BP OIL

BP Oil Company
Environmental Resources Management
Building 13, Suite N
295 SW 41st Street
Renton, Washington 98055-4931
(206) 251-0667

July 6, 1994

Mr. Brian Oliva JMS
Alameda County Health Care Services Agency
80 Swan Way, Room 200
Oakland, CA 94621

RE: BP OIL FACILITY # 11270
3255 Mecartney Road
Alameda, CA

Attached please find our **GROUNDWATER MONITORING AND SAMPLING REPORT DATED JUNE 27, 1994** for the above referenced facility.

If you have any questions, please call me at (206)251-0689.

Respectfully,

Scott T. Hooton
Environmental Resources Management

STH:mu ERM11270

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

Mr Dennis Klimmek, Kemper Real Estate Management, 3470 Mt. Diablo Boulevard, Suite A100, Lafayette, CA 949490

Brady Nagle, ALISTO Engineering Group, 1777 Oakland Blvd, Suite 200, Walnut Creek, CA 94596

Site file

GROUNDWATER MONITORING AND SAMPLING REPORT

BP Oil Company Service Station No. 11270
3255 Mecartney Road
Alameda, California

Project No. 10-206-01-001

Prepared for:

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

Prepared by:

Alisto Engineering Group
1777 Oakland Boulevard, Suite 200
Walnut Creek, California

June 27, 1994

Brady Nagle
Project Manager

Al Sevilla, P.E.
Principal

REGISTERED PROFESSIONAL ENGINEER
ALBERTO SANCHEZ SEVILLA
25392
Exp. Date 3/31/96
CIVIL
STATE OF CALIFORNIA

GROUNDWATER MONITORING AND SAMPLING REPORT

BP Oil Company Service Station No. 11270
3255 Mecartney Road
Alameda, California

Project No. 10-206-01-001

June 27, 1994

INTRODUCTION

This report presents the results and findings of the April 5, 1994 groundwater monitoring and sampling conducted by Alisto Engineering Group at BP Oil Company Service Station No. 11270, 3255 Mecartney Road, Alameda, California. A site vicinity map is shown in 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, and electrical conductivity. 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 in Figure 2. The results of groundwater analysis are shown in 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. 11270
3255 MECARTNEY ROAD, ALAMEDA, CALIFORNIA

ALISTO PROJECT NO. 10-206

WELL ID	DATE OF SAMPLING/ MONITORING	CASING ELEVATION (a) (Feet)	DEPTH TO WATER (Feet)	GROUNDWATER ELEVATION (b) (Feet)	TPH-G (ppb)	TPH-D (ppb)	B (ppb)	T (ppb)	E (ppb)	X (ppb)	HVOC (ppb)	DO (ppm)	LAB
MW-1 (c)	10/29/92	12.50	7.28	5.22	---	---	---	---	---	---	---	---	---
MW-1 (c)	06/21/93	12.50	5.40	7.10	---	---	---	---	---	---	---	---	---
MW-1	04/05/94	12.50	5.64	6.86	1700	---	20	1.1	3.9	7.6	---	---	PACE
MW-2	10/29/92	12.08	6.84	5.24	2500	3900	140	ND<10	65	22	ND	---	---
MW-2	06/21/93	12.08	5.49	6.59	720	770	12	1.5	11	12	---	---	---
MW-2	04/05/94	12.08	5.40	6.68	420	1300	ND<0.5	ND<0.5	ND<0.5	4.0	---	1.8	PACE
MW-3 (c)	10/29/92	12.09	7.14	4.95	---	---	---	---	---	---	---	---	---
MW-3 (c)	06/21/93	12.09	5.84	6.25	---	---	---	---	---	---	---	---	---
MW-3	04/05/94	12.09	5.83	6.26	990	4300	3.2	ND<0.5	ND<0.5	1.3	---	---	PACE
MW-4	10/29/92	12.14	6.90	5.24	2600	---	250	2.5	74	6.6	---	---	---
MW-4	06/21/93	12.14	5.54	6.60	1400	1100	24	2.9	2.6	7.9	---	---	---
MW-4	04/05/94	12.14	5.46	6.68	930	940	33	0.8	ND<0.5	2.8	---	2.7	PACE
MW-5	06/21/93	13.37	7.44	5.93	ND<50	100	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	---
MW-5	04/05/94	13.37	7.42	5.95	ND<50	100	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	2.5	PACE
QC-1 (d)	04/05/94	---	---	---	ND<50	---	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	PACE
XW-1	06/21/93	---	---	---	---	---	---	---	---	---	---	---	---
XW-1	04/05/94	---	5.36	---	ND<50	70	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	3.0	PACE
XW-2	06/21/93	12.50	5.89	6.61	---	---	---	---	---	---	---	---	---
XW-2	04/05/94	12.50	5.77	6.73	ND<50	160	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	3.0	PACE
XW-3	06/21/93	11.85	5.85	6.00	---	---	---	---	---	---	---	---	---
XW-3	04/05/94	11.85	5.85	6.00	ND<50	150	ND<0.5	0.7	ND<0.5	ND<0.5	---	3.1	PACE
QC-2 (e)	04/05/94	---	---	---	ND<50	---	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	PACE

ABBREVIATIONS:

TPH-G	Total petroleum hydrocarbons as gasoline
TPH-D	Total petroleum hydrocarbons as diesel.
B	Benzene
T	Toluene
E	Ethylbenzene
X	Total xylenes
TOG	Total oil and grease
HVOC	Halogenated volital organic compounds
DO	Dissolved oxygen
ppb	Parts per billion
ppm	Parts per million
---	Not analyzed/measured/applicable
ND	Not detected above reported detection limit
PACE	Pace, Inc.

NOTES:

(a) Casing elevations surveyed to nearest 0.01 foot above mean sea level.

