ALAMEDA COUNTY
HEALTH CARE SERVICES
AGENCY
DAVID J. KEARS, Agency Director

ENVIRONMENTAL HEALTH SERVICES
ENVIRONMENTAL PROTECTION
1131 Harbor Bay Parkway, Suite 250
Alameda, CA 94502-6577
(510) 567-6700
FAX (510) 337-9335

August 30, 2001

Mr. Kevin Romak
Romak Iron Works
380 Industrial Court
Benicia, California 94510-1138

RE: Fuel Leak Site Case Closure
(STID # 379 / RO # 249)

Romak Iron Works
3250 Hollis Street, Oakland, California 94608

Dear Mr. Romak:

This letter transmits the enclosed underground storage tank (UST) case closure letter in accordance with Chapter 6.75 (Article 4, Section 25299.37 [h]). The State Water Resources Control Board adopted this letter on February 20, 1997. As of March 1, 1997, the Alameda County Environmental Health Services, Local Oversight Program is required to use this case closure letter for all UST leak sites. We are also transmitting to you the enclosed case closure summary. These documents confirm the completion of the investigation and cleanup of the reported release at the subject site. The subject fuel leak case is closed.

Site Investigation and Cleanup Summary:

Please be advised that the following conditions exist at the site:

- Eleven parts per million (ppm) Total Petroleum Hydrocarbon (TPH) as Gasoline; 0.12 ppm benzene; 0.01 ppm toluene; 0.10 ppm ethylbenzene; and 0.40 ppm xylene remain in soil at the site.
- Eight hundred forty parts per billion (ppb) TPH gasoline; 1,100 ppb TPH diesel; 55 ppb benzene; 0.7 ppb toluene; 7.5 ppb ethyl benzene and 23 ppb methyl tertiary butyl ether (MTBE) remain in groundwater beneath the site.
- A risk management plan (RMP) is required to address residual soil and groundwater contamination left at the site during any construction activities at the subject site.

If you have any questions, please contact me at (510) 567-6780. Thank you.

Sincerely,

Susan L. Hugo
Acting Supervisor, Hazardous Materials Specialist

Enclosures:
1. Case Closure Letter
2. Case Closure Summary

c: Leroy Griffin, Oakland Fire Department, 1605 Martin Luther King Jr. Way, Oakland, CA 94612
SH / files

ALAMEDA COUNTY
HEALTH CARE SERVICES
AGENCY
DAVID J. KEARS, Agency Director

ENVIRONMENTAL HEALTH SERVICES
ENVIRONMENTAL PROTECTION
1131 Harbor Bay Parkway, Suite 250
Alameda, CA 94502-6577
(510) 567-6700
FAX (510) 337-9335

REMEDIAL ACTION COMPLETION CERTIFICATION

August 30, 2001

Mr. Kevin Romak
Romak Iron Works
380 Industrial Court
Benicia, California 94510-1138

RE: RO# 249 / STID# 379 **Romak Iron Works**
3250 Hollis Street, Oakland, California 94608

Dear Mr. Romak:

This letter confirms the completion of a site investigation and remedial action for the two underground storage tanks formerly located at the above-described location. Thank you for your cooperation throughout this investigation. Your willingness and promptness in responding to our inquiries concerning the former underground storage tanks are greatly appreciated.

Based on information in the above-referenced file and with the provision that the information provided to this agency was accurate and representative of site conditions, this agency finds that the site investigation and corrective action carried out at your underground storage tank site is in compliance with the requirements of subdivisions (a) and (b) of Section 25299.37 of the Health and Safety Code and with corrective action regulations adopted pursuant to Section 25299.77 of the Health and Safety Code and that no further action related to the petroleum release(s) at the site is required.

This notice is issued pursuant to subdivision (h) of Section 25299.37 of the Health and Safety Code.

Please contact our office if you have any questions regarding this matter.

Sincerely,

Mee Ling Tung, Director

c: Chuck Headlee, San Francisco Bay RWQCB
Dave Deaner, SWRCB, UST Cleanup Fund Program (with enclosure)
Leroy Griffin, Oakland Fire Services
SH / file

ALAMEDA COUNTY
HEALTH CARE SERVICES
AGENCY
DAVID J. KEARS, Agency Director

ENVIRONMENTAL HEALTH SERVICES
ENVIRONMENTAL PROTECTION
1131 Harbor Bay Parkway, Suite 250
Alameda, CA 94502-6577
(510) 567-6700
FAX (510) 337-9335

August 3, 2001

Mr. Kevin Romak
Romak Iron Works
3250 Hollis Street
Oakland, California 94608

SUBJECT: Case Closure for Romak Iron Works (STID# 379 / RO #249)
3250 Hollis Street, Oakland, California 94608

Dear Mr. Romak:

This letter serves to notify you that this office has received concurrence from the San Francisco Bay RWQCB to close the case file for the above referenced site. The groundwater monitoring well (MW-1) at the site must be properly decommissioned. You can proceed with the well abandonment at the site. Please contact Alameda County Public Works for permit requirements to abandon the well. A well abandonment report must be submitted prior to the issuance of the Remedial Action Completion Certification.

Please notify this office at least 72 hours of the well abandonment work at the site. I can be reached at (510) 567-6780 if you have any questions regarding this letter or the subject site.

Sincerely,

Susan L. Hugo
Acting Supervisor
Hazardous Materials Specialist

c: Chuck Headlee, San Francisco Bay RWQCB
Robert Kitay, ASE, 208 West El Pintado, Danville, CA 94526
SH / files

CASE CLOSURE SUMMARY
Leaking Underground Fuel Storage Tank Program

I. AGENCY INFORMATION

Date: July 25, 2001

Agency Name: **Alameda County-HazMat**
Address: **1131 Harbor Bay Parkway**
City/State/ Zip: **Alameda, CA 94502**
Phone: **(510) 567-6700**
Responsible Staff Person: **Susan L. Hugo**
Title: **Hazardous Materials Specialist**

II. CASE INFORMATION

Site Facility Name: **Romak Iron Works**
Site Facility Address: **3250 Hollis Street**
RB LUSTIS Case No.: **N/A**
Local Case No./ LOP Case No. **379 / RO #249**
URF Filing Date: **01/27/92**
SWEEPS No.: **N/A**

Responsible Parties:	Addresses:	Phone Numbers:
Romak Iron Works	**3250 Hollis Street**	**(510) 658-0588**
Attn: Kevin Romak	**Oakland, CA 94608**	

Tank No:	Size in gal.	Contents:	Closed in-place or removed?:	Date:
1	**1,000**	**Unleaded Gasoline**	**Removed**	**01/15/92**
2	**1,000**	**Unleaded Gasoline**	**Removed**	**01/15/92**

III. RELEASE AND SITE CHARACTERIZATION INFORMATION

Cause and type of release: **Unknown**
Site characterization complete: **Yes**
Date approved by oversight agency: **8/4/2000**
Monitoring wells installed ? **Yes**
Number: **One (1)**
Proper screened interval ? **Yes (5 feet to 22 feet depth)**
Highest GW depth below ground surface: **5.13 feet**
Lowest depth: **12.54 feet**
Flow direction: **West to southwest**
Most sensitive current use: **Commercial / Light Industrial**
Are drinking water wells affected ? **NO**
Aquifer Name: **Unknown**
Is surface water affected ? **Unknown**
Nearest affected SW name: **NA**
Off-site beneficial use impacts (address / location): **Unknown**
Report (s) on file ? **Yes**
Where is report (s) filed ? **Alameda County, 1131 Harbor Bay Parkway, Alameda, CA 94502**

Treatment and Disposal of Affected Materials:

Materials	Amount (Include Units)	Action (Treatment /or Disposal w/ Destination)	Date
Tank	**2 – 1,000 gallons**	**Disposed @ Erickson , Richmond, CA**	**01/15/92**
Soil	**20 cubic yards**	**Aerated and reused at site**	
Water / Oil	**200 gallons**	**Recycled at Demenno Kerdoon, Compton, CA**	**01/15/92**

Maximum Documented Contaminant Concentrations - - Before and After Cleanup

Contaminant	Soil (ppm)		Water (ppb)	
	Before*	After**	Before***	After****
TPH gasoline	180	11	12,000	840
TPH Diesel	-	-	7,600	1,100
Benzene	0.51	0.12	7.6	55
Toluene	0.27	0.01	9.7	0.7
Ethylbenzene	0.12	0.10	9.9	7.5
Xylene	17.0	0.40	29	<0.5
MTBE	-	(<0.005)	-	23

* Soil sample (AEAST) collected following removal of the tank in 1992.
** Confirmation soil sample (OEXC-1A) collected following overexcavation in 1992.
*** Groundwater sample collected from monitoring well (MW-1) collected on 8/4/93.
****Groundwater sample collected from well MW-1 on 8/17/00 which was the last sampling conducted at site.
MTBE was not detected in any of the soil samples collected from the six borings drilled in 2000.

