BP OIL

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

September 26, 1994

Mr. Richard Hiett
California Regional Water Quality Control Board
San Francisco Bay Region
2101 Webster Street, Suite 500
Oakland CA 94612

RE: BP OIL FACILITY #11133
2220 98th Avenue
Oakland CA

Dear Mr. Hiett:

Attached please find our **GROUNDWATER MONITORING AND SAMPLING REPORT DATED AUGUST 10, 1994** for the above referenced facility.

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

Respectfully,

Scott T. Hooton
Environmental Resources Management
Group Leader

STH:mu msword\ERM11133

cc: Mr. Barney Chan, Alameda County Health Care Services Agency
1131 Harbor Bay Parkway, 2nd Floor, Alameda California 94542-6577

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

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

Site File

Ltr 9/29

GROUNDWATER MONITORING AND SAMPLING REPORT

BP Oil Company Service Station No. 11133
2220 98th Avenue
Oakland, California

Project No. 10-025-02-004

Extraction system should be up and ready 9/29/94 per Brady Nagle should be on line Oct 7, 1994

should send QMR in timely manner - Min 60 days of fieldwork this QMR of work done in April 1994 !

If not, send letter to BP. should also get periodic report of vapor extraction system

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

August 10, 1994

Brady Nagle
Project Manager

Dan Salaices
Registered Geologist

REGISTERED GEOLOGIST
DANIEL J.
SALAICES
No. 5162
STATE OF CALIFORNIA

GROUNDWATER MONITORING AND SAMPLING REPORT

BP Oil Company Service Station No. 11133
2220 98th Avenue
Oakland, California

Project No. 10-025-02-004

August 10, 1994

INTRODUCTION

This report presents the results and findings of the April 21, 1994 groundwater monitoring and sampling conducted by Alisto Engineering Group at BP Oil Company Service Station No. 11133, 2220 98th Avenue, Oakland, 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.

FREE PRODUCT MONITORING AND RECOVERY

Product recovery canisters have been installed in Monitoring Wells MW-1 and RW-1 to recover liquid-phase product. Product thicknesses for this and previous monitoring events are presented in Table 1. The volume of product recovered is presented in Table 2.

SAMPLING AND ANALYTICAL RESULTS

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. 11133
2220 98TH AVENUE, OAKLAND, CALIFORNIA

ALISTO PROJECT NO. 10-025

WELL ID	DATE OF MONITORING/ SAMPLING	CASING ELEVATION (a) (Feet)	DEPTH TO WATER (Feet)	PRODUCT THICKNESS (Feet)	GROUNDWATER ELEVATION (b) (Feet)	TPH-G (ppb)	B (ppb)	T (ppb)	E (ppb)	X (ppb)	DO (ppm)	LAB
MW-1	04/05/91	34.46	---	---	---	---	---	---	---	---	---	---
MW-1	04/01/92	34.46	11.25	0.01	23.22	---	---	---	---	---	---	---
MW-1	07/06/92	34.46	13.61	0.02	20.87	---	---	---	---	---	---	---
MW-1	10/07/92	34.46	15.15	0.09	19.38	---	---	---	---	---	---	---
MW-1	01/14/93	34.46	10.73	0.01	23.74	---	---	---	---	---	---	---
MW-1	04/22/93	34.46	11.64	0.16	22.94	---	---	---	---	---	---	---
MW-1	07/15/93	34.46	13.50	1.11	21.79	---	---	---	---	---	---	---
MW-1	10/21/93	34.46	15.21	1.00	20.00	---	---	---	---	---	---	---
MW-1	01/27/94	34.46	17.48	0.81	17.59	---	---	---	---	---	---	---
MW-1	04/21/94	34.46	10.94	---	23.52	110000	1400	9100	3400	30000	1.6	PACE
MW-2	04/05/91	35.50	16.62	---	18.88	ND<50	0.6	0.9	ND<0.3	ND<0.3	---	SUP
MW-2	04/01/92	35.50	11.25	---	24.25	---	---	---	---	---	---	---
MW-2	04/02/92	35.50	---	---	---	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	APP
MW-2	07/06/92	35.50	12.72	---	22.78	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	ANA
MW-2	10/07/92	35.50	15.08	---	20.42	ND<50	ND<0.5	1.8	ND<0.5	2.3	---	ANA
MW-2	01/14/93	35.50	9.69	---	25.81	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	PACE
MW-2	04/22/93	35.50	10.46	---	25.04	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	PACE
MW-2	07/15/93	35.50	12.02	---	23.48	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	PACE
MW-2	10/21/93	35.50	13.12	---	22.38	ND<50	0.7	0.9	ND<0.5	0.9	---	PACE
MW-2	01/27/94	35.50	12.01	---	23.49	ND<50	0.6	ND<0.5	ND<0.5	ND<0.5	---	PACE
MW-2	04/21/94	35.50	10.60	---	24.90	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	1.1	PACE
MW-3	04/05/91	36.53	17.84	---	18.69	ND<50	ND<0.3	ND<0.3	ND<0.3	ND<0.3	---	SUP
MW-3	04/01/92	36.53	15.64	---	20.89	---	---	---	---	---	---	---
MW-3	04/02/92	36.53	---	---	---	ND<50	1.4	ND<0.5	ND<0.5	ND<0.5	---	APP
MW-3	07/06/92	36.53	19.03	---	17.50	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	ANA
MW-3	10/07/92	36.53	21.83	---	14.70	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	ANA
MW-3	01/14/93	36.53	15.96	---	20.57	350	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	PACE
MW-3	04/22/93	36.53	16.20	---	20.33	2800	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	PACE
MW-3	07/15/93	36.53	16.82	---	19.71	1400	1.2	ND<0.5	2.0	3.5	---	PACE
MW-3	10/21/93	36.53	16.84	---	17.69	370	2.1	2.3	2.3	6.0	---	PACE
MW-3	01/27/94	36.53	18.00	---	18.53	1300	6.3	ND<0.5	ND<0.5	ND<0.5	---	PACE
MW-3	04/21/94	36.53	16.62	---	19.91	2000	ND<0.5	ND<0.5	ND<0.5	ND<0.5	1.4	PACE

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BP OIL COMPANY SERVICE STATION NO. 11133
2220 98TH AVENUE, OAKLAND, CALIFORNIA

ALISTO PROJECT NO. 10-025

WELL ID	DATE OF MONITORING/ SAMPLING	CASING ELEVATION (a) (Feet)	DEPTH TO WATER (Feet)	PRODUCT THICKNESS (Feet)	GROUNDWATER ELEVATION (b) (Feet)	TPH-G (ppb)	B (ppb)	T (ppb)	E (ppb)	X (ppb)	DO (ppm)	LAB
AW-1	04/05/91	38.11	25.44	---	12.67	4100	1500	69	100	83	---	SUP
AW-1	04/01/92	38.11	23.22	---	14.89	---	---	---	---	---	---	---
AW-1	04/02/92	38.11	---	---	---	11000	1800	210	210	490	---	APP
AW-1	07/06/92	38.11	24.89	---	13.22	6500	4000	40	290	530	---	ANA
AW-1	10/07/92	38.11	26.55	---	11.56	4700	1500	41	47	300	---	ANA
QC-1 (c)	10/07/92	38.11	---	---	---	2900	1200	25	37	210	---	ANA
AW-1	01/14/93	38.11	23.73	---	14.38	2800	830	31	140	240	---	PACE
QC-1 (c)	01/14/93	38.11	---	---	---	4100	1700	28	130	230	---	PACE
AW-1	04/22/93	38.11	22.29	---	15.82	39000	14000	530	1800	6100	---	PACE
AW-1	07/15/93	38.11	22.50	---	15.61	6200	2200	28	210	540	---	PACE
AW-1	10/21/93	38.11	24.32	---	13.79	2400	820	13	55	120	---	PACE
AW-1	01/27/94	38.11	23.72	---	14.39	3500	1400	26	130	220	---	PACE
AW-1	04/21/94	38.11	22.48	---	15.63	40000	12000	1900	1600	5000	1.4	PACE
AW-2	04/05/91	36.83	22.36	---	14.47	ND<50	ND<0.3	ND<0.3	ND<0.3	ND<0.3	---	SUP
AW-2	04/01/92	36.83	20.81	---	16.02	---	---	---	---	---	---	---
AW-2	04/02/92	36.83	---	---	---	130	25	2.3	0.7	2.1	---	APP
AW-2	07/06/92	36.83	23.57	---	13.26	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	ANA
AW-2	10/07/92	36.83	25.24	---	11.59	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	ANA
AW-2	01/14/93	36.83	20.82	---	16.01	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	PACE
AW-2	04/22/93	36.83	19.37	---	17.46	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	PACE
AW-2	07/15/93	36.83	21.29	---	15.54	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	PACE
AW-2	10/21/93	36.83	23.14	---	13.69	ND<50	1.3	1.1	0.9	2.1	---	PACE
AW-2	01/27/94	36.83	22.34	---	14.49	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	PACE
AW-2	04/21/94	36.83	21.15	---	15.68	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	2.0	PACE
AW-3	04/05/91	39.13	23.90	---	15.23	5200	980	450	95	310		SUP
AW-3	04/01/92	39.13	22.50	---	16.63	4700	890	47	43	110	---	APP
AW-3	07/06/92	39.13	23.26	---	15.87	3900	3100	30	80	99	---	ANA
AW-3	10/07/92	39.13	24.75	---	14.38	5000	2600	ND<0.5	ND<0.5	59	---	ANA
AW-3	01/14/93	39.13	23.59	---	15.54	350	250	ND<0.5	ND<0.5	ND<0.5	---	PACE
AW-3	04/22/93	39.13	19.42	---	19.71	240	71	2.4	0.6	4.0	---	PACE
AW-3	07/15/93	39.13	20.09	---	19.04	650	71	2.8	1.5	1.1	---	PACE
AW-3	10/21/93	39.13	21.88	---	17.25	160	4.8	1.7	1.6	3.6	---	PACE
QC-1 (c)	10/21/93	39.13	---	---	---	170	6.1	2.0	1.7	4.4	---	PACE
AW-3	01/27/94	39.13	22.33	---	16.80	92	2.1	ND<0.5	ND<0.5	ND<0.5	---	PACE
QC-1 (c)	01/27/94	39.13	---	---	---	90	2.9	0.5	ND<0.5	ND<0.5	---	PACE
AW-3	04/21/94	39.13	20.96	---	18.17	150	3.6	0.8	0.9	2.5	1.3	PACE

