GROUNDWATER MONITORING AND SAMPLING REPORT

BP Oil Company Service Station No. 11109
4280 Foothill Boulevard
Oakland, California

Project No. 10-014

Prepared for:

BP Oil Company
Environmental Resource Management
16400 Southcenter Parkway, Suite 301
Tukwila, Washington

Prepared by:

Alisto Engineering Group
1000 Burnett Avenue, Suite 420
Concord, California

February 26, 1993

Brady Nagle
Project Manager

Al Sevilla, P.E.
Principal

GROUNDWATER MONITORING AND SAMPLING REPORT

BP Oil Company Service Station No. 11109
4280 Foothill Boulevard
Oakland, California

Project No. 10-014

February 26, 1993

INTRODUCTION

This report presents the results and findings of the December 31, 1992 groundwater monitoring and sampling conducted by Alisto Engineering Group at BP Oil Company Service Station No. 11109, 4280 Foothill Boulevard, 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 California Regional Water Quality Control Board, San Francisco Bay Region, and the Alameda County Health Care Services Agency.

Before purging and sampling, the groundwater level in each well was measured from a permanent mark on the 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 relative 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, unless the monitoring well would not produce sufficient groundwater. 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 quarterly monitoring event are shown in Figure 2. Isoconcentration maps for total petroleum hydrocarbons as gasoline and benzene detected in the groundwater samples are shown in Figures 3 and 4. The laboratory report and chain of custody record are presented in Appendix B.

TABLE 1 - SUMMARY OF RESULTS OF GROUNDWATER MONITORING AND SAMPLING
BP OIL COMPANY SERVICE STATION NO. 11109
4280 FOOTHILL BOULEVARD, OAKLAND, CALIFORNIA

ALISTO PROJECT NO. 10-014

WELL ID	DATE OF SAMPLING/ MONITORING	CASING ELEVATION (a) (Feet)	DEPTH TO WATER (Feet)	PRODUCT THICKNESS (Feet)	GROUNDWATER ELEVATION (b) (Feet)	TPH-G (ppb)	TPH-D (ppb)	B (ppb)	T (ppb)	E (ppb)	X (ppb)	TOG (ppb)	HVOC (ppb)	LAB
MW-1	01/31/90	38.19	15.41	0.00	22.78	---	---	---	---	---	---	---	---	---
MW-1 (c)	02/05/90	---	---	0.00	---	---	---	---	---	---	---	---	---	---
MW-2	02/05/90	38.21	21.91	0.00	16.30	1300	---	14	ND<1.0	9	13	---	---	SUP
MW-2	02/14/91	38.21	21.16	0.00	17.05	ND<50	ND<10000	ND<0.3	ND<0.3	ND<0.3	ND<0.3	ND<5000	51 (d)	SUP
MW-2	05/13/91	38.21	21.32	0.00	16.89	ND<50	ND<50	ND<0.3	ND<0.3	ND<0.3	ND<0.3	6000	0.5 (e)	SUP
MW-2	07/24/91	38.21	22.92	0.00	15.29	---	---	---	---	---	---	---	---	---
MW-2	10/03/91	38.21	24.90	0.00	13.31	ND<50	ND<50	ND<0.3	0.8	ND<0.3	ND<0.3	ND<5000	0.7 (e)	SUP
MW-2	10/15/91	38.21	24.10	0.00	14.11	---	---	---	---	---	---	---	---	---
MW-2	12/04/91	38.21	INACCESSIBLE	---	---	---	---	---	---	---	---	---	---	---
MW-2	12/16/91	38.21	23.95	0.00	14.26	---	---	---	---	---	---	---	---	---
MW-2	01/06/92	38.21	23.30	0.00	14.91	ND<50	ND<50	ND<0.3	ND<0.3	ND<0.3	ND<0.3	ND<5000	ND	ANA
MW-2	01/22/92	38.21	23.14	0.00	15.07	---	---	---	---	---	---	---	---	---
MW-2	01/28/92	38.21	22.99	0.00	15.22	---	---	---	---	---	---	---	---	---
MW-2	02/05/92	38.21	22.63	0.00	15.58	---	---	---	---	---	---	---	---	---
MW-2	02/12/92	38.21	22.04	0.00	16.17	---	---	---	---	---	---	---	---	---
MW-2	02/17/92	38.21	20.84	0.00	17.37	---	---	---	---	---	---	---	---	---
MW-2	04/03/92	38.21	18.29	0.00	19.92	---	---	---	---	---	---	---	---	---
MW-2	04/08/92	38.21	18.86	0.00	19.35	ND<50	63	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5000	ND	ANA
MW-2	04/14/92	38.21	19.45	0.00	18.76	---	---	---	---	---	---	---	---	---
MW-2	04/29/92	38.21	20.35	0.00	17.86	---	---	---	---	---	---	---	---	---
MW-2	05/07/92	38.21	20.84	0.00	17.37	---	---	---	---	---	---	---	---	---
MW-2	07/03/92	38.21	22.34	0.00	15.87	ND<50	---	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	ANA
MW-2	10/08/92	38.21	23.73	0.00	14.48	ND<50	---	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	ANA
MW-2	12/31/92	38.21	21.12	0.00	17.09	ND<50	---	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	ANA
MW-3	02/05/90	37.74	17.45	0.00	20.29	1400	---	15	ND<2.5	11	8	---	---	SUP
MW-3	02/14/91	37.74	18.52	0.00	19.22	320	---	8	ND<0.3	8	1	---	---	SUP
MW-3	05/13/91	37.74	19.32	0.00	18.42	640	---	13	ND<0.3	18	1	---	---	SUP
MW-3	07/24/91	37.74	20.69	0.00	17.05	---	---	---	---	---	---	---	---	---
MW-3	10/03/91	37.74	19.47	0.00	18.27	940	---	21	ND<0.3	23	2.1	---	---	SUP
MW-3	10/15/91	37.74	20.46	0.00	17.28	---	---	---	---	---	---	---	---	---
MW-3	12/04/91	37.74	18.29	0.00	19.45	---	---	---	---	---	---	---	---	---
MW-3	12/16/91	37.74	18.34	0.00	19.40	---	---	---	---	---	---	---	---	---
MW-3	01/06/92	37.74	18.50	0.00	19.24	580	---	6.1	1	6.1	7.1	---	---	ANA
MW-3	01/22/92	37.74	17.86	0.00	19.88	---	---	---	---	---	---	---	---	---
MW-3	01/28/92	37.74	15.84	0.00	21.90	---	---	---	---	---	---	---	---	---
MW-3	02/05/92	37.74	17.53	0.00	20.21	---	---	---	---	---	---	---	---	---
MW-3	02/12/92	37.74	17.15	0.00	20.59	---	---	---	---	---	---	---	---	---
MW-3	02/17/92	37.74	16.18	0.00	21.56	---	---	---	---	---	---	---	---	---
MW-3	04/03/92	37.74	14.80	0.00	22.94	---	---	---	---	---	---	---	---	---
MW-3	04/08/92	37.74	17.06	0.00	20.68	1100	---	30	4.6	32	11	---	---	ANA
MW-3	04/14/92	37.74	15.22	0.00	22.52	---	---	---	---	---	---	---	---	---
MW-3	04/29/92	37.74	15.90	0.00	21.84	---	---	---	---	---	---	---	---	---
MW-3	05/07/92	37.74	16.35	0.00	21.39	---	---	---	---	---	---	---	---	---
MW-3	07/03/92	37.74	17.74	0.00	20.00	1200	---	38	ND<2.5	24	ND<2.5	---	---	ANA
MW-3	10/08/92	37.74	19.06	0.00	18.68	1400	---	31	ND<0.5	25	13	---	---	ANA
MW-3	12/31/92	37.74	16.61	0.00	21.13	820	---	12	4.1	13	5.9	---	---	ANA
QC-1 (f)	12/31/92	37.74	16.61	0.00	21.13	(dup) 960	---	11	3.6	10	3.8	---	---	ANA

TABLE 1 - SUMMARY OF RESULTS OF GROUNDWATER MONITORING AND SAMPLING
BP OIL COMPANY SERVICE STATION NO. 11109
4280 FOOTHILL BOULEVARD, OAKLAND, CALIFORNIA