Comments (Depth of Remediation, etc.): See "Additional Comments" section.

IV. CLOSURE

Does completed corrective action protect existing beneficial uses per the Regional Board Basin Plan ? **UNKNOWN**

Does completed corrective action protect potential beneficial uses per the Regional Board Basin Plan ? **UNKNOWN**

Does corrective action protect public health for current land use ? **YES**

Site management requirements: **A risk management plan (RMP) is required to address residual soil and groundwater contamination left at the site during any construction activities at the subject site.**

Should corrective action be reviewed if land use changes ? **YES**

Monitoring wells Decommissioned : **NO (will decommission upon closure of the case)**

Number Decommissioned: **NA**

Number Retained: **ONE**

List enforcement actions taken: **NONE**

List enforcement actions rescinded: **NA**

V. LOCAL AGENCY REPRESENTATIVE DATA

Name: **Susan L. Hugo** Title: **Acting Manager, LOP Program**

Signature: Susan L. Hugo Date: 8/1/01

Reviewed by:

Name: **Ariu Levi** Title: **Chief, Environmental Health Department**

Signature: Date: 8/2/01

VI. RWQCB NOTIFICATION

Date Submitted to RB: RB Response: Concur

RWQCB Staff Name: **Chuck Headlee** Title: **Associate EngineeringGeologist**

Signature: Chuck Headlee Date: 8/3/01

VII. ADDITIONAL COMMENTS, DATA, ETC.

The subject site is located at 3250 Hollis Street in Oakland, close to city boundary of Emeryville. In January 1992, two underground gasoline storage tanks (USTs) were removed from the site. Soil sample collected following the removal of the USTs showed contamination listed in Table 1. Approximately 20 cubic yards of contaminated soil was overexcavated on January 16, 1992 and confirmatory soil samples were collected (see Table 2).

On June 30, 1993, soil boring BH-A was drilled approximately 10 feet southwest of the former tank pit in the assumed downgradient direction (based on groundwater data from a neighboring site located at 3421 Hollis Street). Monitoring well MW-1 was installed in boring BH-A. Soil sample collected from the boring at six feet depth showed no detectable level of petroleum hydrocarbon contamination. However, groundwater sample collected from the well found elevated concentration of petroleum hydrocarbon (see Table 4). Sheen was also detected in the well. Groundwater monitoring was conducted from 1993 to 2000 from well MW-1. Sheen was detected during the entire monitoring period until 1999.

In August 2000, six borings (BH-A to BH-F) were drilled to define the extent of soil and groundwater contamination at the site. The borings were drilled at depths ranging from 7.5 feet to 19.0 feet. Soil samples collected from the six borings

showed no detectable level of petroleum hydrocarbons. Groundwater samples collected from the six borings showed non-detect to very low levels of Total Petroleum Hydrocarbon (TPH) as diesel (150 parts per billion {ppb}) and xylenes (0.81 ppb). Groundwater monitoring well MW-1 was also sampled during this time and showed decreasing petroleum hydrocarbon concentrations (see Table 5).

This case appears to be a "Low Risk Soil and Groundwater Case" as described in the San Francisco Bay Regional Water Quality Control Board (RWQCB) memorandum dated January 5, 1996 based on the following rationale:

1. The leak has been stopped and ongoing sources have been removed. The subject tanks were removed in 1992 and contaminated soil was overexcavated. Sheen was detected in the well from 1993 to 1999. However, during the last two samplings conducted in March and August 2000, no sheen was found.

2. The site has been adequately characterized. Monitoring well MW-1 was installed in 1993 and six additional borings (BH-A to BH-F) were drilled in 2000. No significant contamination was detected during the additional characterization conducted in 2000. Residual contaminants do not appear to be migrating off-site.

3. Groundwater at the site is not used as drinking water source. There are no known municipal or residential water wells or surface water bodies that are expected to be impacted from the release at the site.

4. The site presents no significant risk to human health. Residual soil and groundwater contamination do not pose a risk under the current land use scenario.

5. A risk management plan will be required during any construction activities at the subject site. In addition, the site will be entered in Oakland's Permit Tracking System.

TABLE ONE:
SOIL SAMPLE RESULTS, TOTAL PETROLEUM HYDROCARBONS
GASOLINE & BENZENE, TOLUENE, ETHYLBENZENE, XYLENE

Sample NO.	TPH GASOLINE (PPM)	BENZENE (PPB)	TOLUENE (PPB)	ETHYL BENZENE (PPB)	TOTAL XYLENES (PPB)
AWEST	2.7	13	5.3	16	170
AEAST	180	510	270	120	17000
ASTKP	850	770	610	4900	60000
BNORTH	N.D.	N.D.	N.D.	N.D.	N.D.
BSOUTH	N.D.	N.D.	N.D.	N.D.	13
BSTKP	1.5	N.D.	N.D.	N.D.	150
3DISP1OF1	N.D.	N.D.	N.D.	N.D.	N.D.

ND - Non Detectable at analytical method limits
PPM - parts per million
PPB - parts per billion

TABLE TWO:
SOIL SAMPLE RESULTS, TOTAL PETROLEUM HYDROCARBONS
GASOLINE & BENZENE, TOLUENE, ETHYLBENZENE, XYLENE

Sample NO.	TPH GASOLINE (PPM)	BENZENE (PPB)	TOLUENE (PPB)	ETHYL BENZENE (PPB)	TOTAL XYLENES (PPB)
OEXC-1A	11	120	7.2	99	400
OEXC-2B	1.0	78	13	16	56
OEXC-3C	N.D.	N.D.	N.D.	N.D.	N.D.
OEXC-4D	N.D.	N.D.	N.D.	N.D.	N.D.

ND - Non Detectable at analytical method limits
PPM - parts per million
PPB - parts per billion

In total, approximately 20 cubic yards of material were removed from the excavation and stockpiled.

5.0 BACKFILLING AND RESURFACING

At the request of Danny Sutton, the purchasing agent of Romak Iron Works the tank pit was not backfilled and resurfaced. The excavated material and the clean imported backfill material is stockpiled next to the excavation.

6.0 DISCUSSION AND CONCLUSIONS

Two 1,000 gallon underground storage tanks last containing gasoline were removed from the site and transported as hazardous waste to the Erickson Facility in Richmond California, to be cleaned and disposed of as scrap metal.

TABLE ~~TWO~~ THREE
Summary of Chemical Analysis of SOIL BORING BH-A Samples
TPH-G and BTEX

Sample I.D.	TPH Gasoline (ppm)	Benzene (ppm)	Toluene (ppm)	Ethyl Benzene (ppm)	Total Xylenes (ppm)
BH-A 6.0'	<1.0	<0.0050	<0.0050	<0.0050	<0.0050
EPA METHOD	5030/ 8015	8020	8020	8020	8020

ppm = parts per million

TABLE ~~THREE~~ FOUR
Summary of Chemical Analysis of GROUNDWATER Samples
TPH-G and BTEX

Sample I.D.	TPH Gasoline (ppb)	Benzene (ppb)	Toluene (ppb)	Ethyl Benzene (ppb)	Total Xylenes (ppb)
MW-1	12,000	7.6	9.7	9.9	29
DTSC MCL	Not Established	1.0	100*	680	1,750
EPA METHOD	5030/ 8015	602	602	602	602

ppb = parts per billion
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

8.0 CONCLUSIONS AND RECOMMENDATIONS

No hydrocarbons were detected in the soil sample collected from 6.0 to 6.5-feet bgs in boring BH-A.

