November 2, 1994

ENV - STUDIES, SURVEYS, & REPORTS
1127 Lincoln Avenue
Alameda, California

Ms. Juliet Shin
Alameda County Environmental
Health Department
80 Swan Way, Room 200
Oakland, CA 94621

Dear Ms. Shin:

This letter presents the results of groundwater monitoring and sampling conducted by Blaine Tech Services, Inc. on August 22, 1994, at the site referenced above (see Plate 1, Site Vicinity Map). The gradient map has been reviewed by a registered professional (see Plate 2, Groundwater Gradient Map). TPHg and benzene concentrations are shown on Plate 3. Tables 1 and 2 list historical groundwater monitoring data and analytical results, respectively.

The certified analytical report, chain-of-custody, field data sheets, bill of lading and quarterly summary report are in the Appendix, along with Texaco Environmental Services' Standard Operating Procedures.

If you have any questions or comments regarding this site, please call the Texaco Environmental Services' site Project Coordinator, Ms. Karen Petryna at (510) 236-9139.

Best Regards,

Rebecca Digerness
Groundwater Monitoring Coordinator

Karen E. Petryna
Engineer
Texaco Environmental Services

RBD:hs

C:\QMR\1127L\QMR.LET

Enclosures

ALCO HAZMAT
94 NOV -9 PM 2:29

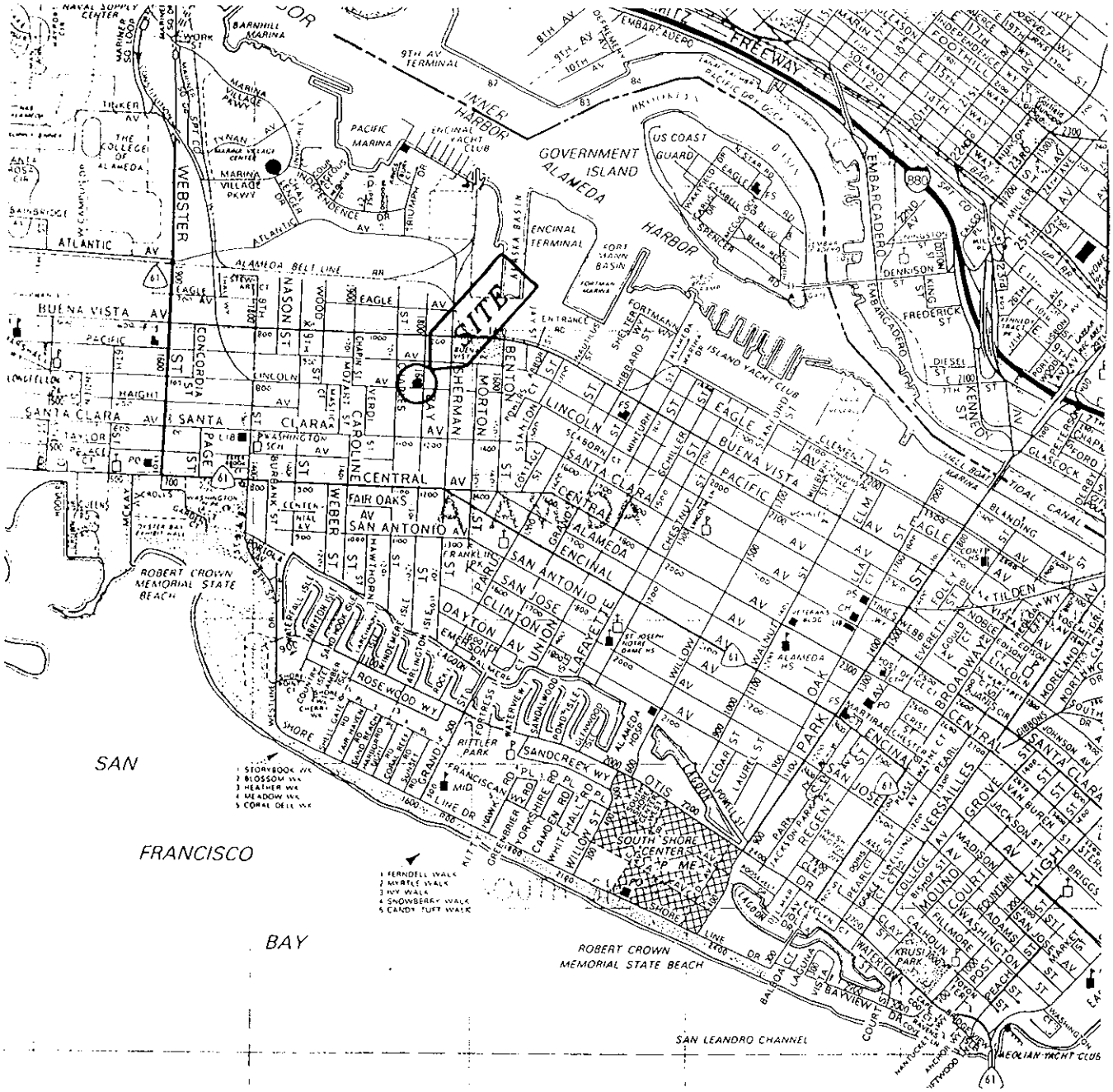
CC: Mr. Richard Hiett
CRWQCB - San Francisco Bay Region
2101 Webster St., Suite 500
Oakland, CA 94621

Mr. Leo Pagano
1127 Lincoln Avenue
Alameda, CA

RAOFile-UCPFile (w/enclosures) RRZielinski (w/o enclosures)

PR: KEP

GROUNDWATER MONITORING AND SAMPLING
Third Quarter, 1994
at the
Former Texaco Station
1127 Lincoln Avenue
Alameda, California



SOURCE

1993 THE THOMAS GUIDE
ALAMEDA COUNTY, PAGE 11 (B3)

N

0 1/4 1/2 3/4 1

MILE

1" = 2200'

TEXACO

REFINING AND MARKETING, INC.
TEXACO ENVIRONMENTAL SERVICES

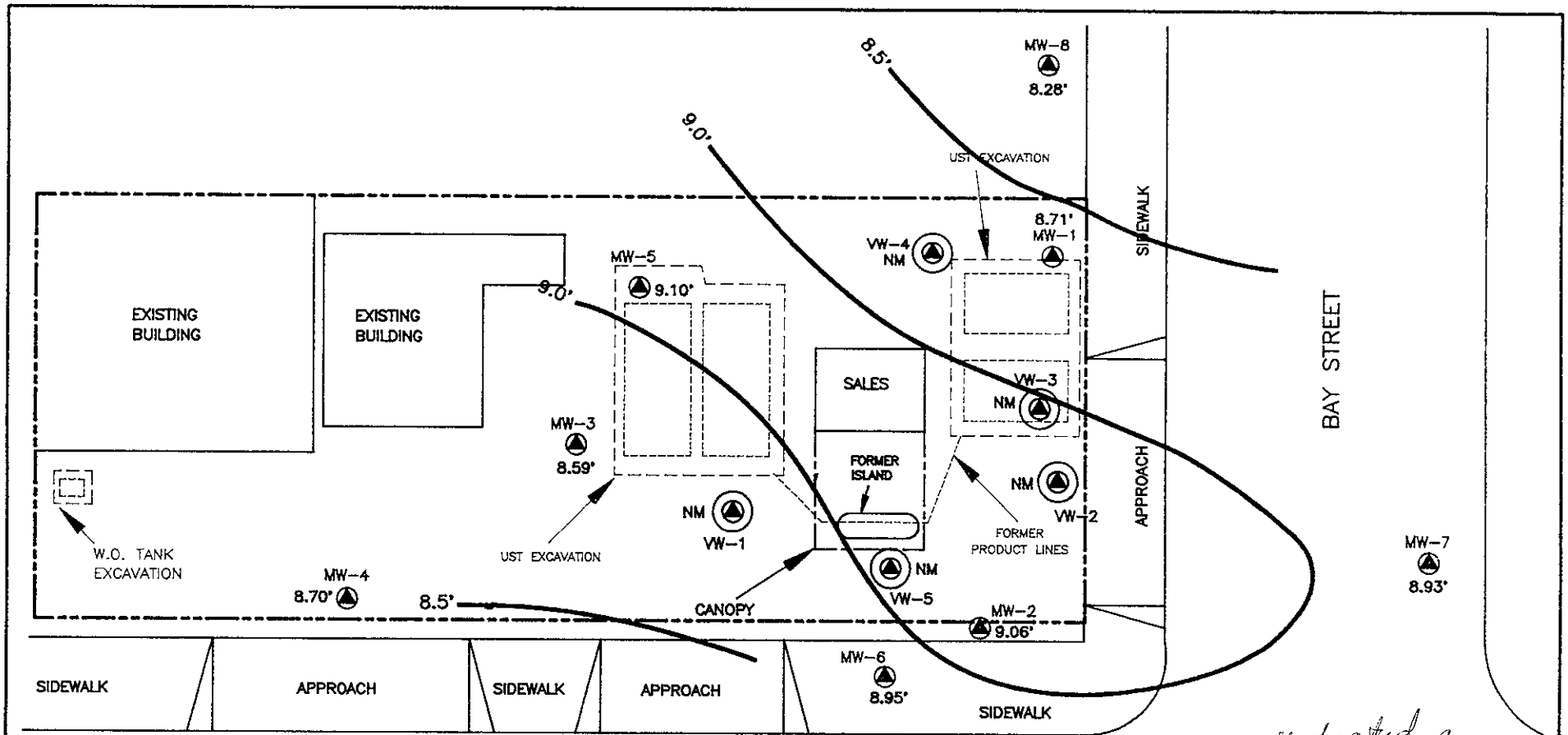
PLATE 1

SITE VICINITY MAP

FORMER TEXACO SERVICE STATION

1127 LINCOLN AVE. / BAY ST.,

ALAMEDA, CALIFORNIA



- Gradient fluctuated a great deal.
- DTW's ~1 foot deeper than last quarter

N

0 20

FEET

REGISTERED GEOLOGIST
MARVIN KATZ
No. 4543
STATE OF CALIFORNIA

LEGEND :

MW-1	MONITORING WELL LOCATION AND WELL NUMBER
VW-1	VAPOR EXTRACTION MONITORING WELL LOCATION AND WELL NUMBER
8.95'	GROUNDWATER CONTOUR LINE GROUNDWATER ELEVATION (ABOVE MSL)
NM	WELL NOT MONITORED

SOURCE :

