



BP OIL

0.3

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

October 2, 1995

Ms Eva Chu  
Alameda County Health Care Services Agency  
1131 Harbour Bay Parkway Room 250  
Oakland, CA 94502-6577

> 6 mo. to get QWR ND  
check [ ] in B-6, B-7 at  
Chevron site (1802 Webster)  
and check if utility/sewer/storm  
drain trenches intercept contain  
but suspect utility trench intercept  
at Chevron.

ENVIRONMENTAL  
PROTECTION  
55 OCT -5 PM 1:45

RE: BP OIL FACILITY #11104  
1716 Webster Street  
Alameda, CA

Dear Ms Chu:

Attached please find our **GROUNDWATER MONITORING AND SAMPLING REPORT DATED June 28, 1995** for the above referenced facility. Plans for the upcoming quarter include the solicitation of competitive bids to complete the engineering design and permitting of a soil and groundwater remediation system.

If you should have any questions regarding this site, I may be reached at (206) 251-0689.

Respectfully,

Scott T. Hooton  
Environmental Remediation Management

STH:mu msword\ERM11104

cc: Mr. Eddy So, CRWQCB, San Francisco Bay Region, 2101 Webster Street, Suite 500,  
Oakland, CA 94612

Mr. Fran Marconi, Hydro Environmental Technologies, 2363 Mariner Square Drive, Suite  
243, Alameda, California 94501

Mr. Larry Silva, TOSCO Northwest Co., 601 Union Street, Suite 2500, Seattle, WA 98101

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

Site File

GROUNDWATER MONITORING AND SAMPLING REPORT

BP Oil Company Service Station No. 11104  
1716 Webster Street  
Alameda, California

Project No. 10-155-03-004

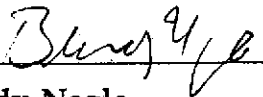
Prepared for:

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

Prepared by:

Alisto Engineering Group  
1575 Treat Boulevard, Suite 201  
Walnut Creek, California

June 28, 1995



Brady Nagle  
Project Manager



Al Sevilla, P.E.  
Principal



ENVIRONMENTAL  
PROTECTION

91:1:10 9-100 36  
09 OCT -5 PM 1:46

# GROUNDWATER MONITORING AND SAMPLING REPORT

BP Oil Company Service Station No. 11104  
1716 Webster Street  
Alameda, California

Project No. 10-155-03-004

June 28, 1995

## INTRODUCTION

This report presents the results and findings of the March 31, 1995 groundwater sampling and May 1, 1995 groundwater monitoring conducted by Alisto Engineering Group at BP Oil Company Service Station No. 11104, 1716 Webster 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. The survey data and groundwater elevation measurements collected to date are presented in Table 1.

Depths to groundwater for the Chevron service station 9-0290, 1802 Webster Street, are present in Table 2.

Before sample collection, each well was purged of 3 casing volumes, while recording field readings of pH, temperature, electrical conductivity, and dissolved oxygen. 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. 11104  
 1716 WEBSTER STREET, ALAMEDA, CALIFORNIA

ALISTO PROJECT NO. 10-155

WELL ID	DATE OF SAMPLING/ MONITORING	CASING ELEVATION (a) (Feet)	DEPTH TO WATER (Feet)	GROUNDWATER ELEVATION (b) (Feet)	TPH-G (ug/L)	B (ug/L)	T (ug/L)	E (ug/L)	X (ug/L)	DO (ppm)	LAB
MW-1	07/21/92	11.98	5.91	6.07	34000	7000	1700	2500	8900	---	---
MW-1	10/20/92	11.98	6.66	5.32	---	---	---	---	---	---	---
MW-1	03/05/93	11.98	4.56	7.42	---	---	---	---	---	---	---
MW-1	04/01/93	11.98	4.57	7.41	---	---	---	---	---	---	---
MW-1	07/09/93	11.98	5.25	6.73	77000	15000	1400	2100	7400	---	PACE
QC-1 (c)	07/09/93	11.98	---	---	79000	16000	1500	2200	7700	---	PACE
MW-1	10/08/93	11.98	6.01	5.97	42000	7100	270	2700	4700	---	PACE
MW-1	01/06/94	11.98	6.24	5.74	45000	12000	4300	3000	8700	---	PACE
MW-1	04/26/94	11.98	5.26	6.72	39000	6500	500	1800	1200	6.3	PACE
MW-1	07/25/94	11.98	5.60	6.38	38000	6300	240	1500	1100	1.7	PACE
MW-1	10/13/94	11.98	6.15	5.83	25000	6300	130	1300	830	2.3	PACE
QC-1 (c)	10/13/94	11.98	---	---	25000	7300	120	1200	740	---	PACE
MW-1	01/17/95	11.98	4.19	7.79	7800	3100	1100	460	850	7.9	ATI
QC-1 (c)	01/17/95	11.98	---	---	8400	3100	1200	470	1000	---	ATI
MW-1	03/31/95	11.98	4.48	7.50	37000	6700	6900	1200	4500	6.4	ATI
QC-1 (c)	03/31/95	11.98	---	---	40000	6900	7300	1300	5000	---	ATI
MW-1	05/01/95	11.98	4.39	7.59	---	---	---	---	---	---	---
MW-2	07/21/92	12.98	6.44	6.54	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---
MW-2	10/20/92	12.98	7.39	5.59	---	---	---	---	---	---	---
MW-2	03/05/93	12.98	4.91	8.07	---	---	---	---	---	---	---
MW-2	04/01/93	12.98	4.92	8.06	---	---	---	---	---	---	---
MW-2	07/09/93	12.98	5.60	7.38	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	PACE
MW-2	10/08/93	12.98	6.50	6.48	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	PACE
QC-1 (c)	10/08/93	12.98	---	---	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	PACE
MW-2	01/06/94	12.98	6.25	6.73	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	PACE
MW-2	04/26/94	12.98	5.73	7.25	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	7.5	PACE
MW-2	07/25/94	12.98	6.07	6.91	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	2.4	PACE
MW-2	10/13/94	12.98	6.80	6.18	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	2.4	PACE
MW-2	01/17/95	12.98	5.10	7.88	---	---	---	---	---	---	---
MW-2	03/31/95	12.98	4.69	8.29	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<1.0	7.3	ATI
MW-2	05/01/95	12.98	5.23	7.75	---	---	---	---	---	---	---
MW-3 (d)	07/21/92	13.38	7.07	6.31	ND<50	0.95	ND<0.5	ND<0.5	ND<0.5	---	---
MW-3	10/20/92	13.38	8.06	5.32	---	---	---	---	---	---	---
MW-3	03/05/93	13.38	5.16	8.22	---	---	---	---	---	---	---
MW-3	04/01/93	13.38	5.25	8.13	---	---	---	---	---	---	---
MW-3	07/09/93	13.38	5.80	7.58	ND<50	0.6	ND<0.5	ND<0.5	ND<0.5	---	PACE
MW-3	10/08/93	13.38	7.17	6.21	ND<50	0.6	ND<0.5	ND<0.5	ND<0.5	---	PACE
MW-3	01/06/94	13.38	6.94	6.44	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	PACE
MW-3	04/26/94	13.38	6.18	7.20	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	3.1	PACE
MW-3	07/25/94	13.38	6.67	6.71	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	2.2	PACE
MW-3	10/13/94	13.38	7.43	5.95	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	2.1	PACE
MW-3	01/17/95	13.38	5.07	8.31	---	---	---	---	---	---	---
MW-3	03/31/95	13.38	4.03	9.35	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<1.0	6.6	ATI
MW-3	05/01/95	13.38	4.94	8.44	---	---	---	---	---	---	---
MW-4	03/05/93	11.80	4.81	6.99	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---
MW-4	04/01/93	11.80	4.80	7.00	---	---	---	---	---	---	---
MW-4	07/09/93	11.80	5.54	6.28	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	PACE
MW-4	10/08/93	11.80	6.28	5.52	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	PACE
MW-4	01/06/94	11.80	6.82	5.98	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	PACE
MW-4	04/26/94	11.80	5.50	6.30	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	7.4	PACE
MW-4	07/25/94	11.80	5.83	5.97	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	7.2	PACE
MW-4	10/13/94	11.80	6.26	5.54	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	6.7	PACE
MW-4	01/17/95	11.80	4.19	7.81	---	---	---	---	---	---	---
MW-4	03/31/95	11.80	3.96	7.84	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<1.0	7.1	ATI
MW-4	05/01/95	11.80	4.48	7.31	---	---	---	---	---	---	---

