aqua science engineers inc.

ENVIRONMENTAL PROTECTION

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March 25, 1999

SEMI-ANNUAL GROUNDWATER MONITORING REPORT
MARCH 10, 1999 GROUNDWATER SAMPLING
ASE JOB NO. 2659
at
Romak Iron Works
3250 Hollis Street
Oakland, California 94662

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

1.0 INTRODUCTION

This report outlines the methods and findings of Aqua Science Engineers, Inc. (ASE)'s quarterly groundwater sampling at the Romak Iron Works property located at 3250 Hollis Street in Oakland, California *(Figures 1 and 2).*

2.0 GROUNDWATER SAMPLING

On March 10, 1999, ASE measured the depth to water in the site groundwater monitoring well using an electric water level sounder. The well was also checked for the presence of free-floating hydrocarbons. A sheen was present on the groundwater surface this quarter. Prior to sampling, the well was purged of four well casing volumes of groundwater using a pre-cleaned polyethylene bailer. The groundwater samples were decanted from the bailer into three (3) 40-ml volatile organic analysis (VOA) vials pre-preserved with hydrochloric acid and two (2) 1-liter amber glass bottles. The samples were labeled, placed in protective foam sleeves, and placed into a cooler with wet ice for transport to Chromalab, Inc. of Pleasanton, California (ELAP #1094) under appropriate chain of custody documentation.

Well sampling purge water was contained in steel 55-gallon drums and removed from the site for disposal. The well sampling log is included as Appendix A.

3.0 ANALYTICAL RESULTS FOR GROUNDWATER

The groundwater samples were analyzed by Chromalab for total petroleum hydrocarbons as gasoline (TPH-G) by EPA Method 5030/8015M, total petroleum hydrocarbons as diesel (TPH-D) by EPA Method 3510/8015M, benzene, toluene, ethylbenzene and total xylenes (collectively known as BTEX) and methyl tertiary butyl ether (MTBE) by EPA Method 8020, and hydrocarbon oil and grease (O&G) by Standard Method 5520 B&F. The analytical results are presented in Tables One and Two. The certified analytical report and chain of custody documentation are included in Appendix B.

TABLE ONE

Certified Analytical Results of **GROUNDWATER** Samples
TPH-G, TPH-D, BTEX and MTBE
All results are in **parts per billion**

Sampling Date	TPH Gasoline	TPH Diesel	Benzene	Toluene	Ethyl Benzene	Total Xylenes	MTBE
08-04-93	12,000	---	7.6	9.7	9.9	29	---
11-18-93	10,270	---	3,169	38.3	661.2	659.4	---
02-09-94	17,000	---	6,200	64	770	420	---
05-25-94	24,000	---	6,200	27	1,100	210	---
08-18-94	22,000	---	5,000	10	740	150	---
11-14-94	20,000	4,200	4,200	25	860	450	---
02-03-95	20,000	4,600[1]	3,400	11	810	100	---
05-02-95	21,000	3,400	3,100	21	910	130	---
08-08-95	17,000	1,800	2,800	11	680	63	---
11-13-95	17,000	<1,000	2,300	8	550	69	---
02-16-96	8,900	7,600	3,100	21	760	474	<40
05-17-96	9,900	1,400	2,100	6	560	23	120
08-01-96	11,000	5,100[2]	1,600	14	580	66	<50
11-12-96	13,000	6,000[2]	910	27	440	440	85
02-06-97	16,000	7,000[1]	1,200	170	660	410	<500
05-21-97	8,600	2,900[1]	720	<10	460	41	170
09-24-97	6,400	2,600	520	12	310	13	210
03-04-98	6,500	3,300[2]	650	2.3	290	35	98
09-18-98	5,400	2,000[2]	980	11	150	24	<50
03-10-99	**6,600**	**2,500[2]**	**470**	**85**	**130**	**20**	**< 50**
DTSC MCL	NE	NE	1.0	150	700	1,750	35†
EPA METHOD	5030/ 8015M	3510/ 8015M	8020	8020	8020	8020	8020

Notes:
--- = Not analyzed
NE = Not established
DTSC = California EPA Department of Toxic Substance Control
MCL = maximum contaminant level for drinking water
1 = motor oil detected
2 = Fuel pattern does not match diesel standard
† = DTSC interim action level; MCL not established.

