GROUNDWATER MONITORING AND SAMPLING REPORT

BP Oil Company Service Station No. 11126
1700 Powell Street
Emeryville, California

Project No. 10-061-03-002

Prepared for:

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Environmental Resources Management
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August 10, 1994

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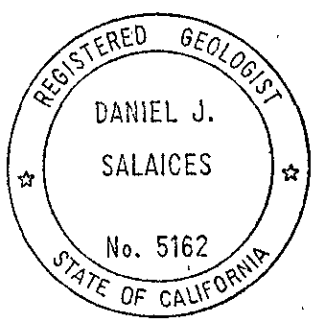

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INTRODUCTION

This report presents the results and findings of the May 11, 1994 groundwater monitoring and sampling conducted by Alisto Engineering Group at BP Oil Company Service Station No. 11126, 1700 Powell Street, Emeryville, 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.

FREE PRODUCT MONITORING AND RECOVERY

Product recovery canisters have been installed in Monitoring Well MW-9 to recover liquid-phase product. Product thicknesses for this and previous monitoring events are presented in Table 1. The volume of product recovered is presented in Table 2.

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. 11126
1700 POWELL STREET, EMERYVILLE, CALIFORNIA

ALISTO PROJECT NO. 10-061

WELL ID	DATE OF SAMPLING/ MONITORING	CASING ELEVATION (a) (Feet)	DEPTH TO WATER (Feet)	PRODUCT THICKNESS (Feet)	GROUNDWATER ELEVATION (b) (Feet)	TPH-G (ppb)	TPH-D (ppb)	B (ppb)	T (ppb)	E (ppb)	X (ppb)	TOG (ppb)	HVOC (ppb)	DO (ppm)	LAB
MW-1	11/04/92	7.76	4.96	—	2.80	5300	—	1100	480	ND<0.5	1500	—	—	—	PACE
MW-1	10/12/93	7.76	5.26	—	2.50	3600	—	970	71	100	550	—	—	—	PACE
MW-1	02/15/94	7.76	4.98	—	2.78	17000	—	4200	510	360	1600	—	—	3.9	PACE
MW-1	05/11/94	7.76	4.55	—	3.21	5500	—	2900	37	56	64	—	—	8.0	PACE
MW-2	11/04/92	8.56	5.88	—	2.68	12000	—	3900	1300	ND<0.5	2300	—	—	—	PACE
QC-1 (c)	11/04/92	8.56	5.88	—	2.68	12000	—	3200	980	ND<0.5	1900	—	—	—	PACE
MW-2	10/12/93	8.56	6.29	—	2.27	4500	—	3400	180	230	940	—	—	—	PACE
MW-2	02/15/94	8.56	5.56	—	3.00	2000	—	430	270	28	390	—	—	4.0	PACE
QC-1 (c)	02/15/94	8.56	5.56	—	3.00	1800	—	290	160	14	250	—	—	—	PACE
MW-2	05/11/94	8.56	5.17	—	3.39	14000	—	3900	1200	440	1900	—	—	8.9	PACE
QC-1 (c)	05/11/94	8.56	5.17	—	3.39	15000	—	5600	1500	470	2000	—	—	—	PACE
MW-3	11/04/92	8.25	6.38	—	1.87	200	690	1.6	ND<0.5	ND<0.5	1.1	ND<5000	ND (d)	—	PACE
MW-3	10/12/93	8.25	5.84	—	2.41	270	2100	5.0	0.7	ND<0.5	2.6	ND<5000	ND (d)	—	PACE
QC-1 (c)	10/12/93	8.25	5.84	—	2.41	150	—	5.6	0.6	ND<0.5	1.6	—	—	—	PACE
MW-3	02/15/94	8.25	6.60	—	1.65	140	2.3	5.7	ND<0.5	ND<0.5	ND<0.5	90	ND (d)	3.9	PACE
MW-3	05/11/94	8.25	5.86	—	2.39	190	2500	2.7	1.9	ND<0.5	1.9	ND<5000	ND (d)	9.2	PACE
MW-4	11/04/92	8.12	6.66	—	1.46	340	—	4.5	ND<0.5	4.3	ND<0.5	—	—	—	PACE
MW-4	10/12/93	8.12	6.87	—	1.25	160	—	5.8	1.4	0.8	2.7	—	—	—	PACE
MW-4	02/15/94	8.12	6.61	—	1.51	110	—	4.4	0.7	ND<0.5	2.5	—	—	4.3	PACE
MW-4	05/11/94	8.12	5.89	—	2.23	120	—	0.5	0.8	ND<0.5	ND<0.5	—	—	9.3	PACE
MW-5	10/12/93	7.69	6.01	—	1.68	—	—	—	—	—	—	—	—	—	—
MW-5	10/13/93	—	—	—	—	2300	—	160	10	ND<0.5	26	—	—	—	PACE
MW-5	02/15/94	7.69	5.74	—	1.95	5100	—	710	16	33	35	—	—	4.0	PACE
MW-5	05/11/94	7.69	5.28	—	2.41	11000	—	1100	39	110	57	—	—	8.0	PACE
MW-6	10/12/93	8.52	6.59	—	1.93	63	—	ND<0.5	ND<0.5	ND<0.5	ND<0.5	—	—	—	PACE
MW-6	02/15/94	8.52	6.31	—	2.21	68	—	ND<0.5	ND<0.5	ND<0.5	ND<0.5	—	—	3.1	PACE
MW-6	05/11/94	8.52	6.15	—	2.37	68	—	ND<0.5	ND<0.5	ND<0.5	ND<0.5	—	—	8.7	PACE
MW-7	10/12/93	7.61	6.14	—	1.47	ND<50	—	ND<0.5	ND<0.5	ND<0.5	0.7	—	—	—	PACE
MW-7	02/15/94	7.61	5.88	—	1.73	78	—	ND<0.5	ND<0.5	ND<0.5	0.6	—	—	4.0	PACE
MW-7	05/11/94	7.61	5.76	—	1.85	70	—	ND<0.5	ND<0.5	ND<0.5	0.9	—	—	9.1	PACE
MW-8	10/12/93	8.60	5.86	—	2.74	ND<50	—	ND<0.5	ND<0.5	ND<0.5	ND<0.5	—	—	—	PACE
MW-8	02/15/94	8.60	5.50	—	3.10	380	—	ND<0.5	ND<0.5	ND<0.5	ND<0.5	—	—	3.3	PACE
MW-8	05/11/94	8.60	5.09	—	3.51	330	—	ND<0.5	1.2	ND<0.5	1.9	—	—	8.5	PACE

TABLE 1 - SUMMARY OF RESULTS OF GROUNDWATER SAMPLING
BP OIL COMPANY SERVICE STATION NO. 11126
1700 POWELL STREET, EMERYVILLE, CALIFORNIA

ALISTO PROJECT NO. 10-061

WELL ID	DATE OF SAMPLING/ MONITORING	CASING ELEVATION (a) (Feet)	DEPTH TO WATER (Feet)	PRODUCT THICKNESS (Feet)	GROUNDWATER ELEVATION (b) (Feet)	TPH-G (ppb)	TPH-D (ppb)	B (ppb)	T (ppb)	E (ppb)	X (ppb)	TOG (ppb)	HVOC (ppb)	DO (ppm)	LAB
MW-9(e)	10/12/93	8.08	5.66	0.08	2.48	---	---	---	---	---	---	---	---	---	---
MW-9(e)	02/15/94	8.08	5.32	0.05	2.80	---	---	---	---	---	---	---	---	---	---
MW-9(e)	05/11/94	8.08	5.57	---	2.51	---	---	---	---	---	---	---	---	---	---
QC-2 (f)	11/05/92	---	---	---	---	ND<50	---	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	---	PACE
QC-2 (f)	10/12/93	---	---	---	---	ND<50	---	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	---	PACE
QC-2 (f)	02/15/94	---	---	---	---	ND<50	---	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	---	PACE
QC-2 (f)	05/11/94	---	---	---	---	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 volatile organic compounds
DO	Dissolved oxygen
ppb	Parts per billion
ppm	Parts per million
ND	Not detected above reported detection limit
---	Not analyzed/applicable/measurable
PACE	Pace, Inc.

