BP OIL

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

93 NOV -2 AM 10:51

October 28, 1993

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

RE: BP OIL FACILITY #11105
3515 Castro Valley Blvd.
Castro Valley, CA

Dear Mr. So:

Attached please find our **GROUNDWATER MONITORING AND SAMPLING REPORT DATED OCTOBER 16, 1993** for the above referenced facility.

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

Respectfully,

Scott T. Hooton
Environmental Resources Management

STH:jc ERM11105

cc: Ms. Juliette Shin, Alameda County Health Care Services Agency, 80 Swan Way, Room 200, Oakland, Ca 94621

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. 11105
3515 Castro Valley Boulevard
Castro Valley, California

Project No. 10-138-01-002

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

[redacted]

Brady Nagle
Project Manager

Al Sevilla, P.E.
Principal

REGISTERED PROFESSIONAL ENGINEER
ALBERTO SANCHEZ SEVILLA
26392
Exp. Date 3/31/10
CIVIL
STATE OF CALIFORNIA

GROUNDWATER MONITORING AND SAMPLING REPORT

BP Oil Company Service Station No. 11105
3515 Castro Valley Boulevard
Castro Valley, California

Project No. 10-138-01-002

September 16, 1993

INTRODUCTION

This report presents the results and findings of the June 29, 1993 groundwater monitoring and sampling conducted by Alisto Engineering Group at BP Oil Company Service Station No. 11105, 3515 Castro Valley Boulevard, Castro Valley, 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 Water District 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. 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 collected during this and previous quarters are summarized in Table 1. The potentiometric groundwater elevations as interpreted from the results of this monitoring event are shown in Figure 2. The results of laboratory 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 MONITORING AND SAMPLING
BP OIL COMPANY SERVICE STATION NO. 11105
3515 CASTRO VALLEY BOULEVARD, CASTRO VALLEY, CALIFORNIA

ALISTO PROJECT NO. 10-138

WELL ID		DATE OF SAMPLING/ MONITORING	CASING ELEVATION (Feet) (a)	DEPTH TO WATER (Feet)	GROUNDWATER ELEVATION (Feet) (b)	TPH-G (ppb)	TPH-D (ppb)	B (ppb)	T (ppb)	E (ppb)	X (ppb)	TOG (ppb)	1,2-DCA (ppb)	LAB
ESE-1		10/05/92	182.49	11.22	171.27	2100	96	370	150	17	110	ND	1.8	---
ESE-1D	(c)	10/05/92	---	---	---	2300	---	370	160	16	110	---	---	---
ESE-1		04/01/93	182.49	8.79	173.70	5900	---	1500	410	110	390	---	---	PACE
ESE-1		06/29/93	182.49	10.34	172.15	7600		2900	390	130	460	---	---	PACE
ESE-2		10/05/92	181.95	11.68	170.27	300	---	5.4	16	3.9	45	---	---	---
ESE-2		04/01/93	181.95	9.17	172.78	240	---	27	ND<0.5	17	2.6	---	---	PACE
ESE-2		06/29/93	181.95	10.88	171.07	1700	---	260	24	110	23	---	---	PACE
QC-1	(c)	06/29/93	---	---	---	1300	---	240	17	110	25	---	---	PACE
ESE-3		10/05/92	182.00	10.58	171.42	430	---	57	31	3.6	34	---	---	---
ESE-3		04/01/93	182.00	8.14	173.86	2400	---	460	220	74	210	---	---	PACE
ESE-3		06/29/93	182.00	9.72	172.28	280	---	56	14	15	13	---	---	PACE
ESE-4		10/05/92	182.47	10.33	172.14	98	---	7.2	1.3	1.1	6.1	---	---	---
ESE-4		04/01/93	182.47	7.88	174.59	550	---	93	20	23	33	---	---	PACE
ESE-4		06/29/93	182.07 (d)	8.33	173.74	150	---	23	0.6	5.4	0.5	---	---	PACE
ESE-5		10/05/92	184.09	9.22	174.87	1300	---	200	3.8	1.2	18	---	---	---
ESE-5		04/01/93	184.09	7.02	177.07	13000	---	2200	26	730	1000	---	---	PACE
QC-1	(c)	04/01/93	---	---	---	13000	---	2500	25	740	1100	---	---	PACE
ESE-5		06/29/93	184.09	10.21	173.88	7600	---	1500	9.3	170	100	---	---	PACE
QC-2	(e)	04/01/93	---	---	---	ND<50	---	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	PACE
QC-2	(e)	06/29/93	---	---	---	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
1,2-DCA	1,2-dichloroethane
ppb	Parts per billion
ND	Not detected above reported detection limit
---	Not measured/analyzed/available
PACE	Pace, Inc.

