



BP OIL

ALCO  
HAZMAT

94 APR -6 PM 1:30

BP Oil Company  
Environmental Resources Management  
Building 13, Suite N  
295 SW 41st Street  
Renton, Washington 98055-4931  
(206) 251-0667

March 25, 1994

*Go down to set amp*

Mr. Brian Oliva  
Alameda County Health Care Services Agency  
80 Swan Way, Room 200  
Oakland, CA 94621


RE: BP OIL FACILITY #11266  
1541 Park Street  
Alameda, CA

Attached please find our GROUNDWATER MONITORING AND SAMPLING REPORT DATED FEBRUARY 24, 1994 for the above referenced facility.

PLEASE NOTE OUR NEW ADDRESS:  
295 SW 41st Street  
Renton, WA 98055

If you have any questions, please call me at (206) 251-0689.

Respectfully,

  
Scott T. Hooton  
Environmental Resources Management  
Group Leader

STH:mu ERM11266

cc: Mr. Eddy So, California Regional Water Quality Control Board, San Francisco Bay Region, 2101 Webster Street, Suite 500, Oakland, Ca 94612

Mr. Robert Merriken, Mobil Oil Corp, 3225 Gallows Road, Fairfax, VA 22037

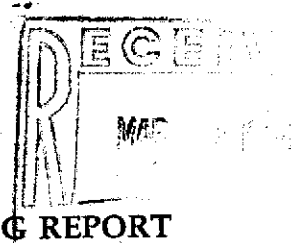
Mr. Brady Nagle, ALISTO, 1777 Oakland Blvd., Suite 200, Walnut Creek, CA 94596

Mr. Scott Kellstedt, Hydro Environmental Technologies, Inc., 2363 Mariner Square Drive, Suite 243, Alameda CA 94501

Site file

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**GROUNDWATER MONITORING AND SAMPLING REPORT**

**BP Oil Company Service Station No. 11266  
1541 Park Street  
Alameda, California**

**Project No. 10-050-03-003**

**Prepared for:**

**BP Oil Company  
Environmental Resources Management  
295 S.W. 41st Street  
Building 13, Suite N  
Renton, Washington**

**Prepared by:**

**Alisto Engineering Group  
1777 Oakland Boulevard, Suite 200  
Walnut Creek, California**

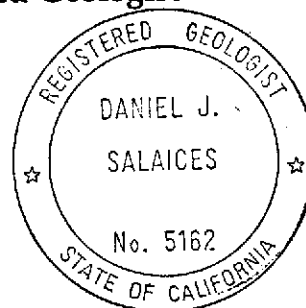
**February 24, 1994**

*William Howell*

**William Howell  
Project Manager**

*Daniel Salaices*

**Daniel Salaices  
Registered Geologist**



# GROUNDWATER MONITORING AND SAMPLING REPORT

BP Oil Company Service Station No. 11266  
1541 Park Street  
Alameda, California

Project No. 10-050-03-003

February 24, 1994

## INTRODUCTION

This report presents the results and findings of the December 28, 1993 groundwater monitoring and sampling conducted by Alisto Engineering Group at BP Oil Company Service Station No. 11266, 1541 Park Street, Alameda, California. A site vicinity map is shown in Figure 1.

## FIELD PROCEDURES

Field activities were performed in accordance with the procedures and guidelines of the Alameda County Health Care Services Agency and the California Regional Water Quality Control Board, San Francisco Bay Region.

Before purging and sampling, the groundwater level in each well was measured from a permanent mark on top of the casing to the nearest 0.01 foot using an electronic sounder. The depth to groundwater and top of casing elevation data were used to calculate the groundwater elevation in each well in reference to mean sea level. The survey data and groundwater elevation measurements collected to date are presented in Table 1.

Before sample collection, each well was purged of 3 casing volumes, while recording field readings of pH, temperature, and electrical conductivity. Groundwater samples were collected for laboratory analysis by lowering a bottom-fill, disposable bailer to just below the water level in the well. The samples were transferred from the bailer into laboratory-supplied containers. The water sampling field survey forms are presented in Appendix A.

## SAMPLING AND ANALYTICAL RESULTS

The results of monitoring and laboratory analysis of the groundwater samples for this and previous quarters are summarized in Table 1. The potentiometric groundwater elevations as interpreted from the results of this monitoring event are shown in Figure 2. The results of groundwater analysis are shown in Figure 3. The laboratory report and chain of custody record are presented in Appendix B.



TABLE 1 - SUMMARY OF RESULTS OF GROUNDWATER SAMPLING  
 BP OIL COMPANY SERVICE STATION NO. 11266  
 1541 PARK STREET, ALAMEDA, CALIFORNIA

