BP OIL

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

60 days to set Qmp

May 26, 1994

Why are wells #5, #3 not being sampled. Why did conc. go up?

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 MAY 3, 1994** for the above referenced facility.

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

Respectfully,

Scott T. Hooton
Environmental Resources Management
Group Leader

STH:aa ERM11266

94 JUN -2 PM 2:10
ALCO HAZMAT

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

GROUNDWATER MONITORING AND SAMPLING REPORT

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

Project No. 10-050-03-004

Prepared for:

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

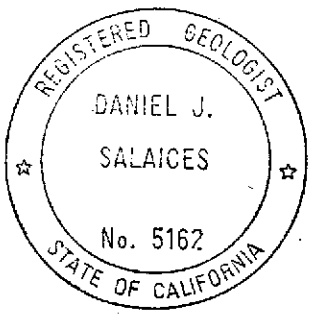
Prepared by:

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

May 3, 1994

William Howell
Project Manager

Daniel Salaices
Registered Geologist



GROUNDWATER MONITORING AND SAMPLING REPORT

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

Project No. 10-050-03-004

May 3, 1994

INTRODUCTION

This report presents the results and findings of the March 29, 1994 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)	DO (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-1	03/29/94	19.19	8.77	10.42	22000	990	560	970	2000	3100	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
MW-2	03/29/94	19.32	9.39	9.93	150	ND<0.5	ND<0.5	ND<0.5	ND<0.5	4900	PACE
QC-1 (c)	03/29/94	---	---	---	140	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	PACE

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)	DO (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-3	03/29/94	19.99	10.01	9.98	---	---	---	---	---	---	---
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
MW-4	03/29/94	20.17	9.42	10.75	---	---	---	---	---	---	---

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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)	DO (ppb)	LAB
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-5	03/29/94	19.41	8.50	10.91	---	---	---	---	---	---	---
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
MW-6	03/29/94	19.40	9.36	10.04	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	5000	PACE

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)	DO (ppb)	LAB
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
RW-1	03/29/94	19.27	8.93	10.34	12000	640	1700	450	2200	6300	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
QC-2 (d)	03/29/94	---	---	---	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
DO	Dissolved Oxygen
X	Total xylenes
ppb	Parts per billion
---	Not analyzed/available/applicable
ND	Not detected above reported detection limit
PACE	Pace, Inc.
ANA	Anametrix, Inc.