MATTESON ENGINEERING CONDUCTED SURVEY ON 08/04/1994

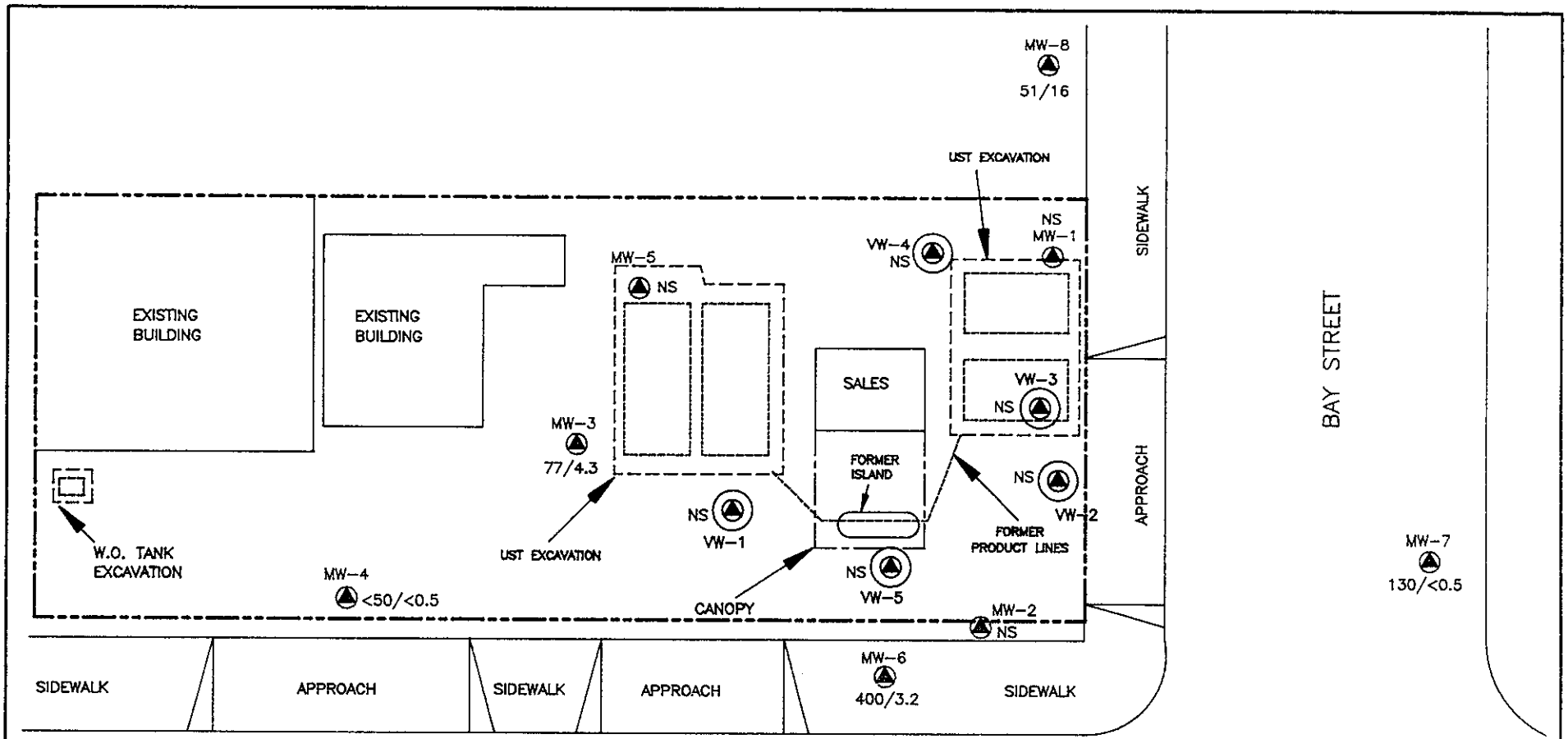
TEXACO
REFINING AND MARKETING,INC.
TEXACO ENVIRONMENTAL SERVICES

PLATE 2 : GROUNDWATER GRADIENT MAP
(08/22/1994)

FORMER TEXACO SERVICE STATION

1127 LINCOLN AVE. / BAY ST.,
ALAMEDA, CALIFORNIA

SCALE	1"=20'-0"	LOCATION #	62-488-1450
DRAWN BY	AMA	DATE	10/20/1994
CHECKED BY	RD	DATE	10/26/94
DRAWING NO.	(ALAMEDA) LI-BY-AL.DWG		



Concentrations gone down appreciably

DTW

LEGEND :

MW-1	MONITORING WELL LOCATION AND WELL NUMBER
VW-1	VAPOR EXTRACTION MONITORING WELL LOCATION AND WELL NUMBER
<50/<0.5	TPHg/BENZENE CONCENTRATION IN GROUNDWATER (ppb)
NS	WELL NOT SAMPLED

SOURCE :

MATTESON ENGINEERING CONDUCTED SURVEY ON 08/04/1994

TEXACO
REFINING AND MARKETING,INC.
TEXACO ENVIRONMENTAL SERVICES

PLATE 3 : TPHg/BENZENE CONCENTRATION IN GROUNDWATER (08/22/1994)

FORMER TEXACO SERVICE STATION

1127 LINCOLN AVE. / BAY ST.,
ALAMEDA, CALIFORNIA

SCALE	1" = 20'-0"	LOCATION #	62-488-1450
DRAWN BY	AMA	DATE	10/20/1994
CHECKED BY	RD	DATE	10/25/94
DRAWING NO.	(ALAMEDA) LI-BY-AL.DWG		

Table 1
Groundwater Elevation Data
1127 Lincoln Avenue, Alameda, CA

Well Number	Date Gauged	Elevation of Wellhead (feet, MSL)	Depth to Water (feet, TOC)	Groundwater Elevation (feet, MSL)
MW-1	2/19/92	16.49	6.34	10.15
	6/25/92		7.60	8.89
	9/16/92		8.95	7.54
	11/17/92		9.10	7.39
	1/26/93		5.63	10.86
	2/4/93		6.02	10.47
	3/9/93		5.92	10.57
	5/6/93		6.76	9.73
	6/15/93		6.81	9.68
	7/26/93	Inaccessible - VES		
	8/31/93	Inaccessible - VES		
	9/27/93	Inaccessible - VES		
	10/19/93	Inaccessible - VES		
	11/15/93	Inaccessible - VES		
	12/17/93	Inaccessible - VES		
	2/7/94	Inaccessible - VES		
	5/20/94	Inaccessible - VES		
	8/22/94		7.78	8.71
MW-2	2/19/92	17.14	6.96	10.18
	6/25/92		7.95	9.19
	9/16/92		9.16	7.98
	11/17/92		9.40	7.74
	1/26/93		6.29	10.85
	2/4/93		6.60	10.54
	3/9/93		6.36	10.78
	5/6/93		6.37	10.77
	6/15/93		7.04	10.10
	7/26/93	Inaccessible - VES		
	8/31/93	Inaccessible - VES		
	9/27/93	Inaccessible - VES		
	10/19/93	Inaccessible - VES		
	11/15/93	Inaccessible - VES		
	12/17/93	Inaccessible - VES		
	2/7/94	Inaccessible - VES		
	5/20/94	Inaccessible - VES		
	8/22/94		8.08	9.06

Table 1
Groundwater Elevation Data
1127 Lincoln Avenue, Alameda, CA

Well Number	Date Gauged	Elevation of Wellhead (feet, MSL)	Depth to Water (feet, TOC)	Groundwater Elevation (feet, MSL)
MW-3	2/19/92	16.91	6.69	10.22
	6/25/92		7.78	9.13
	9/16/92		9.24	7.67
	11/17/92		9.50	7.41
	1/26/93		5.82	11.09
	2/4/93		6.01	10.90
	3/9/93		5.88	11.03
	5/6/93		6.38	10.53
	6/15/93	Inaccessible		
	7/26/93		7.22	9.69
	8/31/93		7.87	9.04
	9/27/93		8.58	8.33
	10/19/93		9.13	7.78
	11/15/93		8.84	8.07
	12/17/93		7.80	9.11
	2/7/94		8.43	8.48
	5/20/94		6.79	10.12
	8/22/94		8.32	8.59
MW-4	6/25/92	17.18	7.92	9.26
	9/16/92		9.40	7.78
	11/17/92		9.63	7.55
	1/26/93		5.91	11.27
	2/4/93		6.14	11.04
	3/9/93		5.81	11.37
	5/6/93		6.49	10.69
	6/15/93		6.34	10.84
	7/26/93		7.29	9.89
	8/31/93		8.02	9.16
	9/27/93	Inaccessible - Car On Well		
	10/19/93		9.14	8.04
	11/15/93		9.01	8.17
	12/17/93		7.91	9.27
	2/7/94		8.02	9.16
	5/20/94		6.85	10.33
	8/22/94		8.48	8.70

Table 1
Groundwater Elevation Data
1127 Lincoln Avenue, Alameda, CA

Well Number	Date Gauged	Elevation of Wellhead (feet, MSL)	Depth to Water (feet, TOC)	Groundwater Elevation (feet, MSL)
MW-5	6/25/92	16.37	7.35	9.02
	9/16/92		8.85	7.52
	11/17/92		9.03	7.34
	1/26/93	Not Monitored		
	2/4/93	Inaccessible		
	3/9/93		5.45	10.92
	5/6/93		6.00	10.37
	6/15/93		7.81	8.56
	7/26/93	Inaccessible - VES		
	8/31/93	Inaccessible - VES		
	9/27/93	Inaccessible - VES		
	10/19/93	Inaccessible - VES		
	11/15/93	Inaccessible - VES		
	12/17/93	Inaccessible - VES		
	2/7/94	Inaccessible - VES		
	5/20/94	Inaccessible - VES		
	8/22/94		7.27	9.10
MW-6	6/25/92	17.12	7.86	9.26
	9/16/92		9.12	8.00
	11/17/92		9.40	7.72
	1/26/93		6.63	10.49
	2/4/93		6.48	10.64
	3/9/93		6.68	10.44
	5/6/93		6.93	10.19
	6/15/93		7.00	10.12
	7/26/93		7.25	9.87
	8/31/93		7.83	9.29
	9/27/93		8.38	8.74
	10/19/93		8.76	8.36
	11/15/93		8.65	8.47
	12/17/93		7.78	9.34
	2/7/94		7.90	9.22
	5/20/94		6.95	10.17
	8/22/94		8.17	8.95