ALISTO PROJECT NO. 10-050

WELL ID	DATE OF SAMPLING/ MONITORING	CASING ELEVATION (a) (Feet)	DEPTH TO WATER (Feet)	GROUNDWATER ELEVATION (b) (Feet)	TPH-G (ppb)	B (ppb)	T (ppb)	E (ppb)	X (ppb)	LAB
MW-1	03/04/88	19.19	---	---	95000	2000	5900	1100	10000	---
MW-1	03/29/89	19.19	---	---	25000	930	2600	24	3100	---
MW-1	11/28/89	19.19	---	---	15000	280	880	340	1200	---
MW-1	02/13/91	19.19	---	---	25000	680	2700	1100	3200	---
MW-1	01/08/92	19.19	---	---	10000	260	1100	570	2000	---
MW-1	03/30/92	19.19	8.15	11.04	5800	290	570	500	1100	PACE
MW-1	07/02/92	19.19	9.38	9.81	2500	170	60	310	300	ANA
MW-1	07/22/92	19.19	9.62	9.57	---	---	---	---	---	---
MW-1	10/02/92	19.19	9.98	9.21	4000	86	190	270	350	ANA
QC-1 (c)	10/02/92	---	---	---	3600	89	180	270	340	ANA
MW-1	12/14/92	19.19	9.90	9.29	6800	75	540	200	670	ANA
QC-1 (c)	12/14/92	---	---	---	5900	68	480	190	600	ANA
MW-1	03/24/93	19.19	8.52	10.67	6400	150	310	370	710	PACE
MW-1	06/17/93	19.19	9.37	9.82	3800	110	160	310	480	PACE
MW-1	09/29/93	19.19	10.80	8.39	1100	22	16	54	110	PACE
MW-1	12/28/93	19.19	9.27	9.92	1800	26	110	77	300	PACE
MW-2	03/04/88	19.32	---	---	ND	ND	ND	ND	ND	---
MW-2	03/29/89	19.32	---	---	ND	1.1	0.78	ND	1.7	---
MW-2	11/28/89	19.32	---	---	170	ND	ND	ND	ND	---
MW-2	02/13/91	19.32	---	---	150	1.4	ND	ND	0.9	---
MW-2	01/08/92	19.32	---	---	ND	1.4	ND	ND	1.1	---
MW-2	03/30/92	19.32	9.03	10.29	91	0.7	ND	ND	ND	PACE
MW-2	07/02/92	19.32	9.96	9.36	150	3.1	0.6	0.6	1.1	ANA
MW-2	07/22/92	19.32	10.12	9.20	---	---	---	---	---	---
MW-2	10/02/92	19.32	10.42	8.90	56	ND<0.5	0.8	0.8	1.2	ANA
MW-2	12/14/92	19.32	10.77	8.55	210	1.5	ND<0.5	0.9	2.7	ANA
MW-2	03/24/93	19.32	9.33	9.99	94	0.8	ND<0.5	ND<0.5	0.9	PACE
QC-1 (c)	03/24/93	---	---	---	150	1.8	0.6	1.3	1.3	PACE
MW-2	06/17/93	19.32	9.91	9.41	ND<50	ND<0.5	ND<0.5	ND<0.5	0.7	PACE
MW-2	09/29/93	19.32	11.39	7.93	68	ND<0.5	0.9	0.7	1.9	PACE
MW-2	12/28/93	19.32	9.75	9.57	260	ND<0.5	ND<0.5	ND<0.5	ND<0.5	PACE
QC-1 (c)	12/28/93	---	---	---	240	ND<0.5	ND<0.5	ND<0.5	ND<0.5	PACE

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 1541 PARK STREET, ALAMEDA, CALIFORNIA

ALISTO PROJECT NO. 10-050

WELL ID	DATE OF SAMPLING/ MONITORING	CASING ELEVATION (a) (Feet)	DEPTH TO WATER (Feet)	GROUNDWATER ELEVATION (b) (Feet)	TPH-G (ppb)	B (ppb)	T (ppb)	E (ppb)	X (ppb)	LAB
MW-3	03/04/88	19.99	---	---	ND	ND	ND	ND	ND	---
MW-3	03/29/89	19.99	---	---	ND	ND	ND	ND	ND	---
MW-3	11/28/89	19.99	---	---	ND	ND	ND	ND	ND	---
MW-3	02/13/91	19.99	---	---	ND	ND	ND	ND	ND	---
MW-3	01/08/92	19.99	---	---	ND	ND	ND	ND	ND	---
MW-3	03/30/92	19.99	9.71	10.28	ND	ND	ND	ND	ND	PACE
MW-3	07/02/92	19.99	10.52	9.47	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ANA
MW-3	07/22/92	19.99	10.62	9.37	---	---	---	---	---	---
MW-3	10/02/92	19.99	10.86	9.13	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ANA
MW-3	12/14/92	19.99	10.53	9.46	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ANA
MW-3	03/24/93	19.99	9.06	10.93	ND<50	ND<0.5	ND<0.5	ND<0.5	ND>0.5	PACE
MW-3	06/17/93	19.99	10.44	9.55	ND<50	ND<0.5	ND<0.5	ND<0.5	ND>0.5	PACE
MW-3	09/29/93	19.99	11.06	8.93	ND<50	ND<0.5	ND<0.5	ND<0.5	ND>0.5	PACE
MW-3	12/28/93	19.99	9.43	10.56	ND<50	ND<0.5	ND<0.5	ND<0.5	ND>0.5	PACE
MW-4	03/04/88	20.17	---	---	ND	ND	ND	ND	ND	---
MW-4	03/29/89	20.17	---	---	ND	ND	ND	ND	ND	---
MW-4	11/28/89	20.17	---	---	430	6.2	0.6	12	3.3	---
MW-4	02/13/91	20.17	---	---	ND	ND	ND	ND	ND	---
MW-4	01/08/92	20.17	---	---	ND	ND	ND	ND	ND	---
MW-4	03/30/92	20.17	8.73	11.44	ND	ND	ND	ND	ND	PACE
MW-4	07/02/92	20.17	10.04	10.13	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ANA
MW-4	07/22/92	20.17	10.26	9.91	---	---	---	---	---	---
MW-4	10/02/92	20.17	10.63	9.54	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ANA
MW-4	12/14/92	20.17	10.02	10.15	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ANA
MW-4	03/24/93	20.17	9.08	11.09	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	PACE
MW-4	06/17/93	20.17	10.03	10.14	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	PACE
MW-4	09/29/93	20.17	10.96	9.21	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	PACE
MW-4	12/28/93	20.17	9.33	10.84	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	PACE

