BP OIL

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

MTBE detected dg of site

July 11, 1996

Mr. Ed So
California Regional Water Quality Control Board
San Francisco Bay Region
2101 Webster Street, Suite 500
Oakland CA 94612

RE: BP OIL FACILITY #11107
18501 Hesperian Boulevard
San Lorenzo, CA

Dear Mr. So:

Attached please find our **GROUNDWATER MONITORING AND SAMPLING REPORT DATED MAY 7, 1996** for the above referenced facility. Plans for the following quarter include additional groundwater monitoring. Please confirm that the extent of the release in groundwater has been adequately characterized.

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\ERM11107

cc: [redacted], Alameda County Health Care Services Agency
1131 Harbour Bay Parkway, Room 250, Alameda CA 94502-6577

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

Mr. Ron Gehrke, Kwik G Enterprises, Inc. 19231 Lake Chabot Road, Castro Valley, CA 94612

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. 11107
18501 Hesperian Boulevard
San Lorenzo, California

Project No. 10-060-05-002

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

May 7, 1996

William Howell
Project Manager

Dan Salaices
Registered Geologist

REGISTERED GEOLOGIST
DANIEL J.
SALAICES
No. 5162
STATE OF CALIFORNIA

GROUNDWATER MONITORING AND SAMPLING REPORT

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

Project No. 10-060-05-002

May 7, 1996

INTRODUCTION

This report presents the results of the March 23, 1996 groundwater monitoring and sampling conducted by Alisto Engineering Group at BP Oil Company Service Station No. 11107, 18501 Hesperian Boulevard, San Lorenzo, California. A site vicinity map is shown on Figure 1.

FIELD PROCEDURES

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

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

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

SAMPLING AND ANALYTICAL RESULTS

The results of monitoring and laboratory analysis of the groundwater samples collected during 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 laboratory 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. 11107
18501 HESPERIAN BOULEVARD, SAN LORENZO, CALIFORNIA

ALISTO PROJECT NO. 10-060

WELL ID	DATE OF SAMPLING/ MONITORING	CASING ELEVATION (a) (Feet)	DEPTH TO WATER (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)	1,1,1-TCA (ug/l)	PCE (ug/l)	DO (ppm)	LAB
MW-1	11/04/92	41.07	20.78	20.29	ND<50	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	--	ND<5000	2.8	ND	--	PACE
QC-1 (c)	11/04/92	---	--	--	ND<50	---	ND<0.5	ND<0.5	ND<0.5	ND<0.5	--	---	--	---	--	PACE
MW-1	02/24/94	41.07	20.70	20.37	ND<50	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	--	ND<5000	1.5	0.9	--	PACE
MW-1	05/12/94	41.07	18.12	22.95	ND<50	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	--	ND<5000	1.0	ND<0.5	7.0	PACE
MW-1	09/09/94	41.07	21.74	19.33	ND<50	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	--	ND<5000	ND<0.5	ND<0.5	2.3	PACE
MW-1	11/03/94	41.07	20.01	21.06	ND<50	50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	--	ND<5000	ND<0.5	ND<0.5	4.3	PACE
MW-1	03/01/95	41.07	17.44	23.63	ND<50	ND<500	ND<50	ND<0.50	ND<0.50	ND<1.0	--	420	0.54	0.3	2.3	ATI
MW-1	06/06/95	41.07	17.55	23.52	--	---	---	---	---	---	---	---	---	---	---	---
MW-1	09/01/95	41.07	18.19	22.88	ND<50	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<1.0	ND<5.0	60	---	---	8.8	ATI
MW-1	11/29/95	41.07	18.84	22.23	---	---	---	---	---	---	---	---	---	---	---	---
MW-1	03/23/96	41.07	16.97	24.10	ND<50	--	ND<0.5	ND<1	ND<1	ND<1	ND<10	---	---	---	9.6	SPL
MW-2	11/04/92	40.56	20.16	20.40	ND<50	---	ND<0.5	ND<0.5	ND<0.5	ND<0.5	--	---	---	---	--	PACE
MW-2	02/24/94	40.56	20.12	20.44	ND<50	---	ND<0.5	ND<0.5	ND<0.5	ND<0.5	--	--	---	---	--	PACE
MW-2	05/12/94	40.56	17.49	23.07	ND<50	---	ND<0.5	ND<0.5	ND<0.5	ND<0.5	--	--	---	---	7.4	PACE
MW-2	09/09/94	40.56	21.12	19.44	ND<50	---	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	---	--	2.1	PACE
MW-2	11/03/94	40.56	19.36	21.20	ND<50	--	ND<0.5	ND<0.5	ND<0.5	ND<0.5	--	---	---	---	4.2	PACE
MW-2	03/01/95	40.56	16.83	23.73	ND<50	--	ND<0.50	ND<0.50	ND<0.50	ND<1.0	--	--	---	---	2.2	ATI
MW-2	06/06/95	40.56	16.96	23.60	---	---	---	--	--	---	---	---	--	--	--	--
MW-2	09/01/95	40.56	17.54	23.02	ND<50	--	ND<0.50	ND<0.50	ND<0.50	ND<1.0	ND<5.0	---	---	---	7.9	ATI
MW-2	11/29/95	40.56	18.19	22.37	--	--	---	---	---	---	---	---	---	---	---	---
MW-2	03/23/96	40.56	16.35	24.21	ND<50	---	ND<0.5	ND<1	ND<1	ND<1	ND<10	---	---	--	8.5	SPL
MW-3	11/04/92	40.45	20.23	20.22	760	---	3.7	15	1.9	57	--	---	--	--	--	PACE
MW-3	02/24/94	40.45	20.24	20.21	ND<50	---	ND<0.5	ND<0.5	ND<0.5	ND<0.5	--	---	--	---	--	PACE
MW-3	05/12/94	40.45	17.61	22.84	ND<50	--	ND<0.5	ND<0.5	ND<0.5	ND<0.5	--	--	---	---	7.3	PACE
MW-3	09/09/94	40.45	21.22	19.23	ND<50	---	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	---	--	2.0	PACE
MW-3	11/03/94	40.45	19.46	20.97	ND<50	--	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	--	--	3.6	PACE
MW-3	03/01/95	40.45	17.08	23.37	ND<50	---	ND<0.50	ND<0.50	ND<0.50	ND<1.0	---	--	--	---	1.9	ATI
MW-3	06/06/95	40.45	17.21	23.24	--	---	---	---	--	--	---	--	--	--	--	--
MW-3	09/01/95	40.45	17.69	22.76	200	---	2.7	33	7.2	43	ND<5.0	--	---	---	7.8	ATI
MW-3	09/01/95	40.45	18.29	22.16	--	--	---	---	---	---	---	--	---	---	--	--
MW-3	03/23/96	40.45	16.59	23.86	ND<50	--	ND<0.5	ND<1	ND<1	ND<1	ND<10	---	---	---	7.3	SPL
MW-4	11/04/92	39.24	19.18	20.06	900	---	150	4.1	0.8	53	---	--	---	---	--	PACE
MW-4	02/24/94	39.24	19.22	20.02	240	---	110	3.8	1.8	11	---	---	---	---	--	PACE
QC-1 (c)	02/24/94	---	--	---	310	---	95	5.3	2.2	17	--	---	---	---	--	PACE
MW-4	05/12/94	39.24	16.62	22.62	ND<50	--	2.2	1.0	ND<0.5	ND<0.5	--	--	--	---	7.3	PACE
QC-1 (c)	05/12/94	--	---	--	430	---	2.6	1.3	ND<0.5	ND<0.5	---	--	---	---	--	PACE
MW-4	09/09/94	39.24	20.27	18.97	240	---	9.1	1.3	0.6	2.5	---	--	---	---	2.2	PACE
QC-1 (c)	09/09/94	---	--	--	57	---	1.7	ND<0.5	ND<0.5	0.5	--	--	---	--	--	PACE
MW-4	11/03/94	39.24	18.46	20.78	250	---	3.1	2.8	1.0	3.3	---	---	---	--	3.2	PACE
QC-1 (c)	11/03/94	---	--	--	110	---	2.4	ND<0.5	ND<0.5	ND<0.5	--	--	--	--	--	PACE
MW-4	03/01/95	39.24	16.15	23.09	8900	---	1800	26	450	400	---	---	---	---	2.0	ATI
QC-1 (c)	03/01/95	---	--	--	7600	--	1700	25	410	370	--	--	---	---	--	ATI
MW-4	06/06/95	39.24	16.28	22.96	3100	--	530	25	170	85	---	--	---	---	--	ATI
QC-1 (c)	06/06/95	---	---	--	3000	--	530	27	170	92	--	--	---	---	--	ATI
MW-4 (d)	09/01/95	39.24	--	--	---	---	---	--	--	---	---	---	--	--	---	---
MW-4	11/29/95	39.24	17.31	21.93	ND<50	---	1.8	ND<0.50	ND<0.50	ND<1.0	440	--	--	--	3.2	ATI
QC-1 (c)	11/29/95	---	---	---	ND<50	---	1.5	ND<0.50	ND<0.50	ND<1.0	490	---	---	---	---	ATI
MW-4	03/23/96	39.24	15.74	23.50	2700	--	480	ND<25	180	176	13000	--	--	--	7.8	SPL

