



BP OIL

ENVIRONMENTAL  
PROTECTION

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

09 JAN 19 PM 3:15

January 8, 1999

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

*on semi-annual sample.  
MTBE still > 200 ppb*

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 29 December 1998 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 11 September 1998. You will note that aromatic petroleum hydrocarbons were detected in samples obtained from monitoring well MW-1. The highest benzene concentrations this quarter (65  $\mu\text{g/l}$  and 81  $\mu\text{g/l}$ ) were detected in replicate samples obtained from well MW-1, located to the north of the product lines.

MTBE was detected in samples obtained from wells MW-1 (1700  $\mu\text{g/l}$  and 1800  $\mu\text{g/l}$ ), MW-2 (31  $\mu\text{g/l}$ ), and MW-6 (59  $\mu\text{g/l}$ ) on 11 September 1998.

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  
David Camille - Tosco (w/attachment)

**GROUNDWATER MONITORING AND SAMPLING REPORT**

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

**Project No. 10-050-08-004**

**JAN - 7 1999**

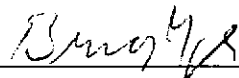
**Prepared for:**

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

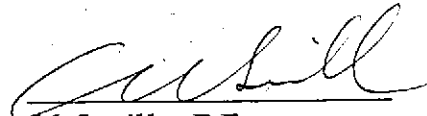
**Prepared by:**

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

**December 29, 1998**



**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. 10-050-08-004

December 29, 1998

## INTRODUCTION

This report presents the results and findings of the September 11, 1998 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
MW-1	01/08/98	19.19	8.36	10.83	2500	33	21	180	183	1200	6.1	SPL
QC-1 (c)	01/08/98	---	---	---	2400	32	20	170	154	1300	---	SPL
MW-1	04/17/98	19.19	7.48	11.71	14000	140	410	730	1980	2400	3.7	SPL
QC-1 (c)	04/17/98	---	---	---	14000	140	460	770	2220	2500	---	SPL
MW-1	09/11/98	19.19	9.30	9.89	7700	65	38	580	880	1700	5.6	SPL
QC-1 (c)	09/11/98	---	---	---	10000	81	59	710	1410	1800	---	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
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
MW-2	01/08/98	19.32	9.04	10.28	ND<50	ND<0.5	ND<1.0	ND<1.0	ND<1.0	18	4.4	SPL
MW-2	04/17/98	19.32	8.56	10.76	ND<50	ND<0.5	ND<1.0	ND<1.0	ND<1.0	ND<10	3.9	SPL
MW-2	09/11/98	19.32	9.79	9.53	ND<50	ND<0.5	ND<1.0	ND<1.0	ND<1.0	31	6.1	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
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	---	---	---	---	---	---	---	---
MW-3	01/08/98	19.99	10.12	9.87	---	---	---	---	---	---	---	---
MW-3	04/17/98	19.99	9.62	10.37	---	---	---	---	---	---	---	---
MW-3	09/11/98	19.99	10.83	9.16	---	---	---	---	---	---	---	---

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-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	---	---	---	---	---	---	---	---
MW-4	01/08/98	20.17	9.60	10.57	---	---	---	---	---	---	---	---
MW-4	04/17/98	20.17	9.11	11.06	---	---	---	---	---	---	---	---
MW-4	09/11/98	20.17	10.32	9.85	---	---	---	---	---	---	---	---

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-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	11.58	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	---	---	---	---	---	---	---	---
MW-5	01/08/98	19.41	10.00	9.41	---	---	---	---	---	---	---	---
MW-5	04/17/98	19.41	8.73	10.68	---	---	---	---	---	---	---	---
MW-5	09/11/98	19.41	9.91	9.50	---	---	---	---	---	---	---	---



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
MW-6	01/08/98	19.40	8.92	10.48	120	ND<0.5	ND<1.0	ND<1.0	ND<1.0	120	5.6	SPL
MW-6	04/17/98	19.40	8.12	11.28	ND<50	ND<0.5	ND<1.0	ND<1.0	ND<1.0	62	3.9	SPL
MW-6	09/11/98	19.40	9.31	10.09	ND<50	ND<0.5	ND<1.0	ND<1.0	ND<1.0	59	5.5	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)	3.4	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	---	---	---	---	---	---	---	---
RW-1	01/08/98	19.27	10.03	9.24	---	---	---	---	---	---	---	---
RW-1	04/17/98	19.27	8.79	10.48	---	---	---	---	---	---	---	---
RW-1	09/11/98	19.27	9.98	9.29	---	---	---	---	---	---	---	---

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.