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ALISTO PROJECT NO. 10-050

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MW-5	03/04/88	19.41	---	---	ND	ND	ND	ND	ND	---
MW-5	03/29/89	19.41	---	---	ND	ND	ND	ND	ND	---
MW-5	11/28/89	19.41	---	---	ND	ND	ND	ND	ND	---
MW-5	02/13/91	19.41	---	---	ND	ND	ND	ND	ND	---
MW-5	01/08/92	19.41	---	---	ND	ND	ND	ND	ND	---
MW-5	03/30/92	19.41	7.85	11.56	ND	ND	ND	ND	ND	PACE
MW-5	07/02/92	19.41	9.27	10.14	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ANA
MW-5	07/22/92	19.41	9.55	9.86	---	---	---	---	---	---
MW-5	10/02/92	19.41	9.97	9.44	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ANA
MW-5	12/14/92	19.41	9.14	10.27	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ANA
MW-5	03/24/93	19.41	8.17	11.24	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	PACE
MW-5	06/17/93	19.41	8.29	11.12	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	PACE
QC-1 (c)	06/17/93	---	---	---	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	PACE
MW-5	09/29/93	19.41	10.31	9.10	ND<50	ND<0.5	ND<0.5	ND<0.5	0.6	PACE
MW-5	12/28/93	19.41	8.91	10.50	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	PACE
MW-6	03/04/88	19.40	---	---	ND	ND	ND	ND	ND	---
MW-6	03/29/89	19.40	---	---	ND	ND	ND	ND	ND	---
MW-6	11/28/89	19.40	---	---	ND	ND	ND	ND	ND	---
MW-6	02/13/91	19.40	---	---	ND	ND	ND	ND	ND	---
MW-6	01/08/92	19.40	---	---	ND	ND	ND	ND	ND	---
MW-6	03/30/92	19.40	8.86	10.54	ND	ND	ND	ND	ND	PACE
MW-6	07/02/92	19.40	9.94	9.46	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ANA
MW-6	07/22/92	19.40	10.10	9.30	---	---	---	---	---	---
MW-6	10/02/92	19.40	10.48	8.92	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ANA
MW-6	12/14/92	19.40	10.76	8.64	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ANA
MW-6	03/24/93	19.40	9.19	10.21	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	PACE
MW-6	06/17/93	19.40	9.91	9.49	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	PACE
MW-6	09/29/93	19.40	11.49	7.91	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	PACE
MW-6	12/28/93	19.40	9.88	9.52	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	PACE

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 BP OIL COMPANY SERVICE STATION NO. 11266  
 1541 PARK STREET, ALAMEDA, CALIFORNIA

ALISTO PROJECT NO. 10-050

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RW-1	07/22/92	---	9.66	---	13000	1000	3400	380	2800	ANA
RW-1	10/02/92	---	10.28	---	---	---	---	---	---	---
RW-1	12/14/92	---	23.28	---	---	---	---	---	---	---
RW-1	03/24/93	---	8.93	---	660	21	25	8.3	100	PACE
RW-1	06/17/93	---	9.66	---	850	13	1.0	15	100	PACE
RW-1	09/29/93	19.27	23.40	-4.13	1200	26	27	11	150	PACE
QC-1 (c)	09/29/93	---	---	---	1200	26	28	11	160	PACE
RW-1	12/28/93	19.27	9.76	9.51	3500	300	220	180	480	PACE
QC-2 (d)	10/02/92	---	---	---	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ANA
QC-2 (d)	12/14/92	---	---	---	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ANA
QC-2 (d)	03/24/93	---	---	---	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	PACE
QC-2 (d)	06/17/93	---	---	---	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	PACE
QC-2 (d)	09/29/93	---	---	---	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	PACE
QC-2 (d)	12/28/93	---	---	---	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	PACE

ABBREVIATIONS:

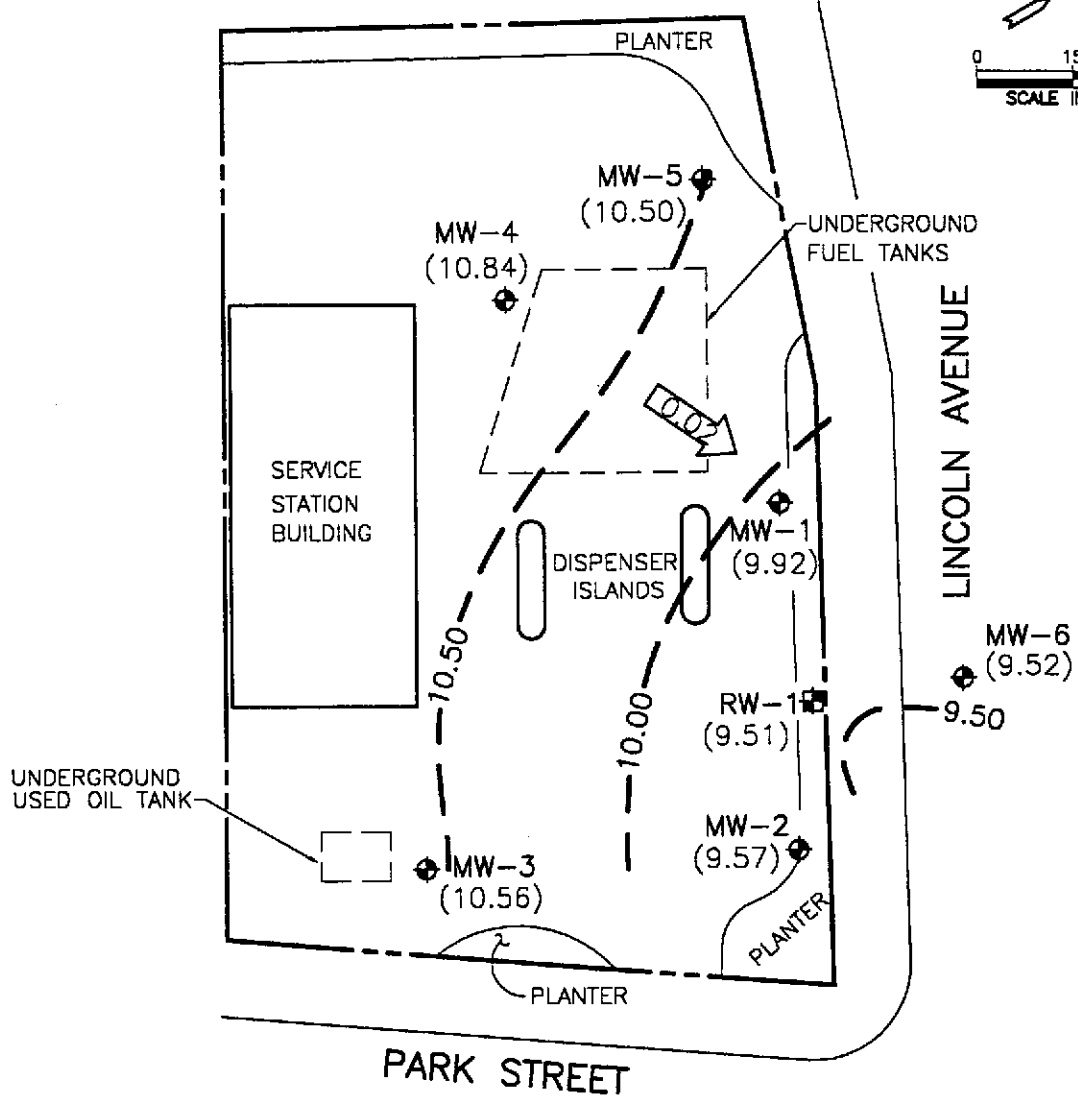
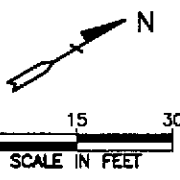
TPH-G Total petroleum hydrocarbons as gasoline  
 B Benzene  
 T Toluene  
 E Ethylbenzene  
 X Total xylenes  
 ppb Parts per billion  
 --- Not analyzed/measured/available  
 ND Not detected above reported detection limit  
 PACE Pace, Inc.  
 ANA Anametrix, Inc.