ALISTO PROJECT NO. 10-014

WELL ID		DATE OF SAMPLING/ MONITORING	CASING ELEVATION (a) (Feet)	DEPTH TO WATER (Feet)	PRODUCT THICKNESS (Feet)	GROUNDWATER ELEVATION (b) (Feet)	TPH-G (ppb)	TPH-D (ppb)	B (ppb)	T (ppb)	E (ppb)	X (ppb)	TOG (ppb)	HVOC (ppb)	LAB
MW-4		02/05/90	37.09	20.75	0.00	16.34	620	—	ND<0.5	9	ND<0.5	10	---	—	SUP
MW-4		02/14/91	37.09	21.73	0.00	15.36	180	---	ND<0.3	ND<0.3	0.4	2	—	—	SUP
MW-4		05/13/91	37.09	18.55	0.00	18.54	72	---	0.7	ND<0.3	ND<0.3	ND<0.3	---	---	SUP
MW-4		07/24/91	37.09	21.31	0.00	15.78	---	---	—	—	—	—	---	---	---
MW-4		10/03/91	37.09	22.57	0.00	14.52	57	—	ND<0.3	ND<0.3	ND<0.3	ND<0.3	---	---	SUP
MW-4		10/15/91	37.09	22.88	0.00	14.21	---	---	---	---	---	—	—	---	---
MW-4		12/04/91	37.09	22.54	0.00	14.55	---	---	---	---	—	—	---	---	---
MW-4		12/16/91	37.09	22.59	0.00	14.50	---	---	—	—	---	---	---	---	---
MW-4		01/06/92	37.09	22.00	0.00	15.09	480	---	0.8	3.2	1.9	7.7	---	---	ANA
MW-4		01/22/92	37.09	21.58	0.00	15.51	—	—	---	---	---	---	—	—	—
MW-4		01/28/92	37.09	21.42	0.00	15.67	—	—	---	---	---	---	—	—	—
MW-4		02/05/92	37.09	21.10	0.00	15.99	---	---	---	---	---	—	—	---	---
MW-4		02/12/92	37.09	20.74	0.00	16.35	—	—	---	---	---	---	---	—	—
MW-4		02/17/92	37.09	19.78	0.00	17.31	---	—	—	---	---	---	---	—	—
MW-4		04/03/92	37.09	16.80	0.00	20.29	—	—	---	---	---	---	—	—	—
MW-4		04/08/92	37.09	17.13	0.00	19.96	ND<50	—	ND<0.5	ND<0.5	ND<0.5	ND<0.5	—	—	ANA
MW-4		04/14/92	37.09	17.74	0.00	19.35	---	---	—	—	---	---	---	---	---
MW-4		04/29/92	37.09	18.56	0.00	18.53	---	—	—	---	---	---	---	---	—
MW-4		05/07/92	37.09	19.10	0.00	17.99	---	—	—	—	---	---	---	---	—
MW-4		07/03/92	37.09	20.71	0.00	16.38	ND<50	---	0.6	ND<0.5	ND<0.5	ND<0.5	---	---	ANA
MW-4		10/08/92	37.09	22.43	0.00	14.66	270	---	ND<0.5	2.1	2.5	3.2	---	---	ANA
MW-4		12/31/92	37.09	19.58	0.00	17.51	150	---	ND<0.5	ND<0.5	ND<0.5	1.3	---	---	ANA
MW-5		10/03/91	36.55	18.08	0.00	18.47	79000	—	13000	7400	1400	6200	—	—	SUP
MW-5		10/15/91	36.55	18.55	0.00	18.00	—	---	---	---	---	---	—	---	---
MW-5		12/04/91	36.55	18.44	0.13	18.21	---	---	---	---	---	—	—	---	---
MW-5		12/16/91	36.55	18.66	0.01	17.90	---	—	—	---	---	---	---	---	—
MW-5	(g)	01/06/92	36.55	19.12	0.11	17.51	—	—	---	---	---	---	---	—	—
MW-5		01/22/92	36.55	14.59	0.00	21.96	—	—	---	---	---	---	---	—	---
MW-5		01/28/92	36.55	15.25	0.00	21.30	---	---	---	---	---	—	—	---	---
MW-5		02/05/92	36.55	15.58	SHEEN	20.97	---	—	—	---	---	—	---	—	—
MW-5		02/12/92	36.55	15.54	0.01	21.02	---	—	—	---	---	---	---	—	—
MW-5		02/17/92	36.55	13.98	SHEEN	22.57	---	—	—	---	---	---	—	—	---
MW-5		04/03/92	36.55	13.63	0.04	22.95	---	---	---	—	—	---	---	---	---
MW-5	(g)	04/08/92	36.55	13.17	0.01	23.39	---	---	---	—	—	---	---	---	---
MW-5		04/14/92	36.55	13.45	0.01	23.11	---	---	---	---	---	---	---	---	---
MW-5		04/29/92	36.55	13.75	0.07	22.85	---	---	—	—	---	---	---	---	—
MW-5		05/07/92	36.55	16.15	0.04	20.43	—	—	---	---	---	---	—	—	---
MW-5	(g)	07/03/92	36.55	17.67	0.08	18.94	---	—	—	---	---	---	---	—	---
MW-5		09/01/92	36.55	17.83	0.50	19.10	—	---	---	---	---	---	—	—	---
MW-5	(g)	10/08/92	36.55	17.86	0.92	19.38	---	---	---	---	---	—	---	---	---
MW-5	(g)	12/31/92	36.55	15.20	Sheen	21.35	---	---	---	---	---	—	---	---	—

36.55 elevation @ GL

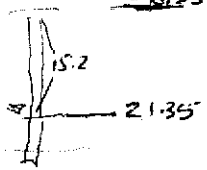


TABLE 1 - SUMMARY OF RESULTS OF GROUNDWATER MONITORING AND SAMPLING
BP OIL COMPANY SERVICE STATION NO. 11109
4280 FOOTHILL BOULEVARD, OAKLAND, CALIFORNIA

ALISTO PROJECT NO. 10-014

WELL ID		DATE OF SAMPLING/ MONITORING	CASING ELEVATION (a) (Feet)	DEPTH TO WATER (Feet)	PRODUCT THICKNESS (Feet)	GROUNDWATER ELEVATION (b) (Feet)	TPH-G (ppb)	TPH-D (ppb)	B (ppb)	T (ppb)	E (ppb)	X (ppb)	TOG (ppb)	HVOC (ppb)	LAB
MW-6		10/03/91	38.57	20.73	0.00	17.84	ND<50	—	0.7	0.8	ND<0.3	1.3	—	—	SUP
MW-6		10/15/91	38.57	21.20	0.00	17.37	—	—	—	—	—	—	—	—	—
MW-6		12/04/91	38.57	21.26	0.00	17.31	—	—	—	—	—	—	—	—	—
MW-6		12/16/91	38.57	21.12	0.00	17.45	—	—	—	—	—	—	—	—	—
MW-6		01/06/92	38.57	20.29	0.00	18.28	ND<50	—	ND<0.5	ND<0.5	ND<0.5	1.6	—	—	ANA
MW-6		01/22/92	38.57	20.12	0.00	18.45	—	—	—	—	—	—	—	—	—
MW-6		01/28/92	38.57	20.20	0.00	18.37	—	—	—	—	—	—	—	—	—
MW-6		02/05/92	38.57	20.09	0.00	18.48	—	—	—	—	—	—	—	—	—
MW-6		02/12/92	38.57	19.15	0.00	19.42	—	—	—	—	—	—	—	—	—
MW-6		02/17/92	38.57	18.02	0.00	20.55	—	—	—	—	—	—	—	—	—
MW-6		04/03/92	38.57	16.62	0.00	21.95	—	—	—	—	—	—	—	—	—
MW-6		04/08/92	38.57	17.06	0.00	21.51	ND<50	—	0.6	ND<0.5	0.8	ND<0.5	—	—	ANA
MW-6		04/14/92	38.57	17.23	0.00	21.34	—	—	—	—	—	—	—	—	—
MW-6		04/29/92	38.57	18.12	0.00	20.45	—	—	—	—	—	—	—	—	—
MW-6		05/07/92	38.57	18.52	0.00	20.05	—	—	—	—	—	—	—	—	—
MW-6		07/03/92	38.57	19.71	0.00	18.86	ND<50	—	ND<0.5	ND<0.5	ND<0.5	ND<0.5	—	—	ANA
MW-6		10/08/92	38.57	21.22	0.00	17.35	ND<50	—	ND<0.5	ND<0.5	ND<0.5	ND<0.5	—	—	ANA
QC-1	(f)	10/08/92	38.57	21.22	0.00	17.35	ND<50	—	ND<0.5	ND<0.5	ND<0.5	ND<0.5	—	—	ANA
MW-6		12/31/92	38.57	21.33	0.00	17.24	ND<50	—	ND<0.5	ND<0.5	ND<0.5	ND<0.5	—	—	ANA
MW-7		10/03/91	37.64	14.93	0.00	22.71	360	—	62	13	3.4	20	—	—	SUP
MW-7		10/15/91	37.64	15.16	0.00	22.48	—	—	—	—	—	—	—	—	—
MW-7		12/04/91	37.64	15.41	0.00	22.23	—	—	—	—	—	—	—	—	—
MW-7		12/16/91	37.64	15.21	0.00	22.43	—	—	—	—	—	—	—	—	—
MW-7		01/06/92	37.64	14.56	0.00	23.08	1100	—	170	ND<0.5	24	23	—	—	ANA
MW-7		01/22/92	37.64	14.63	0.00	23.01	—	—	—	—	—	—	—	—	—
MW-7		01/28/92	37.64	14.73	0.00	22.91	—	—	—	—	—	—	—	—	—
MW-7		02/05/92	37.64	14.58	0.00	23.06	—	—	—	—	—	—	—	—	—
MW-7		02/12/92	37.64	13.94	0.00	23.70	—	—	—	—	—	—	—	—	—
MW-7		02/17/92	37.64	13.10	0.00	24.54	—	—	—	—	—	—	—	—	—
MW-7		04/03/92	37.64	12.66	0.00	24.98	—	—	—	—	—	—	—	—	—
MW-7		04/08/92	37.64	12.77	0.00	24.87	750	—	150	ND<0.5	23	9.9	—	—	ANA
MW-7		04/14/92	37.64	13.02	0.00	24.62	—	—	—	—	—	—	—	—	—
MW-7		04/29/92	37.64	13.59	0.00	24.05	—	—	—	—	—	—	—	—	—
MW-7		05/07/92	37.64	13.95	0.00	23.69	—	—	—	—	—	—	—	—	—
MW-7		07/03/92	37.64	14.73	0.00	22.91	660	—	210	ND<2.5	33	8	—	—	ANA
MW-7		10/08/92	37.64	15.75	0.00	21.89	320	—	49	1.4	13	6.2	—	—	ANA
MW-7		12/31/92	37.64	13.57	0.00	24.07	900	—	100	ND<2.5	28	4.3	—	—	ANA

