



BP OIL

ENVIRONMENTAL  
PROTECTION

53 JAN -6 AM 9:30

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

20-318

December 31, 1997

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

RE: Former BP Oil Site No. 11266  
1541 Park Street (at Lincoln)  
Alameda, CA

Dear Ms. Chu:

This letter transmits a groundwater monitoring and sampling report dated 5 December 1997 prepared on behalf of BP by Alisto Engineering Group.

A petroleum release was documented during the replacement of underground storage tanks by Mobil Oil Corporation during 1987. BP purchased the site from Mobil in 1989, and Mobil later transferred management of the cleanup to BP. BP subsequently sold the site to the current operator (Tosco Corporation) during 1994. To comply with 1998 requirements for leak detection and prevention, the current tanks are understood to require spill buckets around the fill ports, containment sumps around the turbine risers, containment pans beneath the dispensers, and overflow prevention. The current tanks are believed to be constructed of double-wall fiberglass, and were installed in the excavation dug to remove the former tanks.

The enclosed groundwater monitoring and sampling report includes laboratory data for samples collected on 16 October 1997. You will note that aromatic petroleum hydrocarbons were detected in samples obtained from monitoring well MW-1. The highest benzene concentrations this quarter (71  $\mu\text{g/l}$  and 80  $\mu\text{g/l}$ ) were detected in replicate samples obtained from well MW-1, located to the north of the product lines.

MTBE concentration data is now shown in Figure 3, replacing the dissolved oxygen measurements shown in past reports. You should note that estimated MTBE concentrations for samples analyzed during 1993 and 1994 are also shown on Table 1 - Summary of Results of Groundwater Sampling. MTBE was detected in samples obtained from wells MW-1 (500  $\mu\text{g/l}$ ), MW-2 (260  $\mu\text{g/l}$ ), and MW-6 ( $\mu\text{g/l}$ ) on 16 October 1997.

Please give me a call at (425) 251-0689 if you have any questions or comments regarding this submittal.

Sincerely,



Scott Hooton  
Environmental Remediation Management

attachment

cc: site file  
Brady Nagle - Alisto  
T. Berry - Tosco (w/attachment)

**GROUNDWATER MONITORING AND SAMPLING REPORT**

**BP Oil Company Service Station No. 11266  
1541 Park Street  
Alameda, California**

**Project No. 10-050-08-001**

DEC 15 1997

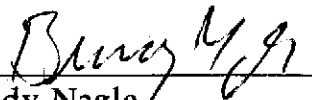
**Prepared for:**

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

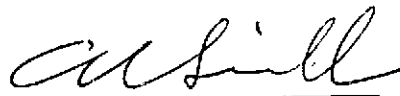
**Prepared by:**

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

**December 5, 1997**



**Brady Nagle  
Project Manager**



**Al Sevilla, P.E.  
Principal**



# GROUNDWATER MONITORING AND SAMPLING REPORT

BP Oil Company Service Station No. 11266  
1541 Park Street  
Alameda, California

Project No. 10-050-08-001

December 5, 1997

## INTRODUCTION

This report presents the results and findings of the October 16, 1997 groundwater monitoring and sampling conducted by Alisto Engineering Group at BP Oil Company Service Station No. 11266, 1541 Park Street, Alameda, 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 for this and previous quarters are summarized in Table 1. The potentiometric groundwater elevations as interpreted from the results of this monitoring event are shown 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. 11266  
 1541 PARK STREET, ALAMEDA, CALIFORNIA

ALISTO PROJECT NO. 10-050

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)	DO (ppm)	LAB
MW-1	03/04/88	19.19	---	---	95000	2000	5900	1100	10000	---	---	---
MW-1	03/29/89	19.19	---	---	25000	930	2600	24	3100	---	---	---
MW-1	11/28/89	19.19	---	---	15000	280	880	340	1200	---	---	---
MW-1	02/13/91	19.19	---	---	25000	680	2700	1100	3200	---	---	---
MW-1	01/08/92	19.19	---	---	10000	260	1100	570	2000	---	---	---
MW-1	03/30/92	19.19	8.15	11.04	5800	290	570	500	1100	---	---	PACE
MW-1	07/02/92	19.19	9.38	9.81	2500	170	60	310	300	---	---	ANA
MW-1	07/22/92	19.19	9.62	9.57	---	---	---	---	---	---	---	---
MW-1	10/02/92	19.19	9.98	9.21	4000	86	190	270	350	---	---	ANA
QC-1 (c)	10/02/92	---	---	---	3600	89	180	270	340	---	---	ANA
MW-1	12/14/92	19.19	9.90	9.29	6800	75	540	200	670	---	---	ANA
QC-1 (c)	12/14/92	---	---	---	5900	68	480	190	600	---	---	ANA
MW-1	03/24/93	19.19	8.52	10.67	6400	150	310	370	710	1400 (d)	---	PACE
MW-1	06/17/93	19.19	9.37	9.82	3800	110	160	310	480	220 (d)	---	PACE
MW-1	09/29/93	19.19	10.80	8.39	1100	22	16	54	110	320 (d)	---	PACE
MW-1	12/28/93	19.19	9.27	9.92	1800	26	110	77	300	220 (d)	---	PACE
MW-1	03/29/94	19.19	8.77	10.42	22000	990	560	970	2000	---	3.1	PACE
MW-1	07/07/94	19.19	9.18	10.01	18000	67	32	250	140	30000 (d)	---	PACE
MW-1	10/18/94	19.19	9.85	9.34	270	1.9	0.6	ND<0.5	3.2	---	3.6	PACE
MW-1	02/01/95	19.19	7.04	12.15	5400	260	350	1100	980	---	6.5	ATI
MW-1	04/12/95	19.19	7.74	11.45	13000	260	620	960	2600	---	5.0	ATI
MW-1	09/13/95	19.19	9.58	9.61	5800	110	110	510	830	4300	5.2	ATI
QC-1 (c)	09/13/95	---	---	---	5800	110	100	490	800	4500	---	ATI
MW-1	01/11/96	19.19	8.95	10.24	5400	91	130	510	1000	1700	5.2	ATI
QC-1 (c)	01/11/96	---	---	---	5100	89	120	490	950	2000	---	ATI
MW-1	04/18/96	19.19	8.40	10.79	12000	190	420	1100	1560	2100	4.5	SPL
QC-1 (c)	04/18/96	---	---	---	12000	190	390	1100	1440	2000	---	SPL
MW-1	06/28/96	19.19	9.08	10.11	11000	100	130	670	1180	4600	---	SPL
QC-1 (c)	06/28/96	---	---	---	11000	100	140	690	1290	4600	---	SPL
MW-1	11/05/96	19.19	9.81	9.38	8800	55	28	520	430	5700	5.5	SPL
QC-1 (c)	11/05/96	---	---	---	8800	48	ND<25	490	413	5600	---	SPL
MW-1	01/17/97	19.19	7.81	11.38	12000	180	160	1200	1650	3200	8.0	SPL
QC-1 (c)	01/17/97	---	---	---	13000	190	160	1200	1770	3200	---	SPL
MW-1	05/01/97	19.19	9.13	10.06	8600	160	49	950	850	3200	7.0	SPL
QC-1 (c)	05/01/97	---	---	---	9000	160	39	940	820	3100	---	SPL
MW-1	07/09/97	19.19	9.55	9.64	10000	93	27	720	476	4500	6.3	SPL
QC-1 (c)	07/09/97	---	---	---	7600	42	13	340	175	4300	---	SPL
MW-1	10/16/97	19.19	9.77	9.42	2100	71	14	420	194	500	6.8	SPL
QC-1 (c)	10/16/97	---	---	---	2600	80	17	500	276	510	---	SPL