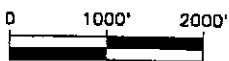
F:\010-050\10-050GW.WQ2



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



QUADRANGLE LOCATION



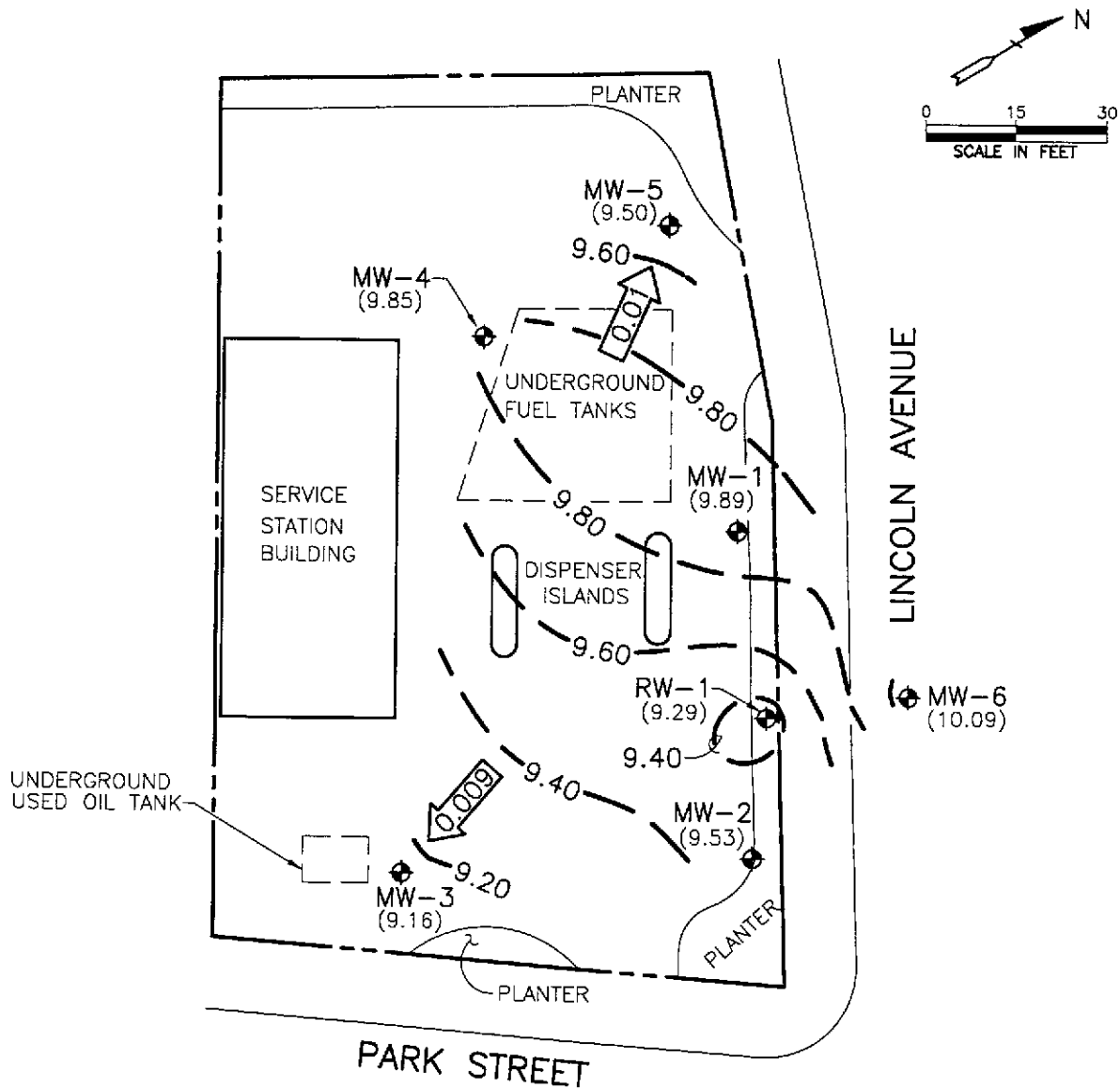
**FIGURE 1**

**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
- (9.50) GROUNDWATER ELEVATION IN FEET ABOVE MEAN SEA LEVEL
- 9.60 - GROUNDWATER ELEVATION CONTOUR IN FEET ABOVE MEAN SEA LEVEL (CONTOUR INTERVAL-0.20 FOOT)
