BP OIL

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

STID 3105

December 8, 1992

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

RE: BP OIL FACILITY #11127
5425 Martin Luther King, Jr. Way
Oakland, California

Dear Mr. Shahid:

Attached please find our **GROUND WATER MONITORING AND SAMPLING REPORT** 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 ERM11227

cc: Mr. Hugh Murphy, Hayward Fire Department, 25151 Clawiter Road, Hayward, CA 94545-2731

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

Mr. Al Sevilla, Alisto, 1000 Burnett Ave., Concord, CA 94520 Suite 420

Mr. David Baker, Mobil Oil Corp, 3225 Gallows Road, Fairfax, VA 22037

Site file

QUARTERLY GROUNDWATER MONITORING AND SAMPLING REPORT

Prepared for

BP Oil Company Service Station No. 11127
5425 Martin Luther King, Jr. Way
Oakland, California

Project No. 10-022

Prepared by

Alisto Engineering Group
1000 Burnett Avenue, Suite 420
Concord, California

October 22, 1992

Brady Nagle
Project Manager

Al Sevilla, P.E.
Principal

QUARTERLY GROUNDWATER MONITORING AND SAMPLING REPORT

BP Oil Company Service Station No. 11127
5425 Martin Luther King, Jr. Way
Oakland, California

Project No. 10-022

[redacted]

INTRODUCTION

This report presents the results and findings of th[redacted]y groundwater monitoring and sampling conducted by Alisto Engineering Group at BP Oil Service Station No. 11127, located at 5425 Martin Luther King, Jr. Way, Oakland, 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 Chevron Service Station No. 9-1583, 5509 Martin Luther King, Jr. Way, are presented in Table 2.

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 the coordinated quarterly monitoring event are depicted in Figure 2. A map showing the concentration of petroleum hydrocarbon constituents detected in the groundwater samples is presented as Figure 2. Laboratory reports and the chain of custody record are presented in Appendix B.

SUMMARY OF FINDINGS

The findings of the September 3, 1992 ground water monitoring and sampling event are summarized below:

- No free product or sheen was detected in any of the two monitoring wells.
- Dissolved-phase total petroleum hydrocarbons as gasoline (TPH-G) and benzene, toluene, ethylbenzene, and total xylenes (BTEX) were detected in the samples collected from the two monitoring wells. TPH-G and benzene were detected at concentrations of up to 530 parts per billion (ppb) and 1.6 ppb, respectively.
- Analysis of groundwater samples from MW-2 detected no detectable concentrations of halogenated volatile organic compounds using EPA Method 8010.

TABLE 1 - SUMMARY OF RESULTS OF GROUNDWATER SAMPLING
BP OIL COMPANY SERVICE STATION NO. 11127
5425 MARTIN LUTHER KING, JR. WAY, OAKLAND, CALIFORNIA

ALISTO PROJECT NO. 10-022

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)	1,1-DCA	1,2-DCA	1,1,1-TCA	LAB
		Screen												
MW-1	08/29/91	82.35	18-28 ft 10.54	71.81	ND<50	ND<0.3	ND<0.3	ND<0.3	ND<0.3	---	---	---	---	
MW-1	11/20/91	82.35	10.24	72.11	55	ND<0.3	ND<0.3	ND<0.3	ND<0.3	---	---	---	---	
MW-1	02/28/92	82.35	8.17	74.18	400	6.7	0.7	11	170	---	---	---	---	SUP
MW-1	06/08/92	82.35	10.25	72.10	250	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	ND<0.5	ND<0.5	ND<0.5	ANA
MW-1	09/03/92	82.35	10.68	71.67	160	1.2	3.8	1.7	5.4	---	---	---	---	ANA
QC-1 (c)	09/03/92	82.35	10.68	71.67	190	0.7	2.6	1.3	5.2	---	---	---	---	ANA
MW-2	08/29/91	83.49	7-27 ft 11.56	71.93	950	ND<0.3	ND<0.3	17	50	66	ND	ND	ND	
MW-2	11/20/91	83.49	11.25	72.24	1400	0.3	ND<0.3	32	90	ND<50	ND	0.8	0.7	
MW-2	02/28/92	83.49	9.02	74.47	2300	4.2	1.8	47	360	70	ND	ND	4.1	SUP
MW-2	06/08/92	83.49	11.37	72.12	470	ND<0.5	ND<0.5	7.7	12	---	6.6	ND<0.5	4.2	ANA
MW-2	09/03/92	83.49	11.81	71.68	530	1.6	3.5	23	46	---	ND<0.5	ND<0.5	ND<0.5	ANA
QC-2 (d)	09/03/92	---	---	---	ND<50	ND<0.5	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	Total Xylenes
TPH-D	Total Petroleum Hydrocarbons as Diesel
1,1-DCA	1,1-Dichloroethane
1,2-DCA	1,2-Dichloroethane
1,1,1-TCA	1,1,1-Trichloroethane
(ppb)	Parts per Billion
ND	Not detected above reported detection limits
ANA	Anametrix, Inc.
SUP	Superior Analytical Laboratory