NOTES:

(a) Top of casing elevations surveyed relative to an established benchmark with an elevation of 8.11 feet above mean sea level.

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

(c) Blind duplicate.

(d) Detection limits vary; see laboratory report.

(e) Not sampled due to presence of free product.

(f) Travel blank.

E:\0\10-061\061-3-2W.WQ1

TABLE 2
PRODUCT REMOVAL STATUS

BP OIL COMPANY SERVICE STATION NO.11126
1700 POWELL, EMERYVILLE, CALIFORNIA

ALISTO PROJECT NO. 10-061

WELL ID	DATE	PRODUCT REMOVED (Gallons)	PRODUCT REMOVED CUMULATIVE (Gallons)
MW-9	12/02/93	0.15	0.15
	12/09/93	0.15	0.30
	12/30/93	0.15	0.45
	01/12/94	0.02	0.47

E:\0\10-061\PRODUCT.WQ2

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

N

0 1000' 2000'

FIGURE 1

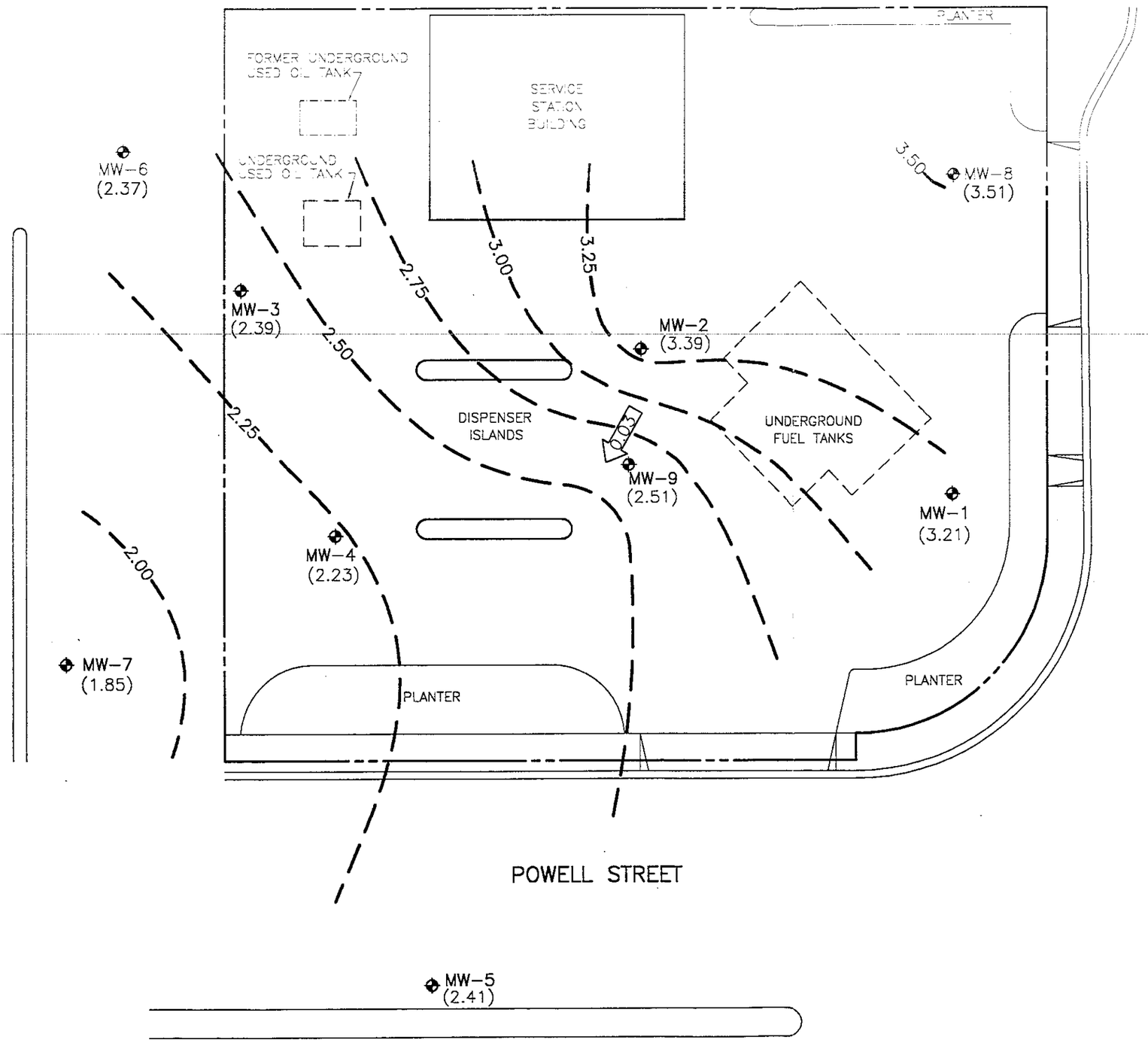
SITE VICINITY MAP

BP OIL SERVICE STATION NO. 11126
1700 POWELL STREET
EMERYVILLE, CALIFORNIA

PROJECT NO. 10--061

ALISTO ENGINEERING GROUP
WALNUT CREEK, CALIFORNIA

10061B---.DWG 12-30-93 RKW 1-1



N

0 20 40

SCALE IN FEET

LEGEND

- ◆ GROUNDWATER MONITORING WELL
- (3.21) GROUNDWATER ELEVATION IN FEET ABOVE MEAN SEA LEVEL
- 3.25 GROUNDWATER ELEVATION CONTOUR IN FEET ABOVE MEAN SEA LEVEL (CONTOUR INTERVAL–0.25 FOOT)
- 0.03 CALCULATED GROUNDWATER GRADIENT DIRECTION AND MAGNITUDE IN FOOT PER FOOT