TABLE 1 - SUMMARY OF RESULTS OF GROUNDWATER MONITORING AND SAMPLING
BP OIL COMPANY SERVICE STATION NO. 11109
4280 FOOTHILL BOULEVARD, OAKLAND, CALIFORNIA

ALISTO PROJECT NO. 10-014

WELL ID		DATE OF SAMPLING/ MONITORING	CASING ELEVATION (a) (Feet)	DEPTH TO WATER (Feet)	PRODUCT THICKNESS (Feet)	GROUNDWATER ELEVATION (b) (Feet)	TPH-G (ppb)	TPH-D (ppb)	B (ppb)	T (ppb)	E (ppb)	X (ppb)	TOG (ppb)	HVOC (ppb)	LAB
MW-8		10/03/91	35.18	22.37	0.00	12.81	ND<50	---	ND<0.3	0.6	ND<0.3	0.9	---	---	SUP
MW-8		10/15/91	35.18	22.70	0.00	12.48	---	---	---	---	---	---	---	---	---
MW-8		12/04/91	35.18	22.44	0.00	12.74	---	---	---	---	---	---	---	---	---
MW-8		12/16/91	35.18	22.47	0.00	12.71	---	---	---	---	---	---	---	---	---
MW-8		01/06/92	35.18	21.94	0.00	13.24	ND<50	---	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	ANA
MW-8		01/22/92	35.18	21.44	0.00	13.74	---	---	---	---	---	---	---	---	---
MW-8		01/28/92	35.18	21.20	0.00	13.98	---	---	---	---	---	---	---	---	---
MW-8		02/05/92	35.18	20.88	0.00	14.30	---	---	---	---	---	---	---	---	---
MW-8		02/12/92	35.18	20.54	0.00	14.64	---	---	---	---	---	---	---	---	---
MW-8		02/17/92	35.18	19.99	0.00	15.19	---	---	---	---	---	---	---	---	---
MW-8		04/03/92	35.18	16.75	0.00	18.43	---	---	---	---	---	---	---	---	---
MW-8		04/08/92	35.18	16.57	0.00	18.61	ND<50	---	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	ANA
MW-8		04/14/92	35.18	INACCESSIBLE	---	---	---	---	---	---	---	---	---	---	---
MW-8		04/29/92	35.18	18.61	0.00	16.57	---	---	---	---	---	---	---	---	---
MW-8		05/07/92	35.18	18.41	0.00	16.77	---	---	---	---	---	---	---	---	---
MW-8		07/03/92	35.18	20.35	0.00	14.83	ND<50	---	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	ANA
MW-8	(h)	10/08/92	35.18	21.74	0.80	13.44	---	---	---	---	---	---	---	---	---
MW-8		12/31/92	35.18	19.09	0.00	16.09	ND<50	---	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	ANA

TABLE 1 - SUMMARY OF RESULTS OF GROUNDWATER MONITORING AND SAMPLING
BP OIL COMPANY SERVICE STATION NO. 11109
4280 FOOTHILL BOULEVARD, OAKLAND, CALIFORNIA

ALISTO PROJECT NO. 10-014

WELL ID	DATE OF SAMPLING/ MONITORING	CASING ELEVATION (a) (Feet)	DEPTH TO WATER (Feet)	PRODUCT THICKNESS (Feet)	GROUNDWATER ELEVATION (b) (Feet)	TPH-G (ppb)	TPH-D (ppb)	B (ppb)	T (ppb)	E (ppb)	X (ppb)	TOG (ppb)	HVOC (ppb)	LAB
MW-9	10/03/91	38.24	14.12	0.00	24.12	ND<50	---	ND<0.3	0.4	ND<0.3	ND<0.3	---	---	SUP
MW-9	10/15/91	38.24	14.27	0.00	23.97	---	---	---	---	---	---	---	---	---
MW-9	12/04/91	38.24	13.84	0.00	24.40	---	---	---	---	---	---	---	---	---
MW-9	12/16/91	38.24	14.18	0.00	24.06	---	---	---	---	---	---	---	---	---
MW-9	01/06/92	38.24	13.42	0.00	24.82	ND<50	---	ND<0.5	ND<0.5	ND<0.5	0.9	---	---	ANA
MW-9	01/22/92	38.24	13.75	0.00	24.49	---	---	---	---	---	---	---	---	---
MW-9	01/28/92	38.24	14.76	0.00	23.48	---	---	---	---	---	---	---	---	---
MW-9	02/05/92	38.24	13.38	0.00	24.86	---	---	---	---	---	---	---	---	---
MW-9	02/12/92	38.24	11.86	0.00	26.38	---	---	---	---	---	---	---	---	---
MW-9	02/17/92	38.24	10.78	0.00	27.46	---	---	---	---	---	---	---	---	---
MW-9	04/03/92	38.24	11.63	0.00	26.61	---	---	---	---	---	---	---	---	---
MW-9	04/08/92	38.24	12.25	0.00	25.99	ND<50	---	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	ANA
MW-9	04/14/92	38.24	12.32	0.00	25.92	---	---	---	---	---	---	---	---	---
MW-9	04/29/92	38.24	13.07	0.00	25.17	---	---	---	---	---	---	---	---	---
MW-9	05/07/92	38.24	14.43	0.00	23.81	---	---	---	---	---	---	---	---	---
MW-9	07/03/92	38.24	13.85	0.00	24.39	ND<50	---	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	ANA
MW-9	10/08/92	38.24	14.89	0.00	23.35	ND<50	---	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	ANA
MW-9	12/31/92	38.24	11.90	0.00	26.34	ND<50	---	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	ANA
QC-2 (i)	10/08/92	---	---	---	---	ND<50	---	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	ANA
QC-2 (i)	12/31/92	---	---	---	---	ND<50	---	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	ANA

ABBREVIATIONS:

TPH-G	Total petroleum hydrocarbons as gasoline
TPH-D	Total petroleum hydrocarbons as diesel
B	Benzene
T	Toluene
E	Ethylbenzene
X	Total xylenes
TOG	Total oil and grease
HVOC	Halogenated volatile organic compounds
ND	Not detected above reported detection limits
---	Not analyzed/applicable
ANA	Anametrix, Inc.
SUP	Superior Analytical Laboratory

NOTES:

(a) Top of casing elevations for all wells are surveyed relative to the City of Oakland survey station, with an elevation of 42.19 feet above mean sea level.

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

(c) Monitoring Well MW-1 was destroyed during tank removal activities in November 1990.

(d) Methylene chloride.

