



BP OIL

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

July 6, 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  
3519 Castro Valley Blvd.  
Castro Valley, CA

Dear Mr. So:


Attached please find our GROUNDWATER MONITORING AND SAMPLING REPORT for the above referenced facility.

The results contained within this report strengthens the indications that there is an offsite upgradient source of petroleum hydrocarbons contamination. We request that Alameda County Health Care Services Agency provide BP Oil with information on investigative results as to who the other Potentially Responsible Party (PRP) may be.

BP Oil is ready to co-ordinate sampling activities with the program initiated by such a PRP.

Please call me at (206) 394-5239 with questions regarding this submission.

Respectfully,

  
Pauline Reith  
Environmental Professional

PR:jc ERM11105

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

**GROUNDWATER MONITORING AND SAMPLING REPORT**

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

**Project No. 10-138**



**Prepared for:**

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

**OIL CO.  
ENVIRONMENTAL DEPT.  
REGION OFFICE**

**Prepared by:**

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

**June 18, 1993**

**Brady Nagle  
Project Manager**

**Al Sevilla, P.E.  
Principal**



# GROUNDWATER MONITORING AND SAMPLING REPORT

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

Project No. 10-138

June 18, 1993

## INTRODUCTION

This report presents the results and findings of the April 1, 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)	DEPTH TO WATER (Feet) (a)	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-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-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-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 (d)	7.88	174.59	550	--	93	20	23	33	--	--	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	(e) 04/01/93	--	--	--	13000	--	2500	25	740	1100	--	--	PACE
QC-2	(f) 04/01/93	--	--	--	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 limits  
 -- Not measured/analyzed/available  
 ANA Anametrix, Inc.  
 PACE Pace, Inc.

NOTES:

(a) Casing elevations relative to an arbitrary datum with an elevation of 264 feet above mean sea level.  
 (b) In feet relative to mean sea level.  
 (c) Duplicate of sample collected from ESE-1.  
 (d) Top of casing lowered by 0.07 foot after the 4/1/93 monitoring event.  
 (e) Blind duplicate of sample collected from ESE-5.  
 (f) Travel blank.

