Ver
10/5/92

BP OIL

BP Oil Company
Aetna Bldg., Suite 360
2868 Prospect Park Drive
Rancho Cordova, California 95670-6020
(916) 631-0733

September 30, 1992

Mr. Rafat Shahid
Alameda County Health Agency
80 Swan Way, Room 200
Oakland, CA 94621

RE: BP OIL FACILITY #11116
7197 VILLAGE PARKWAY
DUBLIN, CA

Dear Mr. Shahid,

Attached please find the Quarterly Groundwater Monitoring and Sampling Report for above referenced facility. The sampling event occurred on August 12, 1992.

Please call me at (206) 394-5246 with any questions regarding this submission.

Respectfully,

Peter J. DeSantis

Peter J. DeSantis sml
Environmental Resources Management

PJD:sml

cc: Brady Nagle - Alisto Engineering
Eddy So - RWQCB San Francisco Bay Region
David Baker - Mobil Oil Co.
Site File

Rec
10/5/92

QUARTERLY GROUNDWATER MONITORING AND SAMPLING REPORT

Prepared for

BP Oil Company Service Station No. 11116
7197 Village Parkway
Dublin, California

Project No. 10-017

Prepared by

Alisto Engineering Group
1000 Burnett Avenue, Suite 420
Concord, California (510) 798-4070

September 6, 1992

Brady Nagle
Project Manager

Al Sevilla, P.E.
Principal

QUARTERLY GROUNDWATER MONITORING AND SAMPLING REPORT

BP Oil Company Service Station No. 11116
7197 Village Parkway
Dublin, California

Project No. 10-017

September 6, 1992

INTRODUCTION

This report presents the results and findings of the August 12, 1992 quarterly groundwater monitoring and sampling conducted by Alisto Engineering Group at BP Oil Service Station No. 11116, located at 7197 Village Parkway, Dublin, California. A site vicinity map is shown in Figure 1.

FIELD PROCEDURES

Field activities were performed in accordance with the guidelines and procedures of the Regional Water Quality Control Board, San Francisco Bay Region (RWQCB), and the Alameda County Health Agency (ACHA).

Prior to purging and sampling, the ground water 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 ground water and the top of casing elevation data were used to calculate the ground water elevation within each well in reference to mean sea level. The survey data and ground water elevation measurements collected to date are presented in Table 1.

Results of depth to groundwater measurements, performed concurrently with the neighboring Unocal Oil Company service station at 7375 Amador Valley Boulevard, and the Shell Oil Company service station at 7194 Amador Valley Boulevard, are presented in Tables 2 and 3, respectively.

Prior to sample collection, each well was purged of three casing volumes, while recording field readings of pH, temperature, and electrical conductivity. Ground water samples for laboratory analysis were collected by lowering a bottom-fill, disposable bailer to just below the water level in the well. The samples were carefully transferred from the bailer into the appropriate clean glass containers. The water sampling field survey forms are presented in Appendix A

SAMPLING AND ANALYTICAL RESULTS

The results of the monitoring and laboratory analyses 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 coordinated monitoring event are depicted in Figure 2. A map showing the lateral distribution of petroleum hydrocarbon constituents detected in groundwater samples collected at the BP Oil site is presented as Figure 3. Laboratory reports and the chain of custody record are presented in Appendix B.

SUMMARY OF FINDINGS

The findings of the August 12, 1992 ground water monitoring and sampling event are summarized below:

- No free product or sheen was detected in any of the six monitoring wells.
- Groundwater elevation data indicate a gradient of approximately 0.004 foot per foot in a general south-southeast direction across the BP Oil site.
- Dissolved-phase total petroleum hydrocarbons as gasoline (TPH-G) were detected two of the six monitoring wells (AW-5 and AW-6) at a concentration of up to 80 parts per billion (ppb). Benzene, toluene, ethylbenzene, and total xylenes were not detected above method detection limits, with the exception of 4.5 ppb benzene detected in the sample collected from Monitoring Well AW-6.
- Concentrations of petroleum hydrocarbon constituents detected in groundwater samples collected from Monitoring Well AW-6 have decreased between February and August 1992.
- Total petroleum hydrocarbons as diesel, total oil and grease, and halogenated volatile organic compounds were not detected above method detection limits in groundwater samples collected from Monitoring Wells MW-1, MW-2, or MW-3.

TABLE 1 - SUMMARY OF RESULTS OF GROUNDWATER SAMPLING
BP OIL COMPANY SERVICE STATION 11116
7197 VILLAGE PARKWAY, DUBLIN, CALIFORNIA

ALISTO PROJECT NO. 10-017

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)	TPH-D (ppb)	TOG (ppb)	HVOC (ppb)	LAB
MW-1	10/12/90	335.17	9.92	325.25	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<50	ND<5,000	ND	ANA
MW-1	11/15/90	335.17	10.16	325.01	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	----	----	----	ANA
MW-1	12/11/90	335.17	9.97	325.20	----	----	----	----	----	----	----	----	----
MW-1	02/15/91	335.17	9.89	325.28	ND<50	ND<0.3	ND<0.3	ND<0.3	ND<0.3	50	ND<5,000	41 (c)	SUP
MW-1	05/14/91	335.17	8.43	326.74	ND<50	ND<0.3	ND<0.3	ND<0.3	ND<0.3	ND<50	7,500	ND	SUP
MW-1	08/23/91	335.17	9.98	325.19	ND<50	ND<0.3	ND<0.3	ND<0.3	ND<0.3	ND<50	ND<5,000	ND	ANA
MW-1	11/13/91	335.17	10.09	325.08	ND<30	ND<0.3	ND<0.3	ND<0.3	ND<0.3	ND<50	ND<5,000	ND	SEQ
MW-1	02/25/92	335.17	8.28	326.89	ND<30	ND<0.3	ND<0.3	ND<0.3	ND<0.3	ND<50	ND<5,000	ND	SEQ
MW-1	04/15/92	335.17	8.50	326.67	----	----	----	----	----	----	----	----	----
MW 1	06/03/92	335.17	9.06	326.11	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<50	ND<5,000	ND	ANA
MW-1	08/12/92	335.17	10.01	325.16	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<50	ND<5,000	ND (d)	ANA
MW-2	10/12/90	334.58	9.60	324.98	93	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<50	ND<5,000	ND	ANA
MW-2	11/15/90	334.58	9.68	324.90	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	----	----	----	ANA
MW-2	12/11/90	334.58	9.47	325.11	----	----	----	----	----	----	----	----	----
MW-2	02/15/91	334.58	9.28	325.30	ND<50	ND<0.3	ND<0.3	ND<0.3	ND<0.3	60 (e)	ND<5,000	45 (c)	SUP
MW-2	05/14/91	334.58	7.74	326.84	130 (e)	ND<0.3	ND<0.3	ND<0.3	ND<0.3	ND<50	6,000	ND	SUP
MW-2	08/23/91	334.58	9.81	324.77	ND<50	ND<0.3	ND<0.3	ND<0.3	ND<0.3	ND<50	ND<5,000	ND	ANA
MW-2	11/13/91	334.58	9.73	324.85	ND<30	ND<0.3	ND<0.3	ND<0.3	ND<0.3	ND<50	ND<5,000	ND	SEQ
MW 2	02/25/92	334.58	7.55	327.03	ND<30	ND<0.3	ND<0.3	ND<0.3	ND<0.3	ND<50	ND<5,000	ND	SEQ
MW-2	04/15/92	334.58	8.00	326.58	----	----	----	----	----	----	----	----	----
MW-2	06/03/92	334.58	8.56	326.02	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<50	ND<5,000	ND	ANA
MW-2	08/12/92	334.58	9.62	324.96	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<50	ND<5,000	ND (d)	ANA

TABLE 1 - SUMMARY OF RESULTS OF GROUNDWATER SAMPLING
BP OIL COMPANY SERVICE STATION 11116
7197 VILLAGE PARKWAY, DUBLIN, CALIFORNIA