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ALISTO PROJECT NO. 10-050

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)	DO (ppm)	LAB
MW-2	03/04/88	19.32	---	---	ND	ND	ND	ND	ND	---	---	---
MW-2	03/29/89	19.32	---	---	ND	1.1	0.78	ND	1.7	---	---	---
MW-2	11/28/89	19.32	---	---	170	ND	ND	ND	ND	---	---	---
MW-2	02/13/91	19.32	---	---	150	1.4	ND	ND	0.9	---	---	---
MW-2	01/08/92	19.32	---	---	ND	1.4	ND	ND	1.1	---	---	---
MW-2	03/30/92	19.32	9.03	10.29	91	0.7	ND	ND	ND	---	---	PACE
MW-2	07/02/92	19.32	9.96	9.36	150	3.1	0.6	0.6	1.1	---	---	ANA
MW-2	07/22/92	19.32	10.12	9.20	---	---	---	---	---	---	---	---
MW-2	10/02/92	19.32	10.42	8.90	56	ND<0.5	0.8	0.8	1.2	---	---	ANA
MW-2	12/14/92	19.32	10.77	8.55	210	1.5	ND<0.5	0.9	2.7	---	---	ANA
MW-2	03/24/93	19.32	9.33	9.99	94	0.8	ND<0.5	ND<0.5	0.9	---	---	PACE
QC-1 (c)	03/24/93	---	---	---	150	1.8	0.6	1.3	1.3	---	---	PACE
MW-2	06/17/93	19.32	9.91	9.41	ND<50	ND<0.5	ND<0.5	ND<0.5	0.7	23 (d)	---	PACE
MW-2	09/29/93	19.32	11.39	7.93	68	ND<0.5	0.9	0.7	1.9	59 (d)	---	PACE
MW-2	12/28/93	19.32	9.75	9.57	260	ND<0.5	ND<0.5	ND<0.5	ND<0.5	1300 (d)	---	PACE
QC-1 (c)	12/28/93	---	---	---	240	ND<0.5	ND<0.5	ND<0.5	ND<0.5	1100 (d)	---	PACE
MW-2	03/29/94	19.32	9.39	9.93	150	ND<0.5	ND<0.5	ND<0.5	ND<0.5	1600 (d)	4.9	PACE
QC-1 (c)	03/29/94	---	---	---	140	ND<0.5	ND<0.5	ND<0.5	ND<0.5	1600 (d)	---	PACE
MW-2	07/07/94	19.32	9.68	9.64	1100	0.6	1.7	0.6	3.2	2000 (d)	---	PACE
MW-2	10/18/94	19.32	10.22	9.10	290	3.1	0.8	ND<0.5	5.1	---	3.3	PACE
MW-2	02/01/95	19.32	8.03	11.29	100	ND<0.5	ND<0.5	ND<0.5	ND<1	---	6.0	ATI
MW-2	04/12/95	19.32	8.71	10.61	1200	ND<1.0	ND<1.0	ND<1.0	ND<2.0	---	8.3	ATI
MW-2	09/13/95	19.32	10.19	9.13	480	ND<2.5	ND<2.5	ND<2.5	ND<5.0	2300	7.8	ATI
MW-2	01/11/96	19.32	9.59	9.73	3400	ND<25	ND<25	ND<25	ND<50	11000	5.4	ATI
MW-2	04/18/96	19.32	9.04	10.28	130	ND<0.5	ND<1	ND<1	ND<1	170	5.5	SPL
MW-2	06/28/96	19.32	9.72	9.60	300	ND<0.5	ND<1	ND<1	ND<1	430	4.9	SPL
MW-2	11/05/96	19.32	10.43	8.89	710	ND<2.5	ND<5.0	ND<5.0	ND<5.0	960	5.3	SPL
MW-2	01/17/97	19.32	8.80	10.52	ND<50	ND<0.5	ND<1.0	ND<1.0	ND<1.0	24	5.3	SPL
MW-2	05/01/97	19.32	10.06	9.26	80	ND<0.5	ND<1.0	ND<1.0	ND<1.0	100	5.2	SPL
MW-2	07/09/97	19.32	10.50	8.82	150	ND<0.5	ND<1.0	ND<1.0	ND<1.0	170	4.3	SPL
MW-2	10/16/97	19.32	10.18	9.14	ND<50	ND<1.0	ND<1.0	ND<1.0	ND<1.0	260	5.0	SPL

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 BP OIL COMPANY SERVICE STATION NO. 11266  
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ALISTO PROJECT NO. 10-050

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)	DO (ppm)	LAB
MW-3	03/04/88	19.99	---	---	ND	ND	ND	ND	ND	---	---	---
MW-3	03/29/89	19.99	---	---	ND	ND	ND	ND	ND	---	---	---
MW-3	11/28/89	19.99	---	---	ND	ND	ND	ND	ND	---	---	---
MW-3	02/13/91	19.99	---	---	ND	ND	ND	ND	ND	---	---	---
MW-3	01/08/92	19.99	---	---	ND	ND	ND	ND	ND	---	---	---
MW-3	03/30/92	19.99	9.71	10.28	ND	ND	ND	ND	ND	---	---	PACE
MW-3	07/02/92	19.99	10.52	9.47	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	ANA
MW-3	07/22/92	19.99	10.62	9.37	---	---	---	---	---	---	---	---
MW-3	10/02/92	19.99	10.86	9.13	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	ANA
MW-3	12/14/92	19.99	10.53	9.46	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	ANA
MW-3	03/24/93	19.99	9.06	10.93	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	PACE
MW-3	06/17/93	19.99	10.44	9.55	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	PACE
MW-3	09/29/93	19.99	11.06	8.93	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	PACE
MW-3	12/28/93	19.99	9.43	10.56	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	PACE
MW-3	03/29/94	19.99	10.01	9.98	---	---	---	---	ND<0.5	---	---	---
MW-3	07/07/94	19.99	10.14	9.85	ND<50	ND<0.5	0.7	ND<0.5	ND<0.5	---	---	PACE
QC-1 (c)	07/07/94	---	---	---	ND<50	ND<0.5	0.7	ND<0.5	ND<0.5	---	---	PACE
MW-3	10/18/94	19.99	10.56	9.43	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	3.2	PACE
MW-3	02/01/95	19.99	8.98	11.01	ND<50	ND<0.5	1.0	0.5	1.9	---	5.9	ATI
MW-3	04/12/95	19.99	9.70	10.29	---	---	---	---	---	---	---	---
MW-3	09/13/95	19.99	10.70	9.29	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<1.0	ND<5.0	5.7	ATI
MW-3	01/11/96	19.99	10.18	9.81	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<1.0	ND<5.0	5.5	ATI
MW-3	04/18/96	19.99	9.53	10.46	---	---	---	---	---	---	---	---
MW-3	06/28/96	19.99	9.21	10.78	ND<50	ND<0.5	ND<1	ND<1	ND<1	ND<10	4.3	SPL
MW-3	11/05/96	19.99	9.94	10.05	---	---	---	---	---	---	---	---
MW-3	01/17/97	19.99	9.29	10.70	ND<50	ND<0.5	ND<1.0	ND<1.0	ND<1.0	ND<10	5.0	SPL
MW-3	05/01/97	19.99	10.53	9.46	---	---	---	---	---	---	---	---
MW-3	07/09/97	19.99	10.92	9.07	ND<50	ND<0.5	ND<1.0	ND<1.0	ND<1.0	ND<10	4.0	SPL
MW-3	10/16/97	19.99	11.24	8.75	---	---	---	---	---	---	---	---