TABLE 1 - SUMMARY OF RESULTS OF GROUNDWATER SAMPLING  
 BP OIL COMPANY SERVICE STATION NO. 11104  
 1716 WEBSTER STREET, ALAMEDA, CALIFORNIA

ALISTO PROJECT NO. 10-155

WELL ID	DATE OF SAMPLING/ MONITORING	CASING ELEVATION (a) (Feet)	DEPTH TO WATER (Feet)	GROUNDWATER ELEVATION (b) (Feet)	TPH-G (ug/L)	B (ug/L)	T (ug/L)	E (ug/L)	X (ug/L)	DO (ppm)	LAB
MW-5	04/01/93	11.62	4.77	6.85	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---
MW-5	07/09/93	11.62	5.40	6.22	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	PACE
MW-5	10/08/93	11.82	5.87	5.75	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	PACE
MW-5	01/06/94	11.82	5.75	5.87	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	PACE
MW-5	04/26/94	11.82	5.49	6.13	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	7.1	PACE
MW-5	07/25/94	11.62	5.69	5.93	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	6.6	PACE
MW-5	10/13/94	11.62	6.03	5.59	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	3.0	PACE
MW-5	01/17/95	11.62	4.74	6.88	---	---	---	---	---	---	---
MW-5	03/31/95	11.62	4.58	7.04	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<1.0	7.1	ATI
MW-5	05/01/95	11.62	4.79	6.83	---	---	---	---	---	---	---
RW-1	01/06/94	11.84	5.69	6.25	23000	3800	210	840	2100	---	PACE
QC-1 (c)	01/06/94	---	---	---	24000	3700	210	830	2000	---	PACE
RW-1	04/26/94	11.84	5.21	6.63	24000	3500	120	800	1700	6.4	PACE
QC-1 (c)	04/26/94	---	---	---	22000	3300	110	700	1700	---	PACE
RW-1	07/25/94	11.84	5.52	6.32	31000	4800	290	1100	1700	5.5	PACE
QC-1 (c)	07/25/94	---	---	---	28000	4400	240	960	1400	---	PACE
RW-1	10/13/94	11.84	6.05	5.79	20000	4200	46	990	440	6.8	PACE
RW-1	01/17/95	11.84	4.02	7.82	9600	1500	65	300	2700	7.7	ATI
RW-1	03/31/95	11.84	3.81	8.03	16000	1500	780	370	2000	7.8	ATI
RW-1	05/01/95	11.84	4.21	7.63	---	---	---	---	---	---	---
QC-2 (e)	07/09/93	---	---	---	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	PACE
QC-2 (e)	10/08/93	---	---	---	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	PACE
QC-2 (e)	01/06/94	---	---	---	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	PACE
QC-2 (e)	04/26/94	---	---	---	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	PACE
QC-2 (e)	07/25/94	---	---	---	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	PACE
QC-2 (e)	10/13/94	---	---	---	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	PACE
QC-2 (e)	01/17/95	---	---	---	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<1	---	ATI
QC-2 (e)	03/31/95	---	---	---	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<1.0	---	ATI

ABBREVIATIONS:

TPH-G Total petroleum hydrocarbons as gasoline  
 B Benzene  
 T Toluene  
 E Ethylbenzene  
 X Total xylenes  
 DO Dissolved oxygen  
 ug/L Micrograms per liter  
 ppm Parts per million  
 --- Not applicable/available/analyzed/measured  
 ND Not detected above reported detection limit  
 PACE Pace, Inc.  
 ATI Analytical Technologies, Inc.

NOTES:

- (a) Top of casing elevations surveyed in reference to USGS benchmark (14.108 feet above mean sea level) at northwest corner of Webster Street and Pacific Avenue.
- (b) Groundwater elevations in feet above mean sea level.
- (c) Blind duplicate.
- (d) Sample also analyzed for cadmium, nickel, chromium, lead, and zinc. None were detected above the reported detection limit.
- (e) Travel blank.

