BP OIL

BP Oil Company
16400 Southcenter Parkway, Suite 301
Tukwila, Washington 98188
(206) 575-4077

September 15, 1993

Mr. Brian Oliva
Alameda County Dept. of Environmental Health
Haz. Mat. Division
80 Swan Way, Room 200,
Oakland, CA 94621

RE: BP OIL FACILITY #11104
1716 Webster Street
Oakland, CA

Dear Mr. Oliva:

Attached please find our **GROUNDWATER MONITORING AND SAMPLING REPORT DATED SEPTEMBER 1, 1993** for the above referenced facility.

Please call me at (206) 394-5243 with questions regarding this submission.

93 SEP 17 PM 3:02

Respectfully,

Scott T. Hooton
Environmental Resources Management

STH:jc ERM11104

cc: Mr.Eddie So, California Regional Water Quality Control Board, San Francisco Bay Region, 2101 Webster Street, Suite 500, Oakland, CA 94621

Mr. Markus Niebanck, Hydro-Environmental Technologies, Inc. 2363 Mariner Square Drive, Suite 243, Alameda, CA

Mr. Robert Merriken, Mobil Oil Corp, 3225 Gallows Road, Fairfax, VA 22037

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

Site file

GROUNDWATER MONITORING AND SAMPLING REPORT

BP Oil Company Service Station No. 11104
1716 Webster Street
Alameda, California

Project No. 10-155-01-001

Prepared for:

BP Oil Company
Environmental Resource Management
16400 Southcenter Parkway, Suite 301
Tukwila, Washington

Prepared by:

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

September 1, 1993

Brady Nagle
Project Manager

Al Sevilla, P.E.
Principal

REGISTERED PROFESSIONAL ENGINEER
ALBERTO SANCHEZ SEVILLA
26392
Exp. Date 3/31/95
CIVIL
STATE OF CALIFORNIA

GROUNDWATER MONITORING AND SAMPLING REPORT

BP Oil Company Service Station No. 11104
1716 Webster Street
Alameda, California

Project No. 10-155-01-001

September 1, 1993

INTRODUCTION

This report presents the results and findings of the July 9, 1993 groundwater monitoring and sampling conducted by Alisto Engineering Group at BP Oil Company Service Station No. 11104, 1716 Webster Street, 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 the 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. 11104
1716 WEBSTER STREET, ALAMEDA, CALIFORNIA

ALISTO PROJECT NO. 10-155

WELL ID	DATE OF SAMPLING/ MONITORING	CASING ELEVATION (a)	DEPTH TO WATER (Feet)	GROUNDWATER ELEVATION (b) (Feet)	TPH-G (ppb)	B (ppb)	T (ppb)	E (ppb)	X (ppb)	LAB
MW-1	07/21/92	8.51	5.91	2.60	34000	7000	1700	2500	6900	---
MW-1	10/20/92	8.51	6.66	1.85	---	---	---	---	---	---
MW-1	03/05/93	8.51	4.56	3.95	---	---	---	---	---	---
MW-1	04/01/93	8.51	4.57	3.94	---	---	---	---	---	---
MW-1	07/09/93	8.51	5.25	3.26	77000	15000	1400	2100	7400	PACE
QC-1 (c)	07/09/93	8.51	---	---	79000	16000	1500	2200	7700	PACE
MW-2	07/21/92	9.41	6.44	2.97	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---
MW-2	10/20/92	9.41	7.39	2.02	---	---	---	---	---	---
MW-2	03/05/93	9.41	4.91	4.50	---	---	---	---	---	---
MW-2	04/01/93	9.41	4.92	4.49	---	---	---	---	---	---
MW-2	07/09/93	9.41	5.60	3.81	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	PACE
MW-3 (d)	07/21/92	9.91	7.07	2.84	ND<50	0.95	ND<0.5	ND<0.5	ND<0.5	---
MW-3	10/20/92	9.91	8.06	1.85	---	---	---	---	---	---
MW-3	03/05/93	9.91	5.16	4.75	---	---	---	---	---	---
MW-3	04/01/93	9.91	5.25	4.66	---	---	---	---	---	---
MW-3	07/09/93	9.91	5.80	4.11	ND<50	0.8	ND<0.5	ND<0.5	ND<0.5	PACE
MW-4	03/05/93	8.33	4.81	3.52	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---
MW-4	04/01/93	8.33	4.80	3.53	---	---	---	---	---	---
MW-4	07/09/93	8.33	5.54	2.79	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	PACE
MW-5	04/01/93	8.17	4.77	3.40	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---
MW-5	07/09/93	8.17	5.40	2.77	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	PACE
QC-2 (e)	07/09/93	---	---	---	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	PACE

ABBREVIATIONS:

TPH-G	Total petroleum hydrocarbons as gasoline
B	Benzene
T	Toluene
E	Ethylbenzene
X	Total xylenes
ppb	Parts per billion
---	Not analyzed/available/measured
ND	Not detected above reported detection limit
PACE	Pace, Inc.

