



BP OIL

ENVIRONMENTAL
PROTECTION

SEP -4 AM 8:25

3878

BP Oil Company
Environmental Resources Management
Building 13, Suite N
295 SW 41st Street
Renton, Washington 98055-4931
(206) 251-0667
Fax No. (206) 251-0736

August 16, 1996

Ms. Susan Hugo
Alameda County Health Care Services Agency
1131 Harbor Bay Parkway Room 250
Oakland CA 94621

**RE: BP OIL FACILITY #11132
3201 - 35th Street
Oakland, CA**

Dear Ms Hugo:

Attached please find our **GROUNDWATER MONITORING AND SAMPLING REPORT DATED JULY 8, 1996** for the above referenced facility. Plans for the following quarter include additional groundwater monitoring. Please note that we have let a contract to remove product from the monitoring wells on a periodic basis.

If you should have any questions regarding this site, I may be reached at (206) 251-0689.

Respectfully,


Scott T. Hooton
Environmental Resources Management
Corrective Action Manager

STH:sb msword\ERM11132

cc: Mr. Eddy So, California Regional Water Quality Control Board, San Francisco Bay Region,
2101 Webster St. Suite 500, Oakland CA 94612

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

Mr. Larry Silva, TOSCO Northwest, 601 Union Street, Suite 2500, Seattle WA 98101

Site File

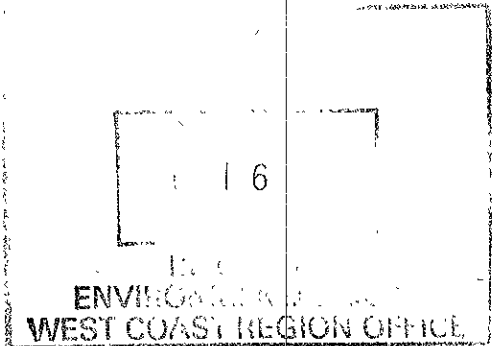
GROUNDWATER MONITORING AND SAMPLING REPORT

**BP Oil Company Service Station No. 11132
3201 35th Street
Oakland, California**

Project No. 10-024-08-004

Prepared for:

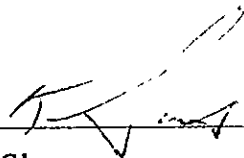
**BP Oil Company
Environmental Resources Management
295 S.W. 41st Street
Building 13, Suite N
Renton, Washington**




Prepared by:

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

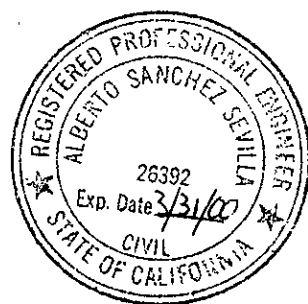
July 8, 1996



**Ken Simas
Project Manager**



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



GROUNDWATER MONITORING AND SAMPLING REPORT

BP Oil Company Service Station No. 11132
3201 35th Street
Oakland, California

Project No. 10-024-08-004

July 8, 1996

INTRODUCTION

This report presents the results and findings of the April 19, 1996 groundwater monitoring and sampling conducted by Alisto Engineering Group at BP Oil Company Service Station No. 11132, 3201 35th Street, 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 relative to mean sea level. The survey data and groundwater elevation measurements collected to date are presented in Table 1.

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

SAMPLING AND ANALYTICAL RESULTS

The results of monitoring and laboratory analysis of the groundwater samples for this and previous quarters are summarized in Table 1. The potentiometric groundwater elevations as interpreted from the results of this monitoring event are shown on Figure 2. The results of groundwater analysis are shown on Figure 3. The laboratory report and chain of custody record are presented in Appendix B.



FREE PRODUCT MONITORING AND RECOVERY

Product recovery canisters have been installed in Monitoring Wells MW-1, MW-2, MW-8, MW-9, and MW-10 to recover liquid-phase product. Product thicknesses measured during this and previous monitoring events are presented in Table 1. The volume of free product recovered from the wells is presented in Table 2.



TABLE 1 - SUMMARY OF RESULTS OF GROUNDWATER SAMPLING
 BP OIL COMPANY SERVICE STATION NO. 11132
 3201 35TH STREET, OAKLAND, CALIFORNIA

ALISTO PROJECT NO. 10-024

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)	B (ug/l)	T (ug/l)	E (ug/l)	X (ug/l)	MTBE (ug/l)	DO (ppm)	LAB
MW-1	07/09/90	169.75	--	0.22	--	--	--	--	--	--	--	--	--
MW-1	12/21/90	169.75	--	0.58	--	--	--	--	--	--	--	--	--
MW-1	03/07/91	169.75	20.59	--	--	--	--	--	--	--	--	--	--
MW-1	06/27/91	169.75	--	0.18	--	--	--	--	--	--	--	--	--
MW-1	09/27/91	169.75	--	0.27	--	--	--	--	--	--	--	--	--
MW-1	12/18/91	169.75	--	0.28	--	--	--	--	--	--	--	--	--
MW-1	04/01/91	169.75	16.51	0.15	153.35	--	--	--	--	--	--	--	--
MW-1	07/03/92	169.75	22.30	0.27	147.65	--	--	--	--	--	--	--	--
MW-1	10/05/92	169.75	23.98	0.24	145.95	--	--	--	--	--	--	--	--
MW-1	01/13/93	169.75	17.03	0.24	152.90	--	--	--	--	--	--	--	--
MW-1	04/23/93	169.75	18.10	0.42	151.97	--	--	--	--	--	--	--	--
MW-1	07/12/93	169.75	22.02	0.49	148.10	--	--	--	--	--	--	--	--
MW-1	10/21/93	169.75	25.12	1.09	145.45	--	--	--	--	--	--	--	--
MW-1	01/21/94	169.75	23.02	0.76	147.30	--	--	--	--	--	--	--	--
MW-1	04/20/94	169.75	24.54	1.80	146.56	--	--	--	--	--	--	--	--
MW-1	08/01/94	169.75	24.11	0.35	145.90	--	--	--	--	--	--	--	--
MW-1	12/23/94	169.75	18.19	0.29	151.78	--	--	--	--	--	--	--	--
MW-1	01/26/95	169.75	16.25	1.10	154.33	--	--	--	--	--	--	--	--
MW-1	06/08/95	169.75	22.92	1.20	147.73	--	--	--	--	--	--	--	--
MW-1	08/22/95	169.75	24.45	0.85	145.94	--	--	--	--	--	--	--	--
MW-1	10/27/95	169.75	25.41	0.69	144.86	--	--	--	--	--	--	--	--
MW-1	01/25/96	169.75	18.20	1.40	152.60	--	--	--	--	--	--	--	--
MW-1	04/19/96	169.75	19.06	1.22	151.61	--	--	--	--	--	--	--	--
MW-2	07/09/90	168.14	--	0.10	--	--	--	--	--	--	--	--	--
MW-2	12/21/90	168.14	--	0.48	--	--	--	--	--	--	--	--	--
MW-2	03/07/91	168.14	19.18	--	--	--	--	--	--	--	--	--	--
MW-2	06/27/91	168.14	--	0.19	--	--	--	--	--	--	--	--	--
MW-2	09/27/91	168.14	--	0.15	--	--	--	--	--	--	--	--	--
MW-2	12/18/91	168.14	--	0.36	--	--	--	--	--	--	--	--	--
MW-2	04/01/91	168.14	15.21	0.10	153.01	--	--	--	--	--	--	--	--
MW-2	07/03/92	168.14	20.93	0.03	147.23	--	--	--	--	--	--	--	--
MW-2	10/05/92	168.14	22.74	0.21	145.56	--	--	--	--	--	--	--	--
MW-2	01/13/93	168.14	15.55	0.02	152.61	--	--	--	--	--	--	--	--
MW-2	04/23/93	168.14	16.54	0.21	151.76	--	--	--	--	--	--	--	--
MW-2	07/12/93	168.14	20.46	0.06	147.73	--	--	--	--	--	--	--	--
MW-2	10/21/93	168.14	24.91	0.31	143.46	--	--	--	--	--	--	--	--
MW-2	01/21/94	168.14	21.20	--	146.94	--	--	--	--	--	--	--	--
MW-2	04/20/94	168.14	22.44	--	145.70	1800	140	370	54	290	1.7	1.7	PAGE
MW-2	08/01/94	168.14	22.24	0.04	145.93	--	--	--	--	--	--	--	--
MW-2	12/23/94	168.14	16.25	0.03	151.91	--	--	--	--	--	--	--	--
MW-2	01/26/95	168.14	14.55	0.39	153.88	--	--	--	--	--	--	--	--
MW-2	06/08/95	168.14	21.18	0.43	147.28	--	--	--	--	--	--	--	--
MW-2	08/22/95	168.14	22.76	0.36	145.65	--	--	--	--	--	--	--	--
MW-2	10/27/95	168.14	23.61	0.30	144.76	--	--	--	--	--	--	--	--
MW-2	01/25/96	168.14	15.95	0.15	152.30	--	--	--	--	--	--	--	--
MW-2	04/19/96	168.14	17.33	0.07	150.86	--	--	--	--	--	--	--	--

TABLE 1 - SUMMARY OF RESULTS OF GROUNDWATER SAMPLING
 BP OIL COMPANY SERVICE STATION NO. 11132
 3201 35TH STREET, OAKLAND, CALIFORNIA

