



BP OIL

ENVIRONMENTAL PROTECTION

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

99 JUL -9 PM 2:41

July 3, 1999

Alameda County Health Care Services Agency
Attention Mr. Amir K. Gholami
1131 Harbor Bay Parkway, STE 250
Alameda, CA 94502-6577

RE: Former BP Oil Site No. 11107
18501 Hesperian Boulevard (at Bockman)
San Lorenzo, CA
STID 780

STID
780

RESPONDED to 10/7/99

Dear Mr. Gholami:

This transmits the *Second Quarter 1999 Groundwater Monitoring* report prepared by Blaine Tech Services on behalf of BP. The report summarizes chemical data obtained since 1992, including the results associated with samples recently collected on 23 April 1999.

Please contact me at (425) 251-0689 if you have questions or concerns.

Sincerely,

Scott Hooton

attachment

cc: site file
Khaled Rahman - Cambria
David Camille - Tosco (w/attachment)

BLAINE
TECH SERVICES INC.



1680 ROGERS AVENUE
SAN JOSE, CALIFORNIA 95112-1105
(408) 573-7771 FAX
(408) 573-0555 PHONE

June 21, 1999

Scott Hooton
BP Oil Company
295 SW 41st Street, Bldg. 13, Suite N
Renton, WA 98055-4931

2nd Quarter 1999 Monitoring at 11107

Second Quarter 1999 Groundwater Monitoring
BP Service Station Number 11107
18501 Hesperian Boulevard
San Lorenzo, CA

Monitoring Performed on April 23, 1999

Groundwater Sampling Report 990423-L-1

This report covers the routine monitoring of groundwater wells at this BP facility. Blaine Tech Services, Inc.'s work at the site includes inspection, gauging, evacuation, purgewater containment, sample collection and sample handling in accordance with standard procedures that conform to Regional Water Quality Control Board requirements.

Routine field data collection includes depth to water, total well depth, thickness of any separate immiscible layer, water column volume, the appropriate calculated purge volume, elapsed evacuation time, total volume of water removed, and standard water parameter instrument readings. Sample material is collected, contained, stored, and transported to the laboratory in conformance with EPA standards. Purgewater is, likewise, collected and transported to Seaport Petroleum Corporation for disposal.

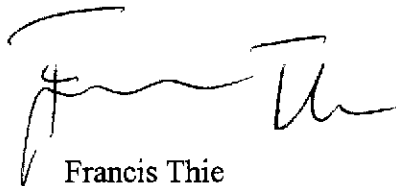
Basic field information is presented alongside analytical values excerpted from the laboratory report in the cumulative table of **WELL DATA AND ANALYTICAL RESULTS**. The full analytical report for the most recent samples is located in the **Analytical Appendix**. The **Professional Engineering Appendix** contains a **Groundwater Elevation Map** and a **Dissolved Petroleum Hydrocarbon Concentration Map**.

At a minimum, Blaine Tech Services, Inc. field personnel are certified upon completion of a forty-hour Hazardous Materials and Emergency Response training course per 29 CFR 1910.120. Field personnel are also enrolled in annual eight hour refresher courses.

Blaine Tech Services, Inc. conducts sampling and documentation assignments of this type as an independent third party. In order to avoid compromising the objectivity necessary for the proper and disinterested performance of this work, Blaine Tech Services, Inc. concentrates on objective data collection and does not participate in the interpretation of analytical results, the definition of geological or hydrological conditions, the formulation of recommendations, or the marketing of remedial systems.

Please call if you have any questions.

Yours truly,

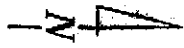
A handwritten signature in black ink, appearing to read 'Francis Thie', written in a cursive style.

Francis Thie
Vice President

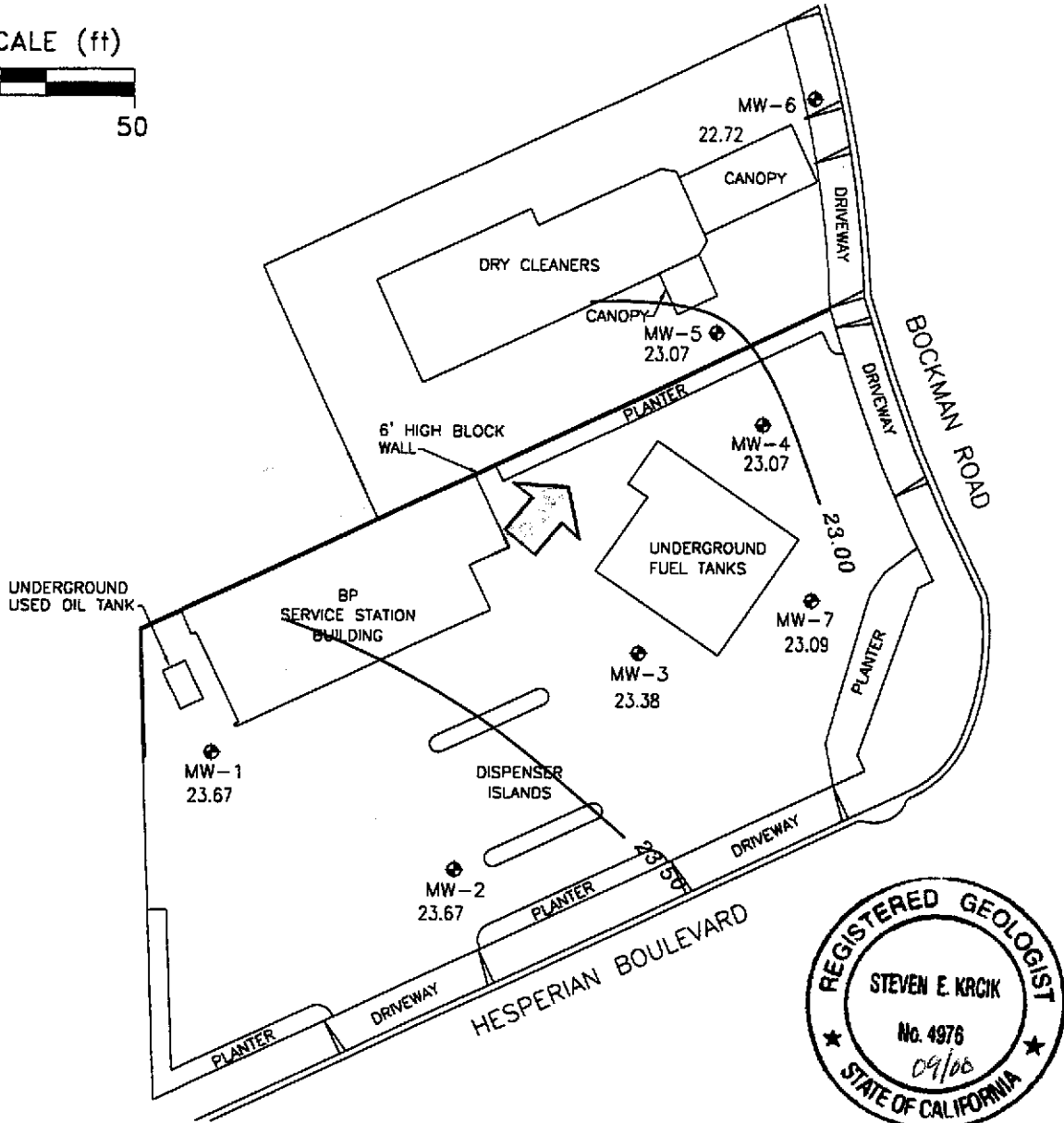
FPT/ck

attachments: Professional Engineering Appendix
Cumulative Table of Well Data and Analytical Results
Analytical Appendix
Field Data Sheets

Professional Engineering Appendix



SCALE (ft)



EXPLANATION

- ⊕ GROUNDWATER MONITORING WELL
- 23.67 GROUNDWATER ELEVATION (FT, MSL)
- 23.50 — GROUNDWATER ELEVATION CONTOUR (FT, MSL)
- APPROXIMATE GROUNDWATER FLOW DIRECTION;
APPROXIMATE GRADIENT = 0.003

Ref. 111107bm.dwg
Base map from Alisto Engineering Group

PREPARED BY



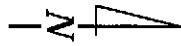
RRM
engineering contracting firm

BP Service Station No. 11107
18501 Hesperian Boulevard
San Lorenzo, California

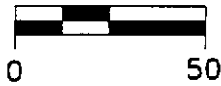
GROUNDWATER ELEVATION CONTOUR MAP,
APRIL 23, 1999

FIGURE:
1

PROJECT:
DAC04



SCALE (ft)