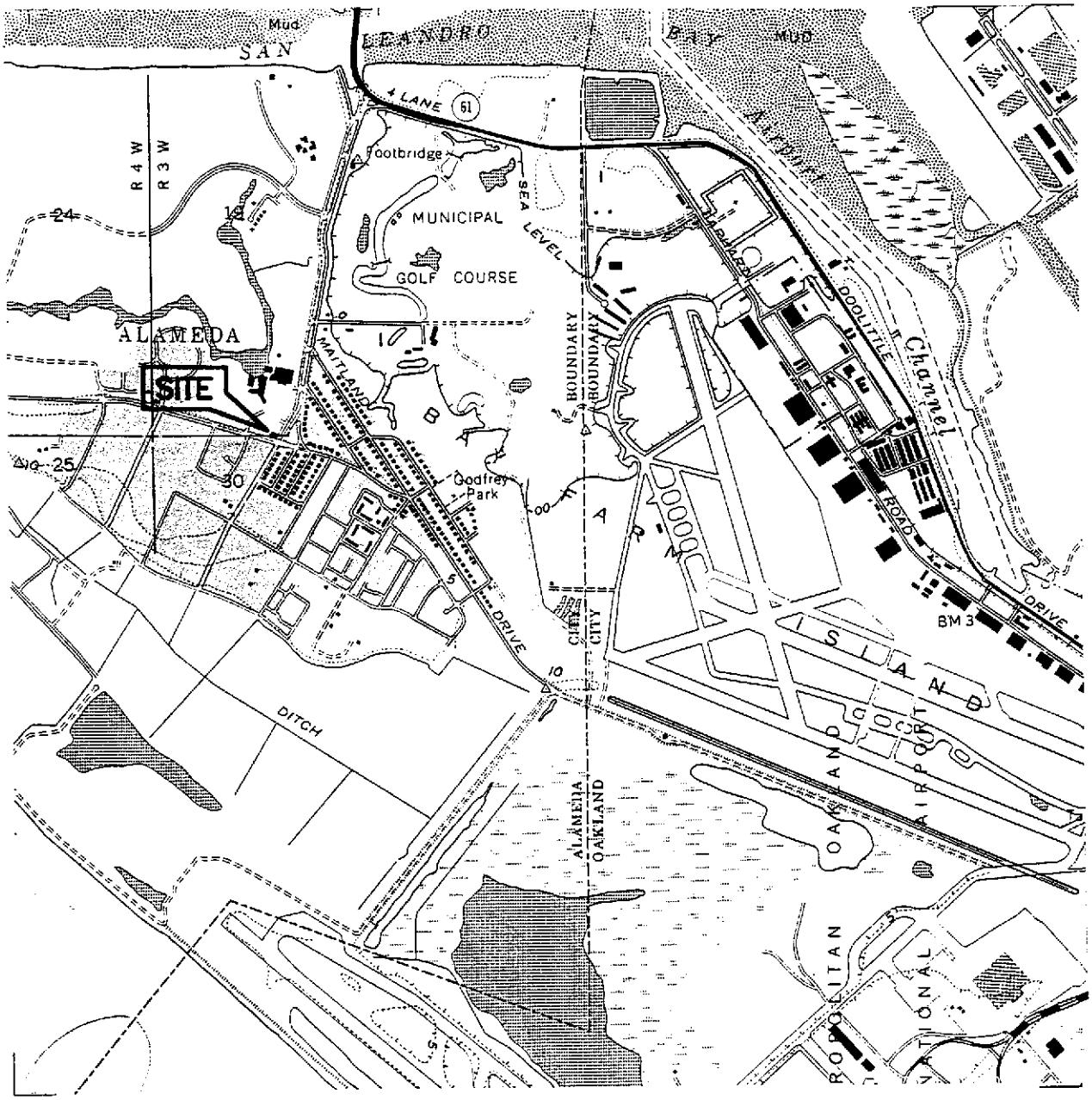
(b) Groundwater elevations in feet above mean sea level.

(c) Not sampled due to inadequate recharge.

(d) Blind duplicate.

(e) Travel blank.

E:\QPRO4\0\10-206\206-1-1.WQ1



SOURCE:
USGS MAP, SAN LEANDRO QUADRANGLE,
7.5 MINUTE SERIES. 1959.
PHOTOREVISED 1980.

N

0 1000' 2000'