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BP OIL COMPANY SERVICE STATION NO. 11133
2220 98TH AVENUE, OAKLAND, CALIFORNIA

ALISTO PROJECT NO. 10-025

WELL ID	DATE OF MONITORING/ SAMPLING	CASING ELEVATION (a) (Feet)	DEPTH TO WATER (Feet)	PRODUCT THICKNESS (Feet)	GROUNDWATER ELEVATION (b) (Feet)	TPH-G (ppb)	B (ppb)	T (ppb)	E (ppb)	X (ppb)	DO (ppm)	LAB
AW-4	04/05/91	39.08	25.12	---	13.96	110000	40000	13000	2000	5500	---	SUP
AW-4	04/01/92	39.08	23.56	---	15.52	230000	57000	31000	2900	7600	---	APP
AW-4 (d)	04/01/92	39.08	23.56	---	15.52	210000	55000	23000	2900	7000	---	APP
AW-4	07/06/92	39.08	25.87	---	13.21	38000	16000	5400	2000	6100	---	ANA
AW-4	10/07/92	39.08	27.53	---	11.55	120000	41000	26000	4700	13000	---	ANA
AW-4	01/14/93	39.08	24.12	---	14.96	62000	18000	14000	2700	7700	---	PACE
AW-4	04/22/93	39.08	21.47	---	17.61	18000	1100	2100	320	3500	---	PACE
AW-4	07/15/93	39.08	23.30	---	15.78	21000	820	2300	590	3800	---	PACE
AW-4	10/21/93	39.08	25.08	---	14.00	11000	570	83	630	2300	---	PACE
AW-4	01/27/94	39.08	24.61	---	14.47	12000	420	460	600	2200	---	PACE
AW-4	04/21/94	39.08	22.96	---	16.12	12000	110	250	150	1900	1.5	PACE
QC-1 (c)	04/21/94	39.13	---	---	---	11000	71	160	29	1200	---	PACE

AW-5	04/05/91	38.51	25.48	---	13.03	420	31	7.5	20	68	---	SUP
AW-5	04/01/92	38.51	23.95	---	14.56	---	---	---	---	---	---	---
AW-5	04/02/92	38.51	---	---	---	4000	270	63	190	290	---	APP
AW-5	07/06/92	38.51	26.48	---	12.03	1400	160	ND<2.5	250	58	---	ANA
AW-5	10/07/92	38.51	28.18	---	10.33	360	12	0.6	8.7	5	---	ANA
AW-5	01/14/93	38.51	24.15	---	14.36	1700	270	7.5	130	62	---	PACE
AW-5	04/22/93	38.51	22.43	---	16.08	2700	780	30	220	180	---	PACE
QC-1	04/22/93	38.51	---	---	---	3500	780	29	240	210	---	PACE
AW-5	07/15/93	38.51	24.31	---	14.20	1300	69	16	67	120	---	PACE
QC-1	07/15/93	38.51	---	---	---	1300	68	8.3	64	99	---	PACE
AW-5	10/21/93	38.51	26.05	---	12.46	510	9.6	1.5	17	45	---	PACE
AW-5	10/21/93	38.51	26.05	---	12.46	510	9.6	1.5	17	45	---	PACE
AW-5	01/27/94	38.51	26.42	---	12.09	420	3.3	ND<0.5	1.0	0.9	---	PACE
AW-5	04/21/94	38.51	24.36	---	14.15	1000	110	25	56	27	1.3	PACE

AW-6	04/05/91	37.08	22.48	---	14.60	1100	80	19	1.4	230	---	SUP
AW-6	04/01/92	37.08	22.50	---	14.58	---	---	---	---	---	---	---
AW-6	04/02/92	37.08	---	---	---	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	APP
AW-6	07/06/92	37.08	22.74	---	14.34	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	ANA
AW-6	10/07/92	37.08	24.64	---	12.44	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	ANA
AW-6	01/14/93	37.08	22.36	---	14.72	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	PACE
AW-6	04/22/93	37.08	22.82	---	14.26	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	PACE
AW-6	07/15/93	37.08	20.49	---	16.59	ND<50	ND<0.5	ND<0.5	ND<0.5	0.8	---	PACE
AW-6	10/21/93	37.08	22.84	---	14.24	ND<50	0.5	0.6	ND<0.5	0.7	---	PACE
AW-6	01/27/94	37.08	22.33	---	14.75	ND<50	ND<0.5	0.9	3.1	12	---	PACE
AW-6	04/21/94	37.08	20.66	---	16.42	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	1.7	PACE

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2220 98TH AVENUE, OAKLAND, CALIFORNIA

ALISTO PROJECT NO. 10-025

WELL ID	DATE OF MONITORING/ SAMPLING	CASING ELEVATION (a) (Feet)	DEPTH TO WATER (Feet)	PRODUCT THICKNESS (Feet)	GROUNDWATER ELEVATION (b) (Feet)	TPH-G (ppb)	B (ppb)	T (ppb)	E (ppb)	X (ppb)	DO (ppm)	LAB
AW-7	04/05/91	37.60	23.38	---	14.22	ND<50	0.4	0.7	ND<0.3	ND<0.3	---	SUP
AW-7	04/01/92	37.60	21.92	---	15.68	---	---	---	---	---	---	---
AW-7	04/02/92	37.60	---	---	---	ND<50	ND<0.5	3.2	1.0	5.4	---	APP
AW-7	07/06/92	37.60	24.50	---	13.10	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	ANA
AW-7	10/07/92	37.60	26.18	---	11.42	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	ANA
AW-7	01/14/93	37.60	22.03	---	15.57	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	PACE
AW-7	04/22/93	37.60	21.18	---	16.42	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	PACE
AW-7	07/15/93	37.60	22.09	---	15.51	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	PACE
AW-7	10/21/93	37.60	24.05	---	13.55	51	5.0	4.2	3.5	8.2	---	PACE
AW-7	01/27/94	37.60	23.40	---	14.20	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	PACE
AW-7	04/21/94	37.60	22.24	---	15.36	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	2.5	PACE
AW-8	04/05/91	40.86	26.68	---	14.18	80	1.9	2.2	0.5	1.3	---	SUP
AW-8	04/01/92	40.86	25.11	---	15.75	73	ND<0.5	0.7	ND<0.5	0.6	---	APP
AW-8	07/06/92	40.86	26.43	---	14.43	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	ANA
AW-8	10/07/92	40.86	28.59	---	12.27	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	ANA
AW-8	01/14/93	40.86	25.55	---	15.31	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	PACE
AW-8	04/22/93	40.86	22.29	---	18.57	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	PACE
AW-8	07/15/93	40.86	23.42	---	17.44	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	PACE
AW-8	10/21/93	40.86	25.15	---	15.71	ND<50	1.9	1.8	1.3	3.3	---	PACE
AW-8	01/27/94	40.86	25.42	---	15.44	ND<50	ND<0.5	0.5	0.6	8.5	---	PACE
AW-8	04/21/94	40.86	24.14	---	16.72	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	1.5	PACE
RW-1	04/05/91	37.73	---	---	---	---	---	---	---	---	---	---
RW-1	04/01/92	37.73	22.81	0.30	15.14	---	---	---	---	---	---	---
RW-1	07/06/92	37.73	26.92	0.41	11.12	---	---	---	---	---	---	---
RW-1	10/07/92	37.73	28.51	1.26	10.16	---	---	---	---	---	---	---
RW-1	01/14/93	37.73	23.75	0.25	14.17	---	---	---	---	---	---	---
RW-1	04/22/93	37.73	22.70	1.38	16.07	---	---	---	---	---	---	---
RW-1	07/15/93	37.73	26.10	0.81	12.24	---	---	---	---	---	---	---
RW-1	10/21/93	37.73	25.40	0.49	12.70	---	---	---	---	---	---	---
RW-1	10/21/93	37.73	25.40	0.49	12.70	---	---	---	---	---	---	---
RW-1	01/27/94	37.73	28.02	0.37	9.99	---	---	---	---	---	---	---
RW-1	04/21/94	37.73	23.10	0.91	15.31	---	---	---	---	---	---	---