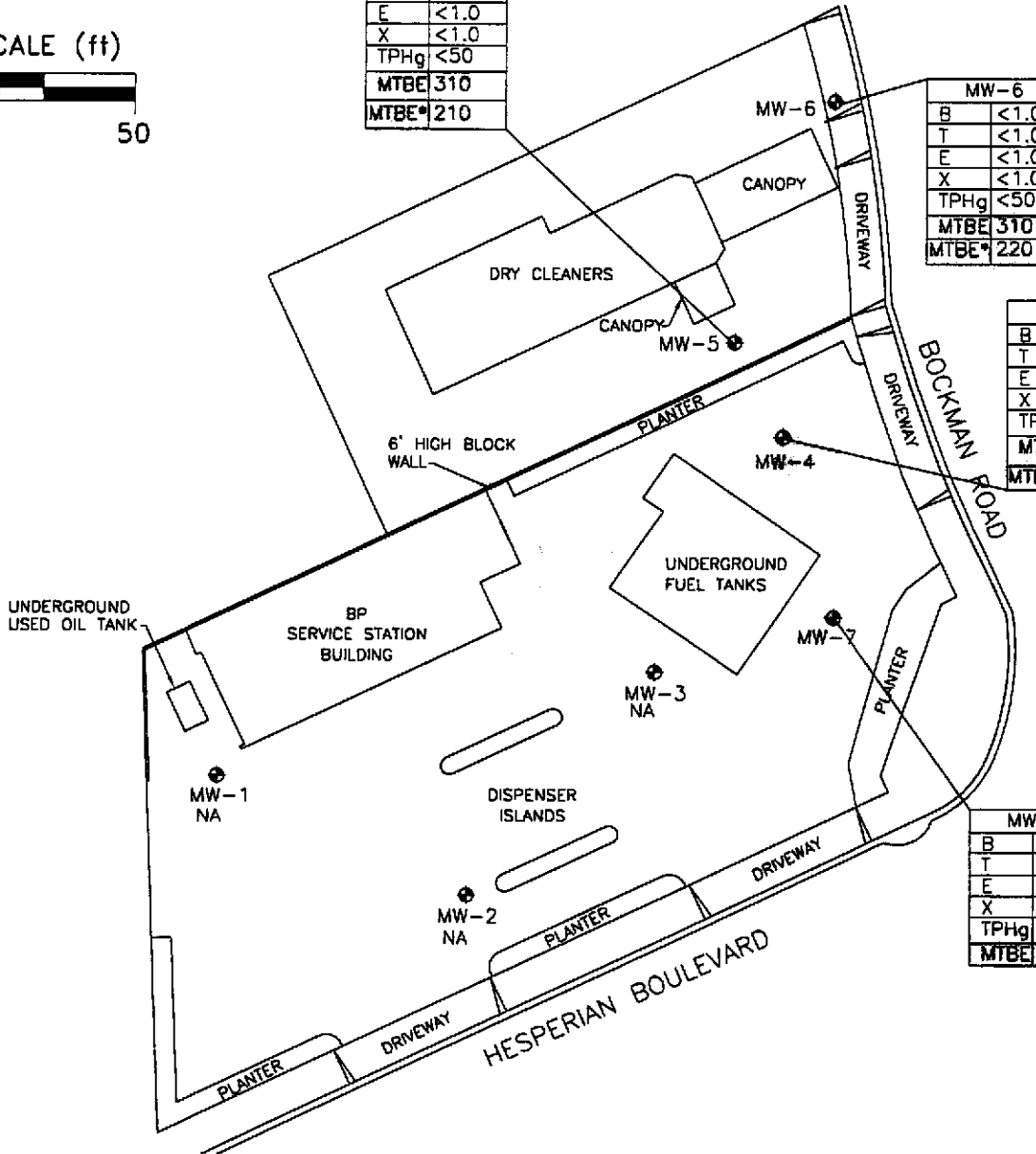


MW-5	
B	<1.0
T	<1.0
E	<1.0
X	<1.0
TPHg	<50
MTBE	310
MTBE*	210

MW-6	
B	<1.0
T	<1.0
E	<1.0
X	<1.0
TPHg	<50
MTBE	310
MTBE*	220

MW-4	
B	<1.0
T	<1.0
E	1.8
X	1.3
TPHg	<50
MTBE	1100
MTBE*	810

MW-7	
B	<1.0
T	<1.0
E	<1.0
X	<1.0
TPHg	<50
MTBE	20



EXPLANATION

- ⊕ GROUNDWATER MONITORING WELL
- TPHg TOTAL PETROLEUM HYDROCARBON CALCULATED AS GASOLINE IN PARTS PER BILLION (ppb)
- B BENZENE, ppb
- T TOLUENE, ppb
- E ETHYLBENZENE, ppb
- X XYLENE, ppb
- MTBE METHYL-TERT-BUTYL-ETHER, ppb
- MTBE* MTBE BY 8260
- NA DATA NOT AVAILABLE

Ref. 111107btex.dwg
 Base map from Alisto Engineering Group

PREPARED BY

RRM
 engineering contracting firm

BP Service Station No. 11107
 18501 Hesperian Boulevard
 San Lorenzo, California

HYDROCARBON CONCENTRATION MAP,
 APRIL 23, 1999

FIGURE:
2
PROJECT:
 DAC04

Table of Well Data and Analytical Results

Table 1 - Summary of Results of Groundwater Sampling

WELL ID	DATE OF SAMPLING/ MONITORING	CASING ELEVATION (a) (Feet)	DEPTH TO WATER (Feet)	GROUNDWATER ELEVATION (Feet)	TPH-G (b) (ug/l)	TPH-D (ug/l)	B (ug/l)	T (ug/l)	E (ug/l)	X (ug/l)	MTBE (ug/l)	TOG (ug/l)	1,1,1-TCA (ug/l)	PCE (ug/l)	DO (ppm)	LAB
MW-1	11/04/92	41.07	20.78	20.29	ND<50	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	ND<5000	2.8	ND	---	PACE
QC-1 (c)	11/04/92	---	---	---	ND<50	---	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	---	---	---	PACE
MW-1	02/24/94	41.07	20.70	20.37	ND<50	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	ND<5000	1.5	0.9	---	PACE
MW-1	05/12/94	41.07	18.12	22.95	ND<50	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	ND<5000	1.0	ND<0.5	7	PACE
MW-1	09/09/94	41.07	21.74	19.33	ND<50	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	ND<5000	ND<0.5	ND<0.5	2.3	PACE
MW-1	11/03/94	41.07	20.01	21.06	ND<50	50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	ND<5000	ND<0.5	ND<0.5	4.3	PACE
MW-1	03/01/95	41.07	17.44	23.63	ND<50	ND<500	ND<0.5	ND<0.50	ND<0.50	ND<1.0	---	420	0.54	0.3	2.3	ATI
MW-1	06/06/95	41.07	17.55	23.52	---	---	---	---	---	---	---	---	---	---	---	---
MW-1	09/01/95	41.07	18.19	22.88	ND<50	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<1.0	ND<5.0	60	---	---	8.8	ATI
MW-1	11/29/95	41.07	18.84	22.23	---	---	---	---	---	---	---	---	---	---	---	---
MW-1	03/23/96	41.07	16.97	24.10	ND<50	---	ND<0.5	ND<1.0	ND<1.0	ND<1.0	ND<10	---	---	---	9.6	SPL
MW-1	09/05/96	41.07	17.74	23.33	110	---	ND<0.5	ND<1.0	ND<1.0	ND<1.0	ND<10	---	---	---	3.6	SPL
MW-1	03/11/97	41.07	17.62	23.45	ND<50	---	ND<0.5	ND<1.0	ND<1.0	ND<1.0	ND<10	---	---	---	5.2	SPL
MW-1	12/08/97	41.07	16.30	24.77	ND<50	---	ND<0.5	ND<1.0	ND<1.0	ND<1.0	ND<10	---	---	---	---	---
MW-1	07/08/98	41.07	16.66	24.41	---	---	---	---	---	---	---	---	---	---	---	---
MW-1	12/07/98	41.07	17.80	23.27	---	---	---	---	---	---	---	---	---	---	---	---
MW-1	01/19/99	41.07	17.18	23.89	---	---	---	---	---	---	---	---	---	---	---	---
MW-1	04/23/99	41.07	17.40	23.67	---	---	---	---	---	---	---	---	---	---	---	---
MW-2	11/04/92	40.56	20.16	20.40	ND<50	---	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	---	---	---	PACE
MW-2	02/24/94	40.56	20.12	20.44	ND<50	---	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	---	---	---	PACE
MW-2	05/12/94	40.56	17.49	23.07	ND<50	---	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	---	---	7.4	PACE
MW-2	09/09/94	40.56	21.12	19.44	ND<50	---	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	---	---	2.1	PACE
MW-2	11/03/94	40.56	19.36	21.20	ND<50	---	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	---	---	4.2	PACE
MW-2	03/01/95	40.56	16.83	23.73	ND<50	---	ND<0.50	ND<0.50	ND<0.50	ND<1.0	---	---	---	---	2.2	ATI
MW-2	06/06/95	40.56	16.96	23.60	---	---	---	---	---	---	---	---	---	---	---	---
MW-2	09/01/95	40.56	17.54	23.02	ND<50	---	ND<0.50	ND<0.50	ND<0.50	ND<1.0	ND<5.0	---	---	---	7.9	ATI
MW-2	11/29/95	40.56	18.19	22.37	---	---	---	---	---	---	---	---	---	---	---	---
MW-2	03/23/96	40.56	16.35	24.21	ND<50	---	ND<0.5	ND<1.0	ND<1.0	ND<1.0	ND<10	---	---	---	8.5	SPL
MW-2	09/05/96	40.56	17.55	23.01	ND<50	---	ND<0.5	ND<1.0	ND<1.0	ND<1.0	ND<10	---	---	---	3.2	SPL
MW-2	03/11/97	40.56	16.95	23.61	ND<50	---	ND<0.5	ND<1.0	ND<1.0	ND<1.0	ND<10	---	---	---	2.9	SPL
MW-2	12/08/97	40.56	16.01	24.55	ND<50	---	ND<0.5	ND<1.0	ND<1.0	ND<1.0	ND<10	---	---	---	3.0	SPL
MW-2	07/08/98	40.56	16.41	24.15	---	---	---	---	---	---	---	---	---	---	---	---
MW-2	12/07/98	40.56	17.15	23.41	---	---	---	---	---	---	---	---	---	---	---	SPL
MW-2	01/19/99	40.56	17.15	23.41	---	---	---	---	---	---	---	---	---	---	---	---
MW-2	04/23/99	40.56	16.89	23.67	---	---	---	---	---	---	---	---	---	---	---	---