12,000 ppb TPH-G and between 7.6 and 29 ppb BTEX were detected in groundwater samples from well MW-1. The benzene concentration of 7.6 ppb exceeds the DTSC MCL of 1 ppb.

ASE recommends sampling the groundwater monitoring well quarterly (every three months) for one year. A report of the analytical results should be forwarded to the ACHCSA and the California Regional Water Quality Control Board - San Francisco Bay Region (RWQCB).

9.0 REPORT LIMITATIONS

The results of this investigation represent conditions at the time of the soil

TABLE ~~ONE~~ FIVE

Certified Analytical Results of GROUNDWATER Samples

Monitoring Well MW-1

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	---
sheen 9.65	11-18-93	10,270	---	3,169	38.3	661.2	659.4	---
sheen 11.04	02-09-94	17,000	---	6,200	64	770	420	---
sheen 12.92	05-25-94	24,000	---	6,200	27	1,100	210	---
sheen 13.44	08-18-94	22,000	---	5,000	10	740	150	---
sheen 12.54	11-14-94	20,000	4,200	4,200	25	860	450	---
sheen 9.50	02-03-95	20,000	4,600[1]	3,400	11	810	100	---
sheen 11.63	05-02-95	21,000	3,400	3,100	21	910	130	---
sheen 7.6	08-08-95	17,000	1,800	2,800	11	680	63	---
sheen 9.37	11-13-95	17,000	<1,000	2,300	8	550	69	---
sheen 6.81	02-16-96	8,900	7,600	3,100	21	760	474	< 40
sheen 5.13	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
sheen 10.06	11-12-96	13,000	6,000[2]	910	27	440	440	85
sheen 5.64	02-06-97	16,000	7,000[1]	1,200	170	660	410	< 500
sheen 6.64	05-21-97	8,600	2,900[1]	720	< 10	460	41	170
sheen 8.61	09-24-97	6,400	2,600	520	12	310	13	210
sheen 7.4	03-04-98	6,500	3,300[2]	650	2.3	290	35	98
7.65	09-18-98	5,400	2,000[2]	980	11	150	24	< 50
sheen 7.21	03-10-99	6,600	2,500[2]	470	85	130	20	< 50
sheen 9.28	09-09-99	2,300	2,400[2]	330	11	48	19	61
	03-02-00	6,700[2]	670[2]	440	< 2.5	65	< 2.5	77
	08-17-00*	**840[2]**	**1,100[2]**	**55**	**0.74**	**7.5**	**< 0.5**	**23**
DHS MCL	NE	NE	1.0	150	700	1,750	13	

Notes:

--- = Not analyzed

NE = Not established

DHS= California Department of Health Services

MCL = maximum contaminant level for drinking water

1 = motor oil detected

2 = Fuel pattern does not match hydrocarbon standard

* = Motor Oil detected at 700 parts per billion

TABLE ~~TWO~~ SIX

Summary of Chemical Analysis of SOIL Samples

Romak Iron Works - Collected on August 17, 2000

Petroleum Hydrocarbons

All results are in parts per million

Boring - Depth	TPH Gasoline	TPH Diesel	TPH Motor Oil	Benzene	Toluene	Ethyl Benzene	Total Xylenes	MTBE
BH-A-15.5'	< 1.0	< 1.0	< 50	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005
BH-B-7.5'	< 1.0	< 1.0	< 50	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005
BH-C-18.0'	< 1.0	< 1.0	< 50	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005
BH-D-18.0'	< 1.0	< 1.0	< 50	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005
BH-E-19.0'	< 1.0	< 1.0	< 50	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005
BH-F-11.5'	< 1.0	< 1.0	< 50	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005

Notes:

MTBE = Methyl-t-butyl ether

PRG = United States Environmental Protection Agency Region IX Preliminary Remediation Goal for Residential Soil.

NE = PRG has not been established.

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

Detectable concentrations are in bold.

TABLE ~~THREE~~ SEVEN

Summary of Chemical Analysis of GROUNDWATER Samples

Romak Iron Works - Collected on August 17, 2000

Petroleum Hydrocarbons

All results are in parts per billion

Boring	TPH Gasoline	TPH Diesel	TPH Motor Oil	Benzene	Toluene	Ethyl Benzene	Total Xylenes	MTBE
BH-A	< 50	< 71**	< 710**	< 0.5	< 0.5	< 0.5	< 0.5	< 5.0
BH-B	< 50	< 83	< 830**	< 0.5	< 0.5	< 0.5	< 0.5	< 5.0
BH-C	< 50	**150***	< 770**	< 0.5	< 0.5	< 0.5	**0.8**	< 5.0
BH-D	< 50	< 100**	< 1,000**	< 0.5	< 0.5	< 0.5	< 0.5	< 5.0
BH-E	< 50	< 61**	< 610**	< 0.5	< 0.5	< 0.5	< 0.5	< 5.0
BH-F	< 50	< 59**	< 590**	< 0.5	< 0.5	< 0.5	**0.81**	< 5.0
DHS MCL	NE	NE	NE	1	150	700	1,750	13

Notes:

MTBE = Methyl-t-butyl ether

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

NE = DHS MCLs are not established.

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

Detectable concentrations are in bold.

* Hydrocarbon reported does not match the laboratory diesel standard.

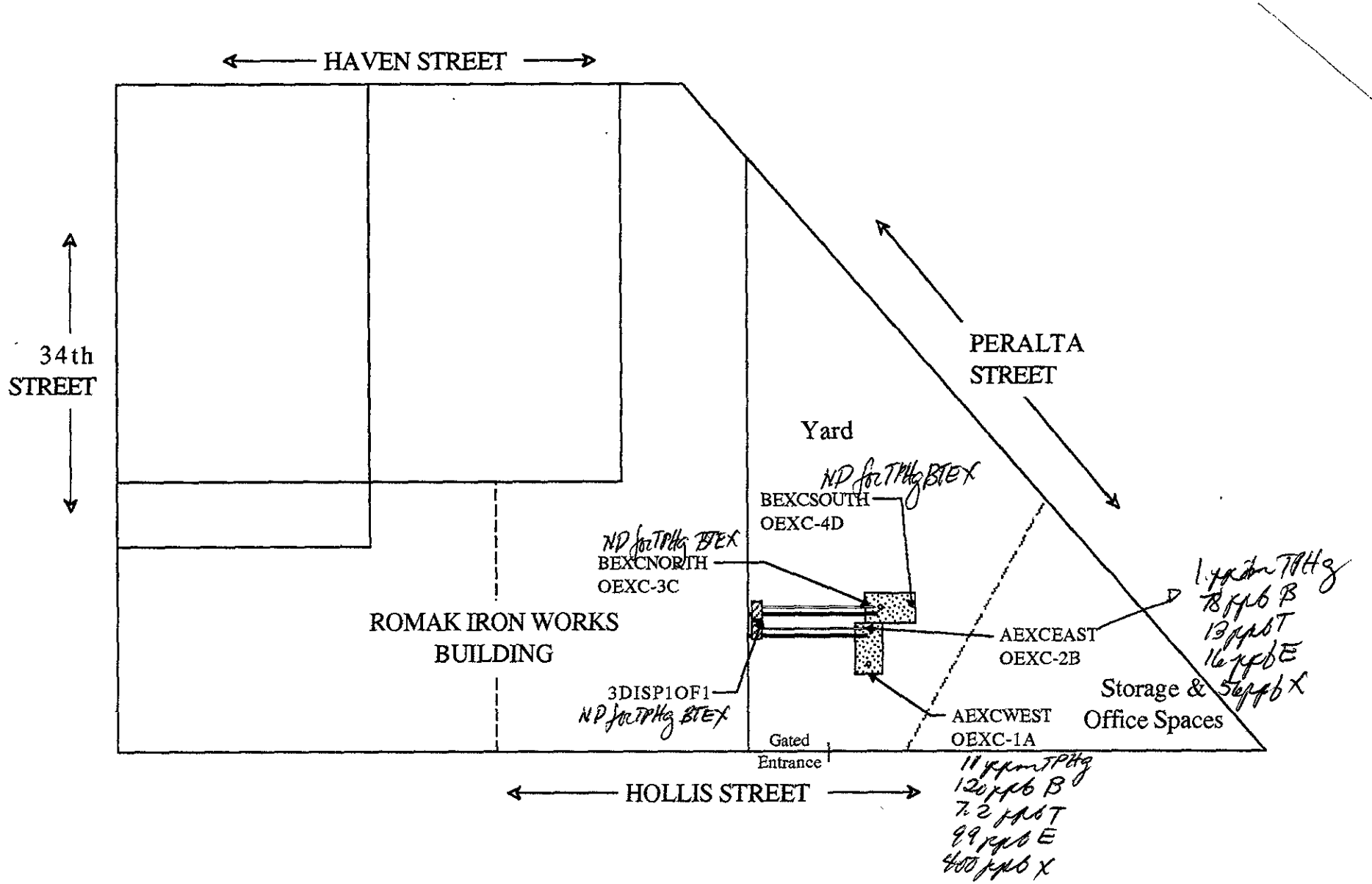
** Laboratory detection limits raised due to limited samples size.