EA010155-3-4

TABLE 2 - SUMMARY OF RESULTS OF GROUNDWATER MONITORING  
 CHEVRON STATION 9-0290  
 1802 WEBSTER STREET, ALAMEDA, CALIFORNIA

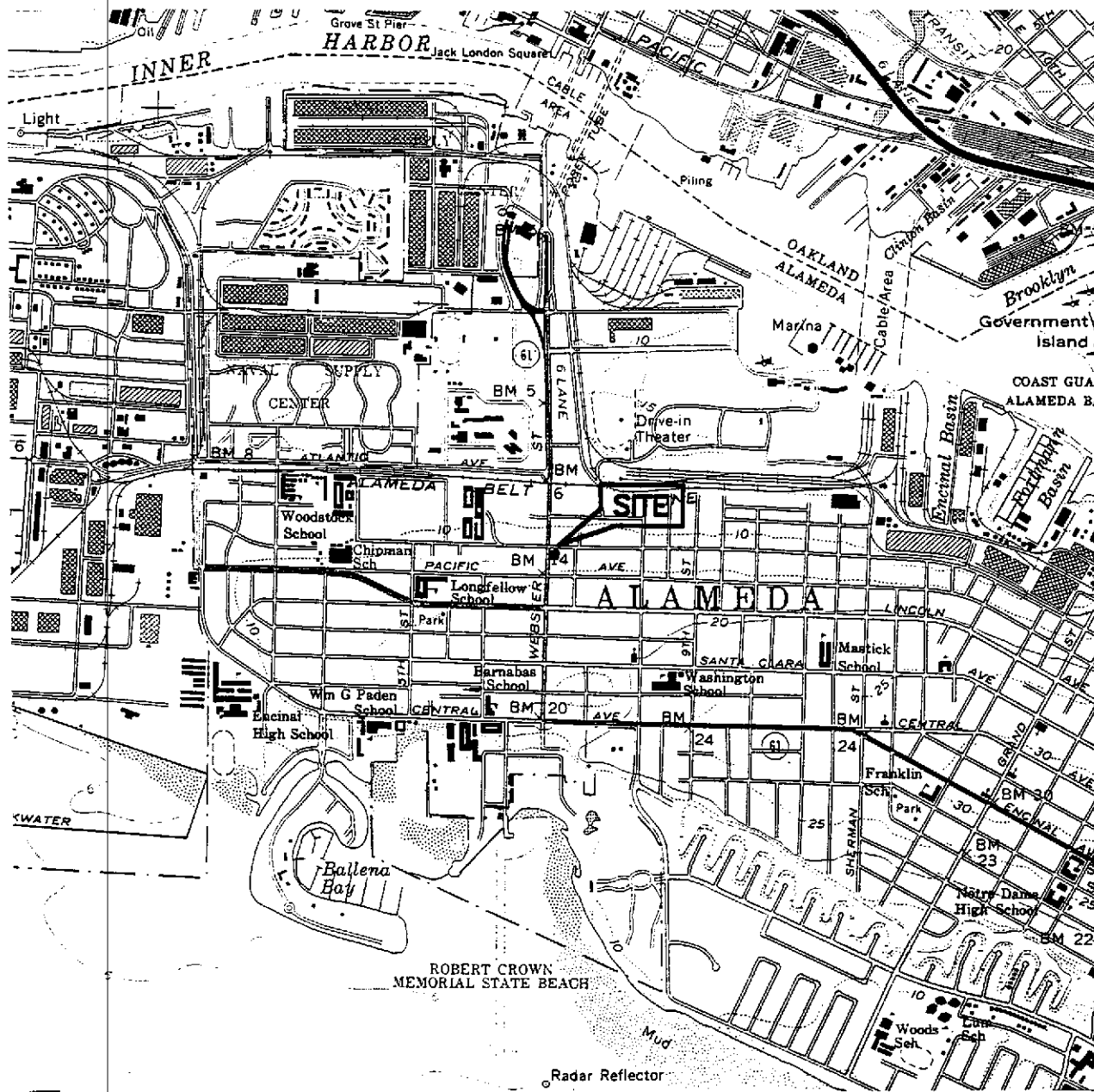
ALISTO PROJECT NO. 10-155

WELL ID	DATE OF MONITORING	CASING ELEVATION (a) (Feet)	DEPTH TO WATER (Feet)	PRODUCT THICKNESS (Feet)	GROUNDWATER ELEVATION (b) (Feet)
A-1	05/01/95	11.56	5.80	0.60	6.21
B-1	02/15/95	12.12	5.37	0.00	6.75
B-1	05/01/95	12.12	5.12	0.00	7.00
B-5	02/15/95	10.18	4.15	0.00	6.03
B-5	05/01/95	10.18	4.43	0.00	5.75
B-6	02/15/95	11.97	4.70	0.00	7.27
B-6	05/01/95	11.97	5.03	0.00	6.94
B-7	02/15/95	10.54	4.22	0.00	6.32
B-7	05/01/95	10.54	4.50	0.00	6.04
B-8	02/15/95	11.99	4.72	0.00	7.27
B-8	05/01/95	11.99	5.00	0.00	6.99
B-9	02/15/95	10.70	3.61	0.00	7.09
B-9	05/01/95	10.70	4.29	0.00	6.41

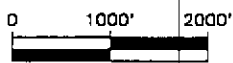
NOTES:

- (a) Top of casing elevations surveyed relative to 1929 NGVD. Measured in feet above mean sea level.
- (b) Groundwater elevations assuming a specific gravity of 0.75 for separate-phase product.

Source: Groundwater data collected by Blaine Tech Services, Inc.



