BP OIL

BP Oil Company
Environmental Remediation Management
295 SW 41st Street
Renton, Washington 98055-4931
(425) 251-0667
Fax No (425) 251-0736

December 30, 1997

Alameda County Health Care Services Agency
Attention Ms. Eva Chu
1131 Harbor Bay Parkway, Room 250
Alameda, CA 94502-6577

RE: BP Oil Site No. 11116
Village Parkway (at 7197) and Amador Valley
Dublin, CA

Dear Ms. Chu:

This letter transmits a Groundwater Monitoring and Sampling Report, dated 5 December 1997. A gasoline release was documented at this site during 1988 when a used-oil underground storage tank was replaced by the Mobil Oil Corporation. Mobil Oil performed several iterations of groundwater monitoring and site assessment prior to transferring management of the release to BP in 1992. BP subsequently sold the business and related improvements were sold to the current operator (Tosco Corporation) in 1994, and is continuing to perform groundwater monitoring activities. The UST system passed required precision tightness tests prior to the sale to Tosco. The single-wall-fiberglass fuel tanks are believed to have been installed by Mobil Oil Corporation during 1983. Soil or groundwater data associated with the 1983 tank replacement was not reported to have been obtained when BP acquired the site from Mobil in 1989. The cause and origin of the petroleum release(s) at this site has not – to the best of my knowledge – been established. I understand that the double-walled tanks will be required at this site to comply with 1998 leak prevention requirements in Oakland.

The enclosed groundwater monitoring and sampling report includes laboratory data for samples collected on 22 August 1997. Consistent with prior monitoring data, the highest concentration detected at this site were reported in samples obtained from AW-6. Benzene and MTBE concentrations reported during this sampling event were slightly higher than concentrations reported for samples obtained on 16 May 1997, but lower than concentrations reported for the 12 August 1996 sampling event. Since the concentration variations appear to be consistent with natural variations of a stable plume in the environment, it seems that a finding for "case closure" and "no further action" may be appropriate. Please call (425) 251-0689 so that we can discuss this in further detail.

Sincerely,

Scott Hooton
Environmental Remediation Management

attachment

cc Brady Nagle - Alisto
CRWQCB, Attention Mr K Graves, 2101 Webster Street, Ste 500, Oakland, CA 94612
T Berry - Tosco (w attachment)

GROUNDWATER MONITORING AND SAMPLING REPORT

BP Oil Company Service Station No. 11116
7197 Village Parkway
Dublin, California

Project No. 10-017-07-001

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

December 5, 1997

Ken Simas
Project Manager

Al Sevilla, P.E.
Principal

GROUNDWATER MONITORING AND SAMPLING REPORT

BP Oil Company Service Station No. 11116
7197 Village Parkway
Dublin, California

Project No. 10-017-07-001

December 5, 1997

INTRODUCTION

This report presents the results and findings of the August 22, 1997 groundwater monitoring and sampling conducted by Alisto Engineering Group at BP Oil Company Service Station No. 11116, 7197 Village Parkway, Dublin, California. A site vicinity map is shown on 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, 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.

Groundwater sampling was performed concurrently at the neighboring Arco Products service station, 7249 Village Parkway. The results are presented in Table 2.

SAMPLING AND ANALYTICAL RESULTS

The results of monitoring and laboratory analysis of the groundwater samples collected during this and previous events are summarized in Table 1. The potentiometric groundwater elevation contour map is shown on Figure 2. The results of groundwater analysis are shown on 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 11116
7197 VILLAGE PARKWAY, DUBLIN, CALIFORNIA

ALISTO PROJECT NO 10-017

WELL ID	DATE OF SAMPLING/ MONITORING	CASING ELEVATION (a) (Feet)	DEPTH TO WATER (Feet)	GROUNDWATER ELEVATION (b) (Feet)	TPH-G (ug/l)	TPH-D (ug/l)	B (ug/l)	T (ug/l)	E (ug/l)	X (ug/l)	MTBE (ug/l)	TOG (ug/l)	HVOC (ug/l)	DO (ppm)	LAB
MW-1	10/12/90	335.17	9.92	325.25	ND<50	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	ND<5000	ND	---	ANA
MW-1	11/15/90	335.17	10.16	325.01	ND<50	---	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	---	---	ANA
MW-1	12/11/90	335.17	9.97	325.20	---	---	---	---	---	---	---	---	---	---	---
MW-1	02/15/91	335.17	9.89	325.28	ND<50	50	ND<0.3	ND<0.3	ND<0.3	ND<0.3	---	ND<5000	41 (c)	---	SUP
MW-1	06/11/91	335.17	8.43	326.74	ND<50	ND<50	ND<0.3	ND<0.3	ND<0.3	ND<0.3	---	7500	ND	---	SUP
MW-1	08/23/91	335.17	9.98	325.19	ND<50	ND<50	ND<0.3	ND<0.3	ND<0.3	ND<0.3	---	ND<5000	ND	---	ANA
MW-1	11/13/91	335.17	10.09	325.08	ND<30	ND<50	ND<0.3	ND<0.3	ND<0.3	ND<0.3	---	ND<5000	ND	---	SEQ
MW-1	02/25/92	335.17	8.28	326.89	ND<30	ND<50	ND<0.3	ND<0.3	ND<0.3	ND<0.3	---	ND<5000	ND	---	SEQ
MW-1	04/15/92	335.17	8.50	326.67	---	---	---	---	---	---	---	---	---	---	---
MW-1	06/03/92	335.17	9.06	326.11	ND<50	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	ND<5000	ND	---	ANA
MW-1	08/12/92	335.17	10.01	325.16	ND<50	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	ND<5000	ND	---	ANA
MW-1	11/10/92	335.17	10.67	324.50	ND<50	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	ND<5000	ND	---	ANA
MW-1	02/10/93	335.17	5.25	329.92	ND<50	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	ND<5000	ND	---	PACE
MW-1	05/21/93	335.17	5.73	329.44	---	---	---	---	---	---	---	---	---	---	---
MW-1	08/13/93	335.17	8.99	326.18	ND<50	---	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	---	---	PACE
MW-1	11/16/93	335.17	9.65	325.52	---	---	---	---	---	---	---	---	---	---	---
MW-1	02/11/94	335.17	8.72	326.45	ND<50	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	ND<5000	ND	---	PACE
MW-1	05/17/94	335.17	8.17	327.00	---	---	---	---	---	---	---	---	---	---	---
MW-1	08/20/94	335.17	8.37	326.80	---	---	---	---	---	---	---	---	---	---	---
MW-1	10/01/94	335.17	9.66	325.51	ND<50	---	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	---	6.5	PACE
MW-1 (d)	11/18/94	335.17	8.65	326.52	---	---	---	---	---	---	---	---	---	---	---
MW-1	02/15/95	335.17	6.56	328.61	ND<50 (e)	---	ND<0.50	ND<0.50	ND<0.50	ND<1.0	---	---	---	---	ATI
MW-1	05/21/95	335.17	6.80	328.37	---	---	---	---	---	---	---	---	---	---	---
MW-1	08/29/95	335.17	8.72	326.45	ND<50	---	ND<0.50	ND<0.50	ND<0.50	ND<1.0	ND<5.0 (f)	---	---	8.7	ATI
MW-1	11/28/95	335.17	9.54	325.63	---	---	---	---	---	---	---	---	---	---	---
MW-1	02/26/96	335.17	5.60	329.57	---	---	---	---	---	---	---	---	---	---	---
MW-1	05/23/96	335.17	7.13	328.04	---	---	---	---	---	---	---	---	---	---	---
MW-1	08/23/96	335.17	6.71	328.46	ND<50	---	ND<0.5	ND<1.0	ND<1.0	ND<1.0	ND<10	---	---	5.7	SPL
MW-1	12/02/96	335.17	8.58	326.59	---	---	---	---	---	---	---	---	---	---	---
MW-1	05/16/97	335.17	7.78	327.39	---	---	---	---	---	---	---	---	---	---	---
MW-1	08/22/97	335.17	8.80	326.37	---	---	---	---	---	---	---	---	---	---	---

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BP OIL COMPANY SERVICE STATION NO. 11116
7197 VILLAGE PARKWAY, DUBLIN, CALIFORNIA

ALISTO PROJECT NO. 10-017

WELL ID	DATE OF SAMPLING / MONITORING	CASING ELEVATION (a) (Feet)	DEPTH TO WATER (Feet)	GROUNDWATER ELEVATION (b) (Feet)	TPH-G (ug/l)	TPH-D (ug/l)	B (ug/l)	T (ug/l)	E (ug/l)	X (ug/l)	MTBE (ug/l)	TOG (ug/l)	HVOC (ug/l)	DO (ppm)	LAB
MW-2	10/12/90	334.58	9.60	324.98	93	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	ND<5000	ND	---	ANA
MW-2	11/15/90	334.58	9.68	324.90	ND<50	---	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	---	---	ANA
MW-2	12/11/90	334.58	9.47	325.11	---	---	---	---	---	---	---	---	---	---	---
MW-2	03/13/91	334.58	9.28	325.30	ND<50	60	ND<0.3	ND<0.3	ND<0.3	ND<0.3	---	ND<5000	45 (c)	---	SUP
MW-2	06/11/91	334.58	7.74	326.84	130	ND<50	ND<0.3	ND<0.3	ND<0.3	ND<0.3	---	6000	ND	---	SUP
MW-2	08/23/91	334.58	9.81	324.77	ND<50	ND<50	ND<0.3	ND<0.3	ND<0.3	ND<0.3	---	ND<5000	ND	---	ANA
MW-2	11/13/91	334.58	9.73	324.85	ND<30	ND<50	ND<0.3	ND<0.3	ND<0.3	ND<0.3	---	ND<5000	ND	---	SEQ
MW-2	02/25/92	334.58	7.55	327.03	ND<30	ND<50	ND<0.3	ND<0.3	ND<0.3	ND<0.3	---	ND<5000	ND	---	SEQ
MW-2	04/15/92	334.58	8.00	326.58	---	---	---	---	---	---	---	---	---	---	---
MW-2	06/03/92	334.58	8.56	326.02	ND<50	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	ND<5000	ND	---	ANA
MW-2	08/12/92	334.58	9.62	324.96	ND<50	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	ND<5000	ND	---	ANA
MW-2	11/10/92	334.58	10.27	324.31	ND<50	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	ND<5000	ND	---	ANA
MW-2	02/10/93	334.58	6.46	328.12	ND<50	---	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	---	---	PACE
MW-2	05/21/93	334.58	6.96	327.62	---	---	---	---	---	---	---	---	---	---	---
MW-2	08/12/93	334.58	8.58	326.00	ND<50	---	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	---	---	PACE
MW-2	11/11/93	334.58	9.28	325.30	---	---	---	---	---	---	---	---	---	---	---
MW-2	02/11/94	334.58	8.10	326.48	ND<50	---	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	---	---	PACE
MW-2	05/17/94	334.58	7.71	326.87	---	---	---	---	---	---	---	---	---	---	---
MW-2	08/20/94	334.58	7.93	326.65	---	---	---	---	---	---	---	---	---	---	---
MW-2	10/07/94	334.58	9.27	325.31	ND<50	---	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	---	5.3	PACE
MW-2 (d)	11/18/94	334.58	8.15	326.43	---	---	---	---	---	---	---	---	---	---	---
MW-2	02/15/95	334.58	5.97	328.61	ND<50	---	ND<0.50	ND<0.50	ND<0.50	ND<1.0	---	---	---	---	ATI
MW-2	05/24/95	334.58	6.50	328.08	---	---	---	---	---	---	---	---	---	---	---
MW-2	08/29/95	334.58	8.35	326.23	ND<50	---	ND<0.50	ND<0.50	ND<0.50	ND<1.0	ND<5.0 (f)	---	---	8.7	ATI
MW-2	11/28/95	334.58	9.05	325.53	---	---	---	---	---	---	---	---	---	---	---
MW-2	02/26/96	334.58	4.49	330.09	---	---	---	---	---	---	---	---	---	---	---
MW-2	05/23/96	334.58	6.95	327.63	---	---	---	---	---	---	---	---	---	---	---
MW-2	08/30/96	334.58	6.53	328.05	ND<50	---	ND<0.5	ND<1.0	ND<1.0	ND<1.0	ND<10	---	---	5.3	SPL
MW-2	12/02/96	334.58	8.40	326.18	---	---	---	---	---	---	---	---	---	---	---
MW-2	05/16/97	334.58	7.57	327.01	---	---	---	---	---	---	---	---	---	---	---
MW-2	08/29/97	334.58	8.55	326.03	---	---	---	---	---	---	---	---	---	---	---

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BP OIL COMPANY SERVICE STATION NO. 11116
7197 VILLAGE PARKWAY, DUBLIN, CALIFORNIA