NOTES:

(a) Top of casing elevation for all wells surveyed in reference to the City of Oakland Benchmark No. 1967, located at on the curb at the southwest corner of Martin Luther King, Jr. Way and 55th Street.

(b) In feet above Mean Sea Level.

(c) Blind duplicate of MW-1.

(d) Travel blank.

TABLE 2 - SUMMARY OF RESULTS OF GROUNDWATER MONITORING
CHEVRON U.S.A. PRODUCTS COMPANY SERVICE STATION NO. 9-1583
5509 MARTIN LUTHER KING, JR. WAY, OAKLAND CALIFORNIA

ALISTO PROJECT NO. 10-022

WELL ID	DATE OF SAMPLING/ MONITORING	CASING ELEVATION (a) (Feet)	DEPTH TO WATER (Feet)	PRODUCT THICKNESS (Feet)	GROUNDWATER ELEVATION (b) (Feet)
MW-1	10/05/92	82.42	11.41	0.00	71.01
MW-2	10/05/92	83.48	12.00	0.00	71.48
MW-3	10/05/92	84.38	13.62	0.02	70.78
MW-4	10/05/92	84.25	14.23	0.00	70.02
MW-5	10/05/92	81.95	10.61	0.00	71.34
MW-6	10/05/92	80.6	INACCESSABLE	----	----

NOTES:

(a) Casing Elevation above Mean Sea Level.

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

Source: Groundwater data collected by Groundwater Technology, Inc.

N

0 1000' 2000'

