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**GROUNDWATER MONITORING AND SAMPLING REPORT**

**BP Oil Company Service Station No. 11109  
4280 Foothill Boulevard  
Oakland, California**

**Project No. 10-014-06-002**

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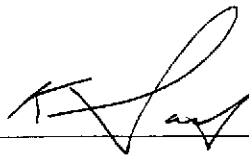
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**November 26, 1996**



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# GROUNDWATER MONITORING AND SAMPLING REPORT

BP Oil Company Service Station No. 11109  
4280 Foothill Boulevard  
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Project No. 10-014-06-002

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## INTRODUCTION

This report presents the results and findings of the September 6 and 9, 1996 groundwater monitoring and sampling conducted by Alisto Engineering Group at BP Oil Company Service Station No. 11109, 4280 Foothill Boulevard, Oakland, California. A site vicinity map is shown on Figure 1.

## FIELD PROCEDURES

Field activities were performed in accordance with the procedures and guidelines of the Alameda County Health Care Services Agency and the California Regional Water Quality Control Board, San Francisco Bay Region.

Before purging and sampling, the groundwater level in each well was measured from a permanent mark on top of the casing to the nearest 0.01 foot using an electronic sounder. The depth to groundwater and top of casing elevation data were used to calculate the groundwater elevation in each well in reference to mean sea level. The survey data and groundwater elevation measurements collected to date are presented in Table 1.

Before sample collection, each well was purged of 3 casing volumes, while recording field readings of pH, temperature, electrical conductivity, and dissolved oxygen. Groundwater samples were collected for laboratory analysis by lowering a bottom-fill, disposable bailer to just below the water level in the well. The samples were transferred from the bailer into laboratory-supplied containers. The water sampling field survey forms are presented in Appendix A.

Groundwater monitoring was performed concurrently at the neighboring Chevron service station, 4265 Foothill Boulevard, and the Shell service station, 4411 Foothill Boulevard. The results are presented in Tables 2 and 3.

## 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. 11109  
 4280 FOOTHILL BOULEVARD, OAKLAND, CALIFORNIA

ALISTO PROJECT NO. 10-014

WELL ID	DATE OF SAMPLING/ MONITORING	CASING ELEVATION (a) (Feet)	DEPTH TO WATER (Feet)	PRODUCT THICKNESS (Feet)	GROUNDWATER ELEVATION (b) (Feet)	TPH-G (ug/l)	TPH-D (ug/l)	B (ug/l)	T (ug/l)	E (ug/l)	X (ug/l)	MTBE (ug/l)	TOG (ug/l)	HVOC (ug/l)	DO (ppm)	LAB
MW-1	01/31/90	38.19	15.41	---	22.78	---	---	---	---	---	---	---	---	---	---	---
MW-1 (c)	02/05/90	38.19	---	---	---	---	---	---	---	---	---	---	---	---	---	---
MW-2	02/05/90	41.22	21.90	---	19.31	1300	---	14	ND<0.1	9	13	---	---	---	---	SUP
MW-2	02/14/91	41.22	21.16	---	20.06	ND<50	ND<10000	ND<0.3	ND<0.3	ND<0.3	ND<0.3	---	ND<5000	51	(d)	SUP
MW-2	05/13/91	41.22	21.32	---	19.90	ND<50	ND<50	ND<0.3	ND<0.3	ND<0.3	ND<0.3	---	6000	0.5	(e)	SUP
MW-2	07/24/91	41.22	22.92	---	18.30	---	---	---	---	---	---	---	---	---	---	---
MW-2	10/03/91	41.22	24.90	---	16.32	ND<50	ND<50	ND<0.3	0.8	ND<0.3	ND<0.3	---	ND<5000	0.7	(e)	SUP
MW-2	10/15/91	41.22	24.10	---	17.12	---	---	---	---	---	---	---	---	---	---	---
MW-2 (f)	12/04/91	41.22	---	---	---	---	---	---	---	---	---	---	---	---	---	---
MW-2	12/16/91	41.22	23.95	---	17.27	---	---	---	---	---	---	---	---	---	---	---
MW-2	01/06/92	41.22	23.30	---	17.92	ND<50	ND<50	ND<0.3	ND<0.3	ND<0.3	ND<0.3	---	ND<5000	ND	---	ANA
MW-2	01/22/92	41.22	23.14	---	18.08	---	---	---	---	---	---	---	---	---	---	---
MW-2	01/28/92	41.22	22.99	---	18.23	---	---	---	---	---	---	---	---	---	---	---
MW-2	02/05/92	41.22	22.63	---	18.59	---	---	---	---	---	---	---	---	---	---	---
MW-2	02/12/92	41.22	22.04	---	19.18	---	---	---	---	---	---	---	---	---	---	---
MW-2	02/17/92	41.22	20.84	---	20.38	---	---	---	---	---	---	---	---	---	---	---
MW-2	04/03/92	41.22	18.29	---	22.93	---	---	---	---	---	---	---	---	---	---	---
MW-2	04/08/92	41.22	18.86	---	22.36	ND<50	63	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	ND<5000	ND	---	ANA
MW-2	04/14/92	41.22	19.45	---	21.77	---	---	---	---	---	---	---	---	---	---	---
MW-2	04/29/92	41.22	20.35	---	20.87	---	---	---	---	---	---	---	---	---	---	---
MW-2	05/07/92	41.22	20.84	---	20.38	---	---	---	---	---	---	---	---	---	---	---
MW-2	07/03/92	41.22	22.34	---	18.88	ND<50	---	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	---	---	ANA
MW-2	10/08/92	41.22	23.73	---	17.49	ND<50	---	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	---	---	ANA
MW-2	12/31/92	41.22	21.12	---	20.10	ND<50	---	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	---	---	ANA
MW-2	04/21/93	41.22	17.68	---	23.54	ND<50	ND<50 (g)	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	ND<5000	ND	---	PACE
MW-2	07/07/93	41.22	20.30	---	20.92	ND<50	---	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	1.0	(e)	PACE
MW-2	09/21/93	41.22	21.93	---	19.29	ND<50	---	0.9	0.7	0.7	2.6	---	---	---	---	PACE
MW-2	12/17/93	41.22	21.48	---	19.74	---	---	---	---	---	---	---	---	---	---	---
MW-2	12/23/93	41.22	---	---	---	ND<50	---	ND<0.5	ND<0.5	ND<0.5	0.7	---	---	---	---	PACE
MW-2	04/07/94	41.22	20.25	---	20.97	ND<50	---	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	---	5.9	PACE
MW-2	07/06/94	41.22	20.59	---	20.63	ND<50	---	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	---	3.1	PACE
MW-2	10/07/94	41.22	22.04	---	19.18	ND<50	---	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	---	2.8	PACE
MW-2	01/27/95	41.22	26.12	---	15.10	ND<50	440	ND<0.5	ND<0.5	ND<0.5	ND<1	---	ND<5000	---	4.8	ATI
MW-2	03/30/95	41.22	12.34	---	28.88	ND<50	---	ND<0.50	ND<0.50	ND<0.50	ND<1.0	---	---	---	7.2	ATI
MW-2	06/20/95	41.22	16.42	---	24.80	ND<50	---	ND<0.50	ND<0.50	ND<0.50	ND<1.0	---	---	---	6.0	ATI
MW-2	10/03/95	41.22	20.06	---	21.16	ND<50	---	ND<0.50	ND<0.50	ND<0.50	ND<1.0	ND<5.0	---	---	5.7	ATI
MW-2	12/06/95	41.22	21.31	---	19.91	ND<50	---	ND<0.50	ND<0.50	ND<0.50	ND<1.0	46	---	---	5.4	ATI
MW-2	03/21/96	41.22	12.28	---	28.94	ND<50	---	ND<0.5	ND<1	ND<1	ND<1	ND<10	---	---	7.4	SPL
MW-2	06/21/96	41.22	13.28	---	27.94	ND<50	---	ND<0.5	ND<1	ND<1	ND<1	ND<10	---	---	7.3	SPL
MW-2	09/06/96	41.22	13.94	---	27.28	---	---	---	---	---	---	---	---	---	---	---
MW-2	09/09/96	41.22	---	---	---	ND<50	---	ND<0.5	ND<1.0	ND<1.0	ND<1.0	ND<10	---	---	7.4	SPL

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 BP OIL COMPANY SERVICE STATION NO. 11109  
 4280 FOOTHILL BOULEVARD, OAKLAND, CALIFORNIA

ALISTO PROJECT NO. 10-014

WELL ID	DATE OF SAMPLING/ MONITORING	CASING ELEVATION (Feet)	DEPTH TO WATER (Feet)	PRODUCT THICKNESS (Feet)	GROUNDWATER ELEVATION (Feet)	TPH-G (ug/l)	TPH-D (ug/l)	B (ug/l)	T (ug/l)	E (ug/l)	X (ug/l)	MTBE (ug/l)	TOG (ug/l)	HVOC (ug/l)	DO (ppm)	LAB
MW-3	02/05/90	40.74	17.45	---	23.29	1400	---	15	ND<2.5	11	8	---	---	---	---	SUP
MW-3	02/14/91	40.74	18.52	---	22.22	320	---	8	ND<0.3	8	1	---	---	---	---	SUP
MW-3	05/13/91	40.74	19.32	---	21.42	640	---	13	ND<0.3	18	1	---	---	---	---	SUP
MW-3	07/24/91	40.74	20.69	---	20.05	---	---	---	---	---	---	---	---	---	---	---
MW-3	10/03/91	40.74	19.47	---	21.27	940	---	21	ND<0.3	23	2.1	---	---	---	---	SUP
MW-3	10/15/91	40.74	20.46	---	20.28	---	---	---	---	---	---	---	---	---	---	---
MW-3	12/04/91	40.74	18.29	---	22.45	---	---	---	---	---	---	---	---	---	---	---
MW-3	12/16/91	40.74	18.34	---	22.40	---	---	---	---	---	---	---	---	---	---	---
MW-3	01/06/92	40.74	18.50	---	22.24	580	---	6.1	1	6.1	7.1	---	---	---	---	ANA
MW-3	01/22/92	40.74	17.86	---	22.88	---	---	---	---	---	---	---	---	---	---	---
MW-3	01/28/92	40.74	15.84	---	24.90	---	---	---	---	---	---	---	---	---	---	---
MW-3	02/05/92	40.74	17.53	---	23.21	---	---	---	---	---	---	---	---	---	---	---
MW-3	02/12/92	40.74	17.15	---	23.59	---	---	---	---	---	---	---	---	---	---	---
MW-3	02/17/92	40.74	16.18	---	24.56	---	---	---	---	---	---	---	---	---	---	---
MW-3	04/03/92	40.74	14.80	---	25.94	---	---	---	---	---	---	---	---	---	---	---
MW-3	04/08/92	40.74	17.06	---	23.68	1100	---	30	4.6	32	11	---	---	---	---	ANA
MW-3	04/14/92	40.74	15.22	---	25.52	---	---	---	---	---	---	---	---	---	---	---
MW-3	04/29/92	40.74	15.90	---	24.84	---	---	---	---	---	---	---	---	---	---	---
MW-3	05/07/92	40.74	16.35	---	24.39	---	---	---	---	---	---	---	---	---	---	---
MW-3	07/03/92	40.74	17.74	---	23.00	1200	---	38	ND<2.5	24	ND<2.5	---	---	---	---	ANA
MW-3	10/08/92	40.74	19.06	---	21.68	1400	---	31	ND<0.5	25	13	---	---	---	---	ANA
MW-3	12/31/92	40.74	16.61	---	24.13	820	---	12	4.1	13	5.9	---	---	---	---	ANA
QC-1	(h) 12/31/92	40.74	---	---	---	960	---	11	3.6	10	3.8	---	---	---	---	ANA
MW-3	04/21/93	40.74	14.24	---	26.50	420	---	5.6	ND<0.5	3.9	1.4	---	---	---	---	PACE
QC-1	(h) 04/21/93	40.74	---	---	---	390	---	5.0	ND<0.5	3.7	1.5	---	---	---	---	PACE
MW-3	07/07/93	40.13	(i) 15.19	---	24.94	54	---	0.6	0.6	ND<0.5	ND<0.5	---	---	---	---	PACE
MW-3	09/21/93	40.13	16.58	---	23.55	540	---	7.9	0.9	4.7	2.4	---	---	---	---	PACE
MW-3	12/17/93	40.13	15.82	---	24.31	---	---	---	---	---	---	---	---	---	---	---
MW-3	12/23/93	40.13	---	---	---	500	---	9.8	1.5	3.3	2.1	---	---	---	---	PACE
QC-1	(h) 12/23/93	40.13	---	---	---	480	---	9.2	ND<0.5	5.4	5.3	---	---	---	---	PACE
MW-3	04/07/94	40.13	28.50	---	11.63	460	---	20	7.4	8.9	11	---	---	---	---	PACE
QC-1	(h) 04/07/94	40.13	---	---	---	460	---	20	7.7	9.0	11	---	---	---	---	PACE
MW-3	07/06/94	40.13	---	---	---	300	---	10	0.6	1.7	6.4	---	---	---	4.8	PACE
MW-3	10/07/94	40.13	27.65	---	12.48	620	---	28	ND<0.5	2.2	12	---	---	---	4.4	PACE
MW-3	01/27/95	40.13	27.65	---	12.48	---	---	---	---	---	---	---	---	---	---	---
MW-3	03/30/95	40.13	26.05	---	14.08	300	---	10	6.0	3.4	18	---	---	---	7.6	ATI
MW-3	06/20/95	40.13	19.49	---	20.64	170	---	7.2	3.4	0.85	15	---	---	---	---	ATI
MW-3	10/03/95	40.13	24.93	---	15.20	170	---	2.1	ND<0.50	0.81	8.0	6.7	---	---	---	ATI
MW-3	12/06/95	40.13	25.14	---	14.99	1700	---	6.7	3.1	2.8	210	64	---	---	---	ATI
QC-1	(h) 12/06/95	40.13	---	---	---	1400	---	6.1	3.0	1.7	190	53	---	---	---	ATI
MW-3	03/21/96	40.13	9.48	---	30.65	ND<50	---	0.5	ND<1	ND<1	1	ND<10	---	---	7.3	SPL
MW-3	06/21/96	40.13	11.60	---	28.53	ND<50	---	13	ND<1	ND<1	ND<1	12	---	---	7.6	SPL
MW-3	09/06/96	40.13	12.23	---	27.90	---	---	---	---	---	---	---	---	---	---	---
MW-3	09/09/96	40.13	---	---	---	ND<250	---	6.5	ND<5.0	ND<5.0	ND<5.0	ND<50	---	---	7.6	SPL