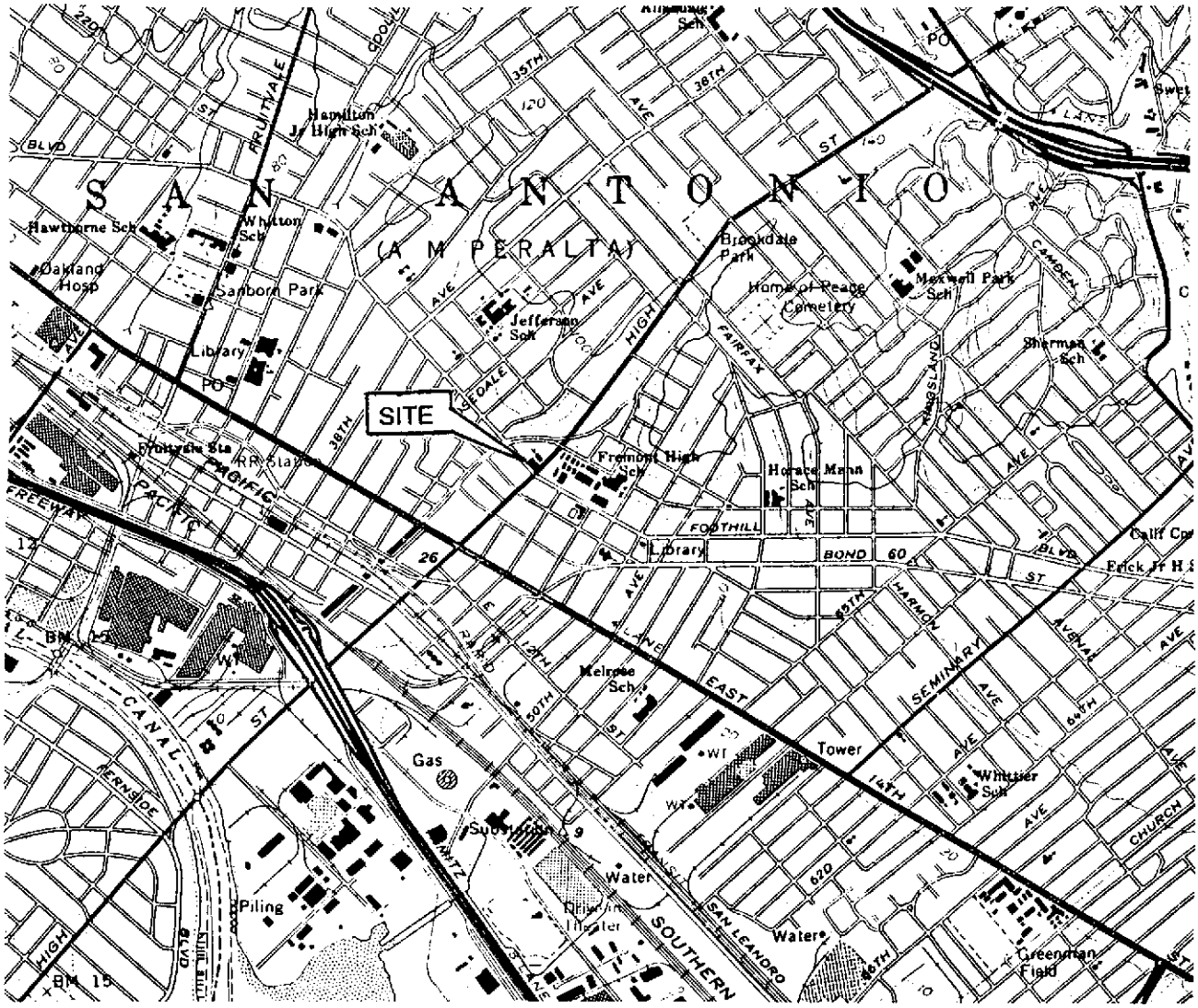
(e) 1,2-dichloroethane.

(f) Blind duplicate.

(g) Well not sampled due to the presence of free product.

(h) MW-8 not sampled due to an abandoned vehicle parked over the well.

(i) Travel blank.



N

0 1000 2000

SCALE IN FEET

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

FIGURE 1

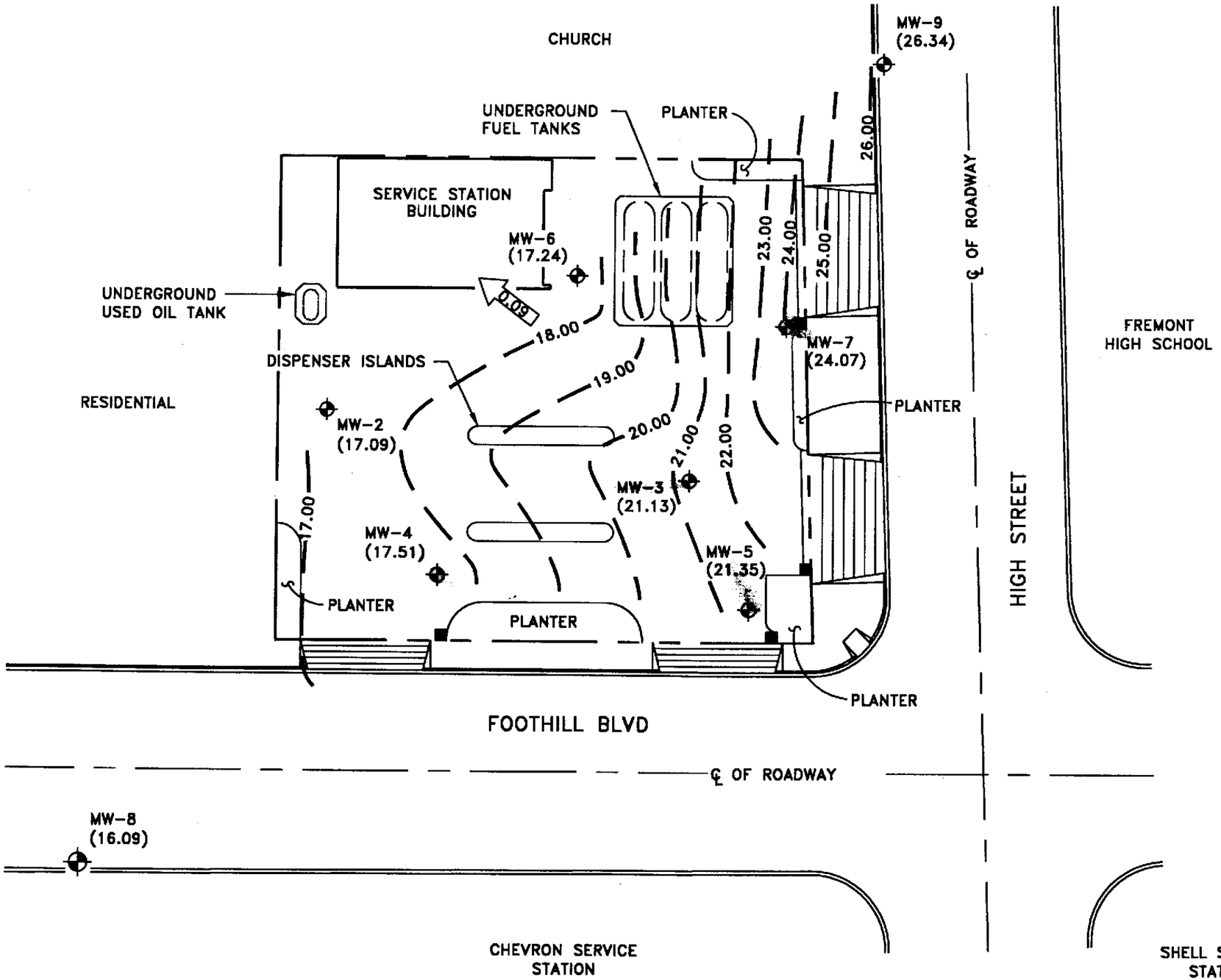
SITE VICINITY MAP

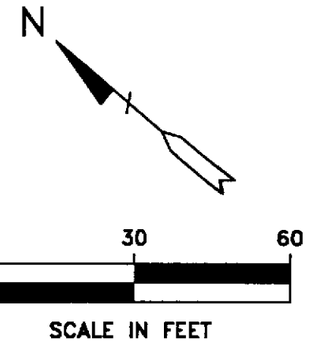
BP OIL SERVICE STATION NO. 11109
4280 FOOTHILL BOULEVARD
OAKLAND, CALIFORNIA

ALISTO PROJECT NO. 10-014

ALISTO ENGINEERING GROUP
CONCORD, CALIFORNIA

10014G1P.DWG 8-24-92 JMB 1=1





LEGEND:

- ⊕ GROUNDWATER MONITORING WELL
- (26.34) GROUNDWATER ELEVATION IN FEET ABOVE MEAN SEA LEVEL
- 20.00 GROUNDWATER ELEVATION CONTOUR IN FEET ABOVE MEAN SEA LEVEL (CONTOUR INTERVAL – 1.00 FOOT)
- 0.09 CALCULATED GROUNDWATER GRADIENT DIRECTION AND MAGNITUDE

