



**BP OIL**

BP Oil Company  
Environmental Remediation Management  
295 SW 41st Street  
Renton, Washington 98055-4931  
(206) 251-0667  
Fax No: (206) 251-0736

July 17, 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 2 July 1997 quarterly groundwater monitoring report prepared by Alisto Engineering Group on behalf of BP Exploration & Oil. You will recall that we discussed the appropriateness of further groundwater monitoring and sampling during our 13 May 1997 telephone conversation based upon MTBE concentrations reported in some of the wells – particularly AW-6 located adjacent to the underground storage tanks.

You will note that the highest MTBE concentration reported was 33 ug/l in a sample obtained from well AW-6. I believe that you can agree that this concentration is not sufficient to impede the case closure process. Based on the prior data (which was considerably higher than the concentration reported this quarter), I plan to continue semi-annual sampling at this time. If the results from the next sampling event are consistent with this quarter's data, I am planning to request a finding for "case closure" and "no further action." Please give me a call at your earliest convenience so that we can discuss the appropriateness of a finding for "case closure" and "no further action." I can be reached at (206) 251-0689. OK

Sincerely,

Scott Hooton  
Environmental Remediation Management

attachment

cc: Brady Nagle - Alisto  
CRWQCB, Attention Mr. K. Graves, 2101 Webster Street, Ste. 500, Oakland,  
CA 94612

ENVIRONMENTAL  
PROTECTION

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## GROUNDWATER MONITORING AND SAMPLING REPORT

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

Project No. 10-017-06-003

JUL 14 1997

BP OIL CO.  
ENVIRONMENTAL  
WEST COAST REGION

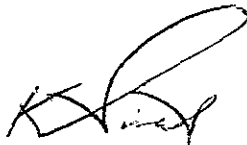
Prepared for:

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

July 2, 1997



Ken Simas  
Project Manager



Al Sevilla, P.E.  
Principal

3/2/97

# GROUNDWATER MONITORING AND SAMPLING REPORT

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

Project No. 10-017-06-003

July 2, 1997

## INTRODUCTION

This report presents the results and findings of the May 16, 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.

## 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. Historical methyl tert butyl ether (MTBE) laboratory analysis data not previously tabulated are now included in Table 1. Copies of the MTBE documentation are included in Appendix C of this report only.

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 (Feet) (a)	DEPTH TO WATER (Feet)	GROUNDWATER ELEVATION (Feet) (b)	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	05/11/91	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	08/12/93	335.17	8.99	326.18	ND<50	---	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	---	---	PACE
MW-1	11/11/93	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	06/20/94	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	05/24/95	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	---	---	---	---	---	---	---	---	---	---	---

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 (Feet)	DEPTH TO WATER (Feet) (a)	GROUNDWATER ELEVATION (Feet) (b)	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	10/25/90	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	11/11/90	334.58	9.47	325.11	---	---	---	---	---	---	---	---	---	---	---
MW-2	03/15/91	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	05/11/91	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	11/11/91	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	03/15/92	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	03/21/93	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	06/20/94	334.58	7.93	326.65	---	---	---	---	---	---	---	---	---	---	---
MW-2	10/04/94	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	05/21/95	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	03/16/96	334.58	4.49	330.09	---	---	---	---	---	---	---	---	---	---	---
MW-2	05/23/96	334.58	6.95	327.63	---	---	---	---	---	---	---	---	---	---	---
MW-2	08/23/96	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	---	---	---	---	---	---	---	---	---	---	---

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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 (Feet) (a)	DEPTH TO WATER (Feet)	GROUNDWATER ELEVATION (Feet) (b)	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	1/24/90	335.13	9.92	325.21	---	---	---	---	---	---	---	---	---	---	---
MW-3	02/15/90	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	05/11/91	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	08/23/91	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	01/15/92	335.13	8.63	326.50	---	---	---	---	---	---	---	---	---	---	---
MW-3	06/30/92	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	03/10/93	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	---	PAGE
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	---	---	---	---	PAGE
MW-3	11/11/93	335.13	9.78	325.35	---	---	---	---	---	---	---	---	---	---	---
MW-3	03/11/94	335.13	8.60	326.53	ND<50	---	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	---	---	PAGE
MW-3	05/12/94	335.13	8.34	326.79	---	---	---	---	---	---	---	---	---	---	---
MW-3	06/30/94	335.13	7.45	327.68	---	---	---	---	---	---	---	---	---	---	---
MW-3	10/01/94	335.13	9.81	325.32	ND<50	---	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	---	7.5	PAGE
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	05/24/95	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	11/02/96	335.13	8.61	326.52	---	---	---	---	---	---	---	---	---	---	---
MW-3	05/16/97	335.13	7.93	327.20	---	---	---	---	---	---	---	---	---	---	---

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 (feet)	DEPTH TO WATER (Feet)	GROUNDWATER ELEVATION (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-4	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-4	12/11/90	333.41	9.19	324.22	---	---	---	---	---	---	---	---	---	---	---
AW-4	02/15/91	333.41	8.32	325.09	ND<50	---	ND<0.3	ND<0.3	ND<0.3	ND<0.3	---	---	---	---	SUP
AW-4	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-4	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-4	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-4	02/25/92	333.41	6.26	327.15	ND<30	---	ND<0.3	ND<0.3	ND<0.3	ND<0.3	---	---	---	---	SEQ
AW-4	03/15/92	333.41	7.05	326.36	---	---	---	---	---	---	---	---	---	---	---
AW-4	06/03/92	333.41	7.41	326.00	ND<50	---	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	---	---	ANA
AW-4	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-4	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-4 (g)	02/10/93	333.41	---	---	---	---	---	---	---	---	---	---	---	---	---
AW-4 (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-4	11/15/93	---	---	---	---	---	---	---	---	---	---	---	---	---	---
AW-4	03/15/94	333.41	6.84	326.57	ND<50	---	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	---	---	PACE
AW-4	05/17/94	333.41	6.54	326.87	---	---	---	---	---	---	---	---	---	---	---
AW-4	06/20/94	333.41	5.70	327.71	ND<50	---	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	---	---	2.0 PACE
AW-4	10/01/94	333.41	8.04	325.37	ND<50	---	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	---	---	6.1 PACE
AW-4 (d)	11/08/94	333.41	6.80	326.61	ND<50	---	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	---	---	2.3 PACE
AW-4	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-4	05/21/95	333.41	5.32	328.09	ND<50	---	ND<0.50	ND<0.50	ND<0.50	ND<1.0	---	---	---	---	4.9 ATI
AW-4	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-4	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-4	02/26/96	333.41	3.85	329.56	---	---	---	---	---	---	---	---	---	---	---
AW-4	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-4	12/02/96	333.41	6.43	326.98	---	---	---	---	---	---	---	---	---	---	---
AW-4	05/16/97	333.41	5.87	327.54	---	---	---	---	---	---	---	---	---	---	---