TABLE TWO
Certified Analytical Results of **GROUNDWATER** Samples
Oil and Grease
All results are in **parts per billion**

Sampling Date	Total Oil & Grease	Hydrocarbon Oil & Grease
11-14-94	4,000	<1,000
02-07-95	11,000	9,300
05-02-95	5,000	1,000
08-08-95	11,000	9,700
11-13-95	1,000	<1,000
02-16-96	---	<5,000
05-17-96	---	1,100
08-01-96	---	1,000
11-12-96	---	< 1,000
02-06-97	---	1,700
05-21-97	---	2,600
09-24-97	---	< 1,000
03-04-98	---	2,200
09-18-98	---	1,700
03-10-99	**---**	**< 1,000**
EPA METHOD	5520C	5520BF

4.0 CONCLUSIONS

TPH-G, TPH-D and benzene were detected in groundwater samples collected from monitoring well MW-1 at 6,600 parts per billion (ppb), 2,500 ppb and 470 ppb, respectively. The benzene and ethylbenzene concentrations are the lowest values since the initial August 1993 sampling. All of the remaining concentrations are very similar to the analytical results from the last two years of groundwater monitoring. Overall, the analytical results show a very slow decreasing trend in hydrocarbon concentrations.

The benzene concentration of 470 ppb exceeded the California Department of Toxic Substances Control (DTSC) maximum contaminant level (MCL) for drinking water of 1 ppb. The toluene, ethylbenzene, and total xylenes concentrations detected this quarter did not exceed DTSC MCLs for drinking water.

ASE recommends continued semi-annual groundwater monitoring at the site.

5.0 REPORT LIMITATIONS

The results of this investigation represent conditions at the time of the groundwater sampling, at the specific locations where the samples were collected, and for the specific parameters analyzed by the laboratory.

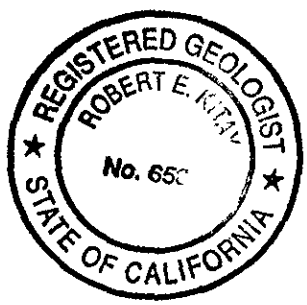
It does not fully characterize the site for contamination resulting from unknown sources, or for parameters not analyzed by the laboratory. All of the laboratory work cited in this report was prepared under the direction of an independent CAL-EPA certified laboratory. The independent laboratory is solely responsible for the contents and conclusions of the analytical data.

Aqua Science Engineers appreciates the opportunity to assist Romak Iron Works with its environmental needs. Should you have any questions or comments, please feel free to call us at (925) 820-9391.

Respectfully submitted,

AQUA SCIENCE ENGINEERS, INC.