Table 1
Groundwater Elevation Data
1127 Lincoln Avenue, Alameda, CA

Well Number	Date Gauged	Elevation of Wellhead (feet, MSL)	Depth to Water (feet, TOC)	Groundwater Elevation (feet, MSL)
MW-7	6/25/92	16.71	7.61	9.10
	9/16/92		8.78	7.93
	11/17/92	Inaccessible		
	1/26/93		6.53	10.18
	2/4/93		6.40	10.31
	3/9/93		6.52	10.19
	5/6/93	Inaccessible		
	6/15/93		6.69	10.02
	7/26/93	Inaccessible		
	8/31/93	Inaccessible		
	9/27/93		7.97	8.74
	10/19/93		8.24	8.47
	11/15/93		8.22	8.49
	12/17/94	Inaccessible		
	2/7/94	Inaccessible		
	5/20/94	Inaccessible		
	8/22/94		7.78	8.93
MW-8	6/25/92	15.91	7.20	8.71
	9/16/92		8.60	7.31
	11/17/92		8.85	7.06
	1/26/93		5.30	10.61
	2/4/93		5.62	10.29
	3/9/93		5.56	10.35
	5/6/93		5.99	9.92
	6/15/93		6.32	9.59
	7/26/93		6.75	9.16
	8/31/93		7.35	8.56
	9/27/93		7.86	8.05
	10/19/93		8.27	7.64
	11/15/93		8.17	7.74
	12/17/93		7.14	8.77
	2/7/94		7.26	8.65
	5/20/94		6.17	9.74
	8/22/94		7.63	8.28

Table 1
Groundwater Elevation Data
1127 Lincoln Avenue, Alameda, CA

Well Number	Date Gauged	Elevation of Wellhead (feet, MSL)	Depth to Water (feet, TOC)	Groundwater Elevation (feet, MSL)
VW-1	2/19/92	16.83	Dry	Dry
	6/25/92		7.36	9.47
	9/16/92	Not Monitored		
	11/17/92	Not Monitored		
	1/26/93	Not Monitored		
	2/4/93	Not Monitored		
	3/9/93	Not Monitored		
	5/6/93	Not Monitored		
	6/15/93	Not Monitored		
	7/26/93	Not Monitored		
	8/31/93	Not Monitored		
	9/27/93	Not Monitored		
	10/19/93	Not Monitored		
	11/15/93	Not Monitored		
	12/17/94	Not Monitored		
	2/7/94	Not Monitored		
	5/20/94	Not Monitored		
	8/22/94	Not Monitored		
VW-2	2/19/92	17.00	6.94	10.06
	6/25/92		8.10	8.90
	9/16/92	Not Monitored		
	11/17/92	Not Monitored		
	1/26/93	Not Monitored		
	2/4/93	Not Monitored		
	3/9/93	Not Monitored		
	5/6/93	Not Monitored		
	6/15/93	Not Monitored		
	7/26/93	Not Monitored		
	8/31/93	Not Monitored		
	9/27/93	Not Monitored		
	10/19/93	Not Monitored		
	11/15/93	Not Monitored		
	12/17/94	Not Monitored		
	2/7/94	Not Monitored		
	5/20/94	Not Monitored		
	8/22/94	Not Monitored		

Table 1
Groundwater Elevation Data
1127 Lincoln Avenue, Alameda, CA

Well Number	Date Gauged	Elevation of Wellhead (feet, MSL)	Depth to Water (feet, TOC)	Groundwater Elevation (feet, MSL)
VW-3	2/19/92	16.94	7.40	9.54
	6/25/92		7.16	9.78
	9/16/92	Not Monitored		
	11/17/92	Not Monitored		
	1/26/93	Not Monitored		
	2/4/93	Not Monitored		
	3/9/93	Not Monitored		
	5/6/93	Not Monitored		
	6/15/93	Not Monitored		
	7/26/93	Not Monitored		
	8/31/93	Not Monitored		
	9/27/93	Not Monitored		
	10/19/93	Not Monitored		
	11/15/93	Not Monitored		
	12/17/94	Not Monitored		
	2/7/94	Not Monitored		
	5/20/94	Not Monitored		
	8/22/94	Not Monitored		
VW-4	2/19/92	16.81	5.76	11.05
	6/25/92		7.23	9.58
	9/16/92	Not Monitored		
	11/17/92	Not Monitored		
	1/26/93	Not Monitored		
	2/4/93	Not Monitored		
	3/9/93	Not Monitored		
	5/6/93	Not Monitored		
	6/15/93	Not Monitored		
	7/26/93	Not Monitored		
	8/31/93	Not Monitored		
	9/27/93	Not Monitored		
	10/19/93	Not Monitored		
	11/15/93	Not Monitored		
	12/17/94	Not Monitored		
	2/7/94	Not Monitored		
	5/20/94	Not Monitored		
	8/22/94	Not Monitored		

Table 1
Groundwater Elevation Data
1127 Lincoln Avenue, Alameda, CA

Well Number	Date Gauged	Elevation of Wellhead (feet, MSL)	Depth to Water (feet, TOC)	Groundwater Elevation (feet, MSL)
VW-5	2/19/92	17.20	7.04	10.16
	6/25/92		8.09	9.11
	9/16/92	Not Monitored		
	11/17/92	Not Monitored		
	1/26/93	Not Monitored		
	2/4/93	Not Monitored		
	3/9/93	Not Monitored		
	5/6/93	Not Monitored		
	6/15/93	Not Monitored		
	7/26/93	Not Monitored		
	8/31/93	Not Monitored		
	9/27/93	Not Monitored		
	10/19/93	Not Monitored		
	11/15/93	Not Monitored		
	12/17/94	Not Monitored		
	2/7/94	Not Monitored		
	5/20/94	Not Monitored		
	8/22/94	Not Monitored		
MSL = Mean Sea Level				
TOC = Top of Casing				
VES = Vapor Extraction System				

Table 2
Groundwater Analytical Data
1127 Lincoln Avenue, Alameda, CA

Well Number	Date Sampled	TPHg (ppb)	Benzene (ppb)	Toluene (ppb)	Ethyl-Benzene (ppb)	Xylenes (ppb)
MW-1	2/19/92	440	14	14	2.1	9.9
	6/25/92	4,000	680	110	73	140
	9/16/92	3,400	880	28	41	53
	11/17/92	730	250	22	12	27
	2/4/93	120	22	3.1	3.3	10
	5/6/93	710	320	3.1	4.2	20
	9/28/93	Not Accessible - Connected to Vapor Extraction System				
	11/15/93	Not Accessible - Connected to Vapor Extraction System				
	2/7/94	Not Accessible - Connected to Vapor Extraction System				
	5/20/94	Not Accessible - Connected to Vapor Extraction System				
	8/22/94	Not Accessible - Connected to Vapor Extraction System				
MW-2	2/19/92	2,100	57	5.6	9.1	75
	6/25/92	4,700	590	24	290	160
	9/16/92	5,700	740	8	370	77
	11/17/92	840	94	<0.5	93	14
	2/4/93	430	45	0.5	20	30
	5/6/93	2,000	460	2.4	160	66
	9/28/93	Not Accessible - Connected to Vapor Extraction System				
	11/15/93	Not Accessible - Connected to Vapor Extraction System				
	2/7/94	Not Accessible - Connected to Vapor Extraction System				
	5/20/94	Not Accessible - Connected to Vapor Extraction System				
	8/22/94	Not Accessible - Connected to Vapor Extraction System				
MW-3	2/19/92	990	<0.5	<0.5	2	72
	6/25/92	4,900	350	11	330	570
	9/17/92	7,300	690	10	450	780
	11/17/92	1,200	160	2.1	83	160
	2/4/93	2,900	180	13	210	350
	5/6/93	2,700	270	6.2	300	720
	9/28/93	1,800	92	1.7	99	240
	11/15/93	1,900	100	2.4	85	280
	2/7/94	1,400	69	3.3	100	320
	5/20/94	1,100	64	19	120	180
	8/22/94	77	4.3	<0.5	2.0	5.6
MW-4	6/25/92	<50	<0.5	<0.5	<0.5	<0.5
	9/17/92	98	0.6	<0.5	1.2	7.7
	11/17/92	<50	<0.5	<0.5	<0.5	<0.5
	2/4/93	<50	<0.5	<0.5	<0.5	<0.5
	5/6/93	<50	1.6	<0.5	1	2.1
	9/28/93	Not Accessible - Auto on Well				
	11/15/93	<50	<0.5	<0.5	<0.5	<0.5
	2/7/94	<50	<0.5	<0.5	<0.5	2.6
	5/20/94	82	6.2	7.6	3.3	17
	8/22/94	<50	<0.5	<0.5	<0.5	<0.5

Table 2
Groundwater Analytical Data
1127 Lincoln Avenue, Alameda, CA

Well Number	Date Sampled	TPHg (ppb)	Benzene (ppb)	Toluene (ppb)	Ethyl-Benzene (ppb)	Xylenes (ppb)
MW-5	6/25/92	18,000	310	1,200	750	2,400
	9/17/92	24,000	700	2,200	900	2,400
	11/17/92	14,000	1,000	1,500	730	1,900
	2/4/93	Not Sampled				
	5/6/93	6,200	460	980	300	1,200
	9/28/93	Not Accessible - Connected to Vapor Extraction System				
	11/15/93	Not Accessible - Connected to Vapor Extraction System				
	2/7/94	Not Accessible - Connected to Vapor Extraction System				
	5/20/94	Not Accessible - Connected to Vapor Extraction System				
	8/22/94	Not Accessible - Connected to Vapor Extraction System				
MW-6	6/25/92	990	10	240	55	310
	9/17/92	1,200	26	4.7	6.5	140
	11/17/92	670	10	3.5	28	94
	2/4/93	2,300	19	5.4	27	220
	5/6/93	540	44	0.9	7	6.7
	9/28/93	180	2.7	0.73	6.3	13
	11/15/93	180	2.2	0.91	5.4	16
	2/7/94	240	2.9	1.2	3.9	7.1
	5/20/94	600	4.5	2.2	24	66
	8/22/94	400	3.2	1	7.9	40
MW-7	6/25/92	<50	<0.5	<0.5	<0.5	<0.5
	9/16/92	<50	1.3	<0.5	<0.5	0.9
	11/17/92	Not Sampled				
	2/4/93	<50	<0.5	<0.5	<0.5	<0.5
	5/6/93	Not Sampled				
	9/28/93	<50	<0.5	<0.5	<0.5	<0.5
	11/15/93	<50	<0.5	<0.5	<0.5	<0.5
	2/7/94	Not Sampled				
	5/20/94	Not Sampled				
	8/22/94	130	<0.5	<0.5	<0.5	<0.5
MW-8	6/25/92	11,000	1,100	29	150	190
	9/16/92	14,000	3,500	47	25	85
	11/17/92	4,700	1,700	12	8	22
	2/4/93	540	150	3.7	5.2	10
	5/6/93	22,000	9,400	46	390	520
	9/28/93	8,000	1,700	22	30	75
	11/15/93	2,000	840	8.8	15	42
	2/7/94	1,700	460	0.6	13	5
	5/20/94	110	98	1.4	1.3	3.4
	8/22/94	51	16	<0.5	<0.5	<0.5

< = Less than the detection limit for the specified method of analysis.
ppb = parts per billion
TPHg = Total Petroleum Hydrocarbons as gasoline (analyzed by EPA Method 5030/602).
BTEX measured by EPA Method 5030/602.