ALISTO PROJECT NO. 10-024

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)	B (ug/l)	T (ug/l)	E (ug/l)	X (ug/l)	MTBE (ug/l)	DO (ppm)	LAB
MW-3	07/09/90	167.17	—	---	---	140	53	46	2.0	3.8	—	—	---
MW-3	12/21/90	167.17	—	---	---	0.19	100	6.0	0.9	27	---	---	---
MW-3	03/07/91	167.17	17.40	---	149.77	0.4	69	22	6.1	57	---	---	---
MW-3	06/27/91	167.17	—	---	---	380	28	26	13	46	---	---	---
MW-3	09/27/91	167.17	—	---	---	0.07	7.9	ND	0.4	1.1	---	---	---
MW-3	12/18/91	167.17	—	---	---	0.26	34	24	0.8	28	---	---	---
MW-3	04/01/91	167.17	13.69	---	153.48	ND	ND	ND	ND	ND	---	---	---
MW-3	07/03/92	167.17	19.59	---	147.58	71	9.4	0.9	5.0	13	---	---	ANA
MW-3	10/05/92	167.17	21.22	---	145.95	67	5.1	1.1	6.1	8.1	---	---	ANA
QC-1 (c)	10/05/92	—	—	---	---	ND<50	2.2	ND<0.5	1.5	2.8	---	---	ANA
MW-3	01/13/93	167.17	13.63	---	153.54	830	50	34	42	89	---	---	PACE
MW-3	04/23/93	167.17	15.02	---	152.15	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	PACE
QC-1 (c)	04/23/93	—	—	---	---	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	PACE
MW-3	07/12/93	167.17	19.16	---	148.01	250	12	4.2	12	16	---	---	PACE
MW-3	10/21/93	167.17	21.81	---	145.36	52	4.4	1.4	4.7	3.3	---	---	PACE
QC-1 (c)	10/21/93	—	—	---	---	65	7.4	1.0	6.9	4.2	---	---	PACE
MW-3	01/21/94	167.17	19.94	---	147.23	57	3.0	3.4	3.6	9.0	---	---	PACE
MW-3	04/20/94	167.17	20.24	---	146.93	600	26	23	33	88	---	1.8	PACE
MW-3	08/01/94	167.17	20.74	---	146.43	99	6.2	1.1	4.5	5.2	---	1.4	PACE
QC-1 (c)	08/01/94	—	—	---	---	120	7.7	1.6	5.9	6.7	---	---	PACE
MW-3	12/23/94	167.17	14.70	---	152.47	ND<50	ND<0.5	0.78	ND<0.5	ND<0.5	---	1.7	PACE
QC-1 (c)	12/23/94	—	—	---	---	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	PACE
MW-3	01/26/95	167.17	12.89	---	154.28	190	16	0.5	35	24	---	6.6	ATI
MW-3	06/08/95	167.17	19.95	---	147.22	330	21	4.0	34	32	---	7.0	ATI
MW-3	08/22/95	167.17	21.41	---	145.76	150	14	ND<0.50	ND<0.50	1.6	---	6.6	ATI
MW-3	10/27/95	167.17	22.43	---	144.74	---	---	---	---	---	---	---	---
MW-3	10/30/95	—	—	---	---	51	2.4	ND<0.50	ND<0.50	ND<1.0	ND<5.0	6.9	ATI
MW-3	01/25/96	167.17	14.03	---	153.14	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<1.0	5.1	---	CEI
MW-3	04/19/96	167.17	15.26	---	151.91	460	55	4	33	63	ND<10	9.4	SPL
MW-4	07/09/90	170.36	—	---	---	ND	ND	ND	ND	ND	---	---	---
MW-4	12/21/90	170.36	—	---	---	ND	ND	ND	ND	0.8	---	---	---
MW-4	03/07/91	170.36	20.72	---	149.64	ND	2.2	3.8	1.5	2.8	---	---	---
MW-4	06/27/91	170.36	—	---	---	ND	6.3	1.8	0.4	1.0	---	---	---
MW-4	09/27/91	170.36	—	---	---	ND	ND	ND	ND	ND	---	---	---
MW-4	12/18/91	170.36	—	---	---	ND	ND	ND	ND	ND	---	---	---
MW-4	04/01/91	170.36	17.49	---	152.87	ND	ND	ND	ND	ND	---	---	---
MW-4	07/03/92	170.36	22.16	---	148.20	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	ANA
MW-4	10/05/92	170.36	23.38	---	146.98	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	ANA
MW-4	01/13/93	170.36	17.58	---	152.78	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	PACE
MW-4	04/23/93	170.36	15.72	---	154.64	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	PACE
MW-4	07/12/93	170.36	21.74	---	148.62	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	PACE
MW-4	10/21/93	170.36	23.84	---	146.52	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	PACE
MW-4	01/21/94	170.36	22.42	---	147.94	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	PACE
MW-4	04/20/94	170.36	22.66	---	147.70	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	2.2	PACE
MW-4	08/01/94	170.36	23.01	---	147.35	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	1.9	PACE
MW-4	12/23/94	170.36	17.03	---	153.33	---	---	---	---	---	---	---	---
MW-4	01/26/95	170.36	17.42	---	152.94	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<1	---	7.5	ATI
MW-4	06/08/95	170.36	21.55	---	148.81	---	---	---	---	---	---	---	---
MW-4	08/22/95	170.36	23.47	---	146.89	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<1.0	---	6.4	ATI
MW-4	10/27/95	170.36	24.50	---	145.86	---	---	---	---	---	---	---	---
MW-4	01/25/96	170.36	18.74	---	151.62	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<1.0	58	---	CEI
MW-4	04/19/96	170.36	18.63	---	151.73	---	---	---	---	---	---	---	---

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 BP OIL COMPANY SERVICE STATION NO. 11132
 3201 35TH STREET, OAKLAND, CALIFORNIA

ALISTO PROJECT NO. 10-024

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)	B (ug/l)	T (ug/l)	E (ug/l)	X (ug/l)	MTBE (ug/l)	DO (ppm)	LAB
MW-5	07/09/90	165.14	--	--	--	280	200	210	46	290	--	--	--
MW-5	12/21/90	165.14	--	--	--	0.69	300	34	8.4	39	--	--	--
MW-5	03/07/91	165.14	16.60	--	148.54	ND	17	0.9	0.7	1.6	--	--	--
MW-5	06/27/91	165.14	--	--	--	330	120	10	12	8	--	--	--
MW-5	09/27/91	165.14	--	--	--	0.73	230	16	20	22	--	--	--
MW-5	12/18/91	165.14	--	--	--	ND	ND	ND	ND	ND	--	--	--
MW-5	04/01/91	165.14	11.99	--	153.15	800	250	54	11	60	--	--	--
MW-5	07/03/92	165.14	18.65	--	146.49	150	36	ND<0.5	ND<0.5	1.1	--	--	ANA
MW-5	10/05/92	165.14	20.32	--	144.82	270	79	4	1.7	2.9	--	--	ANA
MW-5	01/13/93	165.14	13.03	--	152.11	180	59	6.0	1.8	7.6	--	--	PACE
MW-5	04/23/93	165.14	13.51	--	151.63	8700	440	96	35	136	--	--	PACE
MW-5	07/12/93	165.14	18.06	--	147.08	250	57	2.9	2.1	6.0	--	--	PACE
MW-5	10/21/93	165.14	20.41	--	144.73	210	82	1.5	ND<0.5	1.4	--	--	PACE
MW-5	01/21/94	165.14	18.86	--	146.28	110	36	1.2	ND<0.5	0.7	--	--	PACE
MW-5	04/20/94	165.14	17.30	--	147.84	690	230	4.5	1.6	11	--	1.3	PACE
MW-5	08/01/94	165.14	17.53	--	147.61	170	44	1.6	0.9	2.7	--	0.9	PACE
MW-5	12/23/94	165.14	11.63	--	153.51	630	180	1.9	0.66	1.9	--	1.4	PACE
MW-5	01/26/95	165.14	11.25	--	153.89	160	68	ND<0.5	ND<0.5	22	--	5.9	ATI
MW-5	06/08/95	165.14	16.80	--	148.34	2000	630	58	61	180	--	6.5	ATI
QC-1 (c)	06/08/95	--	--	--	--	1700	580	51	55	170	--	--	ATI
MW-5	08/22/95	165.14	19.02	--	146.12	3700	1100	18	27	59	--	7.3	ATI
MW-5	10/27/95	165.14	20.94	--	144.20	--	--	--	--	--	--	--	--
MW-5	10/30/95	--	--	--	--	6500	2200	55	180	270	ND<250	7.5	ATI
MW-5	01/25/96	165.14	13.30	--	151.84	590	37	0.70	ND<0.50	ND<1.0	ND<5.0	--	CEI
QC-1 (c)	01/25/96	--	--	--	--	540	37	0.66	ND<0.50	ND<1.0	ND<5.0	--	CEI
MW-5	04/19/96	165.14	13.63	--	151.51	1500	470	38	49	210	ND<50	8.1	SPL
MW-6	07/09/90	165.40	--	--	--	ND	ND	ND	ND	ND	--	--	--
MW-6	12/21/90	165.40	--	--	--	0.17	2.6	7.0	4.9	26	--	--	--
MW-6 (d)	03/07/91	165.40	--	--	--	--	--	--	--	--	--	--	--
MW-6 (d)	06/27/91	165.40	--	--	--	--	--	--	--	--	--	--	--
MW-6 (d)	09/27/91	165.40	--	--	--	--	--	--	--	--	--	--	--
MW-6	12/18/91	165.40	--	--	--	ND	1.3	22	ND	2.7	--	--	--
MW-6	04/01/91	165.40	11.79	--	153.61	ND	ND	ND	ND	ND	--	--	--
MW-6	07/03/92	165.40	17.77	--	147.63	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	--	--	ANA
MW-6	10/05/92	165.40	19.46	--	145.94	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	--	--	ANA
MW-6	01/13/93	165.40	11.34	--	154.06	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	--	--	PACE
MW-6	04/23/93	165.40	12.92	--	152.48	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	--	--	PACE
MW-6	07/12/93	165.40	17.36	--	148.04	ND<50	ND<0.5	ND<0.5	ND<0.5	0.7	--	--	PACE
MW-6	10/21/93	165.40	19.98	--	145.42	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	--	--	PACE
MW-6	01/21/94	165.40	18.10	--	147.90	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	--	--	PACE
MW-6	04/20/94	165.40	18.68	--	146.72	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	--	2.0	PACE
MW-6	08/01/94	165.40	18.90	--	146.50	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	--	1.5	PACE
MW-6	12/23/94	165.40	12.94	--	152.46	--	--	--	--	--	--	--	--
MW-6	01/26/95	165.40	10.46	--	154.94	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<1	--	7.3	ATI
MW-6	06/08/95	165.40	16.84	--	148.56	--	--	--	--	--	--	--	--
MW-6	08/22/95	165.40	19.48	--	145.92	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<1.0	--	6.7	ATI
MW-6	10/27/95	165.40	20.39	--	145.01	--	--	--	--	--	--	--	--
MW-6	01/25/96	165.40	12.24	--	153.16	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<1.0	9.9	--	CEI
MW-6	04/19/96	165.40	13.90	--	151.50	--	--	--	--	--	--	--	--