NOTES:

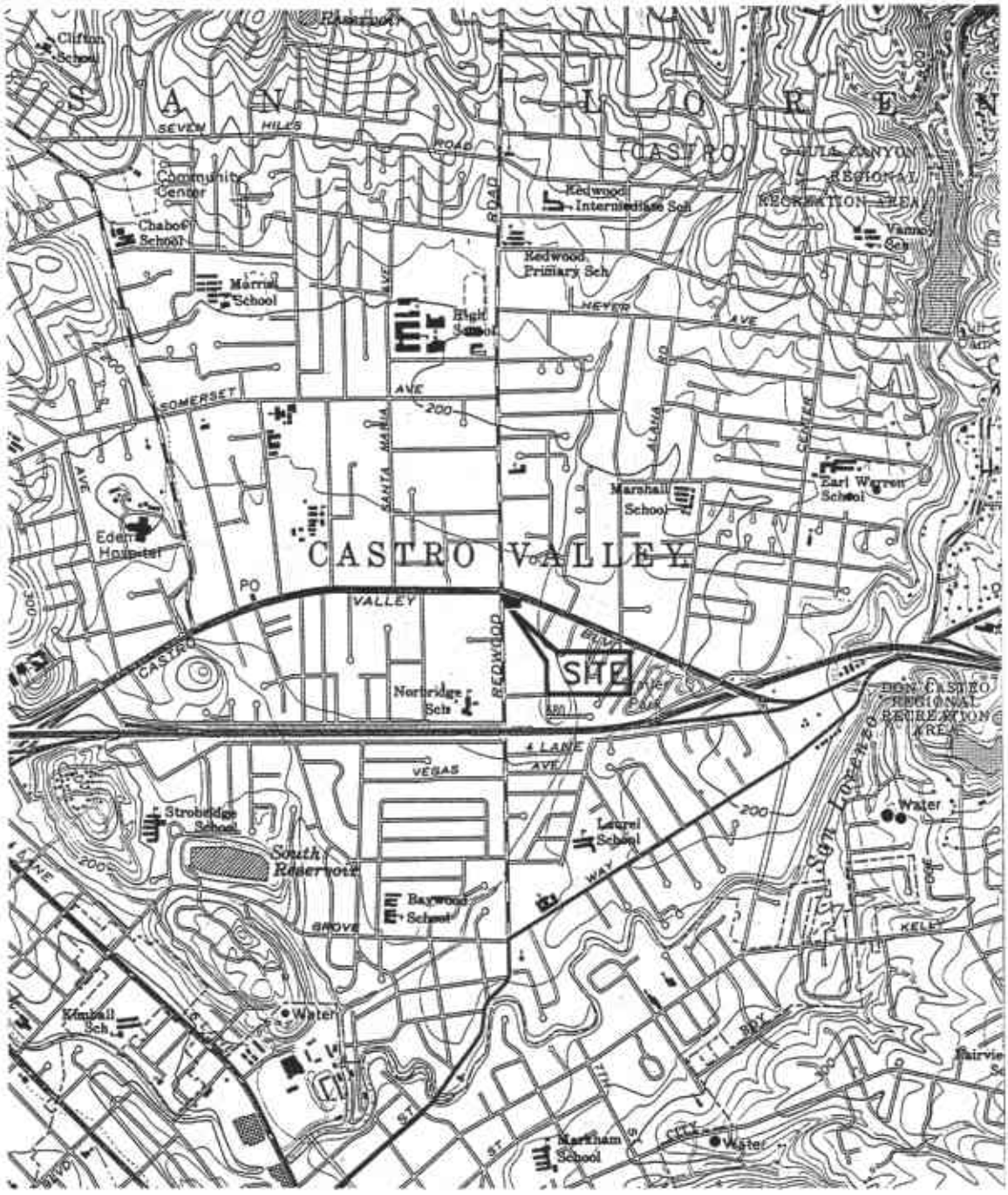
(a) Top of casing elevations relative to an arbitrary datum with an elevation of 264 feet above mean sea level.

(b) Groundwater elevations in feet relative to mean sea level.

(c) Blind duplicate.

(d) Top of casing lowered by 0.07 foot after the 4/1/93 monitoring event.

(f) Travel blank.



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

N

0 1000' 2000'