NOTES:

(a) Casing elevations surveyed to nearest 0.01 foot above mean sea level with an assigned elevation of 22.82 feet (City datum).  
 (b) Groundwater elevations in feet above mean sea level.  
 (c) Blind duplicate.  
 (d) Travel blank.







**LEGEND**

- ◆ GROUNDWATER MONITORING WELL
- GROUNDWATER RECOVERY WELL
- (10.84) GROUNDWATER ELEVATION IN FEET ABOVE MEAN SEA LEVEL
- 10.50 - GROUNDWATER ELEVATION CONTOUR IN FEET ABOVE MEAN SEA LEVEL (CONTOUR INTERVAL - 0.50 FOOT)
- ← 0.02 → CALCULATED GROUNDWATER GRADIENT DIRECTION AND MAGNITUDE IN FOOT PER FOOT

**FIGURE 2**

**POTENTIOMETRIC GROUNDWATER ELEVATION CONTOUR MAP**

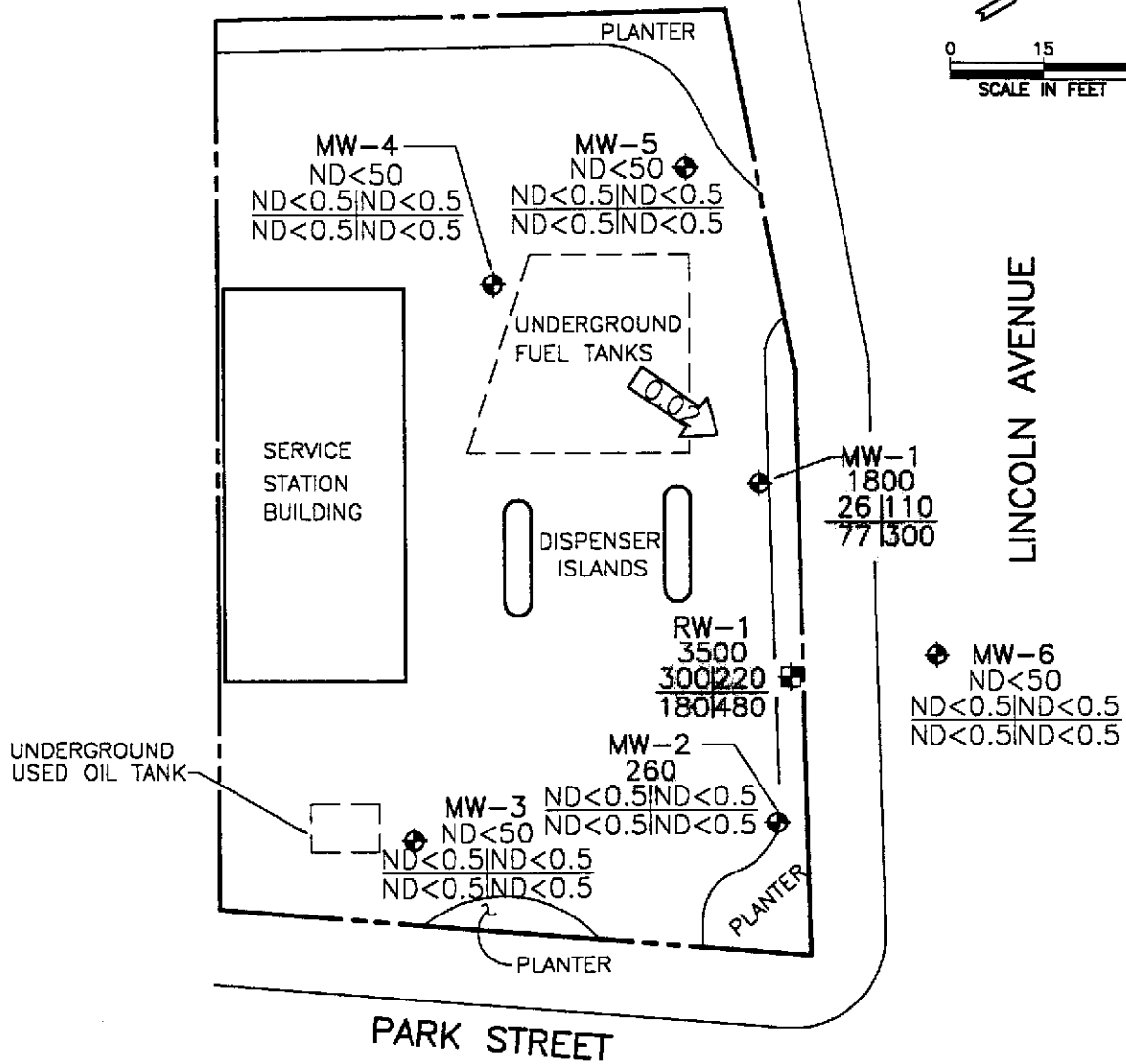
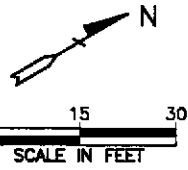
**DECEMBER 28, 1993**