FIGURE 1

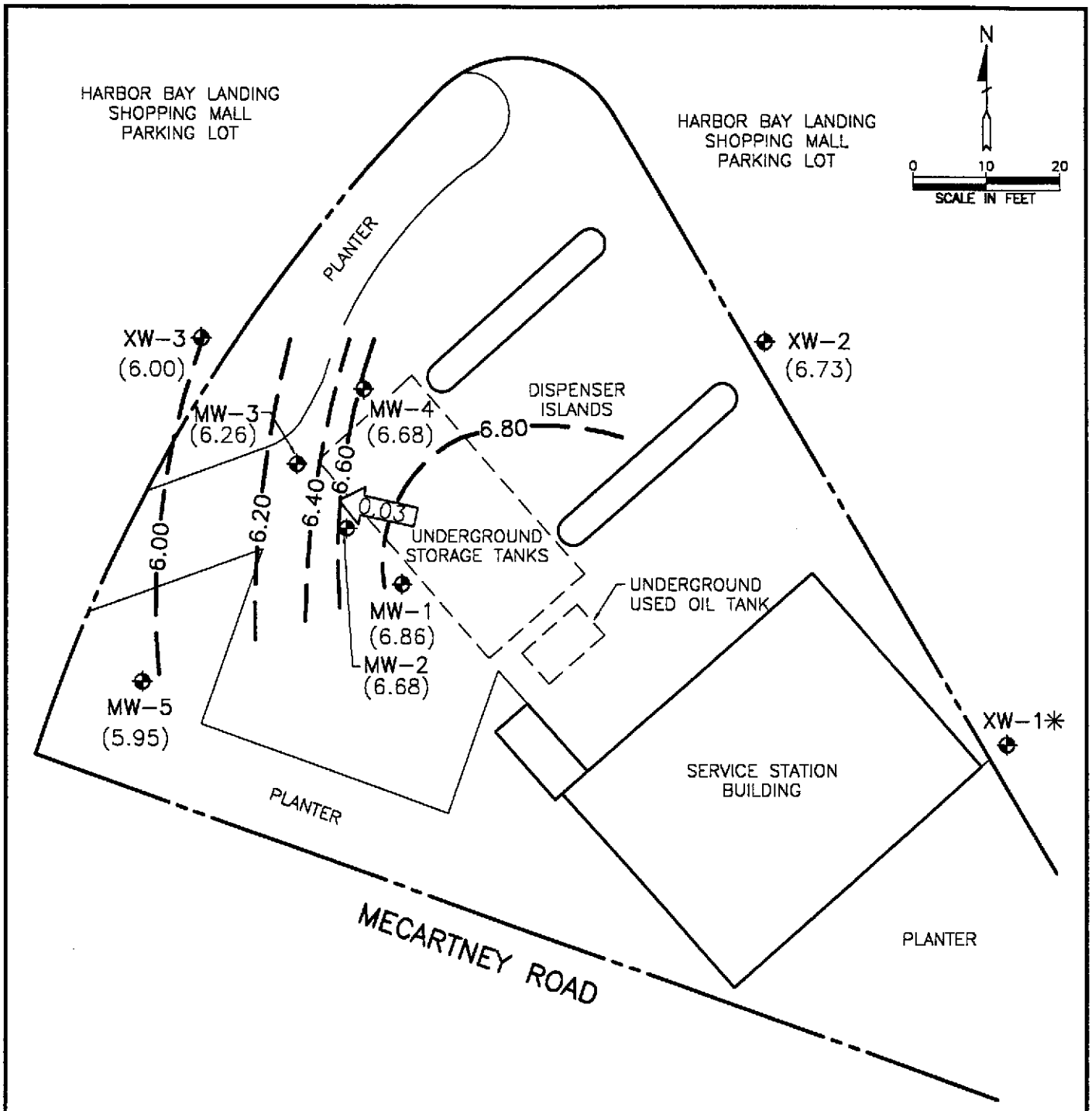
VICINITY MAP

BP OIL SERVICE STATION NO. 11270
3255 MECARTNEY ROAD
ALAMEDA, CALIFORNIA

PROJECT NO. 10-206

ALISTO ENGINEERING GROUP
WALNUT CREEK, CALIFORNIA

10206B---.DWG 5-10-94 RKM 1=1



LEGEND

⊕	GROUNDWATER MONITORING WELL
(6.68)	GROUNDWATER ELEVATION IN FEET ABOVE MEAN SEA LEVEL
6.60	GROUNDWATER ELEVATION CONTOUR IN FEET ABOVE MEAN SEA LEVEL (CONTOUR INTERVAL–0.20 FOOT)
0.03	CALCULATED GROUNDWATER GRADIENT DIRECTION AND MAGNITUDE IN FOOT PER FOOT
*	TOP OF CASING NOT SURVEYED

FIGURE 2

POTENTIOMETRIC GROUNDWATER ELEVATION CONTOUR MAP

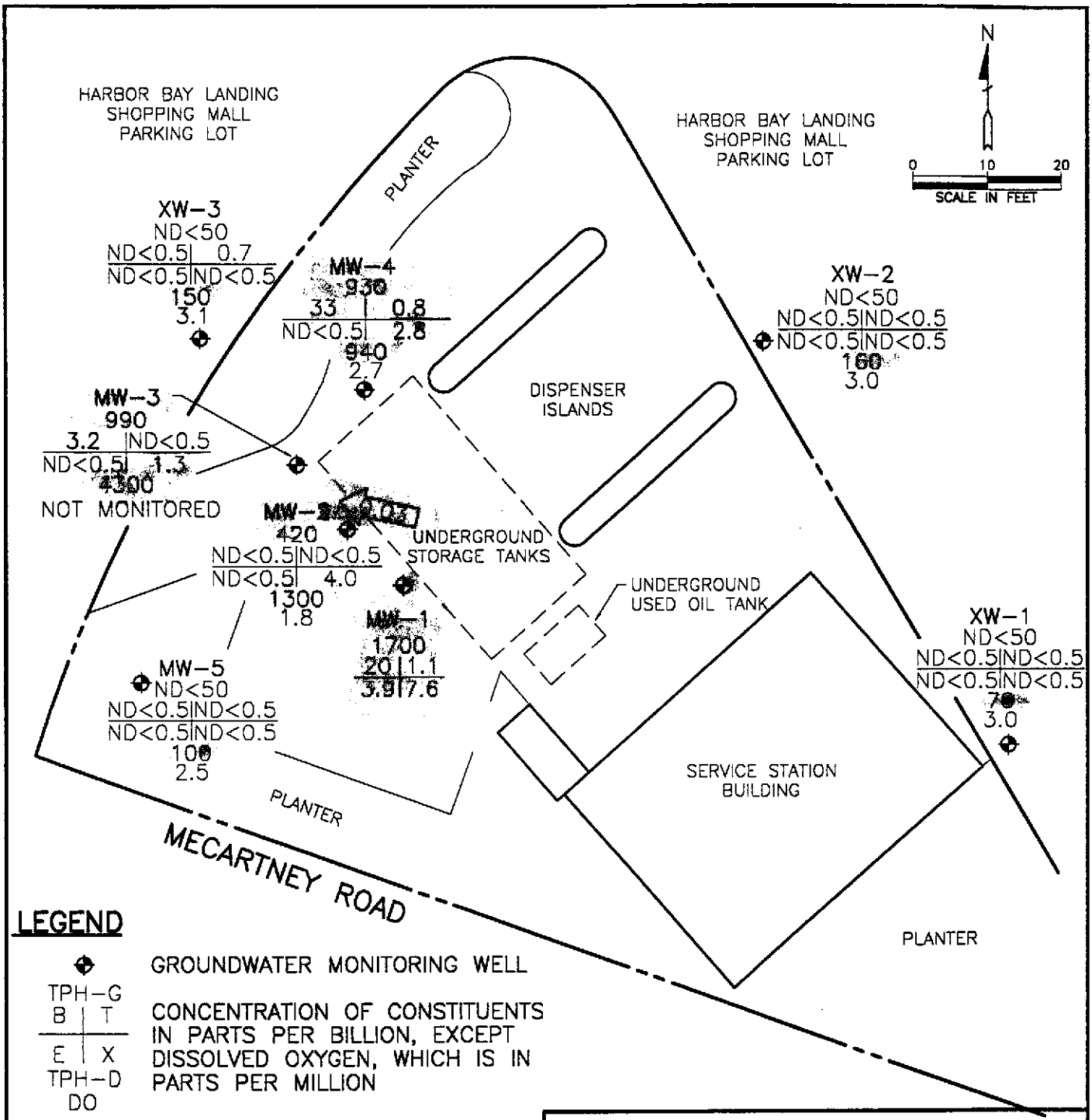
APRIL 5, 1994

BP OIL SERVICE STATION NO. 11270
3255 MECARTNEY ROAD
ALAMEDA, CALIFORNIA

PROJECT NO. 10–206

ALISTO ENGINEERING GROUP
WALNUT CREEK, CALIFORNIA

10200-1.DWG 5-17-94 RKW 1-20



LEGEND

⊕	GROUNDWATER MONITORING WELL
TPH-G / B | T / E | X / TPH-D / DO	CONCENTRATION OF CONSTITUENTS IN PARTS PER BILLION, 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
TPH-D	TOTAL PETROLEUM HYDROCARBONS AS DIESEL
DO	DISSOLVED OXYGEN
ND	NOT DETECTED ABOVE REPORTED DETECTION LIMIT
⇦ 0.03	CALCULATED GROUNDWATER GRADIENT DIRECTION AND MAGNITUDE IN FOOT PER FOOT

FIGURE 3

CONCENTRATIONS OF PETROLEUM HYDROCARBONS IN GROUNDWATER

APRIL 5, 1994

BP OIL SERVICE STATION NO. 11270
3255 MECARTNEY ROAD
ALAMEDA, CALIFORNIA

PROJECT NO. 10-206

ALISTO ENGINEERING GROUP
WALNUT CREEK, CALIFORNIA

10206E-J.DWG 6-15-94 RKM 1=20

APPENDIX A

WATER SAMPLING FIELD SURVEY FORMS

10-206-01-001

ALISTO ENGINEERING GROUP
GROUNDWATER MONITORING

Client: BP
Alisto Project No: 10-206
Service Station No: 11270

Date: 4/5/94
Field Personnel: LC
Site Address: Alameda, Ca

FIELD ACTIVITY:

X Groundwater Monitoring
X Groundwater Sampling
___ Well Development

QUALITY CONTROL SAMPLES:

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

Well ID	Well Diam	Order Measured/ Sampled	Total Depth	Depth to Water	Depth to Product	Product Thick-ness	Comments
MW-1	4"	7	9.01	5.64	Ø	Ø	
MW-2	↓	5	8.74	5.40	↓	↓	
MW-3	↓	6	9.79	5.83	↓	↓	
MW-4	6"	8	12.24	5.46	↓	↓	
MW-5	4"	4	14.51	7.42	↓	↓	
XW-3	2"	3	13.46	5.85	↓	↓	
XW-2	↓	2	13.63	5.77	↓	↓	
XW-1	↓	1	15.38	5.36	↓	↓	

Notes:

FORM: FS2/121592

ALISTO ENGINEERING GROUP
Groundwater Development and Sampling Form

Client: BP
Alisto Project No: 10-206
Service Station No: 11270

Date: 4/5/94
Field Personnel: LBB
Address: Alameda, CA

Well ID: MW-1 Field Activity: ___Well Development X Well Sampling ___Product Bailing

Casing Diameter:

X 2 Inch (0.16 Gal/foot)
___3 Inch (0.37 Gal/foot)
X 4 Inch (0.65 Gal/Foot)
___4.5 Inch (0.83 Gal/foot)
___6 Inch (1.47 Gal/foot)

Purge Method:

___Pump (dispos. Poly Tubing)
X Disposable Bailers
___Other
___1.66 PVC Standard Bailer
___3.50 PVC Standard Bailer

Well Data:

Ø Depth to Product
Ø Product Thickness
5.64 Depth to Water

Sampling Method:

X Disposable Bailer
___Pump

Decontamination Method:

X Triple Rinse (Liquinox)
___ Steam Cleaned

Calculated Purge Volume

9.01 (Total Depth of Well) - 5.64 (Depth to Water) = 3.37 ft (Water Column) X .65 Gal/Ft (Conversion Factor) = 2.19 Gal (Casing Vol) X 3 (Vols to Purge) = 6.57 (Total Volume)

Well Development/Sampling Parameters

Time	Temp °F	pH	Cond. (umhos/cm) (X1000)	Purge Vol (Gal)	Turbidity	Dissolved Oxygen		Analysis Required	Container Type	Preservative
	62.8	8.60	.60	1	Dark Gray	1.3	X	TPH-G/BTEX	VOA	HCL
	62.6	7.79	.55	3	↓		X	TPH-Diesel	Amber Liter	Solvent Rinsed
	62.3	7.69	.53	5	↓			EPA 601	VOA	
								TOG 5520BF	Amber Liter	H_2SO_4
						2.6				

Well dry @ 5 gal. No Recharge!
Not Enough Water to Sample TPH-D

FORM: FS3/121592

ALISTO ENGINEERING GROUP
Groundwater Development and Sampling Form

Client: BP
Alisto Project No: 10-206
Service Station No: 11270

Date: 4/5/94
Field Personnel: LB
Address: Alameda, CA

Well ID: MW-2 Field Activity: ___Well Development X Well Sampling ___Product Bailing

Casing Diameter:

___2 Inch (0.16 Gal/foot)
___3 Inch (0.37 Gal/foot)
X 4 Inch (0.65 Gal/Foot)
___4.5 Inch (0.83 Gal/foot)
___6 Inch (1.47 Gal/foot)

Purge Method:

___Pump (dispos. Poly Tubing)
X Disposable Bailers
___Other
___1.66 PVC Standard Bailer
___3.50 PVC Standard Bailer

Well Data:

Ø Depth to Product
Ø Product Thickness
5.40 Depth to Water

Sampling Method:

X Disposable Bailer
___Pump

Decontamination Method:

X Triple Rinse (Liquinox)
___ Steam Cleaned

Calculated Purge Volume

8.74 (Total Depth of Well) - 5.40 (Depth to Water) = 3.34 ft (Water Column) X .65 Gal/Ft (Conversion Factor) = 2.17 Gal (Casing Vol) X 3 (Vols to Purge) = 6.51 (Total Volume)

Well Development/Sampling Parameters

Time	Temp °F	pH	Cond. (umhos/cm) X1000	Purge Vol (Gal)	Comments/ Turbidity
	62.8	7.61	.54	1	Lt. Brown
	62.3	7.20	.54	3	
	61.9	7.16	.52	4	
	62.0	7.11	.52	5	
	61.8	7.07	.51	6.75	

Analysis Required	Container Type	Preserv
X TPH-G/BTEX	VOA	HCL
X TPH-Diesel	Amber Liter	Solvent Rinsed
EPA 601	VOA	
TOG 5520BF	Amber Liter	H_2SO_4

D.O2 (PPM) 1.3 Begin
1.8 End

FORM: FS3/121592

ALISTO ENGINEERING GROUP
Groundwater Development and Sampling Form

Client: BP
Alisto Project No: 10-206
Service Station No: 11270

Date: 4/5/94
Field Personnel: CS
Address: Alameda, Ca

Well ID: MW-3 Field Activity: ___Well Development X Well Sampling ___Product Bailing

Casing Diameter:

___2 Inch (0.16 Gal/foot)
___3 Inch (0.37 Gal/foot)
X 4 Inch (0.65 Gal/Foot)
___4.5 Inch (0.83 Gal/foot)
___6 Inch (1.47 Gal/foot)

Purge Method:

___Pump (dispos. Poly Tubing)
X Disposable Bailers
___Other
___1.66 PVC Standard Bailer
___3.50 PVC Standard Bailer

Well Data:

Ø Depth to Product
Ø Product Thickness
5.83 Depth to Water

Sampling Method:

X Disposable Bailer
___Pump

Decontamination Method:

X Triple Rinse (Liquinox)
___ Steam Cleaned

Calculated Purge Volume

9.79	- 5.83	= 3.96 ft X	.65 Gal/Ft	= 2.57 Gal X	3	= 7.71
Total Depth of Well	Depth to Water	Water Column	Conversion Factor	Casing Vol	Vols to Purge	Total Volume

Well Development/Sampling Parameters

Time	Temp °F	pH	Cond. (umhos/cm) (X 1000)	Purge Vol (Gal)	Turbidity	Dissolved Oxygen		Analysis Required	Container Type	Preservative
	63.0	7.17	.85	1	Lt Brown	1.4	X	TPH-G/BTEX	VOA	HCL
	62.7	7.11	.85	3			X	TPH-Diesel	Amber Liter	Solvent Rinsed
	62.2	7.09	.85	4				EPA 601	VOA	
	61.9	7.08	.84	5				TOG 5520BF	Amber Liter	H_2SO_4
	61.7	7.06	.83	7.75	V	1.5				