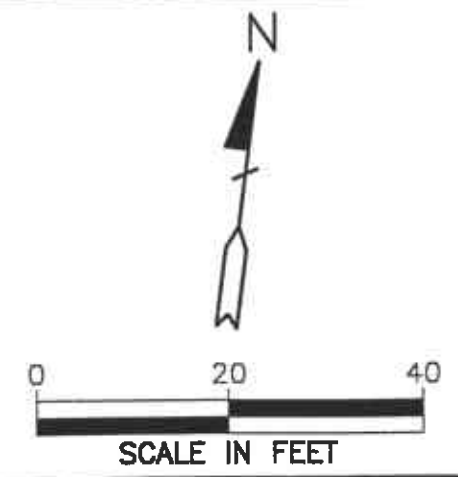
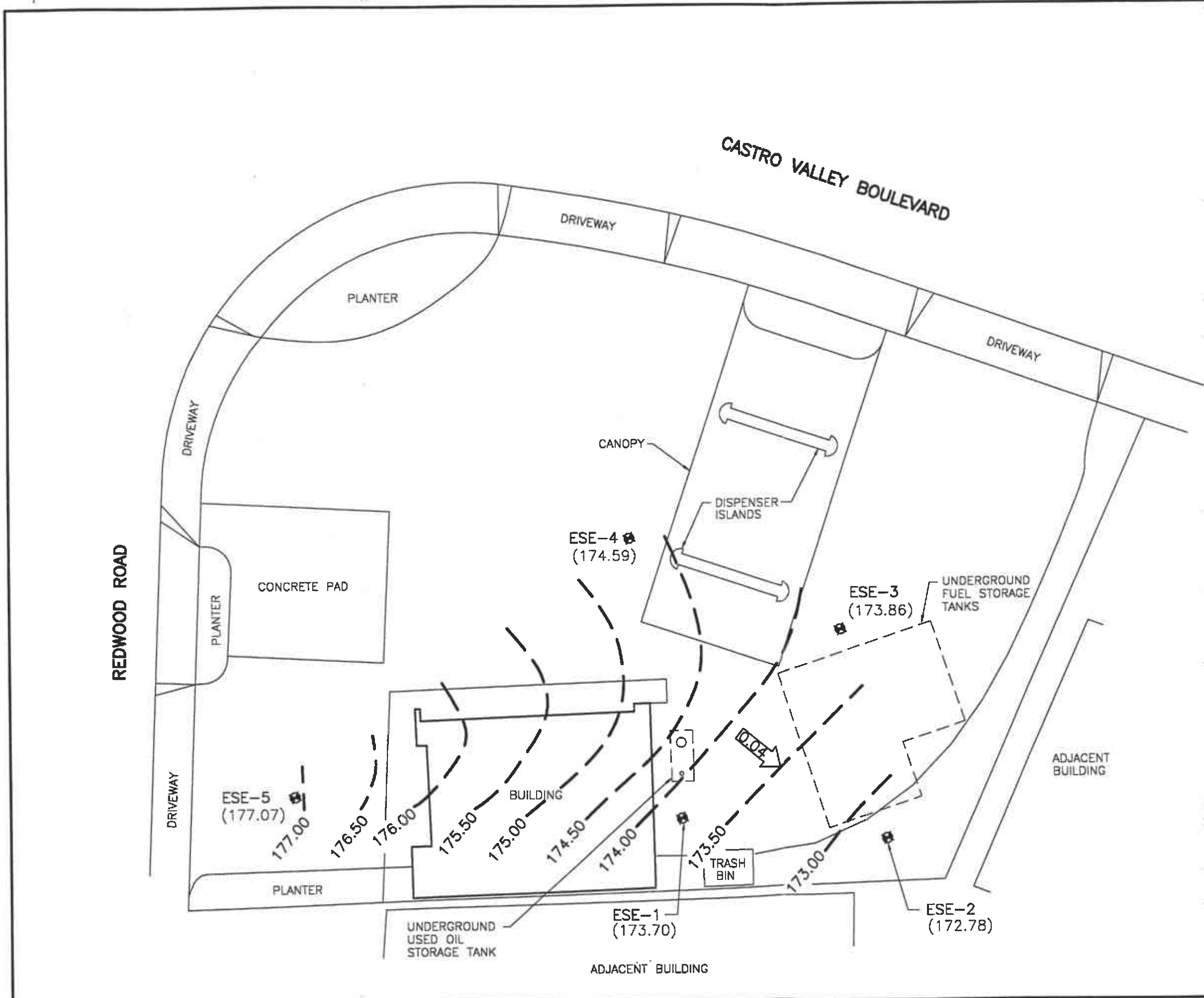


SOURCE:  
 USGS MAP, HAYWARD QUADRANGLE,  
 CALIFORNIA, 7.5 MINUTE SERIES, 1959.  
 PHOTOREVISED 1980.

