aqua science engineers inc.

R022

December 25, 2000

QUARTERLY GROUNDWATER MONITORING REPORT
DECEMBER 2000 GROUNDWATER SAMPLING
ASE JOB NO. 3648

at
1310 Central Avenue
Alameda, California

Prepared for:
Mr. Nissan Saidian
5733 Medallion Court
Castro Valley, CA 94522

Prepared by:
AQUA SCIENCE ENGINEERS, INC.
208 W. El Pintado
Danville, CA 94526
(925) 820-9391

1.0 INTRODUCTION

Site Location (Site), See Figure 1
1310 Central Avenue
Alameda, CA

Responsible Party
Mr. Pritpaul Sappal
c/o Mr. Nissan Saidian
5733 Medallion Court
Castro Valley, CA 94522

Environmental Consulting Firm
Aqua Science Engineers, Inc. (ASE)
208 West El Pintado
Danville, CA 94526
Contact: Robert Kitay, Senior Geologist
(925) 820-9391

Agency Review
Mr. Larry Seto
Alameda County Health Care Services Agency (ACHCSA)
1131 Harbor Bay Parkway, Suite 250
Alameda, CA 94502

Mr. Chuck Headlee
California Regional Water Quality Control Board (RWQCB)
San Francisco Bay Region
1515 Clay Street, Suite 1400
Oakland, CA 94612

The following is a report detailing the methods and findings of the December 2000 quarterly groundwater sampling at the above-referenced site (*Figure 1*). This sampling was conducted as required by the ACHCSA and RWQCB. ASE has prepared this report on behalf of Mr. Nissan Saidian, owner of the property.

2.0 GROUNDWATER FLOW DIRECTION AND GRADIENT

On December 5, 2000, ASE associate geologist Ian Reed measured the depth to water in each site groundwater monitoring well using an electric water level sounder. The surface of the groundwater was also checked for the presence of free-floating hydrocarbons or sheen with a product thickness bailer. No free-floating hydrocarbons or sheen were observed in any site monitoring well. Groundwater elevation data is presented as *Table One*. The water table dropped approximately 0.7-feet this quarter.

A groundwater potentiometric surface map for December 5, 2000 is presented as *Figure 2*. Groundwater beneath the site flows to the southwest with a gradient of approximately 0.0059-feet/foot, which is consistent with previous findings but is not consistent with the hydrocarbon distribution as shown in ASE's August 22, 2000 soil and groundwater assessment.

3.0 GROUNDWATER SAMPLE COLLECTION AND ANALYSIS

Prior to sampling, all monitoring wells were purged of four well casing volumes of groundwater using dedicated polyethylene bailers. Petroleum hydrocarbon odors were present during the purging and sampling of monitoring wells MW-1 and MW-3. The parameters pH, temperature and conductivity were monitored during the well purging. Samples were not collected until these parameters stabilized. Groundwater samples were collected from each well using dedicated polyethylene bailers.

All samples were decanted from the bailers into 40-ml volatile organic analysis (VOA) vials, pre-preserved with hydrochloric acid, and sealed without headspace. The samples were then labeled and placed in coolers with wet ice for transport to Kiff Analytical, LLC of Davis, California under appropriate chain-of-custody documentation. Well sampling field logs are presented in *Appendix A*.

The well purge water was placed in 55-gallon steel drums, labeled, and left on-site for temporary storage.

The groundwater samples collected from all three site monitoring wells were analyzed for total petroleum hydrocarbons as gasoline (TPH-G) by EPA Method 5030/8015M, total petroleum hydrocarbons as diesel (TPH-D) by EPA Method 3550/8015M, benzene, toluene, ethyl benzene, and total xylenes (collectively known as BTEX) and fuel oxygenates by EPA Method 8020. The analytical results are presented in *Table Two* and the

certified analytical report and chain-of-custody documentation are included as *Appendix B.*

4.0 CONCLUSIONS

The groundwater flow was to the southwest at a gradient of 0.0059 feet/foot, which is consistent with previous findings but is not consistent with the off-site hydrocarbon distribution during ASE's August 2000 soil and groundwater assessment. The water table dropped approximately 0.7-feet this quarter.