Table 1 - Summary of Results of Groundwater Sampling

WELL ID	DATE OF SAMPLING/ MONITORING	CASING ELEVATION (a) (Feet)	DEPTH TO WATER (Feet)	GROUNDWATER ELEVATION (Feet)	TPH-G (b) (ug/l)	TPH-D (ug/l)	B (ug/l)	T (ug/l)	E (ug/l)	X (ug/l)	MTBE (ug/l)	TOG (ug/l)	1,1,1-TCA (ug/l)	PCE (ug/l)	DO (ppm)	LAB
MW-3	11/04/92	40.45	20.23	20.22	760	---	3.7	15	1.9	57	---	---	---	---	---	PACE
MW-3	02/24/94	40.45	20.24	20.21	ND<50	---	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	---	---	---	PACE
MW-3	05/12/94	40.45	17.61	22.84	ND<50	---	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	---	---	7.3	PACE
MW-3	09/09/94	40.45	21.22	19.23	ND<50	---	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	---	---	2	PACE
MW-3	11/03/94	40.45	19.48	20.97	ND<50	---	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	---	---	3.6	PACE
MW-3	03/01/95	40.45	17.08	23.37	ND<50	---	ND<0.50	ND<0.50	ND<0.50	ND<1.0	---	---	---	---	1.9	ATI
MW-3	06/06/95	40.45	17.21	23.24	---	---	---	---	---	---	---	---	---	---	---	---
MW-3	09/01/95	40.45	17.69	22.76	200	---	2.7	33	7.2	43	ND<5.0	---	---	---	7.8	ATI
MW-3	09/01/95	40.45	18.29	22.16	---	---	---	---	---	---	---	---	---	---	---	---
MW-3	03/23/96	40.45	16.59	23.86	ND<50	---	ND<0.5	ND<1	ND<1	ND<1	ND<10	---	---	---	7.3	SPL
MW-3	09/05/96	40.45	17.71	22.74	ND<50	---	ND<0.5	ND<1.0	ND<1.0	ND<1.0	ND<10	---	---	---	3.2	SPL
MW-3	03/11/97	40.45	17.17	23.28	ND<50	---	ND<0.5	ND<1.0	ND<1.0	ND<1.0	ND<10	---	---	---	1.5	SPL
MW-3	12/08/97	40.45	16.12	24.33	ND<50	---	ND<0.5	ND<1.0	ND<1.0	ND<1.0	ND<10	---	---	---	1.9	SPL
MW-3	07/08/98	40.45	16.40	24.05	---	---	---	---	---	---	---	---	---	---	---	---
MW-3	12/07/98	40.45	17.32	23.13	---	---	---	---	---	---	---	---	---	---	---	SPL
MW-3	01/19/99	40.45	17.30	23.15	---	---	---	---	---	---	---	---	---	---	---	SPL
MW-3	04/23/99	40.45	17.07	23.38	---	---	---	---	---	---	---	---	---	---	---	SPL

Table 1 - Summary of Results of Groundwater Sampling

WELL ID	DATE OF SAMPLING/ MONITORING	CASING ELEVATION (Feet)	DEPTH TO GROUNDWATER WATER (Feet)	ELEVATION (Feet)	TPH-G (b) (ug/l)	TPH-D (ug/l)	B (ug/l)	T (ug/l)	E (ug/l)	X (ug/l)	MTBE (ug/l)	TOG (ug/l)	1,1,1-TCA (ug/l)	PCE (ug/l)	DO (ppm)	LAB
MW-6	03/01/95	38.46	15.66	22.80	270	---	11	ND<0.50	ND<0.50	ND<1.0	---	---	---	---	1.6	ATI
MW-6	06/06/95	38.46	15.82	22.64	220	---	(e) 2.3	ND<0.50	ND<0.50	ND<1.0	---	---	---	---	---	ATI
MW-6	09/01/95	38.46	16.25	22.21	780	---	ND<2.5	ND<2.5	ND<2.5	ND<5.0	2800	---	---	---	7.5	ATI
MW-6	11/29/95	38.46	16.80	21.66	ND<50	---	ND<0.50	ND<0.50	ND<0.50	ND<1.0	1100	---	---	---	3.9	ATI
MW-6	03/23/96	38.46	15.27	23.19	50	---	ND<0.5	ND<1	ND<1	ND<1	910	---	---	---	8.0	SPL
MW-6	09/05/96	38.46	16.30	22.16	4400	---	ND<0.5	ND<1.0	ND<1.0	ND<1.0	7400	---	---	---	3.0	SPL
MW-6	03/11/97	38.46	15.75	22.71	1100	---	ND<5.0	ND<5.0	ND<5.0	ND<5.0	2000	---	---	---	3.1	SPL
MW-6	12/08/97	38.46	15.51	22.95	150	---	ND<0.5	ND<1.0	ND<1.0	ND<1.0	140	---	---	---	3.4	SPL
MW-6	07/08/98	38.46	15.78	22.68	370	---	ND<0.5	ND<1.0	ND<1.0	ND<1.0	250	---	---	---	3.6	SPL
MW-6	12/07/98	38.46	15.95	22.51	440	---	ND<1.0	ND<1.0	ND<1.0	ND<1.0	630/820 (h)	---	---	---	---	---
MW-6	01/19/99	38.46	15.97	22.49	950	---	ND<1.0	ND<1.0	ND<1.0	ND<1.0	950/810 (h)	---	---	---	---	SPL
MW-6	04/23/99	38.46	15.74	22.72	ND<50	---	ND<1.0	ND<1.0	ND<1.0	ND<1.0	910/220 (h)	---	---	---	---	SPL
MW-7	03/01/95	39.50	16.21	23.29	1400	---	14	ND<1.0	14	27	---	---	---	---	1.8	ATI
MW-7	06/06/95	39.50	16.34	23.16	540	---	(e) 5.5	ND<0.50	15	1.1	---	---	---	---	---	ATI
MW-7	09/01/95	39.50	16.74	22.76	190	---	2.8	ND<0.50	5.0	ND<1.0	10	---	---	---	7.5	ATI
MW-7	11/29/95	39.50	17.33	22.17	230	---	31	ND<0.50	3.8	1.9	ND<5.0	---	---	---	4.6	ATI
MW-7	03/23/96	39.50	15.86	23.64	ND<50	---	5.0	ND<1	ND<1	ND<1	330	---	---	---	7.2	SPL
QC-1 (c)	03/23/96	---	---	---	60	---	7.6	ND<1	ND<1	ND<1	360	---	---	---	---	SPL
MW-7	09/05/96	39.50	16.80	22.70	200	---	ND<0.5	ND<1.0	ND<1.0	ND<1.0	430	---	---	---	3.1	SPL
MW-7	03/11/97	39.50	18.32	21.18	120	---	ND<0.5	ND<1.0	ND<1.0	ND<1.0	140	---	---	---	4.7	SPL
MW-7	12/08/97	39.50	16.02	23.48	240	---	0.8	ND<1.0	ND<1.0	ND<1.0	200	---	---	---	5.2	SPL
MW-7	07/08/98	39.50	16.32	23.18	270	---	ND<0.5	ND<1.0	ND<1.0	ND<1.0	170	---	---	---	4.8	SPL
MW-7	12/07/98	39.50	16.43	23.07	100	---	ND<0.5	ND<1.0	ND<1.0	ND<1.0	120	---	---	---	---	SPL
MW-7	01/19/99	39.50	16.41	23.09	80	---	ND<1.0	ND<1.0	ND<1.0	ND<1.0	80	---	---	---	---	SPL
MW-7	04/23/99	39.50	16.21	23.09	ND<50	---	ND<1.0	ND<1.0	ND<1.0	ND<1.0	20	---	---	---	---	SPL

Table 1 - Summary of Results of Groundwater Sampling

WELL ID	DATE OF SAMPLING/ MONITORING	CASING ELEVATION (Feet)	DEPTH TO GROUNDWATER WATER ELEVATION (Feet)	TPH-G (ug/l)	TPH-D (ug/l)	B (ug/l)	T (ug/l)	E (ug/l)	X (ug/l)	MTBE (ug/l)	TOG (ug/l)	1,1,1-TCA (ug/l)	PCE (ug/l)	DO (ppm)	LAB
QC-2 (g)	11/04/92	---	---	---	ND<50	---	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	---	---	PACE
QC-2 (g)	11/04/92	---	---	---	ND<50	---	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	---	---	PACE
QC-2 (g)	03/01/95	---	---	---	ND<50	---	ND<0.5	ND<0.5	ND<0.5	ND<1.0	---	---	---	---	PACE
QC-2 (g)	05/12/94	---	---	---	ND<50	---	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	---	---	PACE
QC-2 (g)	09/09/94	---	---	---	ND<50	---	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	---	---	PACE
QC-2 (g)	11/03/94	---	---	---	ND<50	---	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	---	---	PACE
QC-2 (g)	06/06/95	---	---	---	ND<50	---	ND<0.50	ND<0.50	ND<0.50	ND<1.0	---	---	---	---	ATI
QC-2 (g)	09/01/95	---	---	---	ND<50	---	ND<0.50	ND<0.50	ND<0.50	ND<1.0	ND<5.0	---	---	---	ATI
QC-2 (g)	11/29/95	---	---	---	ND<50	---	ND<0.50	ND<0.50	ND<0.50	ND<1.0	ND<5.0	---	---	---	ATI
QC-2 (g)	03/23/96	---	---	---	ND<50	---	ND<0.5	ND<1	ND<1	ND<1	ND<10	---	---	---	SPL