NOTES:

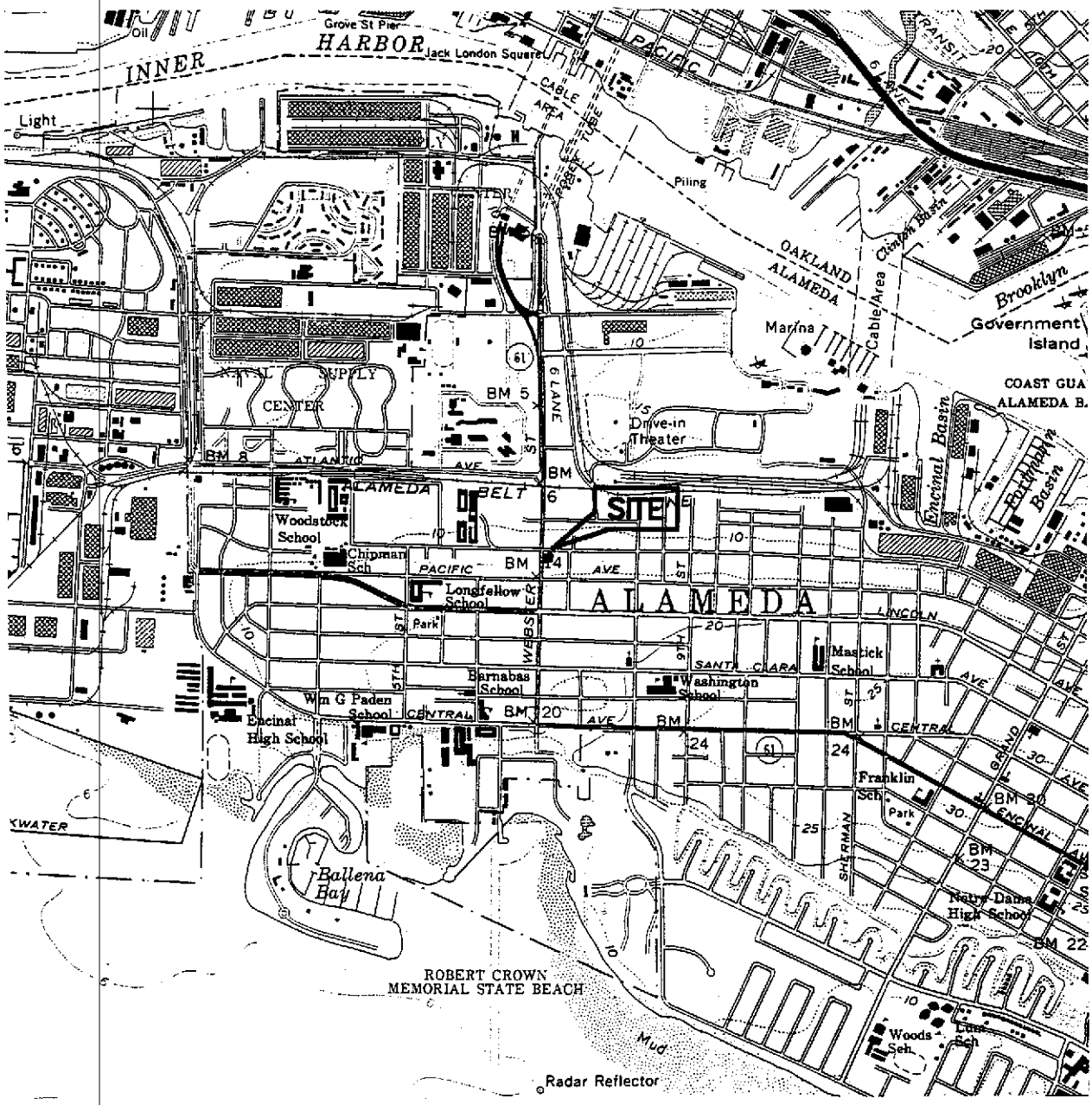
(a) Top of casing elevations surveyed in reference to USGS Mon. (7.68 feet above mean sea level) at northwest corner of Webster Street and Buena Vista Avenue.

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

(c) Blind duplicate.

(d) Sample also analyzed for cadmium, nickle, chromium, lead, and zinc. None were detected above the reported detection limit.

(e) Travel blank.



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

N

0 1000' 2000'

