene	ND	1	0.3	0.08	ug/L	01/23/03 LZ
Methyl t - butyl ether	693	20	100.0	2.0	ug/L	01/23/03 LZ
Toluene	ND	1	0.3	0.07	ug/L	01/23/03 LZ
Xylene (total)	ND	1	0.6	0.35	ug/L	01/23/03 LZ
<b>8015M - Total Petroleum Hydrocarbons</b>						
Gasoline	870 J	20	1000.0	50	ug/L	01/23/03 LZ
Surrogates				Units	Control Limits	
a,a,a-Trifluorotoluene	94			%	55 - 156	

PQL = Practical Quantitation Limit, MDL = Method detection limit, DF = Dilution Factor  
ND = Not detected below indicated MDL, J=Trace



Order #: 406725

Client Sample ID: TOC #049, Int-3

Matrix: WATER

Date Sampled: 01/17/2003 Time Sampled: 09:30

Analyte	Result	DF	PQL	MDL	Units	Date/Analyst
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**8021B BTEX**

Benzene	8.4	1	0.3	0.14	ug/L	01/23/03 LZ
Ethyl benzene	1.1	1	0.3	0.08	ug/L	01/23/03 LZ
Toluene	8.3	1	0.3	0.07	ug/L	01/23/03 LZ
Xylene (total)	2.1	1	0.6	0.35	ug/L	01/23/03 LZ

**8015M - Total Petroleum Hydrocarbons**

Gasoline	260	1	50	50	ug/L	01/23/03 LZ
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Surrogates		Units	Control Limits
a,a,a-Trifluorotoluene	133	%	55 - 156

PQL = Practical Quantitation Limit, MDL = Method detection limit, DF = Dilution Factor  
 ND = Not detected below indicated MDL, J=Trace



Order #: 406726

Matrix: WATER

Client Sample ID: TOC #049, Inlet

Date Sampled: 01/17/2003 Time Sampled: 09:40

Analyte	Result	DF	PQL	MDL	Units	Date/Analyst
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**8021B BTEX**

Benzene	11	10	3.0	0.14	ug/L	01/23/03 LZ
Ethyl benzene	ND	10	3.0	0.08	ug/L	01/23/03 LZ
Methyl t - butyl ether	706	100	500.0	2.0	ug/L	01/23/03 LZ
Toluene	64	10	3.0	0.07	ug/L	01/23/03 LZ
Xylene (total)	6050	100	60.0	0.35	ug/L	01/23/03 LZ

**8015M - Total Petroleum Hydrocarbons**

Gasoline	32400	10	500.0	50	ug/L	01/23/03 LZ
<b>Surrogates</b>						
a,a,a-Trifluorotoluene	115			%		55 - 156

PQL = Practical Quantitation Limit, MDL = Method detection limit, DF = Dilution Factor  
 ND = Not detected below indicated MDL, J=Trace



Order #: 406727

Client Sample ID: Laboratory Method Blank

Matrix: WATER

Analyte	Result	DF	PQL	MDL	Units	Date/Analyst
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**8021B BTEX**

Benzene	ND	1	0.3	0.14	ug/L	01/23/03 LZ
Ethyl benzene	ND	1	0.3	0.08	ug/L	01/23/03 LZ
Methyl t - butyl ether	ND	1	5	2.0	ug/L	01/23/03 LZ
Toluene	ND	1	0.3	0.07	ug/L	01/23/03 LZ
Xylene (total)	ND	1	0.6	0.35	ug/L	01/23/03 LZ

**8015M - Total Petroleum Hydrocarbons**

Gasoline	ND	1	50	50	ug/L	01/23/03 LZ
<b>Surrogates</b>				<b>Units</b>	<b>Control Limits</b>	
a,a,a-Trifluorotoluene	106			%	55 - 156	

PQL = Practical Quantitation Limit, MDL = Method detection limit, DF = Dilution Factor  
 ND = Not detected below indicated MDL, J=Trace



**ASSOCIATED LABORATORIES**  
**QA REPORT FORM**

QC Sample: LCS/LCSD  
 Matrix: WATER  
 Prep. Date: 01/23/03  
 Analysis Date: 01/23/03  
 ID#'s in Batch: LR 105323, 105322  
 Reporting Units = ug/L

**PREPARATION BLANK / LAB CONTROL SAMPLE RESULTS**

Test	Method	LCS	PREP BLK					
			Value	Result	True	%Rec	L.Limit	H.Limit
TPH	8015M-G	LCSD	ND	522	500	104	80%	120%
				522	500	104	80%	120%