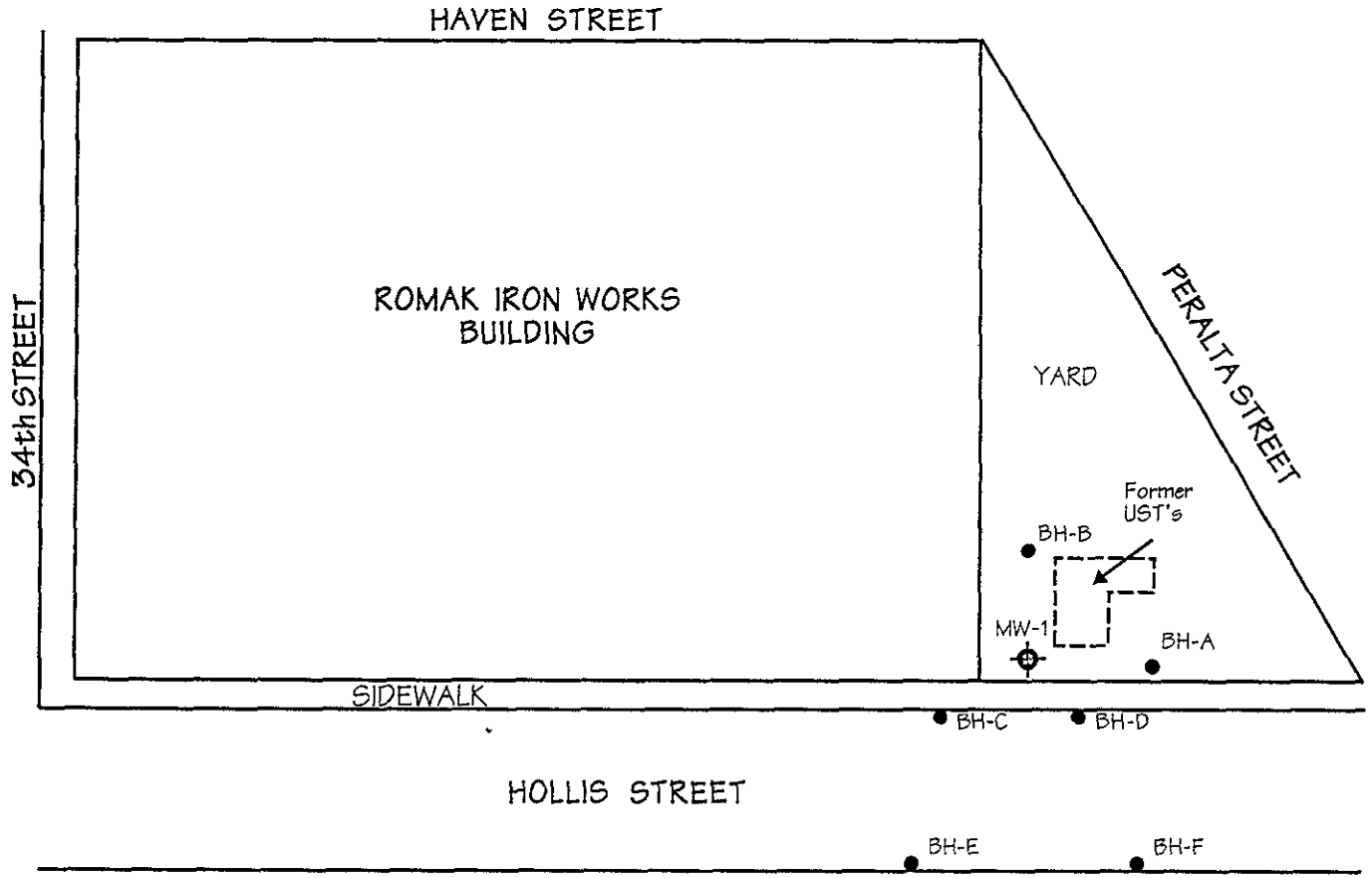
SITE LOCATION MAP

Romak Iron Works
3250 Hollis Street
Oakland, California

Aqua Science Engineers | Figure 1

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


HAVEN STREET
34th STREET
PERALTA STREET
Yard
ND for TPHg BTEX
BEXCSOUTH
OEXC-4D
ND for TPHg BTEX
BEXCNORTH
OEXC-3C
ROMAK IRON WORKS BUILDING
AEXCEAST
OEXC-2B
1.4 ppm TPHg
78 ppb B
13 ppb T
16 ppb E
56 ppb X
3DISP1OF1
ND for TPHg BTEX
AEXCWEST
OEXC-1A
Storage & Office Spaces
Gated Entrance
11 ppm TPHg
120 ppb B
7.2 ppb T
99 ppb E
400 ppb X
HOLLIS STREET
= UST Location
= Fuel Dispenser
= Vent line
= Product line
N
SCALE
1" = 20 FEET
AQUA SCIENCE ENGINEERS, INC.
UST SAMPLE LOCATION
3250 Hollis Street
Romak Iron Works
Oakland, California 94608
figure one



LEGEND

BH-A — Geoprobe Location

MW-1 — Monitoring Well

NORTH

SCALE
1" = 50'

