aqua science engineers inc.

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February 25, 1994

QUARTERLY GROUNDWATER MONITORING REPORT
ASE JOB NO. 2659
at
Romak Iron Works
3250 Hollis Street
Oakland, California 94662

Submitted by:
AQUA SCIENCE ENGINEERS, INC.
2411 Old Crow Canyon Road, #4
San Ramon, CA 94583
(510) 820-9391

REGISTERED PROFESSIONAL ENGINEER
DAVID M. SCHULTZ
No. 38738
Exp 4-97
CIVIL
STATE OF CALIFORNIA

1.0 INTRODUCTION

This report outlines the methods and findings of Aqua Science Engineer's, Inc. (ASE) 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 February 9, 1994, ASE measured the depth to water in the site well using an electric sounder. The well was then purged dry using an electric PVC pump. Since the well went dry and did not recover to 80 percent of the static water level, the samples were collected after the well was allowed to recover for two hours. The samples were collected from the well with a dedicated polyethylene bailer. The groundwater samples were decanted from the bailer into three (3) 40-ml volatile organic analysis (VOA) vials. All of the samples were preserved with hydrochloric acid (except one VOA vial to be analyzed for pH), labeled, placed in protective foam sleeves, and stored on wet ice for transport to Superior Precision Analytical Laboratory (SPA) of Martinez, California under chain of custody.

Well sampling purge water was contained in DOT 17H drums and stored on-site for handling by the client at a later date. See Appendix B for a copy of the well sample field log.

3.0 ANALYTICAL RESULTS FOR GROUNDWATER

The groundwater samples were analyzed by SPA (CSDHS #1542) for total petroleum hydrocarbons as gasoline (TPH-G) by EPA Method 8015, benzene, toluene, ethylbenzene and xylenes (BTEX) by EPA Method 8020, pH and electrical conductivity. The analytical results are tabulated below in Table One, and the certified analytical report and chain of custody form are included in Appendix A.

TPH-G was detected in the groundwater sample at 17,000 parts per billion (ppb), and BTEX was detected between 64 and 6,200 ppb. The benzene concentration of 6,200 ppb exceeded the California EPA Department of Toxic Substances Control (DTSC) maximum contaminant level (MCL) for drinking water of 1 ppb, and the ethylbenzene concentration of 770 ppb

exceeded the DTSC MCL of 680 ppb. The pH was 6.6, and the conductivity was 800 umhos (these values are not tabulated below).

TABLE ONE
Summary of Chemical Analysis of **GROUNDWATER** Samples
TPH-G and BTEX
All results are in **parts per billion**

Sampling Date	Analytical Laboratory	TPH Gasoline	Benzene	Toluene	Ethyl Benzene	Total Xylenes
08-04-93	PEL	12,000	7.6	9.7	9.9	29
11-18-93	GEL	10,270	3,169	38.3	661.2	659.4
02-09-94	SPA	17,000	6,200	64	770	420
DTSC MCL		Not Established	1.0	100*	680	1,750
EPA METHOD		5030/ 8015	602 or 8020	602 or 8020	602 or 8020	602 or 8020

PEL = Priority Analytical Labs of Milpitez, California
GEL = Geochem Environmental Laboratory of San Jose, California
SPA = Superior Precision Analytical of Martinez, California
DTSC = California EPA Department of Toxic Substance Control
MCL = maximum contaminant level for drinking water
* = DTSC recommended action level for drinking water; MCL not established

4.0 CONCLUSIONS AND RECOMMENDATIONS

Relatively high TPH-G, benzene and ethylbenzene concentrations (17,000 ppb, 6,200 ppb and 770 ppb, respectively) were detected in groundwater samples collected from monitoring well MW-1. These concentrations have increased from the previous two quarters. ASE recommends continuing groundwater sampling on a quarterly basis.

5.0 REPORT LIMITATIONS

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

It does not fully characterize the site for contamination resulting from unknown sources, or for parameters not analyzed for by the laboratory. All of the laboratory work cited in this report was prepared under the direction of an independent CSDHS 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 assist Romak Iron Works with its environmental needs. Should you have any questions or comments, please feel free to call us at (510) 820-9391.