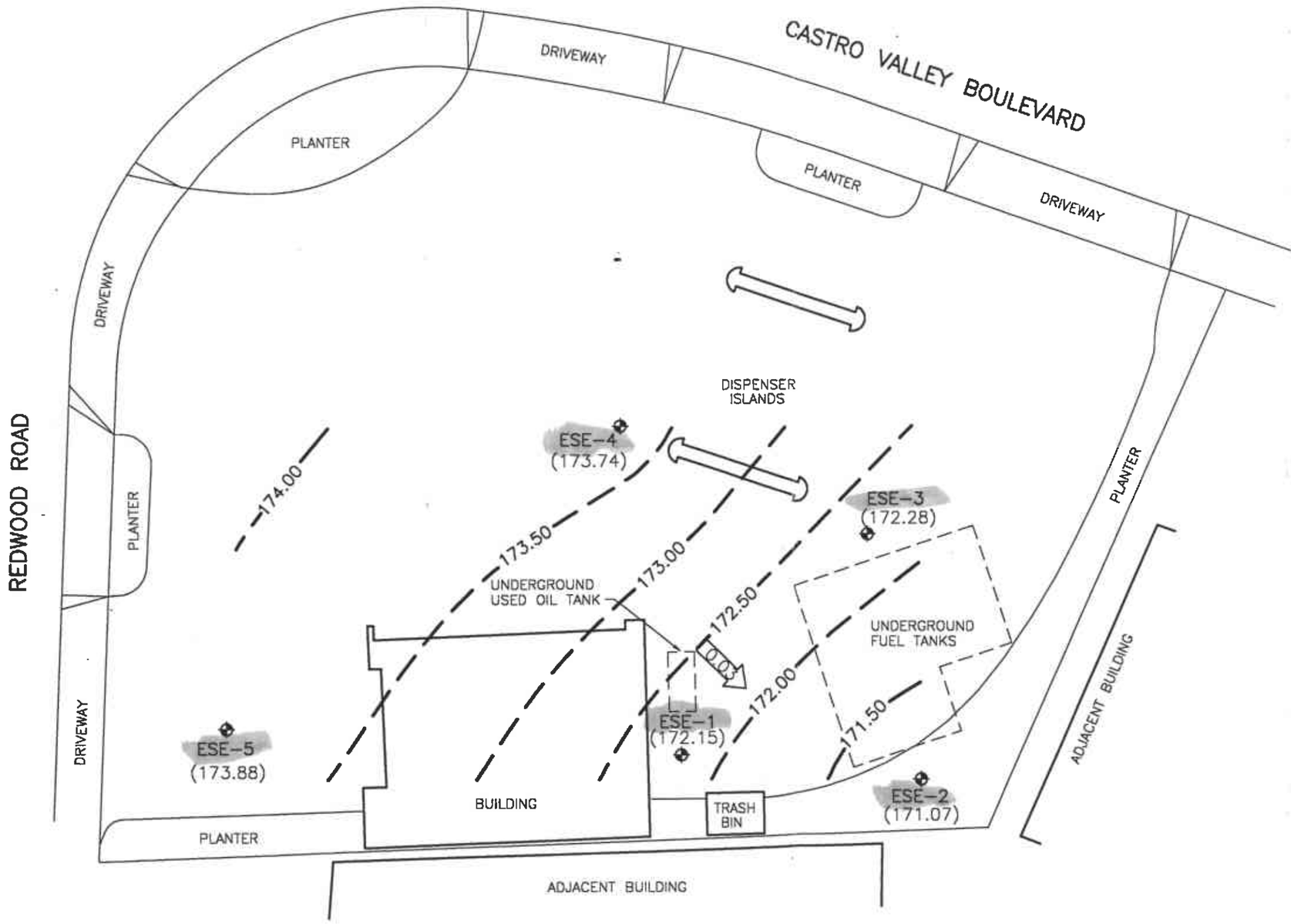
FIGURE 1

SITE VICINITY MAP

BP OIL SERVICE STATION NO. 11105
3515 CASTRO VALLEY BOULEVARD
CASTRO VALLEY, CALIFORNIA

PROJECT NO. 10-138

ALISTO ENGINEERING GROUP
WALNUT CREEK, CALIFORNIA



N

0 20 40

SCALE IN FEET

LEGEND

- ◆ GROUNDWATER MONITORING WELL
- (172.28) GROUNDWATER ELEVATION IN FEET ABOVE MEAN SEA LEVEL
- 172.00 GROUNDWATER ELEVATION CONTOUR IN FEET ABOVE MEAN SEA LEVEL (CONTOUR INTERVAL—0.50 FOOT)
- 0.03 CALCULATED GROUNDWATER GRADIENT DIRECTION AND MAGNITUDE IN FOOT PER FOOT