ABBREVIATIONS:

TPH-G Total petroleum hydrocarbons as gasoline
 TPH-D Total petroleum hydrocarbons as diesel
 B Benzene
 T Toluene
 E Ethylbenzene
 X Total xylenes
 MTBE Methyl tert butyl ether
 TOG Total oil and grease
 1,1,1-TC/ 1,1,1-Trichloroethane
 PCE Tetrachloroethene
 DO Dissolved oxygen
 ug/l Micrograms per liter
 ppm Parts per million
 ND Not detected above reported detection limit
 --- Not measured/analyzed/applicable
 PACE Pace, Inc.
 ATI Analytical Technologies, Inc.
 SPL Southern Petroleum Laboratories

NOTES:

- (a) Top of casing elevations surveyed relative to an established benchmark with an elevation of 39.95 feet above mean sea level.
- (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 10-060-07-001.
- (e) MTBE peak present. See documentation in Appendix C of Alisto report 10-060-07-001.
- (f) Well inaccessible.
- (g) Travel blank.
- (h) EPA methods 8020/8260 used

Analytical Appendix



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

May 5, 1999

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

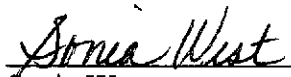
The following report contains analytical results for the sample(s) received at Southern Petroleum Laboratories (SPL) on April 27, 1999. The sample(s) was assigned to Certificate of Analysis No. (s) 9904A25 and analyzed for all parameters as listed on the chain of custody.

Any data flags or quality control exceptions associated with this report will be footnoted in the analytical result 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



Sonia West
Senior Project Manager



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

Southern Petroleum Laboratories, Inc.

Certificate of Analysis Number: 99-04-A25

Approved for Release by:

Sonia West

Sonia West, Senior Project Manager

5-5-99

Date

Joel Grice
Laboratory Director

Idelis Williams
Corporate Quality Assurance Director

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. H9-9904A25-01

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

P.O.#
 N/A, COC#118682
 DATE: 05/04/99

PROJECT: #11107, 18501 Hesperian
SITE: San Lorenzo, CA
SAMPLED BY: Blaine Tech Services
SAMPLE ID: B

PROJECT NO: 990423-L1
MATRIX: WATER
DATE SAMPLED: 04/23/99 10:59:00
DATE RECEIVED: 04/27/99

ANALYTICAL DATA

PARAMETER	RESULTS	DETECTION LIMIT	UNITS
MTBE	310	1.0 P	ug/L
BENZENE	ND	1.0 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
TOTAL VOLATILE AROMATIC HYDROCARBONS	ND		ug/L

Surrogate

% Recovery

1,4-Difluorobenzene

103

4-Bromofluorobenzene

103

Method 8020A ***

Analyzed by: CJ

Date: 05/03/99

Gasoline Range Organics

ND

0.05 P

mg/L

Surrogate

% Recovery

1,4-Difluorobenzene

93

4-Bromofluorobenzene

97

California LUFT Manual for Gasoline

Analyzed by: CJ

Date: 04/30/99 02:26:00

(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. H9-9904A25-01

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

P.O.#
 N/A, COC#118682
 05/04/99

PROJECT: #11107, 18501 Hesperian
 SITE: San Lorenzo, CA
 SAMPLED BY: Blaine Tech Services
 SAMPLE ID: B

PROJECT NO: 990423-L1
 MATRIX: WATER
 DATE SAMPLED: 04/23/99 10:59:00
 DATE RECEIVED: 04/27/99

ANALYTICAL DATA

PARAMETER	RESULTS	PQL*	UNITS
Benzene	ND	5	ug/L
Bromobenzene	ND	5	ug/L
Bromochloromethane	ND	5	ug/L
Bromodichloromethane	ND	5	ug/L
Bromoform	ND	5	ug/L
Bromomethane	ND	10	ug/L
n-Butylbenzene	ND	5	ug/L
sec-Butylbenzene	ND	5	ug/L
tert-Butylbenzene	ND	5	ug/L
Carbon tetrachloride	ND	5	ug/L
Chlorobenzene	ND	5	ug/L
Chlorodibromomethane	ND	5	ug/L
Chloroethane	ND	10	ug/L
Chloroform	ND	5	ug/L
Chloromethane	ND	10	ug/L
2-Chlorotoluene	ND	5	ug/L
4-Chlorotoluene	ND	5	ug/L
1,2-Dibromo-3-chloropropane	ND	5	ug/L
1,2-Dibromoethane	ND	5	ug/L
Dibromomethane	ND	5	ug/L
1,2-Dichlorobenzene	ND	5	ug/L
1,3-Dichlorobenzene	ND	5	ug/L
1,4-Dichlorobenzene	ND	5	ug/L
Dichlorodifluoromethane	ND	10	ug/L
1,1-Dichloroethane	ND	5	ug/L
1,2-Dichloroethane	ND	5	ug/L
1,1-Dichloroethene	ND	5	ug/L
cis-1,2-Dichloroethene	ND	5	ug/L
trans-1,2-Dichloroethene	ND	5	ug/L
1,2-Dichloropropane	ND	5	ug/L
1,3-Dichloropropane	ND	5	ug/L
2,2-Dichloropropane	ND	5	ug/L
1,1-Dichloropropene	ND	5	ug/L
Ethylbenzene	ND	5	ug/L
Hexachlorobutadiene	ND	5	ug/L
Isopropylbenzene	ND	5	ug/L
p-Isopropyltoluene	ND	5	ug/L
Methylene chloride	ND	5	ug/L

METHOD: 8260 Water, Volatile Organics
 (continued on next page)



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

Certificate of Analysis No. H9-9904A25-01

BP Oil Company

SAMPLE ID: B

ANALYTICAL DATA (continued)

PARAMETER	RESULTS	PQL*	UNITS	
Naphthalene	ND	5	ug/L	
n-Propylbenzene	ND	5	ug/L	
Styrene	ND	5	ug/L	
1,1,1,2-Tetrachloroethane	ND	5	ug/L	
1,1,2,2-Tetrachloroethane	ND	5	ug/L	
Tetrachloroethene	ND	5	ug/L	
Toluene	ND	5	ug/L	
1,2,3-Trichlorobenzene	ND	5	ug/L	
1,2,4-Trichlorobenzene	ND	5	ug/L	
1,1,1-Trichloroethane	ND	5	ug/L	
1,1,2-Trichloroethane	ND	5	ug/L	
Trichloroethene	ND	5	ug/L	
Trichlorofluoromethane	ND	5	ug/L	
1,2,3-Trichloropropane	ND	5	ug/L	
1,2,4-Trimethylbenzene	ND	5	ug/L	
1,3,5-Trimethylbenzene	ND	5	ug/L	
Vinyl chloride	ND	10	ug/L	
Xylenes (total)	ND	5	ug/L	
1,2-Dichloroethene (total)	ND	5	ug/L	
cis-1,3-Dichloropropene	ND	5	ug/L	
trans-1,3-Dichloropropene	ND	5	ug/L	
tert-Butyl Ethyl Ether	ND	10	ug/L	
tert-Amyl Methyl Ether	ND	10	ug/L	
Acetone	ND	100	ug/L	
2-Butanone	ND	20	ug/L	
4-Methyl-2-Pentanone	ND	10	ug/L	
2-Hexanone	ND	10	ug/L	
Carbon Disulfide	ND	5	ug/L	
Vinyl Acetate	ND	10	ug/L	
2-Chloroethylvinylether	ND	10	ug/L	
Methyl t-Butyl Ether	210	50	ug/L	
t-Butyl Alcohol	ND	500	ug/L	
Di-isopropyl Ether	ND	10	ug/L	

SURROGATES	AMOUNT SPIKED	% RECOVERY	LOWER LIMIT	UPPER LIMIT
1,2-Dichloroethane-d4	50 ug/L	92	80	120
Toluene-d8	50 ug/L	104	88	110
4-Bromofluorobenzene	50 ug/L	100	86	115

ANALYZED BY: LT

DATE/TIME: 04/30/99 13:38:00

METHOD: 8260 Water, Volatile Organics

NOTES: * - Practical Quantitation Limit

ND - Not Detected

NA - Not Analyzed

COMMENTS:

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. H9-9904A25-02

BP Oil Company
 295 SW 41 Street Bldg.13,SteN
 Renton, WA 98055
 ATTN: Scott Hooton

P.O.#
 N/A, COC#118682
 DATE: 05/04/99

PROJECT: #11107, 18501 Hesperian
 SITE: San Lorenzo, CA
 SAMPLED BY: Blaine Tech Services
 SAMPLE ID: C

PROJECT NO: 990423-L1
 MATRIX: WATER
 DATE SAMPLED: 04/23/99 11:30:00
 DATE RECEIVED: 04/27/99

ANALYTICAL DATA

PARAMETER	RESULTS	DETECTION LIMIT	UNITS
MTBE	1100	10 P	ug/L
BENZENE	ND	1.0 P	ug/L
TOLUENE	ND	1.0 P	ug/L
ETHYLBENZENE	1.8	1.0 P	ug/L
TOTAL XYLENE	1.3	1.0 P	ug/L
TOTAL VOLATILE AROMATIC HYDROCARBONS	3.1		ug/L

Surrogate

% Recovery

1,4-Difluorobenzene

97

4-Bromofluorobenzene

97

Method 8020A ***

Analyzed by: CJ

Date: 05/03/99

Gasoline Range Organics

ND

0.05 P

mg/L

Surrogate

% Recovery

1,4-Difluorobenzene

93

4-Bromofluorobenzene

97

California LUFT Manual for Gasoline

Analyzed by: CJ

Date: 04/30/99 02:54:00

(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. H9-9904A25-02

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

BP Oil Company
295 SW 41 Street Bldg.13, SteN
Renton, WA 98055
ATTN: Scott Hooton

P.O.#
N/A, COC#118682
05/04/99

PROJECT: #11107, 18501 Hesperian
SITE: San Lorenzo, CA
SAMPLED BY: Blaine Tech Services
SAMPLE ID: C

PROJECT NO: 990423-L1
MATRIX: WATER
DATE SAMPLED: 04/23/99 11:30:00
DATE RECEIVED: 04/27/99

ANALYTICAL DATA

Table with 4 columns: PARAMETER, RESULTS, PQL*, UNITS. Lists various chemical compounds and their detection results (ND) and PQL values (5 or 10 ug/L).