- ← 0.01 ← CALCULATED GROUNDWATER GRADIENT DIRECTION AND MAGNITUDE IN FOOT PER FOOT

**NOTE:**

Potentiometric groundwater elevation contours were generated with Quicksurf using the Kriging method with a spherical variogram on a triangulated grid surface.

**FIGURE 2**

**POTENTIOMETRIC GROUNDWATER ELEVATION CONTOUR MAP**

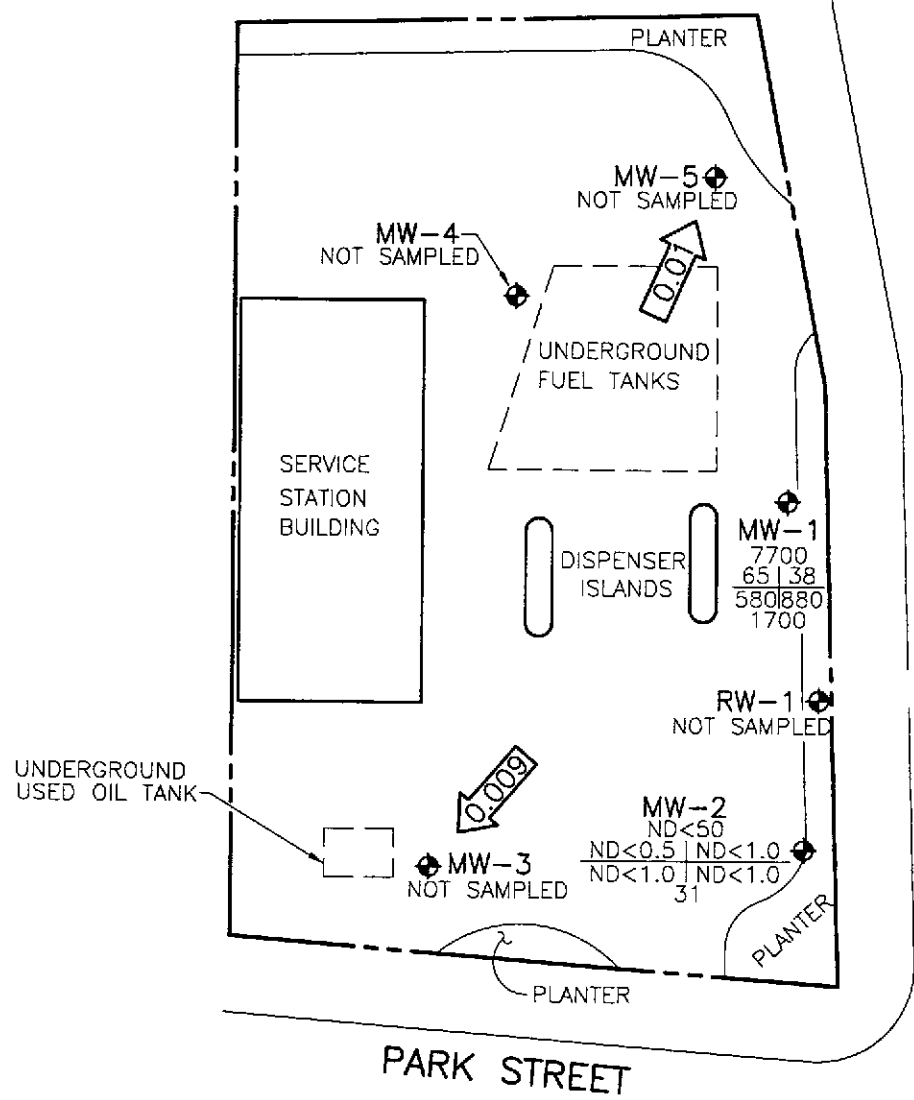
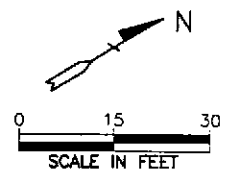
**SEPTEMBER 11, 1998**