ALISTO PROJECT NO 10-017

WELL ID	DATE OF SAMPLING / MONITORING	CASING ELEVATION (a) (Feet)	DEPTH TO WATER (Feet)	GROUNDWATER ELEVATION (b) (Feet)	TPH-G (ug/l)	TPH-D (ug/l)	B (ug/l)	T (ug/l)	E (ug/l)	X (ug/l)	MTBE (ug/l)	TOG (ug/l)	HVOC (ug/l)	DO (ppm)	LAB
MW-3	10/12/90	335.13	10.08	325.05	ND<50	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	ND<5000	ND	---	ANA
MW-3	11/15/90	335.13	10.12	325.01	76	---	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	---	---	ANA
MW-3	12/11/90	335.13	9.92	325.21	---	---	---	---	---	---	---	---	---	---	---
MW-3	03/15/90	335.13	9.84	325.29	ND<50	ND<50	ND<0.3	ND<0.3	ND<0.3	ND<0.3	---	ND<5000	ND	---	SUP
MW-3	05/31/91	335.13	8.40	326.73	ND<50	ND<50	ND<0.3	ND<0.3	ND<0.3	ND<0.3	---	ND<5000	ND	---	SUP
MW-3	06/24/91	335.13	10.27	324.86	ND<50	ND<50	ND<0.3	ND<0.3	ND<0.3	ND<0.3	---	ND<5000	ND	---	ANA
MW-3	11/13/91	335.13	10.27	324.86	ND<30	ND<50	ND<0.3	ND<0.3	ND<0.3	ND<0.3	---	ND<5000	ND	---	SEQ
MW-3	02/25/92	335.13	8.15	326.98	ND<30	ND<50	ND<0.3	ND<0.3	ND<0.3	ND<0.3	---	ND<5000	ND	---	SEQ
MW-3	05/05/92	335.13	8.63	326.50	---	---	---	---	---	---	---	---	---	---	---
MW-3	06/04/92	335.13	9.18	325.95	ND<50	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	ND<5000	ND	---	ANA
MW-3	08/12/92	335.13	10.18	324.95	ND<50	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	ND<5000	ND	---	ANA
MW-3	11/10/92	335.13	10.78	324.35	ND<50	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	ND<5000	ND	---	ANA
MW-3	02/10/93	335.13	7.16	327.97	ND<50	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	ND<5000	ND	---	PACE
MW-3	05/21/93	335.13	7.69	327.44	---	---	---	---	---	---	---	---	---	---	---
MW-3	08/12/93	335.13	9.11	326.02	ND<50	---	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	---	---	PACE
MW-3	11/11/93	335.13	9.78	325.35	---	---	---	---	---	---	---	---	---	---	---
MW-3	02/11/94	335.13	8.60	326.53	ND<50	---	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	---	---	PACE
MW-3	05/17/94	335.13	8.34	326.79	---	---	---	---	---	---	---	---	---	---	---
MW-3	08/20/94	335.13	7.45	327.68	---	---	---	---	---	---	---	---	---	---	---
MW-3	10/03/94	335.13	9.81	325.32	ND<50	---	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	---	7.5	PACE
MW-3 (d)	11/18/94	335.13	8.62	326.51	---	---	---	---	---	---	---	---	---	---	---
MW-3	02/15/95	335.13	6.61	328.52	ND<50 (e)	---	ND<0.50	ND<0.50	ND<0.50	ND<1.0	---	---	---	---	ATI
MW-3	05/23/95	335.13	6.83	328.30	---	---	---	---	---	---	---	---	---	---	---
MW-3	08/29/95	335.13	8.88	326.25	ND<50	---	ND<0.50	ND<0.50	ND<0.50	ND<1.0	ND<5.0 (f)	---	---	9.1	ATI
MW-3	11/28/95	335.13	8.57	326.56	---	---	---	---	---	---	---	---	---	---	---
MW-3	02/26/96	335.13	5.15	329.98	---	---	---	---	---	---	---	---	---	---	---
MW-3	05/23/96	335.13	7.26	327.87	---	---	---	---	---	---	---	---	---	---	---
MW-3	08/23/96	335.13	6.84	328.29	ND<50	---	ND<0.5	ND<1.0	ND<1.0	ND<1.0	ND<10	---	---	6.8	SPL
MW-3	11/20/96	335.13	8.61	326.52	---	---	---	---	---	---	---	---	---	---	---
MW-3	05/16/97	335.13	7.93	327.20	---	---	---	---	---	---	---	---	---	---	---
MW-3	08/29/97	335.13	8.97	326.16	---	---	---	---	---	---	---	---	---	---	---

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ALISTO PROJECT NO 10-017

WELL ID	DATE OF SAMPLING / MONITORING	CASING ELEVATION (a) (Feet)	DEPTH TO WATER (Feet)	GROUNDWATER ELEVATION (b) (Feet)	TPH-G (ug/l)	TPH-D (ug/l)	B (ug/l)	T (ug/l)	E (ug/l)	X (ug/l)	MTBE (ug/l)	TOG (ug/l)	HVOC (ug/l)	DO (ppm)	LAB
AW-1	11/15/90	333.41	8.51	324.90	ND<50	---	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	---	---	ANA
AW-1	12/11/90	333.41	9.19	324.22	---	---	---	---	---	---	---	---	---	---	---
AW-4	09/15/91	333.41	8.32	325.09	ND<50	---	ND<0.3	ND<0.3	ND<0.3	ND<0.3	---	---	---	---	SUP
AW-1	05/14/91	333.41	6.97	326.44	ND<50	---	ND<0.3	ND<0.3	ND<0.3	ND<0.3	---	---	---	---	SUP
AW-1	08/23/91	333.41	8.59	324.82	ND<50	---	ND<0.3	ND<0.3	ND<0.3	ND<0.3	---	---	---	---	ANA
AW-1	11/13/91	333.41	8.57	324.84	ND<30	---	ND<0.3	ND<0.3	ND<0.3	ND<0.3	---	---	---	---	SEQ
AW-1	02/26/92	333.41	6.26	327.15	ND<30	---	ND<0.3	ND<0.3	ND<0.3	ND<0.3	---	---	---	---	SEQ
AW-1	04/15/92	333.41	7.05	326.36	---	---	---	---	---	---	---	---	---	---	---
AW-1	06/30/92	333.41	7.41	326.00	ND<50	---	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	---	---	ANA
AW-1	08/12/92	333.41	8.45	324.96	ND<50	---	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	---	---	ANA
AW-1	11/10/92	333.41	9.10	324.31	ND<50	---	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	---	---	ANA
AW-1 (g)	02/10/93	333.41	---	---	---	---	---	---	---	---	---	---	---	---	---
AW-1 (g)	05/21/93	333.41	---	---	---	---	---	---	---	---	---	---	---	---	---
AW-4 (g)	08/12/93	333.41	---	---	---	---	---	---	---	---	---	---	---	---	---
AW-4	11/11/93	333.41	8.00	325.41	---	---	---	---	---	---	---	---	---	---	---
AW-1	11/15/93	--	---	---	ND<50	---	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	---	---	PACE
AW-1	02/11/94	333.41	6.84	326.57	ND<50	---	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	---	---	PACE
AW-1	05/17/94	333.41	6.54	326.87	---	---	---	---	---	---	---	---	---	---	---
AW-1	08/20/94	333.41	5.70	327.71	ND<50	---	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	---	2.0	PACE
AW-1	10/31/94	333.41	8.04	325.37	ND<50	---	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	---	6.1	PACE
AW-1 (d)	11/18/94	333.41	6.80	326.61	ND<50	---	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	---	2.3	PACE
AW-1	02/15/95	333.41	4.91	328.50	ND<50 (e)	---	ND<0.50	ND<0.50	ND<0.50	ND<1.0	---	---	---	---	ATI
AW-1	05/31/95	333.41	5.32	328.09	ND<50	---	ND<0.50	ND<0.50	ND<0.50	ND<1.0	---	---	---	4.9	ATI
AW-1	08/29/95	333.41	7.26	326.15	ND<50	---	ND<0.50	ND<0.50	ND<0.50	ND<1.0	ND<5.0 (f)	---	---	9.1	ATI
AW-1	11/28/95	333.41	7.81	325.60	ND<50	---	ND<0.50	ND<0.50	ND<0.50	ND<1.0	ND<5.0 (f)	---	---	5.3	ATI
AW-1	02/26/96	333.41	3.85	329.56	---	---	---	---	---	---	---	---	---	---	---
AW-1	05/23/96	333.41	5.17	328.24	---	---	---	---	---	---	---	---	---	---	---
AW-4	08/23/96	333.41	4.73	328.68	ND<50	---	ND<0.5	ND<1.0	ND<1.0	ND<1.0	ND<10	---	---	5.7	SPL
AW-1	12/02/96	333.41	6.43	326.98	---	---	---	---	---	---	---	---	---	---	---
AW-4	05/16/97	333.41	5.87	327.54	---	---	---	---	---	---	---	---	---	---	---
AW-4	08/22/97	333.41	6.92	326.49	---	---	---	---	---	---	---	---	---	---	---

TABLE 1 - SUMMARY OF RESULTS OF GROUNDWATER SAMPLING
BP OIL COMPANY SERVICE STATION NO. 11116
7197 VILLAGE PARKWAY, DUBLIN, CALIFORNIA

ALISTO PROJECT NO. 10-017

WELL ID	DATE OF SAMPLING / MONITORING	CASING ELEVATION (a) (Feet)	DEPTH TO WATER (Feet)	GROUNDWATER ELEVATION (b) (Feet)	TPH-G (ug/l)	TPH-D (ug/l)	B (ug/l)	T (ug/l)	E (ug/l)	X (ug/l)	MTBE (ug/l)	TOG (ug/l)	HVOC (ug/l)	DO (ppm)	LAB
AW-5	11/15/90	334.81	9.67	325.14	ND<50	---	1.3	ND<0.5	ND<0.5	1.0	---	---	---	---	ANA
AW-5	12/11/90	334.81	9.44	325.37	---	---	---	---	---	---	---	---	---	---	---
AW-5	02/15/91	334.81	10.00	324.81	ND<50	---	ND<0.3	ND<0.3	ND<0.3	ND<0.3	---	---	---	---	SUP
AW-5	05/11/91	334.81	8.64	326.17	ND<50	---	ND<0.3	ND<0.3	ND<0.3	ND<0.3	---	---	---	---	SUP
AW-5	08/23/91	334.81	9.58	325.23	ND<50	---	ND<0.3	ND<0.3	ND<0.3	ND<0.3	---	---	---	---	ANA
AW-5	11/13/91	334.81	9.80	325.01	100	---	ND<0.3	ND<0.3	ND<0.3	ND<0.3	---	---	---	---	SEQ
AW-5	02/25/92	334.81	7.89	326.92	ND<30	---	ND<0.3	ND<0.3	ND<0.3	ND<0.3	---	---	---	---	SEQ
AW-5	04/15/92	334.81	8.54	326.27	---	---	---	---	---	---	---	---	---	---	---
AW-5	06/03/92	334.81	8.97	325.84	ND<50	---	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	---	---	ANA
AW-5	08/12/92	334.81	9.73	325.08	61	---	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	---	---	ANA
AW-5	11/10/92	334.81	10.27	324.54	99	---	ND<0.5	ND<0.5	ND<0.5	0.8	---	---	---	---	ANA
QC-1 (h)	11/10/92	---	---	---	86	---	ND<0.5	ND<0.5	ND<0.5	0.7	---	---	---	---	ANA
AW-5	02/10/93	334.81	7.29	327.52	82	---	ND<0.5	ND<0.5	ND<0.5	ND<0.5	140 (f)	---	---	---	PACE
AW-5	05/21/93	334.81	7.77	327.04	---	---	---	---	---	---	---	---	---	---	---
AW-5	08/12/93	334.81	8.87	325.94	130	---	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	---	---	PACE
AW-5	11/11/93	334.81	9.13	325.68	---	---	---	---	---	---	---	---	---	---	---
AW-5	11/12/93	-	---	---	180	---	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	---	---	PACE
AW-5	02/11/94	334.81	8.20	326.61	210	---	16	ND<0.5	ND<0.5	ND<0.5	670 (f)	---	---	---	PACE
AW-5	05/17/94	334.81	8.16	326.65	---	---	---	---	---	---	---	---	---	---	---
AW-5	08/20/94	334.81	8.26	326.55	1300	---	0.9	ND<0.5	0.5	2.2	240 (f)	---	---	2.5	PACE
AW-5	10/04/94	334.81	8.70	326.11	670	---	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	---	6.0	PACE
AW-5 (d)	11/18/94	334.81	8.20	326.61	640	---	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	---	4.1	PACE
QC-1 (h)	11/21/94	---	---	---	660	---	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	---	---	PACE
AW-5	02/15/95	334.81	6.65	328.16	220 (e)	---	ND<0.50	ND<0.50	ND<0.50	ND<1.0	---	---	---	---	ATI
AW-5	05/24/95	334.81	7.27	327.54	220 (e)	---	ND<0.50	ND<0.50	ND<0.50	ND<1.0	---	---	---	5.2	ATI
AW-5	08/29/95	334.81	8.70	326.11	190	---	ND<1.0	ND<1.0	ND<1.0	ND<2.0	820 (f)	---	---	8.5	ATI
AW-5	11/28/95	334.81	9.32	325.49	ND<50	---	ND<0.50	ND<0.50	ND<0.50	ND<1.0	700 (f)	---	---	4.1	ATI
AW-5	02/26/96	334.81	7.13	327.68	ND<50	---	ND<0.5	ND<1	ND<1	ND<1	670 (f)	---	---	8.1	SPL
AW-5	05/23/96	334.81	8.58	326.23	60	---	ND<0.5	ND<0.5	ND<0.5	ND<0.5	620	---	---	4.9	SPL
AW-5	08/23/96	334.81	8.18	326.63	520	---	ND<0.5	ND<1.0	ND<1.0	ND<1.0	520	---	---	5.1	SPL
QC-1 (h)	08/23/96	---	---	---	490	---	ND<0.5	ND<1.0	ND<1.0	ND<1.0	280	---	---	---	SPL
AW-5	12/02/96	334.81	7.90	326.91	390	---	ND<0.5	ND<1	ND<1	ND<1	600	---	---	5.6	SPL
QC-1 (h)	12/02/96	--	---	---	360	---	ND<0.5	ND<1	ND<1	ND<1	600	---	---	---	SPL
AW-5	03/16/97	334.81	9.24	325.57	ND<50	---	ND<0.5	ND<1.0	ND<1.0	ND<1.0	ND<10	---	---	4.9	SPL
QC-1 (h)	03/16/97		---	---	ND<50	---	ND<0.5	ND<1.0	ND<1.0	ND<1.0	ND<10	---	---	---	SPL
AW-5	08/27/97	334.81	10.27	324.54	ND<50	---	ND<0.5	ND<1.0	ND<1.0	ND<1.0	ND<10	---	---	4.3	SPL