Groundwater samples collected from monitoring well MW-1 contained 31,000 parts per billion (ppb) TPH-G, 64 ppb benzene, 27 ppb toluene, 820 ppb ethyl benzene, and 2,200 ppb total xylenes. No MTBE or other oxygenates were detected in groundwater samples collected from monitoring well MW-1. The groundwater samples collected from monitoring well MW-2 contained 1,400 ppb TPH-D. No TPH-G, BTEX, or oxygenated were detected in groundwater samples collected from monitoring well MW-2. The groundwater samples collected from monitoring well MW-3 contained 17,000 ppb TPH-G, 5,800 ppb TPH-D, 1,700 ppb benzene, 45 ppb toluene, 460 ppb ethyl benzene, 240 ppb total xylenes, 1,100 ppb MTBE, 21 ppb tert-amyl methyl ether (TAME), and 230 ppb tert-butanol (TBA).

The benzene concentrations in groundwater samples collected from monitoring wells MW-1 and MW-3 exceeded the Department of Health Services (DHS) maximum contaminant level (MCL) for drinking water. The ethyl benzene and total xylenes concentrations in monitoring well MW-1, and the MTBE concentration in groundwater samples collected from monitoring well MW-3, also exceeded DHS MCLs for drinking water.

5.0 RECOMMENDATIONS

ASE recommends that this site remain on a quarterly sampling schedule. The next sampling is scheduled for March 2001.

6.0 REPORT LIMITATIONS

The results of this sampling represent the conditions at the time of the groundwater sampling, at the specific locations where the groundwater samples were collected, and for the specific parameters analyzed by the laboratory. It does not fully characterize the site for contamination resulting from sources other than the former underground storage tanks

and associated plumbing at the site, or for parameters not analyzed by the laboratory. All of the laboratory work cited in this report was prepared under the direction of independent CAL-EPA certified laboratory. The independent laboratory is solely responsible for the contents and conclusions of the chemical analysis data.

Aqua Science Engineers appreciates the opportunity to provide environmental consulting services for this project, and trust that this report meets your needs. Please feel free to call us at (925) 820-9391 if you have any questions or comments.

Respectfully submitted,

AQUA SCIENCE ENGINEERS, INC.

Ian T. Reed
Associate Geologist

Robert E. Kitay, R.G., R.E.A.
Senior Geologist

Attachments: Table One and Two
Figures 1 and 2
Appendices A and B

cc: Mr. Nissan Saidian
Mr. Larry Seto, ACHCSA
Mr. Chuck Headlee, RWQCB, San Francisco Bay Region

TABLES

TABLE ONE
GROUNDWATER ELEVATION DATA

Well	Date of Measurement	Top of Casing Elevation (msl)	Depth to Water (feet)	Groundwater Elevation (msl)
MW-1	9/6/99	26.85	5.16	21.69
	5/16/00		3.24	23.61
	8/3/00		4.15	22.70
	12/5/00		**4.90**	**21.95**
MW-2	9/6/99	27.18	5.56	21.62
	5/16/00		3.52	23.66
	8/3/00		4.44	22.74
	12/5/00		**5.24**	**21.94**
MW-3	9/6/00	25.30	4.02	21.28
	5/16/00		2.06	23.24
	8/3/00		3.20	22.10
	12/5/00		**3.71**	**21.59**