TABLE 1 - SUMMARY OF RESULTS OF GROUNDWATER SAMPLING
 BP OIL COMPANY SERVICE STATION NO. 11132
 3201 35TH STREET, OAKLAND, CALIFORNIA

ALISTO PROJECT NO. 10-024

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)	B (ug/l)	T (ug/l)	E (ug/l)	X (ug/l)	MTBE (ug/l)	DO (ppm)	LAB
MW-7	07/09/90	167.61	---	---	---	ND	ND	ND	ND	ND	---	---	---
MW-7	12/21/90	167.61	---	---	---	ND	ND	ND	ND	ND	---	---	---
MW-7	03/07/91	167.61	19.04	---	148.57	ND	ND	0.4	0.3	2.4	---	---	---
MW-7	06/27/91	167.61	---	---	---	70	17	4	0.8	2.2	---	---	---
MW-7	09/27/91	167.61	---	---	---	ND	0.4	ND	ND	0.4	---	---	---
MW-7	12/18/91	167.61	---	---	---	ND	0.7	2.9	0.8	3.3	---	---	---
MW-7	04/01/91	167.61	15.18	---	152.43	ND	ND	ND	ND	ND	---	---	---
MW-7	07/03/92	167.61	20.28	---	147.33	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	ANA
MW-7	10/05/92	167.61	21.56	---	146.05	ND<50	ND<0.5	ND<0.5	ND<0.5	1.5	---	---	ANA
MW-7	01/13/93	167.61	15.41	---	152.20	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	PACE
MW-7	04/23/93	167.61	15.84	---	151.77	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	PACE
MW-7	07/12/93	167.61	19.84	---	147.77	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	PACE
MW-7	10/21/93	167.61	21.61	---	146.00	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	PACE
MW-7	01/21/94	167.61	20.49	---	147.12	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	PACE
QC-1 (c)	01/21/94	---	---	---	---	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	PACE
MW-7	04/20/94	167.61	20.54	---	147.07	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	1.5	PACE
MW-7	08/01/94	167.61	20.99	---	146.62	ND<50	0.7	ND<0.5	ND<0.5	ND<0.5	---	1.9	PACE
MW-7	12/23/94	167.61	15.00	---	152.61	---	---	---	---	---	---	---	---
MW-7	01/26/95	167.61	14.69	---	152.92	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<1	---	7.0	ATI
MW-7	06/08/95	167.61	19.87	---	147.74	---	---	---	---	---	---	---	---
MW-7	08/22/95	167.61	21.49	---	146.12	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<1.0	---	6.4	ATI
MW-7	10/27/95	167.61	22.53	---	145.08	---	---	---	---	---	---	---	---
MW-7	01/25/96	167.61	17.21	---	150.40	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<1.0	ND<5.0	---	CEI
MW-7	04/19/96	167.61	17.09	---	150.52	---	---	---	---	---	---	---	---
MW-8	03/07/91	165.74	16.72	---	149.02	2.7	780	450	64	310	---	---	---
MW-8	06/27/91	165.74	---	---	---	12000	3400	1100	240	750	---	---	---
MW-8	09/27/91	165.74	---	---	---	41	5700	5200	1100	4300	---	---	---
MW-8	12/18/91	165.74	---	---	---	3.2	990	150	120	250	---	---	---
MW-8	04/01/91	165.74	12.54	---	153.20	15000	3600	2600	410	1900	---	---	---
MW-8	07/03/92	165.74	18.78	---	146.96	72000	19000	32000	3000	15000	---	---	ANA
MW-8	10/05/92	165.74	20.48	0.01	145.27	---	---	---	---	---	---	---	---
MW-8	01/13/93	165.74	12.87	0.01	152.88	---	---	---	---	---	---	---	---
MW-8	04/23/93	165.74	13.90	SHEEN	151.84	---	---	---	---	---	---	---	---
MW-8	07/12/93	165.74	18.30	SHEEN	147.44	---	---	---	---	---	---	---	---
MW-8	10/21/93	165.74	21.91	0.95	144.54	---	---	---	---	---	---	---	---
MW-8	01/21/94	165.74	19.12	0.03	146.64	---	---	---	---	---	---	---	---
MW-8	04/20/94	165.74	19.28	0.03	146.48	26000	1700	4100	960	4000	---	1.1	PACE
MW-8	08/01/94	165.74	---	---	---	---	---	---	---	---	---	---	---
MW-8	12/23/94	165.74	13.81	0.03	151.95	---	---	---	---	---	---	---	---
MW-8	01/26/95	165.74	---	---	---	---	---	---	---	---	---	---	---
MW-8	06/08/95	165.74	17.82	0.29	148.14	---	---	---	---	---	---	---	---
MW-8	08/22/95	165.74	19.41	0.20	146.48	---	---	---	---	---	---	---	---
MW-8	10/27/95	165.74	20.47	0.14	145.38	---	---	---	---	---	---	---	---
MW-8	01/25/96	165.74	13.35	0.22	152.56	---	---	---	---	---	---	---	---
MW-8	04/19/96	165.74	14.40	0.20	151.49	---	---	---	---	---	---	---	---

TABLE 1 - SUMMARY OF RESULTS OF GROUNDWATER SAMPLING
 BP OIL COMPANY SERVICE STATION NO. 11132
 3201 35TH STREET, OAKLAND, CALIFORNIA

ALISTO PROJECT NO. 10-024

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)	B (ug/l)	T (ug/l)	E (ug/l)	X (ug/l)	MTBE (ug/l)	DO (ppm)	LAB
MW-9	03/07/91	166.20	16.79	---	149.41	7.1	220	4	2.4	2400	---	---	---
MW-9	06/27/91	166.20	---	---	---	3600	520	400	85	310	---	---	---
MW-9	09/27/91	166.20	---	---	---	3.2	720	150	50	180	---	---	---
MW-9	12/18/91	166.20	---	---	---	ND	2.5	1.1	0.3	5.8	---	---	---
MW-9	04/01/91	166.20	12.89	---	153.31	12000	2000	2600	360	1600	---	---	---
MW-9	07/03/92	166.20	18.89	---	147.31	5700	17000	840	230	800	---	---	ANA
MW-9	10/05/92	166.20	20.52	---	145.68	1400	440	17	14	100	---	---	ANA
MW-9	01/13/93	166.20	12.92	---	153.28	11000	1200	1700	340	1400	---	---	PACE
QC-1 (c)	01/13/93	---	---	---	---	0.00	11000	1200	1600	330	1300	---	PACE
MW-9	04/23/93	166.20	14.08	---	152.12	24000	2800	4500	730	3400	---	---	PACE
MW-9	07/12/93	166.20	18.44	---	147.76	13000	1400	1100	360	1400	---	---	PACE
QC-1 (c)	07/12/93	---	---	---	---	10000	1200	900	310	1200	---	---	PACE
MW-9	10/21/93	166.20	21.81	0.89	145.06	---	---	---	---	---	---	---	---
MW-9	01/21/94	166.20	19.28	---	146.92	---	---	---	---	---	---	---	---
MW-9	04/20/94	166.20	19.72	---	146.48	43000	2800	6800	1300	7900	---	1.7	PACE
QC-1 (c)	04/20/94	---	---	---	---	45000	2700	6800	1200	8200	---	---	PACE
MW-9	08/01/94	166.20	20.18	0.05	146.06	---	---	---	---	---	---	---	---
MW-9	12/23/94	166.20	14.22	0.02	152.00	---	---	---	---	---	---	---	---
MW-9	01/26/95	166.20	11.85	0.13	154.45	---	---	---	---	---	---	---	---
MW-9	06/08/95	166.20	18.33	0.80	148.47	---	---	---	---	---	---	---	---
MW-9	08/22/95	166.20	19.95	0.01	146.26	---	---	---	---	---	---	---	---
MW-9	10/27/95	166.20	20.68	0.01	145.33	---	---	---	---	---	---	---	---
MW-9	01/25/96	166.20	13.84	0.07	152.41	---	---	---	---	---	---	---	---
MW-9 (d)	04/19/96	166.20	---	---	---	---	---	---	---	---	---	---	---
MW-10	03/07/91	167.01	18.09	---	148.92	1.6	120	190	32	230	---	---	---
MW-10	06/27/91	167.01	---	---	---	12000	7300	500	150	300	---	---	---
MW-10	09/27/91	167.01	---	---	---	57	12000	7200	1400	4600	---	---	---
MW-10	12/18/91	167.01	---	---	---	5.3	2500	120	36	79	---	---	---
MW-10	04/01/91	167.01	13.92	---	153.09	ND	ND	ND	ND	ND	---	---	---
MW-10	07/03/92	167.01	19.92	---	147.09	8600	5100	1300	180	690	---	---	ANA
MW-10	10/05/92	167.01	21.92	0.19	145.23	---	---	---	---	---	---	---	---
MW-10	01/13/93	167.01	14.43	0.03	152.60	---	---	---	---	---	---	---	---
MW-10	04/23/93	167.01	15.26	0.06	151.80	---	---	---	---	---	---	---	---
MW-10	07/12/93	167.01	19.78	0.45	147.57	---	---	---	---	---	---	---	---
MW-10	10/21/93	167.01	22.90	0.69	144.63	---	---	---	---	---	---	---	---
MW-10	01/21/94	167.01	20.25	0.06	146.81	---	---	---	---	---	---	---	---
MW-10	04/20/94	167.01	20.74	---	146.27	100000	12000	24000	2400	14000	---	1.0	PACE
MW-10	08/01/94	167.01	22.00	0.28	145.22	---	---	---	---	---	---	---	---
MW-10	12/23/94	167.01	16.08	0.25	151.12	---	---	---	---	---	---	---	---
MW-10	01/26/95	167.01	13.68	0.80	153.93	---	---	---	---	---	---	---	---
MW-10	06/08/95	167.01	19.08	0.75	148.49	---	---	---	---	---	---	---	---
MW-10	08/22/95	167.01	20.73	0.70	146.81	---	---	---	---	---	---	---	---
MW-10	10/27/95	167.01	21.69	0.63	145.79	---	---	---	---	---	---	---	---
MW-10	01/25/96	167.01	15.05	0.81	152.57	---	---	---	---	---	---	---	---
MW-10	04/19/96	167.01	16.26	0.59	151.19	---	---	---	---	---	---	---	---