METHOD: 8260 Water, Volatile Organics
(continued on next page)



HOUSTON LABORATORY

8880 INTERCHANGE DRIVE

HOUSTON, TEXAS 77054

PHONE (713) 660-0901

Certificate of Analysis No. H9-9904A25-02

BP Oil Company

SAMPLE ID: C

PARAMETER	ANALYTICAL DATA (continued)		UNITS
	RESULTS	PQL*	
Naphthalene	ND	5	ug/L
n-Propylbenzene	ND	5	ug/L
Styrene	ND	5	ug/L
1,1,1,2-Tetrachloroethane	ND	5	ug/L
1,1,2,2-Tetrachloroethane	ND	5	ug/L
Tetrachloroethene	ND	5	ug/L
Toluene	ND	5	ug/L
1,2,3-Trichlorobenzene	ND	5	ug/L
1,2,4-Trichlorobenzene	ND	5	ug/L
1,1,1-Trichloroethane	ND	5	ug/L
1,1,2-Trichloroethane	ND	5	ug/L
Trichloroethene	ND	5	ug/L
Trichlorofluoromethane	ND	5	ug/L
1,2,3-Trichloropropane	ND	5	ug/L
1,2,4-Trimethylbenzene	ND	5	ug/L
1,3,5-Trimethylbenzene	ND	5	ug/L
Vinyl chloride	ND	10	ug/L
Xylenes (total)	ND	5	ug/L
1,2-Dichloroethene (total)	ND	5	ug/L
cis-1,3-Dichloropropene	ND	5	ug/L
trans-1,3-Dichloropropene	ND	5	ug/L
tert-Butyl Ethyl Ether	ND	10	ug/L
tert-Amyl Methyl Ether	ND	10	ug/L
Acetone	ND	100	ug/L
2-Butanone	ND	20	ug/L
4-Methyl-2-Pentanone	ND	10	ug/L
2-Hexanone	ND	10	ug/L
Carbon Disulfide	ND	5	ug/L
Vinyl Acetate	ND	10	ug/L
2-Chloroethylvinylether	ND	10	ug/L
Methyl t-Butyl Ether	810	100	ug/L
t-Butyl Alcohol	ND	500	ug/L
Di-isopropyl Ether	ND	10	ug/L

SURROGATES	AMOUNT SPIKED	% RECOVERY	LOWER LIMIT	UPPER LIMIT
1,2-Dichloroethane-d4	50 ug/L	90	80	120
Toluene-d8	50 ug/L	106	88	110
4-Bromofluorobenzene	50 ug/L	104	86	115

ANALYZED BY: LT

DATE/TIME: 04/30/99 14:58:00

METHOD: 8260 Water, Volatile Organics

NOTES: * - Practical Quantitation Limit

ND - Not Detected

NA - Not Analyzed

COMMENTS:

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. H9-9904A25-02

BP Oil Company
295 SW 41 Street Bldg.13, SteN
Renton, WA 98055
ATTN: Scott Hooton

P.O.#
N/A, COC#118682
05/04/99

PROJECT: #11107, 18501 Hesperian
SITE: San Lorenzo, CA
SAMPLED BY: Blaine Tech Services
SAMPLE ID: C

PROJECT NO: 990423-L1
MATRIX: WATER
DATE SAMPLED: 04/23/99 11:30:00
DATE RECEIVED: 04/27/99

PARAMETER	ANALYTICAL DATA		PQL*	UNITS
	RESULTS			
1,2-Dichloroethane	ND		1.0	ug/L
1,2-Dibromoethane	ND		1.0	ug/L
SURROGATES	% RECOVERY			
Fluorobenzene			97	

ANALYZED BY: YN DATE/TIME: 04/27/99 17:07:00
METHOD: Mod. 8021B (VOC) [SW 846]
NOTES: * - Practical Quantitation Limit ND - Not Detected
NA - Not Analyzed

COMMENTS:

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. H9-9904A25-03

BP Oil Company
 295 SW 41 Street Bldg.13, SteN
 Renton, WA 98055
 ATTN: Scott Hooton

P.O.#
 N/A, COC#118682
 DATE: 05/04/99

PROJECT: #11107, 18501 Hesperian
 SITE: San Lorenzo, CA
 SAMPLED BY: Blaine Tech Services
 SAMPLE ID: D

PROJECT NO: 990423-L1
 MATRIX: WATER
 DATE SAMPLED: 04/23/99 12:07:00
 DATE RECEIVED: 04/27/99

ANALYTICAL DATA

PARAMETER	RESULTS	DETECTION LIMIT	UNITS
MTBE	310	1.0 P	ug/L
BENZENE	ND	1.0 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
TOTAL VOLATILE AROMATIC HYDROCARBONS	ND		ug/L

Surrogate

% Recovery

1,4-Difluorobenzene

100

4-Bromofluorobenzene

100

Method 8020A ***

Analyzed by: CJ

Date: 05/03/99

Gasoline Range Organics

ND

0.05 P

mg/L

Surrogate

% Recovery

1,4-Difluorobenzene

93

4-Bromofluorobenzene

100

California LUFT Manual for Gasoline

Analyzed by: CJ

Date: 04/30/99 03:22:00

(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. H9-9904A25-03

BP Oil Company
 295 SW 41 Street Bldg.13,SteN
 Renton, WA 98055
 ATTN: Scott Hooton

P.O.#
 N/A, COC#118682
 05/04/99

PROJECT: #11107, 18501 Hesperian
 SITE: San Lorenzo, CA
 SAMPLED BY: Blaine Tech Services
 SAMPLE ID: D

PROJECT NO: 990423-L1
 MATRIX: WATER
 DATE SAMPLED: 04/23/99 12:07:00
 DATE RECEIVED: 04/27/99

ANALYTICAL DATA

PARAMETER	RESULTS	PQL*	UNITS
Benzene	ND	5	ug/L
Bromobenzene	ND	5	ug/L
Bromochloromethane	ND	5	ug/L
Bromodichloromethane	ND	5	ug/L
Bromoform	ND	5	ug/L
Bromomethane	ND	10	ug/L
n-Butylbenzene	ND	5	ug/L
sec-Butylbenzene	ND	5	ug/L
tert-Butylbenzene	ND	5	ug/L
Carbon tetrachloride	ND	5	ug/L
Chlorobenzene	ND	5	ug/L
Chlorodibromomethane	ND	5	ug/L
Chloroethane	ND	10	ug/L
Chloroform	ND	5	ug/L
Chloromethane	ND	10	ug/L
2-Chlorotoluene	ND	5	ug/L
4-Chlorotoluene	ND	5	ug/L
1,2-Dibromo-3-chloropropane	ND	5	ug/L
1,2-Dibromoethane	ND	5	ug/L
Dibromomethane	ND	5	ug/L
1,2-Dichlorobenzene	ND	5	ug/L
1,3-Dichlorobenzene	ND	5	ug/L
1,4-Dichlorobenzene	ND	5	ug/L
Dichlorodifluoromethane	ND	10	ug/L
1,1-Dichloroethane	ND	5	ug/L
1,2-Dichloroethane	ND	5	ug/L
1,1-Dichloroethene	ND	5	ug/L
cis-1,2-Dichloroethene	ND	5	ug/L
trans-1,2-Dichloroethene	ND	5	ug/L
1,2-Dichloropropane	ND	5	ug/L
1,3-Dichloropropane	ND	5	ug/L
2,2-Dichloropropane	ND	5	ug/L
1,1-Dichloropropene	ND	5	ug/L
Ethylbenzene	ND	5	ug/L
Hexachlorobutadiene	ND	5	ug/L
Isopropylbenzene	ND	5	ug/L
p-Isopropyltoluene	ND	5	ug/L
Methylene chloride	ND	5	ug/L

METHOD: 8260 Water, Volatile Organics
 (continued on next page)