Appendix

B C Analytical

801 Western Avenue
Glendale, CA 91201
818/247-5737
Fax: 818/247-9797

ANALYTICAL REPORT

LOG NO: G94-08-262

Received: 23 AUG 94

Mailed: AUG 30 1994

Ms. Rebecca Digerness
Texaco Environmental Services
108 Cutting Boulevard
Richmond, CA 94804

Purchase Order: 94-1446346+4370

Requisition: 624881450
Project: FKEP1001L

REPORT OF ANALYTICAL RESULTS

AQUEOUS

SAMPLE DESCRIPTION	DATE SAMPLED	TPH/BTEX (CADHS/8020)							
		Date Analyzed Date	Dilution Factor Times 1	TPH-g ug/L	Benzene ug/L	Toluene ug/L	Ethyl-Benzene ug/L	Total Xylenes Isomers ug/L	
RDL			1	50	0.5	0.5	0.5	0.5	
1*MW3	08/22/94	08/24/94	1	77	4.3	<0.5	2.0	5.6	
2*MW4	08/22/94	08/24/94	1	<50	<0.5	<0.5	<0.5	<0.5	
3*MW6	08/22/94	08/24/94	1	400	3.2	1.0	7.9	40	
4*MW7	08/22/94	08/24/94	1	130	<0.5	<0.5	<0.5	<0.5	
5*MW8	08/22/94	08/24/94	1	51	16	<0.5	<0.5	<0.5	
6*TB	08/22/94	08/24/94	1	<50	<0.5	<0.5	<0.5	<0.5	
7*EB	08/22/94	08/24/94	1	<50	<0.5	<0.5	<0.5	<0.5	

Karen Petryna
1127 Lincoln Avenue, Alameda
Alameda County

James C. Hein, Laboratory Director

BCA

: ORDER PLACED FOR CLIENT: Texaco Environmental Services 9408262 :
: BC ANALYTICAL : GLEN LAB : 11:23:55 29 AUG 1994 - P. 1 :

SAMPLES...	SAMPLE DESCRIPTION..	DETERM.....	DATE..... ANALYZED	METHOD.....	EQUIP.	BATCH..	ID.NO
9408262*1	MW3	GAS.BTX.TESNC	08.24.94	8015M.TX	536-21	94114	8095
9408262*2	MW4	GAS.BTX.TESNC	08.24.94	8015M.TX	536-21	94114	8095
9408262*3	MW6	GAS.BTX.TESNC	08.24.94	8015M.TX	536-21	94114	8095
9408262*4	MW7	GAS.BTX.TESNC	08.24.94	8015M.TX	536-21	94114	8095
9408262*5	MW8	GAS.BTX.TESNC	08.24.94	8015M.TX	536-21	94114	8095
9408262*6	TB	GAS.BTX.TESNC	08.24.94	8015M.TX	536-21	94114	8095
9408262*7	EB	GAS.BTX.TESNC	08.24.94	8015M.TX	536-21	94114	8095

***

Notes: Equipment = BC Analytical identification number for a particular piece of analytical equipment.

ID.NO = BC Analytical employee identification number of analyst.

ORDER QC REPORT: Definitions and Terms

Accuracy	The ability of a procedure to determine the "true" concentration of an analyte.
Precision	The reproducibility of a procedure demonstrated by the agreement between analyses performed on either duplicates of the same sample or a pair of duplicate spikes.
Batch	A group of twenty samples or less, of similar matrix type, prepped together or analyzed together if no sample preparation is required, under the same conditions and with the same reagents. The batch must include a method blank, LCS and matrix QC.
Laboratory Control Standard (LCS)	A blank that is spiked with a known amount of analyte and subjected to the same procedures as the samples. The LCS indicates the accuracy of the analytical method. It also serves to double-check the calibration because it is prepared from a different source than the standard used to calibrate the instrument.
Matrix QC	Quality control performed on actual client samples. The matrix spike is a client's sample spiked with a known amount of analyte. For most analyses, the laboratory performs matrix spikes in duplicate (duplicate spikes).
Method Blank	A sample that contains no analyte. For water analysis, organic-free or deionized water is used. For solids analysis, analyte-free solvent is used. The method blank serves to measure contamination associated with laboratory storage, preparation or instrumentation.
Batch Number	Numeric designation for a batch of samples and the associated QC. The batch number sequence is unique for each determination.
LC Result	Laboratory result of an LCS analysis.
LT Result	Expected result, or true value, of the LCS analysis.
Percent Recovery	The percentage of analyte recovered. For LCS, the percent recovery calculation is: $LC/LT \times 100$
LC1, LC2 Result	Result of analyzing two separately prepared LCSs; used to determine precision.
R1, R2 Result	Result of analyzing replicate aliquots of a sample, with R1 indicating the first analysis of the sample and R2 its corresponding duplicate; used to determine precision.
S1, S2 Result	Result of the analysis of replicate spiked aliquots, with S1 indicating one spike of the sample and S2 the second spike; used to determine precision and accuracy.
Relative Percent Difference (RPD)	Calculated using one of the following: $\frac{\lvert LC1 - LC2\rvert \times 100}{(LC1 + LC2) \div 2}$ $\frac{\lvert R1 - R2\rvert \times 100}{(R1 + R2) \div 2}$ $\frac{\lvert S1 - S2\rvert \times 100}{(S1 + S2) \div 2}$
S1, S2 Recovery	The percentage of analyte recovered. The percent recovery calculation is: S1 Recovery: $\frac{(S1 - R1)}{(True - R1)} \times 100$ S2 Recovery: $\frac{(S2 - R1)}{(True - R1)} \times 100$
True Value	The theoretical, or expected, result of a spike sample analysis.
NC Flag	Indicates that the spike recovery was not calculated due to high sample concentration relative to the amount of spike added.
Q Flag	Indicates that the quality control measurement is outside the specified control limits.
Blank Result	Laboratory result of analysis of the method blank.
Reporting Detection Limit (RDL)	BCA-assigned limit based on; but not the same as, method detection limits (MDLs) determined using EPA guidelines. Sample RDLs may differ from the blank RDL if the samples were diluted.

BC ANALYTICAL

ORDER QC REPORT FOR G9408262

DATE REPORTED : 08/29/94

LABORATORY CONTROL STANDARDS
FOR BATCHES WHICH INCLUDE THIS ORDER

PARAMETER	DATE ANALYZED	BATCH NUMBER	LC RESULT	LT RESULT	UNIT	PERCENT RECOVERY
1. TPH-gas/BTEX (CADHS/80 C4081944*1						
Date Analyzed	08.24.94	94114	08/24/94	08/24/94	Date	N/A
Benzene	08.24.94	94114	10.2	15.9	ug/L	64 Q
Toluene	08.24.94	94114	50.1	70.5	ug/L	71 Q
Ethylbenzene	08.24.94	94114	10.3	15.9	ug/L	65 Q
Total Xylene Isomers	08.24.94	94114	57.8	54.0	ug/L	107
TPH (as Gasoline)	08.24.94	94114	878	1000	ug/L	88
a,a,a-Trifluorotoluene Reported	08.24.94	94114	46.3	50.0	ug/L	93
a,a,a-Trifluorotoluene Theoretic	08.24.94	94114	50.0	50.0	ug/L	100
2. TPH-gas/BTEX (CADHS/80 C4081945*1						
Date Analyzed	08.25.94	94114	08/25/94	08/25/94	Date	N/A
Benzene	08.25.94	94114	11.2	15.9	ug/L	70
Toluene	08.25.94	94114	50.8	70.5	ug/L	72 Q
Ethylbenzene	08.25.94	94114	10.5	15.9	ug/L	66 Q
Total Xylene Isomers	08.25.94	94114	60.1	54.0	ug/L	111
TPH (as Gasoline)	08.25.94	94114	960	1000	ug/L	96
a,a,a-Trifluorotoluene Reported	08.25.94	94114	70.3	50.0	ug/L	141 Q
a,a,a-Trifluorotoluene Theoretic	08.25.94	94114	50.0	50.0	ug/L	100

BC ANALYTICAL

ORDER QC REPORT FOR G9408262

DATE REPORTED : 08/29/94

ADDITIONAL LCS PRECISION (DUPLICATES)
BATCH QC REPORT

PARAMETER	SAMPLE NUMBER	DATE ANALYZED	BATCH NUMBER	LC1 RESULT	LC2 RESULT	UNIT	RELATIVE % DIFF
1. TPH-gas/BTEX (CADHS/80							
Date Analyzed		08.24.94	94114	08/24/94	08/25/94	Date	N/A
Benzene		08.24.94	94114	10.2	11.2	ug/L	9
Toluene		08.24.94	94114	50.1	50.8	ug/L	1
Ethylbenzene		08.24.94	94114	10.3	10.5	ug/L	2
Total Xylene Isomers		08.24.94	94114	57.8	60.1	ug/L	4
TPH (as Gasoline)		08.24.94	94114	878	960	ug/L	9
a,a,a-Trifluorotoluene Reported		08.24.94	94114	46.3	70.3	ug/L	41
a,a,a-Trifluorotoluene Theoretic		08.24.94	94114	50.0	50.0	ug/L	0

BC ANALYTICAL

ORDER QC REPORT FOR G9408262

DATE REPORTED : 08/29/94

MATRIX QC PRECISION (DUPLICATE SPIKES)
BATCH QC REPORT

PARAMETER	SAMPLE NUMBER	DATE ANALYZED	BATCH NUMBER	MS RESULT	MSD RESULT	UNIT	RELATIVE % DIFF
1. TPH-gas/BTEX (CADHS/80	9408262*1						
Date Analyzed		08.24.94	94114	08/24/94	08/24/94	Date	N/A
Benzene		08.24.94	94114	13.9	15.7	ug/L	12
Toluene		08.24.94	94114	45.1	53.0	ug/L	16
Ethylbenzene		08.24.94	94114	11.1	12.6	ug/L	13
Total Xylene Isomers		08.24.94	94114	58.8	66.6	ug/L	12
TPH (as Gasoline)		08.24.94	94114	753	896	ug/L	17
a,a,a-Trifluorotoluene	Reported	08.24.94	94114	55.8	49.5	ug/L	12
a,a,a-Trifluorotoluene	Theoretic	08.24.94	94114	50.0	50.0	ug/L	0