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

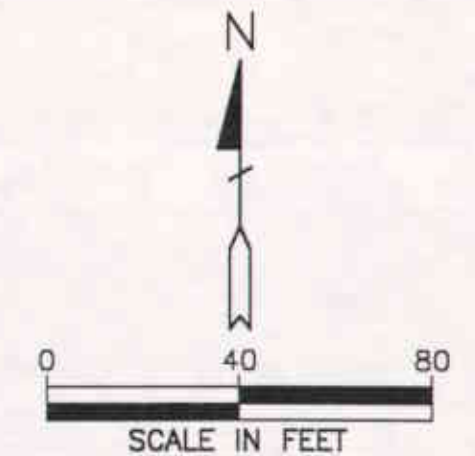
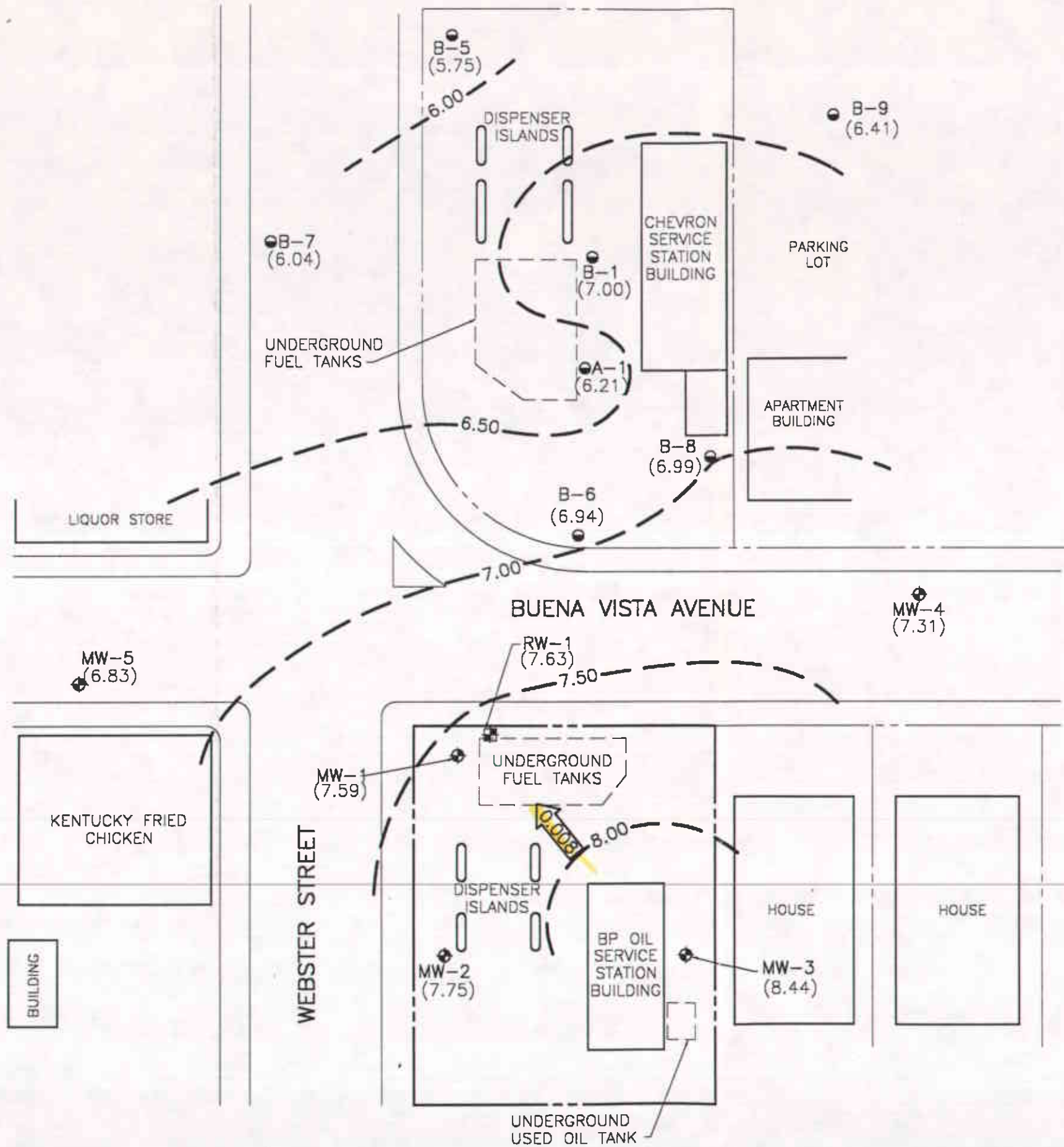


**FIGURE 1**  
**SITE VICINITY MAP**

BP OIL SERVICE STATION NO. 11104  
 1716 WEBSTER STREET  
 ALAMEDA, CALIFORNIA  
 PROJECT NO. 10-155



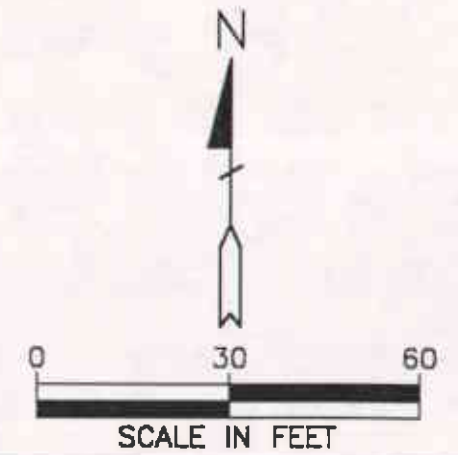
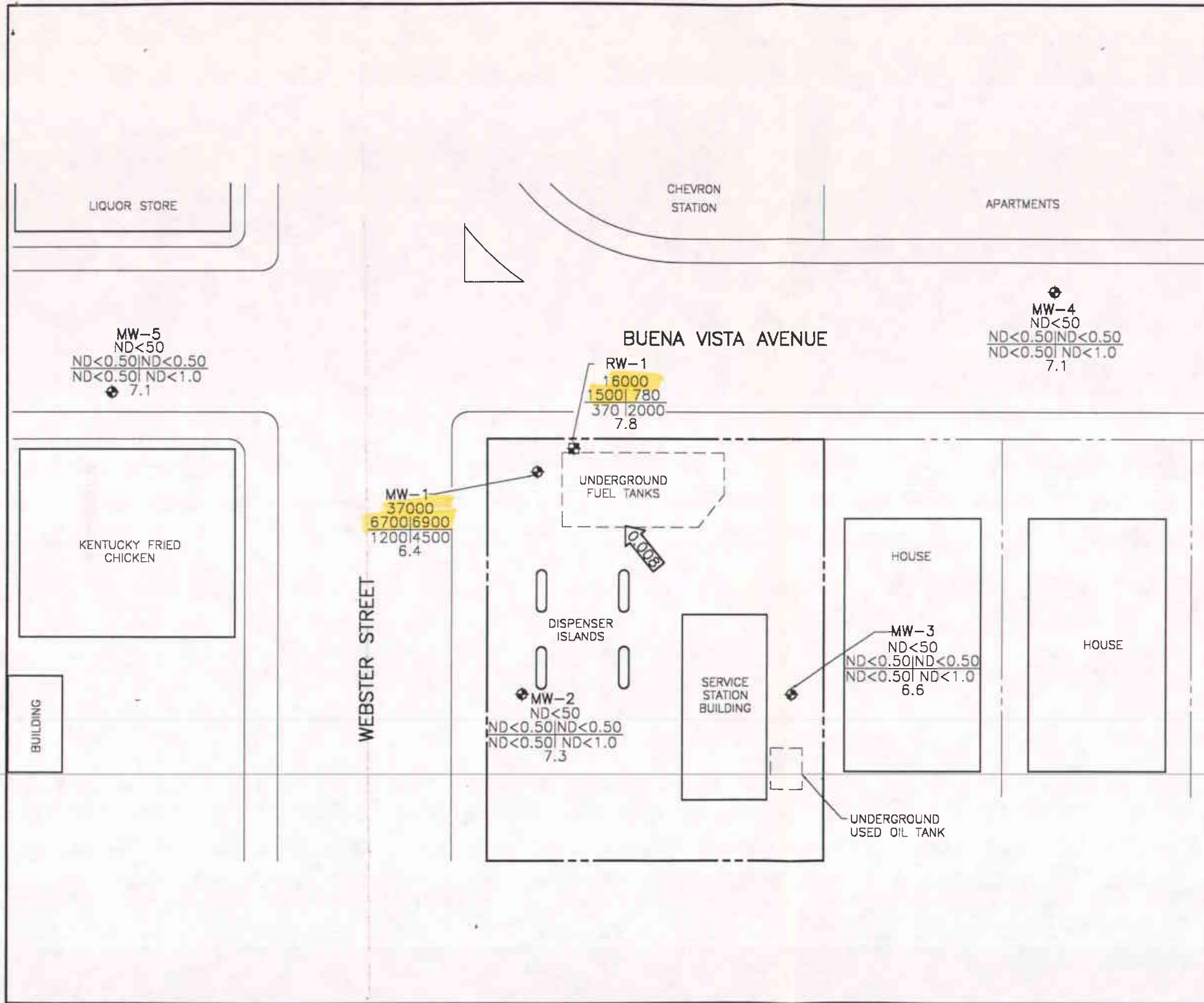
**ALISTO ENGINEERING GROUP**  
 WALNUT CREEK, CALIFORNIA