TABLE 1 - SUMMARY OF RESULTS OF GROUNDWATER SAMPLING
BP OIL COMPANY SERVICE STATION NO. 11116
7197 VILLAGE PARKWAY, DUBLIN, CALIFORNIA

ALISTO PROJECT NO. 10-017

WELL ID	DATE OF SAMPLING / MONITORING	CASING ELEVATION (a) (Feet)	DEPTH TO WATER (Feet)	GROUNDWATER ELEVATION (b) (Feet)	TPH-G (ug/l)	TPH-D (ug/l)	B (ug/l)	T (ug/l)	E (ug/l)	X (ug/l)	MTBE (ug/l)	TOG (ug/l)	HVOC (ug/l)	DO (ppm)	LAB
AW-6	11/15/90	334.90	9.58	325.32	230	---	25	ND<0.5	ND<0.5	0.8	---	---	---	---	ANA
AW-6	12/11/90	334.90	9.58	325.32	---	---	---	---	---	---	---	---	---	---	---
AW-6	02/15/91	334.90	9.66	325.24	ND<50	---	ND<0.3	ND<0.3	ND<0.3	ND<0.3	---	---	---	---	SUP
AW-6	05/11/91	334.90	8.38	326.52	90	---	2	ND<0.3	ND<0.3	ND<0.3	---	---	---	---	SUP
AW-6	08/23/91	334.90	9.61	325.29	57	---	ND<0.5	0.7	1.3	4.6	---	---	---	---	ANA
AW-6	11/13/91	334.90	9.58	325.32	200	---	ND<0.3	ND<0.3	ND<0.3	0.94	---	---	---	---	SEQ
AW-6	02/25/92	334.90	8.00	326.90	19000	---	8000	4700	600	2400	---	---	---	---	SEQ
AW-6	05/05/92	334.90	7.98	326.92	14000	---	5200	2500	550	2200	---	---	---	---	SEQ
AW-6	08/19/92	334.90	8.33	326.57	1100	---	400	ND<3.0	30	ND<3.0	---	---	---	---	SEQ
AW-6	06/03/93	334.90	8.91	325.99	77	---	4.4	ND<0.5	ND<0.5	ND<0.5	---	---	---	---	ANA
AW-6	08/12/93	334.90	9.61	325.29	80	---	4.5	ND<0.5	ND<0.5	ND<0.5	---	---	---	---	ANA
AW-6	11/10/93	334.90	10.10	324.80	450	---	120	2.1	4.5	9.7	---	---	---	---	ANA
AW-6	02/10/94	334.90	7.13	327.77	14000	---	610	17	15	720	14000 (f)	---	---	---	PACE
QC-1 (b)	02/10/94	--	---	---	12000	---	520	15	13	610	17000 (f)	---	---	---	PACE
AW-6	05/21/94	334.90	7.64	327.26	7900	---	900	ND<12	20	ND<12	8000 (f)	---	---	---	PACE
QC-1 (b)	05/21/94	---	---	---	7500	---	620	ND<10	13	ND<10	7700 (f)	---	---	---	PACE
AW-6	08/11/94	334.90	8.64	326.26	26000	---	450	14	250	48	---	---	---	---	PACE
QC-1 (b)	08/12/94	-	---	- -	27000	---	510	43	270	42	---	---	---	---	PACE
AW-6	11/11/94	334.90	8.67	326.23	---	---	---	---	---	---	---	---	---	---	---
AW-6	11/12/94	---	---	---	62000	---	4600	420	310	1100	---	---	---	---	PACE
QC-1 (b)	11/12/94	-	---	---	63000	---	4100	360	290	1000	---	---	---	---	PACE
AW-6	02/11/95	334.90	8.04	326.86	140000	---	21000	25000	1100	13000	50000 (f)	---	---	---	PACE
QC-1 (b)	02/11/95	--	---	---	110000	---	17000	21000	770	10000	47000 (f)	---	---	---	PACE
AW-6	05/17/95	334.90	7.68	327.22	---	---	---	---	---	---	---	---	---	---	---
AW-6	06/20/95	334.90	7.82	327.08	42000	---	2700	1300	1900	9100	6400 (f)	---	---	2.1	PACE
QC-1 (b)	06/20/95	--	---	---	41000	---	2800	1400	1900	8900	6600 (f)	---	---	---	PACE
AW-6	10/01/95	334.90	9.33	325.57	14000	---	2100	77	1000	760	---	---	---	6.1	PACE
QC-1 (b)	10/01/95	---	---	---	14000	---	2100	77	1100	790	---	---	---	---	PACE
AW-6 (d)	11/08/95	334.90	7.17	327.73	50000	---	550	8500	2500	14000	---	---	---	3.3	PACE
AW-6	02/15/96	334.90	6.19	328.71	25000 (e)	---	53	1400	1200	4400	---	---	---	---	ATI
QC-1 (b)	02/15/96	---	---	---	25000 (e)	---	53	1400	1200	4400	---	---	---	---	ATI
AW-6	05/21/96	334.90	6.87	328.03	14000 (e)	---	730	140	570	1100	---	---	---	5.7	ATI
QC-1 (b)	05/21/96		---	---	15000 (e)	---	750	140	570	1100	---	---	---	---	ATI
AW-6	08/29/96	334.90	8.38	326.52	8300	---	430	ND<10	340	40	2600 (f)	---	---	8.9	ATI
QC-1 (b)	08/29/96	-	---	---	9400	---	430	12	360	37	2200 (f)	---	---	---	ATI
AW-6	11/28/96	334.90	9.20	325.70	4700	---	300	13	61	ND<20	3600	---	---	3.0	ATI
QC-1 (b)	11/28/96	-	---	--	5200	---	310	12	78	ND<20	3800	---	---	---	ATI
AW-6	02/26/97	334.90	5.78	329.12	3600	---	17	29	110	1100	68	---	---	8.0	SPL
QC-1 (b)	02/26/97	---	---	---	3600	---	17	28	100	1050	63	---	---	---	SPL
AW-6	05/23/97	334.90	6.94	327.96	1800	---	390	ND<2.5	76	49	560	---	---	5.2	SPL
QC-1 (b)	05/23/97	---	---	---	1800	---	380	ND<2.5	72	44	550	---	---	---	SPL
AW-6	08/23/97	334.90	6.50	328.40	2300	---	54	ND<1.0	ND<1.0	ND<1.0	4240	---	---	6.3	SPL
AW-6	12/02/97	334.90	8.46	326.44	1500	---	27	ND<1	ND<1	ND<1	1700	---	---	7.2	SPL
AW-6	05/16/97	334.90	7.55	327.35	110	---	0.5	ND<1.0	ND<1.0	ND<1.0	33	---	---	4.3	SPL
AW-6	08/22/97	334.90	8.58	326.32	100	---	16	ND<1.0	ND<1.0	3	2900	---	---	6.3	SPL
QC-1 (b)	08/22/97		---	---	100	---	18	ND<1.0	ND<1.0	ND<1.0	1800	---	---	---	SPL

TABLE 1 - SUMMARY OF RESULTS OF GROUNDWATER SAMPLING
BP OIL COMPANY SERVICE STATION NO. 11116
7197 VILLAGE PARKWAY, DUBLIN, CALIFORNIA

ALISTO PROJECT NO. 10-017

WELL ID	DATE OF SAMPLING MONITORING	CASING ELEVATION (a) (Feet)	DEPTH TO WATER (Feet)	GROUNDWATER ELEVATION (b) (Feet)	TPH-G (ug/l)	TPH-D (ug/l)	B (ug/l)	T (ug/l)	E (ug/l)	X (ug/l)	MTBE (ug/l)	TOG (ug/l)	HVOC (ug/l)	DO (ppm)	LAB
QC-2 (i)	11/10/92	---	---	---	ND<50	---	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	---	---	ANA
QC-2 (i)	02/10/93	- -	---	---	ND<50	---	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	---	---	PACE
QC-2 (i)	05/21/93	---	---	---	ND<50	---	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	---	---	PACE
QC-2 (i)	08/12/93	-	---	---	ND<50	---	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	---	---	PACE
QC-2 (i)	11/12/93	-	---	---	ND<50	---	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	---	---	PACE
QC-2 (i)	02/11/94	---	---	---	ND<50	---	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	---	---	PACE
QC-2 (i)	06/20/94	---	---	---	ND<50	---	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	---	---	PACE
QC-2 (i)	10/01/94	---	---	---	ND<50	---	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	---	---	PACE
QC-2 (i)	11/21/94	- -	---	---	ND<50	---	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	---	---	PACE
QC-2 (i)	02/15/95	---	---	---	ND<50	---	ND<0.50	ND<0.50	ND<0.50	ND<1.0	---	---	---	---	ATI
QC-2 (i)	05/24/95	---	---	---	ND<50	---	ND<0.50	ND<0.50	ND<0.50	ND<1.0	---	---	---	---	ATI
QC-2 (i)	08/29/95	---	---	---	ND<50	---	ND<0.50	ND<0.50	ND<0.50	ND<1.0	---	---	---	---	ATI
QC-2 (i)	11/28/95	-	---	---	ND<50	---	ND<0.50	1.6	ND<0.50	1.2	ND<5.0 (f)	---	---	---	ATI
QC-2 (i)	02/26/96	-	---	---	ND<50	---	ND<0.5	ND<1	ND<1	ND<1	ND<10	---	---	---	SPL
QC-2 (i)	05/23/96	---	---	---	ND<50	---	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<10	---	---	---	SPL

ABBREVIATIONS

TPH-G	Total petroleum hydrocarbons as gasoline
TPH-D	Total petroleum hydrocarbons as diesel
B	Benzene
T	Toluene
E	Ethylbenzene
X	Total xylenes
MTBE	Methyl tert butyl ether
TOG	Total oil and grease
HVOC	Halogenated volatile organic compounds
DO	Dissolved oxygen
ug/l	Micrograms per liter
ppm	Parts per million
ND	Not detected above reported detection limit
---	Not applicable/analyzed/measured
ANA	Anametrix, Inc
SUP	Superior Analytical Laboratory
SEQ	Sequoia Analytical Laboratory
PACE	Pace, Inc
ATI	Analytical Technologies, Inc
SPL	Southern Petroleum Laboratories

NOTES:

(a) Top of casing elevations surveyed in reference to the City of Dublin monument at the intersection of Village Parkway and Amador Valley Boulevard, with an elevation of 335.92 feet above mean sea level.