FIGURE 1

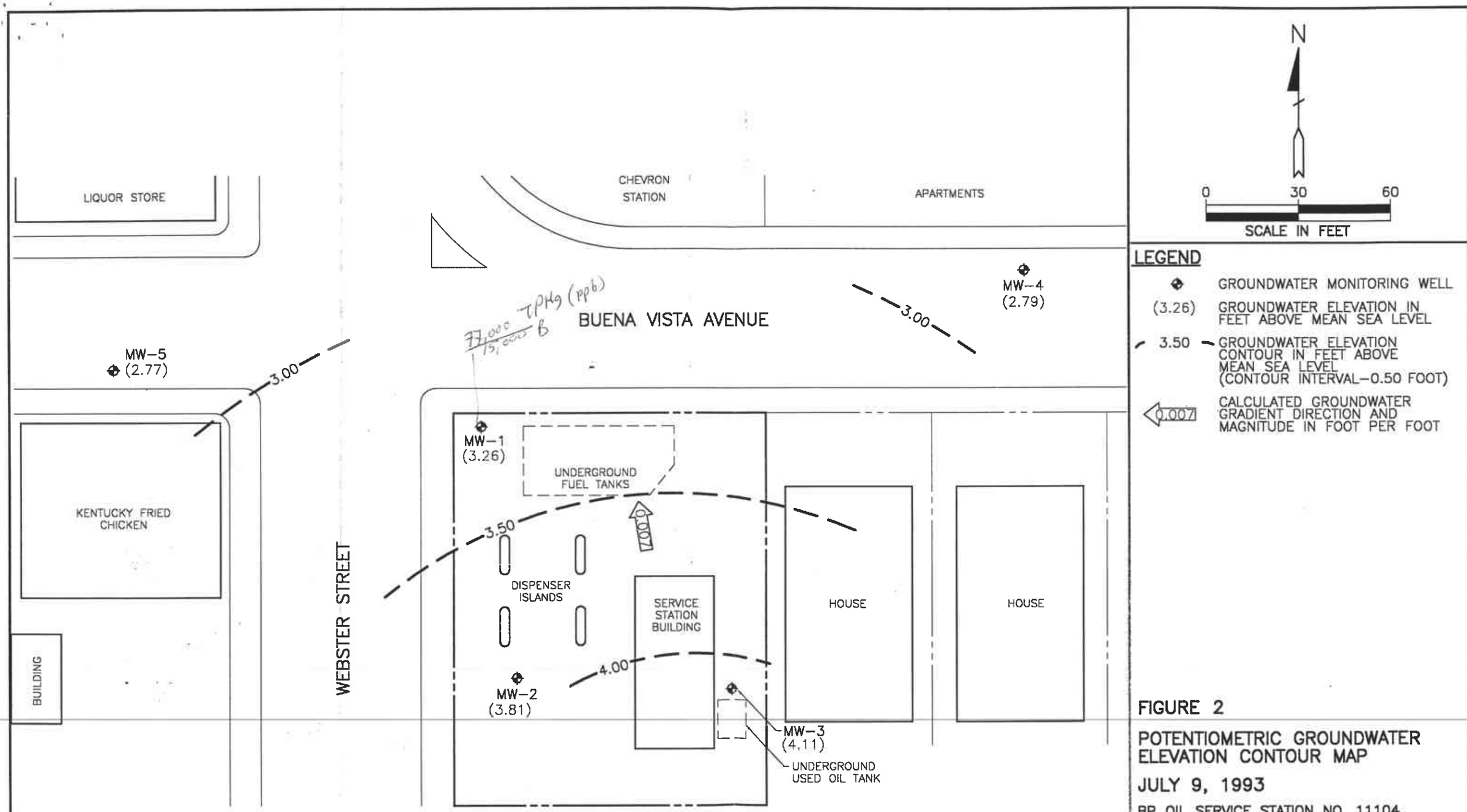
SITE VICINITY MAP

BP OIL SERVICE STATION NO. 11104
1716 WEBSTER STREET
ALAMEDA, CALIFORNIA

PROJECT NO. 10-155

ALISTO ENGINEERING GROUP
WALNUT CREEK, CALIFORNIA

10155B---.DWG 8-10-93 REV 1-1



LEGEND

- ◆ GROUNDWATER MONITORING WELL
- (3.26) GROUNDWATER ELEVATION IN FEET ABOVE MEAN SEA LEVEL
- 3.50 GROUNDWATER ELEVATION CONTOUR IN FEET ABOVE MEAN SEA LEVEL (CONTOUR INTERVAL–0.50 FOOT)
- 0.007 CALCULATED GROUNDWATER GRADIENT DIRECTION AND MAGNITUDE IN FOOT PER FOOT