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 (Feet)	DEPTH TO WATER (Feet) (a)	GROUNDWATER ELEVATION (Feet) (b)	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	1/21/90	334.81	9.44	325.37	---	---	---	---	---	---	---	---	---	---	---
AW-5	03/15/91	334.81	10.00	324.81	ND<50	---	ND<0.3	ND<0.3	ND<0.3	ND<0.3	---	---	---	---	SUP
AW-5	05/14/91	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	01/25/92	334.81	7.89	326.92	ND<30	---	ND<0.3	ND<0.3	ND<0.3	ND<0.3	---	---	---	---	SEQ
AW-5	01/15/92	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	01/10/93	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	01/11/94	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	06/20/94	334.81	8.26	326.55	1300	---	0.9	ND<0.5	0.5	2.2	240 (f)	---	---	2.5	PACE
AW-5	10/01/94	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	01/15/95	334.81	6.65	328.16	220 (e)	---	ND<0.50	ND<0.50	ND<0.50	ND<1.0	---	---	---	---	ATI
AW-5	05/21/95	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	01/26/96	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 (d)	08/23/96	---	---	---	490	---	ND<0.5	ND<1.0	ND<1.0	ND<1.0	280	---	---	---	SPL
AW-5	12/01/96	334.81	7.90	326.91	390	---	ND<0.5	ND<1	ND<1	ND<1	600	---	---	5.6	SPL
QC-1 (h)	12/01/96	---	---	---	360	---	ND<0.5	ND<1	ND<1	ND<1	600	---	---	---	SPL
AW-5	05/16/97	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)	05/16/97	---	---	---	ND<50	---	ND<0.5	ND<1.0	ND<1.0	ND<1.0	ND<10	---	---	---	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 (Feet)	DEPTH TO WATER (Feet)	GROUNDWATER ELEVATION (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	11/12/90	331.90	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	05/14/91	331.90	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	331.90	9.58	325.32	200	---	ND<0.3	ND<0.3	ND<0.3	0.94	---	---	---	---	SEQ
AW-6	02/25/92	331.90	8.00	326.90	19000	---	8000	4700	600	2400	---	---	---	---	SEQ
AW-6	03/05/92	331.90	7.98	326.92	14000	---	5200	2500	550	2200	---	---	---	---	SEQ
AW-6	04/15/92	331.90	8.33	326.57	1100	---	400	ND<3.0	30	ND<3.0	---	---	---	---	SEQ
AW-6	06/09/92	331.90	8.91	325.99	77	---	4.4	ND<0.5	ND<0.5	ND<0.5	---	---	---	---	ANA
AW-6	08/12/92	334.90	9.61	325.29	80	---	4.5	ND<0.5	ND<0.5	ND<0.5	---	---	---	---	ANA
AW-6	11/10/92	331.90	10.10	324.80	450	---	120	2.1	4.5	9.7	---	---	---	---	ANA
AW-6	02/10/93	334.90	7.13	327.77	14000	---	610	17	15	720	14000 (f)	---	---	---	PACE
QC-1 (h)	02/10/93	---	---	---	12000	---	520	15	13	610	17000 (f)	---	---	---	PACE
AW-6	05/21/93	331.90	7.64	327.26	7900	---	900	ND<12	20	ND<12	8000 (f)	---	---	---	PACE
QC-1 (h)	05/21/93	---	---	---	7500	---	620	ND<10	13	ND<10	7700 (f)	---	---	---	PACE
AW-6	08/14/93	331.90	8.64	326.26	26000	---	450	14	250	48	---	---	---	---	PACE
QC-1 (h)	08/12/93	---	---	---	27000	---	510	43	270	42	---	---	---	---	PACE
AW-6	11/11/93	331.90	8.67	326.23	---	---	---	---	---	---	---	---	---	---	---
AW-6	11/12/93	---	---	---	62000	---	4600	420	310	1100	---	---	---	---	PACE
QC-1 (h)	11/12/93	---	---	---	63000	---	4100	360	290	1000	---	---	---	---	PACE
AW-6	02/11/94	331.90	8.04	326.86	140000	---	21000	25000	1100	13000	50000 (f)	---	---	---	PACE
QC-1 (h)	02/11/94	---	---	---	110000	---	17000	21000	770	10000	47000 (f)	---	---	---	PACE
AW-6	05/17/94	334.90	7.68	327.22	---	---	---	---	---	---	---	---	---	---	---
AW-6	06/20/94	331.90	7.82	327.08	42000	---	2700	1300	1900	9100	6400 (f)	---	---	2.1	PACE
QC-1 (h)	06/20/94	---	---	---	41000	---	2800	1400	1900	8900	6600 (f)	---	---	---	PACE
AW-6	10/01/94	331.90	9.33	325.57	14000	---	2100	77	1000	760	---	---	---	6.1	PACE
QC-1 (h)	10/01/94	---	---	---	14000	---	2100	77	1100	790	---	---	---	---	PACE
AW-6 (d)	11/18/94	331.90	7.17	327.73	50000	---	550	8500	2500	14000	---	---	---	3.3	PACE
AW-6	02/15/95	331.90	6.19	328.71	25000	(e)	53	1400	1200	4400	---	---	---	---	ATI
QC-1 (g)	02/15/95	---	---	---	25000	(e)	53	1400	1200	4400	---	---	---	---	ATI
AW-6	05/27/95	334.90	6.87	328.03	14000	(e)	730	140	570	1100	---	---	---	5.7	ATI
QC-1 (h)	05/27/95	---	---	---	15000	(e)	750	140	570	1100	---	---	---	---	ATI
AW-6	08/29/95	334.90	8.38	326.52	8300	---	430	ND<10	340	40	2600 (f)	---	---	8.9	ATI
QC-1 (h)	08/29/95	---	---	---	9400	---	430	12	360	37	2200 (f)	---	---	---	ATI
AW-6	11/28/95	334.90	9.20	325.70	4700	---	300	13	61	ND<20	3600	---	---	3.0	ATI
QC-1 (h)	11/28/95	---	---	---	5200	---	310	12	78	ND<20	3800	---	---	---	ATI
AW-6	02/26/96	334.90	5.78	329.12	3600	---	17	29	110	1100	68	---	---	8.0	SPL
QC-1 (h)	02/26/96	---	---	---	3600	---	17	28	100	1050	63	---	---	---	SPL
AW-6	05/23/96	331.90	6.94	327.96	1800	---	390	ND<2.5	76	49	560	---	---	5.2	SPL
QC-1 (h)	05/23/96	---	---	---	1800	---	380	ND<2.5	72	44	550	---	---	---	SPL
AW-6	08/27/96	331.90	6.50	328.40	2300	---	54	ND<1.0	ND<1.0	ND<1.0	4240	---	---	6.3	SPL
AW-6	12/02/96	331.90	8.46	326.44	1500	---	27	ND<1	ND<1	ND<1	1700	---	---	7.2	SPL
AW-6	05/16/97	331.90	7.55	327.35	110	---	0.5	ND<1.0	ND<1.0	ND<1.0	33	---	---	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 (Feet)	DEPTH TO WATER (Feet)	GROUNDWATER ELEVATION (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 (f)	11/10/94	---	---	---	ND<50	---	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	---	---	ANA
QC-2 (f)	07/10/93	---	---	---	ND<50	---	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	---	---	PACE
QC-2 (f)	05/21/93	---	---	---	ND<50	---	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	---	---	PACE
QC-2 (f)	08/12/93	---	---	---	ND<50	---	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	---	---	PACE
QC-2 (f)	11/12/93	---	---	---	ND<50	---	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	---	---	PACE
QC-2 (f)	07/11/94	---	---	---	ND<50	---	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	---	---	PACE
QC-2 (f)	06/20/94	---	---	---	ND<50	---	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	---	---	PACE
QC-2 (f)	10/01/94	---	---	---	ND<50	---	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	---	---	PACE
QC-2 (f)	11/21/94	---	---	---	ND<50	---	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	---	---	PACE
QC-2 (f)	07/15/95	---	---	---	ND<50	---	ND<0.50	ND<0.50	ND<0.50	ND<1.0	---	---	---	---	ATI
QC-2 (f)	05/21/95	---	---	---	ND<50	---	ND<0.50	ND<0.50	ND<0.50	ND<1.0	---	---	---	---	ATI
QC-2 (f)	08/29/95	---	---	---	ND<50	---	ND<0.50	ND<0.50	ND<0.50	ND<1.0	---	---	---	---	ATI
QC-2 (f)	11/28/95	---	---	---	ND<50	---	ND<0.50	1.6	ND<0.50	1.2	ND<5.0 (f)	---	---	---	ATI
QC-2 (f)	07/26/96	---	---	---	ND<50	---	ND<0.5	ND<1	ND<1	ND<1	ND<10	---	---	---	SPL
QC-2 (f)	05/14/96	---	---	---	ND<50	---	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<10	---	---	---	SPL