**FIGURE 1**  
**SITE VICINITY MAP**

BP OIL SERVICE STATION NO. 11105  
 3515 CASTRO VALLEY BOULEVARD  
 CASTRO VALLEY, CALIFORNIA  
 PROJECT NO. 10-138

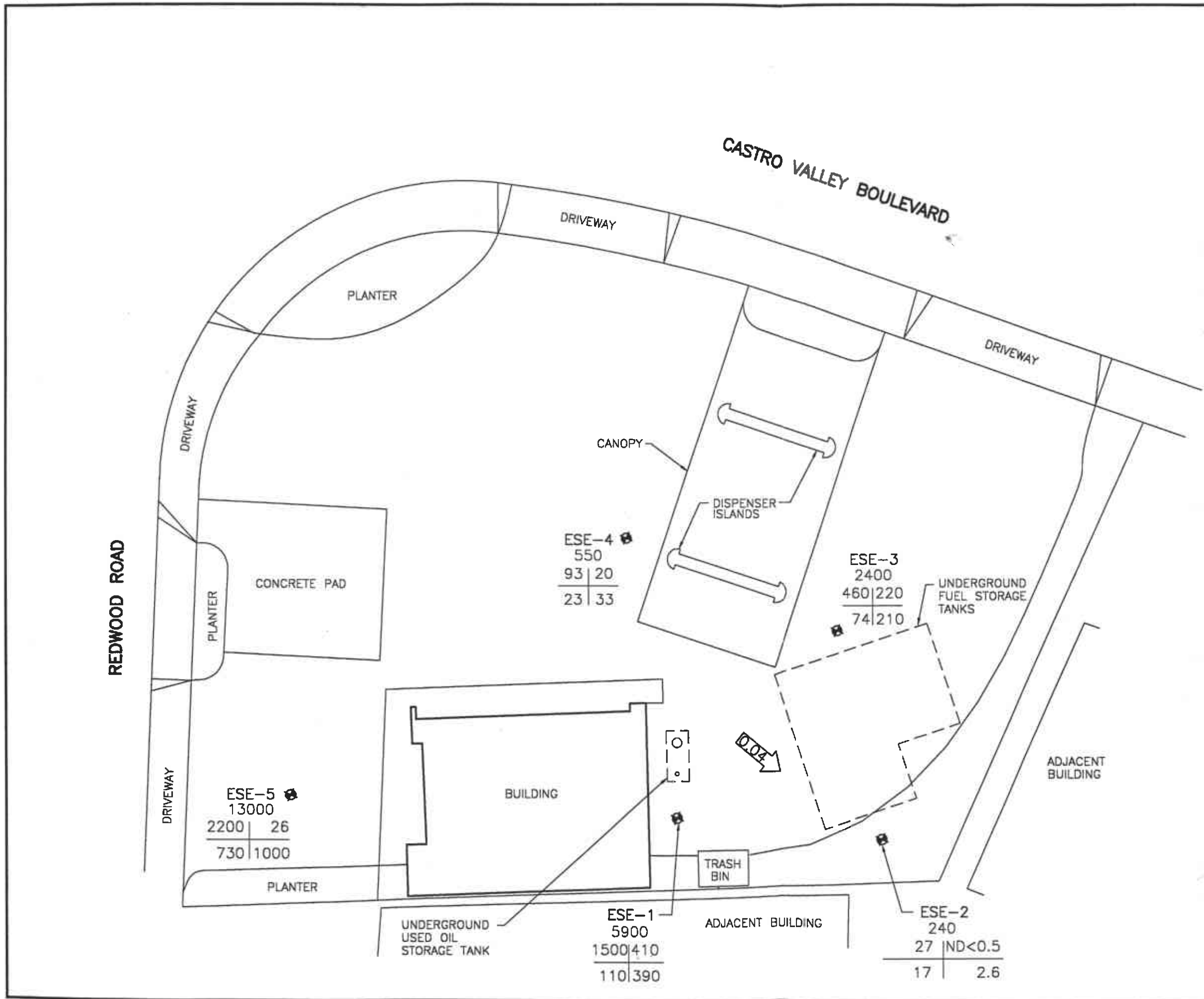




**LEGEND**

- ◆ GROUNDWATER MONITORING WELL
- (172.78) GROUNDWATER ELEVATION IN FEET ABOVE MEAN SEA LEVEL
- 175.00- GROUNDWATER ELEVATION CONTOUR IN FEET ABOVE MEAN SEA LEVEL (CONTOUR INTERVAL -0.00 FOOT)
- ←0.04 GROUNDWATER GRADIENT DIRECTION AND MAGNITUDE