BC ANALYTICAL

ORDER QC REPORT FOR G9408262

DATE REPORTED : 08/29/94

MATRIX QC ACCURACY (SPIKES)
BATCH QC REPORT

PARAMETER	SAMPLE NUMBER	DATE ANALYZED	BATCH NUMBER	MS %	MSD %	TRUE RESULT	UNIT	
1. TPH-gas/BTEX (CADHS/80 9408262*1								
Benzene		08.24.94	94114	83	98	15.9	ug/L	
Toluene		08.24.94	94114	64	75	70.5	ug/L	
Ethylbenzene		08.24.94	94114	65	76	15.9	ug/L	
Total Xylene Isomers		08.24.94	94114	110	126	54.0	ug/L	
TPH (as Gasoline)		08.24.94	94114	73	89	1000	ug/L	
a,a,a-Trifluorotoluene	Reported	08.24.94	94114	NC	NC	50.0	ug/L	NC
a,a,a-Trifluorotoluene	Theoretic	08.24.94	94114	NC	NC	50.0	ug/L	NC

BC ANALYTICAL

ORDER QC REPORT FOR G9408262

DATE REPORTED : 08/29/94

METHOD BLANKS AND REPORTING DETECTION LIMIT (RDL)
FOR BATCHES WHICH INCLUDE THIS ORDER

PARAMETER	DATE ANALYZED	BATCH NUMBER	BLANK RESULT	RDL	UNIT	METHOD
1. TPH-gas/BTEX (CADHS/80 B4081608*1						
Date Analyzed	08.24.94	94114	08/24/94	NA	Date	8015M.TX
Benzene	08.24.94	94114	0	0.5	ug/L	8015M.TX
Toluene	08.24.94	94114	0	0.5	ug/L	8015M.TX
Ethylbenzene	08.24.94	94114	0	0.5	ug/L	8015M.TX
Total Xylene Isomers	08.24.94	94114	0	0.5	ug/L	8015M.TX
TPH (as Gasoline)	08.24.94	94114	0	50	ug/L	8015M.TX
a,a,a-Trifluorotoluene Reported	08.24.94	94114	43.6	NA	ug/L	8015M.TX
a,a,a-Trifluorotoluene Theoretic	08.24.94	94114	50.0	NA	ug/L	8015M.TX

: SURROGATE RECOVERIES :
: BC ANALYTICAL : GLEN LAB : 11:24:48 29 AUG 1994 - P. 1 :

METHOD	ANALYTE	BATCH	ANALYZED	REPORTED	TRUE	%REC	FLAG
9408262*1							
8015M.TX	a,a,a-Trifluorotoluene	94114	08/24/94	45.3	50.0	91	
9408262*2							
8015M.TX	a,a,a-Trifluorotoluene	94114	08/24/94	52.0	50.0	104	
9408262*3							
8015M.TX	a,a,a-Trifluorotoluene	94114	08/24/94	39.5	50.0	79	
9408262*4							
8015M.TX	a,a,a-Trifluorotoluene	94114	08/24/94	43.5	50.0	87	
9408262*5							
8015M.TX	a,a,a-Trifluorotoluene	94114	08/24/94	51.4	50.0	103	
9408262*6							
8015M.TX	a,a,a-Trifluorotoluene	94114	08/24/94	45.5	50.0	91	
9408262*7							
8015M.TX	a,a,a-Trifluorotoluene	94114	08/24/94	50.8	50.0	102	

: SURROGATE RECOVERIES :
: BC ANALYTICAL : GLEN LAB : 11:24:48 29 AUG 1994 - P. 1 :

METHOD ANALYTE	BATCH	ANALYZED	REPORTED	TRUE	%REC	FLAG
9408262*1*R1						
8015M.TXa,a,a-Trifluorotoluene	94114	08/24/94	45.3	50.0	91	
9408262*1*S1						
8015M.TXa,a,a-Trifluorotoluene	94114	08/24/94	55.8	50.0	112	NC
9408262*1*S2						
8015M.TXa,a,a-Trifluorotoluene	94114	08/24/94	49.5	50.0	99	NC
9408262*1*T						
8015M.TXa,a,a-Trifluorotoluene	94114	08/24/94	50.0	50.0	100	
B4081608*1*MB						
8015M.TXa,a,a-Trifluorotoluene	94114	08/24/94	43.6	50.0	87	
C4081944*1*LC						
8015M.TXa,a,a-Trifluorotoluene	94114	08/24/94	46.3	50.0	93	
C4081944*1*LT						
8015M.TXa,a,a-Trifluorotoluene	94114	08/24/94	50.0	50.0	100	
C4081945*1*LC						
8015M.TXa,a,a-Trifluorotoluene	94114	08/25/94	70.3	50.0	141	Q
C4081945*1*LT						
8015M.TXa,a,a-Trifluorotoluene	94114	08/25/94	50.0	50.0	100	

BC ANALYTICAL 0944-08-24

BLAINE TECH SERVICES INC

985 TIMOTHY DRIVE
SAN JOSE, CA 95133
(408) 995-5535
FAX (408) 293-8773

CHAIN OF CUSTODY

CLIENT: Texaco Environmental Services

SITE: Location # 62488 1450
1127 LINCOLN AVE
ALAMEDA

CONDUCT ANALYSIS TO DETECT

LAB ~~Mobile Chem Laboratory~~ DHS #

ALL ANALYSES MUST MEET SPECIFICATIONS AND DETECTION LIMITS SET BY CALIFORNIA DHS AND

☐ EPA ☐ RWQCB REGION
☐ LIA
☐ OTHER

SPECIAL INSTRUCTIONS

Report & Invoice to:
Texaco Environmental Service
108 Cutting Blvd.
Richmond, CA 94804
Attn: Rebecca Digerness
(510)236-3541

SAMPLE I.D.			MATRIX (S = SOIL, W = H2O)	CONTAINERS TOTAL	C = COMPOSITE ALL CONTAINERS	TPH g, BTEX	ADD'L INFORMATION	STATUS	CONDITION	LAB SAMPLE #
~~MW1~~										
~~MW2~~										
MW3	8/22	1540	W	3		X	-1			
MW4	↓	1340	W	3		X	-2			
MW6		1510	W	3		X	-3			
MW7		1650	W	3		X	-4			
MW8		1422	W	3		X	-5			
TB			W	2		X	-6			
EB		1412	W	3		X	-7			

SAMPLING COMPLETED DATE 8/22 TIME 1700 | SAMPLING PERFORMED BY GRANT MOHR | RESULTS NEEDED NO LATER THAN ROUTINE

RELEASED BY	DATE	TIME	RECEIVED BY	DATE	TIME
[signature]	8-23-94	1:20	Bill [signature]	8-25-94	1:20
			Relinquished by Bill [signature]	8-25-94	5:35
			[signature]	8-23-94	5:35

SHIPPED VIA Relinq by [signature] | DATE SENT 8-23-94 | TIME SENT 5:35 | COOLER #

Well Gauging Data

Project Name: TEXACO 6248811450
Project Number: 940822-M1

Date: 8-22-94
Recorded By: GRANT

Well ID	TOC Elev.	DTB (ft. TOC)	Well Dia. (in.)	DTP (ft.)	DTW (ft.)	PT (ft.)	Comments
MW-1		15.91	4		7.78		
MW-2			4		8.08		- DIDN'T DO DTB PER
MW-3		19.56	4		8.32		FRAN. HE DIDN'T WANT
MW-4		20.15	4		8.48		THE SOUNDER TO SNAG
MW-5		15.15	4		7.27		
MW-6		19.54	2		8.17		
MW-7		19.83	2		7.78		
MW-8		19.70	4		7.63		

TOC = Top of casing
DTB = Depth to bottom in feet below TOC
DTP = Depth to product in feet below TOC
DTW = Depth to water in feet below TOC
PT = Product thickness in feet

Groundwater Sampling Form

Project Name: Texaco 62488145O Well No.: MW-1
Project Number: 940822-M1 Well Type: ☐ Monitor ☒ Extraction ☐ Other
Recorded By: GRANT Sampled by: GRANT Date: 8-22-94

WELL PURGING

PURGE VOLUME

Well casing diameter
☐ 2-inch ☒ 4-inch ☐ Other
Well Total Depth (TD, ft. below TOC): 15.91
Depth to Water (WL, ft. below TOC): 7.78
Depth to free phase hydrocarbons (FP, ft. below TOC)
Number of well volumes to be purged
☐ 3 ☐ 10 ☐ Other

PURGE METHOD

☐ Bailer - Type
☐ Pump - Type
☐ Other

PUMP INTAKE

☐ Near top Depth (ft)
☐ Near Bottom Depth (ft)
☐ Other

Pumping Rate ____ gpm

PURGE VOLUME CALCULATION

____ (Water Column Length) X ____ (Multiplier) X ____ (No. Vols) = ____ gals CALCULATED PURGE VOLUME

MULTIPLIER (Casing Dia.[inches] = Gallons/linear ft)
2 = 0.17 | 3 = 0.38 | 4 = 0.66 | 4.5 = 0.83 | 5 = 1.02 | 6 = 1.5 | 8 = 2.6

____ gals ACTUAL PURGE VOLUME

GROUNDWATER PARAMETER MEASUREMENT

Meter Type

Time/Gallons	pH	Cond. (uomhos/cm)	Temp	☐ deg C ☐ deg F	Turbidity (NTU)	Color/Odor
/						
/						
/						
/						
/						
/						
/						
/						

Comments during well purge: EXTRACTION SYSTEM DOESN'T ALLOW PUMP TO BE PUT INTO WELL TO PURGE
Well Pumped dry: YES NO
Purge water storage/disposal ☐ Drummed onsite ☐ Other

WELL SAMPLING

NO SAMPLE PORTS

SAMPLING METHOD

Date/Time Sampled: /
Bailer - Type ☐ ____ Sample port ☐ Other ☐ ____

GROUNDWATER SAMPLE PARAMETER MEASUREMENTS

Meter Type

Date/Time/% Recharge	pH	Cond. (uomhos/cm)	Temp	☐ deg C ☐ deg F	Turbidity (NTU)	Color/Odor
/ /						

SAMPLING PROGRAM

Sample No.	Container #/Volume	Analysis	Preservatives	Laboratory	Comments

QUALITY CONTROL SAMPLES

Duplicate Samples

Original Sample No.	Duplicate Sample No.