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

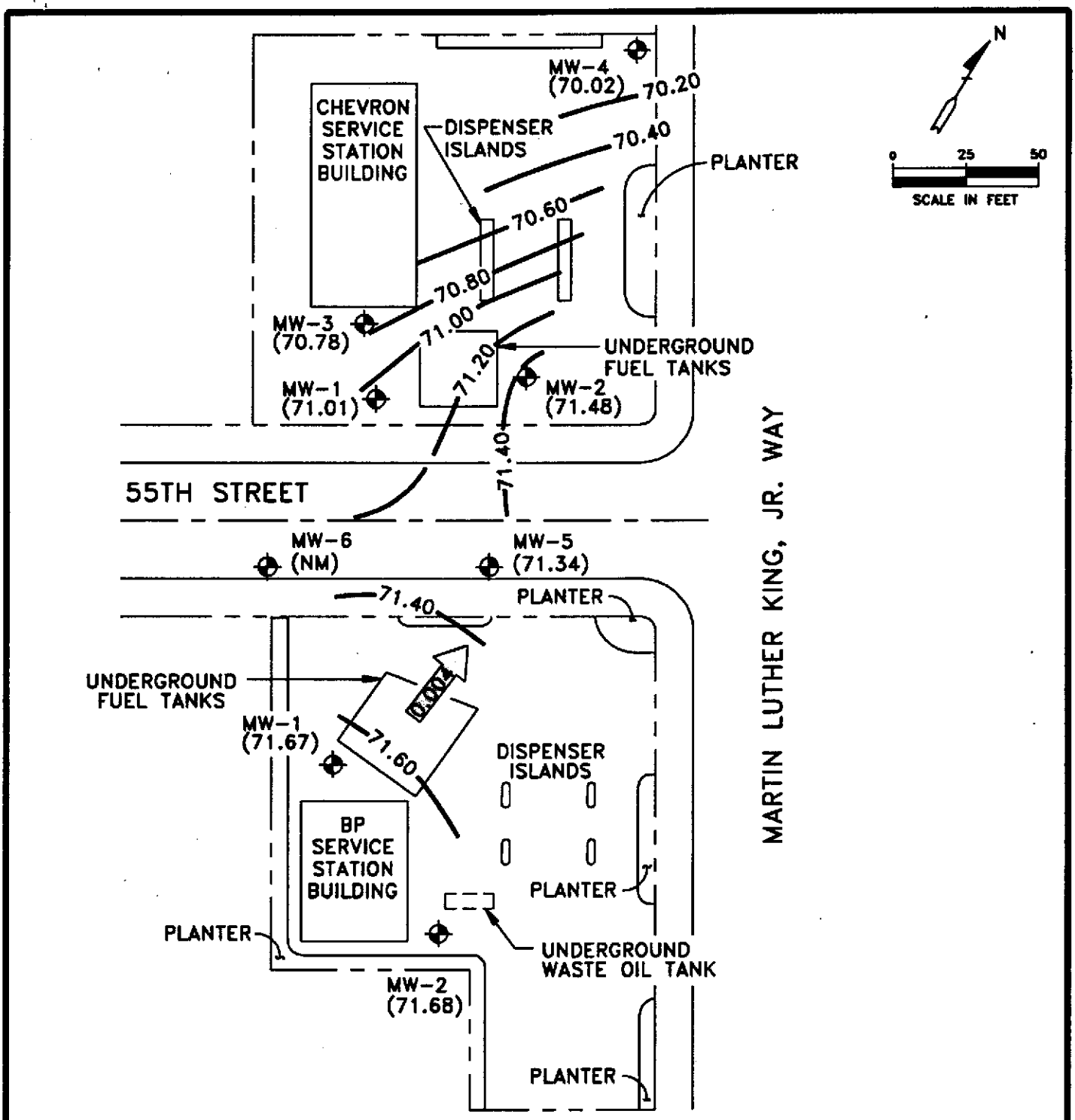
FIGURE 1

SITE VICINITY MAP

BP OIL SERVICE STATION NO. 11127
5425 MARTIN LUTHER KING, JR. WAY
OAKLAND, CALIFORNIA

ALISTO PROJECT NO. 10-022

ALISTO ENGINEERING GROUP
CONCORD, CALIFORNIA



LEGEND:

⊕	GROUNDWATER MONITORING WELL
(71.68)	GROUNDWATER ELEVATION IN FEET ABOVE MEAN SEA LEVEL
71.60	GROUNDWATER ELEVATION CONTOUR IN FEET ABOVE MEAN SEA LEVEL (CONTOUR INTERVAL – .20 FOOT)
0.004	CALCULATED GROUNDWATER GRADIENT DIRECTION
(NM)	NOT MEASURED