**FIGURE 2**  
**POTENTIOMETRIC GROUNDWATER ELEVATION CONTOUR MAP**  
**APRIL 1, 1993**  
 BP OIL SERVICE STATION NO. 11105  
 3515 CASTRO VALLEY BOULEVARD  
 CASTRO VALLEY, CALIFORNIA  
 PROJECT NO. 10-138



**LEGEND**

- ◆ MONITORING WELL
- TPH-G CONCENTRATION OF CONSTITUENTS IN PARTS PER BILLION (PPB)
- B | T
- E | X
- TPH-G TOTAL PETROLEUM HYDROCARBONS AS GASOLINE
- B BENZENE
- T TOLUENE
- E ETHYLBENZENE
- X TOTAL XYLENES
- ND NOT DETECTED ABOVE REPORTED DETECTION LIMIT
- ←0.04 CALCULATED GROUNDWATER GRADIENT DIRECTION AND MAGNITUDE

**FIGURE 3**  
**CONCENTRATIONS OF PETROLEUM HYDROCARBONS IN GROUNDWATER**  
**APRIL 1, 1993**  
 BP OIL SERVICE STATION NO. 11105  
 3515 CASTRO VALLEY BLVD.  
 CASTRO VALLEY, CALIFORNIA  
 PROJECT NO. 10-138

**APPENDIX A**  
**WATER SAMPLING FIELD SURVEY FORMS**



Birch  
Technical  
Services

# Field Report / Data Sheet

Groundwater Sampling  Groundwater Monitoring  Well Development  Drill Support  Stockpile Sampling

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

Firm: ALISTO  
Project Number: 10-138

Date: 4/1/93  
Field Technician: Dan Birch

Station #: BP11105  
Address: 3515 Casho Valley

Day: M Tu W (Th) F  
Weather: Clear

DT/Worder	Well ID	Diam	Lock	Exp Cap	Total Depth (feet)	1st Depth to Water (feet)	2nd Depth to Water (feet)	Depth to Product (feet)	Product Thickness	Comments
	5 ESE-1	2	OK	OK	30.	8.79	8.79			
	2 ESE-2	2	OK	OK	30	9.17	9.17			
	3 ESE-3	2	OK	OK	30	8.14	8.14			
	1 ESE-4	2	OK	OK	25	7.88*	7.88*			Casing lowered 0.07'
	4 ESE-5	2	OK	OK	24	7.02	7.02			

Notes: \* Casing lowered after measurement of depth to water and sampling.





# Birch Technical Services

# GROUNDWATER SAMPLING FORM

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

Well Number: ESE-3

Project Number: 10-138

Sample Type:  Groundwater  Trip Blank  Duplicate of \_\_\_\_\_

Station Number: BP111DS

Date: 4 / 1 / 93

Sampled by: DAN BIRCH

## WELL PURGING

**PURGE VOLUME**

Casing Diameter (inches) 2" 03" 04" 04.5" 06" 0  
 Volume Factors: 0.1632 0.3672 0.6528 0.826 1.469 \_\_\_\_\_

Total Depth of Well 30

Initial Water Level: 8.14

**PURGE METHOD:**

Total Volume Purged: 11

Time Elapsed: 22

- Honda Pump
- Disposable Poly Tubing (32ft)
- Speed Winch
- Disposable PVC Bailer(s) (\_\_\_\_)
- Other \_\_\_\_\_

Calculated Purge Volume:

$$\frac{30}{\text{Total Depth}} - \frac{8.14}{\text{Water Level}} = \frac{21.86}{\text{Well Vol. Fac.}} \times \frac{.16}{\text{Well Vol. Fac.}} = \frac{3.49}{\text{Well Vol. Fac.}} \times \frac{3}{\text{\# of vol. to Purge}} = \frac{10.5}{\text{Calculated Purge Volume}} \text{ (gallons)}$$