Greg Schramm
Staff Geologist

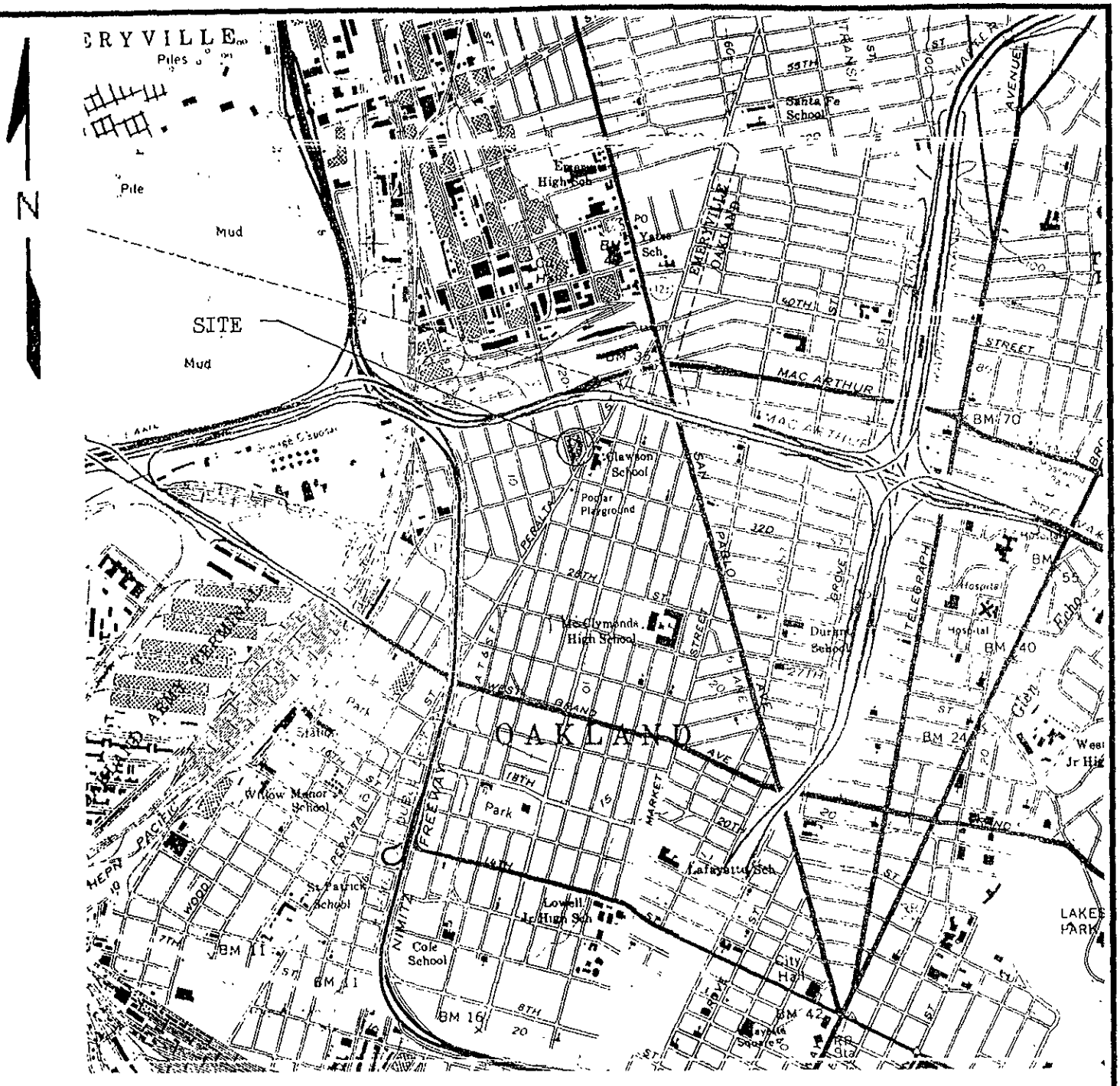


Robert E. Kitay, R.G.
Senior Geologist

Attachments: Figures 1 and 2
Appendices A and B

cc: Mr. Kevin Romak, Romak Iron Works
Ms. Susan Hugo, Alameda County Health Care Services Agency
Mr. Chuck Headlee, California Regional Water Quality Control Board