FIGURE 2

POTENTIOMETRIC GROUNDWATER ELEVATION CONTOUR MAP

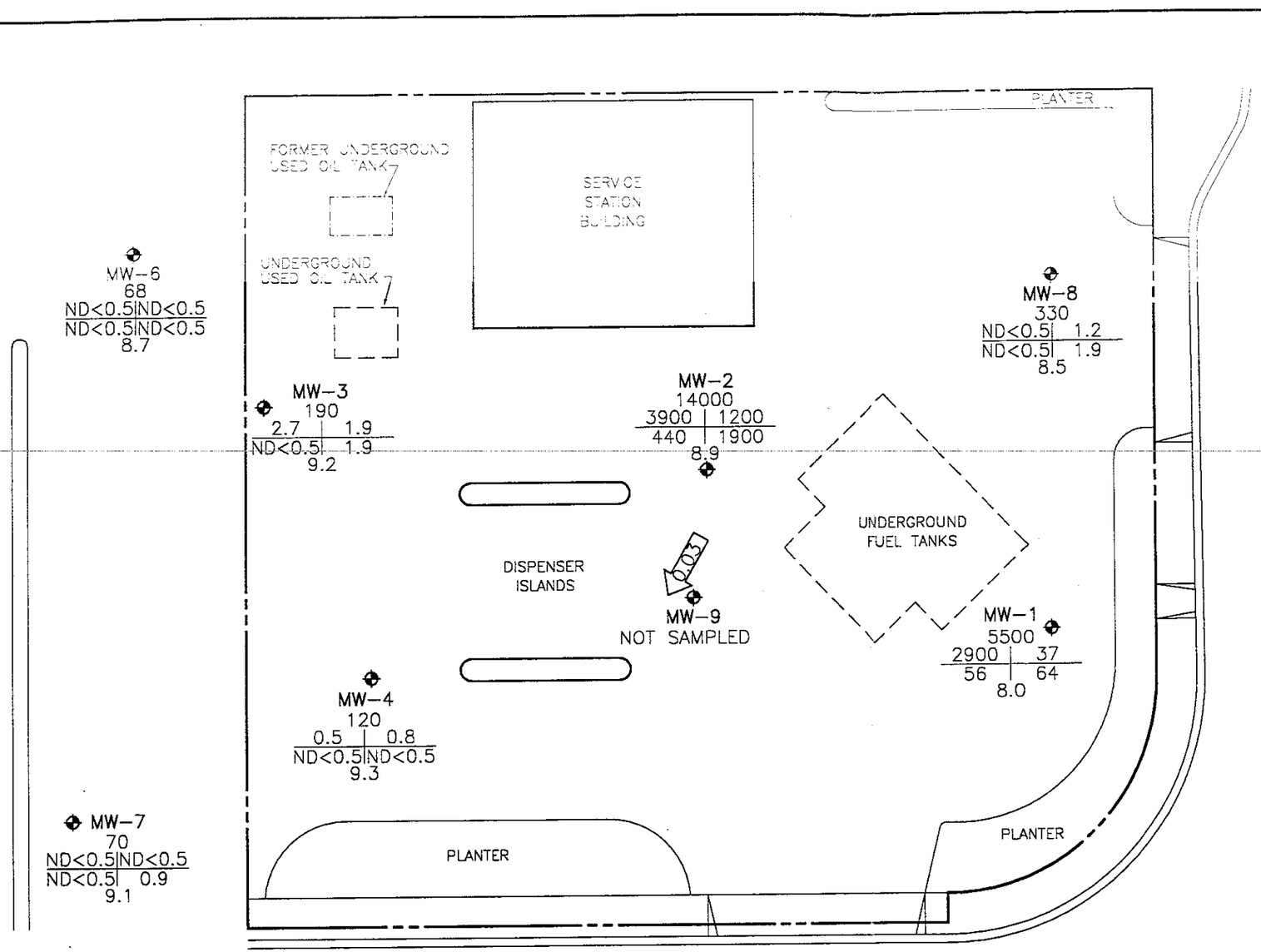
MAY 11, 1994

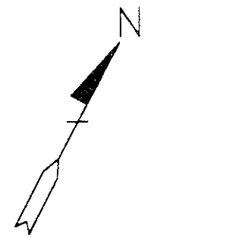
BP OIL SERVICE STATION NO. 11126
1700 POWELL STREET
EMERYVILLE, CALIFORNIA

PROJECT NO. 10–061

ALISTO ENGINEERING GROUP
WALNUT CREEK, CALIFORNIA

10610-J.DWG 8-8-94 RKW 1=20





LEGEND

⊕	GROUNDWATER MONITORING WELL
TPH-G / B | T / E | X / 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
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

MAY 11, 1994

BP OIL SERVICE STATION NO. 11126
1700 POWELL STREET
EMERYVILLE, CALIFORNIA

PROJECT NO. 10-061

ALISTO ENGINEERING GROUP
WALNUT CREEK, CALIFORNIA

10061E-2.DWG 8-10-94 RKW 1=20

APPENDIX A

WATER SAMPLING FIELD SURVEY FORMS

ALISTO ENGINEERING GROUP
GROUNDWATER MONITORING

Client: BP
Alisto Project No: 10-061-03-002 ✓
Service Station No: 11126

Date: 5/11/94
Field Personnel: DC
Site Address: Emeryville

FIELD ACTIVITY:

✓ Groundwater Monitoring
✓ Groundwater Sampling
___ Well Development

QUALITY CONTROL SAMPLES:

MW2 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
MW1	2"	8	11.62	4.55			
MW2	↓	7	11.83	5.17			
MW3		5	12.08	5.86			
MW4		4	11.06	5.89			
MW5		1	13.70	5.28			
MW6		2	13.25	6.15			
MW7		3	13.72	5.76			
MW8	↓	6	13.65	5.09			
* MW9	4"	9	13.85	5.57	[redacted]	[redacted]	irredescence

Notes:

* [redacted] F.P removal from MW-9
1 gal water pulled, only an iridescence
therefor PPRS must have been serviced
recently

FORM: FS2/121592

ALISTO ENGINEERING GROUP
Groundwater Development and Sampling Form

Client: BP
Alisto Project No: 10-061-3-2
Service Station No: 11126

Date: 5/11/94
Field Personnel: DC
Address: Emeryville

Well ID: MW1 Field Activity: ___Well Development ✓Well Sampling ___Product Bailing

Casing Diameter:

✓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)
___Disposable Bailers
___Other
___1.66 PVC Standard Bailer
___3.50 PVC Standard Bailer

Well Data:

0 Depth to Product
0 Product Thickness
4.55 Depth to Water

Sampling Method:

✓Disposable Bailer
___Pump

Decontamination Method:

✓Triple Rinse (Liquinox)
___Steam Cleaned

Calculated Purge Volume

11.62 (Total Depth of Well) - 4.55 (Depth to Water) = 7.07 ft (Water Column) X .16 Gal/Ft (Conversion Factor) = 1.13 Gal (Casing Vol) X 3 (Vols to Purge) = 3.39 (Total Volume)

Well Development/Sampling Parameters

Time	Temp °F	pH	Cond. (umhos /cm)	Purge Vol (Gal)	Comments/ Turbidity	Analysis Required	Container Type	Preserv.
	76.6	7.57	5.17	1.5	clear	TPH-G/BTEX	VOA	HCL
	76.0	7.61	5.35	3	↓	TPH-Diesel	Amber Liter	Solvent Rinsed
	76.9	7.85	5.35	3.5	↓	EPA 601	VOA	
						TOG 5520BF	Amber Liter	H_2SO_4