TABLE TWO

Summary of Chemical Analysis of GROUNDWATER Samples

Petroleum Hydrocarbons

All results are in parts per billion

Well/ Date Sampled	TPH Gasoline	TPH Diesel	Benzene	Toluene	Ethyl Benzene	Total Xylenes	MTBE	TAME	TBA	Other Oxygenates
MW-1										
9/6/99	5,700	8,700	170	59	22	85	20,000	NA	NA	NA
5/16/00	20,000	< 7,500	38	6.3	740	1,600	< 5.0	< 5.0	< 50	< 5.0
8/3/00	20,000	< 6,000	56	9.7	920	1,600	< 0.5	< 0.5	< 5.0	< 0.5
12/5/00	**31,000**	**< 4,000**	**64**	**27**	**820**	**2,200**	**< 10**	**< 5.0**	**< 50**	**< 5.0**
MW-2										
9/6/99	6,000	70	1,300	92	50	400	6,800	NA	NA	NA
5/16/00	< 50	< 50	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 50	< 5.0
8/3/00	< 50	< 50	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 5.0	< 0.5
12/5/00	**< 50**	**1,400**	**< 0.5**	**< 0.5**	**< 0.5**	**< 0.5**	**< 0.5**	**< 0.5**	**< 5.0**	**< 0.5**
MW-3										
9/6/99	43,000	870	860	70	< 0.5	65	120,000	NA	NA	NA
5/16/00	17,000	< 5,000	2,800	60	380	190	990	9.1	350	< 5.0
8/3/00	16,000	< 2,000	1,600	29	210	53	1,200	21	260	< 2.0
12/5/00	**17,000**	**5,800**	**1,700**	**45**	**460**	**240**	**1,100**	**21**	**230**	**< 5.0**
DHS MCL	NE	NE	1	150	700	1,750	13	NE	NE	VARIES

Notes:

MTBE = Methyl-t-butyl ether

TAME = Tert-amyl methyl ether

TBA = Tert-Butanol

DHS MCL is the California Department of Health Services maximum contaminant level for drinking water.

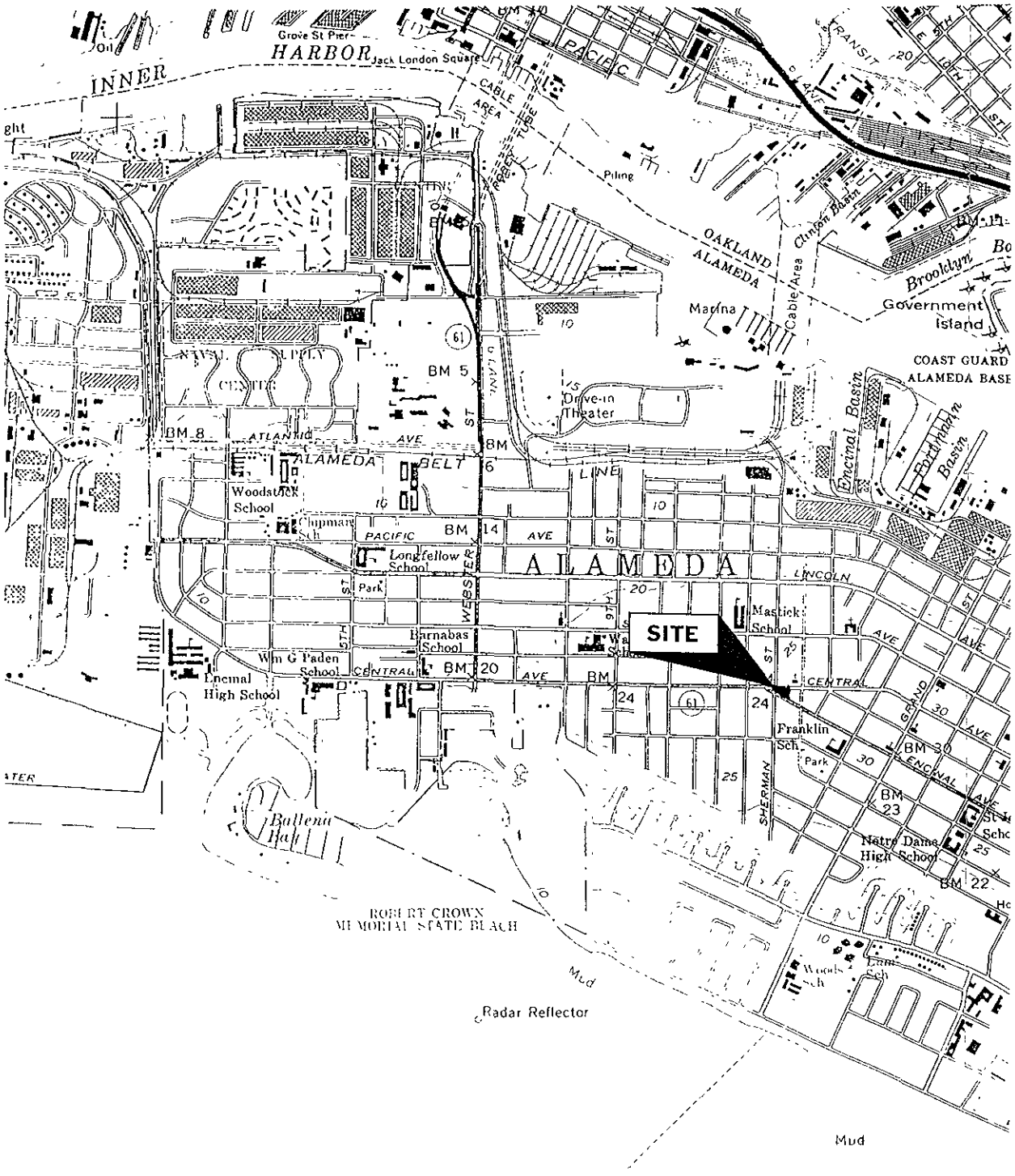
NA = Samples Not Analyzed for this compound.