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

PROJECT NO. 10-050



**ALISTO ENGINEERING GROUP**  
WALNUT CREEK, CALIFORNIA



LINCOLN AVENUE

MW-6  
 ND<50  
 ND<0.5 | ND<1.0  
 ND<1.0 | ND<1.0  
 59

RW-1  
 NOT SAMPLED

MW-1  
 7700  
 65 | 38  
 580 | 880  
 1700

MW-5  
 NOT SAMPLED

MW-4  
 NOT SAMPLED

MW-2  
 ND<50  
 ND<0.5 | ND<1.0  
 ND<1.0 | ND<1.0  
 31

MW-3  
 NOT SAMPLED

**LEGEND**

- ◆ GROUNDWATER MONITORING WELL
- TPH-G CONCENTRATION OF CONSTITUENTS IN MICROGRAMS PER LITER
- B | T | E | X 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
- ←0.01 CALCULATED GROUNDWATER GRADIENT DIRECTION AND MAGNITUDE IN FOOT PER FOOT

**FIGURE 3**  
**CONCENTRATIONS OF PETROLEUM HYDROCARBONS IN GROUNDWATER**  
**SEPTEMBER 11, 1998**  
 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 (925) 295-1650 FAX 295-1823

Project No.

10-050-08-004

Date:

9/11/98

Address

1541 Park St.

Day:

MTWTHF

Contract No.

H177227

City:

Alameda

Station No.

BP 11266

Sampler:

LB

### 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	9.30	Ø	1423	4no Cal "76" ORC
MW-2	S-1	2"	21.88	9.79		1417	ORC-1 (S-4) From this well
MW-3	N/S	2"	N/m	10.83		1410	NS
MW-4	↓	2"	↓	10.32		1413	NS
MW-5	↓	2"	↓	9.91		1418	NS
MW-6	S-2	2"	24.24	9.31		1420	ORC There are no ORC's in mw-6
RW-1	N/S	6"	N/m	9.98	✓	1421	NS

### FIELD INSTRUMENT CALIBRATION DATA

pH METER Ism 4.00 4 7.00 7 10.00 10 TEMPERATURE COMPENSATED Ø N TIME 1140

D.O. METER Ism ZERO d.O. SOLUTION \_\_\_\_\_ BAROMETRIC PRESSURE 760 TEMP 72 WEATHER Clear

CONDUCTIVITY METER Ism 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	9.79	2"	Ø	Ø	Y (N)	2	1501	68.7	7.49	742µs	5.7	<input type="checkbox"/> EPA 601 _____
Total Depth - Water Level=						4		67.1	7.33	769µs		<input checked="" type="checkbox"/> TPH-G/BTEX _____
x Well Vol. Factor=						6	1510	66.6	7.24	773µs	6.1	<input type="checkbox"/> TPH Diesel _____
x#Vol. to Purge. PurgeVol.												<input type="checkbox"/> TOG 5520 _____
Purge Method: <input checked="" type="checkbox"/> Surface Pump <input type="checkbox"/> Disp. Tube <input type="checkbox"/> Winch <input type="checkbox"/> Disp. Bailer(s) <input type="checkbox"/> OSys Port												TIME/SAMPLE ID
Comments:												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.

10-050-08-004

Address

1541 Park St.

Contract No.

H177227

Station No.