DO begin 8.0
end 8.0

FORM: FS3/121592

ALISTO ENGINEERING GROUP
Groundwater Development and Sampling Form

Client: BP
Alisto Project No: 10-061-3-2
Service Station No: 11124

Date: 5/11/94
Field Personnel: DC
Address: Emeryville

Well ID: MW2 Field Activity: ___Well Development ✓Well Sampling ___Product Bailing

Casing Diameter:

✓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)
___Disposable Bailers
___Other
___1.66 PVC Standard Bailer
___3.50 PVC Standard Bailer

Well Data:

___Depth to Product
___Product Thickness
5.17 Depth to Water

Sampling Method:

___Disposable Bailer
___Pump

Decontamination Method:

___ Triple Rinse (Liquinox)
___ Steam Cleaned

Calculated Purge Volume

11.93 (Total Depth of Well) - 5.17 (Depth to Water) = 6.66 ft (Water Column) X .16 Gal/Ft (Conversion Factor) = 1.07 Gal (Casing Vol) X 3 (Vols to Purge) = 3.2 (Total Volume)

Well Development/Sampling Parameters

Time	Temp °F	pH	Cond. (umhos /cm)	Purge Vol (Gal)	Comments/ Turbidity	Analysis Required	Container Type	Preserv.
	71.4	7.81	2.62	1	silty grey	TPH-G/BTEX	VOA	HCL
	73.3	7.69	2.73	2	↓	TPH-Diesel	Amber Liter	Solvent Rinsed
	73.4	7.95	2.93	3.25	↓	EPA 601	VOA	
						TOG 5520BF	Amber Liter	H_2SO_4

*QC-1

DO begin 7.4
end → 8.9

FORM: FS3/121592

ALISTO ENGINEERING GROUP
Groundwater Development and Sampling Form

Client: BP
Alisto Project No: 10-061-3-2
Service Station No: 11126

Date: 5/11/94
Field Personnel: DC
Address: Emeryville

Well ID: MW3 Field Activity: ___Well Development ✓Well Sampling ___Product Bailing

Casing Diameter:

✓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)
___Disposable Bailers
___Other
___1.66 PVC Standard Bailer
___3.50 PVC Standard Bailer

Well Data:

Ø Depth to Product
Ø Product Thickness
5.86 Depth to Water

Sampling Method:

✓Disposable Bailer
___Pump

Decontamination Method:

✓ Triple Rinse (Liquinox)
___ Steam Cleaned

Calculated Purge Volume

12.08 (Total Depth of Well) - 5.86 (Depth to Water) = 6.22 ft (Water Column) X .16 (Conversion Factor) Gal/Ft = 1.0 Gal (Casing Vol) X 3 (Vols to Purge) = 3 (Total Volume)

Well Development/Sampling Parameters

Time	Temp °F	pH	Cond. (umhos /cm)	Purge Vol (Gal)	Comments/ Turbidity	Analysis Required	Container Type	Preserv.
	70.8	7.58	6.22	1	Grey silty thick	TPH-G/BTEX	VOA	HCL
	72.6	7.62	7.76	2	↓	TPH-Diesel	Amber Liter	Solvent Rinsed
	72.0	7.81	7.70	3	↓	EPA 601	VOA	
						TOG 5520BF	Amber Liter	H_2SO_4

All Analysis
TOG
TPHD
601

FORM: FS3/121592

DO begin → 8.5
end → 9.2

ALISTO ENGINEERING GROUP
Groundwater Development and Sampling Form

Client: BP
Alisto Project No: 10-061-3-2
Service Station No: 11126

Date: 5/11/94
Field Personnel: DC
Address: Emeryville

Well ID: MW4 Field Activity: ___Well Development ✓Well Sampling ___Product Bailing

Casing Diameter:

✓ 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)
___ Disposable Bailers
___ Other
___ 1.66 PVC Standard Bailer
___ 3.50 PVC Standard Bailer

Well Data:

0 Depth to Product
0 Product Thickness
5.89 Depth to Water

Sampling Method:

✓ Disposable Bailer
___ Pump

Decontamination Method:

✓ Triple Rinse (Liquinox)
___ Steam Cleaned

Calculated Purge Volume

11.06 (Total Depth of Well) - 5.89 (Depth to Water) = 5.17 ft (Water Column) X .16 Gal/Ft (Conversion Factor) = .83 Gal (Casing Vol) X 3 (Vols to Purge) = 2.48 (Total Volume)

Well Development/Sampling Parameters

Time	Temp °F	pH	Cond. (umhos /cm)	Purge Vol (Gal)	Comments/ Turbidity	Analysis Required	Container Type	Preserv.
	72.1	7.91	6.47	1.	clear	TPH-G/BTEX	VOA	HCL
	73.8	8.21	6.53	2	↓	TPH-Diesel	Amber Liter	Solvent Rinsed
	73.8	8.24	6.70	2.5	↓	EPA 601	VOA	
						TOG 5520BF	Amber Liter	H_2SO_4

DO begin → 9.6
end → 9.3

FORM: FS3/121592

ALISTO ENGINEERING GROUP
Groundwater Development and Sampling Form

Client: BP
Alisto Project No: 001-3-2
Service Station No: 1126

Date: 5/11/94
Field Personnel: DC
Address: Emeryville

Well ID: MW5 Field Activity: ___Well Development ✓Well Sampling ___Product Bailing

Casing Diameter:

✓ 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)
___Disposable Bailers
___Other
___1.66 PVC Standard Bailer
___3.50 PVC Standard Bailer

Well Data:

Ø Depth to Product
Ø Product Thickness
5.28 Depth to Water

Sampling Method:

✓ Disposable Bailer
___Pump

Decontamination Method:

✓ Triple Rinse (Liquinox)
___ Steam Cleaned

Calculated Purge Volume

13.70 (Total Depth of Well) - 5.28 (Depth to Water) = 7.42 ft (Water Column) X .16 Gal/Ft (Conversion Factor) = 1.35 Gal (Casing Vol) X 3 (Vols to Purge) = 4.04 (Total Volume)

Well Development/Sampling Parameters

Time	Temp °F	pH	Cond. (umhos /cm)	Purge Vol (Gal)	Comments/ Turbidity	Analysis Required	Container Type	Preserv.
	68.3	6.79	1.33	1.5	clear	TPH-G/BTEX	VOA	HCL
	68.7	6.96	1,32	3	↓	TPH-Diesel	Amber Liter	Solvent Rinsed
	68.3	7.01	1.30	4.25	↓	EPA 601	VOA	
						TOG 5520BF	Amber Liter	H_2SO_4

DO begin → 7.8
End → 8.0

FORM: FS3/121592

ALISTO ENGINEERING GROUP
Groundwater Development and Sampling Form

Client: BP
Alisto Project No: 10-061-3-2
Service Station No: 11126

Date: 5/11/94
Field Personnel: DC
Address: Emeryville

Well ID: MW6 Field Activity: ___Well Development ✓Well Sampling ___Product Bailing

Casing Diameter:
✓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)
___Disposable Bailers
___Other
___1.66 PVC Standard Bailer
___3.50 PVC Standard Bailer