FIGURES

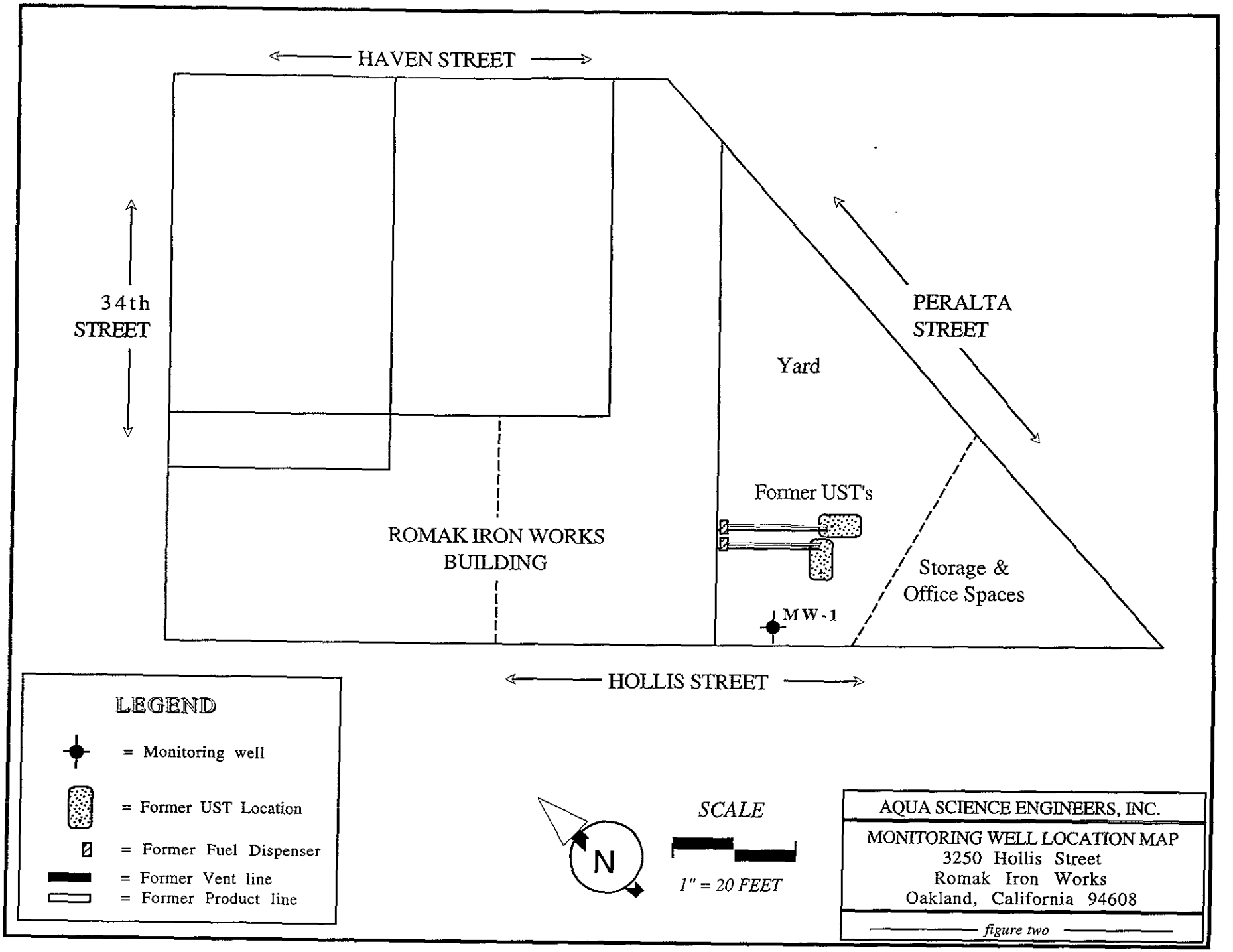


BASE: USGS Oakland West 7.5 minute quadrangle topographic r
dated 1980, scale 1:24,000.