TABLE 1 - SUMMARY OF RESULTS OF GROUNDWATER SAMPLING
BP OIL COMPANY SERVICE STATION NO. 11107
18501 HESPERIAN BOULEVARD, SAN LORENZO, CALIFORNIA

ALISTO PROJECT NO. 10-060

WELL ID	DATE OF SAMPLING/ MONITORING	CASING ELEVATION (a) (Feet)	DEPTH TO WATER (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)	1,1,1-TCA (ug/l)	PCE (ug/l)	DO (ppm)	LAB
MW-5	06/06/95	39.07	16.16	22.91	1100	---	42	ND<2.5	15	4.0	---	---	---	---	---	ATI
MW-5	09/01/95	39.07	16.63	22.44	1600	---	55	ND<2.5	15	8.0	1200	---	---	---	7.4	ATI
QC-1 (c)	09/01/95	---	---	---	1200	---	64	ND<2.5	14	3.1	---	---	---	---	---	ATI
MW-5	11/29/95	39.07	17.19	21.88	2300	---	140	4.0	36	11	1500	---	---	---	4.1	ATI
MW-5	03/23/96	39.07	15.54	23.53	90	---	2.8	ND<1	ND<1	ND<1	1500	---	---	---	7.5	SPL
MW-6	03/01/95	38.46	15.66	22.80	270	---	11	ND<0.50	ND<0.50	ND<1.0	---	---	---	---	1.6	ATI
MW-6	06/06/95	38.46	15.62	22.84	220	---	2.3	ND<0.50	ND<0.50	ND<1.0	---	---	---	---	---	ATI
MW-6	09/01/95	38.46	16.25	22.21	780	---	ND<2.5	ND<2.5	ND<2.5	ND<5.0	2800	---	---	---	7.5	ATI
MW-6	11/29/95	38.46	16.80	21.66	ND<50	---	ND<0.50	ND<0.50	ND<0.50	ND<1.0	1100	---	---	---	3.9	ATI
MW-6	03/23/96	38.46	15.27	23.19	50	---	ND<0.5	ND<1	ND<1	ND<1	910	---	---	---	8.0	SPL
MW-7	03/01/95	39.50	16.21	23.29	1400	---	14	ND<1.0	14	27	---	---	---	---	1.8	ATI
MW-7	06/06/95	39.50	16.34	23.16	540	---	5.5	ND<0.50	15	1.1	---	---	---	---	---	ATI
MW-7	09/01/95	39.50	16.74	22.76	190	---	2.8	ND<0.50	5.0	ND<1.0	10	---	---	---	7.5	ATI
MW-7	11/29/95	39.50	17.33	22.17	230	---	31	ND<0.50	3.8	1.9	ND<5.0	---	---	---	4.6	ATI
MW-7	03/23/96	39.50	15.86	23.64	ND<50	---	5.0	ND<1	ND<1	ND<1	330	---	---	---	7.2	SPL
QC-1 (c)	03/23/96	---	---	---	60	---	7.6	ND<1	ND<1	ND<1	360	---	---	---	---	SPL
QC-2 (e)	11/04/92	---	---	---	ND<50	---	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	---	---	---	PACE
QC-2 (e)	11/04/92	---	---	---	ND<50	---	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	---	---	---	PACE
QC-2 (e)	03/01/95	---	---	---	ND<50	---	ND<0.5	ND<0.5	ND<0.5	ND<1.0	---	---	---	---	---	PACE
QC-2 (e)	05/12/94	---	---	---	ND<50	---	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	---	---	---	PACE
QC-2 (e)	09/09/94	---	---	---	ND<50	---	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	---	---	---	PACE
QC-2 (e)	11/03/94	---	---	---	ND<50	---	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	---	---	---	PACE
QC-2 (e)	06/06/95	---	---	---	ND<50	---	ND<0.50	ND<0.50	ND<0.50	ND<1.0	---	---	---	---	---	ATI
QC-2 (e)	09/01/95	---	---	---	ND<50	---	ND<0.50	ND<0.50	ND<0.50	ND<1.0	ND<5.0	---	---	---	---	ATI
QC-2 (e)	11/29/95	---	---	---	ND<50	---	ND<0.50	ND<0.50	ND<0.50	ND<1.0	ND<5.0	---	---	---	---	ATI
QC-2 (e)	03/23/96	---	---	---	ND<50	---	ND<0.5	ND<1	ND<1	ND<1	ND<10	---	---	---	---	SPL

ABBREVIATIONS:

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

NOTES:

(a) Top of casing elevations surveyed relative to an established benchmark with an elevation of 39.95 feet above mean sea level.