*LCS Result = Lab Control Sample Result*

*True = True Value of LCS*

*L.Limit / H.Limit = LCS Control Limits*

**SURROGATE RECOVERY**

Sample No.	AAA-TFT
QC Limit	55-156
Method Blank	106
LCS	103
LCSD	167 *

\* Outside QC Limits

**ASSOCIATED LABORATORIES**  
**LCS REPORT FORM**

QC Sample: LCS / LCSD

Matrix: WATER

Prep. Date: 01/23/03

Analysis Date: 01/23/03

LAB ID#'s in Batch: LR 105323, 105322

REPORTING UNITS = ug/L

**PREPARATION BLANK / LAB CONTROL SAMPLE RESULTS**

Test	Method	PREP. BLK	LCS			LCSD	
		Value	Result	TRUE	%Rec	Result	%Rec
Benzene	8021	ND	20.3	20	102	19.8	99
Toluene	8021	ND	20.1	20	101	19.9	100
Ethylbenzene	8021	ND	20.1	20	101	19.5	98
Xylenes	8021	ND	58.2	60	97	58.2	97

LCS = Lab Control Sample Result

TRUE = True Value of LCS

L.LIMIT / H.LIMIT = LCS Control Limits

L.Limit	H.Limit
80%	120%

**SURROGATE RECOVERY**

Sample No.	AAA-TFT
QC Limit	55-156
Method Blank	106
LCS	110
LCSD	99

AAA-TFT = *a,a,a*-Trifluorotoluene

## Cooler Receipt Form

Client: Trifly oil Project: \_\_\_\_\_  
Date Cooler Received: 1/20/03 Date Cooler Opened: 1/20/03

Was cooler scanned for presence of radioactivity?

a: Was radioactivity results above 25cpm?

Yes / No

Yes / No

If cooler had custody seal(s), were they signed and intact?

NA / Yes / No

Was a shipper's packing slip attached to the cooler?

Yes / No

Cooler was packed with: Ice  Ice Packs  Bubble Wrap  Styrofoam   
Paper  None  Other

Temperature of cooler: 0.1

\*Cooler needs to be received @ 4°C with an acceptable range of 2°-6°C

Were all samples sealed in plastic bags?

Yes / No

Did all samples arrive intact? If no, see below

Yes / No

Were all samples labeled correctly? (ID, Dates, Times) If no, see below

Yes / No

Can the tests required be run with provided containers? If no, see below

Yes / No

Was sufficient volume of sample sent in all containers?

Yes / No

Were any VOA vials received with headspace?

NA / Yes / No

Were correct preservatives used?

NA / Yes / No

\*If no, see pH Log for a list of samples and container pH.

Any other important information: \_\_\_\_\_

Signed:

Ryan Thiel

Date: 1/20/03

# Chain of Custody Record

## ASSOCIATED LABORATORIES

806 North Batavia • Orange, CA 92868

Phone: (714) 771-6900 • Fax: (714) 538-1209



Company Project Manager Project Name Site Name and Address	THRIFTY OIL CO. JEFF SURIYAKUSUMIT System water sampling +1 049	Phone Fax Project #	(562) 921-3581 (562) 921-7510 049	A.L. Job No. /05/27	Page _____ of _____							
Sample ID	Lab ID	Date	Time	Matrix	Container Number/Size	Pres.	Analysis Requested			Test Instructions & Comments		
							T	B	M		P	T
1	CUTLET PSPH	01.17.03	9:00	H <sub>2</sub> O	3 VOA	HCL	X	X	X			GRAB SAMPLE
2	INT - 1		9:10					X	X			
3	INT - 2		9:20				X	X	X			
4	INT - 3		9:30				X	X	X			
5	INLET		9:40				X	X	X			
6												
7												
8												
9												
10												
11												
12												
13												
14												
15												

### Sample Receipt - To Be Filled By Laboratory

Total Number of Containers	Properly Cooled Y / N / NA	Relinquished by Sampler: Signature:	1.	Relinquished by Sampler: Signature:	2.	Relinquished by Sampler: Signature:	3.
Custody Seals Y / N / NA	Samples Intact Y / N / NA	Printed Name: SERBAN POPESCU		Printed Name:		Printed Name:	
Received in Good Condition Y / N	Samples Accepted Y / N	Date: 01.17.03 Time: 17:30		Date:	Time:	Date:	Time:
<b>Turn Around Time</b>				Received By: GOLDEN STATE	Received By: Signature:	Received By: Signature:	Received By: Signature:
<input checked="" type="checkbox"/> Normal	<input type="checkbox"/> Rush	<input type="checkbox"/> Same Day	<input type="checkbox"/> 48 hrs.	Printed Name:	Printed Name:	Printed Name:	Printed Name:
		<input type="checkbox"/> 24 hrs.	<input type="checkbox"/> 72 hrs.	Date: 1/20/03 Time: 16:00	Date: 1/20/03 Time: 16:00	Date: 1/20/03 Time: 16:00	Date: 1/20/03 Time: 16:00