SITE LOCATION MAP

Romak Iron Works
3250 Hollis Street
Oakland, California

Aqua Science Engineers | Figure 1


HAVEN STREET
34th STREET
PERALTA STREET
Yard
Former UST's
ROMAK IRON WORKS BUILDING
Storage & Office Spaces
MW-1
HOLLIS STREET
LEGEND
= Monitoring well
= Former UST Location
= Former Fuel Dispenser
= Former Vent line
= Former Product line
N
SCALE
1" = 20 FEET
AQUA SCIENCE ENGINEERS, INC.
MONITORING WELL LOCATION MAP
3250 Hollis Street
Romak Iron Works
Oakland, California 94608
figure two

APPENDIX A

Well Sampling Field Log

aqua science engineers inc.

WELL SAMPLING FIELD LOG

Project Name and Address: Romak Iron Works, 3250 Hollis St
Job #: 2659 Date of sampling: 3/10/99
Well Name: MW-1 Sampled by: GS
Total depth of well (feet): 21.76 Well diameter (inches): 2
Depth to water before sampling (feet): 7.21
Thickness of floating product if any: —
Depth of well casing in water (feet): 14.55
Number of gallons per well casing volume (gallons): 2.3
Number of well casing volumes to be removed: 4
Req'd volume of groundwater to be purged before sampling (gallons): 9.3
Equipment used to purge the well: dedicated bailer
Time Evacuation Began: 13:45 Time Evacuation Finished: 14:10
Approximate volume of groundwater purged: 10
Did the well go dry?: NO After how many gallons: —
Time samples were collected: 14:15
Depth to water at time of sampling: —
Percent recovery at time of sampling: —
Samples collected with: dedicated bailer
Sample color: clear, sheen Odor: strong HC
Description of sediment in sample: grey/black

CHEMICAL DATA

Volume Purged	Temp	pH	Conductivity
1	69.5	6.89	1241
2	63.3	6.62	1200
3	64.3	6.29	1210
4	64.3	6.21	1208

SAMPLES COLLECTED

Sample	# of containers	Volume & type container	Pres	Iced?	Analysis
MW-1	3	40ml VOA	HCl	Y	TPHg/BTEX/MTBE
MW-1	1	1l amber	—	Y	TPHd
MW-1	1	1l amber	—	Y	TOG

208 W. El Pintado Road, Danville, California 94526 • 925-820-9391 • Fax 925-837-4853

APPENDIX B

Certified Analytical Report
and
Chain of Custody Documentation

CHROMALAB, INC.

Environmental Services (SDB)

March 19, 1999 *Submission #:* 9903177

AQUA SCIENCE ENGINEERS, INC

Atten: Gerald Sasse

Project: ROMAK *Project#:* 2659
Received: March 11, 1999

re: One sample for Gasoline BTEX MTBE analysis.
Method: SW846 8020A Nov 1990 / 8015Mod

Client Sample ID: **MW-1**
Spl#: 232242 *Matrix:* WATER
Sampled: March 10, 1999 *Run#:*17889 *Analyzed:* March 16, 1999

ANALYTE	RESULT (ug/L)	REPORTING LIMIT (ug/L)	BLANK RESULT (ug/L)	BLANK SPIKE (%)	DILUTION FACTOR
GASOLINE	6600	500	N.D.	98	10
MTBE	N.D.	50	N.D.	108	10
BENZENE	470	5.0	N.D.	102	10
TOLUENE	85	5.0	N.D.	101	10
ETHYL BENZENE	130	5.0	N.D.	101	10
XYLENES	20	5.0	N.D.	101	10

Vincent Vancil
Analyst

Michael Verona
Operations Manager

925-837-4853

1220 Quarry Lane • Pleasanton, California 94566-4756
(925) 484-1919 • Facsimile (925) 484-1096
Federal ID #68-0140157

PM V132 O:BTEXQC0.
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CHROMALAB, INC.

