Environmental
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Services

93 SEP 27 AM 11:42

A REPORT DOCUMENTING THE PURGING AND SAMPLING OF THREE GROUNDWATER MONITORING WELLS ON FOUR CONSECUTIVE QUARTERS AND THE DETERMINATION OF GROUNDWATER GRADIENT FOR TWELVE CONSECUTIVE MONTHS

AT:

ALAMEDA FIRE STATION
635 PACIFIC STREET
ALAMEDA, CALIFORNIA

SEPTEMBER 8, 1993

1548 Jacob Avenue San Jose, CA 95118
Phone/Fax (408) 267-6427 – Pager (415) 578-5947

E nvironmental
T echnical
S ervices

A REPORT DOCUMENTING THE PURGING AND SAMPLING OF THREE GROUNDWATER MONITORING WELLS ON FOUR CONSECUTIVE QUARTERS AND THE DETERMINATION OF GROUNDWATER GRADIENT FOR TWELVE CONSECUTIVE MONTHS:

AT:

ALAMEDA FIRE STATION
635 PACIFIC STREET
ALAMEDA, CALIFORNIA

prepared by:

Helen Mawhinney
ENVIRONMENTAL TECHNICAL SERVICES
Helen A. Mawhinney
Senior Environmental Specialist

Date 9/24/93

and

Roger Greensfelder
GREENSFELDER & ASSOCIATES
Roger Greensfelder PhD
CA Registered Geologist #3011

Date 9/9/93

AUGUST 8, 1993

1548 Jacob Avenue San Jose, CA 95118
Phone/Fax (408) 267-6427 – Pager (415) 578-5947

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1.0 INTRODUCTION

The following report documents the sampling of three groundwater monitoring wells and the determination of groundwater gradient at the Alameda Fire Station, 635 Pacific Street, Alameda, California.

Refer to Appendix A, Figure 1, Site Location Map.

Groundwater was sampled on four consecutive quarters and groundwater gradient determined for twelve consecutive months.

The work was performed in response to the discovery of petroleum hydrocarbons beneath the site and has been requested by the Alameda County Office of Environmental Health Department, Hazardous Materials Division.

2.0 PREVIOUS ENVIRONMENTAL INVESTIGATIONS

2.1 Tank Removal

On November 15, 1991 one 285-gallon underground storage tank (UST) was removed from the above referenced site. The tank previously contained diesel. One soil sample was collected from the native soil beneath the tank. The sample contained a detectable amount of toluene at 6.5 ppb and total xylenes at 4.4 ppb.

A soil sample was collected from stockpiled fill materials removed from the tank pit. This has a detectable amount of total petroleum hydrocarbons as diesel at 220 ppm and xylenes at 52 ppb.

2.2 EXCAVATION OF CONTAMINATED SOIL

Excavation of contaminated soil was performed on August 17, 1992 and four soil samples were collected. A sample was collected from each sidewall vadose/capillary zone. These samples were designated as FSX-1 and FSX-4. Soil sample FSX2-A was collected subsequent to excavation of material around sample FSX2, and confirms removal of the slight contamination present around FSX2. See Table 1A for analytical results.

2.3 ORIGINAL TANK REMOVAL, ANALYTICAL RESULTS

TABLE IA
SOIL ANALYTICAL RESULTS, ORIGINAL TANK REMOVAL
Total Petroleum Hydrocarbons as Gasoline
with Benzene, Toluene, Ethylbenzene, and Xylenes
August 17, 1992

Results reported in ppm

Sample #	TPH-G	B	T	E	X	TPH-D
FSX-1	ND	ND	ND	ND	ND	ND
FSX-2	ND	ND	ND	ND	ND	7.1
FSX-3	ND	ND	ND	ND	ND	ND
FSX-4	ND	ND	ND	ND	ND	ND

FSSP1-FSSP4: This stockpile sample was composited with FSSP5 and FSSP6 which was collected on August 18, 1992. See Table 1B for analytical results.

ND = not detected at lower detection limit for this compound

To ensure that all of the contaminated soil was excavated, additional excavation was performed on August 18, 1992 due to the 7.1 ppm detection of diesel in sidewall sample FSX2. The stockpile sample collected on August 17, FSSP1-FSSP4, was composited with FSSP5 and FSSP6 collected on August 18, 1992 for one analysis. Refer to Table 1B for analytical results.

TABLE 1B
ADDITIONAL EXCAVATION
SOIL ANALYTICAL RESULTS
Total Petroleum Hydrocarbons as Gasoline
and Diesel
August 18, 1992

Results reported in ppm

Sample#	TPH-G	TPH-D
FSX2-A (2FSX2)*	NA	ND
FSSP1-FSSP6	ND	3.0

ND = not detected at the lower detection limit
NA - not analyzed for this compound
*As listed on chain of custody

An existing 2-inch groundwater monitoring well is located adjacent to and within 1.5 feet of the tank pit cavity. The well was constructed by Aqua Science Engineering on June 3, 1986. The well was constructed in compliance with Assembly Bill 1362 and the Groundwater Monitoring Guidelines for Hazardous Materials Storage drafted by the Alameda County Water District in May 1984. The well was placed in the assumed down-gradient direction. Gradient direction information differed within the area.

3.0 SCOPE OF SERVICES

3.1 Groundwater Purging & Sampling

The three existing groundwater monitoring wells were purged and sampled on September 5, 1992, January 11, 1993, May 3, 1993, and July 29, 1993. The wells were purged using a clean stainless steel bailer (1.5" diameter by 3.0' length). Subsequent to purging each well was sampled using a clean stainless steel bailer. A separate bailer was dedicated to each well for the sampling event. At consistent intervals throughout sampling, groundwater parameters (pH and temperature) were monitored to evaluate stabilization of the wells.

A water sample was decanted from the sampling bailer into two one-liter amber bottles and three 40-ml volatile organics analysis vials (VOAs) to a positive meniscus eliminating headspace.

The samples were transported to a certified hazardous waste analytical laboratory under chain of custody for analysis.

3.2 GROUNDWATER ANALYSIS

Each groundwater sample collected was analyzed for total petroleum hydrocarbons as gasoline with benzene, toluene, ethylbenzene, and total xylenes (TPHg & BTEX using EPA Method 5030/602) and total petroleum hydrocarbons as diesel (TPHd using EPA Method 3510).