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WELL ID	DATE OF SAMPLING/ MONITORING	CASING ELEVATION (a) (Feet)	DEPTH TO WATER (Feet)	PRODUCT THICKNESS (Feet)	GROUNDWATER ELEVATION (b) (Feet)	TPH-G (ug/l)	TPH-D (ug/l)	B (ug/l)	T (ug/l)	E (ug/l)	X (ug/l)	MTBE (ug/l)	TOG (ug/l)	HVOC (ug/l)	DO (ppm)	LAB
MW-4	02/05/90	40.11	20.75	---	19.36	620	---	ND<0.5	9	ND<0.5	10	---	---	---	---	SUP
MW-4	02/14/91	40.11	21.73	---	18.38	180	---	ND<0.3	ND<0.3	0.4	2	---	---	---	---	SUP
MW-4	05/13/91	40.11	18.55	---	21.56	72	---	0.7	ND<0.3	ND<0.3	ND<0.3	---	---	---	---	SUP
MW-4	07/24/91	40.11	21.31	---	18.80	---	---	---	---	---	---	---	---	---	---	---
MW-4	10/03/91	40.11	22.57	---	17.54	57	---	ND<0.3	ND<0.3	ND<0.3	ND<0.3	---	---	---	---	SUP
MW-4	10/15/91	40.11	22.88	---	17.23	---	---	---	---	---	---	---	---	---	---	---
MW-4	12/04/91	40.11	22.54	---	17.57	---	---	---	---	---	---	---	---	---	---	---
MW-4	12/16/91	40.11	22.59	---	17.52	---	---	---	---	---	---	---	---	---	---	---
MW-4	01/06/92	40.11	22.00	---	18.11	480	---	0.8	3.2	1.9	7.7	---	---	---	---	ANA
MW-4	01/22/92	40.11	21.58	---	18.53	---	---	---	---	---	---	---	---	---	---	---
MW-4	01/28/92	40.11	21.42	---	18.69	---	---	---	---	---	---	---	---	---	---	---
MW-4	02/05/92	40.11	21.10	---	19.01	---	---	---	---	---	---	---	---	---	---	---
MW-4	02/12/92	40.11	20.74	---	19.37	---	---	---	---	---	---	---	---	---	---	---
MW-4	02/17/92	40.11	19.78	---	20.33	---	---	---	---	---	---	---	---	---	---	---
MW-4	04/03/92	40.11	16.80	---	23.31	---	---	---	---	---	---	---	---	---	---	---
MW-4	04/08/92	40.11	17.13	---	22.98	ND<50	---	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	---	---	ANA
MW-4	04/14/92	40.11	17.74	---	22.37	---	---	---	---	---	---	---	---	---	---	---
MW-4	04/29/92	40.11	18.56	---	21.55	---	---	---	---	---	---	---	---	---	---	---
MW-4	05/07/92	40.11	19.10	---	21.01	---	---	---	---	---	---	---	---	---	---	---
MW-4	07/03/92	40.11	20.71	---	19.40	ND<50	---	0.6	ND<0.5	ND<0.5	ND<0.5	---	---	---	---	ANA
MW-4	10/08/92	40.11	22.43	---	17.68	270	---	ND<0.5	2.1	2.5	3.2	---	---	---	---	ANA
MW-4	12/31/92	40.11	19.58	---	20.53	150	---	ND<0.5	ND<0.5	ND<0.5	1.3	---	---	---	---	ANA
MW-4	04/21/93	40.11	17.79	---	22.32	ND<50	---	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	---	---	PACE
MW-4	07/07/93	40.11	18.44	---	21.67	160	---	1.2	5.4	3.8	19	---	---	---	---	PACE
MW-4	09/21/93	40.11	20.14	---	19.97	71	---	ND<0.5	1.9	ND<0.5	2.1	---	---	---	---	PACE
MW-4	12/17/93	40.11	19.80	---	20.31	---	---	---	---	---	---	---	---	---	---	---
MW-4	12/23/93	40.11	---	---	---	ND<50	---	3.1	1.6	0.8	3.8	---	---	---	---	PACE
MW-4	04/07/94	40.11	19.12	---	20.99	ND<50	---	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	---	6.6	PACE
MW-4	07/06/94	40.11	19.90	---	20.21	62	---	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	---	4.1	PACE
MW-4	10/07/94	40.11	20.07	---	20.04	ND<50	---	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	---	3.6	PACE
MW-4	01/27/95	40.11	13.72	---	26.39	ND<50	---	ND<0.5	ND<0.5	ND<0.5	ND<1	---	---	---	2.7	ATI
MW-4	03/30/95	40.11	11.46	---	28.65	ND<50	---	ND<0.50	ND<0.50	ND<0.50	ND<1.0	---	---	---	8.3	ATI
MW-4	06/20/95	40.11	14.78	---	25.33	ND<50	---	ND<0.50	ND<0.50	ND<0.50	ND<1.0	---	---	---	---	ATI
MW-4	10/03/95	40.11	19.62	---	20.49	ND<50	---	ND<0.50	ND<0.50	ND<0.50	ND<1.0	5.0	---	---	5.8	ATI
MW-4	12/06/95	40.11	19.91	---	20.20	ND<50	---	ND<0.50	ND<0.50	ND<0.50	ND<1.0	47	---	---	5.7	ATI
MW-4	03/21/96	40.11	11.12	---	28.99	ND<50	---	ND<0.5	ND<1	ND<1	ND<1	ND<10	---	---	7.8	SPL
MW-4	06/21/96	40.11	12.21	---	27.90	ND<50	---	ND<0.5	ND<1	ND<1	ND<1	ND<10	---	---	7.9	SPL
MW-4	09/06/96	40.11	12.89	---	27.22	---	---	---	---	---	---	---	---	---	---	---
MW-4	09/09/96	40.11	---	---	---	ND<50	---	ND<0.5	ND<1.0	ND<1.0	ND<1.0	ND<10	---	---	7.2	SPL

TABLE 1 - SUMMARY OF RESULTS OF GROUNDWATER SAMPLING  
 BP OIL COMPANY SERVICE STATION NO. 11109  
 4280 FOOTHILL BOULEVARD, OAKLAND, CALIFORNIA

ALISTO PROJECT NO. 10-014

WELL ID	DATE OF SAMPLING/ MONITORING	CASING ELEVATION (a) (Feet)	DEPTH TO WATER (Feet)	PRODUCT THICKNESS (Feet)	GROUNDWATER ELEVATION (b) (Feet)	TPH-G (ug/l)	TPH-D (ug/l)	B (ug/l)	T (ug/l)	E (ug/l)	X (ug/l)	MTBE (ug/l)	TOG (ug/l)	HVOC (ug/l)	DO (ppm)	LAB
MW-5	10/03/91	39.55	18.08	---	21.47	79000	---	13000	7400	1400	6200	---	---	---	---	SUP
MW-5	10/15/91	39.55	18.55	---	21.00	---	---	---	---	---	---	---	---	---	---	---
MW-5	12/04/91	39.55	18.44	0.13	21.21	---	---	---	---	---	---	---	---	---	---	---
MW-5	12/16/91	39.55	18.66	0.01	20.90	---	---	---	---	---	---	---	---	---	---	---
MW-5	01/06/92	39.55	19.12	0.11	20.51	---	---	---	---	---	---	---	---	---	---	---
MW-5	01/22/92	39.55	14.59	---	24.96	---	---	---	---	---	---	---	---	---	---	---
MW-5	01/28/92	39.55	15.25	---	24.30	---	---	---	---	---	---	---	---	---	---	---
MW-5	02/05/92	39.55	15.58	SHEEN	23.97	---	---	---	---	---	---	---	---	---	---	---
MW-5	02/12/92	39.55	15.54	0.01	24.02	---	---	---	---	---	---	---	---	---	---	---
MW-5	02/17/92	39.55	13.98	SHEEN	25.57	---	---	---	---	---	---	---	---	---	---	---
MW-5	04/03/92	39.55	13.63	0.04	25.95	---	---	---	---	---	---	---	---	---	---	---
MW-5	04/08/92	39.55	13.17	0.01	26.39	---	---	---	---	---	---	---	---	---	---	---
MW-5	04/14/92	39.55	13.45	0.01	26.11	---	---	---	---	---	---	---	---	---	---	---
MW-5	04/29/92	39.55	13.75	0.07	25.85	---	---	---	---	---	---	---	---	---	---	---
MW-5	05/07/92	39.55	16.15	0.04	23.43	---	---	---	---	---	---	---	---	---	---	---
MW-5	07/03/92	39.55	17.67	0.08	21.94	---	---	---	---	---	---	---	---	---	---	---
MW-5	09/01/92	39.55	17.83	0.50	22.10	---	---	---	---	---	---	---	---	---	---	---
MW-5	10/08/92	39.55	17.86	0.92	22.38	---	---	---	---	---	---	---	---	---	---	---
MW-5	12/31/92	39.55	15.20	SHEEN	24.35	---	---	---	---	---	---	---	---	---	---	---
MW-5	04/21/93	39.55	12.64	0.02	26.93	---	---	---	---	---	---	---	---	---	---	---
MW-5	07/07/93	39.14	(i) 12.68	0.82	27.08	---	---	---	---	---	---	---	---	---	---	---
MW-5	09/21/93	39.14	14.35	SHEEN	24.79	---	---	---	---	---	---	---	---	---	---	---
MW-5	12/17/93	39.14	12.61	0.41	26.84	---	---	---	---	---	---	---	---	---	---	---
MW-5	04/07/94	39.14	30.00	---	9.14	66000	---	3000	1700	250	6800	---	---	---	---	PACE
MW-5	07/06/94	39.14	---	---	---	29000	---	1900	330	63	2700	---	---	---	---	PACE
MW-5	10/07/94	39.14	28.70	---	10.44	250000	---	2600	660	830	5200	---	---	---	4.2	PACE
QC-1	(h) 10/07/94	39.14	---	---	---	45000	---	2900	540	260	2600	---	---	---	---	PACE
MW-5	01/27/95	39.14	28.70	---	10.44	---	---	---	---	---	---	---	---	---	---	---
MW-5	03/30/95	39.14	28.95	---	10.19	50000	---	7900	2600	520	6400	---	---	---	5.5	ATI
QC-1	(h) 03/30/95	39.14	---	---	---	43000	---	7900	2500	440	6200	---	---	---	---	ATI
MW-5	06/20/95	39.14	22.54	---	16.60	34000	---	5100	1900	300	3700	---	---	---	---	ATI
QC-1	(h) 06/20/95	39.14	---	---	---	26000	---	3500	290	ND<25	3300	---	---	---	---	ATI
MW-5	10/03/95	39.14	18.84	---	20.30	12000	---	68	42	11	1600	330	---	---	---	ATI
QC-1	(h) 10/03/95	39.14	---	---	---	12000	---	46	39	10	1600	320	---	---	---	ATI
MW-5	12/06/95	39.14	19.07	---	20.07	16000	---	1200	93	51	700	600	---	---	---	ATI
MW-5	03/21/96	39.14	7.43	---	31.71	1500	---	89	28	6	250	ND<10	---	---	7.2	SPL
QC-1	(h) 03/21/96	39.14	---	---	---	1900	---	92	30	7	270	ND<10	---	---	---	SPL
MW-5	06/21/96	39.14	9.87	---	29.27	3500	---	740	150	19	400	ND<100	---	---	7.1	SPL
QC-1	(h) 06/21/96	39.14	---	---	---	2700	---	680	140	20	400	ND<50	---	---	---	SPL
MW-5	09/06/96	39.14	10.52	---	28.62	---	---	---	---	---	---	---	---	---	---	---
MW-5	09/09/96	39.14	---	---	---	82000	---	3100	1700	850	9100	ND<2500	---	---	7.5	SPL
QC-1	(h) 09/09/96	---	---	---	---	90000	---	2900	1600	670	6900	ND<2500	---	---	---	SPL

TABLE 1 - SUMMARY OF RESULTS OF GROUNDWATER SAMPLING  
 BP OIL COMPANY SERVICE STATION NO. 11109  
 4280 FOOTHILL BOULEVARD, OAKLAND, CALIFORNIA