Well Data:
0 Depth to Product
0 Product Thickness
6.15 Depth to Water

Sampling Method:
✓Disposable Bailer
___Pump

Decontamination Method:
✓Triple Rinse (Liquinox)
___Steam Cleaned

Calculated Purge Volume

13.25 (Total Depth of Well) - 6.15 (Depth to Water) = 7.1 ft (Water Column) X .16 Gal/Ft (Conversion Factor) = 1.14 Gal (Casing Vol) X 3 (Vols to Purge) = 3.41 (Total Volume)

Well Development/Sampling Parameters

Time	Temp °F	pH	Cond. (umhos /cm)	Purge Vol (Gal)	Comments/ Turbidity	Analysis Required	Container Type	Preserv.
	68.7	7.49	4.84	1	clear	TPH-G/BTEX	VOA	HCL
	69.9	7.49	6.64	2	↓	TPH-Diesel	Amber Liter	Solvent Rinsed
	70.3	7.63	6.86	3.5	↓	EPA 601	VOA	
						TOG 5520BF	Amber Liter	H_2SO_4

DO begin → 8.7
end → 8.7

FORM: FS3/121592

ALISTO ENGINEERING GROUP
Groundwater Development and Sampling Form

Client: BP
Alisto Project No: 10-061-3-2
Service Station No: 1126

Date: 5/11/94
Field Personnel: DC
Address: Emeryville

Well ID: MW7 Field Activity: ___Well Development ✓Well Sampling ___Product Bailing

Casing Diameter:

✓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)
___Disposable Bailers
___Other
___1.66 PVC Standard Bailer
___3.50 PVC Standard Bailer

Well Data:

Ø Depth to Product
Ø Product Thickness
5.76 Depth to Water

Sampling Method:

✓Disposable Bailer
____Pump

Decontamination Method:

✓ Triple Rinse (Liquinox)
___ Steam Cleaned

Calculated Purge Volume

13.72 (Total Depth of Well) - 5.76 (Depth to Water) = 7.96 ft (Water Column) X .16 (Conversion Factor) Gal/Ft = 1.27 Gal (Casing Vol) X 3 (Vols to Purge) = 3.82 (Total Volume)

Well Development/Sampling Parameters

Time	Temp °F	pH	Cond. (umhos /cm)	Purge Vol (Gal)	Comments/ Turbidity	Analysis Required	Container Type	Preserv.
	72.6	8.26	5.04	1.5	clear	TPH-G/BTEX	VOA	HCL
	72.8	7.69	4.20	3	↓	TPH-Diesel	Amber Liter	Solvent Rinsed
	72.4	7.76	4.72	4	↓	EPA 601	VOA	
						TOG 5520BF	Amber Liter	H_2SO_4

DO begin → 10.0
end → 9.1

FORM: FS3/121592

APPENDIX B

LABORATORY REPORT AND CHAIN OF CUSTODY RECORD

pace INCORPORATED
THE ASSURANCE OF QUALITY

REPORT OF LABORATORY ANALYSIS

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

May 23, 1994
PACE Project Number: 440512512

Attn: Mr. Bill Howell

Client Reference: BP Site #11126/ 10-061-3-2

PACE Sample Number:			70 0319056	
Date Collected:			05/11/94	
Date Received:			05/13/94	
Client Sample ID:			MW-1	
Parameter	Units	MDL		DATE ANALYZED
ORGANIC ANALYSIS				
PURGEABLE FUELS AND AROMATICS				
TOTAL FUEL HYDROCARBONS, (LIGHT):			-	05/17/94
Purgeable Fuels, as Gasoline (EPA 8015M)	ug/L	1200	5500	05/17/94
PURGEABLE AROMATICS (BTXE BY EPA 8020M):			-	05/17/94
Benzene	ug/L	12	2900	05/17/94
Toluene	ug/L	12	37	05/17/94
Ethylbenzene	ug/L	12	56	05/17/94
Xylenes, Total	ug/L	12	64	05/17/94

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REPORT OF LABORATORY ANALYSIS

May 23, 1994
PACE Project Number: 440512512

Client Reference: BP Site #11126/ 10-061-3-2

PACE Sample Number:			70 0320348	
Date Collected:			05/11/94	
Date Received:			05/13/94	
Client Sample ID:			MW-2	
Parameter	Units	MDL		DATE ANALYZED
ORGANIC ANALYSIS				
PURGEABLE FUELS AND AROMATICS				
TOTAL FUEL HYDROCARBONS, (LIGHT):			-	05/16/94
Purgeable Fuels, as Gasoline (EPA 8015M)	ug/L	1200	14000	05/16/94
PURGEABLE AROMATICS (BTXE BY EPA 8020M):			-	05/16/94
Benzene	ug/L	12	3900	05/16/94
Toluene	ug/L	12	1200	05/16/94
Ethylbenzene	ug/L	12	440	05/16/94
Xylenes, Total	ug/L	12	1900	05/16/94

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REPORT OF LABORATORY ANALYSIS

May 23, 1994
PACE Project Number: 440512512

Client Reference: BP Site #11126/ 10-061-3-2

Parameter	Units	MDL		DATE ANALYZED
PACE Sample Number:			70 0320356	
Date Collected:			05/11/94	
Date Received:			05/13/94	
Client Sample ID:			MW-3	
ORGANIC ANALYSIS				
PURGEABLE FUELS AND AROMATICS				
TOTAL FUEL HYDROCARBONS, (LIGHT):			-	05/16/94
Purgeable Fuels, as Gasoline (EPA 8015M)	ug/L	50	190	05/16/94
PURGEABLE AROMATICS (BTXE BY EPA 8020M):			-	05/16/94
Benzene	ug/L	0.5	2.7	05/16/94
Toluene	ug/L	0.5	1.9	05/16/94
Ethylbenzene	ug/L	0.5	ND	05/16/94
Xylenes, Total	ug/L	0.5	1.9	05/16/94
EXTRACTABLE FUELS EPA 3510/8015				
Extractable Fuels, as Diesel	mg/L	0.05	2.5	05/17/94
Date Extracted			05/16/94	
OIL AND GREASE, SILICA GEL (LUFT)				
Oil and Grease, Gravimetric (SM5520)	mg/L	5.0	ND	05/17/94
Date Extracted			05/17/94	
HALOGENATED VOLATILE ORGANICS BY 8010				
VOLATILE HALOCARBONS BY EPA 8010			-	05/19/94
Dichlorodifluoromethane	ug/L	2.0	ND	05/19/94
Chloromethane	ug/L	2.0	ND	05/19/94
Vinyl Chloride	ug/L	2.0	ND	05/19/94
Bromomethane	ug/L	2.0	ND	05/19/94
Chloroethane	ug/L	2.0	ND	05/19/94
Trichlorofluoromethane (Freon 11)	ug/L	2.0	ND	05/19/94
1,1-Dichloroethene	ug/L	0.5	ND	05/19/94
Methylene Chloride	ug/L	2.0	ND	05/19/94
trans-1,2-Dichloroethene	ug/L	0.5	ND	05/19/94
1,1-Dichloroethane	ug/L	0.5	ND	05/19/94
cis-1,2-Dichloroethene	ug/L	0.5	ND	05/19/94
Chloroform	ug/L	0.5	ND	05/19/94
1,1,1-Trichloroethane (TCA)	ug/L	0.5	ND	05/19/94
Carbon Tetrachloride	ug/L	0.5	ND	05/19/94
1,2-Dichloroethane (EDC)	ug/L	0.5	ND	05/19/94