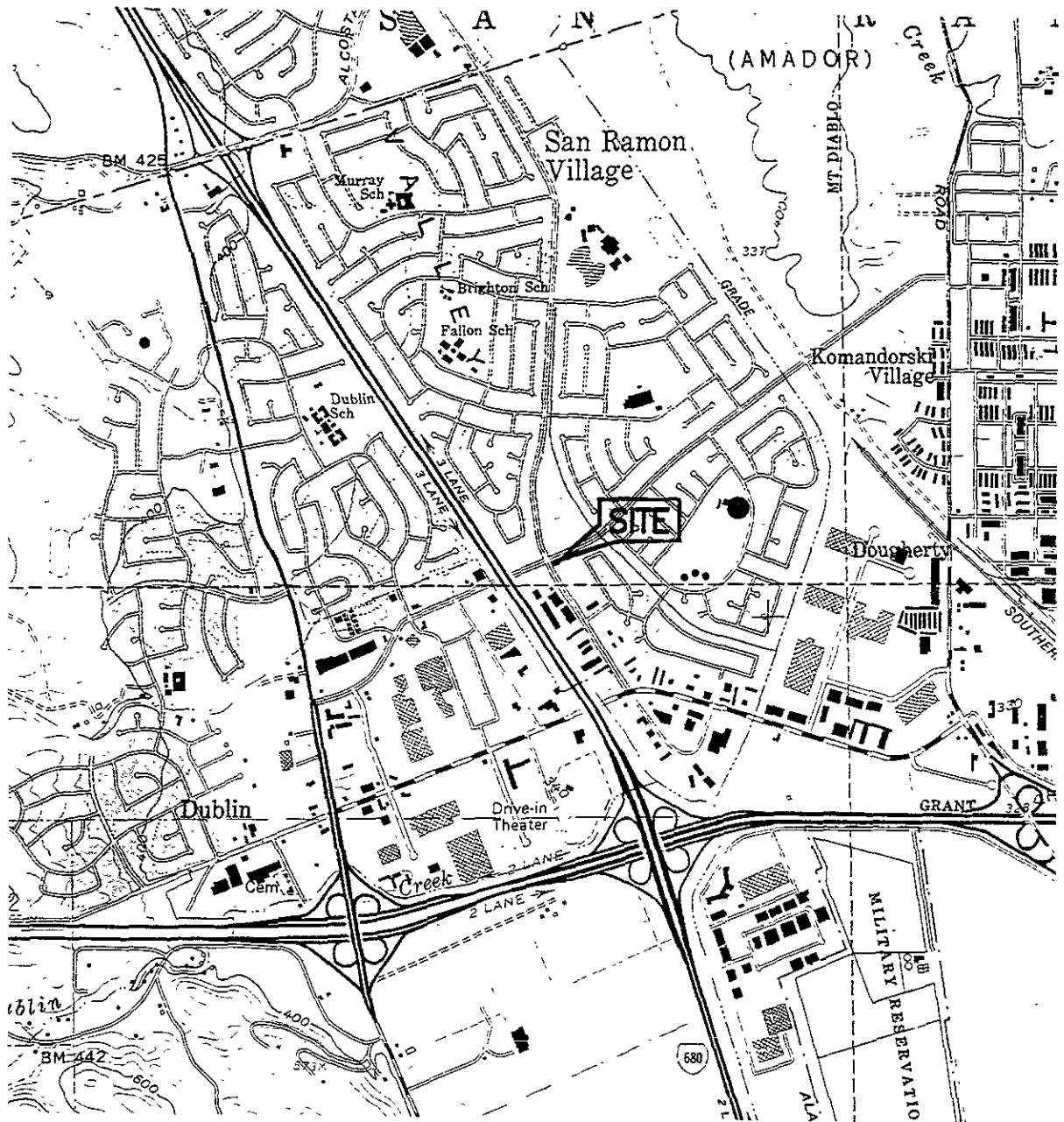
ABBREVIATIONS:

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
SILO	Sequent Analytical Laboratory
PACE	Pace, Inc
ATI	Analytical Technologies, Inc
SPL	Southern Petroleum Laboratories

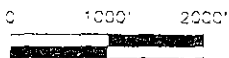
NOTES:

- (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

10-017-06-003



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

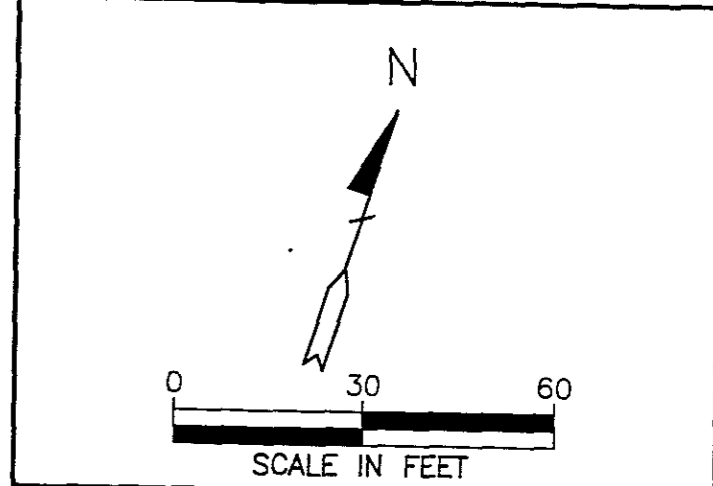
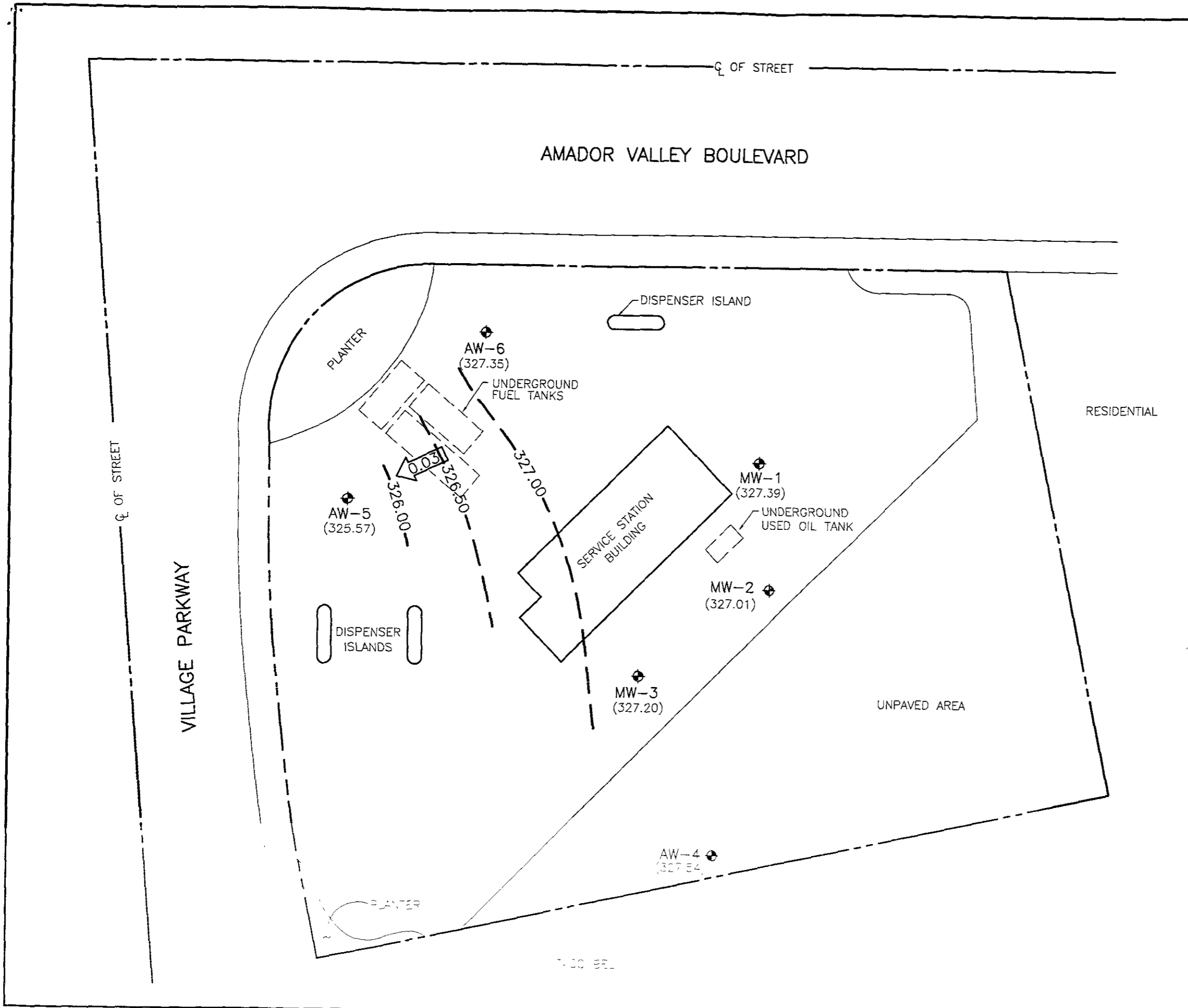