ALISTO PROJECT NO. 10-014

WELL ID	DATE OF SAMPLING/ MONITORING	CASING ELEVATION (a) (Feet)	DEPTH TO WATER (Feet)	PRODUCT THICKNESS (Feet)	GROUNDWATER ELEVATION (b) (Feet)	TPH-G (ug/l)	TPH-D (ug/l)	B (ug/l)	T (ug/l)	E (ug/l)	X (ug/l)	MTBE (ug/l)	TOG (ug/l)	HVOC (ug/l)	DO (ppm)	LAB	
MW-6	10/03/91	41.59	20.73	---	20.86	ND<50	---	0.7	0.8	ND<0.3	1.3	---	---	---	---	SUP	
MW-6	10/15/91	41.59	21.20	---	20.39	---	---	---	---	---	---	---	---	---	---	---	
MW-6	12/04/91	41.59	21.26	---	20.33	---	---	---	---	---	---	---	---	---	---	---	
MW-6	12/16/91	41.59	21.12	---	20.47	---	---	---	---	---	---	---	---	---	---	---	
MW-6	01/06/92	41.59	20.29	---	21.30	ND<50	---	ND<0.5	ND<0.5	ND<0.5	1.6	---	---	---	---	ANA	
MW-6	01/22/92	41.59	20.12	---	21.47	---	---	---	---	---	---	---	---	---	---	---	
MW-6	01/28/92	41.59	20.20	---	21.39	---	---	---	---	---	---	---	---	---	---	---	
MW-6	02/05/92	41.59	20.09	---	21.50	---	---	---	---	---	---	---	---	---	---	---	
MW-6	02/12/92	41.59	19.15	---	22.44	---	---	---	---	---	---	---	---	---	---	---	
MW-6	02/17/92	41.59	18.02	---	23.57	---	---	---	---	---	---	---	---	---	---	---	
MW-6	04/03/92	41.59	16.62	---	24.97	---	---	---	---	---	---	---	---	---	---	---	
MW-6	04/08/92	41.59	17.06	---	24.53	ND<50	---	0.6	ND<0.5	0.8	ND<0.5	---	---	---	---	ANA	
MW-6	04/14/92	41.59	17.23	---	24.36	---	---	---	---	---	---	---	---	---	---	---	
MW-6	04/29/92	41.59	18.12	---	23.47	---	---	---	---	---	---	---	---	---	---	---	
MW-6	05/07/92	41.59	18.52	---	23.07	---	---	---	---	---	---	---	---	---	---	---	
MW-6	07/03/92	41.59	19.71	---	21.88	ND<50	---	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	---	---	ANA	
MW-6	10/08/92	41.59	21.22	---	20.37	ND<50	---	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	---	---	ANA	
QC-1	(h) 10/08/92	41.59	21.22	---	20.37	ND<50	---	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	---	---	ANA	
MW-6	12/31/92	41.59	21.33	---	20.26	ND<50	---	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	---	---	ANA	
MW-6	04/21/93	41.59	16.45	---	25.14	ND<50	---	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	---	---	PACE	
MW-6	07/07/93	41.59	18.68	---	22.91	ND<50	---	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	---	---	PACE	
MW-6	09/21/93	41.59	19.64	---	21.95	ND<50	---	ND<0.5	ND<0.5	ND<0.5	1.6	---	---	---	---	PACE	
MW-6	12/17/93	41.59	21.08	---	20.51	---	---	---	---	---	---	---	---	---	---	---	
MW-6	12/23/93	41.59	---	---	---	ND<50	---	ND<0.5	0.5	ND<0.5	0.6	---	---	---	---	PACE	
MW-6	04/07/94	41.59	21.27	---	20.32	ND<50	---	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	---	6.1	PACE	
MW-6	07/06/94	41.59	19.81	---	21.78	ND<50	---	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	---	4.0	PACE	
QC-1	(h) 07/06/94	41.59	---	---	---	ND<50	---	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	---	---	PACE	
MW-6	10/07/94	41.59	21.25	---	20.34	ND<50	---	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	---	---	3.5	PACE
MW-6	01/27/95	41.59	12.39	---	29.20	ND<50	---	ND<0.5	ND<0.5	ND<0.5	ND<1	---	---	---	---	4.2	ATI
MW-6	03/30/95	41.59	11.34	---	30.25	ND<50	---	ND<0.50	ND<0.50	ND<0.50	ND<1.0	---	---	---	---	6.1	ATI
MW-6	06/20/95	41.59	15.12	---	26.47	ND<50	---	ND<0.50	ND<0.50	ND<0.50	ND<1.0	---	---	---	---	---	ATI
MW-6	10/03/95	41.59	20.68	---	20.91	ND<50	---	ND<0.50	ND<0.50	ND<0.50	ND<1.0	66	---	---	---	6.4	ATI
MW-6	12/06/95	41.59	23.77	---	17.82	ND<50	---	ND<0.50	ND<0.50	ND<0.50	ND<1.0	45	---	---	---	5.7	ATI
MW-6	03/21/96	41.59	11.55	---	30.04	ND<50	---	ND<0.5	ND<1	ND<1	ND<1	41	---	---	---	9.1	SPL
MW-6	06/21/96	41.59	12.60	---	28.99	ND<50	---	ND<0.5	ND<1	ND<1	ND<1	ND<10	---	---	---	8.6	SPL
MW-6	09/06/96	41.59	13.25	---	28.34	---	---	---	---	---	---	---	---	---	---	---	---
MW-6	09/09/96	41.59	---	---	---	ND<50	---	ND<0.5	ND<1.0	ND<1.0	ND<1.0	22/22	(j)	---	---	7.9	SPL

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 BP OIL COMPANY SERVICE STATION NO. 11109  
 4280 FOOTHILL BOULEVARD, OAKLAND, CALIFORNIA

ALISTO PROJECT NO. 10-014

WELL ID	DATE OF SAMPLING/ MONITORING	CASING ELEVATION (a) (Feet)	DEPTH TO WATER (Feet)	PRODUCT THICKNESS (Feet)	GROUNDWATER ELEVATION (b) (Feet)	TPH-G (ug/l)	TPH-D (ug/l)	B (ug/l)	T (ug/l)	E (ug/l)	X (ug/l)	MTBE (ug/l)	TOG (ug/l)	HVOC (ug/l)	DO (ppm)	LAB
MW-7	10/03/91	40.64	14.93	--	25.71	360	--	62	13	3.4	20	--	--	--	--	SUP
MW-7	10/15/91	40.64	15.16	--	25.48	--	--	--	--	--	--	--	--	--	--	--
MW-7	12/04/91	40.64	15.41	--	25.23	--	--	--	--	--	--	--	--	--	--	--
MW-7	12/16/91	40.64	15.21	--	25.43	--	--	--	--	--	--	--	--	--	--	--
MW-7	01/06/92	40.64	14.56	--	26.08	1100	--	170	ND<0.5	24	23	--	--	--	--	ANA
MW-7	01/22/92	40.64	14.63	--	26.01	--	--	--	--	--	--	--	--	--	--	--
MW-7	01/28/92	40.64	14.73	--	25.91	--	--	--	--	--	--	--	--	--	--	--
MW-7	02/05/92	40.64	14.58	--	26.06	--	--	--	--	--	--	--	--	--	--	--
MW-7	02/12/92	40.64	13.94	--	26.70	--	--	--	--	--	--	--	--	--	--	--
MW-7	02/17/92	40.64	13.10	--	27.54	--	--	--	--	--	--	--	--	--	--	--
MW-7	04/03/92	40.64	12.66	--	27.98	--	--	--	--	--	--	--	--	--	--	--
MW-7	04/08/92	40.64	12.77	--	27.87	750	--	150	ND<0.5	23	9.9	--	--	--	--	ANA
MW-7	04/14/92	40.64	13.02	--	27.62	--	--	--	--	--	--	--	--	--	--	--
MW-7	04/29/92	40.64	13.59	--	27.05	--	--	--	--	--	--	--	--	--	--	--
MW-7	05/07/92	40.64	13.95	--	26.69	--	--	--	--	--	--	--	--	--	--	--
MW-7	07/03/92	40.64	14.73	--	25.91	660	--	210	ND<2.5	33	8	--	--	--	--	ANA
MW-7	10/08/92	40.64	15.75	--	24.89	320	--	49	1.4	13	6.2	--	--	--	--	ANA
MW-7	12/31/92	40.64	13.57	--	27.07	900	--	100	ND<2.5	28	4.3	--	--	--	--	ANA
MW-7	04/21/93	40.64	14.56	--	26.08	510	--	83	1.2	10	5.8	--	--	--	--	PACE
MW-7	07/07/93	40.32	13.40	(i)	26.92	1100	--	160	2.0	27	4.0	--	--	--	--	PACE
QC-1	(h) 07/07/93	40.32	--	--	--	1100	--	170	1.9	29	2.8	--	--	--	--	PACE
MW-7	09/21/93	40.32	14.40	--	25.92	690	--	150	3.1	26	5.7	--	--	--	--	PACE
QC-1	(h) 09/21/93	40.32	--	--	--	640	--	140	1.7	23	2.4	--	--	--	--	PACE
MW-7	12/17/93	40.32	13.65	--	26.67	--	--	--	--	--	--	--	--	--	--	--
MW-7	12/23/93	40.32	--	--	--	250	--	64	1.2	9.0	1.8	--	--	--	--	PACE
MW-7	04/07/94	40.32	30.62	--	9.70	140	--	32	1.4	ND<0.5	ND<0.5	--	--	--	--	PACE
MW-7	07/06/94	40.32	16.88	--	23.44	410	--	94	1.3	10	3.5	--	--	--	4.4	PACE
MW-7	10/07/94	40.32	25.59	--	14.73	ND<50	--	9.2	ND<0.5	ND<0.5	ND<0.5	--	--	--	4.9	PACE
MW-7	01/27/95	40.32	9.82	--	30.50	810	--	570	3	60	17	--	--	--	0	ATI
QC-1	(h) 01/27/95	--	--	--	--	930	--	620	4	77	21	--	--	--	--	ATI
MW-7	03/30/95	40.32	9.15	--	31.17	180	--	65	0.53	2.0	ND<1.0	--	--	--	7.8	ATI
MW-7	06/20/95	40.32	11.38	--	28.94	2800	--	980	ND<5.0	ND<5.0	43	--	--	--	--	ATI
MW-7	10/03/95	40.32	29.95	--	10.37	ND<50	--	ND<0.50	ND<0.50	ND<0.50	ND<1.0	ND<5.0	--	--	--	ATI
MW-7	12/06/95	40.32	29.85	--	10.47	ND<50	--	ND<0.50	ND<0.50	ND<0.50	ND<1.0	ND<5.0	--	--	--	ATI
MW-7	03/21/96	40.32	9.76	--	30.56	1000	--	390	2	40	13	ND<10	--	--	7.4	SPL
MW-7	06/21/96	40.32	11.01	--	29.31	ND<250	--	40	ND<5	ND<5	ND<5	ND<50	--	--	7.4	SPL
MW-7	09/06/96	40.32	11.68	--	28.64	--	--	--	--	--	--	--	--	--	--	--
MW-7	09/09/96	40.32	--	--	--	ND<250	--	13	ND<5.0	ND<5.0	ND<5.0	ND<50	--	--	7.2	SPL



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 BP OIL COMPANY SERVICE STATION NO. 11109  
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WELL ID	DATE OF SAMPLING/ MONITORING	CASING ELEVATION (a) (Feet)	DEPTH TO WATER (Feet)	PRODUCT THICKNESS (Feet)	GROUNDWATER ELEVATION (b) (Feet)	TPH-G (ug/l)	TPH-D (ug/l)	B (ug/l)	T (ug/l)	E (ug/l)	X (ug/l)	MTBE (ug/l)	TOG (ug/l)	HVOC (ug/l)	DO (ppm)	LAB
MW-8	10/03/91	38.18	22.37	---	15.81	ND<50	---	ND<0.3	0.6	ND<0.3	0.9	---	---	---	---	SUP
MW-8	10/15/91	38.18	22.70	---	15.48	---	---	---	---	---	---	---	---	---	---	---
MW-8	12/04/91	38.18	22.44	---	15.74	---	---	---	---	---	---	---	---	---	---	---
MW-8	12/16/91	38.18	22.47	---	15.71	---	---	---	---	---	---	---	---	---	---	---
MW-8	01/06/92	38.18	21.94	---	16.24	ND<50	---	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	---	---	ANA
MW-8	01/22/92	38.18	21.44	---	16.74	---	---	---	---	---	---	---	---	---	---	---
MW-8	01/28/92	38.18	21.20	---	16.98	---	---	---	---	---	---	---	---	---	---	---
MW-8	02/05/92	38.18	20.88	---	17.30	---	---	---	---	---	---	---	---	---	---	---
MW-8	02/12/92	38.18	20.54	---	17.64	---	---	---	---	---	---	---	---	---	---	---
MW-8	02/17/92	38.18	19.99	---	18.19	---	---	---	---	---	---	---	---	---	---	---
MW-8	04/03/92	38.18	16.75	---	21.43	---	---	---	---	---	---	---	---	---	---	---
MW-8	04/08/92	38.18	16.57	---	21.61	ND<50	---	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	---	---	ANA
MW-8	(f) 04/14/92	38.18	---	---	---	---	---	---	---	---	---	---	---	---	---	---
MW-8	04/29/92	38.18	18.61	---	19.57	---	---	---	---	---	---	---	---	---	---	---
MW-8	05/07/92	38.18	18.41	---	19.77	---	---	---	---	---	---	---	---	---	---	---
MW-8	07/03/92	38.18	20.35	---	17.83	ND<50	---	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	---	---	ANA
MW-8	(f) 10/08/92	38.18	21.74	---	16.44	---	---	---	---	---	---	---	---	---	---	---
MW-8	12/31/92	38.18	19.09	---	19.09	ND<50	---	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	---	---	ANA
MW-8	04/21/93	38.18	18.92	---	19.26	ND<50	---	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	---	---	PAGE
MW-8	07/07/93	38.18	17.76	---	20.42	ND<50	---	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	---	---	PAGE
MW-8	09/21/93	38.18	19.71	---	18.47	ND<50	---	2.9	2.2	2.2	7.1	---	---	---	---	PAGE
MW-8	12/17/93	38.18	21.33	---	16.85	---	---	---	---	---	---	---	---	---	---	---
MW-8	12/23/93	38.18	---	---	---	ND<50	---	ND<0.5	ND<0.5	ND<0.5	0.6	---	---	---	---	PAGE
MW-8	04/07/94	38.18	21.51	---	16.67	ND<50	---	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	---	6.6	PAGE
MW-8	07/06/94	38.18	17.41	---	20.77	ND<50	---	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	---	4.4	PAGE
MW-8	10/07/94	38.18	19.20	---	18.98	ND<50	---	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	---	3.7	PAGE
MW-8	01/27/95	38.18	12.25	---	25.93	ND<50	---	ND<0.5	ND<0.5	ND<0.5	ND<1	---	---	---	2.9	ATI
MW-8	03/30/95	38.18	10.35	---	27.83	ND<50	---	ND<0.50	ND<0.50	ND<0.50	ND<1.0	---	---	---	8.3	ATI
MW-8	06/20/95	38.18	13.37	---	24.81	ND<50	---	ND<0.50	ND<0.50	ND<0.50	ND<1.0	---	---	---	6.9	ATI
MW-8	(f) 10/03/95	38.18	---	---	---	---	---	---	---	---	---	---	---	---	---	---
MW-8	12/06/95	38.18	18.42	---	19.76	ND<50	---	ND<0.50	ND<0.50	ND<0.50	ND<1.0	47	---	---	5.3	ATI
MW-8	(f) 03/21/96	38.18	---	---	---	---	---	---	---	---	---	---	---	---	---	---
MW-8	06/21/96	38.18	13.03	---	25.15	ND<50	---	ND<0.5	ND<1	ND<1	ND<1	ND<10	---	---	7.0	SPL
MW-8	09/06/96	38.18	13.70	---	24.48	---	---	---	---	---	---	---	---	---	---	---
MW-8	09/09/96	38.18	---	---	---	ND<50	---	ND<0.5	ND<1.0	ND<1.0	ND<1.0	ND<10	---	---	7.0	SPL