FIGURE 2

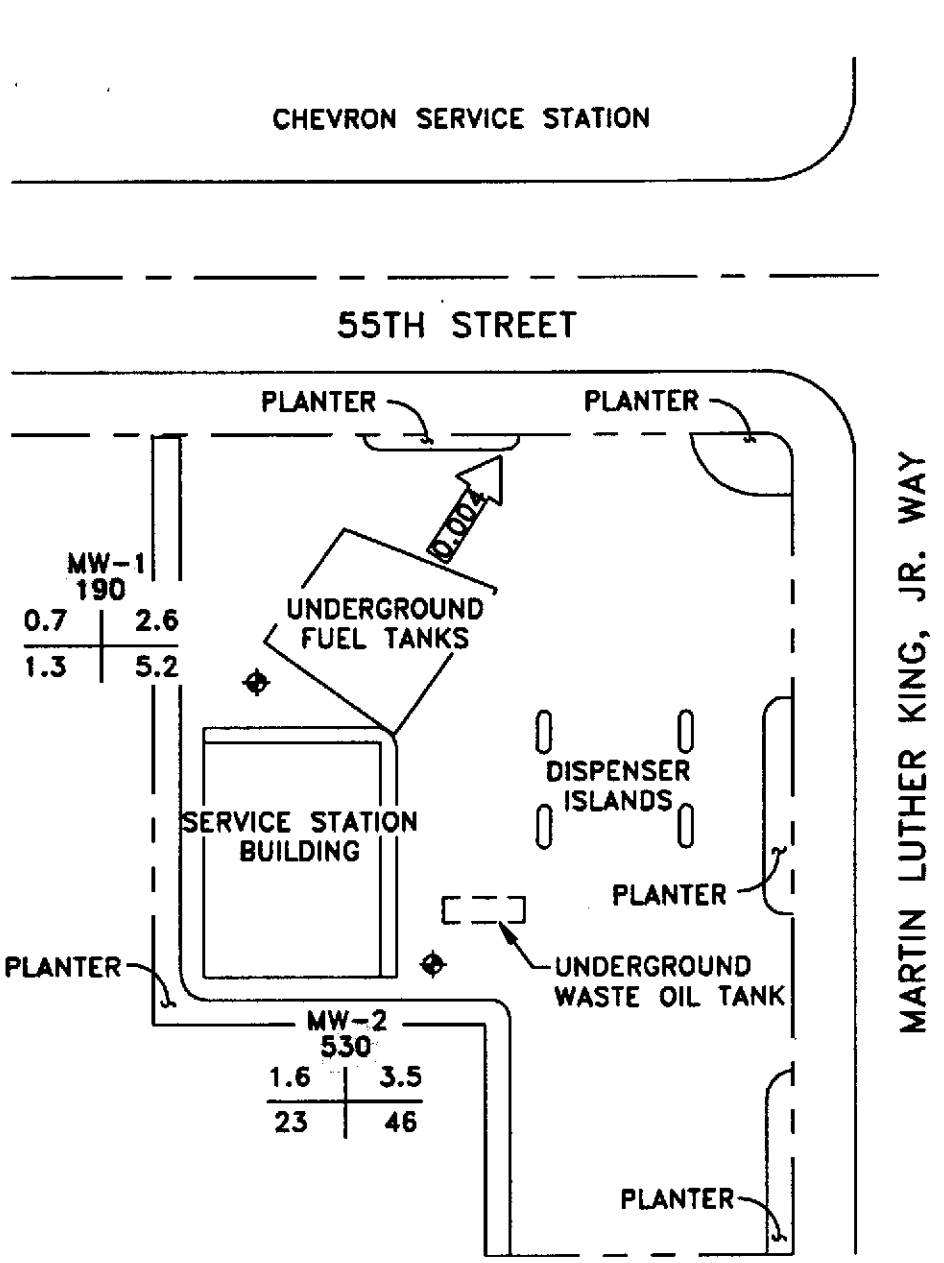
POTENTIOMETRIC GROUNDWATER ELEVATION CONTOUR MAP (SEPTEMBER 3, 1992)

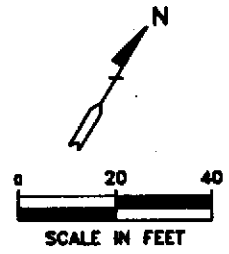
BP OIL SERVICE STATION NO. 11127
5425 MARTIN LUTHER KING, JR. WAY
OAKLAND, CALIFORNIA

PROJECT NO. 10-022

ALISTO ENGINEERING GROUP
CONCORD, CALIFORNIA

10-15-92 JWB 1=100 10022302.DWG





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 (SEPTEMBER 3, 1992)

BP OIL SERVICE STATION NO. 11127
5425 MARTIN LUTHER KING, JR. WAY
OAKLAND, CALIFORNIA

PROJECT NO. 10-022

ALISTO ENGINEERING GROUP
CONCORD, CALIFORNIA

10022025.DWG 10-15-92 JMB 1=400

APPENDIX A

WATER SAMPLING FORMS

Field Report / Data Sheet

Birch Technical Services

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

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

Firm: ALISTO	Date: 9/3/92	Station #: BP11127	Day: M Tu W (Th) F
Project Number: 10-022	Field Technician: Dan Birch	Address: 5425 Martin Luther King, Oakland	Weather: Cool
			Milage: 47 mi