3.3 GROUNDWATER ANALYTICAL RESULTS

TABLE II
GROUNDWATER ANALYTICAL RESULTS
TOTAL PETROLEUM HYDROCARBONS AS GASOLINE
WITH BENZENE, TOLUENE, ETHYLBENZENE, AND TOTAL XYLENES
AND TOTAL PETROLEUM HYDROCARBONS AS DIESEL
SEPTEMBER 5, 1992

Results reported in ug/L

Sample#	TPHg	B	T	E	X	TPH-D
MW-2	ND	ND	ND	ND	ND	ND
MW-3	ND	ND	ND	ND	ND	ND
MW-4	ND	ND	ND	ND	ND	ND

ND - not detected at lower detection limit

TABLE III
GROUNDWATER ANALYTICAL RESULTS
SECOND QUARTER
JANUARY 11, 1993

Results reported in ug/L

Sample#	TPHg	B	T	E	X	TPH-D
MW-2	ND	ND	ND	ND	ND	ND
MW-3	ND	ND	ND	ND	ND	ND
MW-4	ND	ND	ND	ND	ND	ND

ND - not detected at lower detection limit

TABLE IV
GROUNDWATER ANALYTICAL RESULTS
THIRD QUARTER
MAY 3, 1992

Results reported in ug/L

Sample#	TPHg	B	T	E	X	TPH-D
MW-2	ND	ND	ND	ND	ND	ND
MW-3	ND	ND	ND	ND	ND	ND
MW-4	ND	ND	ND	ND	ND	ND

ND - not detected at lower detection limit

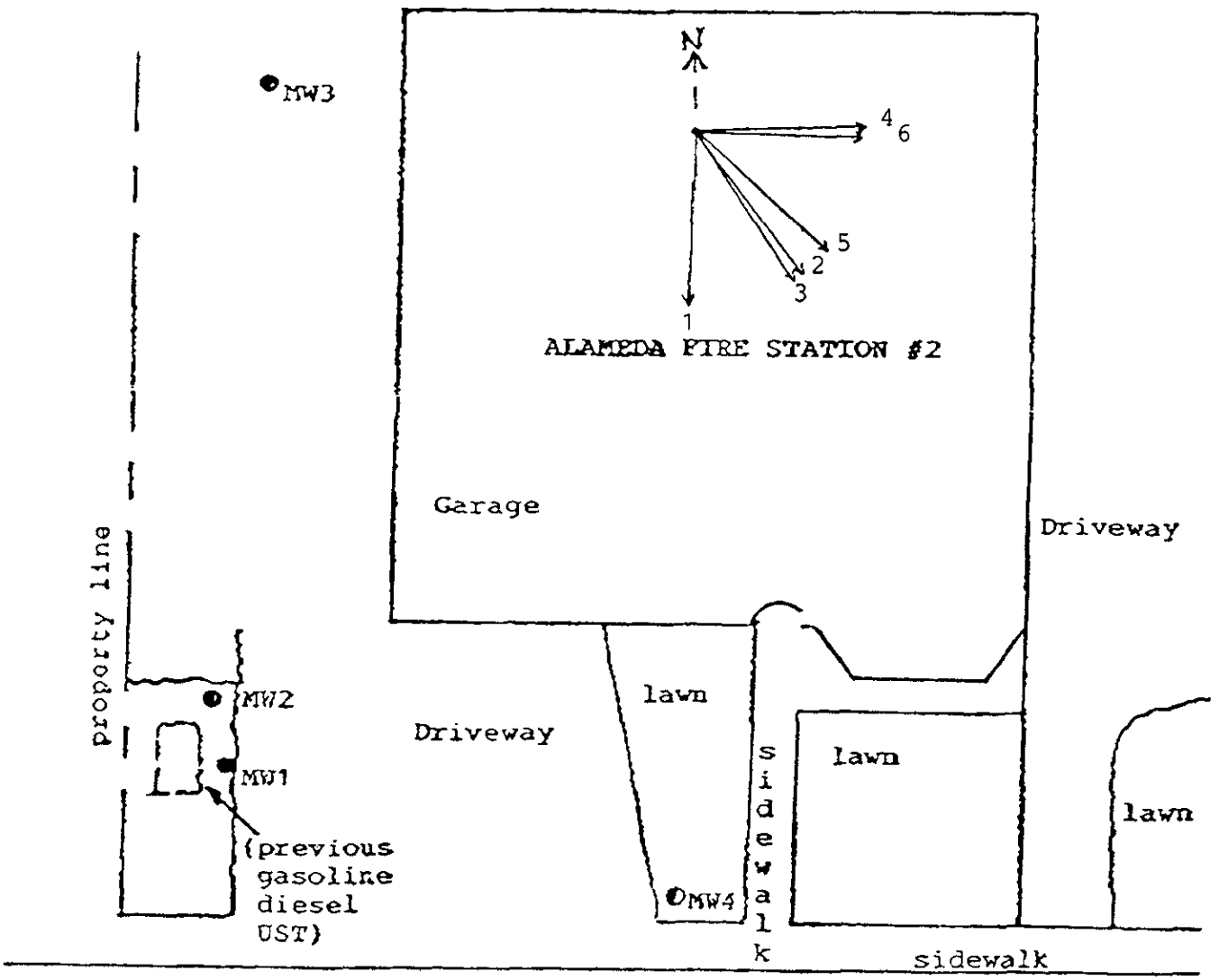
TABLE V
GROUNDWATER ANALYTICAL RESULTS
FOURTH QUARTER
JULY 29, 1992

Results reported in ug/L

Sample#	TPHg	B	T	E	X	TPH-D
MW-2	ND	ND	ND	ND	ND	ND
MW-3	ND	ND	ND	ND	ND	ND
MW-4	ND	ND	ND	ND	ND	ND

ND - not detected at lower detection limit

3.4 GROUNDWATER GRADIENT



GROUNDWATER GRADIENT DATA

KEY NO.	DATE	E4	FLOW	GRAD
1	10/14/92	3.02	183	.0020
2	11/10/92	3.06	143	.0026
3	12/11/92	3.98	146	.0027
4	01/11/93	5.36	89	.0082
5	05/03/93	6.26	133	.0007
6	07/29/93	3.32	94	.0340

NOTES
(1) Water elev. in MW4
(2) Flow azimuth (%E of N)
(3) Gradient (ft/ft)

4.0 CONCLUSIONS AND RECOMMENDATIONS

The three monitoring wells located on this site have been developed and sampled for four consecutive quarters and found no detectable amounts of TPH-G, TPH-D, and BTEX.