NE = DHS MCLs are not established.

Non-detectable concentrations are noted by the less than symbol (<) followed by the detection limit.

Most recent data in bold.

FIGURES



NORTH

LOCATION MAP

SAIDIAN PROPERTY
1310 CENTRAL AVENUE
ALAMEDA, CALIFORNIA

AQUA SCIENCE ENGINEERS, INC. | Figure 1

RESIDENTIAL

RESIDENTIAL

SIDEWALK

CENTRAL AVENUE

APPROXIMATE LOCATION OF FORMER AND CURRENT USTs

ISLAND

SIDEWALK

MW-3 (21.59')

21.6'

21.7'

CANOPY

MW-1 (21.95')

21.8'

CASHIER

SERVICE BAYS

21.9'

MW-2 (21.94')

RESIDENTIAL

RESIDENTIAL

SHERMAN STREET

SIDEWALK

ENCINAL AVENUE

SIDEWALK

RESIDENTIAL

LEGEND

MW-3 (21.59') — MONITORING WELL WITH GROUNDWATER ELEVATION IN FEET, ABOVE MEAN SEA LEVEL

21.9' — POTENTIOMETRIC SURFACE CONTOUR

GROUNDWATER FLOW DIRECTION

NORTH

0 30 60 90

SCALE IN FEET

POTENTIOMETRIC SURFACE CONTOUR MAP DECEMBER 5, 2000

SAIDIAN PROPERTY
1310 CENTRAL AVENUE
ALAMEDA, CALIFORNIA

AQUA SCIENCE ENGINEERS, INC. | FIGURE 2

APPENDIX A

Well Sampling Field Logs

aqua science engineers inc.

WELL SAMPLING FIELD LOG

Project Name and Address: Sladja - Alameda
Job #: 3648 Date of sampling: 12/5/00
Well Name: MW-1 Sampled by: ITR
Total depth of well (feet): 18'.0 Well diameter (inches): 2"
Depth to water before sampling (feet): 9.90'
Thickness of floating product if any: —
Depth of well casing in water (feet): 13.10
Number of gallons per well casing volume (gallons): 2.2
Number of well casing volumes to be removed: 4
Req'd volume of groundwater to be purged before sampling (gallons): 8 8
Equipment used to purge the well: ded. bailer
Time Evacuation Began: 1135 Time Evacuation Finished: 1155
Approximate volume of groundwater purged: 9
Did the well go dry?: NO After how many gallons: —
Time samples were collected: 1200
Depth to water at time of sampling: 5.33'
Percent recovery at time of sampling: 92%
Samples collected with: ded. bailer
Sample color: Gray Odor: Slight HC odor
Description of sediment in sample: clot F silt sediment