BP OIL SERVICE STATION NO. 11266  
1541 PARK STREET  
ALAMEDA, CALIFORNIA

PROJECT NO. 10-050



100000-110000 2-1-94 RHW 1-30



**LEGEND**

- ◆ GROUNDWATER MONITORING WELL
- ⊕ GROUNDWATER RECOVERY WELL
- TPH-G CONCENTRATION OF CONSTITUENTS IN PARTS PER BILLION
- B | T
- E | X
- TPH-G TOTAL PETROLEUM HYDROCARBONS AS GASOLINE
- B BENZENE
- T TOLUENE
- E ETHYLBENZENE
- X TOTAL XYLENES
- ND NOT DETECTED ABOVE REPORTED DETECTION LIMIT
- ← 0.02 CALCULATED GROUNDWATER GRADIENT DIRECTION AND MAGNITUDE IN FOOT PER FOOT

**FIGURE 3**  
**CONCENTRATIONS OF PETROLEUM HYDROCARBONS IN GROUNDWATER**  
**DECEMBER 28, 1993**  
 BP OIL SERVICE STATION NO. 11266  
 1541 PARK STREET  
 ALAMEDA, CALIFORNIA  
 PROJECT NO. 10-050



10050E-HJWC 2-1-94 RW 1-30

**APPENDIX A**  
**WATER SAMPLING FIELD SURVEY FORMS**

B i r c h  
T e c h n i c a l  
S e r v i c e s

# Field Report / Data Sheet

O Groundwater Sampling O Groundwater Monitoring O Well Development O Drill Support O Stockpile Sampling

116 Liberty st Santa Cruz, Ca 95060 (408) 459-0718	Firm: <u>Alisto</u>	Date: <u>12/28/93</u>	Station #: <u>11266</u>	Day: M Tu W Th F
	Project Number: <u>10-060-03-003</u>	Field Technician: <u>DAN BIRCH</u>	Address: <u>Peak St</u> <u>Alzamor</u>	

DT Worder	Well ID	Well Diam	Cap Lock	Total Depth (feet)	1st Depth to Water (feet)	2nd Depth to Water (feet)	Depth to Product (feet)	Product Thickness	Comments
	7	MW-1	2"	OK	<del>21.88</del>	9.27	9.27	NONE	
6	MW-2	2"	OK	21.88	9.75	9.75			QC-1 was taken from MW-2
5	MW-3	2"	OK	9.43	9.43	9.43			
2	MW-4	2"	OK	19.69	9.33	9.33			
1	MW-5	2"	OK	19.92	8.91	8.91			
4	MW-6	2"	OK	24.24	9.88	9.88			
3	RW-1	6"	OK	29.54	9.76	9.76			

Notes: Two full drums of Groundwater were at the site upon arrival, one additional drum was left after the sampling was completed.

CALIBRATION      pH 7.00 7.00      pH 4.00 \_\_\_\_\_      pH 10.00 \_\_\_\_\_      at \_\_\_\_\_ °F















116 Liberty Street  
 Santa Cruz, Ca 95060  
 (408) 459-0718

Well Number: RW-1

Project Number: 10-050-01-063

Sample Type:  Groundwater  Trip Blank  Duplicate of \_\_\_\_\_

Station Number: 11260

Sampled by: DAN BIRCH

Date: 12/28/93

**WELL PURGING**

**PURGE VOLUME**

Casing Diameter (inches)  
 Volume Factors:

0 2" 0 3" 0 4" 0 4.5"  6" 0 \_\_\_\_\_  
 0.1632 0.3672 0.6528 0.826 1.469 \_\_\_\_\_

Total Depth of Well 29.54

Initial Water Level: 9.70

**PURGE METHOD:**

Total Volume Purged: 30 gal.

Time Elapsed: 14 min.

- Honda Pump
- Disposable Poly Tubing (30 ft)
- Speed Winch
- Disposable PVC Bailer(s) (\_\_\_\_)
- Other \_\_\_\_\_

Calculated Purge Volume:

$$\frac{29.54}{\text{Total Depth}} - \frac{9.76}{\text{Water Level}} = \frac{19.78}{\text{Well Vol. Fac.}} \times \frac{1.46}{\text{\# of vol. to Purge}} = \frac{28.87}{\text{Calculated Purge Volume}} \times 3 = \frac{86.6}{\text{Calculated Purge Volume}} \text{ (gallons)}$$

**COMMENTS:**

Subjective Analysis Prior to Purging

Permeameters were stabilized  SHEEN  Depth to Product None (ft) Product Thickness None (ft)  
 Yes  No

after 30 gal. were removed & the sample was collected

**SAMPLING METHOD**

PRS. was temporarily removed in order to collect the sample.