TABLE 1 - SUMMARY OF RESULTS OF GROUNDWATER SAMPLING
BP OIL COMPANY SERVICE STATION NO. 11133
2220 98TH AVENUE, OAKLAND, CALIFORNIA

ALISTO PROJECT NO. 10-025

WELL ID	DATE OF MONITORING/ SAMPLING	CASING ELEVATION (a) (Feet)	DEPTH TO WATER (Feet)	PRODUCT THICKNESS (Feet)	GROUNDWATER ELEVATION (b) (Feet)	TPH-G (ppb)	B (ppb)	T (ppb)	E (ppb)	X (ppb)	DO (ppm)	LAB
QC-2 (e)	10/07/92	---	---	---	---	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	ANA
QC-2 (e)	01/14/93	---	---	---	---	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	PACE
QC-2 (e)	04/22/93	---	---	---	---	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	PACE
QC-2 (e)	07/15/93	---	---	---	---	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	PACE
QC-2 (e)	10/21/93	---	---	---	---	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	PACE
QC-2 (e)	01/27/94	---	---	---	---	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	PACE
QC-2 (e)	04/21/94	---	---	---	---	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
X	Total xylenes
DO	Dissolved oxygen
ppb	Parts per billion
ppm	Parts per million
---	Not measured/available/analyzed
ND	Not detected above reported detection limit
PACE	Pace, Inc.
SUP	Superior Analytical Laboratories, Inc.
APP	Applied Analytical Laboratory
ANA	Anametrix, Inc.

NOTES:

(a) Top of casing elevations surveyed to the nearest 0.01 foot above mean sea level.

(b) Groundwater elevations adjusted assuming a specific gravity of 0.75 for free product.

(c) Blind duplicate.

(d) Duplicate.

(e) Travel blank.

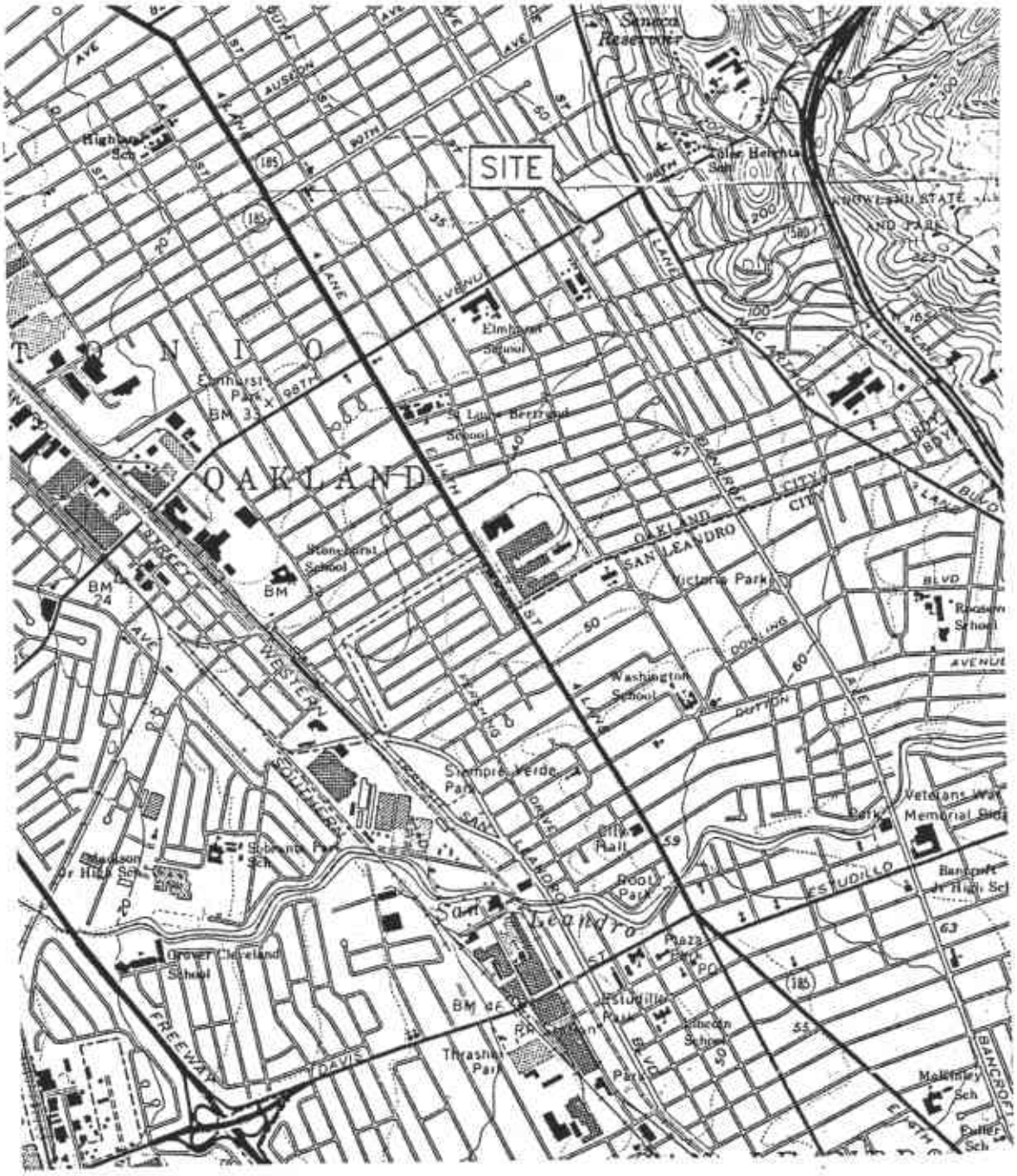
E:\00\10-025\025-3-2.WQ2

TABLE 2 - PRODUCT REMOVAL STATUS

BP OIL COMPANY SERVICE STATION NO. 11133
2220 98TH STREET, OAKLAND, CALIFORNIA

ALISTO PROJECT NO. 10-025

WELL ID	DATE	PRODUCT REMOVED (Gallons)	PRODUCT REMOVED CUMULATIVE (Gallons)
RW-1	10/06/93	1.00	1.00
	10/14/94	1.00	2.00
	10/20/94	18.00	20.00
	10/26/94	3.00	23.00
	11/02/93	5.00	28.00
	11/10/94	6.00	34.00
	11/16/94	2.50	36.50
	11/23/94	5.00	41.50
	11/30/93	2.00	43.50
	12/07/93	4.00	47.50
	12/17/93	1.50	49.00
	01/04/94	5.00	54.00
	01/12/94	3.50	57.50
	01/20/94	2.50	60.00
	02/11/94	4.00	64.00
	02/18/93	3.50	67.50
	02/25/94	3.00	70.50
	03/04/94	3.50	74.00
	03/18/94	5.50	79.50
	03/30/94	4.00	83.50
	04/13/94	4.60	88.10
	04/21/94	4.20	92.30
	04/29/94	4.50	96.80
	05/06/94	5.50	102.30
	05/13/94	3.50	105.80
	05/20/94	3.50	109.30
	05/26/94	4.50	113.80
	06/02/94	3.50	117.30
	06/09/94	2.50	119.80
	06/16/94	3.50	123.30
	06/23/94	4.00	127.30
	06/29/94	2.50	129.80
	07/07/94	2.00	131.80
	07/12/94	3.00	134.80
	07/20/94	1.50	136.30
MW-1	10/20/93	0.10	0.1
	11/10/93	0.10	0.2



SOURCE:
USGS MAP, OAKLAND EAST AND SAN LEANDRO QUADRANGLES, CALIFORNIA. 7.5 MINUTE SERIES. 1956. PHOTOREVISED 1980.