TABLE 1 - SUMMARY OF RESULTS OF GROUNDWATER SAMPLING
 BP OIL COMPANY SERVICE STATION NO. 11132
 3201 35TH STREET, OAKLAND, CALIFORNIA

ALISTO PROJECT NO. 10-024

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)	B (ug/l)	T (ug/l)	E (ug/l)	X (ug/l)	MTBE (ug/l)	DO (ppm)	LAB
RW-1	07/09/90	168.01	---	1.21	---	---	---	---	---	---	---	---	---
RW-1	12/21/90	168.01	---	0.01	---	---	---	---	---	---	---	---	---
RW-1	03/07/91	168.01	17.62	SHEEN	150.39	---	---	---	---	---	---	---	---
RW-1	06/27/91	168.01	---	0.04	---	---	---	---	---	---	---	---	---
RW-1	09/27/91	168.01	---	0.02	---	---	---	---	---	---	---	---	---
RW-1	12/18/91	168.01	---	0.02	---	---	---	---	---	---	---	---	---
RW-1	04/01/91	168.01	14.40	0.11	153.69	---	---	---	---	---	---	---	---
RW-1	07/03/92	168.01	20.66	SHEEN	147.35	---	---	---	---	---	---	---	---
RW-1	10/05/92	168.01	23.34	0.08	144.73	---	---	---	---	---	---	---	---
RW-1	01/13/93	168.01	16.59	0.05	151.46	---	---	---	---	---	---	---	---
RW-1	04/23/93	168.01	16.17	0.18	151.98	---	---	---	---	---	---	---	---
RW-1	07/12/93	168.01	20.18	0.06	147.88	---	---	---	---	---	---	---	---
RW-1	10/21/93	168.01	25.70	0.56	142.73	---	---	---	---	---	---	---	---
RW-1	01/21/94	168.01	21.24	0.40	147.07	---	---	---	---	---	---	---	---
RW-1	04/20/94	168.01	32.20	---	135.81	---	---	---	---	---	---	---	---
RW-1	08/01/94	168.01	21.70	---	146.31	29000	580	950	300	7800	---	1.1	PACE
RW-1	12/23/94	168.01	16.02	---	151.99	1300	25	8.6	1.4	69	---	1.8	PACE
RW-1	01/26/95	168.01	13.78	---	154.23	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<1	---	---	ATI
QC-1 (c)	01/26/95	---	---	---	---	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<1	---	---	ATI
RW-1	06/08/95	168.01	20.05	---	147.96	1300	130	ND<1.0	ND<1.0	36	---	---	ATI
RW-1	08/22/95	168.01	21.74	---	146.27	3300	230	13	4.9	280	---	6.6	ATI
QC-1 (c)	08/22/95	---	---	---	---	2800	210	9.3	4.3	250	---	---	ATI
RW-1	10/27/95	168.01	32.00	---	136.01	---	---	---	---	---	---	---	---
RW-1	10/30/95	---	---	---	---	230	1.4	ND<1.0	ND<1.0	ND<2.0	650	6.9	ATI
QC-1 (c)	10/30/95	---	---	---	---	240	1.6	ND<1.0	ND<1.0	ND<2.0	630	---	ATI
RW-1	01/25/96	168.01	15.41	---	152.60	15000	3400	930	330	2500	5300	---	CEI
RW-1	04/19/96	168.01	16.83	---	151.18	35000	5600	3300	1700	9400	14000	7.6	SPL
QC-1 (c)	04/19/96	---	---	---	---	33000	5600	3200	1700	8800	15000	---	SPL
QC-2 (e)	10/05/92	---	---	---	---	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	ANA
QC-2 (e)	01/13/93	---	---	---	---	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	PACE
QC-2 (e)	04/23/93	---	---	---	---	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	PACE
QC-2 (e)	07/12/93	---	---	---	---	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	PACE
QC-2 (e)	10/21/93	---	---	---	---	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	PACE
QC-2 (e)	01/21/94	---	---	---	---	ND<50	ND<0.5	2.1	ND<0.5	2.1	---	---	PACE
QC-2 (e)	04/20/94	---	---	---	---	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	PACE
QC-2 (e)	04/20/94	---	---	---	---	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	PACE
QC-2 (e)	12/23/94	---	---	---	---	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	ATI
QC-2 (e)	01/26/95	---	---	---	---	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<1	---	---	ATI
QC-2 (e)	06/08/95	---	---	---	---	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<1.0	---	---	ATI
QC-2 (e)	08/22/95	---	---	---	---	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<1.0	---	---	ATI
QC-2 (e)	10/30/95	---	---	---	---	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<1.0	ND<5.0	---	ATI
QC-2 (e)	01/25/96	---	---	---	---	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<1.0	ND<5.0	---	CEI
QC-2 (e)	04/19/96	---	---	---	---	ND<50	ND<0.5	ND<1	ND<1	ND<1	ND<10	---	SPL

TABLE 1 - SUMMARY OF RESULTS OF GROUNDWATER SAMPLING
 BP OIL COMPANY SERVICE STATION NO 11132
 3201 35TH STREET, OAKLAND, CALIFORNIA

ALISTO PROJECT NO. 10-024

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)	B (ug/l)	T (ug/l)	E (ug/l)	X (ug/l)	MTBE (ug/l)	DO (ppm)	LAB
ABBREVIATIONS:						NOTES:							
TPH-G	Total petroleum hydrocarbons as gasoline					(a)	Casing elevations surveyed to the nearest 0.01 foot relative to mean sea level.						
B	Benzene												
T	Toluene												
E	Ethylbenzene					(b)	Groundwater elevations adjusted assuming a specific gravity of 0.75 for free product.						
X	Total xylenes												
MTBE	Methyl tert butyl ether												
DO	Dissolved oxygen					(c)	Blind duplicate.						
ug/l	Micrograms per liter												
ppm	Parts per million					(d)	Well inaccessible.						
---	Not analyzed/available/applicable/measurable												
ND	Not detected above reported detection limit					(e)	Travel blank.						
PACE	Pace, Inc.												
ANA	Anametrix, Inc.												
ATI	Analytical Technologies, Inc.												
CEI	Ceimic Corporation												
SPL	Southern Petroleum Laboratories												

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TABLE 2 - PRODUCT REMOVAL STATUS
 BP OIL COMPANY SERVICE STATION NO. 11132
 3201 35TH STREET, OAKLAND, CALIFORNIA