Blank Samples

Type	Sample No.
Trip	
Rinsate	
Transfer	
Other:	

Groundwater Sampling Form

Project Name: TEXACO 6248881450 | Well No.: MW-2
Project Number: 940822-M1 | Well Type: [ ] Monitor [X] Extraction [ ] Other
Recorded By: GRANT | Sampled by: GRANT | Date: 8-22-94

WELL PURGING

PURGE VOLUME

Well casing diameter
[ ] 2-inch [X] 4-inch [ ] Other
Well Total Depth (TD, ft. below TOC)
Depth to Water (WL, ft. below TOC) 8.08
Depth to free phase hydrocarbons (FP, ft. below TOC)
Number of well volumes to be purged
[ ] 3 [ ] 10 [ ] Other

PURGE METHOD

[ ] Bailer - Type
[ ] Pump - Type
[ ] Other

PUMP INTAKE

[ ] Near top Depth (ft)
[ ] Near Bottom Depth (ft)
[ ] Other

Pumping Rate ____ gpm

PURGE VOLUME CALCULATION

____ (Water Column Length) X ____ (Multiplier) X ____ (No. Vols) = ____ gals CALCULATED PURGE VOLUME

MULTIPLIER (Casing Dia.[inches] = Gallons/linear ft)
2 = 0.17 | 3 = 0.38 | 4 = 0.66 | 4.5 = 0.83 | 5 = 1.02 | 6 = 1.5 | 8 = 2.6

____ gals ACTUAL PURGE VOLUME

GROUNDWATER PARAMETER MEASUREMENT Meter Type

Time/Gallons	pH	Cond. (uomhos/cm)	Temp	[ ] deg C [ ] deg F	Turbidity (NTU)	Color/Odor
/						
/						
/						
/						
/						
/						
/						
/						

Comments during well purge: EXTRACTION SYSTEM DOESNT ALLOW PUMP TO BE PUT INTO WELL
Well Pumped dry: YES NO
Purge water storage/disposal: [ ] Drummed onsite [ ] Other NO SAMPLE PORTS

WELL SAMPLING

SAMPLING METHOD Date/Time Sampled ____/____

Bailer - Type [ ] ____ Sample port [ ] Other [ ] ____

GROUNDWATER SAMPLE PARAMETER MEASUREMENTS Meter Type ____

Date/Time/% Recharge	pH	Cond. (uomhos/cm)	Temp	[ ] deg C [ ] deg F	Turbidity (NTU)	Color/Odor
/ /						

SAMPLING PROGRAM

Sample No.	Container #/Volume	Analysis	Preservatives	Laboratory	Comments

QUALITY CONTROL SAMPLES

Duplicate Samples

Original Sample No.	Duplicate Sample No.

Blank Samples

Type	Sample No.
Trip	
Rinsate	
Transfer	
Other:	

Groundwater Sampling Form

Project Name: TEXACO 6249081450 | Well No.: MW-3
Project Number: 940822-M1 | Well Type: [X] Monitor [ ] Extraction [ ] Other
Recorded By: GRANT | Sampled by: GRANT | Date: 8-22-94

WELL PURGING

PURGE VOLUME

Well casing diameter: [ ] 2-inch [X] 4-inch [ ] Other
Well Total Depth (TD, ft. below TOC): 19.56
Depth to Water (WL, ft. below TOC): 8.32
Depth to free phase hydrocarbons (FP, ft. below TOC):
Number of well volumes to be purged: [ ] 3 [ ] 10 [ ] Other 2.9

PURGE VOLUME CALCULATION

11.24 (Water Column Length) x .66 (Multiplier) x 3 (No. Vols) = 25.7 gals CALCULATED PURGE VOLUME

MULTIPLIER (Casing Dia.[inches] = Gallons/linear ft)
2 = 0.17 | 3 = 0.38 | 4 = 0.66 | 4.5 = 0.83 | 5 = 1.02 | 6 = 1.5 | 8 = 2.6

24.0 gals ACTUAL PURGE VOLUME

PURGE METHOD

[ ] Bailer - Type
[X] Pump - Type ELEC. SUB
[ ] Other

PUMP INTAKE

[ ] Near top Depth (ft)
[ ] Near Bottom Depth (ft)
[ ] Other

Pumping Rate _____ gpm

GROUNDWATER PARAMETER MEASUREMENT

Meter Type

Time/Gallons	pH	Cond. (uomhos/cm)	Temp	[ ] deg C [X] deg F	Turbidity (NTU)	Color/Odor
1522 / 8.0	7.1	560	74.0		700	
1526 / 16.0	7.0	600	74.2		111.0	
1535 / 24.0	7.1	580	74.6		40.6	
/						
/						
/						
/						
/						

Comments during well purge
Well Pumped dry: YES (NO)
Purge water storage/disposal [ ] Drummed onsite [X] Other BTS

WELL SAMPLING

SAMPLING METHOD

Date/Time Sampled: 1540 / 8/22
Bailer - Type [X] SUB
Sample port [ ] Other [ ]

GROUNDWATER SAMPLE PARAMETER MEASUREMENTS

Meter Type: HYDAC

Date/Time/% Recharge	pH	Cond. (uomhos/cm)	Temp	[ ] deg C [ ] deg F	Turbidity (NTU)	Color/Odor
/ /						

SAMPLING PROGRAM

Sample No.	Container #/Volume	Analysis	Preservatives	Laboratory	Comments

QUALITY CONTROL SAMPLES

Duplicate Samples

Original Sample No.	Duplicate Sample No.

Blank Samples

Type	Sample No.
Trip	
Rinsate	
Transfer	
Other:	

Groundwater Sampling Form

Project Name TEXACO 6249881450 Well No. MW-4
Project Number 940822-M1 Well Type [X] Monitor [ ] Extraction [ ] Other
Recorded By GRANT Sampled by GRANT Date

WELL PURGING

PURGE VOLUME

Well casing diameter
[ ] 2-inch [X] 4-inch [ ] Other
Well Total Depth (TD, ft. below TOC) 20.15
Depth to Water (WL, ft. below TOC) 8.46
Depth to free phase hydrocarbons (FP, ft. below TOC)
Number of well volumes to be purged
[X] 3 [ ] 10 [ ] Other 6.4

PURGE VOLUME CALCULATION

9.67 (Water Column Length) x .66 (Multiplier) x 3 (No. Vols) = 20.4 gals CALCULATED PURGE VOLUME

21.0 gals ACTUAL PURGE VOLUME

MULTIPLIER (Casing Dia [inches] = Gallons/linear ft)
2 = 0.17 | 3 = 0.38 | 4 = 0.66 | 4.5 = 0.83 | 5 = 1.02 | 6 = 1.5 | 8 = 2.6

PURGE METHOD

[ ] Bailer - Type
[X] Pump - Type ELEC. SUB
[ ] Other

PUMP INTAKE

[ ] Near top Depth (ft)
[ ] Near Bottom Depth (ft)
[ ] Other
Pumping Rate gpm

GROUNDWATER PARAMETER MEASUREMENT

Meter Type

Time/Gallons	pH	Cond. (uomhos/cm)	Temp	[ ] deg C [X] deg F	Turbidity (NTU)	Color/Odor
1320 / 7.0	7.4	750	74.9		18.2	
1325 / 14.0	7.0	480	76.1		52.8	
1330 / 21.0	7.0	750	76.2		10.1	
/						
/						
/						
/						
/						

Comments during well purge
Well Pumped dry: YES (NO)
Purge water storage/disposal [ ] Drummed onsite [X] Other DI

WELL SAMPLING

SAMPLING METHOD Date/Time Sampled 8/22 / 1340
Bailer - Type [X] SSB Sample port [ ] Other [ ]

GROUNDWATER SAMPLE PARAMETER MEASUREMENTS

Meter Type HYDAC

Date/Time/% Recharge	pH	Cond. (uomhos/cm)	Temp	[ ] deg C [ ] deg F	Turbidity (NTU)	Color/Odor
/ /						

SAMPLING PROGRAM

Sample No.	Container #/Volume	Analysis	Preservatives	Laboratory	Comments

QUALITY CONTROL SAMPLES

Duplicate Samples

Original Sample No.	Duplicate Sample No.

Blank Samples

Type	Sample No.
Trip	
Rinsate	
Transfer	
Other:	

Groundwater Sampling Form

Project Name: TEXACO 6248811450 Well No.: MW-5

Project Number: 940822-M1 Well Type: ☐ Monitor ☒ Extraction ☐ Other

Recorded By: GRANT Sampled by: GRANT Date: 8-22-94

WELL PURGING

PURGE VOLUME

Well casing diameter

☐ 2-inch ☒ 4-inch ☐ Other ____

Well Total Depth (TD, ft. below TOC): 15.15

Depth to Water (WL, ft. below TOC): 7.27

Depth to free phase hydrocarbons (FP, ft. below TOC)

Number of well volumes to be purged

☐ 3 ☐ 10 ☐ Other ____

PURGE METHOD

☐ Bailer - Type ____

☐ Pump - Type ____

☐ Other ____

PUMP INTAKE

☐ Near top Depth (ft) ____

☐ Near Bottom Depth (ft) ____

☐ Other ____

Pumping Rate ____ gpm

PURGE VOLUME CALCULATION

____ X ____ X ____ = ____ gals

Water Column Length × Multiplier × No. Vols = CALCULATED PURGE VOLUME

____ gals ACTUAL PURGE VOLUME

MULTIPLIER (Casing Dia.[inches] = Gallons/linear ft)						
2 = 0.17	3 = 0.38	4 = 0.66	4.5 = 0.83	5 = 1.02	6 = 1.5	8 = 2.6

GROUNDWATER PARAMETER MEASUREMENT

Meter Type ____

Time/Gallons	pH	Cond. (uomhos/cm)	Temp ☐ deg C ☐ deg F	Turbidity (NTU)	Color/Odor
/					
/					
/					
/					
/					
/					
/					
/					

Comments during well purge: EXTRACTION SYSTEM DOESN'T ALLOW PUMP TO BE PUT INTO WELL

Well Pumped dry: YES NO

Purge water storage/disposal ☐ Drummed onsite ☐ Other NO SAMPLE PORTS

WELL SAMPLING

SAMPLING METHOD

Date/Time Sampled ____ / ____

Bailer - Type ☐ ____ Sample port ☐ Other ☐ ____

GROUNDWATER SAMPLE PARAMETER MEASUREMENTS

Meter Type ____

Date/Time/% Recharge	pH	Cond. (uomhos/cm)	Temp ☐ deg C ☐ deg F	Turbidity (NTU)	Color/Odor
/ /					

SAMPLING PROGRAM

Sample No.	Container #/Volume	Analysis	Preservatives	Laboratory	Comments

QUALITY CONTROL SAMPLES

Duplicate Samples

Original Sample No.	Duplicate Sample No.