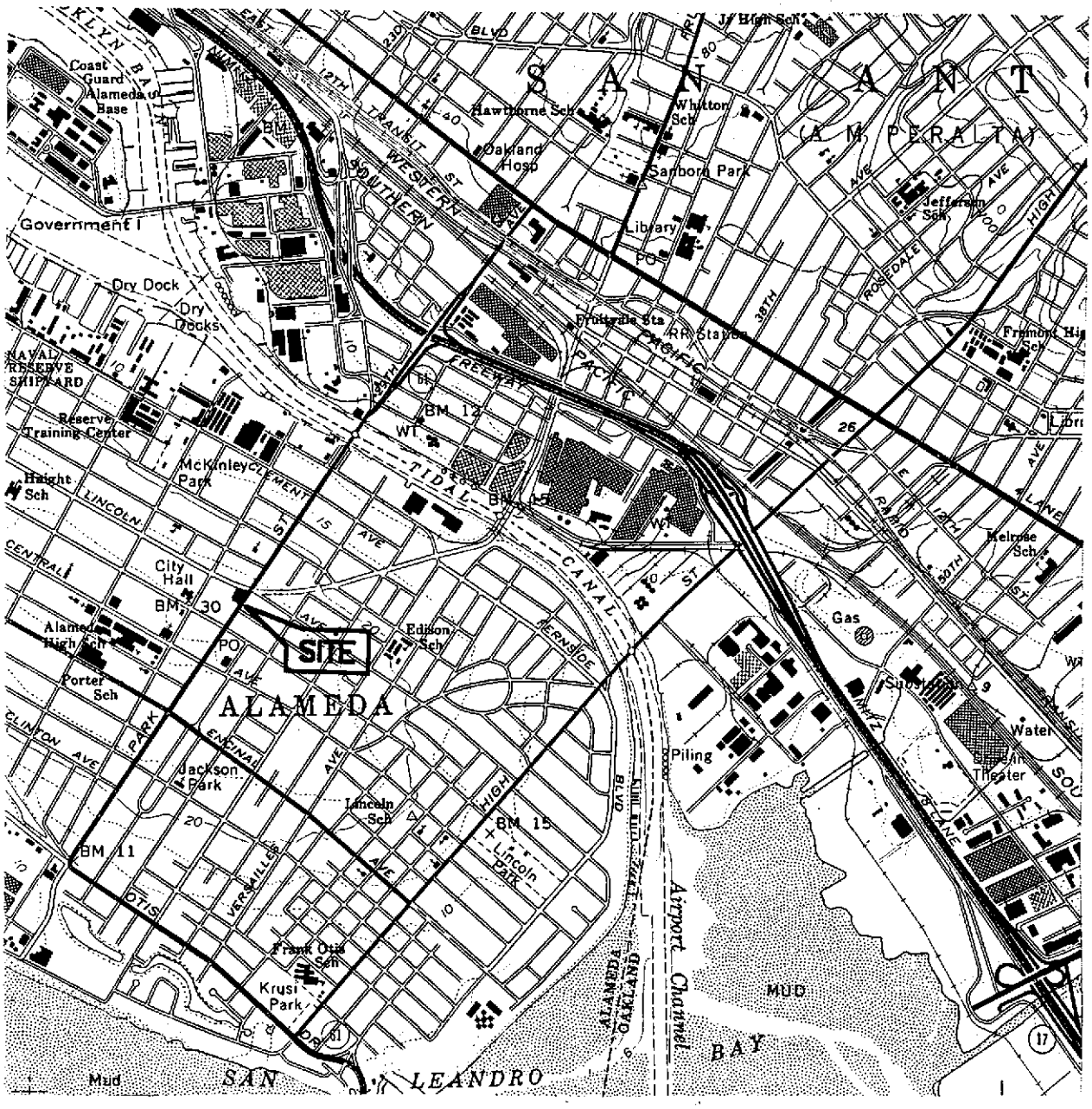
NOTES:

(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.



SOURCE:
USGS MAP, OAKLAND EAST QUADRANGLE, CALIFORNIA. 7.5 MINUTE SERIES. 1959. PHOTOREVISED 1980.

N

0 1000' 2000'