### Subjective Analysis Prior to Purging

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

### PARAMETER EQUIPMENT CALIBRATION

pH Meter #: 9112 Time: 1432  
 Solution pH 7.00 7 at 70 °F  
 Solution pH 4.00 4 at 70 °F  
 Solution pH 10.00 10 at \_\_\_\_\_ °F  
 Water Level Meter#: 10337

COMMENTS:

*Purged dry @  
 9 gallons.*

### SAMPLING METHOD

PVC Disposable Bailer  Teflon Bailer  Other: \_\_\_\_\_  
 Time Sampled (24 hour clock) 1714

### WELL SAMPLING PARAMETERS

Gallons Removed	Time	Temp °F	pH	Cond. (umhos/cm)
3	1655	65.2	6.86	2.86
6	1657	66.4	6.75	3.00
9	1659	65.5	6.85	2.92
11	1714	65.1	6.87	2.94

Analysis Required	No. of	Container Type	Preservatives
EPA 601		VOA's	
<input checked="" type="checkbox"/> TPH-G/BTEX	3	VOA's	HCl
TPH- Diesel		Amber Liter	
TOG 5520 BF		Amber Liter	H <sub>2</sub> SO <sub>4</sub>



# Birch Technical Services

# GROUNDWATER SAMPLING FORM

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

Well Number: ESE-5

Project Number: 10-138  
 Station Number: BP11105  
 Date: 4/1/93

Sample Type:  Groundwater  Trip Blank  Duplicate of \_\_\_\_\_  
 Sampled by: DAN BIRCH

## WELL PURGING

PURGE VOLUME

Casing Diameter (inches) X 2" 03" 04" 04.5" 06" 0 \_\_\_\_\_  
 Volume Factors: 0.1632 0.3672 0.6528 0.826 1.469 \_\_\_\_\_

Total Depth of Well 24  
 Total Volume Purged: 9

Initial Water Level: 7.02  
 Time Elapsed: 5

PURGE METHOD:  
 Honda Pump  
 Disposable PolyTubing (26 ft)  
 Speed Winch  
 Disposable PVC Bailer(s) (\_\_\_\_)  
 Other \_\_\_\_\_

Calculated Purge Volume:

24 - 7.02 = \_\_\_\_\_ x .16 = \_\_\_\_\_ x 3 = \_\_\_\_\_ (gallons)  
 Total Depth    Water Level                      Well Vol. Fac.                      #of vol. to Purge                      Calculated Purge Volume

### Subjective Analysis Prior to Purging

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

### PARAMETER EQUIPMENT CALIBRATION

pH Meter #: 9112    Time: 1432  
 Solution pH 7.00 7 at 70 °F  
 Solution pH 4.00 4 at 70 °F  
 Solution pH 10.00 \_\_\_\_\_ at \_\_\_\_\_ °F  
 Water Level Meter#: 10337

### COMMENTS:

QC-1 from ESE-5.

### SAMPLING METHOD

PVC Disposable Bailer    Time Sampled (24 hour clock) 1804  
 Teflon Bailer  
 Other: \_\_\_\_\_

### WELL SAMPLING PARAMETERS

Gallons Removed	Time	Temp °F	pH	Cond. (umhos/cm)
3	1800	61.8	6.56	3.90
6	1802	64.0	6.45	4.24
9	1804	66.9	6.46	4.41

Analysis Required	No. of	Container Type	Preservatives
EPA 601		VOA's	
<input checked="" type="checkbox"/> TPH-G/BTEX	3	VOA's	HCl
TPH- Diesel		Amber Liter	
TOG 5520 BF		Amber Liter	H <sub>2</sub> SO <sub>4</sub>



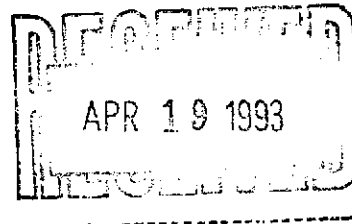




**APPENDIX B**

**LABORATORY REPORT AND CHAIN OF CUSTODY RECORD**

April 16, 1993



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

RE: PACE Project No. 430402.511  
Client Reference: BP Station # 11105

Dear Mr. Nagle:

Enclosed is the report of laboratory analyses for samples received April 02, 1993.