ALISTO PROJECT NO. 10-017

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)	TPH-D (ppb)	TOG (ppb)	HVOC (ppb)	LAB
MW-3	10/12/90	335 13	10.08	325.05	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<50	ND<5,000	ND	ANA
MW-3	11/15/90	335 13	10.12	325.01	76	ND<0.5	ND<0.5	ND<0.5	ND<0.5	----	----	----	ANA
MW-3	12/11/90	335 13	9.92	325.21	----	----	----	----	----	----	----	----	----
MW-3	02/15/90	335 13	9.84	325.29	ND<50	ND<0.3	ND<0.3	ND<0.3	ND<0.3	ND<50	ND<5,000	ND	SUP
MW-3	05/14/91	335 13	8.40	326.73	ND<50	ND<0.3	ND<0.3	ND<0.3	ND<0.3	ND<50	ND<5,000	ND	SUP
MW-3	08/23/91	335 13	10.27	324.86	ND<50	ND<0.3	ND<0.3	ND<0.3	ND<0.3	ND<50	ND<5,000	ND	ANA
MW-3	11/13/91	335 13	10.27	324.86	ND<30	ND<0.3	ND<0.3	ND<0.3	ND<0.3	ND<50	ND<5,000	ND	SEQ
MW-3	02/25/92	335 13	8.15	326.98	ND<30	ND<0.3	ND<0.3	ND<0.3	ND<0.3	ND<50	ND<5,000	ND	SEQ
MW-3	04/15/92	335 13	8.63	326.50	----	----	----	----	----	----	----	----	----
MW-3	06/03/92	335 13	9.18	325.95	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<50	ND<5,000	ND	ANA
MW-3	08/12/92	335 13	10.18	324.95	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<50	ND<5,000	ND (d)	ANA
AW-4	11/15/90	333 41	8.51	324.90	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	----	----	----	ANA
AW-4	12/11/90	333 41	9.19	324.22	----	----	----	----	----	----	----	----	----
AW-4	02/15/91	333 41	8.32	325.09	ND<50	ND<0.3	ND<0.3	ND<0.3	ND<0.3	----	----	----	SUP
AW-4	05/14/91	333 41	6.97	326.44	ND<50	ND<0.3	ND<0.3	ND<0.3	ND<0.3	----	----	----	SUP
AW-4	08/23/91	333 41	8.59	324.82	ND<50	ND<0.3	ND<0.3	ND<0.3	ND<0.3	----	----	----	ANA
AW-4	11/13/91	333 41	8.57	324.84	ND<30	ND<0.3	ND<0.3	ND<0.3	ND<0.3	----	----	----	SEQ
AW-4	02/25/92	333 41	6.26	327.15	ND<30	ND<0.3	ND<0.3	ND<0.3	ND<0.3	----	----	----	SEQ
AW-4	04/15/92	333 41	7.05	326.36	----	----	----	----	----	----	----	----	----
AW 4	06/03/92	333 41	7.41	326.00	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	----	----	----	ANA
AW-4	08/12/92	333 41	8.45	324.96	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	----	----	----	ANA
AW 5	11/15/90	334 81	9.67	325.14	ND<50	1.3	ND<0.5	ND<0.5	1.0	----	----	----	ANA
AW-5	12/11/90	334 81	9.44	325.37	----	----	----	----	----	----	----	----	----
AW-5	02/15/91	334 81	10.00	324.81	ND<50	ND<0.3	ND<0.3	ND<0.3	ND<0.3	----	----	----	SUP
AW 5	05/14/91	334 81	8.64	326.17	ND<50	ND<0.3	ND<0.3	ND<0.3	ND<0.3	----	----	----	SUP
AW-5	08/23/91	334 81	9.58	325.23	ND<50	ND<0.3	ND<0.3	ND<0.3	ND<0.3	----	----	----	ANA
AW 5	11/13/91	334 81	9.80	325.01	100	ND<0.3	ND<0.3	ND<0.3	ND<0.3	----	----	----	SEQ
AW-5	02/25/92	334 81	7.89	326.92	ND<30	ND<0.3	ND<0.3	ND<0.3	ND<0.3	----	----	----	SEQ
AW-5	04/15/92	334 81	8.54	326.27	----	----	----	----	----	----	----	----	----
AW-5	06/03/92	334 81	8.97	325.84	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	----	----	----	ANA
AW-5	08/12/92	334 81	9.73	325.08	61	ND<0.5	ND<0.5	ND<0.5	ND<0.5	----	----	----	ANA

TABLE 1 - SUMMARY OF RESULTS OF GROUNDWATER SAMPLING
BP OIL COMPANY SERVICE STATION 11116
7197 VILLAGE PARKWAY, DUBLIN, CALIFORNIA

ALISTO PROJECT NO. 10-017

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)	TPH-D (ppb)	TOG (ppb)	HVOC (ppb)	LAB
AW-6	11/15/90	334.90	9.58	325.32	230	25	ND<0.5	ND<0.5	0.8	----	----	----	ANA
AW-6	12/11/90	334.90	9.58	325.32	----	----	----	----	----	----	----	----	----
AW-6	02/15/91	334 90	9.66	325.24	ND<50	ND<0.3	ND<0.3	ND<0.3	ND<0.3	----	----	----	SUP
AW-6	05/14/91	334 90	8.38	326.52	90	2	ND<0.3	ND<0.3	ND<0.3	----	----	----	SUP
AW-6	08/23/91	334 90	9.61	325.29	57	ND<0.5	0.7	1.3	4.6	----	----	----	ANA
AW-6	11/13/91	334 90	9.58	325.32	200	ND<0.3	ND<0.3	ND<0.3	0.94	----	----	----	SEQ
AW-6	02/25/92	334 90	8.00	326.90	19000	8000	4700	600	2400	----	----	----	SEQ
AW-6	03/05/92	334 90	7.98	326.92	14000	5200	2500	550	2200	----	----	----	SEQ
AW-6	04/15/92	334 90	8.33	326.57	1100	400	ND<3.0	30	ND<3.0	----	----	----	SEQ
AW-6	06/03/92	334 90	8.91	325.99	77	4.4	ND<0.5	ND<0.5	ND<0.5	----	----	----	ANA
AW-6	08/12/92	334 90	9.61	325.29	80	4.5	ND<0.5	ND<0.5	ND<0.5	----	----	----	ANA

ABBREVIATIONS

TPH-G	Total Petroleum Hydrocarbons as Gasoline
B	Benzene
T	Toluene
E	Ethylbenzene
X	Xylenes
TPH-D	Total Petroleum Hydrocarbons as Diesel
TOG	Total Oil and Grease
HVOC	Halogenated Volatile Organic Compounds
(ppb)	Parts per Billion
ND	Not detected above reported detection limits
ANA	Anametrix, Inc
SEQ	Sequoia Analytical Lab
SUP	Superior Analytical Laboratory

NOTES:

(a) Top of casing elevation for all wells surveyed in reference to the City of Dublin monument in the intersection of Village Parkway and Amador Valley Boulevard with an elevation of 335.92 feet above Mean Sea Level.

(b) In feet above Mean Sea Level

(c) Methylene Chloride

(d) HVOCs not detected at or above detection limits of 0.5 or 1.0 ppb.

(e) Typical chromatogram patterns not present.

TABLE 2 - SUMMARY OF RESULTS OF GROUNDWATER MONITORING
UNOCAL OIL COMPANY SERVICE STATION
7375 AMADOR VALLEY BOULEVARD, DUBLIN, CALIFORNIA

ALISTO PROJECT NO. 10-017

WELL ID	DATE OF MONITORING	CASING ELEVATION **(a)** (Feet)	DEPTH TO WATER (Feet)	GROUNDWATER ELEVATION **(b)** (Feet)
MW-1	08/12/92	336.72	11.32	325.40
MW-2	08/12/92	337.36	11.48	325.88
MW-3	08/12/92	337.53	11.64	325.89
MW-4	08/12/92	337.00	11.62	325.38

NOTES:

(a) Top of casing elevations for all well surveyed to the nearest 0.01 foot above Mean Sea Level.

(b) Groundwater elevation in feet above Mean Sea Level.

TABLE 3 - SUMMARY OF RESULTS OF GROUNDWATER MONITORING
SHELL OIL COMPANY SERVICE STATION
7194 AMADOR VALLEY BOULEVARD, DUBLIN, CALIFORNIA

ALISTO PROJECT NO. 10-017

WELL ID	DATE OF MONITORING	CASING ELEVATION (a) (Feet)	DEPTH TO WATER (Feet)	GROUNDWATER ELEVATION (b) (Feet)
MW-1	08/12/92	334.83	9.15	325.68
MW-2	08/12/92	336.96	11.58	325.38
MW-3	08/12/92	336.93	10.94	325.99
MW-4	08/12/92	337.14	11.36	325.78
MW-5	08/12/92	334.96	9.40	325.56
MW-6	08/12/92	335.42	9.72	325.70
MW-7	08/12/92	333.23	8.65	324.58
MW-8	08/12/92	335.80	9.82	325.98
MW-9	08/12/92	334.57	8.97	325.60
MW-10 (c)	---	---	---	---
MW-11	08/12/92	334.20	8.75	325.45
MW-12	08/12/92	332.53	9.83	322.70
MW-13	08/12/92	335.64	10.91	324.73
RW-1 (d)	08/12/92	---	---	---