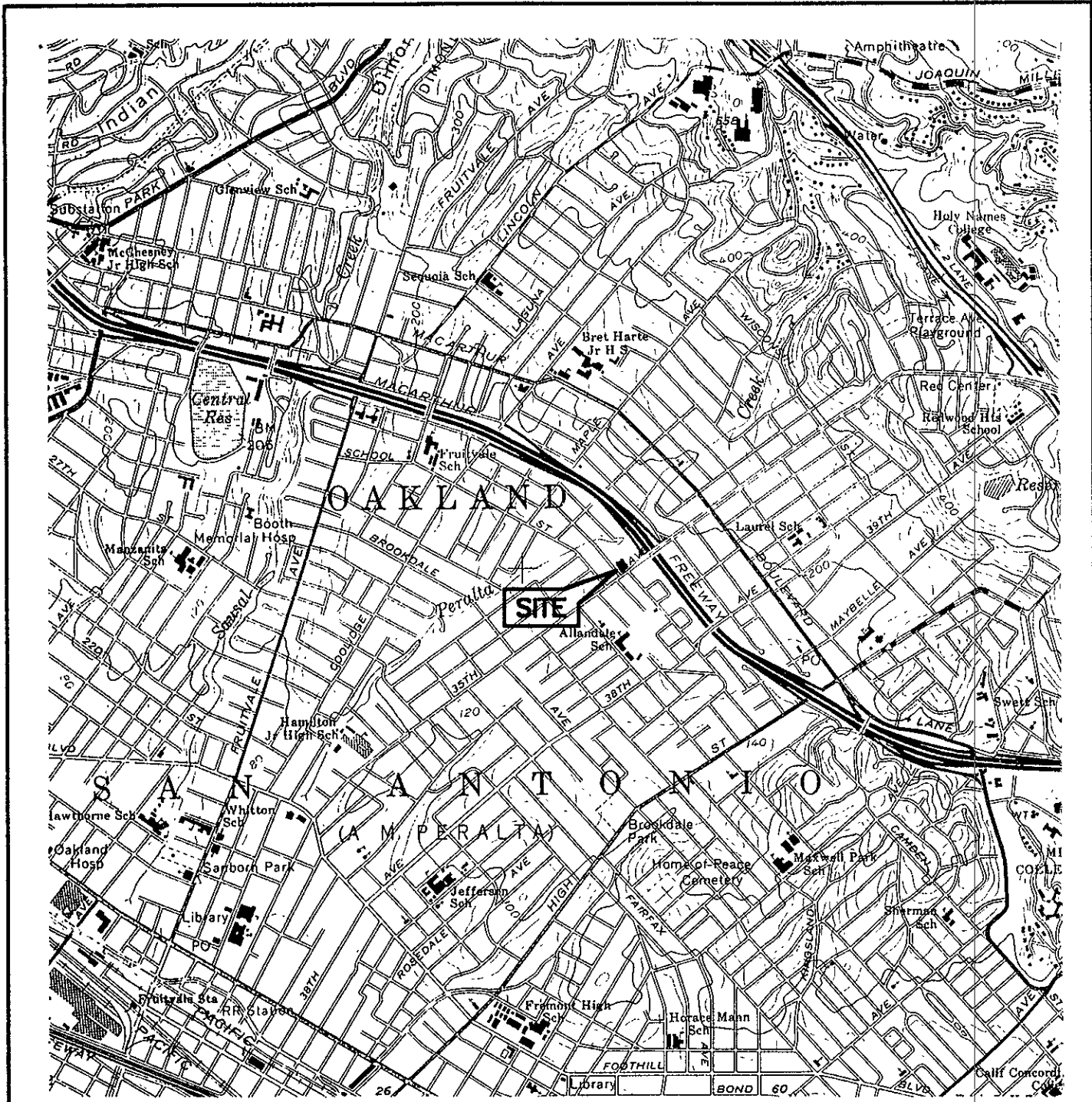
ALISTO PROJECT NO. 10-024

WELL ID	DATE	PRODUCT REMOVED (Gallons)	PRODUCT REMOVED CUMULATIVE (Gallons)
MW-1	01/26/95	3.00	3.00
	06/08/95	0.60	3.60
	06/28/95	0.10	3.70
	08/22/95	0.15	3.85
	10/30/95	0.11	3.96
	01/25/96	1.00	4.96
	02/16/95	0.08	5.04
	04/19/96	0.75	5.79
MW-2	09/29/93	0.10	0.10
	10/05/93	0.10	0.20
	10/14/93	0.10	0.30
	10/20/93	0.25	0.55
	11/02/93	0.10	0.65
	12/07/93	0.05	0.70
	12/17/93	<0.01	0.70
	12/23/93	0.30	1.00
	01/12/94	0.05	1.05
	02/02/94	0.01	1.06
	02/11/94	0.01	1.07
	03/18/94	<0.01	1.07
	10/26/94	0.76	1.83
	11/12/94	0.08	1.91
	12/12/94	0.03	1.94
	01/26/95	0.19	2.13
	06/08/95	Sheen	2.13
	06/28/95	0.05	2.18
	08/22/95	0.10	2.28
	10/30/95	0.05	2.33
01/25/96	Sheen	2.33	
02/16/95	0.04	2.37	
04/19/96	0.01	2.38	
MW-8	11/02/93	0.25	0.25
	11/10/93	0.10	0.35
	11/16/93	0.10	0.45
	11/23/93	0.10	0.55
	11/30/93	0.10	0.65
	12/17/93	<0.01	0.65
	12/23/93	<0.01	0.65
	01/12/94	0.01	0.66
	02/02/94	0.05	0.71
	02/11/94	0.08	0.79
	02/18/94	<0.01	0.79
	03/18/94	0.01	0.80
	04/27/94	<0.01	0.80
	05/27/94	<0.01	0.80
	10/26/94	0.10	0.90
	11/12/94	0.02	0.92
	12/12/94	0.01	0.93
	06/08/95	Sheen	0.93
	08/22/95	0.05	0.98
	10/30/95	0.02	1.00
01/25/96	0.05	1.05	
02/16/95	0.01	1.06	
04/19/96	0.25	1.31	

TABLE 2 - PRODUCT REMOVAL STATUS
 BP OIL COMPANY SERVICE STATION NO. 11132
 3201 35TH STREET, OAKLAND, CALIFORNIA

ALISTO PROJECT NO. 10-024

WELL ID	DATE	PRODUCT REMOVED (Gallons)	PRODUCT REMOVED CUMULATIVE (Gallons)
MW-9	11/02/93	0.10	0.10
	11/10/93	0.10	0.20
	11/16/93	0.10	0.30
	12/23/93	<0.01	0.30
	01/12/94	0.01	0.31
	01/20/93	0.05	0.36
	02/02/94	0.05	0.41
	02/11/94	0.01	0.42
	02/18/94	<0.01	0.42
	03/18/94	0.10	0.52
	10/26/94	0.15	0.67
	11/12/94	<0.01	0.67
	12/12/94	<0.01	0.67
	01/26/95	0.10	0.77
	06/28/95	<0.01	0.77
	08/22/95	<0.01	0.77
	10/30/95	<0.01	0.77
	01/25/96	<0.01	0.77
02/16/95	<0.01	0.77	
04/19/96	<0.01	0.77	
MW-10	09/07/93	0.10	0.10
	09/14/93	0.10	0.20
	09/29/93	0.10	0.30
	10/05/93	1.60	1.90
	10/14/93	2.10	4.00
	10/20/93	1.00	5.00
	10/27/93	1.00	6.00
	11/02/93	0.30	6.30
	11/10/93	0.20	6.50
	11/16/93	0.10	6.60
	11/23/93	0.10	6.70
	11/30/93	0.30	7.00
	12/07/93	0.20	7.20
	12/17/93	0.30	7.50
	12/23/93	<0.01	7.50
	01/04/94	0.01	7.51
	01/12/94	0.01	7.52
	01/20/94	0.20	7.72
	02/02/94	0.01	7.73
	02/11/94	0.01	7.74
	02/18/94	0.20	7.94
	05/27/94	<0.01	7.94
	10/26/94	0.60	8.54
	11/12/94	0.43	8.97
	12/12/94	0.26	9.23
	01/26/95	0.13	9.36
	06/28/95	0.10	9.46
	08/22/95	0.15	9.61
10/30/95	0.10	9.71	
01/25/96	0.25	9.96	
02/16/95	0.10	10.06	
04/19/96	0.50	10.56	



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

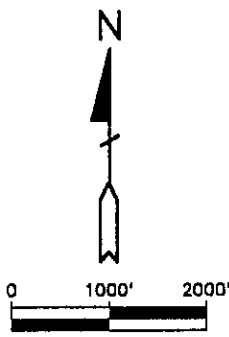
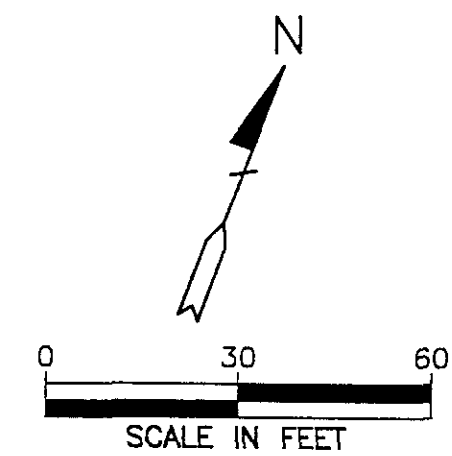
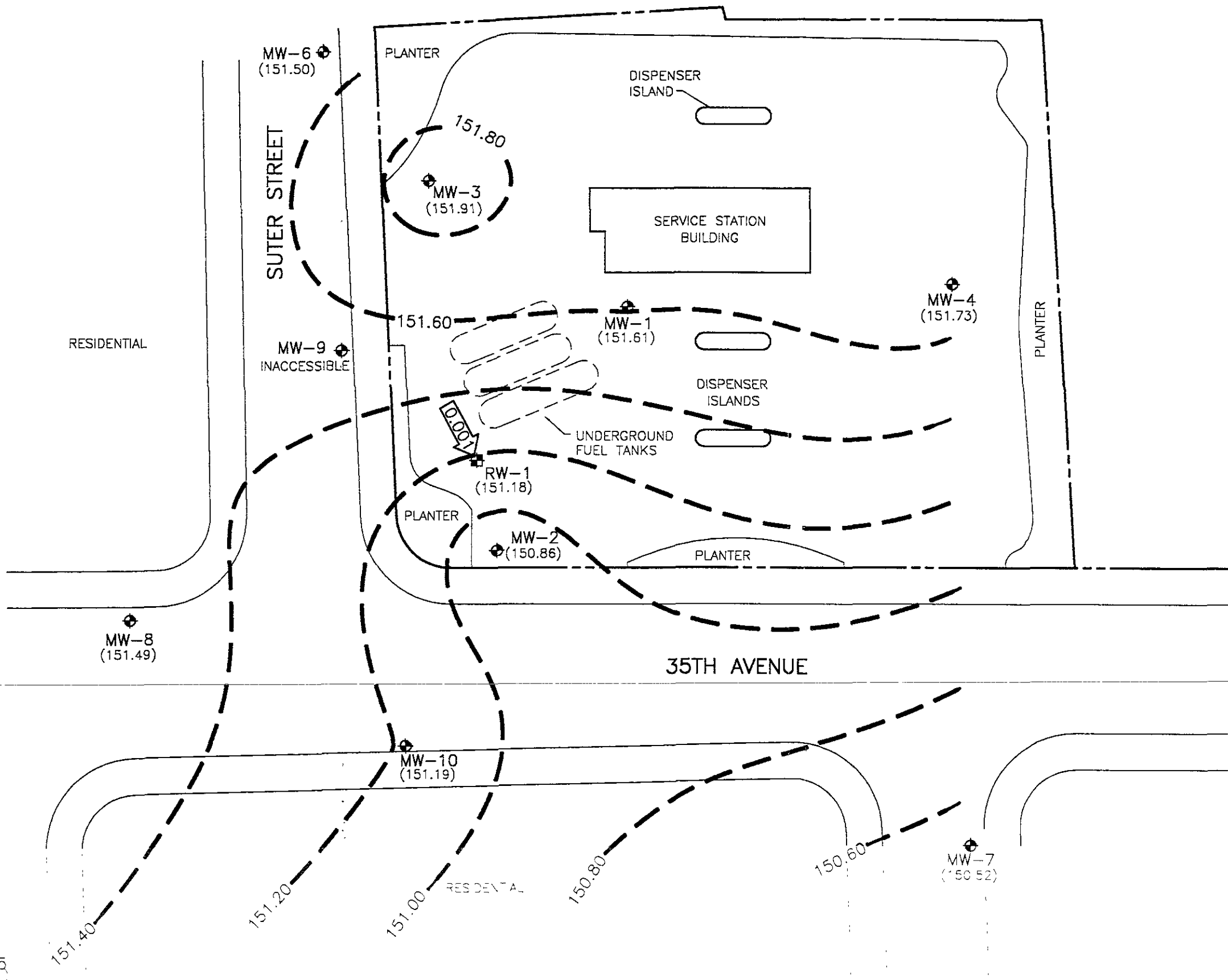