Footnotes are given at the end of the report.

If you have any questions concerning this report, please feel free to contact us.

Sincerely,

A handwritten signature in cursive script that reads "Stephanie Matzo".

Stephanie Matzo  
Project Manager

Enclosures



# REPORT OF LABORATORY ANALYSIS

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

April 16, 1993  
PACE Project Number: 430402511

Attn: Mr. Brady Nagle

Client Reference: BP Station # 11105

PACE Sample Number: 70 0041430  
Date Collected: 04/01/93  
Date Received: 04/02/93  
Client Sample ID: ESE-1

<u>Parameter</u>	<u>Units</u>	<u>MDL</u>	<u>DATE ANALYZED</u>
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## ORGANIC ANALYSIS

### PURGEABLE FUELS AND AROMATICS

TOTAL FUEL HYDROCARBONS, (LIGHT):		-	04/13/93
Purgeable Fuels, as Gasoline (EPA 8015M)	ug/L	250	5900
PURGEABLE AROMATICS (BTXE BY EPA 8020M):		-	04/13/93
Benzene	ug/L	2.5	1500
Toluene	ug/L	2.5	410
Ethylbenzene	ug/L	2.5	110
Xylenes, Total	ug/L	2.5	390

Mr. Brady Nagle  
 Page 2

April 16, 1993  
 PACE Project Number: 430402511

Client Reference: BP Station # 11105

PACE Sample Number: 70 0041449  
 Date Collected: 04/01/93  
 Date Received: 04/02/93  
 Client Sample ID: ESE-2

<u>Parameter</u>	<u>Units</u>	<u>MDL</u>	<u>DATE ANALYZED</u>
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ORGANIC ANALYSIS

PURGEABLE FUELS AND AROMATICS

TOTAL FUEL HYDROCARBONS, (LIGHT):			-	04/13/93
Purgeable Fuels, as Gasoline (EPA 8015M)	ug/L	50	240	04/13/93
PURGEABLE AROMATICS (BTXE BY EPA 8020M):			-	04/13/93
Benzene	ug/L	0.5	27(MT)	04/13/93
Toluene	ug/L	0.5	ND	04/13/93
Ethylbenzene	ug/L	0.5	17	04/13/93
Xylenes, Total	ug/L	0.5	2.6	04/13/93

Mr. Brady Nagle  
 Page 3

April 16, 1993  
 PACE Project Number: 430402511

Client Reference: BP Station # 11105

PACE Sample Number: 70 0041457  
 Date Collected: 04/01/93  
 Date Received: 04/02/93  
 Client Sample ID: ESE-3

<u>Parameter</u>	<u>Units</u>	<u>MDL</u>	<u>DATE ANALYZED</u>
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ORGANIC ANALYSIS

PURGEABLE FUELS AND AROMATICS			
TOTAL FUEL HYDROCARBONS, (LIGHT):		-	04/13/93
Purgeable Fuels, as Gasoline (EPA 8015M)	ug/L	50	2400
PURGEABLE AROMATICS (BTXE BY EPA 8020M):		-	04/13/93
Benzene	ug/L	0.5	460
Toluene	ug/L	0.5	220
Ethylbenzene	ug/L	0.5	74
Xylenes, Total	ug/L	0.5	210

**REPORT OF LABORATORY ANALYSIS**

Mr. Brady Nagle  
 Page 4

April 16, 1993  
 PACE Project Number: 430402511

Client Reference: BP Station # 11105

PACE Sample Number: 70 0041465  
 Date Collected: 04/01/93  
 Date Received: 04/02/93  
 Client Sample ID: ESE-4

<u>Parameter</u>	<u>Units</u>	<u>MDL</u>	<u>DATE ANALYZED</u>
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ORGANIC ANALYSIS