Blank Samples

Type	Sample No.
Trip	
Rinsate	
Transfer	
Other:	

Groundwater Sampling Form

Project Name: TEXACO 624881450   Well No.: MW-6
Project Number: 940822-M1   Well Type: [X] Monitor [ ] Extraction [ ] Other
Recorded By: GRANT   Sampled by: GRANT   Date: 8-22-94

WELL PURGING

PURGE VOLUME

Well casing diameter
[X] 2-inch [ ] 4-inch [ ] Other

Well Total Depth (TD, ft. below TOC): 19.54

Depth to Water (WL, ft. below TOC): 8.17

Depth to free phase hydrocarbons (FP, ft. below TOC)

Number of well volumes to be purged
[X] 3 [ ] 10 [ ] Other

PURGE METHOD

[X] Bailer - Type: SSB
[ ] Pump - Type
[ ] Other

PUMP INTAKE

[ ] Near top Depth (ft)
[ ] Near Bottom Depth (ft)
[ ] Other

Pumping Rate ______ gpm

PURGE VOLUME CALCULATION

2.2

11.37 x .17 x 3 = 6.6 gals

Water Column Length x Multiplier x No. Vols = CALCULATED PURGE VOLUME

7.0 gals ACTUAL PURGE VOLUME

MULTIPLIER (Casing Dia.[inches] = Gallons/linear ft)						
2 = 0.17	3 = 0.38	4 = 0.66	4.5 = 0.83	5 = 1.02	6 = 1.5	8 = 2.6

GROUNDWATER PARAMETER MEASUREMENT   Meter Type

Time/Gallons	pH	Cond. (uomhos/cm)	Temp [ ] deg C [ ] deg F	Turbidity (NTU)	Color/Odor
1452 / 3.0	7.1	620	71.7	7200	
1454 / 5.0	7.0	610	72.0	7200	
1507 / 7.0	7.0	600	71.9	7200	
/					
/					
/					
/					
/					

Comments during well purge

Well Pumped dry: YES (NO)   Purge water storage/disposal [ ] Drummed onsite [X] Other BTS

WELL SAMPLING

SAMPLING METHOD   Date/Time Sampled: 8/22 / 1510

Bailer - Type [X] SSB   Sample port [ ]   Other [ ]

GROUNDWATER SAMPLE PARAMETER MEASUREMENTS   Meter Type: HYDAC

Date/Time/% Recharge	pH	Cond. (uomhos/cm)	Temp [ ] deg C [ ] deg F	Turbidity (NTU)	Color/Odor
/ /					

SAMPLING PROGRAM

Sample No.	Container #/Volume	Analysis	Preservatives	Laboratory	Comments

QUALITY CONTROL SAMPLES

Duplicate Samples

Original Sample No.	Duplicate Sample No.

Blank Samples

Type	Sample No.
Trip	
Rinsate	
Transfer	
Other:	

Groundwater Sampling Form

Project Name TEXACO 6248801450 Well No. MW-7

Project Number 940822-M1 Well Type [X] Monitor [ ] Extraction [ ] Other

Recorded By GRANT Sampled by GRANT Date 8-22-94

WELL PURGING

PURGE VOLUME

Well casing diameter

[X] 2-inch [ ] 4-inch [ ] Other

Well Total Depth (TD, ft. below TOC) 19.85

Depth to Water (WL, ft. below TOC) 7.76

Depth to free phase hydrocarbons (FP, ft. below TOC)

Number of well volumes to be purged

[X] 3 [ ] 10 [ ] Other

PURGE METHOD

[X] Bailer - Type SSB

[ ] Pump - Type

[ ] Other

PUMP INTAKE

[ ] Near top Depth (ft)

[ ] Near Bottom Depth (ft)

[ ] Other

Pumping Rate gpm

PURGE VOLUME CALCULATION

12.09 (Water Column Length) x .17 (Multiplier) x 3 (No. Vols) = 7.2 gals CALCULATED PURGE VOLUME

2.4

MULTIPLIER (Casing Dia. [inches] = Gallons/linear ft)

2 = 0.17 | 3 = 0.38 | 4 = 0.66 | 4.5 = 0.83 | 5 = 1.02 | 6 = 1.5 | 8 = 2.6

7.5 gals ACTUAL PURGE VOLUME

GROUNDWATER PARAMETER MEASUREMENT

Meter Type

Time/Gallons		pH	Cond. (uomhos/cm)	Temp [ ] deg C [ ] deg F	Turbidity (NTU)	Color/Odor
1115	/ CAR MARKED ON WELL					
1230	/					
1320	/					
1400	/					
1530	/					
1631	/ 2.5	7.3	520	73.6	7200	
1637	/ 5.0	7.2	500	72.3	7200	
1645	/ 7.5	7.2	520	72.4	7200	

Comments during well purge

Well Pumped dry: YES (NO)

Purge water storage/disposal [ ] Drummed onsite [X] Other BTS

WELL SAMPLING

SAMPLING METHOD

Date/Time Sampled 8-22, ~~16~~ 1650

Bailer - Type [X] SSB Sample port [ ] Other [ ]

GROUNDWATER SAMPLE PARAMETER MEASUREMENTS

Meter Type HYDAC

Date/Time/% Recharge	pH	Cond. (uomhos/cm)	Temp [ ] deg C [ ] deg F	Turbidity (NTU)	Color/Odor
/ /					

SAMPLING PROGRAM

Sample No.	Container #/Volume	Analysis	Preservatives	Laboratory	Comments

QUALITY CONTROL SAMPLES

Duplicate Samples

Original Sample No.	Duplicate Sample No.

Blank Samples

Type	Sample No.
Trip	
Rinsate	
Transfer	
Other:	

Groundwater Sampling Form

Project Name: TEXACO 6249881450 — Well No.: MW-8
Project Number: 940822-M1 — Well Type: [X] Monitor [ ] Extraction [ ] Other
Recorded By: GRANT — Sampled by: GRANT — Date: 8-22-94

WELL PURGING

PURGE VOLUME

Well casing diameter
[ ] 2-inch [X] 4-inch [ ] Other
Well Total Depth (TD, ft. below TOC): 19.70
Depth to Water (WL, ft. below TOC): 7.63
Depth to free phase hydrocarbons (FP, ft. below TOC):
Number of well volumes to be purged
[X] 3 [ ] 10 [ ] Other

PURGE METHOD

[ ] Bailer - Type
[X] Pump - Type: ELEC. SUB.
[ ] Other

PUMP INTAKE

[ ] Near top Depth (ft)
[ ] Near Bottom Depth (ft)
[ ] Other
Pumping Rate: gpm

PURGE VOLUME CALCULATION

12.07 (Water Column Length) x .66 (Multiplier) x 3 (No. Vols) = 25.2 gals CALCULATED PURGE VOLUME

MULTIPLIER (Casing Dia. [inches] = Gallons/linear ft)
2 = 0.17 | 3 = 0.38 | 4 = 0.66 | 4.5 = 0.83 | 5 = 1.02 | 6 = 1.5 | 8 = 2.6

27.0 gals ACTUAL PURGE VOLUME

GROUNDWATER PARAMETER MEASUREMENT

Meter Type:

Time/Gallons	pH	Cond. (uomhos/cm)	Temp [ ] deg C [ ] deg F	Turbidity (NTU)	Color/Odor
1406 / 9.0	6.9	720	74.9	84.5	
1409 / 18.0	6.8	700	71.7	111.3	
1412 / 27.0	6.8	660	69.5	142.5	
/					
/					
/					
/					
/					

Comments during well purge:
Well Pumped dry: YES (NO)
Purge water storage/disposal: [ ] Drummed onsite [X] Other: BTS

WELL SAMPLING

SAMPLING METHOD

Date/Time Sampled: 8-22 / 1412
Bailer - Type [X] Teflon
Sample port [ ] Other [ ]

GROUNDWATER SAMPLE PARAMETER MEASUREMENTS

Meter Type: HYDAC

Date/Time/% Recharge	pH	Cond. (uomhos/cm)	Temp [ ] deg C [ ] deg F	Turbidity (NTU)	Color/Odor
/ /					

SAMPLING PROGRAM

Sample No.	Container #/Volume	Analysis	Preservatives	Laboratory	Comments

QUALITY CONTROL SAMPLES

Duplicate Samples

Original Sample No.	Duplicate Sample No.

Blank Samples

Type	Sample No.
Trip	
Rinsate	EB
Transfer	
Other:	

SOURCE RECORD # BILL OF LADING

FOR NON-HAZARDOUS PURGEWATER RECOVERED FROM GROUNDWATER WELLS AT TEXACO FACILITIES IN THE STATE OF CALIFORNIA. THE NON-HAZARDOUS PURGE-WATER WHICH HAS BEEN RECOVERED FROM GROUND-WATER WELLS IS COLLECTED BY THE CONTRACTOR, MADE UP INTO LOADS OF APPROPRIATE SIZE AND HAULED TO THE DESTINATION DESIGNATED BY TEXACO ENVIRONMENTAL SERVICES (TES).

Contractor: Blaine Tech Services
Address: 985 Timothy Dr
City, State, ZIP: San Jose CA 95133
Phone: 408 995-5535

is authorized by Texaco Environmental Services to recover, collect, apportion into loads, and haul the NON-HAZARDOUS WELL PURGEWATER that is drawn from wells at the Texaco facility listed below and to deliver that purgewater to an appropriate destination designated by TEXACO ENVIRONMENTAL SERVICES in either Redwood City, California or in Richmond, California. Transport routing of the Non-Hazardous Well Purgewater may be directed from one Texaco facility to the designated desitnation point; from one Texaco facility to the designated destination point via another Texaco facility; from a Texaco facility via the contractor's facility, or any combination thereof. The Non-Hazardous Well Purgewater is and remains the property of Texaco Environmental Services (TES).