TABLE 1 - SUMMARY OF RESULTS OF GROUNDWATER SAMPLING  
 BP OIL COMPANY SERVICE STATION NO. 11109  
 4280 FOOTHILL BOULEVARD, OAKLAND, CALIFORNIA

ALISTO PROJECT NO. 10-014

WELL ID	DATE OF SAMPLING/ MONITORING	CASING ELEVATION (a) (Feet)	DEPTH TO WATER (Feet)	PRODUCT THICKNESS (Feet)	GROUNDWATER ELEVATION (b) (Feet)	TPH-G (ug/l)	TPH-D (ug/l)	B (ug/l)	T (ug/l)	E (ug/l)	X (ug/l)	MTBE (ug/l)	TOG (ug/l)	HVOC (ug/l)	DO (ppm)	LAB
MW-9	10/03/91	41.25	14.12	---	27.13	ND<50	---	ND<0.3	0.4	ND<0.3	ND<0.3	---	---	---	---	SUP
MW-9	10/15/91	41.25	14.27	---	26.98	---	---	---	---	---	---	---	---	---	---	---
MW-9	12/04/91	41.25	13.84	---	27.41	---	---	---	---	---	---	---	---	---	---	---
MW-9	12/16/91	41.25	14.18	---	27.07	---	---	---	---	---	---	---	---	---	---	---
MW-9	01/06/92	41.25	13.42	---	27.83	ND<50	---	ND<0.5	ND<0.5	ND<0.5	0.9	---	---	---	---	ANA
MW-9	01/22/92	41.25	13.75	---	27.50	---	---	---	---	---	---	---	---	---	---	---
MW-9	01/28/92	41.25	14.76	---	26.49	---	---	---	---	---	---	---	---	---	---	---
MW-9	02/05/92	41.25	13.38	---	27.87	---	---	---	---	---	---	---	---	---	---	---
MW-9	02/12/92	41.25	11.86	---	29.39	---	---	---	---	---	---	---	---	---	---	---
MW-9	02/17/92	41.25	10.78	---	30.47	---	---	---	---	---	---	---	---	---	---	---
MW-9	04/03/92	41.25	11.63	---	29.62	---	---	---	---	---	---	---	---	---	---	---
MW-9	04/08/92	41.25	12.25	---	29.00	ND<50	---	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	---	---	ANA
MW-9	04/14/92	41.25	12.32	---	28.93	---	---	---	---	---	---	---	---	---	---	---
MW-9	04/29/92	41.25	13.07	---	28.18	---	---	---	---	---	---	---	---	---	---	---
MW-9	05/07/92	41.25	14.43	---	26.82	---	---	---	---	---	---	---	---	---	---	---
MW-9	07/03/92	41.25	13.85	---	27.40	ND<50	---	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	---	---	ANA
MW-9	10/08/92	41.25	14.89	---	26.36	ND<50	---	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	---	---	ANA
MW-9	12/31/92	41.25	11.90	---	29.35	ND<50	---	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	---	---	ANA
MW-9	04/21/93	41.25	13.68	---	27.57	ND<50	---	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	---	---	PACE
MW-9	07/07/93	41.25	13.12	---	28.13	ND<50	---	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	---	---	PACE
MW-9	09/21/93	41.25	14.00	---	27.25	ND<50	---	ND<0.5	ND<0.5	ND<0.5	0.9	---	---	---	---	PACE
MW-9	12/17/93	41.25	12.98	---	28.27	---	---	---	---	---	---	---	---	---	---	---
MW-9	12/23/93	41.25	---	---	---	ND<50	---	ND<0.5	ND<0.5	ND<0.5	0.9	---	---	---	---	PACE
MW-9	04/07/94	41.25	13.24	---	28.01	ND<50	---	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	---	4.7	PACE
MW-9	07/06/94	41.25	13.77	---	27.48	ND<50	---	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	---	3.9	PACE
MW-9	10/07/94	41.25	14.60	---	26.65	ND<50	---	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	---	3.0	PACE
MW-9	01/27/95	41.25	8.47	---	32.78	ND<50	---	ND<0.5	ND<0.5	ND<0.5	ND<1	---	---	---	2.5	ATI
MW-9	03/30/95	41.25	8.19	---	33.06	ND<50	---	ND<0.50	ND<0.50	ND<0.50	ND<1.0	---	---	---	8.4	ATI
MW-9	06/20/95	41.25	11.25	---	30.00	ND<50	---	ND<0.50	ND<0.50	ND<0.50	ND<1.0	---	---	---	8.1	ATI
MW-9	10/03/95	41.25	14.68	---	26.57	ND<50	---	ND<0.50	ND<0.50	ND<0.50	ND<1.0	ND<5.0	---	---	6.0	ATI
MW-9	12/06/95	41.25	16.07	---	25.18	ND<50	---	ND<0.50	ND<0.50	ND<0.50	ND<1.0	46	---	---	5.4	ATI
MW-9	03/21/96	41.25	9.60	---	31.65	ND<50	---	ND<0.5	ND<1	ND<1	ND<1	ND<10	---	---	8.0	SPL
MW-9	06/21/96	41.25	10.86	---	30.39	ND<50	---	ND<0.5	ND<1	ND<1	ND<1	ND<10	---	---	7.8	SPL
MW-9	09/06/96	41.25	11.52	---	29.73	---	---	---	---	---	---	---	---	---	---	---
MW-9	09/09/96	41.25	---	---	---	ND<50	---	ND<0.5	ND<1.0	ND<1.0	ND<1.0	20/21 (j)	---	---	7.3	SPL

TABLE 1 - SUMMARY OF RESULTS OF GROUNDWATER SAMPLING  
 BP OIL COMPANY SERVICE STATION NO. 11109  
 4280 FOOTHILL BOULEVARD, OAKLAND, CALIFORNIA

ALISTO PROJECT NO. 10-014

WELL ID	DATE OF SAMPLING/ MONITORING	CASING ELEVATION (a) (Feet)	DEPTH TO WATER (Feet)	PRODUCT THICKNESS (Feet)	GROUNDWATER ELEVATION (b) (Feet)	TPH-G (ug/l)	TPH-D (ug/l)	B (ug/l)	T (ug/l)	E (ug/l)	X (ug/l)	MTBE (ug/l)	TOG (ug/l)	HVOC (ug/l)	DO (ppm)	LAB
QC-2	(k)	10/08/92	---	---	---	ND<50	---	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	---	---	ANA
QC-2	(k)	12/31/92	---	---	---	ND<50	---	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	---	---	ANA
QC-2	(k)	04/21/93	---	---	---	---	---	---	---	---	---	---	---	ND	---	PACE
QC-2	(k)	07/07/93	---	---	---	ND<50	---	ND<0.5	ND<0.5	ND<0.5	0.6	---	---	---	---	PACE
QC-2	(k)	09/21/93	---	---	---	ND<50	---	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	---	---	PACE
QC-2	(k)	12/23/93	---	---	---	ND<50	---	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	---	---	PACE
QC-2	(k)	04/07/94	---	---	---	ND<50	---	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	---	---	PACE
QC-2	(k)	07/06/94	---	---	---	ND<50	---	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	---	---	PACE
QC-2	(k)	10/07/94	---	---	---	ND<50	---	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	---	---	PACE
QC-2	(k)	01/27/95	---	---	---	ND<50	---	ND<0.5	0.5	ND<0.5	ND<1	---	---	---	---	ATI
QC-2	(k)	03/30/95	---	---	---	ND<50	---	ND<0.50	ND<0.50	ND<0.50	ND<1.0	---	---	---	---	ATI
QC-2	(k)	06/20/95	---	---	---	ND<50	---	ND<0.50	ND<0.50	ND<0.50	ND<1.0	---	---	---	---	ATI
QC-2	(k)	10/03/95	---	---	---	ND<50	---	ND<0.50	ND<0.50	ND<0.50	ND<1.0	ND<5.0	---	---	---	ATI
QC-2	(k)	12/06/95	---	---	---	ND<50	---	ND<0.50	ND<0.50	ND<0.50	ND<1.0	ND<5.0	---	---	---	ATI
QC-2	(k)	03/21/96	---	---	---	ND<50	---	ND<0.5	ND<1	ND<1	ND<1	ND<10	---	---	---	SPL
QC-2	(k)	06/21/96	---	---	---	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  
 HVOC Halogenated volatile organic compounds  
 DO Dissolved oxygen  
 ug/l Micrograms per liter  
 ppm Parts per million  
 --- Not analyzed/measured/applicable  
 ND Not detected above reported detection limit  
 SUP Superior Analytical Laboratory  
 ANA Anamatrix, Inc.  
 PACE Pace, Inc.  
 ATI Analytical Technologies, Inc.  
 SPL Southern Petroleum Laboratories

NOTES:

- (a) Top of casing elevations surveyed in feet above mean sea level, relative to the NGVD (1929)..
- (b) Groundwater elevations adjusted assuming a specific gravity of 0.75 for free product.
- (c) Well destroyed during tank removal in November 1990.
- (d) Methylene chloride.
- (e) 1,2-Dichloroethane.
- (f) Well inaccessible.
- (g) Sample collected from MW-2 for TPH-D analysis received in laboratory 7 days after collection; sample exceeded EPA recommended holding time for TPH-D on a water matrix.
- (h) Blind duplicate.
- (i) Top of casing lowered.
- (j) EPA Methods 8020/8260 used.
- (k) Travel blank.

TABLE 2 - SUMMARY OF RESULTS OF GROUNDWATER MONITORING  
 CHEVRON U.S.A. SERVICE STATION NO. 9-0076  
 4265 FOOTHILL BOULEVARD, OAKLAND, CALIFORNIA

ALISTO PROJECT NO. 10-014

WELL ID	DATE OF MONITORING	CASING ELEVATION (a) (Feet)	DEPTH TO WATER (Feet)	PRODUCT THICKNESS (Feet)	GROUNDWATER ELEVATION (b) (Feet)
C-1	07/14/92	38.41	27.81	--	10.60
C-1	10/08/92	38.41	24.44	--	13.97
C-1	09/21/93	38.41	21.42	--	16.99
C-1	03/30/95	38.41	12.02	--	26.39
C-1	06/20/95	38.41	14.40	--	24.01
C-1	03/21/96	38.41	11.65	--	26.76
C-1	09/06/96	38.41	16.75	--	21.66
C-2	07/14/92	37.47	--	--	--
C-2	10/08/92	37.47	--	--	--
C-2	09/21/93	37.47	26.29	--	11.18
C-2	03/30/95	37.47	17.18	--	20.29
C-2	06/20/95	37.47	18.95	--	18.52
C-2	03/21/96	37.47	16.17	--	21.30
C-2	09/06/96	37.47	21.14	0.04	16.36
C-3	07/14/92	38.37	27.87	--	10.50
C-3	10/08/92	38.37	28.55	--	9.82
C-3	09/21/93	38.37	26.22	--	12.15
C-3	03/30/95	38.37	18.42	--	19.95
C-3	06/20/95	38.37	19.79	--	18.58
C-3	03/21/96	38.37	17.85	--	20.52
C-3	09/06/96	38.37	21.63	--	16.74
C-4	07/14/92	36.49	26.89	--	9.60
C-4	10/08/92	36.49	27.79	--	8.70
C-4	09/21/93	36.49	25.51	--	10.96
C-4	03/30/95	36.49	14.86	--	21.63
C-4	06/20/95	36.49	16.90	--	19.59
C-4	03/21/96	36.49	14.10	--	22.39
C-4	09/06/96	36.49	20.13	--	16.36
C-5	07/14/92	38.50	28	--	10.50
C-5	10/08/92	38.50	28.65	--	9.85
C-5	09/21/93	38.50	26.36	--	12.14
C-5	03/30/95	38.50	18.54	--	19.96
C-5	06/20/95	38.50	20.13	--	18.37
C-5	03/21/96	38.50	18.40	--	20.10
C-5	09/06/96	38.50	21.90	--	16.60
C-6	07/14/92	35.40	38.89	--	-3.49
C-6	10/08/92	35.40	38.67	--	-3.27
C-6	09/21/93	35.40	33.98	--	1.42
C-6	03/30/95	35.40	26.38	--	9.02
C-6	06/20/95	35.40	25.01	--	10.39
C-6	03/21/96	35.40	23.12	--	12.28
C-6	09/06/96	35.40	24.83	--	10.57
C-7	07/14/92	35.19	39.77	--	-4.58
C-7	10/08/92	35.19	39.14	--	-3.95
C-7	09/21/93	35.19	35.46	--	-0.27
C-7	03/30/95	35.19	27.60	--	7.59
C-7	06/20/95	35.19	27.87	--	7.32
C-7	03/21/96	35.19	27.85	--	7.34
C-7	09/06/96	35.19	28.35	--	6.84
C-8	07/14/92	34.68	39.02	--	-4.34
C-8	10/08/92	34.68	38.68	--	-4.00
C-8	09/21/93	34.68	35.30	--	-0.62
C-8	03/30/95	34.68	29.24	--	5.44
C-8	06/20/95	34.68	28.34	--	6.34
C-8	03/21/96	34.68	28.65	--	6.03
C-8	09/06/96	34.68	28.70	--	5.98

NOTES:

(a) Top of casing elevations surveyed relative to 1929 NGVD.  
 Measured in feet above mean sea level.