(b) Groundwater elevations in feet above mean sea level.

(c) Methylene chloride.

(d) Groundwater samples collected on November 21, 1994.

(e) MTBE peak present. See historical MTBE documentation in Appendix C of Alisto report 10-017-06-003.

(f) A copy of the documentation for this data is included in Appendix C of Alisto report 10-017-06-003.

(g) Well buried

(h) Blind duplicate

(i) Travel blank.

10-017-WQ2

TABLE 2 - SUMMARY OF RESULTS OF GROUNDWATER MONITORING
ARCO PRODUCTS SERVICE STATION 6041
7249 VILLAGE PARKWAY, DUBLIN, CALIFORNIA

ALISTO PROJECT NO. 10-017

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)	MTBE (ug/l)	LAB
MW-1	11/10/92	336.56	11.74	324.82	---	---	---	---	---	---	---
MW-1	02/10/93	336.56	9.66	326.90	---	---	---	---	---	---	---
MW-1	05/10/93	336.56	9.50	327.06	---	---	---	---	---	---	---
MW-1 (c)	08/12/93	336.56	---	---	---	---	---	---	---	---	---
MW-1	11/11/93	336.56	10.70	325.86	---	---	---	---	---	---	---
MW-1	02/11/94	336.56	10.35	326.21	---	---	---	---	---	---	---
MW-1	05/27/94	336.56	10.40	326.16	---	---	---	---	---	---	---
MW-1 (c)	08/25/94	336.56	---	---	---	---	---	---	---	---	---
MW-1	11/18/94	336.56	10.25	326.31	---	---	---	---	---	---	---
MW-1	02/15/95	336.56	8.53	328.03	---	---	---	---	---	---	---
MW-1	05/24/95	336.56	9.00	327.56	---	---	---	---	---	---	---
MW-1	08/25/95	336.56	6.93	329.63	780	2	ND<1	2	2	2500	CAS
MW-1	11/28/95	336.56	11.01	325.55	570	2.2	ND<0.5	1.4	0.9	---	CAS
MW-1	02/26/96	336.56	7.35	329.21	---	---	---	---	---	---	---
MW-1	05/23/96	336.56	8.73	327.83	560	8.5	ND<1	1.1	ND<1	3900	CAS
MW-1	08/23/96	336.56	10.25	326.31	860	ND<1	ND<1	ND<4	2	5600	CAS
MW-1	08/20/97	336.56	10.75	325.81	ND<5000	ND<50	ND<50	ND<50	ND<50	7400	CAS
MW-2	11/10/92	334.80	10.12	324.68	---	---	---	---	---	---	---
MW-2	02/10/93	334.80	7.30	327.50	---	---	---	---	---	---	---
MW-2	05/10/93	334.80	7.40	327.40	---	---	---	---	---	---	---
MW-2 (c)	08/12/93	334.80	---	---	---	---	---	---	---	---	---
MW-2	11/11/93	334.80	9.02	325.78	---	---	---	---	---	---	---
MW-2	02/11/94	334.80	8.59	326.21	---	---	---	---	---	---	---
MW-2	05/27/94	334.80	8.51	326.29	---	---	---	---	---	---	---
MW-2 (c)	08/25/94	334.80	---	---	---	---	---	---	---	---	---
MW-2	11/18/94	334.80	8.70	326.10	---	---	---	---	---	---	---
MW-2	02/15/95	334.80	6.75	328.05	---	---	---	---	---	---	---
MW-2	05/24/95	334.80	6.88	327.92	---	---	---	---	---	---	---
MW-2	08/25/95	334.80	7.91	326.89	150	6	ND<1	1	ND<1	2700	CAS
MW-2	11/28/95	334.80	9.06	325.74	ND<50	ND<0.5	ND<0.5	ND<0.5	0.8	---	CAS
MW-2	02/26/96	334.80	6.65	328.15	---	---	---	---	---	---	---
MW-2	05/23/96	334.80	6.90	327.90	540	140	ND<2.5	13	ND<2.5	4600	CAS
MW-2	08/23/96	334.80	8.45	326.35	180	0.8	2	0.7	2.6	4000	CAS
MW-2	08/20/97	334.80	8.87	325.93	ND<5000	ND<50	ND<50	ND<50	ND<50	3100	CAS
MW-3	11/10/92	335.53	10.72	324.81	---	---	---	---	---	---	---
MW-3	02/10/93	335.53	7.87	327.66	---	---	---	---	---	---	---
MW-3	05/10/93	335.53	9.91	325.62	---	---	---	---	---	---	---
MW-3 (c)	08/12/93	335.53	---	---	---	---	---	---	---	---	---
MW-3	11/11/93	335.53	9.81	325.72	---	---	---	---	---	---	---
MW-3	02/11/94	335.53	9.60	325.93	---	---	---	---	---	---	---
MW-3	05/27/94	335.53	9.51	326.02	---	---	---	---	---	---	---
MW-3 (c)	08/25/94	335.53	---	---	---	---	---	---	---	---	---
MW-3	11/18/94	335.53	9.79	325.74	---	---	---	---	---	---	---
MW-3	02/15/95	335.53	8.55	326.98	---	---	---	---	---	---	---
MW-3	05/24/95	335.53	8.17	327.36	---	---	---	---	---	---	---
MW-3	08/25/95	335.53	9.27	326.26	210	3.6	ND<0.5	2.9	0.6	20000	CAS
MW-3	11/28/95	335.53	9.91	325.62	81	1.5	ND<0.5	1.4	ND<0.5	15000	CAS
MW-3	02/26/96	335.53	8.42	327.11	---	---	---	---	---	---	---
MW-3	05/23/96	335.53	7.70	327.83	6500	690	ND<10	120	14	8600	CAS
MW-3	08/23/96	335.53	9.25	326.28	1700	85	2.1	61	5.3	11000	CAS
MW-3	08/20/97	335.53	9.73	325.80	ND<5000	ND<50	ND<50	ND<50	ND<50	7700	CAS

TABLE 2 - SUMMARY OF RESULTS OF GROUNDWATER MONITORING
ARCO PRODUCTS SERVICE STATION 6041
7249 VILLAGE PARKWAY, DUBLIN, CALIFORNIA

ALISTO PROJECT NO. 10-017

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)	MTBE (ug/l)	LAB
MW-4	11/10/92	334.22	9.58	324.64	---	---	---	---	---	---	---
MW-4	02/10/93	334.22	6.80	327.42	---	---	---	---	---	---	---
MW-4	05/10/93	334.22	9.90	324.32	---	---	---	---	---	---	---
MW-4 (c)	08/12/93	334.22	---	---	---	---	---	---	---	---	---
MW-4	11/11/93	334.22	8.48	325.74	---	---	---	---	---	---	---
MW-4	02/11/94	334.22	8.15	326.07	---	---	---	---	---	---	---
MW-4	05/27/94	334.22	7.83	326.39	---	---	---	---	---	---	---
MW-4 (c)	08/25/94	334.22	---	---	---	---	---	---	---	---	---
MW-4	11/18/94	334.22	8.31	325.91	---	---	---	---	---	---	---
MW-4	02/15/95	334.22	7.85	326.37	---	---	---	---	---	---	---
MW-4	05/24/95	334.22	6.68	327.54	---	---	---	---	---	---	---
MW-4	08/25/95	334.22	6.93	327.29	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<3	CAS
MW-4	11/28/95	334.22	8.21	326.01	---	---	---	---	---	---	---
MW-4	02/26/96	334.22	6.65	327.57	---	---	---	---	---	---	---
MW-4	05/23/96	334.22	6.47	327.75	---	---	---	---	---	---	---
MW-4	08/23/96	334.22	7.66	326.56	---	---	---	---	---	---	---
MW-4	08/20/97	334.22	8.32	325.90	---	---	---	---	---	---	---
MW-5	11/10/92	335.87	11.02	324.85	---	---	---	---	---	---	---
MW-5	02/10/93	335.87	8.00	327.87	---	---	---	---	---	---	---
MW-5	05/10/93	335.87	8.64	327.23	---	---	---	---	---	---	---
MW-5 (c)	08/12/93	335.87	---	---	---	---	---	---	---	---	---
MW-5	11/11/93	335.87	10.09	325.78	---	---	---	---	---	---	---
MW-5	02/11/94	335.87	9.63	326.24	---	---	---	---	---	---	---
MW-5	05/27/94	335.87	9.60	326.27	---	---	---	---	---	---	---
MW-5 (c)	08/25/94	335.87	---	---	---	---	---	---	---	---	---
MW-5	11/18/94	335.87	9.65	326.22	---	---	---	---	---	---	---
MW-5	02/15/95	335.87	7.80	328.07	---	---	---	---	---	---	---
MW-5	05/24/95	335.87	8.10	327.77	---	---	---	---	---	---	---
MW-5	08/25/95	335.87	9.43	326.44	---	---	---	---	---	---	---
MW-5	11/28/95	335.87	10.12	325.75	---	---	---	---	---	---	---
MW-5	02/26/96	335.87	6.73	329.14	---	---	---	---	---	---	---
MW-5	05/23/96	335.87	7.87	328.00	---	---	---	---	---	---	---
MW-5	08/23/96	335.87	9.46	326.41	---	---	---	---	---	---	---
MW-5	08/20/97	335.87	9.92	325.95	---	---	---	---	---	---	---
MW-6	11/10/92	335.84	11.03	324.81	---	---	---	---	---	---	---
MW-6	02/10/93	335.84	8.22	327.62	---	---	---	---	---	---	---
MW-6	05/10/93	335.84	8.85	326.99	---	---	---	---	---	---	---
MW-6 (c)	08/12/93	335.84	---	---	---	---	---	---	---	---	---
MW-6	11/11/93	335.84	10.02	325.82	---	---	---	---	---	---	---
MW-6	02/11/94	335.84	9.66	326.18	---	---	---	---	---	---	---
MW-6	05/27/94	335.84	9.69	326.15	---	---	---	---	---	---	---
MW-6 (c)	08/25/94	335.84	---	---	---	---	---	---	---	---	---
MW-6	11/18/94	335.84	9.54	326.30	---	---	---	---	---	---	---
MW-6	02/15/95	335.84	7.81	328.03	---	---	---	---	---	---	---
MW-6	05/24/95	335.84	8.35	327.49	---	---	---	---	---	---	---
MW-6	08/25/95	335.84	9.71	326.13	---	---	---	---	---	---	---
MW-6	11/28/95	335.84	10.28	325.56	---	---	---	---	---	---	---
MW-6	02/26/96	335.84	6.60	329.24	---	---	---	---	---	---	---
MW-6	05/23/96	335.84	8.05	327.79	---	---	---	---	---	---	---
MW-6	08/23/96	335.84	9.58	326.26	---	---	---	---	---	---	---
MW-6	08/20/97	335.84	9.98	325.86	---	---	---	---	---	---	---

TABLE 2 - SUMMARY OF RESULTS OF GROUNDWATER MONITORING
ARCO PRODUCTS SERVICE STATION 6041
7249 VILLAGE PARKWAY, DUBLIN, CALIFORNIA

ALISTO PROJECT NO. 10-017

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)	MTBE (ug/l)	LAB
VW-2	08/20/97	—	9.16	—	—	—	—	—	—	—	—

ABBREVIATIONS:

TPH-G	Total petroleum hydrocarbons as gasoline
B	Benzene
T	Toluene
E	Ethylbenzene
X	Total xylenes
MTBE	Methyl tert butyl ether
ug/l	Micrograms per liter
—	Not analyzed/applicable/measured
ND	Not detected above reported detection limit
CAS	Columbia Analytical Services, Inc.