**FIGURE 1**  
**SITE VICINITY MAP**

BP OIL SERVICE STATION NO. 11116  
 7197 VILLAGE PARKWAY  
 DUBLIN, CALIFORNIA  
 PROJECT NO. 10-017

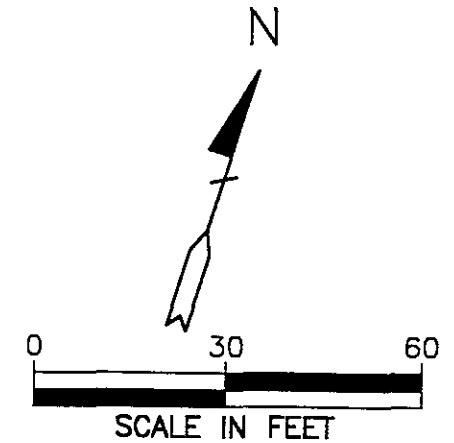
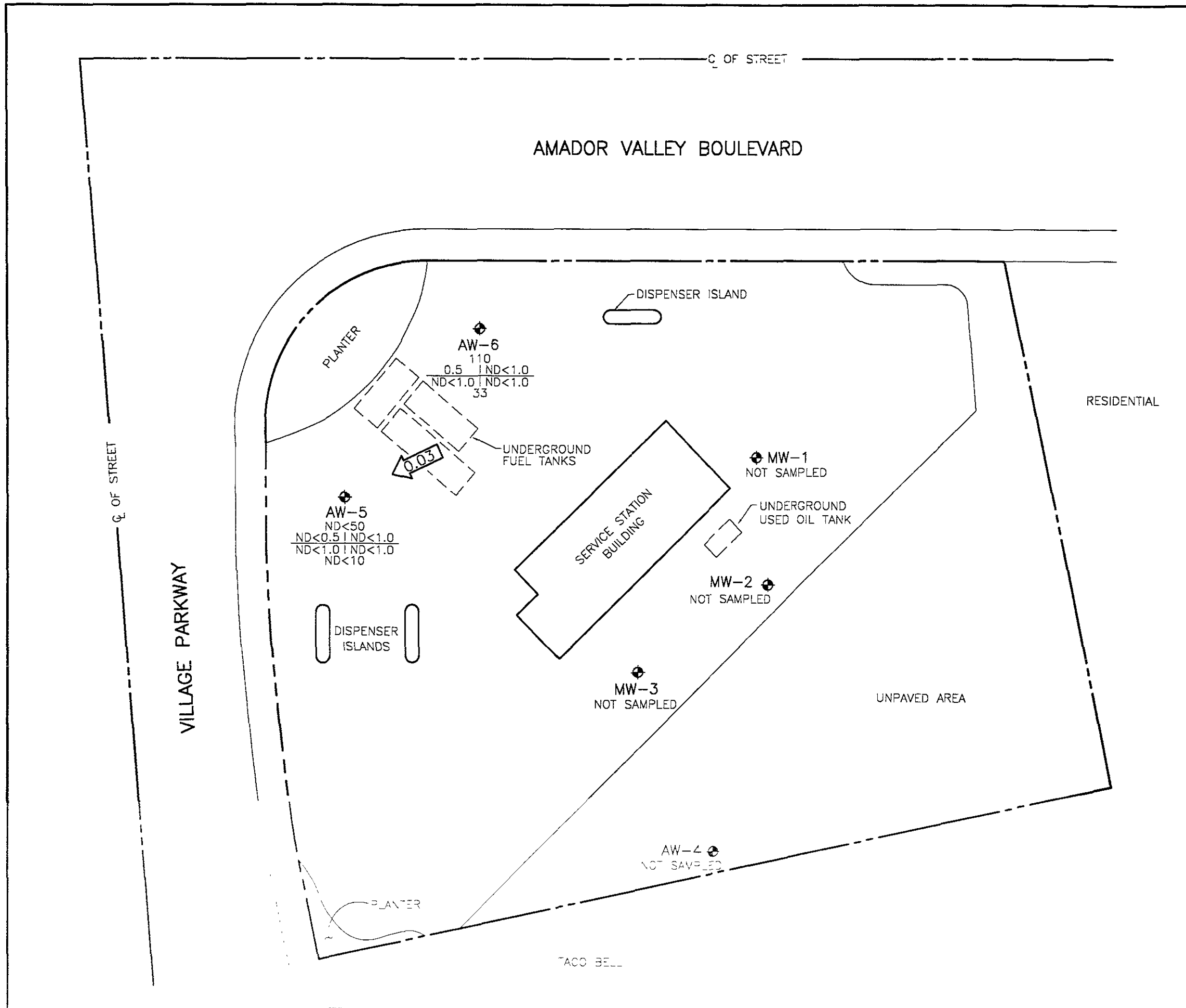


**ALISTO ENGINEERING GROUP**  
 WALNUT CREEK, CALIFORNIA



- LEGEND**
- ◆ (325.57) GROUNDWATER MONITORING WELL
  - ◆ (325.57) GROUNDWATER ELEVATION IN FEET ABOVE MEAN SEA LEVEL
  - 326.00 - 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

**FIGURE 2**  
**POTENTIOMETRIC GROUNDWATER ELEVATION CONTOUR MAP**  
 MAY 16, 1997  
 BP OIL SERVICE STATION NO. 11116  
 7197 VILLAGE PARKWAY  
 DUBLIN, CALIFORNIA  
 PROJECT NO. 10-017



**LEGEND**

⊕	GROUNDWATER MONITORING WELL
TPH-G BIT ETX 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

**FIGURE 3**  
**CONCENTRATIONS OF PETROLEUM**  
**HYDROCARBONS IN GROUNDWATER**  
**MAY 16, 1997**  
 BP OIL SERVICE STATION NO. 11116  
 7197 VILLAGE PARKWAY  
 DUBLIN, CALIFORNIA  
 PROJECT NO. 10-017

10017E-V-DWG 6/15/97 MW 1/30

APPENDIX A  
WATER SAMPLING FIELD SURVEY FORMS

# ALISTO

## Field Report / Sampling Data Sheet

ENGINEERING

GROUP

1575 TREAT BOULEVARD, SUITE 201

WALNUT CREEK CA 94598 (510) 295-1650 FAX 295-1823

Project No. 10-017-06-003

Address 7197 Village Parkway

Contract No. G797520 /KS

Station No. BP 11116

Date: 5/16/97

Day: M T W T H (E)

City: Dublin

Sampler: LEB

### DEPTH TO GROUNDWATER SUMMARY

WELL ID	SAMPLE ID	WELL DIAM	TOTAL DEPTH	DEPTH TO WATER	PRODUCT THICKNESS	TIME MONITORED	COMMENTS:
MW-1	NIS	2"	25.80'	7.78	Ø	1336	NS
MW-2	↓	2"	25.45'	7.57	Ø	1339	NS
MW-3	↓	2"	25.90'	7.93	↓	1344	NS
AW-4	↓	4"	34.15'	5.87	↓	1347	NS
AW-5	S-1	4"	32.90'	9.24	↓	1351	* QC-1 S-3 From this well
AW-6	S-2	4"	16.50'	7.55	↓	1355	ORC Well <del>QC-1 (S-3) From this well</del>

### FIELD INSTRUMENT CALIBRATION DATA

pH METER Imm 400 4 7.00 7 10.00 10 TEMPERATURE COMPENSATED  Y  N TIME \_\_\_\_\_ WEATHER Clear

D.O. METER Imm ZERO d.O. SOLUTION \_\_\_\_\_ BAROMETRIC PRESSURE 760 TEMP 72

CONDUCTIVITY METER Imm 10,000 \_\_\_\_\_ TURBIDITY METER \_\_\_\_\_ 5.0 NTU \_\_\_\_\_ OTHER X

Well ID	Depth to Water	Diam	Cap/Lock	Product Dept	Iridescence	Gal.	Time	Temp *F	pH	E.C.	D.O.	
Aw-5	9.24	4"	OK	Ø	Y (N)	15	1404	71.4	7.21	1.82ms	4.4	<input type="radio"/> EPA 601 <input checked="" type="radio"/> TPH-G/BTEX <u>Hel</u>
Total Depth - Water Level x Well Vol. Factor = x#Vol. to Purge PurgeVol.						30		70.6	7.13	1.92ms		<input type="radio"/> TPH Diesel _____
32.90 - 9.24 = 23.66 x .65 = 15.38 x 3 = 46.14						47	1429	70.0	7.06	1.94ms	4.9	<input type="radio"/> TOG 5520 _____
Purge Method <u>Surface Pump</u> ODisp. Tube OWinch ODisp. Bailor(s) _____ OSys Port _____												TIME/SAMPLE ID
Comments <u>QC-1 (S-3) From this well</u>												<u>1433</u>
Aw-6	7.55	4"	OK	Ø	Y (N)	6	1449	70.7	7.77	1.11ms	4.1	<input type="radio"/> EPA 601 _____
Total Depth - Water Level x Well Vol. Factor = x#Vol. to Purge PurgeVol.						12		70.1	7.69	1.17ms		<input checked="" type="radio"/> TPH-G/BTEX <u>Hel</u>
16.50 - 7.55 = 8.95 x .65 = 5.82 x 3 = 17.46						18	1510	69.8	7.61	1.19ms	4.3	<input type="radio"/> TPH Diesel _____
Purge Method <u>Surface Pump</u> ODisp. Tube OWinch ODisp. Bailor(s) _____ OSys Port _____												<input type="radio"/> TOG 5520 _____
Comments:												TIME/SAMPLE ID
												<u>1513</u>

**APPENDIX B**

**LABORATORY REPORT AND CHAIN OF CUSTODY RECORD**





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

May 29, 1997

Scott Hooton  
BP OIL COMPANY  
295 SW 41st Street  
Building 13, Suite N  
Renton, WA 98055


The following report contains analytical results for samples received at Southern Petroleum Laboratories (SPL) on May 20, 1997. The samples were assigned to Certificate of Analysis No(s).9705995 and analyzed for the parameters specified on the chain of custody.