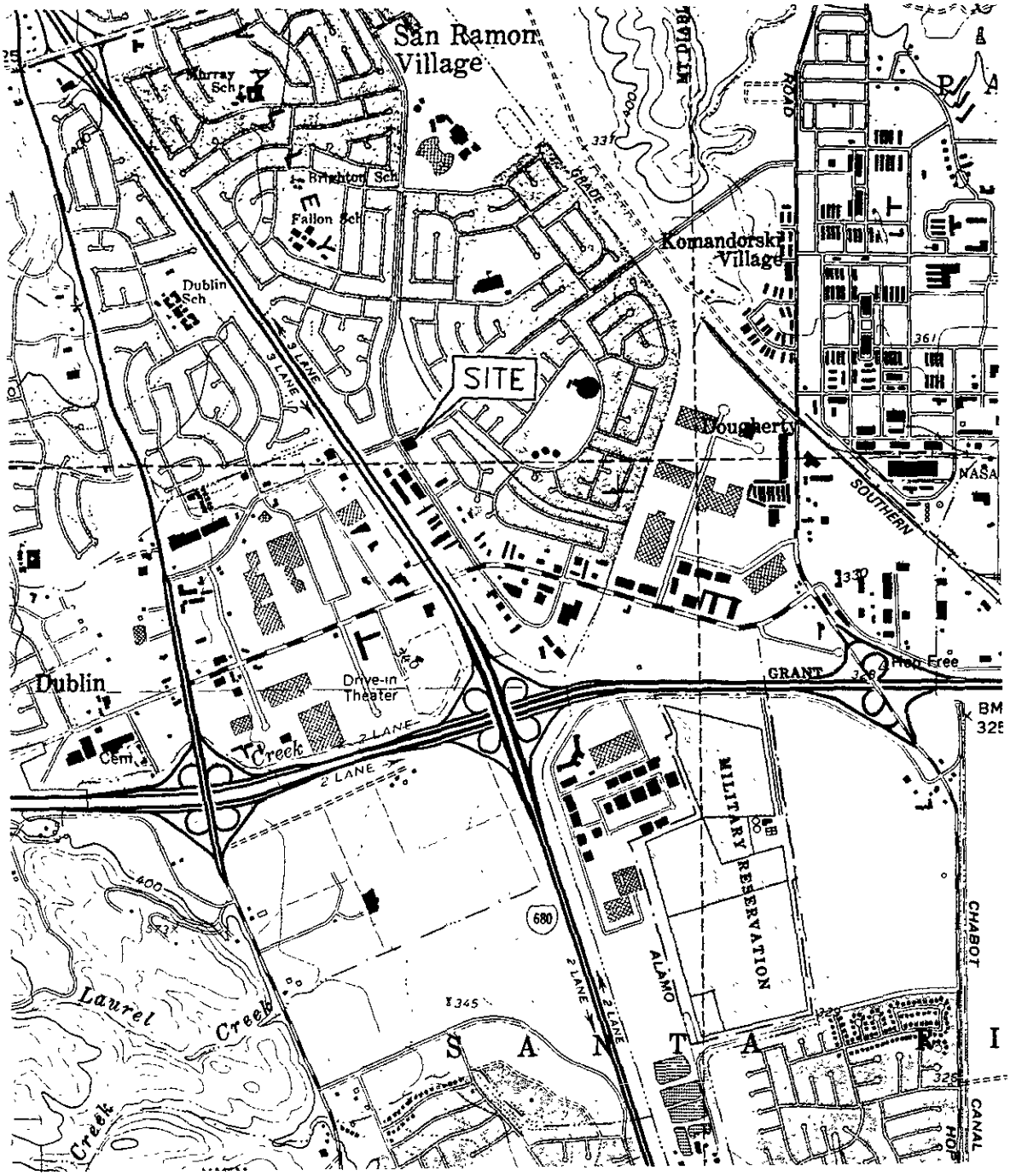
NOTES:

(a) Top of casing elevations for all wells surveyed to the nearest 0.01 foot above Mean Sea Level.

(b) Groundwater elevation in feet above Mean Sea Level.

(c) Monitoring Well MW-10 was destroyed.

(d) Data not available



N

SOURCE:
USGS MAP, DUBLIN QUADRANGLE, CALIFORNIA.
7.5 MINUTE SERIES. 1961. PHOTOREVERSED 1980.

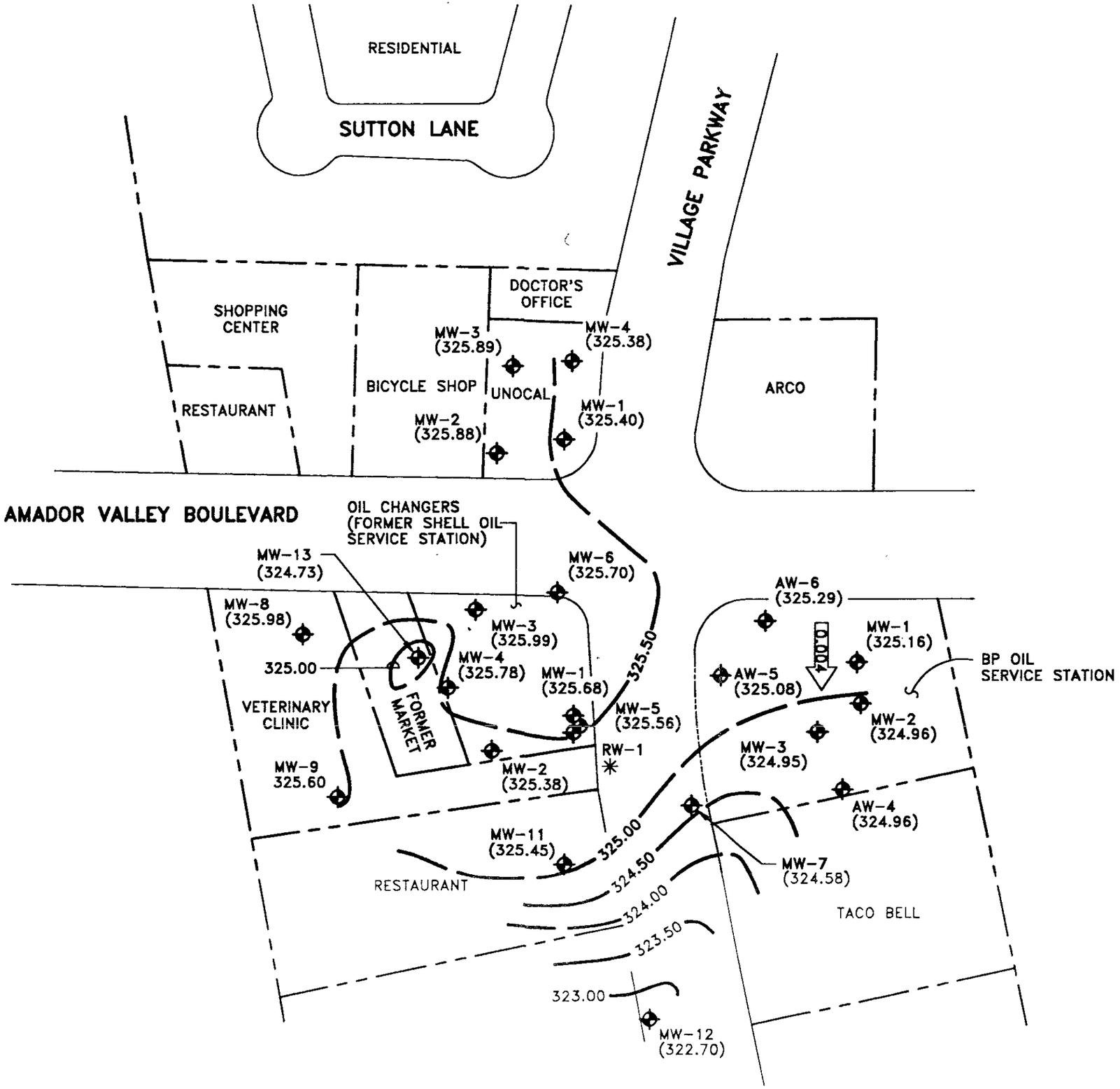
FIGURE 1

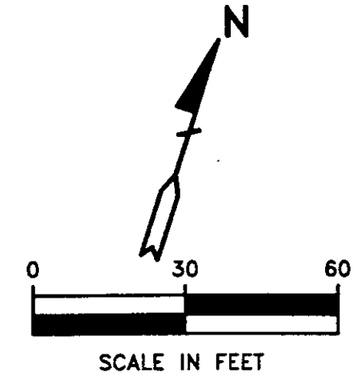
SITE VICINITY MAP

BP OIL SERVICE STATION NO. 11116
7 9[illegible] VILLAGE PARKWAY
DUBLIN, CALIFORNIA

ALISTO PROJECT NO. 10-017

ALISTO ENGINEERING GROUP
CONCORD, CALIFORNIA





LEGEND:

- ⊕ GROUNDWATER MONITORING WELL
- (324.96) GROUNDWATER ELEVATION IN FEET ABOVE MEAN SEA LEVEL
- 325.00 GROUNDWATER ELEVATION CONTOUR IN FEET ABOVE MEAN SEA LEVEL (CONTOUR INTERVAL – 0.50 FOOT)
- 0.004 CALCULATED GROUNDWATER GRADIENT DIRECTION AND MAGNITUDE IN FOOT PER FOOT
- ✳ GROUNDWATER ELEVATION NOT AVAILABLE