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REPORT OF LABORATORY ANALYSIS

May 23, 1994
PACE Project Number: 440512512

Client Reference: BP Site #11126/ 10-061-3-2

Parameter	Units	MDL		DATE ANALYZED
PACE Sample Number:			70 0320356	
Date Collected:			05/11/94	
Date Received:			05/13/94	
Client Sample ID:			MW-3	
ORGANIC ANALYSIS				
HALOGENATED VOLATILE ORGANICS BY 8010				
Trichloroethene (TCE)	ug/L	0.5	ND	05/19/94
1,2-Dichloropropane	ug/L	0.5	ND	05/19/94
Bromodichloromethane	ug/L	0.5	ND	05/19/94
Dibromomethane	ug/L	0.5	ND	05/19/94
2-Chloroethylvinyl ether	ug/L	0.5	ND	05/19/94
cis-1,3-Dichloropropene	ug/L	0.5	ND	05/19/94
trans-1,3-Dichloropropene	ug/L	0.5	ND	05/19/94
1,1,2-Trichloroethane	ug/L	0.5	ND	05/19/94
Tetrachloroethene	ug/L	0.5	ND	05/19/94
Dibromochloromethane	ug/L	0.5	ND	05/19/94
Chlorobenzene	ug/L	0.5	ND	05/19/94
1,1,1,2-Tetrachloroethane	ug/L	0.5	ND	05/19/94
Bromoform	ug/L	0.5	ND	05/19/94
1,1,2,2-Tetrachloroethane	ug/L	0.5	ND	05/19/94
1,2,3-Trichloropropane	ug/L	0.5	ND	05/19/94
Bromobenzene	ug/L	0.5	ND	05/19/94
1,3-Dichlorobenzene	ug/L	0.5	ND	05/19/94
1,4-Dichlorobenzene	ug/L	0.5	ND	05/19/94
Benzyl Chloride	ug/L	0.5	ND	05/19/94
1,2-Dichlorobenzene	ug/L	0.5	ND	05/19/94
Bromochloromethane (Surrogate Recovery)	%		101	05/19/94
1,4-Dichlorobutane (Surrogate Recovery)	%		116	05/19/94

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REPORT OF LABORATORY ANALYSIS

May 23, 1994
PACE Project Number: 440512512

Client Reference: BP Site #11126/ 10-061-3-2

PACE Sample Number:			70 0320364	
Date Collected:			05/11/94	
Date Received:			05/13/94	
Client Sample ID:			MW-4	
Parameter	Units	MDL		DATE ANALYZED
ORGANIC ANALYSIS				
PURGEABLE FUELS AND AROMATICS				
TOTAL FUEL HYDROCARBONS, (LIGHT):			-	05/16/94
Purgeable Fuels, as Gasoline (EPA 8015M)	ug/L	50	120	05/16/94
PURGEABLE AROMATICS (BTXE BY EPA 8020M):			-	05/16/94
Benzene	ug/L	0.5	0.5	05/16/94
Toluene	ug/L	0.5	0.8	05/16/94
Ethylbenzene	ug/L	0.5	ND	05/16/94
Xylenes, Total	ug/L	0.5	ND	05/16/94

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REPORT OF LABORATORY ANALYSIS

May 23, 1994
PACE Project Number: 440512512

Client Reference: BP Site #11126/ 10-061-3-2

PACE Sample Number:			70 0320372	
Date Collected:			05/11/94	
Date Received:			05/13/94	
Client Sample ID:			MW-5	
Parameter	Units	MDL		DATE ANALYZED
ORGANIC ANALYSIS				
PURGEABLE FUELS AND AROMATICS				
TOTAL FUEL HYDROCARBONS, (LIGHT):			-	05/16/94
Purgeable Fuels, as Gasoline (EPA 8015M)	ug/L	1000	11000	05/16/94
PURGEABLE AROMATICS (BTXE BY EPA 8020M):			-	05/16/94
Benzene	ug/L	10	1100	05/16/94
Toluene	ug/L	10	39	05/16/94
Ethylbenzene	ug/L	10	110	05/16/94
Xylenes, Total	ug/L	10	57	05/16/94

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REPORT OF LABORATORY ANALYSIS

May 23, 1994
PACE Project Number: 440512512

Client Reference: BP Site #11126/ 10-061-3-2

PACE Sample Number:			70 0320380	
Date Collected:			05/11/94	
Date Received:			05/13/94	
Client Sample ID:			MW-6	
Parameter	Units	MDL		DATE ANALYZED
ORGANIC ANALYSIS				
PURGEABLE FUELS AND AROMATICS				
TOTAL FUEL HYDROCARBONS, (LIGHT):			-	05/16/94
Purgeable Fuels, as Gasoline (EPA 8015M)	ug/L	50	68	05/16/94
PURGEABLE AROMATICS (BTXE BY EPA 8020M):			-	05/16/94
Benzene	ug/L	0.5	ND	05/16/94
Toluene	ug/L	0.5	ND	05/16/94
Ethylbenzene	ug/L	0.5	ND	05/16/94
Xylenes, Total	ug/L	0.5	ND	05/16/94

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REPORT OF LABORATORY ANALYSIS

May 23, 1994
PACE Project Number: 440512512

Client Reference: BP Site #11126/ 10-061-3-2

PACE Sample Number:			70 0320399	
Date Collected:			05/11/94	
Date Received:			05/13/94	
Client Sample ID:			MW-7	
Parameter	Units	MDL		DATE ANALYZED
ORGANIC ANALYSIS				
PURGEABLE FUELS AND AROMATICS				
TOTAL FUEL HYDROCARBONS, (LIGHT):			-	05/16/94
Purgeable Fuels, as Gasoline (EPA 8015M)	ug/L	50	70	05/16/94
PURGEABLE AROMATICS (BTXE BY EPA 8020M):			-	05/16/94
Benzene	ug/L	0.5	ND	05/16/94
Toluene	ug/L	0.5	ND	05/16/94
Ethylbenzene	ug/L	0.5	ND	05/16/94
Xylenes, Total	ug/L	0.5	0.9	05/16/94

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REPORT OF LABORATORY ANALYSIS

Mr. Bill Howell
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May 23, 1994
PACE Project Number: 440512512

Client Reference: BP Site #11126/ 10-061-3-2

PACE Sample Number:			70 0320402	
Date Collected:			05/11/94	
Date Received:			05/13/94	
Client Sample ID:			MW-8	
Parameter	Units	MDL		DATE ANALYZED
ORGANIC ANALYSIS				
PURGEABLE FUELS AND AROMATICS				
TOTAL FUEL HYDROCARBONS, (LIGHT):			-	05/16/94
Purgeable Fuels, as Gasoline (EPA 8015M)	ug/L	50	330	05/16/94
PURGEABLE AROMATICS (BTXE BY EPA 8020M):			-	05/16/94
Benzene	ug/L	0.5	ND	05/16/94
Toluene	ug/L	0.5	1.2	05/16/94
Ethylbenzene	ug/L	0.5	ND	05/16/94
Xylenes, Total	ug/L	0.5	1.9	05/16/94