BP 11266

Sampler:

Date:

9/11/98

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-6	9.31	2"	OK		Y (N)	3	1531	70.1	7.91	822 <sub>us</sub>	4.9
Total Depth - Water Level=						5		69.4	7.72	836 <sub>us</sub>	
x Well Vol. Factor=						8	1542	68.4	7.68	844 <sub>us</sub>	5.5
x#vol. to Purge PurgeVol.											
Purge Method: <input checked="" type="checkbox"/> Surface Pump <input type="checkbox"/> Disp. Tube <input type="checkbox"/> Winch <input type="checkbox"/> Disp. Bailer(s) <input type="checkbox"/> Sys Port											

- EPA 601
- TPH-G/BTEX
- TPH Diesel
- TOG 5520

TIME/SAMPLE ID

1543

Comments:

Well ID	Depth to Water	Diam	Cap/Lock	Product Dept	Iridescence	Gal.	Time	Temp *F	pH	E.C.	D.O.
MW-1	9.30	2"	OK		Y (N)	2	1601	68.3	7.81	687 <sub>us</sub>	5.3
Total Depth - Water Level=						4		67.2	7.63	717 <sub>us</sub>	
x Well Vol. Factor=						7	1615	67.0	7.55	721 <sub>us</sub>	5.6
x#vol. to Purge PurgeVol.											
Purge Method: <input checked="" type="checkbox"/> Surface Pump <input type="checkbox"/> Disp. Tube <input type="checkbox"/> Winch <input type="checkbox"/> Disp. Bailer(s) <input type="checkbox"/> Sys Port											

- EPA 601
- TPH-G/BTEX
- TPH Diesel
- TOG 5520

TIME/SAMPLE ID

1615

Comments:

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: <input type="checkbox"/> Surface Pump <input type="checkbox"/> Disp. Tube <input type="checkbox"/> Winch <input type="checkbox"/> Disp. Bailer(s) <input type="checkbox"/> Sys Port											

- EPA 601
- TPH-G/BTEX
- TPH Diesel
- TOG 5520

TIME/SAMPLE ID

Comments:

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: <input type="checkbox"/> Surface Pump <input type="checkbox"/> Disp. Tube <input type="checkbox"/> Winch <input type="checkbox"/> Disp. Bailer(s) <input type="checkbox"/> Sys Port											

- EPA 601
- TPH-G/BTEX
- TPH Diesel
- TOG 5520

TIME/SAMPLE ID

Comments:

**APPENDIX B**

**LABORATORY REPORT AND CHAIN OF CUSTODY RECORD**



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

September 21, 1998

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

The following report contains analytical results for the sample(s) received at Southern Petroleum Laboratories (SPL) on September 15, 1998. The sample(s) was assigned to Certificate of Analysis No.(s) 9809506 and analyzed for all parameters as listed on the chain of custody.

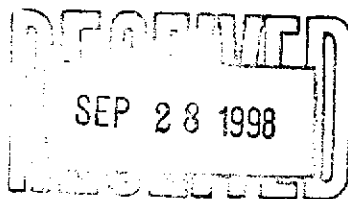
Any data flags or quality control exceptions associated with this report will be footnoted in the analytical results page(s) or the quality control summary page(s).

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

  
\_\_\_\_\_  
Joel Grice  
Senior Organic Project Manager



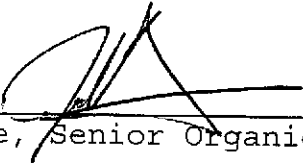


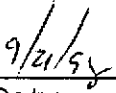
HOUSTON LABORATORY  
8880 INTERCHANGE DRIVE  
HOUSTON, TEXAS 77054  
PHONE (713) 660-0901

Southern Petroleum Laboratories, Inc.

Certificate of Analysis Number: 98-09-506

Approved for Release by:

  
\_\_\_\_\_  
Joel Grice, Senior Organic Project Manager

  
\_\_\_\_\_  
Date:

Greg Grandits  
Laboratory Director

Cynthia Schreiner  
Quality Assurance Officer

The attached analytical data package may not be reproduced except in full without the express written approval of this laboratory.  
The results relate only to the samples tested.  
Results reported on a Wet Weight Basis unless otherwise noted.