- PVC Disposable Bailer
- Teflon Bailer
- Other: \_\_\_\_\_

Time Sampled (24 hour clock)  
1325

**WELL SAMPLING PARAMETERS**

Gallons Removed	Time	pH	Temp °F	Cond. (umhos/cm)
5	1300	7.71	63.4	0.54
10	1310	7.70	66.0	0.55
15	1313	7.61	67.6	0.55
20	1316	7.60	67.1	0.55
25	1319	7.59	67.5	0.55
30	1322	7.59	67.2	0.54

Analysis Required	No. of	Container Type	Preservatives
EPA 601		VOA's	
<input checked="" type="checkbox"/> TPH-G/BTEX	3	VOA's	HCl
TPH- Diesel		Amber Liter	
TOG 5520 BF		Amber Liter	H <sub>2</sub> SO <sub>4</sub>



116 Liberty Street  
 Santa Cruz, Ca 95060  
 (408) 459-0718

Project Number: 10-050-01-003

Station Number: BR11266

Date: 12-28-93

Well Number: QC-2

Sample Type:  Groundwater  Trip Blank  Duplicate of

Sampled by: Dan Birch

**WELL PURGING**

**PURGE VOLUME**

Casing Diameter (inches)  
 Volume Factors:

2"  3"  4"  4.5"  6"  \_\_\_\_\_  
 0.1632 0.3672 0.6528 0.826 1.469 \_\_\_\_\_

Total Depth of Well \_\_\_\_\_

Initial Water Level: \_\_\_\_\_

Total Volume Purged: \_\_\_\_\_

Time Elapsed: \_\_\_\_\_

Calculated Purge Volume:

**PURGE METHOD:**

Honda Pump  
 Disposable Poly Tubing (\_\_\_\_ ft)  
 Speed Winch  
 Disposable PVC Bailer(s) (\_\_\_\_)  
 Other \_\_\_\_\_

\_\_\_\_\_ - \_\_\_\_\_ = \_\_\_\_\_ x \_\_\_\_\_ = \_\_\_\_\_ x \_\_\_\_\_ = \_\_\_\_\_ (gallons)  
 Total Depth    Water Level                      Well Vol. Fac.                      #of vol. to Purge                      Calculated Purge Volume

**COMMENTS:**

Subjective Analysis Prior to Purging

SHEEN                      Depth to Product                      Product Thickness  
 Yes  No                      \_\_\_\_\_ (ft)                      \_\_\_\_\_ (ft)

**SAMPLING METHOD**

PVC Disposable Bailer                      Time Sampled  
 Teflon Bailer                      (24 hour clock)  
 Other: \_\_\_\_\_

WELL SAMPLING PARAMETERS

Gallons Removed	Time	pH	Temp °F	Cond. (umhos/cm)

Analysis Required	No. of	Container Type	Preservatives
EPA 601		VOA's	
<input checked="" type="checkbox"/> TPH-G/BTEX	1	VOA's	HCl
TPH- Diesel		Amber Liter	
TOG 5520 BF		Amber Liter	H <sub>2</sub> SO <sub>4</sub>

**APPENDIX B**

**LABORATORY REPORT AND CHAIN OF CUSTODY RECORD**



# REPORT OF LABORATORY ANALYSIS

Alisto Engineering Group  
1777 Oakland Blvd., Ste. 200  
Walnut Creek, CA 94596

January 05, 1994  
PACE Project Number: 431229501

Attn: Mr. Bill Howell

Client Reference: BP Station # 11266/CP# 10-050-01-003

PACE Sample Number: 70 0222010  
Date Collected: 12/28/93  
Date Received: 12/29/93  
Client Sample ID: MW-1

<u>Parameter</u>	<u>Units</u>	<u>MDL</u>	<u>DATE ANALYZED</u>
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## ORGANIC ANALYSIS

PURGEABLE FUELS AND AROMATICS			
TOTAL FUEL HYDROCARBONS, (LIGHT):		-	12/30/93
Purgeable Fuels, as Gasoline (EPA 8015M)	ug/L	50	1800
PURGEABLE AROMATICS (BTXE BY EPA 8020M):		-	12/30/93
Benzene	ug/L	0.5	26
Toluene	ug/L	0.5	110
Ethylbenzene	ug/L	0.5	77
Xylenes, Total	ug/L	0.5	300

**REPORT OF LABORATORY ANALYSIS**

Mr. Bill Howell  
 Page 2

January 07, 1994  
 PACE Project Number: 431229501

Client Reference: BP Station # 11266/CP# 10-050-01-003

PACE Sample Number: 70 0222028  
 Date Collected: 12/28/93  
 Date Received: 12/29/93  
 Client Sample ID: MW-2

<u>Parameter</u>	<u>Units</u>	<u>MDL</u>	<u>DATE ANALYZED</u>
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ORGANIC ANALYSIS

<u>PURGEABLE FUELS AND AROMATICS</u>			
TOTAL FUEL HYDROCARBONS, (LIGHT):			12/30/93
Purgeable Fuels, as Gasoline (EPA 8015M)	ug/L	50	260 12/30/93
<u>PURGEABLE AROMATICS (BTXE BY EPA 8020M):</u>			
Benzene	ug/L	0.5	ND 12/30/93
Toluene	ug/L	0.5	ND 12/30/93
Ethylbenzene	ug/L	0.5	ND 12/30/93
Xylenes, Total	ug/L	0.5	ND 12/30/93



Mr. Bill Howell  
 Page 3

January 05, 1994  
 PACE Project Number: 431229501

Client Reference: BP Station # 11266/CP# 10-050-01-003

PACE Sample Number: 70 0222036  
 Date Collected: 12/28/93  
 Date Received: 12/29/93  
 Client Sample ID: MW-3

<u>Parameter</u>	<u>Units</u>	<u>MDL</u>		<u>DATE ANALYZED</u>
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ORGANIC ANALYSIS

PURGEABLE FUELS AND AROMATICS				
TOTAL FUEL HYDROCARBONS, (LIGHT):				
Purgeable Fuels, as Gasoline (EPA 8015M)	ug/L	50	-	12/30/93
PURGEABLE AROMATICS (BTXE BY EPA 8020M):				
Benzene	ug/L	0.5	ND	12/30/93
Toluene	ug/L	0.5	ND	12/30/93
Ethylbenzene	ug/L	0.5	ND	12/30/93
Xylenes, Total	ug/L	0.5	ND	12/30/93

Mr. Bill Howell  
 Page 4

January 05, 1994  
 PACE Project Number: 431229501

Client Reference: BP Station # 11266/CP# 10-050-01-003

PACE Sample Number: 70 0222044  
 Date Collected: 12/28/93  
 Date Received: 12/29/93  
 Client Sample ID: MW-4