FIGURE 2

POTENTIOMETRIC GROUNDWATER ELEVATION CONTOUR MAP

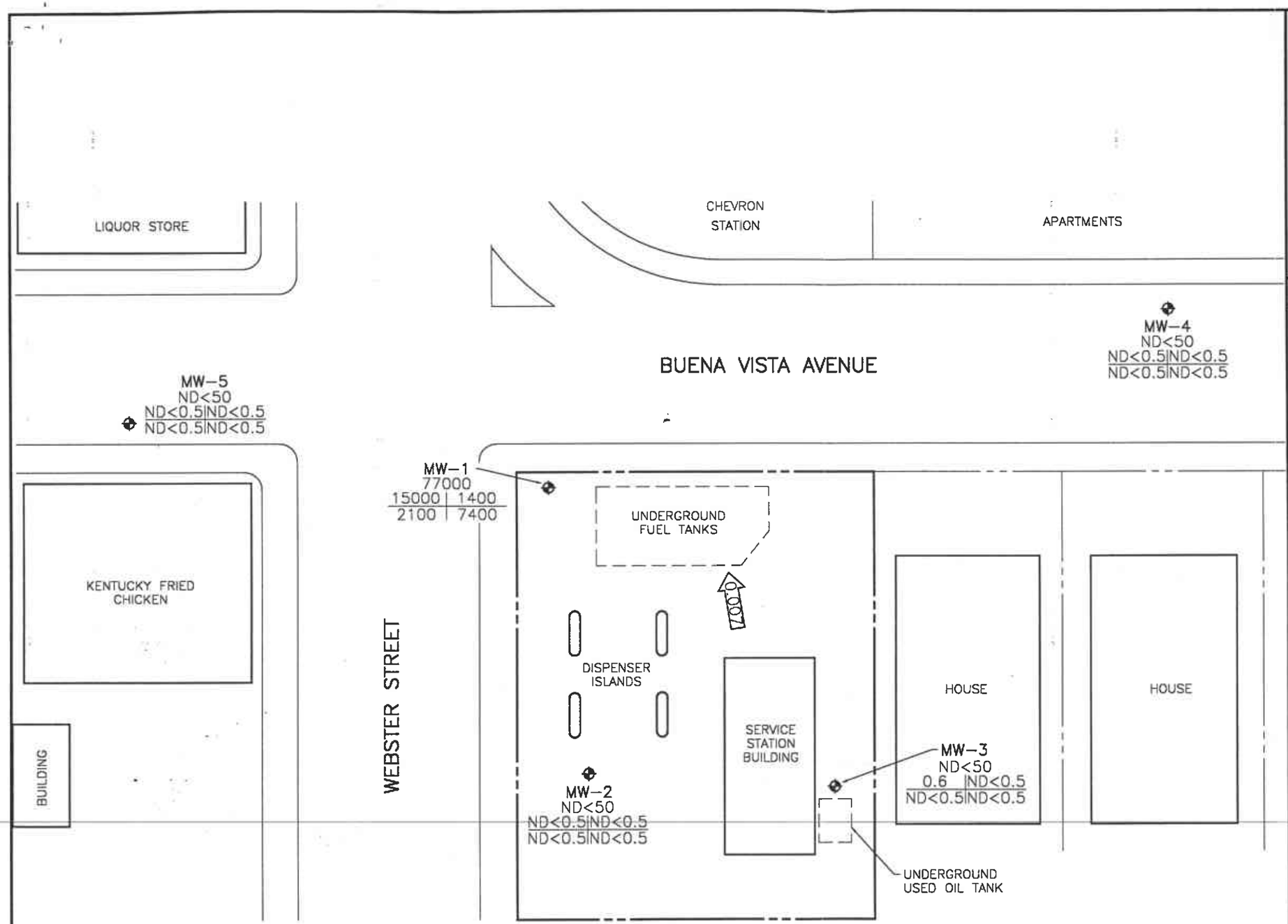
JULY 9, 1993

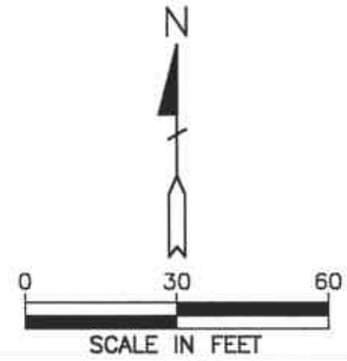
BP OIL SERVICE STATION NO. 11104
1716 WEBSTER STREET
ALAMEDA, CALIFORNIA

PROJECT NO. 10–155

ALISTO ENGINEERING GROUP
WALNUT CREEK, CALIFORNIA

101550-G.DWG 8-27-93 RKW 1-30





LEGEND

⊕	GROUNDWATER MONITORING WELL
TPH–G / B | T / E | X	CONCENTRATION OF CONSTITUENTS IN PARTS PER BILLION
TPH–G	TOTAL PETROLEUM HYDROCARBONS AS GASOLINE
B	BENZENE
T	TOLUENE
E	ETHYLBENZENE
X	TOTAL XYLENES
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

JULY 9, 1993

BP OIL SERVICE STATION NO. 11104
1716 WEBSTER STREET
ALAMEDA, CALIFORNIA

PROJECT NO. 10–155

ALISTO ENGINEERING GROUP
WALNUT CREEK, CALIFORNIA

10155C-D.DWG 8-17-93 RKW 1=30

APPENDIX A

WATER SAMPLING FIELD SURVEY FORMS

Birch Technical Services

116 Liberty st
Santa Cruz, Ca 95060
(408) 459-0718

Field Report / Data Sheet

OGroundwater Sampling OGroundwater Monitoring OWell Development ODrill Support OStockpile Sampling

Firm: ALISTO
Date: 7/9/93
Station #: BP/1104
Day: M Tu W Th (F)
Field Technician: DJ BIRCH
Address: 1716 WEBSTER ST., ALAMEDA
Weather: clear
Project Number: 10-155-01-001
Milage: ____ mi

DTWorder	Well ID	Lock	Exp Cap	Total Depth (feet)	1st Depth to Water (feet)	2nd Depth to Water (feet)	Depth to Product (feet)	Product Thickness	Comments	WELL DIAM.
5	MW-1	ok	NO	16.88	5.25	5.25				2"
3	MW-2	ok	ok	15.52	5.60	5.60				2
4	MW-3	ok	ok	17.00	5.80	5.80				2
2	MW-4	ok	ok	15.90	5.54	5.54				2
1	MW-5	ok	ok	14.94	5.40	5.40				2

Notes: 1 Drum left behind site.

Inv#: ____

Birch Technical Services

116 Liberty Street
Santa Cruz, Ca 95060
(408) 459-0718

GROUNDWATER SAMPLING FORM

Well Number: MW-1

Project Number: 10-155
Station Number: BP11104
Date: 7/9/93

Sample Type: XGroundwater OTrip Blank ODuplicate of _____
Sampled by: Dan Birch

WELL PURGING

PURGE VOLUME

Casing Diameter (inches) X2" O3" O4" O4.5" O6" O____
Volume Factors: 0.1632 0.3672 0.6528 0.826 1.469 _____

Total Depth of Well 16.88 Initial Water Level: 5.25
Total Volume Purged: 6 Time Elapsed: 9

PURGE METHOD:
XHonda Pump
XDisposable PolyTubing(17 ft)
OSpeed Winch
ODisposable PVC Bailer(s)(____)
OOther_____

Calculated Purge Volume:

16.88 (Total Depth) - 5.25 (Water Level) = 11.63 x .16 (Well Vol. Fac.) = 1.8 x 3 (#of vol. to Purge) = 5.60 (gallons) Calculated Purge Volume

Subjective Analysis Prior to Purging

SHEEN OYes ONo
Depth to Product _____(ft)
Product Thickness _____(ft)

PARAMETER EQUIPMENT CALIBRATION

pH Meter #: 9112 Time: 1201
Solution pH 7.00 7 at 71 °F
Solution pH 4.00 4 at 71 °F
Solution pH 10.00 10 at 71 °F
Water Level Meter#: 10337

COMMENTS:

QC-1 from MW-1. Purge dry @ 4 and 6 gallons - allow recharge Then sampled

SAMPLING METHOD

XPVC Disposable Bailer
OTeflon Bailer
OOther:_____

Time Sampled (24 hour clock) 1420

WELL SAMPLING PARAMETERS

Gallons Removed	Time	Temp °F	pH	Cond. (umhos/cm)
2	1412	70.7	6.70	0.86
4	1416	71.1	6.54	0.93
6	1420	71.2	6.54	0.93

	Analysis Required	No. of	Container Type	Preservatives
	EPA 601		VOA's	
X	TPH-G/BTEX	3	VOA's	HCl
	TPH- Diesel		Amber Liter	
	TOG 5520 BF		Amber Liter	H_2SO_4

Birch Technical Services

116 Liberty Street
Santa Cruz, Ca 95060
(408) 459-0718

GROUNDWATER SAMPLING FORM

Well Number: MW-2

Project Number: 10-155
Station Number: BP11104
Date: 7/9/93

Sample Type: XGroundwater OTrip Blank ODuplicate of _____
Sampled by: Dan Birch

WELL PURGING

PURGE VOLUME

Casing Diameter (inches) Volume Factors:

X 2"	O3"	O4"	O4.5"	O6"	O____
0.1632	0.3672	0.6528	0.826	1.469	_____

Total Depth of Well 15.52 Initial Water Level: 5.60

Total Volume Purged: 6 Time Elapsed: 4

PURGE METHOD:
XHonda Pump
XDisposable PolyTubing(16 ft)
OSpeed Winch
ODisposable PVC Bailer(s)(____)
OOther_____

Calculated Purge Volume:

15.52 (Total Depth) - 5.60 (Water Level) = 9.92 x .16 (Well Vol. Fac.) = 1.58 x 3 (#of vol. to Purge) = 4.7 (gallons) Calculated Purge Volume

Subjective Analysis Prior to Purging

SHEEN OYes XNo Depth to Product None (ft) Product Thickness None (ft)

COMMENTS:

PARAMETER EQUIPMENT CALIBRATION

pH Meter #: 9112 Time: 1201
Solution pH 7.00 7 at 71 °F
Solution pH 4.00 4 at 71 °F
Solution pH 10.00 10 at 71 °F
Water Level Meter#: 10337

SAMPLING METHOD

XPVC Disposable Bailer
OTeflon Bailer
OOther:_____

Time Sampled (24 hour clock) _____

WELL SAMPLING PARAMETERS

Gallons Removed	Time	Temp °F	pH	Cond. (umhos/cm)
3	1301	72.2	7.33	0.41
5	1303	73.1	7.27	0.40
6	1304	73.1	7.27	0.41

	Analysis Required	No. of	Container Type	Preservatives
	EPA 601		VOA's	
X	TPH-G/BTEX		VOA's	HCl
	TPH- Diesel		Amber Liter	
	TOG 5520 BF		Amber Liter	H_2SO_4

Birch Technical Services

116 Liberty Street
Santa Cruz, Ca 95060
(408) 459-0718

GROUNDWATER SAMPLING FORM

Well Number: MW-3

Project Number: 10-155
Station Number: BP11104
Date: 7/9/93

Sample Type: ☒Groundwater OTrip Blank ODuplicate of _____

Sampled by: DAN BIRCH

WELL PURGING

PURGE VOLUME

Casing Diameter (inches) Volume Factors:

☒2"	O3"	O4"	O4.5"	O6"	O____
0.1632	0.3672	0.6528	0.826	1.469	_____

Total Depth of Well: 17.00 Initial Water Level: 5.80

Total Volume Purged: 6 Time Elapsed: 9

PURGE METHOD:
☒Honda Pump
☒Disposable PolyTubing(18 ft)
OSpeed Winch
ODisposable PVC Bailer(s)(____)
OOther_____

Calculated Purge Volume:

17.00 (Total Depth) - 5.80 (Water Level) = 11.2 x .16 (Well Vol. Fac.) = 1.79 x 3 (#of vol. to Purge) = 5.3 (gallons) (Calculated Purge Volume)

Subjective Analysis Prior to Purging

SHEEN OYes ☒No Depth to Product: None (ft) Product Thickness: None (ft)

COMMENTS:

PARAMETER EQUIPMENT CALIBRATION

pH Meter #: 9112 Time: 1201
Solution pH 7.00 7 at 71 °F
Solution pH 4.00 4 at 71 °F
Solution pH 10.00 10 at 71 °F
Water Level Meter#: 10337

SAMPLING METHOD

☒PVC Disposable Bailer
OTeflon Bailer
OOther:_____

Time Sampled (24 hour clock): _____

WELL SAMPLING PARAMETERS

Gallons Removed	Time	Temp °F	pH	Cond. (umhos/cm)
2	1330	66.2	7.17	0.41
4	1334	65.7	7.06	0.48
6	1338	65.7	7.09	0.48

Analysis Required		No. of	Container Type	Preservatives
	EPA 601		VOA's	
	TPH-G/BTEX	X	VOA's	HCl
	TPH- Diesel		Amber Liter	
	TOG 5520 BF		Amber Liter	H_2SO_4

Birch Technical Services

116 Liberty Street
Santa Cruz, Ca 95060
(408) 459-0718

GROUNDWATER SAMPLING FORM

Well Number: MW-4

Project Number: 10-155
Station Number: BP11104
Date: 7/9/93

Sample Type: XGroundwater OTrip Blank ODuplicate of _____
Sampled by: DAN BIRCH

WELL PURGING

PURGE VOLUME

Casing Diameter (inches) Volume Factors:

X 2"	O3"	O4"	O4.5"	O6"	O____
0.1632	0.3672	0.6528	0.826	1.469	_____

Total Depth of Well 15.90 Initial Water Level: 5.54

Total Volume Purged: 6 Time Elapsed: 6

PURGE METHOD:
XHonda Pump
XDisposable PolyTubing(16 ft)
OSpeed Winch
ODisposable PVC Bailer(s)(____)
OOther_____

Calculated Purge Volume:

15.90 (Total Depth) - 5.54 (Water Level) = 10.36 x .16 (Well Vol. Fac.) = 1.65 x 3 (#of vol. to Purge) = 4.97 (gallons) Calculated Purge Volume

Subjective Analysis Prior to Purging

SHEEN OYes XNo | Depth to Product None (ft) | Product Thickness None (ft)

COMMENTS:

PARAMETER EQUIPMENT CALIBRATION

pH Meter #: 9112 Time: 1201
Solution pH 7.00 7 at 71 °F
Solution pH 4.00 4 at 71 °F
Solution pH 10.00 10 at 71 °F
Water Level Meter#: 10337