FORM: FS3/121592

ALISTO ENGINEERING GROUP
Groundwater Development and Sampling Form

Client: BP
Alisto Project No: 10-206
Service Station No: 1270

Date: 4/4/94
Field Personnel: LCB
Address: Alameda, CA

Well ID: MW-4 Field Activity: ___Well Development X Well Sampling ___Product Bailing

Casing Diameter:

___2 Inch (0.16 Gal/foot)
___3 Inch (0.37 Gal/foot)
X 4 Inch (0.65 Gal/Foot)
___4.5 Inch (0.83 Gal/foot)
X 6 Inch (1.47 Gal/foot)

Purge Method:

X Pump (dispos. Poly Tubing)
___Disposable Bailers
___Other
___1.66 PVC Standard Bailer
___3.50 PVC Standard Bailer

Well Data:

Ø Depth to Product
Ø Product Thickness
5.46 Depth to Water

Sampling Method:

X Disposable Bailer
___Pump

Decontamination Method:

X Triple Rinse (Liquinox)
___ Steam Cleaned

Calculated Purge Volume

12.24 (Total Depth of Well) - 5.46 (Depth to Water) = 6.78 ft (Water Column) X 1.47 (Conversion Factor) Gal/Ft = 9.97 Gal (Casing Vol) X 3 (Vols to Purge) = 29.91 (Total Volume)

Well Development/Sampling Parameters

Time	Temp °F	pH	Cond. (umhos/cm)X1000	Purge Vol (Gal)	Comments/ Turbidity	Analysis Required	Container Type	Preserv
	63.0	7.67	.96	6	Clear	X TPH-G/BTEX	VOA	HCL
	62.5	7.57	.85	12	↓	X TPH-Diesel	Amber Liter	Solvent Rinsed
	62.5	7.51	.80	18	Lt. Brown	EPA 601	VOA	
	62.4	7.46	.82	24	↓	TOG 5520BF	Amber Liter	H_2SO_4
	62.2	7.42	.82	30	↓			

D.O (PPM) 17 Begin
12.7 End

FORM: FS3/121592

ALISTO ENGINEERING GROUP
Groundwater Development and Sampling Form

Client: BP
Alisto Project No: 10-206
Service Station No: 1170

Date: 4/5/94
Field Personnel: LCB
Address: Alameda, CA

Well ID: MW-5 Field Activity: ___Well Development X Well Sampling ___Product Bailing

Casing Diameter:
___2 Inch (0.16 Gal/foot)
___3 Inch (0.37 Gal/foot)
X 4 Inch (0.65 Gal/Foot)
___4.5 Inch (0.83 Gal/foot)
___6 Inch (1.47 Gal/foot)

Purge Method:
___Pump (dispos. Poly Tubing)
X Disposable Bailers
___Other
___1.66 PVC Standard Bailer
___3.50 PVC Standard Bailer

Well Data:
Ø Depth to Product
Ø Product Thickness
7.42 Depth to Water

Sampling Method:
X Disposable Bailer
___Pump

Decontamination Method:
X Triple Rinse (Liquinox)
___ Steam Cleaned

Calculated Purge Volume
14.51 (Total Depth of Well) - 7.42 (Depth to Water) = 7.09 ft (Water Column) X .65 Gal/Ft (Conversion Factor) = 4.61 Gal (Casing Vol) X 3 (Vols to Purge) = 13.83 (Total Volume)

Well Development/Sampling Parameters

Time	Temp °F	pH	Cond. (umhos/cm) X1000	Purge Vol (Gal)	Comments/ Turbidity
	65.4	7.80	9.63	3	Lt Brown
	65.2	7.64	10.68	6	
	65.2	7.67	8.99	9	
	65.3	7.59	8.99	12	
	65.1	7.56	9.00	14	

Analysis Required	Container Type	Preserv
X TPH-G/BTEX	VOA	HCL
X TPH-Diesel	Amber Liter	Solvent Rinsed
EPA 601	VOA	
TOG 5520BF	Amber Liter	H_2SO_4

QC-1 Dup taken From this well

D.02 (PPM) 1.9 Begin
2.5 End

FORM: FS3/121592

ALISTO ENGINEERING GROUP
Groundwater Development and Sampling Form

Client: BP
Alisto Project No: 10-206
Service Station No: 11270

Date: 4/5/94
Field Personnel: LCR
Address: Alameda, CA

Well ID: X-1 Field Activity: ___Well Development X Well Sampling ___Product Bailing

Casing Diameter:

X 2 Inch (0.16 Gal/foot)
___3 Inch (0.37 Gal/foot)
___4 Inch (0.65 Gal/Foot)
___4.5 Inch (0.83 Gal/foot)
___6 Inch (1.47 Gal/foot)

Purge Method:

___Pump (dispos. Poly Tubing)
X Disposable Bailers
___Other
___1.66 PVC Standard Bailer
___3.50 PVC Standard Bailer

Well Data:

0 Depth to Product
0 Product Thickness
5.36 Depth to Water

Sampling Method:

X Disposable Bailer
___Pump

Decontamination Method:

X Triple Rinse (Liquinox)
___ Steam Cleaned

Calculated Purge Volume

15.38 (Total Depth of Well) - 5.36 (Depth to Water) = 10.02 ft (Water Column) X .16 Gal/Ft (Conversion Factor) = 1.60 Gal (Casing Vol) X 3 (Vols to Purge) = 4.80 (Total Volume)

Well Development/Sampling Parameters

Time	Temp °F	pH	Cond. (umhos/cm) X1000	Purge Vol (Gal)	Comments/ Turbidity
	63.0	7.13	1.42	1	Lt. Brown
	61.7	7.19	1.36	2	
	62.1	7.02	1.36	3	
	62.2	7.00	1.34	4	
	62.4	7.02	1.34	5	↓

Analysis Required	Container Type	Preserv
X TPH-G/BTEX	VOA	HCL
X TPH-Diesel	Amber Liter	Solvent Rinsed
EPA 601	VOA	
TOG 5520BF	Amber Liter	H_2SO_4

FORM: FS3/121592

D. O_2 1.4 Begin
(PPM) 3.0 End

ALISTO ENGINEERING GROUP
Groundwater Development and Sampling Form

Client: BP
Alisto Project No: 10-206
Service Station No: 11270

Date: 4/5/94
Field Personnel: LB
Address: Alameda, CA

Well ID: X-2 Field Activity: ___Well Development X Well Sampling ___Product Bailing