Equipment List:

- X Water Guage (½) day
- X Parameter Kit (½) day
- X Disposable Bailers (2)
- O Plug(s)( )(in)
- O _____( )
- O _____( )
- X Honda Pump (½) day
- X Poly Tubing (57 ft)
- O Dolphin Lock(s) ( )
- X Nitrile Gloves (1 pair)

Travel Time: 1.5 hrs
Time at Site: 3 hrs
Total Time: 4.5 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
	MW-1	4	ok	ok	27.55	10.68	10.68	—	—	
	MW-2	4	ok	ok	26.81	11.81	11.81	—	—	

Notes: Arrive at 2:10, open wells allowing breathe time then measured DTW and started Sampling forms. Started sampling MW-1 and collected a Blank duplicate from MW-1 called QC-1. These were TPH-G/ Btex analyses. Moved on to MW-2 and collected Waste oil trilogy samples. Left site at 5:00.

Page ___ of ___ Inv#: ___

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

GROUND-WATER SAMPLING FORM

Well Number: MW-1

Project Number: 10-022
Station Number: BP11127
Date: 9/3/92

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) 27.55 Initial Water Level: 10.68

Total Volume Purged: 20 Time Elapsed: 13

PURGE METHOD:
⊗Honda Pump
⊗Disposable PolyTubing(30 ft)
ODisposable PVC Bailer(s)(____)
OOther_____

Calculated Purge Volume:

27.55 - 10.68 = 16.9 x .65 = 10.9 x 3 = 32.9 (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: Duplicate sample QC-1 was collected from MW-1 at the same time and labelled "QC-1 1533".

Well pumped dry @ 20 gallons. Allowed recharge and sampled.

PARAMETER EQUIPMENT CALIBRATION

pH Meter #: 9112 Time: 1420
Solution pH 4.00 4 at 71.0°C
Solution pH 10.00 10 at 71.0°C
Solution pH 7.00 7 at 71.0°C
Water Level Meter#: 10337

SAMPLING METHOD

⊗PVC Disposable Bailer
OTeflon Bailer
OOther:_____

Time Sampled (24 hr)
MW-1 1530
QC-1 1533

WELL SAMPLING PARAMETERS

Gallons Removed	Time	Temp °C	pH	Cond. (umhos/cm)
10	1500	71.4	6.55	1.94
20	1510	72.1	6.57	1.99
~~30~~				
~~34~~				

	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: MW-2

Project Number: 10-022
Station Number: BP11127
Date: 9/3/92

Well Type: XMonitor OExtraction O_____

Sampled by: Dan Birch

WELL PURGING

PURGE VOLUME

Casing Diameter (inches)	O 2"	O3"	X4"	O4.5"	O6"	O____
Volume Factors:	0.1632	0.3672	0.6528	0.826	1.469	_____

Total Depth of Well (BOW) 26.81 Initial Water Level: 11.81

Total Volume Purged: 36 Time Elapsed: 24

PURGE METHOD:
XHonda Pump
ODisposable PolyTubing(27 ft)
ODisposable PVC Bailer(s)(____)
OOther_____

Calculated Purge Volume:

26.81 - 11.81 = 15 x .65 = 9.75 x 3 = 29.3 (gallons)

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

Subjective Analysis Prior to Purging

SHEEN OYes XNo | Depth of Product _____(ft) | Emulsion OYes XNo

PARAMETER EQUIPMENT CALIBRATION

pH Meter #: 9112 Time: 1420
Solution pH 4.00 4 at 71.0 °C
Solution pH 10.00 10 at 71.0 °C
Solution pH 7.00 7 at 71.0 °C
Water Level Meter#: 10337

COMMENTS:

Good production.
QC-2 Travel (Trip) Blank.