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

Certificate of Analysis No. H9-9809506-01

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

P.O.#  
H177227, COC#095815  
DATE: 09/21/98

PROJECT: #11266, N/A  
SITE: Alameda, CA  
SAMPLED BY: Alisto Engineering  
SAMPLE ID: S-1

PROJECT NO: 10-050-8-4  
MATRIX: WATER  
DATE SAMPLED: 09/11/98  
DATE RECEIVED: 09/15/98

ANALYTICAL DATA

PARAMETER	RESULTS	DETECTION LIMIT	UNITS
MTBE	31	10 P	ug/L
Benzene	ND	0.5 P	ug/L
Toluene	ND	1.0 P	ug/L
Ethylbenzene	ND	1.0 P	ug/L
Total Xylene	ND	1.0 P	ug/L
<b>Surrogate</b>	<b>% Recovery</b>		
1,4-Difluorobenzene	93		
4-Bromofluorobenzene	93		
Method 8020A***			
Analyzed by: YN			
Date: 09/17/98			
Gasoline Range Organics	ND	0.05 P	mg/L
<b>Surrogate</b>	<b>% Recovery</b>		
1,4-Difluorobenzene	77		
4-Bromofluorobenzene	90		
California LUFT Manual for Gasoline			
Analyzed by: YN			
Date: 09/17/98 01:59:00			

(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. H9-9809506-02

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

P.O.#  
 H177227, COC#095815  
 DATE: 09/21/98

PROJECT: #11266, N/A  
 SITE: Alameda, CA  
 SAMPLED BY: Alisto Engineering  
 SAMPLE ID: S-2

PROJECT NO: 10-050-8-4  
 MATRIX: WATER  
 DATE SAMPLED: 09/11/98  
 DATE RECEIVED: 09/15/98

ANALYTICAL DATA

PARAMETER	RESULTS	DETECTION LIMIT	UNITS
MTBE	59	10 P	ug/L
Benzene	ND	0.5 P	ug/L
Toluene	ND	1.0 P	ug/L
Ethylbenzene	ND	1.0 P	ug/L
Total Xylene	ND	1.0 P	ug/L

Surrogate

% Recovery

1,4-Difluorobenzene  
 4-Bromofluorobenzene

93  
 90

Method 8020A\*\*\*

Analyzed by: YN

Date: 09/17/98

Gasoline Range Organics

ND 0.05 P

mg/L

Surrogate

% Recovery

1,4-Difluorobenzene  
 4-Bromofluorobenzene

77  
 90

California LUFT Manual for Gasoline

Analyzed by: YN

Date: 09/17/98 02:36:00

(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. H9-9809506-03

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

P.O.#  
 H177227, COC#095815  
 DATE: 09/21/98

PROJECT: #11266, N/A  
 SITE: Alameda, CA  
 SAMPLED BY: Alisto Engineering  
 SAMPLE ID: S-3

PROJECT NO: 10-050-8-4  
 MATRIX: WATER  
 DATE SAMPLED: 09/11/98  
 DATE RECEIVED: 09/15/98

**ANALYTICAL DATA**

PARAMETER	RESULTS	DETECTION LIMIT	UNITS
MTBE	1700	50 P	ug/L
Benzene	65	2.5 P	ug/L
Toluene	38	5.0 P	ug/L
Ethylbenzene	580	5.0 P	ug/L
Total Xylene	880	5.0 P	ug/L
<b>Surrogate</b>		<b>% Recovery</b>	
1,4-Difluorobenzene		93	
4-Bromofluorobenzene		87	
Method 8020A***			
Analyzed by: YN			
Date: 09/16/98			
Gasoline Range Organics	7.7	0.25 P	mg/L
<b>Surrogate</b>		<b>% Recovery</b>	
1,4-Difluorobenzene		80	
4-Bromofluorobenzene		100	
California LUFT Manual for Gasoline			
Analyzed by: YN			
Date: 09/16/98 08:57:00			

(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. H9-9809506-04

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

P.O.#  
 H177227, COC#095815  
 DATE: 09/21/98

PROJECT: #11266, N/A  
 SITE: Alameda, CA  
 SAMPLED BY: Alisto Engineering  
 SAMPLE ID: S-4

PROJECT NO: 10-050-8-4  
 MATRIX: WATER  
 DATE SAMPLED: 09/11/98  
 DATE RECEIVED: 09/15/98

**ANALYTICAL DATA**

PARAMETER	RESULTS	DETECTION LIMIT	UNITS
MTBE	1800	50 P	ug/L
Benzene	81	2.5 P	ug/L
Toluene	59	5.0 P	ug/L
Ethylbenzene	710	5.0 P	ug/L
Total Xylene	1410	5.0 P	ug/L

