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

StID 3169

July 16, 1997

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

Mr. Bob Boust
Unocal
P.O. Box 5155
San Ramon, CA 94583

Re: Fuel Leak Site Case Closure for Former Unocal Service Station #5366, at 7375 Amador Valley Blvd, Dublin, CA

Dear Mr. Boust:

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 Protection Division 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:

- Residual hydrocarbon contamination at 1,100ppm TPHg and 7.1ppm benzene remain in soil at 10'bgs under the sidewalk of Village Parkway

If you have any questions, please contact me at (510) 567-6762.

eva chu
Hazardous Materials Specialist

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

c: Dennis Carrington, City of Dublin, 100 Civic Plaza, P.O. Box 2340, Dublin, CA 94568
files (unocaldl.12)

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

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

REMEDIAL ACTION COMPLETION CERTIFICATION

StID 3169 - 7375 Amador Valley Blvd, Dublin, CA
(1-550 gallon waste oil and 3-10K gallon fuel tanks removed in December 1987 and February 1988; 1-520 gallon waste oil and 2-12K gallon gasoline tanks removed in March 1996)

July 16, 1997

Mr. Bob Boust
Unocal
P.O. Box 5155
San Ramon, CA 94583

Dear Mr. Boust:

This letter confirms the completion of 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 Title 23, Section 2721(e) of the California Code of Regulations.

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

Sincerely,

Mee Ling Tung

Mee Ling Tung, Director

cc: Chief, Division of Environmental Protection
Kevin Graves, RWQCB
Dave Deaner, SWRCB (with attachment-case closure summary)
William McCammon, Alameda Co Fire Department (QIC 41401)
files-ec (unocaldl.11)

0-1610

ENVIRONMENTAL PROTECTION
97 APR 31 PM 3:09

CASE CLOSURE SUMMARY
Leaking Underground Fuel Storage Tank Program

I. AGENCY INFORMATION

Date: March 24, 1997

Agency name: **Alameda County-HazMat** Address: **1131 Harbor Bay Pkwy**
City/State/Zip: **Alameda, CA 94502** Phone: **(510) 567-6700**
Responsible staff person: **Eva Chu** Title: **Hazardous Materials Spec.**

II. CASE INFORMATION

Site facility name: **Unocal Service Station #5366**
Site facility address: **7375 Amador Valley Blvd, Dublin, CA 94568**
RB LUSTIS Case No: **N/A** Local Case No./LOP Case No.: **3169**
URF filing date: **1/5/88** SWEEPS No: **N/A**

Responsible Parties:	Addresses:	Phone Numbers:
Bob Boust **Unocal**	**P.O. Box 5155** **San Ramon, CA 94583**	**510/277-2334**

Tank No:	Size in gal.:	Contents:	Closed in-place or removed?:	Date:
1	550	Waste Oil	Removed	12/2/87
2	10,000	Gasoline	"	2/18/88
3	10,000	Gasoline	"	"
4	10,000	Diesel	"	"
5	12,000	Gasoline	Removed	3/20/96
6	12,000	"	"	"
7	520	Waste Oil	"	"

III. RELEASE AND SITE CHARACTERIZATION INFORMATION

Cause and type of release: **Leaking USTs and product piping**
Site characterization complete? **YES**
Date approved by oversight agency: **3/18/97**
Monitoring Wells installed? **Yes** Number: **5**
Proper screened interval? **Yes**
Highest GW depth below ground surface: **6.45'** Lowest depth: **11.54' in MW-1**
Flow direction: **ESE**
Most sensitive current use: **Commercial**
Are drinking water wells affected? **No** Aquifer name: **Dublin Subbasin**
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(s) filed? **Alameda County**
1131 Harbor Bay Pkwy
Alameda, CA 94502

Treatment and Disposal of Affected Material:

Material	Amount (include units)	Action (Treatment or Disposal w/destination)	Date
Tank	1 UST	Unknown	12/8/87
	3-10K USTs	Disposed by H & H, in SF	2/19/88
	3 USTs	Disposed by Erickson	3/20/96
Rinsate	~8800 gal.	Disposed by H & H, in SF	Feb 1988
Soil	~150 cy	Unknown	~2/88
	~817 cy	Vasco Rd L.F, in Livermore	3/96
Groundwater	~9000 gal.		~2/88
	~37,000 gal.	Disposed at Unocal Refinery	3/96

Maximum Documented Contaminant Concentrations - - Before and After Cleanup

Contaminant	Soil (ppm)		Water (ppb)	
	Before[1]	After[2]	Before[3]	After[4]
TPH (Gas)	1,700	1,100	91,000	380
TPH (Diesel)	300[5]		350	
Benzene	8.0	7.1	8,200	6.0
Toluene	22	2.7	1,200	.98
Ethylbenzene	62	39	4,300	ND
Xylenes	340	140	5,300	ND
MTBE	NA	NA	NA	33
Oil & Grease	1,700[5]	ND	2,500	ND
Other HVOC	0.061[5]	ND		ND
SVOC		ND		NA

NOTE 1 sidewall soil sample S4 collected at time of "old" fuel UST removal, 2/88
2 sample collected from capillary fringe of boring/well MW-5, 1/94
3 "grab" water sample from "old" fuel pit, 2/88
4 most recent sampling event, from well MW-5, 11/96
5 soil sample collected from "old" waste oil tank pit. PCE at 0.061 ppm, 12/87

IV. CLOSURE

Does completed corrective action protect existing beneficial uses per the Regional Board Basin Plan? _____
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: **None**
Should corrective action be reviewed if land use changes? **YES**
Monitoring wells Decommissioned: **Yes**
Number Decommissioned: **4** Number Retained: **1**
List enforcement actions taken: **None**
List enforcement actions rescinded: **NA**

V. LOCAL AGENCY REPRESENTATIVE DATA

Name: **Eva Chu** Title: **Haz Mat Specialist**

Signature: Eva Chu Date: 4/1/97

Reviewed by

Name: **Amy Leech** Title: **Haz Mat Specialist**

Signature: A Leech Date: 3/24/97

Name: **Thomas Peacock** Title: **Supervisor**

Signature: Thomas Peacock Date: 3-31-97

VI. RWQCB NOTIFICATION

Date Submitted to RB: 4/2/97 RB Response: Approved

RWQCB Staff Name: **Kevin Graves** Title: **AWRCE**

Signature: Kevin Graves Date: 4/21/97

VII. ADDITIONAL COMMENTS, DATA, ETC.

The subject site was formerly a Unocal service station. Two generations of USTs were removed from the site between 1987 and 1996. The lot is currently vacant. The site is at the northwest corner of the intersection of Village Parkway and Amador Valley Blvd. A BP service station, an ARCO service station, and a former Shell service station are located at the other three corners of this intersection. Each service station has reported an unauthorized release of fuel products to the subsurface. (See Figs 1 and 2)

In December 2, 1987 a 550 gallon waste oil UST was removed and a "new" waste oil tank installed in the same pit. The "old" tank was rusted with numerous small holes. A soil sample was collected at ~8' bgs and analyzed for TPHd, TOG, HVOC, and BTEX. Analytical results identified 300 ppm TPHd, 1,700 ppm TOG, 0.3 ppm benzene, 0.15 ppm toluene and 0.06 ppm PCE (see Fig 3, Table 1). Additional excavation was conducted on December 14, 1987. Groundwater was encountered at ~15' bgs. Two confirmatory soil samples (S1, S2) were collected at 12' and 15' bgs and a "grab" water sample (W-15-pit) was collected. Both soil and groundwater samples were analyzed for the same above constituents. Soil sample S2 contained trace to non-detectable levels of VOCs and HVOCs. TPHd and TOG were not found above detection limits. The grab water sample contained low levels of VOCs, TCA, and 870 ppb TPHd. (See Table 1A)

On February 18, 1988 three "old" USTs (2-10K gasoine, 1-10K diesel) were removed. The tanks had several through-holes on the bottoms. Groundwater was encountered at ~10.5' bgs. Six sidewall soil samples (S1, S2, S2D, S3, S4, and S4D) were collected at ~10' bgs. Samples S2, S3, S4, and W1 and W2 were analyzed for TPHg and BTEX. Samples S1, S2D, and S4D, and W1 and W2 were analyzed for TPHd. Elevated TPHg and BTEX were identified in samples S4 and W1. Low TPHd was identified in sample S4D. The fuel pit was excavated to a depth of 13' bgs in an attempt to remove obvious contaminated soil. However, due to the proximity of the existing pump island, further excavation in the vicinity of sample S4 was not conducted. Approximately 9,000 gallons of groundwater was pumped out of the pit. A water sample, W-1, was collected from the pit. An additional water sample, W-2, was collected from a second excavation where two "new" fuel USTs were to be placed. (See Fig 4, Table 2)

In April 1988 four groundwater monitoring wells (MW-1 through MW-4) were installed at the site. Select soil samples from the borings were analyzed for TPH and BTEX. Low to ND levels of TPH and non-detectable levels of BTEX were found in the soil samples. Soil from boring MW-3, near the waste oil pit, was also analyzed for HVOCs. None was detected. Only groundwater from well MW-1 contained elevated TPH and BTEX levels (see Fig 4, Table 3). Quarterly monitoring of the wells was initiated at this time. Groundwater data collected through 1993 indicated well MW-1 continued to exhibit elevated hydrocarbons. A fifth well, MW-5, was installed in January 1994 to further delineate the degree and extent of soil and groundwater contamination. Groundwater was first encountered at ~13' bgs. Soil samples were collected at 5', 10' and 12.5' bgs.

Elevated petroleum hydrocarbons were identified in soil samples collected from 10' and 12.5' bgs, the capillary fringe zone (up to 1,100ppm TPHg, 7.1ppm, 2.7ppm, 39ppm, and 140ppm BTEX, respectively) in boring MW-5. Groundwater also contained elevated TPHg and BTEX (up to 18,000 ppb TPHg, 2,400 ppb benzene: see Table 4). Further delineation of the contaminant plume did not appear practical since all four corners of the intersection are/were service stations, each reporting former fuel releases. Contaminant plumes from each service station may have co-mingled within the intersection. Monitoring wells in the intersection is prohibitive in such a busy intersection. It was decided that passive biodegradation may be the most feasible remedial alternative for the site. Therefore, an Oxygen Releasing Compound (ORC) was installed in well MW-1 in June 1995. And ORC was installed in well MW-5 in February 1996.