Therefore it is our recommendation that this site be considered for closure and no further monitoring be required.

5.0 REPORT

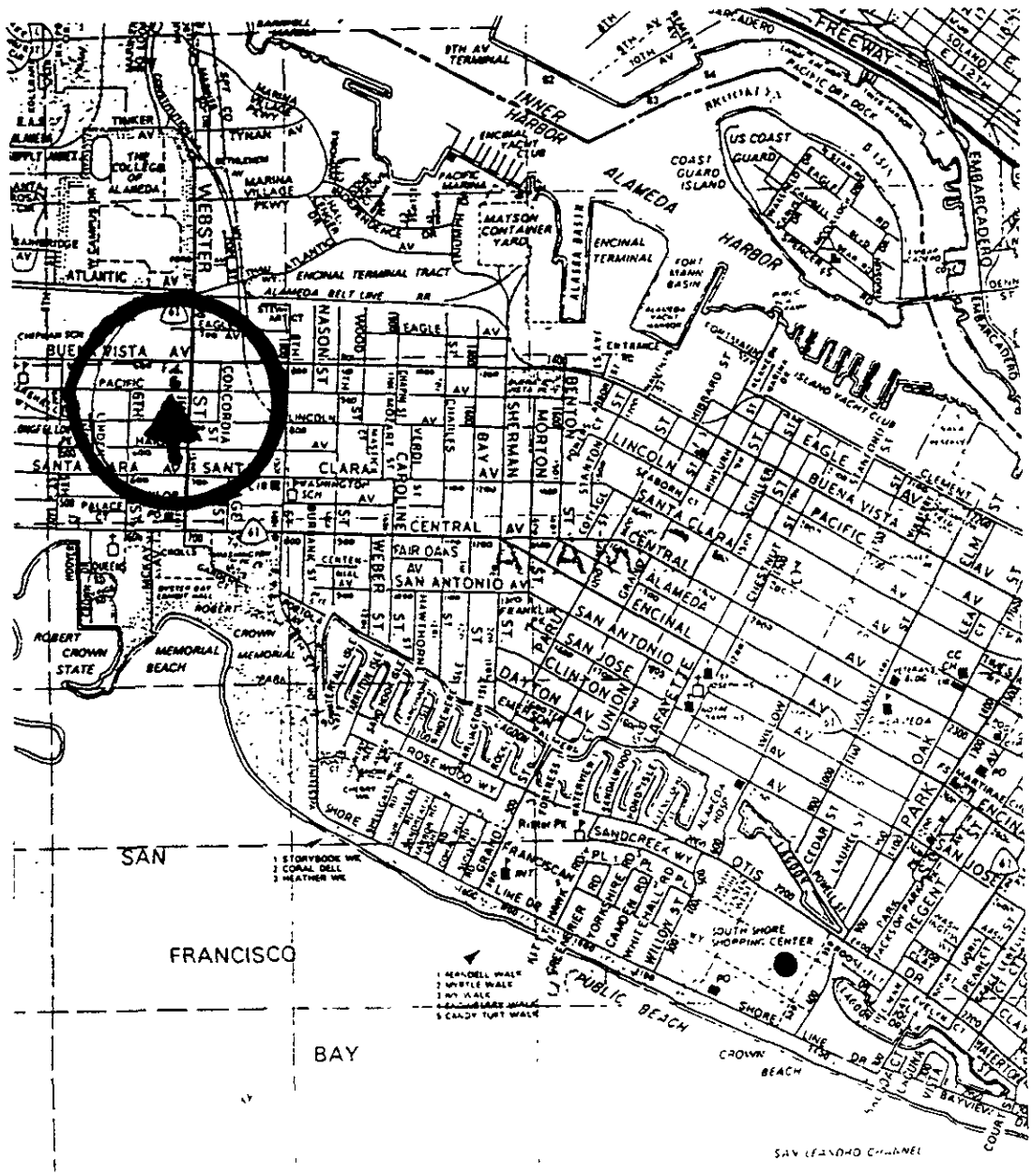
Please forward copies of this report, chain of custody documentation, and laboratory analytical reports to the San Francisco Regional Water Quality Control Board, and the Alameda County Department of Environmental Health Department Hazardous Materials Division.

Alameda County
Department of Environmental Health
Hazardous Materials Division
80 Swan Way,
Room 200
Oakland, CA 94621

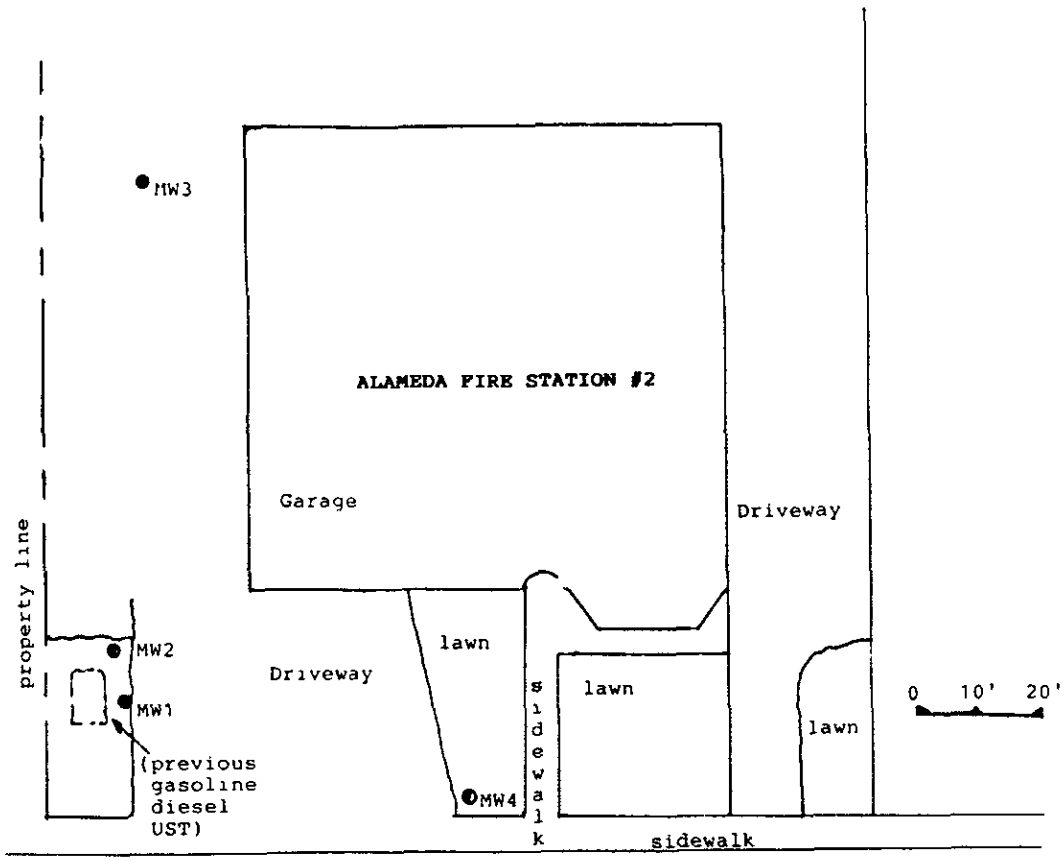
San Francisco Regional
Water Quality Control Board
2101 Webster Street, Rm 500
Oakland, CA 94621