FIGURE 2

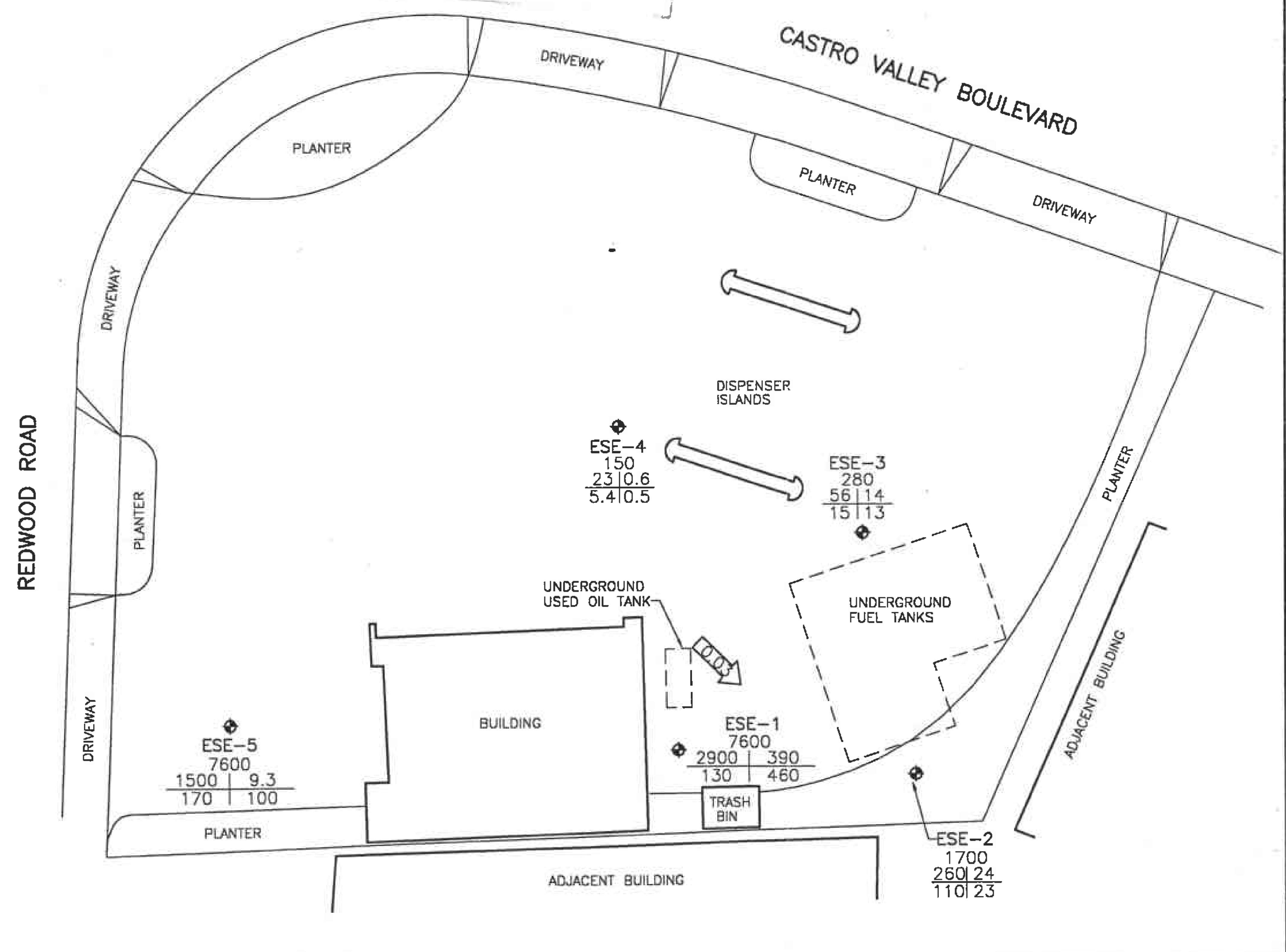
POTENTIOMETRIC GROUNDWATER ELEVATION CONTOUR MAP

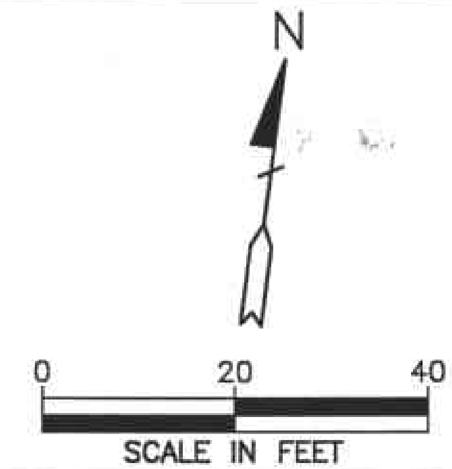
JUNE 29, 1993

BP OIL SERVICE STATION NO. 11105
3515 CASTRO VALLEY BOULEVARD
CASTRO VALLEY, CALIFORNIA

PROJECT NO. 10—138

ALISTO ENGINEERING GROUP
WALNUT CREEK, CALIFORNIA





LEGEND

Symbol	Description
⊕	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
⇦ 0.03	CALCULATED GROUNDWATER GRADIENT DIRECTION AND MAGNITUDE IN FOOT PER FOOT

FIGURE 3

CONCENTRATIONS OF PETROLEUM HYDROCARBONS IN GROUNDWATER

JUNE 29, 1993

BP OIL SERVICE STATION NO. 11105
3515 CASTRO VALLEY BOULEVARD
CASTRO VALLEY, CALIFORNIA

PROJECT NO. 10-138

ALISTO ENGINEERING GROUP
WALNUT CREEK, CALIFORNIA

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 ENG.	Date: 6/29/93	Station #: BA1105	Day: M (Tu) W Th F
Project Number: 10-138-01-002	Field Technician: DJ BIRCH	Address: 3615 CASTRO VALLEY BLVD CASTRO VALLEY	Weather: clear

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	ESE-1	ok	ok	30	10.34	10.34				2"
2	ESE-2	ok	ok	30	10.88	10.88				2"
3	ESE-3	ok	ok	30	9.72	9.72				2"
1	ESE-4	ok	ok	25	8.33	8.33				2"
4	ESE-5	ok	ok	24	10.21	10.21				2"

Notes: 1 Drum was left at site.