N

0 1000' 2000'

FIGURE 1

SITE VICINITY MAP

BP OIL SERVICE STATION NO. 11133
2220 98TH AVENUE
OAKLAND, CALIFORNIA

PROJECT NO. 10-025

ALISTO ENGINEERING GROUP
WALNUT CREEK, CALIFORNIA

10025G---DWG 3-22-94 RKW 1=1

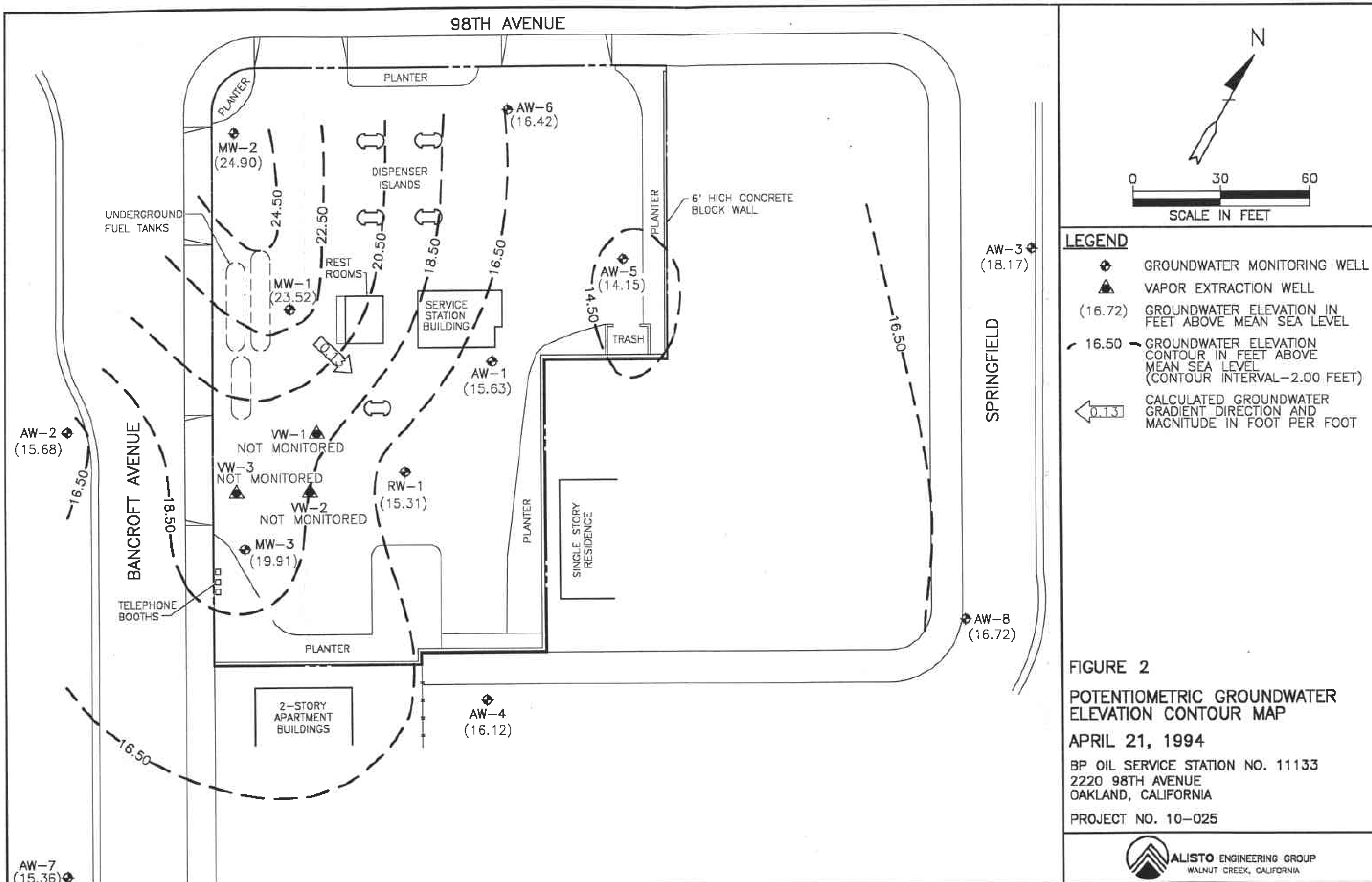

98TH AVENUE
PLANTER
PLANTER
AW-6 (16.42)
MW-2 (24.90)
DISPENSER ISLANDS
24.50
22.50
20.50
18.50
16.50
UNDERGROUND FUEL TANKS
REST ROOMS
MW-1 (23.52)
SERVICE STATION BUILDING
PLANTER
6' HIGH CONCRETE BLOCK WALL
AW-5 (14.15)
14.50
TRASH
AW-1 (15.63)
AW-3 (18.17)
16.50
SPRINGFIELD
AW-2 (15.68)
16.50
BANCROFT AVENUE
18.50
VW-1 NOT MONITORED
VW-3 NOT MONITORED
VW-2 NOT MONITORED
RW-1 (15.31)
PLANTER
SINGLE STORY RESIDENCE
MW-3 (19.91)
TELEPHONE BOOTHS
PLANTER
AW-8 (16.72)
2-STORY APARTMENT BUILDINGS
AW-4 (16.12)
16.50
AW-7 (15.36)
N
0 30 60
SCALE IN FEET
LEGEND
GROUNDWATER MONITORING WELL
VAPOR EXTRACTION WELL
(16.72) GROUNDWATER ELEVATION IN FEET ABOVE MEAN SEA LEVEL
16.50 GROUNDWATER ELEVATION CONTOUR IN FEET ABOVE MEAN SEA LEVEL (CONTOUR INTERVAL-2.00 FEET)
0.13 CALCULATED GROUNDWATER GRADIENT DIRECTION AND MAGNITUDE IN FOOT PER FOOT
ALISTO ENGINEERING GROUP
WALNUT CREEK, CALIFORNIA