This SOURCE RECORD BILL OF LADING was initiated to cover the recovery of Non-Hazardous Well Purgewater from wells at the Texaco facility described below:

TEXACO #: 624881450
Address: ~~77~~ 1127 LINCOLN AVE
City, State, ZIP: ALAMEDA

Well I.D.	Gals.	Well I.D.	Gals.
MW-1			
MW-8	87		

Total gals. 87

added rinse water 15

Total Gals. Recovered 102

Job #: 940822-M1
Date 8-22-94
Time 1700
Signature: [signature]

REC'D AT: BTS
Date: 8-22-94
Time: 1800
Signature: [signature]

QUARTERLY SUMMARY REPORT
Former Texaco Service Station
1127 Lincoln Avenue, Alameda, California
Alameda County
Second Quarter, 1994

HISTORY OF INVESTIGATIVE AND REMEDIAL ACTIONS

Four gasoline and one waste-oil underground storage tanks were removed in September, 1989. Eleven soil borings were drilled with three groundwater monitoring wells (MW-1 through MW-3) and five vapor wells (VW-1 through VW-5) being installed into eight of the borings in March, 1981. Five groundwater monitoring wells, MW-4 through MW-8 were installed in June, 1992. A soil vapor extraction and groundwater remediation system was installed June, 1993 and began full operation in September, 1993. Monitoring well MW-5 was connected to the vapor extraction system in September, 1993 and MW-1 and MW-2 were connected to the extraction system in November, 1993. MW-1, MW-2, and MW-5 act as combined extraction/recovery wells.

WORK PERFORMED DURING THIS QUARTER

Quarterly groundwater monitoring and sampling was performed. The vapor extraction system was modified from internal combustion engine to carbon abatement. The groundwater treatment system was cleaned and serviced.

CHARACTERIZATION STATUS

The extent of petroleum hydrocarbons in soil and groundwater has not been delineated.

REMEDIATION STATUS

A vapor extraction and groundwater treatment system is in operation at the site. Vapors are extracted from five vapor extraction wells and three combination wells and groundwater is extracted from the three combination wells. Two vapor-phase carbon canisters treat the vapors prior to discharge.

WORK TO BE PERFORMED NEXT QUARTER

Continue quarterly monitoring and sampling to record fluctuations in hydrocarbons concentrations. Resume operation and maintenance of the groundwater and soil vapor treatment systems.

COMPANY CONTACT: Karen Petryna (510) 236-9134

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Texaco Environmental Services
Standard Operating Procedures
for Groundwater Monitoring and Sampling

The following are routine procedures to be followed by personnel obtaining field information concerning petroleum product thickness and samples of groundwater during the monitoring and sampling of Texaco sites. These procedures are designed to assure that:

- Information and samples are properly collected.
- Samples are identified, preserved and transported in a manner such that they are representative of field conditions.
- Monitoring and sampling results are reproducible.

Water Level Measurements

Water level measurements are needed to document groundwater flow directions and calculate gradient. By gauging the level of water in a groundwater monitoring well and comparing the complied data, calculations can be made that determine the direction the groundwater at the monitored well is flowing and the groundwater gradient between successive monitoring wells.

- An interface probe or electronic probe is generally used to gauge the level of water in a monitoring well. When using either probe, it is slowly lowered into the well until the oscillating alarm indicating water is heard. Raise the interface probe above the water level and lower it back into the water at least three times to verify that the true depth to water is measured. Without moving the probe, read the numbers on the tape to determine the distance from the predetermined top of the well casing. A chalked, steel add-tape may also be used to gauge the level of water in a monitoring well. When using the steel tape, it is slowly lowered into the well until the chalked portion of the tape encounters water. Read the numbers on the tape to determine the distance from the predetermined top of the well casing. Raise the tape to the surface grade, re-chalk and lower it back into the water at least two times to verify that the true depth to water is measured. Record the depth to water on the Well Gauging Form and Groundwater Sampling Form.

Petroleum Product Thickness Measurements.

If free phase petroleum hydrocarbons (product) are observed floating on the groundwater surface during the water level measurement, the thickness of the product will be measured in each appropriate well. Groundwater samples will not be collected for chemical analysis from wells containing product unless specifically requested by the Project Coordinator. Product thicknesses will be measured using interface probes, and/or acrylic (clear plastic) bailers. The procedures for obtaining level and thickness measurements using each instrument are:

- The level of the top of the product will be measured with an interface probe. When product is suspected but not measurable with the interface probe, a visual evaluation can be made using clear acrylic bailers. A bailer will be lowered into the water/product surface so that the top of the bailer is NOT submerged; the bailer is then removed from

the well and the thickness of the product visually measured and documented on the Well Gauging Form.

- When the interface probe contacts liquid, the visual/audible alarm on the reel will be activated. An oscillating alarm indicates water, a continuous alarm indicates hydrocarbon. To determine the exact thickness of a hydrocarbon layer, the probe should be slowly lowered to the air/hydrocarbon interface until the alarm is activated. with the probe at the exact point where the alarm comes on, read the numbers on the tape to determine the distance from the predetermined top of casing elevation mark. Next, lower the probe through the hydrocarbon layer and well into the water. An oscillating alarm will be obtained. The probe should then be raised slowly to the hydrocarbon/water interface until the point where the alarm changes from oscillating to continuous. The thickness of the hydrocarbon layer is determined by subtracting the first reading from the second reading. Record the calculated value on the Well Gauging Form and Groundwater Sampling Form.

Groundwater Sampling

Groundwater samples will be collected from selected groundwater monitoring wells to provide data which will be statistically representative of local groundwater conditions at the site. Groundwater samples will be collected as follows:

- All measuring and sampling equipment will be decontaminated prior to sample collection from each well and documented on the Groundwater Sampling Form.

- Prior to sampling activity, the water level of the well will be measured and the minimum purge volume of each well will be calculated using the purge volume calculation portion of the Groundwater Sampling Form. A minimum of three casing volumes will be purged prior to sample collection. The actual total volume purged will be recorded on Groundwater Sampling Form.

- Prior to sampling, a submersible pump, centrifugal pump, peristaltic pump, or a Teflon or stainless steel bailer will be used to purge a minimum of three casing volumes from each well. Purge volumes will be estimated using a flow meter or a stopwatch and a bucket to estimate flow rate, from which a time to purge the required volume will be calculated. The pump will be lowered to a depth of two to three feet from bottom of the well. When bailers are used for purging, the bailer should be gently lowered into the water and allowed to fill then removed. Care should be taken to not agitate the water which could release volatile organics.

- Whenever possible, groundwater parameters (pH, temperature (in degrees Celsius [C]), specific conductance (in micromhos per centimeters squared [umhos]), and turbidity (in National Turbidity Units [NTU]) will be monitored and recorded on the Groundwater Sampling Form.

- If a well is purged dry before three casing volumes have been removed, the sample will be taken after the well has recovered to within 80 percent of the static water level prior to purging or after 4 hours when sufficient water volume is available to meet analytical requirements, whichever comes first. Reasonable efforts will be made to avoid dewatering wells by using low-yield pumps as necessary.

- Water samples will be collected with a stainless steel or Teflon bailer. To reduce potential cross contamination, sampling should take place in order from least to most contaminated wells. Bailer strings should be replaced between each well to avoid cross contamination from a bailer string which has absorbed contamination.

- Sample containers will be filled directly from the bailer.

- Use only sample containers prepared and provided by an analytical laboratory. Preservatives are required for some types of samples. Sample containers containing preservatives should be supplied by an analytical laboratory.

- For volatile organics analysis, each sample vial will be filled with sample water so that water stands above the lip of the vial. The cap should then be quickly placed on the vial and tightened securely. The vial should then be checked to ensure that no air bubbles are present prior to labeling the sample.

- Take site blank samples (trip and rinsate) using distilled water or laboratory supplied water from a known uncontaminated source. One trip blank and one rinsate blank sample for each site sampling event.

- Once collected and labeled, all samples will be stored in cooler maintained at 4 degrees Celsius using frozen water ice.

Sample Custody Procedures

Sample custody procedures will be followed through sample collection, transfer, analysis and ultimate disposal. The purpose of these procedures is to assure that the integrity of samples is maintained during their collection and transfer. Sample quantities, types and locations will be determined before the actual field work beings. As few people as possible will handle samples. The field sampler is personally responsible for the care and custody of the collected samples until they are properly transferred.

Each sample will be labelled and sealed properly immediately after collection. Sample identification documents will be carefully prepared so that identification and chain-of-custody records can be maintained and sample disposition can be controlled. Forms will be filled out with waterproof ink. The following are sample identification documents that will be utilized during the field operations.

- Sample Identification Label
- Chain-of Custody

Each separate sample will be identified using a label obtained from the laboratory. The sampler will complete all information, using a black waterproof pen, as follows:

The Site ID This is the name assigned to the particular sampling station.

The Sample Source. This will be the name of the well location.

The Analysis Required. This will be indicated for each sample using proper EPA reference

number indicating analytical method.

The Date Taken. This will be the date the sample was collected, using the format MM-DD-YY. Example: 06-15-91

Noting the Time. The time the sample was collected will be given in military time. Example: 1430

The Method of Preservation. Preservation methods will be provided, specifying the type of preservation. For non-acidified samples, "ice" will be indicated.

The Sampler's Name. This will be printed in the "Sampled By" section. The sampler's signature will be written in the "Signed" section.

There is the potential that samples and analysis could be of an evidentiary nature. Therefore, the possession of samples must be traceable from the time samples are collected in the field until the analysis is completed and the data are entered as evidence. The tracing of the samples through the laboratory is accomplished by "chain-of-custody" procedures. Chain-of-Custody Forms will be completed for each set of samples. The sampler will sign the first "Relinquished By" line at the bottom of the chain of custody record, and will indicate the date and time of the custody transfer. Samples will not leave custody of the field technician until relinquished to another party. Custody is defined by the following criteria.

In the Actual Physical Possession. When field personnel have sample in possession, they have "custody".

In View. The field personnel view after being in physical possession.

Special Areas. Sample is kept in a locked area after being in physical possession.

Designated Area. Sample is in a designated, locked-storage area.

Transfer of samples to an analytical laboratory will be done by use of a common carrier or personal delivery. Carrier personnel will personally secure samples and sample containers in such a way that no containers can be opened in transit. The person to whom custody is being transferred will sign on the first "Received By" line of the chain-of-custody record, indicating that custody is being accepted by the carrier for all the samples listed on the sheet. For subsequent transfers of custody, the succeeding relinquish and receipt lines will be used.

Equipment Decontamination

All equipment that comes in contact with potentially contaminated soil or water will be decontaminated prior to and after each use (for example, after each sampling event). All hand bailers and will be decontamination with an Alconox wash with deionized (DI) water rinse.