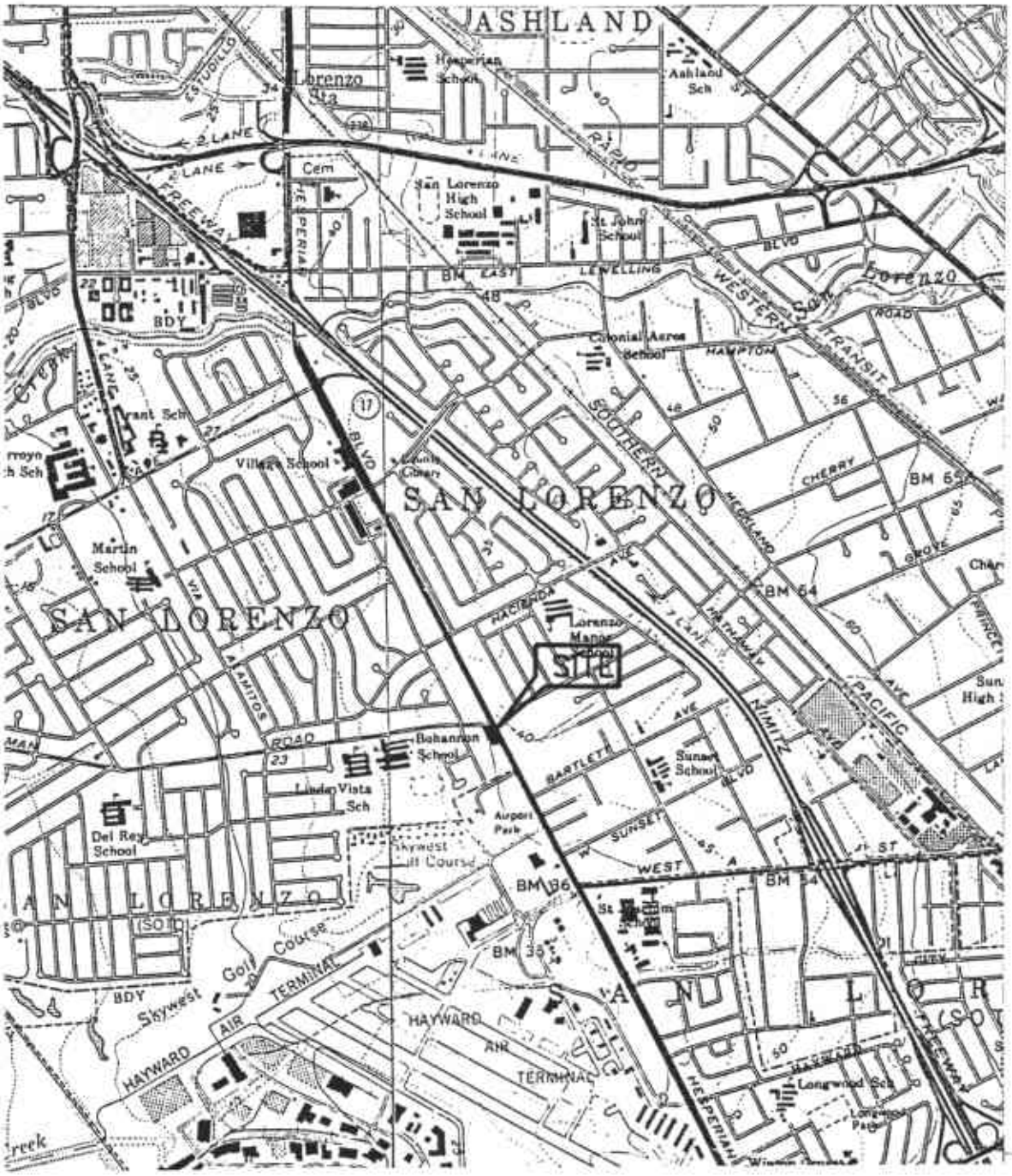
(b) Groundwater elevations in feet above mean sea level.

(c) Blind duplicate.

(d) Well inaccessible.

(e) Travel blank.

F:\0\10-060\060-5-1.WQ2



SOURCE:
USGS MAP, HAYWARD & SAN LEANDRO QUADRANGLES,
7.5 MINUTE SERIES. 1959.
PHOTOREVISED 1980.

N

0 1000' 2000'

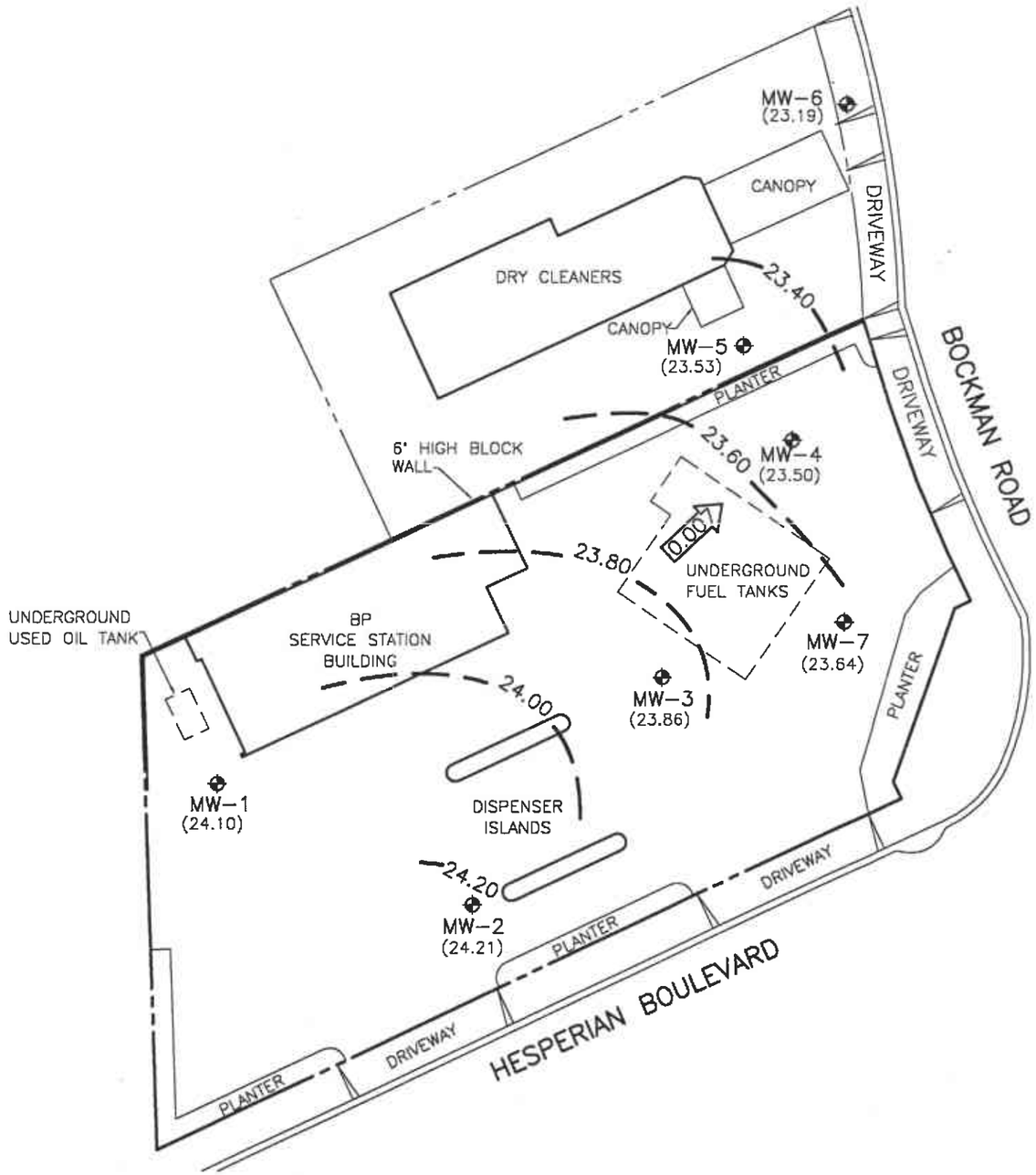
FIGURE 1

VICINITY MAP

BP OIL SERVICE STATION NO. 11107
18501 HESPERIAN BOULEVARD
SAN LORENZO, CALIFORNIA

PROJECT NO. 10-060

ALISTO ENGINEERING GROUP
WALNUT CREEK, CALIFORNIA



N

0 30 60

SCALE IN FEET

LEGEND

- ◆ GROUNDWATER MONITORING WELL
- (24.21) GROUNDWATER ELEVATION IN FEET ABOVE MEAN SEA LEVEL
- 24.20 GROUNDWATER ELEVATION CONTOUR IN FEET ABOVE MEAN SEA LEVEL (CONTOUR INTERVAL–0.20 FOOT)
- 0.007 CALCULATED GROUNDWATER GRADIENT DIRECTION AND MAGNITUDE IN FOOT PER FOOT