SAMPLING METHOD

XPVC Disposable Bailer
OTeflon Bailer
OOther:_____

Time Sampled (24 hour clock) 1235

WELL SAMPLING PARAMETERS

Gallons Removed	Time	Temp °F	pH	Cond. (umhos/cm)
2	1230	74.1	7.21	0.91
4	1233	73.1	7.23	0.90
6	1235	73.2	7.23	0.88

	Analysis Required	No. of	Container Type	Preservatives
	EPA 601		VOA's	
X	TPH-G/BTEX	3	VOA's	HCl
	TPH- Diesel		Amber Liter	
	TOG 5520 BF		Amber Liter	H_2SO_4

Birch Technical Services

116 Liberty Street
Santa Cruz, Ca 95060
(408) 459-0718

GROUNDWATER SAMPLING FORM

Well Number: MW-5

Project Number: 10.155
Station Number: BP11104
Date: 7/5/93

Sample Type: OGroundwater OTrip Blank ODuplicate of _____

Sampled by: Dan Birch

WELL PURGING

PURGE VOLUME

Casing Diameter (inches) O 2" O3" O4" O4.5" O6" O____
Volume Factors: 0.1632 0.3672 0.6528 0.826 1.469 _____

Total Depth of Well 14.94 Initial Water Level: 5.40

Total Volume Purged: 5 Time Elapsed: 5

PURGE METHOD:
XHonda Pump
XDisposable PolyTubing(____ft)
OSpeed Winch
ODisposable PVC Bailer(s)(____)
OOther_____

Calculated Purge Volume:

14.94 (Total Depth) - 5.40 (Water Level) = 9.54 x .16 (Well Vol. Fac.) = 1.52 x 3 (#of vol. to Purge) = 4.57 (gallons) Calculated Purge Volume

Subjective Analysis Prior to Purging

SHEEN OYes XNo Depth to Product None (ft) Product Thickness None (ft)

COMMENTS:

PARAMETER EQUIPMENT CALIBRATION

pH Meter #: 9112 Time: 1201
Solution pH 7.00 7 at 71 °F
Solution pH 4.00 4 at 71 °F
Solution pH 10.00 10 at 71 °F
Water Level Meter#: 10337

SAMPLING METHOD

XPVC Disposable Bailer
OTeflon Bailer
OOther:_____

Time Sampled (24 hour clock) 1214

WELL SAMPLING PARAMETERS

Gallons Removed	Time	Temp °F	pH	Cond. (umhos/cm)
2	1210	73.1	7.07	0.57
4	1212	72.1	7.09	0.57
5	1214	72-2	7.10	0.57

	Analysis Required	No. of	Container Type	Preservatives
	EPA 601		VOA's	
X	TPH-G/BTEX	3	VOA's	HCl
	TPH- Diesel		Amber Liter	
	TOG 5520 BF		Amber Liter	H_2SO_4

Birch Technical Services

116 Liberty Street
Santa Cruz, Ca 95060
(408) 459-0718

GROUNDWATER SAMPLING FORM

Project Number: 10-155
Station Number: BP11104
Date: 7/9/93

Well Number: QC-1
Sample Type: OGroundwater OTrip Blank XDuplicate of MW-1
Sampled by: Dan Birch

WELL PURGING

PURGE VOLUME

Casing Diameter (inches) / Volume Factors:

O 2"	O3"	O4"	O4.5"	O6"	O____
0.1632	0.3672	0.6528	0.826	1.469	_____

Total Depth of Well _____ Initial Water Level:_____

Total Volume Purged:_____ Time Elapsed:_____

Calculated Purge Volume:

_____ - _____ = _____ x _____ = _____ x _____ = _____(gallons)
Total Depth | Water Level | Well Vol. Fac. | #of vol. to Purge | Calculated Purge Volume

PURGE METHOD:
O Honda Pump
ODisposable PolyTubing(____ft)
OSpeed Winch
ODisposable PVC Bailer(s)(____)
OOther_____

Subjective Analysis Prior to Purging

SHEEN OYes ONo
Depth to Product _____(ft)
Product Thickness _____ (ft)

PARAMETER EQUIPMENT CALIBRATION

pH Meter #:_____ Time:_____
Solution pH 7.00 _____ at _____ °F
Solution pH 4.00_____ at _____ °F
Solution pH 10.00 _____ at _____ °F
Water Level Meter#:_____

COMMENTS:

Duplicate of MW-1

SAMPLING METHOD

XPVC Disposable Bailer
OTeflon Bailer
OOther:_____

Time Sampled (24 hour clock) 1422

WELL SAMPLING PARAMETERS

Gallons Removed	Time	Temp °F	pH	Cond. (umhos/cm)

	Analysis Required	No. of	Container Type	Preservatives
	EPA 601		VOA's	
X	TPH-G/BTEX	3	VOA's	HCl
	TPH- Diesel		Amber Liter	
	TOG 5520 BF		Amber Liter	H_2SO_4

Birch Technical Services

116 Liberty Street
Santa Cruz, Ca 95060
(408) 459-0718

GROUNDWATER SAMPLING FORM

Well Number: QC-2

Project Number: 10-155
Station Number: BP1110L
Date: 7/9/93

Sample Type: OGroundwater ⊗Trip Blank ODuplicate of _____

Sampled by: Dan Birch

WELL PURGING

PURGE VOLUME

Casing Diameter (inches) O 2" O3" O4" O4.5" O6" O____
Volume Factors: 0.1632 0.3672 0.6528 0.826 1.469 _____

Total Depth of Well _____ Initial Water Level:_____

Total Volume Purged:_____ Time Elapsed:_____

Calculated Purge Volume:

PURGE METHOD:
O Honda Pump
ODisposable PolyTubing(____ft)
OSpeed Winch
ODisposable PVC Bailer(s)(____)
OOther_____