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REPORT OF LABORATORY ANALYSIS

May 23, 1994
PACE Project Number: 440512512

Client Reference: BP Site #11126/ 10-061-3-2

PACE Sample Number:			70 0320410	
Date Collected:			05/11/94	
Date Received:			05/13/94	
Client Sample ID:			QC-1	
Parameter	Units	MDL		DATE ANALYZED
ORGANIC ANALYSIS				
PURGEABLE FUELS AND AROMATICS				
TOTAL FUEL HYDROCARBONS, (LIGHT):			-	05/16/94
Purgeable Fuels, as Gasoline (EPA 8015M)	ug/L	250	15000	05/16/94
PURGEABLE AROMATICS (BTXE BY EPA 8020M):			-	05/16/94
Benzene	ug/L	10	5600	05/16/94
Toluene	ug/L	2.5	1500	05/16/94
Ethylbenzene	ug/L	2.5	470	05/16/94
Xylenes, Total	ug/L	2.5	2000	05/16/94

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REPORT OF LABORATORY ANALYSIS

May 23, 1994
PACE Project Number: 440512512

Client Reference: BP Site #11126/ 10-061-3-2

PACE Sample Number:			70 0320429	
Date Collected:			05/11/94	
Date Received:			05/13/94	
Client Sample ID:			QC-2	
Parameter	Units	MDL		DATE ANALYZED
ORGANIC ANALYSIS				
PURGEABLE FUELS AND AROMATICS				
TOTAL FUEL HYDROCARBONS, (LIGHT):			-	05/16/94
Purgeable Fuels, as Gasoline (EPA 8015M)	ug/L	50	ND	05/16/94
PURGEABLE AROMATICS (BTXE BY EPA 8020M):			-	05/16/94
Benzene	ug/L	0.5	ND	05/16/94
Toluene	ug/L	0.5	ND	05/16/94
Ethylbenzene	ug/L	0.5	ND	05/16/94
Xylenes, Total	ug/L	0.5	ND	05/16/94

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 11

May 23, 1994
PACE Project Number: 440512512

Client Reference: BP Site #11126/ 10-061-3-2

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

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REPORT OF LABORATORY ANALYSIS

QUALITY CONTROL DATA

May 23, 1994
PACE Project Number: 440512512

Client Reference: BP Site #11126/ 10-061-3-2

EXTRACTABLE FUELS EPA 3510/8015
Batch: 70 30478
Samples: 70 0320356

METHOD BLANK AND SAMPLE DUPLICATE:

Parameter	Units	MDL	Method Blank	700322022	Duplicate of 70 0322022	RPD
Extractable Fuels, as Diesel	mg/L	0.05	ND	ND	ND	NC
n-Pentacosane (Surrogate Recovery)	%			133	95	33%

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	96%	92%	4%

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QUALITY CONTROL DATA

May 23, 1994
PACE Project Number: 440512512

Client Reference: BP Site #11126/ 10-061-3-2

HALOGENATED VOLATILE ORGANICS 8010/8020
Batch: 70 30591
Samples: 70 0320356

METHOD BLANK:

Parameter	Units	MDL	Method Blank
VOLATILE HALOCARBONS BY EPA 8010			-
Dichlorodifluoromethane	ug/L	2.0	ND
Chloromethane	ug/L	2.0	ND
Vinyl Chloride	ug/L	2.0	ND
Bromomethane	ug/L	2.0	ND
Chloroethane	ug/L	2.0	ND
Trichlorofluoromethane (Freon 11)	ug/L	2.0	ND
FREON 113	ug/L	1.0	ND
1,1-Dichloroethene	ug/L	0.5	ND
Methylene Chloride	ug/L	2.0	ND
trans-1,2-Dichloroethene	ug/L	0.5	ND
1,1-Dichloroethane	ug/L	0.5	ND
cis-1,2-Dichloroethene	ug/L	0.5	ND
Chloroform	ug/L	0.5	ND
1,1,1-Trichloroethane (TCA)	ug/L	0.5	ND
Carbon Tetrachloride	ug/L	0.5	ND
1,2-Dichloroethane (EDC)	ug/L	0.5	ND
Trichloroethene (TCE)	ug/L	0.5	ND
1,2-Dichloropropane	ug/L	0.5	ND
Bromodichloromethane	ug/L	0.5	ND
Dibromomethane	ug/L	0.5	ND
2-Chloroethylvinyl ether	ug/L	0.5	ND
cis-1,3-Dichloropropene	ug/L	0.5	ND
trans-1,3-Dichloropropene	ug/L	0.5	ND
1,1,2-Trichloroethane	ug/L	0.5	ND
Tetrachloroethene	ug/L	0.5	ND
Dibromochloromethane	ug/L	0.5	ND
Chlorobenzene	ug/L	0.5	ND
1,1,1,2-Tetrachloroethane	ug/L	0.5	ND
Bromoform	ug/L	0.5	ND
1,1,2,2-Tetrachloroethane	ug/L	0.5	ND
1,2,3-Trichloropropane	ug/L	0.5	ND

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QUALITY CONTROL DATA

May 23, 1994
PACE Project Number: 440512512

Client Reference: BP Site #11126/ 10-061-3-2

HALOGENATED VOLATILE ORGANICS 8010/8020
Batch: 70 30591
Samples: 70 0320356

METHOD BLANK:

Parameter	Units	MDL	Method Blank
Bromobenzene	ug/L	0.5	ND
1,3-Dichlorobenzene	ug/L	0.5	ND
1,4-Dichlorobenzene	ug/L	0.5	ND
Benzyl Chloride	ug/L	0.5	ND
1,2-Dichlorobenzene	ug/L	0.5	ND
Bromochloromethane (Surrogate Recovery)	%		101
1,4-Dichlorobutane (Surrogate Recovery)	%		116
VOLATILE AROMATICS BY EPA 8020			-
Benzene	ug/L	0.3	ND
Toluene	ug/L	0.3	ND
Chlorobenzene	ug/L	0.5	ND
Ethylbenzene	ug/L	0.5	ND
Xylenes, Total	ug/L	0.5	ND
1,3-Dichlorobenzene	ug/L	0.5	ND
1,4-Dichlorobenzene	ug/L	0.5	ND
1,2-Dichlorobenzene	ug/L	0.5	ND
a,a,a-Trifluorotoluene (Surro. Recovery	%		94

SPIKE AND SPIKE DUPLICATE:

Parameter	Units	MDL	700320356 MW-3	Spike	Spike Recv	Spike Dupl Recv	RPD
1,1-Dichloroethane	ug/L	0.5	ND	20	115%	91%	23%
Trichloroethene (TCE)	ug/L	0.5	ND	20	99%	98%	1%
1,1,2-Trichloroethane	ug/L	0.5	ND	20	106%	102%	4%
Tetrachloroethene	ug/L	0.5	ND	20	107%	106%	1%
Benzene	ug/L	0.3	1.6	20	103%	102%	1%
Toluene	ug/L	0.3	0.8	20	98%	98%	0%
Xylenes, Total	ug/L	0.5	1.9	60	106%	104%	2%