Casing Diameter:
- X 2 Inch (0.16 Gal/foot)
- ___3 Inch (0.37 Gal/foot)
- ___4 Inch (0.65 Gal/Foot)
- ___4.5 Inch (0.83 Gal/foot)
- ___6 Inch (1.47 Gal/foot)

Purge Method:
- ___Pump (dispos. Poly Tubing)
- X Disposable Bailers
- ___Other
- ___1.66 PVC Standard Bailer
- ___3.50 PVC Standard Bailer

Well Data:
- Ø Depth to Product
- Ø Product Thickness
- 5.77 Depth to Water

Sampling Method:
- X Disposable Bailer
- ___Pump

Decontamination Method:
- X Triple Rinse (Liquinox)
- ___ Steam Cleaned

Calculated Purge Volume

13.63 (Total Depth of Well) - 5.77 (Depth to Water) = 7.86 ft (Water Column) X .16 Gal/Ft (Conversion Factor) = 1.26 Gal (Casing Vol) X 3 (Vols to Purge) = 3.78 (Total Volume)

Well Development/Sampling Parameters

Time	Temp °F	pH	Cond. (umhos/cm) X1000	Purge Vol (Gal)	Comments/ Turbidity
	64.6	7.11	3.65	1	Lt. Brown
	64.2	7.09	3.71	2	
	64.0	7.08	3.90	3	
	63.8	7.08	3.93	4	

	Analysis Required	Container Type	Preserv
X	TPH-G/BTEX	VOA	HCL
X	TPH-Diesel	Amber Liter	Solvent Rinsed
	EPA 601	VOA	
	TOG 5520BF	Amber Liter	H_2SO_4

FORM: FS3/121592

0.02 ppm 1.6 Begin
3.0 End

ALISTO ENGINEERING GROUP
Groundwater Development and Sampling Form

Client: BP
Alisto Project No: 10-206
Service Station No: 1270

Date: 4/5/04
Field Personnel: LB
Address: Alameda, CA

Well ID: X-3 Field Activity: ___Well Development X Well Sampling ___Product Bailing

Casing Diameter:

X 2 Inch (0.16 Gal/foot)
___3 Inch (0.37 Gal/foot)
___4 Inch (0.65 Gal/Foot)
___4.5 Inch (0.83 Gal/foot)
___6 Inch (1.47 Gal/foot)

Purge Method:

___Pump (dispos. Poly Tubing)
X Disposable Bailers
___Other
___1.66 PVC Standard Bailer
___3.50 PVC Standard Bailer

Well Data:

0 Depth to Product
0 Product Thickness
5.85 Depth to Water

Sampling Method:

X Disposable Bailer
___Pump

Decontamination Method:

X Triple Rinse (Liquinox)
___ Steam Cleaned

Calculated Purge Volume: 13.96 (Total Depth of Well) - 5.85 (Depth to Water) = 7.61 ft (Water Column) X .16 Gal/Ft (Conversion Factor) = 1.22 Gal (Casing Vol) X 3 (Vols to Purge) = 3.66 (Total Volume)

Well Development/Sampling Parameters

Time	Temp °F	pH	Cond. (umhos/cm) X1000	Purge Vol (Gal)	Comments/ Turbidity
	64.9	7.56	10.49	1	Lt. Brown
	65.0	7.22	16.19	2	↓
	65.2	7.26	15.17	3	
	65.2	7.28	15.21	4	

Analysis Required	Container Type	Preserv
X TPH-G/BTEX	VOA	HCL
X TPH-Diesel	Amber Liter	Solvent Rinsed
EPA 601	VOA	
TOG 5520BF	Amber Liter	H_2SO_4

FORM: FS3/121592

0.02 2.0 Begin
3.1 End

APPENDIX B

LABORATORY REPORT AND CHAIN OF CUSTODY RECORD

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THE ASSURANCE OF QUALITY

REPORT OF LABORATORY ANALYSIS

Alisto Engineering Group
1777 Oakland Blvd., Ste. 200
Walnut Creek, CA 94596

April 14, 1994
PACE Project Number: 440406515

Attn: Mr. Bill Howell

Client Reference: BP Station # 11270/10-206-01/001

PACE Sample Number:			70 0300150	
Date Collected:			04/05/94	
Date Received:			04/06/94	
			MW-2	
Parameter	Units	MDL		DATE ANALYZED
ORGANIC ANALYSIS				
PURGEABLE FUELS AND AROMATICS				
TOTAL FUEL HYDROCARBONS, (LIGHT):			-	04/12/94
Purgeable Fuels, as Gasoline (EPA 8015M)	ug/L	50	420	04/12/94
PURGEABLE AROMATICS (BTXE BY EPA 8020M):			-	04/12/94
Benzene	ug/L	0.5	ND	04/12/94
Toluene	ug/L	0.5	ND	04/12/94
Ethylbenzene	ug/L	0.5	ND	04/12/94
Xylenes, Total	ug/L	0.5	4.0	04/12/94
EXTRACTABLE FUELS EPA 3510/8015				
Extractable Fuels, as Diesel	mg/L	0.05	1.3	04/11/94
Date Extracted			04/08/94	

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FAX: 415-883-2673

REPORT OF LABORATORY ANALYSIS

Mr. Bill Howell
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April 14, 1994
PACE Project Number: 440406515

Client Reference: BP Station # 11270/10-206-01/001

PACE Sample Number:			70 0300169	
Date Collected:			04/05/94	
Date Received:			04/06/94	
Client Sample ID:			MW-3	
Parameter	Units	MDL		DATE ANALYZED
ORGANIC ANALYSIS				
PURGEABLE FUELS AND AROMATICS				
TOTAL FUEL HYDROCARBONS, (LIGHT):			-	04/13/94
Purgeable Fuels, as Gasoline (EPA 8015M)	ug/L	50	990	04/13/94
PURGEABLE AROMATICS (BTXE BY EPA 8020M):			-	04/13/94
Benzene	ug/L	0.5	3.2	04/13/94
Toluene	ug/L	0.5	ND	04/13/94
Ethylbenzene	ug/L	0.5	ND	04/13/94
Xylenes, Total	ug/L	0.5	1.3	04/13/94
EXTRACTABLE FUELS EPA 3510/8015				
Extractable Fuels, as Diesel	mg/L	0.05	4.3	04/11/94
Date Extracted			04/08/94	

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REPORT OF LABORATORY ANALYSIS

Mr. Bill Howell
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April 14, 1994
PACE Project Number: 440406515