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

-- Not measured/available.

Source: Groundwater data collected by Blaine Tech Services Inc.

TABLE 3 - SUMMARY OF RESULTS OF GROUNDWATER MONITORING  
 SHELL SERVICE STATION  
 4411 FOOTHILL BOULEVARD, OAKLAND, CALIFORNIA

ALISTO PROJECT NO. 10-014

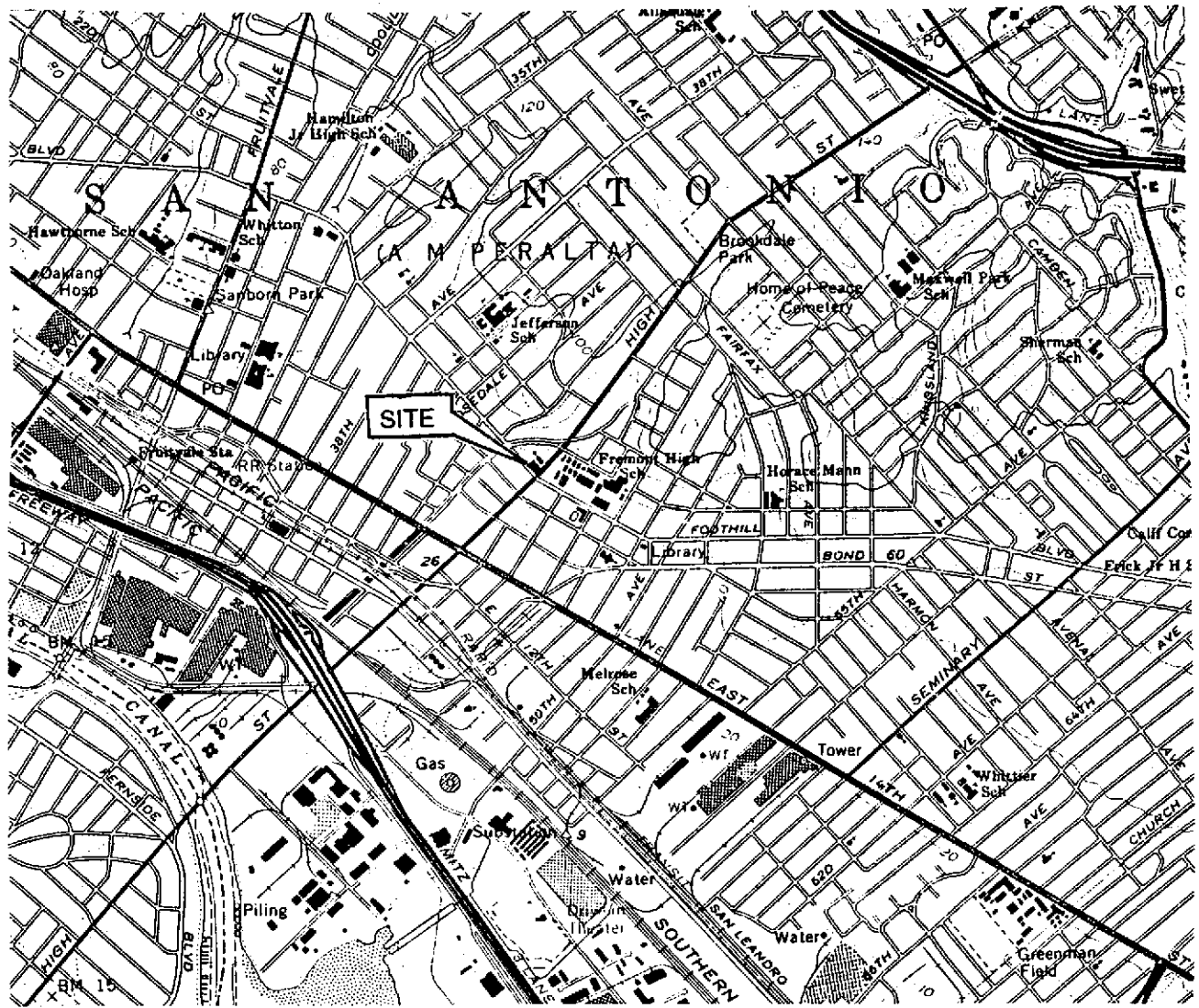
WELL ID	DATE OF MONITORING	CASING ELEVATION (a) (Feet)	DEPTH TO WATER (Feet)	GROUNDWATER ELEVATION (b) (Feet)
S-1	03/30/95	38.31	6.09	32.22
S-1	06/20/95	38.31	7.30	31.01
S-1	12/06/95	38.31	11.64	26.67
S-1	03/21/96	38.31	6.87	31.44
S-1	06/21/96	38.31	8.65	29.66
S-1	09/06/96	38.31	10.50	27.81
S-2	03/30/95	38.79	7.86	30.93
S-2	06/20/95	38.79	9.51	29.28
S-2	12/06/95	38.79	10.52	28.27
S-2	03/21/96	38.79	8.60	30.19
S-2	06/21/96	38.79	9.95	28.84
S-2	09/06/96	38.79	10.50	28.29
S-3	03/30/95	37.33	7.06	30.27
S-3	06/20/95	37.33	8.15	29.18
S-3	12/06/95	37.33	10.53	26.80
S-3	03/21/96	37.33	7.32	30.01
S-3	06/21/96	37.33	8.85	28.48
S-3	09/06/96	37.33	10.10	27.23

NOTES:

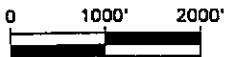
- (a) Top of casing elevations surveyed relative to 1929 NGVD.  
Measured in feet above mean sea level.
- (b) Groundwater elevations in feet above mean sea level.

SOURCE: Groundwater data collected by Weiss Associates

FA\0\10-014\014-6-2B.WQ2



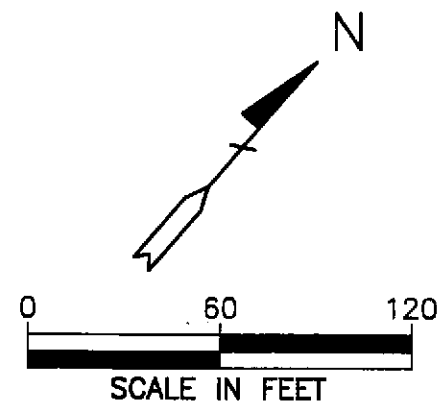
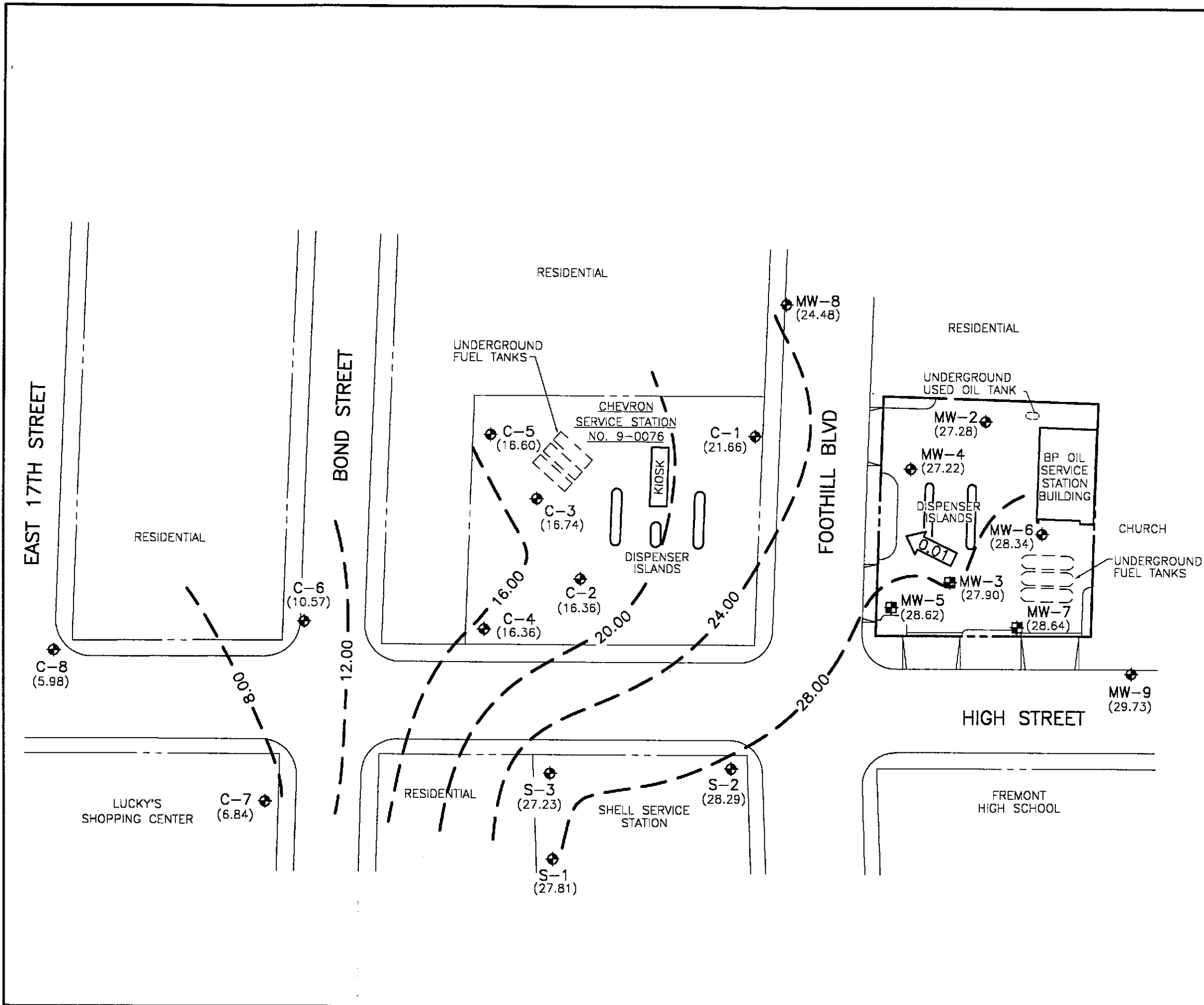
SOURCE:  
 USGS MAP, OAKLAND EAST QUADRANGLE,  
 CALIFORNIA. 7.5 MINUTE SERIES. 1959.  
 PHOTOREVISED 1980.