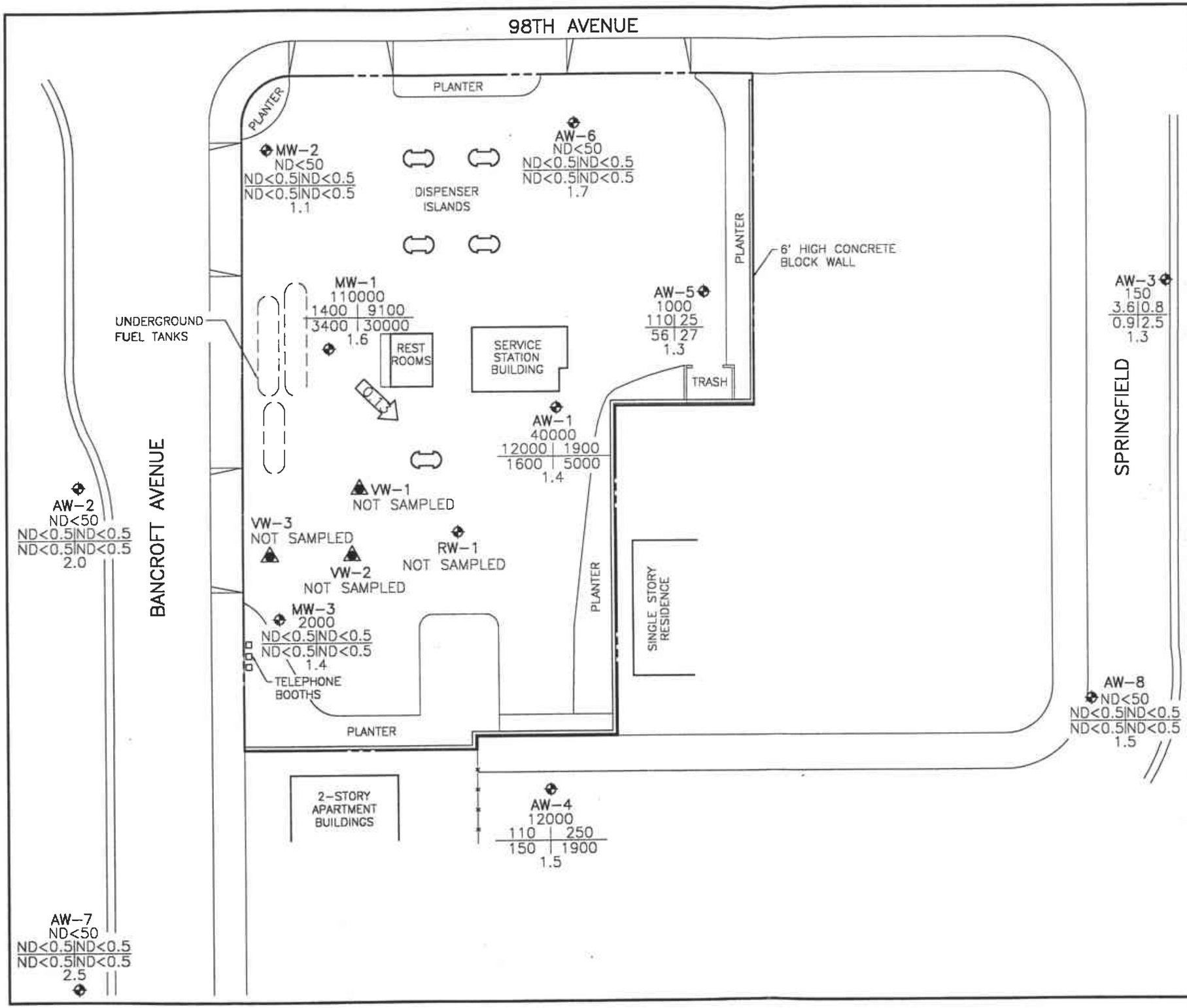
FIGURE 2

POTENTIOMETRIC GROUNDWATER ELEVATION CONTOUR MAP

APRIL 21, 1994

BP OIL SERVICE STATION NO. 11133
2220 98TH AVENUE
OAKLAND, CALIFORNIA

PROJECT NO. 10-025



LEGEND

◆	GROUNDWATER MONITORING WELL
▲	VAPOR EXTRACTION 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
◁ 0.13	CALCULATED GROUNDWATER GRADIENT DIRECTION AND MAGNITUDE IN FOOT PER FOOT

FIGURE 3

CONCENTRATIONS OF PETROLEUM HYDROCARBONS IN GROUNDWATER

APRIL 21, 1994

BP OIL SERVICE STATION NO. 11133
2220 98TH AVENUE
OAKLAND, CALIFORNIA

PROJECT NO. 10-025

ALISTO ENGINEERING GROUP
WALNUT CREEK, CALIFORNIA

10025E-1.DWG 8-10-94 REW 1=30

APPENDIX A

WATER SAMPLING FIELD SURVEY FORMS

Alisto Engineering Group

Field Report / Sampling Data Sheet

Consultant: ALISTO ENGINEERING GROUP

1777 Oakland Blvd., Ste200
Walnut Creek CA 94596 (510) 295-1650 Fax 295-1823

☒ Groundwater Sampling
○ Groundwater Monitoring
○ Well Development

Date: 4-21-94
Day: THURS
Weather: CLOUDS

Project No. 10-025-02-004
Station No. BP11133
Address 2220 98th Avenue
Oakland

MEASURED DEPTH TO GROUND WATER SUMMARY

Well ID	Depth to Water	Prod Thickness	Well ID	Depth to Water	Product Thickness	Well ID	D T Water	Prod thickness
AW-1	22.48'	None	AW-5	24.36'	NONE	MW-1	10.94'	Sheen
AW-2	21.15'	None	AW-6	20.66'	NONE	MW-2	10.60	None
AW-3	20.96'	None	AW-7	22.24'	NONE	MW-3	16.62'	None
AW-4 QC-1	22.96'	None	AW-8	24.14'	NONE	RW-1	23.10	0.91'

Well ID	Depth to Water	Diam	Cap/Lock	Product Depth	Thickness	Gal.	Time	Temp *F	pH	E.C.	D.O.	
AW-1	22.48	2"	OK	None	None	3	1410	67.6	6.31	694	1.3	○ EPA 601 ☒ TPH-G/BTEX Hal ○ TPH Diesel ○ TOG 5520 BF
Total Depth - Water Level =	x Well Vol. Factor =	x#vol. to Purge =	PurgeVol.			6	1414	67.5	6.30	693	1.4	
38.6 - 22.48 = 16.12 x .16 = 2.5 x 3 =			7.7			8	1419	67.2	6.30	692	1.4	
Purge Method: ☒ Surface Pump ☒ Disp.Tube OWinch ODisp. Bailer(s)___ OSys Port												Time Sampled
Comments:												1419

Well ID	Depth to Water	Diam	Cap/Lock	Product Depth	Thickness	Gal.	Time	Temp *F	pH	E.C.	D.O.	
AW-2	21.15	2"	New/New	None	None	2	0945	67.9	6.57	317	2.0	○ EPA 601 ☒ TPH-G/BTEX Hal ○ TPH Diesel ○ TOG 5520 BF
Total Depth - Water Level =	x Well Vol. Factor =	x#vol. to Purge =	PurgeVol.			4	0949	65.9	6.50	316	2.1	
35.2 - 21.15 = 14.05 x .16 = 2.2	x 3 =		6.7			7	0952	65.9	6.49	312	2.0	
Purge Method: ☒ Surface Pump ☒ Disp.Tube OWinch ODisp. Bailer(s)___ OSys Port												Time Sampled
Comments: New plug + Lock.												0952

Well ID	Depth to Water	Diam	Cap/Lock	Product Depth	Thickness	Gal.	Time	Temp *F	pH	E.C.	D.O.	
AW-3	20.96	2"	OK	NONE	—	2	1135	65.8	6.84	950	1.5	○ EPA 601 ☒ TPH-G/BTEX Hal ○ TPH Diesel ○ TOG 5520 BF
Total Depth - Water Level =	x Well Vol. Factor =	x#vol. to Purge =	PurgeVol.			5	1140	64.7	6.81	447	1.4	
35.75 - 20.96 = 14.79 x .16 = 2.3	x 3 =		7.0			7	1143	64.3	6.80	940	1.3	
Purge Method: ☒ Surface Pump ☒ Disp.Tube OWinch ODisp. Bailer(s)___ OSys Port												Time Sampled
Comments:												1143

Well ID	Depth to Water	Diam	Cap/Lock	Product Depth	Thickness	Gal.	Time	Temp *F	pH	E.C.	D.O.	
AW-4	22.96	2"	OK	None	None	2	1110	66.2	6.45	658	1.8	○ EPA 601 ☒ TPH-G/BTEX Hal ○ TPH Diesel ○ TOG 5520 BF
Total Depth - Water Level =	x Well Vol. Factor =	x#vol. to Purge =	PurgeVol.			4	1114	66.1	6.41	659	1.7	
33.9 - 22.96 = 10.94 x .16 = 1.75	x 3 =		5.25			6	1120	66.0	6.40	657	1.5	
Purge Method: ☒ Surface Pump ☒ Disp.Tube OWinch ODisp. Bailer(s)___ OSys Port												Time Sampled
Comments: QC-1												1120

Alisto Engineering Group — Field Report / Sampling Data Sheet

1777 Oakland Blvd., Ste200
Walnut Creek CA 94596 (510) 295-1650 Fax 295-1823

Consultant: ALISTO ENGINEERING GROUP

☒ Groundwater Sampling ○ Groundwater Monitoring ○ Well Development

Date: 4-21-94 | Day: THURS | Weather: CLOUDS

Project No. 10-025-02-004
Station No. BP11133
Address 2220 98tH avenue
Oakland

AW-5

Well ID	Depth to Water	Diam	Cap/Lock	Product Depth	Thickness
AW-5	24.36	4"	OK	None	None

Total Depth - Water Level = x Well Vol. Factor = x#vol. to Purge = PurgeVol.
42.9 - 24.36 = 18.5 x .65 = 12.0 x 3 = 36