In March 1996 the service station was demolished and the "new" USTs (2-12K gasoline, 1-520 waste oil), two hydraulic lifts, and an oil/water separator were removed. Groundwater was encountered at ~9.5' to 10' bgs. Four sidewall soil samples (SW1 through SW4) were collected from the fuel UST pit; two soil samples (WOSW1 and WOSW2) from the waste oil pit; two soil samples (H2, H2) from beneath the former hydraulic lifts; and, one soil sample (OWS5.5) from beneath the oil/water separator. Seven soil samples (P1 through P7) were also collected from beneath the product pump islands and piping trenches. (See Fig 5)

Upon review of analytical results, additional excavation was performed in the vicinity of the oil/water separator, and in the vicinity of sample locations P1 and P2. Confirmatory soil samples (OWS-SW1 through OWS-SW3 and PSW1 though PSW4) were collected. It appears that most of the hydrocarbon-impacted soil in these areas were removed. (See Table 5)

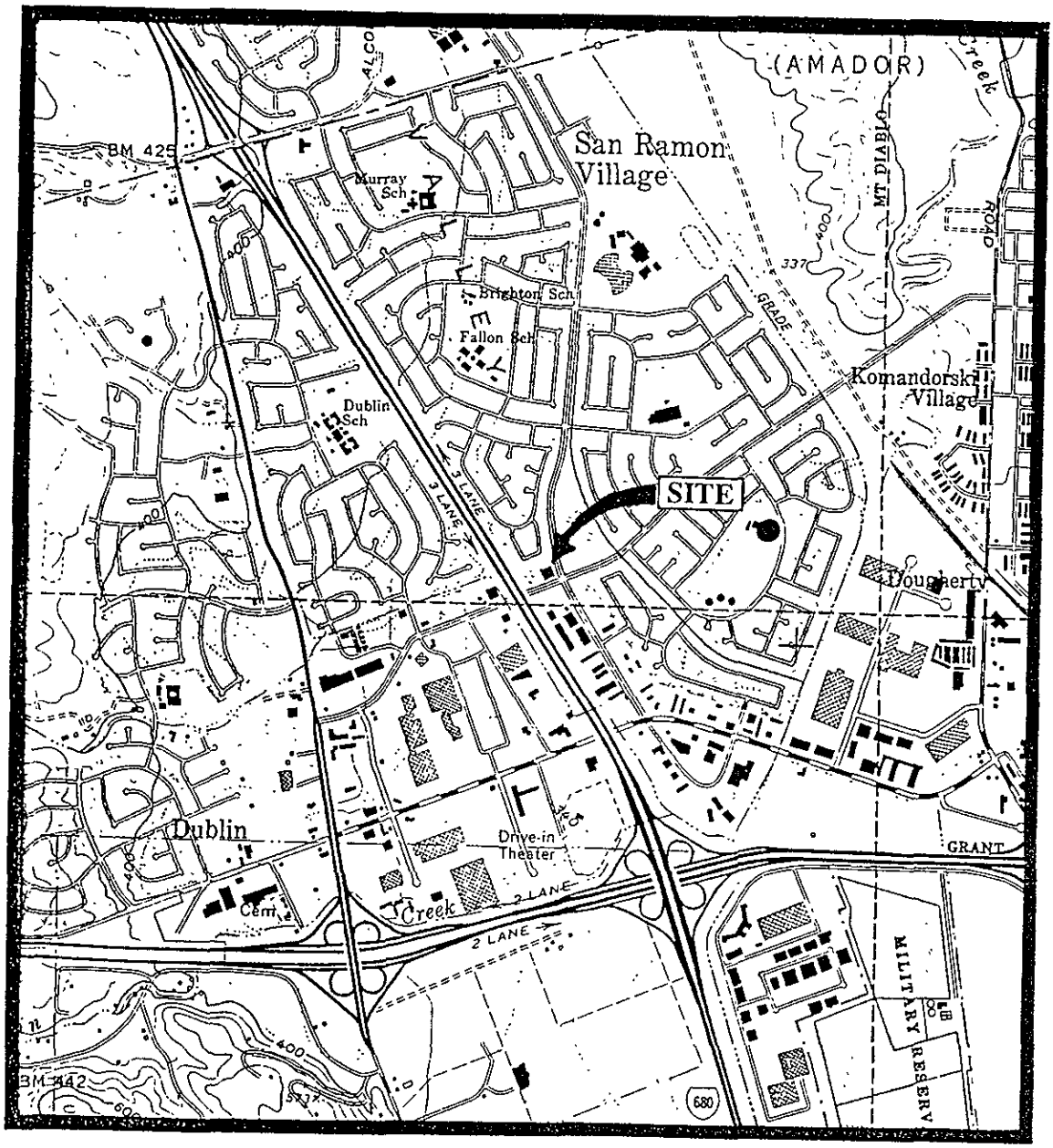
In May 1996 the onsite wells MW-1 through MW-4 were destroyed, in preparation for future development of the property.

Groundwater from well MW-1 was sampled from April 1988 to February 1996. Groundwater data suggest a gradual decline in TPHg and benzene concentrations. By February 1996 groundwater contained 1,900 ppb TPHg and 40 ppb benzene. Groundwater from well MW-5 was sampled from February 1994 to November 1996. Since the introduction of ORC in well MW-1 (June 1995) and in well MW-5 (February 1996) TPHg and benzene concentrations have dropped dramatically. The recent sampling event in November 1996 identified 380 ppb TPHg and 6ppb benzene in well MW-5. (See Table 6)

It appears source removal along with ORC was effective in reducing contaminant concentrations in groundwater. Continued monitoring of well MW-5 is not warranted.

In summary, case closure is recommended because:

- the leak and ongoing sources have been removed;
- the site has been adequately characterized;
- no water wells, surface water, or other sensitive receptors are likely to be impacted; and,
- it appears that the site presents no significant risk to human health or the environment.

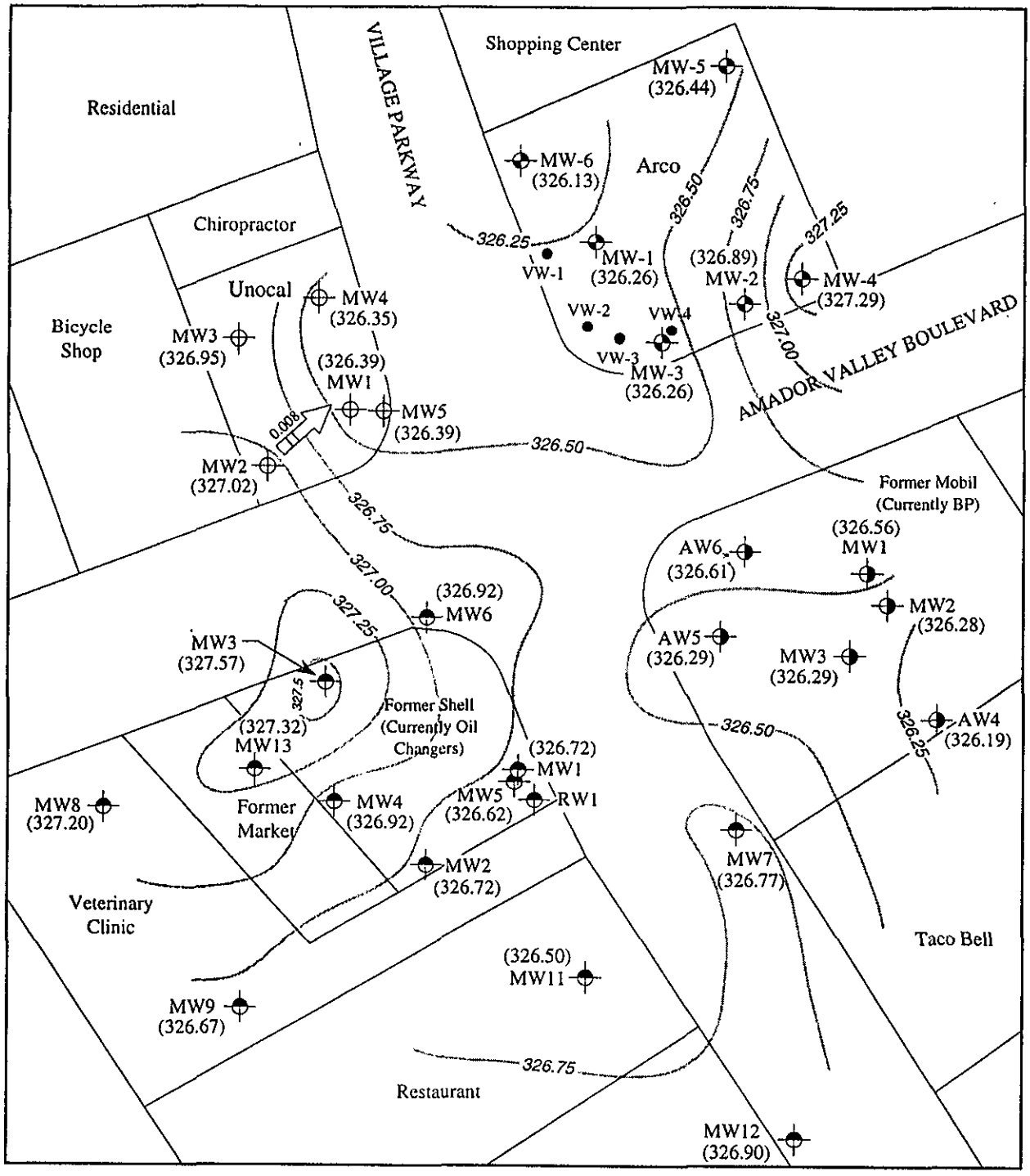


Base modified from 7.5 minute U.S.G.S. Dublin Quadrangle
(photorevised 1980)

0 2000 4000

Approx. scale feet

mpds SERVICES, INCORPORATED	UNOCAL SERVICE STATION #5366 7375 AMADOR VALLEY BLVD. DUBLIN, CALIFORNIA	LOCATION MAP FIG 1



LEGEND

- Monitoring well (Unocal)
- Monitoring well (BP)
- Monitoring well (Shell)
- Monitoring well (Arco)
- Vapor extraction well (Arco)

#.## ( ) Ground water elevation in feet above Mean Sea Level

Direction of ground water flow with approximate hydraulic gradient

Contours of ground water elevation

0 100 200

Approx. scale feet

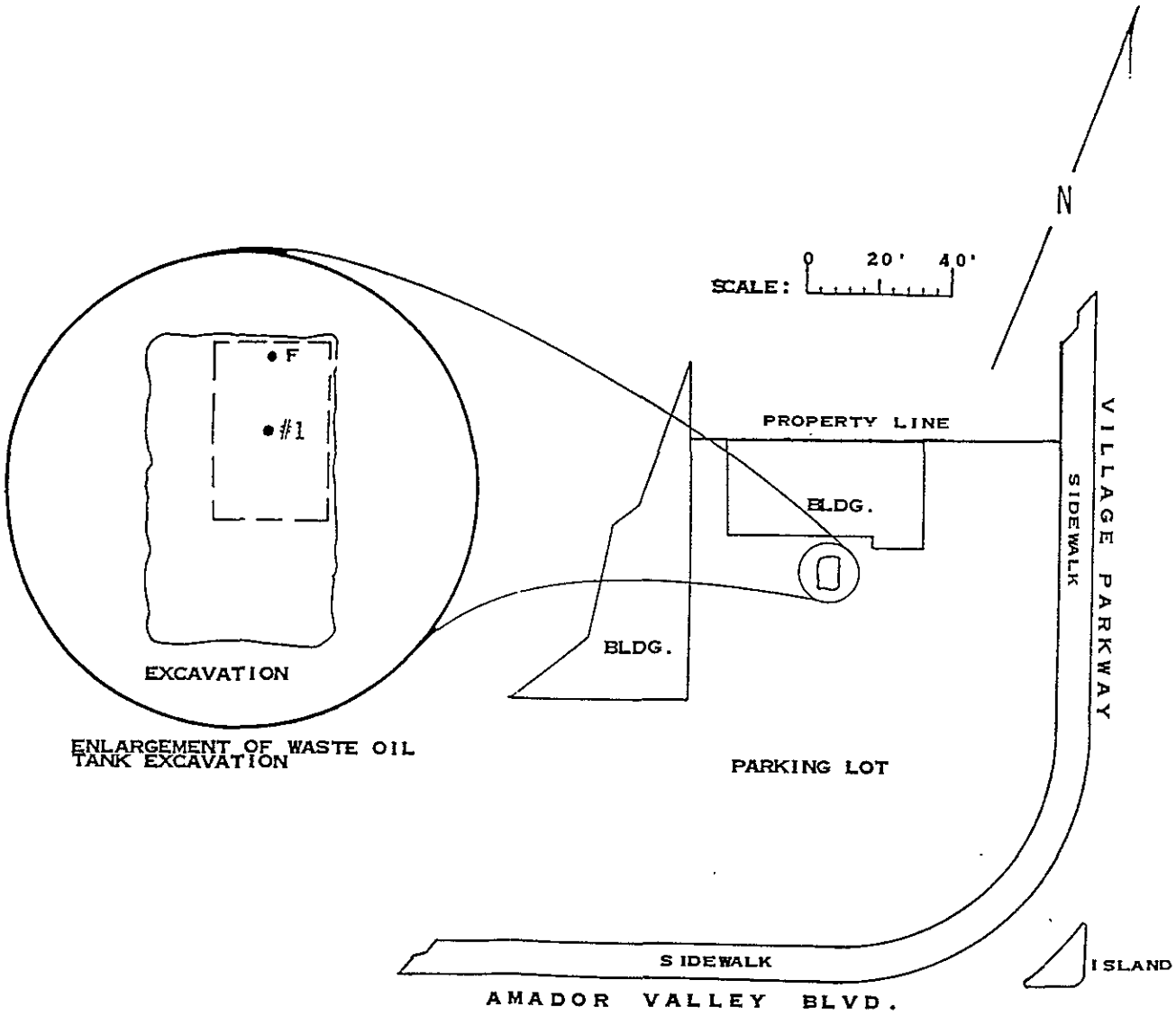
POTENTIOMETRIC SURFACE MAP FOR THE AUGUST 25, 1995 JOINT MONITORING EVENT

mpds SERVICES, INCORPORATED

UNOCAL SERVICE STATION #5366
7375 AMADOR VALLEY BLVD.
DUBLIN, CALIFORNIA

FIGURE 2

SAMPLING REPORT 87336C2, 12-2-87, EDDIE NEAL CONSTRUCTION, UNOCAL STATION, 7375 AMADOR VALLEY BLVD., DUBLIN, CA.



MAP REF: THOMAS BROS.
ALAMEDA
P.35 D-3

LEGEND: F = FILL END

#1 SOIL FROM 8' ANALYSIS FOR TOTAL PETROLEUM HYDROCARBONS (TPH)-HIGH BOILING FRACTION (HBF), TOTAL OIL AND GREASE (TOG), EPA 8010 AND EPA 8020 AT SEQUOIA ANALYTICAL LABORATORY
SEQUOIA LAB NO. 7120126

SAMPLING PERFORMED BY
STEPHEN CARTER

DIAGRAM PREPARED BY
BRENT ADAMS

FIG 3

SEQUOIA Analytical Laboratory
2549 Middlefield Road
Redwood City, CA 94063 • (415) 364-9222

SA

Table 1

Blaine Tech Services
P.O. Box 5745
San Jose, CA 95150
Attn: Richard Blaine

Date Sampled: 12/02/87
Date Received: 12/02/87
Date Reported: 12/07/87

Project: BTS #87336-C2,
Eddie Neal Construction

TOTAL PETROLEUM HYDROCARBONS

Sample Number	Sample Description Soil,	Detection Limit ppm	High Boiling Point Hydrocarbons ppm
7120126	#1	1	300

Method of Analysis: EPA 3550/8015

SEQUOIA ANALYTICAL LABORATORY

Arthur G. Burton
Laboratory Director

SEQUOIA Analytical Laboratory
2549 Middlefield Road
Redwood City, CA 94063 • (415) 364-9222

3)

cont. Table 1

Blaine Tech Services
P.O. Box 5745
San Jose, CA 95150
Attn: Richard Blaine

Date Sampled: 12/02/87
Date Received: 12/02/87
Date Reported: 12/07/87

Project: BTS #87336-C2,
Eddie Neal Construction

TOTAL OIL AND GREASE

Sample Number	Sample Description	Detection Limit	Gravimetric Petroleum Oil
	Soil,	ppm	ppm
7120126	#1	30	1700

Method of Analysis: EPA 3550 with trichlorotrifluoroethane and gravimetric determination.

SEQUOIA ANALYTICAL LABORATORY

Arthur G. Burton
Laboratory Director

SEQUOIA Analytical Laboratory
2549 Middlefield Road
Redwood City, CA 94063 • (415) 364-9222

cont. Table 1

Blaine Tech Services
P.O. Box 5745
San Jose, CA 95150
Attn: Richard Blaine

Date Sampled: 12/02/87
Date Received: 12/02/87
Date Analyzed: 12/04/87
Date Reported: 12/07/87

BTS #87336-C2, Eddie Neal Construction

Sample Number	Sample Description
7120126	Soil, #1

PRIORITY POLLUTANTS

PURGEABLE HALOCARBONS & AROMATICS
results in ppb

Benzene	300	1,2-Dichloropropane	< 50
Bromomethane	< 50	1,3-Dichloropropane	< 50
Bromodichloromethane	< 50	Ethylbenzene	< 50
Bromoform	< 50	Methylene chloride	< 50
Carbon tetrachloride	< 50	1,1,2,2-Tetrachloroethane	< 50
Chlorobenzene	< 50	Tetrachloroethene	61
Chloroethane	< 50	1,1,1-Trichloroethane	< 50
2-Chloroethylvinyl ether	< 50	1,1,2-Trichloroethane	< 50
Chloroform	< 50	Trichloroethene	< 50
Chloromethane	< 50	Toluene	150
Dibromochloromethane	< 50	Vinyl chloride	< 50
1,1-Dichloroethane	< 50	1,2-Dichlorobenzene	< 50
1,2-Dichloroethane	< 50	1,3-Dichlorobenzene	< 50
1,1-Dichloroethene	< 50	1,4-Dichlorobenzene	< 50
trans-1,2-Dichloroethene	< 50		

Method of Analysis: EPA 8010/8020

SEQUOIA ANALYTICAL LABORATORY

Arthur G. Burton
Laboratory Director

ANALYSIS DATA SHEET - PETROLEUM HYDROCARBON COMPOUNDS
ANAMETRIX, INC. (408) 629-1132

Sample I.D.	: 87141-1 S-1-121487	Anametrix I.D.	: 8712090-02
Matrix	: SOIL	Analyst	: mh
Date sampled	: 12-14-87	Supervisor	: [illegible]
Date anl. TVH	: NA	Date released	: 12-30-87
Date ext. TEH	: 12-17-87	Date ext. TOG	: 12-17-87
Date anl. TEH	: 12-21-87	Date anl. TOG	: 12-17-87

Table 1A

CAS #	Compound Name	Det. Limit (ug/kg)	Amt. Found (ug/kg)	Q
71-43-2	Benzene	200		NR
108-88-3	Toluene	200		NR
100-41-4	Ethylbenzene	200		NR
	Total Xylenes	200		NR
	TVH as Gasoline	5000		NR
	TEH as Diesel	10,000		U
	Total Oil & Grease	30,000		U

For reporting purposes, the following qualifiers (Q) are used:
+ : A value greater than or equal to the method detection limit.
U : The compound was analyzed for but was not detected.
NR: Not requested.

TVH - Total Volatile Hydrocarbons is determined by modified EPA 8015 with either headspace or purge and trap.
TEH - Total Extractable Hydrocarbons is determined by modified EPA 8015 with direct injection.
TOG - Total Oil & Grease is determined by Standard Method 503E.
BTEX- Benzene, Toluene, Ethylbenzene, and Total Xylenes are determined by modified EPA 8020.

All testing procedures follow CRWQCB Region 2 guidelines.

Form 3-2.

ANALYSIS DATA SHEET - PETROLEUM HYDROCARBON COMPOUNDS
ANAMETRIX, INC. (408) 629-3132

Sample I.D.	: 87141-1 S-2-121487	Anametrix I.D.	: 8712090-03
Matrix	: SOIL	Analyst	: mk
Date sampled	: 12-14-87	Supervisor	: RJS
Date anl. TVH	: NA	Date released	: 12-30-87
Date ext. TEH	: 12-17-87	Date ext. TOG	: 12-17-87
Date anl. TEH	: 12-21-87	Date anl. TOG	: 12-29-87

cont. Table 1A

CAS #	Compound Name	Det. Limit (ug/kg)	Amt. Found (ug/kg)	Q
71-43-2	Benzene	200		NR
108-88-3	Toluene	200		NR
100-41-4	Ethylbenzene	200		NR
	Total Xylenes	200		NR
	TVH as Gasoline	5000		NR
	TEH as Diesel	10,000		U
	Total Oil & Grease	30,000		U

For reporting purposes, the following qualifiers (Q) are used:
+ : A value greater than or equal to the method detection limit.
U : The compound was analyzed for but was not detected.
NR: Not requested.

TVH - Total Volatile Hydrocarbons is determined by modified EPA 8015 with either headspace or purge and trap.
TEH - Total Extractable Hydrocarbons is determined by modified EPA 8015 with direct injection.
TOG - Total Oil & Grease is determined by Standard Method 503E.
BTEX- Benzene, Toluene, Ethylbenzene, and Total Xylenes are determined by modified EPA 8020.

All testing procedures follow CRWQCB Region 2 guidelines.

Form 3-3.

ORGANICS ANALYSIS DATA SHEET - EPA METHOD 624/8240
ANAMETRIX, INC. (408) 629-1132

Sample I.D. : 87141-1 S-1-121487
Matrix : SOIL
Date sampled : 12-14-87
Date analyzed : 12-23-87
Dilution : NONE cont. Table 1A

Anametrix I.D. : 8712090-02
Analyst : CP
Supervisor : BWS
Date released : 12-30-87
Instrument : F1

CAS #	Compound Name	Det. Limit (ug/kg)	Amt. Found (ug/kg)	Q
74-87-3	* Chloromethane	7		U
75-01-4	* Vinyl Chloride	7		U
74-83-9	* Bromomethane	7		U
75-00-3	* Chloroethane	7		U
75-69-4	* Trichlorofluoromethane	2		U
75-35-4	* 1,1-Dichloroethene	2		U
76-13-1	# Trichlorotrifluoroethane	2		U
67-64-1	**Acetone	20		U
75-15-0	**Carbondisulfide	2		U
75-09-2	* Methylene Chloride	2		U
156-60-5	* Trans-1,2-Dichloroethene	2		U
75-34-3	* 1,1-Dichloroethane	2		U
78-93-3	**2-Butanone	20		U
156-59-2	* Cis-1,2-Dichloroethene	2		U
67-66-3	* Chloroform	2		U
71-55-6	* 1,1,1-Trichloroethane	2		U
56-23-5	* Carbon Tetrachloride	2		U
71-43-2	* Benzene	2		U
107-06-2	* 1,2-Dichloroethane	2		U
79-01-6	* Trichloroethene	2		U
78-87-5	* 1,2-Dichloropropane	2		U
75-27-4	* Bromodichloromethane	2		U
110-75-8	* 2-Chloroethylvinylether	2		U
108-05-4	**Vinyl Acetate	10		U
10061-02-6	* Trans-1,3-Dichloropropene	2		U
108-10-1	**4-Methyl-2-Pentanone	10		U
108-88-3	* Toluene	2		U
10061-01-5	* cis-1,3-Dichloropropene	2		U
79-00-5	* 1,1,2-Trichloroethane	2		U
127-18-4	* Tetrachloroethene	2		U
591-78-6	**2-Hexanone	10		U
124-48-1	* Dibromochloromethane	2		U
108-90-7	* Chlorobenzene	2		U
100-41-4	* Ethylbenzene	2		U
	**Total Xylenes	2		U
100-42-5	**Styrene	2		U
75-25-2	* Bromoform	2		U
79-34-5	* 1,1,2,2-Tetrachloroethane	2		U
541-73-1	* 1,3-Dichlorobenzene	2		U
106-46-7	* 1,4-Dichlorobenzene	2		U
95-50-1	* 1,2-Dichlorobenzene	2		U

* A 624/8240 approved compound (Federal Register, 10/26/84)
** A compound on the U.S. EPA CLP Hazardous Substance List (HSL)
\# A compound added by Anametrix, Inc.

For reporting purposes, the following qualifiers (Q) are used:
+ : A value greater than or equal to the method detection limit.
U : The compound was analyzed for but was not detected.

ANAMETRIX, INC. (408) 629-1132

Sample I.D. : 87141-1 S-2-121487
Matrix : SOIL
Date sampled : 12-14-87
Date analyzed : 12-23-87
Dilution : NONE

Anametrix I.D. : 8712090-03
Analyst : CP
Supervisor : BWS
Date released : 12-30-87
Instrument : F1

cont Table 1A

CAS #	Compound Name	Det. Limit (ug/kg)	Amt. Found (ug/kg)	Q
74-87-3	* Chloromethane	7		U
75-01-4	* Vinyl Chloride	7		U
74-83-9	* Bromomethane	7		U
75-00-3	* Chloroethane	7		U
75-69-4	* Trichlorofluoromethane	2		U
75-35-4	* 1,1-Dichloroethene	2		U
76-13-1	# Trichlorotrifluoroethane	2		U
67-64-1	**Acetone	20	31	+
75-15-0	**Carbondisulfide	2	3	+
75-09-2	* Methylene Chloride	2		U
156-60-5	* Trans-1,2-Dichloroethene	2		U
75-34-3	* 1,1-Dichloroethane	2		U
78-93-3	**2-Butanone	20		U
156-59-2	* Cis-1,2-Dichloroethene	2		U
67-66-3	* Chloroform	2		U
71-55-6	* 1,1,1-Trichloroethane	2		U
56-23-5	* Carbon Tetrachloride	2		U
71-43-2	* Benzene	2	5	+
107-06-2	* 1,2-Dichloroethane	2		U
79-01-6	* Trichloroethene	2		U
78-87-5	* 1,2-Dichloropropane	2		U
75-27-4	* Bromodichloromethane	2		U
110-75-8	* 2-Chloroethylvinylether	2		U
108-05-4	**Vinyl Acetate	10		U
10061-02-6	* Trans-1,3-Dichloropropene	2		U
108-10-1	**4-Methyl-2-Pentanone	10		U
108-88-3	* Toluene	2		U
10061-01-5	* cis-1,3-Dichloropropene	2		U
79-00-5	* 1,1,2-Trichloroethane	2		U
127-18-4	* Tetrachloroethene	2		U
591-78-6	**2-Hexanone	10		U
124-48-1	* Dibromochloromethane	2		U
108-90-7	* Chlorobenzene	2		U
100-41-4	* Ethylbenzene	2		U
	**Total Xylenes	2		U
100-42-5	**Styrene	2		U
75-25-2	* Bromoform	2		U
79-34-5	* 1,1,2,2-Tetrachloroethane	2		U
541-73-1	* 1,3-Dichlorobenzene	2		U
106-46-7	* 1,4-Dichlorobenzene	2		U
95-50-1	* 1,2-Dichlorobenzene	2		U

* A 624/8240 approved compound (Federal Register, 10/26/84)
** A compound on the U.S. EPA CLP Hazardous Substance List (HSL)
\# A compound added by Anametrix, Inc.

For reporting purposes, the following qualifiers (Q) are used:
+ : A value greater than or equal to the method detection limit.
U : The compound was analyzed for but was not detected.

ANAMETRIX, INC. (408) 629-1132

ple I.D.	: 87141-1 S-2-121487	Anametrix I.D.	: 8712090-0
rix	: SOIL	Analyst	: CP
te Sampled	: 12-14-87	Supervisor	: BWS
alyzed VOA	: 12-23-87	Date Released	: 12-30-87
ilution VOA	: NONE		
nalyzed SV	: NA		
Dilution SV	: NA		

cont. Table 1A

	CAS #	Scan#	Volatile Fraction Compound Name	Det. Limit ppb	Amt. Found ppb
1	365-59-3	300	2,3-dimethylpentane	5	10
2	590-73-8	320	2,2-dimethylhexane	5	10
3	565-75-3	455	2,3,4-trimethylpentane	5	<5
4	560-21-4	471	2,3,3-trimethylpentane	5	<5
5		1347	unknown hydrocarbon	5	<5
6				5	
7				5	
8				5	
9				5	
10				5	

	CAS #	Scan#	Semivolatile Fraction Compound Name	Det. Limit ppb	Amt. Found ppb
1				10	
2				10	
3				10	
4				10	
5				10	
6				10	
7				10	
8				10	
9				10	
10				10	
11				10	
12				10	
13				10	
14				10	
15				10	
16				10	
17				10	
18				10	
19				10	
20				10	

Tentatively identified compounds are significant chromatographic peaks (TICs) other than priority pollutants. TIC spectra are compared with entries in the National Bureau of Standards mass spectral library. Identification is made by following US EPA guidelines and acceptance criteria. TICs are quantitated by using the area of the nearest internal standard and assuming a response factor of one (1). Values calculated are ESTIMATES ONLY.

ANAMETRIX, INC. (408) 629-1132

Sample I.D.	: 87141-1 W-15-PIT	Anametrix I.D.	: 8712090-01
Matrix	: WATER	Analyst	: mh
Date sampled	: 12-14-87	Supervisor	: [illegible]
Date anl. TVH	: NA	Date released	: 12-30-87
Date ext. TEH	: 12-17-87	Date ext. TOG	: 12-17-87
Date anl. TEH	: 12-21-87	Date anl. TOG	: 12-17-87

cont. Table 1A

CAS #	Compound Name	Det. Limit (ug/L)	Amt. Found (ug/L)	Q
71-43-2	Benzene	1		NR
108-88-3	Toluene	1		NR
100-41-4	Ethylbenzene	1		NR
	Total Xylenes	1		NR
	TVH as Gasoline	50		NR
	TEH as Diesel	50	870	+
	Total Oil & Grease	10000		U

For reporting purposes, the following qualifiers (Q) are used:
+ : A value greater than or equal to the method detection limit.
U : The compound was analyzed for but was not detected.
NR: Not requested.

TVH - Total Volatile Hydrocarbons is determined by modified EPA 8015 with either headspace or purge and trap.
TEH - Total Extractable Hydrocarbons is determined by modified EPA 8015 with direct injection.
TOG - Total Oil & Grease is determined by Standard Method 503E.
BTEX- Benzene, Toluene, Ethylbenzene, and Total Xylenes are determined by modified EPA 8020.

All testing procedures follow CRWQCB Region 2 guidelines.

Form 3-1.

ANAMETRIX, INC. (408) 629-1132

Sample I.D. : 87141-1 W-15-PIT
Matrix : WATER
Date sampled : 12-14-87
Date analyzed : 12-23-87
Dilution : 1:2

Anametrix I.D. : 8712090-01
Analyst : CP
Supervisor : BWS
Date released : 12-30-87
Instrument : F1

cont Table 1A

CAS #	Compound Name	Det. Limit (ug/l)	Amt. Found (ug/l)	Q
74-87-3	* Chloromethane	14		U
75-01-4	* Vinyl Chloride	14		U
74-83-9	* Bromomethane	14		U
75-00-3	* Chloroethane	14		U
75-69-4	* Trichlorofluoromethane	4		U
75-35-4	* 1,1-Dichloroethene	4		U
76-13-1	# Trichlorotrifluoroethane	4		U
67-64-1	**Acetone	40		U
75-15-0	**Carbondisulfide	4		U
75-09-2	* Methylene Chloride	4		U
156-60-5	* Trans-1,2-Dichloroethene	4		U
75-34-3	* 1,1-Dichloroethane	4		U
78-93-3	**2-Butanone	40		U
156-59-2	* Cis-1,2-Dichloroethene	4		U
67-66-3	* Chloroform	4		U
71-55-6	* 1,1,1-Trichloroethane	4	5	+
56-23-5	* Carbon Tetrachloride	4		U
71-43-2	* Benzene	4	38	+
107-06-2	* 1,2-Dichloroethane	4		U
79-01-6	* Trichloroethene	4		U
78-87-5	* 1,2-Dichloropropane	4		U
75-27-4	* Bromodichloromethane	4		U
110-75-8	* 2-Chloroethylvinylether	4		U
108-05-4	**Vinyl Acetate	20		U
10061-02-6	* Trans-1,3-Dichloropropene	4		U
108-10-1	**4-Methyl-2-Pentanone	20		U
108-88-3	* Toluene	4	140	+
10061-01-5	* cis-1,3-Dichloropropene	4		U
79-00-5	* 1,1,2-Trichloroethane	4		U
127-18-4	* Tetrachloroethene	4		U
591-78-6	**2-Hexanone	20		U
124-48-1	* Dibromochloromethane	4		U
108-90-7	* Chlorobenzene	4		U
100-41-4	* Ethylbenzene	4	27	+
	**Total Xylenes	4	170	+
100-42-5	**Styrene	4		U
75-25-2	* Bromoform	4		U
79-34-5	* 1,1,2,2-Tetrachloroethane	4		U
541-73-1	* 1,3-Dichlorobenzene	4		U
106-46-7	* 1,4-Dichlorobenzene	4		U
95-50-1	* 1,2-Dichlorobenzene	4		U

* A 624/8240 approved compound (Federal Register, 10/26/84)
** A compound on the U.S. EPA CLP Hazardous Substance List (HSL)
\# A compound added by Anametrix, Inc.

For reporting purposes, the following qualifiers (Q) are used:
+ : A value greater than or equal to the method detection limit.
U : The compound was analyzed for but was not detected.

ORGANICS ANALYSIS DATA SHEET - TENTATIVELY IDENTIFIED COMPOUNDS
ANAMETRIX, INC. (408) 62[illegible]1132

Sample I.D.	: 87141-1 W-15-PIT	Anametrix I.D.	: 8712090-01
Matrix	: WATER	Analyst	: ARL
Date Sampled	: 12-14-87	Supervisor	: BWS
Analyzed VOA	: 12-23-87	Date Released	: 12-30-87
Dilution VOA	: 1:2		
Analyzed SV	: NA		
Dilution SV	: NA		

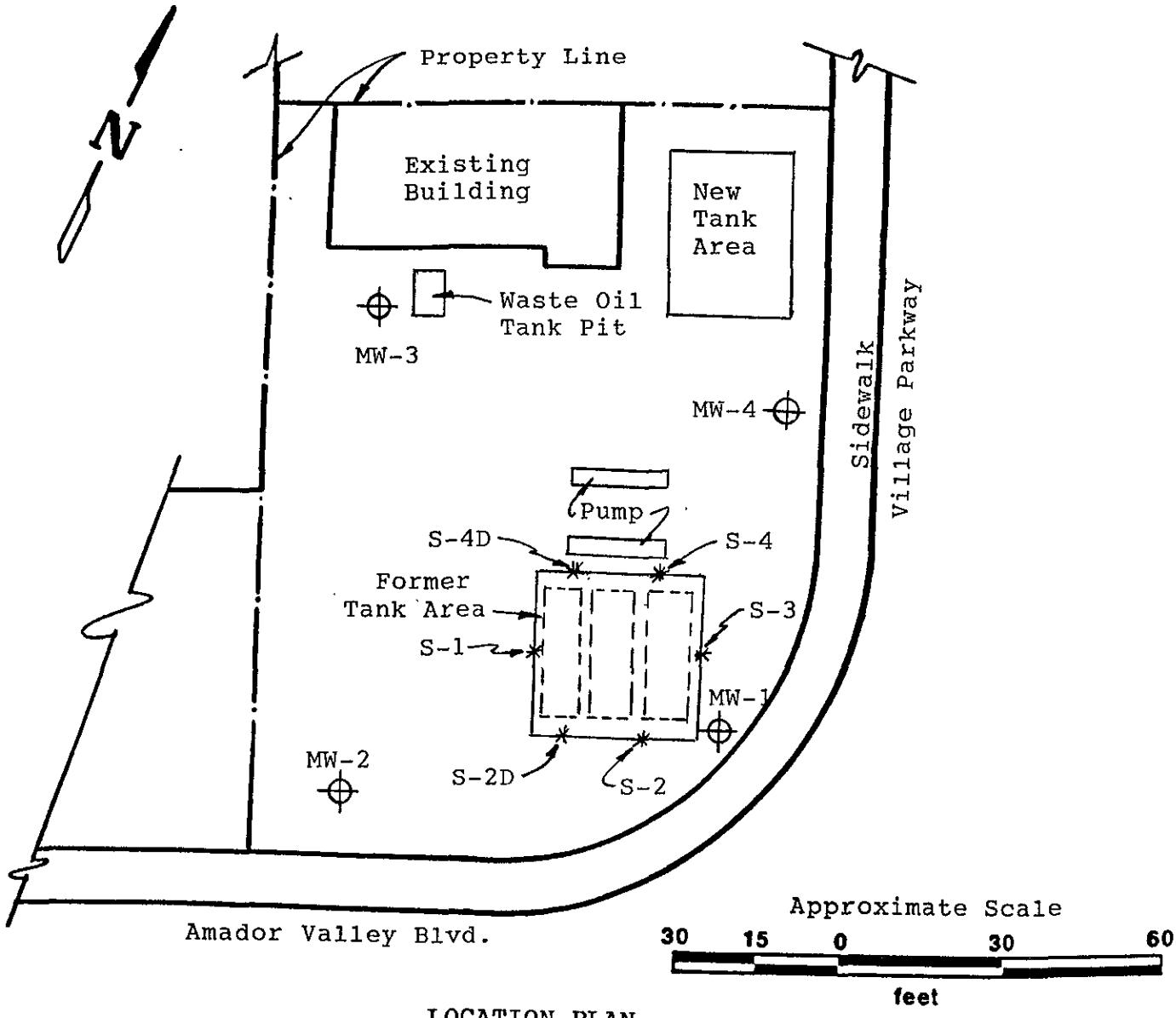
cont. TABLE 1A

	CAS #	Scan#	Volatile Fraction Compound Name	Det. Limit ppb	Amt. Found ppb
1	611-14-3	1128	1-ethyl-2-methylbenzene	10	30
2	108-67-8	1138	1,3,5-trimethylbenzene	10	<10
3	620-14-4	1186	1-ethyl-3-methylbenzene	10	<10
4	95-63-6	1212	1,2,4-trimethylbenzene	10	40
5	526-73-8	1304	1,2,3-trimethylbenzene	10	10
6				10	
7				10	
8				10	
9				10	
10				10	

	CAS #	Scan#	Semivolatile Fraction Compound Name	Det. Limit ppb	Amt. Found ppb
1				10	
2				10	
3				10	
4				10	
5				10	
6				10	
7				10	
8				10	
9				10	
10				10	
11				10	
12				10	
13				10	
14				10	
15				10	
16				10	
17				10	
18				10	
19				10	
20				10	

Tentatively identified compounds are significant chromatographic peaks (TICs) other than priority pollutants. TIC spectra are compared with entries in the National Bureau of Standards mass spectral library. Identification is made by following US EPA guidelines and acceptance criteria. TICs are quantitated by using the area of the nearest internal standard and assuming a response factor of one (1). Values calculated are ESTIMATES ONLY.

KAPREALIAN ENGINEERING, INC.
Consulting Engineers
P. O. BOX 913
BENICIA, CA 94510
(415) 676 - 9100 (707) 746 - 6915



LOCATION PLAN

✳ Sample Location

⊕ Monitoring Well

UNOCAL STATION # 5366
7375 Amador Valley Blvd.
Dublin, California

FIG 4

TABLE 2

SUMMARY OF SOIL ANALYSES

(all analyses are in parts per million)

Sample #	TPH as Diesel	TPH as Gasoline	Benzene	Toluene	Xylene	Ethylbenzene
S-1	<10	---	---	---	---	---
S-2	---	14	0.8	<0.1	2.7	4.6
S-2D	<10	---	---	---	---	---
S-3	---	14	1.1	<0.1	0.7	7.1
S-4	---	1700	8.0	22	340	62
S-4D	83	---	---	---	---	---

Summary of Water Analyses
(All Analyses in Parts Per Billion)

Sample #	TPH as Gasoline	Benzene	Toluene	Xylene	Ethylbenzene
W-1	91,000	8200	1200	5300	4300
W-2	120	<0.5	5.0	12	2.4

Summary of Composite Sample Analyses

Sample #	TPH as Diesel	TPH as Gasoline	Benzene	Toluene	Xylene	Ethylbenzene
Comp A	<10	5.5	<0.1	0.1	1.4	0.3
Comp B	45	2.0	0.1	0.1	0.7	0.2
Comp C	<10	69	1.4	1.9	31	6.5
Comp D	<10	440	1.3	18	130	30

TABLE - 3

Results of Soil Analyses - Parts Per Million

Sample Number	Depth (feet)	TPH	Benzene	Toluene	Xylene	Ethylbenzene
MW-1	10	340	<0.1	<0.1	<0.1	<0.1
MW-1	15	11	<0.1	<0.1	<0.1	<0.1
MW-2	10	<1.0	<0.1	<0.1	<0.1	<0.1
MW-3*	5	<1.0	<0.1	<0.1	<0.1	<0.1
MW-4	10	4.9	<0.1	<0.1	<0.1	<0.1

Results of Water Analyses - parts per billion

Sample Number	Depth (feet)	TPH	Benzene	Toluene	Xylene	Ethylbenzene
MW-1	10.250	10,000	960	17	1500	870
MW-2	10.479	170	2.7	0.6	13	<0.5
MW-3	10.604	<50	<0.5	<0.5	<0.5	<0.5
MW-4	10.542	<50	<0.5	<0.5	<0.5	<0.5

* MW-3(5') and MW-3(10') showed non-detectable levels of TOG and TPH as diesel. MW-3(10') had non-detectable levels of 8010 and 8020 priority pollutants.

KEI-P88-0205.R9
April 5, 1994

TABLE 4

SUMMARY OF LABORATORY ANALYSES
SOIL

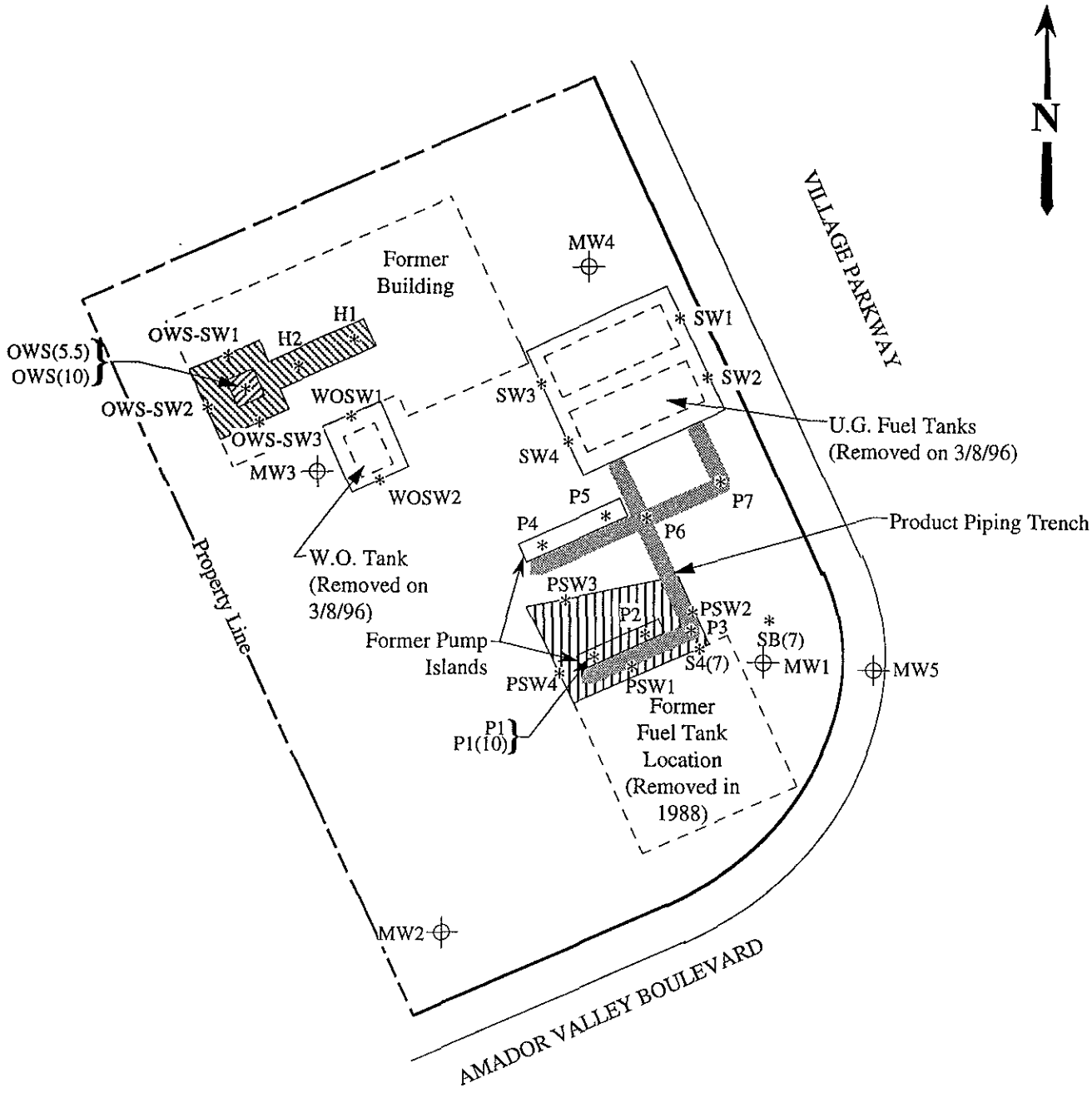
Date	Sample Number	TPH as Gasoline	Benzene	Toluene	Ethyl-benzene	Xylenes
4/14/88	MW1(10)	340	ND	ND	ND	ND
	MW1(15)	11	ND	ND	ND	ND
	MW2(10)	ND	ND	ND	ND	ND
	MW3(5)*	ND	ND	ND	ND	ND
	MW3(10)*	--	--	--	--	--
	MW4(10)	4.9	ND	ND	ND	ND
1/11/94	MW5(5)	ND	ND	ND	0.012	0.017
	MW5(10)	1,100	7.1	1.2	39	140
	MW5(12.5)	950	7.0	2.7	24	87

* TOG and TPH as diesel were non-detectable; MW3(10) had non-detectable levels of EPA methods 8010 and 8020 priority pollutants.

-- Indicates analysis was not performed.

Results are in milligrams per kilogram (mg/kg), unless otherwise indicated.

NOTE: The soil samples were collected at the depths below grade indicated in the ( ) of the respective sample number.



LEGEND

- Monitoring well
- * Sample point location
- Area excavated to a depth of about 5.5 feet below grade
- Area excavated to a depth of about 10 feet below grade
- Area excavated to a depth of about 11.5 feet below grade

0 30 60

Approx. scale feet

SOIL SAMPLE POINT LOCATION MAP

KAPREALIAN ENGINEERING
INCORPORATED

FORMER UNOCAL S/S #5366
7375 AMADOR VALLEY BLVD.
DUBLIN, CALIFORNIA

FIGURE 5

KEI-P88-0205.R11
April 15, 1996

TABLE 5

SUMMARY OF LABORATORY ANALYSES
SOIL

Date	Sample	Depth (feet)	TPH as Diesel	TPH as Gasoline	Benzene	Toluene	Ethyl-benzene	Xylenes
3/08/96	SW1	9.5	--	ND	0.013	0.011	ND	0.021
	SW2	9.5	--	1.2	0.0093	0.068	0.021	0.15
	SW3	9.5	--	ND	ND	ND	ND	ND
	SW4	9.5	--	ND	0.0057	0.0097	ND	0.023
	WOSW1*	9.0	2.2	ND	ND	ND	ND	0.0070
	WOSW2*	9.0	ND	ND	ND	ND	ND	ND
	H1**	8.5	--	ND	ND	ND	ND	0.011
	H2**	8.5	--	ND	ND	ND	ND	ND
	OWS(5.5)*	5.5	3,500	4,100	ND	ND	7.3	70
	OWS(10)*	10.0	8.6	18	ND	ND	ND	0.55
	P1	3.0	--	160	1.1	5.5	7.7	39
	P2	3.0	--	97	0.44	0.43	5.2	14
	P3	3.0	--	6.5	0.040	0.019	0.29	0.015
	P4	3.0	--	3.7	0.092	ND	0.56	0.019
	P5	3.0	--	11	0.066	ND	0.41	0.30
	P6	3.0	--	1.2	0.0093	ND	0.040	0.030
	P7	3.0	--	2.1	0.013	0.0091	0.13	0.17
3/18/96	OWS-SW1	5.5	ND	12	0.033	ND	ND	0.089
	OWS-SW2	5.5	ND	20	0.032	ND	0.038	0.36
	OWS-SW3	5.5	ND	4.5	0.031	0.014	0.0084	0.064
	S4(7)	7.0	--	1.0	0.043	0.059	0.0055	0.023
	SB(7)	7.0	--	2.3	0.0057	0.010	0.0051	0.0073
3/20/96	P1(10)	10.0	--	87	0.49	0.52	0.46	0.11
	PSW1	9.5	--	21	0.026	0.055	0.060	0.040
	PSW2	9.5	--	13	0.018	0.047	0.40	0.016
	PSW3	9.5	--	1.7	0.023	ND	ND	0.019
	PSW4	9.5	--	6.0	0.031	0.025	0.021	0.011

-- Indicates analysis was not performed.
* TOG was non-detectable.
** TPH as hydraulic fluid was non-detectable.
ND = Non-detectable.
Results are in milligrams per kilogram (mg/kg), unless otherwise indicated.

cont. TABLE 5

SUMMARY OF LABORATORY ANALYSES
(FUEL FINGERPRINT)

Date	Sample	Diesel (C10-C22)	JP-4 (C8-C14)	JP-5 (C10-C16)	Kerosene (C10-C16)	Motor Oil (>C16)	Paint Thinner (C10-C12)	Unidentified Extractable Hydrocarbons
3/18/96	OWS-SW1	ND	ND	ND	ND	33	22	ND
	OWS-SW2	ND	ND	ND	ND	27	37	ND
	OWS-SW3	ND	ND	ND	ND	15	8.9	ND

Date	Sample	EPA Method 8010 Constituents (µg/kg)	EPA Method 8270 Constituents (µg/kg)	Cadmium	Chromium	Lead	Nickel	Zinc
3/08/96	WOSW1	ND	ND	ND	27	5.4	30	53

ND = Non-detectable.

Results are in milligrams per kilogram (mg/kg), unless otherwise indicated.

Table 6

Summary of Laboratory Analyses
Water

Well #	Date	TPH as Gasoline	Benzene	Toluene	Ethyl-Benzene	Xylenes	MTBE
MW1	4/29/88	10,000	960	17	870	1,500	--
	7/25/88	6,100	170	2.1	94	94	--
	10/28/88	5,200	150	ND	250	12	--
	1/26/89	1,900	240	1.8	81	30	--
	4/28/89	1,000	97	0.8	170	24	--
	7/27/89	1,900	130	6.3	ND	68	--
	10/20/89	ND	ND	ND	ND	ND	--
	2/6/90	2,700	170	ND	350	29	--
	5/18/90	2,000	140	1.8	460	19	--
	8/15/90	2,200	160	ND	570	45	--
	11/14/90	2,000	110	0.52	410	16	--
	2/14/91	1,900	150	2.9	340	43	--
	5/15/91	2,100	220	ND	360	27	--
	8/12/91	1,100	68	2.6	210	9.3	--
	11/13/91	860	40	ND	11	2.5	--
	2/25/92	3,900	500	ND	450	400	--
	5/22/92	2,500	120	ND	230	37	--
	8/12/92	1,700	51	ND	93	21	--
	11/10/92	1,100	49	ND	71	21	--
	2/10/93	3,000	230	ND	340	200	--
	5/10/93	1,600	39	0.4	25	3.3	--
	8/12/93	1,000	46	ND	29	6.3	--
	11/11/93	350	19	2.5	2.7	3.4	--
	2/11/94	970	40	3.2	2.8	15	--
	5/17/94	1,000	41	ND	49	32	--
	8/25/94	650	10	1.6	7.7	2.1	--
	11/18/94	820	21	ND	19	6.6	--
	2/15/95	2,400	61	ND	87	34	--
	6/13/95	1,300	28	ND	15	ND	--
	8/25/95	530	16	ND	2.2	13	†
	11/28/95	650	15	ND	21	6.7	††
	2/26/96	1,900	40	ND	84	46	110
	5/23/96	WELL WAS DESTROYED IN MAY 1996.					
MW2	4/29/88	170	2.7	0.6	ND	13	--
	7/25/88	ND	ND	ND	ND	ND	--
	10/28/88	ND	ND	ND	ND	ND	--
	1/26/89	ND	ND	ND	ND	ND	--
	4/28/89	ND	ND	ND	ND	ND	--
	7/27/89	ND	ND	ND	ND	ND	--
	10/20/89	ND	ND	ND	ND	ND	--
	2/6/90	ND	ND	ND	ND	ND	--

Cont. Table 6

Summary of Laboratory Analyses
Water

Well #	Date	TPH as Gasoline	Benzene	Toluene	Ethyl-Benzene	Xylenes	MTBE
MW2	5/18/90	ND	ND	ND	ND	ND	--
(Cont.)	5/22/92	ND	ND	ND	ND	ND	--
	2/10/93	ND	ND	ND	ND	ND	--
	2/11/94	ND	ND	ND	ND	ND	--
	5/17/94	SAMPLED ANNUALLY					
	2/15/95	ND	ND	ND	ND	ND	--
	2/26/96	ND	ND	ND	ND	ND	--
	5/23/96	WELL WAS DESTROYED IN MAY 1996.					
MW3	4/29/88	ND	ND	ND	ND	ND	--
	7/25/88	--	ND	ND	ND	ND	--
	10/28/88	--	ND	ND	ND	ND	--
	1/26/89	ND	ND	ND	ND	ND	--
	4/28/89	880	9.6	9.7	19	12.7	--
	5/22/89	ND	ND	ND	ND	ND	--
	7/27/89	ND	ND	ND	ND	ND	--
	10/20/89	ND	ND	ND	0.38	ND	--
	2/6/90	ND	ND	ND	ND	ND	--
	5/18/90	ND	ND	ND	ND	ND	--
	2/10/93	ND	ND	ND	ND	ND	--
	2/11/94	ND	ND	ND	ND	ND	--
	5/17/94	SAMPLED ANNUALLY					
	2/15/95	ND	ND	ND	ND	ND	--
	2/26/96	ND	ND	ND	ND	ND	--
	5/23/96	WELL WAS DESTROYED IN MAY 1996.					
MW4	4/29/88	ND	ND	ND	ND	ND	--
	7/25/88	ND	ND	ND	ND	ND	--
	10/28/88	ND	ND	ND	ND	ND	--
	1/26/89	ND	0.67	ND	ND	ND	--
	4/28/89	ND	0.3	ND	ND	ND	--
	7/27/89	ND	0.34	ND	ND	ND	--
	10/20/89	ND	ND	ND	ND	ND	--
	2/6/90	ND	ND	ND	ND	ND	--
	5/18/90	ND	ND	ND	ND	ND	--
	2/10/93	ND	ND	ND	ND	ND	--
	2/11/94	ND	ND	ND	ND	ND	--
	5/17/94	SAMPLED ANNUALLY					
	2/15/95	ND	ND	ND	ND	ND	--
	2/26/96	ND	ND	ND	ND	ND	--
	5/23/96	WELL WAS DESTROYED IN MAY 1996.					

cont. Table 6

Summary of Laboratory Analyses
Water

Well #	Date	TPH as Gasoline	Benzene	Toluene	Ethyl-Benzene	Xylenes	MTBE
MW5	2/11/94	18,000	2,400	140	920	3,100	--
	5/17/94	20,000	4,300	ND	2,300	130	--
	8/25/94	9,400	3,800	ND	2,200	150	--
	11/18/94	18,000	2,400	52	1,600	51	--
	2/15/95	16,000	2,700	ND	1,700	50	--
	6/13/95	14,000	2,200	ND	2,200	ND	--
	8/25/95	3,100	43	ND	590	8.4	†
	11/28/95	6,400	320	ND	720	ND	††
	2/26/96	2,800	75	ND	160	ND	74
	5/23/96	71	7.9	ND	3.4	ND	43
	8/23/96	350	22	1.0	13	3.0	56
	11/22/96	380	6.0	0.98	ND	ND	33

† Sequoia Analytical Laboratory has potentially identified the presence of MTBE at reportable levels in the ground water samples collected from this well.

†† Sequoia Analytical Laboratory has identified the presence of MTBE at a level above or equal to the taste and odor threshold of 40 mg/L in the sample collected from this well.

ND = Non-detectable.

-- Indicates that analysis was not performed.

Results are in micrograms per liter (µg/L), unless otherwise indicated.

Note: The detection limit for results reported as ND by Sequoia Analytical Laboratory is equal to the stated detection limit times the dilution factor indicated on the laboratory analytical sheets.

Prior to August 1, 1995, the total purgeable petroleum hydrocarbon (TPH as gasoline) quantification range used by Sequoia Analytical Laboratory was C4 - C12. Since August 1, 1995, the quantification range used by Sequoia Analytical Laboratory is C6 - C12.

Laboratory analyses data prior to February 11, 1994 were provided by Kaprealian Engineering, Inc.

cont. **Table 6**

Summary of Laboratory Analyses
Water

Well #	Date	TPH as Diesel	Total Oil & Grease (mg/L)	EPA 8010 Constituents
MW1	5/10/93	730*	--	--
MW3	4/29/88	ND	--	ND
	7/25/88	ND	--	ND
	10/28/88	ND	--	ND
	1/26/89	ND	--	ND
	4/28/89	72	ND	ND
	5/22/89	--	--	--
	7/27/89	ND	1.6	ND
	10/20/89	ND	2.5	ND
	2/6/90	ND	ND	ND
	5/18/90	ND	ND	ND
	2/10/93	200	ND	--
	2/11/94	ND	ND	--
	2/15/95	ND	ND	--
	2/26/96	ND	ND	--
MW5	2/11/94	2,300*	--	--
	5/17/94	2,500*	--	--
	8/25/94	2,000**	--	--
	11/18/94	2,000**	--	--
	2/15/95	2,000*	--	--
	6/13/95	2,400**	--	--
	8/25/95	2,300**	--	--
	11/28/95	3,800**	--	--
	2/26/96	1,600**	--	--
	5/23/96	190*	--	--
	8/23/96	140**	--	--
	11/22/96	350*	--	--

* Sequoia Analytical Laboratory reported that the hydrocarbons detected appeared to be a diesel and non-diesel mixture.

** Sequoia Analytical Laboratory reported that the hydrocarbons detected did not appear to be diesel.

ND = Non-detectable.

-- Indicates analysis was not performed.

mg/L = milligrams per liter.

Results are in micrograms per liter (µg/L), unless otherwise indicated.

Note: Laboratory analyses data prior to February 11, 1994, were provided by Kaprealian Engineering, Inc.

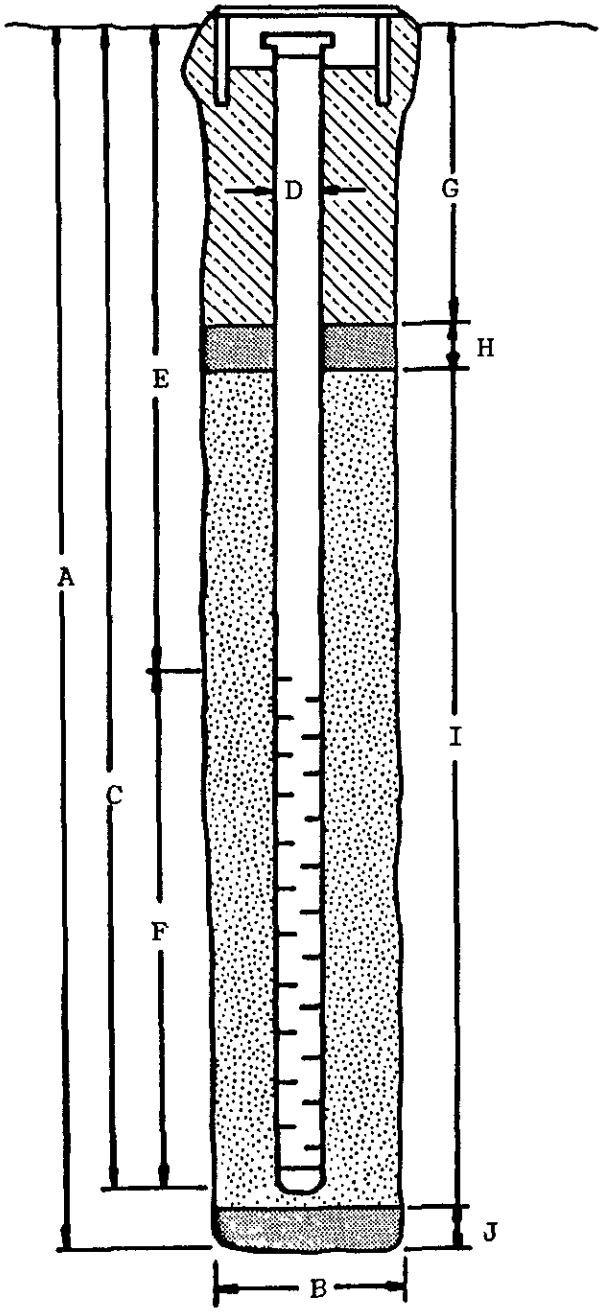
WELL DETAILS

PROJECT NAME: Unocal, Dublin, Amador Vly. Blvd. BORING/WELL NO. MW-1

PROJECT NUMBER: KEI-P88-025A CASING ELEVATION: _____

WELL PERMIT NO.: 88107 Alameda Co. Flood Control SURFACE ELEVATION: _____

G-5 Vault Box



A. Total Depth: 20 feet

B. Boring Diameter: 8 inch

Drilling method: Hollow Stem Auger

C. Casing Length: 20 feet

Material: PVC Schedule 40

D. Casing Diameter: 2 inch

E. Depth to Perforations: 10 feet

F. Perforated Length: 10 feet

Perforated Interval: 20 to 10 fee

Perforation Type: Schedule 40

Perforation Size: 0.02

G. Surface Seal: 8 to 0 feet

Seal Material: concrete

H. Seal: 9 to 8 feet

Seal Material: bentonite

I. Gravel Pack: 20 to 9 feet

Pack Material: Monterey sand

Size: 6 X 12

J. Bottom Seal: None

Seal Material: -

Exploratory Boring Log

Project No. KEI-P88-025A	Boring & Casing Diameter 8 inch, 2in. csg.	Logged By P. Morrill
Project Name Unocal Dublin, Amador Vly. Blvd.	Casing Elevation	Date Drilled 4/14/88
Boring No. MW-1	Hollow-stem Flight Auger	Depth to Groundwater 16 feet

Penetration blows/ft	G. W. level	Depth (ft) Samples	Litho-graphy USCS	Description
		0	SC	ASPHALT SANDY CLAY LOAM: 7.5YR 3/0, very dark gray, mod. plastic, stiff, v. fine sands
			CL	CLAY LOAM: 7.5YR 2/0, black, stiff, mod. plastic, slightly moist, 5 to 10% gravels and rounded cobbles
			CH	CLAY: 7.5YR 3/0, very dark gray, stiff, plastic, moist
		5	ML/ CL	LOAM: 2.5Y 3/0, very dark gray, firm, mod. plastic, very fine sands, few small gravels
		10		
21			CL	CLAY: 7.5YR 3/0, very dark gray, stiff, plastic, moist, $CaCO_3$ concretions, slightly effervescent
		15	CH	SILTY CLAY: 5Y 4/1, stiff, plastic, slightly moist
17	▼		CH	SILTY CLAY: 5Y 4/1, dark gray, firm, plastic, wet, 10 to 15% subrounded gravels up to ¼ inch in size
			CH	SILTY CLAY: 5Y 4/1, dark gray, very stiff, slightly moist, plastic, up to 10% gravels as above
		20		

TOTAL DEPTH 20 FEET

Exploratory Boring Log

Project No.	Boring & Casing Diameter	Logged By
KEI-P88-025A	8 inch, 2 in. csg.	P. Morrill
Project Name Unocal Dublin, Amador V1y Blvd.	Casing Elevation	Date Drilled 4/14/88
Boring No. MW-2	Hollow-stem Flight Auger	Depth to Groundwater 15 feet

Penetration blows/ft	G. W. level	Depth (ft) Samples	Litho-graphy USCS	Description
		0		ASPHALT
			GC	GRAVELLY SANDY LOAM FILL: Brown, Dry
			CH	CLAY: 7.5 YR 2/0, black, stiff, very plastic, slightly moist
			CL	CLAY LOAM: 7.5YR 2/0, mod. plastic, firm
			CH	CLAY: 7.5YR 2/0, black, stiff, plastic slightly moist
		5	ML/ CL	LOAM: 5Y 3/1, very dark gray, firm, mod. plastic, moist, very fine sands
		10	CL	CLAY: 7.5YR 3/0, very dark gray, stiff, plastic, moist, $CaCO_3$ concretions, slightly effervescent
16				
	▼	15	CH	SILTY CLAY 5Y 4/1, dark gray, firm, plastic, wet, 10 to 15% subrounded gravels up to ¼ inch in size
			CH	SILTY CLAY: 5Y 4/1, dark gray, very stiff, plastic, gravels as above, moist
		20		

TOTAL DEPTH 20 FEET

Exploratory Boring Log

Project No.	Boring & Casing Diameter	Logged By
KEI-P88-025A	8 in. 2 in. csg.	P. Morrill
Project Name Unocal Dublin, Amador Vly. Blvd.	Casing Elevation	Date Drilled 4/14/88
Boring No. MW-3	Hollow-stem Flight Auger	Depth to Groundwater 14 feet

Penetration blows/ft	G. W. level	Depth (ft) Samples	Litho-graphy USCS	Description
		0		ASPHALT
			CL	CLAY LOAM: 10YR 3/1, very dark gray, stiff, mod. plastic, slightly moist
			CL	CLAY LOAM: 7.5 YR 2/0, black, firm, mod. plastic, slightly moist
			CH	CLAY: black, plastic, stiff
		5		
14			ML/ CL	LOAM: 5Y 3/1, firm, mod. plastic, moist, very fine sands
			CL	CLAY: 7.5YR 3/0, very dark gray, stiff plastic, moist, $CaCO_3$ concretions, slightly effervescent
		10		
19				
	▼		CH	SILTY CLAY: 5Y 4/1, dark gray, plastic firm, wet, 10 to 15% gravels up to ¼ inch
		15		
			CH	SILTY CLAY: 5Y 4/1, dark gray, plastic very stiff, moist, 10 to 15% gravels up to ¼ inch
		20		

TOTAL DEPTH 20 FEET

Exploratory Boring Log

Project No. KEI-P88-025A	Boring & Casing Diameter 8 in. 2 in. csg.	Logged By P. Morrill
Project Name Unocal Dublin, Amador Vly. Blvd.	Casing Elevation	Date Drilled 4/14/88
Boring No. MW-4	Hollow-stem Flight Auger	Depth to Groundwater 16 feet

Penetration blows/ft	G. W. level	Depth (ft) Samples	Lithography USCS	Description
		0		ASPHALT
			GC	GRAVELLY SANDY LOAM FILL: brown, dry
			CL	CLAY: 7.5 YR 2/0, black, very stiff, plastic, slightly moist, $CaCO_3$ concreti
			CL	CLAY LOAM: 7.5 YR 3/0, very dark gray, firm, plastic, slightly moist, 5 to 10% gravels and cobbles
		5	ML/CL	LOAM: 5Y 3/1,very dark gray, firm, mod. plastic, slightly moist, very fine sands
		10	CL	CLAY: 7.5 YR 3/0, very dark gray, slightly moist, stiff, plastic, $CaCO_3$ concretions, slightly effervescent
15				
	▼	15	CH	SILTY CLAY: 5Y 4/1, dark gray, firm, plastic, wet, 10 to 15% gravels up to ¼ inch
			CH	SILTY CLAY: 5Y 4/1, dark gray, plastic, very stiff, slightly moist, approx. 10% gravels as above
		20		

TOTAL DEPTH 20 FEET

BORING LOG

Project No. KEI-P88-0205	**Boring Diameter** 8.5" / **Casing Diameter** 2"	**Logged By** JGG / D.L. CEG 1633
Project Name Unocal S/S #5366, 7375 Amador Valley Blvd., Dublin	**Well Cover Elevation** N/A	**Date Drilled** 1/11/94
Boring No. MW5	**Drilling Method** Hollow-stem Auger	**Drilling Company** Woodward Drilling

Penetration blows/6"	G. W. level	Depth (feet) Samples	Stratigraphy USCS	Description
		0		Concrete Slab
				Silt, sand and gravel, very moist, brown (fill).
			ML	Clayey silt, estimated at 10-15% sand, stiff, moist, very dark gray.
				Sandy silt, stiff, moist, very dark gray, with thin lenses of silt, sand is fine grained.
5/6/6		5	SW	Well graded sand, trace silt, medium dense, moist, very dark gray.
			CL	Silty clay, stiff to very stiff, moist, black, with roots and root holes, caliche fills root holes, grades to very dark gray below 10 feet.
6/11/13		10		
4/6/7				
3/4/6	▽			Silty clay, firm to stiff, moist, wet inside voids, very dark gray, with caliche nodules to 3/4 inch diameter, locally grades to very clayey silt.
		15		
4/6/8				Silty clay, stiff, moist, olive brown and very dark gray, mottled, with root holes and caliche nodules to 1-1/4 inches diameter.
3/5/6		20		
				TOTAL DEPTH: 20'