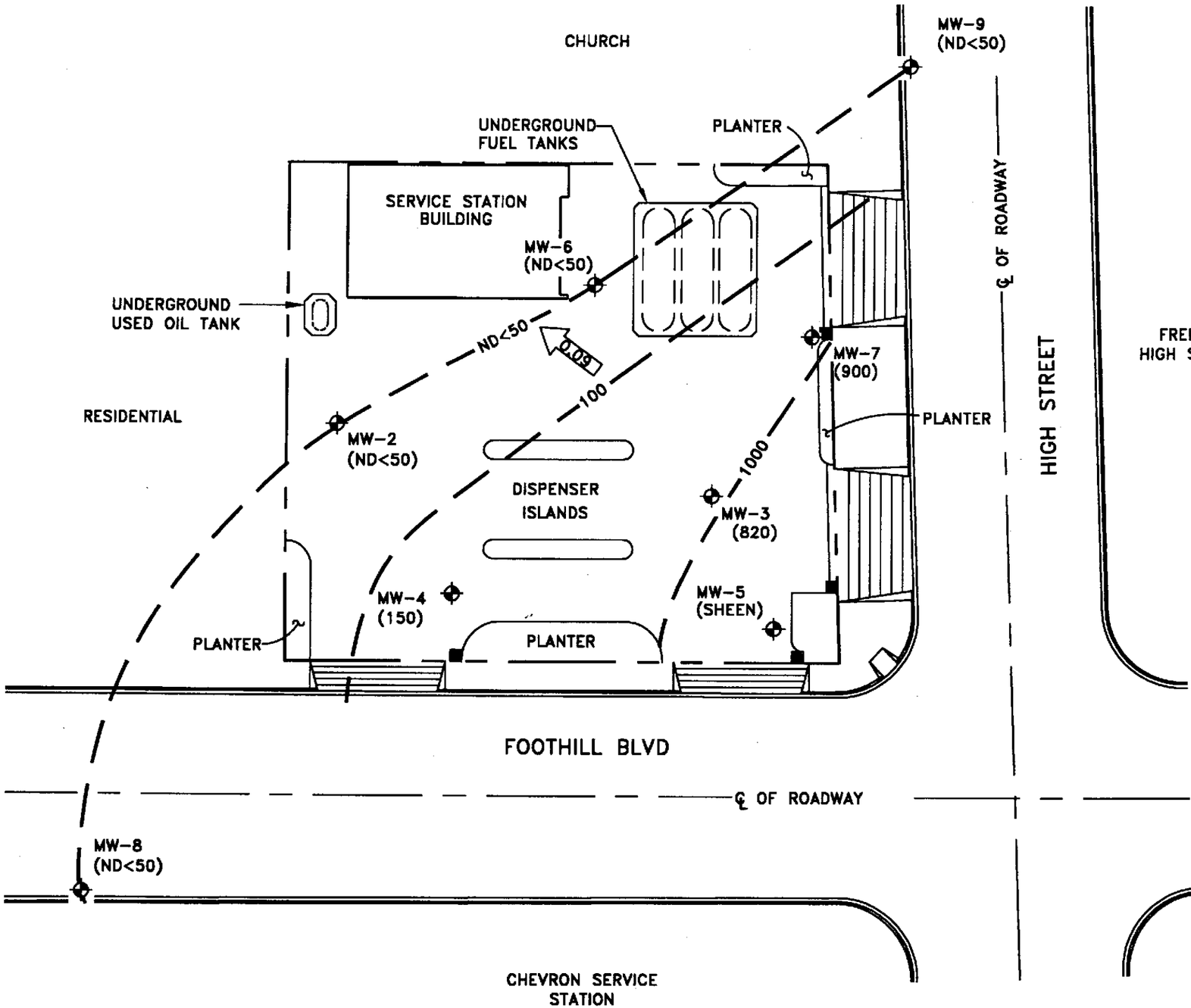
FIGURE 2

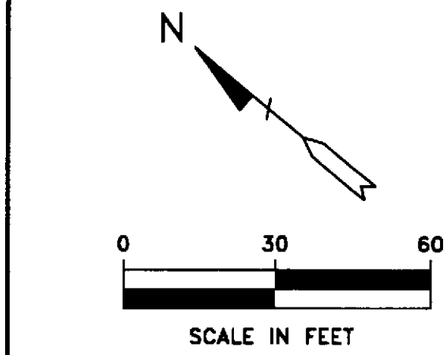
POTENTIOMETRIC GROUNDWATER ELEVATION CONTOUR MAP (DECEMBER 31, 1992)

BP OIL SERVICE STATION NO. 11109
4280 FOOTHILL BOULEVARD
OAKLAND, CALIFORNIA

PROJECT NO. 10-014

ALISTO ENGINEERING GROUP
CONCORD, CALIFORNIA





LEGEND:

- ⊕ GROUNDWATER MONITORING WELL
- (150) TOTAL PETROLEUM HYDROCARBONS AS GASOLINE CONCENTRATION IN PARTS PER BILLION
- 100 TOTAL PETROLEUM HYDROCARBONS AS GASOLINE ISOCONCENTRATION CONTOUR IN PARTS PER BILLION
- 0.09 CALCULATED GROUNDWATER GRADIENT DIRECTION AND MAGNITUDE

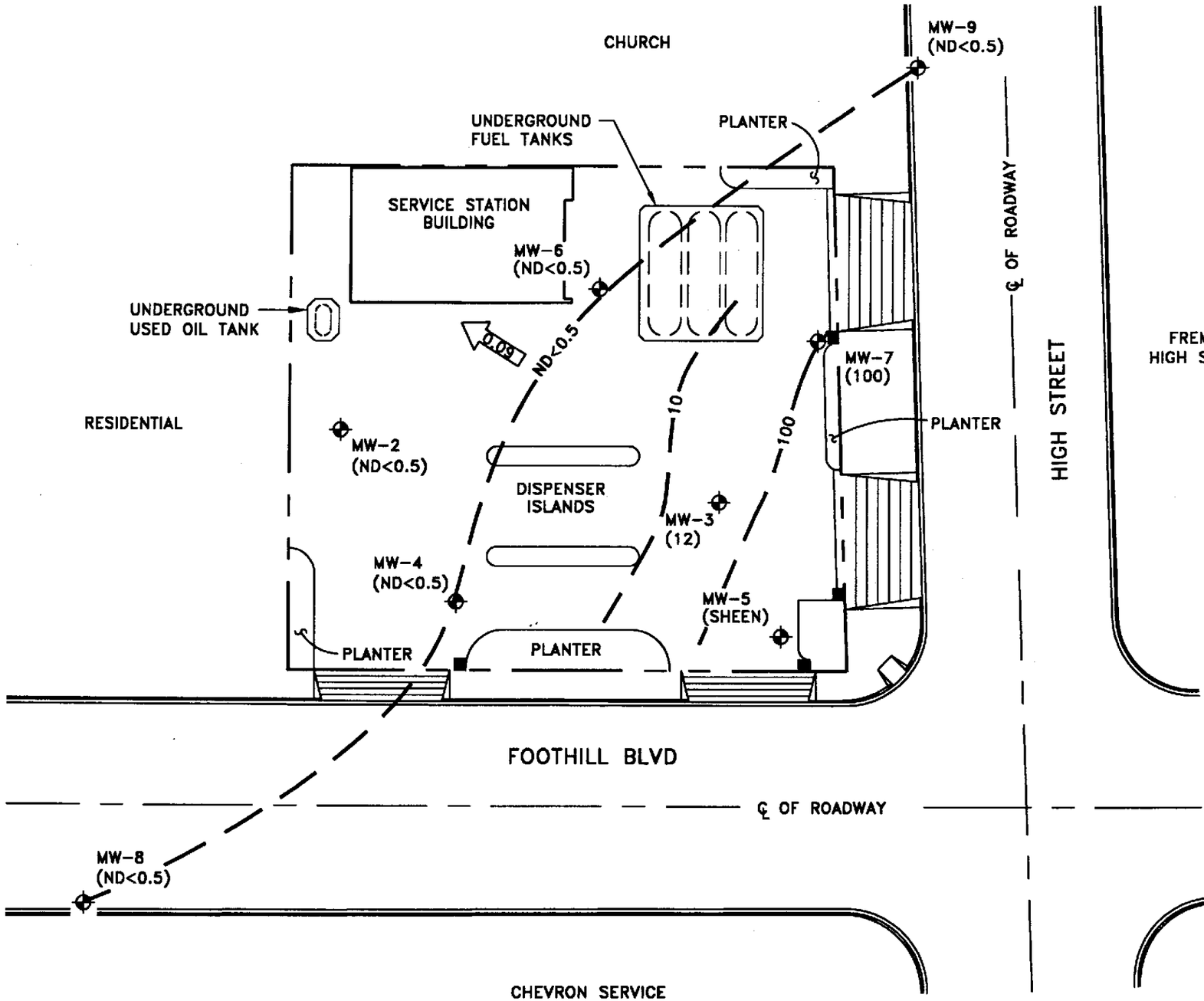
FIGURE 3

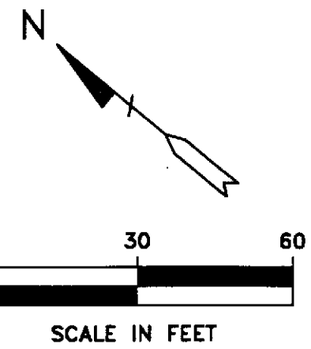
TOTAL PETROLEUM HYDROCARBONS AS GASOLINE ISOCONCENTRATION MAP (DECEMBER 31, 1992)

BP OIL SERVICE STATION NO. 11109
4280 FOOTHILL BOULEVARD
OAKLAND, CALIFORNIA

PROJECT NO. 10-014

ALISTO ENGINEERING GROUP
CONCORD, CALIFORNIA





LEGEND:

- ⊕ GROUNDWATER MONITORING WELL
- (100) BENZENE CONCENTRATION IN PARTS PER BILLION
- 10 BENZENE ISOCONCENTRATION CONTOUR IN /PARTS PER BILLION
- 0.09 CALCULATED GROUNDWATER GRADIENT DIRECTION AND MAGNITUDE

FIGURE 4

BENZENE ISOCONCENTRATION MAP
(DECEMBER 31, 1992)

BP OIL SERVICE STATION NO. 11109
4280 FOOTHILL BOULEVARD
OAKLAND, CALIFORNIA

PROJECT NO. 10-014

ALISTO ENGINEERING GROUP
CONCORD, CALIFORNIA

APPENDIX A

WATER SAMPLING FIELD SURVEY FORMS

ALISTO ENGINEERING GROUP
FIELD FORM

Client: BP
Alisto Project No: 10-014-01
Service Station No: 11109

Date: 12/31/92
Field Personnel: LCB
Site Address: Oakland, CA

Field Activity: ___Groundwater Monitoring X Groundwater Sampling ___Well Development

Well ID	Order Measured	Total Depth	Depth to Water	Depth to Product	Product Thickness	Comments
MW-2	1	30.10	21.12	Ø	Ø	
MW-3	7	31.80	16.61	↓	↓	
MW-4	5	34.28	19.58	↓	↓	
MW-5	8		15.20	Trace FP	" "	Thicker than a sheen But Not measurable
MW-6	2	34.28	21.33	Ø	Ø	
MW-7	6	33.42	13.59	↓	↓	
MW-8	3	29.71	19.09	↓	↓	
MW-9	4	29.31	11.90	↓	↓	

QUALITY CONTROL SAMPLES:

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

Notes:

ALISTO ENGINEERING GROUP

Groundwater Monitoring Well Development/Sampling Field Survey Form

Client: BP
Alisto Project No: 10-014-01
Service Station No: 11109

Date: 12/31/92
Field Personnel: LB
Address: Oakland, CA

Well ID: MW-2 Field Activity: ___Well Development X Well Sampling ___Product Bailing

Casing Diameter:
X 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:
X Pump (dispos. Poly Tubing)
___Disposable Bailers
___Other
___1.66 PVC Standard Bailer
___3.50 PVC Standard Bailer

Well Data:
Ø Depth to Product
Ø Product Thickness
21.12 Depth to Water

Sampling Method:
X Dispos. Bailer
___Pump

Decontamination Method: X Triple Rinse (Liquinox) ___ Steam Cleaned

Calculated Purge Volume

30.10 (Total Depth of Well) - 21.12 (Depth to Water) = 8.98 ft (Water Column) X .16 (Conversion Factor) Gal/Ft = 1.44 Gal (Casing Vol) X 3 (Vols to Purge) = 4.32 (Calculated Purge Volume)

Well Development/Sampling Parameters

Time	Surged (Min)	Temp °F	pH	Cond. (umhos /cm)	Purge Vol (Gal)	Comments
				X1000		
1219		64.9	8.31	.77	.90	clear
1220		65.2	8.32	.77	1.80	↓
1221		65.3	8.23	.76	2.70	
1222		65.9	8.17	.78	3.60	
1224		66.1	8.14	.77	4.50	↓

	Analysis Required	Container Type	Preserv.
X	TPH-G/BTEX	VOA	HCL
	TPH-Diesel	Amber Liter	
	EPA 601	VOA	
	TOG 5520BF	Amber Liter	H_2NO_3

Comments:
Begun 1215 Stop 1224 Sampled 1228

ALISTO ENGINEERING GROUP

Groundwater Monitoring Well Development/Sampling Field Survey Form

Client: BP
Alisto Project No: 10-014-01
Service Station No: 11109

Date: 12/31/92
Field Personnel: LCB
Address: Oakland, Ca

Well ID: MW-3 Field Activity: ___Well Development X Well Sampling ___Product Bailing

Casing Diameter:
___2 Inch (0.16 Gal/foot)
___3 Inch (0.37 Gal/foot)
X 4 Inch (0.65 Gal/Foot)
___4.5 Inch (0.83 Gal/foot)
___6 Inch (1.47 Gal/foot)

Purge Method:
X Pump (dispos. Poly Tubing)
___Disposable Bailers
___Other
___1.66 PVC Standard Bailer
___3.50 PVC Standard Bailer

Well Data:
0 Depth to Product
0 Product Thickness
16.61 Depth to Water

Sampling Method:
X Dispos. Bailer
___Pump

Decontamination Method: X Triple Rinse (Liquinox) ___ Steam Cleaned

Calculated Purge Volume

31.80	- 16.61	= 15.19 ft	X .65 Gal/Ft	= 9.87 Gal	X 3	= 29.61
Total Depth of Well	Depth to Water	Water Column	Conversion Factor	Casing Vol	Vols to Purge	Calculated Purge Volume

Well Development/Sampling Parameters

Time	Surged (Min)	Temp °F	pH	Cond. (umhos /cm)	Purge Vol (Gal)	Comments
1536		64.9	7.91	X1000 1.01	6	clear
1539		67.5	7.68	1.07	12	" "
1542		66.8	7.62	1.05	18	" "
1545		64.9	7.70	1.06	24	" "
1548		65.1	7.68	1.06	30	" "

Analysis Required	Container Type	Preserv.
X TPH-G/BTEX	VOA	HCL
TPH-Diesel	Amber Liter	
EPA 601	VOA	
TOG 5520BF	Amber Liter	H_2NO_3

Comments:
Begun 1532 Stop 1548 Sampled 1553
QC-1 Dup taken from this Well

ALISTO ENGINEERING GROUP

Groundwater Monitoring Well Development/Sampling Field Survey Form

Client: BP
Alisto Project No: 10-014-01
Service Station No: 11109

Date: 12/31/92
Field Personnel: LCB
Address: Oakland

Well ID: MW-4 Field Activity: ___Well Development X Well Sampling ___Product Bailing

Casing Diameter:
__2 Inch (0.16 Gal/foot)
__3 Inch (0.37 Gal/foot)
X 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)
X Disposable Bailers
__Other
__1.66 PVC Standard Bailer
__3.50 PVC Standard Bailer

Well Data:
Ø Depth to Product
Ø Product Thickness
21.33 Depth to Water

Sampling Method:
X Dispos. Bailer
__Pump

Decontamination Method: X Triple Rinse (Liquinox) ___ Steam Cleaned

Calculated Purge Volume

34.29 (Total Depth of Well) - 21.33 (Depth to Water) = 12.95 ft (Water Column) X .65 Gal/Ft (Conversion Factor) = 8.42 Gal (Casing Vol) X 3 (Vols to Purge) = 25.26 (Calculated Purge Volume)

Well Development/Sampling Parameters

Time	Surged (Min)	Temp °F	pH	Cond. (umhos /cm)	Purge Vol (Gal)	Comments
1338		63.1	8.12	X1000 .64	5	Clear
1342		64.3	7.98	.64	10.25	↓
1345		64.1	7.85	.65	15.25	Lt. Brown
					20.25	
					25.50	

	Analysis Required	Container Type	Preserv.
X	TPH-G/BTEX	VOA	HCL
	TPH-Diesel	Amber Liter	
	EPA 601	VOA	
	TOG 5520BF	Amber Liter	H_2NO_3

Comments:
Begin 1335 Stop 1345 Sampled 1445
Well went dry @ 15.50 gal. Let Recharge + Sampled
Slow Producer!

ALISTO ENGINEERING GROUP

Groundwater Monitoring Well Development/Sampling Field Survey Form

Client: BP
Alisto Project No: 10-014-01
Service Station No: 11109

Date: 12/31/92
Field Personnel: LB
Address: Oakland

Well ID: MW-6 Field Activity: ___Well Development X Well Sampling ___Product Bailing

Casing Diameter:
___2 Inch (0.16 Gal/foot)
___3 Inch (0.37 Gal/foot)
X 4 Inch (0.65 Gal/Foot)
___4.5 Inch (0.83 Gal/foot)
___6 Inch (1.47 Gal/foot)

Purge Method:
X Pump (dispos. Poly Tubing)
___Disposable Bailers
___Other
___1.66 PVC Standard Bailer
___3.50 PVC Standard Bailer

Well Data:
Ø Depth to Product
Ø Product Thickness
21.33 Depth to Water

Sampling Method:
X Dispos. Bailer
___Pump

Decontamination Method: X Triple Rinse (Liquinox) ___ Steam Cleaned

Calculated Purge Volume

34.28 (Total Depth of Well) - 21.33 (Depth to Water) = 12.95 ft (Water Column) X .65 Gal/Ft (Conversion Factor) = 8.42 Gal (Casing Vol) X 3 (Vols to Purge) = 25.26 (Calculated Purge Volume)