- LEGEND**
- ◆ BP OIL GROUNDWATER MONITORING WELL
  - ⊠ GROUNDWATER RECOVERY WELL
  - CHEVRON GROUNDWATER MONITORING WELL
  - (8.44) GROUNDWATER ELEVATION IN FEET ABOVE MEAN SEA LEVEL
  - 8.00 - GROUNDWATER ELEVATION CONTOUR IN FEET ABOVE MEAN SEA LEVEL (CONTOUR INTERVAL=0.50 FOOT)
  - ← 0.008 → CALCULATED GROUNDWATER GRADIENT DIRECTION AND MAGNITUDE IN FOOT PER FOOT

**FIGURE 2**  
**POTENTIOMETRIC GROUNDWATER ELEVATION CONTOUR MAP**  
**MAY 1, 1995**  
 BP OIL SERVICE STATION NO. 11104  
 1716 WEBSTER STREET  
 ALAMEDA, CALIFORNIA  
 PROJECT NO. 10-155





**LEGEND**

- ⊕ GROUNDWATER MONITORING WELL
- ⊕ GROUNDWATER RECOVERY WELL
- TPH-G CONCENTRATION OF CONSTITUENTS IN MICROGRAMS PER LITER, EXCEPT DISSOLVED OXYGEN, WHICH IS IN PARTS PER MILLION
- B | T
- E | X
- DO
- 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
- ←0.008 CALCULATED GROUNDWATER GRADIENT DIRECTION AND MAGNITUDE IN FOOT PER FOOT

**FIGURE 3**  
**CONCENTRATIONS OF PETROLEUM HYDROCARBONS IN GROUNDWATER**  
**MARCH 31, 1995**  
 BP OIL SERVICE STATION NO. 11104  
 1716 WEBSTER STREET  
 ALAMEDA, CALIFORNIA  
 PROJECT NO. 10-155

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

# BLAINE TECH SERVICES INC.

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

DATE 6/7/95

Total pages  
including  
cover sheet

1

TO Lynn

OF Alisto

FROM Deidre

REMARKS: TOC elevations for Chevron  
9-0290 that you requested:

A-1 = 11.56                      B-9 10.70

B-1 = 12.12

B-5 10.18

B-6 11.97

B-7 10.54

B-8 11.99

Call if you  
can't read the  
numbers.

WELL GAUGING DATA

Project # 950501-04 Date 5-4-95 Client Chavez 9-0290

Site 1802 Webster Alameda

Well I.D.	Well Size (in.)	Sheen/Odor	Depth to Immiscible Liquid (feet)	Thickness of Immiscible Liquid (ft.)	Volume of Immiscibles Removed (ml)	Depth to Water (feet)	Depth to Well Bottom (feet)	Survey Point: TOB or TOC
A-1	4 <sup>7/8</sup>		5.20'		? →	5.80'	11.54	TOC
B-1	2					5.12	17.30	↓
B-5	2					4.43	18.06	
B-6	2					5.03	18.76	
B-7	2					4.50	13.88	
B-8	2					5.00	14.08	
B-9	2					4.29	13.88	

# ALISTO ENGINEERING GROUP GROUNDWATER MONITORING

Client: BR  
 Alisto Project No: 10-155-04-001  
 Service Station No: 11104

Date: 5/1/95  
 Field Personnel: DC  
 Site Address: 716 Webster St. Alameda CA

**FIELD ACTIVITY:**

- Groundwater Monitoring
- Groundwater Sampling
- Well Development

**QUALITY CONTROL SAMPLES:**

- 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-5	2"	1	14.70'	4.79'			
mw-4	2"	2	14.72'	4.49'			
mw-3	2"	3	16.80'	4.94'			
mw-2	2"	4	15.90'	5.23'			
kw-1	6"	5	22.50'	4.21'			
mw-1	2"	6	16.50'	4.39'			

Notes:

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# ALISTO

ENGINEERING  
GROUP

## Field Report / Sampling Data Sheet

Groundwater Sampling

Date: 3/31/95 Project No. 10-155-03-004

Day: M T W Th F Facility No. 11104

1777 OAKLAND BLVD, STE 200 Barometric pres. 760

Temp. 78°F Address 1716 Webster St Alameda CA

WALNUT CREEK CA 94596 (510) 295-1650 FAX 295-1823

SAMPLER: DC

Well ID	SAMPLE #	WATER	time	Well ID	SAMPLE #	WATER/	time	Well ID	SAMPLE	WATER / time
mw-4	S-1	3.96	1101	mw-1	S-6	4.48	1130			
mw-5	S-2	4.58	1109							
mw-3	S-3	4.03	1116							
mw-2	S-4	4.69	1120							
mw-1	S-5	3.81	1124							

### FIELD INSTRUMENT CALIBRATION DATA

PH METER Hydax 4.00 7.00  10.00  TIME 1201 TEMPERATURE COMPENSATED  N  
 TURBIDI METER 5.0 NTU STANDARD OTHER Icm DO meter 0.50in 1.2 @ 1210  
 CONDUCTIVITY METER Hydax 10,000  OTHER \_\_\_\_\_