Purge Method: ☒ Surface Pump ☒ Disp.Tube ○ Winch ○ Disp. Bailer(s) ___ ○ Sys Port

Comments:

Gal.	Time	Temp *F	pH	E.C.	D.O.
10	1220	67.3	6.57	515	1.4
20	1233	67.3	6.57	512	1.4
30	1245	67.3	6.56	612	1.3

○ EPA 601 ___
☒ TPH-G/BTEX Hcl
○ TPH Diesel ___
○ TOG 5520 BF ___
Time Sampled: 1245

AW-6

Well ID	Depth to Water	Diam	Cap/Lock	Product Depth	Thickness
AW-6	20.66	4	OK	None	None

Total Depth - Water Level = x Well Vol. Factor = x#vol. to Purge = PurgeVol.
34.2 - 20.66 = 13.54 x .65 = 8.8 x 3 = 26.4

Purge Method: ☒ Surface Pump ○ Disp.Tube ○ Winch ○ Disp. Bailer(s) ___ ○ Sys Port

Comments:

Gal.	Time	Temp *F	pH	E.C.	D.O.
10	1269	69.2	6.47	422	1.6
20	1310	69.1	6.46	421	1.7
27	1321	69.2	6.48	423	1.7

○ EPA 601 ___
☒ TPH-G/BTEX Hcl
○ TPH Diesel ___
○ TOG 5520 BF ___
Time Sampled: 1321

AW-7

Well ID	Depth to Water	Diam	Cap/Lock	Product Depth	Thickness
AW-7	22.24	2"	OK	None	—

Total Depth - Water Level = x Well Vol. Factor = x#vol. to Purge = PurgeVol.
32.3 - 22.24 = 10.06 x .16 = 1.6 x 3 = 4.8

Purge Method: ☒ Surface Pump ☒ Disp.Tube ○ Winch ○ Disp. Bailer(s) ___ ○ Sys Port

Comments:

Gal.	Time	Temp *F	pH	E.C.	D.O.
2	0920	68.5	6.51	372	2.9
4	0924	68.3	6.50	371	2.7
5	0927	68.1	6.41	370	2.5

○ EPA 601 ___
☒ TPH-G/BTEX Hcl
○ TPH Diesel ___
○ TOG 5520 BF ___
Time Sampled: 0927

AW-8

Well ID	Depth to Water	Diam	Cap/Lock	Product Depth	Thickness
AW-8	24.14	2"	OK	None	—

Total Depth - Water Level = x Well Vol. Factor = x#vol. to Purge = PurgeVol.
39.2 - 24.14 = 15.06 x .16 = 2.4 x 3 = 7.22

Purge Method: ☒ Surface Pump ☒ Disp.Tube ○ Winch ○ Disp. Bailer(s) ___ ○ Sys Port

Comments:

Gal.	Time	Temp *F	pH	E.C.	D.O.
3	1020	66.3	6.91	7.35	1.8
6	1024	65.9	6.90	7 30	1.6
8	1027	65.7	6.98	7.31	1.5

○ EPA 601 ___
☒ TPH-G/BTEX ___
○ TPH Diesel ___
○ TOG 5520 BF ___
Time Sampled: 1027

MW-1

Well ID	Depth to Water	Diam	Cap/Lock	Product Depth	Thickness
MW-1	10.94	2"	OK	Sheen	Sheen

Total Depth - Water Level = x Well Vol. Factor = x#vol. to Purge = PurgeVol.
30.0 - 10.94 = x .16 = x 3 =

Purge Method: ○ Surface Pump ○ Disp.Tube ○ Winch ○ Disp. Bailer(s) ___ ○ Sys Port

Comments: PURGED 2 Liters water.

Gal.	Time	Temp *F	pH	E.C.	D.O.
		68.7	6.53	540	1.6

○ EPA 601 ___
☒ TPH-G/BTEX Hcl
○ TPH Diesel ___
○ TOG 5520 BF ___
Time Sampled: ___

Alisto Engineering Group — Field Report / Sampling Data Sheet

1777 Oakland Blvd., Ste200
Walnut Creek CA 94596 (510) 295-1650 Fax 295-1823

Consultant: ALISTO ENGINEERING GROUP

☒ Groundwater Sampling ○ Groundwater Monitoring ○ Well Development

Date: 4-21-94 | Day: THURS | Weather: CLOUDS

Project No. 10-025-02-004 | Station No. BP11133 | Address 2220 98tH avenue, Oakland

Well ID	Depth to Water	Diam	Cap/Lock	Product Depth	Thickness	Gal.	Time	Temp *F	pH	E.C.	D.O.	○ EPA 601 ○ TPH-G/BTEX ○ TPH Diesel ○ TOG 5520 BF
MW-2	10.60'	2"	ok	None	None	3	1510	66.7	6.72	241	1.3	☒ TPH-G/BTEX AO
Total Depth - Water Level =	x Well Vol. Factor =		x#vol. to Purge =		PurgeVol.	6	1520	66.1	6.71	240	1.2	
31.4 - 10.60 = 20.8 x .16 = 3.3 x 3 =					9.9	9	1530	65.9	6.72	243	1.1	
Purge Method: ☒Surface Pump ☒Disp.Tube OWinch ODisp. Bailer(s)___ OSys Port												Time Sampled
Comments:												1530

Well ID	Depth to Water	Diam	Cap/Lock	Product Depth	Thickness	Gal.	Time	Temp *F	pH	E.C.	D.O.	○ EPA 601 ☒ TPH-G/BTEX Hel ○ TPH Diesel ○ TOG 5520 BF
MW-3	16.62'	2"	ok	None	None	2	1439	68.0	6.62	288	1.6	
Total Depth - Water Level =	x Well Vol. Factor =		x#vol. to Purge =		PurgeVol.	5	1444	68.1	6.60	286	1.5	
34.1 - 16.62 = 17.48 x .16 = 2.79 x 3 =					8.3	9	1450	68.2	6.59	284	1.4	
Purge Method: ☒Surface Pump ☒Disp.Tube OWinch ODisp. Bailer(s)___ OSys Port												Time Sampled
Comments:												1450

Well ID	Depth to Water	Diam	Cap/Lock	Product Depth	Thickness	Gal.	Time	Temp *F	pH	E.C.	D.O.	○ EPA 601 ○ TPH-G/BTEX ○ TPH Diesel ○ TOG 5520 BF
RW-1	23.10'	6"	Broken	22.19'	0.91'							
Total Depth - Water Level =	x Well Vol. Factor =		x#vol. to Purge =		PurgeVol.							
needs new 6" expanding plug + lock												
Purge Method: OSurface Pump ODisp.Tube OWinch ODisp. Bailer(s)___ OSys Port												Time Sampled
Comments: PPRS EMPTIED 2 Liters product. 5g. Product Was bailed.												NOT

Well ID	Depth to Water	Diam	Cap/Lock	Product Depth	Thickness	Gal.	Time	Temp *F	pH	E.C.	D.O.	○ EPA 601 ○ TPH-G/BTEX Hel ○ TPH Diesel ○ TOG 5520 BF
QC-2												
Total Depth - Water Level =	x Well Vol. Factor =		x#vol. to Purge =		PurgeVol.							
TRIP BLANK FROM PACE												
Purge Method: OSurface Pump ODisp.Tube OWinch ODisp. Bailer(s)___ OSys Port												Time Sampled
Comments:												1200

Well ID	Depth to Water	Diam	Cap/Lock	Product Depth	Thickness	Gal.	Time	Temp *F	pH	E.C.	D.O.	○ EPA 601 ☒ TPH-G/BTEX Hel ○ TPH Diesel ○ TOG 5520 BF
QC-1												
Total Depth - Water Level =	x Well Vol. Factor =		x#vol. to Purge =		PurgeVol.							
DUPLICATE OF AW-4												
Purge Method: OSurface Pump ODisp.Tube OWinch ODisp. Bailer(s)___ OSys Port												Time Sampled
Comments:												1123

