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

StID 1185

March 2, 1999

Ms. Sharon Williams
Lamorinda Development
89 Davis Road, Suite 260
Orinda, CA 94563

Mr. Phil Briggs
Chevron
P.O. Box 5004
San Ramon, CA 94583-0804

Re: Fuel Leak Site Case Closure for the Former Chevron Service Station #9-3676, 4300 MacArthur Blvd, Oakland, CA

Dear Messrs. Christopoulous and Briggs:

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:

- up to 110ppm TPH as gasoline and 1,5ppm benzene exists in soil beneath the site;
- up to 5,600ppb TPHg and 840ppb benzene exists in groundwater beneath the site; and,
- a site safety plan must be prepared for construction workers in the event of excavation/trenching is proposed in the vicinity of residual soil and groundwater contamination.

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

eva chu
Hazardous Materials Specialist

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

c: Frank Kliewer, City of Oakland, Planning Dept, 1330 Broadway, Oakland, CA 94612
files (amirchevron4)

ALAMEDA COUNTY
HEALTH CARE SERVICES
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ENVIRONMENTAL HEALTH SERVICES
ENVIRONMENTAL PROTECTION
1131 Harbor Bay Parkway, Suite 250
Alameda, CA 94502-6577
(510) 567-6700

REMEDIAL ACTION COMPLETION CERTIFICATION

StID 1185 - 4300 MacArthur Blvd., Oakland, CA
(2-10K, 1-5K, and 1-1K gallon USTs removed on December 2, 1988)

March 2, 1999

Ms. Sharon Williams
Lamorinda Development
89 Davis Road, Suite 260
Orinda, CA 94563

Mr. Phil Briggs
Chevron
P.O. Box 5004
San Ramon, CA 94583-0804

Dear Ms. Williams and Mr. Briggs:

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, Director

cc: Richard Pantages, Chief of Division of Environmental Protection
Chuck Headlee, RWQCB
Dave Deaner, SWRCB
Leroy Griffin, OFD
files-ec (amirchevron3)

RB # 01-0371
RO 1094

ENVIRONMENTAL PROTECTION
98 NOV 31 AM 9:

QUALITY CONTROL BOARD

NOV 07 1998

CALIFORNIA REGIONAL WATER

CASE CLOSURE SUMMARY
Leaking Underground Fuel Storage Tank Program

I. AGENCY INFORMATION

Date: **October 22, 1998**

Agency name: **Alameda County-HazMat**
City/State/Zip: **Alameda, CA 94502**
Responsible staff person: **Madhulla Logan**

Address: **1131 Harbor Bay Pkwy**
Phone: **(510) 567-6700**
Title: **Hazardous Materials Spec.**

II. CASE INFORMATION

Site facility name: **Amir Chevron**
Site facility address: **4300 MacArthur Blvd, Oakland, CA 94619**
RB LUSTIS Case No: **N/A**
Local Case No./LOP Case No.: **1185**
URF filing date:
SWEEPS No: **N/A**

Responsible Parties:	Addresses:	Phone Numbers:
C. Christopoulous **C & H Development** **3744 Mt Diablo Suite 301** **Lafayette, CA 94549**	**Phil Briggs** **Chevron** **P.O. Box 5004** **San Ramon, CA 94583-0804**	

Tank No:	Size in gal.:	Contents:	Closed in-place or removed?:	Date:
1	10,000	Gasoline	Removed	12/2/88
2	10,000	Gasoline	"	"
3	5,000	Gasoline	"	"
4	1,000	Waste Oil	"	"

III. RELEASE AND SITE CHARACTERIZATION INFORMATION

Cause and type of release: **Unknown**
Site characterization complete? **YES**
Date approved by oversight agency: **8/28/98**
Monitoring Wells installed? **Yes** Number: **10**
Proper screened interval? **Yes, 12' to 20'bgs in well MW-3A**
Highest GW depth below ground surface: **4.55'** Lowest depth: **8.84' in well MW-3A**
Flow direction: **WSW**
Most sensitive current use: **Commercial**
Are drinking water wells affected? **No** Aquifer name: **Unknown**
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** and **Oakland Fire Dept**, **1605 MLK Jr Dr**, **Oakland, CA 94612**

Treatment and Disposal of Affected Material:

Material	Amount (include units)	Action (Treatment or Disposal w/destination)	Date
Tank	**4 USTs**	**Disposed by Erickson, in Richmond**	**12/2/88**

Maximum Documented Contaminant Concentrations - - Before and After Cleanup

Contaminant	Soil (ppm)		Water (ppb)	
	Before[1]	After[2]	Before[3]	After[4]
TPH (Gas)	**110**		**110,000**	**5,600**
Benzene	**1.5**		**3,100**	**840**
Toluene	**3.7**		**3,700**	**290**
Ethylbenzene	**2.5**		**2,500**	**300**
Xylenes	**14**		**14,000**	**370**
MTBE	**NA**		**1,600**	**ND[5]**
Oil & Grease				
Heavy metals				
Other **SVOC (Method 8270)**			**see Note 6**	

NOTE:
1. soil sample collected at time of UST removal, 12/88
2. no overexcavation of tank pit performed
3. maximum groundwater concentration detected historically
4. most recent sampling event, 6/98
5. results using EPA Method 8260, 10/98
6. 350ppb naphthalene, 600ppb 2-Methylnaphthalene, 60ppb phenanthrene, 59ppb pyrene, 55ppb benzo(a)anthracene

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: **A site safety plan must be prepared for construction workers in the event excavation/trenching is proposed in the vicinity of residual soil and groundwater contamination.**

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

Monitoring wells Decommissioned: **Yes**

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

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: 11/6/98

Reviewed by

Name: **Madhulla Logan** Title: **Haz Mat Specialist**

Signature: Madhulla Logan Date: 10/22/98

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

Signature: Thomas Peacock Date: 11-4-98

VI. RWQCB NOTIFICATION

Date Submitted to RB: 11/6/98 RB Response:

RWQCB Staff Name: ~~Chuck Headlee~~ Title: ~~EG~~ SEG

Signature: John E. Kaiser John E. Kaiser Date: 11/20/98

VII. ADDITIONAL COMMENTS, DATA, ETC.

The site was formerly a gasoline service station. The station was closed and razed in December 1988. In its place, a mini-mall was constructed.

In August 1988 a soil vapor study was conducted at the site. Ten vapor point locations were selected for the collection of vapor samples at ~4.5'bgs. Results of the study identified petroleum hydrocarbons north of the USTs, adjacent to the station building, and by the eastern pump island. To verify the severity and extent of the fuel release, five groundwater monitoring wells (MW-1 through MW-5) were installed. Soil samples 1-1 and 5-1 (from 6'bgs in boring MW-1 and MW-5, respectively) and groundwater from well MW-5 contained detectable levels of gasoline constituents. (See Fig 1, 2, 3, and Table 1)

Four USTs (2-10K, 1-5K gallon gasoline and 1-1K gallon waste oil) were removed in December 1988. Groundwater was noted in the pit. Soil samples were collected at the capillary fringe at ~8.5' to 11'bgs and analyzed for TPHg and BTEX. The soil sample from the waste oil tank pit was also analyzed for TOG, TPHd, HVOC, SVOC, and four metals. None of the soil samples contained remarkable levels of analytes sought. The water samples did contain elevated fuel constituents. (See Fig 4, Table 2)

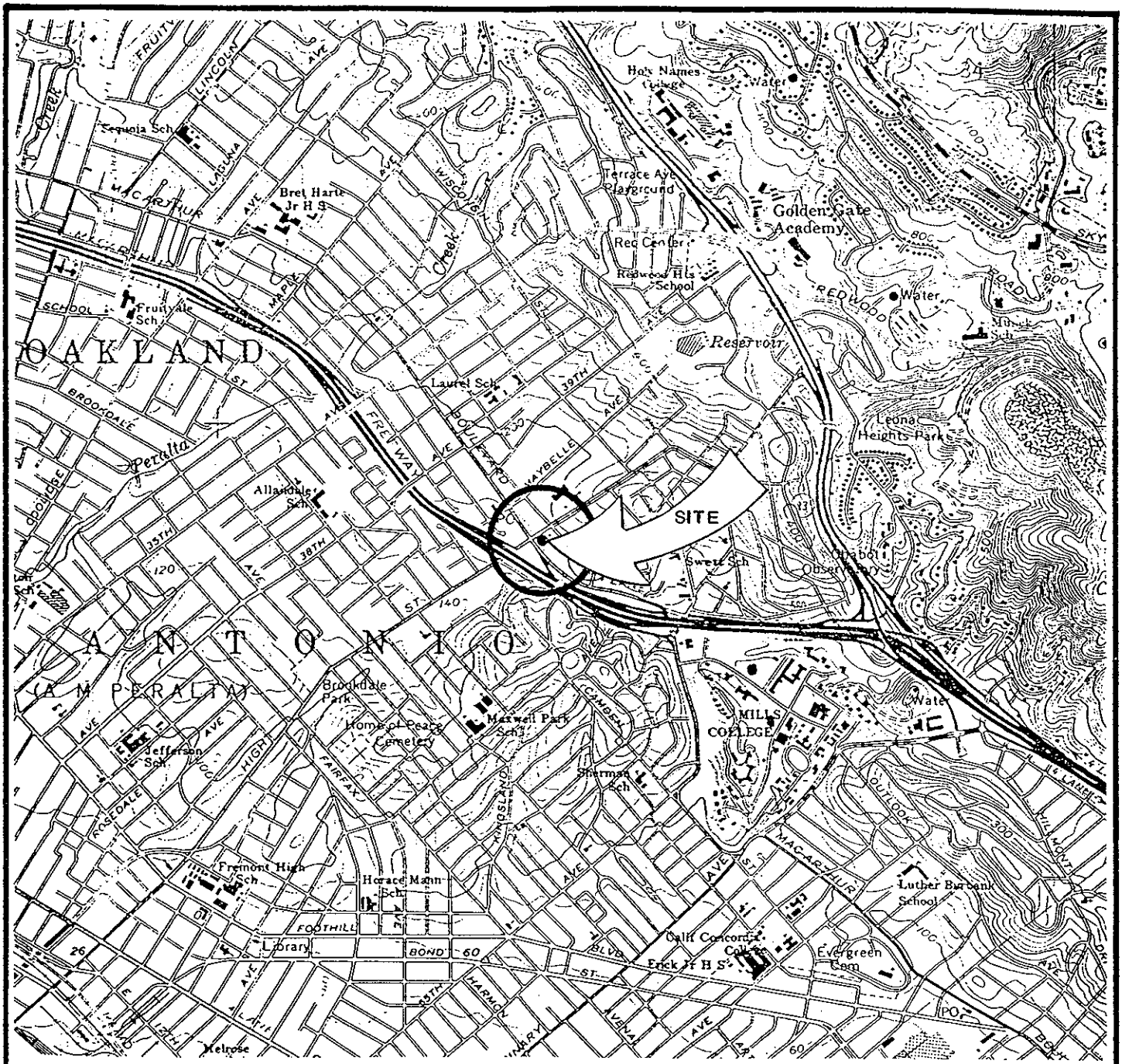
The service station was leveled and three of the five monitoring wells were damaged during destruction activities. Plans for the development of a new building was located over four of the wells. Therefore, all five wells were properly abandoned and two new wells (MW-1A and MW-2A) were completed in March 1989. Three years later, two additional wells (MW-3A and MW-4A) were installed to verify groundwater flow direction. Groundwater gradient and flow direction was calculated to be ~0.03 ft/ft to the southwest. (See Fig 5, 6, 7, and Table 3, 4)

In June 1995 well MW-5A was installed further downgradient and across MacArthur Blvd., to delineate the extent of the contaminant plume. After nine years of groundwater monitoring, wells MW-2A, MW-3A, and MW-4A continue to exhibit TPHg and BTEX constituents. The plume appears stable and has not migrated to offsite monitoring well MW-5A. (See Fig 8, Table 5)

A risk analysis (using ASTM's RBCA methodology) was conducted for the site. It was determined that residual soil and groundwater contamination at the site did not pose an excess risk to construction workers or to human health by means of groundwater volatilization of vapors to indoor and outdoor air (see Table 6, 7, and 8). Continued groundwater monitoring is not warranted.