FIGURE 1
SITE VICINITY MAP

BP OIL SERVICE STATION NO. 11132
 3201 35TH STREET
 OAKLAND, CALIFORNIA
 PROJECT NO. 10-024

 **ALISTO ENGINEERING GROUP**
 WALNUT CREEK, CALIFORNIA

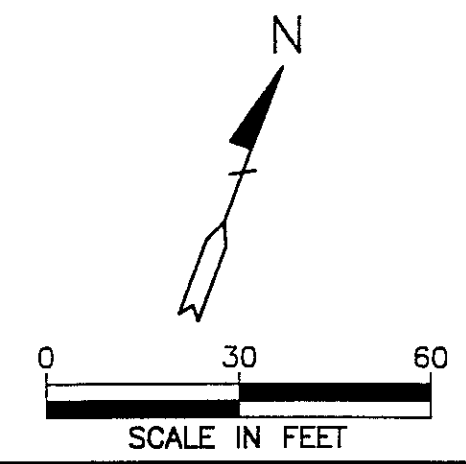
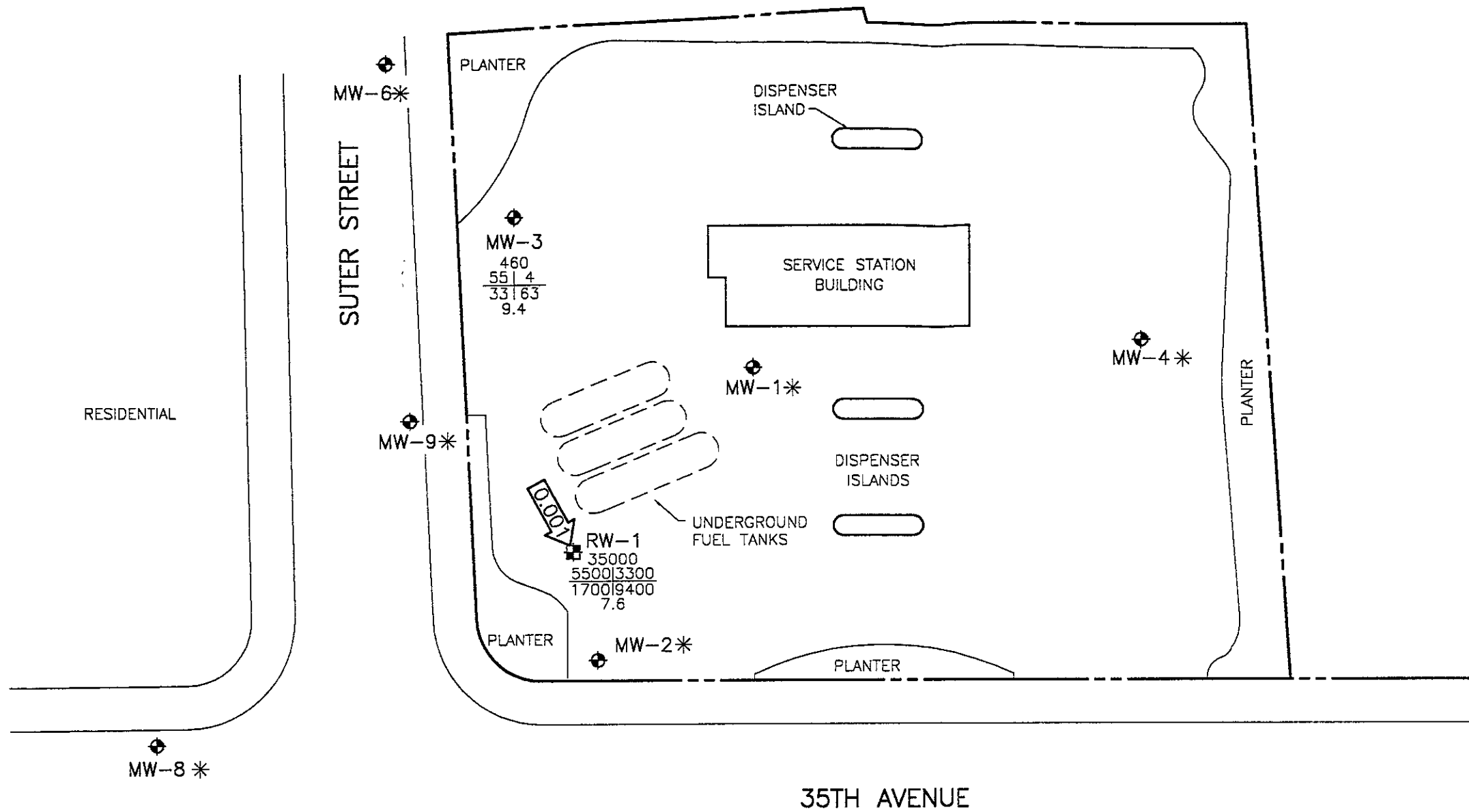


LEGEND

- ◆ GROUNDWATER MONITORING WELL
- ⊕ GROUNDWATER RECOVERY WELL
- (150.52) GROUNDWATER ELEVATION IN FEET ABOVE MEAN SEA LEVEL
- 150.60 - GROUNDWATER ELEVATION CONTOUR IN FEET ABOVE MEAN SEA LEVEL (CONTOUR INTERVAL-0.20 FOOT)
- ← 0.001 GROUNDWATER GRADIENT DIRECTION AND MAGNITUDE IN FOOT PER FOOT

FIGURE 2
POTENTIOMETRIC GROUNDWATER ELEVATION CONTOUR MAP
 APRIL 19, 1996
 BP OIL SERVICE STATION NO. 11132
 3201 35TH STREET
 OAKLAND, CALIFORNIA
 PROJECT NO. 10-024

100040 R DWG 5 08 00



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
- ←0.001 CALCULATED GROUNDWATER GRADIENT DIRECTION AND MAGNITUDE IN FOOT PER FOOT
- * NOT SAMPLED

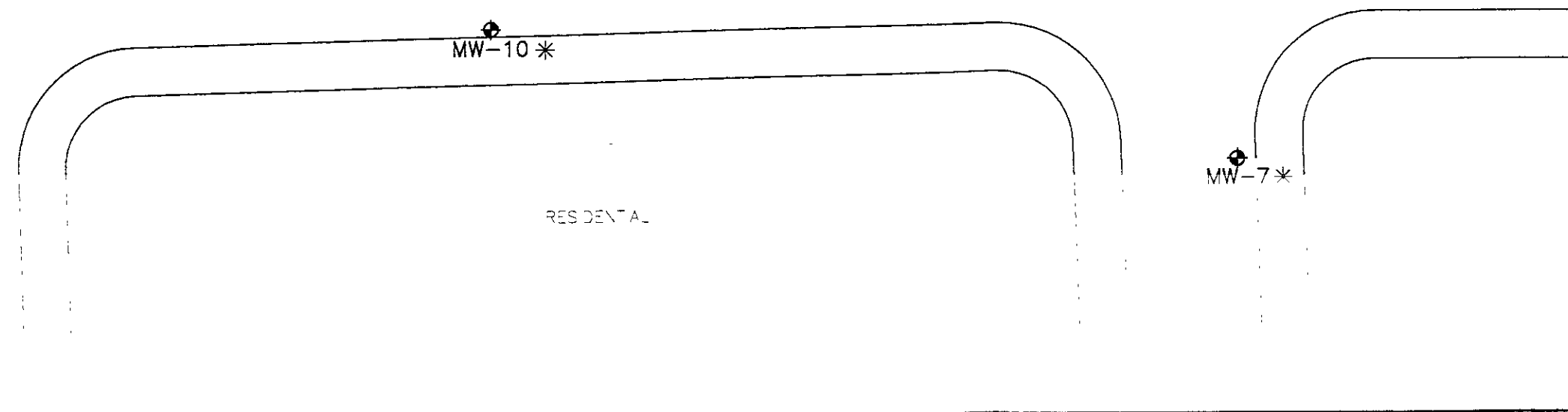


FIGURE 3
CONCENTRATIONS OF PETROLEUM HYDROCARBONS IN GROUNDWATER
 APRIL 19, 1996
 BP OIL SERVICE STATION NO. 11132
 3201 35TH STREET
 OAKLAND, CALIFORNIA
 PROJECT NO. 10-024



100241-11.DWG 7 1 86 25 1 30

APPENDIX A
WATER SAMPLING FIELD SURVEY FORMS

ALISTO

Field Report / Sampling Data Sheet

ENGINEERING
GROUP
1575 TREAT BOULEVARD, SUITE 201

Project No. 10-024-08-003⁰⁰⁴ Date: 4/18/06
Address 3201 35th Street Day: MTWTHF
Contract No. G602109 City: Oakland
Station No. BP 11132 Sampler: DC