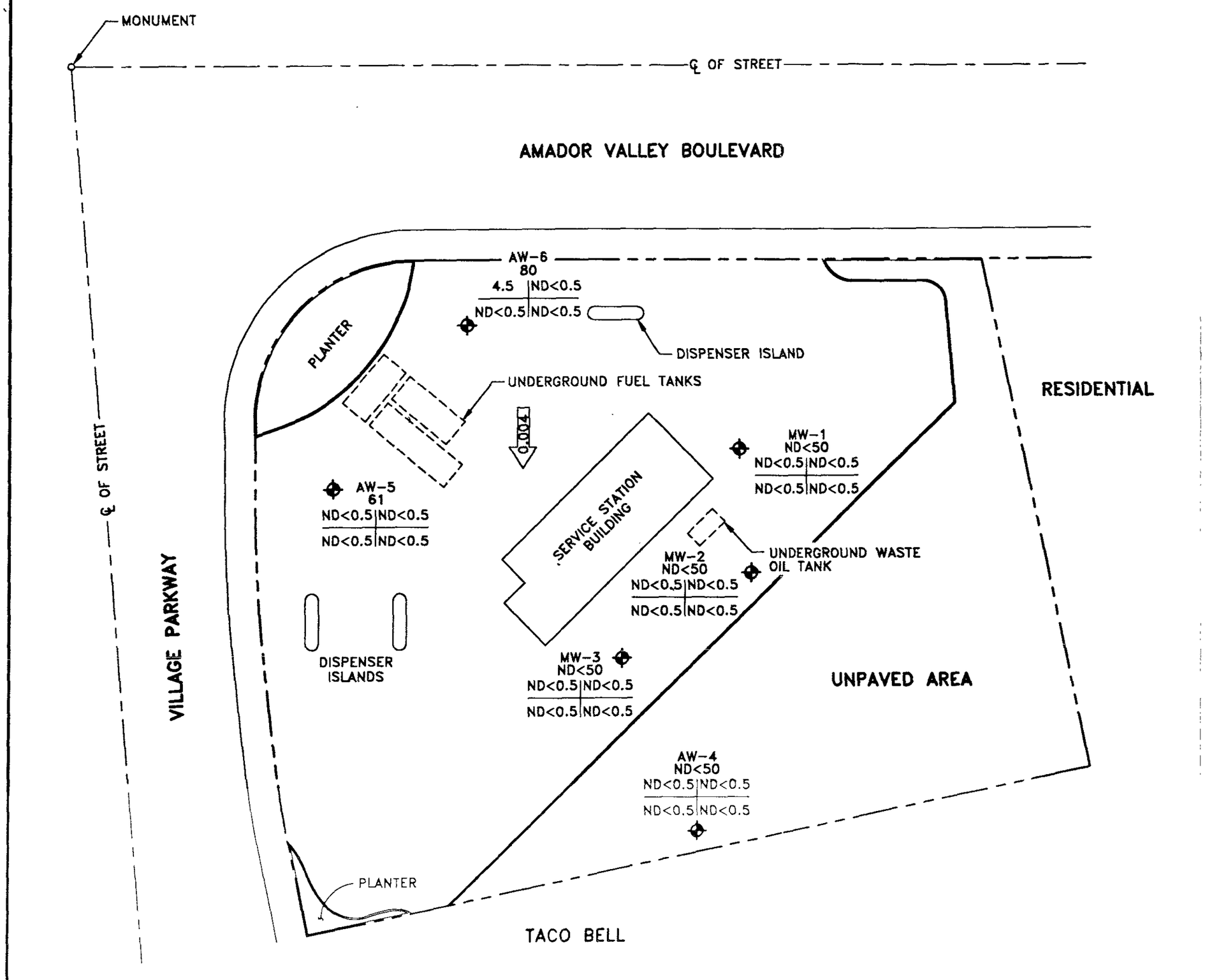
FIGURE 2

POTENTIOMETRIC GROUNDWATER ELEVATION CONTOUR MAP (AUGUST 12, 1992)

BP OIL SERVICE STATION NO. 11116
7197 VILLAGE PARKWAY
DUBLIN, CALIFORNIA

PROJECT NO. 10-017

ALISTO ENGINEERING GROUP
CONCORD, CALIFORNIA



N

0 30 60

SCALE IN FEET

LEGEND:

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

FIGURE 3

CONCENTRATION OF PETROLEUM HYDROCARBONS IN GROUNDWATER (AUGUST 12, 1992)

BP OIL SERVICE STATION NO. 11116
7197 VILLAGE PARKWAY
DUBLIN, CALIFORNIA

PROJECT NO. 10-017

ALISTO ENGINEERING GROUP
CONCORD, CALIFORNIA

10017D2F.DWG 8-1-92 JWB 1=30

APPENDIX A

WATER SAMPLING FORMS

Birch Technical Services

Field Report / Data Sheet

X Groundwater Sampling O Groundwater Monitoring O Well Development O Drill Support O Stockpile Sampling

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

Firm: Alisto
Project Number: 10-017
Field Technician: Don Birch
Date: 8/12/92
Station #: BP1116
Day: M Tu (W) Th F
Address: Village Pkwy Dublin
Weather: Hot/Clear
Milage: 129 mi

Equipment List:

- O _____ ( )
- O _____ ( )
- X Water Guage (1)day
- X Parameter Kit(1)day
- X Disposable Bailers (6)
- O Plug(s)( )(in)
- X Honda Pump (1)day
- X Poly Tubing (171 ft)
- O Dolphin Lock(s) ( )
- X Nitrile Gloves (1 pair)

Travel Time: 2.5 hrs
Time at Site: 5 hrs
Total Time: 7.5 hrs

DTWorder	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
2	MW-1	2"	Ok	OK	25.90'	10.01'	10.01'			
4	MW-2	2"	OK	OK	25.70'	9.62'	9.62'			
1	MW-3	2"	Ok	Ok	25.44'	10.18'	10.18'			
3	AW-4	4"	Ok	Ok	34.24'	8.45'	8.45'			
5	AW-5	4"	Ok	OK	33.14	9.73'	9.73'			
6	AW-6	4"	Ok	OK	16.81	9.61	9.61			

Notes: Travel 11-12. Arrive open wells. Talk with Emcon tech's. Measure DTW and notice no drums are at site. Call Balch Steve says the driver might have delivered to wrong station. I drive to other station and find drums bringing them back. Purge wells w/ 1" pump poly tube Sample w/ disposable bailers. Finish at 5 00. Dinner 5-6. Travel to lab 6-6:50. Transfer C-O-C then travel to office at 7:30.

Page ___ of ___ Inv#: ___

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

GROUND-WATER SAMPLING FORM

Project Number: 10-017
Station Number: BP11116
Date: 8/12/92

Well Number: MW-1
Well Type: ⊗Monitor OExtraction O_____
Sampled by: Dan Birch

WELL PURGING

PURGE VOLUME

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

Total Depth of Well (BOW) 25.90' Initial Water Level: 10.01'
Total Volume Purged: 8g Time Elapsed: 5

PURGE METHOD:
⊗Honda Pump
⊗Disposable PolyTubing(26 ft)
ODisposable PVC Bailer(s)(____)
OOther_____

Calculated Purge Volume:

25.90 (Total Depth) − 10.01 (Water Level) = 15.89 × 0.1632 (Well Vol. Fac.) = 2.59 × 3 (#of vol. to Purge) = 7.8 (gallons) Calculated Purge Volume

Subjective Analysis Prior to Purging

SHEEN OYes ⊗No
Depth of Product _____(ft)
Emulsion OYes ⊗No

COMMENTS:

PARAMETER EQUIPMENT CALIBRATION

pH Meter #: 9112 Time: 9:00
Solution pH 4.00 4 at 65.5 °C
Solution pH 10.00 10 at 65.5 °C
Solution pH 7.00 7 at 65.5 °C
Water Level Meter#: 10337

SAMPLING METHOD

⊗PVC Disposable Bailer
OTeflon Bailer
OOther:_____

Time Sampled (24 hr) 1445

WELL SAMPLING PARAMETERS

Gallons Removed	Time	Temp °C	pH	Cond. (umhos/cm)
1	1429	77.1	6.60	>20
3	1430	76.8	6.66	>20
6	1432	74.0	7.0	>20
8	1434	73.4	6.75	>20

	Analysis Required	No. of	Container Type	Preservatives
X	EPA 601	3	VOA's	
X	TPH-G/BTEX	3	VOA's	HCl
X	TPH- Diesel	1	Amber Liter	
X	TOG 5520 BF	1	Amber Liter	H_2NO_3

Birch Technical Services

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

GROUND-WATER SAMPLING FORM

Well Number: MW-2

Project Number: 10-017
Station Number: BP 11116
Date: 8/12/92

Well Type: ⊗Monitor OExtraction O_____

Sampled by: Dan Birch

WELL PURGING

PURGE VOLUME

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

Total Depth of Well (BOW) 25.70 Initial Water Level: 9.62

Total Volume Purged: 8 Time Elapsed: 10 m

PURGE METHOD:
⊗Honda Pump
⊗Disposable PolyTubing(27 ft)
ODisposable PVC Bailer(s)(____)
OOther_____

Calculated Purge Volume:

25.70 - 9.62 = 16.08 x 0.1632 = 2.62 x 3 = 7.8 (gallons)

Total Depth | Water Level | Well Vol. Fac. | #of vol. to Purge | Calculated Purge Volume

Subjective Analysis Prior to Purging

SHEEN OYes ⊗No
Depth of Product _____(ft)
Emulsion OYes ⊗No

COMMENTS:

PARAMETER EQUIPMENT CALIBRATION

pH Meter #: 9112 Time: 9:00
Solution pH 4.00 4 at 65.5 °C
Solution pH 10.00 10 at 65.5 °C
Solution pH 7.00 7 at 65.5 °C
Water Level Meter#: 10337

SAMPLING METHOD

⊗PVC Disposable Bailer
OTeflon Bailer
OOther:_____

Time Sampled (24 hr): 1410

WELL SAMPLING PARAMETERS

Gallons Removed	Time	Temp °C	pH	Cond. (umhos/cm)
1	1400	73.6	6.88	>20
5	1402	72.4	6.81	>20
8	1403	72.0	6.75	>20

	Analysis Required	No. of	Container Type	Preservatives
X	EPA 601	3	VOA's	
X	TPH-G/BTEX	3	VOA's	HCl
X	TPH- Diesel	1	Amber Liter	
✓	TOG 5520 BF	1	Amber Liter	H_2NO_3

Birch Technical Services

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

GROUND-WATER SAMPLING FORM

Well Number: MW-3

Project Number: 102017
Station Number: BP 11116
Date: 8/12/92

Well Type: ⊗Monitor OExtraction O_____

Sampled by: Dan Birch

WELL PURGING

PURGE VOLUME

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

Total Depth of Well (BOW) 25.44' Initial Water Level: 10.18

Total Volume Purged: 8 Time Elapsed: 4

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

Calculated Purge Volume:

25.44 (Total Depth) - 10.18 (Water Level) = 15.26 x .16 (Well Vol. Fac.) = 2.4 x 3 (#of vol. to Purge) = 7.2 (gallons) Calculated Purge Volume

Subjective Analysis Prior to Purging

SHEEN OYes ⊗No | Depth of Product _____(ft) | Emulsion OYes ⊗No

COMMENTS:

PARAMETER EQUIPMENT CALIBRATION

pH Meter #: 9112 Time: 9:00
Soluuion pH 4.00 4 at 65.5 °C
Solution pH 10.00 10 at 65.5 °C
Solution pH 7.00 7 at 65.5 °C
Water Level Meter#: 10377

SAMPLING METHOD

⊗PVC Disposable Bailer
OTeflon Bailer
OOther:_____

Time Sampled (24 hr) 1330

WELL SAMPLING PARAMETERS

Gallons Removed	Time	Temp °C	pH	Cond. (umhos/cm)
0	1325	80.6	7.01	>20
3	1327	76.9	6.92	>20
6	1328	75.4	6.82	>20
8	1329	75.7	6.75	>20

	Analysis Required	No. of	Container Type	Preservatives
X	EPA 601	3	VOA's	
X	TPH-G/BTEX	3	VOA's	HCl
X	TPH- Diesel	1	Amber Liter	
X	TOG 5520 BF	1	Amber Liter	H_2SO_3

Birch Technical Services

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

GROUND-WATER SAMPLING FORM

Well Number: AW-4

Project Number: 10-017
Station Number: BP 11116
Date: 8/12/92

Well Type: ⊗Monitor OExtraction O_____

Sampled by: Dan Birch

WELL PURGING

PURGE VOLUME

Casing Diameter (inches) O 2" O3" ⊗4" O4.5" O6" O____
Volume Factors: 0.1632 0.3672 0.6528 0.826 1.469 _____

Total Depth of Well (BOW) 34.24' Initial Water Level: 8.45

Total Volume Purged: 51 Time Elapsed: 16

PURGE METHOD:
⊗Honda Pump
⊗Disposable PolyTubing(36 ft)
ODisposable PVC Bailer(s)(____)
OOther_____

Calculated Purge Volume:

34.24 - 8.45 = 25.79 x .65 = 16.7 x 3 = 50.3 (gallons)

Total Depth | Water Level | Well Vol. Fac. | #of vol. to Purge | Calculated Purge Volume

Subjective Analysis Prior to Purging

SHEEN OYes ⊗No | Depth of Product _____(ft) | Emulsion OYes ⊗No

COMMENTS:

PARAMETER EQUIPMENT CALIBRATION

pH Meter #: 912 Time: 9:00
Solution pH 4.00 4 at 65.5 °C
Solution pH 10.00 10 at 65.5 °C
Solution pH 7.00 7 at 65.5 °C
Water Level Meter#: 10337

SAMPLING METHOD

⊗PVC Disposable Bailer
OTeflon Bailer
OOther:_____

Time Sampled (24 hr) 1530

WELL SAMPLING PARAMETERS

Gallons Removed	Time	Temp °C	pH	Cond. (umhos/cm)
10	1510	75.8	6.96	18.24
20	1513	73.8	6.94	18.11
30	1515	72.2	6.91	18.18
40	1517	71.6	6.89	18.17
50	1521	71.7	6.86	18.22
51	1522	71.2	6.87	18.27

	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_2NO_3

Birch Technical Services

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

GROUND-WATER SAMPLING FORM

Well Number: AW-5

Project Number: 10-017
Station Number: BP 11116
Date: 8/12/92

Well Type: ⊗Monitor OExtraction O_____

Sampled by: Dan Birch

WELL PURGING

PURGE VOLUME

Casing Diameter (inches) / Volume Factors:

O 2"	O3"	⊗4"	O4.5"	O6"	O____
0.1632	0.3672	0.6528	0.826	1.469	_____

Total Depth of Well (BOW) 33.14' Initial Water Level: 9.73

Total Volume Purged: 46 Time Elapsed: 30

PURGE METHOD:
⊗ Honda Pump
⊗Disposable PolyTubing(35 ft)
ODisposable PVC Bailer(s)(____)
OOther_____

Calculated Purge Volume:

33.14' (Total Depth) - 9.73 (Water Level) = 23.41 x .65 (Well Vol. Fac.) = 15.2 x 3 (#of vol. to Purge) = 45.6 (gallons) Calculated Purge Volume

Subjective Analysis Prior to Purging

SHEEN OYes ⊗No | Depth of Product _____(ft) | Emulsion OYes ⊗No

COMMENTS: Poor producer.

PARAMETER EQUIPMENT CALIBRATION

pH Meter #: 912 Time: 9:00
Solution pH 4.00 4 at 65.5 °C
Solution pH 10.00 10 at 65.5 °C
Solution pH 7.00 7 at 65.5 °C
Water Level Meter#: 10337

SAMPLING METHOD

⊗PVC Disposable Bailer
⊗Teflon Bailer
OOther:_____

Time Sampled (24 hr): 1610

WELL SAMPLING PARAMETERS

Gallons Removed	Time	Temp °C	pH	Cond. (umhos/cm)
10	1540	73.8	~~7~~ 6.11	6.68
20	1545	74.9	6.97	5.17
30	1552	74.1	6.87	5.34
40	1600	750	6.85	5.19
46	1605	74.7	6.88	5.18

	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_2NO_3

Birch Technical Services

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

Project Number: 10-017
Station Number: BP 11116
Date: 8/12/92

GROUND-WATER SAMPLING FORM

Well Number: AW-6

Well Type: ⊗Monitor OExtraction O_____

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 (BOW) 16.81
Initial Water Level: 9.61
Total Volume Purged: 14.5
Time Elapsed: 18

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

Calculated Purge Volume:

16.81 (Total Depth) - 9.61 (Water Level) = 7.2 x 0.6528 (Well Vol. Fac.) = 4.7 x 3 (#of vol. to Purge) = 14.1 (gallons) Calculated Purge Volume

Subjective Analysis Prior to Purging

SHEEN OYes ⊗No
Depth of Product _____(ft)
Emulsion OYes ⊗No

COMMENTS:

PARAMETER EQUIPMENT CALIBRATION

pH Meter #: 912 Time: 9:00
Solution pH 4.00 4 at 65.5 °C
Solution pH 10.00 10 at 65.5 °C
Solution pH 7.00 7 at 65.5 °C
Water Level Meter#: 10337

SAMPLING METHOD

⊗PVC Disposable Bailer
OTeflon Bailer
OOther:_____

Time Sampled (24 hr) 1645

WELL SAMPLING PARAMETERS

Gallons Removed	Time	Temp °C	pH	Cond. (umhos/cm)
8	1630	75.3	6.92	9.66
10	1632	75.0	6.77	9.13
12	1638	75.2	6.58	8.95
14.5	1643	75.1	6.58	8.91

	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_2NO_3

APPENDIX B

LABORATORY REPORTS AND CHAIN OF CUSTODY RECORDS

ANAMETRIX INC
Environmental & Analytical Chemistry
1961 Concourse Drive Suite E, San Jose, CA 95131
(408) 432-8192 • Fax (408) 432-8198

REPORT

MR. BRADY NAGLE
ALISTO ENGINEERING GROUP
1000 BURNETT AVENUE, SUITE 150
CONCORD, CA 94520

Workorder # : 9208139
Date Received : 08/12/92
Project ID : 10-017
Purchase Order: N/A

The following samples were received at Anametrix, Inc. for analysis :

ANAMETRIX ID	CLIENT SAMPLE ID
9208139- 1	MW-1
9208139- 2	MW-2
9208139- 3	MW-3
9208139- 4	MW-4
9208139- 5	MW-5
9208139- 6	MW-6

This report consists of 21 pages not including the cover letter, and is organized in sections according to the specific Anametrix laboratory group or section which performed the analysis(es) and generated the data. The Report Summary that precedes each section will help you determine which Anametrix group is responsible for those test results, and will bear the signatures of the department supervisor and the chemist who have reviewed the analytical data. Please refer all questions to the department supervisor who signed the form.

Anametrix is certified by the California Department of Health Services (DHS) to perform environmental testing under Certificate Number 1234. A detailed list of the approved fields of testing can be obtained by calling our office, or the DHS Environmental Laboratory Accreditation Program at (415)540-2800.

If you have any further questions or comments on this report, please give us a call as soon as possible. Thank you for using Anametrix.

Sarah Schoen, Ph.D.
Laboratory Director

8-24-92
Date

ANAMETRIX REPORT DESCRIPTION
GC

Organic Analysis Data Sheets (OADS)

OADS forms contain tabulated results for target compounds. The OADS are grouped by method and, within each method, organized sequentially in order of increasing Anametrix ID number.

Surrogate Recovery Summary (SRS)

SRS forms contain quality assurance data. An SRS form will be printed for each method, if the method requires surrogate compounds. They will list surrogate percent recoveries for all samples and any method blanks. Any surrogate recovery outside the established limits will be flagged with an "*", and the total number of surrogates outside the limits will be listed in the column labelled "Total Out".

Matrix Spike Recovery Form (MSR)

MSR forms contain quality assurance data. They summarize percent recovery and relative percent difference information for matrix spikes and matrix spike duplicates. This information is a statement of both accuracy and precision. Any percent recovery or relative percent difference outside established limits will be flagged with an "*", and the total number outside the limits will be listed at the bottom of the page. Not all reports will contain an MSR form.