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

Certificate of Analysis No. H9-9904A25-03

BP Oil Company

SAMPLE ID: D

PARAMETER	ANALYTICAL DATA (continued)		UNITS
	RESULTS	PQL*	
Naphthalene	ND	5	ug/L
n-Propylbenzene	ND	5	ug/L
Styrene	ND	5	ug/L
1,1,1,2-Tetrachloroethane	ND	5	ug/L
1,1,2,2-Tetrachloroethane	ND	5	ug/L
Tetrachloroethene	ND	5	ug/L
Toluene	ND	5	ug/L
1,2,3-Trichlorobenzene	ND	5	ug/L
1,2,4-Trichlorobenzene	ND	5	ug/L
1,1,1-Trichloroethane	ND	5	ug/L
1,1,2-Trichloroethane	ND	5	ug/L
Trichloroethene	ND	5	ug/L
Trichlorofluoromethane	ND	5	ug/L
1,2,3-Trichloropropane	ND	5	ug/L
1,2,4-Trimethylbenzene	ND	5	ug/L
1,3,5-Trimethylbenzene	ND	5	ug/L
Vinyl chloride	ND	10	ug/L
Xylenes (total)	ND	5	ug/L
1,2-Dichloroethene (total)	ND	5	ug/L
cis-1,3-Dichloropropene	ND	5	ug/L
trans-1,3-Dichloropropene	ND	5	ug/L
tert-Butyl Ethyl Ether	ND	10	ug/L
tert-Amyl Methyl Ether	ND	10	ug/L
Acetone	ND	100	ug/L
2-Butanone	ND	20	ug/L
4-Methyl-2-Pentanone	ND	10	ug/L
2-Hexanone	ND	10	ug/L
Carbon Disulfide	ND	5	ug/L
Vinyl Acetate	ND	10	ug/L
2-Chloroethylvinylether	ND	10	ug/L
Methyl t-Butyl Ether	220	50	ug/L
t-Butyl Alcohol	ND	500	ug/L
Di-isopropyl Ether	ND	10	ug/L

SURROGATES	AMOUNT SPIKED	% RECOVERY	LOWER LIMIT	UPPER LIMIT
1,2-Dichloroethane-d4	50 ug/L	94	80	120
Toluene-d8	50 ug/L	108	88	110
4-Bromofluorobenzene	50 ug/L	104	86	115

ANALYZED BY: LT

DATE/TIME: 04/30/99 15:23:00

METHOD: 8260 Water, Volatile Organics

NOTES: * - Practical Quantitation Limit ND - Not Detected

NA - Not Analyzed

COMMENTS:

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. H9-9904A25-04

BP Oil Company
 295 SW 41 Street Bldg.13,SteN
 Renton, WA 98055
 ATTN: Scott Hooton

P.O.#
 N/A, COC#118682
 DATE: 05/04/99

PROJECT: #11107, 18501 Hesperian
 SITE: San Lorenzo, CA
 SAMPLED BY: Blaine Tech Services
 SAMPLE ID: A

PROJECT NO: 990423-L1
 MATRIX: WATER
 DATE SAMPLED: 04/23/99 10:42:00
 DATE RECEIVED: 04/27/99

ANALYTICAL DATA

PARAMETER	RESULTS	DETECTION LIMIT	UNITS
MTBE	20	1.0 P	ug/L
BENZENE	ND	1.0 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
TOTAL VOLATILE AROMATIC HYDROCARBONS	ND		ug/L

Surrogate

% Recovery

1,4-Difluorobenzene

100

4-Bromofluorobenzene

100

Method 8020A ***

Analyzed by: CJ

Date: 04/30/99

Gasoline Range Organics

ND

0.05 P

mg/L

Surrogate

% Recovery

1,4-Difluorobenzene

93

4-Bromofluorobenzene

97

California LUFT Manual for Gasoline

Analyzed by: CJ

Date: 04/30/99 03:50:00

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

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

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

QUALITY CONTROL

DOCUMENTATION

WATER VOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: SPL

Contract:

Lab Code:

Case No.: 9904A25 SAS No.:

SDG No.:

Matrix Spike - EPA Sample No.: B

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	MS CONCENTRATION (ug/L)	MS % REC #	QC. LIMITS REC.
1,1-Dichloroethene	50	0	56	112	61-145
Trichloroethene	50	0	50	100	71-120
Benzene	50	0	50	100	76-127
Toluene	50	0	47	94	76-125
Chlorobenzene	50	0	46	92	75-130

COMPOUND	SPIKE ADDED (ug/L)	MSD CONCENTRATION (ug/L)	MSD % REC #	% RPD #	QC LIMITS RPD REC.	
1,1-Dichloroethene	50	52	104	7	14	61-145
Trichloroethene	50	48	96	4	14	71-120
Benzene	50	49	98	2	11	76-127
Toluene	50	47	94	0	13	76-125
Chlorobenzene	50	45	90	2	13	75-130

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits due to matrix interference

RPD: 0 out of 5 outside limits

Spike Recovery: 0 out of 10 outside limits

SPL Houston Labs

RECOVERY REPORT

Client Name: Client SDG: 1990430
 Sample Matrix: LIQUID Fraction: VOA
 Lab Smp Id: METHSPIKE-8260W/1X Operator: LT
 Level: LOW SampleType: METHSPIKE
 Data Type: MS DATA Quant Type: ISTD
 SpikeList File: 8260_water.spk
 Sublist File: 8260_lcs.sub
 Method File: /var/chem/l.i/1990430.b/l8260aw.m
 Misc Info: L120W1/L120B01/L120CW1

SPIKE COMPOUND	CONC ADDED ug/L	CONC RECOVERED ug/L	% RECOVERED	LIMITS
8 1,1-Dichloroethene	50	56	112.00	61-145
29 Trichloroethene	50	51	102.00	71-120
25 Benzene	50	49	98.00	76-127
37 Toluene	50	50	100.00	76-125
45 Chlorobenzene	50	48	96.00	75-130

SURROGATE COMPOUND	CONC ADDED ug/L	CONC RECOVERED ug/L	% RECOVERED	LIMITS
\$ 21 1,2-Dichloroethane	50	47	94.00	80-120
\$ 36 Toluene-d8	50	53	106.00	88-110
\$ 56 Bromofluorobenzene	50	52	104.00	86-115



SPL Blank QC Report

Matrix: Aqueous
Sample ID: VLBLK
Batch: L990430104642

Reported on: 05/04/99 11:48
Analyzed on: 04/30/99 12:48
Analyst: LT

METHOD 8260 L120B01

Compound	Result	Detection Limit	Units
Dichlorodifluoromethane	ND	10	ug/L
Chloromethane	ND	10	ug/L
Vinyl Chloride	ND	10	ug/L
Bromomethane	ND	10	ug/L
Chloroethane	ND	10	ug/L
Trichlorofluoromethane	ND	5	ug/L
Acetone	ND	100	ug/L
1,1-Dichloroethene	ND	5	ug/L
Methylene Chloride	ND	5	ug/L
Carbon Disulfide	ND	5	ug/L
trans-1,2-Dichloroethene	ND	5	ug/L
1,1-Dichloroethane	ND	5	ug/L
Vinyl Acetate	ND	10	ug/L
2-Butanone	ND	20	ug/L
cis-1,2-Dichloroethene	ND	5	ug/L
1,2-Dichloroethene (total)	ND	5	ug/L
2,2-Dichloropropane	ND	5	ug/L
Bromochloromethane	ND	5	ug/L
Chloroform	ND	5	ug/L
1,1,1-Trichloroethane	ND	5	ug/L
1,2-Dichloroethane	ND	5	ug/L
1,1-Dichloropropene	ND	5	ug/L
Benzene	ND	5	ug/L
Carbon Tetrachloride	ND	5	ug/L
1,2-Dichloropropane	ND	5	ug/L
Trichloroethene	ND	5	ug/L
Dibromomethane	ND	5	ug/L
Bromodichloromethane	ND	5	ug/L
2-Chloroethylvinylether	ND	10	ug/L
4-Methyl-2-Pentanone	ND	10	ug/L
cis-1,3-Dichloropropene	ND	5	ug/L
trans-1,3-Dichloropropene	ND	5	ug/L
Toluene	ND	5	ug/L
1,1,2-Trichloroethane	ND	5	ug/L

Notes

ND - Not detected.



SPL Blank QC Report

HOUSTON LABORATORY

8880 INTERCHANGE DRIVE

HOUSTON, TEXAS 77054

PHONE (713) 660-0901

page 2

Matrix: Aqueous
Sample ID: VLBLK
Batch: L990430104642

Reported on: 05/04/99 11:48
Analyzed on: 04/30/99 12:48
Analyst: LT

METHOD 8260 L120B01

Compound	Result	Detection Limit	Units
1,3-Dichloropropane	ND	5	ug/L
2-Hexanone	ND	10	ug/L
Dibromochloromethane	ND	5	ug/L
1,2-Dibromoethane	ND	5	ug/L
Tetrachloroethene	ND	5	ug/L
Chlorobenzene	ND	5	ug/L
1,1,1,2-Tetrachloroethane	ND	5	ug/L
Ethylbenzene	ND	5	ug/L
Bromoform	ND	5	ug/L
Styrene	ND	5	ug/L
Xylene (Total)	ND	5	ug/L
1,1,2,2-Tetrachloroethane	ND	5	ug/L
1,2,3-Trichloropropane	ND	5	ug/L
Isopropylbenzene	ND	5	ug/L
Bromobenzene	ND	5	ug/L
N-Propylbenzene	ND	5	ug/L
2-Chlorotoluene	ND	5	ug/L
4-Chlorotoluene	ND	5	ug/L
1,3,5-Trimethylbenzene	ND	5	ug/L
tert-Butylbenzene	ND	5	ug/L
1,2,4-Trimethylbenzene	ND	5	ug/L
1,3-Dichlorobenzene	ND	5	ug/L
sec-Butylbenzene	ND	5	ug/L
1,4-Dichlorobenzene	ND	5	ug/L
p-Isopropyltoluene	ND	5	ug/L
1,2-Dichlorobenzene	ND	5	ug/L
n-Butylbenzene	ND	5	ug/L
1,2-Dibromo-3-Chloropropan	ND	5	ug/L
1,2,4-Trichlorobenzene	ND	5	ug/L
Naphthalene	ND	5	ug/L
Hexachlorobutadiene	ND	5	ug/L
1,2,3-Trichlorobenzene	ND	5	ug/L
Methyl t-Butyl Ether	ND	10	ug/L
t-Butyl Alcohol	ND	500	ug/L

Notes

ND - Not detected.