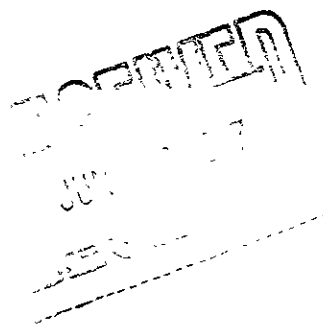
There were no analytical problems encountered with this group of samples and all quality control data was within acceptance limits.

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 Number 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

  
Ed Fry  
Project Manager



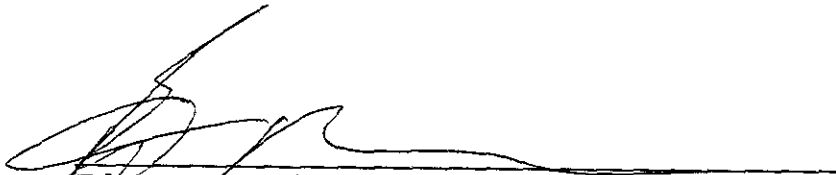


HOUSTON LABORATORY  
8880 INTERCHANGE DRIVE  
HOUSTON, TEXAS 77054  
PHONE (713) 660-0901

Southern Petroleum Laboratories, Inc.

Certificate of Analysis Number: 97-05-995

Approved for Release by:

  
Ed Fry, Project Manager

5/29/97  
Date:

Greg Grandits  
Laboratory Director

Idelis Williams  
Quality Assurance Officer

The attached analytical data package may not be reproduced except in full without the express written approval of this laboratory.



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

Certificate of Analysis No. H9-9705995-01

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

P.O.#  
 G797520 , COC#088201  
 DATE: 05/29/97

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

PROJECT NO: 10-017-6  
 MATRIX: WATER  
 DATE SAMPLED: 05/16/97  
 DATE RECEIVED: 05/20/97

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 97  
 4-Bromofluorobenzene 90  
 Method 8020A\*\*\*  
 Analyzed by: RL  
 Date: 05/27/97

Total Petroleum Hydrocarbons-Gasoline ND 0.05 P mg/L

Surrogate % Recovery  
 1,4-Difluorobenzene 103  
 4-Bromofluorobenzene 83  
 California LUFT Manual  
 Analyzed by: RL  
 Date: 05/27/97 06:05:00

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. H9-9705995-02

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

P.O.#  
 G797520 , COC#088201  
 DATE: 05/29/97

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

PROJECT NO: 10-017-6  
 MATRIX: WATER  
 DATE SAMPLED: 05/16/97  
 DATE RECEIVED: 05/20/97

ANALYTICAL DATA

PARAMETER	RESULTS	DETECTION LIMIT	UNITS
MTBE	33	10 P	µg/L
Benzene	0.5	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 93  
 4-Bromofluorobenzene 73

Method 8020A\*\*\*  
 Analyzed by: AA  
 Date: 05/28/97

Total Petroleum Hydrocarbons-Gasoline 0.11 0.05 P mg/L

Surrogate % Recovery  
 1,4-Difluorobenzene 113  
 4-Bromofluorobenzene 73

California LUFT Manual  
 Analyzed by: AA  
 Date: 05/28/97 03:35:00

(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. H9-9705995-03

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

P.O.#  
 G797520 , COC#088201  
 DATE: 05/29/97

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

PROJECT NO: 10-017-6  
 MATRIX: WATER  
 DATE SAMPLED: 05/16/97  
 DATE RECEIVED: 05/20/97

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

97

4-Bromofluorobenzene

97

Method 8020A\*\*\*

Analyzed by: RL

Date: 05/27/97

Total Petroleum Hydrocarbons-Gasoline

ND

0.05 P

mg/L

Surrogate

% Recovery

1,4-Difluorobenzene

100

4-Bromofluorobenzene

83

California LUFT Manual

Analyzed by: RL

Date: 05/27/97 06:32:00

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

*QUALITY CONTROL*  
*DOCUMENTATION*



AMOUNT CONC. RECOVERY  
ADDED MEASURED

Modified 8015A - Gasoline\*\*\*  
WORK ORDER: 9705995-01A

BATCH#:HP\_W970527080700  
CLIENT SAMPLE ID:S-1

4-Bromofluorobenzene	30	25	83	52- 152
1,4-Difluorobenzene	30	31	103	54- 137

California LUFT Manual  
WORK ORDER: 9705995-03A

BATCH#:HP\_W970527080700  
CLIENT SAMPLE ID:S-3

1,4-Difluorobenzene	30	30	100	50- 150
4-Bromofluorobenzene	30	25	83	50- 150

Modified 8015A - Gasoline\*\*\*  
WORK ORDER: Method Blank

BATCH#:HP\_W970527080700  
CLIENT SAMPLE ID:

4-Bromofluorobenzene	30	25		52- 152
1,4-Difluorobenzene	30	30		54- 137

Modified 8015A - Gasoline\*\*\*  
WORK ORDER: Matrix Spike

BATCH#:HP\_W970527080700  
CLIENT SAMPLE ID:9705995-01A

4-Bromofluorobenzene	30	32	107	52- 152
1,4-Difluorobenzene	30	30	100	54- 137

Modified 8015A - Gasoline\*\*\*  
WORK ORDER: Matrix Spike Dup.

BATCH#:HP\_W970527080700  
CLIENT SAMPLE ID:9705995-01A

4-Bromofluorobenzene	30	31	103	52- 152
1,4-Difluorobenzene	30	30	100	54- 137

Method 8020A\*\*\*  
WORK ORDER: 9705995-01A

BATCH#:HP\_W970527083400  
CLIENT SAMPLE ID:S-1

1,4-Difluorobenzene	30	29	97	70- 131
4-Bromofluorobenzene	30	27	90	43- 135

Method 8020A\*\*\*  
WORK ORDER: 9705995-03A

BATCH#:HP\_W970527083400  
CLIENT SAMPLE ID:S-3

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

Method 8020A \*\*\*  
WORK ORDER: Method Blank

BATCH#:HP\_W970527083400  
CLIENT SAMPLE ID:

1,4-Difluorobenzene	30	29		74- 131
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05/29/97 14:30:35

HOUSTON LABORATORY

8880 INTERCHANGE DRIVE

HOUSTON, TEXAS 77054

PHONE (713) 660-0901

AMOUNT ADDED	CONC. MEASURED	RECOVERY	LIMITS
-----------------	-------------------	----------	--------

4-Bromofluorobenzene	30	28	43- 135
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Method 8020A \*\*\*

BATCH#:HP\_W970527083400

WORK ORDER: LCS

CLIENT SAMPLE ID:

1,4-Difluorobenzene	30	35	117	70- 131
4-Bromofluorobenzene	30	29	96.7	43- 135

Method 8020A \*\*\*

BATCH#:HP\_W970527083400

WORK ORDER: Matrix Spike

CLIENT SAMPLE ID:9705893-10A

1,4-DIFLUOROBENZENE	30	36	120	70- 131
4-BROMOFLUOROBENZENE	30	29	97	43- 135

Method 8020A \*\*\*

BATCH#:HP\_W970527083400

WORK ORDER: Matrix Spike Dup.