APPENDIX B

LABORATORY REPORT AND CHAIN OF CUSTODY RECORD

pace INCORPORATED
THE ASSURANCE OF QUALITY

REPORT OF LABORATORY ANALYSIS

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

May 05, 1994
PACE Project Number: 440428508

Attn: Mr. Bill Howell

Client Reference: BP Site #11133/10-025-02-004

PACE Sample Number:			70 0312108	
Date Collected:			04/21/94	
Date Received:			04/28/94	
			AW-1	
Parameter	Units	MDL		DATE ANALYZED
ORGANIC ANALYSIS				
PURGEABLE FUELS AND AROMATICS				
TOTAL FUEL HYDROCARBONS, (LIGHT):			-	05/03/94
Purgeable Fuels, as Gasoline (EPA 8015M)	ug/L	2500	40000	05/03/94
PURGEABLE AROMATICS (BTXE BY EPA 8020M):			-	05/03/94
Benzene	ug/L	25	12000	05/03/94
Toluene	ug/L	5.0	1900	05/03/94
Ethylbenzene	ug/L	5.0	1600	05/03/94
Xylenes, Total	ug/L	5.0	5000	05/03/94

11 Digital Drive
Novato, CA 94949
TEL: 415-883-6100
FAX: 415-883-2673

REPORT OF LABORATORY ANALYSIS

May 05, 1994
PACE Project Number: 440428508

Client Reference: BP Site #11133/10-025-02-004

PACE Sample Number:			70 0312116	
Date Collected:			04/21/94	
Date Received:			04/28/94	
Client Sample ID:			AW-2	
Parameter	Units	MDL		DATE ANALYZED
ORGANIC ANALYSIS				
PURGEABLE FUELS AND AROMATICS				
TOTAL FUEL HYDROCARBONS, (LIGHT):			-	05/03/94
Purgeable Fuels, as Gasoline (EPA 8015M)	ug/L	50	ND	05/03/94
PURGEABLE AROMATICS (BTXE BY EPA 8020M):			-	05/03/94
Benzene	ug/L	0.5	ND	05/03/94
Toluene	ug/L	0.5	ND	05/03/94
Ethylbenzene	ug/L	0.5	ND	05/03/94
Xylenes, Total	ug/L	0.5	ND	05/03/94

11 Digital Drive
Novato, CA 94949
TEL: 415-883-6100
FAX: 415-883-2673

Client Reference: BP Site #11133/10-025-02-004

PACE Sample Number:			70 0312124	
Date Collected:			04/21/94	
Date Received:			04/28/94	
Client Sample ID:			AW-3	
Parameter	Units	MDL		DATE ANALYZED
ORGANIC ANALYSIS				
PURGEABLE FUELS AND AROMATICS				
TOTAL FUEL HYDROCARBONS, (LIGHT):			-	05/03/94
Purgeable Fuels, as Gasoline (EPA 8015M)	ug/L	50	150	05/03/94
PURGEABLE AROMATICS (BTXE BY EPA 8020M):			-	05/03/94
Benzene	ug/L	0.5	3.6	05/03/94
Toluene	ug/L	0.5	0.8	05/03/94
Ethylbenzene	ug/L	0.5	0.9	05/03/94
Xylenes, Total	ug/L	0.5	2.5	05/03/94

REPORT OF LABORATORY ANALYSIS

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May 05, 1994
PACE Project Number: 440428508

Client Reference: BP Site #11133/10-025-02-004

PACE Sample Number:			70 0312132	
Date Collected:			04/21/94	
Date Received:			04/28/94	
Client Sample ID:			AW-4	
Parameter	Units	MDL		DATE ANALYZED
ORGANIC ANALYSIS				
PURGEABLE FUELS AND AROMATICS				
TOTAL FUEL HYDROCARBONS, (LIGHT):			-	05/03/94
Purgeable Fuels, as Gasoline (EPA 8015M)	ug/L	1000	12000	05/03/94
PURGEABLE AROMATICS (BTXE BY EPA 8020M):			-	05/03/94
Benzene	ug/L	10	110	05/03/94
Toluene	ug/L	10	250	05/03/94
Ethylbenzene	ug/L	10	150	05/03/94
Xylenes, Total	ug/L	10	1900	05/03/94

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REPORT OF LABORATORY ANALYSIS

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May 05, 1994
PACE Project Number: 440428508

Client Reference: BP Site #11133/10-025-02-004

PACE Sample Number:			70 0312140	
Date Collected:			04/21/94	
Date Received:			04/28/94	
Client Sample ID:			AW-5	
Parameter	Units	MDL		DATE ANALYZED
ORGANIC ANALYSIS				
PURGEABLE FUELS AND AROMATICS				
TOTAL FUEL HYDROCARBONS, (LIGHT):			-	05/03/94
Purgeable Fuels, as Gasoline (EPA 8015M)	ug/L	50	1000	05/03/94
PURGEABLE AROMATICS (BTXE BY EPA 8020M):			-	05/03/94
Benzene	ug/L	0.5	110	05/03/94
Toluene	ug/L	0.5	25	05/03/94
Ethylbenzene	ug/L	0.5	56	05/03/94
Xylenes, Total	ug/L	0.5	27	05/03/94

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PACE Project Number: 440428508

Client Reference: BP Site #11133/10-025-02-004

PACE Sample Number:			70 0312159	
Date Collected:			04/21/94	
Date Received:			04/28/94	
Client Sample ID:			AW-6	
Parameter	Units	MDL		DATE ANALYZED
ORGANIC ANALYSIS				
PURGEABLE FUELS AND AROMATICS				
TOTAL FUEL HYDROCARBONS, (LIGHT):			-	05/02/94
Purgeable Fuels, as Gasoline (EPA 8015M)	ug/L	50	ND	05/02/94
PURGEABLE AROMATICS (BTXE BY EPA 8020M):			-	05/02/94
Benzene	ug/L	0.5	ND	05/02/94
Toluene	ug/L	0.5	ND	05/02/94
Ethylbenzene	ug/L	0.5	ND	05/02/94
Xylenes, Total	ug/L	0.5	ND	05/02/94

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REPORT OF LABORATORY ANALYSIS

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May 05, 1994
PACE Project Number: 440428508

Client Reference: BP Site #11133/10-025-02-004

PACE Sample Number:			70 0312167	
Date Collected:			04/21/94	
Date Received:			04/28/94	
Client Sample ID:			AW-7	
Parameter	Units	MDL		DATE ANALYZED
ORGANIC ANALYSIS				
PURGEABLE FUELS AND AROMATICS				
TOTAL FUEL HYDROCARBONS, (LIGHT):			-	05/03/94
Purgeable Fuels, as Gasoline (EPA 8015M)	ug/L	50	ND	05/03/94
PURGEABLE AROMATICS (BTXE BY EPA 8020M):			-	05/03/94
Benzene	ug/L	0.5	ND	05/03/94
Toluene	ug/L	0.5	ND	05/03/94
Ethylbenzene	ug/L	0.5	ND	05/03/94
Xylenes, Total	ug/L	0.5	ND	05/03/94

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May 05, 1994
PACE Project Number: 440428508

Client Reference: BP Site #11133/10-025-02-004

PACE Sample Number:			70 0312175	
Date Collected:			04/21/94	
Date Received:			04/28/94	
Client Sample ID:			AW-8	
Parameter	Units	MDL		DATE ANALYZED
ORGANIC ANALYSIS				
PURGEABLE FUELS AND AROMATICS				
TOTAL FUEL HYDROCARBONS, (LIGHT):			-	05/02/94
Purgeable Fuels, as Gasoline (EPA 8015M)	ug/L	50	ND	05/02/94
PURGEABLE AROMATICS (BTXE BY EPA 8020M):			-	05/02/94
Benzene	ug/L	0.5	ND	05/02/94
Toluene	ug/L	0.5	ND	05/02/94
Ethylbenzene	ug/L	0.5	ND	05/02/94
Xylenes, Total	ug/L	0.5	ND	05/02/94

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May 05, 1994
PACE Project Number: 440428508

Client Reference: BP Site #11133/10-025-02-004

PACE Sample Number:			70 0312183	
Date Collected:			04/21/94	
Date Received:			04/28/94	
Client Sample ID:			MW-1	
Parameter	Units	MDL		DATE ANALYZED
ORGANIC ANALYSIS				
PURGEABLE FUELS AND AROMATICS				
TOTAL FUEL HYDROCARBONS, (LIGHT):			-	05/02/94
Purgeable Fuels, as Gasoline (EPA 8015M)	ug/L	5000	110000	05/02/94
PURGEABLE AROMATICS (BTXE BY EPA 8020M):			-	05/02/94
Benzene	ug/L	50	1400	05/02/94
Toluene	ug/L	50	9100	05/02/94
Ethylbenzene	ug/L	50	3400	05/02/94
Xylenes, Total	ug/L	50	30000	05/02/94

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May 05, 1994
PACE Project Number: 440428508