Birch Technical Services

GROUNDWATER SAMPLING FORM

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

Well Number: ESE-1

Project Number: 10-138-01-002

Station Number: BP11105

Date: 6/29/93

Sample Type: X Groundwater O Trip Blank O Duplicate 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 30 Initial Water Level: 10.34

Total Volume Purged: 10 Time Elapsed: 10

PURGE METHOD:
X Honda Pump
O Disposable PolyTubing (3 ft)
O Speed Winch
O Disposable PVC Bailer(s) (___)
O Other _____

Calculated Purge Volume:

30 (Total Depth) - 10.34 (Water Level) = 19.66 x .16 (Well Vol. Fac.) = 3.14 x 3 (#of vol. to Purge) = 9.43 (gallons) Calculated Purge Volume

Subjective Analysis Prior to Purging

SHEEN O Yes X No Depth to Product None (ft) Product Thickness None (ft)

COMMENTS:

PARAMETER EQUIPMENT CALIBRATION

pH Meter #: 9/12 Time: 1000

Solution pH 7.00 7 at 69 °F

Solution pH 4.00 4 at 69 °F

Solution pH 10.00 10 at 69 °F

Water Level Meter#: 10332

SAMPLING METHOD

X PVC Disposable Bailer
O Teflon Bailer
O Other: _____

Time Sampled (24 hour clock) 1214

WELL SAMPLING PARAMETERS

Gallons Removed	Time	Temp °F	pH	Cond. (umhos/cm)
3	1206	71.3	6.70	0.77
6	1209	70.5	6.64	0.76
10	1214	70.3	6.61	0.70

	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

GROUNDWATER SAMPLING FORM

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

Well Number: ESE-2

Project Number: 10-138-01-002

Sample Type: X Groundwater O Trip Blank O Duplicate of _____

Station Number: BP11105

Date: 6/29/93

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 30

Initial Water Level: 10.88

Total Volume Purged: 10

Time Elapsed: 10

PURGE METHOD:

X Honda Pump
O Disposable PolyTubing(33 ft)
O Speed Winch
O Disposable PVC Bailer(s)(____)
O Other _____

Calculated Purge Volume:

30.8 (Total Depth) - 10.88 (Water Level) = 19.12 x 1.6 (Well Vol. Fac.) = 3.05 x 3 (#of vol. to Purge) = 9.17 (gallons) Calculated Purge Volume

Subjective Analysis Prior to Purging

SHEEN O Yes X No | Depth to Product None (ft) | Product Thickness None (ft)

PARAMETER EQUIPMENT CALIBRATION

pH Meter #: 9112 Time: 1000

Solution pH 7.00 7 at 69 °F

Solution pH 4.00 4 at 69 °F

Solution pH 10.00 10 at 69 °F

Water Level Meter#: 10337

COMMENTS:

QC-1 is from ESE-2.

SAMPLING METHOD

X PVC Disposable Bailer
O Teflon Bailer
O Other: _____

Time Sampled (24 hour clock): 1119

WELL SAMPLING PARAMETERS

Gallons Removed	Time	Temp °F	pH	Cond. (umhos/cm)
1	1111	75.9	7.25	0.73
4	1113	70.6	7.31	0.70
7	1115	69.7	7.21	0.65
10	1119	69.6	7.21	0.66

	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: ESE-3

Project Number: 10-138-01-002
Station Number: BP11105
Date: 6/29/93

Sample Type: OGroundwater OTrip Blank ODuplicate of _____
Sampled by: _____

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 30
Initial Water Level: 9.72
Total Volume Purged: _____
Time Elapsed: _____

PURGE METHOD:
X Honda Pump
X Disposable PolyTubing(31 ft)
OSpeed Winch
ODisposable PVC Bailer(s)(____)
OOther_____

Calculated Purge Volume:

30 (Total Depth) - 9.72 (Water Level) = 20.2 x 1/6 (Well Vol. Fac.) = 3.24 x 3 (#of vol. to Purge) = 9.73 (gallons) Calculated Purge Volume

Subjective Analysis Prior to Purging

SHEEN OYes X No
Depth to Product None (ft)
Product Thickness None (ft)

COMMENTS:

PARAMETER EQUIPMENT CALIBRATION

pH Meter #: 9112 Time: 1000
Solution pH 7.00 7 at 69 °F
Solution pH 4.00 4 at 69 °F
Solution pH 10.00 10 at 69 °F
Water Level Meter#: 10337

SAMPLING METHOD

X OPVC Disposable Bailer
OTeflon Bailer
OOther: _____

Time Sampled (24 hour clock) 1135

WELL SAMPLING PARAMETERS

Gallons Removed	Time	Temp °F	pH	Cond. (umhos/cm)
3	1130	71.6	6.99	0.67
6	1132	71.6	6.92	0.70
10	1135	70.9	6.91	0.71

	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

GROUNDWATER SAMPLING FORM

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

Well Number: ESE-4

Project Number: 10-138-01-002
Station Number: BP1105
Date: 6/29/93

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 25 Initial Water Level: 8.33

Total Volume Purged: 8 Time Elapsed: 5

PURGE METHOD:
⊗Honda Pump
⊗Disposable PolyTubing(29 ft)
OSpeed Winch
ODisposable PVC Bailer(s)(____)
OOther_____

Calculated Purge Volume:

25 (Total Depth) - 8.33 (Water Level) = 16.67 x .16 (Well Vol. Fac.) = 2.66 x 3 (#of vol. to Purge) = 8.0 (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: 1000
Solution pH 7.00 7 at 69 °F
Solution pH 4.00 4 at 69 °F
Solution pH 10.00 10 at 69 °F
Water Level Meter#: 10337

SAMPLING METHOD

⊗PVC Disposable Bailer
OTeflon Bailer
OOther:_____

Time Sampled (24 hour clock): 1057

WELL SAMPLING PARAMETERS

Gallons Removed	Time	Temp °F	pH	Cond. (umhos/cm)
1	1053	71.7	7.31	0.71
5	1055	70.9	7.30	0.74
8	1057	70.7	7.22	0.74

	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

GROUNDWATER SAMPLING FORM

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

Well Number: ESE-5

Project Number: 10-138-01-002

Sample Type: XGroundwater OTrip Blank ODuplicate of _____

Station Number: BP11105

Date: 6/29/93

Sampled by: DAN BIRCH

WELL PURGING

PURGE VOLUME

Casing Diameter (inches) / Volume Factors:

X2"	O3"	O4"	O4.5"	O6"	O____
0.1632	0.3672	0.6528	0.826	1.469	_____

Total Depth of Well 24

Initial Water Level: 10.21

Total Volume Purged: 7

Time Elapsed: 6

PURGE METHOD:

XHonda Pump
ODisposable PolyTubing(25 ft)
OSpeed Winch
ODisposable PVC Bailer(s)(____)
OOther_____

Calculated Purge Volume:

24 (Total Depth) - 10.21 (Water Level) = 13.79 x 1/6 (Well Vol. Fac.) = 2.2 x 3 (#of vol. to Purge) = 6.7 (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: 1000

Solution pH 7.00 7 at 69 °F

Solution pH 4.00 4 at 69 °F

Solution pH 10.00 10 at 69 °F

Water Level Meter#: 10337

SAMPLING METHOD

XPVC Disposable Bailer
OTeflon Bailer
OOther:_____

Time Sampled (24 hour clock) 1153

WELL SAMPLING PARAMETERS

Gallons Removed	Time	Temp °F	pH	Cond. (umhos/cm)
3	1148	72.7	6.56	1.07
6	1151	74.2	6.51	1.09
7	1153	74.1	6.50	1.09

	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-1

Project Number: 10-138-01-002

Station Number: BP1105

Date: 6/29/93

Sample Type: OGroundwater OTrip Blank XDuplicate of ESE-2

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)

COMMENTS:

Duplicate of ESE-2.

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

OPVC 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	
X	TPH-G/BTEX	3	VOA's	HCl
	TPH- Diesel		Amber Liter	
	TOG 5520 BF		Amber Liter	H_2SO_4

Birch Technical Services

GROUNDWATER SAMPLING FORM

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

Well Number: QC-2

Project Number: 10-138-01-002

Sample Type: OGroundwater X OTrip Blank ODuplicate of _____

Station Number: BP1105

Sampled by: DAN BIRCH

Date: 6/29/93

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:

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 FROM PACE.