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

**BP OIL SERVICE STATION NO. 11109**  
**4280 FOOTHILL BOULEVARD**  
**OAKLAND, CALIFORNIA**  
**PROJECT NO. 10-014**

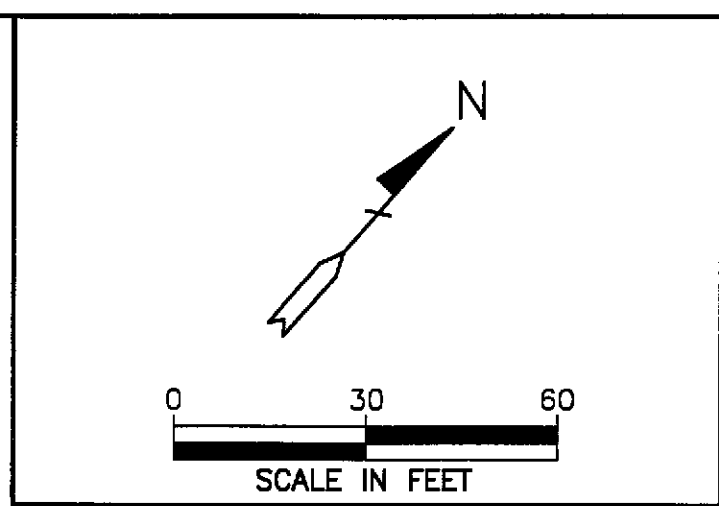
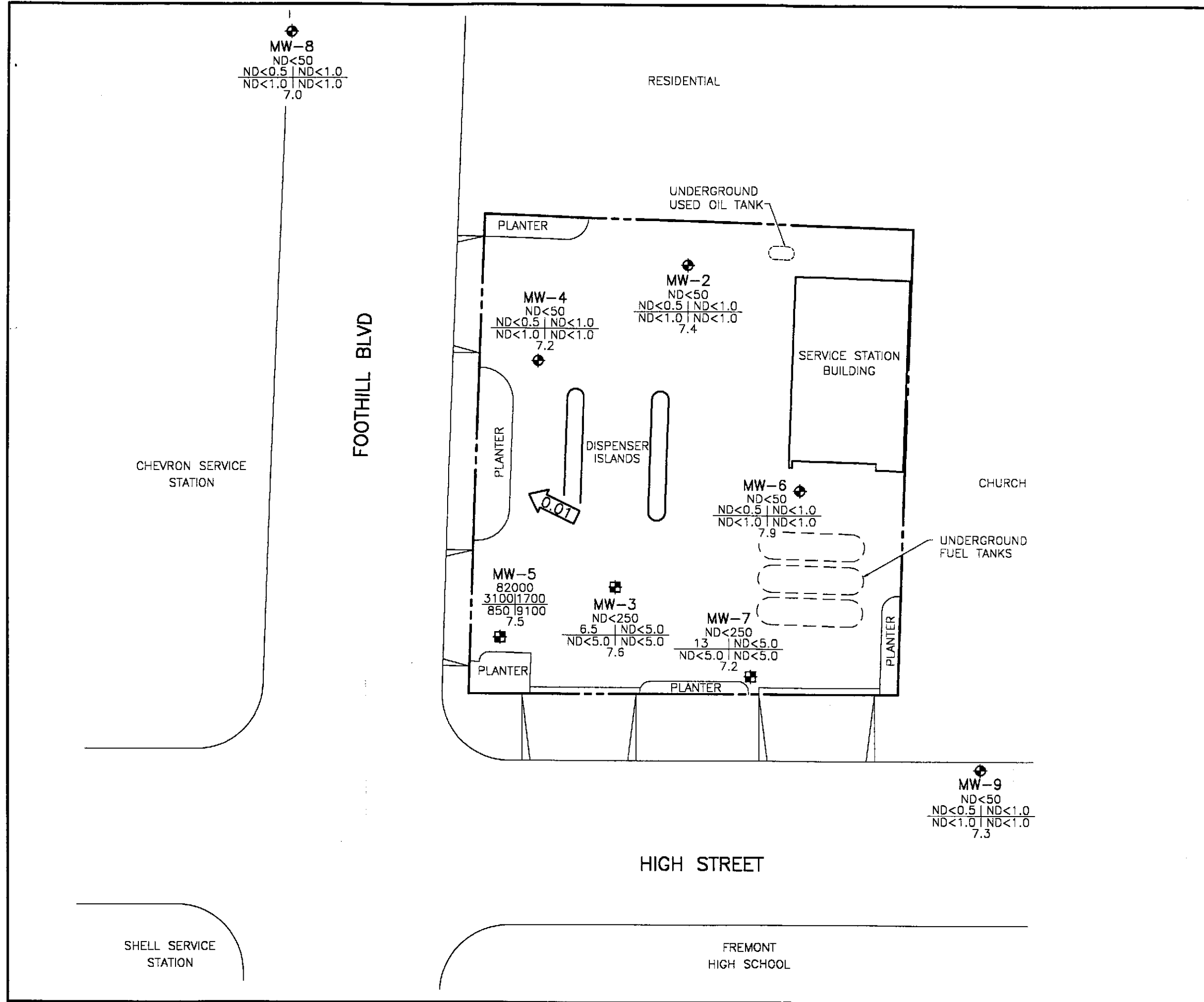




- LEGEND**
- ◆ GROUNDWATER MONITORING WELL
  - GROUNDWATER RECOVERY WELL
  - (21.66) GROUNDWATER ELEVATION IN FEET ABOVE MEAN SEA LEVEL
  - 24.00 - GROUNDWATER ELEVATION CONTOUR IN FEET ABOVE MEAN SEA LEVEL (CONTOUR INTERVAL - 4.00 FEET)
  - ← 0.01 CALCULATED GROUNDWATER GRADIENT DIRECTION AND MAGNITUDE IN FOOT PER FOOT

**FIGURE 2**  
**POTENTIOMETRIC GROUNDWATER ELEVATION CONTOUR MAP**  
**SEPTEMBER 6, 1996**  
 BP OIL SERVICE STATION NO. 11109  
 4280 FOOTHILL BOULEVARD  
 OAKLAND, CALIFORNIA  
 PROJECT NO. 10-014

10040-S.DWG 11-13-96 DIM 148



**LEGEND**

- ⊕ GROUNDWATER MONITORING WELL
- ⊕ GROUNDWATER RECOVERY WELL
- TPH-G CONCENTRATION OF CONSTITUENTS IN MICROGRAMS PER LITER, EXCEPT DISSOLVED OXYGEN, WHICH IS IN PARTS PER MILLION
- B | T
- E | X
- DO
- TPH-G TOTAL PETROLEUM HYDROCARBONS AS GASOLINE
- B BENZENE
- T TOLUENE
- E ETHYLBENZENE
- X TOTAL XYLENES
- DO DISSOLVED OXYGEN
- 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 9, 1996**  
 BP OIL SERVICE STATION NO. 11109  
 4280 FOOTHILL BOULEVARD  
 OAKLAND, CALIFORNIA  
 PROJECT NO. 10-014

11-13-96 004 1-30



**APPENDIX A**  
**WATER SAMPLING FIELD SURVEY FORMS**

# ALISTO

## Field Report / Sampling Data Sheet

ENGINEERING  
GROUP  
1575 TREAT BOULEVARD, SUITE 201

Project No. 10-014-06-002  
Address 4280 Foothill Blvd  
Contract No. G797448  
Station No. BP 11109

Date: <sup>68</sup> 9/2/96  
Day: MTWTHF  
City: Oakland  
Sampler: LAB

### DEPTH TO GROUNDWATER SUMMARY

WELL ID	SAMPLE ID	WELL DIAM	TOTAL DEPTH	DEPTH TO WATER	PRODUCT THICKNESS	TIME MONITORED	COMMENTS:
MW-2	S-1	2"	30.10	<del>30.10</del>	Ø	1001	DTW 13.94'
MW-3	S-6	4"	31.80	<del>31.80</del>	↓	1222	12.23'
MW-4	S-2	4"	34.28	<del>34.28</del>		1010	12.89'
MW-5	S-8	4"	35.00	<del>35.00</del>		1029	10.52'
MW-6	S-4	4"	34.28	<del>34.28</del>		1015	13.25'
MW-7	S-7	6"	33.42	<del>33.42</del>		1024	11.68'
MW-8	S-5	2"	29.71	<del>29.71</del>		1018	13.70'
MW-9	S-3	2"	29.31	<del>29.31</del>		1013	11.52'

} collected 9/6/96

### FIELD INSTRUMENT CALIBRATION DATA

pH METER <sup>Agm</sup> Check 4.00 4 7.00 7 10.00 10 TEMPERATURE COMPENSATED ON TIME 0945  
 D.O. METER <sup>Agm</sup> Check ZERO d.O. SOLUTION 0 BAROMETRIC PRESSURE 760 TEMP 65 WEATHER Clear  
 CONDUCTIVITY METER <sup>Agm</sup> Check 10,000 TURBIDITY METER 5.0 NTU OTHER X

Well ID	Depth to Water	Diam	Cap/Lock	Product Dept	Iridescence	Gal.	Time	Temp °F	pH	E.C.	D.O.	
MW-2	13.94	2"	OK	Ø	Y (D)	3	1047	68.4	7.63	692µs	6.5	<input type="checkbox"/> EPA 601
Total Depth - Water Level = x Well Vol. Factor = x#vol. to Purge PurgeVol.						6		67.2	7.40	710µs		<input checked="" type="checkbox"/> TPH-G/BTEX Hel
30.10 - 13.94 = 16.16 x .16 = 2.59 x 3 = 7.77						8	1056	66.8	7.35	703µs	7.4	<input type="checkbox"/> TPH Diesel
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												<input type="checkbox"/> TOG 5520
Comments:												TIME/SAMPLE ID
												1100
MW-4	12.89	4"	OK	Ø	Y (D)	15	1108	67.4	7.19	842µs	6.9	<input type="checkbox"/> EPA 601
Total Depth - Water Level = x Well Vol. Factor = x#vol. to Purge PurgeVol.						30		66.3	7.03	776µs		<input checked="" type="checkbox"/> TPH-G/BTEX Hel
34.28 - 12.89 = 21.39 x .65 = 13.90 x 3 = 41.70						42	1120	65.8	6.98	741µs	7.2	<input type="checkbox"/> TPH Diesel
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												<input type="checkbox"/> TOG 5520
Comments:												TIME/SAMPLE ID
												1123

# 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. 10-014-06-002  
Address 4280 Foothill Blvd  
Contract No. G797448  
Station No. BP 11109

Date: 8/9/96  
Day:  M  T  W  TH  F  
City: Oakland  
Sampler: LR

Well ID	Depth to Water	Diam	Cap/Lock	Product Dept	Iridescence	Gal.	Time	Temp *F	pH	E.C.	D.O.	
MW-9	11.52	2"	Oil	Ø	Y (N)	3	1232	69.4	7.09	729 µs	6.9	<input type="radio"/> EPA 601 _____
Total Depth - Water Level= x Well Vol. Factor= x#vol. to Purge PurgeVol.						4		68.3	6.96	703 µs		<input checked="" type="radio"/> TPH-G/BTEX HCL
29.31 - 11.52 = 17.79 x 1.6 = 2.85 x 3 = 8.55						9	1250	67.6	6.89	698 µs	7.3	<input type="radio"/> TPH Diesel _____
Purge Method: OSurface Pump ODisp.Tube OWinch ODisp. Bailer(s) OSys Port												<input type="radio"/> TOG 5520 _____
Comments:												TIME/SAMPLE ID
												1252
MW-6	13.25	4"	OK	Ø	Y (N)	15	1301	70.7	7.92	1031 µs	7.6	<input type="radio"/> EPA 601 _____
Total Depth - Water Level= x Well Vol. Factor= x#vol. to Purge PurgeVol.						30		69.3	7.83	1013 µs		<input checked="" type="radio"/> TPH-G/BTEX HCL
34.28 - 13.25 = 21.03 x 1.65 = 13.67 x 3 = 41.01						41.5	1320	68.6	7.76	992 µs	7.9	<input type="radio"/> TPH Diesel _____
Purge Method: OSurface Pump ODisp.Tube OWinch ODisp. Bailer(s) OSys Port												<input type="radio"/> TOG 5520 _____
Comments:												TIME/SAMPLE ID
												1322
MW-8	13.70	2"	Oil	Ø	Y (N)	3	1330	71.9	7.63	831 µs	6.6	<input type="radio"/> EPA 601 _____
Total Depth - Water Level= x Well Vol. Factor= x#vol. to Purge PurgeVol.						5		70.3	7.50	793 µs		<input checked="" type="radio"/> TPH-G/BTEX HCL
29.71 - 13.70 = 16.01 x 1.6 = 2.56 x 3 = 7.68						8	1340	69.6	7.42	784 µs	7.0	<input type="radio"/> TPH Diesel _____
Purge Method: OSurface Pump ODisp.Tube OWinch ODisp. Bailer(s) OSys Port												<input type="radio"/> TOG 5520 _____
Comments:												TIME/SAMPLE ID
												1343
MW-3	12.23	4"	OK	Ø	Y (N)	14	1449	70.6	7.61	1.17 ms	6.7	<input type="radio"/> EPA 601 _____
Total Depth - Water Level= x Well Vol. Factor= x#vol. to Purge PurgeVol.						29		70.1	7.40	1.03 ms		<input checked="" type="radio"/> TPH-G/BTEX HCL
31.80 - 12.23 = 19.57 x 1.6 = 12.72 x 3 = 38.16						38.5	1507	69.3	7.32	1.00 ms	7.6	<input type="radio"/> TPH Diesel _____
Purge Method: OSurface Pump ODisp.Tube OWinch ODisp. Bailer(s) OSys Port												<input type="radio"/> TOG 5520 _____
Comments:												TIME/SAMPLE ID
												1510
MW-7	11.68	6"	Oil	Ø	Y (N)	32	1523	71.4	7.93	1021 µs	6.7	<input type="radio"/> EPA 601 _____
Total Depth - Water Level= x Well Vol. Factor= x#vol. to Purge PurgeVol.						64		70.3	7.61	992 µs		<input checked="" type="radio"/> TPH-G/BTEX HCL
33.42 - 11.68 = 21.74 x 1.47 = 31.96 x 3 = 95.88						96	1605	69.7	7.47	983 µs	7.2	<input type="radio"/> TPH Diesel _____
Purge Method: OSurface Pump ODisp.Tube OWinch ODisp. Bailer(s) OSys Port												<input type="radio"/> TOG 5520 _____
Comments:												TIME/SAMPLE ID
												1610

# 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. 10-014-06-002

Address 4280 Foothill Blvd

Contract No. G797448

Station No. BP 11109

Date: 9/9/96

Day: W T W T H F

City: Oakland

Sampler: *CS*

Well ID	Depth to Water	Diam	Cap/Lock	Product Dept	Iridescence	Gal.	Time	Temp *F	pH	E.C.	D.O.						
MW-5	10.52	4"	OK	Ø	Y ND	17	1617	71.3	8.13	703µS	7.2	<input type="checkbox"/> EPA 601					
Total Depth - Water Level =						x Well Vol. Factor =						x #vbl. to Purge Purge Vol.					
~ 35.00 - 10.52 = 24.48						x .65 = 15.91						x 3 = 47.73					
Purge Method: O Surface Pump						O Disp. Tube						O Winch					
O Disp. Bailer(s)						O Sys Port						TIME/SAMPLE ID					
Comments: DC-1 Dup (5-9) From this												1703					

- EPA 601
- TPH-G/BTEX *1703*
- TPH Diesel
- TOG 5520

# ALISTO ENGINEERING GROUP GROUNDWATER MONITORING

Client: BP  
 Alisto Project No: 10-014  
 Service Station No: 1109

Date: 9/6/96  
 Field Personnel: WB  
 Site Address: Oakl

**FIELD ACTIVITY:**

- Groundwater Monitoring
- Groundwater Sampling
- Well Development

**QUALITY CONTROL SAMPLES:**

- QC-1 Sample Duplicate (Well ID) MW-5 (S-9)
- QC-2 Trip Blank
- QC-3 Rinsate Blank

JOINT MONITORING

Well ID	Well Diam	Order Measured/ Sampled	Total Depth	Depth to Water	Depth to Product	Product Thickness	Comments
MW-2	2"	S-1	30.10	13.94	Ø	Ø	
MW-4	4"	S-2	34.28	12.89	↓	↓	
MW-9	2"	S-3	29.31	11.52			
MW-6	4"	S-4	34.28	13.25			
MW-8	2"	S-5	29.71	13.70			
MW-3	4"	S-6	31.90	12.23			
MW-7	6"	S-7	33.42	11.68			
MW-5	4"	S-8	~35.00	10.52			

Notes:

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*WB*

**APPENDIX B**

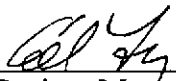
**LABORATORY REPORT AND CHAIN OF CUSTODY RECORD**



Southern Petroleum Laboratories, Inc.