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ALISTO PROJECT NO. 10-050

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)	DO (ppm)	LAB
MW-4	03/04/88	20.17	---	---	ND	ND	ND	ND	ND	---	---	---
MW-4	03/29/89	20.17	---	---	ND	ND	ND	ND	ND	---	---	---
MW-4	11/28/89	20.17	---	---	430	6.2	0.6	12	3.3	---	---	---
MW-4	02/13/91	20.17	---	---	ND	ND	ND	ND	ND	---	---	---
MW-4	01/08/92	20.17	---	---	ND	ND	ND	ND	ND	---	---	---
MW-4	03/30/92	20.17	8.73	11.44	ND	ND	ND	ND	ND	---	---	PACE
MW-4	07/02/92	20.17	10.04	10.13	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	ANA
MW-4	07/22/92	20.17	10.26	9.91	---	---	---	---	---	---	---	---
MW-4	10/02/92	20.17	10.63	9.54	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	ANA
MW-4	12/14/92	20.17	10.02	10.15	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	ANA
MW-4	03/24/93	20.17	9.08	11.09	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	PACE
MW-4	06/17/93	20.17	10.03	10.14	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	PACE
MW-4	09/29/93	20.17	10.96	9.21	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	PACE
MW-4	12/28/93	20.17	9.33	10.84	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	PACE
MW-4	03/29/94	20.17	9.42	10.75	---	---	---	---	---	---	---	---
MW-4	07/07/94	20.17	9.82	10.35	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	PACE
MW-4	10/18/94	20.17	10.36	9.81	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	3.1	PACE
MW-4	02/01/95	20.17	7.50	12.67	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<1	---	9.3	ATI
MW-4	04/12/95	20.17	8.21	11.96	---	---	---	---	---	---	---	---
MW-4	09/13/95	20.17	10.20	9.97	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<1.0	ND<5.0	4.3	ATI
MW-4	01/11/96	20.17	9.57	10.60	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<1.0	ND<5.0	5.1	ATI
MW-4	04/18/96	20.17	9.03	11.14	---	---	---	---	---	---	---	---
MW-4	06/28/96	20.17	8.73	11.44	ND<50	ND<0.5	ND<1	ND<1	ND<1	ND<10	4.6	SPL
MW-4	11/05/96	20.17	9.47	10.70	---	---	---	---	---	---	---	---
MW-4	01/17/97	20.17	8.79	11.38	ND<50	ND<0.5	ND<1.0	ND<1.0	ND<1.0	ND<10	5.4	SPL
MW-4	05/01/97	20.17	10.08	10.09	---	---	---	---	---	---	---	---
MW-4	07/09/97	20.17	10.52	9.65	ND<50	ND<0.5	ND<1.0	ND<1.0	ND<1.0	ND<10	4.1	SPL
MW-4	10/16/97	20.17	10.85	9.32	---	---	---	---	---	---	---	---



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 BP OIL COMPANY SERVICE STATION NO. 11266  
 1541 PARK STREET, ALAMEDA, CALIFORNIA

ALISTO PROJECT NO. 10-050

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)	DO (ppm)	LAB
MW-5	03/04/88	19.41	---	---	ND	ND	ND	ND	ND	---	---	---
MW-5	03/29/89	19.41	---	---	ND	ND	ND	ND	ND	---	---	---
MW-5	11/28/89	19.41	---	---	ND	ND	ND	ND	ND	---	---	---
MW-5	02/13/91	19.41	---	---	ND	ND	ND	ND	ND	---	---	---
MW-5	01/08/92	19.41	---	---	ND	ND	ND	ND	ND	---	---	---
MW-5	03/30/92	19.41	7.85	11.56	ND	ND	ND	ND	ND	---	---	PACE
MW-5	07/02/92	19.41	9.27	10.14	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	ANA
MW-5	07/22/92	19.41	9.55	9.86	---	---	---	---	---	---	---	---
MW-5	10/02/92	19.41	9.97	9.44	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	ANA
MW-5	12/14/92	19.41	9.14	10.27	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	ANA
MW-5	03/24/93	19.41	8.17	11.24	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	PACE
MW-5	06/17/93	19.41	8.29	11.12	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	PACE
QC-1 (c)	06/17/93	---	---	---	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	PACE
MW-5	09/29/93	19.41	10.31	9.10	ND<50	ND<0.5	ND<0.5	ND<0.5	0.6	---	---	PACE
MW-5	12/28/93	19.41	8.91	10.50	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	PACE
MW-5	03/29/94	19.41	8.50	10.91	---	---	---	---	---	---	---	---
MW-5	07/07/94	19.41	8.99	10.42	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	PACE
MW-5	10/18/94	19.41	9.61	9.80	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	3.5	PACE
MW-5	02/01/95	19.41	6.55	12.86	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<1	---	7.6	ATI
MW-5	04/12/95	19.41	7.27	12.14	---	---	---	---	---	---	---	---
MW-5	09/13/95	19.41	9.49	9.92	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<1.0	ND<5.0	4.9	ATI
MW-5	01/11/96	19.41	8.82	10.59	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<1.0	ND<5.0	4.9	ATI
MW-5	04/18/96	19.41	8.30	11.11	---	---	---	---	---	---	---	---
MW-5	06/28/96	19.41	8.96	10.45	ND<50	ND<0.5	ND<1	ND<1	ND<1	ND<10	4.2	SPL
MW-5	11/05/96	19.41	9.69	9.72	---	---	---	---	---	---	---	---
MW-5	01/17/97	19.41	9.02	10.39	ND<50	ND<0.5	ND<1.0	ND<1.0	ND<1.0	ND<10	5.2	SPL
MW-5	05/01/97	19.41	10.29	9.12	---	---	---	---	---	---	---	---
MW-5	07/09/97	19.41	10.71	8.70	ND<50	ND<0.5	ND<1.0	ND<1.0	ND<1.0	ND<10	4.2	SPL
MW-5	10/16/97	19.41	11.03	8.38	---	---	---	---	---	---	---	---

TABLE 1 - SUMMARY OF RESULTS OF GROUNDWATER SAMPLING  
 BP OIL COMPANY SERVICE STATION NO. 11266  
 1541 PARK STREET, ALAMEDA, CALIFORNIA

ALISTO PROJECT NO. 10-050

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)	DO (ppm)	LAB
MW-6	03/04/88	19.40	---	---	ND	ND	ND	ND	ND	---	---	---
MW-6	03/29/89	19.40	---	---	ND	ND	ND	ND	ND	---	---	---
MW-6	11/28/89	19.40	---	---	ND	ND	ND	ND	ND	---	---	---
MW-6	02/13/91	19.40	---	---	ND	ND	ND	ND	ND	---	---	---
MW-6	01/08/92	19.40	---	---	ND	ND	ND	ND	ND	---	---	---
MW-6	03/30/92	19.40	8.86	10.54	ND	ND	ND	ND	ND	---	---	PACE
MW-6	07/02/92	19.40	9.94	9.46	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	ANA
MW-6	07/22/92	19.40	10.10	9.30	---	---	---	---	---	---	---	---
MW-6	10/02/92	19.40	10.48	8.92	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	ANA
MW-6	12/14/92	19.40	10.76	8.64	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	ANA
MW-6	03/24/93	19.40	9.19	10.21	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	PACE
MW-6	06/17/93	19.40	9.91	9.49	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	PACE
MW-6	09/29/93	19.40	11.49	7.91	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	PACE
MW-6	12/28/93	19.40	9.88	9.52	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	PACE
MW-6	03/29/94	19.40	9.36	10.04	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	5.0	PACE
MW-6	07/07/94	19.40	9.75	9.65	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	38	(d)	PACE
MW-6	10/18/94	19.40	10.30	9.10	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	3.3	PACE
MW-6	02/01/95	19.40	7.92	11.48	ND<50	ND<0.5	0.9	ND<0.5	1.1	---	5.4	ATI
MW-6	04/12/95	19.40	8.41	10.99	220	ND<0.50	ND<0.50	ND<0.50	ND<1.0	---	4.7	ATI
MW-6	09/13/95	19.40	10.05	9.35	180	ND<1.0	ND<1.0	ND<1.0	ND<2.0	770	4.9	ATI
MW-6	01/11/96	19.40	9.52	9.88	670	ND<2.5	ND<2.5	ND<2.5	ND<5.0	2400	4.6	ATI
MW-6	04/18/96	19.40	9.03	10.37	560	ND<0.5	ND<1	ND<1	ND<1	860	5.1	SPL
MW-6	06/28/96	19.40	8.76	10.64	620	ND<0.5	ND<1	ND<1	ND<1	540	4.9	SPL
MW-6	11/05/96	19.40	9.48	9.92	810	ND<5	ND<10	ND<10	ND<10	970	4.8	SPL
MW-6	01/17/97	19.40	8.58	10.82	830	ND<0.5	ND<1.0	ND<1.0	ND<1.0	960	8.9	SPL
MW-6	05/01/97	19.40	9.92	9.48	780	ND<5	ND<10	ND<10	ND<10	970	7.7	SPL
MW-6	07/09/97	19.40	10.33	9.07	990	ND<0.5	ND<1.0	ND<1.0	ND<1.0	1100	6.0	SPL
MW-6	10/16/97	19.40	10.66	8.74	ND<50	ND<0.5	ND<1.0	ND<1.0	ND<1.0	750	6.7	SPL