Qualifiers

Anametrix uses several data qualifiers (Q) in it's report forms. These qualifiers give additional information on the compounds reported. They should help a data reviewer to verify the integrity of the analytical results. The following is a list of qualifiers and their meanings:

U - Indicates that the compound was analyzed for, but was not detected at or above the specified reporting limit.

B - Indicates that the compound was detected in the associated method blank.

J - Indicates that the compound was detected at an amount below the specified reporting limit. Consequently, the amount should be considered an approximate value. Tentatively identified compounds will always have a "J" qualifier because they are not included in the instrument calibration.

E - Indicates that the amount reported exceeded the linear range of the instrument calibration.

D - Indicates that the compound was detected in an analysis performed at a secondary dilution.

Absence of a qualifier indicates that the compound was detected at a concentration at or above the specified reporting limit.

REPORTING CONVENTIONS

- Due to a size limitation in our data processing step, only the first eight (8) characters of your project ID and sample ID will be printed on the report forms. However, the report cover letter and report summary pages display up to twenty (20) characters of your project and sample IDs.
- Amounts reported are gross values, i.e., not corrected for method blank contamination

REPORT SUMMARY
ANAMETRIX, INC. (408)432-8192

MR. BRADY NAGLE
ALISTO ENGINEERING GROUP
1000 BURNETT AVENUE, SUITE 150
CONCORD, CA 94520

Workorder # : 9208139
Date Received : 08/12/92
Project ID : 10-017
Purchase Order: N/A
Department : GC
Sub-Department: VOA

SAMPLE INFORMATION:

ANAMETRIX SAMPLE ID	CLIENT SAMPLE ID	MATRIX	DATE SAMPLED	METHOD
9208139- 1	MW-1	WATER	08/12/92	8010
9208139- 2	MW-2	WATER	08/12/92	8010
9208139- 3	MW-3	WATER	08/12/92	8010

REPORT SUMMARY
ANAMETRIX, INC. (408)432-8192

MR. BRADY NAGLE
ALISTO ENGINEERING GROUP
1000 BURNETT AVENUE, SUITE 150
CONCORD, CA 94520

Workorder # : 9208139
Date Received : 08/12/92
Project ID : 10-017
Purchase Order: N/A
Department : GC
Sub-Department: VOA

QA/QC SUMMARY :

- No QA/QC problems encountered for samples.

Corinne Tham 8/21/92
Department Supervisor Date

Kamal G. Kamal 8/21/92
Chemist Date

DESCRIPTIONS FOR SPECIFIC COMPOUNDS ANALYZED
EPA METHOD 601/8010

CAS #	COMPOUND NAME	ABBREVIATED NAME
74-87-3	Chloromethane	Chloromethane
74-83-9	Bromomethane	Bromoethane
75-71-8	Dichlorodifluoromethane	Freon 12
75-01-4	Vinyl Chloride	Vinyl Chloride
75-00-3	Chloroethane	Chloroethane
75-09-2	Methylene Chloride	Methylene Chlor
75-69-4	Trichlrofluoromethane	Freon 11
75-35-4	1,1-Dichloroethene	1,1-DCE
75-34-3	1,1-Dichloroethane	1,1-DCA
156-59-2	Cis-1,2-Dichloroethene	Cis-1,2-DCE
156-60-5	Trans-1,2-Dichloroethene	Trans-1,2-DCE
67-66-3	Chloroform	Chloroform
76-13-1	Trichlorotrifluoroethane	Freon 113
107-06-2	1,2-Dichloroethane	1,2-DCA
71-55-6	1,1,1-Trichloroethane	1,1,1-TCA
56-23-5	Carbon Tetrachloride	Carbon Tet
75-27-4	Bromodichloromethane	BromodichloroMe
78-87-5	1,2-Dichloropropane	1,2-DCPA
10061-02-6	Trans-1,3-Dichloropropene	Trans-1,3-DCPE
79-01-6	Trichloroethene	TCE
124-48-1	Dibromochloromethane	DibromochloroMe
79-00-5	1,1,2-Trichloroethane	1,1,2-TCA
10061-01-5	Cis-1,3-Dichloropropene	Cis-1,3-DCPE
110-75-8	2-Chloroethylvinylether	Chloroethylvinl
75-25-2	Bromoform	Bromoform
127-18-4	Tetrachloroethene	PCE
79-34-5	1,1,2,2-Tetrachloroethane	PCA
108-90-7	Chlorobenzene	Chlorobenzene
95-50-1	1,2-Dichlorobenzene	1,2-DCB
541-73-1	1,3-Dichlorobenzene	1,3-DCB
106-46-7	1,4-Dichlorobenzene	1,4-DCB
352-33-0	p-Chlorofluorobenzene	Chlorofluoroben

ORGANIC ANALYSIS DATA SHEET -- EPA METHOD 8010
ANAMETRIX, INC. (408)432-8192

Project ID	: 10-017	Anametrix ID	: 9208139-01
Sample ID	: MW-1	Analyst	: KK
Matrix	: WATER	Supervisor	: CJ
Date Sampled	: 8/12/92		
Date Analyzed	: 8/17/92	Dilution Factor	: 1.0
Instrument ID	: HP14	Conc. Units	: ug/L

CAS No.	COMPOUND NAME	REPORTING LIMIT	AMOUNT DETECTED	Q
75-71-8	Freon 12	1.0	ND	U
74-87-3	Chloromethane	1.0	ND	U
75-01-4	Vinyl Chloride	.50	ND	U
74-83-9	Bromomethane	.50	ND	U
75-00-3	Chloroethane	.50	ND	U
75-69-4	Freon 11	.50	ND	U
76-13-1	Freon 113	.50	ND	U
75-35-4	1,1-DCE	.50	ND	U
75-09-2	Methylene Chlor	1.0	ND	U
156-60-5	Trans-1,2-DCE	.50	ND	U
75-34-3	1,1-DCA	.50	ND	U
156-59-2	Cis-1,2-DCE	.50	ND	U
67-66-3	Chloroform	.50	ND	U
71-55-6	1,1,1-TCA	.50	ND	U
56-23-5	Carbon Tet	.50	ND	U
107-06-2	1,2-DCA	.50	ND	U
79-01-6	Trichloroethene	.50	ND	U
78-87-5	1,2-DCPA	.50	ND	U
75-27-4	Bromodichlorome	.50	ND	U
110-75-8	Chloroethylvinl	1.0	ND	U
10061-01-5	Cis-1,3-DCPE	.50	ND	U
10061-02-6	Trans-1,3-DCPE	.50	ND	U
79-00-5	1,1,2-TCA	.50	ND	U
127-18-4	PCE	.50	ND	U
124-48-1	Dibromochlorome	.50	ND	U
108-90-7	Chlorobenzene	.50	ND	U
75-25-2	Bromoform	.50	ND	U
79-34-5	1,1,2,2-PCA	.50	ND	U
541-73-1	1,3-DCB	1.0	ND	U
106-46-7	1,4-DCB	1.0	ND	U
95-50-1	1,2-DCB	1.0	ND	U

ORGANIC ANALYSIS DATA SHEET -- EPA METHOD 8010
ANAMETRIX, INC. (408)432-8192

Project ID : 10-017
Sample ID : MW-2
Matrix : WATER
Date Sampled : 8/12/92
Date Analyzed : 8/17/92
Instrument ID : HP14

Anametrix ID : 9208139-02
Analyst : KK
Supervisor : CP

Dilution Factor : 1.0
Conc. Units : ug/L

CAS No.	COMPOUND NAME	REPORTING LIMIT	AMOUNT DETECTED	Q
75-71-8	Freon 12	1.0	ND	U
74-87-3	Chloromethane	1.0	ND	U
75-01-4	Vinyl Chloride	.50	ND	U
74-83-9	Bromomethane	.50	ND	U
75-00-3	Chloroethane	.50	ND	U
75-69-4	Freon 11	.50	ND	U
76-13-1	Freon 113	.50	ND	U
75-35-4	1,1-DCE	.50	ND	U
75-09-2	Methylene Chlor	1.0	ND	U
156-60-5	Trans-1,2-DCE	.50	ND	U
75-34-3	1,1-DCA	.50	ND	U
156-59-2	Cis-1,2-DCE	.50	ND	U
67-66-3	Chloroform	.50	ND	U
71-55-6	1,1,1-TCA	.50	ND	U
56-23-5	Carbon Tet	.50	ND	U
107-06-2	1,2-DCA	.50	ND	U
79-01-6	Trichloroethene	.50	ND	U
78-87-5	1,2-DCPA	.50	ND	U
75-27-4	Bromodichlorome	.50	ND	U
110-75-8	Chloroethylvinl	1.0	ND	U
10061-01-5	Cis-1,3-DCPE	.50	ND	U
10061-02-6	Trans-1,3-DCPE	.50	ND	U
79-00-5	1,1,2-TCA	.50	ND	U
127-18-4	PCE	.50	ND	U
124-48-1	Dibromochlorome	.50	ND	U
108-90-7	Chlorobenzene	.50	ND	U
75-25-2	Bromoform	.50	ND	U
79-34-5	1,1,2,2-PCA	.50	ND	U
541-73-1	1,3-DCB	1.0	ND	U
106-46-7	1,4-DCB	1.0	ND	U
95-50-1	1,2-DCB	1.0	ND	U