SAMPLING METHOD

XPVC Disposable Bailer
OTeflon Bailer
OOther:_____

Time Sampled (24 hr): 1630

WELL SAMPLING PARAMETERS

Gallons Removed	Time	Temp °C	pH	Cond. (umhos/cm)
10	1610	67.2	7.15	1.06
20	1620	67.2	7.12	1.07
36	1629	67.1	7.13	1.07

	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~~
		1		H_2SO_4

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 # : 9209075
Date Received : 09/04/92
Project ID : 10-022
Purchase Order: N/A

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

ANAMETRIX ID	CLIENT SAMPLE ID
9209075- 1	MW-1
9209075- 2	QC-1
9209075- 3	QC-2
9209075- 4	MW-2

This report consists of 18 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

9-22-92
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 # : 9209075
Date Received : 09/04/92
Project ID : 10-022
Purchase Order: N/A
Department : GC
Sub-Department: VOA

SAMPLE INFORMATION:

ANAMETRIX SAMPLE ID	CLIENT SAMPLE ID	MATRIX	DATE SAMPLED	METHOD
9209075- 4	MW-2	WATER	09/03/92	8010

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

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

Workorder # : 9209075
Date Received : 09/04/92
Project ID : 10-022
Purchase Order: N/A
Department : GC
Sub-Department: VOA

QA/QC SUMMARY :

- No QA/QC problems encountered for this sample.

Corinne Phan 9/17/92
Department Supervisor Date

Michelle Young 9/18/92
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

mh/3426 - 10MH

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

Project ID : 10-022
Sample ID : MW-2
Matrix : WATER
Date Sampled : 9/ 3/92
Date Analyzed : 9/15/92
Instrument ID : HP15

Anametrix ID : 9209075-04
Analyst :
Supervisor :

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 : 10-022
Sample ID : VBLANK
Matrix : WATER
Date Sampled : 0/ 0/ 0
Date Analyzed : 9/15/92
Instrument ID : HP15

Anametrix ID : 15B0915H01
Analyst :
Supervisor :

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 : 10-022
Matrix : LIQUID

Anametrix ID : 9209075
Analyst : MY
Supervisor : CP

	SAMPLE ID	SU1	SU2	SU3
1	VBLANK	111		
2	MW-2	105		
3	MW-2 MS	97		
4	MW-2 MSD	97		
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

MATRIX SPIKE RECOVERY FORM -- EPA METHOD 8010
ANAMETRIX, INC. (408)432-8192

Project ID : N/A
Sample ID : N/A
Matrix : WATER
Date Sampled : 9/ 3/92
Date Analyzed : 9/15/92
Instrument ID : HP15

Anametrix ID : 9209075-04
Analyst :
Supervisor :

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	MS CONCENTRATION (ug/L)	MS % REC	%REC LIMITS
Freon 113	10.0	.0	7.4	74	50-150
1,1-DCE	10.0	.0	8.6	86	41-110
Trans-1,2-DCE	10.0	.0	8.4	84	47-126
1,1-DCA	10.0	.0	9.9	99	67-124
Cis-1,2-DCE	10.0	.0	7.3	73	50-150
1,1,1-TCA	10.0	.0	8.9	89	50-125
Trichloroethene	10.0	.0	9.2	92	51-131
PCE	10.0	.0	9.6	96	70-136
Chlorobenzene	10.0	.0	10.6	106	71-119
1,3-DCB	10.0	.0	9.0	90	67-120
1,4-DCB	10.0	.0	9.4	94	61-109
1,2-DCB	10.0	.0	8.3	83	70-119

COMPOUND	SPIKE ADDED (ug/L)	MSD CONCENTRATION (ug/L)	MSD % REC	% RPD	RPD LIMITS	%REC LIMITS
Freon 113	10.0	6.5	65	13	25	50-150
1,1-DCE	10.0	7.8	78	10	25	41-110
Trans-1,2-DCE	10.0	8.1	81	4	25	47-126
1,1-DCA	10.0	9.4	94	5	25	67-124
Cis-1,2-DCE	10.0	7.3	73	0	25	50-150
1,1,1-TCA	10.0	8.1	81	10	25	50-125
Trichloroethene	10.0	9.2	92	0	25	51-131
PCE	10.0	9.1	91	6	25	70-136
Chlorobenzene	10.0	10.1	101	4	25	71-119
1,3-DCB	10.0	8.6	86	4	25	67-120
1,4-DCB	10.0	9.3	93	1	25	61-109
1,2-DCB	10.0	9.0	90	8	25	70-119