<u>Parameter</u>	<u>Units</u>	<u>MDL</u>	<u>DATE ANALYZED</u>
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ORGANIC ANALYSIS

PURGEABLE FUELS AND AROMATICS

TOTAL FUEL HYDROCARBONS, (LIGHT):			-	12/30/93
Purgeable Fuels, as Gasoline (EPA 8015M)	ug/L	50	ND	12/30/93
PURGEABLE AROMATICS (BTXE BY EPA 8020M):			-	12/30/93
Benzene	ug/L	0.5	ND	12/30/93
Toluene	ug/L	0.5	ND	12/30/93
Ethylbenzene	ug/L	0.5	ND	12/30/93
Xylenes, Total	ug/L	0.5	ND	12/30/93

Mr. Bill Howell  
 Page 5

January 05, 1994  
 PACE Project Number: 431229501

Client Reference: BP Station # 11266/CP# 10-050-01-003

PACE Sample Number: 70 0222052  
 Date Collected: 12/28/93  
 Date Received: 12/29/93  
 Client Sample ID: MW-5

<u>Parameter</u>	<u>Units</u>	<u>MDL</u>	<u>DATE ANALYZED</u>
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ORGANIC ANALYSIS

PURGEABLE FUELS AND AROMATICS			
TOTAL FUEL HYDROCARBONS, (LIGHT):			-
Purgeable Fuels, as Gasoline (EPA 8015M)	ug/L	50	ND
PURGEABLE AROMATICS (BTXE BY EPA 8020M):			-
Benzene	ug/L	0.5	ND
Toluene	ug/L	0.5	ND
Ethylbenzene	ug/L	0.5	ND
Xylenes, Total	ug/L	0.5	ND

Mr. Bill Howell  
 Page 6

January 05, 1994  
 PACE Project Number: 431229501

Client Reference: BP Station # 11266/CP# 10-050-01-003

PACE Sample Number: 70 0222060  
 Date Collected: 12/28/93  
 Date Received: 12/29/93  
 Client Sample ID: MW-6

<u>Parameter</u>	<u>Units</u>	<u>MDL</u>	<u>DATE ANALYZED</u>
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ORGANIC ANALYSIS

PURGEABLE FUELS AND AROMATICS

TOTAL FUEL HYDROCARBONS, (LIGHT):			-	12/30/93
Purgeable Fuels, as Gasoline (EPA 8015M)	ug/L	50	ND	12/30/93
PURGEABLE AROMATICS (BTXE BY EPA 8020M):			-	12/30/93
Benzene	ug/L	0.5	ND	12/30/93
Toluene	ug/L	0.5	ND	12/30/93
Ethylbenzene	ug/L	0.5	ND	12/30/93
Xylenes, Total	ug/L	0.5	ND	12/30/93

Mr. Bill Howell  
 Page 7

January 05, 1994  
 PACE Project Number: 431229501

Client Reference: BP Station # 11266/CP# 10-050-01-003

PACE Sample Number:  
 Date Collected:  
 Date Received:  
 Client Sample ID:  
 Parameter

70 0222079  
 12/28/93  
 12/29/93  
 RW-1

Units                      MDL                      DATE ANALYZED

ORGANIC ANALYSIS

PURGEABLE FUELS AND AROMATICS

TOTAL FUEL HYDROCARBONS, (LIGHT):			-	12/30/93
Purgeable Fuels, as Gasoline (EPA 8015M)	ug/L	50	3500	12/30/93
PURGEABLE AROMATICS (BTXE BY EPA 8020M):			-	12/30/93
Benzene	ug/L	0.5	300	12/30/93
Toluene	ug/L	0.5	220	12/30/93
Ethylbenzene	ug/L	0.5	180	12/30/93
Xylenes, Total	ug/L	0.5	480	12/30/93

**REPORT OF LABORATORY ANALYSIS**

Mr. Bill Howell  
 Page 8

January 07, 1994  
 PACE Project Number: 431229501

Client Reference: BP Station # 11266/CP# 10-050-01-003

PACE Sample Number:  
 Date Collected:  
 Date Received:  
 Client Sample ID:  
 Parameter

70 0222087  
 12/28/93  
 12/29/93  
 QC-1

Units      MDL      \_\_\_\_\_ DATE ANALYZED

ORGANIC ANALYSIS

PURGEABLE FUELS AND AROMATICS

TOTAL FUEL HYDROCARBONS, (LIGHT):			-	12/30/93
Purgeable Fuels, as Gasoline (EPA 8015M)	ug/L	50	240	12/30/93
PURGEABLE AROMATICS (BTXE BY EPA 8020M):			-	12/30/93
Benzene	ug/L	0.5	ND	12/30/93
Toluene	ug/L	0.5	ND	12/30/93
Ethylbenzene	ug/L	0.5	ND	12/30/93
Xylenes, Total	ug/L	0.5	ND	12/30/93

Mr. Bill Howell  
 Page 9

January 05, 1994  
 PACE Project Number: 431229501

Client Reference: BP Station # 11266/CP# 10-050-01-003

PACE Sample Number: 70 0222095  
 Date Collected: 12/28/93  
 Date Received: 12/29/93  
 Client Sample ID: QC-2

<u>Parameter</u>	<u>Units</u>	<u>MDL</u>	<u>DATE ANALYZED</u>
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ORGANIC ANALYSIS

PURGEABLE FUELS AND AROMATICS

TOTAL FUEL HYDROCARBONS, (LIGHT):			-	12/30/93
Purgeable Fuels, as Gasoline (EPA 8015M)	ug/L	50	ND	12/30/93
PURGEABLE AROMATICS (BTXE BY EPA 8020M):			-	12/30/93
Benzene	ug/L	0.5	ND	12/30/93
Toluene	ug/L	0.5	ND	12/30/93
Ethylbenzene	ug/L	0.5	ND	12/30/93
Xylenes, Total	ug/L	0.5	ND	12/30/93

These data have been reviewed and are approved for release.



for Darrell C. Cain  
 Regional Director

Mr. Bill Howell  
Page 10

FOOTNOTES  
for pages 1 through 9

January 05, 1994  
PACE Project Number: 431229501

Client Reference: BP Station # 11266/CP# 10-050-01-003

MDL Method Detection Limit  
ND Not detected at or above the MDL.