Client Reference: BP Site #11133/10-025-02-004

PACE Sample Number:			70 0312191	
Date Collected:			04/21/94	
Date Received:			04/28/94	
Client Sample ID:			MW-2	
Parameter	Units	MDL		DATE ANALYZED
ORGANIC ANALYSIS				
PURGEABLE FUELS AND AROMATICS				
TOTAL FUEL HYDROCARBONS, (LIGHT):			-	05/02/94
Purgeable Fuels, as Gasoline (EPA 8015M)	ug/L	50	ND	05/02/94
PURGEABLE AROMATICS (BTXE BY EPA 8020M):			-	05/02/94
Benzene	ug/L	0.5	ND	05/02/94
Toluene	ug/L	0.5	ND	05/02/94
Ethylbenzene	ug/L	0.5	ND	05/02/94
Xylenes, Total	ug/L	0.5	ND	05/02/94

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May 05, 1994
PACE Project Number: 440428508

Client Reference: BP Site #11133/10-025-02-004

PACE Sample Number:			70 0312205	
Date Collected:			04/21/94	
Date Received:			04/28/94	
Client Sample ID:			MW-3	
Parameter	Units	MDL		DATE ANALYZED
ORGANIC ANALYSIS				
PURGEABLE FUELS AND AROMATICS				
TOTAL FUEL HYDROCARBONS, (LIGHT):			-	05/03/94
Purgeable Fuels, as Gasoline (EPA 8015M)	ug/L	50	2000	05/03/94
PURGEABLE AROMATICS (BTXE BY EPA 8020M):			-	05/03/94
Benzene	ug/L	0.5	ND	05/03/94
Toluene	ug/L	0.5	ND	05/03/94
Ethylbenzene	ug/L	0.5	ND	05/03/94
Xylenes, Total	ug/L	0.5	ND	05/03/94

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REPORT OF LABORATORY ANALYSIS

May 05, 1994
PACE Project Number: 440428508

Client Reference: BP Site #11133/10-025-02-004

PACE Sample Number:			70 0312213	
Date Collected:			04/21/94	
Date Received:			04/28/94	
Client Sample ID:			QC-1	
Parameter	Units	MDL		DATE ANALYZED
ORGANIC ANALYSIS				
PURGEABLE FUELS AND AROMATICS				
TOTAL FUEL HYDROCARBONS, (LIGHT):			-	05/02/94
Purgeable Fuels, as Gasoline (EPA 8015M)	ug/L	1000	14000	05/02/94
PURGEABLE AROMATICS (BTXE BY EPA 8020M):			-	05/02/94
Benzene	ug/L	0.5	71	05/02/94
Toluene	ug/L	0.5	160	05/02/94
Ethylbenzene	ug/L	0.5	29	05/02/94
Xylenes, Total	ug/L	0.5	1200	05/02/94

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May 05, 1994
PACE Project Number: 440428508

Client Reference: BP Site #11133/10-025-02-004

PACE Sample Number:			70 0312221	
Date Collected:			04/21/94	
Date Received:			04/28/94	
Client Sample ID:			QC-2	
Parameter	Units	MDL		DATE ANALYZED
ORGANIC ANALYSIS				
PURGEABLE FUELS AND AROMATICS				
TOTAL FUEL HYDROCARBONS, (LIGHT):			-	05/02/94
Purgeable Fuels, as Gasoline (EPA 8015M)	ug/L	50	ND	05/02/94
PURGEABLE AROMATICS (BTXE BY EPA 8020M):			-	05/02/94
Benzene	ug/L	0.5	ND	05/02/94
Toluene	ug/L	0.5	ND	05/02/94
Ethylbenzene	ug/L	0.5	ND	05/02/94
Xylenes, Total	ug/L	0.5	ND	05/02/94

These data have been reviewed and are approved for release.

Darrell C. Cain
Regional Director

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FOOTNOTES
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May 05, 1994
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MDL Method Detection Limit
ND Not detected at or above the MDL.

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QUALITY CONTROL DATA

May 05, 1994
PACE Project Number: 440428508

Client Reference: BP Site #11133/10-025-02-004

PURGEABLE FUELS AND AROMATICS
Batch: 70 30060
Samples: 70 0312116

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	700311772	Spike	Spike Recv	Spike Dupl Recv	RPD
Purgeable Fuels, as Gasoline (EPA 8015M	ug/L	50	ND	1000	105%	100%	5%

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%	95%	2%

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Client Reference: BP Site #11133/10-025-02-004

PURGEABLE FUELS AND AROMATICS
Batch: 70 30094
Samples: 70 0312140, 70 0312159, 70 0312167, 70 0312175, 70 0312183
70 0312191, 70 0312205, 70 0312213, 70 0312221

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	700312175 AW-8	Spike	Spike Recv	Spike Dupl Recv	RPD
Purgeable Fuels, as Gasoline (EPA 8015M	ug/L	50	ND	1000	96%	99%	3%

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	88%	86%	2%

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QUALITY CONTROL DATA

May 05, 1994
PACE Project Number: 440428508

Client Reference: BP Site #11133/10-025-02-004

PURGEABLE FUELS AND AROMATICS
Batch: 70 30106
Samples: 70 0312108, 70 0312124, 70 0312132

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	700312469	Spike	Spike Recv	Spike Dupl Recv	RPD
Benzene	ug/L	0.5	ND	100	91%	89%	2%
Toluene	ug/L	0.5	ND	100	92%	91%	1%
Ethylbenzene	ug/L	0.5	ND	100	86%	83%	4%
Xylenes, Total	ug/L	0.5	ND	300	90%	87%	3%

LABORATORY CONTROL SAMPLE AND CONTROL SAMPLE DUPLICATE:

Parameter	Units	MDL	Reference Value	Recv	Dupl Recv	RPD
Benzene	ug/L	0.5	100	97%	98%	1%
Toluene	ug/L	0.5	100	102%	105%	3%
Ethylbenzene	ug/L	0.5	100	99%	98%	1%
Xylenes, Total	ug/L	0.5	300	104%	105%	1%

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Client Reference: BP Site #11133/10-025-02-004

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

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4460428.508

CHAIN OF CUSTODY

No. 052964 Page ____ of ____

CONSULTANT'S NAME: ALLSTO ENGINEERING	ADDRESS: 1777 OAKLAND BLVD. STE 200	CITY: WALNUT CREEK	STATE: CA ZIP CODE: 94596
BP SITE NUMBER: BP11133	BP CORNER ADDRESS/CITY: 2220 98th AVE., OAKLAND		CONSULTANT PROJECT NUMBER: 10-025-02.004
CONSULTANT PROJECT MANAGER: BILL HOWELL	PHONE NUMBER: 510 295 1650	FAX NUMBER: 510 295 1823	CONSULTANT CONTRACT NUMBER:
BP CONTACT: SCOTT HOOTEN	~~BP ADDRESS~~ SITE: 2220 98th AVE, OAKLAND	PHONE NUMBER:	FAX NO.:
LAB CONTACT: JIM OYES	LABORATORY ADDRESS: 11 DIGITAL DR., NOVATO	PHONE NUMBER:	FAX NO.:
SAMPLED BY (Please Print Name): DANIEL J. BIRCH	SAMPLED BY (Signature):	SHIPMENT DATE:	SHIPMENT METHOD:
			AIRBILL NUMBER:

TAT: ☐ 24 Hours ☐ 48 Hours ☐ 1 Week ☐ Standard 2 Weeks

ANALYSIS REQUIRED

SAMPLE DESCRIPTION	COLLECTION DATE	MATRIX SOIL/WATER	CONTAINERS NO.	CONTAINERS TYPE (VOL.)	PRESERVATIVE LAB SAMPLE #	[redacted]	[redacted]	HCl TPH GAS BTEX							COMMENTS
AW-1	4-21-94	WATER	3	VOAs	31210.8			X							
AW-2					31211.6			X							
AW-3					31212.4			X							
AW-4					31213.2			X							
AW-5					31214.0			X							
AW-6					31215.9			X							
AW-7					31216.7			X							
AW-8					31217.5			X							
MW-1					31218.3			X							
MW-2					31219.1			X							
MW-3					31220.5			X							
~~AW-4~~ QC-1					31221.3			X							
QC-2			1		31222.1			X							

RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME
[signature]	4/28/94	1430	[signature]	4/28/94	1440
[signature]	4/28	1720	[signature]	4/28/94	1720

ADDITIONAL COMMENTS: 14/1

CLV-16722

Distribution: White - Original (with Data)
Yellow - BP
Pink - Lab
Blue - Consultant Field Staff