Well ID	Depth to Water	Diam	Cap/Lock	Depth to prod.	Iridescence	Gal.	Time	Temp *F	pH	E.C.	D.O.	
mw-4	3.96	2"	OK	Φ	Y (N)	2	1222	68.3	6.72	0.49	6.9	<input type="checkbox"/> EPA 601
Total Depth - Water Level = $14.80 - 3.96 = 10.84$						4	1224	67.4	6.97	0.43		<input checked="" type="checkbox"/> TPH-G/BTEX <u>AC</u>
x Well Vol. Factor = $10.84 \times .16 = 1.73$						5.25	1226	67.8	7.03	0.44	7.1	<input type="checkbox"/> TPH Diesel
x #vol. to Purge = $1.73 \times 3 = 5.19$												<input type="checkbox"/> TOG 5520
Purge Method: <input checked="" type="checkbox"/> Surface Pump												Time/Sample
Comments:												1230 / S-1

Well ID	Depth to Water	Diam	Cap/Lock	Depth to prod.	Iridescence	Gal.	Time	Temp *F	pH	E.C.	D.O.	
mw-5	4.58	2"	OK	Φ	Y (N)	2	1306	67.2	7.38	0.49	6.8	<input type="checkbox"/> EPA 601
Total Depth - Water Level = $14.80 - 4.58 = 10.22$						4	1308	67.5	7.27	0.50		<input checked="" type="checkbox"/> TPH-G/BTEX <u>AC</u>
x Well Vol. Factor = $10.22 \times .16 = 1.64$						5	1310	67.7	7.24	0.50	7.1	<input type="checkbox"/> TPH Diesel
x #vol. to Purge = $1.64 \times 3 = 4.91$												<input type="checkbox"/> TOG 5520
Purge Method: <input checked="" type="checkbox"/> Surface Pump												Time/ Sample
Comments:												- 1314 / S-2

Well ID	Depth to Water	Diam	Cap/Lock	Depth to prod.	Iridescence	Gal.	Time	Temp *F	pH	E.C.	D.O.	
mw-3	4.03	2"	OK	Φ	Y (N)	2	1242	65.1	7.34	0.48	7.0	<input type="checkbox"/> EPA 601
Total Depth - Water Level = $16.60 - 4.03 = 12.57$						4	1245	64.8	7.15	0.47		<input checked="" type="checkbox"/> TPH-G/BTEX <u>AC</u>
x Well Vol. Factor = $12.57 \times .16 = 2.01$						6	1248	64.9	7.12	0.47	6.4	<input type="checkbox"/> TPH Diesel
x #vol. to Purge = $2.01 \times 3 = 6.03$												<input type="checkbox"/> TOG 5520
Purge Method: <input checked="" type="checkbox"/> Surface Pump												Time / Sample
Comments:												1255 / S-3

# ALISTO

## Field Report / Sampling Data Sheet

ENGINEERING  
GROUP

Groundwater Sampling

Date: 3/31/95 Project No. 10-155-03-004

Day: Fri Station No. 11104

1777 OAKLAND BLVD, STE 200  
WALNUT CREEK CA 94596 (510) 295-1650 FAX 295-1823

Weather: Sunny Address 1716 Webster St Alameda CA

SAMPLER: DC

Well ID	Depth to Water	Diam	Cap/Lock	Product Depth	Thickness	Gal.	Time	Temp *F	pH	E.C.	D.O.	
MW-2	4.69	2"	OK	Φ	Φ	2	1324	68.7	6.91	0.54	6.9	<input type="checkbox"/> EPA 601
Total Depth - Water Level = x Well Vol. Factor = x#vol. to Purge = PurgeVol.						4	1327	67.3	6.96	0.47		<input checked="" type="checkbox"/> TPH-G/BTEX <u>HC</u>
$15.84 - 4.69 = 11.15 \times .16 = 1.78 \times 3 = 5.35$						55	1329	68.4	7.16	0.50	7.3	<input type="checkbox"/> TPH Diesel
Purge Method: <input checked="" type="checkbox"/> Surface Pump <input type="checkbox"/> Disp. Tube <input type="checkbox"/> Winch <input type="checkbox"/> Disp. Bailor(s) <input type="checkbox"/> Sys Port												<input type="checkbox"/> TOG 6520
Comments:												Time Sampled <u>1335/5-4</u>
RW-1	3.81	6"	OK	Φ	Φ	40	1354	67.7	6.92	0.43	7.3	<input type="checkbox"/> EPA 601
Total Depth - Water Level = x Well Vol. Factor = x#vol. to Purge = PurgeVol.						60	1406	66.0	7.19	0.42		<input checked="" type="checkbox"/> TPH-G/BTEX <u>HC</u>
$21.61 - 3.81 = 17.80 \times .16 \times 7 = 26 \times 3 = 78.5$						70	1412	64.8	7.05	0.42	7.8	<input type="checkbox"/> TPH Diesel
Purge Method: <input checked="" type="checkbox"/> Surface Pump <input type="checkbox"/> Disp. Tube <input type="checkbox"/> Winch <input type="checkbox"/> Disp. Bailor(s) <input type="checkbox"/> Sys Port						80	1419	64.9	7.02	0.45	7.8	<input type="checkbox"/> TOG 6520
Comments:												Time Sampled <u>1425/5-5</u>
MW-1	4.48	2"	OK	Φ	Φ	2	1434	66.1	7.04	0.45	6.5	<input type="checkbox"/> EPA 601
Total Depth - Water Level = x Well Vol. Factor = x#vol. to Purge = PurgeVol.						4	1437	64.2	7.12	0.44		<input checked="" type="checkbox"/> TPH-G/BTEX <u>HC</u>
$16.88 - 4.48 = 12.40 \times .16 = 1.98 \times 3 = 6$						6	1440	63.8	7.10	0.44	6.4	<input type="checkbox"/> TPH Diesel
Purge Method: <input checked="" type="checkbox"/> Surface Pump <input type="checkbox"/> Disp. Tube <input type="checkbox"/> Winch <input type="checkbox"/> Disp. Bailor(s) <input type="checkbox"/> Sys Port												<input type="checkbox"/> TOG 6520
Comments: <u>QC-1 from this well (5-7)</u>												Time Sampled <u>1445/5-6</u>

\* had to sample MW-5 out of order because Pacific

Bell Truck was parked where well is.