DEPTH TO GROUNDWATER SUMMARY

WELL ID	SAMPLE ID	WELL DIAM	TOTAL DEPTH	DEPTH TO WATER	PRODUCT THICKNESS	TIME MONITORED	COMMENTS:
MW-1	Not	2"	Nm	15.06	1.22	1435	PPRS had 1/4 gallon of prod, banded 2galls, .75gall was product
MW-2	not	2"	Nm	17.33	0.07'	1117	PPRS had 1/4 gallon of water & 0.01 gallon product, banded 1/4 gallon w/ shov
MW-3	S-1	↓	34.58	15.26	∅	1104	
MW-4	Not	↓	38.74	18.63	↓	1045	SEMI/JAN-JULY
MW-5	S-2	↓	30.38	13.63	↓	1110	
MW-6	Not	↓	34.56	13.90	↓	1101	SEMI/JAN-JULY
MW-7	Not	↓	34.49	17.09	↓	1055	SEMI/JAN-JULY
MW-8	not	2"	Nm	14.40	0.20'	1121	Spilled 1 gallon of H ₂ O, rest of that ≈ 1/4 gallon was product
MW-9	not	-	-	-	-	-	unacc. s. be, car over well
MW-10	not	2"	Nm	16.26	0.58'	1127	PPRS had 1/4 gallon of product; banded 1.5 gallon; .5 gallon was product
RW-1	S-3	6"	38.41	16.83	∅	1113	

FIELD INSTRUMENT CALIBRATION DATA

pH METER Hydra 4.00 ✓ : 7.00 ✓ 10.00 _____ TEMPERATURE COMPENSATED Y N TIME 1145
D.O. METER Icon ZERO D.O. SOLUTION 7.0 ppm BAROMETRIC PRESSURE _____ TEMP 69°F WEATHER Overcast
CONDUCTIVITY METER Hydra 10,000 ✓ TURBIDITY METER _____ 5.0 NTU OTHER _____

Well ID	Depth to Water	Diam	Cap/Lock	Product Depl	Iridescence	Gal.	Time	Temp °F	pH	E.C.	D.O.	
MW-3	15.26	2"	OK	∅	Y (N)	3	1152	66.6	7.80	0.63	9.7	<input type="radio"/> EPA 601 _____
Total Depth - Water Level = x Well Vol. Factor = x#vol. to Purge Purge Vol.						6	1157	66.3	7.85	0.64		<input checked="" type="radio"/> TPH-G/BTEX <u>HT</u>
$34.58 - 15.26 = 19.32 \times .16 = 3.09 \times 3 = 9.27$						9.5	1202	65.9	7.88	0.64	9.4	<input type="radio"/> 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"/> OSys Port												<input type="radio"/> TOG 5520 _____
Comments:												TIME/SAMPLE ID 1205 / S-1
MW-5	13.63	2"	OK	∅	Y (N)	3	1217	63.8	7.32	1.55	8.0	<input type="radio"/> EPA 601 _____
Total Depth - Water Level = x Well Vol. Factor = x#vol. to Purge Purge Vol.						6	1221	66.2	7.29	1.53		<input checked="" type="radio"/> TPH-G/BTEX <u>HT</u>
$32.98 - 13.63 = 19.35 \times .16 = 2.76 \times 3 = 8.28$						7.5	1225	66.3	7.19	1.50	7.1	<input type="radio"/> 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"/> OSys Port												<input type="radio"/> TOG 5520 _____
Comments:												TIME/SAMPLE ID 1230 / S-1

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.

10-024-08-003⁰⁰⁴

Address

3201 35th Street

Contract No.

G602109

Station No.

BP 11132

Sampler:

Date: 4/19/96

Day: M T W T F (circled)

City: Oakland

DC

Well ID	Depth to Water	Diam	Cap/Lock	Product Dept	Iridescence	Gal.	Time	Temp *F	pH	E.C.	D.O.	
RW-1	16.83	6"	OK	P	Y (N)	40	1248	66.2	7.35	1.20	7.6	<input type="checkbox"/> EPA 601
Total Depth - Water Level=						80	1256	66.0	7.41	1.07		<input checked="" type="checkbox"/> TPH-G/BTEX <i>H</i>
x Well Vol. Factor=						95.25	1259	66.0	7.34	1.03	7.6	<input type="checkbox"/> TPH Diesel
x#vol. to Purge PurgeVol.												<input type="checkbox"/> TOG 5520
Purge Method: <input checked="" type="checkbox"/> Surface Pump <input type="checkbox"/> Disp. Tube <input type="checkbox"/> Winch <input type="checkbox"/> Disp. Bailer(s) <input type="checkbox"/> Sys Port												TIME/SAMPLE ID
Comments: RL-1 from this well (S-4); purge H was had tiny globules												1300 / S-3

* conductivity reading on x 1000 μ S/cm units.

APPENDIX B

LABORATORY REPORT AND CHAIN OF CUSTODY RECORD



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

SPL, INC.

REPORT APPROVAL SHEET

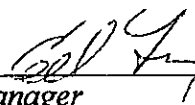
WORK ORDER NUMBER: 96 - 04 - B67

Approved for release by:



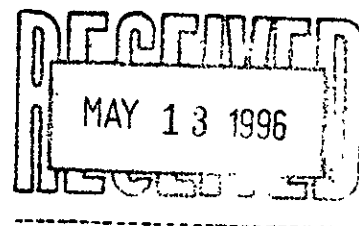
Brent Barron, Client Services Supervisor

Date: 5/8/96



Ed Fry, Project Manager

Date: 5/9/96





HOUSTON LABORATORY

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

Certificate of Analysis No. H9-9604B67-01

Alisto Engineering
1575 Treat Blvd.
Walnut Creek, CA 94598
ATTN: Bill Howell

P.O.#
G602109 , COC# 071585
DATE: 05/07/96

PROJECT: BP Oil #11132
SITE: 3201 35th, Oakland, CA
SAMPLED BY: Alisto Engineering
SAMPLE ID: S-1

PROJECT NO: 10-024-8-3
MATRIX: WATER
DATE SAMPLED: 04/19/96 12:05:00
DATE RECEIVED: 04/23/96

ANALYTICAL DATA

PARAMETER	RESULTS	DETECTION LIMIT	UNITS
MTBE	ND	10 P	µg/L
Benzene	55	0.5 P	µg/L
Toluene	4	1 P	µg/L
Ethylbenzene	33	1 P	µg/L
Total Xylene	63	1 P	µg/L
Surrogate		% Recovery	
1,4-Difluorobenzene		94	
4-Bromofluorobenzene		142	
METHOD 8020***			
Analyzed by: LJ			
Date: 05/04/96			
Total Petroleum Hydrocarbons-Gasoline	0.46	0.05 P	mg/L
Surrogate		% Recovery	
1,4-Difluorobenzene		113	
4-Bromofluorobenzene		114	
CA LUFT - Gasoline			
Analyzed by: LJ			
Date: 05/04/96 02:02:00			

ND - Not detected.

(P) - Practical Quantitation Limit

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

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



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

Certificate of Analysis No. H9-9604B67-02

Alisto Engineering
 1575 Treat Blvd.
 Walnut Creek, CA 94598
 ATTN: Bill Howell

P.O.#
 G602109 , COC# 071585
 DATE: 05/07/96

PROJECT: BP Oil #11132
 SITE: 3201 35th, Oakland, CA
 SAMPLED BY: Alisto Engineering
 SAMPLE ID: S-2

PROJECT NO: 10-024-8-3
 MATRIX: WATER
 DATE SAMPLED: 04/19/96 12:30:00
 DATE RECEIVED: 04/23/96

ANALYTICAL DATA

PARAMETER	RESULTS	DETECTION LIMIT	UNITS
MTBE	ND	50 P	µg/L
Benzene	470	2.5 P	µg/L
Toluene	38	5 P	µg/L
Ethylbenzene	49	5 P	µg/L
Total Xylene	210	5 P	µg/L

Surrogate % Recovery
 1,4-Difluorobenzene 113
 4-Bromofluorobenzene 112

METHOD 8020***
 Analyzed by: LJ
 Date: 05/04/96

Total Petroleum Hydrocarbons-Gasoline 1.5 0.25 P mg/L

Surrogate % Recovery
 1,4-Difluorobenzene 125
 4-Bromofluorobenzene 81

CA LUFT - Gasoline
 Analyzed by: LJ
 Date: 05/04/96 02:28:00

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

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

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



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

Certificate of Analysis No. H9-9604B67-03

Alisto Engineering
 1575 Treat Blvd.
 Walnut Creek, CA 94598
 ATTN: Bill Howell

P.O.#
 G602109 , COC# 071585
 DATE: 05/07/96

PROJECT: BP Oil #11132
 SITE: 3201 35th, Oakland, CA
 SAMPLED BY: Alisto Engineering
 SAMPLE ID: S-3

PROJECT NO: 10-024-8-3
 MATRIX: WATER
 DATE SAMPLED: 04/19/96 13:00:00
 DATE RECEIVED: 04/23/96

ANALYTICAL DATA

PARAMETER	RESULTS	DETECTION LIMIT	UNITS
MTBE	14000	1000 P	µg/L
Benzene	5500	50 P	µg/L
Toluene	3300	100 P	µg/L
Ethylbenzene	1700	100 P	µg/L
Total Xylene	9400	100 P	µg/L

Surrogate	% Recovery
1,4-Difluorobenzene	97
4-Bromofluorobenzene	119

METHOD 8020***

Analyzed by: LJ

Date: 05/04/96

Total Petroleum Hydrocarbons-Gasoline	35	5 P	mg/L
---------------------------------------	----	-----	------