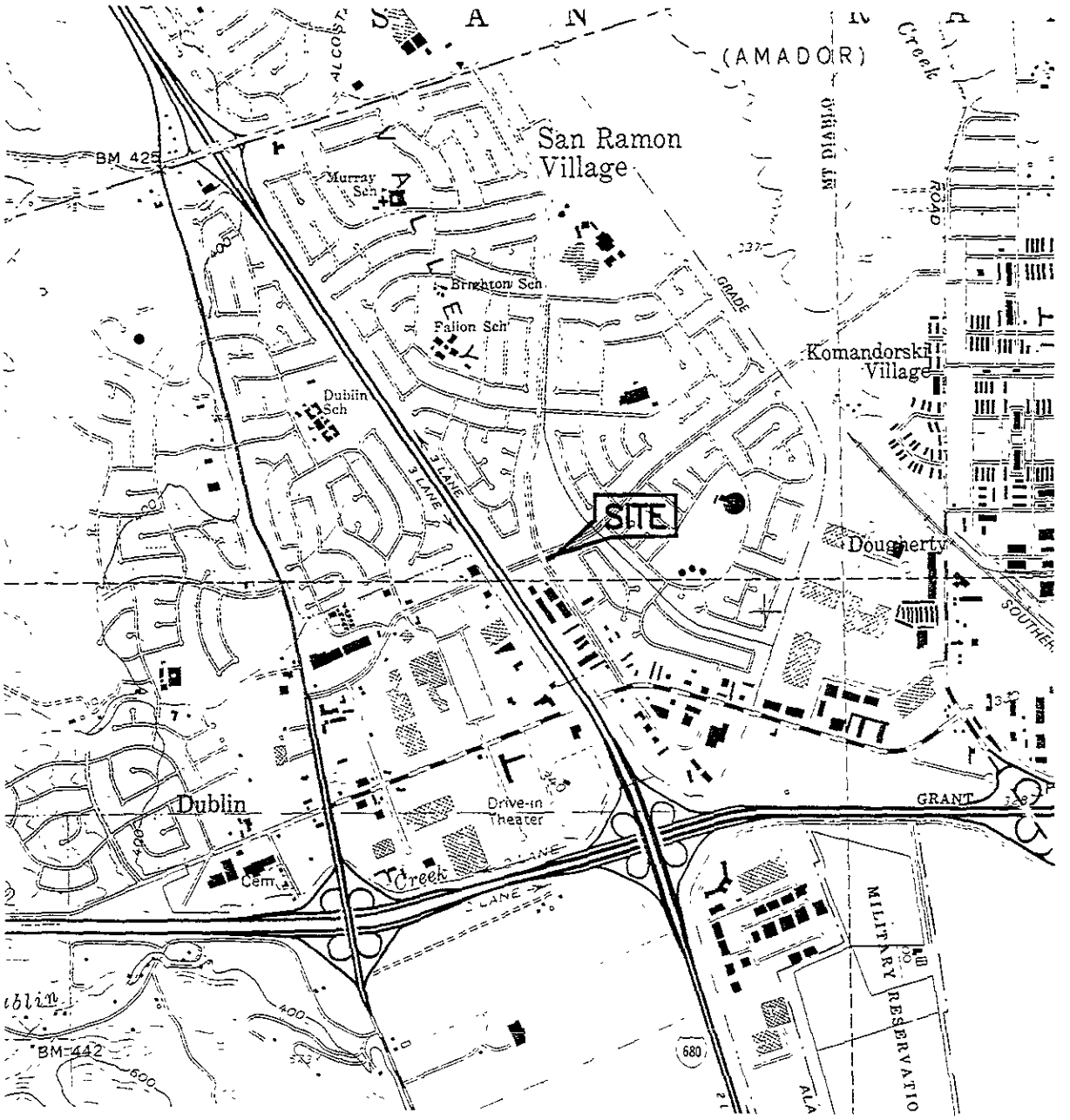
NOTES:

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

(b) Groundwater elevations in feet above mean sea level.

(c) Data not available.

F:\0\10-017\076-7-1D.WQ2



SOURCE:
USGS MAP, DUBLIN QUADRANGLE, CALIFORNIA. 7.5 MINUTE SERIES. 1961. PHOTOREVISED 1980.

N

0 1000 2000'

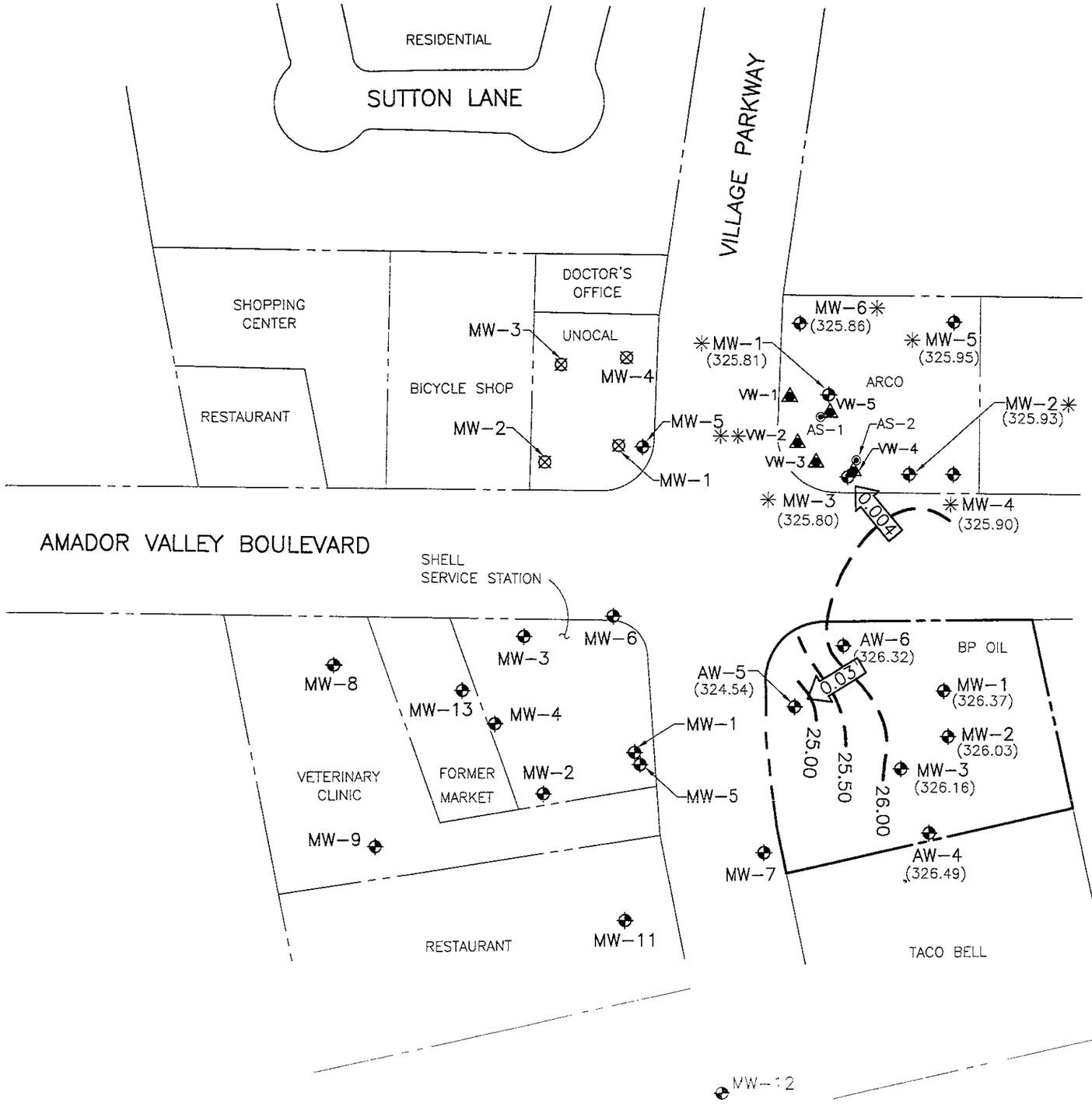
FIGURE 1

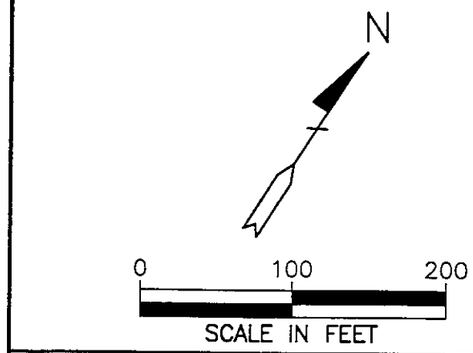
SITE VICINITY MAP

BP OIL SERVICE STATION NO. 11116
7197 VILLAGE PARKWAY
DUBLIN, CALIFORNIA

PROJECT NO. 10-017

ALISTO ENGINEERING GROUP
WALNUT CREEK, CALIFORNIA





LEGEND

- GROUNDWATER MONITORING WELL
- VAPOR EXTRACTION WELL
- AIR SPARGING POINT
- DESTROYED WELL
- (24.54) GROUNDWATER ELEVATION IN FEET ABOVE MEAN SEA LEVEL
- 25.00 GROUNDWATER ELEVATION CONTOUR IN FEET ABOVE MEAN SEA LEVEL (CONTOUR INTERVAL–0.50 FOOT)
- 0.03 CALCULATED GROUNDWATER GRADIENT DIRECTION AND MAGNITUDE IN FOOT PER FOOT
- ✳ MONITORED ON AUGUST 20,1997
- ✳✳ TOP OF CASING NOT SURVEYED

NOTE:
Data not available for Unocal and Shell Service Station wells.

FIGURE 2

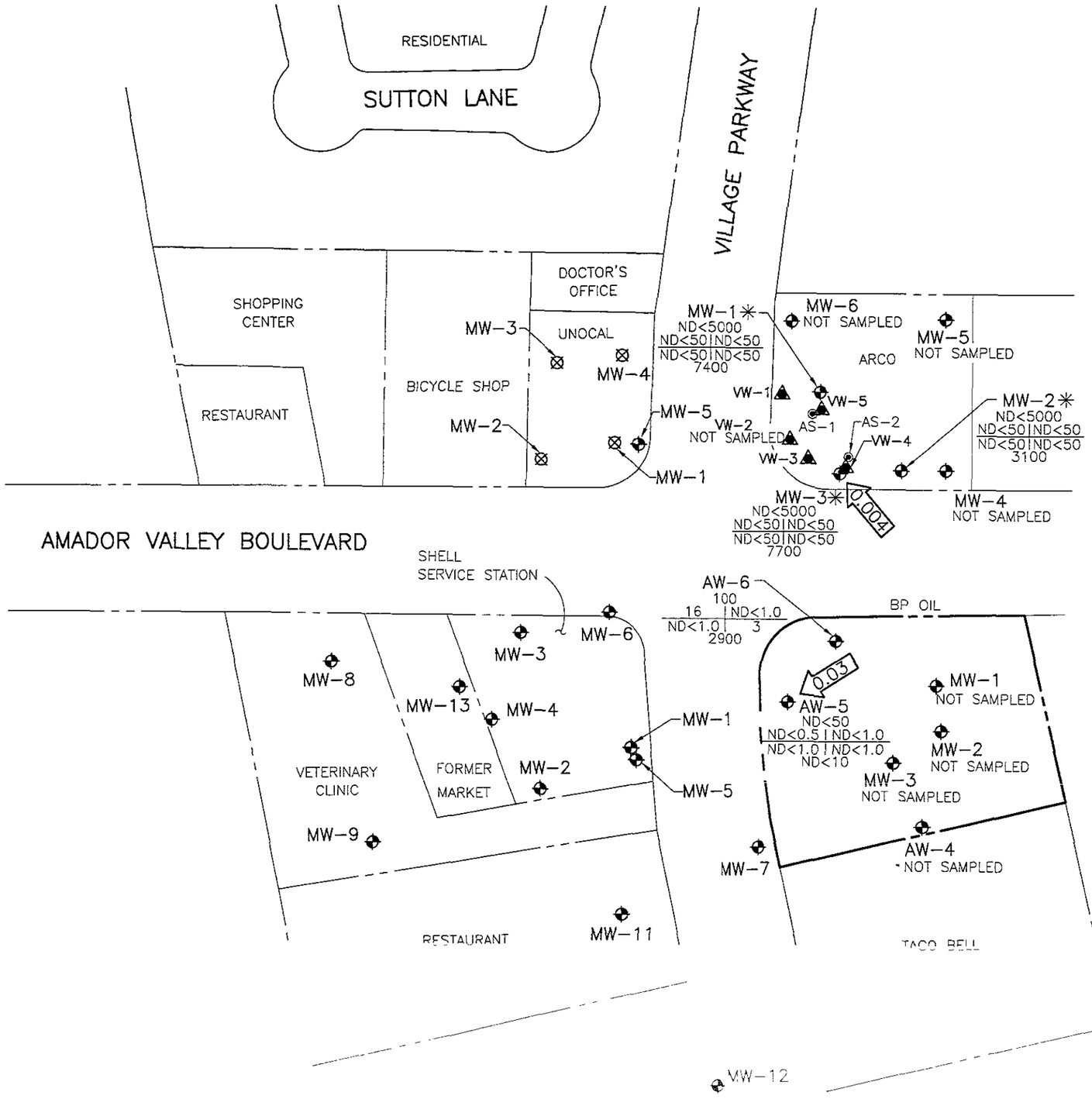
POTENTIOMETRIC GROUNDWATER ELEVATION CONTOUR MAP

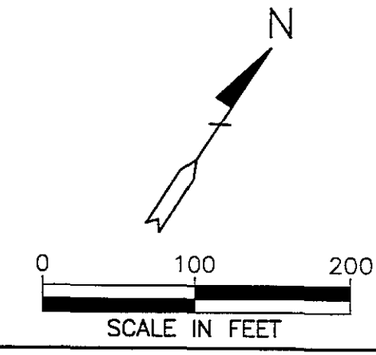
AUGUST 20 AND 22, 1997

BP OIL SERVICE STATION NO. 11116
7197 VILLAGE PARKWAY
DUBLIN, CALIFORNIA

PROJECT NO. 10–017

ALISTO ENGINEERING GROUP
WALNUT CREEK, CALIFORNIA





LEGEND

⊕	GROUNDWATER MONITORING WELL
▲	VAPOR EXTRACTION WELL
◉	AIR SPARGING POINT
⊠	DESTROYED WELL
TPH-G / B | T / E | X / MTBE	CONCENTRATION OF CONSTITUENTS IN MICROGRAMS PER LITER
TPH-G	TOTAL PETROLEUM HYDROCARBONS AS GASOLINE
B	BENZENE
T	TOLUENE
E	ETHYLBENZENE
X	TOTAL XYLENES
MTBE	METHYL TERT BUTYL ETHER
ND	NOT DETECTED ABOVE REPORTED DETECTION LIMIT
0.03	CALCULATED GROUNDWATER GRADIENT DIRECTION AND MAGNITUDE IN FOOT PER FOOT
*	SAMPLED ON AUGUST 20,1997

NOTE:

Data not available for Unocal and Shell Service Station wells.