Client Reference: BP Station # 11270/10-206-01/001

PACE Sample Number:			70 0300177	
Date Collected:			04/05/94	
Date Received:			04/06/94	
Client Sample ID:			MW-4	
Parameter	Units	MDL		DATE ANALYZED
ORGANIC ANALYSIS				
PURGEABLE FUELS AND AROMATICS				
TOTAL FUEL HYDROCARBONS, (LIGHT):			-	04/13/94
Purgeable Fuels, as Gasoline (EPA 8015M)	ug/L	50	930	04/13/94
PURGEABLE AROMATICS (BTXE BY EPA 8020M):			-	04/13/94
Benzene	ug/L	0.5	33	04/13/94
Toluene	ug/L	0.5	0.8	04/13/94
Ethylbenzene	ug/L	0.5	ND	04/13/94
Xylenes, Total	ug/L	0.5	2.8	04/13/94
EXTRACTABLE FUELS EPA 3510/8015				
Extractable Fuels, as Diesel	mg/L	0.05	0.94	04/11/94
Date Extracted			04/08/94	

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REPORT OF LABORATORY ANALYSIS

Mr. Bill Howell
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April 14, 1994
PACE Project Number: 440406515

Client Reference: BP Station # 11270/10-206-01/001

PACE Sample Number:			70 0300185	
Date Collected:			04/05/94	
Date Received:			04/06/94	
Client Sample ID:			MW-5	
Parameter	Units	MDL		DATE ANALYZED
ORGANIC ANALYSIS				
PURGEABLE FUELS AND AROMATICS				
TOTAL FUEL HYDROCARBONS, (LIGHT):			-	04/12/94
Purgeable Fuels, as Gasoline (EPA 8015M)	ug/L	50	ND	04/12/94
PURGEABLE AROMATICS (BTXE BY EPA 8020M):			-	04/12/94
Benzene	ug/L	0.5	ND	04/12/94
Toluene	ug/L	0.5	ND	04/12/94
Ethylbenzene	ug/L	0.5	ND	04/12/94
Xylenes, Total	ug/L	0.5	ND	04/12/94
EXTRACTABLE FUELS EPA 3510/8015				
Extractable Fuels, as Diesel	mg/L	0.05	0.10	04/11/94
Date Extracted			04/08/94	

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THE ASSURANCE OF QUALITY

REPORT OF LABORATORY ANALYSIS

Mr. Bill Howell
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April 14, 1994
PACE Project Number: 440406515

Client Reference: BP Station # 11270/10-206-01/001

PACE Sample Number:			70 0300193	
Date Collected:			04/05/94	
Date Received:			04/06/94	
Client Sample ID:			XW-1	
Parameter	Units	MDL		DATE ANALYZED
ORGANIC ANALYSIS				
PURGEABLE FUELS AND AROMATICS				
TOTAL FUEL HYDROCARBONS, (LIGHT):			-	04/12/94
Purgeable Fuels, as Gasoline (EPA 8015M)	ug/L	50	ND	04/12/94
PURGEABLE AROMATICS (BTXE BY EPA 8020M):			-	04/12/94
Benzene	ug/L	0.5	ND	04/12/94
Toluene	ug/L	0.5	ND	04/12/94
Ethylbenzene	ug/L	0.5	ND	04/12/94
Xylenes, Total	ug/L	0.5	ND	04/12/94
EXTRACTABLE FUELS EPA 3510/8015				
Extractable Fuels, as Diesel	mg/L	0.05	0.07	04/11/94
Date Extracted			04/08/94	

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REPORT OF LABORATORY ANALYSIS

Mr. Bill Howell
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April 14, 1994
PACE Project Number: 440406515

Client Reference: BP Station # 11270/10-206-01/001

Parameter	Units	MDL		DATE ANALYZED
PACE Sample Number:			70 0300207	
Date Collected:			04/05/94	
Date Received:			04/06/94	
Client Sample ID:			XW-2	
ORGANIC ANALYSIS				
PURGEABLE FUELS AND AROMATICS				
TOTAL FUEL HYDROCARBONS, (LIGHT):			-	04/12/94
Purgeable Fuels, as Gasoline (EPA 8015M)	ug/L	50	ND	04/12/94
PURGEABLE AROMATICS (BTXE BY EPA 8020M):			-	04/12/94
Benzene	ug/L	0.5	ND	04/12/94
Toluene	ug/L	0.5	ND	04/12/94
Ethylbenzene	ug/L	0.5	ND	04/12/94
Xylenes, Total	ug/L	0.5	ND	04/12/94
EXTRACTABLE FUELS EPA 3510/8015				
Extractable Fuels, as Diesel	mg/L	0.05	0.16	04/11/94
Date Extracted			04/08/94	

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REPORT OF LABORATORY ANALYSIS

April 14, 1994
PACE Project Number: 440406515

Client Reference: BP Station # 11270/10-206-01/001

PACE Sample Number:			70 0300215	
Date Collected:			04/05/94	
Date Received:			04/06/94	
Client Sample ID:			XW-3	
Parameter	Units	MDL		DATE ANALYZED
ORGANIC ANALYSIS				
PURGEABLE FUELS AND AROMATICS				
TOTAL FUEL HYDROCARBONS, (LIGHT):			-	04/12/94
Purgeable Fuels, as Gasoline (EPA 8015M)	ug/L	50	ND	04/12/94
PURGEABLE AROMATICS (BTXE BY EPA 8020M):			-	04/12/94
Benzene	ug/L	0.5	ND	04/12/94
Toluene	ug/L	0.5	0.7	04/12/94
Ethylbenzene	ug/L	0.5	ND	04/12/94
Xylenes, Total	ug/L	0.5	ND	04/12/94
EXTRACTABLE FUELS EPA 3510/8015				
Extractable Fuels, as Diesel	mg/L	0.05	0.15	04/11/94
Date Extracted			04/08/94	

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REPORT OF LABORATORY ANALYSIS

April 14, 1994
PACE Project Number: 440406515

Client Reference: BP Station # 11270/10-206-01/001

PACE Sample Number:			70 0300223	
Date Collected:			04/05/94	
Date Received:			04/06/94	
Client Sample ID:			QC-1	
Parameter	Units	MDL		DATE ANALYZED
ORGANIC ANALYSIS				
PURGEABLE FUELS AND AROMATICS				
TOTAL FUEL HYDROCARBONS, (LIGHT):			-	04/13/94
Purgeable Fuels, as Gasoline (EPA 8015M)	ug/L	50	ND	04/13/94
PURGEABLE AROMATICS (BTXE BY EPA 8020M):			-	04/13/94
Benzene	ug/L	0.5	ND	04/13/94
Toluene	ug/L	0.5	ND	04/13/94
Ethylbenzene	ug/L	0.5	ND	04/13/94
Xylenes, Total	ug/L	0.5	ND	04/13/94

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REPORT OF LABORATORY ANALYSIS