**APPENDIX B**

**LABORATORY REPORT AND CHAIN OF CUSTODY RECORD**





Analytical **Technologies, Inc.**

Corporate Offices: 5550 Morehouse Drive San Diego, CA 92121 (619) 458-9141

ATI I.D.: 504018

April 13, 1995

ALISTO ENGINEERING  
1777 OAKLAND BOULEVARD, SUITE 200  
WALNUT CREEK, CA 94596

Project Name: BP SITE #11104/1716 WEBSTER ST., ALAMEDA CA  
Project # : G317830/10-155-03-004

Attention: BRADY NAGLE

Analytical Technologies, Inc. has received the following sample(s):

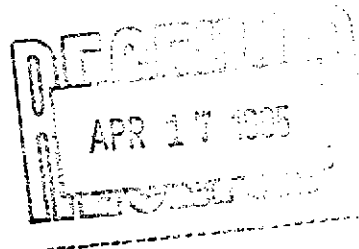
<u>Date Received</u>	<u>Quantity</u>	<u>Matrix</u>
April 04, 1995	8	WATER

The sample(s) were analyzed with EPA methodology or equivalent methods as specified in the enclosed analytical schedule. The symbol for "less than" indicates a value below the reportable detection limit. If any flags appear next to the analytical data in this report, please see the attached list of flag definitions.

The results of these analyses and the quality control data are enclosed. Please note that the Sample Condition Upon Receipt Checklist is included at the end of this report.

GARY STEWART  
VOLATILES SUPERVISOR

ALAN J. KLEINSCHMIDT  
LABORATORY MANAGER





Client : ALISTO ENGINEERING
Project # : G317830/10-155-03-004
Project Name: BP SITE #11104/1716 WEBSTER ST., ALAMEDA CA

Report Date: April 13, 1995
ATI I.D. : 504018

Table with 4 columns: ATI #, Client Description, Matrix, Date Collected. Contains 8 rows of sample data.

---TOTALS---

Matrix

# Samples

WATER

8

ATI STANDARD DISPOSAL PRACTICE

The sample(s) from this project will be disposed of in twenty-one (21) days from the date of this report. If an extended storage period is required, please contact our sample control department before the scheduled disposal date.



Client : ALISTO ENGINEERING  
Project # : G317830/10-155-03-004  
Project Name: BP SITE #11104/1716 WEBSTER ST., ALAMEDA CA

ATI I.D.: 504018

Analysis	Technique/Description
MOD EPA 8015-CDOHS/8020 (HYDROCARBONS C7-C12/BTXE)	GC/FLAME ION./PHOTO IONIZATION DETECTOR



Test : MOD EPA 8015-CDOHS/8020 (HYDROCARBONS C7-C12/BTXE)  
 Client : ALISTO ENGINEERING ATI I.D. : 504018  
 Project # : G317830/10-155-03-004  
 Project Name: BP SITE #11104/1716 WEBSTER ST., ALAMEDA CA

Sample #	Client ID	Matrix	Date Sampled	Date Extracted	Date Analyzed	Dil. Factor
1	S-1	WATER	31-MAR-95	N/A	07-APR-95	1.00
2	S-2	WATER	31-MAR-95	N/A	07-APR-95	1.00
3	S-3	WATER	31-MAR-95	N/A	07-APR-95	1.00

Parameter	Units	1	2	3
BENZENE	UG/L	<0.50	<0.50	<0.50
TOLUENE	UG/L	<0.50	<0.50	<0.50
ETHYLBENZENE	UG/L	<0.50	<0.50	<0.50
XYLENES (TOTAL)	UG/L	<1.0	<1.0	<1.0
FUEL HYDROCARBONS	UG/L	<50	<50	<50
HYDROCARBON RANGE		C6-C12	C6-C12	C6-C12
HYDROCARBONS QUANTITATED USING		GASOLINE	GASOLINE	GASOLINE
<u>SURROGATES</u>				
TRIFLUOROTOLUENE	%	92	96	98



Test : MOD EPA 8015-CDOHS/8020 (HYDROCARBONS C7-C12/BTXE)  
 Client : ALISTO ENGINEERING  
 Project # : G317830/10-155-03-004  
 Project Name: BP SITE #11104/1716 WEBSTER ST., ALAMEDA CA

ATI I.D. : 504018

Sample #	Client ID	Matrix	Date Sampled	Date Extracted	Date Analyzed	Dil. Factor
4	S-4	WATER	31-MAR-95	N/A	07-APR-95	1.00
5	S-5	WATER	31-MAR-95	N/A	07-APR-95	50.00
6	S-6	WATER	31-MAR-95	N/A	07-APR-95	100.00

Parameter	Units	4	5	6		
BENZENE	UG/L	<0.50	1500	6700		
TOLUENE	UG/L	<0.50	780	6900		
ETHYLBENZENE	UG/L	<0.50	370	1200		
XYLENES (TOTAL)	UG/L	<1.0	2000	4500		
FUEL HYDROCARBONS	UG/L	<50	16000	37000		
HYDROCARBON RANGE		C6-C12	C6-C12	C6-C12		
HYDROCARBONS QUANTITATED USING		GASOLINE	GASOLINE	GASOLINE		
<u>SURROGATES</u>						
TRIFLUOROTOLUENE	%	100	97	99		



Test : MOD EPA 8015-CDOHS/8020 (HYDROCARBONS C7-C12/BTXY)  
 Client : ALISTO ENGINEERING  
 Project # : G317830/10-155-03-004  
 Project Name: BP SITE #11104/1716 WEBSTER ST., ALAMEDA CA

ATI I.D. : 504018

Sample #	Client ID	Matrix	Date Sampled	Date Extracted	Date Analyzed	Dil. Factor
7	S-7	WATER	31-MAR-95	N/A	07-APR-95	100.00
8	S-8	WATER	31-MAR-95	N/A	07-APR-95	1.00

Parameter	Units	7	8
BENZENE	UG/L	6900	<0.50
TOLUENE	UG/L	7300	<0.50
ETHYLBENZENE	UG/L	1300	<0.50
XYLENES (TOTAL)	UG/L	5000	<1.0
FUEL HYDROCARBONS	UG/L	40000	<50
HYDROCARBON RANGE		C6-C12	C6-C12
HYDROCARBONS QUANTITATED USING		GASOLINE	GASOLINE
<u>SURROGATES</u>			
TRIFLUOROTOLUENE	%	102	99



GAS CHROMATOGRAPHY - QUALITY CONTROL

REAGENT BLANK

Test : MOD EPA 8015-CDOHS (FUEL HYDROCARBONS/BTEX)  
 Blank I.D. : 34948  
 Client : ALISTO ENGINEERING  
 Project # : G317830/10-155-03-004  
 Project Name: BP SITE #11104/1716 WEBSTER ST., ALAMEDA CA

ATI I.D. : 504018  
 Date Extracted: N/A  
 Date Analyzed : 07-APR-95  
 Dil. Factor : 1.00