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

X PVC Disposable Bailer
O Teflon 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	
X	TPH-G/BTEX	2	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 14, 1993
PACE Project Number: 430629512

Attn: Mr. Bill Howell

Client Reference: BP Station # 11105

PACE Sample Number:			70 0105480	
Date Collected:			06/29/93	
Date Received:			06/29/93	
			ESE-1	
Parameter	Units	MDL		DATE ANALYZED
ORGANIC ANALYSIS				
PURGEABLE FUELS AND AROMATICS				
TOTAL FUEL HYDROCARBONS, (LIGHT):			-	07/06/93
Purgeable Fuels, as Gasoline (EPA 8015M)	ug/L	1200	7600	07/06/93
PURGEABLE AROMATICS (BTXE BY EPA 8020M):			-	07/06/93
Benzene	ug/L	12	2900	07/06/93
Toluene	ug/L	12	390	07/06/93
Ethylbenzene	ug/L	12	130	07/06/93
Xylenes, Total	ug/L	12	460	07/06/93

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

Mr. Bill Howell
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July 14, 1993
PACE Project Number: 430629512

Client Reference: BP Station # 11105

PACE Sample Number:			70 0105498	
Date Collected:			06/29/93	
Date Received:			06/29/93	
Client Sample ID:			ESE-2	
Parameter	Units	MDL		DATE ANALYZED
ORGANIC ANALYSIS				
PURGEABLE FUELS AND AROMATICS				
TOTAL FUEL HYDROCARBONS, (LIGHT):			-	07/06/93
Purgeable Fuels, as Gasoline (EPA 8015M)	ug/L	1200	1700	07/06/93
PURGEABLE AROMATICS (BTXE BY EPA 8020M):			-	07/06/93
Benzene	ug/L	12	260	07/06/93
Toluene	ug/L	12	24	07/06/93
Ethylbenzene	ug/L	12	110	07/06/93
Xylenes, Total	ug/L	12	23	07/06/93

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REPORT OF LABORATORY ANALYSIS

Mr. Bill Howell
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July 14, 1993
PACE Project Number: 430629512

Client Reference: BP Station # 11105

PACE Sample Number:			70 0105501	
Date Collected:			06/29/93	
Date Received:			06/29/93	
Client Sample ID:			ESE-3	
Parameter	Units	MDL		DATE ANALYZED
ORGANIC ANALYSIS				
PURGEABLE FUELS AND AROMATICS				
TOTAL FUEL HYDROCARBONS, (LIGHT):			-	07/06/93
Purgeable Fuels, as Gasoline (EPA 8015M)	ug/L	50	280	07/06/93
PURGEABLE AROMATICS (BTXE BY EPA 8020M):			-	07/06/93
Benzene	ug/L	0.5	56	07/06/93
Toluene	ug/L	0.5	14	07/06/93
Ethylbenzene	ug/L	0.5	15	07/06/93
Xylenes, Total	ug/L	0.5	13	07/06/93

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REPORT OF LABORATORY ANALYSIS

July 14, 1993
PACE Project Number: 430629512

Client Reference: BP Station # 11105

PACE Sample Number:			70 0105510	
Date Collected:			06/29/93	
Date Received:			06/29/93	
Client Sample ID:			ESE-4	
Parameter	Units	MDL		DATE ANALYZED
ORGANIC ANALYSIS				
PURGEABLE FUELS AND AROMATICS				
TOTAL FUEL HYDROCARBONS, (LIGHT):			-	07/07/93
Purgeable Fuels, as Gasoline (EPA 8015M)	ug/L	50	150	07/07/93
PURGEABLE AROMATICS (BTXE BY EPA 8020M):			-	07/07/93
Benzene	ug/L	0.5	23	07/07/93
Toluene	ug/L	0.5	0.6	07/07/93
Ethylbenzene	ug/L	0.5	5.4	07/07/93
Xylenes, Total	ug/L	0.5	0.5	07/07/93

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Mr. Bill Howell
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July 14, 1993
PACE Project Number: 430629512

Client Reference: BP Station # 11105

PACE Sample Number:			70 0105528	
Date Collected:			06/29/93	
Date Received:			06/29/93	
Client Sample ID:			ESE-5	
Parameter	Units	MDL		DATE ANALYZED
ORGANIC ANALYSIS				
PURGEABLE FUELS AND AROMATICS				
TOTAL FUEL HYDROCARBONS, (LIGHT):			-	07/07/93
Purgeable Fuels, as Gasoline (EPA 8015M)	ug/L	500	7600	07/07/93
PURGEABLE AROMATICS (BTXE BY EPA 8020M):			-	07/07/93
Benzene	ug/L	5.0	1500	07/07/93
Toluene	ug/L	5.0	9.3	07/07/93
Ethylbenzene	ug/L	5.0	170	07/07/93
Xylenes, Total	ug/L	5.0	100	07/07/93

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REPORT OF LABORATORY ANALYSIS

Mr. Bill Howell
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July 14, 1993
PACE Project Number: 430629512