Mr. Bill Howell  
 Page 11

QUALITY CONTROL DATA

January 05, 1994  
 PACE Project Number: 431229501

Client Reference: BP Station # 11266/CP# 10-050-01-003

PURGEABLE FUELS AND AROMATICS

Batch: 70 27402

Samples: 70 0222010, 70 0222028, 70 0222036, 70 0222044, 70 0222060  
 70 0222079, 70 0222087, 70 0222095

METHOD BLANK:

Parameter	Units	MDL	Method Blank
TOTAL FUEL HYDROCARBONS, (LIGHT):			-
Purgeable Fuels, as Gasoline (EPA 8015M)	ug/L	50	ND
PURGEABLE AROMATICS (BTXE BY EPA 8020M)			-
Benzene	ug/L	0.5	ND
Toluene	ug/L	0.5	ND
Ethylbenzene	ug/L	0.5	ND
Xylenes, Total	ug/L	0.5	ND

LABORATORY CONTROL SAMPLE AND CONTROL SAMPLE DUPLICATE:

Parameter	Units	MDL	Reference Value	Recv	Dupl Recv	RPD
Purgeable Fuels, as Gasoline (EPA 8015M)	ug/L	50	1000	97%	91%	6%
Benzene	ug/L	0.5	40	101%	99%	2%
Toluene	ug/L	0.5	40	99%	94%	5%
Ethylbenzene	ug/L	0.5	40	96%	86%	10%
Xylenes, Total	ug/L	0.5	120	102%	92%	10%

Mr. Bill Howell  
 Page 12

QUALITY CONTROL DATA

January 05, 1994  
 PACE Project Number: 431229501

Client Reference: BP Station # 11266/CP# 10-050-01-003

PURGEABLE FUELS AND AROMATICS

Batch: 70 27444  
 Samples: 70 0222052

METHOD BLANK:

Parameter	Units	MDL	Method Blank
TOTAL FUEL HYDROCARBONS, (LIGHT):			-
Purgeable Fuels, as Gasoline (EPA 8015M)	ug/L	50	ND
PURGEABLE AROMATICS (BTXE BY EPA 8020M)			-
Benzene	ug/L	0.5	ND
Toluene	ug/L	0.5	ND
Ethylbenzene	ug/L	0.5	ND
Xylenes, Total	ug/L	0.5	ND

LABORATORY CONTROL SAMPLE AND CONTROL SAMPLE DUPLICATE:

Parameter	Units	MDL	Reference Value	Recv	Dupl Recv	RPD
Purgeable Fuels, as Gasoline (EPA 8015M)	ug/L	50	1000	98%	85%	14%
Benzene	ug/L	0.5	100	88%	91%	3%
Toluene	ug/L	0.5	100	90%	93%	3%
Ethylbenzene	ug/L	0.5	100	87%	87%	0%
Xylenes, Total	ug/L	0.5	300	90%	91%	1%

Mr. Bill Howell  
Page 13

FOOTNOTES  
for pages 11 through 12

January 05, 1994  
PACE Project Number: 431229501

Client Reference: BP Station # 11266/CP# 10-050-01-003

MDL      Method Detection Limit  
ND        Not detected at or above the MDL.  
RPD      Relative Percent Difference



# CHAIN OF CUSTODY

No. 051370

431229.501

Page 1 of 1

CONSULTANT'S NAME <b>Alisto Engineering</b>		ADDRESS <b>1777 OAKLAND Blvd Suite 200 Walnut Creek CA.</b>		CITY	STATE	ZIP CODE
BP SITE NUMBER <b>11206</b>	BP CORNER ADDRESS/CITY <b>Park St. Alameda</b>			CONSULTANT PROJECT NUMBER <b>10-050-01-003</b>		
CONSULTANT PROJECT MANAGER <b>Bill Howell</b>		PHONE NUMBER <b>510 295 1650</b>	FAX NUMBER <b>510 295 1823</b>		CONSULTANT CONTRACT NUMBER	
BP CONTACT <b>Scott Hosten</b>	BP ADDRESS <b>16400 South Center</b>		PHONE NUMBER <b>206 394 5243</b>	FAX NO. <b>206 394 5280</b>		
LAB CONTACT <b>Jim Oyes</b>	LABORATORY ADDRESS <b>11 Digital Drive, Novato CA.</b>		PHONE NUMBER	FAX NO.		
SAMPLED BY (Please Print Name) <b>DAN Birch</b>		SAMPLED BY (Signature)		SHIPMENT DATE		SHIPMENT METHOD <b>Common</b>

TAT:  24 Hours  48 Hours  1 Week  Standard 2 Weeks

### ANALYSIS REQUIRED

SAMPLE DESCRIPTION	COLLECTION DATE	MATRIX SOIL/WATER	CONTAINERS		PRESERVATIVE	TPH											COMMENTS			
	COLLECTION TIME		NO.	TYPE (VOL.)	LAB SAMPLE #		GAS	TEXT												
	12-28-93	Water	3		HCL															
MW-1 1510	↓	↓	↓		↓	X														
MW-2 1444	↓	↓	↓		↓	X														
MW-3 1410	↓	↓	↓		↓	X														
MW-4 1236	↓	↓	↓		↓	X														
MW-5 1201	↓	↓	↓		↓	X														
MW-6 1350	↓	↓	↓		↓	X														
RW-1 1325	↓	↓	↓		↓	X														
QC-1 1450	↓	↓	↓		↓	X														
QC-2	↓	↓	↓		↓	X														

RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	ADDITIONAL COMMENTS
<i>Mary Reed</i>	12/24/93	1417	<i>Sherry Hoover Pace</i>	12/29/93	1417	
						10/4