CHEMICAL DATA

Volume Purged	Temp	pH	Conductivity
1	19.8	6.37	41
2	19.9	6.37	41
3	19.6	6.38	42
4	19.9	6.38	40

SAMPLES COLLECTED

Sample	# of containers	Volume & type container	Pres	Iced?	Analysis
MW 1	5	40ml VOA	✓	✓	

aqua science engineers inc.

WELL SAMPLING FIELD LOG

Project Name and Address: Saidian-Alameda
Job #: 304180 Date of sampling: 12/5/00
Well Name: MW-2 Sampled by: ITR
Total depth of well (feet): 17.8' Well diameter (inches): 2"
Depth to water before sampling (feet): 5.24'
Thickness of floating product if any: —
Depth of well casing in water (feet): 12.56
Number of gallons per well casing volume (gallons): 2.1
Number of well casing volumes to be removed: 4
Req'd volume of groundwater to be purged before sampling (gallons): 8.4
Equipment used to purge the well: ded. bailer
Time Evacuation Began: 1035 Time Evacuation Finished: 1055
Approximate volume of groundwater purged: 8.5
Did the well go dry?: NO After how many gallons: —
Time samples were collected: 1100
Depth to water at time of sampling: 6.02
Percent recovery at time of sampling: 87%
Samples collected with: ded. bailer
Sample color: brown Odor: none
Description of sediment in sample: silt & sand

CHEMICAL DATA

Volume Purged	Temp	pH	Conductivity
1	21.0	6.97	37
2	21.1	6.97	36
3	21.0	6.98	37
4	21.6	6.97	37

SAMPLES COLLECTED

Sample	# of containers	Volume & type container	Pres	Iced?	Analysis
MW-2	5	40 ml VOA	✓	✓	

aqua science engineers inc.

WELL SAMPLING FIELD LOG

Project Name and Address: Sadian - Alameda
Job #: 3418 Date of sampling: 12/5/00
Well Name: MW-3 Sampled by: ITR
Total depth of well (feet): 18' Well diameter (inches): 2"
Depth to water before sampling (feet): 3.71
Thickness of floating product if any: —
Depth of well casing in water (feet): 14.29
Number of gallons per well casing volume (gallons): 2.4
Number of well casing volumes to be removed: 4
Req'd volume of groundwater to be purged before sampling (gallons): 9.6
Equipment used to purge the well: ded. bailer
Time Evacuation Began: 1005 Time Evacuation Finished: 1020
Approximate volume of groundwater purged: 10
Did the well go dry?: NO After how many gallons: —
Time samples were collected: 1025
Depth to water at time of sampling: 4.38
Percent recovery at time of sampling: 85.1
Samples collected with: ded. bailer
Sample color: gray Odor: Mod HC odor
Description of sediment in sample: f silt and f sand

CHEMICAL DATA

Volume Purged	Temp	pH	Conductivity
1	21.0	7.10	32
2	21.2	7.10	32
3	21.3	7.09	33
4	21.2	7.11	37

SAMPLES COLLECTED

Sample	# of containers	Volume & type container	Pres	Iced?	Analysis
MW-3	5	40ml VOA	✓	✓	

APPENDIX B

Certified Analytical Report
and
Chain of Custody Documentation

KIFF ANALYTICAL LLC

Report Number : 18585
Date : 12/18/00

Ian Reed
Aqua Science Engineers, Inc.
208 W. El Pintado Road
Danville, CA 94526

Subject : 3 Water Samples
Project Name : Saidain-Alameda
Project Number : 3648

Dear Mr. Reed,

Chemical analysis of the samples referenced above has been completed. Summaries of the data are contained on the following pages. Sample(s) were received under documented chain-of-custody. US EPA protocols for sample storage and preservation were followed.