MONTORING WELL AND BORING LOCATION

Romak Iron Works
3250 Hollis Street
Oakland, California

AQUA SCIENCE ENGINEERS, INC. | FIGURE 2

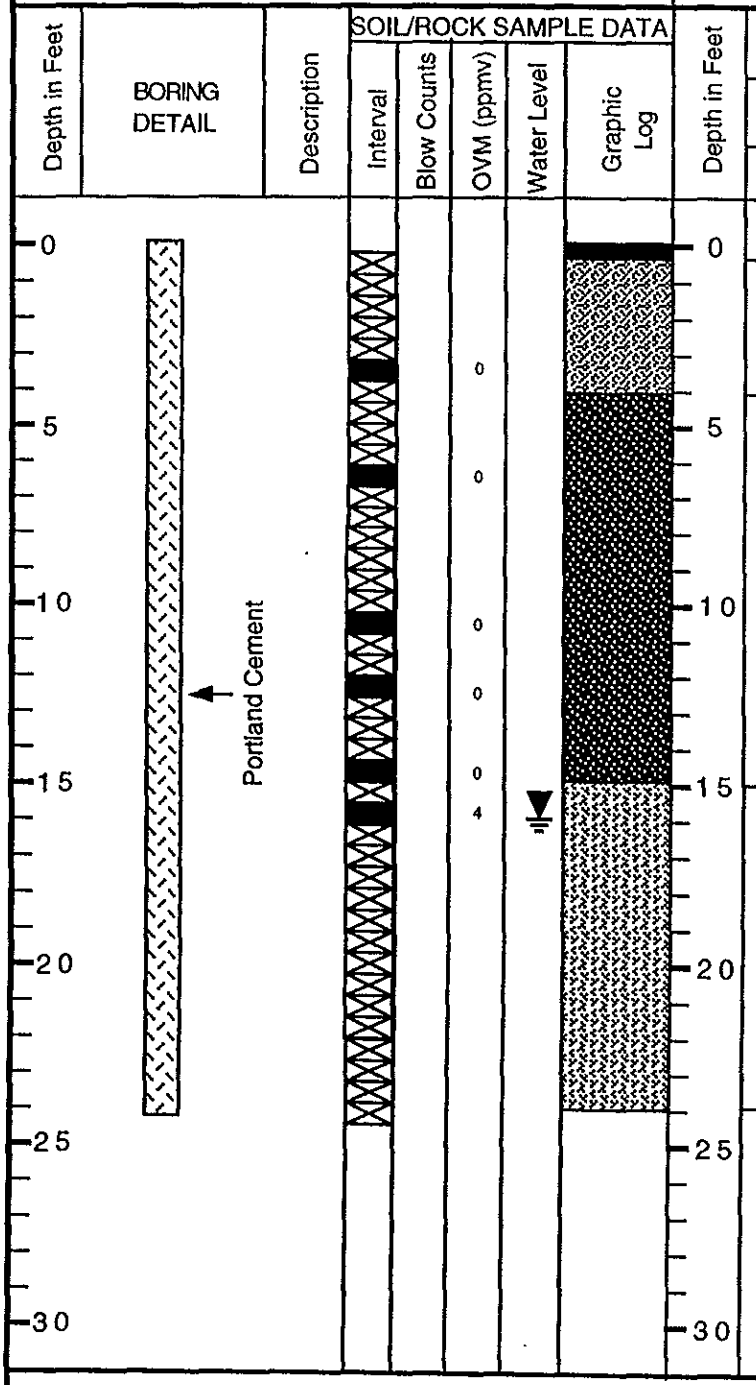
SOIL BORING LOG AND MONITORING WELL COMPLETION DETAILS

Boring: BH-A

Project Name: Romak Iron Works	Project Location: 3250 Hollis St., Oakland, CA	Page 1 of 1
Driller: Vironex	Type of Rig: Geoprobe	Size of Drill: 2.0" Diameter
Logged By: Ian T. Reed	Date Drilled: August 17, 2000	Checked By: Robert E. Kitay, R.G.

WATER AND WELL DATA

Depth of Water First Encountered: 16'	Total Depth of Well Completed: NA
Static Depth of Water in Well: NA	Well Screen Type and Diameter: NA
Total Depth of Boring: 24.0'	Well Screen Slot Size: NA
	Type and Size of Soil Sampler: 2.0" I.D. Macro Sampler



DESCRIPTION OF LITHOLOGY

standard classification, texture, relative moisture, density, stiffness, odor-staining, USCS designation.

0 — Asphalt

Sandy SILT (ML); dark brown; damp; stiff; 75% silt; 25% fine to coarse sand; trace clay; very low plasticity; low estimated K; no odor

5 — Silty CLAY (CL); light brown; damp; very stiff; 60% clay; 20% silt; 20% fine to coarse sand; low plasticity; very low estimated K; no odor

10

15 — Sandy CLAY (CL); brown; very moist; stiff; 50% clay; 30% fine to medium sand; 20% silt; trace gravel; medium plasticity; very low estimated K; no odor

20

25 — End of Boring at 24.0'

30

AQUA SCIENCE ENGINEERS, INC.

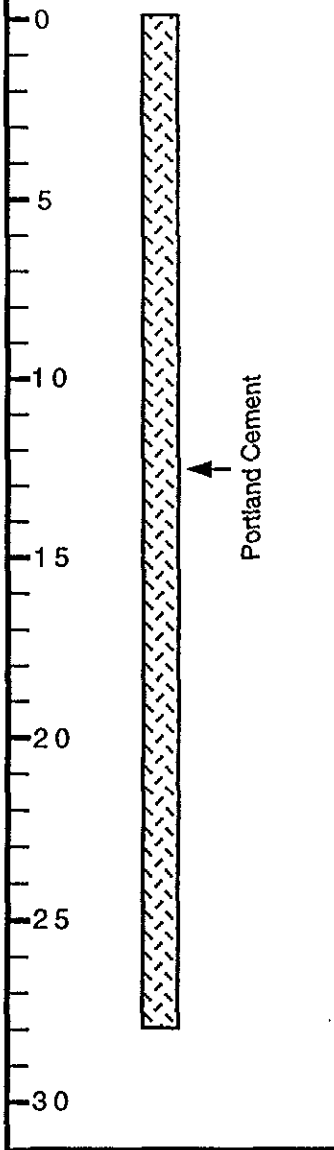
SOIL BORING LOG AND MONITORING WELL COMPLETION DETAILS

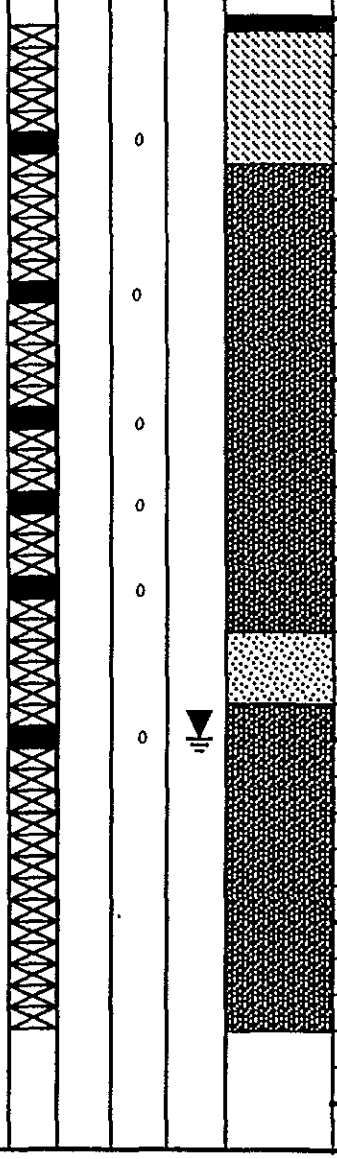
Boring: BH-B

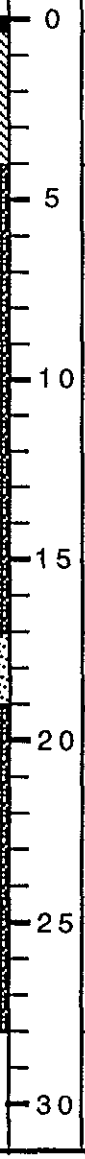
Project Name: Romak Iron Works	Project Location: 3250 Hollis St., Oakland, CA	Page 1 of 1
Driller: Vironex	Type of Rig: Geoprobe	Size of Drill: 2.0" Diameter
Logged By: Ian T. Reed	Date Drilled: August 17, 2000	Checked By: Robert E. Kitay, R.G.

WATER AND WELL DATA

Depth of Water First Encountered: 20.0'	Total Depth of Well Completed: NA
Static Depth of Water in Well: NA	Well Screen Type and Diameter: NA
Total Depth of Boring: 28.0'	Well Screen Slot Size: NA
	Type and Size of Soil Sampler: 2.0" I.D. Macro Sampler







DESCRIPTION OF LITHOLOGY

standard classification, texture, relative moisture, density, stiffness, odor-staining, USCS designation.

0 — Concrete

Clayey SILT (ML); dark brown; damp; very stiff; 60% silt; 40% clay; trace sand; low plasticity; very low estimated K; no odor

5 — Silty CLAY (CL); light brown with speckled gray; damp; very stiff; 60% clay; 30% silt; 10% fine sand; low plasticity; very low estimated K; no odor

very slight hydrocrabon odor at 7.5'

10 — speckled green, slight hydrocarbon odor

trace gravel to 0.5" diameter

15

Silty SAND (SM): brown; wet; medium stiff; 60% fine to medium sand; 30% silt; 10% clay; low plasticity; medium estimated K; no odor

20 — Silty CLAY (CL); light brown with speckled gray; damp; very stiff; 60% clay; 30% silt; 10% fine sand; low plasticity; very low estimated K; no odor

wet at 20'

25

End of Boring at 28.0'

30

AQUA SCIENCE ENGINEERS, INC.