Certificate of Analysis Number: 96-09-480

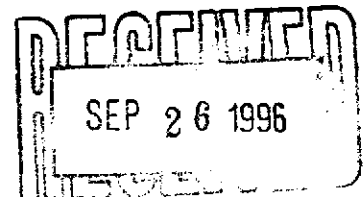
Approved for Release by:

  
\_\_\_\_\_  
Ed Fry, Project Manager

9/20/96  
Date:

Greg Grandits  
Laboratory Director

Idelis Williams  
Quality Assurance Officer



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Certificate of Analysis No. H9-9609480-01

BP Oil Company  
1575 Treat Blvd Ste 201  
Walnut, CA 94598  
ATTN: Scott Hooten

P.O.#  
G797448, COC#078673  
DATE: 09/19/96

PROJECT: BP Oil #11109  
SITE: Oakland, CA  
SAMPLED BY: Alisto Engineering  
SAMPLE ID: S-1

PROJECT NO: 10-014-6/002  
MATRIX: WATER  
DATE SAMPLED: 09/09/96  
DATE RECEIVED: 09/11/96

ANALYTICAL DATA

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

Surrogate

% Recovery

1,4-Difluorobenzene

107

4-Bromofluorobenzene

97

METHOD 8020\*\*\*

Analyzed by: YN

Date: 09/17/96

Total Petroleum Hydrocarbons-Gasoline

ND 0.05 P

mg/L

Surrogate

% Recovery

1,4-Difluorobenzene

90

4-Bromofluorobenzene

77

CA LUFT - Gasoline

Analyzed by: YN

Date: 09/17/96 02:56:00

ND - Not detected.

(P) - Practical Quantitation Limit

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

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





Certificate of Analysis No. H9-9609480-02

BP Oil Company
1575 Treat Blvd Ste 201
Walnut, CA 94598
ATTN: Scott Hooten

P.O.#
G797448, COC#078673
DATE: 09/19/96

PROJECT: BP Oil #11109
SITE: Oakland, CA
SAMPLED BY: Alisto Engineering
SAMPLE ID: S-2

PROJECT NO: 10-014-6/002
MATRIX: WATER
DATE SAMPLED: 09/09/96
DATE RECEIVED: 09/11/96

ANALYTICAL DATA

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

Surrogate % Recovery
1,4-Difluorobenzene 103
4-Bromofluorobenzene 93

METHOD 8020\*\*\*

Analyzed by: YN
Date: 09/17/96

Total Petroleum Hydrocarbons-Gasoline ND 0.05 P mg/L

Surrogate % Recovery
1,4-Difluorobenzene 93
4-Bromofluorobenzene 77

CA LUFT - Gasoline
Analyzed by: YN
Date: 09/17/96 03:24:00

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

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

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



Certificate of Analysis No. H9-9609480-03

BP Oil Company
1575 Treat Blvd Ste 201
Walnut, CA 94598
ATTN: Scott Hooten

P.O.#
G797448, COC#078673
DATE: 09/19/96

PROJECT: BP Oil #11109
SITE: Oakland, CA
SAMPLED BY: Alisto Engineering
SAMPLE ID: S-3

PROJECT NO: 10-014-6/002
MATRIX: WATER
DATE SAMPLED: 09/09/96
DATE RECEIVED: 09/11/96

ANALYTICAL DATA

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

Table with 2 columns: Surrogate, % Recovery. Rows include 1,4-Difluorobenzene, 4-Bromofluorobenzene.

METHOD 8020\*\*\*
Analyzed by: YN
Date: 09/17/96

Table with 5 columns: PARAMETER, RESULTS, DETECTION LIMIT, UNITS. Row: Total Petroleum Hydrocarbons-Gasoline.

Table with 2 columns: Surrogate, % Recovery. Rows include 1,4-Difluorobenzene, 4-Bromofluorobenzene.

CA LUFT - Gasoline
Analyzed by: YN
Date: 09/17/96 03:53:00

(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. H9-9609480-03

BP Oil Company  
1575 Treat Blvd Ste 201  
Walnut, CA 94598  
ATTN: Scott Hooten

P.O.#  
G797448, COC#078673  
09/19/96

PROJECT: BP Oil #11109  
SITE: Oakland, CA  
SAMPLED BY: Alisto Engineering  
SAMPLE ID: S-3

PROJECT NO: 10-014-6/002  
MATRIX: WATER  
DATE SAMPLED: 09/09/96  
DATE RECEIVED: 09/11/96

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ANALYTICAL DATA				
PARAMETER	RESULTS	PQL*	UNITS	
Methyl t-butyl ether	21	10	ug/L	
SURROGATES	AMOUNT SPIKED	% RECOVERY	LOWER LIMIT	UPPER LIMIT
1,2-Dichloroethane-d4	50 ug/L	94	76	114
Toluene-d8	50 ug/L	94	88	110
4-Bromofluorobenzene	50 ug/L	88	86	115

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ANALYZED BY: GT

DATE/TIME: 09/13/96 15:29:00

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



Certificate of Analysis No. H9-9609480-04

BP Oil Company  
1575 Treat Blvd Ste 201  
Walnut, CA 94598  
ATTN: Scott Hooten

P.O.#  
G797448, COC#078673  
DATE: 09/19/96

PROJECT: BP Oil #11109  
SITE: Oakland, CA  
SAMPLED BY: Alisto Engineering  
SAMPLE ID: S-4

PROJECT NO: 10-014-6/002  
MATRIX: WATER  
DATE SAMPLED: 09/09/96  
DATE RECEIVED: 09/11/96

ANALYTICAL DATA

PARAMETER	RESULTS	DETECTION LIMIT	UNITS
MTBE	22	10 P	µg/L
Benzene	ND	0.5 P	µg/L
Toluene	ND	1.0 P	µg/L
Ethylbenzene	ND	1.0 P	µg/L
Total Xylene	ND	1.0 P	µg/L

<b>Surrogate</b>	<b>% Recovery</b>
1,4-Difluorobenzene	103
4-Bromofluorobenzene	93

METHOD 8020\*\*\*

Analyzed by: YN

Date: 09/17/96

Total Petroleum Hydrocarbons-Gasoline	ND	0.05 P	mg/L
---------------------------------------	----	--------	------

<b>Surrogate</b>	<b>% Recovery</b>
1,4-Difluorobenzene	90
4-Bromofluorobenzene	73

CA LUFT - Gasoline

Analyzed by: YN

Date: 09/17/96 04:21:00

(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. H9-9609480-04

BP Oil Company  
1575 Treat Blvd Ste 201  
Walnut, CA 94598  
ATTN: Scott Hooten

P.O.#  
G797448, COC#078673  
09/19/96

PROJECT: BP Oil #11109  
SITE: Oakland, CA  
SAMPLED BY: Alisto Engineering  
SAMPLE ID: S-4

PROJECT NO: 10-014-6/002  
MATRIX: WATER  
DATE SAMPLED: 09/09/96  
DATE RECEIVED: 09/11/96

ANALYTICAL DATA

PARAMETER	RESULTS	PQL*	UNITS	
Methyl t-butyl ether	22	10	ug/L	
SURROGATES	AMOUNT SPIKED	% RECOVERY	LOWER LIMIT	UPPER LIMIT
1,2-Dichloroethane-d4	50 ug/L	94	76	114
Toluene-d8	50 ug/L	90	88	110
4-Bromofluorobenzene	50 ug/L	86	86	115

ANALYZED BY: GT                      DATE/TIME: 09/13/96 15:53:00  
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



Certificate of Analysis No. H9-9609480-05

BP Oil Company
1575 Treat Blvd Ste 201
Walnut, CA 94598
ATTN: Scott Hooten

P.O.#
G797448, COC#078673
DATE: 09/19/96

PROJECT: BP Oil #11109
SITE: Oakland, CA
SAMPLED BY: Alisto Engineering
SAMPLE ID: S-5

PROJECT NO: 10-014-6/002
MATRIX: WATER
DATE SAMPLED: 09/09/96
DATE RECEIVED: 09/11/96

ANALYTICAL DATA

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

Surrogate % Recovery
1,4-Difluorobenzene 100
4-Bromofluorobenzene 93

METHOD 8020\*\*\*
Analyzed by: YN
Date: 09/17/96

Total Petroleum Hydrocarbons-Gasoline ND 0.05 P mg/L

Surrogate % Recovery
1,4-Difluorobenzene 90
4-Bromofluorobenzene 73

CA LUFT - Gasoline
Analyzed by: YN
Date: 09/17/96 04:54:00

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

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

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



Certificate of Analysis No. H9-9609480-06

BP Oil Company
1575 Treat Blvd Ste 201
Walnut, CA 94598
ATTN: Scott Hooten

P.O.#
G797448, COC#078673
DATE: 09/19/96

PROJECT: BP Oil #11109
SITE: Oakland, CA
SAMPLED BY: Alisto Engineering
SAMPLE ID: S-6

PROJECT NO: 10-014-6/002
MATRIX: WATER
DATE SAMPLED: 09/09/96
DATE RECEIVED: 09/11/96

Table with 5 columns: PARAMETER, ANALYTICAL DATA, RESULTS, DETECTION LIMIT, UNITS. Rows include MTBE, Benzene, Toluene, Ethylbenzene, Total Xylene, Surrogate (1,4-Difluorobenzene, 4-Bromofluorobenzene), Total Petroleum Hydrocarbons-Gasoline, and Surrogate (1,4-Difluorobenzene, 4-Bromofluorobenzene) for CA LUFT - Gasoline.

ND - Not detected.

(P) - Practical Quantitation Limit

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

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



Certificate of Analysis No. H9-9609480-07

BP Oil Company
1575 Treat Blvd Ste 201
Walnut, CA 94598
ATTN: Scott Hooten

P.O.#
G797448, COC#078673
DATE: 09/19/96

PROJECT: BP Oil #11109
SITE: Oakland, CA
SAMPLED BY: Alisto Engineering
SAMPLE ID: S-7

PROJECT NO: 10-014-6/002
MATRIX: WATER
DATE SAMPLED: 09/09/96
DATE RECEIVED: 09/11/96

Table with columns: PARAMETER, ANALYTICAL DATA, RESULTS, DETECTION LIMIT, UNITS. Rows include MTBE, Benzene, Toluene, Ethylbenzene, Total Xylene, Surrogate (1,4-Difluorobenzene, 4-Bromofluorobenzene), METHOD 8020\*\*\*, Analyzed by: YN, Date: 09/17/96, Total Petroleum Hydrocarbons-Gasoline, Surrogate (1,4-Difluorobenzene, 4-Bromofluorobenzene), CA LUFT - Gasoline, Analyzed by: YN, Date: 09/17/96 05:51:00.

ND - Not detected.

(P) - Practical Quantitation Limit

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

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





Certificate of Analysis No. H9-9609480-08

BP Oil Company  
1575 Treat Blvd Ste 201  
Walnut, CA 94598  
ATTN: Scott Hooten

P.O.#  
G797448, COC#078673  
DATE: 09/19/96

PROJECT: BP Oil #11109  
SITE: Oakland, CA  
SAMPLED BY: Alisto Engineering  
SAMPLE ID: S-8

PROJECT NO: 10-014-6/002  
MATRIX: WATER  
DATE SAMPLED: 09/09/96  
DATE RECEIVED: 09/11/96

ANALYTICAL DATA

PARAMETER	RESULTS	DETECTION LIMIT	UNITS
MTBE	ND	2500 P	µg/L
Benzene	3100	120 P	µg/L
Toluene	1700	250 P	µg/L
Ethylbenzene	850	250 P	µg/L
Total Xylene	9100	250 P	µg/L

Surrogate	% Recovery
1,4-Difluorobenzene	107
4-Bromofluorobenzene	93

METHOD 8020\*\*\*

Analyzed by: YN

Date: 09/18/96

Total Petroleum Hydrocarbons-Gasoline	82	50 P	mg/L
---------------------------------------	----	------	------

Surrogate	% Recovery
1,4-Difluorobenzene	90
4-Bromofluorobenzene	77

CA LUFT - Gasoline

Analyzed by: YN

Date: 09/18/96 12:29:00

ND - Not detected.