Kiff Analytical is certified by the State of California (# 2236). If you have any questions regarding procedures or results, please call me at 530-297-4800.

Sincerely,

Joel Kiff

Joel Kiff

KIFF ANALYTICAL LLC

Report Number : 18585
Date : 12/18/00

Subject : 3 Water Samples
Project Name : Saidain-Alameda
Project Number : 3648

Case Narrative

The Method Reporting Limit for TPH as Diesel has been increased due to interference from Gasoline-Range Hydrocarbons for the following sample:

MW-1

Approved By: Joel Kiff

720 Olive Drive, Suite D Davis, CA 95616 916-297-4800

KIFF ANALYTICAL LLC

Report Number : 18585
Date : 12/18/00

Project Name : **Saidain-Alameda**
Project Number : **3648**

Sample : **MW-1** Matrix : Water Lab Number : 18585-01
Sample Date :12/5/00

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	64	5.0	ug/L	EPA 8260B	12/15/00
Toluene	27	5.0	ug/L	EPA 8260B	12/15/00
Ethylbenzene	820	5.0	ug/L	EPA 8260B	12/15/00
Total Xylenes	2200	5.0	ug/L	EPA 8260B	12/15/00
Methyl-t-butyl ether (MTBE)	< 10	10	ug/L	EPA 8260B	12/15/00
Diisopropyl ether (DIPE)	< 5.0	5.0	ug/L	EPA 8260B	12/15/00
Ethyl-t-butyl ether (ETBE)	< 5.0	5.0	ug/L	EPA 8260B	12/15/00
Tert-amyl methyl ether (TAME)	< 5.0	5.0	ug/L	EPA 8260B	12/15/00
Tert-Butanol	< 50	50	ug/L	EPA 8260B	12/15/00
TPH as Gasoline	31000	500	ug/L	EPA 8260B	12/15/00
Toluene - d8 (Surr)	105		% Recovery	EPA 8260B	12/15/00
4-Bromofluorobenzene (Surr)	107		% Recovery	EPA 8260B	12/15/00
TPH as Diesel	< 4000	4000	ug/L	M EPA 8015	12/14/00

Approved By: Joel Kiff

720 Olive Drive, Suite D Davis, CA 95616 530-297-4800

KIFF ANALYTICAL LLC

Report Number : 18585
Date : 12/18/00

Project Name : **Saldain-Alameda**
Project Number : **3648**

Sample : **MW-2** Matrix : Water Lab Number : 18585-02
Sample Date :12/5/00

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**< 0.50**	0.50	ug/L	EPA 8260B	12/14/00
Toluene	**< 0.50**	0.50	ug/L	EPA 8260B	12/14/00
Ethylbenzene	**< 0.50**	0.50	ug/L	EPA 8260B	12/14/00
Total Xylenes	**< 0.50**	0.50	ug/L	EPA 8260B	12/14/00
Methyl-t-butyl ether (MTBE)	**< 0.50**	0.50	ug/L	EPA 8260B	12/14/00
Diisopropyl ether (DIPE)	**< 0.50**	0.50	ug/L	EPA 8260B	12/14/00
Ethyl-t-butyl ether (ETBE)	**< 0.50**	0.50	ug/L	EPA 8260B	12/14/00
Tert-amyl methyl ether (TAME)	**< 0.50**	0.50	ug/L	EPA 8260B	12/14/00
Tert-Butanol	**< 5.0**	5.0	ug/L	EPA 8260B	12/14/00
TPH as Gasoline	**< 50**	50	ug/L	EPA 8260B	12/14/00
Toluene - d8 (Surr)	100		% Recovery	EPA 8260B	12/14/00
4-Bromofluorobenzene (Surr)	100		% Recovery	EPA 8260B	12/14/00
TPH as Diesel	**1400**	50	ug/L	M EPA 8015	12/14/00