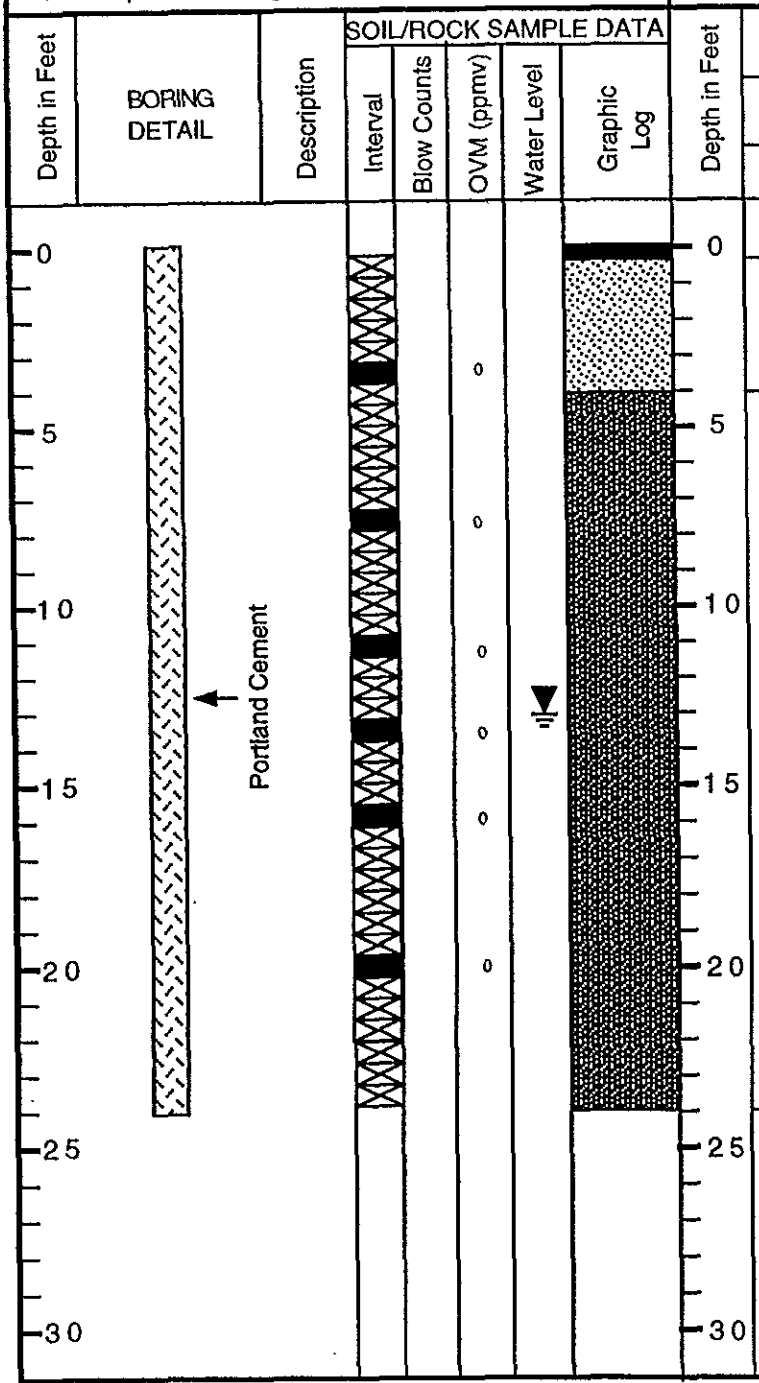
SOIL BORING LOG AND MONITORING WELL COMPLETION DETAILS

Boring: BH-C

Project Name: Romak Iron Works	Project Location: 3250 Hollis St., Oakland, CA	Page 1 of 1
Driller: Vironex	Type of Rig: Geoprobe	Size of Drill: 2.0" Diameter
Logged By: Ian T. Reed	Date Drilled: August 17, 2000	Checked By: Robert E. Kitay, R.G.

WATER AND WELL DATA

Depth of Water First Encountered: 13.0'	Total Depth of Well Completed: NA
Static Depth of Water in Well: NA	Well Screen Type and Diameter: NA
Total Depth of Boring: 24.0'	Well Screen Slot Size: NA
	Type and Size of Soil Sampler: 2.0" I.D. Macro Sampler



DESCRIPTION OF LITHOLOGY

standard classification, texture, relative moisture, density, stiffness, odor-staining, USCS designation.

0 — Concrete

Sandy SILT (ML); brown to light brown; damp; very stiff; 60% silt; 20% fine to coarse sand; 20% clay; low plasticity; very low estiimated K; no odor

5 — Silty CLAY (CL); brown with black speckles; damp; very stiff; 60% clay; 30% silt; 10% fine to coarse sand; trace gravel to 0.5" diameter; low plasticity; very low estimated K; no odor

10 — brown to light brown; 70% clay; 20% silt; 10% fine sand

wet at 13'

15 — gray to light brown; 70% clay; 30% silt; damp to moist; no odor

20

25 — End of Boring at 24.0'

30

AQUA SCIENCE ENGINEERS, INC.

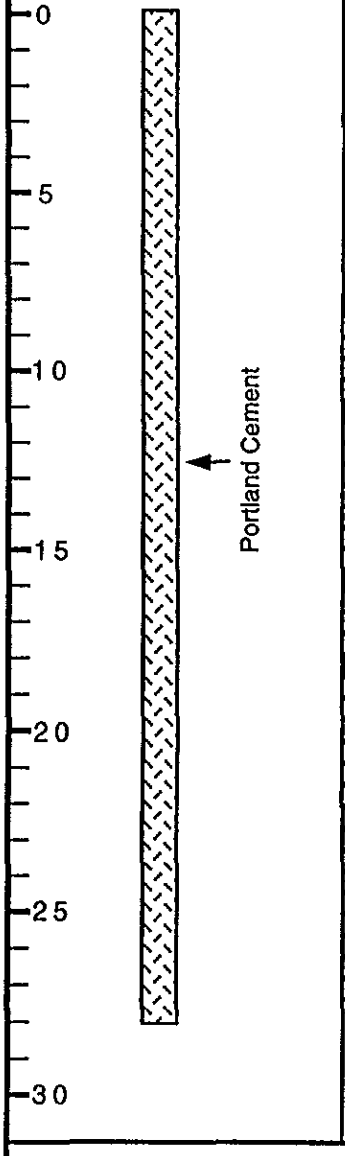
SOIL BORING LOG AND MONITORING WELL COMPLETION DETAILS

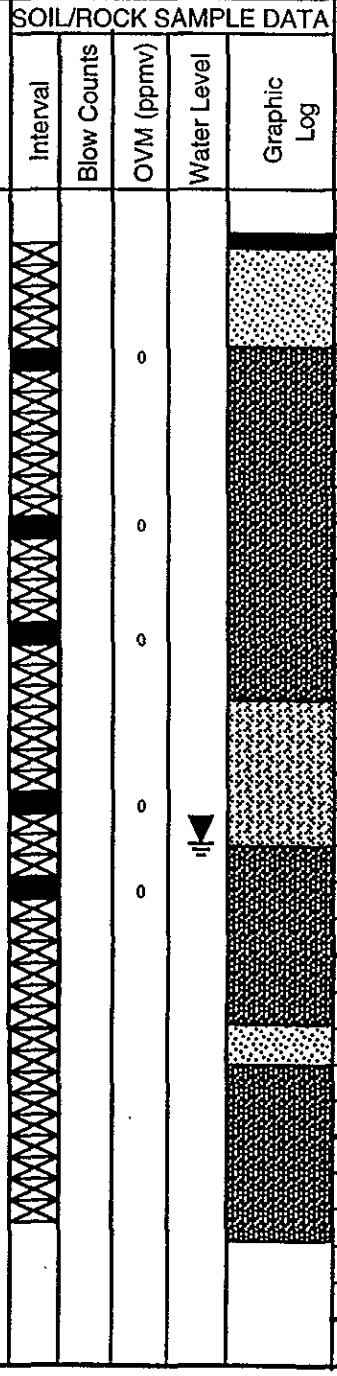
Boring: BH-D

Project Name: Romak Iron Works	Project Location: 3250 Hollis St., Oakland, CA	Page 1 of 1
Driller: Vironex	Type of Rig: Geoprobe	Size of Drill: 2.0" Diameter
Logged By: Ian T. Reed	Date Drilled: August 17, 2000	Checked By: Robert E. Kitay, R.G.