CLIENT SAMPLE ID:9705893-11A

1,4-Difluorobenzene	30	39	130	70- 131
4-Bromofluorobenzene	30	29	97	43- 135

Method 8020A\*\*\*

BATCH#:HP\_W970528052800

WORK ORDER: 9705995-02A

CLIENT SAMPLE ID:S-2

1,4-Difluorobenzene	30	28	93	70- 131
4-Bromofluorobenzene	30	22	73	43- 135

Method 8020A \*\*\*

BATCH#:HP\_W970528052800

WORK ORDER: Method Blank

CLIENT SAMPLE ID:

1,4-Difluorobenzene	30	27	90	74- 131
4-Bromofluorobenzene	30	23	77	43- 135

Method 8020A \*\*\*

BATCH#:HP\_W970528052800

WORK ORDER: LCS

CLIENT SAMPLE ID:

1,4-Difluorobenzene	30	30	100	70- 131
4-Bromofluorobenzene	30	24	80.0	43- 135

Method 8020A \*\*\*

BATCH#:HP\_W970528052800

WORK ORDER: Matrix Spike

CLIENT SAMPLE ID:9705A19-07A

1,4-DIFLUOROBENZENE	30	26	87	70- 131
4-BROMOFLUOROBENZENE	30	23	77	43- 135





AMOUNT CONC. RECOVERY  
ADDED MEASURED

LIMITS

Method 8020A \*\*\* BATCH#:HP\_W970528052800  
WORK ORDER: Matrix Spike Dup. CLIENT SAMPLE ID:9705A19-07A

1,4-Difluorobenzene	30	28	93	70- 131
4-Bromofluorobenzene	30	24	80	43- 135

California LUFT Manual BATCH#:HP\_W970528055600  
WORK ORDER: 9705995-02A CLIENT SAMPLE ID:S-2

1,4-Difluorobenzene	30	34	113	50- 150
4-Bromofluorobenzene	30	22	73	50- 150

California LUFT Manual BATCH#:HP\_W970528055600  
WORK ORDER: Method Blank CLIENT SAMPLE ID:

1,4-Difluorobenzene	30	26	87	50- 150
4-Bromofluorobenzene	30	21	70	50- 150

California LUFT Manual BATCH#:HP\_W970528055600  
WORK ORDER: Matrix Spike CLIENT SAMPLE ID:9705A37-01A

1,4-Difluorobenzene	30	26	87	50- 150
4-Bromofluorobenzene	30	27	90	50- 150

California LUFT Manual BATCH#:HP\_W970528055600  
WORK ORDER: Matrix Spike Dup. CLIENT SAMPLE ID:9705A37-01A

1,4-Difluorobenzene	30	26	87	50- 150
4-Bromofluorobenzene	30	26	87	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



MATRIX: Aqueous  
Units: µg/L

Batch Id: HP\_W970527083400

LABORATORY CONTROL SAMPLE

SPIKE COMPOUNDS	Method Blank Result <2>	Spike Added <3>	Blank Spike		QC Limits(**) (Mandatory) % Recovery Range
			Result	Recovery	
			<1>	%	
MTBE	ND	50	48	96.0	63 - 120
Benzene	ND	50	49	98.0	62 - 121
Toluene	ND	50	55	110	66 - 136
EthylBenzene	ND	50	56	112	70 - 136
O Xylene	ND	50	53	106	74 - 134
M & P Xylene	ND	100	110	110	77 - 140

MATRIX SPIKES

SPIKE COMPOUNDS	Sample Results <2>	Spike Added <3>	Matrix Spike		Matrix Spike Duplicate		MS/MSD Relative % Difference	QC Limits(***) (Advisory)	
			Result	Recovery	Result	Recovery		RPD Max.	Recovery Range
			<1>	<4>	<1>	<5>			
MTBE	41	20.0	62	105	63	110	4.65	20	39 - 150
BENZENE	330	20.0	300	NC	310	NC	NC	25	39 - 150
TOLUENE	78	20.0	78	0 *	82	20.0 *	200 *	26	56 - 134
ETHYLBENZENE	29	20.0	40	55.0 *	42	65.0	16.7	38	61 - 128
O XYLENE	48	20.0	59	55.0	61	65.0	16.7	29	40 - 130
M & P XYLENE	110	40.0	120	25.0 *	130	50.0	66.7 *	20	43 - 152

Analyst: RL

Sequence Date: 05/27/97

SPL ID of sample spiked: 9705893-09A

Sample File ID: W\_7E073.TX0

Method Blank File ID:

Blank Spike File ID: W\_7E057.TX0

Matrix Spike File ID: W\_7E070.TX0

Matrix Spike Duplicate File ID: W\_7E071.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):

9705A10-02A 9705893-08A 9705893-07A 9705996-03A  
9705996-04A 9705893-13A 9705996-01A 9705996-06A  
9705996-05A 9705C87-02A 9705690-02B 9705995-01A  
9705995-03A



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

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

Matrix: Aqueous  
Units: µg/L

Batch Id: HP\_W970528052800

LABORATORY CONTROL SAMPLE

SPIKE COMPOUNDS	Method Blank Result <2>	Spike Added <3>	Blank Spike		QC Limits(**) (Mandatory) ‡ Recovery Range
			Result <1>	Recovery ‡	
MTBE	ND	50.0	38	76.0	63 - 120
Benzene	ND	50.0	40	80.0	62 - 121
Toluene	ND	50.0	44	88.0	66 - 136
EthylBenzene	ND	50.0	42	84.0	70 - 136
O Xylene	ND	50.0	43	86.0	74 - 134
M & P Xylene	ND	100.0	90	90.0	77 - 140

MATRIX SPIKES

SPIKE COMPOUNDS	Sample Results <2>	Spike Added <3>	Matrix Spike		Matrix Spike Duplicate		MS/MSD Relative % Difference	QC Limits(***) (Advisory)	
			Result <1>	Recovery <4>	Result <1>	Recovery <5>		RPD Max.	Recovery Range
			MTBE	ND	20	16.9	84.5	16.8	84.0
BENZENE	ND	20	14.6	73.0	14.6	73.0	0	25	39 - 150
TOLUENE	ND	20	15.1	75.5	14.6	73.0	3.37	26	56 - 134
ETHYLBENZENE	ND	20	14.0	70.0	13.7	68.5	2.17	38	61 - 128
O XYLENE	ND	20	13.6	68.0	13.4	67.0	1.48	29	40 - 130
M & P XYLENE	ND	40	27.9	69.8	27.1	67.8	2.91	20	43 - 152

Analyst: AA

Sequence Date: 05/29/97

SPL ID of sample spiked: 9705A19-07A

Sample File ID: W\_7E096.TX0

Method Blank File ID:

Blank Spike File ID: W\_7E119.TX0

Matrix Spike File ID: W\_7E101.TX0

Matrix Spike Duplicate File ID: W\_7E102.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):

9705997-05A 9705995-02A 9705A19-07A 9705A19-08A  
 9705A19-06A 9705A19-10A 9705997-03A 9705C01-02C  
 9705996-01A 9705997-01A 9705997-04A 9705997-05A  
 9705A10-03A 9705996-02A 9705A98-01A 9705997-04A



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

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

Matrix: Aqueous  
Units: mg/L

Batch Id: HP\_W970527080700

LABORATORY CONTROL SAMPLE

SPIKE COMPOUNDS	Method Blank Result <2>	Spike Added <3>	Blank Spike		QC Limits(**) (Mandatory) % Recovery Range
			Result <1>	Recovery %	
Gasoline Petr. Hydrocarbon	ND	1.0	0.96	96.0	56 - 130

MATRIX SPIKES

SPIKE COMPOUNDS	Sample Results <2>	Spike Added <3>	Matrix Spike		Matrix Spike Duplicate		MS/MSD Relative % Difference	QC Limits(***) (Advisory)	
			Result <1>	Recovery <4>	Result <1>	Recovery <5>		RPD Max.	Recovery Range
GASOLINE PETR. HYDROCARBON	ND	0.9	0.70	77.8	0.66	73.3	5.96	22	37 - 169

Analyst: RL

Sequence Date: 05/27/97

SPL ID of sample spiked: 9705995-01A

Sample File ID: WW7E059.TX0

Method Blank File ID:

Blank Spike File ID: WW7E058.TX0

Matrix Spike File ID: WW7E068.TX0

Matrix Spike Duplicate File ID: WW7E069.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 =  $[( <1> - <2> ) / <3> ] \times 100$

LCS % Recovery =  $( <1> / <3> ) \times 100$

Relative Percent Difference =  $|( <4> - <5> | / [( <4> + <5> ) \times 0.5] \times 100$

(\*\*) = Source: SPL-Houston Historical data (3rd Q '95)

(\*\*\*) = Source: SPL-Houston Historical Data (3rd Q '95)

SAMPLES IN BATCH(SPL ID):

9705893-07A 9705996-03A 9705996-04A 9705893-13A  
9705996-01A 9705997-01A 9705996-06A 9705996-05A  
9705C87-02A 9705865-03A 9705995-01A 9705995-03A  
9705893-08A