In summary, case closure is recommended because:

- the leak and ongoing sources have been removed;
- the site has been adequately characterized;
- the dissolved plume is not migrating;
- no water wells, surface water, or other sensitive receptors are likely to be impacted; and,
- the site presents no significant risk to human health or the environment.



LEGEND

SITE LOCATION

FROM USGS TOPO. EAST OAKLAND

ensco environmental services, Inc.

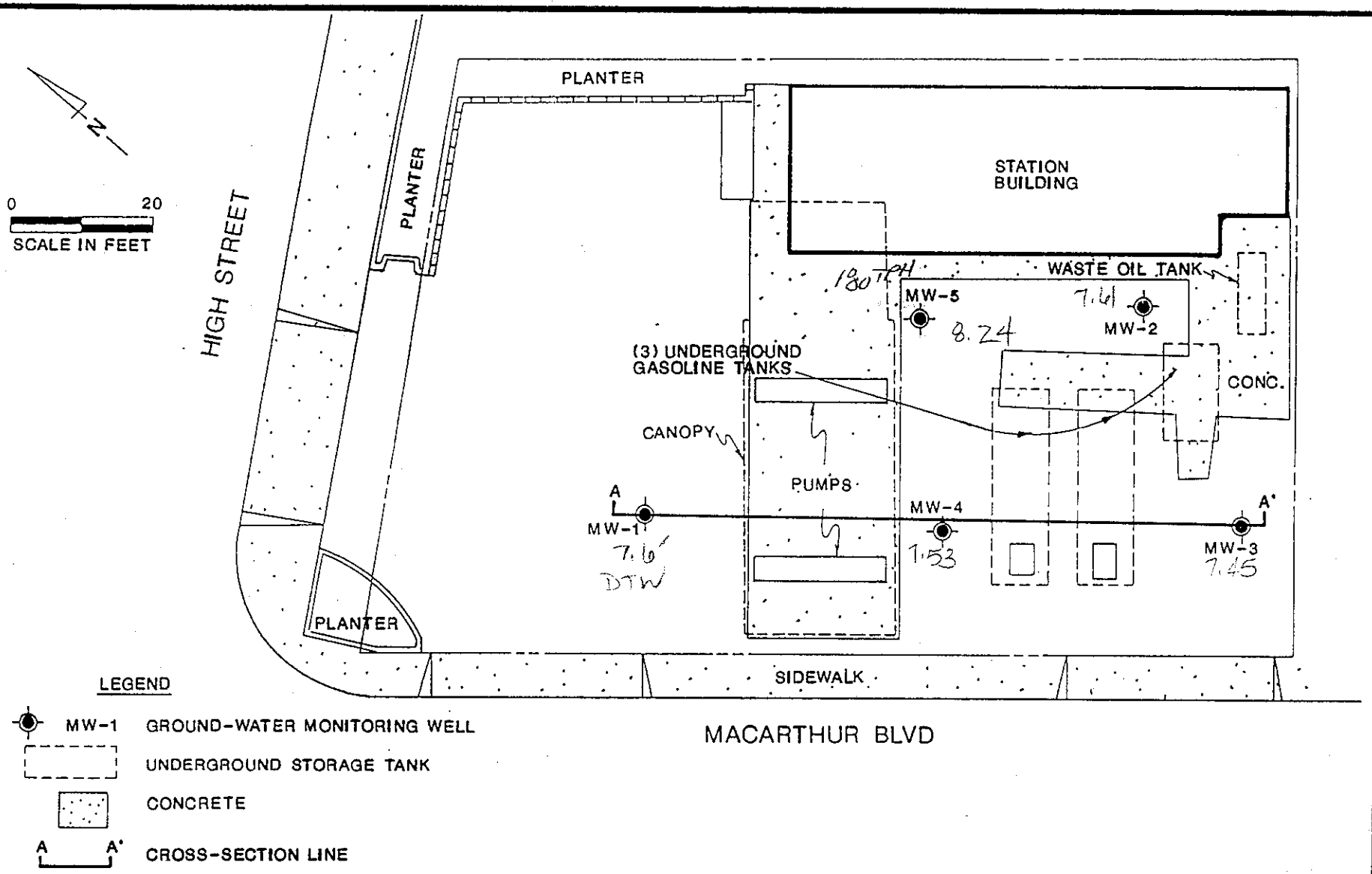
SITE LOCATION MAP

CHEVRON SERVICE STATION NO. 9-3676

4300 MACARTHUR BOULEVARD

OAKLAND, CALIFORNIA

REVIEWED BY:	APPROVED BY:
JOB #: 1876G	DRAWN BY: J.C.
DATE: 11-7-88	DRAWING #: FIG. 1



LEGEND

- MW-1 GROUND-WATER MONITORING WELL
- UNDERGROUND STORAGE TANK
- CONCRETE
- A A' CROSS-SECTION LINE

ensco environmental services, inc.

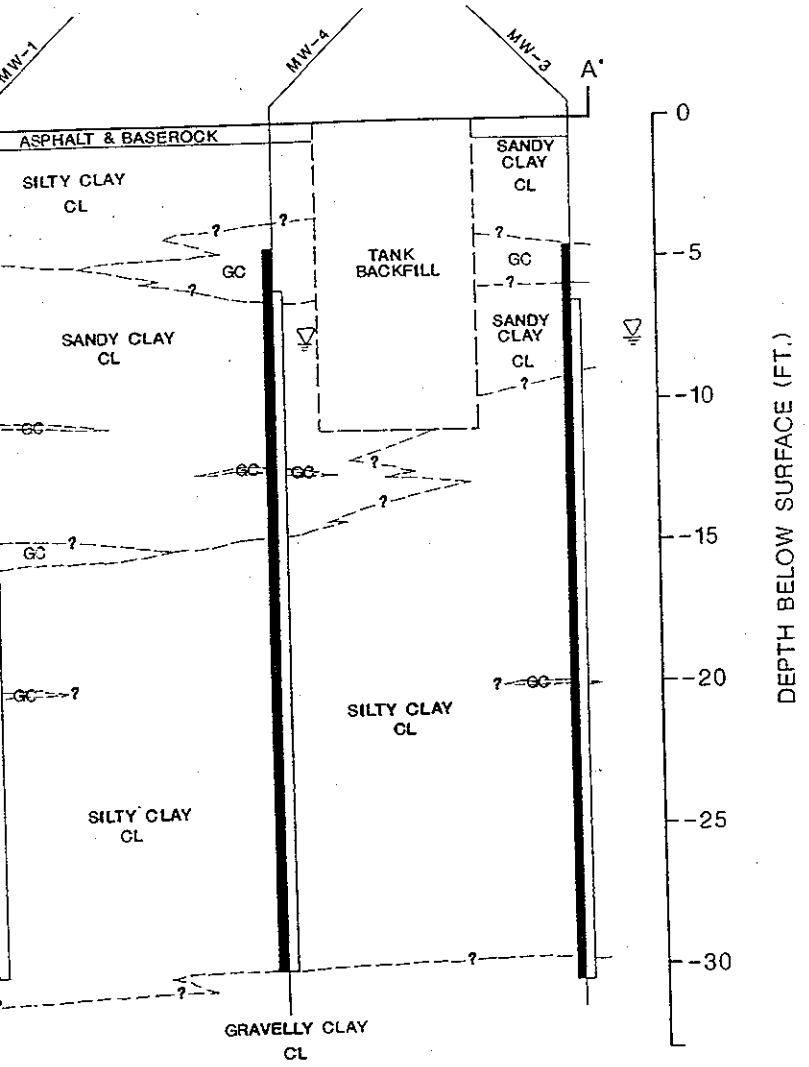
SITE PLAN

CHEVRON SERVICE STATION NO. 9-3676

4300 MACARTHUR BOULEVARD

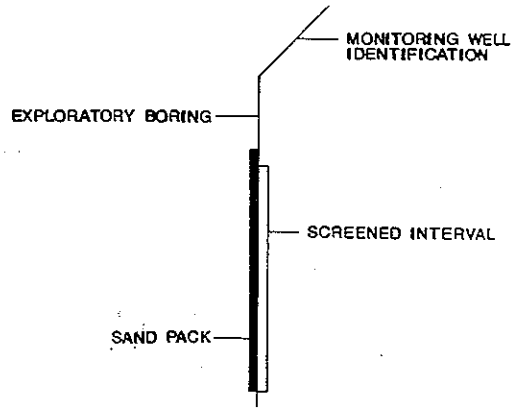
OAKLAND, CALIFORNIA

REVIEWED BY:	APPROVED BY:
JOB #: 1876G	DRAWN BY: J.C.
DATE: 10-31-88	DRAWING #: FIG. 2



LEGEND

CL	SILTY CLAY, SANDY CLAY TO GRAVELLY CLAY
GC	CLAYEY GRAVEL
▽	APPROXIMATE GROUND-WATER LEVEL
---?---?---	APPROXIMATE CONTACT BETWEEN ADJACENT SOIL UNITS



SCALE:
HORIZ.: 1"=20'
VERT., 1"=5'

ntact lines represent approximate
een soil types and the transitions

ensco environmental services, Inc.

GEOLOGIC CROSS SECTION A-A'

CHEVRON SERVICE STATION NO.9-3676

4300 MACARTHUR BOULEVARD

OAKLAND, CALIFORNIA

REVIEWED BY:	APPROVED BY:
JOB #: 1876G	DRAWN BY: J.C.
DATE: 11-7-88	DRAWING #: FIG. 3

Ensco Environmental Services, Inc.
Project #1876G

Chevron Station #9-3676
Oakland, California

TABLE 1
LABORATORY ANALYSES DATA

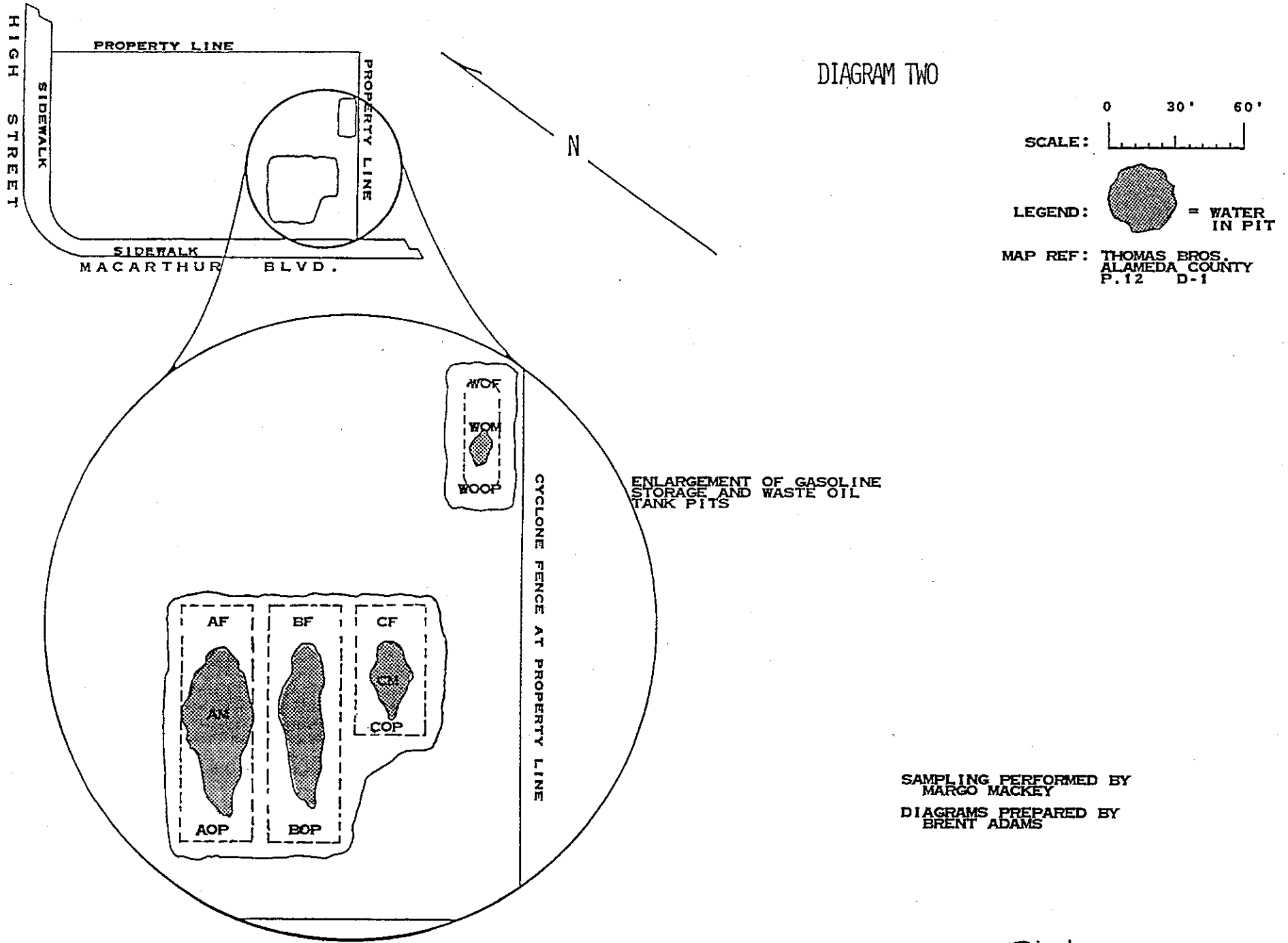
SAMPLE NO.	DEPTH (ft.)	TVH (ppm)	BENZENE (ppm)	TOLUENE (ppm)	ETHYL BENZENE (ppm)	XYLENES (ppm)
SOIL						
1-1	6	61	BRL	0.4	0.3	1
5-1	6	110	BRL	0.6	2.5	36

WATER	DEPTH TO WATER	TVH (ppb)	BENZENE (ppb)	TOLUENE (ppb)	ETHLY BENZENE (ppb)	XYLENES (ppb)
MW-1	7.60	BRL	BRL	BRL	BRL	BRL
MW-2	7.61	BRL	BRL	BRL	BRL	BRL
MW-3	7.45	BRL	BRL	BRL	BRL	BRL
MW-4	7.53	BRL	BRL	BRL	BRL	BRL
MW-5	8.24	180	4.1	4.3	22	2.0

TVH = Total Volatile Hydrocarbons as Gasoline
BRL = Below Reporting Limit for Compound(s)
ppm = parts per million (mg/kg)
ppb = parts per billion (ug/l)
Note: For reporting limits, refer to laboratory reports

Current Department Of Health Services Action Levels
In Drinking Water
Benzene 0.7 ppb
Toluene 100 ppb
Ethyl Benzene 680 ppb
Xylenes 620 ppb

DIAGRAM TWO



SAMPLING PERFORMED BY
MARGO MACKEY

DIAGRAMS PREPARED BY
BRENT ADAMS

Fig 4

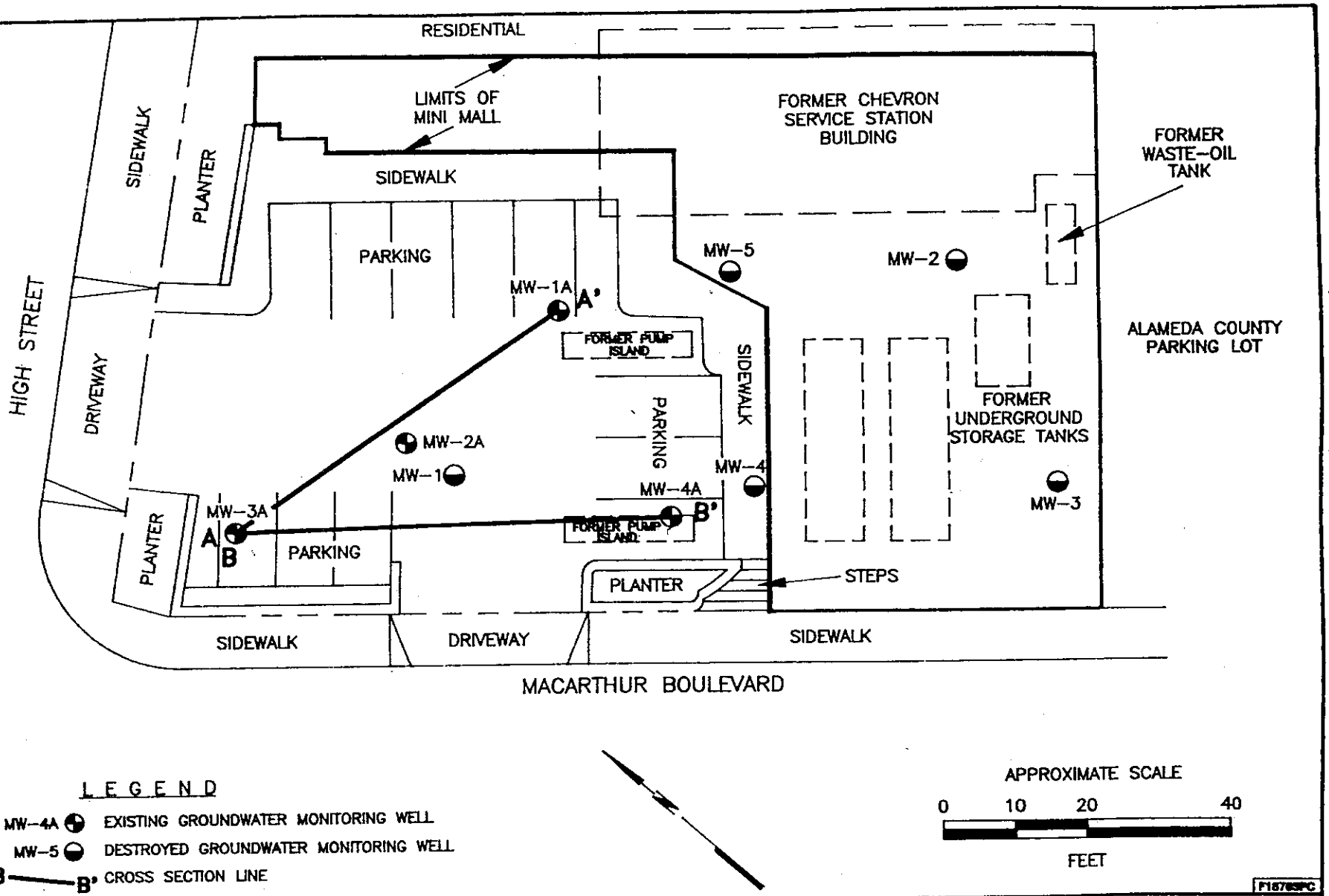
Table 2

TABLE OF SAMPLING LOCATIONS AND ANALYTICAL RESULTS

I.D. GIVEN THIS SAMPLE AREA	SAMPLE DEPTH IN FT. BELOW GRADE	SAMPLING LOCATION DICTATED BY	TYPE & METHOD FOR THE SAMPLE OBTAINED	SAMPLE MATRIX	DATE SAMPLED	BTS CHAIN OF CUSTODY I.D.	BTS SAMPLE I.D.	NAME OF DOHS HMTL LABORATORY	LABORATORY SAMPLE I.D.	ANALYTICAL RESULTS IN PARTS PER MILLION -- PPM: TPH AS GAS	BEN-ZENE	TOL-UENE	ETHYL BEN-ZENE	XY-LENES
AF	12.0	STANDARD	SUBSURF	LIQUID	12/2/88	88337-M-1	#7	ANAMETRIX	8812023-07	110	1.5	3.7	2.5	14
AM	11.0	STANDARD	CAPILLAR	SOIL	12/2/88	88337-M-1	#5	ANAMETRIX	8812023-05	ND	ND	ND	ND	ND
BF	11.0	STANDARD	CAPILLAR	SOIL	12/2/88	88337-M-1	#4	ANAMETRIX	8812023-04	ND	ND	ND	ND	ND
Bop	10.0	STANDARD	CAPILLAR	SOIL	12/2/88	88337-M-1	#6	ANAMETRIX	8812023-06	ND	ND	ND	ND	ND
CM	9.5	STANDARD	CAPILLAR	SOIL	12/2/88	88337-M-1	#3	ANAMETRIX	8812023-03	4.0	0.080	ND	ND	0.20

I.D. GIVEN THIS SAMPLE AREA	SAMPLE DEPTH IN FT. BELOW GRADE	SAMPLING LOCATION DICTATED BY	TYPE & METHOD FOR THE SAMPLE OBTAINED	SAMPLE MATRIX	DATE SAMPLED	BTS CHAIN OF CUSTODY I.D.	BTS SAMPLE I.D.	NAME OF DOHS HMTL LABORATORY	LABORATORY SAMPLE I.D.	TOTAL OIL & GREASE	Cd	Cr	Pb	Zn
WOF	8.5	STANDARD	INTERFACE	SOIL	12/2/88	88337-M-1	#1	ANAMETRIX	8812023-01	ND	ND	61.3	ND	38.
WOM	11.0	STANDARD	SUBSURF	LIQUID	12/2/88	88337-M-1	#2	ANAMETRIX	8812023-02	59	0.01	3.28	3.01	6.

I.D. GIVEN THIS SAMPLE AREA	SAMPLE DEPTH IN FT. BELOW GRADE	SAMPLING LOCATION DICTATED BY	TYPE & METHOD FOR THE SAMPLE OBTAINED	SAMPLE MATRIX	DATE SAMPLED	BTS CHAIN OF CUSTODY I.D.	BTS SAMPLE I.D.	NAME OF DOHS HMTL LABORATORY	LABORATORY SAMPLE I.D.	ANALYTICAL RESULTS IN PARTS PER BILLION -- P: PPM TPH AS GAS	PPM TPH-HBP DIESEL	PPB EPA 8240 COMPOUNDS	PPB EPA 8270 COMPOUNDS
WOF	8.5	STANDARD	INTERFACE	SOIL	12/2/88	88337-M-1	#1	ANAMETRIX	8812023-01	ND	ND	ND	ND
WOM	11.0	STANDARD	SUBSURF	LIQUID	12/2/88	88337-M-1	#2	ANAMETRIX	8812023-02	4.8	140	SEE LAB REPORT	SEE LAB REPORT



LEGEND

MW-4A EXISTING GROUNDWATER MONITORING WELL

MW-5 DESTROYED GROUNDWATER MONITORING WELL

B — B' CROSS SECTION LINE

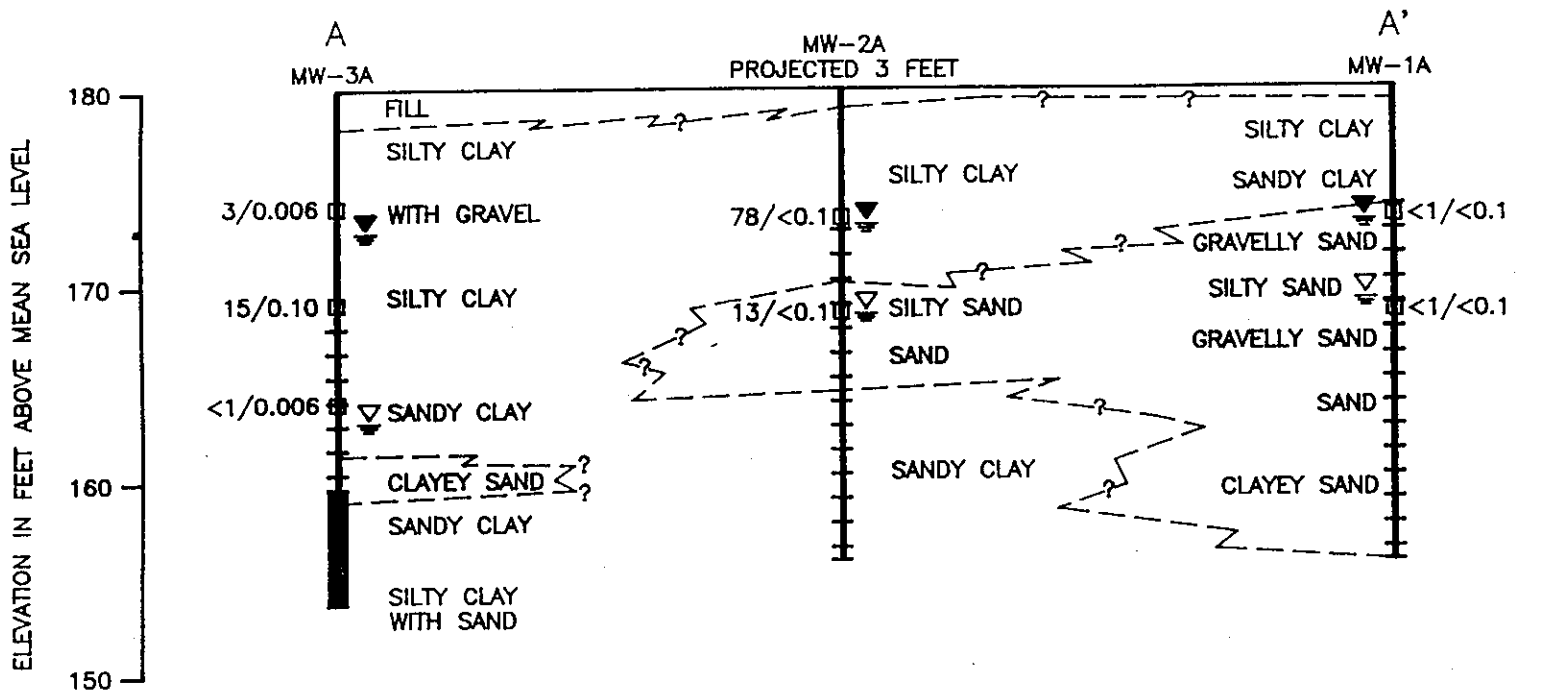
APPROXIMATE SCALE

0 10 20 40

FEET

F1876SPC

PLATE	SITE PLAN/GEOLOGIC CROSS SECTION LOCATIONS	RESNA
2	FORMER CHEVRON SERVICE STATION NO. 9-3676	Fig 5
	4300 MACARTHUR BOULEVARD	PROJECT NO. F1876.01
	OAKLAND, CALIFORNIA	



LEGEND

- □ SOIL SAMPLE INTERVAL
- 15/0.10 CONCENTRATION OF TPHG/BENZENE IN SOIL IN PARTS PER MILLION
- <1 NOT DETECTED AT OR ABOVE INDICATED DETECTION LIMIT
- WELL CASING
- WELL SCREEN
- BENTONITE BACKFILL
- ▽ INITIAL WATER LEVEL (3/1/89) IN WELLS MW-2A AND MW-1A; (12/22/92) IN WELL MW-3A
- ▼ STATIC WATER LEVEL (1/4/93)

HORIZONTAL AND VERTICAL SCALE

0 5 10 20

FEET

F1876-GA

PLATE 3

GEOLOGIC CROSS SECTION A-A'

FORMER CHEVRON SERVICE STATION NO. 9-3676

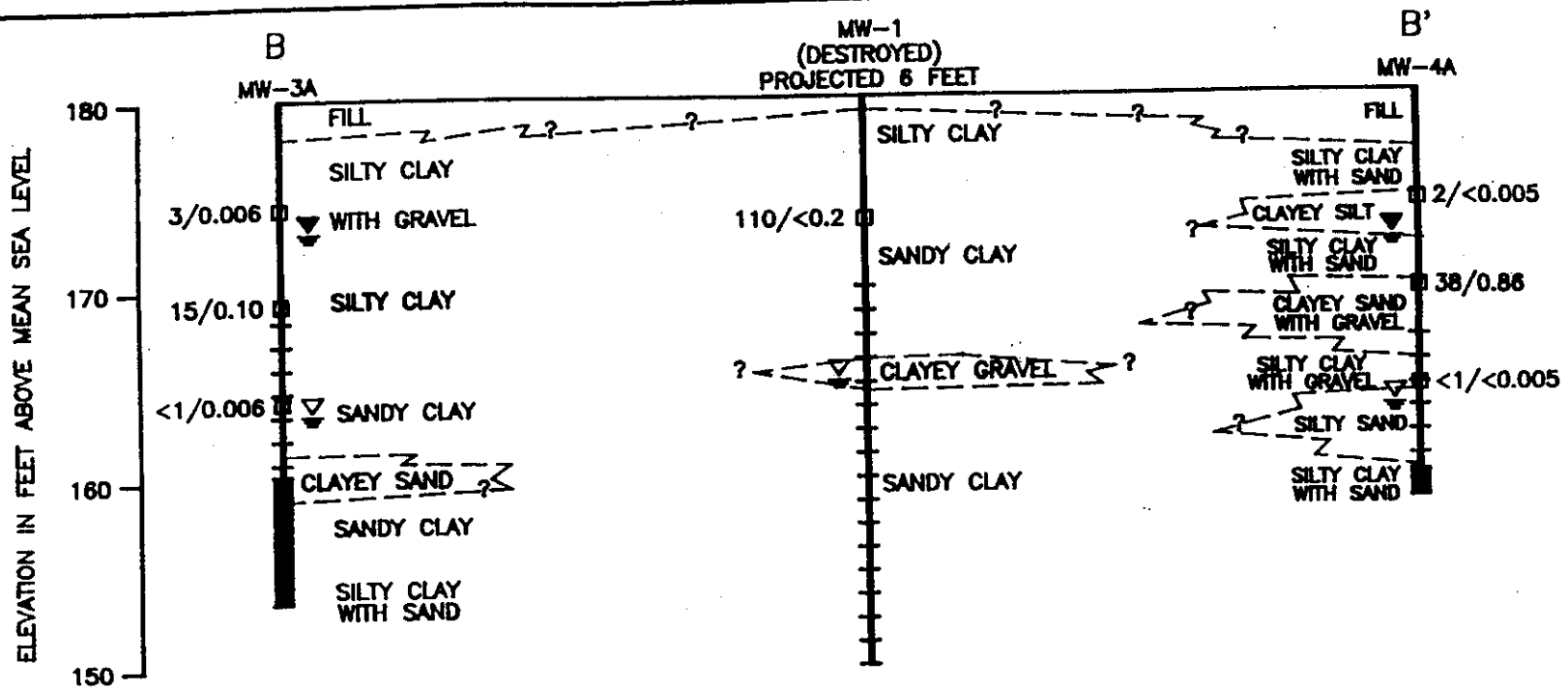
4300 MACARTHUR BOULEVARD

OAKLAND, CALIFORNIA

RESNA

Fig 6

PROJECT NO. F1876.01



LEGEND

- □ SOIL SAMPLE INTERVAL
- 15/0.10 CONCENTRATION OF TPHG/BENZENE IN SOIL IN PARTS PER MILLION
- <1 NOT DETECTED AT OR ABOVE INDICATED DETECTION LIMIT
- WELL CASING
- WELL SCREEN
- BENTONITE BACKFILL
- INITIAL WATER LEVEL (10/10/88) IN WELL MW-1; (12/22/92) IN WELLS MW-3A AND MW-4A
- STATIC WATER LEVEL (1/4/93)

HORIZONTAL AND VERTICAL SCALE

0 5 10 20

FEET

F1876-GB

PLATE 4

GEOLOGIC CROSS SECTION B-B'

FORMER CHEVRON SERVICE STATION NO. 9-3676

4300 MACARTHUR BOULEVARD

OAKLAND, CALIFORNIA

RESNA

Fig 7

PROJECT NO. F1876.01

Table 3

contains the laboratory reports. The contaminants and their concentrations detected by the laboratory are presented in the table below.

LABORATORY TEST RESULTS

Concentrations in parts per billion (ppb)

Sample	Depth*	TPHG	Benzene	Toluene	Ethyl Benzene	Xylenes
Soil						
MW-1A-1	5.5	ND	ND	ND	ND	ND
MW-1A-2	10	ND	ND	ND	ND	ND
MW-2A-1	6	78,000	ND	400	300	400
MW-2A-2	11	13,000	ND	ND	ND	ND
Water						
MW-1A		ND	ND	ND	ND	ND
MW-2A		130	18	2.7	ND	12
Bailer Blank		ND	ND	ND	ND	ND

TPHG = Total Petroleum Hydrocarbons as Gasoline
ND = Not Detected
* = Depth in feet

DISCUSSION

Currently, the DHS does not maintain action levels for concentrations of TPHG in water. However, action levels do exist for BTEX compounds in drinking water. The current action level for benzene is 0.7 ppb. The concentration of benzene in sample MW-2A (18 ppb) exceeds that level. The remaining concentrations detected in the groundwater samples are below current DHS action levels.

Hydrocarbon contamination detected in the groundwater must be reported to the appropriate authorities. These results should be submitted by Chevron U.S.A., Inc. as soon as possible to the following agencies:

Alameda County
Division of Environmental Health
470 27th Street, Room 324
Oakland, California 94612
Attn: Mr. Ariu Levi

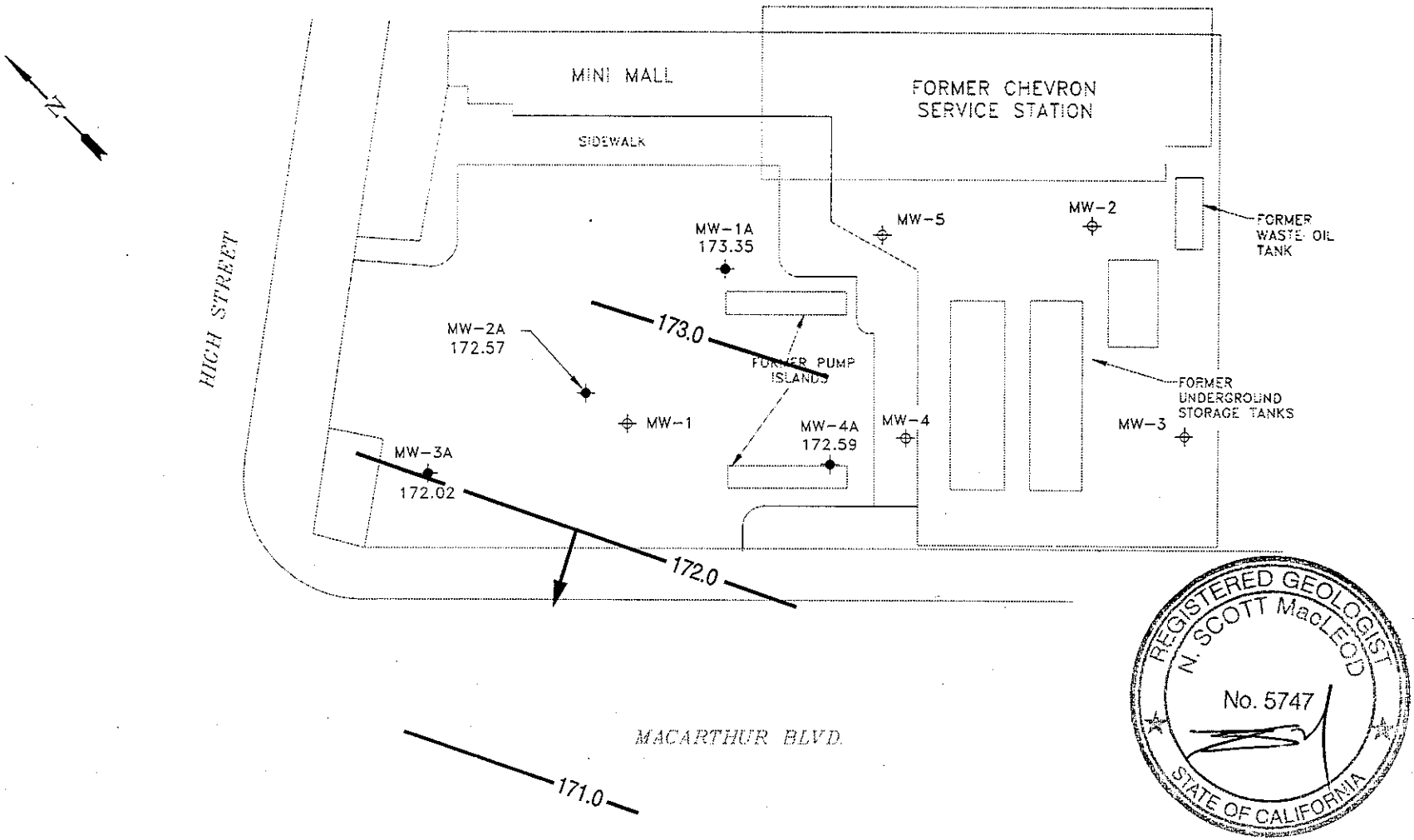
Regional Water Quality Control Board
San Francisco Bay Region
1111 Jackson street, Room 6040
Oakland, California 94607
Attn: Mr. Tom Callaghan

TABLE 4

SOIL ANALYTICAL RESULTS
(TPHG and BTEX)

Sample	Date	TPHG (ppm)	Benzene (ppm)	Toluene (ppm)	Ethyl-benzene (ppm)	Total Xylenes (ppm)
S-MW3A-5.5	12/22/92	3	0.006	<0.005	0.021	0.026
S-MW3A-10.5	12/22/92	15	0.10	0.34	0.22	0.95
S-MW3A-15.5	12/22/92	<1	0.006	0.006	0.005	0.023
S-MW4A-5.5	12/22/92	2	<0.005	<0.005	<0.005	0.012
S-MW4A-10.5	12/22/92	38	0.86	0.86	0.18	0.81
S-MW4A-15.5	12/22/92	<1	<0.005	<0.005	<0.005	<0.005

ppm Parts per million
TPHG Total petroleum hydrocarbons as gasoline
S-MW3A-5.5 Soil sample from MW-3A collected at 5.5 feet.



Base map from Groundwater Technology, Inc.

CAMBRIA
Environmental Technology, Inc.

Chevron Station 9-3676
4300 MacArthur Boulevard
Oakland, California

\CHEVRON\9-3676\3676-QM.DWG

Ground Water Elevation

September 13, 1995

FIGURE 8

Table 5

Cumulative Table of Well Data and Analytical Results

Vertical Measurements are in feet. Analytical results are in parts per billion (ppb)

DATE	Well Head Elev.	Ground Water Elev.	Depth To Water	Notes	TPH-Gasoline	Benzene	Toluene	Ethyl-Benzene	Xylene	MTBE	TOG	TPH-Diesel
MW-1A												
03/22/89	--	--	7.30	--	<50	<0.5	<0.5	<0.5	<1.0	--	--	--
06/02/89	--	--	8.70	--	<50	<0.5	<0.5	<0.5	<1.0	--	--	--
09/08/89	--	--	9.80	--	<50	<0.5	<0.5	<0.5	<1.0	--	--	--
12/18/89	180.24	172.13	8.11	--	<50	<0.3	0.5	<0.3	<0.6	--	--	--
03/20/90	180.24	173.16	7.08	--	<50	<0.3	<0.3	<0.3	<0.6	--	--	--
06/21/89	180.24	173.02	7.22	--	<50	<0.3	<0.3	<0.3	<0.6	--	--	--
09/26/90	180.24	171.69	8.55	--	<50	<0.3	<0.3	<0.3	<0.6	--	--	--
12/14/90	180.24	171.49	8.75	--	110	3.0	13	2.4	13	--	--	--
03/04/91	180.24	173.74	6.50	--	<50	<0.5	<0.5	<0.5	<0.5	--	--	--
06/03/91	180.24	173.24	7.00	--	<50	<0.5	<0.5	<0.5	<0.5	--	--	--
10/04/91	180.24	172.24	8.00	--	<50	<0.5	<0.5	<0.5	<0.5	--	--	--
09/29/92	180.24	171.69	8.55	--	<50	<0.5	<0.5	<0.5	<0.5	--	--	--
01/04/93	180.24	173.91	6.33	--	<50	<0.5	<0.5	<0.5	<0.5	--	<5000	<50
03/25/93	180.24	174.88	5.36	--	<50	<0.5	<0.5	<0.5	<0.5	--	--	--
06/08/93	180.24	173.88	6.36	--	<50	<0.5	<0.5	<0.5	<0.5	--	--	--
09/17/93	180.24	172.33	7.91	--	<50	<0.5	<0.5	<0.5	<0.5	--	--	--
12/20/93	180.24	173.48	6.76	--	<50	<0.5	<0.5	<0.5	<0.5	--	--	--
03/10/94	180.24	173.84	6.40	--	<50	<0.5	<0.5	<0.5	0.9	--	--	--
06/14/94	180.24	173.63	6.61	--	<50	<0.5	<0.5	<0.5	<0.5	--	--	--
09/16/94	180.24	172.17	8.07	--	<50	<0.5	<0.5	<0.5	<0.5	--	--	--
11/30/94	180.24	174.21	6.03	--	<50	<0.5	<0.5	<0.5	<0.5	--	--	--
03/21/95	180.24	176.15	4.09	--	<50	<0.5	<0.5	<0.5	<0.5	--	--	--
06/01/95	180.24	175.31	4.93	--	<50	<0.5	<0.5	<0.5	1.5	--	--	--
09/13/95	180.24	173.35	6.89	--	<50	<0.5	<0.5	<0.5	<0.5	--	--	--
12/07/95	180.24	172.48	7.76	--	<50	<0.5	<0.5	<0.5	<0.5	<2.5	--	--
02/29/96	180.24	176.29	3.95	--	<50	<0.5	<0.5	<0.5	<0.5	<2.5	--	--
06/10/96	180.24	174.74	5.50	--	<50	<0.5	<0.5	<0.5	<0.5	<2.5	--	--
09/30/96	180.24	172.96	7.28	--	<50	<0.5	<0.5	<0.5	<0.5	<2.5	--	--
12/13/96	180.24	174.98	5.26	--	<50	<0.5	<0.5	<0.5	<0.5	<2.5	--	--
03/31/97	180.24	174.14	6.10	--	<50	<0.5	<0.5	<0.5	<0.5	<2.5	--	--
05/22/97	180.24	173.69	6.55	--	<50	<0.5	<0.5	<0.5	<0.5	<2.5	--	--
09/02/97	180.24	173.49	6.75	--	<50	<0.5	<0.5	<0.5	<0.5	<2.5	--	--
12/12/97	180.24	175.24	5.00	--	<50	<0.5	<0.5	<0.5	<0.5	<2.5	--	--
02/21/98	180.24	176.83	3.41	--	84	3.7	2.7	3.3	12	<2.5	--	--
06/16/98	180.24	175.39	4.85	--	<50	<0.5	<0.5	<0.5	<0.5	<2.5	--	--

cont. Table 5

Cumulative Table of Well Data and Analytical Results

Vertical Measurements are in feet. Analytical results are in parts per billion (ppb)

DATE	Well Head Elev.	Ground Water Elev.	Depth To Water	Notes	TPH-Gasoline	Benzene	Toluene	Ethyl-Benzene	Xylene	MTBE	TOG	TPH-Diesel
MW-2A												
03/22/89	--	--	8.80	--	130	18	2.7	<0.5	12	--	--	--
06/02/89	--	--	9.81	--	<50	<0.5	<0.5	<0.5	<1.0	--	--	--
09/08/89	--	--	10.80	--	230	13	3.0	4.0	4.0	--	--	--
12/18/89	180.09	171.42	8.67	--	<50	1.0	0.4	1.0	1.0	--	--	--
03/20/90	180.09	171.69	8.40	--	<50	1.0	<0.3	0.9	1.0	--	--	--
06/21/89	180.09	171.57	8.52	--	<50	2.0	<0.3	0.9	1.0	--	--	--
09/26/90	180.09	171.12	8.97	--	<50	2.0	<0.3	1.0	0.8	--	--	--
12/14/90	180.09	171.01	9.08	--	80	2.3	9.1	1.6	8.7	--	--	--
03/04/91	180.09	173.24	6.85	--	<50	<0.5	<0.5	<0.5	<0.5	--	--	--
06/03/91	180.09	172.43	7.66	--	<50	2.7	<0.5	1.0	<0.5	--	--	--
10/04/91	180.09	171.63	8.46	--	120	2.6	<0.5	2.0	<0.5	--	--	--
09/29/92	180.09	171.12	8.97	--	740	40	2.9	27	14	--	--	--
01/04/93	180.09	173.20	6.89	--	240	21	1.0	6.9	3.0	--	<5000	<50
03/25/93	180.09	174.38	5.71	--	290	18	1.0	12	6.0	--	--	--
06/08/93	180.09	173.00	7.09	--	270	15	1.0	9.0	5.0	--	--	--
09/17/93	180.09	171.70	8.39	--	220	18	1.0	13	7.0	--	--	--
12/20/93	180.09	172.76	7.33	--	<50	0.8	<0.5	0.8	<0.5	--	--	--
03/10/94	180.09	173.21	6.88	--	<50	1.2	<0.5	1.1	1.1	--	--	--
06/14/94	180.09	172.67	7.42	--	<50	1.7	<0.5	1.7	1.0	--	--	--
09/16/94	180.09	171.55	8.54	--	150	6.6	0.8	7.8	4.7	--	--	--
11/30/94	180.09	173.53	6.56	--	130	5.7	<0.5	5.4	2.4	--	--	--
03/21/95	180.09	175.32	4.77	--	110	4.4	<0.5	2.2	1.7	--	--	--
06/01/95	180.09	174.00	6.09	--	420	17	<2.0	16	11	--	--	--
09/13/95	180.09	172.57	7.52	--	290	11	0.72	13	8.8	--	--	--
12/07/95	180.09	171.81	8.28	--	430	14	1.0	14	7.9	<5.0	--	--
02/29/96	180.09	174.89	5.20	--	66	2.4	<0.5	2.3	1.6	2.8	--	--
06/10/96	180.09	173.77	6.32	--	95	3.4	<0.5	3.9	3.0	<2.5	--	--
09/30/96	180.09	172.22	7.87	--	390	13	<2.5	12	7.6	<12	--	--
12/13/96	180.09	174.09	6.00	--	360	8.1	<1.0	9.9	9.2	<5.0	--	--
03/31/97	180.09	173.09	7.00	--	120	2.4	<0.5	1.0	1.1	<2.5	--	--
05/22/97	180.09	172.96	7.13	--	280	4.3	<0.5	5.3	4.5	<2.5	--	--
09/02/97	180.09	172.89	7.20	--	110	2.9	<0.5	3.5	2.0	<2.5	--	--
12/12/97	180.09	174.42	5.67	--	<50	<0.5	<0.5	<0.5	<0.5	<2.5	--	--
02/21/98	180.09	175.83	4.26	--	430	12	1.5	17	20	<2.5	--	--
06/16/98	180.09	174.55	5.54	--	610	17	1.1	16	13	4.5	--	--

(cont. Table 5

Cumulative Table of Well Data and Analytical Results

Vertical Measurements are in feet. Analytical results are in parts per billion (ppb)

DATE	Well Head Elev.	Ground Water Elev.	Depth To Water	Notes	TPH-Gasoline	Benzene	Toluene	Ethyl-Benzene	Xylene	MTBE	TOG	TPH-Diesel
MW-3A												
01/04/93	180.08	173.03	7.05	--	2400	330	140	52	160	--	<5000	<50
03/25/93	180.08	173.40	6.68	--	9200	1600	750	270	1000	--	--	--
06/08/93	180.08	172.73	7.35	--	6200	1600	570	280	610	--	--	--
09/17/93	180.08	171.53	8.55	--	8300	1800	860	360	1000	--	--	--
12/20/93	180.08	172.27	7.81	--	2900	570	230	150	250	--	--	--
03/10/94	180.08	172.97	7.11	--	4200	630	270	180	280	--	--	--
06/14/94	180.08	173.40	6.68	--	3400	620	240	200	240	--	--	--
09/16/94	180.08	171.36	8.72	--	3600	710	240	260	260	--	--	--
11/30/94	180.08	172.83	7.25	--	1000	180	86	56	100	--	--	--
03/21/95	180.08	174.96	5.12	--	900	170	60	21	71	--	--	--
06/01/95	180.08	173.78	6.30	--	16,000	2200	1700	890	2400	--	--	--
09/13/95	180.08	172.02	8.06	--	5400	660	470	230	570	--	--	--
12/07/95	180.08	171.24	8.84	--	24,000	3100	2400	1100	2900	1600	--	--
02/29/96	180.08	174.80	5.28	--	8100	1200	740	410	900	<50	--	--
06/10/96	180.08	173.45	6.63	--	4600	660	230	120	310	<50	--	--
09/30/96	180.08	171.66	8.42	--	8900	1700	780	540	1100	<100	--	--
12/13/96	180.08	173.39	6.69	--	2100	360	160	110	230	<100	--	--
03/31/97	180.08	172.85	7.23	--	22,000	2800	2000	1100	2800	180	--	--
05/22/97	180.08	172.73	7.35	--	21,000	2400	1500	960	2200	880	--	--
09/02/97	180.08	172.69	7.39	--	540	130	16	15	28	14	--	--
12/12/97	180.08	174.18	5.90	--	150	25	65	3.1	13	3.0	--	--
02/21/98	180.08	175.53	4.55	--	310	41	24	16	42	<2.5	--	--
06/16/98	180.08	174.37	5.71	--	5900	840	290	300	370	190	--	--

cont. Table 5

Cumulative Table of Well Data and Analytical Results

Vertical Measurements are in feet. Analytical results are in parts per billion (ppb)

DATE	Well Head Elev.	Ground Water Elev.	Depth To Water	Notes	TPH-Gasoline	Benzene	Toluene	Ethyl-Benzene	Xylene	MTBE	TOG	TPH-Diesel
MW-4A												
01/04/93	180.41	172.58	7.83	--	2800	85	10	18	20	--	<5000	210
03/25/93	180.41	173.42	6.99	--	3600	270	14	37	32	--	--	--
06/08/93	180.41	172.68	7.73	--	2000	190	7.0	8.0	18	--	--	--
09/17/93	180.41	171.71	8.70	--	2500	46	22	8.0	19	--	--	--
12/20/93	180.41	172.54	7.87	--	4100	180	34	23	32	--	--	--
03/10/94	180.41	172.92	7.49	--	6200	200	39	21	23	--	--	--
06/14/94	180.41	172.17	8.24	--	5200	120	32	13	32	--	--	--
09/16/94	180.41	171.35	9.06	--	2900	59	15	10	29	--	--	--
11/30/94	180.41	172.91	7.50	--	2500	49	<5.0	7.9	13	--	--	--
03/21/95	180.41	174.64	5.77	--	5500	170	11	11	28	--	--	--
06/01/95	180.41	173.80	6.61	--	5100	320	34	23	24	--	--	--
09/13/95	180.41	172.59	7.82	--	3800	94	12	<5.0	13	--	--	--
12/07/95	180.41	172.47	7.94	--	3400	32	<10	<10	14	90	--	--
02/29/96	180.41	174.75	5.66	--	3400	160	<5.0	13	17	33	--	--
06/10/96	180.41	173.71	6.70	--	3200	130	<5.0	9.0	20	41	--	--
09/30/96	180.41	172.09	8.32	--	3800	95	18	6.5	19	33	--	--
12/13/96	180.41	173.57	6.84	--	3100	17	<5.0	5.7	15	<25	--	--
03/31/97	180.41	173.01	7.40	--	4400	130	7.0	7.4	21	35	--	--
05/22/97	180.41	172.84	7.57	--	4500	81	7.2	5.3	19	28	--	--
09/02/97	180.41	172.61	7.80	--	2400	13	<5.0	<5.0	9.4	44	--	--
12/12/97	180.41	173.89	6.52	--	3100	21	6.9	16	20	<50	--	--
02/21/98	180.41	175.70	4.71	--	4500	190	16	15	20	<50	--	--
06/16/98	180.41	174.23	6.18	--	5000	120	20	9.0	17	41	--	--

cont. Table 5

Cumulative Table of Well Data and Analytical Results

Vertical Measurements are in feet. Analytical results are in parts per billion (ppb)

DATE	Well Head Elev.	Ground Water Elev.	Depth To Water	Notes	TPH-Gasoline	Benzene	Toluene	Ethyl-Benzene	Xylene	MTBE	TOG	TPH-Diesel
MW-5A												
06/06/95	--	--	--	New Well	ND	ND	ND	ND	ND	--	--	--
09/13/95	177.32	170.50	6.82	--	<50	<0.5	<0.5	<5.0	<0.5	--	--	--
12/07/95	177.32	169.78	7.54	--	<50	<0.5	<0.5	<5.0	<0.5	<2.5	--	--
02/29/96	177.32	171.30	6.02	--	<50	<0.5	<0.5	<5.0	<0.5	<2.5	--	--
06/10/96	177.32	171.12	6.20	--	<50	<0.5	<0.5	<5.0	<0.5	<2.5	--	--
10/03/96	177.32	170.54	6.78	--	<50	<0.5	<0.5	<5.0	<0.5	<2.5	--	--
12/13/96	177.32	--	--	Inaccessible	--	--	--	--	--	--	--	--
03/31/97	177.32	170.22	7.10	--	<50	<0.5	<0.5	<0.5	<0.5	<2.5	--	--
05/22/97	177.32	170.46	6.86	--	<50	<0.5	<0.5	<0.5	<0.5	<2.5	--	--
09/02/97	177.32	170.35	6.97	--	<50	<0.5	<0.5	<0.5	<0.5	<2.5	--	--
12/12/97	177.32	171.22	6.10	--	<50	<0.5	<0.5	<0.5	<0.5	<2.5	--	--
02/21/98	177.32	171.96	5.36	--	<50	<0.5	<0.5	<0.5	<0.5	<2.5	--	--
06/16/98	177.32	172.34	4.98	--	<50	<0.5	<0.5	<0.5	<0.5	<2.5	--	--

Table 6

RBCA SITE ASSESSMENT | **Tier 2 Worksheet 9.1**

Site Name: Chevron 9-3676 | Completed By: MMJ

Site Location: 4300 MacArthur Blvd, Oakland, CA | Date Completed: 6/2/1997

SURFACE SOIL SSTL VALUES (< 3 FT BGS)

Target Risk (Class A & B) 1.0E-5 ☐ MCL exposure limit?

Target Risk (Class C) 1.0E-5 ☐ PEL exposure limit?

Target Hazard Quotient 1.0E+0

Calculation Option: 2

SSTL Results For Complete Exposure Pathways ("x" if Complete)

CONSTITUENTS OF CONCERN		Representative Concentration	Soil Leaching to Groundwater			Ingestion, Inhalation and Dermal Contact		X Construction Worker	Applicable SSTL	SSTL Exceeded ?	Required CRF
CAS No.	Name	(mg/kg)	Residential: (on-site)	Commercial: (on-site)	Regulatory(MCL): (on-site)	Residential: (on-site)	Commercial: (on-site)	Commercial: (on-site)	(mg/kg)	"■" If yes	Only if "yes" left
71-43-2	Benzene	6.0E-3	NA	NA	NA	NA	NA	8.2E+2	8.2E+2	☐	<1
100-41-4	Ethylbenzene	2.5E+0	NA	NA	NA	NA	NA	>Res	>Res	☐	<1
108-88-3	Toluene	6.0E-1	NA	NA	NA	NA	NA	>Res	>Res	☐	<1
1330-20-7	Xylene (mixed isomers)	3.6E+1	NA	NA	NA	NA	NA	>Res	>Res	☐	<1

Software: GSI RBCA Spreadsheet Serial: G-273-IBX-894

Version: v 1.0

Table 7

RBCA SITE ASSESSMENT | **Tier 2 Worksheet 9.3**

Site Name: Chevron 9-3676 | Completed By: PFM

Site Location: 4300 MacArthur Blvd., Oakland | Date Completed: 3/12/1997

GROUNDWATER SSTL VALUES

Target Risk (Class A & B) 1.0E-5 ☐ MCL exposure limit?

Target Risk (Class C) 1.0E-5 ☐ PEL exposure limit?

Target Hazard Quotient 1.0E+0

Calculation Option: 2

SSTL Results For Complete Exposure Pathways ("x" if Complete)

CONSTITUENTS OF CONCERN		Representative Concentration		Groundwater Ingestion			X	Groundwater Volatilization to Indoor Air		Groundwater Volatilization to Outdoor Air		Applicable SSTL	SSTL Exceeded ?	Required CRF
CAS No.	Name	(mg/L)	Residential: (on-site)	Commercial: (on-site)	Regulatory(MCL): (on-site)		Residential: (on-site)	Commercial: (on-site)	Residential (on-site)	Commercial: (on-site)	(mg/L	"■" If yes	Only if "yes" left
71-43-2	Benzene	3.2E-1	NA	NA	NA		NA	7.0E+0	NA	NA	7.0E+0	☐	<1

>Sol indicates risk-based target concentration greater than constituent solubility

Software: GSI RBCA Spreadsheet Serial: G-273-IBX-894

Version: 1.0.1

Table 8

RBCA SITE ASSESSMENT — Tier 2 Worksheet 9.3

Site Name: Chevron 9-3676
Site Location: 4300 MacArthur Blvd, Oakland, CA

Completed By: MMJ
Date Completed: 6/2/1997

GROUNDWATER SSTL VALUES

Target Risk (Class A & B) 1.0E-5
Target Risk (Class C) 1.0E-5
Target Hazard Quotient 1.0E+0

☐ MCL exposure limit?
☐ PEL exposure limit?

Calculation Option: 2

SSTL Results For Complete Exposure Pathways ("x" if Complete)

CONSTITUENTS OF CONCERN		Representative Concentration	Groundwater Ingestion			Groundwater Volatilization to Indoor Air		X Groundwater Volatilization to Outdoor Air		Applicable SSTL	SSTL Exceeded ?	Required CRF
CAS No.	Name	(mg/L)	Residential: (on-site)	Commercial: (on-site)	Regulatory(MCL): (on-site)	Residential: (on-site)	Commercial: (on-site)	Residential (on-site)	Commercial: (on-site)	(mg/L	"■" If yes	Only if "yes" left
71-43-2	Benzene	2.8E+0	NA	NA	NA	NA	NA	NA	1.5E+3	1.5E+3	☐	<1
100-41-4	Ethylbenzene	1.1E+0	NA	NA	NA	NA	NA	NA	>Sol	>Sol	☐	<1
108-88-3	Toluene	2.0E+0	NA	NA	NA	NA	NA	NA	>Sol	>Sol	☐	<1
1330-20-7	Xylene (mixed isomers)	2.8E+0	NA	NA	NA	NA	NA	NA	>Sol	>Sol	☐	<1

Software: GSI RBCA Spreadsheet
Version: v 1.0

Serial: G-273-IBX-894

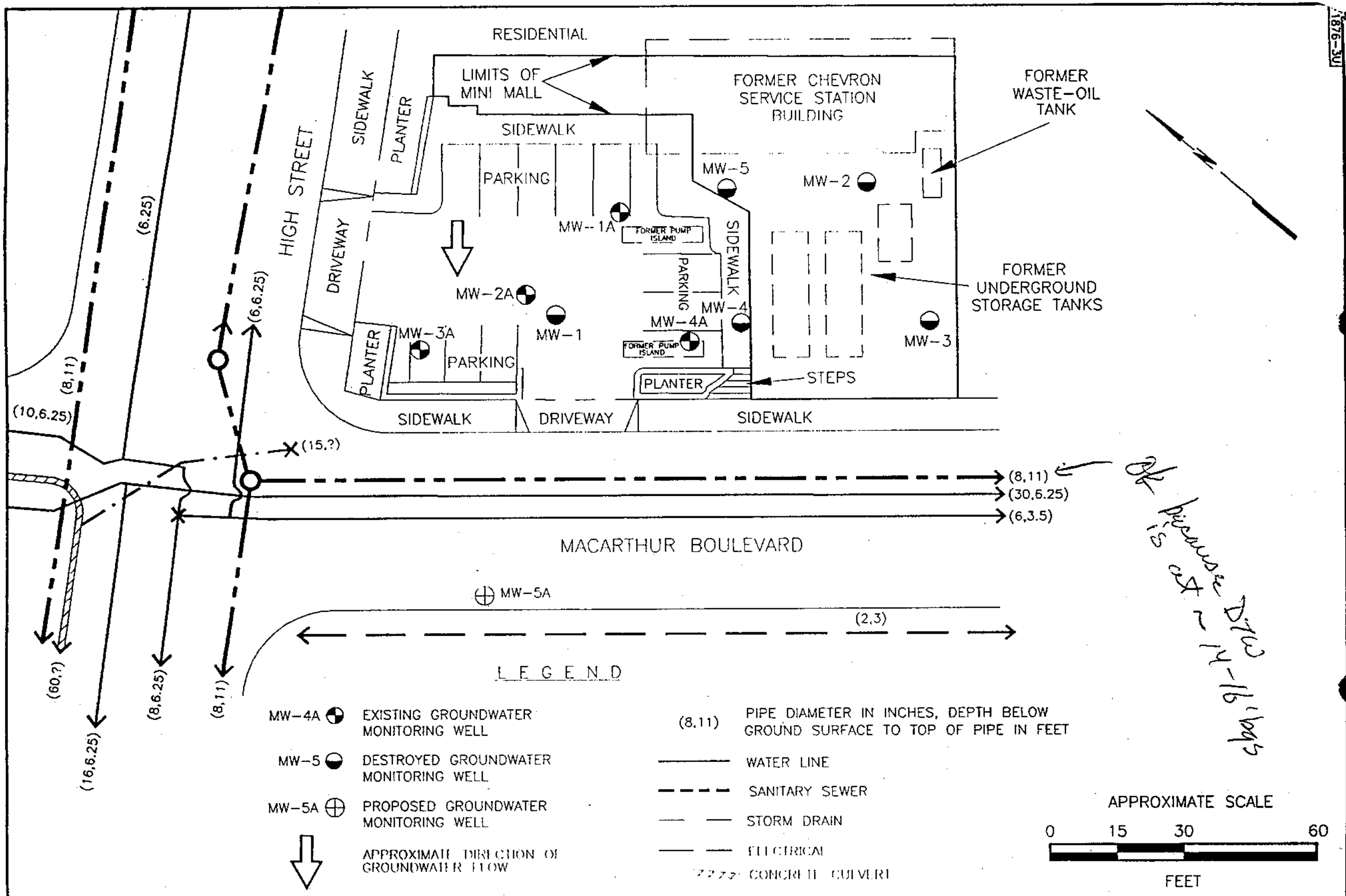


PLATE	UNDERGROUND UTILITY MAP	RESNA Working to Restore Nature
1	Former Chevron Service Station 9-3676 4300 MacArthur Boulevard Oakland, California	PROJECT F1876.03

EXPLORATORY BORING LOG

ensco environmental services, inc.

PROJECT NAME: Chevron #9-3676
4300 MacArthur, Oakland

PROJECT NUMBER: 1876G

BORING NO. MW-1A

DATE DRILLED: 3/1/89

LOGGED BY: D.S.

DEPTH (ft.)	SAMPLE No	BLOWS/FOOT 140 ft/lbs.	UNIFIED SOIL CLASSIFICATION	SOIL DESCRIPTION	WATER LEVEL
0				3" baserock	
1-4			CL	SILTY CLAY, light olive brown (2.5Y 5/4), silt 20%, low plasticity, very stiff, damp, no petroleum odor	
5-6	MW-1A-1	70	CL	SANDY CLAY, mottled dark yellowish brown (10YR 4/6) and greenish gray (5GY 6/1), 30% sand (25% very fine to fine, 5% medium to coarse), angular to subangular, hard, damp, no petroleum odor	▼
7-8			SW	GRAVELLY SAND, greenish gray (5GY 6/1), gravel 25%, angular; sand medium to very coarse, angular to subangular, very dense, damp, very slight petroleum odor	
9			SM	SILTY SAND, yellowish brown (10YR 5/8), silt 30%, sand very fine to fine, medium dense, damp, no petroleum odor changes color to olive brown (2.5Y 4/4) at 9 feet.	
10	MW-1A-2	38			▽
11-13			SW	GRAVELLY SAND, brownish yellow (10YR 6/6), gravel 25%, fine to coarse, angular; sand fine to very coarse, dense, moist to wet, no petroleum odor	
14-15		34			
16-18			SP	SAND, yellowish brown (10 5/6), fine to medium, angular, dense, wet, no petroleum odor	
19-20		30	SC	CLAYEY SAND, yellowish brown (10YR 5/6), clay 15%; sand very fine to very coarse, angular to subangular moist, no petroleum odor	
21					

SUPERVISED AND APPROVED BY R.G./C.E.G.

EXPLORATORY BORING LOG

ensco environmental services, inc.

PROJECT NAME: Chevron #9-3676
4300 MacArthur, Oakland

PROJECT NUMBER: 1876G

BORING NO. MW-2A

DATE DRILLED: 3/1/89

LOGGED BY: D.S.

DEPTH (ft.)	SAMPLE No	BLOWS/FOOT 140 ft/lbs.	UNIFIED SOIL CLASSIFICATION	SOIL DESCRIPTION	WATER LEVEL
				6" baserock	
1–5			CL	SILTY CLAY, greenish gray (5GY 6/1), silt 20%; 20% sand, medium to very coarse, angular to subrounded, low plasticity, stiff, damp	
5–6			CL	becoming mottled yellowish brown (!0YR 5/6), and greenish gray (5GY 5/1), silt 15 to 20%, damp, faint to moderate petroleum odor	
6	MW-2A-1	32			▼
7–10					
10–11	MW-2A-2	44	SM	SILTY SAND, greenish gray (5GY 5/1), silt 25%; sand very fine to fine, dense, damp, moderate to strong petroleum odor	▽
12–13			SW	sand increasing size with depth, @11' 10% coarse to very coarse, angular to subangular	
14–15		82		SAND, light yellowish brown (10YR 6/4), very fine to very coarse, angular to subangular, dense, wet, no petroleum odor	
16–21			CL	SANDY CLAY, dark yellowish brown (10YR 4/6), sand 25%, fine to medium, angular to subangular; 5% gravel; subangular to subrounded, low to medium plasticity, very stiff, wet; no petroleum odor	

SUPERVISED AND APPROVED BY R.G./C.E.G.

Total depth of boring:	26-1/2 feet	Casing diameter:	2 inches
Diameter of boring:	8 inches	Casing material:	Sch 40 PVC
Date drilled:	12-29-92	Slot size:	0.020-inch
Drilling Company:	Spectrum Exploration	Sand size:	No. 2/12 Sand
Driller:	Mike Young and Bob Duvall	Blank casing from	0 feet to 12 feet
Drilling method:	Hollow-Stem Auger	Perforated casing from	12 feet to 20 feet
Field Geologist:	Robin Barber	Annular seal from	0 feet to 10 feet
		Bentonite plug from	10 feet to 11 feet
		Sand pack from	11 feet to 20 feet

Depth	Sample No.	Blows	OVM	USCS Code	Description	Well Const.
2					Fill: silty gravel.	
4				CL	Silty clay with 10% fine- to coarse-grained sand, angular, yellow-brown, medium plasticity, moist.	
6	S-5.5	7 16 24	50		15% gravel to 1 cm, 10% medium- to coarse-grained sand, gray with red-brown mottling, medium plasticity, hard.	
8					▼	
10	S-10.5	7 8 12	1914		Decrease in sand to 5%, yellow-brown with light gray mottling, very stiff.	
12						
14						
16	S-15.5	5 7 12	36		Sandy clay, 40% fine- to medium-grained sand, poorly sorted, angular, light yellow-brown, low plasticity, stiff, wet.	
18					▽	
20		7 8 9		SC	Clayey sand, medium- to coarse-grained sand, poorly sorted, angular, yellow-brown, medium dense, moist.	
22				CL	Sandy clay, 40% fine- to medium-grained sand, poorly sorted, very angular, light yellow-brown, low plasticity, stiff, moist.	
24						
26		5 10 11			Silty clay, 5-10% fine sand, yellow-brown, medium plasticity, very stiff, damp.	
28					Total Depth = 26-1/2 feet.	
30						
32						
34						
36						
38						
40						

RESNA

PROJECT NO. F1876.01

LOG OF BORING FOR MW-3A

FORMER CHEVRON SERVICE STATION NO. 9-3676

4300 MACARTHUR BOULEVARD

OAKLAND, CALIFORNIA

Total depth of boring: 21-1/2 feet
Diameter of boring: 8 inches
Date drilled: 12-29-92
Drilling Company: Spectrum Exploration
Driller: Mike Young and Bob Duvall
Drilling method: Hollow-Stem Auger
Field Geologist: Robin Barber

Casing diameter: 2 inches
Casing material: Sch 40 PVC
Slot size: 0.020-inch
Sand size: No. 2/12 Sand
Blank casing from 0 feet to 13 feet
Perforated casing from 13 feet to 20 feet
Annular seal from 0 feet to 10 feet
Bentonite plug from 10 feet to 11 feet
Sand pack from 11 feet to 20 feet

Depth	Sample No.	Blows	OVM	USCS Code	Description	Well Const.
0					Fill: gravel baserock up to 4 cm.	
4				CL	Silty clay with 15% fine- to coarse-grained sand, brown, medium plasticity, damp.	
6	S-5.5	3 5 6	306	ML	Clayey silt with 10% fine- to coarse-grained sand, brown with light gray mottling, stiff, damp.	
8				CL	Silty clay with 20-30% fine- to medium-grained sand, light gray, very stiff, damp.	
10	S-10.5	5 13 17	1700	SC	Clayey sand with 10% gravel, 70% fine- to coarse-grained sand, medium gray with dark gray mottling, medium dense, damp.	
14				CL	Silty clay with 10% gravel to 2 cm and 5% fine-grained sand, medium gray with brown mottling, medium plasticity, stiff, damp.	
16	S-15.5	5 13 15	0	SM	Silty sand, 80% fine- to medium-grained sand, trace clay, gray-brown medium dense, wet.	
20		5 13 20		CL	Silty clay with 20% fine- to coarse-grained sand, trace gravel, subangular, poorly sorted, yellow-brown, medium to high plasticity, very stiff, damp.	
22					Total Depth = 21-1/2 feet.	

RESNA

LOG OF BORING FOR MW-4A

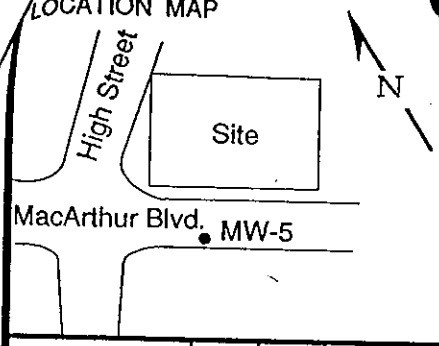
FORMER CHEVRON SERVICE STATION NO. 9-3676

4300 MACARTHUR BOULEVARD

OAKLAND, CALIFORNIA

PROJECT NO. F1876.01

LOCATION MAP



PACIFIC ENVIRONMENTAL GROUP, INC.

WELL NO. MW-5A
PAGE 1 OF 1

PROJECT NO. 320-119.1A
LOGGED BY: D.A.
DRILLER: TURNER
DRILLING METHOD: HSA
SAMPLING METHOD: CAL MOD
CASING TYPE: SCHED 40 PVC
SLOT SIZE: 0.020
GRAVEL PACK: #3 SAND

CLIENT: CHEVRON
DATE DRILLED: 6-2-95
LOCATION: 4300 MacArthur Bl., Oakland
HOLE DIAMETER: 8"
HOLE DEPTH: 20'
WELL DIAMETER: 2"
WELL DEPTH: 18.5'
CASING STICKUP: N/A

WELL COMPLETION	MOISTURE CONTENT	PID	PENETRATION (BLOWS/FT)	DEPTH (FEET)	RECOVERY / SAMPLE INTERVAL	GRAPHIC	SOIL TYPE	LITHOLOGY / REMARKS
CEMENT				1				CONCRETE AND ASHALT
				2			CL	SILTY CLAY: dark brown; 80-85% clay; 15-20% silt; 5-10% coarse subangular sand; moist.
	Mst	0		3				@4': as above; caliche nodules; bluish gray mottling; organic odor.
				4				
BENTONITE	Mst	0	35	5				@5': light yellowish brown; 70-75% clay; 15-20% silt; 5-10% subangular fine to medium gravel; calcified lenses and matrix to depth; organic matter.
				6				
				7				
				8				
				9				@9': as above; abundant weathered organics; no product odor.
	Sat	0	40	10				@10': as above; iron oxide staining; caliche lenses; rootholes; saturated.
				11				
				12				
				13				
				14				
SAND	Sat	0	26	15				@15': as above; 85-90% clay; 10-15% silt; trace fine gravel; calicified matrix; saturated rootholes.
				16				
				17				
				18				
				19				
	Sat	0	33	20				@20': as above; 5-10% coarse subrounded gravel; trace fines and; saturated rootholes.
				21				
				22				BOTTOM OF BORING 20.5'