WATER AND WELL DATA

Depth of Water First Encountered: 17.0'	Total Depth of Well Completed: NA
Static Depth of Water in Well: NA	Well Screen Type and Diameter: NA
Total Depth of Boring: 28.0'	Well Screen Slot Size: NA
	Type and Size of Soil Sampler: 2.0" I.D. Macro Sampler





DESCRIPTION OF LITHOLOGY

standard classification, texture, relative moisture, density, stiffness, odor-staining, USCS designation.

0 — Concrete

Sandy SILT (ML); dark brown; damp; very stiff; 70% silt; 25% fine to coarse sand; 5% clay; low plasticity; very low estimated K; no odor

Silty CLAY (CL); light brown with black speckles; damp; stiff; 60% clay; 25% silt; 15% fine to coarse sand; low plasticity; very low estimated K; no odor

10 — 60% clay; 40% silt; trace sand; no odor

Sandy CLAY (CL); brown to gray; damp; very stiff; 60% clay; 30% fine to coarse sand; 10% silt; very low plasticity; very low estimated K; no odor

Silty CLAY (CL); light brown with black speckles; damp; stiff; 60% clay; 25% silt; 15% fine to coarse sand; low plasticity; very low estimated K; no odor

20 — fine sand layer at 22' - 23'

End of Boring at 28.0'

AQUA SCIENCE ENGINEERS, INC.

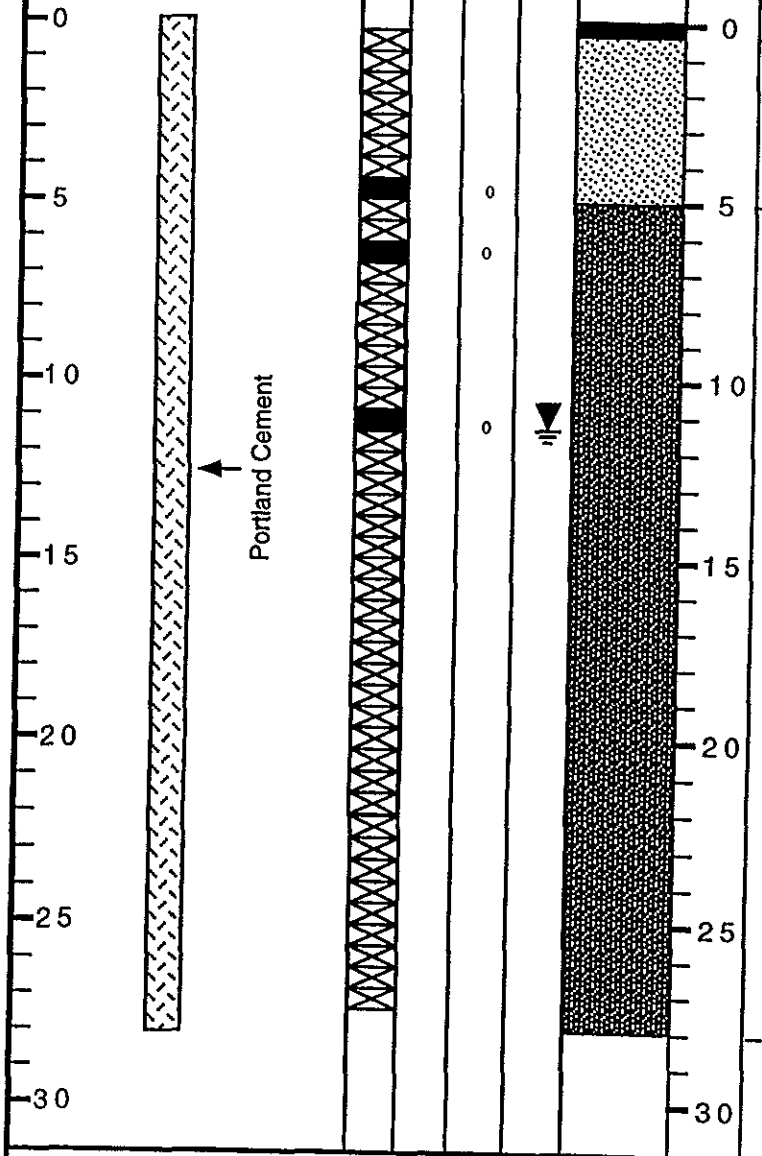
SOIL BORING LOG AND MONITORING WELL COMPLETION DETAILS

Boring: BH-E

Project Name: Romak Iron Works	Project Location: 3250 Hollis St., Oakland, CA	Page 1 of 1
Driller: Vironex	Type of Rig: Geoprobe	Size of Drill: 2.0" Diameter
Logged By: Ian T. Reed	Date Drilled: August 17, 2000	Checked By: Robert E. Kitay, R.G.

WATER AND WELL DATA

Depth of Water First Encountered: 12.5'	Total Depth of Well Completed: NA
Static Depth of Water in Well: NA	Well Screen Type and Diameter: NA
Total Depth of Boring: 24.0'	Well Screen Slot Size: NA
	Type and Size of Soil Sampler: 2.0" I.D. Macro Sampler



DESCRIPTION OF LITHOLOGY

standard classification, texture, relative moisture, density, stiffness, odor-staining, USCS designation.

0 — Concrete

Sandy SILT (ML); dark brown; damp; very stiff; 60% silt; 30% fine to coarse sand; 10% clay; very low plasticity; very low estimated K; no odor

5 — Silty CLAY (CL); light brown; damp; very stiff; 60% clay; 30% silt; 10% fine to coarse sand; very low plasticity; very low estimated K; no odor

10 — wet at 12.5'

15

20

25

End of Boring at 28.0'

30

AQUA SCIENCE ENGINEERS, INC.