FIGURE 1

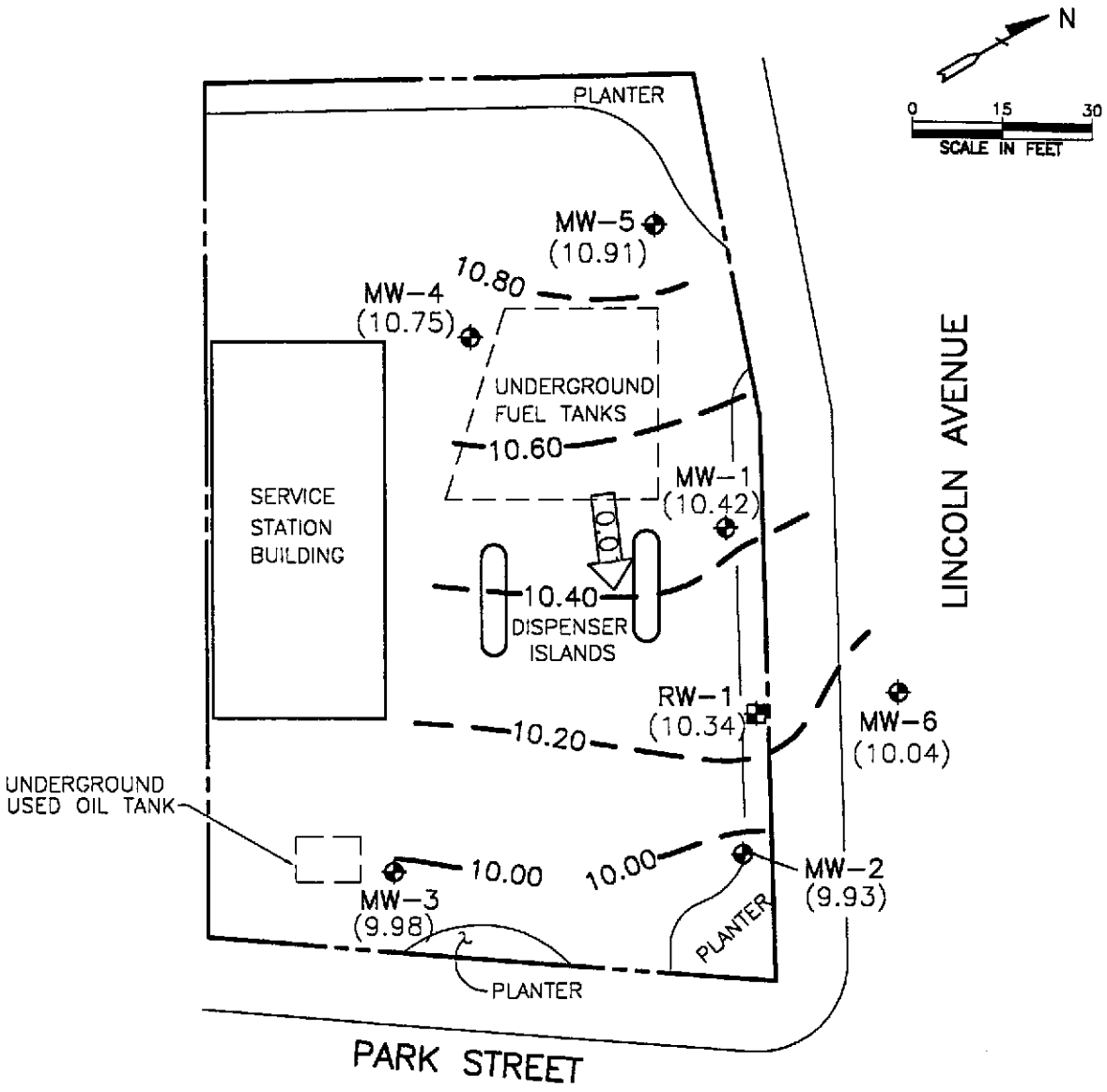
SITE VICINITY MAP

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

PROJECT NO. 10-050

ALISTO ENGINEERING GROUP
WALNUT CREEK, CALIFORNIA

100568---DWG 8-4-93 KH 1=1



LEGEND

- ⊕ GROUNDWATER MONITORING WELL
- ⊞ GROUNDWATER RECOVERY WELL
- (9.93) GROUNDWATER ELEVATION IN FEET ABOVE MEAN SEA LEVEL
- 10.00 GROUNDWATER ELEVATION CONTOUR IN FEET ABOVE MEAN SEA LEVEL (CONTOUR INTERVAL–0.20 FOOT)
- 0.01 CALCULATED GROUNDWATER GRADIENT DIRECTION AND MAGNITUDE IN FOOT PER FOOT

FIGURE 2

POTENTIOMETRIC GROUNDWATER ELEVATION CONTOUR MAP

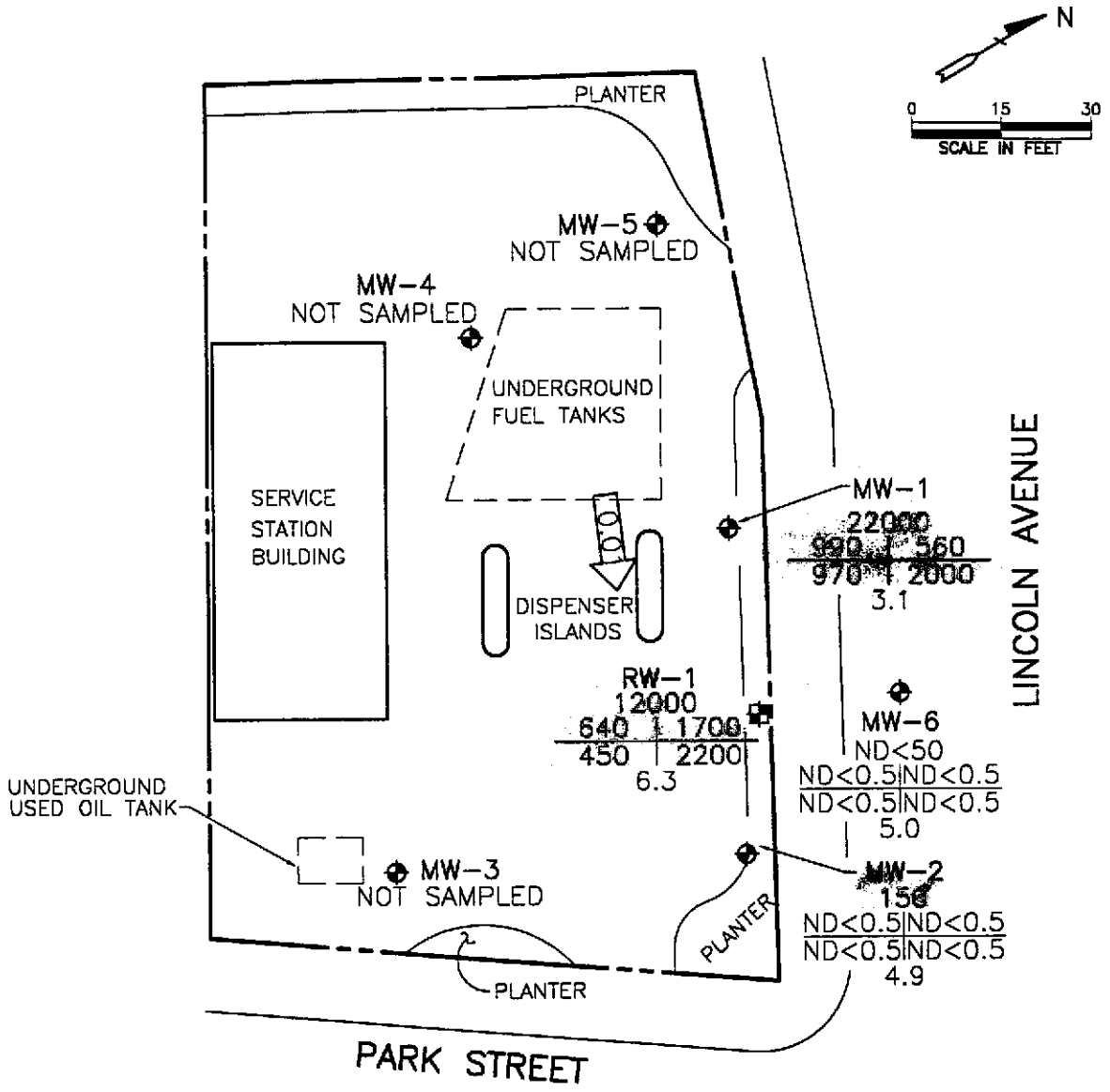
MARCH 29, 1994

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

PROJECT NO. 10–050

ALISTO ENGINEERING GROUP
WALNUT CREEK, CALIFORNIA

100501-LDWG 4-21-04 RKW 1=30



LEGEND

⊕	GROUNDWATER MONITORING WELL
⊞	GROUNDWATER RECOVERY WELL
TPH–G / B | T / E | X / DO	CONCENTRATION OF CONSTITUENTS IN PARTS PER BILLION, EXCEPT DISSOLVED OXYGEN WHICH IS IN PARTS PER MILLION
TPH–G	TOTAL PETROLEUM HYDROCARBONS AS GASOLINE
B	BENZENE
T	TOLUENE
E	ETHYLBENZENE
X	TOTAL XYLENES
DO	DISSOLVED OXYGEN
ND	NOT DETECTED ABOVE REPORTED DETECTION LIMIT
⟵ 0.01	CALCULATED GROUNDWATER GRADIENT DIRECTION AND MAGNITUDE IN FOOT PER FOOT