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Mr. Bill Howell QUALITY CONTROL DATA May 23, 1994
Page 16 PACE Project Number: 440512512

Client Reference: BP Site #11126/ 10-061-3-2

HALOGENATED VOLATILE ORGANICS 8010/8020
Batch: 70 30591
Samples: 70 0320356

LABORATORY CONTROL SAMPLE AND CONTROL SAMPLE DUPLICATE:

Parameter	Units	MDL	Reference Value	Recv	Dupl Recv	RPD
1,1-Dichloroethane	ug/L	0.5	20	91%	77%	17%
Trichloroethene (TCE)	ug/L	0.5	20	97%	96%	1%
1,1,2-Trichloroethane	ug/L	0.5	20	103%	102%	1%
Tetrachloroethene	ug/L	0.5	20	103%	102%	1%
Benzene	ug/L	0.3	20	96%	98%	2%
Toluene	ug/L	0.3	20	95%	98%	3%
Xylenes, Total	ug/L	0.5	60	98%	100%	2%

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QUALITY CONTROL DATA

May 23, 1994
PACE Project Number: 440512512

Client Reference: BP Site #11126/ 10-061-3-2

OIL AND GREASE, SILICA GEL (LUFT)
Batch: 70 30531
Samples: 70 0320356

METHOD BLANK:

Parameter	Units	MDL	Method Blank
Oil and Grease, Gravimetric (SM5520)	mg/L	5.0	ND

LABORATORY CONTROL SAMPLE AND CONTROL SAMPLE DUPLICATE:

Parameter	Units	MDL	Reference Value	Recv	Dupl Recv	RPD
Oil and Grease, Gravimetric (SM5520)	mg/L	5.0	20	100%	100%	0%

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Mr. Bill Howell QUALITY CONTROL DATA May 23, 1994
Page 18 PACE Project Number: 440512512

Client Reference: BP Site #11126/ 10-061-3-2

PURGEABLE FUELS AND AROMATICS
Batch: 70 30475
Samples: 70 0320348, 70 0320356, 70 0320364, 70 0320372, 70 0320380
70 0320399, 70 0320402, 70 0320410, 70 0320429

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
Xylenes, Total	ug/L	0.5	ND

SPIKE AND SPIKE DUPLICATE:

Parameter	Units	MDL	700319579	Spike	Spike Recv	Spike Dupl Recv	RPD
Benzene	ug/L	0.5	0.7	100	102%	100%	2%
Toluene	ug/L	0.5	ND	100	106%	103%	3%
Ethylbenzene	ug/L	0.5	ND	100	108%	107%	1%
Xylenes, Total	ug/L	0.5	ND	300	108%	105%	3%

LABORATORY CONTROL SAMPLE AND CONTROL SAMPLE DUPLICATE:

Parameter	Units	MDL	Reference Value	Recv	Dupl Recv	RPD
Benzene	ug/L	0.5	100	103%	101%	2%
Toluene	ug/L	0.5	100	107%	105%	2%
Ethylbenzene	ug/L	0.5	100	108%	108%	0%
Xylenes, Total	ug/L	0.5	300	107%	106%	1%

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QUALITY CONTROL DATA

May 23, 1994
PACE Project Number: 440512512

Client Reference: BP Site #11126/ 10-061-3-2

PURGEABLE FUELS AND AROMATICS
Batch: 70 30486
Samples: 70 0319056

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
Methyl tert-Butyl Ether (MTBE)	ug/L	5.0	ND
Xylene (total)	ug/L	0.5	ND

SPIKE AND SPIKE DUPLICATE:

Parameter	Units	MDL	700321190	Spike	Spike Recv	Spike Dupl Recv	RPD
Benzene	ug/L	0.5	ND	100	94%	94%	0%
Toluene	ug/L	0.5	ND	100	90%	92%	2%
Ethylbenzene	ug/L	0.5	ND	100	93%	94%	1%
Methyl tert-Butyl Ether (MTBE)	ug/L	5.0	ND	100	96%	101%	5%
Xylene (total)	ug/L	0.5	ND	300	88%	90%	2%

LABORATORY CONTROL SAMPLE AND CONTROL SAMPLE DUPLICATE:

Parameter	Units	MDL	Reference Value	Recv	Dupl Recv	RPD
Benzene	ug/L	0.5	100	100%	97%	3%
Toluene	ug/L	0.5	100	100%	97%	3%
Ethylbenzene	ug/L	0.5	100	106%	104%	2%
Methyl tert-Butyl Ether (MTBE)	ug/L	5.0	100	95%	92%	3%
Xylene (total)	ug/L	0.5	300	103%	100%	3%

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Client Reference: BP Site #11126/ 10-061-3-2

MDL	Method Detection Limit
NC	No calculation due to value below detection limit.
ND	Not detected at or above the MDL.
RPD	Relative Percent Difference

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440512.512

CHAIN OF CUSTODY

No. 063077 Page 1 of 1

CONSULTANT'S NAME: Alisto Engineering	ADDRESS: 1777 Oak Knoll Blvd, Ste 200	CITY: Walnut Creek	STATE: CA ZIP CODE: 94596
BP SITE NUMBER: 11126	BP CORNER ADDRESS/CITY: Emeryville CA		CONSULTANT PROJECT NUMBER: 10-061-3-2
CONSULTANT PROJECT MANAGER: Bill Howell	PHONE NUMBER: 510 (295) 1650	FAX NUMBER: (510) 295 1823	CONSULTANT CONTRACT NUMBER:
BP CONTACT: Scott Houston	BP ADDRESS: Renton WA	PHONE NUMBER:	FAX NO.:
LAB CONTACT: PACE	LABORATORY ADDRESS: Novato CA	PHONE NUMBER: 415 883 6100	FAX NO.: 415 883 2673
SAMPLED BY (Please Print Name): David Cusack	SAMPLED BY (Signature): [signature]	SHIPMENT DATE:	SHIPMENT METHOD: Courier
TAT: ☐ 24 Hours ☐ 48 Hours ☐ 1 Week ☒ Standard 2 Weeks		ANALYSIS REQUIRED	AIRBILL NUMBER:

SAMPLE DESCRIPTION	COLLECTION DATE / TIME	MATRIX SOIL/WATER	CONTAINERS NO.	CONTAINERS TYPE (VOL.)	PRESERVATIVE LAB SAMPLE #	TPH GAS BTEX	TOG	TPH D	601	COMMENTS
MW-1	5/11/94	H_2O	3		31905.6					
MW-2			3		32034.8					
MW-3			6		32035.6		X	X	X	
MW4			3		32036.4					
MW5					32037.2					
MW6					32038.0					
MW7					32039.9					
MW8					32040.2					
QC-1					32041.0					
QC-2			2		32042.9					

RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME
[signature]	5/12/94	1530	Donald Johanski Pace	5/12/94	1530
Donald Johanski Pace	5/12/94	1650	[signature] PACE	5/12/94	1650

ADDITIONAL COMMENTS

CLV-16722

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

Scott