Well Development/Sampling Parameters

Time	Surged (Min)	Temp °F	pH	Cond. (umhos /cm)	Purge Vol (Gal)	Comments		Analysis Required	Container Type	Preserv.
1232		64.3	8.07	X1000 .74	5	clear	X	TPH-G/BTEX	VOA	HCL
1235		64.6	7.86	.79	10			TPH-Diesel	Amber Liter	
1240		64.1	7.71	.81	15			EPA 601	VOA	
1244		63.7	7.65	.78	20.25			TOG 5520BF	Amber Liter	H_2NO_3
1248		63.7	7.60	.79	25.50	↓				

Comments:
Begin 1229 Stop 1248 Sampled 1253

ALISTO ENGINEERING GROUP

Groundwater Monitoring Well Development/Sampling Field Survey Form

Client: BP
Alisto Project No: 10-014-01
Service Station No: 11109

Date: 12/31/92
Field Personnel: LB
Address: Oakland

Well ID: MW-7 Field Activity: ___Well Development X 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)
X 6 Inch (1.47 Gal/foot)

Purge Method:
X Pump (dispos. Poly Tubing)
___Disposable Bailers
___Other
___1.66 PVC Standard Bailer
___3.50 PVC Standard Bailer

Well Data:
Ø Depth to Product
Ø Product Thickness
13.57 Depth to Water

Sampling Method:
X Dispos. Bailer
___Pump

Decontamination Method: X Triple Rinse (Liquinox) ___ Steam Cleaned

Calculated Purge Volume

33.42 (Total Depth of Well) - 1.57 (Depth to Water) = 19.85 ft (Water Column) x 1.47 Gal/Ft (Conversion Factor) = 29.18 Gal (Casing Vol) x 3 (Vols to Purge) = 87.54 (Calculated Purge Volume)

Well Development/Sampling Parameters

Time	Surged (Min)	Temp °F	pH	Cond. (umhos /cm)	Purge Vol (Gal)	Comments		Analysis Required	Container Type	Preserv.
1441		65.9	8.27	X1000 .59	17.50	clear	X	TPH-G/BTEX	VOA	HCL
1452		64.8	7.95	.67	35.00	"		TPH-Diesel	Amber Liter	
1504		65.6	8.03	.59	52.50	"		EPA 601	VOA	
1515		65.8	8.00	.57	70.00	"		TOG 5520BF	Amber Liter	H_2NO_3
1526		65.6	7.98	.57	87.75	"				

Comments: Begin 1430 Stop 1526 Sampled 1530

ALISTO ENGINEERING GROUP

Groundwater Monitoring Well Development/Sampling Field Survey Form

Client: BP
Alisto Project No: 10-014-01
Service Station No: 11109

Date: 12/31/92
Field Personnel: LB
Address: Oakland

Well ID: MW-8 Field Activity: ___Well Development X Well Sampling ___Product Bailing

Casing Diameter:
X 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:
X Pump (dispos. Poly Tubing)
___Disposable Bailers
___Other
___1.66 PVC Standard Bailer
___3.50 PVC Standard Bailer

Well Data:
0 Depth to Product
0 Product Thickness
19.09 Depth to Water

Sampling Method:
X Dispos. Bailer
___Pump

Decontamination Method: X Triple Rinse (Liquinox) ___ Steam Cleaned

Calculated Purge Volume

29.71 (Total Depth of Well) - 19.09 (Depth to Water) = 10.62 ft (Water Column) X .16 (Conversion Factor) Gal/Ft = 1.70 Gal (Casing Vol) X 3 (Vols to Purge) = 5.10 (Calculated Purge Volume)

Well Development/Sampling Parameters

Time	Surged (Min)	Temp °F	pH	Cond. (umhos /cm)	Purge Vol (Gal)	Comments		Analysis Required	Container Type	Preserv.
1300		61.5	7.96	X1000 .52	1	clear	X	TPH-G/BTEX	VOA	HCL
1301		62.8	8.05	.47	2	↓		TPH-Diesel	Amber Liter	
1303		63.9	8.03	.50	3			EPA 601	VOA	
1304		64.0	8.01	.47	4			TOG 5520BF	Amber Liter	H_2NO_3
1305		64.1	7.98	.48	5.25	↓				

Comments:
Begin 1258 Stop 1305 Sampled 1313

ALISTO ENGINEERING GROUP

Groundwater Monitoring Well Development/Sampling Field Survey Form

Client: BP
Alisto Project No: 10-014-01
Service Station No: 11109

Date: 12/31/92
Field Personnel: LB
Address: Oakland, CA

Well ID: MW-9 Field Activity: ___Well Development X Well Sampling ___Product Bailing

Casing Diameter:
X 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:
X Pump (dispos. Poly Tubing)
___Disposable Bailers
___Other
___1.66 PVC Standard Bailer
___3.50 PVC Standard Bailer

Well Data:
Ø Depth to Product
Ø Product Thickness
11.90 Depth to Water

Sampling Method:
X Dispos. Bailer
___Pump

Decontamination Method: X Triple Rinse (Liquinox) ___ Steam Cleaned

Calculated Purge Volume

29.31 (Total Depth of Well) - 11.90 (Depth to Water) = 17.41 ft (Water Column) X .16 (Conversion Factor) = 2.79 Gal (Casing Vol) X 3 (Vols to Purge) = 8.37 (Calculated Purge Volume)

Well Development/Sampling Parameters

Time	Surged (Min)	Temp °F	pH	Cond. (umhos /cm)	Purge Vol (Gal)	Comments		Analysis Required	Container Type	Preserv.
1321		63.8	8.14	X 1000 .48	1.75	clear	X	TPH-G/BTEX	VOA	HCL
1323		64.9	8.02	.54	3.50			TPH-Diesel	Amber Liter	
1324		65.9	7.99	.56	5.25	Lt. Brown		EPA 601	VOA	
1325		64.1	7.95	.59	7.00	↓		TOG 5520BF	Amber Liter	H_2NO_3
1327		63.9	7.91	.59	8.50	↓				

Comments: Begin 1318 Stop 1327 Sampled 1333

APPENDIX B

LABORATORY REPORT AND CHAIN OF CUSTODY RECORD

ANAMETRIX INC
Environmental & Analytical Chemistry

Part of INCHCAPE ENVIRONMENTAL

REPORT

MR. BRADY NAGLE
ALISTO ENGINEERING GROUP
1000 BURNETT AVENUE, SUITE 420
CONCORD, CA 94520

Workorder # : 9301006
Date Received : 01/04/93
Project ID : 10-014-01
Purchase Order: N/A

The following samples were received at Anametrix, Inc. for analysis :

ANAMETRIX ID	CLIENT SAMPLE ID
9301006- 1	QC-2
9301006- 2	MW-2
9301006- 3	MW-6
9301006- 4	MW-8
9301006- 5	MW-9
9301006- 6	MW-4
9301006- 7	MW-7
9301006- 8	MW-3
9301006- 9	QC-1

This report consists of 7 pages not including the cover letter, and is organized in sections according to the specific Anametrix laboratory group or section which performed the analysis(es) and generated the data. The Report Summary that precedes each section will help you determine which Anametrix group is responsible for those test results, and will bear the signatures of the department supervisor and the chemist who have reviewed the analytical data. Please refer all questions to the department supervisor who signed the form.

Anametrix is certified by the California Department of Health Services (DHS) to perform environmental testing under Certificate Number 1234. A detailed list of the approved fields of testing can be obtained by calling our office, or the DHS Environmental Laboratory Accreditation Program at (415)540-2800.

If you have any further questions or comments on this report, please give us a call as soon as possible. Thank you for using Anametrix.

Larry Kent for

Sarah Schoen, Ph.D.
Laboratory Director

1-19-93
Date

REPORT SUMMARY
ANAMETRIX, INC. (408)432-8192

MR. BRADY NAGLE
ALISTO ENGINEERING GROUP
1000 BURNETT AVENUE, SUITE 420
CONCORD, CA 94520

Workorder # : 9301006
Date Received : 01/04/93
Project ID : 10-014-01
Purchase Order: N/A
Department : GC
Sub-Department: TPH

SAMPLE INFORMATION:

ANAMETRIX SAMPLE ID	CLIENT SAMPLE ID	MATRIX	DATE SAMPLED	METHOD
9301006- 1	QC-2	WATER	12/31/92	TPHg/BTEX
9301006- 2	MW-2	WATER	12/31/92	TPHg/BTEX
9301006- 3	MW-6	WATER	12/31/92	TPHg/BTEX
9301006- 4	MW-8	WATER	12/31/92	TPHg/BTEX
9301006- 5	MW-9	WATER	12/31/92	TPHg/BTEX
9301006- 6	MW-4	WATER	12/31/92	TPHg/BTEX
9301006- 7	MW-7	WATER	12/31/92	TPHg/BTEX
9301006- 8	MW-3	WATER	12/31/92	TPHg/BTEX
9301006- 9	QC-1	WATER	12/31/92	TPHg/BTEX

REPORT SUMMARY
ANAMETRIX, INC. (408)432-8192

MR. BRADY NAGLE
ALISTO ENGINEERING GROUP
1000 BURNETT AVENUE, SUITE 420
CONCORD, CA 94520

Workorder # : 9301006
Date Received : 01/04/93
Project ID : 10-014-01
Purchase Order: N/A
Department : GC
Sub-Department: TPH

QA/QC SUMMARY :

- No QA/QC problems encountered for these samples.