FIGURE 3

CONCENTRATIONS OF PETROLEUM HYDROCARBONS IN GROUNDWATER

MARCH 29, 1994

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

PROJECT NO. 10–050

ALISTO ENGINEERING GROUP
WALNUT CREEK, CALIFORNIA

10050E-1.DWG 3-3-94 RKW 1-30

APPENDIX A

WATER SAMPLING FIELD SURVEY FORMS

10-050-03-4

ALISTO ENGINEERING GROUP
GROUNDWATER MONITORING

Client: BP Oil
Alisto Project No: 10-050-03-004
Service Station No: 11266

Date: 3/29/94
Field Personnel: Dave C
Site Address: Alameda, CA

FIELD ACTIVITY:

✓ Groundwater Monitoring
✓ Groundwater Sampling
___ Well Development

QUALITY CONTROL SAMPLES:

MW-2 QC-1 Sample Duplicate (Well ID)
✓ QC-2 Trip Blank
___ QC-3 Rinsate Blank

	Well ID	Well Diam	Order Measured/ Sampled	Total Depth	Depth to Water	Depth to Product	Product Thick-ness	Comments
•	MW-1	2"	7	21.88	8.77			Hard backed casing
•	MW-2	↓	6	21.88	9.39			↓
*	MW-3		5	19.72	10.01			
*	MW-4		2	19.59	9.42			fine
*	MW-5		1	19.92	8.50			
•	MW-6	↓	4	24.24	9.36			
•	RW-1	6"	3	29.54	8.93			↓

Notes: ~~QC-1~~
* not sampled this quarter
QC-1 from MW-2
changed lock for system fencing See Pete for the keys (or Scott, Scott took keys to change lock)

FORM: FS2/121592

ALISTO ENGINEERING GROUP
Groundwater Development and Sampling Form

Client: BP Oil
Alisto Project No: [redacted]10-050-03-004
Service Station No: 11266

Date: 3/29/94
Field Personnel: Dave C
Address: Alameda, CA

Well ID: MW1 Field Activity: ___Well Development _√_Well Sampling ___Product Bailing

Casing Diameter:

___2 Inch (0.16 Gal/foot)
___3 Inch (0.37 Gal/foot)
___4 Inch (0.65 Gal/Foot)
___4.5 Inch (0.83 Gal/foot)
_√_6 Inch (1.47 Gal/foot)

Purge Method:

___Pump (dispos. Poly Tubing)
_√_Disposable Bailers
___Other
___1.66 PVC Standard Bailer
___3.50 PVC Standard Bailer

Well Data:

_9_ Depth to Product
_9_ Product Thickness
8.93 ~~[redacted]~~ Depth to Water

Sampling Method:

_√_ Disposable Bailer
___Pump

Decontamination Method:

_√_ Triple Rinse (Liquinox)
___ Steam Cleaned

Calculated Purge Volume

29.54 (Total Depth of Well) - 8.93 (Depth to Water) = 20.61 ft (Water Column) X 1.47 Gal/Ft (Conversion Factor) = 30.30 Gal (Casing Vol) X 3 (Vols to Purge) = 90.90 (Total Volume)

Well Development/Sampling Parameters

Time	Temp °F	pH	Cond. (umhos /cm)	Purge Vol (Gal)	Comments/ Turbidity	Analysis Required	Container Type	Preserv.
	68.3	7.60	0.51	5	Clear Brown	TPH-G/BTEX	VOA	HCL
	67.1	7.17	0.42	15	↓	TPH-Diesel	Amber Liter	Solvent Rinsed
	67.0	6.97	0.42	20		EPA 601	VOA	
	67.6	6.88	0.44	30	↓	TOG 5520BF	Amber Liter	H_2SO_4
					Stable.			

DO2 begin → 4.8
6.3 end

FORM: FS3/121592

ALISTO ENGINEERING GROUP
Groundwater Development and Sampling Form

Client: BP Oil
Alisto Project No: 10-050-03-004
Service Station No: 11206

Date: 3/29/94
Field Personnel: Dave
Address: Alameda, CA

Well ID: MW6 Field Activity: ___Well Development ✓Well Sampling ___Product Bailing

Casing Diameter:

✓ 2 Inch (0.16 Gal/foot)
___3 Inch (0.37 Gal/foot)
___4 Inch (0.65 Gal/Foot)
___4.5 Inch (0.83 Gal/foot)
___6 Inch (1.47 Gal/foot)

Purge Method:

___Pump (dispos. Poly Tubing)
✓ Disposable Bailers
___Other
___1.66 PVC Standard Bailer
___3.50 PVC Standard Bailer

9.36

Well Data:

Depth to Product
Product Thickness
Depth to Water

Sampling Method:

✓ Disposable Bailer
___Pump

Decontamination Method:

✓ Triple Rinse (Liquinox)
___ Steam Cleaned

Calculated Purge Volume

24.24 (Total Depth of Well) - 9.310 (Depth to Water) = 14.88 ft (Water Column) X .16 (Conversion Factor) Gal/Ft = 2.38 Gal (Casing Vol) X 3 (Vols to Purge) = 7.14 (Total Volume)

Well Development/Sampling Parameters

Time	Temp °F	pH	Cond. (umhos /cm)	Purge Vol (Gal)	Comments/ Turbidity	Analysis Required	Container Type	Preserv.
	66.4	6.59	0.49	2	brown clear	TPH-G/BTEX	VOA	HCL
	65.8	6.51	0.49	4		TPH-Diesel	Amber Liter	Solvent Rinsed
	65.1	6.47	0.49	6		EPA 601	VOA	
	65.4	6.37	0.49	8		TOG 5520BF	Amber Liter	H_2SO_4

- Next time might want cones for Traffic control

DO2 begin → 4.8
5.0 and

FORM: FS3/121592

ALISTO ENGINEERING GROUP
Groundwater Development and Sampling Form

Client: BP Oil
Alisto Project No: 10-050-03-004
Service Station No: 11266

Date: 3/29/94
Field Personnel: Dave C
Address: Alameda, CA

Well ID: MW2 Field Activity: ___Well Development ✓Well Sampling ___Product Bailing

Casing Diameter:

✓2 Inch (0.16 Gal/foot)
___3 Inch (0.37 Gal/foot)
___4 Inch (0.65 Gal/Foot)
___4.5 Inch (0.83 Gal/foot)
___6 Inch (1.47 Gal/foot)

Purge Method:

~~✓~~ Pump (dispos. Poly Tubing)
✓Disposable Bailers
___Other
___1.66 PVC Standard Bailer
___3.50 PVC Standard Bailer

Well Data:

Depth to Product
Product Thickness
Depth to Water 9.39

* QC-1

Sampling Method:

✓Disposable Bailer
___Pump

Decontamination Method:

✓ Triple Rinse (Liquinox)
___ Steam Cleaned

Calculated Purge Volume

21.88 - 9.39 = 12.49 ft X .16 Gal/Ft = 2 Gal X 3 = 6

Total Depth of Well | Depth to Water | Water Column | Conversion Factor | Casing Vol | Vols to Purge | Total Volume

Well Development/Sampling Parameters

Time	Temp °F	pH	Cond. (umhos /cm)	Purge Vol (Gal)	Comments/ Turbidity	Analysis Required	Container Type	Preserv.
	67.6	6.63	0.55	1	Brownish	TPH-G/BTEX	VOA	HCL
	66.5	6.59	0.56	2		TPH-Diesel	Amber Liter	Solvent Rinsed
	66.5	6.53	0.54	4		EPA 601	VOA	
	66.8	6.50	0.55	6		TOG 5520BF	Amber Liter	H_2SO_4
	66.7	6.60	0.54	6.5	✓			

* QC-1 from this well

FORM: FS3/121592

DO2 start 4.5
4.9

ALISTO ENGINEERING GROUP
Groundwater Development and Sampling Form

Client: BP Oil
Alisto Project No: 10-050-03-004
Service Station No: 11266

Date: 3/29/94
Field Personnel: Dave C
Address: Alameda CA

Well ID: MW-1 Field Activity: ___Well Development ✓Well Sampling ___Product Bailing

Casing Diameter:

✓2 Inch (0.16 Gal/foot)
___3 Inch (0.37 Gal/foot)
___4 Inch (0.65 Gal/Foot)
___4.5 Inch (0.83 Gal/foot)
___6 Inch (1.47 Gal/foot)

Purge Method:

✓Pump (dispos. Poly Tubing)
✓Disposable Bailers
___Other
___1.66 PVC Standard Bailer
___3.50 PVC Standard Bailer