FIGURE 3

CONCENTRATIONS OF PETROLEUM HYDROCARBONS IN GROUNDWATER

AUGUST 20 AND 22, 1997

BP OIL SERVICE STATION NO. 11116
7197 VILLAGE PARKWAY
DUBLIN, CALIFORNIA

PROJECT NO. 10-017

ALISTO ENGINEERING GROUP
MOUNT DIABLO, CALIFORNIA

APPENDIX A

WATER SAMPLING FIELD SURVEY FORMS

ALISTO

ENGINEERING
GROUP
1575 TREAT BOULEVARD, SUITE 201
WALNUT CREEK CA 94598 (510) 295-1650 FAX 295-1823

Field Report / Sampling Data Sheet

Project No.	10-017-07-001	Date:	8/28/97
Address	7197 Village Parkway	Day:	M T W TH F
Contract No.	H176927 /KS	City:	Dublin
Station No.	BP 11116	Sampler:	LB

DEPTH TO GROUNDWATER SUMMARY

WELL ID	SAMPLE ID	WELL DIAM	TOTAL DEPTH	DEPTH TO WATER	PRODUCT THICKNESS	TIME MONITORED	COMMENTS:
MW-1	N/S	2"	25.80'	8.80	Ø	0920	NS
MW-2		2"	25.45'	8.55		0931	NS
MW-3		2"	25.90'	8.97		0927	NS
AW-4		4"	34.15'	6.92		0936	NS
AW-5	S-1	4"	32.90'	10.27		0942	
AW-6	S-2	4"	16.50'	8.58		0950	ORC Well QC-1 S-3 From this well

FIELD INSTRUMENT CALIBRATION DATA

pH METER N/A 400 ✓ 7.00 7 10.00 10 TEMPERATURE COMPENSATED Y N TIME 0957 WEATHER Clear

D.O. METER N/A ZERO d.O. SOLUTION ______ BAROMETRIC PRESSURE 760 TEMP 70

CONDUCTIVITY METER N/A Em 10,000 ______ TURBIDITY METER ______ 5.0 NTU ______ OTHER ______

Well ID	Depth to Water	Diam	Cap/Lock	Product Dept	Iridescence	Gal.	Time	Temp °F	pH	E.C.	D.O.	
AW-5	10.27	4"	OK	Ø	Y N	14	1020	74.2	7.51	1.71ms	4.1	○ EPA 601___ ⊗ TPH-G/BTEX___
Total Depth − Water Level x Well Vol. Factor= x#vol. to Purge PurgeVol.						28		72.1	7.17	1.83ms		○ TPH Diesel___
32.90 − 10.27 = 22.63 X .65 = 14.71 X 3 = 44.13						45	1047	71.5	7.07	1.83ms	4.3	○ TOG 5520 ___
Purge Method ⊘Surface Pump ODisp.Tube OWinch ODisp. Bailer(s)___ OSys Port												TIME/SAMPLE ID
Comments.												1050

Well ID	Depth to Water	Diam	Cap/Lock	Product Dept	Iridescence	Gal.	Time	Temp °F	pH	E.C.	D.O.	
AW-6	8.58	4"	OK	Ø	Y N	5	1101	72.7	7.69	1.20ms	6.1	○ EPA 601___ ⊗ TPH-G/BTEX___
Total Depth − Water Level x Well Vol. Factor= x#vol. to Purge PurgeVol.						10		71.3	7.49	1.27ms		○ TPH Diesel___
16.50 − 8.58 = 7.92 X .65 = 5.15 X 3 = 15.45						16	1117	70.6	7.42	1.29ms	6.3	○ TOG 5520 ___
Purge Method ⊘Surface Pump ODisp.Tube OWinch ODisp. Bailer(s)___ OSys Port												TIME/SAMPLE ID
Comments.												1122

APPENDIX B

LABORATORY REPORT AND CHAIN OF CUSTODY RECORD

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TEXAS 77054
PHONE (713)660-0901

September 03, 1997

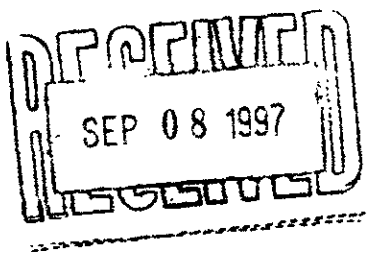
Mr. Scott Hooton
BP Oil Company
295 SW 41st, Bldg 13,Ste N
Renton, WA 98055

The following report contains analytical results for samples received at Southern Petroleum Laboratories (SPL) on August 26, 1997 . The samples were assigned to Certificate of Analysis No.(s)9708A68 and analyzed for all parameters as listed on the chain of custody.

There were no analytical problems encountered with this group of samples and all quality control data was within acceptance limits.

If you have any questions or comments pertaining to this data report, please do not hesitate to contact me. Please reference the above Certificate of Analysis No. during any inquiries.

Again, SPL is pleased to be of service to you. We anticipate working with you in fulfilling all your current and future analytical needs.



Southern Petroleum Laboratories

Brett VanDelinder
Project Manager

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TEXAS 77054
PHONE (713)660-0901

Southern Petroleum Laboratories, Inc.

Certificate of Analysis Number 97-08-A68

Approved for Release by:

Brett VanDelinder, Project Manager

9-3-97
Date:

Greg Grandits
Laboratory Director

Idelis Williams
Quality Assurance Officer

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TEXAS 77054
PHONE (713)660-0901

Certificate of Analysis No. H9-9708A68-01

BP Oil Company
295 SW 41st St, Bldg 13,Ste N
Renton, WA 98055
ATTN: Scott Hooton

P.O.# H176927, COC#088263
DATE: 09/03/97

PROJECT: BP Oil #11116
SITE: Dublin,CA
SAMPLED BY: Alisto Engineering
SAMPLE ID: S-1

PROJECT NO: 10-017-7-1
MATRIX: WATER
DATE SAMPLED: 08/22/97
DATE RECEIVED: 08/26/97

ANALYTICAL DATA

PARAMETER	RESULTS	DETECTION LIMIT	UNITS
MTBE	ND	10 P	µg/L
Benzene	ND	0.5 P	µg/L
Toluene	ND	1.0 P	µg/L
Ethylbenzene	ND	1.0 P	µg/L
Total Xylene	ND	1.0 P	µg/L

Surrogate	% Recovery
1,4-Difluorobenzene	100
4-Bromofluorobenzene	103

Method 8020A***
Analyzed by: VHZ
Date: 08/27/97

Total Petroleum Hydrocarbons-Gasoline	ND	0.05 P	mg/L

Surrogate	% Recovery
1,4-Difluorobenzene	57
4-Bromofluorobenzene	90

California LUFT Manual
Analyzed by: VHZ
Date: 08/27/97 08:23:00

ND - Not detected. (P) - Practical Quantitation Limit

Notes: *Ref: Methods for Chemical Analysis of Water and Wastes, 1983, EPA
**Ref: Standard Methods for Examination of Water & Wastewater, 18th ed.
***Ref: Test Methods for Evaluating Solid Waste, EPA SW846, 3rd Ed.

QUALITY ASSURANCE: These analyses are performed in accordance with EPA guidelines for quality assurance.
SPL California License # 1903

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TEXAS 77054
PHONE (713)660-0901

Certificate of Analysis No. H9-9708A68-02

BP Oil Company
295 SW 41st St, Bldg 13,Ste N
Renton, WA 98055
ATTN: Scott Hooton

P.O.# H176927, COC#088263
DATE: 09/03/97

PROJECT: BP Oil #11116
SITE: Dublin,CA
SAMPLED BY: Alisto Engineering
SAMPLE ID: S-2

PROJECT NO: 10-017-7-1
MATRIX: WATER
DATE SAMPLED: 08/22/97
DATE RECEIVED: 08/26/97

ANALYTICAL DATA

PARAMETER	RESULTS	DETECTION LIMIT	UNITS
MTBE	2900	100 P	µg/L
Benzene	16	0.5 P	µg/L
Toluene	ND	1.0 P	µg/L
Ethylbenzene	ND	1.0 P	µg/L
Total Xylene	3	1.0 P	µg/L
Surrogate	**% Recovery**		
1,4-Difluorobenzene	100		
4-Bromofluorobenzene	100		
Method 8020A***			
Analyzed by: VHZ			
Date: 08/28/97			
Total Petroleum Hydrocarbons-Gasoline	0.10	0.05 P	mg/L
Surrogate	**% Recovery**		
1,4-Difluorobenzene	60		
4-Bromofluorobenzene	90		
California LUFT Manual			
Analyzed by: VHZ			
Date: 08/27/97 08:50:00			

(P) - Practical Quantitation Limit ND - Not detected.

Notes: *Ref: Methods for Chemical Analysis of Water and Wastes, 1983, EPA
**Ref: Standard Methods for Examination of Water & Wastewater, 18th ed.
***Ref: Test Methods for Evaluating Solid Waste, EPA SW846, 3rd Ed.

QUALITY ASSURANCE: These analyses are performed in accordance with EPA guidelines for quality assurance.
SPL California License # 1903

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TEXAS 77054
PHONE (713)660-0901

Certificate of Analysis No. H9-9708A68-03

BP Oil Company
295 SW 41st St, Bldg 13,Ste N
Renton, WA 98055
ATTN: Scott Hooton

P.O.# H176927, COC#088263
DATE: 09/03/97

PROJECT: BP Oil #11116
SITE: Dublin,CA
SAMPLED BY: Alisto Engineering
SAMPLE ID: S-3

PROJECT NO: 10-017-7-1
MATRIX: WATER
DATE SAMPLED: 08/22/97
DATE RECEIVED: 08/26/97

ANALYTICAL DATA

PARAMETER	RESULTS	DETECTION LIMIT	UNITS
MTBE	1800	100 P	µg/L
Benzene	18	0.5 P	µg/L
Toluene	ND	1.0 P	µg/L
Ethylbenzene	ND	1.0 P	µg/L
Total Xylene	ND	1.0 P	µg/L
Surrogate	**% Recovery**		
1,4-Difluorobenzene	100		
4-Bromofluorobenzene	103		
Method 8020A***			
Analyzed by: LJ			
Date: 08/31/97			
Total Petroleum Hydrocarbons-Gasoline	0.10	0.05 P	mg/L
Surrogate	**% Recovery**		
1,4-Difluorobenzene	57		
4-Bromofluorobenzene	90		
California LUFT Manual			
Analyzed by: VHZ			
Date: 08/28/97 11:08:00			

(P) - Practical Quantitation Limit ND - Not detected.

Notes: *Ref: Methods for Chemical Analysis of Water and Wastes, 1983, EPA
**Ref: Standard Methods for Examination of Water & Wastewater, 18th ed.
***Ref: Test Methods for Evaluating Solid Waste, EPA SW846, 3rd Ed.