* Value is outside of Anametrix QC limits

RPD: 0 out of 12 outside limits
Spike Recovery: 0 out of 24 outside limits

LABORATORY CONTROL SAMPLE
EPA METHOD 601/8010
ANAMETRIX, INC. (408)432-8192

Project/Case	: LABORATORY CONTROL SAMPLE	Anametrix I.D.	: WO091592
Matrix	: WATER	Analyst	:
SDG/Batch	: N/A	Supervisor	:
Date analyzed	: 09/15/92	Instrument I.D.	: HP15

COMPOUND	SPIKE AMOUNT (ug/L)	AMOUNT RECOVERED (ug/L)	PERCENT RECOVERY	%RECOVERY LIMITS
FREON 113	10	10.7	107%	34 - 128
1,1-DICHLOROETHENE	10	10.8	108%	63 - 133
trans-1,2-DICHLOROETHENE	10	10.0	100%	55 - 145
1,1-DICHLOROETHANE	10	10.5	105%	49 - 121
cis-1,2-Trichloroethene	10	7.8	78%	66 - 168
1,1,1-TRICHLOROETHANE	10	10.4	104%	72 - 143
TRICHLOROETHENE	10	11.5	115%	63 - 147
TETRACHLOROETHENE	10	12.1	121%	60 - 133
CHLOROBENZENE	10	12.5	125%	70 - 148
1,3-DICHLOROBENZENE	10	9.5	95%	49 - 139
1,4-DICHLOROBENZENE	10	10.0	100%	70 - 133
1,2-DICHLOROBENZENE	10	9.5	95%	69 - 140

* Limits based on data generated by Anametrix, Inc., August, 1992.

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

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

Workorder # : 9209075
Date Received : 09/04/92
Project ID : 10-022
Purchase Order: N/A
Department : GC
Sub-Department: TPH

SAMPLE INFORMATION:

ANAMETRIX SAMPLE ID	CLIENT SAMPLE ID	MATRIX	DATE SAMPLED	METHOD
9209075- 4	MW-2	WATER	09/03/92	TPHd
9209075- 1	MW-1	WATER	09/03/92	TPHg/BTEX
9209075- 2	QC-1	WATER	09/03/92	TPHg/BTEX
9209075- 3	QC-2	WATER	09/03/92	TPHg/BTEX
9209075- 4	MW-2	WATER	09/03/92	TPHg/BTEX

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

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

Workorder # : 9209075
Date Received : 09/04/92
Project ID : 10-022
Purchase Order: N/A
Department : GC
Sub-Department: TPH

QA/QC SUMMARY :

- No QA/QC problems encountered for these samples.

Cheryl Balmer 9/22/92
Department Supervisor Date

Steve Sims 9/22/92
Chemist Date

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

Anametrix W.O.: 9209075
Matrix : WATER
Date Sampled : 09/03/92

Project Number : 10-022
Date Released : 09/21/92

COMPOUNDS	Reporting Limit (ug/L)	Sample I.D.# MW-1 -01	Sample I.D.# QC-1 -02	Sample I.D.# QC-2 -03	Sample I.D.# MW-2 -04	Sample I.D.# BS1101E BLANK
Benzene	0.5	1.2	0.7	ND	1.6	ND
Toluene	0.5	3.8	2.6	ND	3.5	ND
Ethylbenzene	0.5	1.7	1.3	ND	23	ND
Total Xylenes	0.5	5.4	5.2	ND	46	ND
TPH as Gasoline	50	160	190	ND	530	ND
% Surrogate Recovery		110%	107%	98%	106%	104%
Instrument I.D.		HP4	HP4	HP4	HP4	HP4
Date Analyzed		09/11/92	09/11/92	09/11/92	09/11/92	09/11/92
RLMF		1	1	1	2	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 9/24/92 Date

Supervisor 9/22/92 Date

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

Anametrix W.O.: 9209075
Matrix : WATER
Date Sampled : 09/03/92
Date Extracted: 09/08/92

Project Number : 10-022
Date Released : 09/21/92
Instrument I.D.: HP23

Anametrix I.D.	Client I.D.	Date Analyzed	Reporting Limit (ug/L)	Amount Found (ug/L)
9209075-04	MW-2	09/11/92	50	ND
DWBL090892	METHOD BLANK	09/11/92	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.