**Surrogate**

**% Recovery**

1,4-Difluorobenzene  
 4-Bromofluorobenzene

87  
 87

Method 8020A\*\*\*

Analyzed by: YN

Date: 09/16/98

Gasoline Range Organics

10 0.25 P

mg/L

**Surrogate**

**% Recovery**

1,4-Difluorobenzene  
 4-Bromofluorobenzene

80  
 87

California LUFT Manual for Gasoline

Analyzed by: YN

Date: 09/16/98 09:35:00

(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*



\*\* SPL BATCH QUALITY CONTROL REPORT \*\*

Method 8020A\*\*\*

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

Batch Id: HP\_S980916103900

Units: ug/L

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 %	
MTBE	ND	50	42	84.0	72 - 128
Benzene	ND	50	43	86.0	61 - 119
Toluene	ND	50	45	90.0	65 - 125
EthylBenzene	ND	50	40	80.0	70 - 118
O Xylene	ND	50	43	86.0	72 - 117
M & P Xylene	ND	100	89	89.0	72 - 116

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
			MTBE	ND	20	19	95.0	19	95.0
BENZENE	ND	20	20	100	19	95.0	5.13	21	32 - 164
TOLUENE	ND	20	17	85.0	16	80.0	6.06	20	38 - 159
ETHYLBENZENE	ND	20	15	75.0	14	70.0	6.90	19	52 - 142
O XYLENE	ND	20	10	50.0 *	9.3	46.5 *	7.25	18	53 - 143
M & P XYLENE	ND	40	9.1	22.8 *	8.2	20.5 *	10.6	17	53 - 144

\* = Values outside QC Range due to Matrix Interference (except RPD)

< = 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)

Analyst: YN

Sequence Date: 09/16/98

SPL ID of sample spiked: 9809507-02A

Sample File ID: S\_I2065.TX0

Method Blank File ID:

Blank Spike File ID: S\_I2048.TX0

Matrix Spike File ID: S\_I2071.TX0

Matrix Spike Duplicate File ID: S\_I2072.TX0

SAMPLES IN BATCH(SPL ID):

9809512-01A 9809507-02A 9809506-01A 9809506-02A  
 9809507-01A 9809507-03A 9809326-09A 9809326-10A  
 9809326-12A 9809506-03A 9809506-04A



**\*\* SPL BATCH QUALITY CONTROL REPORT \*\***

California LUFT Manual for Gasoline

**HOUSTON LABORATORY**

8880 INTERCHANGE DRIVE

HOUSTON, TEXAS 77054

PHONE (713) 660-0901

Batch Id: HP\_S980916092100

Units: mg/L

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	0.81	81.0	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	0.74	82.2	0.85	94.4	13.8	36	36 - 160

Analyst: YN

Sequence Date: 09/16/98

SPL ID of sample spiked: 9809506-01A

Sample File ID: SSI2066.TX0

Method Blank File ID:

Blank Spike File ID: SSI2049.TX0

Matrix Spike File ID: SSI2073.TX0

Matrix Spike Duplicate File ID: SSI2074.TX0

\* = Values outside QC Range due to Matrix Interference (except RPD)

\* = 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):

9809507-02A 9809506-01A 9809506-02A 9809507-01A  
 9809507-03A 9809506-03A 9809506-04A 9809512-01A

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

# SPL Houston Environmental Laboratory

## Sample Login Checklist

Date: 9-15-98	Time: 10 <sup>00</sup>
---------------	------------------------

SPL Sample ID:

9809506

		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 #)	805188475416
		Other:	
11	Method of sample disposal:	SPL Disposal	
		HOLD	
		Return to Client	