Surrogate	% Recovery
1,4-Difluorobenzene	125
4-Bromofluorobenzene	86

CA LUFT - Gasoline

Analyzed by: LJ

Date: 05/04/96 02:55:00

(P) - Practical Quantitation Limit

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

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



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

Certificate of Analysis No. H9-9604B67-04

Alisto Engineering
 1575 Treat Blvd.
 Walnut Creek, CA 94598
 ATTN: Bill Howell

P.O.#
 G602109 , COC# 071585
 DATE: 05/07/96

PROJECT: BP Oil #11132
 SITE: 3201 35th, Oakland, CA
 SAMPLED BY: Alisto Engineering
 SAMPLE ID: S-4

PROJECT NO: 10-024-8-3
 MATRIX: WATER
 DATE SAMPLED: 04/19/96
 DATE RECEIVED: 04/23/96

ANALYTICAL DATA

PARAMETER	RESULTS	DETECTION LIMIT	UNITS
MTBE	15000	500 P	µg/L
Benzene	5600	25 P	µg/L
Toluene	3200	50 P	µg/L
Ethylbenzene	1700	50 P	µg/L
Total Xylene	8800	50 P	µg/L

Surrogate

% Recovery

1,4-Difluorobenzene 107
 4-Bromofluorobenzene 124

METHOD 8020***

Analyzed by: LJ
 Date: 05/04/96

Total Petroleum Hydrocarbons-Gasoline 33 2.5 P mg/L

Surrogate

% Recovery

1,4-Difluorobenzene 110
 4-Bromofluorobenzene 94

CA LUFT - Gasoline

Analyzed by: LJ
 Date: 05/04/96 03:21:00

(P) - Practical Quantitation Limit

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

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



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

Certificate of Analysis No. H9-9604B67-05

Alisto Engineering
 1575 Treat Blvd.
 Walnut Creek, CA 94598
 ATTN: Bill Howell

P.O.#
 G602109 , COC# 071585
 DATE: 05/07/96

PROJECT: BP Oil #11132
 SITE: 3201 35th, Oakland, CA
 SAMPLED BY: Alisto Engineering
 SAMPLE ID: S-5

PROJECT NO: 10-024-8-3
 MATRIX: WATER
 DATE SAMPLED: 04/19/96
 DATE RECEIVED: 04/23/96

ANALYTICAL DATA

PARAMETER	RESULTS	DETECTION LIMIT	UNITS
MTBE	ND	10 P	µg/L
Benzene	ND	0.5 P	µg/L
Toluene	ND	1 P	µg/L
Ethylbenzene	ND	1 P	µg/L
Total Xylene	ND	1 P	µg/L
Surrogate		% Recovery	
1,4-Difluorobenzene		81	
4-Bromofluorobenzene		95	
METHOD 8020***			
Analyzed by: LJ			
Date: 05/04/96			
Total Petroleum Hydrocarbons-Gasoline	ND	0.05 P	mg/L
Surrogate		% Recovery	
1,4-Difluorobenzene		110	
4-Bromofluorobenzene		57	
CA LUFT - Gasoline			
Analyzed by: LJ			
Date: 05/04/96 03:47:00			

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



Matrix: Aqueous
Units: µg/L

Batch Id: HP_J960503010700

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	38	76.0	20 - 110
Benzene	ND	50	39	78.0	62 - 121
Toluene	ND	50	38	76.0	66 - 136
EthylBenzene	ND	50	40	80.0	70 - 136
O Xylene	ND	50	41	82.0	74 - 134
M & P Xylene	ND	100	83	83.0	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	3	20	20			
BENZENE	ND	20	23	115	24	120	4.26	25	39 - 150
TOLUENE	ND	20	22	110	22	110	0	26	56 - 134
ETHYLBENZENE	ND	20	22	110	22	110	0	38	61 - 128
O XYLENE	ND	20	24	120	23	115	4.26	29	40 - 130
M & P XYLENE	ND	40	47	118	47	118	0	20	43 - 152

Analyst: LJ

Sequence Date: 05/03/96

SPL ID of sample spiked: 9604986-12A

Sample File ID: J__561.TX0

Method Blank File ID:

Blank Spike File ID: J__537.TX0

Matrix Spike File ID: J__555.TX0

Matrix Spike Duplicate File ID: J__556.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

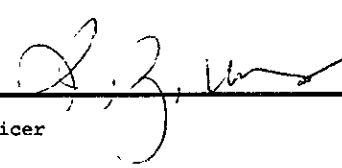
Relative Percent Difference = | (<4> - <5>) | / [(<4> + <5>) / 2] x 100

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

(***) = Source: SPL-Houston Historical Data (2nd Q '95)

SAMPLES IN BATCH(SPL ID):

9604A96-09A 9604A96-10A 9604986-07A 9604986-11A
9604986-12A 9604986-13A 9604986-14A 9604B67-01A
9604B67-02A 9604B67-03A 9604B67-04A 9604B67-05A
9604C02-01A 9604A96-06A


QC Officer



Matrix: Aqueous
Units: mg/L

Batch Id: HP_J960503011000

LABORATORY CONTROL SAMPLE

SPIKE COMPOUNDS	Method Blank Result <2>	Spike Added <3>	Blank Spike		QC Limits(**) (Mandatory) % Recovery Range
			Result <1>	Recovery %	
Gasoline Petr. Hydrocarbon	ND	1.0	0.95	95.0	56 - 130

MATRIX SPIKES

SPIKE COMPOUNDS	Sample Results <2>	Spike Added <3>	Matrix Spike		Matrix Spike Duplicate		MS/MSD Relative % Difference	QC Limits(***) (Advisory)	
			Result <1>	Recovery <4>	Result <1>	Recovery <5>		RPD Max.	Recovery Range
			GASOLINE PETR. HYDROCARBON	ND	0.9	1.06			

Analyst: LJ

Sequence Date: 05/03/96

SPL ID of sample spiked: 9604B67-05A

Sample File ID: JJ_567.TX0

Method Blank File ID:

Blank Spike File ID: JJ_539.TX0

Matrix Spike File ID: JJ_556.TX0

Matrix Spike Duplicate File ID: JJ_557.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 = $(<1> / <3>) \times 100$

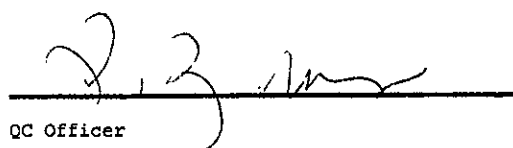
Relative Percent Difference = $|(<4> - <5> | / [(<4> + <5>) \times 0.5] \times 100$

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

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

SAMPLES IN BATCH(SPL ID):

9604B67-01A 9604B67-02A 9604B67-03A 9604B67-04A
9604B67-05A 9604C02-01A 9604A64-06A 9604A96-09A
9604A96-10A


QC Officer

CHAIN OF CUSTODY
AND
SAMPLE RECEIPT CHECKLIST



9604B67

CHAIN OF CUSTODY

No. 071585

Page 1 of 1

CONSULTANT'S NAME Alisto Engineering		ADDRESS 1575 Treat Blvd Walnut Creek CA 94598		CITY Walnut Creek CA	STATE CA	ZIP CODE 94598
BP SITE NUMBER 11132	BP CORNER ADDRESS/CITY 3201 35th St Oakland CA			CONSULTANT PROJECT NUMBER 10-024-8-3		
CONSULTANT PROJECT MANAGER Bill Howell		PHONE NUMBER (510) 295 1650	FAX NUMBER (510) 295 1823		CONSULTANT CONTRACT NUMBER 6602109	
BP CONTACT Scott Houston		BP ADDRESS Renton WA		PHONE NUMBER -		FAX NO -
LAB CONTACT SPL		LABORATORY ADDRESS Houston Texas		PHONE NUMBER -		FAX NO -
SAMPLED BY (Please Print Name) Dave W. Savel		SAMPLED BY (Signature) <i>[Signature]</i>		SHIPMENT DATE 4-22-96		SHIPMENT METHOD Fed Ex

TAT: 24 Hours 48 Hours 1 Week Standard 2 Weeks

ANALYSIS REQUIRED

AIRBILL NUMBER **9360716864**

SAMPLE DESCRIPTION	COLLECTION DATE	MATRIX SOIL/WATER	CONTAINERS		PRESERVATIVE	LAB SAMPLE #	COMMENTS
	COLLECTION TIME		NO.	TYPE (VOL.)	LAB		
S-1 1205	4/19/96	H2O	3	VSA	H ₂ O	X1	
S-2 1230	↓	↓	↓	↓	↓	↓	
S-3 1300	↓	↓	↓	↓	↓	↓	
S-4 -	↓	↓	↓	↓	↓	↓	
S-5 -	↓	↓	2	↓	↓	↓	URS 4/23/96

RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	ADDITIONAL COMMENTS
<i>[Signature]</i> Alisto	4/19/96	1800	Patricia Yelton	4/19/96	1805	See non conformance
Patricia Yelton	4/22/96	1400	E. Brown	4/23/96	10:00	

SPL Houston Environmental Laboratory

Sample Login Checklist

Date: 4/23/94	Time: 1000
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SPL Sample ID: 9604B67

		Yes	No
1	Chain-of-Custody (COC) form is present.	✓	
2	COC is properly completed.	✓	
3	If no, Non-Conformance Worksheet has been completed.		
4	Custody seals are present on the shipping container.	✓	
5	If yes, custody seals are intact.	✓	
6	All samples are tagged or labeled.	✓	
7	If no, Non-Conformance Worksheet has been completed.		
8	Sample containers arrived intact		✓
9	Temperature of samples upon arrival:	5°	C
10	Method of sample delivery to SPL:		
	SPL Delivery		
	Client Delivery		
	FedEx Delivery (airbill #)		9360716864
	Other:		
11	Method of sample disposal:		
	SPL Disposal	✓	
	HOLD		
	Return to Client		

Name: <i>Debbie Selas</i>	Date: 4/23/94
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R E C E I V E D
AUG 26 1996
**SANTA CLARA VALLEY
WATER DISTRICT**