QUALITY ASSURANCE: These analyses are performed in accordance with EPA guidelines for quality assurance.
SPL California License # 1903

QUALITY CONTROL

DOCUMENTATION

SPL COMPOUND®
HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TEXAS 77054
PHONE (713)660-0901

SURROGATE RECOVERY SUMMARY **PAGE 1**
09/03/97 10:10:37

Method 8020A *** **BATCH#:**HP_N970830111901
WORK ORDER: Method Blank **CLIENT SAMPLE ID:**

	AMOUNT ADDED	CONC. MEASURED	RECOVERY	LIMITS
1,4-Difluorobenzene		29	29.0	-
4-Bromofluorobenzene		30	29.5	-

Method 8020A *** **BATCH#:**HP_N970830111901
WORK ORDER: LCS **CLIENT SAMPLE ID:**

1,4-Difluorobenzene	30	31	103	70- 131
4-Bromofluorobenzene	30	30	100	43- 135

Method 8020A *** **BATCH#:**HP_N970830111901
WORK ORDER: Matrix Spike **CLIENT SAMPLE ID:**9708B07-01A

1,4-DIFLUOROBENZENE	30	29	97	70- 131
4-BROMOFLUOROBENZENE	30	29	97	43- 135

Method 8020A *** **BATCH#:**HP_N970830111901
WORK ORDER: Matrix Spike Dup. **CLIENT SAMPLE ID:**9708B07-01A

1,4-Difluorobenzene	30	29	97	70- 131
4-Bromofluorobenzene	30	30	100	43- 135

California LUFT Manual **BATCH#:**HP_S970827112000
WORK ORDER: 9708A68-01A **CLIENT SAMPLE ID:**S-1

1,4-Difluorobenzene	30	17	57	50- 150
4-Bromofluorobenzene	30	27	90	50- 150

Modified 8015A - Gasoline*** **BATCH#:**HP_S970827112000
WORK ORDER: 9708A68-02A **CLIENT SAMPLE ID:**S-2

4-Bromofluorobenzene	30	27	90	52- 152
1,4-Difluorobenzene	30	18	60	54- 137

Modified 8015A - Gasoline*** **BATCH#:**HP_S970827112000
WORK ORDER: Method Blank **CLIENT SAMPLE ID:**

4-Bromofluorobenzene	30	27	16.9	52- 152
1,4-Difluorobenzene	30	19	19.0	54- 137

Modified 8015A - Gasoline*** BATCH#:HP_S970827112000
WORK ORDER: Matrix Spike CLIENT SAMPLE ID:9708A68-02A

4-Bromofluorobenzene	30	34	113	52- 152

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	AMOUNT ADDED	CONC. MEASURED	RECOVERY	LIMITS
1,4-Difluorobenzene	30	31	103	54- 137

Modified 8015A - Gasoline* BATCH#:HP_S970827112000**
WORK ORDER: Matrix Spike Dup. **CLIENT SAMPLE ID:**9708A68-02A

4-Bromofluorobenzene	30	35	117	52- 152
1,4-Difluorobenzene	30	31	103	54- 137

Method 8020A * BATCH#:HP_S970827125000**
WORK ORDER: 9708A68-01A **CLIENT SAMPLE ID:**S-1

1,4-Difluorobenzene	30	30	100	70- 131
4-Bromofluorobenzene	30	31	103	43- 135

Method 8020A* BATCH#:HP_S970827125000**
WORK ORDER: 9708A68-02A **CLIENT SAMPLE ID:**S-2

1,4-Difluorobenzene	30	30	100	70- 131
4-Bromofluorobenzene	30	30	100	43- 135

Method 8020A * BATCH#:HP_S970827125000**
WORK ORDER: Method Blank **CLIENT SAMPLE ID:**

1,4-Difluorobenzene	30	31	30.5	74- 131
4-Bromofluorobenzene	30	32	31.6	43- 135

Method 8020A * BATCH#:HP_S970827125000**
WORK ORDER: LCS **CLIENT SAMPLE ID:**

1,4-Difluorobenzene	30	30	100	70- 131
4-Bromofluorobenzene	30	32	107	43- 135

Method 8020A * BATCH#:HP_S970827125000**
WORK ORDER: Matrix Spike **CLIENT SAMPLE ID:**9708A68-01A

1,4-DIFLUOROBENZENE	30	30	100	70- 131
4-BROMOFLUOROBENZENE	30	31	103	43- 135

Method 8020A * BATCH#:HP_S970827125000**
WORK ORDER: Matrix Spike Dup. **CLIENT SAMPLE ID:**9708A68-01A

1,4-Difluorobenzene	30	30	100	70- 131
4-Bromofluorobenzene	30	31	103	43- 135

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Method 8020A* BATCH#:HP_S970828101200**
WORK ORDER: 9708A68-03A **CLIENT SAMPLE ID:** S-3

	AMOUNT ADDED	CONC. MEASURED	RECOVERY	LIMITS
1,4-Difluorobenzene	30	30	100	70- 131
4-Bromofluorobenzene	30	31	103	43- 135

Method 8020A * BATCH#:HP_S970828101200**
WORK ORDER: Method Blank **CLIENT SAMPLE ID:**

1,4-Difluorobenzene	30	31	30.8	74- 131
4-Bromofluorobenzene	30	32	31.7	43- 135

Method 8020A * BATCH#:HP_S970828101200**
WORK ORDER: LCS **CLIENT SAMPLE ID:**

1,4-Difluorobenzene	30	30	100	70- 131
4-Bromofluorobenzene	30	32	107	43- 135

Method 8020A * BATCH#:HP_S970828101200**
WORK ORDER: Matrix Spike **CLIENT SAMPLE ID:** 9708B47-01A

1,4-DIFLUOROBENZENE	30	30	100	70- 131
4-BROMOFLUOROBENZENE	30	32	107	43- 135

Method 8020A * BATCH#:HP_S970828101200**
WORK ORDER: Matrix Spike Dup. **CLIENT SAMPLE ID:** 9708B47-01A

1,4-Difluorobenzene	30	30	100	70- 131
4-Bromofluorobenzene	30	32	107	43- 135

California LUFT Manual BATCH#:HP_S970828110700
WORK ORDER: 9708A68-03A **CLIENT SAMPLE ID:** S-3

1,4-Difluorobenzene	30	17	57	50- 150
4-Bromofluorobenzene	30	27	90	50- 150

California LUFT Manual BATCH#:HP_S970828110700
WORK ORDER: Method Blank **CLIENT SAMPLE ID:**

1,4-Difluorobenzene	30	19	19.0	50- 150
4-Bromofluorobenzene	30	28	28.3	50- 150

California LUFT Manual BATCH#:HP_S970828110700
WORK ORDER: Matrix Spike CLIENT SAMPLE ID: 9708A71-05A

1,4-Difluorobenzene	30	31	103	50- 150

COMPOUND ®

SURROGATE RECOVERY SUMMARY
09/03/97 10:10:37

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TEXAS 77054
PHONE (713)660-0901

	AMOUNT ADDED	CONC. MEASURED	RECOVERY	LIMITS
4-Bromofluorobenzene	30	29	97	50- 150

California LUFT Manual BATCH#:HP_S970828110700
WORK ORDER: Matrix Spike Dup. CLIENT SAMPLE ID:9708A71-05A

1,4-Difluorobenzene	30	33	110	50- 150
4-Bromofluorobenzene	30	29	97	50- 150

« = Recovery outside of control limits
* = Methods for Chemical Analysis of Water & Wastes,1983,EPA
** = Standard Methods for Examination of Water & Wastewater,17th
*** = Test Methods for Evaluating Solid Waste,EPA SW846,3rd

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** SPL BATCH QUALITY CONTROL REPORT **
METHOD 8020/602

Matrix: Aqueous
Units: µg/L

Batch Id: HP_S970827125000

LABORATORY CONTROL SAMPLE

SPIKE COMPOUNDS	Method Blank Result <2>	Spike Added <3>	Blank Spike Result <1>	Blank Spike Recovery %	QC Limits(**) (Mandatory) % Recovery Range
MTBE	ND	50	43	86.0	63 - 120
Benzene	ND	50	42	84.0	62 - 121
Toluene	ND	50	43	86.0	66 - 136
EthylBenzene	ND	50	44	88.0	70 - 136
O Xylene	ND	50	44	88.0	74 - 134
M & P Xylene	ND	100	85	85.0	77 - 140

MATRIX SPIKES

SPIKE COMPOUNDS	Sample Results <2>	Spike Added <3>	Matrix Spike Result <1>	Matrix Spike Recovery <4>	Matrix Spike Duplicate Result <1>	Matrix Spike Duplicate Recovery <5>	MS/MSD Relative % Difference	QC Limits(***) (Advisory) RPD Max.	QC Limits(***) (Advisory) Recovery Range
MTBE	ND	20	19	95.0	19	95.0	0	20	39 - 150
BENZENE	ND	20	18	90.0	19	95.0	5.41	25	39 - 150
TOLUENE	ND	20	18	90.0	18	90.0	0	26	56 - 134
ETHYLBENZENE	ND	20	18	90.0	18	90.0	0	38	61 - 128
O XYLENE	ND	20	19	95.0	19	95.0	0	29	40 - 130
M & P XYLENE	ND	40	37	92.5	37	92.5	0	20	43 - 152

Analyst: VHZ
Sequence Date: 08/27/97
SPL ID of sample spiked: 9708A68-01A
Sample File ID: S_H7430.TX0
Method Blank File ID:
Blank Spike File ID: S_H7420.TX0
Matrix Spike File ID: S_H7425.TX0
Matrix Spike Duplicate File ID: S_H7426.TX0

* = Values Outside QC Range. « = Data outside Method Specification limits.
NC = Not Calculated (Sample exceeds spike by factor of 4 or more)
ND = Not Detected/Below Detection Limit
% Recovery = [(<1> - <2>) / <3>] x 100
LCS % Recovery = (<1> / <3>) x 100
Relative Percent Difference = |(<4> - <5>] / [(<4> + <5>) x 0.5] x 100
(**) = Source: SPL-Houston Historical Data (3rd Q '95)
(***) = Source: SPL-Houston Historical Data (2nd Q '95)

SAMPLES IN BATCH(SPL ID):

9708856-01A 9708856-02A 9708856-03A 9708855-02A
9708855-01A 9708856-06A 9708684-03A 9708A43-01A
9708A43-03A 9708A43-04A 9708A43-05A 9708A43-06A
9708A43-07A 9708A43-02A 9708A68-01A 9708A68-02A
9708855-04A 9708855-03A

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HOUSTON, TEXAS 77054
PHONE (713)660-0901

** SPL BATCH QUALITY CONTROL REPORT **

METHOD 8020/602

Matrix: Aqueous
Units: µg/L

Batch Id: HP_S970828101200

LABORATORY CONTROL SAMPLE

SPIKE COMPOUNDS	Method Blank Result <2>	Spike Added <3>	Blank Spike Result <1>	Blank Spike Recovery %	QC Limits(**) (Mandatory) % Recovery Range
MTBE	ND	50	39	78.0	63 - 120
Benzene	ND	50	41	82.0	62 - 121
Toluene	ND	50	42	84.0	66 - 136
EthylBenzene	ND	50	43	86.0	70 - 136
O Xylene	ND	50	43	86.0	74 - 134
M & P Xylene	ND	100	84	84.0	77 - 140

MATRIX SPIKES

SPIKE COMPOUNDS	Sample Results <2>	Spike Added <3>	Matrix Spike Result <1>	Matrix Spike Recovery <4>	Matrix Spike Duplicate Result <1>	Matrix Spike Duplicate Recovery <5>	MS/MSD Relative % Difference	QC Limits(***) (Advisory) RPD Max.	QC Limits(***) (Advisory) Recovery Range
MTBE	391	20	380	NC	390	NC	NC	20	39 - 150
BENZENE	ND	20	19	95.0	19	95.0	0	25	39 - 150
TOLUENE	ND	20	19	95.0	18	90.0	5.41	26	56 - 134
ETHYLBENZENE	ND	20	18	90.0	18	90.0	0	38	61 - 128
O XYLENE	ND	20	18	90.0	18	90.0	0	29	40 - 130
M & P XYLENE	ND	40	37	92.5	36	90.0	2.74	20	43 - 152

Analyst: VHZ
Sequence Date: 08/28/97
SPL ID of sample spiked: 9708B47-01A
Sample File ID: S_H7465.TX0
Method Blank File ID:
Blank Spike File ID: S_H7454.TX0
Matrix Spike File ID: S_H7459.TX0
Matrix Spike Duplicate File ID: S_H7460.TX0

* = Values Outside QC Range. « = Data outside Method Specification limits.
NC = Not Calculated (Sample exceeds spike by factor of 4 or more)
ND = Not Detected/Below Detection Limit
% Recovery = [(<1> - <2>) / <3>] x 100
LCS % Recovery = (<1> / <3>) x 100
Relative Percent Difference = |(<4> - <5> | / [(<4> + <5>) x 0.5] x 100
(**) = Source: SPL-Houston Historical Data (3rd Q '95)
(***) = Source: SPL-Houston Historical Data (2nd Q '95)

SAMPLES IN BATCH(SPL ID): 9708856-05A 9708A68-02A 9708A71-03A 9708A68-03A 9708A71-08A 9708A71-09A 9708B26-02A 9708B44-01A 9708B26-01A 9708B48-02A 9708B48-03A 9708854-04A 9708B47-01A 9708A71-05A