FIGURE 2

POTENTIOMETRIC GROUNDWATER ELEVATION CONTOUR MAP

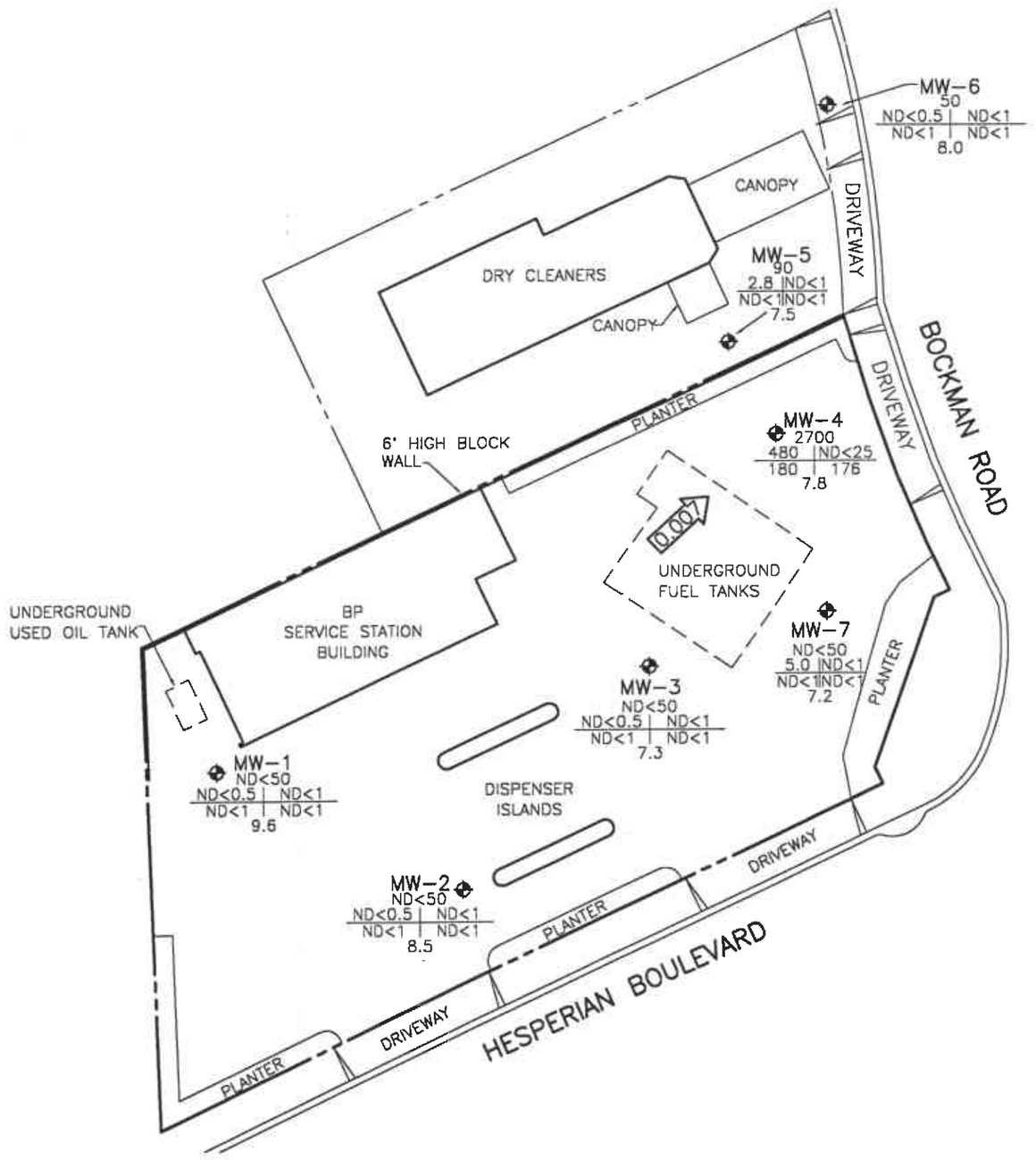
MARCH 23, 1996

BP OIL SERVICE STATION NO. 11107
18501 HESPERIAN BOULEVARD
SAN LORENZO, CALIFORNIA

PROJECT NO. 10–060

ALISTO ENGINEERING GROUP
WALNUT CREEK, CALIFORNIA

10600D-9.DWG 4-24-96 JAC 1=30



N

0 30 60

SCALE IN FEET

LEGEND

◆	GROUNDWATER MONITORING WELL
TPH-G / B | T / E | X / DO	CONCENTRATION OF CONSTITUENTS IN MICROGRAMS PER LITER, EXCEPT DISSOLVED OXYGEN, WHICH IS IN PARTS PER MILLION
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
0.007	CALCULATED GROUNDWATER GRADIENT DIRECTION AND MAGNITUDE IN FOOT PER FOOT

FIGURE 3

CONCENTRATIONS OF PETROLEUM HYDROCARBONS IN GROUNDWATER

MARCH 23, 1996

BP OIL SERVICE STATION NO. 11107
18501 HESPERIAN BOULEVARD
SAN LORENZO, CALIFORNIA

PROJECT NO. 10-060

ALISTO ENGINEERING GROUP
WALNUT CREEK, CALIFORNIA

10300E-D.DWG 4-24-96 JAC 1=30

APPENDIX A

WATER SAMPLING FIELD SURVEY FORMS

ALISTO

Field Report / Sampling Data Sheet

ENGINEERING
GROUP
1575 TREAT BOULEVARD, SUITE 201
WALNUT CREEK CA 94598 (510) 295-1650 FAX 295-1823

Project No. 10-060-05-002 Date: 3/23/96
Address 18501 Hesperian Blvd Day: M T W TH (F)
Contract No. G602074 City: San Lorenzo
Station No. BP 11107 Sampler: DC

DEPTH TO GROUNDWATER SUMMARY

WELL ID	SAMPLE ID	WELL DIAM	TOTAL DEPTH	DEPTH TO WATER	PRODUCT THICKNESS	TIME ~~Measured~~ SAMPLED	COMMENTS: Semi=Mar/Sept
MW-1	S-3	2"	30.70	16.97	ϕ	1041	SEMI
MW-2	S-4		25.00	16.35		1043	SEMI
MW-3	S-6		25.20	16.59		1053	SEMI, replaced well cap
MW-4	S-5		26.00	15.74		1047	
MW-5	S-2		26.00	15.54		1038	Sampled 1st due to off site wells
MW-6	S-1		25.00	15.27'		1035	Sampled 1st due to off site wells
MW-7	S-7	↓	26.00	15.86	↓	1101	