_____ - _____ = _____ x _____ = _____ x _____ = _____(gallons)
Total Depth | Water Level | Well Vol. Fac. | #of vol. to Purge | Calculated Purge Volume

Subjective Analysis Prior to Purging

SHEEN OYes ONo | Depth to Product _____(ft) | Product Thickness _____ (ft)

COMMENTS:

TRIP BLANK

PARAMETER EQUIPMENT CALIBRATION

pH Meter #:_____ Time:_____
Solution pH 7.00 _____at _____°F
Solution pH 4.00_____at _____°F
Solution pH 10.00 _____ at _____°F
Water Level Meter#:_____

SAMPLING METHOD

⊗VC Disposable Bailer
OTeflon Bailer
OOther:_____

Time Sampled (24 hour clock) _____

WELL SAMPLING PARAMETERS

Gallons Removed	Time	Temp °F	pH	Cond. (umhos/cm)

	Analysis Required	No. of	Container Type	Preservatives
	EPA 601		VOA's	
Z	TPH-G/BTEX	X	VOA's	HCl
	TPH- Diesel		Amber Liter	
	TOG 5520 BF		Amber Liter	H_2SO_4

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

July 22, 1993
PACE Project Number: 430709526

Attn: Mr. Bill Howell

Client Reference: BP Station # 11104

PACE Sample Number:			70 0110653	
Date Collected:			07/09/93	
Date Received:			07/09/93	
Client Sample ID:			MW-1	
Parameter	Units	MDL		DATE ANALYZED
ORGANIC ANALYSIS				
PURGEABLE FUELS AND AROMATICS				
TOTAL FUEL HYDROCARBONS, (LIGHT):			-	07/19/93
Purgeable Fuels, as Gasoline (EPA 8015M)	ug/L	2500	77000	07/19/93
PURGEABLE AROMATICS (BTXE BY EPA 8020M):			-	07/19/93
Benzene	ug/L	25	15000	07/19/93
Toluene	ug/L	25	1400	07/19/93
Ethylbenzene	ug/L	25	2100	07/19/93
Xylenes, Total	ug/L	25	7400	07/19/93

11 Digital Drive
Novato, CA 94949
TEL: 415-883-6100
FAX: 415-883-2673

REPORT OF LABORATORY ANALYSIS

Mr. Bill Howell
Page 2

July 22, 1993
PACE Project Number: 430709526

Client Reference: BP Station # 11104

PACE Sample Number:			70 0110661	
Date Collected:			07/09/93	
Date Received:			07/09/93	
Client Sample ID:			MW-2	
Parameter	Units	MDL		DATE ANALYZED
ORGANIC ANALYSIS				
PURGEABLE FUELS AND AROMATICS				
TOTAL FUEL HYDROCARBONS, (LIGHT):			-	07/17/93
Purgeable Fuels, as Gasoline (EPA 8015M)	ug/L	50	ND	07/17/93
PURGEABLE AROMATICS (BTXE BY EPA 8020M):			-	07/17/93
Benzene	ug/L	0.5	ND	07/17/93
Toluene	ug/L	0.5	ND	07/17/93
Ethylbenzene	ug/L	0.5	ND	07/17/93
Xylenes, Total	ug/L	0.5	ND	07/17/93

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REPORT OF LABORATORY ANALYSIS

Mr. Bill Howell
Page 3

July 22, 1993
PACE Project Number: 430709526

Client Reference: BP Station # 11104

PACE Sample Number:			70 0110670	
Date Collected:			07/09/93	
Date Received:			07/09/93	
Client Sample ID:			MW-3	
Parameter	Units	MDL		DATE ANALYZED
ORGANIC ANALYSIS				
PURGEABLE FUELS AND AROMATICS				
TOTAL FUEL HYDROCARBONS, (LIGHT):			-	07/17/93
Purgeable Fuels, as Gasoline (EPA 8015M)	ug/L	50	ND	07/17/93
PURGEABLE AROMATICS (BTXE BY EPA 8020M):			-	07/17/93
Benzene	ug/L	0.5	0.6	07/17/93
Toluene	ug/L	0.5	ND	07/17/93
Ethylbenzene	ug/L	0.5	ND	07/17/93
Xylenes, Total	ug/L	0.5	ND	07/17/93

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REPORT OF LABORATORY ANALYSIS

Mr. Bill Howell
Page 4

July 22, 1993
PACE Project Number: 430709526

Client Reference: BP Station # 11104

PACE Sample Number:			70 0110688	
Date Collected:			07/09/93	
Date Received:			07/09/93	
Client Sample ID:			MW-4	
Parameter	Units	MDL		DATE ANALYZED
ORGANIC ANALYSIS				
PURGEABLE FUELS AND AROMATICS				
TOTAL FUEL HYDROCARBONS, (LIGHT):			-	07/17/93
Purgeable Fuels, as Gasoline (EPA 8015M)	ug/L	50	ND	07/17/93
PURGEABLE AROMATICS (BTXE BY EPA 8020M):			-	07/17/93
Benzene	ug/L	0.5	ND	07/17/93
Toluene	ug/L	0.5	ND	07/17/93
Ethylbenzene	ug/L	0.5	ND	07/17/93
Xylenes, Total	ug/L	0.5	ND	07/17/93

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REPORT OF LABORATORY ANALYSIS

Mr. Bill Howell
Page 5

July 22, 1993
PACE Project Number: 430709526

Client Reference: BP Station # 11104

PACE Sample Number:			70 0110696	
Date Collected:			07/09/93	
Date Received:			07/09/93	
Client Sample ID:			MW-5	
Parameter	Units	MDL		DATE ANALYZED
ORGANIC ANALYSIS				
PURGEABLE FUELS AND AROMATICS				
TOTAL FUEL HYDROCARBONS, (LIGHT):			-	07/17/93
Purgeable Fuels, as Gasoline (EPA 8015M)	ug/L	50	ND	07/17/93
PURGEABLE AROMATICS (BTXE BY EPA 8020M):			-	07/17/93
Benzene	ug/L	0.5	ND	07/17/93
Toluene	ug/L	0.5	ND	07/17/93
Ethylbenzene	ug/L	0.5	ND	07/17/93
Xylenes, Total	ug/L	0.5	ND	07/17/93