TABLE 1 - SUMMARY OF RESULTS OF GROUNDWATER SAMPLING  
 BP OIL COMPANY SERVICE STATION NO. 11266  
 1541 PARK STREET, ALAMEDA, CALIFORNIA

ALISTO PROJECT NO. 10-050

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)	DO (ppm)	LAB
RW-1	07/22/92	---	9.66	---	13000	1000	3400	380	2800	---	---	ANA
RW-1	10/02/92	---	10.28	---	---	---	---	---	---	---	---	---
RW-1	12/14/92	---	23.28	---	---	---	---	---	---	---	---	---
RW-1	03/24/93	---	8.93	---	660	21	25	8.3	100	315	(d)	PACE
RW-1	06/17/93	---	9.66	---	850	13	1.0	15	100	390	(d)	PACE
RW-1	09/29/93	19.27	23.40	-4.13	1200	26	27	11	150	1800	(d)	PACE
QC-1 (c)	09/29/93	---	---	---	1200	26	28	11	160	1900	(d)	PACE
RW-1	12/28/93	19.27	9.76	9.51	3500	300	220	180	480	1900	(d)	PACE
RW-1	03/29/94	19.27	8.93	10.34	12000	640	1700	450	2200	---	6.3	PACE
RW-1	07/07/94	19.27	9.45	9.82	7600	530	1100	380	1800	410	(d)	PACE
RW-1	10/18/94	19.27	10.11	9.16	5300	47	100	150	280	2500	(d)	PACE
QC-1 (c)	10/18/94	---	---	---	430	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	PACE
RW-1	02/01/95	19.27	8.54	10.73	27000	2400	6100	1800	5300	---	4.5	ATI
QC-1 (c)	02/01/95	---	---	---	15000	1300	3300	970	2900	---	---	ATI
RW-1	04/12/95	19.27	8.21	11.06	6200	330	910	350	1500	---	5.2	ATI
QC-1 (c)	04/12/95	---	---	---	7600	400	1100	440	1900	---	---	ATI
RW-1	09/13/95	19.27	9.84	9.43	920	140	60	34	110	1200	5.1	ATI
RW-1	01/11/96	19.27	9.25	10.02	ND<50	0.95	0.61	ND<0.50	2.1	43	5.4	ATI
RW-1	04/18/96	19.27	8.73	10.54	ND<50	ND<0.5	ND<1	ND<1	ND<1	ND<10	4.7	SPL
RW-1	06/28/96	19.27	9.40	9.87	ND<50	ND<0.5	ND<1	ND<1	ND<1	ND<10	4.5	SPL
RW-1	11/05/96	19.27	10.12	9.15	ND<50	ND<0.5	ND<1.0	ND<1.0	ND<1.0	ND<10	4.9	SPL
RW-1	01/17/97	19.27	8.10	11.17	ND<50	ND<0.5	ND<1.0	ND<1.0	ND<1.0	ND<10	4.8	SPL
RW-1	05/01/97	19.27	9.43	9.84	ND<50	ND<0.5	ND<1.0	ND<1.0	ND<1.0	ND<10	4.6	SPL
RW-1	07/09/97	19.27	10.83	8.44	ND<50	ND<0.5	ND<1.0	ND<1.0	ND<1.0	ND<10	4.1	SPL
RW-1	10/16/97	19.27	11.17	8.10	---	---	---	---	---	---	---	---

TABLE 1 - SUMMARY OF RESULTS OF GROUNDWATER SAMPLING  
 BP OIL COMPANY SERVICE STATION NO. 11266  
 1541 PARK STREET, ALAMEDA, CALIFORNIA

ALISTO PROJECT NO. 10-050

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)	DO (ppm)	LAB
QC-2 (e)	10/02/92	---	---	---	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	ANA
QC-2 (e)	12/14/92	---	---	---	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	ANA
QC-2 (e)	03/24/93	---	---	---	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	PACE
QC-2 (e)	06/17/93	---	---	---	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	PACE
QC-2 (e)	09/29/93	---	---	---	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	PACE
QC-2 (e)	12/28/93	---	---	---	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	PACE
QC-2 (e)	03/29/94	---	---	---	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	PACE
QC-2 (e)	07/07/94	---	---	---	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	PACE
QC-2 (e)	10/18/94	---	---	---	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	PACE
QC-2 (e)	02/01/95	---	---	---	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<1	---	---	ATI
QC-2 (e)	04/12/95	---	---	---	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<1.0	---	---	ATI
QC-2 (e)	09/13/95	---	---	---	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<1.0	ND<5.0	---	ATI
QC-2 (e)	01/11/96	---	---	---	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<1.0	ND<5.0	---	ATI
QC-2 (e)	04/18/96	---	---	---	ND<50	ND<0.5	ND<1	ND<1	ND<1	ND<10	---	SPL
QC-2 (e)	06/28/96	---	---	---	ND<50	ND<0.5	ND<1	ND<1	ND<1	ND<10	---	SPL

