

ALAMEDA COUNTY
HEALTH CARE SERVICES



AGENCY
DAVID J. KEARS, Agency Director

January 20, 1998

STID 4439

Western Pacific Housing
6160 Stoneridge Mall Road, Ste. 210
Pleasanton, CA 94588
Attn: Susan Shaffer

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

RE: (FORMER) PARKER'S SHELL, 5293 CROW CANYON ROAD, CASTRO
VALLEY

Dear Ms. Shaffer::

This letter transmits the enclosed underground storage tank (UST) case closure letter in accordance with Chapter 6.75 (Article 4, Section 25299.37[h]) of the California Health and Safety Code. The State Water Resources Control Board (SWRCB) has required since March 1, 1997 that this agency 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 this site.

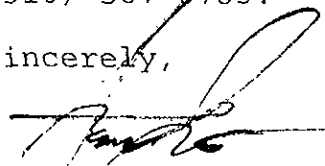
SITE INVESTIGATION AND CLEANUP SUMMARY

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

- o Up to 56 parts per million (ppm) Total Petroleum Hydrocarbons as Gasoline and 0.27 ppm Benzene, among other constituents, remain in native soil beneath the former dispenser island area at depths between 6 and 12 feet below grade.

If you have any questions, please contact the undersigned at (510) 567-6783.

Sincerely,



Scott O. Seery, CHMM
Hazardous Materials Specialist

Enclosures:

1. Case Closure Letter
2. Case Closure Summary

cc: Dick Pantages, Chief

ALAMEDA COUNTY
HEALTH CARE SERVICES



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DAVID J. KEARS, Agency Director

January 20, 1998

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

REMEDIAL ACTION COMPLETION CERTIFICATION

- REVISED -

Western Pacific Housing
6160 Stoneridge Mall Road, Ste. 210
Pleasanton, CA 94588
Attn: Susan Shaffer

RE: (FORMER) PARKER'S SHELL, 5293 CROW CANYON ROAD, CASTRO
VALLEY

Dear Ms. Shaffer:

This letter confirms the completion of a site investigation and remedial action for the 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, no further action related to the underground tank release is required.

This notice is issued pursuant to a regulation contained in Section 2721(e) of Title 23 of the California Code of Regulations.

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

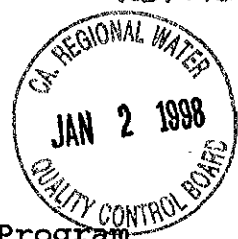
Sincerely,

Mee Ling Tung
Director, Environmental Health Services

c: Dick Pantages, Chief, Env. Protection Division
Stephen Hill, RWQCB
Dave Deaner, SWRCB (w/attachment)
SOS/files

SIGNED
COPY-

KB file # 01-0877



CASE CLOSURE SUMMARY - REVISED
Leaking Underground Fuel Storage Tank Program

I. AGENCY INFORMATION

Date: 12/17/97

Agency name: Alameda County-EPD Address: 1131 Harbor Bay Pkwy #250
City/State/Zip: Alameda, CA 94502 Phone: (510) 567-6700
Responsible staff person: Scott Seery/ Amy Leach Title: Haz. Materials Spec.

II. CASE INFORMATION

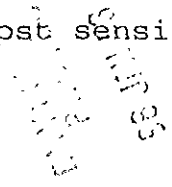
Site facility name: (former) Parker's Shell
Site facility address: 5293 Crow Cnyn Rd., Castro Valley 94552
RB LUSTIS Case No: N/A Local Case No./LOP Case No.: 4439
URF filing date: 05/10/89 SWEEPS No: N/A

<u>Responsible Parties:</u>	<u>Addresses:</u>	<u>Phone Numbers:</u>
Richard K. Young et al c/o Melvin S. Gerton	829 Redwood Rd. Danville, CA 94506	
Wm. & Judith McDonald et al	1700-150th Ave. San Leandro, CA 94578	
Western Pacific Housing Attn: Susan Shaffer	6160 Stoneridge Mall Rd., Ste. 210 Pleasanton, CA 94588	(510) 737-1080

<u>Tank No:</u>	<u>Size in gal.:</u>	<u>Contents:</u>	<u>Closed in-place or removed?:</u>	<u>Date:</u>
1	10K	gasoline	removed	02/10/89
2	10K	"	"	"
3	10K	"	"	"
4	550	waste oil	"	"

III. RELEASE AND SITE CHARACTERIZATION INFORMATION

Cause and type of release: Piping/dispenser leaks
Site characterization complete? YES
Date approved by oversight agency: 08/09/96
Monitoring Wells installed? YES Number: 5
Proper screened interval? Likely
Highest GW depth below ground surface: 7.24' Lowest depth: 16.33'
Flow direction: S - SW
Most sensitive current use: Residential



Leaking Underground Fuel Storage Tank Program

III. RELEASE AND SITE CHARACTERIZATION INFORMATION (Continued)

Are drinking water wells affected? NO Aquifer name: NA
 Is surface water affected? NO Nearest affected SW name: NA
 Off-site beneficial use impacts (addresses/locations): NONE
 Report(s) on file? YES Where is report filed? Alameda County
 1131 Harbor Bay Pkwy
 Alameda CA 94502

Treatment and Disposal of Affected Material:

<u>Material</u>	<u>Amount</u> (include units)	<u>Action (Treatment</u> <u>of Disposal w/destination)</u>	<u>Date</u>
Tank	3 x 10K gals 1 x 550 gals	<u>Disposal</u> - Erickson, Inc Richmond, CA	02/10/89
Piping	~ 230'	<u>Disposal</u> - Erickson, Inc. Richmond, CA	10/15/97
Soil	~270 yds ³ ~10 yds ³	<u>Disposal</u> - Altamont LF Livermore, CA <u>Disposal</u> - on-site	06/27/97 Fall 1997

Maximum Documented Contaminant Concentrations - - Before and After Cleanup

Contaminant	Soil (ppm)		Water (ppb)	
	Before ¹	After ²	Before	After
TPH (Gas)	980	56	ND	ND
TPH (Diesel)	20	NA	"	"
Benzene	4.3	0.27	"	"
Toluene	17	<0.62	"	"
Xylene	35	<0.62	"	"
Ethylbenzene	75	<0.62	"	"
Oil & Grease	35	NA	"	"
Heavy metals	NA	"	86 (Zn)	20 (Zn)
Other: HVOC	"	"	(Note 3)	ND

- Notes:
- 1) "Before" soil results derived from samples collected during 2/89 UST closures and from exploratory borings advanced during 4/90 and 5/91, as follows: TPH-G result from fuel UST pit samples; TPH-D result from well/boring MW-4 at 10' BG; BTEX results from boring B-8; and, O&G result from sample collected from waste oil UST pit.
 - 2) "After" soil results from samples collected from "test pits" excavated during 9/97 below product piping and dispenser risers @ depths between 6-12' BG.
 - 3) Trace concentrations of particular HVOCs detected in water sampled from MW-3 5/91, as follows: 1.1 ppb chloroform, 2.1 ppb bromodichloromethane, 6.1 ppb dibromochloromethane, and 2.8 ppb bromoform.

Leaking Underground Fuel Storage Tank Program

Comments (Depth of Remediation, etc.):

On February 10, 1989, four USTs (three 10,000-gallon gasoline USTs and one 550-gallon waste oil UST) were removed from a former gasoline/auto service station located at this site. Up to 980 ppm TPH-G and 4.0 ppm benzene were identified in soil samples collected at 13' BG from the gasoline pit. Analytical results for TOG and TPH-D from the soil sample collected at 7' BG from the waste oil pit were 35 ppm and ND, respectively. No other waste oil target compounds were sought.

Product piping was not removed, nor were samples collected below such piping, during the 1989 closure activities. Removal or remediation of in-situ contaminated soil did not occur subsequent to UST removals.

In late August 1997, during the performance of preliminary site grading activities in preparation for the impending residential development, apparent product piping was encountered at the north end of the site. Subsequent trenching uncovered even more piping (a total of ~230') leading from the former UST pit, to the dispenser island areas. Several dispenser risers were still intact. One product piping run was still charged with gasoline, discovered only when an attempt to remove the piping resulted in fuel flowing out an opening at its opposite end.

All piping was exposed, and "test pits" dug to depths ranging from ~5 to 13' BG in all areas where pipe segment connections were observed (~20'), and at pipe terminuses. Soil samples were collected in only those test pits where subjective release evidence (e.g., odors, staining, significant OVA deflections) was observed.

Both sidewall and bottom samples were collected from such pits. However, due to the rocky and fragmentary nature of the sampled media, difficulty was encountered during collection to the extent that, in one or two instances, material was placed by hand into sample sleeves.

Up to 0.27 ppm benzene and 56 ppm TPH-G, among other low or ND concentrations of TEX, were identified in analyzed samples. Nearly all detectable concentrations were isolated at the west end of this "test pit" exploration area, and at depths of 7' or greater. This area of the site essentially encompasses the former dispenser island and fueling pad, the same area extensively evaluated previously by way of several soil borings. (See Section V. "Additional Comments" for specific information regarding these borings.)

IV. CLOSURE

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

Leaking Underground Fuel Storage Tank Program

IV. CLOSURE (cont'd)

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

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

Site management requirements: **See Section V "Additional Comments"**

Should corrective action be reviewed if land use changes? **NO**

Monitoring wells Decommissioned: **YES**

Number Decommissioned: **5** Number Retained: **0**

List enforcement actions taken: **NA**

List enforcement actions rescinded: **NA**

V. ADDITIONAL COMMENTS

Between April and May 1990, 11 soil borings (referred to as both SB and B series borings in various reports) were advanced across the site to assess the impact to soil and groundwater. Soil borings SB-1 through SB-9, excluding SB-5, were drilled to a depth of 20' BG in the approximate vicinities of the former dispenser islands, along product piping, and around the former gasoline UST pit. Groundwater was encountered in borings SB-1, -2, -3, -4, -6, -8, and -9 between 15 and 19' BG, stabilizing between 7 and 9' BG.

Three soil borings were advanced to between 30.5 - 60' BG and converted into monitoring wells MW-1, -2, and -3. It is not clear if the monitoring wells were screened properly since initial groundwater was encountered in MW-1 at 42' BG, MW-2 at 18' BG, and MW-3 at 50' BG, stabilizing at 15.8, 8.85, and 15.1' BG, respectively.

Elevated levels of TPH-G and BTEX were identified in soil samples collected from 5 to 10' BG from borings SB-1, -2, -6, -8, and -9; soil sample results were not reported for MW-2 and -3. TPH-G and BTEX were reportedly not detected in samples collected deeper than 10' BG.

Five additional borings (B-10, -11, -12, MW-4, and -5) were advanced in May 1990 to further define the extent of soil contamination. Monitoring wells MW-4 and -5 were installed approximately 15 feet southwest of the former gasoline pit and boring SB-8, respectively, to assess groundwater conditions directly downgradient from areas previously identified with the highest concentrations of soil contamination.

Leaking Underground Fuel Storage Tank Program

V. ADDITIONAL COMMENTS (cont'd)

Fuel product odors were noted during drilling at borings B-10, -11, MW-4, and -5, between 3 and 15' BG. Particularly heavy soil contamination was reportedly apparent at boring MW-4 between 5 and 15' BG. However, low levels of TPH-G and TX were detected in samples collected from boring B-10 (11.5 - 20' BG), and 5.3 ppm TPH-G was detected at 10' BG in boring MW-4.

Soil sampling and drilling were reported to be very difficult due to encountered subsurface materials consisting of indurated sedimentary rocks comprised of interbedded claystone, siltstone, and sandstone. Beds appear to be steeply dipping in the direction of Crow Creek, located south of and topographically lower than the site.

Groundwater was reportedly sampled seven times (6/90, 2/91, 5/91, 8/91, 11/91, 1/92, 4/94), although laboratory results are not available for the 2/91, 8/91, 11/91, and 1/92 sampling events. Groundwater samples were analyzed for TPH-G and BTEX in all three wells. In addition, analyses for TPH-D, TOG, HVOCs, chlorinated pesticides, heavy metals, and PNA's, PCB's and creosote were performed on groundwater samples collected from monitoring well MW-3. Except for trace concentrations of certain chlorinated hydrocarbons (possible lab contaminants) and metals (Zn) detected in well MW-3 in 5/91, analytical results for all constituents sought were non-detect.

Groundwater, present within a mantle of weathered bedrock fragments and "duff," as well as within more competent, yet fractured, bedrock below, appears to flow towards Crow Creek to the south and southwest.

Two additional borings (SB-1A and SB-8A), reportedly located near borings B-1 and B-8, were emplaced in April 1997 to corroborate results from the earlier exploratory efforts. Lab results of soil samples collected at 5' BG from borings B-1A and -8A identified ND TPH-G, 0.0076 ppm benzene, ND toluene, 0.025 ppm ethylbenzene, and 0.063 ppm xylenes from boring SB-1A, and ND for TPH-G and BTEX from boring SB-8A.

Approximately 250 cubic yards of stockpile soil was identified and sampled at this site during 7/96. The stockpile soil was segregated into three piles (piles "A", "B", and "C") on the site and are presumed to have originated from back-fill material removed during the 1989 excavations of the gasoline and waste oil tanks, and soil cuttings accumulated during subsequent soil and groundwater investigations.

The 7/96 composite samples collected from the stockpiles were analyzed for the following constituents: Total Oil & Grease, Metals (Cd, Cr, Ni, Pb Zn and As), SVOCs by EPA method 8270. Analytical results of these samples were unremarkable on most counts. Up to 132 ppm total Pb was identified in stockpile "A", however, a concentration just above the California-modified

Leaking Underground Fuel Storage Tank Program

V. ADDITIONAL COMMENTS (cont'd)

Preliminary Remediation Goal (PRG) of 130 ppm. Up to 2,000 ppm TOG was also identified stockpile "B". A composite sample from stockpile "A" was subsequently analyzed for soluble Pb in April 1997; results were ND.

Only stockpile "B" was removed from the site, disposed of at Altamont Landfill (Livermore) in June 1997. Stockpiles "A" and "C" were reintroduced to the site. In addition, Pb-contaminated imported fill materials were discovered during related assessment work performed elsewhere on the contiguous property encompassing the 38 lot residential development. This material, in addition to one soil stockpile generated during excavation of the abandoned UST product piping, was relocated to the southern half of the development where it was incorporated as engineered fill below the asphalt "cap" of a communal parking area.

.....

Because, overexcavation of contaminated soil was reportedly not performed at this site due to the consolidated nature of the substrate, the exception being the limited material relocated to another portion of the site following the 1997 excavation of product piping and "test pit" exploration, a RBCA evaluation was completed by SCA Environmental, Inc. in 1997 to facilitate the construction of a residential development at the site. The risk assessment used an average (mean) of the *maximum* benzene concentrations collected from each soil boring installed during historic investigations, including data derived from the 1997 borings (SB-1A and SB-8A). The most conservative exposure pathway ("volatilization from subsurface soil into enclosed space") was evaluated for *residential* exposure.

Mean benzene soil concentrations at the site were calculated to be 1.1E-02 ppm. The cleanup level, or *site-specific target level (SSTL)*, for benzene was calculated to be 5.8E-02 ppm, using an excess cancer risk of 1E-05. Approval for residential development was accepted with the application of specific risk management and construction measures outlined below.

Subsequent review of site development plans depicting building pad locations was made and these features compared with the surveyed locations of the 1997 "test pits" and piping runs. Development plans indicate dwellings will not be located in areas where noteworthy concentrations of residual fuel compounds, in particular benzene, are found.

No further investigations are recommended since this site appears to meet the San Francisco Bay RWQCB's definition of a "low risk" groundwater case:

1. The source of contamination was abated by removal of the UST system.

Leaking Underground Fuel Storage Tank Program

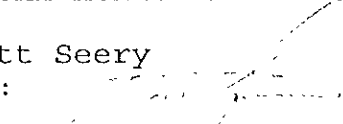
V. ADDITIONAL COMMENTS (cont'd)

2. The extent of impact to soil and groundwater has been evaluated at this site by analysis of multiple soil and groundwater samples collected within and in the vicinity of the UST pit and fuel dispensing area. Relatively low concentrations were found in resampled soil in areas that previously had elevated levels of petroleum hydrocarbons indicates that natural attenuation may have occurred in these areas.
3. Analytical groundwater data collected seven times over four years has shown that there is no significant impact to groundwater at this site.
4. The residual contamination left in soil at this site is not expected to significantly impact water wells, deeper drinking water aquifers, surface water, or other sensitive receptors. Shallow groundwater at this site is not used for municipal or domestic purposes.
5. Based on a RBCA modified Tier-1/Tier-2 analysis, it appears there is no significant risk to human health (residential exposure scenario with 1×10^{-5} excess cancer risk) from the residual levels of benzene in soil at this site.
6. It does not appear that sensitive ecological receptors are currently impacted by the petroleum hydrocarbon release from this site; therefore, an environmental risk analysis was not performed.


To ensure a conservative approach protective of human health, this department requests that risk management practices be developed to:

- Mitigate any potential negative impacts posed by the residual contamination remaining on site including the installation of **vapor barriers** beneath new building construction located over the former service station site (Lots 1, 2, 3, 4, and 38).
- Develop a strategy to address any risk posed to the homeowner, construction or utility worker during earth moving activities (e.g., foundation and utility trenching, water impoundments, below ground spas and swimming pools, etc.).

VI. LOCAL AGENCY REPRESENTATIVE DATA

Name: Scott Seery
Signature: 

Title: Haz Mat Specialist
Date: 12/31/97

Reviewed by
Name: Tom Peacock
Signature: 

Title: Supervising Haz Mat Specialist
Date: 12-31-97

Leaking Underground Fuel Storage Tank Program

VI. LOCAL AGENCY REPRESENTATIVE DATA (cont'd)

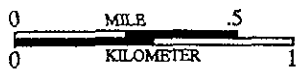
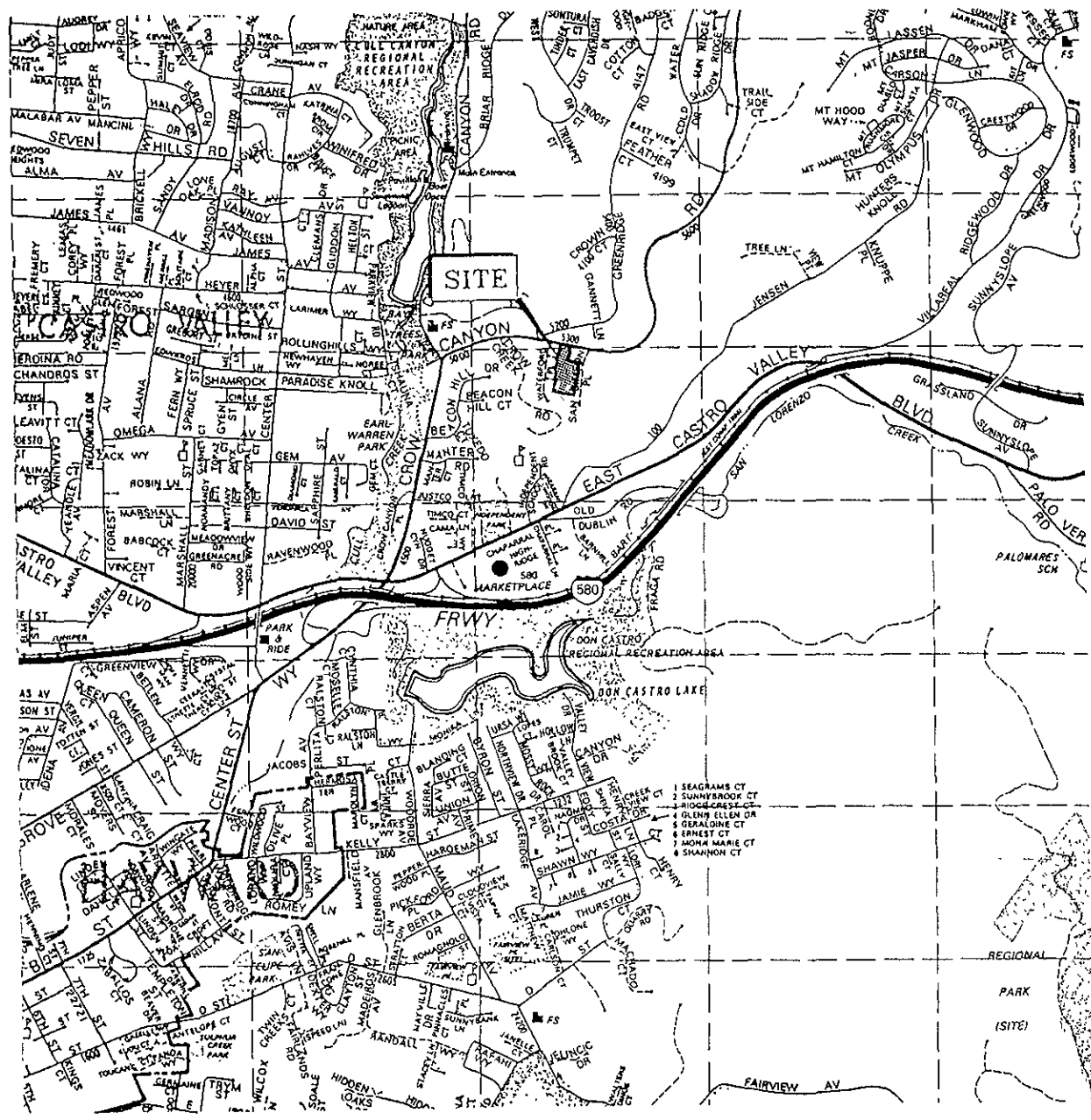
Name: Madhulla Logan Title: Haz Mat Specialist
Signature: *Madhulla Logan* Date: 12/29/97

VII. RWQCB NOTIFICATION

Date Submitted to RB: 12/31/97 RB Response: *Concur*
RWQCB Staff Name: ~~Kevin Graves~~ Title: ~~San. Eng. Assoc.~~ Date: 1/8/98
Stephen Hill EST IV Sup

Stephen Hill

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BASE: THOMAS BROTHERS



SITE VICINITY MAP
CASTRO VALLEY PROPERTY
5277 CROW CANYON ROAD
CASTRO VALLEY, CALIFORNIA

JOB NO.: 4186-F2A	FIGURE NO.
DATE: NOVEMBER 1996	1
DRAWN BY: <i>[Signature]</i> CHECKED BY: <i>[Signature]</i>	

PIPING TRENCH SAMPLING

TABLE I
 Piping Trench Excavation Samples - 1997
 (Concentrations reported in parts per million - ppm)

SAMPLE NO.	TPHg	BENZ	TOL	E.BENZ	XYL
1-1	17	<0.05	<0.62	<0.62	<0.62
1-2	12	0.14	<0.62	<0.62	<0.62
1-3	56	0.27	<0.62	<0.62	<0.62
2-1	1.7	0.071	<0.0050	0.093	0.026
2-2	<1.0	<0.0050	0.013	0.0081	0.046
3-1	1.3	0.014	<0.0050	0.035	0.093
3-2	12	<0.05	<0.62	<0.62	<0.62
4-1	<1.0	<0.0050	<0.0050	<0.0050	<0.0050
4-2	23	<0.05	<0.62	<0.62	<0.62
5-1	26	<0.05	<0.62	<0.62	<0.62
5-2	<1.0	<0.0050	<0.0050	<0.0050	<0.0050
6-1	1.6	<0.0050	<0.0050	0.0056	<0.0050
6-2	<1.0	0.0055	<0.0050	0.0071	0.0053

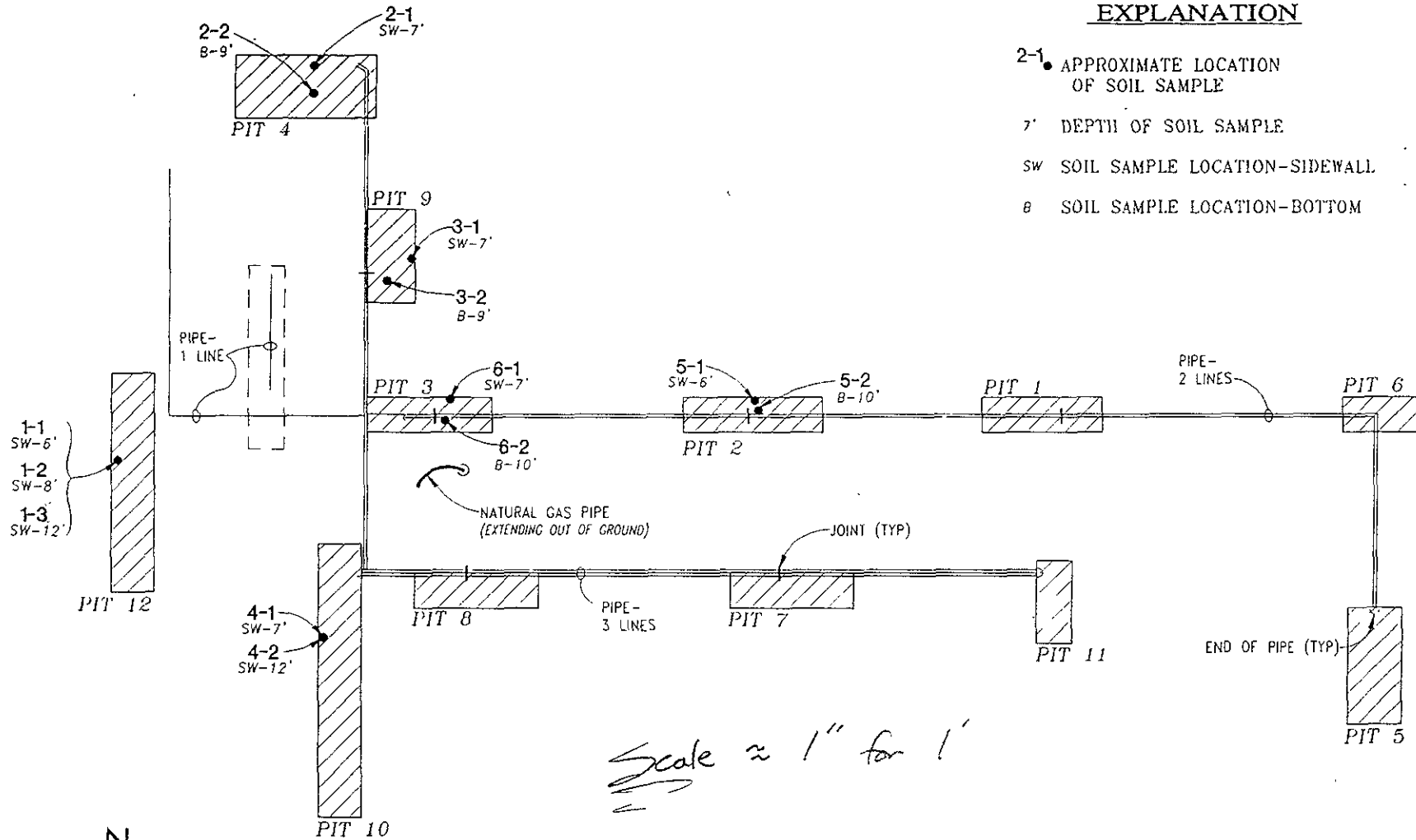
TABLE II
 Stockpile Soil Samples
 (Concentrations reported in parts per million - ppm)

SAMPLE	TPHg	BENZ	TOL	E.BENZ	XYL	LEAD
SP1	<1.0	<0.005	<0.005	<0.005	<0.005	12
SP2	<1.0	<0.005	<0.005	<0.005	<0.005	10
SP3	<1.0	<0.005	<0.005	<0.005	<0.005	6.1
SP4	<1.0	<0.005	<0.005	<0.005	0.006	9.6

CROW CANYON ROAD

EXPLANATION

- 2-1. APPROXIMATE LOCATION OF SOIL SAMPLE
- 7' DEPTH OF SOIL SAMPLE
- SW SOIL SAMPLE LOCATION-SIDEWALL
- 8 SOIL SAMPLE LOCATION-BOTTOM

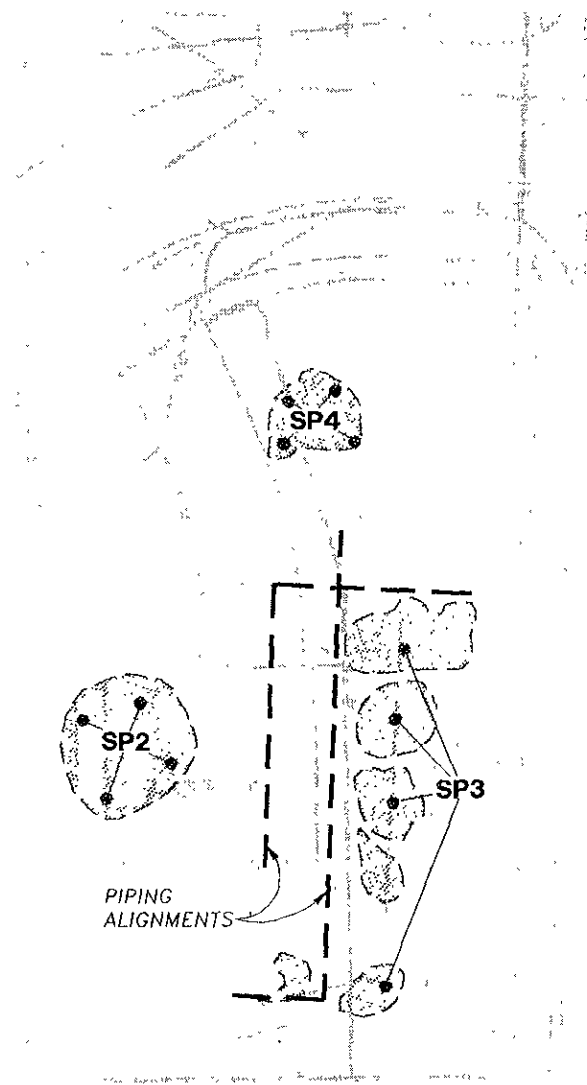


Scale ≈ 1" for 1'



	PIPING SAMPLING LOCATIONS FORMER PARKER SHELL SITE, 5293 CROW CANYON ROAD CASTRO VALLEY, CALIFORNIA		JOB NO 4186-F4A DATE: SEPTEMBER 1997 DRAWN BY: <i>DB</i> CHECKED BY: <i>SM</i>	FIGURE NO

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EXPLANATION



APPROXIMATE LOCATION OF STOCKPILE



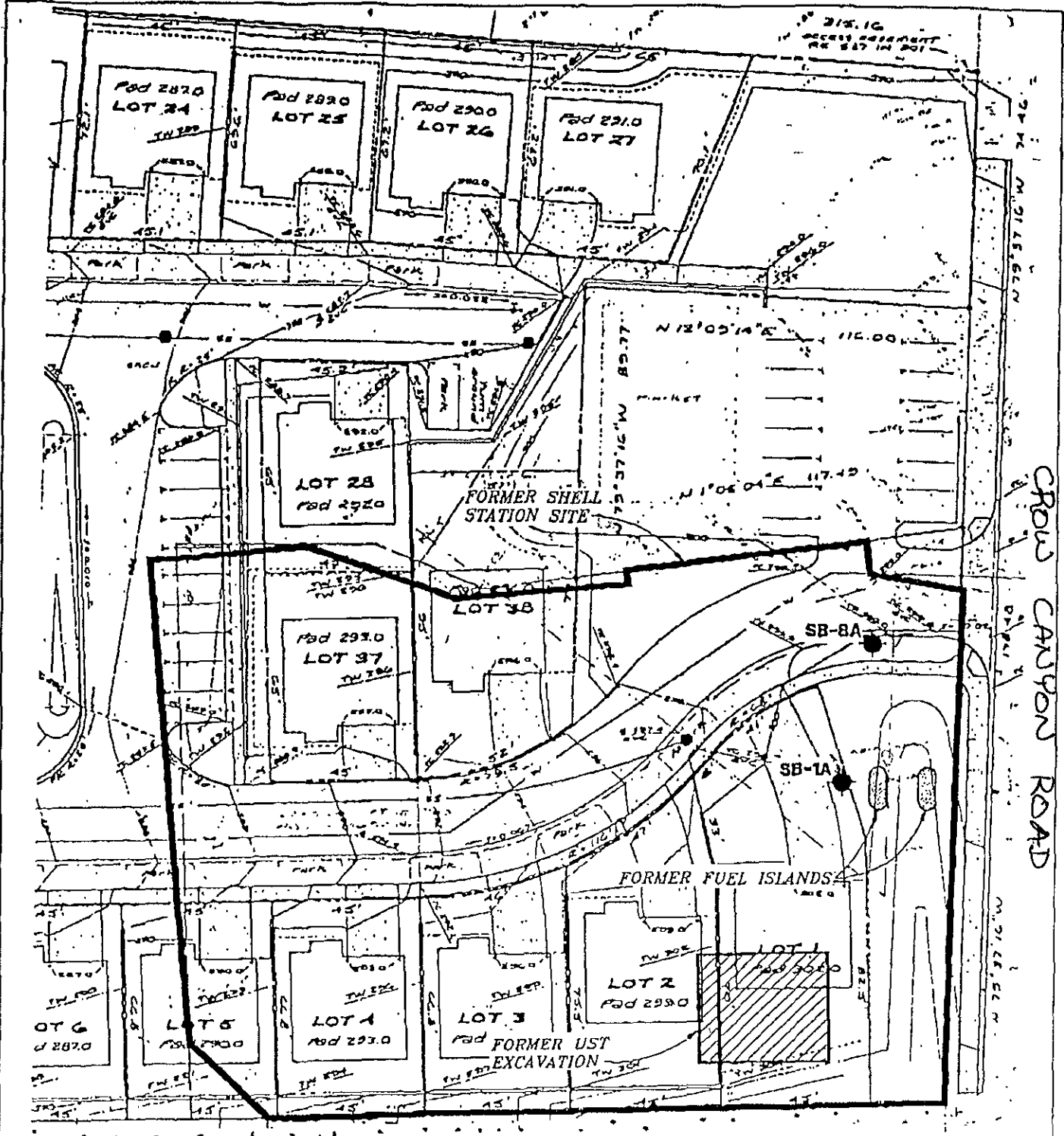
APPROXIMATE LOCATION OF STOCKPILE SOIL SAMPLE



SOIL STOCKPILES
FORMER PARKER SHELL SITE, 5293 CROW CANYON ROAD
CASTRO VALLEY, CALIFORNIA

PROJECT NO.: 4186-F4A	FIGURE NO.
DATE: SEPTEMBER 1997	3
DRAWN BY: <i>JB</i> CHECKED BY: <i>SM</i>	

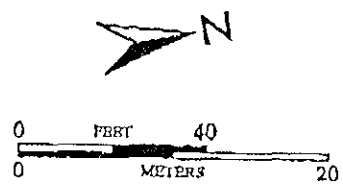
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EXPLANATION

SB-8A ● APPROXIMATE LOCATION OF SOIL BORING

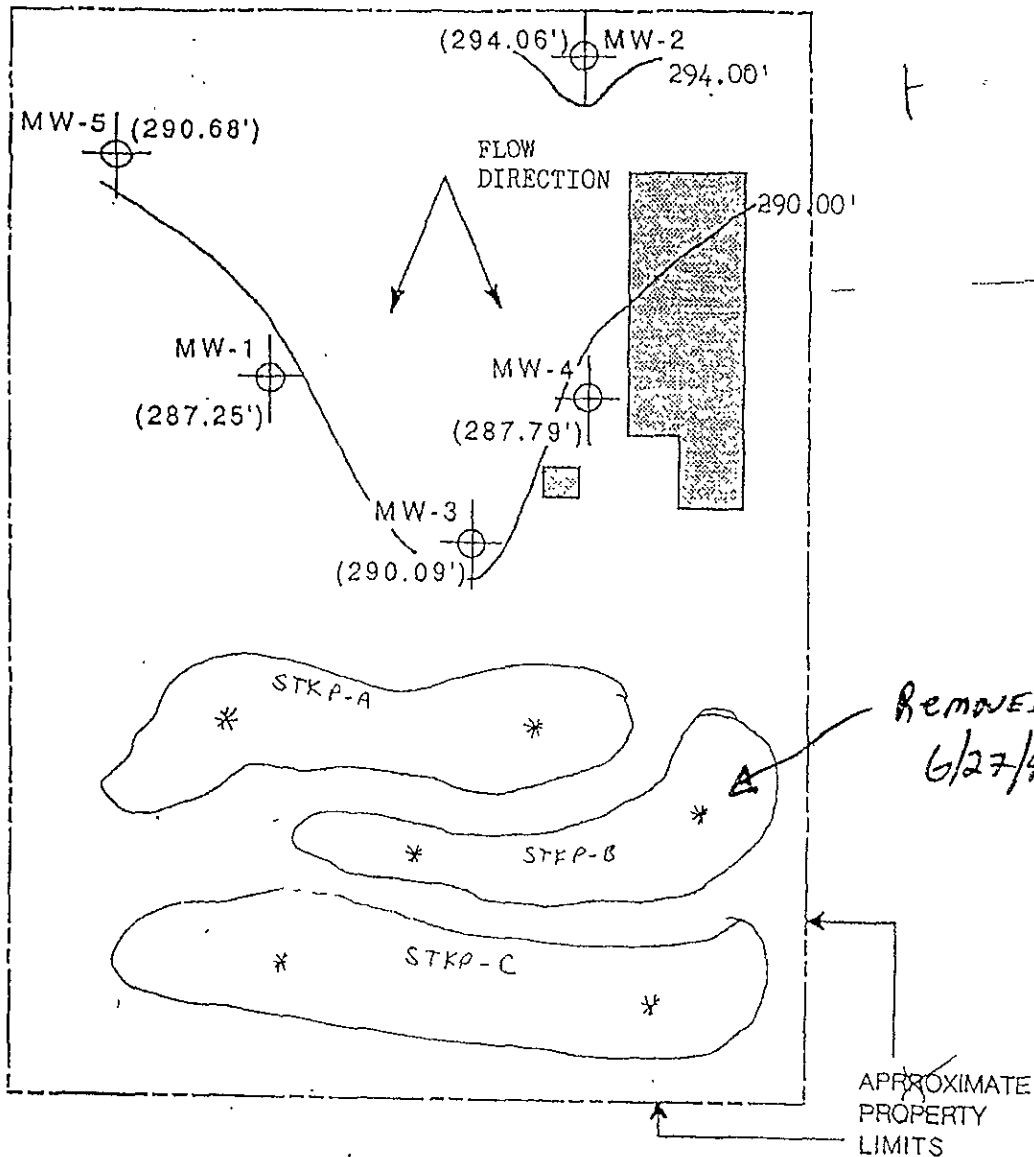
SAMPLE RESULTS:



Sample No.	TPH(g)	Benzene	Toluene	E.Benzene	Xylenes	Lead (STLC)
SB-1A	ND	.0076	ND	.025	.063	----
SB-8A	ND	ND	ND	ND	ND	----

FIGURE NO. **1**
 DRAWN BY: *SM*

CROW CANYON ROAD



* = Sample Point

LEGEND

MW-1
 (287.25')


 MONITORING WELL WITH
 GROUNDWATER ELEVATION
 IN FEET AMSL



1" = 40'

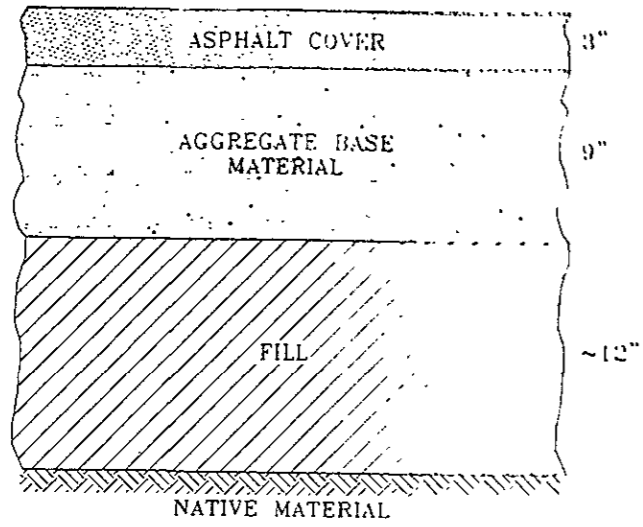
POTENTIOMETRIC SURFACE MAP 8-21-91

FORMER RAMOS PROPERTY
 5293 Crow Canyon Road
 Castro Valley, California

AQUA SCIENCE ENGINEERS, INC.

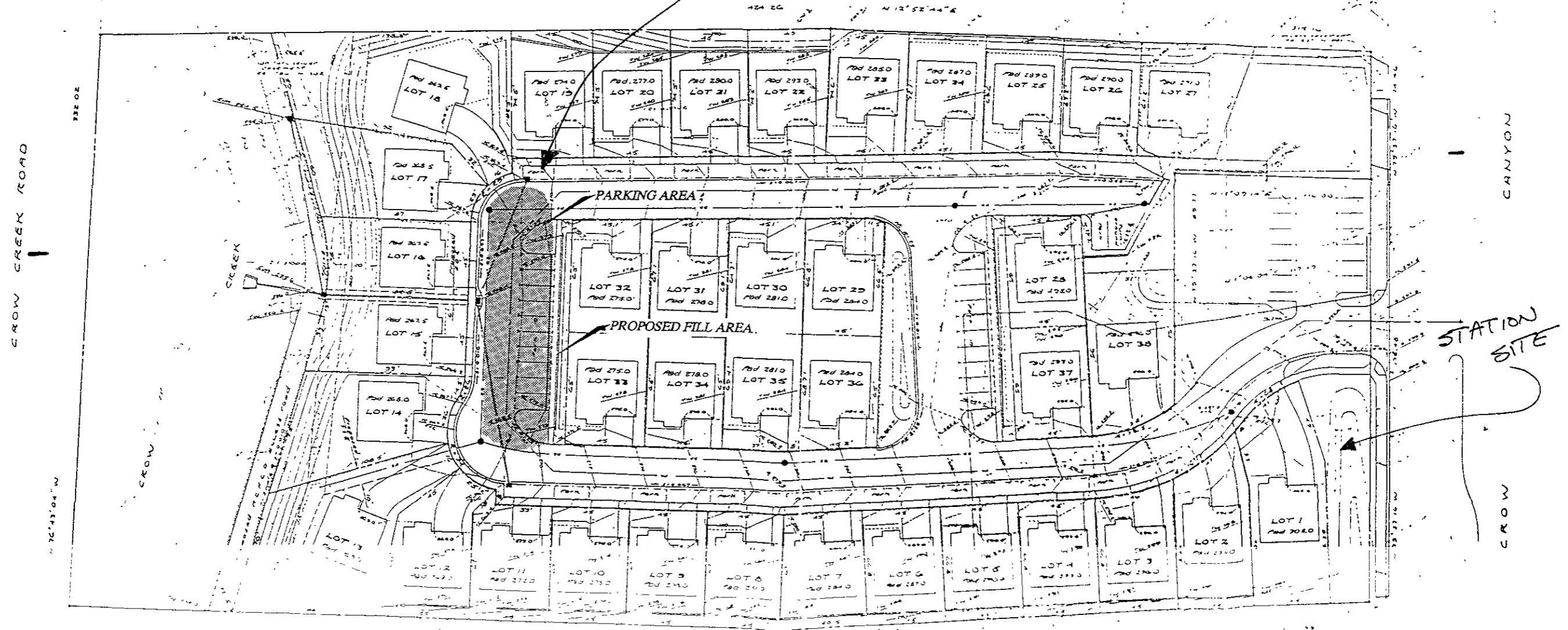
Figure 2

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TYPICAL PARKING AREA DETAIL
N.T.S.

STOCKPILE SITE
RELOCATION



SOURCE GREENWOOD & MOORE, INC.



TENTATIVE MAP
TRACT 6910, CROW CANYON ROAD
CASTRO VALLEY, CALIFORNIA

JOB NO 4186-F5	FIGURE NO
DATE AUGUST 1997	3
DRAWN BY [Signature]	CHECKED BY [Signature]

NTS

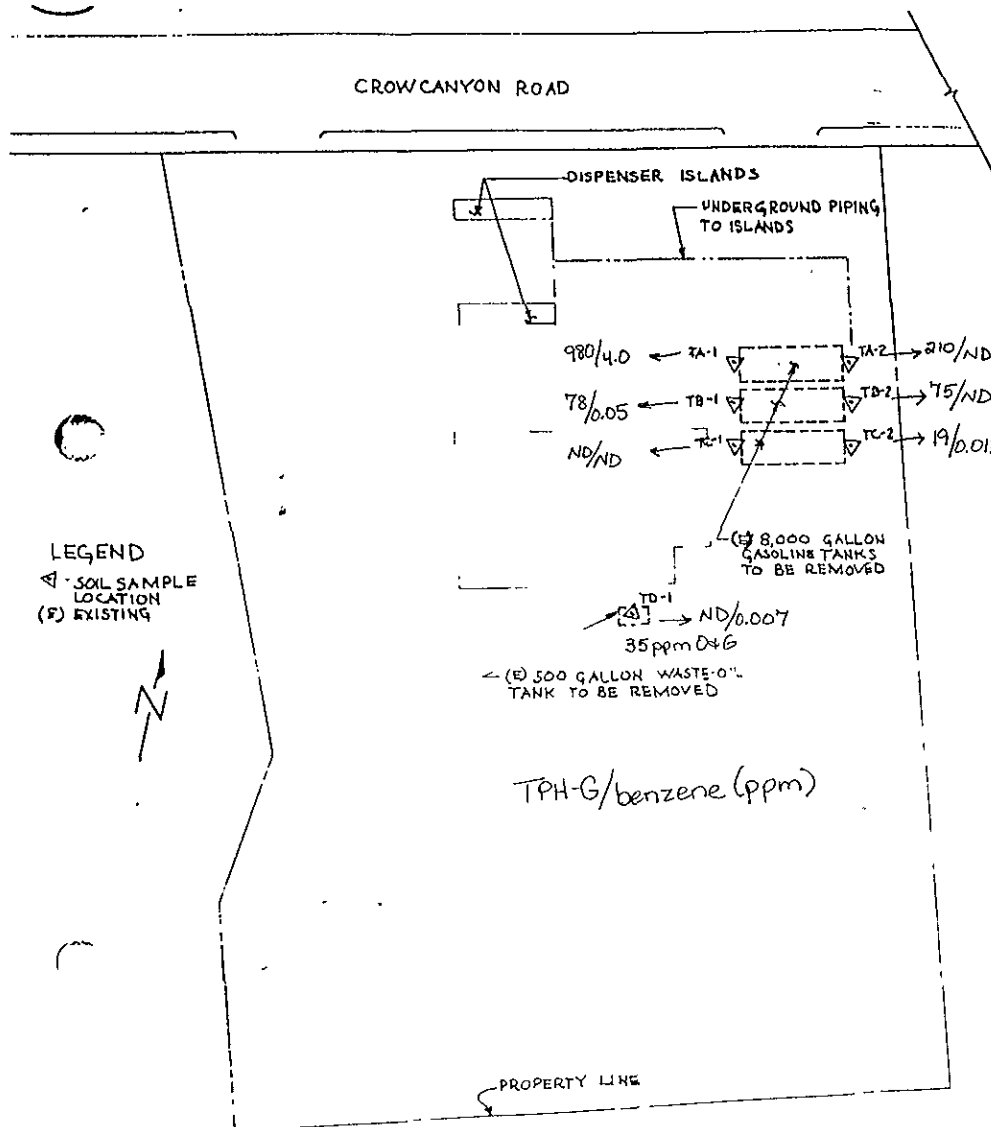


TABLE 1 - SOIL SAMPLE ANALYSIS - TANK REMOVAL

Sample ID Chemical Compound	TA-1 (ppm)	TA-2 (ppm)	TB-1 (ppm)	TB-2 (ppm)	TC-1 (ppm)	TC-2 (ppm)	TD-1 (ppm)
TPH (light)	980.0	210.0	78.0	75.0	ND	19.0	ND
TPH (diesel)	NA	NA	NA	NA	NA	NA	ND
Benzene	4.0	<0.08	0.05	<0.04	ND	0.013	0.007
Ethylbenzene	17.0	0.34	0.29	0.13	0.015	0.022	0.005
Toluene	35.0	0.29	0.26	0.12	0.010	0.035	0.017
Xylenes	75.0	0.27	0.64	0.19	0.062	0.310	0.020
Oil & Grease	NA	NA	NA	NA	NA	NA	35.0

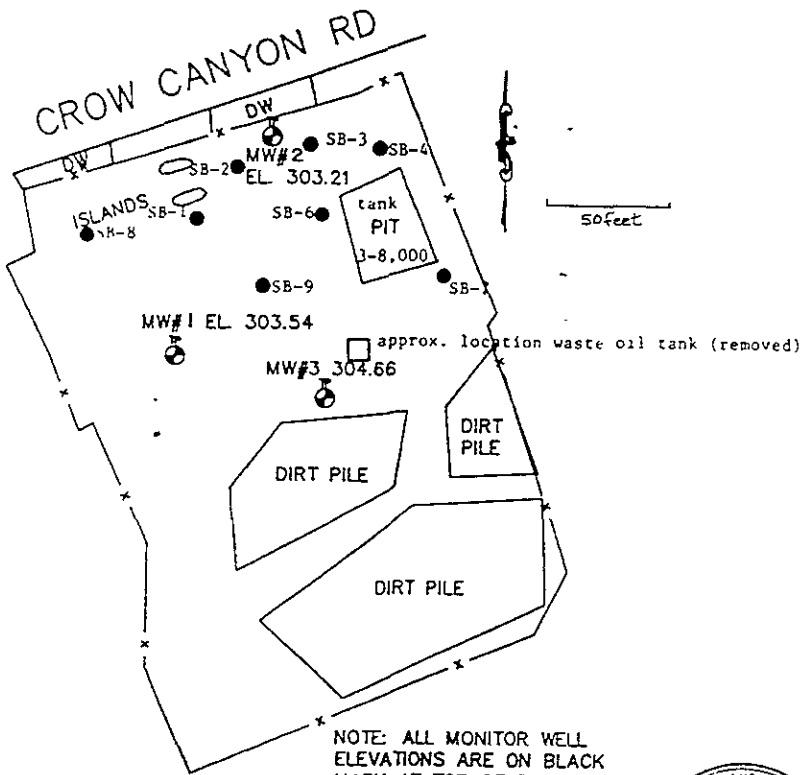
NA - Not Applicable
ND - Not Detected

TABLE 2 - SOIL SAMPLE ANALYSIS - STOCKPILE

Sample ID Chemical Analysis	Composite S1 to S4 (ppm)
TPH (light)	84.0
Oil & Grease	775.0



Figure 1
Site Plan



● denotes soil boring/sampling location

BM BRASS DISK IN TOP OF CURB AT THE MOST EASTERLY CURB RETURN AT CROW CANYON ROAD AND SAN SIMEON PLACE. ELEV. : 307.73 FEET



Drawn DE Job 4307-01 Checked DE
 Scale 1"=50' Date 7-16-90 Parcel _____

BORINGS

SOIL TABLE 1
SAMPLE ANALYTICAL RESULTS

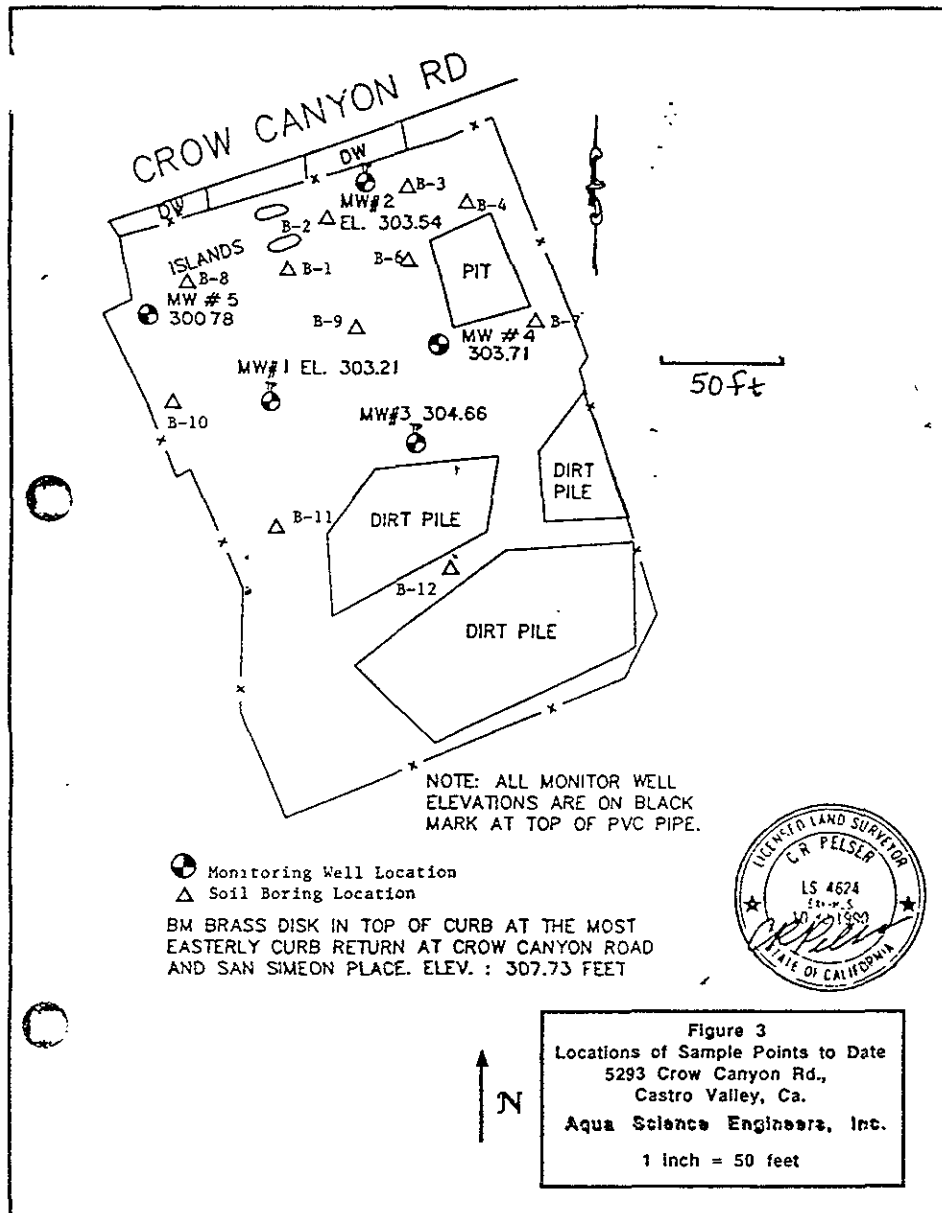
SAMPLE #	GASOLINE	BENZENE	TOLUENE	ETHYL BENZENE	TOTAL XYLENES
	mg/kg	ug/kg	ug/kg	ug/kg	ug/kg
SB-1, 5'	110	2,500	1,200	690	1,300
SB-1, 10'	N.D.	780	44	19	18
SB-1, 15'	N.D.	N.D.	N.D.	N.D.	N.D.
SB-1, 20'	N.D.	N.D.	N.D.	N.D.	N.D.
SB-2, 5'	7.8	240	5.1	97	5.5
SB-2, 10'	N.D.	N.D.	N.D.	N.D.	N.D.
SB-2, 20'	N.D.	N.D.	N.D.	N.D.	N.D.
SB-3, 5'	N.D.	90	N.D.	16	10
SB-3, 10'	N.D.	N.D.	N.D.	N.D.	N.D.
SB-3, 15'	N.D.	N.D.	N.D.	N.D.	N.D.
SB-4, 10'	N.D.	N.D.	N.D.	N.D.	N.D.
SB-4, 15'	N.D.	N.D.	N.D.	N.D.	N.D.
SB-4, 20'	N.D.	6.3	N.D.	N.D.	N.D.
SB-6, 5'	N.D.	N.D.	N.D.	N.D.	N.D.
SB-6, 10'	79	23	10	330	310
SB-6, 15'	N.D.	N.D.	N.D.	N.D.	N.D.
SB-7, 10'	N.D.	N.D.	N.D.	N.D.	N.D.
SB-7, 15'	N.D.	N.D.	N.D.	N.D.	N.D.
SB-7, 20'	N.D.	N.D.	N.D.	N.D.	N.D.
SB-8, 5'	390	4,300	4,000	2,800	5,300
SB-8, 10'	N.D.	37	11	N.D.	5.4
SB-8, 15'	N.D.	49	20	7.5	15
SB-8, 20'	N.D.	N.D.	N.D.	N.D.	N.D.
SB-9, 5'	N.D.	N.D.	N.D.	N.D.	N.D.
SB-9, 10'	66	190	85	170	320
SB-9, 15'	N.D.	N.D.	N.D.	N.D.	N.D.
MW-1, 5'	N.D.	N.D.	N.D.	N.D.	N.D.
MW-1, 10'	N.D.	N.D.	N.D.	N.D.	N.D.
MW-1, 15'	N.D.	N.D.	N.D.	N.D.	N.D.
MW-1, 20'	N.D.	N.D.	N.D.	N.D.	N.D.
MW-1, 40'	N.D.	N.D.	N.D.	N.D.	N.D.

*Soil results for MW#2 & MW#3 not included in reports.

Initial Water Samples

	GASOLINE Diesel	EPA 601	EPA 602	EPA 608	EPA 625	Other
	mg/l	ug/l	ug/l	ug/l	ug/l	ug/l
MW-1	N.D.	NA	N.D.	N.D.	N.D.	NA
MW-2	N.D.	NA	N.D.	N.D.	N.D.	NA
MW-3	N.D.	ND	N.D.	N.D.	N.D.	ND

N.D. - not detected



BORINGS

TABLE ONE:
RESULTS OF
SOIL SAMPLE ANALYSES
(5-16-91)

Soil Sample #	TPH gasoline mg/kg	benzene ug/kg	toluene ug/kg	ethyl benzene ug/kg	total xylenes ug/kg
B-10,5'	ND.	ND.	ND.	ND.	ND.
B-10,11,5'	10.6	ND.	1.0	ND.	1.0
B-10,15'	2.7	ND.	1.0	ND.	2.0
B-10,20'	5.5	ND.	ND.	ND.	ND.
B-11,5'	ND.	ND.	ND.	ND.	ND.
B-11,20'	ND.	ND.	ND.	ND.	ND.
B-12,5'	ND.	ND.	ND.	ND.	ND.
B-12,10'	ND.	ND.	ND.	ND.	ND.
B-12,15'	ND.	ND.	ND.	ND.	ND.
B-12,20'	ND.	ND.	ND.	ND.	ND.
B-12,25'	ND.	ND.	ND.	ND.	ND.
MW-4,5'	ND.	ND.	ND.	ND.	ND.
MW-4,10'	5.3	ND.	ND.	ND.	ND.
MW-4,15'	ND.	ND.	ND.	ND.	ND.
MW-4,20'	ND.	ND.	ND.	ND.	ND.
MW-5,5'	ND.	ND.	ND.	ND.	ND.
MW-5,9.5'	ND.	ND.	ND.	ND.	ND.
MW-5,15'	ND.	ND.	ND.	ND.	ND.

Soil Sample #	TPH-diesel mg/kg	TOG mg/kg	chlorinated hydrocarbons ug/kg
B-12,10'	ND.	ND.	97% dichloromethane
B-12,15'	ND.	ND.	36,400 dichloromethane
MW-4,10'	ND.	---	---

methylene chloride
methane dichloride

Summary of Analytical Results of WATER Samples
All results are in parts per billion

Well ID & Dates Sampled	Analytical Lab	TPH-G	TPH-D	Benzene	Toluene	Ethyl Benzene	Total Xylenes	Oil & Grease
MW-1								
08-21-91	MTX	<50	---	<0.3	<0.3	<0.3	<1	---
11-23-91	MTX	<50	---	<0.3	<0.3	<0.3	<1	---
01-28-92	MTX	<50	---	<0.3	<0.3	<0.3	<1	---
04-13-94	AEN	<50	---	<0.5	<0.5	<0.5	<2	---
MW-2								
08-21-91	MTX	<50	---	<0.3	<0.3	<0.3	<1	---
11-23-91	MTX	<50	---	<0.3	<0.3	<0.3	<1	---
01-28-92	MTX	<50	---	<0.3	<0.3	<0.3	<1	---
04-13-94	AEN	<50	---	<0.5	<0.5	<0.5	<2	---
MW-3								
08-21-91	MTX	<50	<50	<0.3	<0.3	<0.3	<1	<500
11-23-91	MTX	<50	<50	<0.3	<0.3	<0.3	<1	<500
01-28-92	MTX	<50	<50	<0.3	<0.3	<0.3	<1	<500
04-13-94	AEN	<50	<50	<0.5	<0.5	<0.5	<2	<1,000
MW-4								
08-21-91	MTX	<50	---	<0.3	<0.3	<0.3	<1	---
11-23-91	MTX	<50	---	<0.3	<0.3	<0.3	<1	---
01-28-92	MTX	<50	---	<0.3	<0.3	<0.3	<1	---
04-13-94	AEN	<50	---	<0.5	<0.5	<0.5	<2	---
MW-5								
08-21-91	MTX	<50	---	<0.3	<0.3	<0.3	<1	---
11-23-91	MTX	<50	---	<0.3	<0.3	<0.3	<1	---
01-28-92	MTX	<50	---	<0.3	<0.3	<0.3	<1	---
04-13-94	AEN	<50	---	<0.5	<0.5	<0.5	<2	---

MTX = Medtox of Pleasant Hill, California

AEN = American Environmental Network of Pleasant Hill, California

Summary of Groundwater Well Survey Data

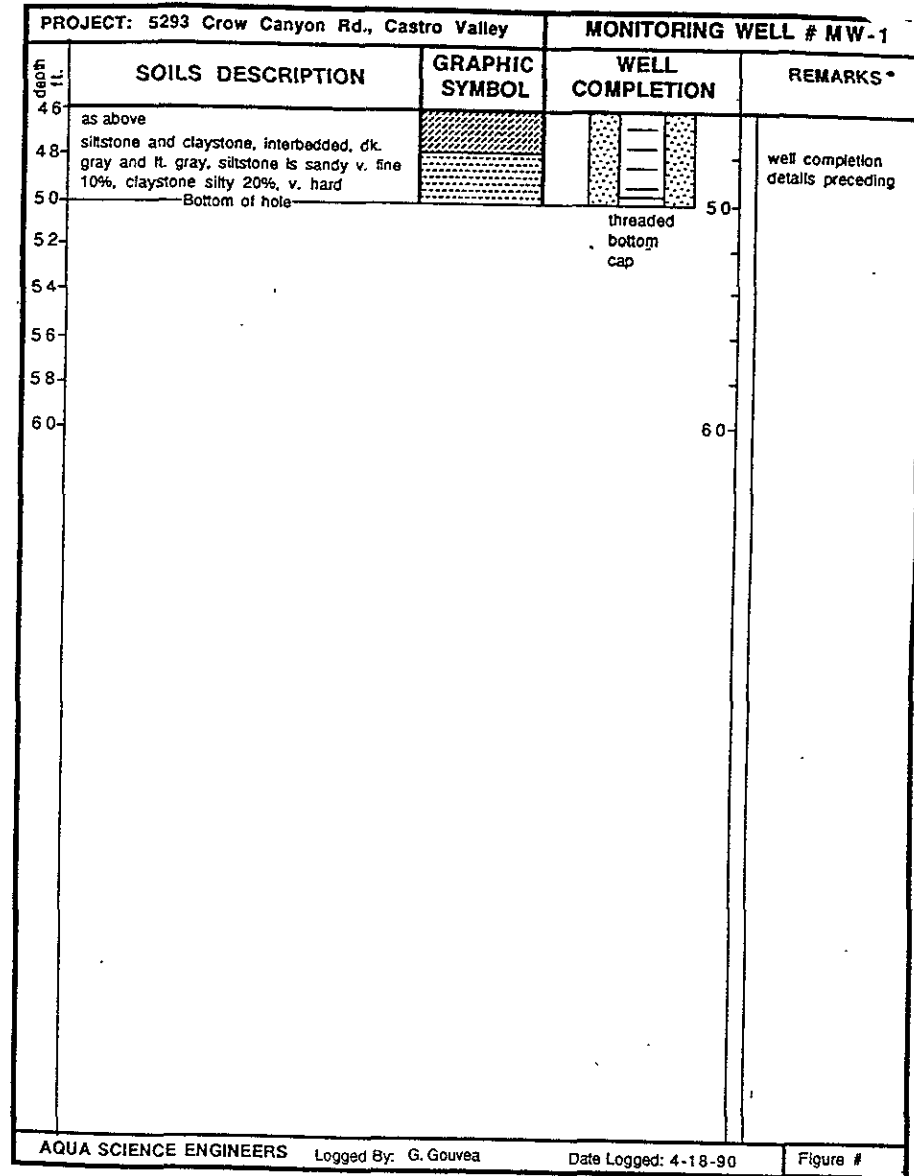
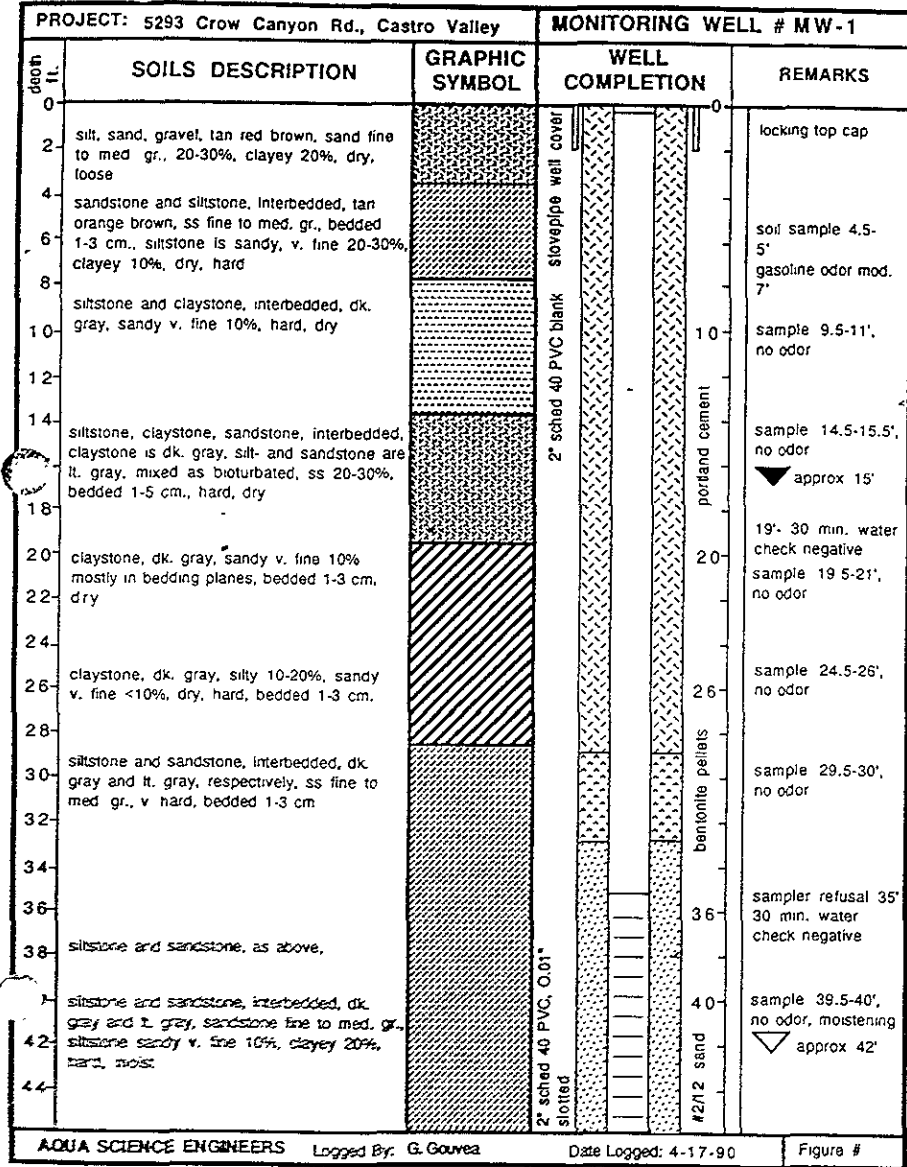
Well I.D.	Date of Measurement	Top of Casing Elevation (relative to project datum)	Depth to Water (feet)	Groundwater Elevation (project data)
MW-1	08-21-91	303.21	15.96	287.25
	11-23-91		16.33	286.88
	01-28-92		16.24	286.97
	04-13-94		15.34	287.87
MW-2	08-21-91	303.54	9.48	294.06
	11-23-91		10.05	293.49
	01-28-92		9.95	293.59
	04-13-94		7.24	296.30
MW-3	08-21-91	304.66	14.57	290.09
	11-23-91		16.28	288.38
	01-28-92		16.26	288.40
	04-13-94		13.86	290.80
MW-4	08-21-91	303.71	13.92	289.79
	11-23-91		15.47	288.24
	01-28-92		15.09	288.62
	04-13-94		10.53	293.18
MW-5	08-21-91	300.78	10.10	290.68
	11-23-91		10.10	290.68
	01-28-92		9.91	290.87
	04-13-94		9.72	291.06

**HISTORICAL RESULTS OF
GROUNDWATER SAMPLE ANALYSES
THROUGH 6-7-91**

Groundwater Sample #	TPH gasoline mg/l	benzene ug/l	toluene ug/l	ethyl benzene ug/l	total xylenes ug/l
MW-1 (6-1-90)	N.D.	N.D.	N.D.	N.D.	N.D.
MW-1 (2-28-91)	N.D.	N.D.	N.D.	N.D.	N.D.
MW-1 (5-22-91)	N.D.	N.D.	N.D.	N.D.	N.D.
MW-2 (6-1-90)	N.D.	N.D.	N.D.	N.D.	N.D.
MW-2 (2-28-91)	N.D.	N.D.	N.D.	N.D.	N.D.
MW-2 (5-22-91)	N.D.	N.D.	N.D.	N.D.	N.D.
MW-3 (6-1-90)	N.D.	N.D.	N.D.	N.D.	N.D.
MW-3 (2-28-91)	N.D.	N.D.	N.D.	N.D.	N.D.
MW-3 (5-22-91)	N.D.	N.D.	N.D.	N.D.	N.D.
MW-4 (5-22-91)	N.D.	N.D.	N.D.	N.D.	N.D.
MW-5 (5-22-91)	N.D.	N.D.	N.D.	N.D.	N.D.