Environmental Services (SDB)

March 18, 1999 *Submission #:* 9903177

AQUA SCIENCE ENGINEERS, INC

Atten: Gerald Sasse

Project: ROMAK *Project#:* 2659
Received: March 11, 1999

re: 1 sample for TPH - Diesel analysis.
Method: *EPA 8015M*

Matrix: WATER *Extracted:* March 12, 1999
Sampled: March 10, 1999 *Run#:* 17804 *Analyzed:* March 15, 1999

Spl#	CLIENT SPL ID	DIESEL (ug/L)	REPORTING LIMIT (ug/L)	BLANK RESULT (ug/L)	BLANK SPIKE (%)	DILUTION FACTOR
232242	MW-1	2500	50	N.D.	87.2	1

Note: Hydrocarbon reported is in the early Diesel Range and does not match our Diesel Standard.

Carolyn House
Analyst

Bruce Havlik
Analyst

925-837-4853 PM 03/18

1220 Quarry Lane • Pleasanton, California 94566-4756
(925) 484-1919 • Facsimile (925) 484-1096
Federal ID #68-0140157

CHROMALAB, INC.

Environmental Services (SDB)

March 18, 1999 *Submission #:* 9903177

AQUA SCIENCE ENGINEERS, INC

Atten: Gerald Sasse

Project: ROMAK *Project#:* 2659
Received: March 11, 1999

re: 1 sample for Hydrocarbon Oil and Grease analysis.
Method: *5520 B&F*

Matrix: WATER *Extracted:* March 15, 1999
Sampled: March 10, 1999 *Run#:* 17845 *Analyzed:* March 15, 1999

Spl#	CLIENT SPL ID	OIL & GREASE (mg/L)	REPORTING LIMIT (mg/L)	BLANK RESULT (mg/L)	BLANK SPIKE (%)	DILUTION FACTOR
232242	MW-1	N.D.	1.0	N.D.	97.5	1

Lulu Frazier
Analyst

Joan Mullen for
Michael Verona
Operations Manager

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(925) 484-1919 • Facsimile (925) 484-1096
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9903177 . 252242 44978

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

Chain of Custody

SAMPLER (SIGNATURE) [signature] (PHONE NO.) 820 9391

PROJECT NAME Romak JOB NO. 2659
ADDRESS 3250 Hollis St DATE 3/10

ANALYSIS REQUEST

SPECIAL INSTRUCTIONS.

SAMPLE ID.	DATE	TIME	MATRIX	NO. OF SAMPLES	TPH-GAS / MTBE & BTEX (EPA 5030/8015-8020)	TPH-GASOLINE (EPA 5030/8015)	TPH-DIESEL (EPA 3510/8015)	PURGEABLE HALOCARBONS (EPA 601/8010)	PURGEABLE AROMATICS (EPA 602/8020)	VOLATILE ORGANICS (EPA 624/8240)	SEMI-VOLATILE ORGANICS (EPA 625/8270)	OIL & GREASE 5520BF (EPA 5520)	LUFT METALS (5) (EPA 6010+7000)	CAM 17 METALS (EPA 6010+7000)	PCBs & PESTICIDES (EPA 608/8080)	ORGANOPHOSPHORUS PESTICIDES (EPA 8140)	ORGANOCHLORINE HERBICIDES (EPA 8150)	FUEL OXYGENATES (EPA 8260)				COMPOSITE
MW-1	3/10	14:15	water	5	X		X					X										

SUBM #: 9903177 REF: PM
CLIENT: ASE
DUE: 03/18/99
REF #:44978

RELINQUISHED BY:	RECEIVED BY.	RELINQUISHED BY:	RECEIVED BY LABORATORY:	COMMENTS:
[signature] (signature) (time)	[signature] 0957 (signature) (time)	[signature] 1741 (signature) (time)	[signature] 1805 (signature) (time)	5 day T.A.T.
Greg Schramm 3/11 (printed name) (date)	B Morrow 3-11-99 (printed name) (date)	B Morrow 3-11-99 (printed name) (date)	A. Paredes 3/11/99 (printed name) (date)	3.0 °C
Company- ASE	Company- Chromalab	Company- Chromalab	Chromalab Company-	2 Amber 3 VOAS