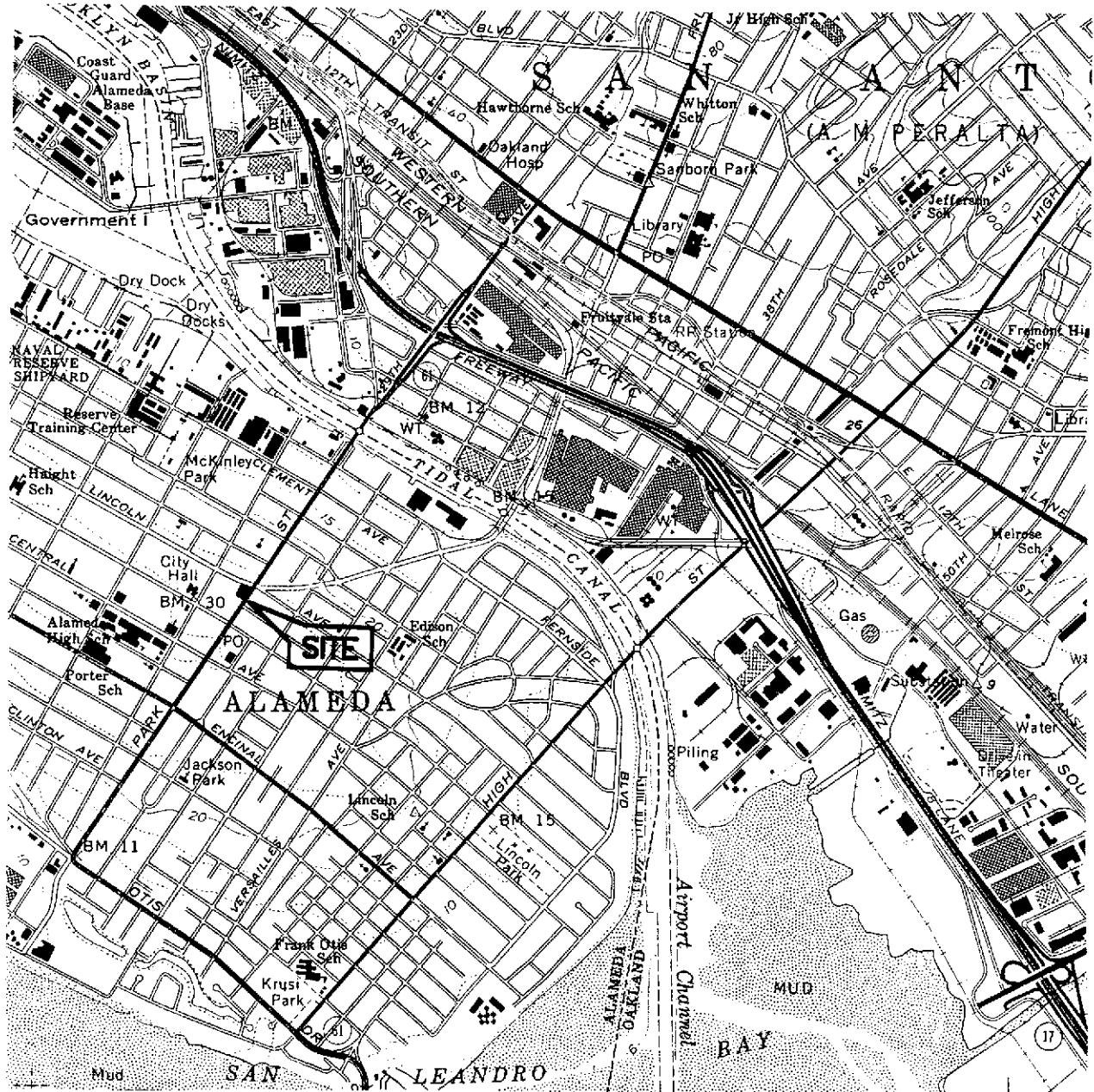
ABBREVIATIONS:

TPH-G	Total petroleum hydrocarbons as gasoline
B	Benzene
T	Toluene
E	Ethylbenzene
X	Total xylenes
MTBE	Methyl tert butyl ether
DO	Dissolved oxygen
ug/l	Micrograms per liter
ppm	Parts per million
---	Not measured/applicable/analyzed
ND	Not detected above reported detection limit
PACE	Pace, Inc.
ANA	Anametrix, Inc.
ATI	Analytical Technologies, Inc.
SPL	Southern Petroleum Laboratories

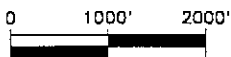
NOTES:

- (a) Casing elevations surveyed to nearest 0.01 foot above mean sea level, with an assigned elevation of 22.82 feet (City datum).
- (b) Groundwater elevations in feet above mean sea level.
- (c) Blind duplicate.
- (d) A copy of the documentation for this data is included in Appendix C of Alisto report 10-050-07-004.
- (e) Travel blank.

F:\0\10-050\050-8-1.WQ2



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

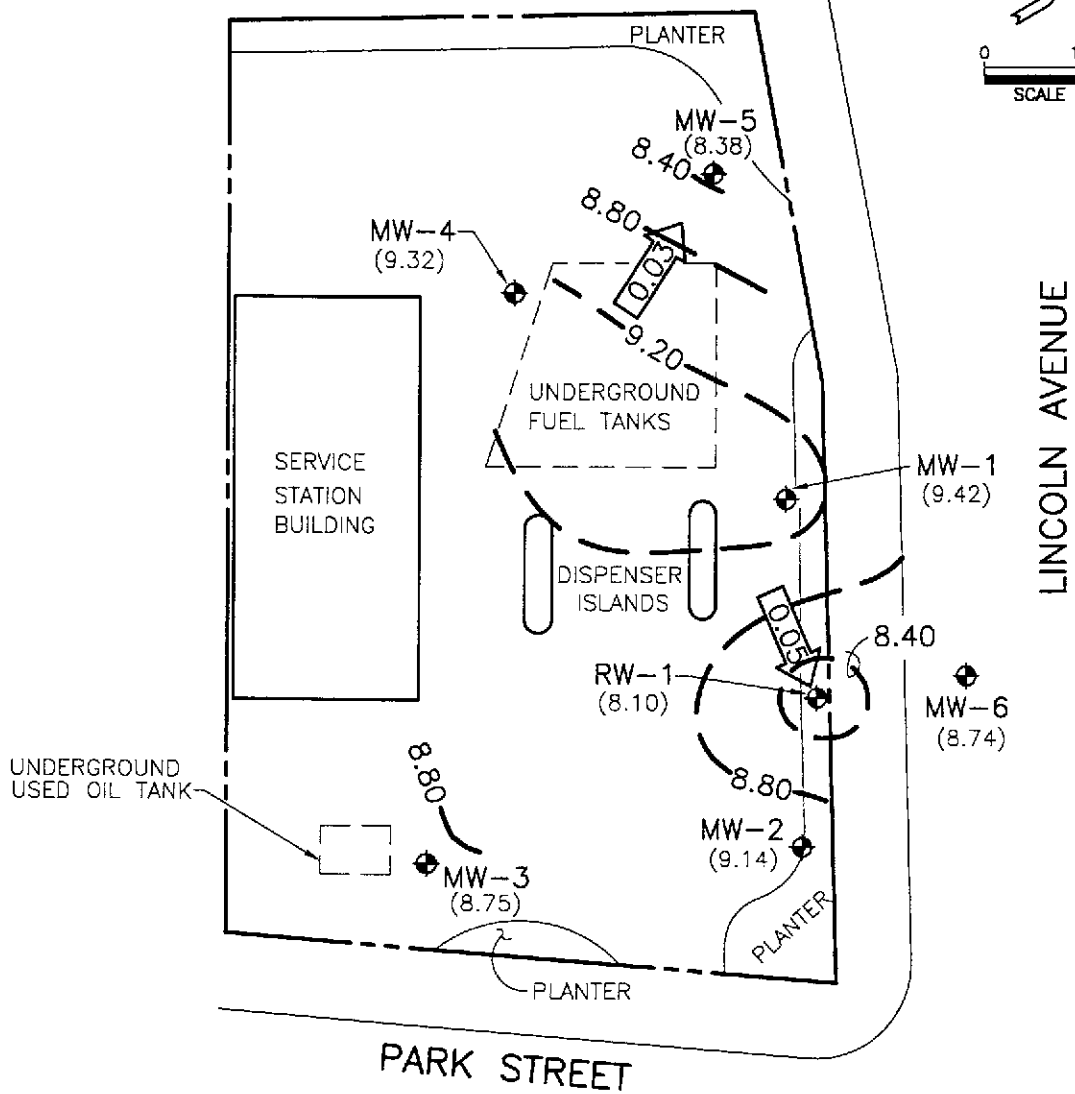
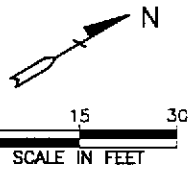


**FIGURE 1**  
**SITE VICINITY MAP**

BP OIL SERVICE STATION NO. 11266  
 1541 PARK STREET  
 ALAMEDA, CALIFORNIA  
 PROJECT NO. 10-050



**ALISTO ENGINEERING GROUP**  
 WALNUT CREEK, CALIFORNIA



**LEGEND**

- ◆ GROUNDWATER MONITORING WELL
- (8.38) GROUNDWATER ELEVATION IN FEET ABOVE MEAN SEA LEVEL
- 8.40 — GROUNDWATER ELEVATION CONTOUR IN FEET ABOVE MEAN SEA LEVEL (CONTOUR INTERVAL—0.40 FOOT)
- ← 0.03 → CALCULATED GROUNDWATER GRADIENT DIRECTION AND MAGNITUDE IN FOOT PER FOOT

**FIGURE 2**

**POTENTIOMETRIC GROUNDWATER ELEVATION CONTOUR MAP**

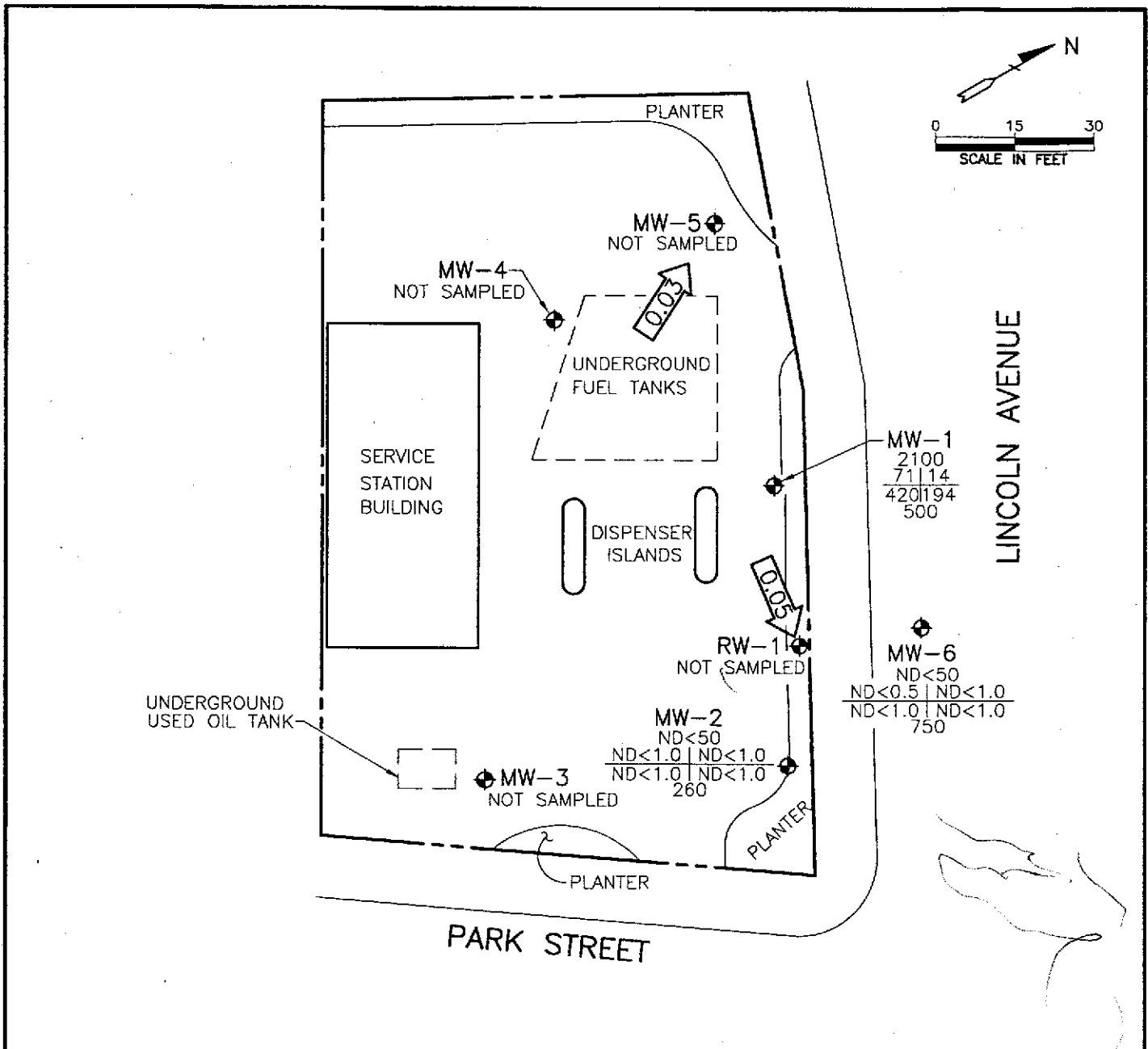
**OCTOBER 16, 1997**

BP OIL SERVICE STATION NO. 11266  
 1541 PARK STREET  
 ALAMEDA, CALIFORNIA

PROJECT NO. 10-050



**ALISTO ENGINEERING GROUP**  
 WALNUT CREEK, CALIFORNIA



**LEGEND**

- ◆ GROUNDWATER MONITORING WELL
- TPH-G CONCENTRATION OF CONSTITUENTS IN MICROGRAMS PER LITER
- B I T
- E I X
- MTBE
- 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**  
**OCTOBER 16, 1997**  
 BP OIL SERVICE STATION NO. 11266  
 1541 PARK STREET  
 ALAMEDA, CALIFORNIA  
 PROJECT NO. 10-050



**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.

10-050-08-001

Address

1541 Park St.

Contract No.

H177227

Station No.

BP 11266

Date:

10/16/97

Day:

MTWTF

City:

Alameda

Sampler:

### DEPTH TO GROUNDWATER SUMMARY

WELL ID	SAMPLE ID	WELL DIAM	TOTAL DEPTH	DEPTH TO WATER	PRODUCT THICKNESS	TIME MONITORED	COMMENTS:
MW-1	S-3	2"	21.88	9.77	0	1422	ORC OC-1 (S-4) From this well
MW-2	S-1	2"	21.88	10.18	↓	1414	
MW-3	NIS	2"	30.00	11.24	↓	1400	NS
MW-4	↓	2"	30.00	10.85	↓	1402	NS
MW-5	↓	2"	30.00	11.03	↓	1407	NS
MW-6	S-2	2"	24.24	10.66	↓	1418	ORC
RW-1	NIS	6"	29.54	11.17	↓	1410	NS

### FIELD INSTRUMENT CALIBRATION DATA

pH METER Jan 4.00 4 7.00 7 10.00 10 TEMPERATURE COMPENSATED  N TIME 1430

D.O. METER Jan ZERO d.O. SOLUTION \_\_\_\_\_ BAROMETRIC PRESSURE 760 TEMP 67 WEATHER Clear

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

LEAK DETECTOR: \_\_\_\_\_ ALARM MODE X NON ALARM MODE \_\_\_\_\_

Well ID	Depth to Water	Diam	Cap/Lock	Product Dept	Iridescence	Gal.	Time	Temp *F	pH	E.C.	D.O.	
Mw-2	10.18	2"	OK	0	Y (N)	2	1437	72.4	7.89	747 $\mu$ S	5.0	<input type="radio"/> EPA 601 _____
Total Depth - Water Level= x Well Vol. Factor= x#vol. to Purge: PurgeVol.												<input checked="" type="radio"/> TPH-G/BTEX _____
21.88 - 10.18 = 11.70 x .16 = 1.87 x 3 = 5.61												<input type="radio"/> TPH Diesel _____
Purge Method: OSurface Pump ODisp.Tube OWinch ODisp. Bailer(s) OSys Port												<input type="radio"/> TOG 5520 _____
Comments:												TIME/SAMPLE ID
												1450

Well ID	Depth to Water	Diam	Cap/Lock	Product Dept	Iridescence	Gal.	Time	Temp *F	pH	E.C.	D.O.	
Mw-6	10.66	2"	OK	0	Y (N)	2	1501	73.1	7.71	816 $\mu$ S	6.7	<input type="radio"/> EPA 601 _____
Total Depth - Water Level= x Well Vol. Factor= x#vol. to Purge: PurgeVol.												<input checked="" type="radio"/> TPH-G/BTEX _____
24.24 - 10.66 = 13.58 x .16 = 2.17 x 3 = 6.51												<input type="radio"/> TPH Diesel _____
Purge Method: OSurface Pump ODisp.Tube OWinch ODisp. Bailer(s) OSys Port												<input type="radio"/> TOG 5520 _____
Comments:												TIME/SAMPLE ID
												1515

# 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.

10-050-08-001

Address

1541 Park St.

Contract No.

H177227

Station No.

BP 11266

Sampler:

Date:

10/16/97

Day:

MTWTF

City:

Alameda

LCB

Well ID	Depth to Water	Diam	Cap/Lock	Product Dept	Iridescence	Gal.	Time	Temp *F	pH	E.C.	D.O.
Mw-1	9.77	2"	OK	Ø	Y (N)	2	1527	69.9	7.92	700µs	6.6
Total Depth - Water Level=						x Well Vol. Factor=	x#vol. to Purge		PurgeVol.		
21.88 - 9.77 = 12.11						16 = 194	3 = 5.82	4	69.1	7.71	700µs
Purge Method: OSurface Pump ODisp.Tube OWinch ODisp. Bailer(s) OSys Port						6	1536	68.7	7.63	727µs	6.8
Comments: AC-1 (S-4) From this well											

- EPA 601 \_\_\_\_\_
- TPH-G/BTEX \_\_\_\_\_
- TPH Diesel \_\_\_\_\_
- TOG 5520 \_\_\_\_\_
- TIME/SAMPLE ID**
- 1540**

Well ID	Depth to Water	Diam	Cap/Lock	Product Dept	Iridescence	Gal.	Time	Temp *F	pH	E.C.	D.O.
					Y N						
Total Depth - Water Level=						x Well Vol. Factor=	x#vol. to Purge		PurgeVol.		
Purge Method: OSurface Pump ODisp.Tube OWinch ODisp. Bailer(s) OSys Port											
Comments:											

- EPA 601 \_\_\_\_\_
- TPH-G/BTEX \_\_\_\_\_
- TPH Diesel \_\_\_\_\_
- TOG 5520 \_\_\_\_\_
- TIME/SAMPLE ID**

**APPENDIX B**

**LABORATORY REPORT AND CHAIN OF CUSTODY RECORD**



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

October 31, 1997

Mr. Scott Hooton  
BP OIL COMPANY  
295 SW 41st St, Bldg 13, Ste N  
Renton, WA 98055

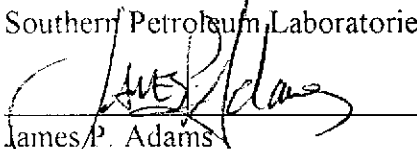
The following report contains analytical results for samples received at Southern Petroleum Laboratories (SPL) on October 22, 1997. The samples were assigned to Certificate of Analysis No.(s) 9710A56 and analyzed for all parameters as listed on the chain of custody.

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

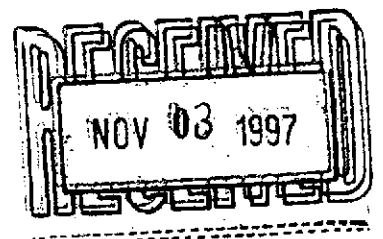
If you have any questions or comments pertaining to this data report, please do not hesitate to contact me. Please reference the above Certificate of Analysis No. during any inquiries.

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



James P. Adams  
Client Services Manager



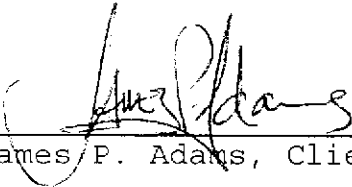


HOUSTON LABORATORY  
8880 INTERCHANGE DRIVE  
HOUSTON, TEXAS 77054  
PHONE (713) 660-0901

Southern Petroleum Laboratories, Inc.

Certificate of Analysis Number: 97-10-A56

Approved for Release by:

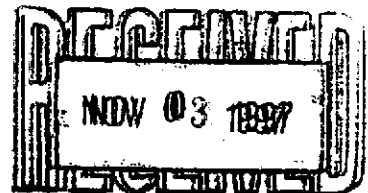
  
\_\_\_\_\_  
James P. Adams, Client Services Manager

6/31/97  
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.





Certificate of Analysis No. H9-9710A56-01

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

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

P.O.#  
NA, COC#072058  
DATE: 10/31/97

PROJECT: #11266, 1541 Park St.  
SITE: Alameda, CA  
SAMPLED BY: Alisto Engineering  
SAMPLE ID: S-1

PROJECT NO: 10-050-08-001  
MATRIX: WATER  
DATE SAMPLED: 10/16/97 14:00:00  
DATE RECEIVED: 10/22/97

ANALYTICAL DATA

PARAMETER	RESULTS	DETECTION LIMIT	UNITS
MTBE	260	1.0 P	µg/L
Benzene	ND	1.0 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  
4-Bromofluorobenzene

93  
60

Method 8020A\*\*\*

Analyzed by: LJ

Date: 10/29/97

Gasoline Range Organics

ND 0.05 P

mg/L

Surrogate

% Recovery

1,4-Difluorobenzene  
4-Bromofluorobenzene  
TFT

107  
67  
1

California LUFT Manual for Gasoline

Analyzed by: LJ

Date: 10/29/97 05:46:00

(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



Certificate of Analysis No. H9-9710A56-02

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

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

P.O.#
NA, COC#072058
DATE: 10/31/97

PROJECT: #11266, 1541 Park St.
SITE: Alameda, CA
SAMPLED BY: Alisto Engineering
SAMPLE ID: S-2

PROJECT NO: 10-050-08-001
MATRIX: WATER
DATE SAMPLED: 10/16/97 14:05:00
DATE RECEIVED: 10/22/97

ANALYTICAL DATA

Table with 5 columns: PARAMETER, RESULTS, DETECTION LIMIT, UNITS. Rows include MTBE, Benzene, Toluene, Ethylbenzene, Total Xylene.

Surrogate % Recovery
1,4-Difluorobenzene 93
4-Bromofluorobenzene 63

Method 8020A\*\*\*
Analyzed by: LJ
Date: 10/29/97

Gasoline Range Organics ND 0.05 P mg/L

Surrogate % Recovery
1,4-Difluorobenzene 103
4-Bromofluorobenzene 67
TFT 1

California LUFT Manual for Gasoline
Analyzed by: LJ
Date: 10/29/97 06:10:00

(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. H9-9710A56-03

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

P.O.#
NA, COC#072058
DATE: 10/31/97

PROJECT: #11266, 1541 Park St.
SITE: Alameda, CA
SAMPLED BY: Alisto Engineering
SAMPLE ID: S-3

PROJECT NO: 10-050-08-001
MATRIX: WATER
DATE SAMPLED: 10/16/97 14:10:00
DATE RECEIVED: 10/22/97

ANALYTICAL DATA

Table with 5 columns: PARAMETER, RESULTS, DETECTION LIMIT, UNITS. Rows include MTBE, Benzene, Toluene, Ethylbenzene, Total Xylene.

Surrogate

% Recovery

1,4-Difluorobenzene
4-Bromofluorobenzene

100
100

Method 8020A\*\*\*

Analyzed by: LJ

Date: 10/29/97

Gasoline Range Organics

2.1

0.05 P

mg/L

Surrogate

% Recovery

1,4-Difluorobenzene
4-Bromofluorobenzene
TFT

110
297MI
1

California LUFT Manual for Gasoline

Analyzed by: LJ

Date: 10/29/97 06:34:00

(P) - Practical Quantitation Limit MI - Matrix interference.

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. H9-9710A56-04

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

P.O.#  
 NA, COC#072058  
 DATE: 10/31/97

PROJECT: #11266, 1541 Park St.  
 SITE: Alameda, CA  
 SAMPLED BY: Alisto Engineering  
 SAMPLE ID: S-4

PROJECT NO: 10-050-08-001  
 MATRIX: WATER  
 DATE SAMPLED: 10/16/97 14:26:00  
 DATE RECEIVED: 10/22/97

ANALYTICAL DATA

PARAMETER	RESULTS	DETECTION LIMIT	UNITS
MTBE	510	50 P	µg/L
Benzene	80	0.5 P	µg/L
Toluene	17	1.0 P	µg/L
Ethylbenzene	500	1.0 P	µg/L
Total Xylene	276	1.0 P	µg/L

Surrogate

% Recovery

1,4-Difluorobenzene  
 4-Bromofluorobenzene

100  
 107

Method 8020A\*\*\*

Analyzed by: LJ

Date: 10/29/97

Gasoline Range Organics

2.6

0.05 P

mg/L

Surrogate

% Recovery

1,4-Difluorobenzene  
 4-Bromofluorobenzene  
 TFT

113  
 323MI  
 1

California LUFT Manual for Gasoline

Analyzed by: LJ

Date: 10/29/97 06:58:00

(P) - Practical Quantitation Limit      MI - Matrix interference.

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*



Matrix: Aqueous  
Units: µg/L

Batch Id: HP\_U971029014300

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	40	80.0	72 - 128
Benzene	ND	50	50	100	61 - 119
Toluene	ND	50	51	102	65 - 125
EthylBenzene	ND	50	49	98.0	70 - 118
O Xylene	ND	50	50	100	72 - 117
M & P Xylene	ND	100	100	100	72 - 116

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	260	20	200		NC	200
BENZENE	ND	20	20	100	19	95.0	5.13	21	32 - 164
TOLUENE	ND	20	19	95.0	19	95.0	0	20	38 - 159
ETHYLBENZENE	ND	20	18	90.0	18	90.0	0	19	52 - 142
O XYLENE	ND	20	19	95.0	18	90.0	5.41	18	53 - 143
M & P XYLENE	ND	40	36	90.0	34	85.0	5.71	17	53 - 144

Analyst: LJ

Sequence Date: 10/29/97

SPL ID of sample spiked: 9710A56-01A

Sample File ID: U\_7J107.TX0

Method Blank File ID:

Blank Spike File ID: U\_7J097.TX0

Matrix Spike File ID: U\_7J102.TX0

Matrix Spike Duplicate File ID: U\_7J103.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 (1st Q '97)

(\*\*\*) = Source: SPL-Houston Historical Data (1st Q '97)

SAMPLES IN BATCH(SPL ID):

9710A57-01A 9710A57-02A 9710A57-03A 9710A57-04A  
9710A57-05A 9710A02-07A 9710816-12A 9710A56-02A  
9710A56-03A 9710A56-04A 9710A57-06A 9710A57-07A  
9710A57-08A 9710A57-09A 9710A58-01A 9710A58-02A  
9710A56-01A 9710A56-02A 9710A56-03A 9710A56-04A



SPL BATCH QUALITY CONTROL REPORT \*\*  
California LUFT Manual for Gasoline

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

Matrix: Aqueous  
Units: mg/L

Batch Id: HP\_U971029032000

LABORATORY CONTROL SAMPLE

SPIKE COMPOUNDS	Method Blank Result <2>	Spike Added <3>	Blank Spike		QC Limits(**) (Mandatory) % Recovery Range
			Result <1>	Recovery %	
Gasoline Range Organics	ND	1.0	0.74	74.0	64 - 131

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 RANGE ORGANICS	ND	0.90	0.59	65.6	0.57	63.3	3.57	36	36 - 160

Analyst: LJ

Sequence Date: 10/29/97

SPL ID of sample spiked: 9710A56-02A

Sample File ID: UU7J108.TX0

Method Blank File ID:

Blank Spike File ID: UU7J100.TX0

Matrix Spike File ID: UU7J104.TX0

Matrix Spike Duplicate File ID: UU7J105.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 (1st Q '97)

(\*\*\*) = Source: SPL-Houston Historical Data (1st Q '97)

SAMPLES IN BATCH(SPL ID):

9710A57-01A 9710A57-02A 9710A57-03A 9710A57-04A  
9710A57-05A 9710A57-06A 9710A57-07A 9710A57-08A  
9710A57-09A 9710A58-01A 9710A58-02A 9710A56-01A  
9710A56-02A 9710A56-03A 9710A56-04A

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


# SPL Houston Environmental Laboratory

## Sample Login Checklist

Date: 10-22-97	Time: 1300
----------------	------------

SPL Sample ID: 9710A56
---------------------------

		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 #)	3848471686
		Other:	
11	Method of sample disposal:	SPL Disposal	
		HOLD	
		Return to Client	

Name: 	Date: 10-22-97
---	----------------



9710AS6

CHAIN OF CUSTODY

No. 072058

Page \_\_\_\_ of \_\_\_\_

CONSULTANT'S NAME: Austo Engineering ADDRESS: 1575 Treat Blvd Suite 201 Walnut Creek CA 94598 CITY: Walnut Creek STATE: CA ZIP CODE: 94598

BP SITE NUMBER: 11266 BP CORNER ADDRESS/CITY: 1541 Park St. Alameda CONSULTANT PROJECT NUMBER: 10-050-08-001

CONSULTANT PROJECT MANAGER: Brady Nagle PHONE NUMBER: (510) 295-1680 FAX NUMBER: (510) 295-1823 CONSULTANT CONTRACT NUMBER: -

BP CONTACT: Scott Hooton BP ADDRESS: Redon WA PHONE NUMBER: - FAX NO.: -

LAB CONTACT: SPL LABORATORY ADDRESS: Houston TX PHONE NUMBER: - FAX NO.: -

SAMPLED BY (Please Print Name): Larry Buenvenida SAMPLED BY (Signature): \_\_\_\_\_ SHIPMENT DATE: 10-21-97 SHIPMENT METHOD: Fed Ex

TAT:  24 Hours  48 Hours  1 Week  Standard 2 Weeks

ANALYSIS REQUIRED: \_\_\_\_\_ AIRBILL NUMBER: 3848471686

SAMPLE DESCRIPTION	COLLECTION DATE COLLECTION TIME	MATRIX SOIL/WATER	CONTAINERS		PRESERVATIVE	LAB SAMPLE #	COMMENTS
			NO.	TYPE (VOL.)			
S-1	1400	W	3	HLL			
S-2	1405	↓	↓	↓			
S-3	1410	↓	↓	↓			
S-4	1426	↓	↓	↓			

RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	ADDITIONAL COMMENTS
<u>P. Lyette for L. Buenvenida</u>	<u>10/21/97</u>	<u>0800</u>	<u>[Signature]</u>	<u>10-22-97</u>	<u>1000</u>	

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

BP Site Number: 11266  
ERM Contact: H177227  
Sampling Date: 10/16/97  
Matrix Description: Water  
Date Final Report Received: 11/03/97  
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 <u>30</u> %?	<u>X</u>	_____	_____
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: Surrogate recovery for S-3 and S-4 for  
4- Bromofluorobenzene during TPH-G analysis outside  
of a range due to matrix interference. MS/MSD  
recovery for MIBK not calculated (spike sample exceeds  
spike by a factor of 4 or more)

Data Validation Completed by: William Howell Brady Nagler  
(signature): Benny [Signature]  
Date: 12/1/97