SPL Blank QC Report

Matrix: Aqueous
Sample ID: VLBLK
Batch: L990430104642

Reported on: 05/04/99 11:48
Analyzed on: 04/30/99 12:48
Analyst: LT

METHOD 8260 L120B01

Compound	Result	Detection Limit	Units
Di-isopropyl Ether	ND	10	ug/L
tert-Butyl Ethyl Ether	ND	10	ug/L
tert-Amyl Methyl Ether	ND	10	ug/L

Surrogate	Result	QC Criteria	Units
1,2-Dichloroethane-d4	92	80-120	% Recovery
Toluene-d8	104	88-110	% Recovery
Bromofluorobenzene	102	86-115	% Recovery

Samples in Batch 9904A25-01 9904A25-02 9904A25-03

Notes

ND - Not detected.



** SPL BATCH QUALITY CONTROL REPORT **
METHOD 8020

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

Matrix: Aquecus
Units: ug/L

Batch Id: HP_S990502222200

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	53	106	72 - 128
Benzene	ND	50	52	104	61 - 119
Toluene	ND	50	52	104	65 - 125
EthylBenzene	ND	50	51	102	70 - 118
O Xylene	ND	50	52	104	72 - 117
M & P Xylene	ND	100	100	100	72 - 116

MATRIX SPIKES

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	24	120	26	130	8.00	20	39 - 150
BENZENE	31	20	49	90.0	48	85.0	5.71	21	32 - 164
TOLUENE	18	20	36	90.0	35	85.0	5.71	20	38 - 159
ETHYLBENZENE	4.8	20	24	96.0	24	96.0	0	19	52 - 142
O XYLENE	16	20	35	95.0	35	95.0	0	18	53 - 143
M & P XYLENE	23	40	59	90.0	59	90.0	0	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: CJ

Sequence Date: 05/02/99

SPL ID of sample spiked: 9904912-06A

Sample File ID: S_D4151.TX0

Method Blank File ID:

Blank Spike File ID: S_D4147.TX0

Matrix Spike File ID: S_D4148.TX0

Matrix Spike Duplicate File ID: S_D4149.TX0

SAMPLES IN BATCH(SPL ID):

9904B36-01A 9904A86-01A 9904A86-05A 9904A86-06A
 9904A86-08A 9904A86-07A 9904A22-02A 9904A22-03A
 9904A22-04A 9904A22-05A 9904A22-06A 9904A25-02A
 9904A86-03A 9904A25-01A 9904A25-03A



** SPL BATCH QUALITY CONTROL REPORT **
METHOD 8020

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

Matrix: Aqueous
Units: ug/L

Batch Id: HP_S990429135100

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	50	100	72 - 128
Benzene	ND	50	51	102	61 - 119
Toluene	ND	50	51	102	65 - 125
EthylBenzene	ND	50	51	102	70 - 118
O Xylene	ND	50	52	104	72 - 117
M & P Xylene	ND	100	100	100	72 - 116

MATRIX SPIKES

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	3400	20	2400	NC	2500	NC	NC	20	39 - 150
BENZENE	ND	20	20	100	19	95.0	5.13	21	32 - 164
TOLUENE	ND	20	20	100	19	95.0	5.13	20	38 - 159
ETHYLBENZENE	ND	20	19	95.0	19	95.0	0	19	52 - 142
O XYLENE	ND	20	20	100	20	100	0	18	53 - 143
M & P XYLENE	ND	40	39	97.5	38	95.0	2.60	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: CJ

Sequence Date: 04/29/99

SPL ID of sample spiked: 9904A22-04A

Sample File ID: S_D4089.TX0

Method Blank File ID:

Blank Spike File ID: S_D4081.TX0

Matrix Spike File ID: S_D4083.TX0

Matrix Spike Duplicate File ID: S_D4084.TX0

SAMPLES IN BATCH(SPL ID):

9904964-11A 9904964-12A 9904964-13A 9904964-14A
 9904A22-01A 9904A22-02A 9904A22-06A 9904A25-02A
 9904A25-D4A 9904964-16A 9904964-17A 9904964-18A
 9904964-19A 9904A22-03A 9904A22-04A 9904964-07A
 9904964-10A



** SPL BATCH QUALITY CONTROL REPORT **

California LUFT Manual for Gasoline

HOUSTON LABORATORY

8880 INTERCHANGE DRIVE

HOUSTON, TEXAS 77054

PHONE (713) 660-0901

Matrix: Aqueous

Batch Id: HP_S990429142000

Units: mg/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 %	
Gasoline Range Organics	ND	1.0	0.69	69.0	64 - 131

MATRIX SPIKES

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
			GASOLINE RANGE ORGANICS	0.07	0.90	0.83		84.4	0.83

* = 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 = $\frac{(\langle 1 \rangle - \langle 2 \rangle)}{\langle 3 \rangle} \times 100$

LCS % Recovery = $\frac{(\langle 1 \rangle)}{\langle 3 \rangle} \times 100$

Relative Percent Difference = $\frac{|\langle 4 \rangle - \langle 5 \rangle|}{[(\langle 4 \rangle + \langle 5 \rangle) \times 0.5]} \times 100$

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

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

Analyst: CJ

Sequence Date: 04/29/99

SPL ID of sample spiked: 9904A22-03A

Sample File ID: SSD4088.TX0

Method Blank File ID:

Blank Spike File ID: SSD4082.TX0

Matrix Spike File ID: SSD4085.TX0

Matrix Spike Duplicate File ID: SSD4086.TX0

SAMPLES IN BATCH(SPL ID):

9904A22-06A 9904A25-01A 9904A25-02A 9904A25-03A
 9904A22-05A 9904A25-04A 9904A22-03A 9904A22-04A
 9904A22-01A 9904A22-02A



** SPL BATCH QUALITY CONTROL REPORT **
Method 8021B ***

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

Matrix: Aqueous
Units: ug/L

Batch Id: HP_F990427112711

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 %	
1,2-Dichloroethane	ND	20	21	105	70 - 130
1,2-Dibromoethane	ND	20	21	105	70 - 130

MATRIX SPIKES

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
1,2-DICHLOROETHANE	ND	20	23	115	23	115	0	13	75 - 123
1,2-DIBROMOETHANE	ND	20	23	115	23	115	0	33	67 - 135

Analyst: YN

Sequence Date: 04/27/99

SPL ID of sample spiked: 9904A25-02C

Sample File ID: FFD4033.TX0

Method Blank File ID:

Blank Spike File ID: FFD4029.TX0

Matrix Spike File ID: FFD4035.TX0

Matrix Spike Duplicate File ID: FFD4036.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>] x 100

LCS % Recovery = (<1> / <3>) x 100

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

(**) = Source: Default limits 8021B

(***) = Source: SPL Historicals for 1st Qtr.'97

SAMPLES IN BATCH(SPL ID): 9904A25-02C

CHAIN OF CUSTODY
AND
SAMPLE RECEIPT CHECKLIST



440412D

EW

CHAIN OF CUSTODY

No. 118682

Page 1 of 1

CONSULTANT'S NAME Blain Tech Services, Inc.		CONSULTANT'S ADDRESS 1680 Rogers Ave., San Jose, CA 95112	
BP SITE NUMBER 11107	BP SITE / FACILITY ADDRESS 18501 Hesperian, San Lorenzo		CONSULTANT PROJECT NUMBER 990423-21
CONSULTANT PROJECT MANGER Doug Sanders	PHONE NUMBER (408) 573-0555 X218	FAX NUMBER (408) 573-7771	CONSULTANT CONTRACT NUMBER
BP CONTACT Scott Hooton	BP ADDRESS 295 SW 41st St., Renton, WA	PHONE NUMBER (425) 251-0689	FAX NO. (425) 251-0736
LAB CONTACT SPL - Sonia West	LABORATORY ADDRESS P.O. Box 20807, Houston, TX	PHONE NUMBER (800) 969-6775	FAX NO. (713) 660-8975
BP CONTACT REQUESTING RUSH TAT (Print BP Contact Name)	RUSH REQUESTED OF (Print Consultant Contact Name)	DATE/TIME	SHIPMENT DATE
TAT: <input type="checkbox"/> 24 Hours <input type="checkbox"/> 48 Hours <input type="checkbox"/> 72 Hours <input checked="" type="checkbox"/> Standard 7 or 14 Days			SHIPMENT METHOD
			AIRBILL NUMBER

SAMPLE DESCRIPTION	COLLECTION DATE	COLLECTION TIME	MATRIX SOIL/WATER	CONTAINERS		PRESERVATIVE	LAB SAMPLE #	ANALYSIS REQUIRED			COMMENTS	
				NO.	TYPE (VOL.)			THG	BTX	MTBE		1/2 PCA
X B	4-23-99	1059	WATER	6	40 ML			X	X	X		
X C	↓	1130	↓	9	↓			X	X	X		
X D	↓	1207	↓	6	↓			X	X	X		
X A	↓	1042	↓	3	↓			X	X	X		

SAMPLED BY (Please Print Name) LAD GILCHRIST		SAMPLED BY (Signature) <i>[Signature]</i>		ADDITIONAL COMMENTS 3 C	
RELINQUISHED BY / AFFILIATION (Print Name / Signature) LAD GILCHRIST / [Signature]	DATE 4/26/99	TIME 1610	ACCEPTED BY / AFFILIATION (Print Name / Signature) [Signature]	DATE	TIME
			Cockrum / SPL 4/27/99 1000		