FIELD INSTRUMENT CALIBRATION DATA

pH METER Hydac 4.00 ✓ 7.00 ✓ 10.00 ___ TEMPERATURE COMPENSATED (Y) N TIME 1130 WEATHER rain

D.O. METER Ican ZERO d.O. SOLUTION 0.6ppm BAROMETRIC PRESSURE 764 TEMP 58°F

* CONDUCTIVITY METER Hydac 10,000 ✓ TURBIDITY METER ___ 5.0 NTU ___ OTHER ___

Well ID	Depth to Water	Diam	Cap/Lock	Product Depth	Iridescence	Gal.	Time	Temp °F	pH	E.C.	D.O.
MW-6	15.27	2"	OK	ϕ	Y (N)	2	1222	63.2	7.14	0.82	8.0
Total Depth - Water Level=	x Well Vol. Factor=	x#vol. to Purge	PurgeVol.			4	1227	64.9	7.10	0.84	
25.00 - 15.27 = 9.73	x .16 = 1.56	x 3 = 4.67				4.75	1230	65.1	7.03	0.82	8.0

Purge Method: (X) Surface Pump O Disp.Tube O Winch O Disp. Bailer(s) ___ O Sys Port

Comments:

O EPA 601 ___
(X) TPH-G/BTEX Hydac
O TPH Diesel ___
O TOG 5520 ___

TIME/SAMPLE ID: 1235 / S-1

Well ID	Depth to Water	Diam	Cap/Lock	Product Depth	Iridescence	Gal.	Time	Temp °F	pH	E.C.	D.O.
MW-5	15.54	2"	OK	ϕ	Y (N)	2	1242	65.2	7.29	0.93	7.7
Total Depth - Water Level=	x Well Vol. Factor=	x#vol. to Purge	PurgeVol.			4	1247	67.8	7.22	0.86	
26.00 - 15.54 = 10.46	x .16 = 1.67	x 3 = 5.02				5	1250	68.0	7.15	0.87	7.5

Purge Method: (X) Surface Pump O Disp.Tube O Winch O Disp. Bailer(s) ___ O Sys Port

Comments:

O EPA 601 ___
(X) TPH-G/BTEX Hydac
O TPH Diesel ___
O TOG 5520 ___

TIME/SAMPLE ID: 1256 / S-2

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. 10-060-05-002 Date: 3/23/96
Address 18501 Hesperian Blvd Day: M T W TH F
Contract No. G602074 City: San Lorenzo
Station No. BP 11107 Sampler: DC

Well ID	Depth to Water	Diam	Cap/Lock	Product Depth	Iridescence	Gal.	Time	Temp °F	pH	E.C.	D.O.
MW-1	16.97	2"	OK	Ø	Y (N)	2.5	1136	63.0	6.20	0.52	9.6
Total Depth - Water Level=	x Well Vol. Factor=	x#vol. to Purge	PurgeVol.			5	1139	63.8	6.33	0.53	
30.70 - 16.97 = 13.73 x .16 = 2.20 x 3 = 6.59						6.75	1142	63.9	6.39	0.53	9.6
Purge Method: X Surface Pump ODisp.Tube OWinch ODisp. Bailer(s)___ OSys Port											
Comments:											

O EPA 601_____
X TPH-G/BTEX H
O TPH Diesel_____
O TOG 5520 __
TIME/SAMPLE ID
1145 / S-3

Well ID	Depth to Water	Diam	Cap/Lock	Product Depth	Iridescence	Gal.	Time	Temp °F	pH	E.C.	D.O.
MW-2	16.35	2"	OK	Ø	Y (N)	1.5	1159	63.5	6.71	0.78	8.7
Total Depth - Water Level=	x Well Vol. Factor=	x#vol. to Purge	PurgeVol.			3	1204	64.2	6.73	0.79	
25.00 - 16.35 = 8.65 x .16 = 1.38 x 3 = 4.15						4.25	1210	64.6	6.73	0.80	8.5
Purge Method: X Surface Pump ODisp.Tube OWinch ODisp. Bailer(s)___ OSys Port											
Comments:											

O EPA 601_____
X TPH-G/BTEX H
O TPH Diesel_____
O TOG 5520 __
TIME/SAMPLE ID
1215 / S-4

Well ID	Depth to Water	Diam	Cap/Lock	Product Depth	Iridescence	Gal.	Time	Temp °F	pH	E.C.	D.O.
MW-4	15.74	2"	OK	Ø	Y (N)	2	1331	66.5	7.62	0.86	7.8
Total Depth - Water Level=	x Well Vol. Factor=	x#vol. to Purge	PurgeVol.			4	1337	67.5	7.53	0.86	
26.00 - 15.74 = 10.26 x .16 = 1.64 x 3 = 4.93						5	1342	66.6	7.25	0.96	7.8
Purge Method: X Surface Pump ODisp.Tube OWinch ODisp. Bailer(s)___ OSys Port											
Comments:											

O EPA 601_____
X TPH-G/BTEX H
O TPH Diesel_____
O TOG 5520 __
TIME/SAMPLE ID
1347 / S-5

Well ID	Depth to Water	Diam	Cap/Lock	Product Depth	Iridescence	Gal.	Time	Temp °F	pH	E.C.	D.O.
MW-3	16.59	2"	replaced	Ø	Y (N)	1.5	1354	64.5	7.31	0.82	7.7
Total Depth - Water Level=	x Well Vol. Factor=	x#vol. to Purge	PurgeVol.			3	1357	66.1	7.22	0.81	
25.20 - 16.59 = 8.61 x .16 = 1.37 x 3 = 4.13						4.25	1400	66.1	7.13	0.81	7.3
Purge Method: X Surface Pump ODisp.Tube OWinch ODisp. Bailer(s)___ OSys Port											
Comments: replaced cap											

O EPA 601_____
X TPH-G/BTEX H
O TPH Diesel_____
O TOG 5520 __
TIME/SAMPLE ID
1405 / S-6

Well ID	Depth to Water	Diam	Cap/Lock	Product Depth	Iridescence	Gal.	Time	Temp °F	pH	E.C.	D.O.
MW-7	15.96	2"	OK	Ø	Y (N)	2	1412	61.6	7.58	0.76	7.1
Total Depth - Water Level=	x Well Vol. Factor=	x#vol. to Purge	PurgeVol.			4	1417	64.4	7.55	0.78	
26.00 - 15.96 = 10.14 x .16 = 1.62 x 3 = 4.87						5	1423	64.7	7.50	0.80	7.2
Purge Method: X Surface Pump ODisp.Tube OWinch ODisp. Bailer(s)___ OSys Port											
Comments: QC-1 from this well (S-8)											

O EPA 601_____
X TPH-G/BTEX H
O TPH Diesel_____
O TOG 5520 __
TIME/SAMPLE ID
1430 / S-7

* conductivity readings are in x1000 µS/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 - 03 - C32

Approved for release by:

M. Scott Sample, Laboratory Director for Date: 4/3/96

Ed Fry, Project Manager Date: 4/3/96

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

CASE NARRATIVE

WORKORDER NO.: 9603C32

Southern Petroleum Laboratories (SPL) is pleased to present the results of laboratory analysis to Alisto Engineering. Nine water samples were received at our laboratory on 03/26/96 at a temperature of 4 degrees Celsius. The following is a brief narrative of the laboratory analysis.