Client Reference: BP Station # 11105

PACE Sample Number:			70 0105536	
Date Collected:			06/29/93	
Date Received:			06/29/93	
Client Sample ID:			QC-1	
Parameter	Units	MDL		DATE ANALYZED
ORGANIC ANALYSIS				
PURGEABLE FUELS AND AROMATICS				
TOTAL FUEL HYDROCARBONS, (LIGHT):			-	07/13/93
Purgeable Fuels, as Gasoline (EPA 8015M)	ug/L	50	1300	07/13/93
PURGEABLE AROMATICS (BTXE BY EPA 8020M):			-	07/13/93
Benzene	ug/L	0.5	240	07/13/93
Toluene	ug/L	0.5	17	07/13/93
Ethylbenzene	ug/L	0.5	110	07/13/93
Xylenes, Total	ug/L	0.5	25	07/13/93

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pace INCORPORATED
THE ASSURANCE OF QUALITY

REPORT OF LABORATORY ANALYSIS

Mr. Bill Howell
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July 14, 1993
PACE Project Number: 430629512

Client Reference: BP Station # 11105

PACE Sample Number:			70 0105544	
Date Collected:			06/29/93	
Date Received:			06/29/93	
Client Sample ID:			QC-2	
Parameter	Units	MDL		DATE ANALYZED
ORGANIC ANALYSIS				
PURGEABLE FUELS AND AROMATICS				
TOTAL FUEL HYDROCARBONS, (LIGHT):			-	07/07/93
Purgeable Fuels, as Gasoline (EPA 8015M)	ug/L	50	ND	07/07/93
PURGEABLE AROMATICS (BTXE BY EPA 8020M):			-	07/07/93
Benzene	ug/L	0.5	ND	07/07/93
Toluene	ug/L	0.5	ND	07/07/93
Ethylbenzene	ug/L	0.5	ND	07/07/93
Xylenes, Total	ug/L	0.5	ND	07/07/93

These data have been reviewed and are approved for release.

Darrell C. Cain
Regional Director

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

Mr. Bill Howell
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FOOTNOTES
for pages 1 through 7

July 14, 1993
PACE Project Number: 430629512

Client Reference: BP Station # 11105

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

July 14, 1993
PACE Project Number: 430629512

Client Reference: BP Station # 11105

PURGEABLE FUELS AND AROMATICS
Batch: 70 22534
Samples: 70 0105528, 70 0105536

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	94%	82%	13%
Benzene	ug/L	0.5	100	91%	89%	2%
Toluene	ug/L	0.5	100	93%	91%	2%
Ethylbenzene	ug/L	0.5	100	93%	94%	1%
Xylenes, Total	ug/L	0.5	300	97%	98%	1%

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Client Reference: BP Station # 11105

PURGEABLE FUELS AND AROMATICS
Batch: 70 22545
Samples: 70 0105480, 70 0105498, 70 0105501

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	96%	97%	1%
Benzene	ug/L	0.5	40.0	109%	108%	0%
Toluene	ug/L	0.5	40.0	104%	108%	3%
Ethylbenzene	ug/L	0.5	40.0	103%	105%	1%
Xylenes, Total	ug/L	0.5	120	97%	113%	15%

Mr. Bill Howell
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QUALITY CONTROL DATA

July 14, 1993
PACE Project Number: 430629512

Client Reference: BP Station # 11105

PURGEABLE FUELS AND AROMATICS
Batch: 70 22608
Samples: 70 0105510, 70 0105544

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	84%	82%	2%
Benzene	ug/L	0.5	100	90%	97%	7%
Toluene	ug/L	0.5	100	92%	100%	8%
Ethylbenzene	ug/L	0.5	100	95%	99%	4%
Xylenes, Total	ug/L	0.5	300	99%	103%	3%

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Mr. Bill Howell
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FOOTNOTES
for pages 9 through 11

July 14, 1993
PACE Project Number: 430629512

Client Reference: BP Station # 11105

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

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pace INCORPORATED THE ASSURANCE OF QUALITY

B.P. OIL COMPANY

16400 Southcenter Parkway, Suite 301, Tukwila, WA 98188

CHAIN OF CUSTODY

№ 0095

430629.512

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: AUSTO ENGINEERING	Consultant Project #: 10-138-01-002	Page 1 of 1
Address: 1777 OAKLAND BLVD., STE 200		
Project Contact: Bill Howe	Phone #: 5102951650 Fax #:	Consultant Work Order #:
Sampled by (print): Dan Bird	Sampler's Signature:	B.P. Site Location #: BP11105
Shipment Method: Sampler deliv. Airbill #:	Shipment Date: 6-25-93	B.P. Site Location: 3515 Castro Valley Blvd

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
ANALYSIS REQUIRED																		
ESE-1	6-25-93	W	HCl	3	10548.0	X												
ESE-2					49.8	X												
ESE-3					50.1	X												
ESE-4					51.0	X												
ESE-5					52.8	X												
QC-1					53.6	X												
QC-2				2	54.4	X												
5/1																		

Relinquished by/Affiliation	Date	Time	Accepted by/Affiliation	Date	Time	Additional Comments:
	6/29/93	1645	Sharon Brown PACE	6/29	1645	

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