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** SPL BATCH QUALITY CONTROL REPORT **
METHOD 8020/602

Matrix: Aqueous
Units: µg/L

Batch Id: HP_N970830111901

LABORATORY CONTROL SAMPLE

SPIKE COMPOUNDS	Method Blank Result <2>	Spike Added <3>	Blank Spike Result <1>	Blank Spike Recovery %	QC Limits(**) (Mandatory) % Recovery Range
MTBE	ND	50	44	88.0	63 - 120
Benzene	ND	50	42	84.0	62 - 121
Toluene	ND	50	44	88.0	66 - 136
EthylBenzene	ND	50	44	88.0	70 - 136
O Xylene	ND	50	45	90.0	74 - 134
M & P Xylene	ND	100	89	89.0	77 - 140

MATRIX SPIKES

SPIKE COMPOUNDS	Sample Results <2>	Spike Added <3>	Matrix Spike Result <1>	Matrix Spike Recovery <4>	Matrix Spike Duplicate Result <1>	Matrix Spike Duplicate Recovery <5>	MS/MSD Relative % Difference	QC Limits(***) (Advisory) RPD Max.	QC Limits(***) (Advisory) Recovery Range
MTBE	16	20.0	33	85.0	32	80.0	6.06	20	39 - 150
BENZENE	ND	20.0	20	100	20	100	0	25	39 - 150
TOLUENE	ND	20.0	21	105	20	100	4.88	26	56 - 134
ETHYLBENZENE	ND	20.0	20	100	20	100	0	38	61 - 128
O XYLENE	1.8	20.0	22	101	21	96.0	5.08	29	40 - 130
M & P XYLENE	2.1	40.0	43	102	41	97.2	4.82	20	43 - 152

Analyst: LJ
Sequence Date: 08/30/97
SPL ID of sample spiked: 9708B07-01A
Sample File ID: N_H7964.TX0
Method Blank File ID:
Blank Spike File ID: N_H7958.TX0
Matrix Spike File ID: N_H7961.TX0
Matrix Spike Duplicate File ID: N_H7962.TX0

* = Values Outside QC Range. « = Data outside Method Specification limits.
NC = Not Calculated (Sample exceeds spike by factor of 4 or more)
ND = Not Detected/Below Detection Limit
% Recovery = [(<1> - <2>) / <3>] x 100
LCS % Recovery = (<1> / <3>) x 100
Relative Percent Difference = |(<4> - <5>] / [(<4> + <5>) x 0.5] x 100
(**) = Source: SPL-Houston Historical Data (3rd Q '95)
(***) = Source: SPL-Houston Historical Data (2nd Q '95)

SAMPLES IN BATCH(SPL ID):

9708B09-04A 9708A75-06A 9708A92-31A 9708A92-32A
9708B08-02A 9708B09-05A 9708B09-06A 9708B09-07A
9708A68-03A 9708C89-01A 9708C89-02A 9708C89-03A
9708B07-01A 9708A75-04A 9708A75-08A 9708B08-01A

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PHONE (713)660-0901

** SPL BATCH QUALITY CONTROL REPORT **
Modified 8015 - Gasoline

Matrix: Aqueous
Units: mg/L

Batch Id: HP_S970827112000

LABORATORY CONTROL SAMPLE

SPIKE COMPOUNDS	Method Blank Result <2>	Spike Added <3>	Blank Spike Result <1>	Blank Spike Recovery %	QC Limits(**) (Mandatory) % Recovery Range
Gasoline Petr. Hydrocarbon	ND	1.0	0.81	81.0	56 - 130

MATRIX SPIKES

SPIKE COMPOUNDS	Sample Results <2>	Spike Added <3>	Matrix Spike Result <1>	Matrix Spike Recovery <4>	Matrix Spike Duplicate Result <1>	Matrix Spike Duplicate Recovery <5>	MS/MSD Relative % Difference	QC Limits(***) (Advisory) RPD Max.	QC Limits(***) (Advisory) Recovery Range
GASOLINE PETR. HYDROCARBON	ND	0.9	1.07	119	1.08	120	0.837	22	37 - 169

Analyst: VHZ
Sequence Date: 08/27/97
SPL ID of sample spiked: 9708A68-02A
Sample File ID: SSH7431.TX0
Method Blank File ID:
Blank Spike File ID: SSH7421.TX0
Matrix Spike File ID: SSH7427.TX0
Matrix Spike Duplicate File ID: SSH7428.TX0

* = Values Outside QC Range. « = Data outside Method Specification limits.
NC = Not Calculated (Sample exceeds spike by factor of 4 or more)
ND = Not Detected/Below Detection Limit
% Recovery = [(<1> - <2>) / <3>] x 100
LCS % Recovery = (<1> / <3>) x 100
Relative Percent Difference = |(<4> - <5>) / [(<4> + <5>) x 0.5] x 100
(**) = Source: SPL-Houston Historical data (3rd Q '95)
(***) = Source: SPL-Houston Historical Data (3rd Q '95)

SAMPLES IN BATCH(SPL ID): 9708A68-02A 9708684-03A 9708A68-01A

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TEXAS 77054
PHONE (713)660-0901

** SPL BATCH QUALITY CONTROL REPORT **
CA LUFT

Matrix: Aqueous
Units: mg/L

Batch Id: HP_S970828110700

LABORATORY CONTROL SAMPLE

SPIKE COMPOUNDS	Method Blank Result <2>	Spike Added <3>	Blank Spike Result <1>	Blank Spike Recovery %	QC Limits(**) (Mandatory) % Recovery Range
Petroleum Hydrocarbons-Gas	ND	1.0	0.76	76.0	50 - 150

MATRIX SPIKES

SPIKE COMPOUNDS	Sample Results <2>	Spike Added <3>	Matrix Spike Result <1>	Matrix Spike Recovery <4>	Matrix Spike Duplicate Result <1>	Matrix Spike Duplicate Recovery <5>	MS/MSD Relative % Difference	QC Limits(***) (Advisory) RPD Max.	QC Limits(***) (Advisory) Recovery Range
PETROLEUM HYDROCARBONS-GAS	ND	0.9	1.03	114	1.11	123	7.59	50	50 - 150

Analyst: VHZ
Sequence Date: 08/28/97
SPL ID of sample spiked: 9708A71-05A
Sample File ID: SSH7466.TX0
Method Blank File ID:
Blank Spike File ID: SSH7456.TX0
Matrix Spike File ID: SSH7461.TX0
Matrix Spike Duplicate File ID: SSH7462.TX0

* = Values Outside QC Range. « = Data outside Method Specification limits.
NC = Not Calculated (Sample exceeds spike by factor of 4 or more)
ND = Not Detected/Below Detection Limit
% Recovery = [(<1> - <2>) / <3>] x 100
LCS % Recovery = (<1> / <3>) x 100
Relative Percent Difference = |(<4> - <5> | / [(<4> + <5>) x 0.5] x 100
(**) = Source: Temporary Limits
(***) = Source: Temporary Limits

SAMPLES IN BATCH(SPL ID): 9708A71-03A 9708A71-04A 9708A68-03A 9708A71-01A
9708A71-07A 9708A71-08A 9708A71-09A 9708A71-05A

CHAIN OF CUSTODY

AND

SAMPLE RECEIPT CHECKLIST

SPL Houston Environmental Laboratory

Sample Login Checklist

Date: 8-26-97	Time: 0945

SPL Sample ID: 9708A68

			Yes	No
1	Chain-of-Custody (COC) form is present.		✓	
2	COC is properly completed.		✓	
3	If no, Non-Conformance Worksheet has been completed.			
4	Custody seals are present on the shipping container.		✓	
5	If yes, custody seals are intact.		✓	
6	All samples are tagged or labeled.		✓	
7	If no, Non-Conformance Worksheet has been completed.			
8	Sample containers arrived intact		✓	
9	Temperature of samples upon arrival:		4° C	
10	Method of sample delivery to SPL:	SPL Delivery		
		Client Delivery		
		FedEx Delivery (airbill #)	3848471454	
		Other:		
11	Method of sample disposal:	SPL Disposal		
		HOLD		
		Return to Client		

Name:	Date: 8-26-97

7708168

BP

CHAIN OF CUSTODY

No. 088263 | Page 1 of 1

CONSULTANT'S NAME: Alisto Engineering	CONSULTANT'S ADDRESS: 1575 Treat Blvd #201 W.C. Ca 94598		
BP SITE NUMBER: 11111	BP SITE / FACILITY ADDRESS: Dublin, Ca		CONSULTANT PROJECT NUMBER: 10-017-7-1
CONSULTANT PROJECT MANAGER: Brady Nagle	PHONE NUMBER: (510) 295-1650	FAX NUMBER: 295-1823	CONSULTANT CONTRACT NUMBER: H176927
BP CONTACT: Scott Hooton	BP ADDRESS: Renton, WA	PHONE NUMBER: —	FAX NO. —
LAB CONTACT: SPL	LABORATORY ADDRESS: Texas	PHONE NUMBER: —	FAX NO. —
BP CONTACT REQUESTING RUSH TAT (Print BP Contact Name)	RUSH REQUESTED OF (Print Consultant Contact Name) DATE/TIME	SHIPMENT DATE: 8/25/97	SHIPMENT METHOD: Fed Ex

TAT: [ ] 24 Hour [ ] 48 Hours [ ] 72 Hours [X] Standard 7 or 14 Days

ANALYSIS REQUIRED — AIRBILL NUMBER: 384847 1454

SAMPLE DESCRIPTION	COLLECTION DATE	COLLECTION TIME	MATRIX SOIL/WATER	CONTAINERS NO.	TYPE (VOL.)	PRESERVATIVE / LAB SAMPLE #	TPH-G / BTEX	MTBE									COMMENTS
S-1	8/22/97		W	3	HCL		X	X									
S-2	↓		↓	↓	↓		↓	↓									
S-3	↓		↓	↓	↓		↓	↓									
																	intact RoF 4c

SAMPLED BY (Please Print Name) | SAMPLED BY (Signature) | ADDITIONAL COMMENTS

RELINQUISHED BY / AFFILIATION (Print Name / Signature)	DATE	TIME	ACCEPTED BY / AFFILIATION (Print Name / Signature)	DATE	TIME
[signature]	8/25/97	0800	Patricia Yelton	8/25/97	0800
Patricia Yelton	8/25/97	1500	[signature]	8/26/97	0945

COC Rev. / Agent Pkg.

DISTRIBUTION WHITE - ORIGINAL (WITH DATA) YELLOW - BP PINK - LAB BLUE - CONSULTANT FIELD STAFF

BP EXPLORATION & OIL, INC.
ENVIRONMENTAL REMEDIATION MANAGEMENT
DATA REVIEW CHECKLIST

BP Site Number:	11116
ERM Contact:	H176927
Sampling Date:	08/22/97
Matrix Description:	Water
Date Final Report Received:	09/08/97
Laboratory & Location:	SPL, Houston, Texas

	Yes	No	N/A
1. Is BP contract release number consistent with analytical report?	___	___	___
2. Was report submitted within the specified timeframe?	___	___	___
3. Does report agree with the COC?	___	___	___
4. Are units consistent with the given matrix?	___	___	___
5. Were any target analytes/compounds detected in blanks (i.e., trip or equipment)?	___	___	___
6. Are duplicate water samples within ___%?	___	___	___
7. Are holding times met?	___	___	___
8. Are surrogates within limits using laboratory criteria?	___	___	___
9. Are MS/MSD acceptable using laboratory criteria?	___	___	___
10. Are LCS results acceptable using laboratory criteria?	___	___	___

Notes: MS/MSD recovery and relative % difference for MTBE not calculated (Sample exceeds spike by a factor of 4 or more).

Data Validation Completed by ~~Ken Simas~~ Brady Nagle

(Signature) [signature]

Date 11/23/97

Calculation of RPD
for BP Oil QA/QC Program
BP Oil Station No. 11116 08/22/97 Event

Analytical Data	TPH-G	Benzene	Toluene	Ethylbenzene	Xylenes	MTBE
Primary Sample	100	16	ND<1.0	ND<1.0	3	2900
QC-1 Duplicate	100	18	ND<1.0	ND<1.0	ND<1.0	1800
Sample Mean	100	17	0	0	1.5	2350
RPD	0.00%	-11.76%	N/A	N/A	200.00%	46.81%
Significant Result?	NO	NO	NO	NO	YES	YES

Notes:

(1) Significance is defined as an RPD greater than 30% (or less than -30).

(2) "A negative" RPD will result if the value of the Primary Sample Result is smaller than QC-1. The determination of Significant Result is not affected by sign of RPD.