Steve Jones 9/22/92
Analyst Date

Cheryl Balmer 9/22/92
Supervisor Date

TOTAL EXTRACTABLE HYDROCARBON LABORATORY CONTROL SAMPLE REPORT
EPA METHOD 3550 WITH GC/FID
ANAMETRIX, INC. (408) 432-8192

Sample I.D.	: LAB CONTROL SAMPLE	Anametrix I.D.	: LCSW0908
Matrix	: SOIL	Analyst	:
Date Sampled	: N/A	Supervisor	:
Date Extracted	: 09/08/92	Date Released	: 09/21/92
Date Analyzed	: 09/11/92	Instrument I.D.	: HP23

COMPOUND	SPIKE AMT (mg/L)	REC LCS (mg/L)	% REC LCS	% REC LIMITS
Diesel	1250	700	56%	36-150

*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 # : 9209075
Date Received : 09/04/92
Project ID : 10-022
Purchase Order: N/A
Department : PREP
Sub-Department: PREP

SAMPLE INFORMATION:

ANAMETRIX SAMPLE ID	CLIENT SAMPLE ID	MATRIX	DATE SAMPLED	METHOD
9209075- 4	MW-2	WATER	09/03/92	5520BF

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

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

Workorder # : 9209075
Date Received : 09/04/92
Project ID : 10-022
Purchase Order: N/A
Department : PREP
Sub-Department: PREP

QA/QC SUMMARY :

- No QA/QC problems encountered for sample.

Carl C. Brady 9.21.92
Department Supervisor Date

S Patel 09-21-92
Chemist Date

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

Project #	: 10-022	Anametrix I.D.	: 9209075
Matrix	: WATER	Analyst	: AP
Date sampled	: 09/03/92	Supervisor	: CB
Date ext. TOG	: 09/09/92	Date released	: 09/21/92
Date anl. TOG	: 09/09/92		

Workorder #	Sample I.D.	Reporting Limit (mg/L)	Amount Found (mg/L)
9209075-04	MW-2	5	ND
GWBL090992	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.	: LCSW0909
Matrix	: WATER	Analyst	: ART
Date sampled	: N/A	Supervisor	: CB
Date extracted	: 09/09/92	Date Released	: 09/21/92
Date analyzed	: 09/09/92		

COMPOUND	SPIKE AMT. (mg/L)	LCS (mg/L)	%REC LCS	LCSD (mg/L)	%REC LCSD	%RPD	%REC LIMITS
Motor Oil	50	30	60%	27	54%	11%	54-106%

* 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

9209075 (B) (10/15) (16)

CHAIN-OF-CUSTODY RECORD

PROJECT NUMBER	PROJECT NAME
10-022	BP 11127

Send Report Attention of:	Report Due	Verbal Due
BRADY NAGLE	9/21/92	9/21/92

	Sample Number	Date	Time	Comp	Matrix	Station Location	Number of Cntnrs	Type of Containers	Type of Analysis: TPH6 BTEX	EPA 601	TPH DIESEL 5520BF	Condition of Samples	Initial
(1)	MW-1	9/3/92	1530		W		3	VOA's	X			Bubbles (2)	
(2)	QC-1	9/3/92	1533		W		3	VOA's	X			" (1)	
(3)	QC-2	9/3/92			W	DUP 1	~~8~~	VOA's	X				
(4)	MW-2	9/3/92	1630		W		8	VOAs Ambers	X	X	X	X	

Relinquished by:(Signature)	Date/Time	Received by: (Signature)	Date/Time
[signature]	9/4/15	[signature]	9/4/92 13:15
Relinquished by:(Signature)	Date/Time	Received by: (Signature)	Date/Time
Relinquished by:(Signature)	Date/Time	Received by Lab:	Date/Time

Remarks: Please fax a copy to Brady

COMPANY: ACLS TO ENGINEERING
ADDRESS:
PHONE : 5107984070 FAX : 5107984099