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REPORT OF LABORATORY ANALYSIS

Mr. Bill Howell
Page 6

July 22, 1993
PACE Project Number: 430709526

Client Reference: BP Station # 11104

PACE Sample Number:			70 0110700	
Date Collected:			07/09/93	
Date Received:			07/09/93	
Client Sample ID:			QC-1	
Parameter	Units	MDL		DATE ANALYZED
ORGANIC ANALYSIS				
PURGEABLE FUELS AND AROMATICS				
TOTAL FUEL HYDROCARBONS, (LIGHT):			-	07/19/93
Purgeable Fuels, as Gasoline (EPA 8015M)	ug/L	2500	79000	07/19/93
PURGEABLE AROMATICS (BTXE BY EPA 8020M):			-	07/19/93
Benzene	ug/L	25	16000	07/19/93
Toluene	ug/L	25	1500	07/19/93
Ethylbenzene	ug/L	25	2200	07/19/93
Xylenes, Total	ug/L	25	7700	07/19/93

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REPORT OF LABORATORY ANALYSIS

Mr. Bill Howell
Page 7

July 22, 1993
PACE Project Number: 430709526

Client Reference: BP Station # 11104

PACE Sample Number:			70 0110718	
Date Collected:			07/09/93	
Date Received:			07/09/93	
Client Sample ID:			QC-2	
Parameter	Units	MDL		DATE ANALYZED
ORGANIC ANALYSIS				
PURGEABLE FUELS AND AROMATICS				
TOTAL FUEL HYDROCARBONS, (LIGHT):			-	07/17/93
Purgeable Fuels, as Gasoline (EPA 8015M)	ug/L	50	ND	07/17/93
PURGEABLE AROMATICS (BTXE BY EPA 8020M):			-	07/17/93
Benzene	ug/L	0.5	ND	07/17/93
Toluene	ug/L	0.5	ND	07/17/93
Ethylbenzene	ug/L	0.5	ND	07/17/93
Xylenes, Total	ug/L	0.5	ND	07/17/93

These data have been reviewed and are approved for release.

Darrell C. Cain
Regional Director

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Novato, CA 94949
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FAX: 415-883-2673

Mr. Bill Howell | FOOTNOTES | July 22, 1993
Page 8 | for pages 1 through 7 | PACE Project Number: 430709526

Client Reference: BP Station # 11104

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

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REPORT OF LABORATORY ANALYSIS

QUALITY CONTROL DATA

July 22, 1993
PACE Project Number: 430709526

Client Reference: BP Station # 11104

PURGEABLE FUELS AND AROMATICS
Batch: 70 22909
Samples: 70 0110661, 70 0110670, 70 0110688, 70 0110696, 70 0110718

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

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	92%	85%	7%
Benzene	ug/L	0.5	100	90%	89%	1%
Toluene	ug/L	0.5	100	91%	89%	2%
Ethylbenzene	ug/L	0.5	100	91%	86%	5%
Xylenes, Total	ug/L	0.5	300	89%	90%	1%

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Mr. Bill Howell
Page 11

FOOTNOTES
for pages 9 through 10

July 22, 1993
PACE Project Number: 430709526

Client Reference: BP Station # 11104

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

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430709.526

B.P. OIL COMPANY

16400 Southcenter Parkway, Suite 301, Tukwila, WA 98188

CHAIN OF CUSTODY

№ 0102

pace INCORPORATED THE ASSURANCE OF QUALITY

☐ Novato, CA, 11 Digital Drive, 94949
Phone: (415) 883-6100 Fax: (415) 883-2673

☐ Huntington Beach, CA, 5702 Bolsa Avenue, 92649
Phone: (714) 892-2565 Fax: (714) 890-4032

Consultant's Name: ALISTO ENGINEERING	Consultant Project #: 10-155-01-001		Page 1 of 1
Address: 1777 OAKLAND BLVD., STE 200 WALNUT CREEK			
Project Contact: Bill Howell	Phone #: 5102951650	Fax #:	Consultant Work Order #: 10-155-01-001
Sampled by (print): Dan Burch	Sampler's Signature: D J Burch		B.P. Site Location #: BP11104
Shipment Method:	Airbill #:	Shipment Date: 7/9/93	B.P. Site Location: BP11104

TAT: ☐ 24 hr ☐ 48 hr ☐ 72 hr ☒ Standard (10 day)

Sample Condition as Received
Temperature ° C: _____
Cooler #: _____
Inbound Seal Yes No
Outbound Seal Yes No

Sample Description	Collection Date/Time	Matrix Soil/Water	Prsv	# of Cont	PACE Sample #	TPH/GAS/BTEX EPA 8015/8020	TPH/Diesel EPA 8015	TRPH EPA 418.1	HVOC 8010									COMMENTS
MW-1	7/9/93	W	Hcl	3	110653	X												
MW-2	↓	↓	↓	↓	66.1	X												
MW-3					67.0	X												
MW-4					68.8	X												
MW-5					69.6	X												
QC-1					70.0	X												
QC-2				2	71.8	X												
10/2																		

Relinquished by/Affiliation	Date	Time	Accepted by/Affiliation	Date	Time
[signature]	7/9	1745	[signature]-PACE	7/9	1600
D J Burch	7/9/93	1600	[signature]	7/9	1601

Additional Comments:

Distribution: White - Original Yellow - B.P. Oil Pink - Lab Goldenrod - Consultant Field Staff