Due to the amount of MTBE found, the Matrix Spike (MS), the Matrix Spike Duplicate (MSD) and the Relative Percent Difference (RPD) recoveries could not be calculated in the analytical batch HP_J960329055400 for BTEX by EPA method 8020. The Laboratory Control Standard (LCS) performed for this analysis was within acceptable QC limits. The LCS is a method specific test performed to verify instrument and method performance. Acceptable LCS recoveries for analytical batches that contain samples with poor surrogate and spike recoveries are an indication of sample matrix interferences.

Please refer to this project by **9603C32** to expedite any further discussions. I will be happy to address any questions or concerns you may have.

SOUTHERN PETROLEUM LABORATORIES

Ed Fry
Project Manager

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

Certificate of Analysis No. H9-9603C32-01

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

P.O.# G602074 , COC# 055962
DATE: 04/02/96

PROJECT: BP Oil #11107
SITE: San Lorenzo, CA
SAMPLED BY: Alisto Engineering
SAMPLE ID: S-1

PROJECT NO: 10-060-5-2
MATRIX: WATER
DATE SAMPLED: 03/23/96 12:35:00
DATE RECEIVED: 03/26/96

ANALYTICAL DATA

PARAMETER	RESULTS	DETECTION LIMIT	UNITS
MTBE	910	50 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	77		
4-Bromofluorobenzene	77		
METHOD 8020***			
Analyzed by: AA			
Date: 03/30/96			
Total Petroleum Hydrocarbons-Gasoline	0.05	0.05 P	mg/L
Surrogate	**% Recovery**		
1,4-Difluorobenzene	94		
4-Bromofluorobenzene	83		
CA LUFT - Gasoline			
Analyzed by: YN			
Date: 03/29/96 10:17:00			

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

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

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

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

Certificate of Analysis No. H9-9603C32-02

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

P.O.# G602074 , COC# 055962
DATE: 04/02/96

PROJECT: BP Oil #11107
SITE: San Lorenzo, CA
SAMPLED BY: Alisto Engineering
SAMPLE ID: S-2

PROJECT NO: 10-060-5-2
MATRIX: WATER
DATE SAMPLED: 03/23/96 12:56:00
DATE RECEIVED: 03/26/96

ANALYTICAL DATA

PARAMETER	RESULTS	DETECTION LIMIT	UNITS
MTBE	1500	100 P	µg/L
Benzene	2.8	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	83		
4-Bromofluorobenzene	79		
METHOD 8020***			
Analyzed by: AA			
Date: 03/30/96			
Total Petroleum Hydrocarbons-Gasoline	0.09	0.05 P	mg/L
Surrogate	**% Recovery**		
1,4-Difluorobenzene	97		
4-Bromofluorobenzene	81		
CA LUFT - Gasoline			
Analyzed by: YN			
Date: 03/29/96 10:43:00			

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

Certificate of Analysis No. H9-9603C32-03

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

P.O.# G602074 , COC# 055962
DATE: 04/02/96

PROJECT: BP Oil #11107
SITE: San Lorenzo, CA
SAMPLED BY: Alisto Engineering
SAMPLE ID: S-3

PROJECT NO: 10-060-5-2
MATRIX: WATER
DATE SAMPLED: 03/23/96 11:45:00
DATE RECEIVED: 03/26/96

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	82		
4-Bromofluorobenzene	77		
METHOD 8020***			
Analyzed by: YN			
Date: 03/30/96			
Total Petroleum Hydrocarbons-Gasoline	ND	0.05 P	mg/L
Surrogate	**% Recovery**		
1,4-Difluorobenzene	92		
4-Bromofluorobenzene	80		
CA LUFT - Gasoline			
Analyzed by: YN			
Date: 03/30/96 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.
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HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TEXAS 77054
PHONE (713) 660-0901

Certificate of Analysis No. H9-9603C32-04

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

P.O.# G602074 , COC# 055962
DATE: 04/02/96

PROJECT: BP Oil #11107
SITE: San Lorenzo, CA
SAMPLED BY: Alisto Engineering
SAMPLE ID: S-4

PROJECT NO: 10-060-5-2
MATRIX: WATER
DATE SAMPLED: 03/23/96 12:15:00
DATE RECEIVED: 03/26/96

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	83		
4-Bromofluorobenzene	77		
METHOD 8020***			
Analyzed by: YN			
Date: 03/29/96			
Total Petroleum Hydrocarbons-Gasoline	ND	0.05 P	mg/L
Surrogate	**% Recovery**		
1,4-Difluorobenzene	92		
4-Bromofluorobenzene	81		
CA LUFT - Gasoline			
Analyzed by: YN			
Date: 03/29/96 04:04:00			

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

Certificate of Analysis No. H9-9603C32-05

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

P.O.# G602074 , COC# 055962
DATE: 04/02/96

PROJECT: BP Oil #11107
SITE: San Lorenzo, CA
SAMPLED BY: Alisto Engineering
SAMPLE ID: S-5

PROJECT NO: 10-060-5-2
MATRIX: WATER
DATE SAMPLED: 03/23/96 13:47:00
DATE RECEIVED: 03/26/96

ANALYTICAL DATA

PARAMETER	RESULTS	DETECTION LIMIT	UNITS
MTBE	13000	500 P	µg/L
Benzene	480	12 P	µg/L
Toluene	ND	25 P	µg/L
Ethylbenzene	180	25 P	µg/L
Total Xylene	176	25 P	µg/L
Surrogate	**% Recovery**		
1,4-Difluorobenzene	87		
4-Bromofluorobenzene	83		
METHOD 8020***			
Analyzed by: AA			
Date: 03/30/96			
Total Petroleum Hydrocarbons-Gasoline	2.7	1.2 P	mg/L
Surrogate	**% Recovery**		
1,4-Difluorobenzene	99		
4-Bromofluorobenzene	108		
CA LUFT - Gasoline			
Analyzed by: YN			
Date: 03/29/96 04:31:00			

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

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

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

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

Certificate of Analysis No. H9-9603C32-06

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

P.O.# G602074 , COC# 055962
DATE: 04/02/96

PROJECT: BP Oil #11107
SITE: San Lorenzo, CA
SAMPLED BY: Alisto Engineering
SAMPLE ID: S-6

PROJECT NO: 10-060-5-2
MATRIX: WATER
DATE SAMPLED: 03/23/96 14:05:00
DATE RECEIVED: 03/26/96

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	83		
4-Bromofluorobenzene	82		
METHOD 8020***			
Analyzed by: AA			
Date: 03/30/96			
Total Petroleum Hydrocarbons-Gasoline	ND	0.05 P	mg/L
Surrogate	**% Recovery**		
1,4-Difluorobenzene	92		
4-Bromofluorobenzene	79		
CA LUFT - Gasoline			
Analyzed by: YN			
Date: 03/29/96 11:10:00			

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. H9-9603C32-07

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

P.O.# G602074 , COC# 055962
DATE: 04/02/96

PROJECT: BP Oil #11107
SITE: San Lorenzo, CA
SAMPLED BY: Alisto Engineering
SAMPLE ID: S-7