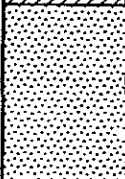
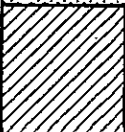
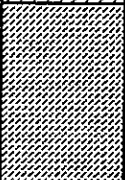
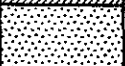
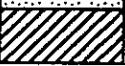
Water Sample #	TPH-diesel mg/l	TOG mg/l	chlorinated hydrocarbons ug/l	PCNA ^p extractables ug/l	metals mg/l
MW-3* (6-1-90)	N.D.	N.D.	N.D.	N.D.	0.004 Cd 0.027 Zn
MW-3 (2-28-91)	N.D.	N.D.	N.D.	N.D.	N.D.
MW-3* (5-22-91)	N.D.	N.D.	11 chloroform 21 bromodichloromethane 61 dibromochloromethane 28 bromoform	11 chloroform 21 bromodichloromethane 61 dibromochloromethane 28 bromoform	N.D.
MW-4 (5-22-91)	N.D.	----	----	----	----

* = samples also analyzed N.D. for PCB's
 mg/kg = parts per million
 ug/kg = parts per billion
 N.D. = Not Detected
 ---- = not analyzed



PROJECT: 5293 Crow Canyon Rd., Castro Valley

MONITORING WELL # MW-2

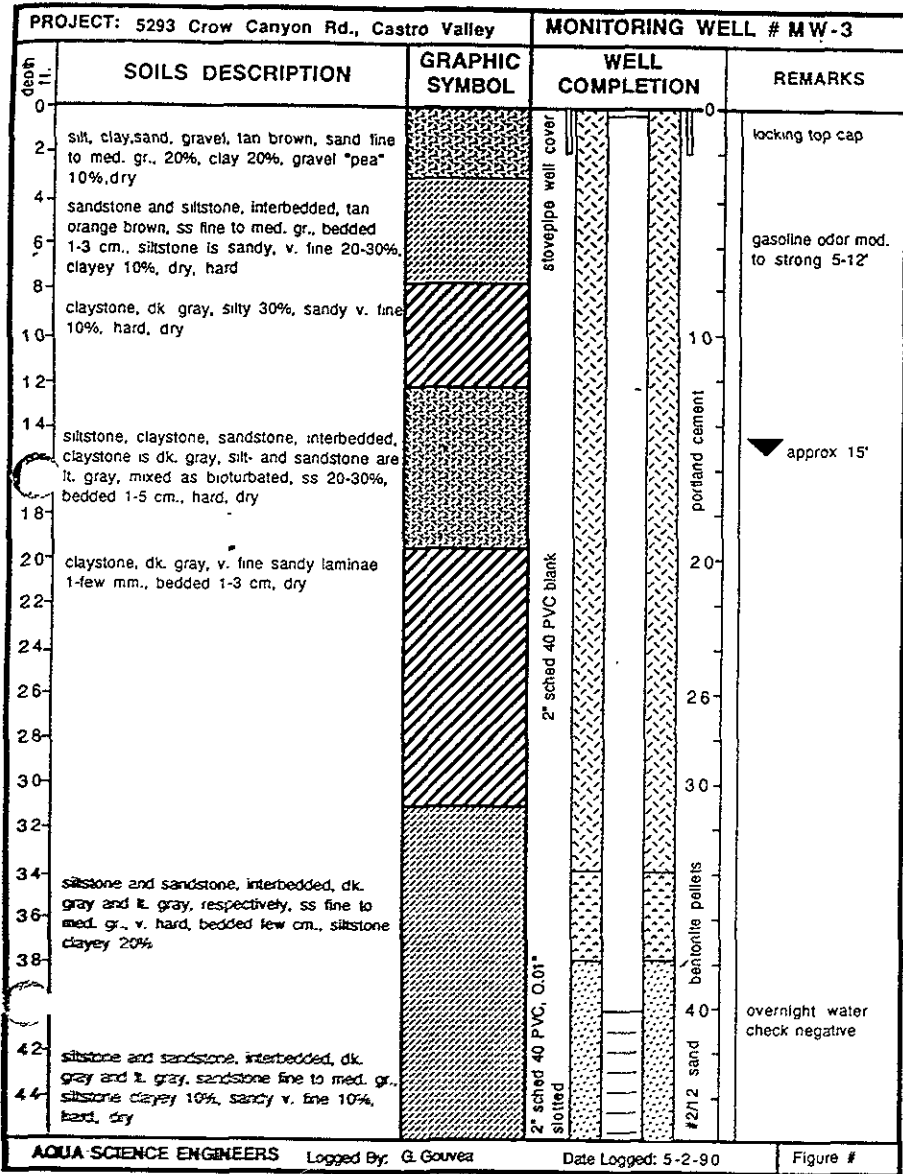
depth ft.	SOILS DESCRIPTION	GRAPHIC SYMBOL	WELL COMPLETION	REMARKS
0				
2	silt, tan brown, sandy v. fine to fine 20%, dry		stovepipe well cover	locking top cap
4	sandstone, olive tan brown, fine gr., silty 20-30%, bedded few cm., dry hard			portland cement
6			2" sched 40 PVC blank	▼ 9 feet
10	siltstone, dk. gray and lt. gray, sandy v. fine 20-30%, bedded few cm., damp			bentonite pellets
12			2" sched 40 PVC, 0.01" slotted	▽ 19 feet
14				#2/12 sand
16				
18	siltstone and sandstone, interbedded, dk. gray and lt. gray, respectively, siltstone is v. fine sandy 10%, crumbly, ss is silty 30% bedded few cm., wet, hard			
20				
22	sandstone, lt. gray, v. fine to fine gr., silty 20-30%, few siltstone interbeds few cm., wet			
24				
26	claystone, dk. gray, silty 20%, bedded as above, hard			
28			threaded bottom cap	
30				
32				
34				
36				
38				
40				
42				
44				

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Date Logged: 4-26-90

Figure #

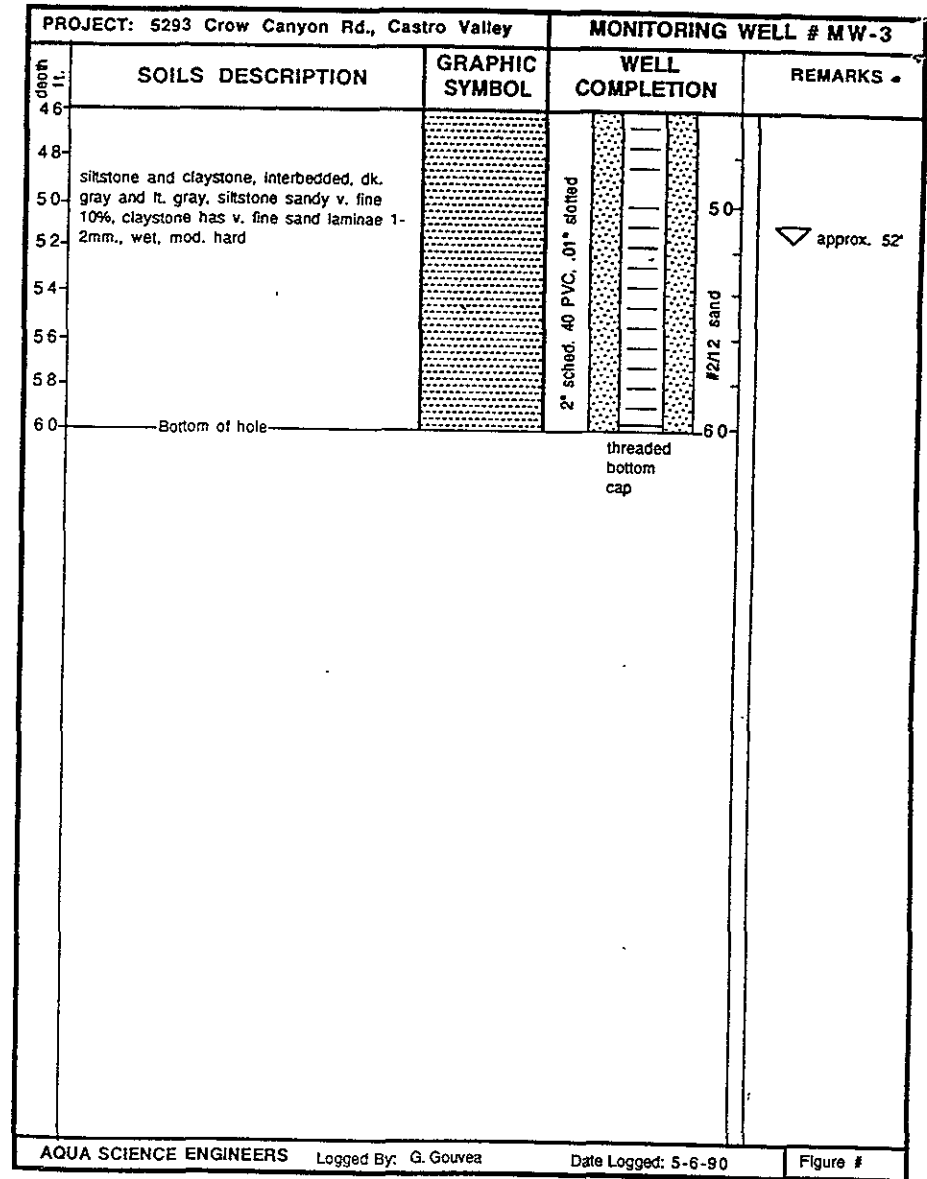


AQUA SCIENCE ENGINEERS

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Date Logged: 5-2-90

Figure #



AQUA SCIENCE ENGINEERS

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Date Logged: 5-6-90

Figure #