Respectfully submitted,

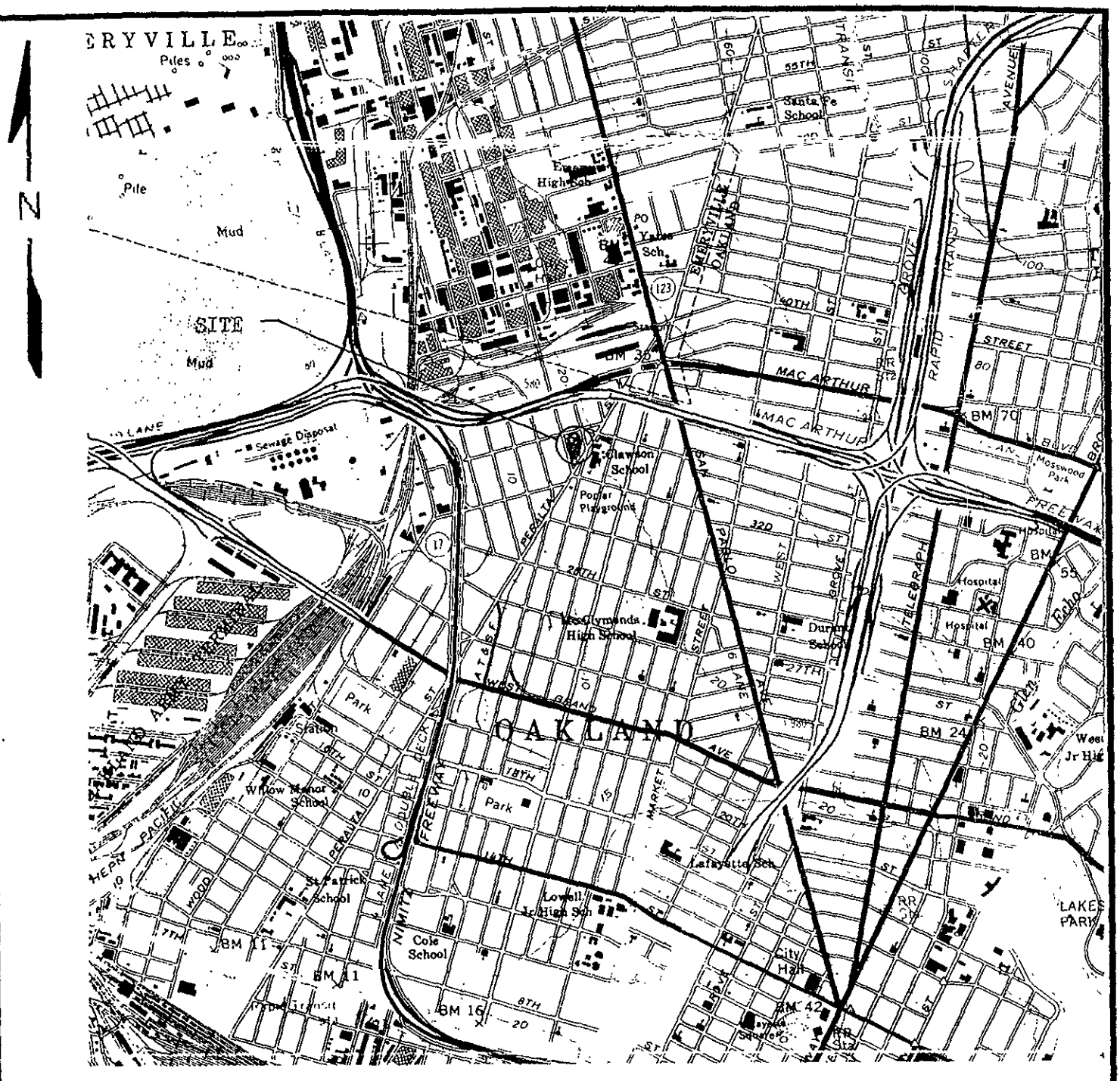
AQUA SCIENCE ENGINEERS, INC.