PROJECT NO: 10-060-5-2
MATRIX: WATER
DATE SAMPLED: 03/23/96 14:30:00
DATE RECEIVED: 03/26/96

ANALYTICAL DATA

PARAMETER	RESULTS	DETECTION LIMIT	UNITS
MTBE	330	10 P	µg/L
Benzene	5.0	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	86		
4-Bromofluorobenzene	79		
METHOD 8020***			
Analyzed by: YN			
Date: 03/29/96			
Total Petroleum Hydrocarbons-Gasoline	ND	0.05 P	mg/L
Surrogate	**% Recovery**		
1,4-Difluorobenzene	96		
4-Bromofluorobenzene	136		
CA LUFT - Gasoline			
Analyzed by: YN			
Date: 03/29/96 11:36:00			

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

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

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

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

Certificate of Analysis No. H9-9603C32-08

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

P.O.# G602074 , COC# 055962
DATE: 04/02/96

PROJECT: BP Oil #11107
SITE: San Lorenzo, CA
SAMPLED BY: Alisto Engineering
SAMPLE ID: S-8

PROJECT NO: 10-060-5-2
MATRIX: WATER
DATE SAMPLED: 03/23/96
DATE RECEIVED: 03/26/96

ANALYTICAL DATA

PARAMETER	RESULTS	DETECTION LIMIT	UNITS
MTBE	360	10 P	µg/L
Benzene	7.6	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	89		
4-Bromofluorobenzene	81		
METHOD 8020***			
Analyzed by: YN			
Date: 03/30/96			
Total Petroleum Hydrocarbons-Gasoline	0.06	0.05 P	mg/L
Surrogate	**% Recovery**		
1,4-Difluorobenzene	98		
4-Bromofluorobenzene	147		
CA LUFT - Gasoline			
Analyzed by: YN			
Date: 03/30/96 12:03:00			

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

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

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

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

Certificate of Analysis No. H9-9603C32-09

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

P.O.# G602074 , COC# 055962
DATE: 04/02/96

PROJECT: BP Oil #11107
SITE: San Lorenzo, CA
SAMPLED BY: Alisto Engineering
SAMPLE ID: S-9

PROJECT NO: 10-060-5-2
MATRIX: WATER
DATE SAMPLED: 03/23/96
DATE RECEIVED: 03/26/96

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	84		
4-Bromofluorobenzene	68		
METHOD 8020***			
Analyzed by: YN			
Date: 03/29/96			
Total Petroleum Hydrocarbons-Gasoline	ND	0.05 P	mg/L
Surrogate	**% Recovery**		
1,4-Difluorobenzene	93		
4-Bromofluorobenzene	71		
CA LUFT - Gasoline			
Analyzed by: YN			
Date: 03/29/96 12:34:00			

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

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

** SPL BATCH QUALITY CONTROL REPORT **
METHOD 8020/602

Matrix: Aqueous
Units: µg/L

Batch Id: HP_J960329055400

LABORATORY CONTROL SAMPLE

SPIKE COMPOUNDS	Method Blank Result <2>	Spike Added <3>	Blank Spike Result <1>	Blank Spike Recovery %	QC Limits(**) (Mandatory) % Recovery Range
MTBE	ND	50	44	88.0	20 - 110
Benzene	ND	50	48	96.0	62 - 121
Toluene	ND	50	46	92.0	66 - 136
EthylBenzene	ND	50	48	96.0	70 - 136
O Xylene	ND	50	49	98.0	74 - 134
M & P Xylene	ND	100	100	100	77 - 140

MATRIX SPIKES

SPIKE COMPOUNDS	Sample Results <2>	Spike Added <3>	Matrix Spike Result <1>	Matrix Spike Recovery <4>	Matrix Spike Duplicate Result <1>	Matrix Spike Duplicate Recovery <5>	MS/MSD Relative % Difference	QC Limits(***) (Advisory) RPD Max.	QC Limits(***) (Advisory) Recovery Range
MTBE	940	20	878	NC	913	NC	NC	20	39 - 150
BENZENE	ND	20	18	90.0	18	90.0	0	25	39 - 150
TOLUENE	ND	20	17	85.0	17	85.0	0	26	56 - 134
ETHYLBENZENE	ND	20	16	80.0	16	80.0	0	38	61 - 128
O XYLENE	ND	20	16	80.0	17	85.0	6.06	29	40 - 130
M & P XYLENE	ND	40	33	82.5	34	85.0	2.99	20	43 - 152

Analyst: YN
Sequence Date: 03/29/96
SPL ID of sample spiked: 9603C32-01A
Sample File ID: J___285.TX0
Method Blank File ID:
Blank Spike File ID: J___274.TX0
Matrix Spike File ID: J___279.TX0
Matrix Spike Duplicate File ID: J___280.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: SPL-Houston Historical Data (3rd Q '95)
(***) = Source: SPL-Houston Historical Data (2nd Q '95)

SAMPLES IN BATCH(SPL ID):

9603A15-03A 9603C32-01A 9603C32-02A 9603C32-07A
9603C32-08A 9603C32-03A 9603A15-01A 9603A15-02A
9603A16-01A 9603A16-02A 9603A21-01A 9603A21-02A
9603C32-06A 9603C32-01A 9603C32-02A 9603C32-05A

QC Officer

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

** SPL BATCH QUALITY CONTROL REPORT **
METHOD 8020/602

Matrix: Aqueous
Units: µg/L

Batch Id: HP_J960328102100

LABORATORY CONTROL SAMPLE

SPIKE COMPOUNDS	Method Blank Result <2>	Spike Added <3>	Blank Spike Result <1>	Blank Spike Recovery %	QC Limits(**) (Mandatory) % Recovery Range
MTBE	ND	50	44	88.0	20 - 110
Benzene	ND	50	44	88.0	62 - 121
Toluene	ND	50	46	92.0	66 - 136
EthylBenzene	ND	50	49	98.0	70 - 136
O Xylene	ND	50	50	100	74 - 134
M & P Xylene	ND	100	100	100	77 - 140

MATRIX SPIKES

SPIKE COMPOUNDS	Sample Results <2>	Spike Added <3>	Matrix Spike Result <1>	Matrix Spike Recovery <4>	Matrix Spike Duplicate Result <1>	Matrix Spike Duplicate Recovery <5>	MS/MSD Relative % Difference	QC Limits(***) (Advisory) RPD Max.	QC Limits(***) (Advisory) Recovery Range
MTBE	ND	20	18	90.0	17	85.0	5.71	20	39 - 150
BENZENE	ND	20	20	100	20	100	0	25	39 - 150
TOLUENE	ND	20	18	90.0	18	90.0	0	26	56 - 134
ETHYLBENZENE	ND	20	18	90.0	17	85.0	5.71	38	61 - 128
O XYLENE	ND	20	19	95.0	18	90.0	5.41	29	40 - 130
M & P XYLENE	ND	40	37	92.5	36	90.0	2.74	20	43 - 152

Analyst: YN
Sequence Date: 03/28/96
SPL ID of sample spiked: 9603A18-15A
Sample File ID: J___249.TX0
Method Blank File ID:
Blank Spike File ID: J___238.TX0
Matrix Spike File ID: J___244.TX0
Matrix Spike Duplicate File ID: J___245.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: SPL-Houston Historical Data (3rd Q '95)
(***) = Source: SPL-Houston Historical Data (2nd Q '95)