April 14, 1994
PACE Project Number: 440406515

Client Reference: BP Station # 11270/10-206-01/001

PACE Sample Number:			70 0300231	
Date Collected:			04/05/94	
Date Received:			04/06/94	
Client Sample ID:			QC-2	
Parameter	Units	MDL		DATE ANALYZED
ORGANIC ANALYSIS				
PURGEABLE FUELS AND AROMATICS				
TOTAL FUEL HYDROCARBONS, (LIGHT):			-	04/12/94
Purgeable Fuels, as Gasoline (EPA 8015M)	ug/L	50	ND	04/12/94
PURGEABLE AROMATICS (BTXE BY EPA 8020M):			-	04/12/94
Benzene	ug/L	0.5	ND	04/12/94
Toluene	ug/L	0.5	ND	04/12/94
Ethylbenzene	ug/L	0.5	ND	04/12/94
Xylenes, Total	ug/L	0.5	ND	04/12/94

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REPORT OF LABORATORY ANALYSIS

Mr. Bill Howell
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April 14, 1994
PACE Project Number: 440406515

Client Reference: BP Station # 11270/10-206-01/001

PACE Sample Number:			70 0300240	
Date Collected:			04/05/94	
Date Received:			04/06/94	
Client Sample ID:			MW-1	
Parameter	Units	MDL		DATE ANALYZED
ORGANIC ANALYSIS				
PURGEABLE FUELS AND AROMATICS				
TOTAL FUEL HYDROCARBONS, (LIGHT):			-	04/13/94
Purgeable Fuels, as Gasoline (EPA 8015M)	ug/L	50	1700	04/13/94
PURGEABLE AROMATICS (BTXE BY EPA 8020M):			-	04/13/94
Benzene	ug/L	0.5	20	04/13/94
Toluene	ug/L	0.5	1.1	04/13/94
Ethylbenzene	ug/L	0.5	3.9	04/13/94
Xylenes, Total	ug/L	0.5	7.6	04/13/94

These data have been reviewed and are approved for release.

Darrell C. Cain
Regional Director

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Mr. Bill Howell
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FOOTNOTES
for pages 1 through 10

April 14, 1994
PACE Project Number: 440406515

Client Reference: BP Station # 11270/10-206-01/001

MDL Method Detection Limit
ND Not detected at or above the MDL.

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Mr. Bill Howell
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QUALITY CONTROL DATA

April 14, 1994
PACE Project Number: 440406515

Client Reference: BP Station # 11270/10-206-01/001

EXTRACTABLE FUELS EPA 3510/8015
Batch: 70 29593
Samples: 70 0300150, 70 0300169, 70 0300177, 70 0300185, 70 0300193
70 0300207, 70 0300215

METHOD BLANK:

Parameter	Units	MDL	Method Blank
Extractable Fuels, as Diesel	mg/L	0.05	ND

LABORATORY CONTROL SAMPLE AND CONTROL SAMPLE DUPLICATE:

Parameter	Units	MDL	Reference Value	Recv	Dupl Recv	RPD
Extractable Fuels, as Diesel	mg/L	0.05	1.00	90%	78%	14%

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REPORT OF LABORATORY ANALYSIS

Mr. Bill Howell — QUALITY CONTROL DATA — April 14, 1994
Page 13 — PACE Project Number: 440406515

Client Reference: BP Station # 11270/10-206-01/001

PURGEABLE FUELS AND AROMATICS
Batch: 70 29027
Samples: 70 0300150, 70 0300169, 70 0300177, 70 0300185, 70 0300193
70 0300207, 70 0300215, 70 0300223, 70 0300231, 70 0300240

METHOD BLANK:

Parameter	Units	MDL	Method Blank
TOTAL FUEL HYDROCARBONS, (LIGHT):			-
Purgeable Fuels, as Gasoline (EPA 8015M	ug/L	50	ND
PURGEABLE AROMATICS (BTXE BY EPA 8020M)			-
Benzene	ug/L	0.5	ND
Toluene	ug/L	0.5	ND
Ethylbenzene	ug/L	0.5	ND
Xylene (total)	ug/L	0.5	ND

SPIKE AND SPIKE DUPLICATE:

Parameter	Units	MDL	700284660	Spike	Spike Recv	Spike Dupl Recv	RPD
Purgeable Fuels, as Gasoline (EPA 8015M	ug/L	50	ND	1000	102%	97%	5%

LABORATORY CONTROL SAMPLE AND CONTROL SAMPLE DUPLICATE:

Parameter	Units	MDL	Reference Value	Recv	Dupl Recv	RPD
Purgeable Fuels, as Gasoline (EPA 8015M	ug/L	50	1000	96%	92%	4%

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Mr. Bill Howell
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FOOTNOTES
for pages 12 through 13

April 14, 1994
PACE Project Number: 440406515

Client Reference: BP Station # 11270/10-206-01/001

MDL	Method Detection Limit
ND	Not detected at or above the MDL.
RPD	Relative Percent Difference

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440406.515

CHAIN OF CUSTODY

No. 063127 Page 1 of 1

CONSULTANT'S NAME	ADDRESS	CITY	STATE	ZIP CODE
Alisto Eng.	1777 Oakland Blvd #200	Walnut Creek	Ca	94596

BP SITE NUMBER	BP CORNER ADDRESS/CITY	CONSULTANT PROJECT NUMBER
11270	Alameda, Ca	10-206-01/001

CONSULTANT PROJECT MANAGER	PHONE NUMBER	FAX NUMBER	CONSULTANT CONTRACT NUMBER
Bill Howell	(510) ~~88~~ 295-1650	295-1823	

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

LAB CONTACT	LABORATORY ADDRESS	PHONE NUMBER	FAX NO.
Pace Inc	Novato, Ca	(415) 883-6100	883-2673

SAMPLED BY (Please Print Name)	SAMPLED BY (Signature)	SHIPMENT DATE	SHIPMENT METHOD
Larry Buenvenida			Courier

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

AIRBILL NUMBER:

ANALYSIS REQUIRED

SAMPLE DESCRIPTION	COLLECTION DATE / TIME	MATRIX SOIL/WATER	CONTAINERS NO.	CONTAINERS TYPE (VOL.)	PRESERVATIVE LAB SAMPLE #	TPH-G/BTXE	TPH-D	COMMENTS
MW-2	4/5/94	W	4	HCl VOAs	30015.0	X	X	
MW-3					30016.9			
MW-4					30017.7			
MW-5					30018.5			
XW-1					30019.3			
XW-2					30020.7			
XW-3					30021.5			
QC-1	4/5/94	W	3		30022.3			
QC-2			2		30023.1			
MW-1		W	3		30024.0			

RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME
	4/6/94	1250	Ed Kotas - Pace	4/6/94	1250
Ed Kotas Pace	4/6	1700	Jennifer Rose Pace	4/6/94	1700

ADDITIONAL COMMENTS: S/3 C/5

CIV 16722

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