Well Data:

P Depth to Product
P Product Thickness
7.77 Depth to Water

Sampling Method:

✓Disposable Bailer
___Pump

Decontamination Method:

✓ Triple Rinse (Liquinox)
___ Steam Cleaned

Calculated Purge Volume

21.88 (Total Depth of Well) - 8.77 (Depth to Water) = 13.11 ft (Water Column) X .16 (Conversion Factor) Gal/Ft = 2.10 (Casing Vol) Gal X 3 (Vols to Purge) = 6.3 (Total Volume)

Well Development/Sampling Parameters

Time	Temp °F	pH	Cond. (umhos /cm)	Purge Vol (Gal)	Comments/ Turbidity	Analysis Required	Container Type	Preserv.
	67.2	6.54	0.54	2	grey (Dark)	TPH-G/BTEX	VOA	HCL
	66.2	6.40	0.53	4	↓	TPH-Diesel	Amber Liter	Solvent Rinsed
	65.2	6.43	0.52	6		EPA 601	VOA	
	65.3	6.41	0.52	6.5		TOG 5520BF	Amber Liter	H_2SO_4

FORM: FS3/121592

DO2 Begin = 3.1
End = 3.1

APPENDIX B

LABORATORY REPORT AND CHAIN OF CUSTODY RECORD

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REPORT OF LABORATORY ANALYSIS

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

April 06, 1994
PACE Project Number: 440330519

Attn: Mr. Bill Howell

Client Reference: BP Station # 11266/CP#10-050-03-004

PACE Sample Number:			70 0295734	
Date Collected:			03/29/94	
Date Received:			03/30/94	
Client Sample ID:			RW-1	
Parameter	Units	MDL		DATE ANALYZED
ORGANIC ANALYSIS				
PURGEABLE FUELS AND AROMATICS				
TOTAL FUEL HYDROCARBONS, (LIGHT):			-	04/04/94
Purgeable Fuels, as Gasoline (EPA 8015M)	ug/L	500	12000	04/04/94
PURGEABLE AROMATICS (BTXE BY EPA 8020M):			-	04/04/94
Benzene	ug/L	5.0	640	04/04/94
Toluene	ug/L	5.0	1700	04/04/94
Ethylbenzene	ug/L	5.0	450	04/04/94
Xylenes, Total	ug/L	5.0	2200	04/04/94

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REPORT OF LABORATORY ANALYSIS

Mr. Bill Howell
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April 06, 1994
PACE Project Number: 440330519

Client Reference: BP Station # 11266/CP#10-050-03-004

PACE Sample Number:			70 0295742	
Date Collected:			03/29/94	
Date Received:			03/30/94	
Client Sample ID:			MW-6	
Parameter	Units	MDL		DATE ANALYZED
ORGANIC ANALYSIS				
PURGEABLE FUELS AND AROMATICS				
TOTAL FUEL HYDROCARBONS, (LIGHT):			-	04/04/94
Purgeable Fuels, as Gasoline (EPA 8015M)	ug/L	50	ND	04/04/94
PURGEABLE AROMATICS (BTXE BY EPA 8020M):			-	04/04/94
Benzene	ug/L	0.5	ND	04/04/94
Toluene	ug/L	0.5	ND	04/04/94
Ethylbenzene	ug/L	0.5	ND	04/04/94
Xylenes, Total	ug/L	0.5	ND	04/04/94

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April 06, 1994
PACE Project Number: 440330519

Client Reference: BP Station # 11266/CP#10-050-03-004

PACE Sample Number:			70 0295750	
Date Collected:			03/29/94	
Date Received:			03/30/94	
Client Sample ID:			MW-2	
Parameter	Units	MDL		DATE ANALYZED
ORGANIC ANALYSIS				
PURGEABLE FUELS AND AROMATICS				
TOTAL FUEL HYDROCARBONS, (LIGHT):			-	04/04/94
Purgeable Fuels, as Gasoline (EPA 8015M)	ug/L	50	150	04/04/94
PURGEABLE AROMATICS (BTXE BY EPA 8020M):			-	04/04/94
Benzene	ug/L	0.5	ND	04/04/94
Toluene	ug/L	0.5	ND	04/04/94
Ethylbenzene	ug/L	0.5	ND	04/04/94
Xylenes, Total	ug/L	0.5	ND	04/04/94