APPENDIX A

MAPS



Environmental Technical Services	ALAMEDA FIRE STATION 635 PACIFIC STREET ALAMEDA, CALIF.	**Figure** 1 SITE LOCATION MAP



635 PACIFIC STREET

Environmental Technical Services	ALAMEDA FIRE STATION 635 PACIFIC STREET ALAMEDA, CALIF	**Figure** 2 MONITORING WELL AND FORMER TANK LOCATION

APPENDIX B

GROUNDWATER ANALYTICAL RESULTS
FIRST QUARTER

S&W
Soil and Water
Environmental
Laboratory

Drinking Water
Waste Water ○ Asbestos
Hazardous Waste – Soil
Calderon Testing – Air

14072 W. Park Avenue
Boulder Creek, CA 95006
(408) 338-3053

Laboratory Report

Client: Environmental Tech. Services
1548 Jacob Ave.
San Jose CA 95118

Report Date: 09/29/92

Sample Site:
Alam Fire Dept
635 Pacific Street
Alameda
Alam Fire #2

Date Received: 09/05/92

Analysis Requested	Procedure	Date Analyzed
Total Hydrocarbons - Gas	EPA 5030	09/05/92
Total Hydrocarbons - Diesel	EPA 3510	
BTEX	EPA 602	

S&W Ref. #	Client Ref. #	Matrix/Analysis	Concentration	Detection Limit
2492-ET1-A	MW-2	Water/TPH-G	*	50 ppb
2492-ET1-A	MW-2	Water/TPH-D	*	50 ppb
2492-ET1-A	MW-2	Water/BTEX		
		Benzene	*	0.5 ppb
		Toluene	*	0.5 ppb
		Ethylbenzene	*	0.5 ppb
		Xylenes	*	0.5 ppb
2492-ET1-B	MW-4	Water/TPH-G	*	50 ppb
2492-ET1-B	MW-4	Water/TPH-D	*	50 ppb
2492-ET1-B	MW-4	Water/BTEX		
		Benzene	*	0.5 ppb
		Toluene	*	0.5 ppb
		Ethylbenzene	*	0.5 ppb
		Xylenes	*	0.5 ppb

* No detectable amount @ detection limit

Analyst Signature: R. W. Lamay

S&W
Soil and Water
Environmental
Laboratory

Drinking Water
Waste Water ○ Asbestos
Hazardous Waste – Soil
Calderon Testing – Air

14072 W. Park Avenue
Boulder Creek, CA 95006
(408) 338-3053

Laboratory Report

Client
Environmental Tech. Services
1548 Jacob Ave.
San Jose CA 95118

Report Date
03/10/92

Sample Site
Alameda Fire Det.
635 Pacific St.
Alameda, CA
Alam Fire #2

Date Received
03/05/92

Analysis Requested	Procedure	Date Analyzed
Total Hydrocarbons - Gas	EPA 5030	03/06/92
Total Hydrocarbons - Diesel	EPA 3510	
BTEX	EPA 602	

S&W Ref. #	Client Ref. #	Matrix/Analysis	Concentration	Detection Limit
2492-ET1-C	MW-3	Water/TPH-G	*	50 ppb
2492-ET1-C	MW-3	Water/TPH-D	*	50 ppb
2492-ET1-C	MW-3	Water/BTEX		
		Benzene	*	0.5 ppb
		Toluene	*	0.5 ppb
		Ethylbenzene	*	0.5 ppb
		Xylenes	*	0.5 ppb

* No detectable amount @ detection limit

Analyst Signature R. M. Lamoy

CHAIN OF CUSTODY RECORD

PROJECT NO/MW: Alam Fire #2

SITE NAME & ADDRESS: Alam Fire Dept / 635 Pacific St Alameda, Ca

WITNESSING AGENCY / INSPECTOR NAME / DATE: Juliet Shen / Alam Fire Health Dept

ID NO.	DATE	TIME	SOIL	WATER	SAMPLING LOCATION	TPH (Gasoline) & B, T, X, & E	TPH (Diesel) & B, T, X, & E	Total Oil & Grease	Halogenated HC's	B, T, X & E	Heavy Metals		REMARKS
MW-2	← 9/4/92			✓		✓	✓						
MW-4	← 9/4/92			✓		✓	✓						
MW-3	9/4/92			✓		✓	✓						

ANALYSES REQUESTED (1)

(1) See attached "Table 2" for specific analysis method.