Robert E. Kitay

Robert E. Kitay, R.E.A.
Project 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. Richard Hiett, California Regional Water Quality Control Board

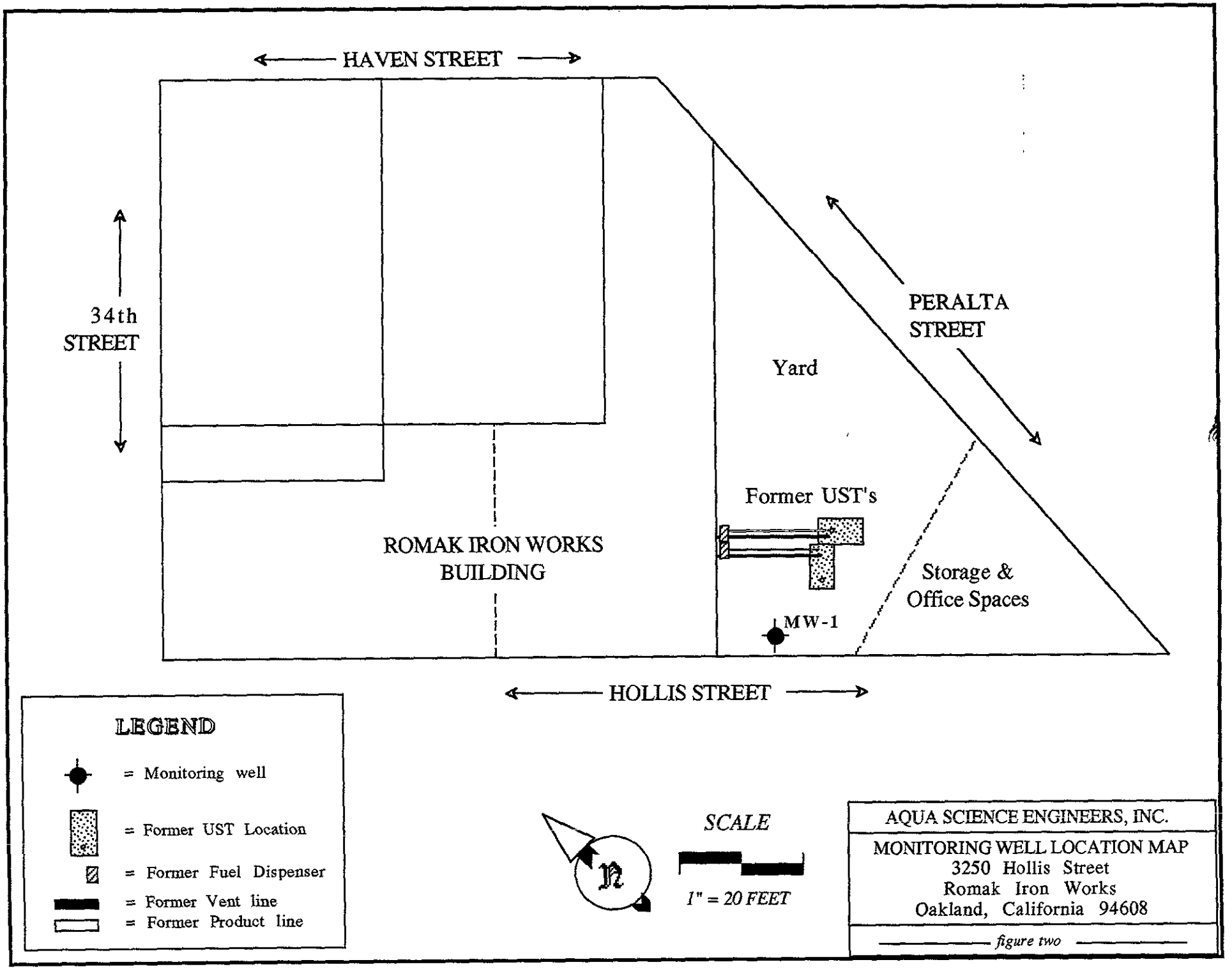


SITE LOCATION MAP

Romak Iron Works
3250 Hollis Street
Oakland, California

Aqua Science Engineers | Figure 1

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


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

Analytical Report and Chain of Custody Form

Superior Precision Analytical, Inc.
P.O. Box 1545 • Martinez, California 94553 • (510) 229-1590 / fax (510) 229-0916