Parameters	Units	Results
BENZENE	UG/L	<0.50
TOLUENE	UG/L	<0.50
ETHYLBENZENE	UG/L	<0.50
XYLENES (TOTAL)	UG/L	<1.0
FUEL HYDROCARBONS	UG/L	<50
HYDROCARBON RANGE		C6-C12
HYDROCARBONS QUANTITATED USING		GASOLINE
<u>SURROGATES</u>		
TRIFLUOROTOLUENE	%	98



## REAGENT BLANK

Test : MOD EPA 8015-CDOHS (FUEL HYDROCARBONS/BTXE)  
Blank I.D. : 34959  
Client : ALISTO ENGINEERING  
Project # : G317830/10-155-03-004  
Project Name: BP SITE #11104/1716 WEBSTER ST., ALAMEDA CA

ATI I.D. : 504018  
Date Extracted: N/A  
Date Analyzed : 07-APR-95  
Dil. Factor : 1.00

Parameters	Units	Results
BENZENE	UG/L	<0.50
TOLUENE	UG/L	<0.50
ETHYLBENZENE	UG/L	<0.50
XYLENES (TOTAL)	UG/L	<1.0
FUEL HYDROCARBONS	UG/L	<50
HYDROCARBON RANGE		C6-C12
HYDROCARBONS QUANTITATED USING		GASOLINE
<u>SURROGATES</u>		
TRIFLUOROTOLUENE	%	97





Test : MOD EPA 8015-CDOHS (FUEL HYDROCARBONS/BTXE)  
 MSMSD # : 74682  
 Client : ALISTO ENGINEERING  
 Project # : G317830/10-155-03-004  
 Project Name: BP SITE #11104/1716 WEBSTER ST., ALAMEDA CA

ATI I.D. : 504018  
 Date Extracted: N/A  
 Date Analyzed : 07-APR-95  
 Sample Matrix : WATER  
 REF I.D. : 504018-01

Parameters	Units	Sample Result	Conc Spike	Spiked Sample	% Rec	Dup Spike	Dup % Rec	RPD
BENZENE	UG/L	<0.50	5.0	5.1	102	5.0	100	2
TOLUENE	UG/L	<0.50	5.0	5.0	100	5.1	102	2

% Recovery = (Spike Sample Result - Sample Result)\*100/Spike Concentration  
 RPD (Relative % Difference) = (Spiked Sample Result - Duplicate Spike Result)\*100/Average Result



BLANK SPIKE

Test : MOD EPA 8015-CDOHS (FUEL HYDROCARBONS/BTXE)  
 Blank Spike #: 55631  
 Client : ALISTO ENGINEERING  
 Project # : G317830/10-155-03-004  
 Project Name : BP SITE #11104/1716 WEBSTER ST., ALAMEDA CA

ATI I.D. : 504018  
 Date Extracted: N/A  
 Date Analyzed : 07-APR-95  
 Sample Matrix : WATER

Parameters	Units	Blank Result	Spiked Sample	Spike Conc.	% Rec
BENZENE	UG/L	<0.50	5.4	5.0	108
TOLUENE	UG/L	<0.50	5.5	5.0	110

$\% \text{ Recovery} = (\text{Spike Sample Result} - \text{Sample Result}) * 100 / \text{Spike Concentration}$   
 $\text{RPD (Relative \% Difference)} = (\text{Spiked Sample} - \text{Blank Result}) * 100 / \text{Average Result}$



BLANK SPIKE

Test : MOD EPA 8015-CDOHS (FUEL HYDROCARBONS/BTXE)  
 Blank Spike #: 55663  
 Client : ALISTO ENGINEERING  
 Project #: G317830/10-155-03-004  
 Project Name : BP SITE #11104/1716 WEBSTER ST., ALAMEDA CA

ATI I.D. : 504018  
 Date Extracted: N/A  
 Date Analyzed : 07-APR-95  
 Sample Matrix : WATER

Parameters	Units	Blank Result	Spiked Sample	Spike Conc.	% Rec
BENZENE	UG/L	<0.50	5.3	5.0	106
TOLUENE	UG/L	<0.50	5.4	5.0	108

% Recovery = (Spike Sample Result - Sample Result)\*100/Spike Concentration  
 RPD (Relative % Difference) = (Spiked Sample - Blank Result)\*100/Average Result



# CHAIN OF CUSTODY

## No 055846

Page 1 of 1

CONSULTANT'S NAME <u>Alisto Engineering</u>		ADDRESS <u>1777 Oakland Blvd</u>		CITY <u>Walnut Creek</u>	STATE <u>CA</u>	ZIP CODE <u>94596</u>
BP SITE NUMBER <u>11141</u>	BP CORNER ADDRESS/CITY <u>1716 Webster St Alameda CA</u>			CONSULTANT PROJECT NUMBER <u>11-155-03-004</u>		
CONSULTANT PROJECT MANAGER <u>Brady Nagle</u>		PHONE NUMBER <u>(510) 295 1650</u>	FAX NUMBER <u>(510) 295 1273</u>		CONSULTANT CONTRACT NUMBER <u>C31770</u>	
BP CONTACT <u>Scott Horton</u>		BP ADDRESS <u>Renton WA</u>	PHONE NUMBER		FAX NO.	
LAB CONTACT <u>PHI Inc</u>		LABORATORY ADDRESS <u>San Diego CA</u>		PHONE NUMBER		FAX NO.
SAMPLED BY (Please Print Name) <u>Dave Casaca</u>		SAMPLED BY (Signature) <u>[Signature]</u>		SHIPMENT DATE		SHIPMENT METHOD <u>Carrier FedEx</u>

TAT:  24 Hours  48 Hours  1 Week  Standard 2 Weeks

ANALYSIS REQUIRED

AIRBILL NUMBER 4531331361

SAMPLE DESCRIPTION	COLLECTION DATE	MATRIX SOIL/WATER	CONTAINERS		PRESERVATIVE	PH	COMMENTS
	COLLECTION TIME		NO.	TYPE (VOL.)	LAB SAMPLE #		
S-1 1230	3/31/95	H <sub>2</sub> O	2	VOL	01	X	
S-2 1314	↓	↓	↓	↓	02	↓	
S-3 1255	↓	↓	↓	↓	03	↓	
S-4 1335	↓	↓	↓	↓	04	↓	
S-5 1125	↓	↓	↓	↓	05	↓	
S-6 1445	↓	↓	↓	↓	06	↓	
S-7 -	↓	↓	↓	↓	07	↓	
S-8 -	↓	↓	↓	↓	08	↓	

RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	ADDITIONAL COMMENTS
<u>[Signature]</u> Alisto			<u>[Signature]</u>	<u>4/1/96</u>	<u>11:00</u>	<u>504018</u> <u>2.0°C</u>