Relinquished by: (Signature)	Date/Time	Received by: (Signature)
Helen Wawrzyniuk	9/5/92 1:16	
Relinquished by: (Signature)	Date/Time	Received by: (Signature)
Relinquished by: (Signature)	Date/Time	Received by: (Signature)
Relinquished by: (Signature)	Date/Time	Rec'd for Laboratory by: (Signature)
	9/5/92 1:45	R Hanson

The following MUST BE completed by the laboratory accepting samples for analysis:

1. Have all samples received for analysis been stored in Ice? Yes
2. Will samples remain refrigerated until analyzed? Yes
3. Did any samples received for analysis have head space? No
4. Were samples in appropriate containers and properly packaged? Yes

R Hanson — Signature — Title — 9-5-92 Date

Rev: 12-88

APPENDIX C

GROUNDWATER ANALYTICAL RESULTS
SECOND QUARTER

S&W
Soil and Water Environmental Laboratory

Drinking Water
Waste Water ◦ Asbestos
Hazardous Waste – Soil
Calderon Testing – Air

14072 W. Park Avenue
Boulder Creek, CA 95006
(408) 338-3053

Laboratory Report

Client: Environmental Tech. Services
1548 Jacob Ave.
San Jose CA 95118

Report Date: 01/15/93

Sample Site: Alam Fire Station #2
635 Pacific Ave
Alameda
2MWALAMFIRE2

Date Received: 01/12/93

Analysis Requested	Procedure	Date Analyzed
Total Hydrocarbons - Gas	EPA 5030	01/14/93
Total Hydrocarbons - Diesel	EPA 3510	
Total Oil & Grease	EPA 503e	
BTEX	EPA 602	

S&W Ref. #	Client Ref #	Matrix/Analysis	Concentration	Detection Limit
0123-ET2-A	MW-2	Water/TPH-G	*	50 ppb
0123-ET2-A	MW-2	Water/TPH-D	*	50 ppb
0123-ET2-A	MW-2	Water/TOG	*	5 ppm
0123-ET2-A	MW-2	Water/BTEX		
		Benzene	*	0.5 ppb
		Toluene	*	0.5 ppb
		Ethylbenzene	*	0.5 ppb
		Xylenes	*	0.5 ppb
0123-ET2-B	MW-3	Water/TPH-G	*	50 ppb
0123-ET2-B	MW-3	Water/TPH-D	*	50 ppb
0123-ET2-B	MW-3	Water/TOG	*	5 ppm
0123-ET2-B	MW-3	Water/BTEX		
		Benzene	*	0.5 ppb
		Toluene	*	0.5 ppb
		Ethylbenzene	*	0.5 ppb
		Xylenes	*	0.5 ppb
0123-ET2-C	MW-4	Water/TPH-G	*	50 ppb
0123-ET2-C	MW-4	Water/TPH-D	*	50 ppb
0123-ET2-C	MW-4	Water/TOG	*	5 ppm
0123-ET2-C	MW-4	Water/BTEX		
		Benzene	*	0.5 ppb
		Toluene	*	0.5 ppb
		Ethylbenzene	*	0.5 ppb
		Xylenes	*	0.5 ppb

* No detectable amount @ detection limit

Analyst Signature: R. H. Lamson

Environmental Technical Services
(408) 267-6427

CHAIN - OF - CUSTODY

Project Number	Site Name and Address	Type and Number of Containers	Analysis Required							Laboratory ID	Comments
2MWALAMFIRE2	ALAM Fire Stn #2, 635 Pacific Ave, Alameda		TPH-G + BTEX	TPH-D + [illegible]	TOG					Condition of Samples 1 - Good 2 - See Reverse	
Witnessing Agency/Inspector Name and Date: ALAM. CO. ENV HLTH DEPT, JulieH Shen											
Sample ID	Date / Time / Matrix / Sample Location										
mw-2	1/11/93 / H2O / 1st GW	2 liters 2 VOAs	✓	✓							
mw-3	↓ / ↓ / ↓	↓	✓	✓							
mw-4	↓ / ↓ / ↓	↓	✓	✓							

Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Date/Time	Remarks:
Helen Mawhinney	1/11/93 4:30	ETS FRIDGE		
Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Date/Time	COMPANY:
				ADDRESS:
Relinquished by: (Signature)	Date/Time	Received by Lab: (Signature)	Date/Time	PHONE: FAX:
[illegible]	1/[illegible]/93	[illegible]	1/11/93 [illegible]	

APPENDIX D

GROUNDWATER ANALYTICAL RESULTS
THIRD QUARTER

Soil and Water Environmental Laboratory

Drinking Water
Waste Water ◦ Asbestos
Hazardous Waste – Soil
Calderon Testing – Air

14072 W. Park Avenue
Boulder Creek, CA 95006
(408) 338-3053

Laboratory Report

Client: Enviornmental Tech. Services
1548 Jacob Ave.
San Jose CA 95118

Report Date: 05/13/93

Sample Site: Alameda Fire Station #2
Park Street, Alameda

AFS #2

Date Received: 05/05/93

Analysis Requested	Procedure	Date Analyzed
Total Hydrocarbons - Gas	EPA 5030	05/06/93
Total Hydrocarbons - Diesel	EPA 3510	
BTEX	EPA 602	

S&W Ref #	Client Ref. #	Matrix/Analysis	Concentration	Detection Limit
1253-ET2-A	MW-2	Water/TPH-G	*	50 ppb
1253-ET2-A	MW-2	Water/TPH-D	*	50 ppb
1253-ET2-A	MW-2	Water/BTEX		
		Benzene	*	0.5 ppb
		Toluene	*	0.5 ppb
		Ethylbenzene	*	0.5 ppb
		Xylenes	*	0.5 ppb
1253-ET2-B	MW-3	Water/TPH-G	*	50 ppb
1253-ET2-B	MW-3	Water/TPH-D	*	50 ppb
1253-ET2-B	MW-3	Water/BTEX		
		Benzene	*	0.5 ppb
		Toluene	*	0.5 ppb
		Ethylbenzene	*	0.5 ppb
		Xylenes	*	0.5 ppb
1253-ET2-C	MW-4	Water/TPH-G	*	50 ppb
1253-ET2-C	MW-4	Water/TPH-D	*	50 ppb
1253-ET2-C	MW-4	Water/BTEX		
		Benzene	*	0.5 ppb
		Toluene	*	0.5 ppb
		Ethylbenzene	*	0.5 ppb
		Xylenes	*	0.5 ppb

* No detectable amount @ detection limit

Analyst Signature: R. D. Romero

Soil and Water Environmental Laboratory
14072 West Park Avenue
Boulder Creek, CA 95006
(408) 338-3053/4466

CHAIN - OF - CUSTODY

Project Number	Site Name and Address	Type and Number of Containers	Analysis Required							Laboratory ID	Comments
AFS #2	Park St, Alameda ALAMEDA FIRE STATION #2		TPH-G + BTEX	TPH-D + [redacted]	TOG					Condition of Samples 1 - Good 2 - See Reverse	
Witnessing Agency/Inspector Name and Date											

Sample ID	Date	Time	Matrix	Sample Location										
MW-2	5/3/93		H2O			✓	✓							
MW-3	↓		↓			✓	✓							
MW-4	↓		↓			✓	✓							

Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Date/Time	Remarks:
Helen Mawhinney	5/[redacted]93 6:15	TO ETS FRIDGE		
Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Date/Time	COMPANY:
				ADDRESS:
Relinquished by: (Signature)	Date/Time	Received by Lab: (Signature)	Date/Time	PHONE: FAX:
Helen Mawhinney	5/5/93 6:22	[redacted] Tamon	5/5/93 6:20	

LABORATORY REQUIRES TWO (2) COPIES OF THIS FORM.

APPENDIX E

GROUNDWATER ANALYTICAL RESULTS
FOURTH QUARTER

S&W
Soil and Water
Environmental
Laboratory, Inc.

Drinking Water
Waste Water - Asbestos
Hazardous Waste - Soil
Calderon Testing - Air

14072 W. Park Avenue
Boulder Creek, CA 95006
(408) 338-3053

Laboratory Report

Client
Enviornmental Tech. Services
1548 Jacob Ave.
San Jose CA 95118

Report Date 08/15/93

Sample Site
Pacific Ave.
Alameda Fire Station
Alameda
AlamFire

Date Received 07/29/93

Analysis Requested
Total Hydrocarbons - Gas
Total Hydrocarbons - Diesel
BTEX

Procedure
EPA 5030
EPA 3510
EPA 602

Date Analyzed 08/01/93

S&W Ref #	Client Ref. #	Matrix/Analysis	Concentration	Detection Limit
2103-ET1=A	MW-2	Water/TPH-G	*	50 ppb
2103-ET1=A	MW-2	Water/TPH-D	*	50 ppb
2103-ET1=A	MW-2	Water/BTEX		
		Benzene	*	0.5 ppb
		Toluene	*	0.5 ppb
		Ethylbenzene	*	0.5 ppb
		Xylenes	*	0.5 ppb
2103-ET1=B	MW-3	Water/TPH-G	*	50 ppb
2103-ET1=B	MW-3	Water/TPH-D	*	50 ppb
2103-ET1=B	MW-3	Water/BTEX		
		Benzene	*	0.5 ppb
		Toluene	*	0.5 ppb
		Ethylbenzene	*	0.5 ppb
		Xylenes	*	0.5 ppb
2103-ET1=C	MW-4	Water/TPH-G	*	50 ppb
2103-ET1=C	MW-4	Water/TPH-D	*	50 ppb
2103-ET1=C	MW-4	Water/BTEX		
		Benzene	*	0.5 ppb
		Toluene	*	0.5 ppb
		Ethylbenzene	*	0.5 ppb
		Xylenes	*	0.5 ppb

* No detectable amount @ detection limit

Analyst Signature R. F. Lemon

Environmental Technical Services
(408) 267-6427

CHAIN - OF - CUSTODY

Project Number	Site Name and Address	Type and Number of Containers	Analysis Required							Laboratory ID	Comments
Project Number: Alam Fire	Site Name and Address: Pacific Ave Alameda Fire Dept Alameda		TPH-G - BTEX	TPH-D - [illegible]	TOG					Laboratory ID: 2103-ET1	
Witnessing Agency/Inspector Name and Date										Condition of Samples 1 - Good 2 - See Reverse	
Sample ID	Date / Time / Matrix / Sample Location										
MW2	7/27/93 / H2O		✓	✓							A
MW3	" "		✓	✓							B
MW4	" "		✓	✓							C

Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Date/Time	Remarks:
Helen Mawhinney	7/27/93 9:30	ETS Fridge		
Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Date/Time	COMPANY: ETS
Relinquished by: (Signature) Helen Mawhinney	Date/Time 7/29/93 9:45	Received by Lab: (Signature) R. H. Lamon	Date/Time 7/29/93 10:15	ADDRESS:
				PHONE: FAX:

APPENDIX F

GROUNDWATER DEVELOPMENT REPORTS

MONITORING WELL SAMPLING DATA
MW-2

Project Name:	Well#
ALAMEDA FIRE STATION	MW-2

DATE: July 29, 1993

NAME:	Time Began:
Mawhinney/Smith	12:05 p

DEPTH OF WELL	DEPTH TO WATER	WELL DIAM.
17.7'	5.92'	2"

Time	Gallons	Temp.	pH	Cond.
12:08	1	79.9	12.23	.55
12:12	3	76.1	12.07	.55
12:20	5	73.8	16.57	.55
12:30	7	72.6	15.30	.56

Volume Evacuated	Purging Equip.	Sampling Equip.
8 gallons	Stainless Steel Bailer	Stainless Steel Bailer

Depth to Water Upon Completion of Sampling: 5.9'

Sheen	Floating Product	Sample Color	Odor
no	no	gold/muddy	no

Sediment/Foreign Matter: very little silt

Sample ID#	Analysis	Laboratory
MW-1	TPH-G, BTEX	S & W Lab

Sample Containers:
2/40ml VOAs
2 amber one-liter bottles

MONITORING WELL SAMPLING DATA
MW-3

Project Name: ALAMEDA FIRE STATION

Well# MW-3

DATE: July 29, 1993

NAME: Mawhinney

Time Began: 12:45p

DEPTH OF WELL	DEPTH TO WATER	WELL DIAM.
17.52'	6.6'	2"

Time	Gallons	Temp.	pH	Cond.
12:57	1	72.6	13.42	.38
1:00	3	70.8	13.57	.38
1:07	5	69.8	14.94	.34
1:15	7	69.8	14.92	.38

Volume Evacuated	Purging Equip.	Sampling Equip.
8 gallons	Stainless Steel Bailer	Stainless Steel Bailer

Depth to Water Upon Completion of Sampling: 5.9'

Sheen	Floating Product	Sample Color	Odor
no	no	gold/muddy	no

Sediment/Foreign Matter: very little silt

Sample ID#	Analysis	Laboratory
MW-2	TPH-G, BTEX	S & W Lab

Sample Containers:

2/40ml VOAs
2 amber one-liter bottles

MONITORING WELL SAMPLING DATA
MW-4

Project Name:	Well#
ALAMEDA FIRE STATION	MW-4

DATE: July 29, 1993

NAME: Mawhinney

Time Began: 11:10a

DEPTH OF WELL	DEPTH TO WATER	WELL DIAM.
18.3'	7.74'	2'

Time	Gallons	Temp.	pH	Cond.
11:15	1	90.3	16.83	1.15
11:20	3	81.9	13.28	.51
11:28	5	78.4	14.58	.48
11:35	7	76.6	13.69	.49

Volume Evacuated	Purging Equip.	Sampling Equip.
8 gallons	Stainless Steel Bailer	Stainless Steel Bailer

Depth to Water Upon Completion of Sampling: 6.5'

Sheen	Floating Product	Sample Color	Odor
no	no	gold/muddy	no

Sediment/Foreign Matter: very little silt

Sample ID#	Analysis	Laboratory
MW-3	TPH-g, BTEX	S & W Lab

Sample Containers:

2/40ml VOAs
2 amber one-liter bottles

MONITORING WELL SAMPLING DATA
MW-2

Project Name:	Well#
ALAMEDA FIRE STATION	MW-2

DATE: May 3, 1993

NAME:	Time Began:
Mawhinney	12:29p

DEPTH OF WELL	DEPTH TO WATER	WELL DIAM.
17.7′	4.87′	2"

Time	Gallons	Salinity	pH	Temp.	Cond.
12:34	1	*	*	63.5 F	5.53
12:38	3	*	*	63.7 F	5.34
12:42	5	*	*	63.7 F	5.34
12:50	7	*	*	63.7 F	5.34

Volume Evacuated	Purging Equip.	Sampling Equip.
7 gallons	Stainless Steel Bailer	Stainless Steel Bailer

Depth of Well Upon Completion of Sampling:

17.7′ Good Recharge

Sheen	Floating Product	Sample Color	Odor
no	no	gold	no

Sediment/Foreign Matter: very silty

Sample ID#	Analysis	Laboratory
MW-2	TPHg, BTEX, TPHd	S & W Lab

Sample Containers

2/40-ml VOAs
2 amber one liter bottles

MONITORING WELL SAMPLING DATA
MW-3

Project Name:	Well#
ALAMEDA FIRE STATION	MW-3

DATE: May 3, 1993

NAME:	Time Began:
Mawhinney	1:00p

DEPTH OF WELL	DEPTH TO WATER	WELL DIAM.
17.62′	5.54′	2"

Time	Gallons	Salinity	pH	Temp.	Cond.
1:05	1	*	*	64.7 F	7.62
1:08	3	*	*	64.4 F	7.84
1:12	5	*	*	64.2 F	12.1
1:16	7	*	*	59.3 F	12.94

Volume Evacuated	Purging Equip.	Sampling Equip.
7 gallons	Stainless Steel Bailer	Stainless Steel Bailer

Depth to Water Upon Completion of Sampling:

17.7′ at completion

Sheen	Floating Product	Sample Color	Odor
no	no	gold	no

Sediment/Foreign Matter: very little silt

Sample ID#	Analysis	Laboratory
MW-3	TPHg, BTEX, TPHd	S & W Lab

Sample Containers

2/40-ml VOAs
2 amber one liter bottles

MONITORING WELL SAMPLING DATA
MW-4

Project Name:	Well#
ALAMEDA FIRE STATION	MW-4

DATE: May 3, 1993

NAME:	Time Began:
Mawhinney	11:41

DEPTH OF WELL	DEPTH TO WATER	WELL DIAM.
14.8	4.8	2"

Time	Gallons	Salinity	pH	Temp.	Cond.
11:48	1	*	*	61.2 F	5.61
11:54	3	*	*	60.7 F	7.09
12:00	5	*	*	60.7 F	7.30
12:05	7	*	*	60.7 F	7.29
12:24	9	*	*	60.7 F	7.29

Volume Evacuated	Purging Equip.	Sampling Equip.
9 gallons	Stainless Steel Bailer	Stainless Steel Bailer

Depth of Well Upon Completion of Sampling:

19.00' Recharge good

Sheen	Floating Product	Sample Color	Odor
no	no	gold	no

Sediment/Foreign Matter: very little silty

Sample ID#	Analysis	Laboratory
MW-4	TPHg, BTEX, TPHd	S & W Lab

Sample Containers

2/40-ml VOAs
2 amber one liter bottles

MONITORING WELL SAMPLING DATA
MONITORING WELL NO.1

PROJECT NAME:	WELL #
ALAMEDA FIRE STATION #2	MW-1

DATE: JANUARY 11, 1993

NAME:	TIME BEGAN:
Helen Mawhinney	12:45

DEPTH OF WELL(FT.)	DEPTH OF WATER(FT.)	WELL DIAM.
19.2	5.7	2"

TIME	GALLONS	pH	TEMP.	COND.
10:45	1	7.3	61.0	1.49
10:50	2	7.2	61.0	1.48
10:55	3	7.3	61.0	1.49
11:05	4	7.2	59.0	1.49
11:15	5	7.2	61.0	1.49
11:19	7	7.2	61.0	1.49

VOLUME EVACUATED	PURGING EQUIP.	SAMPLING EQUIP.
8 gallons	Stainless Steel Bailer	Stainless Steel Bailer

DEPTH TO WATER UPON COMPLETION OF SAMPLING

Not measured. Recharge very good

SHEEN	FLOATING PRODUCT	SAMPLE COLOR	ODOR
no	no	gold	no

SEDIMENT/FOREIGN MATTER: Sample clear

SAMPLE ID#	ANALYSIS	LABORATORY
MW-1	TPHg, BTEX	S & W Lab.

SAMPLE CONTAINERS	PRESERVATIVE
3/ 40-ml VOAs	none (24 hr.analysis)

MONITORING WELL SAMPLING DATA
MONITORING WELL NO.2

PROJECT NAME:	WELL #
ALAMEDA FIRE STATION #2	MW-2

DATE: JANUARY 11, 1993

NAME:	TIME BEGAN:
Helen Mawhinney	11:25

DEPTH OF WELL(FT.)	DEPTH OF WATER(FT.)	WELL DIAM.
17.7	5.3	2"

TIME	GALLONS	pH	TEMP.	COND.
11:25	1	7.96	60.4	3.47
11:30	2	7.94	60.5	3.47
11:35	3	7.93	60.5	3.48
11:40	4	7.90	60.5	3.51
11:45	5	7.90	60.4	3.53
11:50	7	7.90	60.4	3.53

VOLUME EVACUATED	PURGING EQUIP.	SAMPLING EQUIP.
8 gallons	Stainless Steel Bailer	Stainless Steel Bailer

DEPTH TO WATER UPON COMPLETION OF SAMPLING
Not measured.

SHEEN	FLOATING PRODUCT	SAMPLE COLOR	ODOR
no	no	gold	no

SEDIMENT/FOREIGN MATTER: sample clear

SAMPLE ID#	ANALYSIS	LABORATORY
MW-2	TPHg, BTEX	S & W Lab

SAMPLE CONTAINERS	PRESERVATIVE
3/ 40-ml VOAs	none (24 hr. analysis)

MONITORING WELL SAMPLING DATA
MONITORING WELL NO.3

PROJECT NAME:	WELL #
ALAMEDA FIRE STATION #2	MW-3

DATE: JANUARY 11, 1993

NAME:	TIME BEGAN:
Helen Mawhinney	12:00p

DEPTH OF WELL(FT.)	DEPTH OF WATER(FT.)	WELL DIAM.
17.6	6.0	2"

TIME	GALLONS	pH	TEMP.	COND.
12:00	1	7.68	57.1	1.53
12:05	2	7.68	57.3	1.52
12:10	3	7.67	57.3	1.52
12:15	4	7.63	57.4	1.53
12:20	5	7.65	57.5	1.53
12:25	7	7.65	57.5	1.53

VOLUME EVACUATED	PURGING EQUIP.	SAMPLING EQUIP.
8 gallons	Stainless Steel Bailer	Stainless Steel Bailer

DEPTH TO WATER UPON COMPLETION OF SAMPLING

Not measured. Recharge very good

SHEEN	FLOATING PRODUCT	SAMPLE COLOR	ODOR
no	no	gold	no

SEDIMENT/FOREIGN MATTER: very little silt

SAMPLE ID#	ANALYSIS	LABORATORY
MW-3	TPHg, BTEX	S & W Lab.

SAMPLE CONTAINERS	PRESERVATIVE
3/ 40-ml VOAs	none (24 hr.analysis)

MONITORING WELL SAMPLING DATA/MW-2

Project Name:	Well#
ALAMEDA FIRE STATION# 2	MW-2
Date: September 4, 1992	
Name:	**Time Began:**
Mawhinney	3:12

DEPTH OF WELL(ft.)	DEPTH TO WATER(ft.)	WELL DIAM.
17.7	7.33	2"

Time	Gallons	Salinity	pH	Temp.	Cond.
3:12	1	.05	7.5	25 C	1.46
3:30	3	.05	7.3	23 C	1.00
3:41	5	.04	7.0	23 C	1.26
3:54	8	.04	7.3	23 C	1.20
4:11	10	.04	7.3	23 C	1.24

Volume Evacuated	Purging Equip.	Sampling Equip.
10 gallons	Stainless Steel Bailer	Stainless Steel Bailer

Depth to Water Upon Completion of Sampling

Not measured. Recharge very good

Sheen	Floating Product	Sample Color	Odor
no	no	gold	no

Sediment/Foreign Matter: sample clear

Sample ID#	Analysis	Laboratory
MW-2	TPHg, BTEX	S & W Lab.

Sample Containers	Preservative
3/ 40-ml VOAs	None (24 hr analysis)

MONITORING WELL SAMPLING DATA/MW-3

Project Name:	Well#
ALAMEDA FIRE STATION# 2	MW-3

Date: September 4, 1992

Name:	Time Began:
Mawhinney	4:29

DEPTH OF WELL(ft.)	DEPTH TO WATER(ft.)	WELL DIAM.
17.73	7.93	2"

Time	Gallons	Salinity	pH	Temp.	Cond.
12:21	1	.04	7.6	26 C	1.25
12:34	3	.05	7.5	25 C	1.38
12:48	5	.04	7.3	23 C	1.26
1:01	8	.04	7.2	24 C	1.26
1:15	10	.04	7.3	23 C	1.24

Volume Evacuated	Purging Equip.	Sampling Equip.
10 gallons	Stainless Steel Bailer	Stainless Steel Bailer

Depth to Water Upon Completion of Sampling

Recharge very good

Sheen	Floating Product	Sample Color	Odor
no	no	gold	no

Sediment/Foreign Matter: sample clear

Sample ID#	Analysis	Laboratory
MW-3	TPHg, BTEX	S & W Lab.

Sample Containers	Preservative
3/ 40-ml VOAs	None (24 hr analysis)

MONITORING WELL SAMPLING DATA/MW-4

Project Name:	Well#
ALAMEDA FIRE STATION# 2	MW-4

Date: September 4, 1992

Name:	Time Began:
Mawhinney	4:29

DEPTH OF WELL(ft.)	DEPTH TO WATER(ft.)	WELL DIAM.
19.81	7.26	2"

Time	Gallons	Salinity	pH	Temp.	Cond.
2:01	1	.04	7.6	26 C	1.25
2:16	3	.05	7.5	25 C	1.38
2:25	5	.04	7.3	23 C	1.26
2:45	8	.04	7.2	24 C	1.26
3:01	10	.04	7.3	23 C	1.24

Volume Evacuated	Purging Equip.	Sampling Equip.
10 gallons	Stainless Steel Bailer	Stainless Steel Bailer

Depth to Water Upon Completion of Sampling

Recharge very good

Sheen	Floating Product	Sample Color	Odor
no	no	gold	no

Sediment/Foreign Matter: sample clear

Sample ID#	Analysis	Laboratory
MW-4	TPHg, BTEX	S & W Lab.

Sample Containers	Preservative
3/ 40-ml VOAs	None (24 hr analysis)