SPL Houston Environmental Laboratory

Sample Login Checklist

Date: <u>4/27/99</u>	Time: <u>1000</u>
----------------------	-------------------

SPL Sample ID: <u>9904A25</u>

		<u>Yes</u>	<u>No</u>
1	Chain-of-Custody (COC) form is present.	✓	
2	COC is properly completed.	✓	
3	If no, Non-Conformance Worksheet has been completed.		
4	Custody seals are present on the shipping container.	✓	
5	If yes, custody seals are intact.	✓	
6	All samples are tagged or labeled.	✓	
7	If no, Non-Conformance Worksheet has been completed.		
8	Sample containers arrived intact	✓	
9	Temperature of samples upon arrival:	<u>3°</u>	<u>C</u>
10	Method of sample delivery to SPL:	SPL Delivery	
		Client Delivery	
		FedEx Delivery (airbill #) <u>804039491297</u>	
		Other:	
11	Method of sample disposal:	SPL Disposal	✓
		HOLD	
		Return to Client	

Name: <u>Rockman</u>	Date: <u>4/27/99</u>
----------------------	----------------------

Field Data Sheets

WELL MONITORING DATA SHEET

Project #: <u>990423-L1</u>	Client: <u>BP # 11107</u>
Sampler: <u>LAD</u>	Start Date: <u>4-23-99</u>
Well I.D.: <u>MW-4</u>	Well Diameter: <u>(2)</u> 3 4 6 8 <u> </u>
Total Well Depth: <u>25.20</u>	Depth to Water: <u>16.17</u>
Before: After:	Before: After:
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: <u>PVC</u> Grade	D.O. Meter (if req'd): YSI HACH

Purge Method: <u>Bailer</u> <u>Disposable Bailer</u> <u>Middleburg</u> Electric Submersible Extraction Pump Other: _____	Sampling Method: <u>Bailer</u> <u>Disposable Bailer</u> <u>Extraction Port</u> Other: _____
---	--

1.4 (Gals.) X _____ = _____ Gals.
 1 Case Volume Specified Volumes Calculated Volume

Well Diameter	Multiplier	Well Diameter	Multiplier
2"	0.16	5"	1.02
3"	0.37	6"	1.47
4"	0.65	Other	radius ² * 0.163

Time	Temp (°F)	pH	Cond.	Turbidity	Gals. Removed	Observations
<u>11:13</u>	<u>68.6</u>	<u>6.5</u>	<u>896</u>	<u>—</u>	<u>2</u>	
<u>11:19</u>	<u>68.6</u>	<u>6.6</u>	<u>899</u>	<u>—</u>	<u>3</u>	
<u>11:25</u>	<u>68.2</u>	<u>6.6</u>	<u>896</u>	<u>—</u>	<u>5</u>	

Did well dewater? Yes No Gallons actually evacuated: 5

Sampling Time: 1130 Sampling Date: 4-23-99

Sample I.D.: C Laboratory: SPL

Analyzed for: TPH-G BTEX MTBE TPH-D Other: 1/2, DEAR, DB, BOTO / OXYGEN, BCEO

Equipment Blank I.D.: _____ @ _____ Time Duplicate I.D.: 9 JOBS TOTAL

Analyzed for: TPH-G BTEX MTBE TPH-D Other: _____

D.O. (if req'd):	Pre-purge:	mg/L	Post-purge:	mg/L
ORP (if req'd):	Pre-purge:	mV	Post-purge:	mV

WELL MONITORING DATA SHEET

Project #: <u>990423-L1</u>	Client: <u>BP# 11107</u>
Sampler: <u>LAD</u>	Start Date: <u>4-23-99</u>
Well I.D.: <u>MW-5</u>	Well Diameter: <u>(2)</u> 3 4 6 8 <u> </u>
Total Well Depth: <u>24.54</u>	Depth to Water: <u>16.00</u>
Before: After:	Before: After:
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: <u>PVC</u> Grade	D.O. Meter (if req'd): YSI HACH

Purge Method: Bailer
Disposable Bailer
 Middleburg
 Electric Submersible
 Extraction Pump

Sampling Method: Bailer
Disposable Bailer
Extraction Port
 Other: _____

Other: _____

Well Diameter	Multiplier	Well Diameter	Multiplier
2"	0.16	5"	1.02
3"	0.37	6"	1.47
4"	0.65	Other	radius ² * 0.163

1.4 (Gals.) X _____ = _____ Gals.
 Case Volume Specified Volumes Calculated Volume

Time	Temp (°F)	pH	Cond.	Turbidity	Gals. Removed	Observations
<u>10:51</u>	<u>68.0</u>	<u>6.5</u>	<u>872</u>	<u>—</u>	<u>2.</u>	
<u>10:53</u>	<u>67.8</u>	<u>6.5</u>	<u>853</u>	<u>—</u>	<u>3.</u>	
<u>10:54</u>	<u>67.2</u>	<u>6.6</u>	<u>853.</u>	<u>—</u>	<u>5.</u>	

Did well dewater? Yes No Gallons actually evacuated: 5

Sampling Time: 1059 Sampling Date: 4-23-99

Sample I.D.: B Laboratory: SPL

Analyzed for: TPH-G BTEX MTBE TPH-D Other: ETHER OXYGENATES BY 8260

Equipment Blank I.D.: _____ @ _____ Time Duplicate I.D.: _____

Analyzed for: TPH-G BTEX MTBE TPH-D Other: _____

D.O. (if req'd):	Pre-purge:	mg/L	Post-purge:	mg/L
	ORP (if req'd):	Pre-purge:	mV	Post-purge:

WELL MONITORING DATA SHEET

Project #: 990423-21	Client: BP # 1107
Sampler: LAD	Start Date: 4-23-99
Well I.D.: MW-6	Well Diameter: 2 3 4 6 8 _____
Total Well Depth: 24.95	Depth to Water: 15.74
Before: _____ After: _____	Before: _____ After: _____
Depth to Free Product: _____	Thickness of Free Product (feet): _____
Referenced to: <u>PVC</u> Grade	D.O. Meter (if req'd): YSI HACH

Purge Method: Bailer
Disposable Bailer
 Middleburg
 Electric Submersible
 Extraction Pump

Sampling Method: Bailer
Disposable Bailer
 Extraction Port
 Other: _____

Other: _____

1.5 (Gals.) X _____ = _____ Gals.
 1 Case Volume Specified Volumes Calculated Volume

Well Diameter	Multiplier	Well Diameter	Multiplier
2"	0.16	5"	1.02
3"	0.37	6"	1.47
4"	0.65	Other	radius ² * 0.163

Time	Temp (°F)	pH	Cond.	Turbidity	Gals. Removed	Observations
11:50	67.4	6.6	881	—	2	
11:57	67.4	6.6	889	—	3	
12:05	67.4	6.7	896	—	5	

Did well dewater? Yes No Gallons actually evacuated: 5

Sampling Time: 12:07 Sampling Date: 4-23-99

Sample I.D.: D Laboratory: SPL

Analyzed for: TPH-G BTEX MTBE TPH-D Other: ETHER OXYGENATES BY 8260

Equipment Blank I.D.: _____ @ _____ Time Duplicate I.D.: _____

Analyzed for: TPH-G BTEX MTBE TPH-D Other: _____

D.O. (if req'd):	Pre-purge:	mg/L	Post-purge:	mg/L
	ORP (if req'd):	Pre-purge:	mV	Post-purge:

WELL MONITORING DATA SHEET

Project #: <u>990423-L1</u>	Client: <u>BP# 11107</u>
Sampler: <u>LAD</u>	Start Date: <u>4-23-99</u>
Well I.D.: <u>MW-7</u>	Well Diameter: <u>(2)</u> 3 4 6 8
Total Well Depth: <u>24.45</u>	Depth to Water: <u>16.21</u>
Before: _____ After: _____	Before: _____ After: _____
Depth to Free Product: _____	Thickness of Free Product (feet): _____
Referenced to: <u>PVC</u> Grade	D.O. Meter (if req'd): YSI HACH

Purge Method: Bailer
Disposable Bailer
Middleburg
 Electric Submersible
 Extraction Pump
 Other: _____

Sampling Method: Bailer
Disposable Bailer
Extraction Port
 Other: _____

1.3 (Gals.) X (3.5) = _____ Gals.
 1 Case Volume Specified Volumes Calculated Volume

Well Diameter	Multiplier	Well Diameter	Multiplier
<u>2"</u>	<u>0.16</u>	5"	1.02
3"	0.37	6"	1.47
4"	0.65	Other	radius ² * 0.163

Time	Temp (°F)	pH	Cond.	Turbidity	Gals. Removed	Observations
<u>1028</u>	<u>70.0</u>	<u>6.5</u>	<u>827.</u>	<u>—</u>	<u>2.</u>	
<u>1034</u>	<u>67.6</u>	<u>6.4</u>	<u>841.</u>	<u>—</u>	<u>3.</u>	
<u>1040</u>	<u>69.0</u>	<u>6.5</u>	<u>783.</u>	<u>—</u>	<u>4.</u>	

Did well dewater? Yes No Gallons actually evacuated: 4.

Sampling Time: 1042 Sampling Date: 4-23-99

Sample I.D.: A Laboratory: SPL

Analyzed for: TPH-G BTEX MTBE TPH-D Other: _____

Equipment Blank I.D.: _____ @ _____ Time Duplicate I.D.: _____

Analyzed for: TPH-G BTEX MTBE TPH-D Other: _____

D.O. (if req'd):	Pre-purge:	mg/L	Post-purge:	mg/L
ORP (if req'd):	Pre-purge:	mV	Post-purge:	mV