(P) - Practical Quantitation Limit

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

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



Certificate of Analysis No. H9-9609480-09

BP Oil Company  
1575 Treat Blvd Ste 201  
Walnut, CA 94598  
ATTN: Scott Hooten

P.O.#  
G797448, COC#078673  
DATE: 09/19/96

PROJECT: BP Oil #11109  
SITE: Oakland, CA  
SAMPLED BY: Alisto Engineering  
SAMPLE ID: S-9

PROJECT NO: 10-014-6/002  
MATRIX: WATER  
DATE SAMPLED: 09/09/96  
DATE RECEIVED: 09/11/96

ANALYTICAL DATA

PARAMETER	RESULTS	DETECTION LIMIT	UNITS
MTBE	ND	2500 P	µg/L
Benzene	2900	120 P	µg/L
Toluene	1600	250 P	µg/L
Ethylbenzene	670	250 P	µg/L
Total Xylene	6900	250 P	µg/L

Surrogate % Recovery  
 1,4-Difluorobenzene 108  
 4-Bromofluorobenzene 95  
 METHOD 8020\*\*\*  
 Analyzed by: YN  
 Date: 09/18/96

Total Petroleum Hydrocarbons-Gasoline 90 50 P mg/L

Surrogate % Recovery  
 1,4-Difluorobenzene 90  
 4-Bromofluorobenzene 73  
 CA LUFT - Gasoline  
 Analyzed by: YN  
 Date: 09/18/96 12:00:00

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

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

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

***QUALITY CONTROL***

***DOCUMENTATION***

3A  
WATER VOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: SPL

Contract:

Lab Code:

Case No.: 9609513 SAS No.:

SDG No.:

Matrix Spike - EPA Sample No.: #3 Crude

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	MS CONCENTRATION (ug/L)	MS % REC #	QC. LIMITS REC.
1,1-Dichloroethene	50	0	68	136	61-145
Trichloroethene	50	0	66	132*	71-120
Benzene	50	2	72	140*	76-127
Toluene	50	12	78	132*	76-125
Chlorobenzene	50	0	64	128	75-130

COMPOUND	SPIKE ADDED (ug/L)	MSD CONCENTRATION (ug/L)	MSD % REC #	% RPD #	QC LIMITS	
					RPD	REC.
1,1-Dichloroethene	50	66	132	3	14	61-145
Trichloroethene	50	64	128*	3	14	71-120
Benzene	50	68	132*	6	11	76-127
Toluene	50	78	132*	0	13	76-125
Chlorobenzene	50	62	124	3	13	75-130

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

\* Values outside of QC limits

RPD: 0 out of 5 outside limits

Spike Recovery: 6 out of 10 outside limits

SPL Labs

RECOVERY REPORT

Client Name: Client SDG: m960912  
 Sample Matrix: LIQUID Fraction: VOA  
 Lab Smp Id: LCS Operator: GT  
 Level: LOW SampleType: METHSPIKE  
 Data Type: MS DATA Quant Type: ISTD  
 SpikeList File: 8240water.spk  
 Method File: /chem/m.i/m960912.b/m8240bwq.m  
 Misc Info: M256W1//M256CW2

SPIKE COMPOUND	CONC ADDED ug/L	CONC RECOVERED ug/L	% RECOVERED	LIMITS
7 1,1-Dichloroethene	50	54	109.03	61-145
25 Trichloroethene	50	58	115.02	71-120
21 Benzene	50	59	117.47	76-127
32 Toluene	50	58	117.06	76-125
38 Chlorobenzene	50	59	117.21	75-130

SURROGATE COMPOUND	CONC ADDED ug/L	CONC RECOVERED ug/L	% RECOVERED	LIMITS
\$ 18 1,2-Dichloroethane	50	48	96.39	76-114
\$ 31 Toluene-d8	50	46	91.41	88-110
\$ 46 Bromofluorobenzene	50	46	92.70	86-115



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

SPL Blank QC Report

page 1

Matrix: Aqueous  
Sample ID: BLANK  
Batch: M960913113701

Reported on: 09/15/96 12:05  
Analyzed on: 09/13/96 14:14  
Analyst: GT

METHOD 8240/8260 M257B01

Compound	Result	Detection Limit	Units
Methyl t-butyl ether	ND	10	ug/L

Surrogate	Result	QC Criteria	Units
1,2-Dichloroethane-d4	95	76-114	% Recovery
Toluene-d8	91	88-110	% Recovery
Bromofluorobenzene	90	86-115	% Recovery

Samples in Batch 9609480-03 9609480-04

Notes

ND - Not detected.



Matrix: Aqueous  
Units: mg/L

Batch Id: HP\_N960916012300

LABORATORY CONTROL SAMPLE

S P I K E C O M P O U N D S	Method Blank Result <2>	Spike Added <3>	Blank Spike		QC Limits(**) (Mandatory) % Recovery Range
			Result <1>	Recovery %	
Petroleum Hydrocarbons-Gas	ND	1.00	1.11	111	50 - 150

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
			PETROLEUM HYDROCARBONS-GAS	ND	0.9	0.86		95.6	0.96

Analyst: YN

Sequence Date: 09/16/96

SPL ID of sample spiked: 9609480-02A

Sample File ID: NNI6705.TX0

Method Blank File ID:

Blank Spike File ID: NNI6696.TX0

Matrix Spike File ID: NNI6714.TX0

Matrix Spike Duplicate File ID: NNI6715.TX0

\* = Values Outside QC Range

NC = Not Calculated (Sample exceeds spike by factor of 4 or more)

ND = Not Detected/Below Detection Limit

% Recovery = [( <1> - <2> ) / <3> ] x 100

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

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

(\*\*) = Source: Temporary Limits

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

SAMPLES IN BATCH(SPL ID):

9609413-10A	9609256-03A	9609413-15A	9609480-01A
9609480-02A	9609480-03A	9609480-04A	9609480-05A
9609480-06A	9609480-07A	9609248-12A	9609256-06A
9609256-07A	9609256-08A	9609256-09A	



Matrix: Aqueous  
Units: mg/L

Batch Id: HP\_N960917103500

LABORATORY CONTROL SAMPLE

SPIKE COMPOUNDS	Method Blank Result <2>	Spike Added <3>	Blank Spike		QC Limits(**) (Mandatory) ‡ Recovery Range
			Result <1>	Recovery ‡	
Petroleum Hydrocarbons-Gas	ND	1.00	1.12	112	50 - 150

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
PETROLEUM HYDROCARBONS-GAS	ND	0.9	1.03	114	1.10	122	6.78	50	50 - 150

Analyst: YN

Sequence Date: 09/17/96

SPL ID of sample spiked: 9609515-07A

Sample File ID: NNI6726.TX0

Method Blank File ID:

Blank Spike File ID: NNI6719.TX0

Matrix Spike File ID: NNI6750.TX0

Matrix Spike Duplicate File ID: NNI6751.TX0

\* = Values Outside QC Range

NC = Not Calculated (Sample exceeds spike by factor of 4 or more)

ND = Not Detected/Below Detection Limit

‡ Recovery =  $[( <1> - <2> ) / <3> ] \times 100$

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

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

(\*\*) = Source: Temporary Limits

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

SAMPLES IN BATCH(SPL ID):

9609515-09A 9609515-07A 9609515-01A 9609515-02A  
 9609515-03A 9609515-05A 9609515-04A 9609515-06A  
 9609480-09A 9609480-08A





Matrix: Aqueous  
Units: µg/L

Batch Id: HP\_N960916125400

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	41	82.0	20 - 110
Benzene	ND	50.0	41	82.0	62 - 121
Toluene	ND	50.0	42	84.0	66 - 136
EthylBenzene	ND	50.0	46	92.0	70 - 136
O Xylene	ND	50.0	48	96.0	74 - 134
M & P Xylene	ND	100.0	95	95.0	77 - 140

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	21	105	20	100
BENZENE	ND	20	20	100	19	95.0	5.13	25	39 - 150
TOLUENE	ND	20	20	100	19	95.0	5.13	26	56 - 134
ETHYLBENZENE	ND	20	19	95.0	18	90.0	5.41	38	61 - 128
O XYLENE	ND	20	20	100	20	100	0	29	40 - 130
M & P XYLENE	ND	40	41	102	39	97.5	4.51	20	43 - 152

Analyst: YN

Sequence Date: 09/16/96

SPL ID of sample spiked: 9609480-01A

Sample File ID: N\_I6704.TX0

Method Blank File ID:

Blank Spike File ID: N\_I6687A.TX0

Matrix Spike File ID: N\_I6712.TX0

Matrix Spike Duplicate File ID: N\_I6713.TX0

\* = Values Outside QC Range

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 (4th Q '95)

(\*\*\*) = Source: SPL-Houston Historical Data (3rd Q '96)

SAMPLES IN BATCH(SPL ID):

9609256-07A 9609256-06A 9609256-08A 9609256-09A  
 9609248-06A 9609256-07A 9609413-15A 9609480-01A  
 9609480-02A 9609480-03A 9609480-04A 9609480-05A  
 9609480-06A 9609480-07A 9609413-10A 9609256-03A  
 9609248-12A 9609256-04A 9609256-06A 9609256-05A



Matrix: Aqueous  
Units: µg/L

Batch Id: HP\_N960918044900

LABORATORY CONTROL SAMPLE

SPIKE COMPOUNDS	Method Blank Result <2>	Spike Added <3>	Blank Spike		QC Limits(**) (Mandatory) ‡ Recovery Range
			Result <1>	Recovery ‡	
MTBE	ND	50	49	98.0	20 - 110
Benzene	ND	50	48	96.0	62 - 121
Toluene	ND	50	46	92.0	66 - 136
EthylBenzene	ND	50	47	94.0	70 - 136
O Xylene	ND	50	49	98.0	74 - 134
M & P Xylene	ND	100	97	97.0	77 - 140

MATRIX SPIKES

SPIKE COMPOUNDS	Sample Results <2>	Spike Added <3>	Matrix Spike		Matrix Spike Duplicate		MS/MSD Relative % Difference	QC Limits(***) (Advisory)	
			Result <1>	Recovery <4>	Result <1>	Recovery <5>		RPD Max.	Recovery Range
			MTBE	10	20	21	55.0	27	85.0
BENZENE	ND	20	15	75.0	18	90.0	18.2	25	39 - 150
TOLUENE	ND	20	13	65.0	17	85.0	26.7 *	26	56 - 134
ETHYLBENZENE	ND	20	14	70.0	17	85.0	19.4	38	61 - 128
O XYLENE	ND	20	14	70.0	18	90.0	25.0	29	40 - 130
M & P XYLENE	ND	40	29	72.5	35	87.5	18.8	20	43 - 152

Analyst: YN

Sequence Date: 09/18/96

SPL ID of sample spiked: 9609515-05A

Sample File ID: N\_I6757.TX0

Method Blank File ID:

Blank Spike File ID: N\_I6752.TX0

Matrix Spike File ID: N\_I6754.TX0

Matrix Spike Duplicate File ID: N\_I6755.TX0

\* = Values Outside QC Range

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 (4th Q '95)

(\*\*\*) = Source: SPL-Houston Historical Data (3rd Q '96)

SAMPLES IN BATCH(SPL ID):

9609480-09A 9609479-05A 9609515-08A 9609479-04A  
9609515-05A 9609515-03A 9609515-01A 9609480-08A

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



96-09-480

### CHAIN OF CUSTODY

No. 078673

Page 1 of 1

CONSULTANT'S NAME <b>Aristo Engineering</b>		ADDRESS <b>1575 Trent Blvd #201</b>		CITY <b>Walnut</b>	STATE <b>Ca</b>	ZIP CODE <b>94598</b>
BP SITE NUMBER <b>11109</b>	BP CORNER ADDRESS/CITY <b>Oakland, Ca</b>				CONSULTANT PROJECT NUMBER <b>10-014-6/002</b>	
CONSULTANT PROJECT MANAGER <b>Brady Nagle</b>		PHONE NUMBER <b>(510) 295-1650</b>	FAX NUMBER <b>295-1823</b>		CONSULTANT CONTRACT NUMBER <b>6797448</b>	
BP CONTACT <b>Scott Hooton</b>	BP ADDRESS <b>Lenton, WA</b>		PHONE NUMBER -		FAX NO. -	
LAB CONTACT <b>SPL</b>	LABORATORY ADDRESS <b>Texas</b>		PHONE NUMBER -		FAX NO. -	
SAMPLED BY (Please Print Name) <b>Larry Buenavente</b>		SAMPLED BY (Signature) <i>[Signature]</i>		SHIPMENT DATE <b>9/10/96</b>		SHIPMENT METHOD <b>Fed Ex</b>

TAT:  24 Hours  48 Hours  1 Week  Standard 2 Weeks

ANALYSIS REQUIRED

AIRBILL NUMBER **9404778655**

SAMPLE DESCRIPTION	COLLECTION DATE	MATRIX SOIL/WATER	CONTAINERS		PRESERVATIVE	TAP-61	SIXE	SIXE	MTBE	PCE	TOLU	COMMENTS
	COLLECTION TIME		NO.	TYPE (VOL.)	LAB SAMPLE #							
S-1	9/9/96	W	3	HD		X	X					
S-2	↓	↓	↓	↓		↓	↓					
S-3	↓	↓	↓	↓		↓	↓					
S-4	↓	↓	↓	↓		↓	↓					
S-5	↓	↓	↓	↓		↓	↓					
S-6	↓	↓	↓	↓		↓	↓					
S-7	↓	↓	↓	↓		↓	↓					
S-8	↓	↓	2	↓		↓	↓					
S-9	↓	↓	3	↓		↓	↓					

RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	ADDITIONAL COMMENTS
<i>[Signature]</i>	9/9/96	1200	Patricia Yelton	9/9/96	1230	500 ROI, intact
Patricia Yelton	9/10/96	1530	Sam Parks / SPL	9-11-96	0930	

# SPL Houston Environmental Laboratory

## Sample Login Checklist

Date: <div style="text-align: center; font-size: 1.2em;">9-11-96</div>	Time: <div style="text-align: center; font-size: 1.2em;">0930</div>
---	--

SPL Sample ID:

96-09-480

		<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:	5° C	
10	Method of sample delivery to SPL:	SPL Delivery	
		Client Delivery	
		FedEx Delivery (airbill #)	9404778455
		Other:	
11	Method of sample disposal:	SPL Disposal	✓
		HOLD	
		Return to Client	

Name: <div style="font-size: 1.5em; font-family: cursive;">Dan Curtis</div>	Date: <div style="text-align: center; font-size: 1.2em;">9-11-96</div>
--	---

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

BP Site Number: 11109  
 ERM Contact: G797448  
 Sampling Date: 9/8/96 + 9/9/96  
 Matrix Description: groundwater  
 Date Final Report Received: 9/26/96  
 Laboratory & Location: SPL - TX

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

Notes/Comments: ① Exceeded lab QC for MTBE + Toluene  
 \_\_\_\_\_  
 \_\_\_\_\_

Data Validation Completed by (print): Bill Howell  
 (signature): Bill Howell  
 Date: 11/19/96