SAMPLES IN BATCH(SPL ID):

9603A17-18A 9603A17-13A 9603A17-15A 9603A18-10A
9603A18-11A 9603C32-09A 9603A18-11A 9603A18-10A
9603A18-12A 9603A17-17A 9603A18-05A 9603A18-13A
9603A18-14A 9603C32-04A 9603C32-05A 9603A18-15A
9603A18-16A 9603A18-17A

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** SPL BATCH QUALITY CONTROL REPORT **

CA LUFT

Matrix: Aqueous

Batch Id: HP_J960329064600

Units: mg/L

LABORATORY CONTROL SAMPLE

SPIKE COMPOUNDS	Method Blank Result <2>	Spike Added <3>	Blank Spike Result <1>	Blank Spike Recovery %	QC Limits(**) (Mandatory) % Recovery Range
Petroleum Hydrocarbons-Gas	ND	0.90	1.1	122	50 - 150

MATRIX SPIKES

SPIKE COMPOUNDS	Sample Results <2>	Spike Added <3>	Matrix Spike Result <1>	Matrix Spike Recovery <4>	Matrix Spike Duplicate Result <1>	Matrix Spike Duplicate Recovery <5>	MS/MSD Relative % Difference	QC Limits(***) (Advisory) RPD Max.	QC Limits(***) (Advisory) Recovery Range
PETROLEUM HYDROCARBONS-GAS	0.09	0.9	1.16	119	1.26	130	8.84	50	50 - 150

Analyst: YN

Sequence Date: 03/29/96

SPL ID of sample spiked: 9603C32-02A

Sample File ID: JJ__286.TX0

Method Blank File ID:

Blank Spike File ID: JJ__276.TX0

Matrix Spike File ID: JJ__281.TX0

Matrix Spike Duplicate File ID: JJ__282.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): 9603C32-07A 9603C32-08A 9603C32-03A 9603A15-02A 9603A16-01A 9603A16-02A 9603A21-01A 9603A21-02A 9603A15-01A 9603A15-03A 9603C32-01A 9603C32-02A 9603C32-06A

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** SPL BATCH QUALITY CONTROL REPORT **
Modified 8015 - Gasoline

Matrix: Aqueous
Units: mg/L

Batch Id: HP_J960329120700

LABORATORY CONTROL SAMPLE

SPIKE COMPOUNDS	Method Blank Result <2>	Spike Added <3>	Blank Spike Result <1>	Blank Spike Recovery %	QC Limits(**) (Mandatory) % Recovery Range
Gasoline Petr. Hydrocarbon	ND	0.9	1.04	116	56 - 130

MATRIX SPIKES

SPIKE COMPOUNDS	Sample Results <2>	Spike Added <3>	Matrix Spike Result <1>	Matrix Spike Recovery <4>	Matrix Spike Duplicate Result <1>	Matrix Spike Duplicate Recovery <5>	MS/MSD Relative % Difference	QC Limits(***) (Advisory) RPD Max.	QC Limits(***) (Advisory) Recovery Range
GASOLINE PETR. HYDROCARBON	0.53	0.9	1.94	157	1.89	151	3.90	22	37 - 169

Analyst: YN
Sequence Date: 03/28/96
SPL ID of sample spiked: 9603A18-16A
Sample File ID: JJ__250R.TX0
Method Blank File ID:
Blank Spike File ID: JJ__241.TX0
Matrix Spike File ID: JJ__246R.TX0
Matrix Spike Duplicate File ID: JJ__247R.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: SPL-Houston Historical data (3rd Q '95)
(***) = Source: SPL-Houston Historical Data (3rd Q '95)

SAMPLES IN BATCH(SPL ID):

9603A18-12A 9603C32-09A 9603A18-11A 9603A18-10A
9603A18-12A 9603A17-17A 9603A18-05A 9603A18-13A
9603A18-14A 9603C32-04A 9603C32-05A 9603A18-15A
9603A18-16A 9603A18-17A

QC Officer

CHAIN OF CUSTODY

AND

SAMPLE RECEIPT CHECKLIST

4603C32

CHAIN OF CUSTODY

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CONSULTANT'S NAME	ADDRESS	CITY	STATE	ZIP CODE
Alisto Engineering	1575 Treat Blvd	Walnut Creek	CA	94598

BP SITE NUMBER	BP CORNER ADDRESS/CITY	CONSULTANT PROJECT NUMBER
11107	17501 Hesperian Blvd, San Lorenzo	10-060-S-2

CONSULTANT PROJECT MANAGER	PHONE NUMBER	FAX NUMBER	CONSULTANT CONTRACT NUMBER
Bill Howell	(510) 295 1600	(510) 295 1823	G602074

BP CONTACT	BP ADDRESS	PHONE NUMBER	FAX NO.
Scott Hooton	Renton WA	—	—

LAB CONTACT	LABORATORY ADDRESS	PHONE NUMBER	FAX NO.
SPL	Houston Texas	—	—

SAMPLED BY (Please Print Name)	SAMPLED BY (Signature)	SHIPMENT DATE	SHIPMENT METHOD
Dan Curtis	Dan Curtis		Fed Ex

TAT: ☐ 24 Hours ☐ 48 Hours ☐ 1 Week ☒ Standard 2 Weeks

ANALYSIS REQUIRED

AIRBILL NUMBER: 936071653 6

SAMPLE DESCRIPTION	COLLECTION DATE / COLLECTION TIME	MATRIX SOIL/WATER	CONTAINERS NO.	CONTAINERS TYPE (VOL.)	PRESERVATIVE LAB SAMPLE #	TPH Gas BTEX MTBE pH	COMMENTS
S-1 1235	3/20/96	H2O	3	VOA		X 1	
S-2 1256						1	
S-3 1145						1	
S-4 1215						1	
S-5 1347						1	
S-6 1405						1	
S-7 1430						1	
S-8 —							
S-9 —			2			1	

RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME
Dan Curtis Alisto	3/25/96	0800	P. Yelton	3/25/96	0805
P. Yelton	3/25/96	1500	S. West	3/26/96	1000

ADDITIONAL COMMENTS

CTV 16722

Distribution: White - Original (with Data) Yellow - BP Pink - Lab Blue - Consultant Field Staff

SPL Houston Environmental Laboratory

Sample Login Checklist

Date: 3/26/96	Time: 1000

SPL Sample ID: 9603C32

		Yes	No
1	Chain-of-Custody (COC) form is present.	✓	
2	COC is properly completed.	✓	
3	If no, Non-Conformance Worksheet has been completed.		
4	Custody seals are present on the shipping container.	✓	
5	If yes, custody seals are intact.	✓	
6	All samples are tagged or labeled.	✓	
7	If no, Non-Conformance Worksheet has been completed.		
8	Sample containers arrived intact	✓	
9	Temperature of samples upon arrival:	4° C	
10	Method of sample delivery to SPL: SPL Delivery		
	Client Delivery		
	FedEx Delivery (airbill #)	936071165 36	
	Other:		
11	Method of sample disposal: SPL Disposal	✓	
	HOLD		
	Return to Client		

Name: Aurie Salas	Date: 3/26/96