ORGANIC ANALYSIS DATA SHEET -- EPA METHOD 8010
ANAMETRIX, INC. (408)432-8192

Project ID : 10-017
Sample ID : MW-3
Matrix : WATER
Date Sampled : 8/12/92
Date Analyzed : 8/17/92
Instrument ID : HP14

Anametrix ID : 9208139-03
Analyst : KK
Supervisor : CD

Dilution Factor : 1.0
Conc. Units : ug/L

CAS No.	COMPOUND NAME	REPORTING LIMIT	AMOUNT DETECTED	Q
75-71-8	Freon 12	1.0	ND	U
74-87-3	Chloromethane	1.0	ND	U
75-01-4	Vinyl Chloride	.50	ND	U
74-83-9	Bromomethane	.50	ND	U
75-00-3	Chloroethane	.50	ND	U
75-69-4	Freon 11	.50	ND	U
76-13-1	Freon 113	.50	ND	U
75-35-4	1,1-DCE	.50	ND	U
75-09-2	Methylene Chlor	1.0	ND	U
156-60-5	Trans-1,2-DCE	.50	ND	U
75-34-3	1,1-DCA	.50	ND	U
156-59-2	Cis-1,2-DCE	.50	ND	U
67-66-3	Chloroform	.50	ND	U
71-55-6	1,1,1-TCA	.50	ND	U
56-23-5	Carbon Tet	.50	ND	U
107-06-2	1,2-DCA	.50	ND	U
79-01-6	Trichloroethene	.50	ND	U
78-87-5	1,2-DCPA	.50	ND	U
75-27-4	Bromodichlorome	.50	ND	U
110-75-8	Chloroethylvinl	1.0	ND	U
10061-01-5	Cis-1,3-DCPE	.50	ND	U
10061-02-6	Trans-1,3-DCPE	.50	ND	U
79-00-5	1,1,2-TCA	.50	ND	U
127-18-4	PCE	.50	ND	U
124-48-1	Dibromochlorome	.50	ND	U
108-90-7	Chlorobenzene	.50	ND	U
75-25-2	Bromoform	.50	ND	U
79-34-5	1,1,2,2-PCA	.50	ND	U
541-73-1	1,3-DCB	1.0	ND	U
106-46-7	1,4-DCB	1.0	ND	U
95-50-1	1,2-DCB	1.0	ND	U

ORGANIC ANALYSIS DATA SHEET -- EPA METHOD 8010
ANAMETRIX, INC. (408)432-8192

Project ID : 10-017
Sample ID : VBLANK
Matrix : WATER
Date Sampled : 0/ 0/ 0
Date Analyzed : 8/17/92
Instrument ID : HP14

Anametrix ID : 14B0817H01
Analyst : KK
Supervisor : [illegible]

Dilution Factor : 1.0
Conc. Units : ug/L

CAS No.	COMPOUND NAME	REPORTING LIMIT	AMOUNT DETECTED	Q
75-71-8	Freon 12	1.0	ND	U
74-87-3	Chloromethane	1.0	ND	U
75-01-4	Vinyl Chloride	.50	ND	U
74-83-9	Bromomethane	.50	ND	U
75-00-3	Chloroethane	.50	ND	U
75-69-4	Freon 11	.50	ND	U
76-13-1	Freon 113	.50	ND	U
75-35-4	1,1-DCE	.50	ND	U
75-09-2	Methylene Chlor	1.0	ND	U
156-60-5	Trans-1,2-DCE	.50	ND	U
75-34-3	1,1-DCA	.50	ND	U
156-59-2	Cis-1,2-DCE	.50	ND	U
67-66-3	Chloroform	.50	ND	U
71-55-6	1,1,1-TCA	.50	ND	U
56-23-5	Carbon Tet	.50	ND	U
107-06-2	1,2-DCA	.50	ND	U
79-01-6	Trichloroethene	.50	ND	U
78-87-5	1,2-DCPA	.50	ND	U
75-27-4	Bromodichlorome	.50	ND	U
110-75-8	Chloroethylvinl	1.0	ND	U
10061-01-5	Cis-1,3-DCPE	.50	ND	U
10061-02-6	Trans-1,3-DCPE	.50	ND	U
79-00-5	1,1,2-TCA	.50	ND	U
127-18-4	PCE	.50	ND	U
124-48-1	Dibromochlorome	.50	ND	U
108-90-7	Chlorobenzene	.50	ND	U
75-25-2	Bromoform	.50	ND	U
79-34-5	1,1,2,2-PCA	.50	ND	U
541-73-1	1,3-DCB	1.0	ND	U
106-46-7	1,4-DCB	1.0	ND	U
95-50-1	1,2-DCB	1.0	ND	U

SURROGATE RECOVERY SUMMARY -- EPA METHOD 8010
ANAMETRIX, INC. (408)432-8192

Project ID : 10-017
Matrix : LIQUID

Anametrix ID : 9208139
Analyst : KK
Supervisor : CD

	SAMPLE ID	SU1	SU2	SU3
1	VBLANK	94		
2	MW-1	91		
3	MW-2	92		
4	MW-3	88		
5				
6				
7				
8				
9				
10				
11				
12				
13				
14				
15				
16				
17				
18				
19				
20				
21				
22				
23				
24				
25				
26				
27				
28				
29				
30				

	QC LIMITS
SU1 = CHLOROFLUOROBEN	(51-136)

* Values outside of Anametrix QC limits

REPORT SUMMARY
ANAMETRIX, INC. (408)432-8192

MR. BRADY NAGLE
ALISTO ENGINEERING GROUP
1000 BURNETT AVENUE, SUITE 150
CONCORD, CA 94520

Workorder # : 9208139
Date Received : 08/12/92
Project ID : 10-017
Purchase Order: N/A
Department : GC
Sub-Department: TPH

SAMPLE INFORMATION:

ANAMETRIX SAMPLE ID	CLIENT SAMPLE ID	MATRIX	DATE SAMPLED	METHOD
9208139- 1	MW-1	WATER	08/12/92	TPHd
9208139- 2	MW-2	WATER	08/12/92	TPHd
9208139- 3	MW-3	WATER	08/12/92	TPHd
9208139- 1	MW-1	WATER	08/12/92	TPHg/BTEX
9208139- 2	MW-2	WATER	08/12/92	TPHg/BTEX
9208139- 3	MW-3	WATER	08/12/92	TPHg/BTEX
9208139- 4	MW-4	WATER	08/12/92	TPHg/BTEX
9208139- 5	MW-5	WATER	08/12/92	TPHg/BTEX
9208139- 6	MW-6	WATER	08/12/92	TPHg/BTEX

REPORT SUMMARY
ANAMETRIX, INC. (408)432-8192

MR. BRADY NAGLE
ALISTO ENGINEERING GROUP
1000 BURNETT AVENUE, SUITE 150
CONCORD, CA 94520

Workorder # : 9208139
Date Received : 08/12/92
Project ID : 10-017
Purchase Order: N/A
Department : GC
Sub-Department: TPH

QA/QC SUMMARY :

- No QA/QC problems encountered for these samples.

Cheryl Bergman 8/24/92
Department Supervisor Date

Chemist Date

ANALYSIS DATA SHEET - TOTAL PETROLEUM HYDROCARBONS AS DIESEL
ANAMETRIX, INC. (408) 432-8192

Anametrix W.O.: 9208139
Matrix : WATER
Date Sampled : 08/12/92
Date Extracted: 08/14/92

Project Number : 10-017
Date Released : 08/21/92
Instrument I.D.: HP23

Anametrix I.D.	Client I.D.	Date Analyzed	Reporting Limit (ug/L)	Amount Found (ug/L)
9208139-01	MW-1	08/19/92	50	ND
9208139-02	MW-2	08/19/92	50	ND
9208139-03	MW-3	08/19/92	50	ND
DWBL081492	METHOD BLANK	08/19/92	50	ND

Note : Reporting limit is obtained by multiplying the dilution factor times 50 ug/L.
ND - Not detected at or above the practical quantitation limit for the method.
TPHd - Total Petroleum Hydrocarbons as diesel is determined by GCFID following sample extraction by EPA Method 3510.

All testing procedures follow California Department of Health Services (Cal-DHS) approved methods.

Analyst 8/24/92 Date

Supervisor 8/. Date

ANALYSIS DATA SHEET - TOTAL PETROLEUM HYDROCARBONS
(GASOLINE WITH BTEX)
ANAMETRIX, INC. - (408) 432-8192

Anametrix W.O.: 9208139
Matrix : WATER
Date Sampled : 08/12/92

Project Number : 10-017
Date Released : 08/21/92

COMPOUNDS	Reporting Limit (ug/L)	Sample I.D.# MW-1 -01	Sample I.D.# MW-2 -02	Sample I.D.# MW-3 -03	Sample I.D.# MW-4 -04	Sample I.D.# MW-5 -05
Benzene	0.5	ND	ND	ND	ND	ND
Toluene	0.5	ND	ND	ND	ND	ND
Ethylbenzene	0.5	ND	ND	ND	ND	ND
Total Xylenes	0.5	ND	ND	ND	ND	ND
TPH as Gasoline	50	ND	ND	ND	ND	61
% Surrogate Recovery		109%	116%	109%	62%	115%
Instrument I.D.		HP4	HP4	HP4	HP4	HP4
Date Analyzed		08/14/92	08/14/92	08/17/92	08/17/92	08/14/92
RLMF		1	1	1	1	1

ND - Not detected at or above the practical quantitation limit for the method.
TPHg - Total Petroleum Hydrocarbons as gasoline is determined by GCFID using modified EPA Method 8015 following sample purge and trap by EPA Method 5030.
BTEX - Benzene, Toluene, Ethylbenzene, and Total Xylenes are determined by modified EPA Method 8020 following sample purge and trap by EPA Method 5030.
RLMF - Reporting Limit Multiplication Factor.