PURGEABLE FUELS AND AROMATICS

TOTAL FUEL HYDROCARBONS, (LIGHT):			-	04/13/93
Purgeable Fuels, as Gasoline (EPA 8015M)	ug/L	50	550	04/13/93
PURGEABLE AROMATICS (BTXE BY EPA 8020M):			-	04/13/93
Benzene	ug/L	0.5	93	04/13/93
Toluene	ug/L	0.5	20	04/13/93
Ethylbenzene	ug/L	0.5	23	04/13/93
Xylenes, Total	ug/L	0.5	33	04/13/93

**REPORT OF LABORATORY ANALYSIS**

Mr. Brady Nagle  
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April 16, 1993  
 PACE Project Number: 430402511

Client Reference: BP Station # 11105

PACE Sample Number: 70 0041473  
 Date Collected: 04/01/93  
 Date Received: 04/02/93  
 Client Sample ID: ESE-5

<u>Parameter</u>	<u>Units</u>	<u>MDL</u>	<u>DATE ANALYZED</u>
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ORGANIC ANALYSIS

PURGEABLE FUELS AND AROMATICS			
TOTAL FUEL HYDROCARBONS, (LIGHT):			
Purgeable Fuels, as Gasoline (EPA 8015M)	ug/L	250	13000
PURGEABLE AROMATICS (BTXE BY EPA 8020M):			
Benzene	ug/L	2.5	2200
Toluene	ug/L	2.5	26
Ethylbenzene	ug/L	2.5	730
Xylenes, Total	ug/L	2.5	1000

**REPORT OF LABORATORY ANALYSIS**

Mr. Brady Nagle  
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April 16, 1993  
 PACE Project Number: 430402511

Client Reference: BP Station # 11105

PACE Sample Number: 70 0041481  
 Date Collected: 04/01/93  
 Date Received: 04/02/93  
 Client Sample ID: QC-1

<u>Parameter</u>	<u>Units</u>	<u>MDL</u>	<u>DATE ANALYZED</u>
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ORGANIC ANALYSIS

PURGEABLE FUELS AND AROMATICS			
TOTAL FUEL HYDROCARBONS, (LIGHT):		-	04/13/93
Purgeable Fuels, as Gasoline (EPA 8015M)	ug/L	500	13000 04/13/93
PURGEABLE AROMATICS (BTXE BY EPA 8020M):			
Benzene	ug/L	5.0	2500 04/13/93
Toluene	ug/L	5.0	25 04/13/93
Ethylbenzene	ug/L	5.0	740 04/13/93
Xylenes, Total	ug/L	5.0	1100 04/13/93



Mr. Brady Nagle  
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April 16, 1993  
 PACE Project Number: 430402511

Client Reference: BP Station # 11105

PACE Sample Number: 70 0041490  
 Date Collected: 04/01/93  
 Date Received: 04/02/93  
 Client Sample ID: QC-2


<u>Parameter</u>	<u>Units</u>	<u>MDL</u>	<u>DATE ANALYZED</u>
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ORGANIC ANALYSIS

PURGEABLE FUELS AND AROMATICS

TOTAL FUEL HYDROCARBONS, (LIGHT):			-	04/13/93
Purgeable Fuels, as Gasoline (EPA 8015M)	ug/L	50	ND	04/13/93
PURGEABLE AROMATICS (BTXE BY EPA 8020M):			-	04/13/93
Benzene	ug/L	0.5	ND	04/13/93
Toluene	ug/L	0.5	ND	04/13/93
Ethylbenzene	ug/L	0.5	ND	04/13/93
Xylenes, Total	ug/L	0.5	ND	04/13/93

These data have been reviewed and are approved for release.



Darrell C. Cain  
 Regional Director

Mr. Brady Nagle  
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FOOTNOTES  
for pages 1 through 7

April 16, 1993  
PACE Project Number: 430402511

Client Reference: BP Station # 11105

MDL Method Detection Limit  
ND Not detected at or above the MDL.  
(MT) A peak eluting earlier than Benzene and suspected to be methyl tert butyl ether was present in your sample at approximately 123 ppb.