Aqua Science Engineers, Inc.
Attn: ROBERT KITAY
Client : Romak Iron Works

Project 2659
Reported 02/16/94

TOTAL PETROLEUM HYDROCARBONS

Lab #	Sample Identification	Sampled	Analyzed	Matrix
91101- 1	MW-1	02/09/94	02/14/94	Water

RESULTS OF ANALYSIS

Laboratory Number: 91101- 1

Gasoline:	17000
Benzene:	6200
Toluene:	64
Ethyl Benzene:	770
Total Xylenes:	420
Concentration:	ug/L

Superior Precision Analytical, Inc.
P.O. Box 1545 • Martinez, California 94553 • (510) 229-1590 / fax (510) 229-0916

C E R T I F I C A T E O F A N A L Y S I S

ANALYSIS FOR TOTAL PETROLEUM HYDROCARBONS

QA/QC INFORMATION
SET: 91101

NA = ANALYSIS NOT REQUESTED
ND = ANALYSIS NOT DETECTED ABOVE QUANTITATION LIMIT
ug/L = parts per billion (ppb)

OIL AND GREASE ANALYSIS By Standard Methods Method 5520F:
Minimum Detection Limit in Water: 5000ug/L

Modified EPA SW-846 Method 8015 for Extractable Hydrocarbons:
Minimum Quantitation Limit for Diesel in Water: 50ug/L

EPA SW-846 Method 8015/5030 Total Purgable Petroleum Hydrocarbons:
Minimum Quantitation Limit for Gasoline in Water: 50ug/L

EPA SW-846 Method 8020/BTXE
Minimum Quantitation Limit in Water: 0.5ug/L

ANALYTE	MS/MSD RECOVERY	RPD	CONTROL LIMIT
Gasoline:	115/109	5%	70-130
Benzene:	121/120	1%	70-130
Toluene:	112/115	3%	70-130
Ethyl Benzene:	104/106	2%	70-130
Total Xylenes:	115/116	1%	70-130

Senior Chemist

Superior Precision Analytical, Inc.
P.O. Box 1545 • Martinez, California 94553 • (510) 229-1590 / fax (510) 229-0916

CERTIFICATE OF ANALYSIS

Laboratory No.: 91101
Client : Aqua Science Engineers, Inc.
Client job No.: 2659
Client : Romak Iron Works

Date received : 02/10/94
Date reported : 02/16/94

Lab	Sample ID	Date Sampled	Date Analyzed	Analyte	Conc.	RL	Unit
1	MW-1	02/09/94	02/10/94	PH	6.6		

QAQC Summary:
Water PH Duplicate RPD = 0%

ug/L = parts per billion (ppb)
mg/kg = parts per million (ppm)
ND = Not Detected
NA = Not Applicable
RL = Reporting Limit

Afsaneh Salimpour
Senior Chemist
Account Manager

Precision Analytical Laboratory, Inc.

4136 LAKESIDE DRIVE, RICHMOND, CA 94806 PHONE (510) 222-3002 FAX (510) 222-1251

CERTIFICATE OF ANALYSIS

STATE LICENSE NO. 1150

Date Received: 02/10/94
Date Analyzed: 02/16/94
Date Reported: 02/17/94
Job #: 75474

Attn: Tracy Babjar
Superior Precision Analytical, Inc.
825 Arnold Drive, Suite 114
Martinez, CA 94553

Project: #91101
Matrix: Water

Conductivity
Standard Methods, 17th Edition, 2510 B
µmhos

Lab I.D.	Client I.D.	Conductivity
75474-1	MW-1	800

MDL: Method Detection Limit. Compound below this level would not be detected.