SPL BATCH QUALITY CONTROL REPORT \*\*  
CA LUFT

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

MATRIX: Aqueous  
Units: mg/L

Batch Id: HP\_W970528055600

LABORATORY CONTROL SAMPLE

S P I K E C O M P O U N D S	Method Blank Result <2>	Spike Added <3>	Blank Spike		QC Limits(**) (Mandatory) % Recovery Range
			Result <1>	Recovery %	
Petroleum Hydrocarbons-Gas	ND	1.0	0.76	76.0	50 - 150

M A T R I X S P I K E S

S P I K E C O M P O U N D S	Sample Results <2>	Spike Added <3>	Matrix Spike		Matrix Spike Duplicate		MS/MSD Relative % Difference	QC Limits(***) (Advisory)	
			Result <1>	Recovery <4>	Result <1>	Recovery <5>		RPD Max.	Recovery Range
PETROLEUM HYDROCARBONS-GAS	ND	0.9	0.65	72.2	0.60	66.7	7.92	50	50 - 150

Analyst: AA

Sequence Date: 05/29/97

SPL ID of sample spiked: 9705A37-01A

Sample File ID: WW7E106.TX0

Method Blank File ID:

Blank Spike File ID: WW7E120.TX0

Matrix Spike File ID: WW7E103.TX0

Matrix Spike Duplicate File ID: WW7E104.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 =  $[( <1> - <2> ) / <3> ] \times 100$

LCS % Recovery =  $( <1> / <3> ) \times 100$

Relative Percent Difference =  $|( <4> - <5> | / [( <4> + <5> ) \times 0.5] \times 100$

(\*\*) = Source: Temporary Limits

(\*\*\*) = Source: Temporary Limits

SAMPLES IN BATCH(SPL ID):

9705995-02A 9705996-02A 9705997-04A 9705997-05A

*CHAIN OF CUSTODY*  
*AND*  
*SAMPLE RECEIPT CHECKLIST*



9705995

### CHAIN OF CUSTODY

No. 088201

Page 1 of 1

CONSULTANT'S NAME <b>Alvito Engineering</b>		CONSULTANT'S ADDRESS <b>1575 Trent Blvd # 201</b>		W.C. <b>C 94598</b>	
BP SITE NUMBER <b>11126-11116</b>		BP SITE / FACILITY ADDRESS <b>Dublin, CA</b>		CONSULTANT PROJECT NUMBER <b>10-061-7-4</b>	
CONSULTANT PROJECT MANAGER <b>Brady Nagle</b>		PHONE NUMBER <b>(510) 295-1650</b>	FAX NUMBER <b>295-1823</b>	CONSULTANT CONTRACT NUMBER <b>6797467 6797520</b>	
BP CONTACT <b>Scott Hooton</b>		BP ADDRESS <b>Renton, WA</b>	PHONE NUMBER <b>-</b>	FAX NO. <b>-</b>	
LAB CONTACT <b>SPL</b>		LABORATORY ADDRESS <b>TEXAS</b>	PHONE NUMBER <b>-</b>	FAX NO. <b>-</b>	
BP CONTACT REQUESTING RUSH (Print BP Contact Name)		RUSH REQUESTED OF (Print Consultant Contact Name)	DATE/TIME	SHIPMENT DATE <b>5-19-97</b>	SHIPMENT METHOD <b>Fed Ex</b>

TAI  24 Hours  48 Hours  72 Hours  Standard 7 or 14 Days

ANALYSIS REQUIRED

AIRBILL NUMBER: **3848470614**

SAMPLE DESCRIPTION	COLLECTION DATE	COLLECTION TIME	MATRIX SOIL/WATER	CONTAINERS		PRESERVATIVE		COMMENTS
				NO.	TYPE (VOL.)	LAB SAMPLE #		
S-1	5/16/97		w	3	Hel			
S-2	↓		↓	↓	↓			
S-3	↓		↓	↓	↓			

SAMPLED BY (Please Print Name) \_\_\_\_\_ SAMPLED BY (Signature) \_\_\_\_\_ ADDITIONAL COMMENTS \_\_\_\_\_

RE-LINQUISHED BY / AFFILIATION (Print Name / Signature)	DATE	TIME	ACCEPTED BY / AFFILIATION (Print Name / Signature)	DATE	TIME
<i>[Signature]</i>	5/19/97	0830	<i>[Signature]</i>	5/19/97	0830
<i>[Signature]</i>	5/19/97	1530	<i>[Signature]</i>	5/20/97	0945

# SPL Houston Environmental Laboratory

## Sample Login Checklist

Date: <span style="font-size: 1.2em; margin-left: 20px;">5/20/97</span>	Time: <span style="font-size: 1.2em; margin-left: 20px;">0945</span>
---	--

SPL Sample ID: <div style="text-align: center; margin-top: 10px; font-size: 1.2em;">9705995</div>
--

		<u>Yes</u>	<u>No</u>
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°	<b>C</b>
10	Method of sample delivery to SPL:		
	SPL Delivery		
	Client Delivery		
	FedEx Delivery (airbill #)	3848470614	
	Other:		
11	Method of sample disposal:		
	SPL Disposal	✓	
	HOLD		
	Return to Client		

Name: <span style="font-size: 1.2em; margin-left: 20px;">Alfonso Salas</span>	Date: <span style="font-size: 1.2em; margin-left: 20px;">5/20/97</span>
---	---



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

BP Site Number: 11116  
 ERM Contact: G797396  
 Sampling Date: 05/16/97  
 Matrix Description: Water  
 Date Final Report Received: 06/02/97  
 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 30%?	✓	_____	_____
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: Matrix spiked values outside QC Range (see lab report)

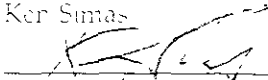
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Data Validation Completed by: Ker Simas  
 Signature:   
 Date: 6/21/97

APPENDIX C  
HISTORICAL MTBE DOCUMENTATION

Mr. Brady Nagle  
Page 10

FOOTNOTES  
for pages 1 through 9

February 24, 1993  
PACE Project Number: 430211510

Client Reference: BP Station # 11116

MDL Method Detection Limit  
ND Not detected at or above the MDL.  
(MT) A peak eluting earlier than Benzene and suspected to be methyl tert butyl ether was present in samples AW-5, AW-6, and QC-1 at approximately 140 ppb, 14000 ppb, and 17000 ppb respectively.

**REPORT OF LABORATORY ANALYSIS**

July 08, 1993

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

RE: PACE Project No. 430527.509 reissue  
Client Reference: BP Station # 11116

Dear Mr. Nagle:

Enclosed is the report of laboratory analyses for samples received May 27, 1993.

Please note that a peak eluting earlier than Benzene and suspected to be Methyl tert-butyl ether was detected in the following samples at the approximated levels:

70 0081459/AW-6	8000ug/L
70 0081467/QC-1	7700ug/L

Footnotes are given at the end of the report.

If you have any questions concerning this report, please feel free to contact us.

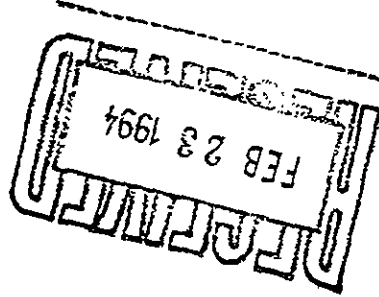
Sincerely,

*Stacy P. Hoch*

*Jim J. Oys*  
Project Manager

Enclosures

February 22, 1994



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

RE: PACE Project No. 440214.511  
Client Reference: BP Station # 11116/CP#10-017-02-004 ✓

Dear Mr. Howell:

Enclosed is the report of laboratory analyses for samples received February 14, 1994.

Please note that a peak eluting earlier than Benzene and suspected to be Methyl Tert Butyl Ether was detected in the following samples at the approximated levels:

700246466/AW-5	670 ug/L ✓
700246474/AW-6	50000 ug/L
700246482/QC-1	47000 ug/L

Footnotes are given at the end of the report.

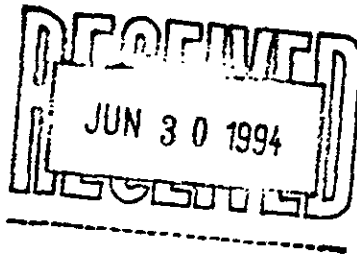
If you have any questions concerning this report, please feel free to contact us.

Sincerely,

Ronald M. Chew  
Project Manager

Enclosures

June 29, 1994



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

RE: PACE Project No. 440622.520  
Client Reference: BP Site #11116/10-017 -3 -1

Dear Mr. Howell:

Enclosed is the report of laboratory analyses for samples received June 22, 1994.

Please note that a peak eluting earlier than Benzene and suspected to be Methyl Tert Butyl Ether was detected in the following samples at the approximated levels:

700345464/S-2	240 ug/L	✓
700345472/S-3	6400 ug/L	
700345480/S-4	6600 ug/L	

Footnotes are given at the end of the report.

If you have any questions concerning this report, please feel free to contact us.

Sincerely,

Ronald M. Chew  
Project Manager

Enclosures

## GAS CHROMATOGRAPHY RESULTS

Test : MOD EPA 8015-CDOHS/8020 (HYDROCARBONS C6-C12/BTXE)  
 Client : ALISTO ENGINEERING ATI I.D. : 502226  
 Project # : G317853/10-017-03-004  
 Project Name: BP SITE #11116/7197 VILLAGE PARKWAY DUBLIN, CA.

Sample #	Client ID	Matrix	Date Sampled	Date Extracted	Date Analyzed	Dil. Factor
4	S-4	WATER	15-FEB-95	N/A	24-FEB-95	1.00
5	S-5	WATER	15-FEB-95	N/A	25-FEB-95	1.00
6	S-6	WATER	15-FEB-95	N/A	25-FEB-95	50.00

Parameter	Units	4	5	6
BENZENE	UG/L	<0.50	<0.50	53
TOLUENE	UG/L	<0.50	<0.50	1400
ETHYLBENZENE	UG/L	<0.50	<0.50	1200
XYLENES (TOTAL)	UG/L	<1.0	<1.0	4400
FUEL HYDROCARBONS	UG/L	<50	220@C	25000@C
HYDROCARBON RANGE		C6-C12	C6-C12	C6-C12
HYDROCARBONS QUANTITATED USING		GASOLINE	GASOLINE	GASOLINE

SURROGATES

TRIFLUOROTOLUENE	%	100	103	98
------------------	---	-----	-----	----

@C MTBE PEAK PRESENT

## GAS CHROMATOGRAPHY RESULTS

Test : MOD EPA 8015-CDOHS/8020 (HYDROCARBONS C6-C12/BTXE)  
 Client : ALISTO ENGINEERING ATI I.D. : 502226  
 Project # : G317853/10-017-03-004  
 Project Name: BP SITE #11116/7197 VILLAGE PARKWAY DUBLIN, CA.

Sample #	Client ID	Matrix	Date Sampled	Date Extracted	Date Analyzed	Dil. Factor
7	S-7	WATER	15-FEB-95	N/A	25-FEB-95	50.00
8	S-8	WATER	15-FEB-95	N/A	25-FEB-95	1.00

Parameter	Units	7	8
BENZENE	UG/L	53	<0.50
TOLUENE	UG/L	1400	<0.50
ETHYLBENZENE	UG/L	1200	<0.50
XYLENES (TOTAL)	UG/L	4400	<1.0
FUEL HYDROCARBONS	UG/L	25000@C	<50
HYDROCARBON RANGE		C6-C12	C6-C12
HYDROCARBONS QUANTITATED USING		GASOLINE	GASOLINE
<b>SURROGATES</b>			
TRIFLUOROTOLUENE	%	91	96

@C MTBE PEAK PRESENT





Analytical **Technologies**, Inc.

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

ATI I.D.: 505275

June 09, 1995

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

Project Name: BP SITE#11116/DUBLIN, CA  
Project # : G317853/10-017-04/001

Attention: BILL HOWELL


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

<u>Date Received</u>	<u>Quantity</u>	<u>Matrix</u>
May 26, 1995	5	WATER

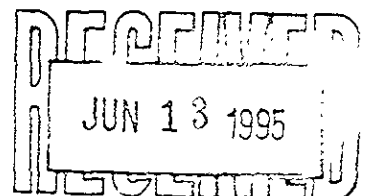
The sample(s) were analyzed with EPA methodology or equivalent methods as specified in the enclosed analytical schedule. The symbol for "less than" indicates a value below the reportable detection limit. If any flags appear next to the analytical data in this report, please see the attached list of flag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

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

Please note that Alisto Engineering samples S2, S3 and S4 contain an MTBE peak.

  
GARY STEWART  
VOLATILES SUPERVISOR

  
ALAN J. KLEINSCHMIDT  
LABORATORY MANAGER



GAS CHROMATOGRAPHY RESULTS

Test : MOD EPA 8015-CDOHS/8020 (HYDROCARBONS C6-C12/BTEX)  
 Client : ALISTO ENGINEERING  
 Project # : G317853/10-017-05-001  
 Project Name: BP SITE#11116/7179 VILLAGE PKWY DUBLIN, CA

ATI I.D. : 508297

Sample #	Client ID	Matrix	Date Sampled	Date Extracted	Date Analyzed	Dil. Factor
1	S-1	WATER	29-AUG-95	N/A	11-SEP-95	1.00
2	S-2	WATER	29-AUG-95	N/A	11-SEP-95	1.00
3	S-3	WATER	29-AUG-95	N/A	12-SEP-95	1.00

Parameter	Units	1	2	3
METHYL T-BUTYL ETHER	UG/L	<5.0	<5.0	<5.0
BENZENE	UG/L	<0.50	<0.50	<0.50
TOLUENE	UG/L	<0.50	<0.50	<0.50
ETHYLBENZENE	UG/L	<0.50	<0.50	<0.50
XYLENES (TOTAL)	UG/L	<1.0	<1.0	<1.0
FUEL HYDROCARBONS	UG/L	<50	<50	<50
HYDROCARBON RANGE		C6-C12	C6-C12	C6-C12
HYDROCARBONS QUANTITATED USING		GASOLINE	GASOLINE	GASOLINE

<u>SURROGATES</u>				
TRIFLUOROTOLUENE	%	90	92	90

GAS CHROMATOGRAPHY RESULTS

Test : MOD EPA 8015-CDOHS/8020 (HYDROCARBONS C6-C12/BTXE)  
 Client : ALISTO ENGINEERING  
 Project # : G317853/10-017-05-001  
 Project Name: BP SITE#11116/7179 VILLAGE PKWY DUBLIN, CA

ATI I.D. : 508297

Sample #	Client ID	Matrix	Date Sampled	Date Extracted	Date Analyzed	Dil. Factor
4	S-4	WATER	29-AUG-95	N/A	12-SEP-95	1.00
5	S-5	WATER	29-AUG-95	N/A	12-SEP-95	2.00
6	S-6	WATER	29-AUG-95	N/A	12-SEP-95	20.00

Parameter	Units	4	5	6
METHYL T-BUTYL ETHER	UG/L	<5.0	820	2600
BENZENE	UG/L	<0.50	<1.0	430
TOLUENE	UG/L	<0.50	<1.0	<10
ETHYLBENZENE	UG/L	<0.50	<1.0	340
XYLENES (TOTAL)	UG/L	<1.0	<2.0	40
FUEL HYDROCARBONS	UG/L	<50	190	8300
HYDROCARBON RANGE		C6-C12	C6-C12	C6-C12
HYDROCARBONS QUANTITATED USING		GASOLINE	GASOLINE	GASOLINE
<u>SURROGATES</u>				
TRIFLUOROTOLUENE	%	94	92	108

GAS CHROMATOGRAPHY RESULTS

Test : MOD EPA 8015-CDOHS/8020 (HYDROCARBONS C6-C12/BTXE)  
 Client : ALISTO ENGINEERING  
 Project # : G317853/10-017-05-001  
 Project Name: BP SITE#11116/7179 VILLAGE PKWY DUBLIN, CA

ATI I.D. : 508297

Sample #	Client ID	Matrix	Date Sampled	Date Extracted	Date Analyzed	Dil. Factor
7	S-7	WATER	29-AUG-95	N/A	12-SEP-95	20.00
8	S-8	WATER	29-AUG-95	N/A	12-SEP-95	1.00

Parameter	Units	7	8
METHYL T-BUTYL ETHER	UG/L	2200	<5.0
BENZENE	UG/L	430	<0.50
TOLUENE	UG/L	12	<0.50
ETHYLBENZENE	UG/L	360	<0.50
XYLENES (TOTAL)	UG/L	37	<1.0
FUEL HYDROCARBONS	UG/L	9400	<50
HYDROCARBON RANGE		C6-C12	C6-C12
HYDROCARBONS QUANTITATED USING		GASOLINE	GASOLINE
<u>SURROGATES</u>			
TRIFLUOROTOLUENE	%	103	90