Name:	Date: 9-15-98
-------	---------------



9809506

CHAIN OF CUSTODY

No. 095815

Page 1 of 1

CONSULTANT'S NAME <b>Alisto Engineering</b>		CONSULTANT'S ADDRESS <b>1575 Trent Blvd #201 W.C. Ca 94598</b>	
BP SITE NUMBER <b>11266</b>	BP SITE / FACILITY ADDRESS <b>Alameda, Ca</b>		CONSULTANT PROJECT NUMBER <b>10-050-8-4</b>
CONSULTANT PROJECT MANGER <b>Brady Nagle</b>	PHONE NUMBER <b>(925) 295-1650</b>	FAX NUMBER <b>295-1823</b>	CONSULTANT CONTRACT NUMBER <b>#177227</b>
BP CONTACT <b>Scott Hooton</b>	BP ADDRESS <b>Denton</b>	PHONE NUMBER _____	FAX NO. _____
LAB CONTACT <b>SPL</b>	LABORATORY ADDRESS <b>Texas</b>	PHONE NUMBER _____	FAX NO. _____
BP CONTACT REQUESTING RUSH TAT (Print BP Contact Name)	RUSH REQUESTED OF (Print Consultant Contact Name)	DATE/TIME	SHIPMENT DATE <b>9/14/98</b>
			SHIPMENT METHOD <b>FedEx</b>

TAT:  24 Hours  48 Hours  72 Hours  Standard 7 or 14 Days

ANALYSIS REQUIRED

AIRBILL NUMBER **805188475416**

SAMPLE DESCRIPTION	COLLECTION DATE	COLLECTION TIME	MATRIX SOIL/WATER	CONTAINERS		PRESERVATIVE	LAB SAMPLE #	TAP-GI	STYRE	XMTBE	COMMENTS
				NO.	TYPE (VOL.)						
S-1	9/11/98		W	3	HCL			X	X		
S-2	↓		↓	3	↓			↓	↓		
S-3	↓		↓	3	↓			↓	↓		
S-4	↓		↓	3	↓			↓	↓		

SAMPLED BY (Please Print Name) \_\_\_\_\_ SAMPLED BY (Signature) \_\_\_\_\_ ADDITIONAL COMMENTS **4°C**

RELINQUISHED BY / AFFILIATION (Print Name / Signature)	DATE	TIME	ACCEPTED BY / AFFILIATION (Print Name / Signature)	DATE	TIME
<i>[Signature]</i>	9/14/98	8 AM	<i>[Signature]</i>	9/14/98	1445
<i>[Signature]</i>	9/14/98	1450			
			<i>[Signature]</i>	9-15-98	1000

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

BP Site Number: 11266  
ERM Contract: H177227  
Sampling Date: 9/11/98  
Matrix Description: Water  
Date Final Report Received: 9/28/98  
Laboratory & Location: SPL, Houston, Texas

	Yes	No	N/A
1. Is BP contract release number consistent with analytical report?	<u>  X  </u>	<u>      </u>	<u>      </u>
2. Was report submitted within the specified timeframe?	<u>  X  </u>	<u>      </u>	<u>      </u>
3. Does report agree with the COC?	<u>  X  </u>	<u>      </u>	<u>      </u>
4. Are units consistent with the given matrix?	<u>  X  </u>	<u>      </u>	<u>      </u>
5. Were any target analytes/compounds detected in blanks (i.e., trip or equipment)?	<u>      </u>	<u>      </u>	<u>  X  </u>
6. Are duplicate water samples within 30%?	<u>  X  </u>	<u>      </u>	<u>      </u>
7. Are holding times met?	<u>  X  </u>	<u>      </u>	<u>      </u>
8. Are surrogates within limits using laboratory criteria?	<u>  X  </u>	<u>      </u>	<u>      </u>
9. Are MS/MSD acceptable using laboratory criteria?	See Below	<u>      </u>	<u>      </u>
10. Are LCS results acceptable using laboratory criteria?	<u>  X  </u>	<u>      </u>	<u>      </u>

MS/MSD relative % difference value for xylenes in the matrix spike were outside QC range due to matrix interference. MS/MSD limits are advisory only; as stated in SW-846, Section 8.7 to 8.8, if the MS/MSD results fall outside the advisable ranges, a laboratory control samples (LCS) must be analyzed and fall within those ranges. LCS results are within quality control limits.

Data Validation Completed by: Brady Nagle

(signature): Brady Nagle

Date: 12/28/98