Mr. Brady Nagle  
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QUALITY CONTROL DATA

April 16, 1993  
 PACE Project Number: 430402511

Client Reference: BP Station # 11105

**PURGEABLE FUELS AND AROMATICS**

Batch: 70 20163  
 Samples: 70 0041490

**METHOD BLANK:**

Parameter	Units	MDL	Method Blank
<b>TOTAL FUEL HYDROCARBONS, (LIGHT):</b>			
Purgeable Fuels, as Gasoline (EPA 8015M)	ug/L	50	ND
<b>PURGEABLE AROMATICS (BTXE BY EPA 8020M)</b>			
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	103%	100%	2%
Benzene	ug/L	0.5	100	121%	135%	10%
Toluene	ug/L	0.5	100	99%	110%	10%
Ethylbenzene	ug/L	0.5	100	100%	110%	9%
Xylenes, Total	ug/L	0.5	300	99%	109%	9%

Mr. Brady Nagle  
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QUALITY CONTROL DATA

April 16, 1993  
 PACE Project Number: 430402511

Client Reference: BP Station # 11105

**PURGEABLE FUELS AND AROMATICS**

Batch: 70 20289

Samples: 70 0041430, 70 0041449, 70 0041457, 70 0041465, 70 0041473  
 70 0041481

**METHOD BLANK:**

Parameter	Units	MDL	Method Blank
<b>TOTAL FUEL HYDROCARBONS, (LIGHT):</b>			
Purgeable Fuels, as Gasoline (EPA 8015M)	ug/L	50	ND
<b>PURGEABLE AROMATICS (BTXE BY EPA 8020M)</b>			
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	Dup1 Recv	RPD
Purgeable Fuels, as Gasoline (EPA 8015M)	ug/L	50	1000	100%	98%	2%
Benzene	ug/L	0.5	40.0	93%	96%	3%
Toluene	ug/L	0.5	40.0	91%	99%	8%
Ethylbenzene	ug/L	0.5	40.0	90%	93%	3%
Xylenes, Total	ug/L	0.5	120	89%	93%	4%

Mr. Brady Nagle  
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FOOTNOTES  
for pages 9 through 10

April 16, 1993  
PACE Project Number: 430402511

Client Reference: BP Station # 11105

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



**B.P. OIL COMPANY**  
 16400 Southcenter Parkway, Suite 301, Tukwila, WA 98188  
**CHAIN OF CUSTODY**

430407.511

No 0965

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 #: **10-138** Page **1** of **1**

Address: **1777 OAKLAND Blvd, STE 200 WALNUT CREEK**

Project Contact: **Brady Nagle** Phone #: \_\_\_\_\_ Fax #: \_\_\_\_\_ Consultant Work Order #: **10-138**

Sampled by (print): **DAN BIRCH** Sampler's Signature: *[Signature]* B.P. Site Location #: **BP11105**

Shipment Method: \_\_\_\_\_ Airbill #: \_\_\_\_\_ Shipment Date: **4-2-93** B.P. Site Location: **CASTRO VALLEY**

TAT:  24 hr  48 hr  72 hr  Standard (10 day) ANALYSIS REQUIRED

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												
ESE-1	4-1-93	1827	1hr	3	4143.0	X																
ESE-2		1636			44.9	X																
ESE-3		1714			45.7	X																
ESE-4		1728			46.5	X																
ESE-5		1804			47.3	X																
QC-1		1810			48.1	X																
QC-2				2	49.0	X																
10/1																						

Relinquished by/Affiliation	Date	Time	Accepted by/Affiliation	Date	Time	Additional Comments:
<i>[Signature]</i> BLS	4/2/93	1217	<i>[Signature]</i> PACE	4/2/93	1215	