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REPORT OF LABORATORY ANALYSIS

Mr. Bill Howell
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April 06, 1994
PACE Project Number: 440330519

Client Reference: BP Station # 11266/CP#10-050-03-004

PACE Sample Number:			70 0295769	
Date Collected:			03/29/94	
Date Received:			03/30/94	
Client Sample ID:			MW-1	
Parameter	Units	MDL		DATE ANALYZED
ORGANIC ANALYSIS				
PURGEABLE FUELS AND AROMATICS				
TOTAL FUEL HYDROCARBONS, (LIGHT):			-	04/04/94
Purgeable Fuels, as Gasoline (EPA 8015M)	ug/L	1200	22000	04/04/94
PURGEABLE AROMATICS (BTXE BY EPA 8020M):			-	04/04/94
Benzene	ug/L	12	990	04/04/94
Toluene	ug/L	12	560	04/04/94
Ethylbenzene	ug/L	12	970	04/04/94
Xylenes, Total	ug/L	12	2000	04/04/94

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REPORT OF LABORATORY ANALYSIS

April 06, 1994
PACE Project Number: 440330519

Client Reference: BP Station # 11266/CP#10-050-03-004

PACE Sample Number:			70 0295777	
Date Collected:			03/29/94	
Date Received:			03/30/94	
Client Sample ID:			QC-1	
Parameter	Units	MDL		DATE ANALYZED
ORGANIC ANALYSIS				
PURGEABLE FUELS AND AROMATICS				
TOTAL FUEL HYDROCARBONS, (LIGHT):			-	04/04/94
Purgeable Fuels, as Gasoline (EPA 8015M)	ug/L	50	140	04/04/94
PURGEABLE AROMATICS (BTXE BY EPA 8020M):			-	04/04/94
Benzene	ug/L	0.5	ND	04/04/94
Toluene	ug/L	0.5	ND	04/04/94
Ethylbenzene	ug/L	0.5	ND	04/04/94
Xylenes, Total	ug/L	0.5	ND	04/04/94

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REPORT OF LABORATORY ANALYSIS

Mr. Bill Howell
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April 06, 1994
PACE Project Number: 440330519

Client Reference: BP Station # 11266/CP#10-050-03-004

PACE Sample Number:			70 0295785	
Date Collected:			03/29/94	
Date Received:			03/30/94	
Client Sample ID:			QC-2	
Parameter	Units	MDL		DATE ANALYZED
ORGANIC ANALYSIS				
PURGEABLE FUELS AND AROMATICS				
TOTAL FUEL HYDROCARBONS, (LIGHT):			-	04/04/94
Purgeable Fuels, as Gasoline (EPA 8015M)	ug/L	50	ND	04/04/94
PURGEABLE AROMATICS (BTXE BY EPA 8020M):			-	04/04/94
Benzene	ug/L	0.5	ND	04/04/94
Toluene	ug/L	0.5	ND	04/04/94
Ethylbenzene	ug/L	0.5	ND	04/04/94
Xylenes, Total	ug/L	0.5	ND	04/04/94

These data have been reviewed and are approved for release.

Darrell C. Cain
Regional Director

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Novato, CA 94949
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Mr. Bill Howell
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FOOTNOTES
for pages 1 through 6

April 06, 1994
PACE Project Number: 440330519

Client Reference: BP Station # 11266/CP#10-050-03-004

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

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

April 06, 1994
PACE Project Number: 440330519

Client Reference: BP Station # 11266/CP#10-050-03-004

PURGEABLE FUELS AND AROMATICS
Batch: 70 29471
Samples: 70 0295734, 70 0295742, 70 0295750, 70 0295769, 70 0295777
70 0295785

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

SPIKE AND SPIKE DUPLICATE:

Parameter	Units	MDL	700295777 QC-1	Spike	Spike Recv	Spike Dupl Recv	RPD
Purgeable Fuels, as Gasoline (EPA 8015M	ug/L	50	140	1000	77%	83%	8%

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	89%	83%	7%

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