Anametrix control limits for surrogate p-Bromofluorobenzene recovery are 53-147%.

All testing procedures follow California Department of Health Services (Cal-DHS) approved methods.

Analyst 8/24/92 Date

Supervisor Date

ANALYSIS DATA SHEET - TOTAL PETROLEUM HYDROCARBONS
(GASOLINE WITH BTEX)
ANAMETRIX, INC. - (408) 432-8192

Anametrix W.O.: 9208139
Matrix : WATER
Date Sampled : 08/12/92

Project Number : 10-017
Date Released : 08/21/92

COMPOUNDS	Reporting Limit (ug/L)	Sample I.D.# MW-6 -06	Sample I.D.# BG1402E3 BLANK	Sample I.D.# BG1701E3 BLANK
Benzene	0.5	4.5	ND	ND
Toluene	0.5	ND	ND	ND
Ethylbenzene	0.5	ND	ND	ND
Total Xylenes	0.5	ND	ND	ND
TPH as Gasoline	50	80	ND	ND
% Surrogate Recovery		117%	106%	110%
Instrument I.D.		HP4	HP4	HP4
Date Analyzed		08/14/92	08/14/92	08/17/92
RLMF		1	1	1

ND - Not detected at or above the practical quantitation limit for the method.
TPHg - Total Petroleum Hydrocarbons as gasoline is determined by GCFID using modified EPA Method 8015 following sample purge and trap by EPA Method 5030.
BTEX - Benzene, Toluene, Ethylbenzene, and Total Xylenes are determined by modified EPA Method 8020 following sample purge and trap by EPA Method 5030.
RLMF - Reporting Limit Multiplication Factor.

Anametrix control limits for surrogate p-Bromofluorobenzene recovery are 53-147%.

All testing procedures follow California Department of Health Services (Cal-DHS) approved methods.

Analyst Date

Supervisor Date

TOTAL VOLATILE HYDROCARBON MATRIX SPIKE REPORT
EPA METHOD 5030 WITH GC/FID
ANAMETRIX, INC. (408) 432-8192

Sample I.D. : 10-017 MW-5
Matrix : WATER
Date Sampled : 08/12/92
Date Analyzed : 08/14/92

Anametrix I.D. : 9208139-05
Analyst : LS
Supervisor : [illegible]
Date Released : 08/21/92
Instrument I.D.: HP4

COMPOUND	SPIKE AMT. (ug/L)	MS (ug/L)	%REC MS	MD (ug/L)	%REC MD	RPD	%REC LIMITS
BENZENE	20	16	80%	17	85%	6%	49-159
TOLUENE	20	14	70%	14	70%	0%	53-156
ETHYLBENZENE	20	14	70%	15	75%	7%	54-151
M+P-XYLENE	13.3	10.1	76%	10.9	82%	8%	56-157
O-XYLENE	6.7	4.3	64%	4.5	67%	5%	58-157
p-BFB			112%		103%		53-147

* Quality control limit established by Anametrix, Inc.

TOTAL EXTRACTABLE HYDROCARBON LABORATORY CONTROL SAMPLE REPORT
EPA METHOD 3510 WITH GC/FID
ANAMETRIX, INC. (408) 432-8192

Sample I.D.	: LAB CONTROL SAMPLE	Anametrix I.D.	: LCSW0814
Matrix	: WATER	Analyst	:
Date Sampled	: N/A	Supervisor	: CB
Date Extracted	: 08/14/92	Date Released	: 08/21/92
Date Analyzed	: 08/19/92	Instrument I.D.	: HP23

COMPOUND	SPIKE AMT (ug/L)	LCS REC (ug/L)	% REC LCS	LSCD REC (ug/L)	% REC LCSD	RPD	% REC LIMITS
DIESEL	1250	910	73%	890	71%	-2%	36-150

* Quality control limit established by Anametrix, Inc.

BTEX LABORATORY CONTROL SAMPLE REPORT
EPA METHOD 5030 WITH GC/PID
ANAMETRIX, INC. (408) 432-8192

Sample I.D.	: LAB CONTROL SAMPLE	Anametrix I.D.	: LCSW0814
Matrix	: WATER	Analyst	:
Date Sampled	: N/A	Supervisor	: ea
Date Analyzed	: 08/14/92	Date Released	: 08/21/92
		Instrument ID	: HP4

COMPOUND	SPIKE AMT. (ug/L)	LCS (ug/L)	REC LCS	%REC LIMITS
Benzene	10	11	110%	49-159
Toluene	10	8.8	88%	53-156
Ethylbenzene	10	9.5	95%	54-151
M+P-Xylenes	6.7	6.5	97%	56-157
O-Xylene	3.3	2.6	79%	58-154
P-BFB			147%	53-147

* Limits established by Anametrix, Inc.

REPORT SUMMARY
ANAMETRIX, INC. (408)432-8192

MR. BRADY NAGLE
ALISTO ENGINEERING GROUP
1000 BURNETT AVENUE, SUITE 150
CONCORD, CA 94520

Workorder # : 9208139
Date Received : 08/12/92
Project ID : 10-017
Purchase Order: N/A
Department : PREP
Sub-Department: PREP

SAMPLE INFORMATION:

ANAMETRIX SAMPLE ID	CLIENT SAMPLE ID	MATRIX	DATE SAMPLED	METHOD
9208139- 1	MW-1	WATER	08/12/92	5520BF
9208139- 2	MW-2	WATER	08/12/92	5520BF
9208139- 3	MW-3	WATER	08/12/92	5520BF

REPORT SUMMARY
ANAMETRIX, INC. (408)432-8192

MR. BRADY NAGLE
ALISTO ENGINEERING GROUP
1000 BURNETT AVENUE, SUITE 150
CONCORD, CA 94520

Workorder # : 9208139
Date Received : 08/12/92
Project ID : 10-017
Purchase Order: N/A
Department : PREP
Sub-Department: PREP

QA/QC SUMMARY :

- No QA/QC problems encountered for samples.

Carl C. Brallo 8/19/92
Department Supervisor Date

Chemist Date

ANALYSIS DATA SHEET - TOTAL OIL AND GREASE
ANAMETRIX, INC. (408) 432-8192

Project # : 10-017
Matrix : WATER
Date sampled : 08/12/92
Date ext. TOG : 08/14/92
Date anl. TOG : 08/14/92

Anametrix I.D. : 9208139
Analyst : APP
Supervisor : CCB
Date released : 08/19/92

Workorder #	Sample I.D.	Reporting Limit (mg/L)	Amount Found (mg/L)
9208139-01	MW-1	5	ND
9208139-02	MW-2	5	ND
9208139-03	MW-3	5	ND
GWBL081492	METHOD BLANK	5	ND

ND - Not detected at or above the practical quantitation limit for the method.
TOG - Total Oil & Grease is determined by Standard Method 5520BF.

All testing procedures follow California Department of Health Services (Cal-DHS) approved methods.

TOTAL OIL AND GREASE LAB CONTROL SAMPLE REPORT
STANDARD METHOD 5520BF
ANAMETRIX, INC. (408) 432-8192

Sample I.D.	: LAB CONTROL SAMPLE	Anametrix I.D.	: LCSW0814
Matrix	: WATER	Analyst	: APK
Date sampled	: N/A	Supervisor	: CeB
Date extracted	: 08/14/92	Date Released	: 08/19/92
Date analyzed	: 08/14/92		

COMPOUND	SPIKE AMT. (mg/L)	LCS (mg/L)	%REC LCS	LCSD (mg/L)	%REC LCSD	%RPD	%REC LIMITS
Motor Oil	50	49	98%	47	94%	4%	47-99%

* Quality control limits established by Anametrix, Inc.

ANAMETRIX INC
Environmental & Analytical Chemistry
1961 Concourse Drive, Suite E, San Jose, CA 95131
(408) 432-8192 • Fax (408) 432-8198

9208139 (16) (18) 10/18 18:55 MA

CHAIN-OF-CUSTODY RECORD

PROJECT NUMBER	PROJECT NAME
10-017	BP 11116

Send Report Attention of:	Report Due	Verbal Due
Brady Nagle	8/26/92	8/26/92

	Sample Number	Date	Time	Comp	Matrix	Station Location	Number of Cntnrs	Type of Containers	Type of Analysis: EPA 601		TPH-G/BTEX		TPH-Diesel		TPH 5520BF				Condition of Samples	Initial
(1)	MW-1	8/12/92	1445		W		8	VOAs amber	X		X		X		X					
(2)	MW-2	8/12/92	1410		W		7		X		X		X		X					
(3)	MW-3	8/12/92	1330		W		8		X		X		X		X					
(4)	AW-4	8/12/92	1530		W		2				X									
(5)	AW-5	8/12/92	1610		W		3				X									
(6)	AW-6	8/12/92	1645		W		3				X									

Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Date/Time
Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Date/Time
Relinquished by: (Signature)	Date/Time	Received by Lab:	Date/Time
[signature]	8/12/92 1850	[signature]	8/12/92 1850

Remarks: Please fax COC to Brady Nagle

COMPANY: Alisto Engineering Group
ADDRESS:
PHONE: 510 798-4070 FAX: 510 798-4099