Cheryl Bateman 1/13/93
Department Supervisor Date

Laura Shen 1/13/93
Chemist Date

ANALYSIS DATA SHEET - TOTAL PETROLEUM HYDROCARBONS
(GASOLINE WITH BTEX)
ANAMETRIX, INC. - (408) 432-8192

Anametrix W.O.: 9301006
Matrix : WATER
Date Sampled : 12/31/92

Project Number : 10-014-01
Date Released : 01/11/93

	Reporting Limit	Sample I.D.# QC-2	Sample I.D.# MW-2	Sample I.D.# MW-6	Sample I.D.# MW-8	Sample I.D.# MW-9
COMPOUNDS	(ug/L)	-01	-02	-03	-04	-05
Benzene	0.5	ND	ND	ND	ND	ND
Toluene	0.5	ND	ND	ND	ND	ND
Ethylbenzene	0.5	ND	ND	ND	ND	ND
Total Xylenes	0.5	ND	ND	ND	ND	ND
TPH as Gasoline	50	ND	ND	ND	ND	ND
% Surrogate Recovery		88%	90%	89%	106%	111%
Instrument I.D.		HP21	HP21	HP21	HP21	HP21
Date Analyzed		01/05/93	01/05/93	01/05/93	01/07/93	01/05/93
RLMF		1	1	1	1	1

ND - Not detected at or above the practical quantitation limit for the method.
TPHg - Total Petroleum Hydrocarbons as gasoline is determined by GCFID using modified EPA Method 8015 following sample purge and trap by EPA Method 5030.
BTEX - Benzene, Toluene, Ethylbenzene, and Total Xylenes are determined by modified EPA Method 8020 following sample purge and trap by EPA Method 5030.
RLMF - Reporting Limit Multiplication Factor.

Anametrix control limits for surrogate p-Bromofluorobenzene recovery are 53-147%.

All testing procedures follow California Department of Health Services (Cal-DHS) approved methods.

Analyst 1/13/93 Date

Supervisor 1/13/93 Date

ANALYSIS DATA SHEET - TOTAL PETROLEUM HYDROCARBONS
(GASOLINE WITH BTEX)
ANAMETRIX, INC. - (408) 432-8192

Anametrix W.O.: 9301006
Matrix : WATER
Date Sampled : 12/31/92

Project Number : 10-014-01
Date Released : 01/11/93

COMPOUNDS	Reporting Limit (ug/L)	Sample I.D.# MW-4 -06	Sample I.D.# MW-7 -07	Sample I.D.# MW-3 -08	Sample I.D.# QC-1 -09	Sample I.D.# BJ0501E3 BLANK
Benzene	0.5	ND	100	12	11	ND
Toluene	0.5	ND	ND	4.1	3.6	ND
Ethylbenzene	0.5	ND	28	13	10	ND
Total Xylenes	0.5	1.3	4.3	5.9	3.8	ND
TPH as Gasoline	50	150	900	820	960	ND
% Surrogate Recovery		85%	97%	104%	113%	106%
Instrument I.D.		HP21	HP21	HP21	HP21	HP21
Date Analyzed		01/06/93	01/06/93	01/06/93	01/07/93	01/05/93
RLMF		1	5	2	2	1

ND - Not detected at or above the practical quantitation limit for the method.
TPHg - Total Petroleum Hydrocarbons as gasoline is determined by GCFID using modified EPA Method 8015 following sample purge and trap by EPA Method 5030.
BTEX - Benzene, Toluene, Ethylbenzene, and Total Xylenes are determined by modified EPA Method 8020 following sample purge and trap by EPA Method 5030.
RLMF - Reporting Limit Multiplication Factor.

Anametrix control limits for surrogate p-Bromofluorobenzene recovery are 53-147%.

All testing procedures follow California Department of Health Services (Cal-DHS) approved methods.

Lucia Shaw 1/13/93
Analyst Date

Cheryl Balmer 1/13/93
Supervisor Date

ANALYSIS DATA SHEET - TOTAL PETROLEUM HYDROCARBONS
(GASOLINE WITH BTEX)
ANAMETRIX, INC. - (408) 432-8192

Anametrix W.O.: 9301006
Matrix : WATER
Date Sampled : N/A

Project Number : 10-014-01
Date Released : 01/11/93

COMPOUNDS	Reporting Limit (ug/L)	Sample I.D.# BJ0601E3 BLANK	Sample I.D.# BJ0701E3 BLANK
Benzene	0.5	ND	ND
Toluene	0.5	ND	ND
Ethylbenzene	0.5	ND	ND
Total Xylenes	0.5	ND	ND
TPH as Gasoline	50	ND	ND
% Surrogate Recovery		86%	110%
Instrument I.D.		HP21	HP21
Date Analyzed		01/06/93	01/07/93
RLMF		1	1

ND - Not detected at or above the practical quantitation limit for the method.
TPHg - Total Petroleum Hydrocarbons as gasoline is determined by GCFID using modified EPA Method 8015 following sample purge and trap by EPA Method 5030.
BTEX - Benzene, Toluene, Ethylbenzene, and Total Xylenes are determined by modified EPA Method 8020 following sample purge and trap by EPA Method 5030.
RLMF - Reporting Limit Multiplication Factor.

Anametrix control limits for surrogate p-Bromofluorobenzene recovery are 53-147%.

All testing procedures follow California Department of Health Services (Cal-DHS) approved methods.

Lance Shaw 1/13/93
Analyst Date

Cheryl Balman 1/14/93
Supervisor Date

TOTAL VOLATILE HYDROCARBON MATRIX SPIKE REPORT
EPA METHOD 5030 WITH GC/FID
ANAMETRIX, INC. (408) 432-8192

Sample I.D.	: 10-014-01 MW-9	Anametrix I.D.	: 9301006-05
Matrix	: WATER	Analyst	:
Date Sampled	: 12/31/93	Supervisor	:
Date Analyzed	: 01/05/93	Date Released	: 01/12/93
		Instrument ID	: HP21

COMPOUND	SPIKE AMT (ug/L)	SAMPLE AMT (ug/L)	REC MS (ug/L)	% REC MS	REC MD (ug/L)	% REC MD	RPD	% REC LIMITS
GASOLINE	250	0	290	116%	280	112%	-4%	48-145
P-BFB				82%		84%		53-147

* Limits established by Anametrix, Inc.

TOTAL VOLATILE HYDROCARBON LABORATORY CONTROL SAMPLE REPORT
EPA METHOD 5030 WITH GC/FID
ANAMETRIX, INC. (408) 432-8192

Sample I.D. : LAB CONTROL SAMPLE
Matrix : WATER
Date Sampled : N/A
Date Analyzed : 01/05/93

Anametrix I.D. : LCSW0105
Analyst :
Supervisor :
Date Released : 01/12/93
Instrument I.D.: HP21

COMPOUND	SPIKE AMT. (ug/L)	REC LCS (ug/L)	%REC LCS	% REC LIMITS
GASOLINE	250	270	108%	56-116
SURROGATE		76%		53-147

* Quality control established by Anametrix, Inc.

AMERICA INC
Environmental & Analytical Chemistry
1961 Concourse Drive, Suite E, San Jose, CA 95131
(408) 432-8192 • Fax (408) 432-8198

4301006 (18)

CHAIN-OF-CUSTODY RECORD

PROJECT NUMBER: 10-014-01 | PROJECT NAME: BP

Send Report Attention of: Brady Wagle | Report Due: STAT | Verbal Due: / /

	Sample Number	Date	Time	Comp	Matrix	Station Location	Number of Cntnrs	Type of Containers	Type of Analysis: TPH-G/BTXE	Condition of Samples	Initial
1	QC-2	12/3/92	1226		W	Oakland	2	HCL Vogs	X		
2	MW-2		1228				3				
3	MW-6		1253								
4	MW-8		1313								
5	MW-9		1333								
6	MW-4		1445								
7	MW-7		1530								
8	MW-3		1553								
9	QC-1	↓	1555		↓	↓	↓	↓	↓		

Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Date/Time
[signature]	12/3/92	Ted Mosp	12/3/92
Ted Mosp	1/4/93 1530	[signature]	1-4-93 1530
[signature] 1527	1-4-93	Michele D Aguilar 1527	1-4-93

Remarks: Ref # 1862C

COMPANY: Alisto Engineering Group
ADDRESS: 1000 Burnett Ave #420 Concord Ca 94520
PHONE: (510) 798-4070 FAX: 798-4099