SOIL BORING LOG AND MONITORING WELL COMPLETION DETAILS

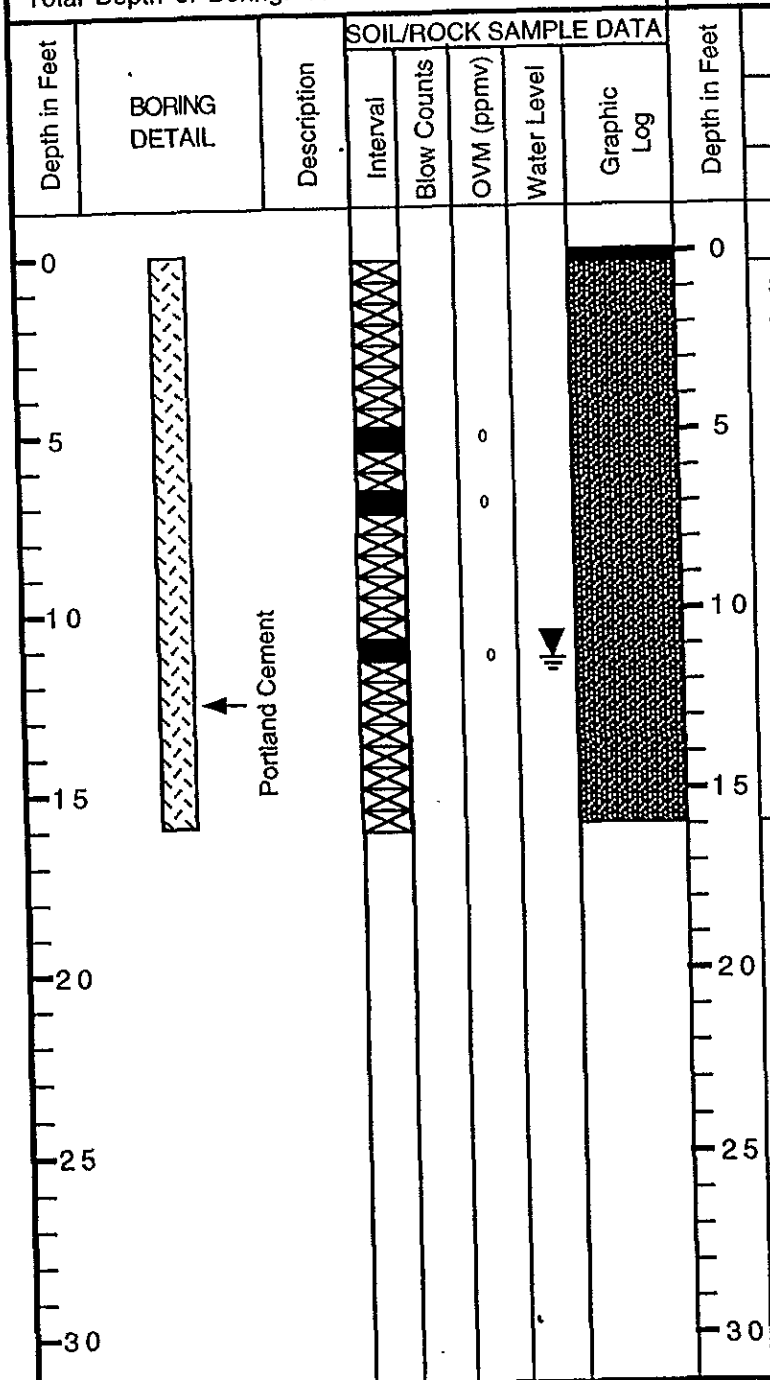
Boring: BH-F

Page 1 of 1

Project Name: Romak Iron Works	Project Location: 3250 Hollis St., Oakland, CA	
Driller: Vironex	Type of Rig: Geoprobe	Size of Drill: 2.0" Diameter
Logged By: Ian T. Reed	Date Drilled: August 17, 2000	Checked By: Robert E. Kitay, R.G.

WATER AND WELL DATA

Depth of Water First Encountered: 12.0'	Total Depth of Well Completed: NA
Static Depth of Water in Well: NA	Well Screen Type and Diameter: NA
Total Depth of Boring: 16.0'	Well Screen Slot Size: NA
	Type and Size of Soil Sampler: 2.0" I.D. Macro Sampler



DESCRIPTION OF LITHOLOGY

standard classification, texture, relative moisture, density, stiffness, odor-staining, USCS designation.

Concrete

Silty CLAY (CL); light brown; damp; very stiff; 60% clay; 30% silt; 10% fine to coarse sand; very low plasticity; very low estimated K; no odor

wet at 12'

End of Boring at 16.0'

AQUA SCIENCE ENGINEERS, INC.

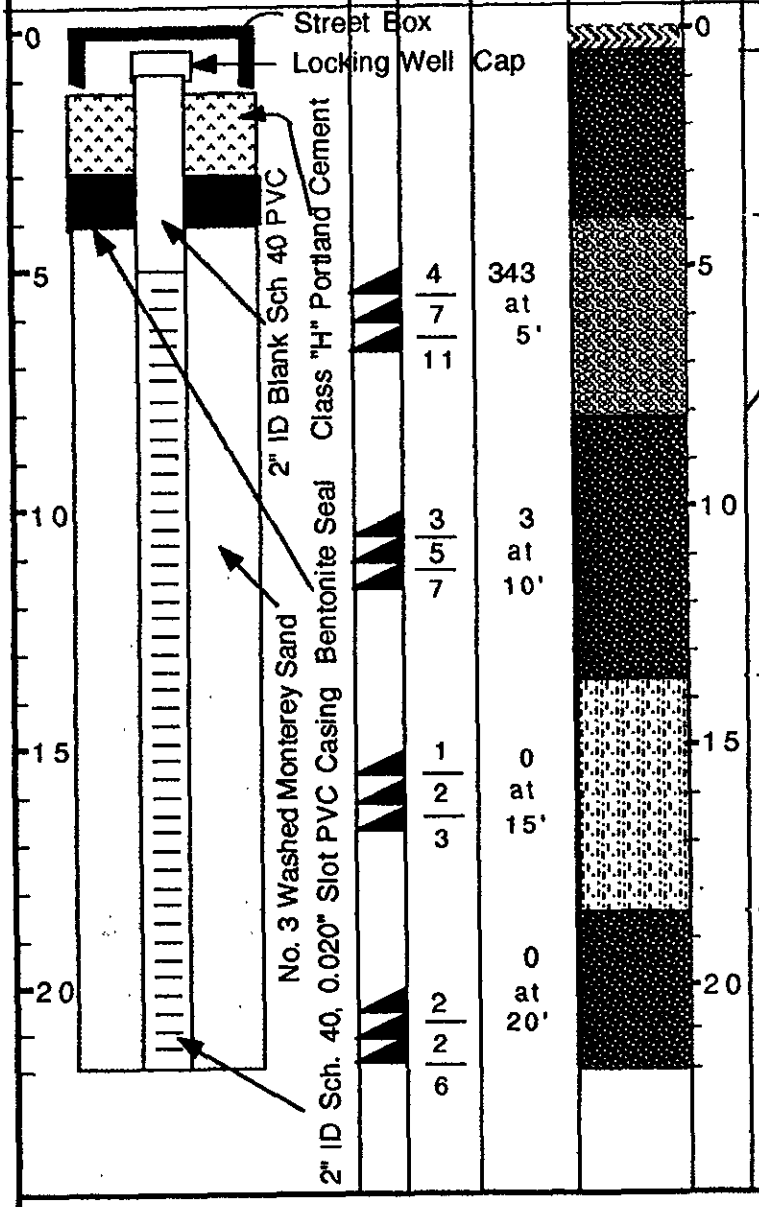
SOIL BORING LOG AND MONITORING WELL CONSTRUCTION DETAILS

Boring BH-A/Well MW-1

Project Name: Romak Iron Works	Project Location: 3250 Hollis Street, Oakland, CA	Page 1 of 1
Driller: Solls Exploration Services	Type of Rig: CME 55	Type and Size of Auger: 8-inch O.D. Hollow-stem.
Logged By: Robert E. Kitay	Date Drilled: July 30, 1993	Checked By: David M. Schultz, P.E.

WATER AND WELL DATA

Depth of Water First Encountered: ~ 13.5'	Total Depth of Well Completed: 22.0'
Static Depth of Water in Well: 9.43' Below T.O.C.	Well Screen Type and Diameter: 2" Diameter Schedule 40 PVC
Total Depth of Boring: 22.0'	Well Screen Slot Size: 0.020"
	Type and Size of Soil Sampler: 2" I.D., Calif. Split-barrel



DESCRIPTION OF LITHOLOGY

standard classification, texture, relative moisture, density, stiffness, odor-staining, USCS designation.

Concrete surface

0.5'; Silty CLAY (CL); black; stiff; moist; 80% clay; 20% silt; moderate plasticity; very low estimated K; no odor

~4.0'; Clayey SILT (ML); olive; medium stiff; moist; 75% silt; 15% clay; 10% very fine to fine sand; moderate plasticity; low estimated K; moderate hydrocarbon odor

~8.0'; Silty CLAY (CL); yellow brown mottled blue green; stiff; moist; 80% clay; 20% silt; moderate plasticity; very low estimated K; slight hydrocarbon odor

Static Water Level = 9.43'

Groundwater encountered at 13.5'

~13.5'; Sandy SILT (ML); olive; soft; wet; 70% silt; 20% very fine to fine sand; 10% clay; moderate plasticity; low estimated K; slight hydrocarbon odor

~18.5'; Silty CLAY (CL); light yellow brown; stiff; wet; 65% clay; 30% silt; 5% fine sand; moderate plasticity; very low estimated K; slight hydrocarbon odor