Jaime Chow
Laboratory Director

JC/dwc

AQUA 9110/

Aqua Science Engineers, Inc.
2411 Old Crow Canyon Road, #4,
San Ramon, CA 94583
(510) 820-9391 - FAX (510) 837-4853

Chain of Custody

DATE 2-9-94 PAGE 1 OF 1

SAMPLERS (SIGNATURE) (PHONE NO.)
Robert E. Kitay (510) 820-9391

PROJECT NAME Bomak Iron Works NO. 2659
ADDRESS 3250 Hollis Street, Oakland, CA

ANALYSIS REQUEST

SPECIAL INSTRUCTIONS:
Use unpreserved VOA for pH/conductivity analysis

SAMPLE ID.	DATE	TIME	MATRIX	NO. OF SAMPLES	TPH- GASOLINE (EPA 5030/8015)	TPH- GASOLINE/BTEX (EPA 5030/8015-8020)	TPH- DIESEL (EPA 3510/8015)	PURGABLE AROMATICS (EPA 602/8020)	PURGABLE HALOCARBONS (EPA 601/8010)	VOLATILE ORGANICS (EPA 624/8240)	BASE/NUETRALS, ACIDS (EPA 625/8270)	OIL & GREASE (EPA 5520 E&F or B&F)	LUFT METALS (5) (EPA 6010+7000)	TITLE 22 (CAM 17) (EPA 6010+7000)	TCLP (EPA 1311/1310)	STLC- CAM WET (EPA 1311/1310)	REACTIVITY CORROSIVITY IGNITABILITY	pH/conductivity
MW-1	2/9	1700	Water	4		X												X

Please initial
Sample containers
Headspace

RELINQUISHED BY: Robert E. Kitay 9:25
(signature) (time)
Robert E. Kitay 2-10-94
(printed name) (date)
Company- ASE

RECEIVED BY: Michael DuBois 9:25
(signature) (time)
Michael DuBois 9:25
(printed name) (date)
Company- Acro 2/10/94

RELINQUISHED BY: Michael DuBois 10:30
(signature) (time)
Michael DuBois 10:30
(printed name) (date)
Company- ACRO 2/10/94

RECEIVED BY LABORATORY:
(signature) (time)
Trag Bass
(printed name) (date)
Company Superior

COMMENTS:
Precision

APPENDIX B

Well Sampling Field Log

aqua science engineers inc.

WELL SAMPLING FIELD LOG

Project Name and Address: Bomak Iron Works, 3250 Hollis St., Oakland, CA
Job #: 2659 Date of sampling: 2-9-94
Well Name: MW-1 Sampled by: RK
Total depth of well (feet): 21.66 Well diameter (inches): 2
Depth to water before sampling (feet): 11.04
Thickness of floating product if any: Sheen
Depth of well casing in water (feet): 10.62
Number of gallons per well casing volume (gallons): 1.8
Number of well casing volumes to be removed: 5
Req'd volume of groundwater to be purged before sampling (gallons): 9
Equipment used to purge the well: 12 volt PVC pump
Time Evacuation Began: 14:50 Time Evacuation Finished: 15:00
Approximate volume of groundwater purged: 8 gallons
Did the well go dry?: Yes After how many gallons: 8
Time samples were collected: 17:00
Depth to water at time of sampling: 13.38
Percent recovery at time of sampling: 78%
Samples collected with: Dedicated polyethylene bailer
Sample color: None Odor: Very strong hydrocarbon
Description of sediment in sample: None

SAMPLES COLLECTED

Sample	# of containers	Volume & type container	Pres	Iced?	Analysis
MW-1	40-ml VOA	vials (3)	HCl	Yes	TPH-G/BTEX
↓	40-ml VOA	vials (1)	None	↓	pH/conductivity