Approved By: Joel Kiff

720 Olive Drive, Suite D Davis, CA 95616 530-297-4800

KIFF ANALYTICAL LLC

Report Number : 18585
Date : 12/18/00

Project Name : **Saidaln-Alameda**
Project Number : **3648**

Sample : **MW-3** Matrix : Water Lab Number : 18585-03
Sample Date :12/5/00

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**1700**	5.0	ug/L	EPA 8260B	12/16/00
Toluene	**45**	5.0	ug/L	EPA 8260B	12/16/00
Ethylbenzene	**460**	5.0	ug/L	EPA 8260B	12/16/00
Total Xylenes	**240**	5.0	ug/L	EPA 8260B	12/16/00
Methyl-t-butyl ether (MTBE)	**1100**	5.0	ug/L	EPA 8260B	12/16/00
Diisopropyl ether (DIPE)	**< 5.0**	5.0	ug/L	EPA 8260B	12/16/00
Ethyl-t-butyl ether (ETBE)	**< 5.0**	5.0	ug/L	EPA 8260B	12/16/00
Tert-amyl methyl ether (TAME)	**21**	5.0	ug/L	EPA 8260B	12/16/00
Tert-Butanol	**230**	50	ug/L	EPA 8260B	12/16/00
TPH as Gasoline	**17000**	500	ug/L	EPA 8260B	12/16/00
Toluene - d8 (Surr)	99.2		% Recovery	EPA 8260B	12/16/00
4-Bromofluorobenzene (Surr)	99.3		% Recovery	EPA 8260B	12/16/00
TPH as Diesel	**5800**	50	ug/L	M EPA 8015	12/14/00

Approved By: Joel Kiff

720 Olive Drive, Suite D Davis, CA 95616 530-297-4800

18585

Aqua Science Engineers, Inc.
208 W. El Pintado Road
Danville, CA 94526
(925) 820-9391
FAX (925) 837-4853

Chain of Custody

PAGE 1 OF 1

SAMPLER (SIGNATURE) Ian T Reed (PHONE NO.) (925) 820-9391

PROJECT NAME Saidin - Alameda JOB NO. 3648

ADDRESS 1510 Central Avenue, Alameda CA

ANALYSIS REQUEST

SPECIAL INSTRUCTIONS:

5-day TAT

SAMPLE ID.	DATE	TIME	MATRIX	NO. OF SAMPLES	TPH-GAS / MTBE & BTEX (EPA 5030/8015-8020)	TPH-DIESEL (EPA 3510/8015)	TPH-DIESEL & MOTOR OIL (EPA 3510/8015)	PURGEABLE HALOCARBONS (EPA 601/8010)	VOLATILE ORGANICS (EPA 624/8240/8260)	SEMI-VOLATILE ORGANICS (EPA 625/8270)	OIL & GREASE (EPA 5520) ____	LUFT METALS (5) (EPA 6010+7000)	CAM 17 METALS (EPA 6010+7000)	PCBs & PESTICIDES (EPA 608/8080)	ORGANOPHOSPHORUS PESTICIDES (EPA 8140 EPA 608/8080)	FUEL OXYGENATES (EPA 8260)	Pb (TOTAL or DISSOLVED) (EPA 6010)	TPH-G/BTEX/5 OXY'S (EPA 8260)	TPH-G/BTEX/7 OXY'S / HVOCS (EPA 8260)			COMPOSITE	
MW-1	12/5	1208	water	5		X												X					-01
MW-2	12/5	1100	water	5		X												X					-02
MW-3	12/5	1025	water	5		X												X					-03

RELINQUISHED BY: Ian T Reed (signature) (time) 13:35

Ian T. Reed (printed name) 12/7/00 (date)

Company- ASE

RECEIVED BY: (signature) (time)

(printed name) (date)

Company-

RELINQUISHED BY: (signature) (time)

(printed name) (date)

Company-

RECEIVED BY LABORATORY: Hazel Brown (signature) 1335 (time)

HAZEL BROWN (printed name) 120700 (date)

Company- KIFF ANALYTICAL,

COMMENTS:

TURN AROUND TIME

STANDARD 24Hr 48Hr 72Hr

OTHER: