

LAW OFFICES OF  
PILLSBURY MADISON & SUTRO

SAN FRANCISCO  
LOS ANGELES  
WASHINGTON, D.C.  
SAN DIEGO

TEN ALMADEN BOULEVARD  
SAN JOSE, CALIFORNIA 95113

TELEPHONE (408) 947-4000

TELECOPIER (408) 287-8341

ORANGE COUNTY  
SACRAMENTO  
MENLO PARK  
TOKYO

WRITER'S DIRECT DIAL NUMBER

(408) 947-4044

May 27, 1992

CALIFORNIA REGIONAL WATER

MAY 28 1992

QUALITY CONTROL BOARD

Mr. Barney Chan  
Department of Environmental Health  
Hazardous Materials Program  
80 Swan Way, Room 200  
Oakland, California 94621

Re: Avis Rent A Car System, Inc. -  
Oakland Airport Remediation

Dear Mr. Chan:

Enclosed please find Avis' Quarterly Ground-Water Monitoring Report dated May 26, 1992 prepared by McCulley, Frick & Gilman on the remediation being conducted at the Oakland Airport rental car facility.

Whereas none of the target constituents were detected above laboratory reporting limits in the ground water samples collected during the current sampling event, we hereby request that the site be certified as having been remediated.

We look forward to a prompt response.

Very truly yours,

*Beth L. Hamilton*

Beth L. Hamilton

Enc.

cc: ✓ Mr. Karl Westermann, Avis w/enc.  
✓ Mr. Lester Feldman, RWQCB w/enc.  
Ms. Michele Heffes, Port of Oakland w/enc.  
Mr. Ed Conti, MF&G w/o enc.

---

# **QUARTERLY GROUND WATER MONITORING REPORT**

**Avis Rent A Car System, Inc.  
Oakland International Airport Facility  
Oakland, California**

**Prepared for**

**Avis Rent A Car System, Inc.  
900 Old Country Road  
Garden City, New York 11530**

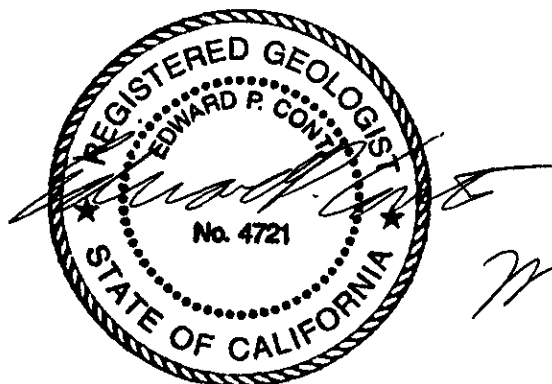
**May 26, 1992**

---

**McCULLEY, FRICK & GILMAN, INC.  
Environmental Sciences and Engineering**

**PROFESSIONAL CERTIFICATION**

This report has been prepared by McCulley, Frick & Gilman, Inc. under the professional supervision of Edward P. Conti. The findings, recommendations, specifications and/or professional opinions presented in this report have been prepared in accordance with generally accepted professional hydrogeologic practice, and within the scope of the project. There is no other warranty, either express or implied.



*May 26, 1992*

Edward P. Conti  
RG No. 4721  
Project Geologist  
McCULLEY, FRICK & GILMAN, INC.

## TABLE OF CONTENTS

	<u>Page</u>
List of Tables	ii
List of Figures	iii
List Of Appendices	iii
1.0 <u>INTRODUCTION</u>	1
2.0 <u>GROUND WATER SAMPLING AND ANALYSIS</u>	2
2.1 FIELD METHODS	2
2.1.1 <u>Water Level Measurement</u>	2
2.1.2 <u>Ground Water Sampling</u>	2
2.2 ANALYTICAL METHODS AND RESULTS	4
3.0 <u>EVALUATION OF LATERAL HYDRAULIC GRADIENT</u>	5

## LIST OF TABLES

<u>Table No.</u>	<u>Title</u>
1	Summary of Chemical Analyses of Ground Water Samples
2	Summary of Water Level Data for Ground Water Monitoring Wells

## LIST OF FIGURES

<u>Figure No.</u>	<u>Title</u>
1	Location Map
2	Site Plan
3	Potentiometric Surface of Shallow Ground Water, May 23, 1990
4	Potentiometric Surface of Shallow Ground Water, September 26, 1990
5	Potentiometric Surface of Shallow Ground Water, December 17, 1990
6	Potentiometric Surface of Shallow Ground Water, February 26, 1991
7	Potentiometric Surface of Shallow Ground Water, July 17, 1991
8	Potentiometric Surface of Shallow Ground Water, October 18, 1991
9	Potentiometric Surface of Shallow Ground Water, January 3, 1992
10	Potentiometric Surface of Shallow Ground Water, April 2, 1992

## LIST OF APPENDICES

<u>Appendix</u>	<u>Title</u>
A	Laboratory Report and Chain-of-Custody Record for Ground Water Samples

# QUARTERLY GROUND WATER MONITORING REPORT

## AVIS RENT A CAR SYSTEM, INC. OAKLAND INTERNATIONAL AIRPORT FACILITY OAKLAND, CALIFORNIA

---

### 1.0 INTRODUCTION

This report presents the methods and results of the April 1992 quarterly ground water monitoring event conducted at the Avis Rent A Car System, Inc. (Avis) facility at Oakland International Airport, Neil Armstrong Way, Oakland, California (hereinafter the "Site"). The Site location is illustrated in Figure 1. The monitoring program was conducted by McCulley, Frick & Gilman, Inc. (MFG) on behalf of Avis.

The monitoring program conducted at the Avis facility consisted of the following tasks:

- (1) Measurement of water levels in monitoring wells MW-1A, MW-2 and MW-3, and preparation of a potentiometric surface map of the shallow ground water; and
- (2) Collection and chemical analysis of ground water samples from monitoring wells MW-1A, MW-2 and MW-3.

The monitoring well locations are illustrated in Figure 2. The methods and results of the ground water monitoring program are described below.

## **2.0 GROUND WATER SAMPLING AND ANALYSIS**

### **2.1 FIELD METHODS**

The methods used to measure the water levels and collect ground water samples from monitoring wells MW-1A, MW-2 and MW-3 are described below.

#### **2.1.1 Water Level Measurement**

MFG measured the water levels in monitoring wells MW-1A, MW-2 and MW-3 on April 2, 1992 using a weighted, graduated steel tape. Evaluation of the water level data is discussed in Section 3.0 of this report. Following water level measurement, MFG checked for the presence of a light immiscible layer (free product) or sheen using a clear, acrylic bailer. No free product or sheen was observed in the three wells.

#### **2.1.2 Ground Water Sampling**

MFG collected ground water samples from monitoring wells MW-1A, MW-2 and MW-3 on April 2, 1992. Prior to collecting samples, each well was purged using a positive displacement hand pump. Wells MW-1A and MW-3 were pumped dry after removal of approximately 4 casing volumes (6 gallons) and 2.5 casing volumes (4 gallons), respectively. Approximately four casing volumes (6 gallons) of water were removed from well MW-2 during the purging process. The temperature, pH and specific conductance of the water were monitored during purging.

After purging, the ground water samples were collected using a Teflon® bailer. One bailer volume collected from each well was used to measure the temperature, pH and specific conductance of the sample. The field measured values of these parameters were as follows:

Sample	Temperature (°C)	pH	Specific Conductance (micromhos/cm at 25°C)
MW-1A	18	7.2	8,000
MW-2	18	7.2	4,200
MW-3	18	7.0	15,000

The following samples were subsequently collected from each well and placed in containers supplied by the laboratory:

- Total Volatile Petroleum Hydrocarbons (TPH) as Gasoline and Benzene, Toluene, Ethylbenzene and Total Xylenes (BTEX): three, 40-milliliter (ml) glass vials closed with a screw cap with a Teflon®-lined septum, containing hydrochloric acid placed in the vials by the laboratory for sample preservation; and

In addition, the following sample was collected from well MW-1A and placed in containers supplied by the laboratory:

- Polynuclear Aromatic Hydrocarbons (PNA's): two, one-liter amber glass bottles with Teflon®-lined lids.

After filling, the ground water sample containers were placed in an ice-cooled, insulated chest for transport to the laboratory for analysis. A chain-of-custody record was completed for the samples and accompanied the samples until receipt by the laboratory.

All equipment used in purging the wells was washed in an Alconox detergent-water solution and rinsed with tap water both before and after use in each well. All equipment used in sampling the wells was washed in an Alconox detergent-water solution, rinsed with tap water, and then rinsed with deionized water both before and after use in each well.



## 2.2 ANALYTICAL METHODS AND RESULTS

The ground water samples were analyzed by Anametrix, Inc. (Anametrix) laboratory of San Jose, California. The following analyses were performed by Anametrix:

- A. TPH as Gasoline (EPA Method 5030/modified EPA Method 8015)
- B. BTEX (EPA Method 5030/modified EPA Method 8020)
- C. PNA's (EPA Method 610/8310)

The laboratory results are summarized in Table 1. Copies of the laboratory report and chain-of-custody record are included in Appendix A.

TPH as gasoline, benzene, toluene, ethylbenzene and total xylenes were not detected above their laboratory method reporting limits in the ground water samples collected from wells MW-1A, MW-2 and MW-3 on April 2, 1992. In addition, PNA's were not detected above their respective laboratory method reporting limits in the ground water sample collected from well MW-1A.

### **3.0 EVALUATION OF LATERAL HYDRAULIC GRADIENT**

MFG measured the depth to ground water in wells MW-1A, MW-2 and MW-3 on April 2, 1992 (Table 2). The depth to water in the wells ranged from approximately five to six feet below the ground surface. The elevations of the water surface in the wells were calculated using the depth to water measurements and the measuring point (north side, top of casing) elevations of the wells. The water level elevations calculated for April 2, 1992 were the highest at the Site since the ground water monitoring program began in May 1990 (Table 2). A potentiometric surface map of the shallow ground water on April 2, 1992 was constructed using these data and is shown in Figure 10. The potentiometric surface contours illustrate that the direction of the lateral hydraulic gradient on April 2, 1992 was east-northeast, with an approximate magnitude of 0.0003.

The direction and magnitude of the lateral hydraulic gradient calculated for April 2, 1992 were different from previous hydraulic gradients at the Site. Water level measurements performed periodically at the Site from May 1990 to January 1992 indicate that the direction of the lateral hydraulic gradient has varied from south-southeast to east-southeast. The potentiometric surface of the shallow ground water at the Site on April 2, 1992 was also relatively flat; the magnitude of the lateral hydraulic gradient calculated for April 2, 1992 is approximately one order of magnitude less than the magnitude calculated for any previous ground water monitoring event at the Site. Historical potentiometric surface maps of the shallow ground water at the Site are included in Figures 3 through 9.

8qtroak.rpt

TABLE 1  
(Page 1 of 2)

SUMMARY OF CHEMICAL ANALYSES OF GROUND WATER SAMPLES<sup>1</sup>

Avis Rent A Car System, Inc.  
Oakland International Airport Facility  
Oakland, California

WELL NO.	SAMPLE NO.	DATE SAMPLED	Reporting Limit:		TOTAL PETROLEUM HYDROCARBONS AS GASOLINE (mg/L)	BENZENE (mg/L)	TOLUENE (mg/L)	ETHYLBENZENE (mg/L)	TOTAL XYLENES (mg/L)	NAPHTHALENE (mg/L)	OTHER POLYNUCLEAR AROMATIC HYDROCARBONS (mg/L)
			0.05	0.0005	0.0005	0.0005	0.0005	0.0005	0.01	0.01	
MW-1	MW-1	23-May-90	12	0.65	0.05	ND <sup>2</sup>	[0.05] <sup>3</sup>	2.2	0.25	0.033 <sup>4</sup>	
	MW-1	26-Sep-90	0.66	ND	[0.0025]	0.004	0.028	0.046	0.016	ND	
	MW-1	17-Dec-90 <sup>5</sup>	1.6	0.19	ND	[0.005]	0.063	0.027	0.039	0.023 <sup>6</sup>	
MW-1A <sup>7</sup>	MW-1A	30-Apr-91	ND	ND	ND	ND	ND	ND	ND	ND	
	MW-1A	17-Jul-91	ND	ND	ND	ND	ND	ND	ND	ND	
	MW-1A	18-Oct-91	ND	ND	0.0023	ND	ND	ND	ND	ND	
	MW-1A	25-Nov-91	0.051	0.0018	ND	ND	0.0017	NA <sup>8</sup>	NA		
	MW-1A	3-Jan-92	0.077	0.0024	0.0009	0.0014	0.0032	ND	ND		
	MW-1A	2-Apr-92	ND	ND	ND	ND	ND	ND	ND	ND	
MW-2	MW-2	23-May-90	ND	ND	ND	ND	ND	ND	ND	ND	
	MW-2	26-Sep-90	ND	ND	ND	ND	ND	ND	ND	ND	
	MW-2	17-Dec-90	ND	ND	ND	ND	ND	ND	ND	ND	
	MW-2	13-Mar-91	ND	ND	ND	ND	ND	ND	ND	ND	
	MW-2	17-Jul-91	ND	ND	ND	ND	ND	ND	ND	ND	
	MW-2	18-Oct-91	ND	ND	ND	ND	ND	ND	ND	ND	

TABLE 1  
(Page 2 of 2)

SUMMARY OF CHEMICAL ANALYSES OF GROUND WATER SAMPLES<sup>1</sup>

Avis Rent A Car System, Inc.  
Oakland International Airport Facility  
Oakland, California

WELL NO.	SAMPLE NO.	DATE SAMPLED	Reporting Limit:					TOTAL XYLENES (mg/L)	NAPHTHALENE (mg/L)	OTHER POLYNUCLEAR AROMATIC HYDROCARBONS (mg/L)
			TOTAL PETROLEUM HYDROCARBONS AS GASOLINE (mg/L)	BENZENE (mg/L)	TOLUENE (mg/L)	ETHYLBENZENE (mg/L)				
			0.05	0.0005	0.0005	0.0005	0.0005	0.01	0.01	
MW-2	MW-2	3-Jan-92	ND	ND	ND	ND	ND	ND	ND	
	MW-2	2-Apr-92	ND	ND	ND	ND	ND	NA	NA	
MW-3	MW-3	23-May-90	ND	ND	ND	ND	ND	ND	ND	
	MW-3	26-Sep-90	ND	ND	ND	ND	ND	ND	ND	
	MW-3	17-Dec-90	ND	ND	ND	ND	ND	ND	ND	
	MW-3	13-Mar-91	ND	ND	ND	ND	ND	ND	ND	
	MW-3	17-Jul-91	ND	ND	ND	ND	ND	ND	ND	
	MW-3	18-Oct-91	ND	ND	ND	ND	ND	ND	ND	
	MW-3	3-Jan-92	ND	ND	ND	ND	ND	ND	ND	
	MW-3	2-Apr-92	ND	ND	ND	ND	ND	NA	NA	

NOTES:

<sup>1</sup> Constituents in the EPA Method 8270 or 8310 analyses (PNA's) which are not listed were not detected in ground water samples.

<sup>2</sup> ND = Not Detected at or above the reporting limit indicated at top of column.

<sup>3</sup> [ ] Indicates reporting limit other than that indicated at top of column.

<sup>4</sup> The PNA compound 2-methyl-naphthalene was detected at a concentration of 0.033 mg/L.

<sup>5</sup> Monitoring Well MW-1 was sealed and abandoned on February 26, 1991.

<sup>6</sup> The PNA compound acenaphthene was detected at a concentration of 0.023 mg/L.

<sup>7</sup> Monitoring Well MW-1A was installed on April 1, 1991.

<sup>8</sup> NA = Not Analyzed

**TABLE 2**  
**(Page 1 of 2)**

**SUMMARY OF WATER LEVEL DATA FOR  
GROUND WATER MONITORING WELLS**

Avis Rent A Car System, Inc.  
Oakland International Airport Facility  
Oakland, California

WELL	MEASUREMENT DATE	DEPTH TO WATER (ft BMP <sup>1</sup> )	MEASURING POINT ELEVATION <sup>2</sup> (ft NGVD <sup>3</sup> )	WATER LEVEL ELEVATION (ft NGVD)
MW-1	23-May-90	5.62	3.34	-2.28
	26-Sep-90	6.29	3.34	-2.95
	17-Dec-90	5.92	3.34	-2.58
	26-Feb-91 <sup>4</sup>	5.69	3.34	-2.35
MW-1A	30-Apr-91 <sup>6</sup>	5.10	3.20	-1.90
	17-Jul-91	5.73	3.20	-2.53
	18-Oct-91	6.09	3.20	-2.89
	3-Jan-92	5.90	3.20	-2.70
	2-Apr-92	4.75	3.20	-1.55
MW-2	23-May-90	6.13	4.25	-1.88
	26-Sep-90	6.62	4.25	-2.37
	17-Dec-90	6.40	4.25	-2.15
	26-Feb-91	5.96	4.25	-1.71
	17-Jul-91	6.09	4.07 <sup>8</sup>	-2.02
	18-Oct-91	6.47	4.07	-2.40
	3-Jan-92	6.39	4.07	-2.32
	2-Apr-92	5.58	4.07	-1.51
MW-3	23-May-90	6.77	3.98	-2.79
	26-Sep-90	7.28	3.98	-3.30
	17-Dec-90	7.05	3.98	-3.07
	26-Feb-91	6.63	3.98	-2.65
	17-Jul-91	6.75	3.98	-2.77

TABLE 2  
(Page 2 of 2)

SUMMARY OF WATER LEVEL DATA FOR  
GROUND WATER MONITORING WELLS

Avis Rent A Car System, Inc.  
Oakland International Airport Facility  
Oakland, California

WELL	MEASUREMENT DATE	DEPTH TO WATER (ft BMP <sup>1</sup> )	MEASURING POINT ELEVATION <sup>2</sup> (ft NGVD <sup>3</sup> )	WATER LEVEL ELEVATION (ft NGVD)
MW-3	18-Oct-91	7.18	3.98	-3.20
	3-Jan-91	6.91	3.98	-2.93
	2-Apr-92	5.53	3.98	-1.55

NOTES:

<sup>1</sup> BMP = Below Measuring Point.

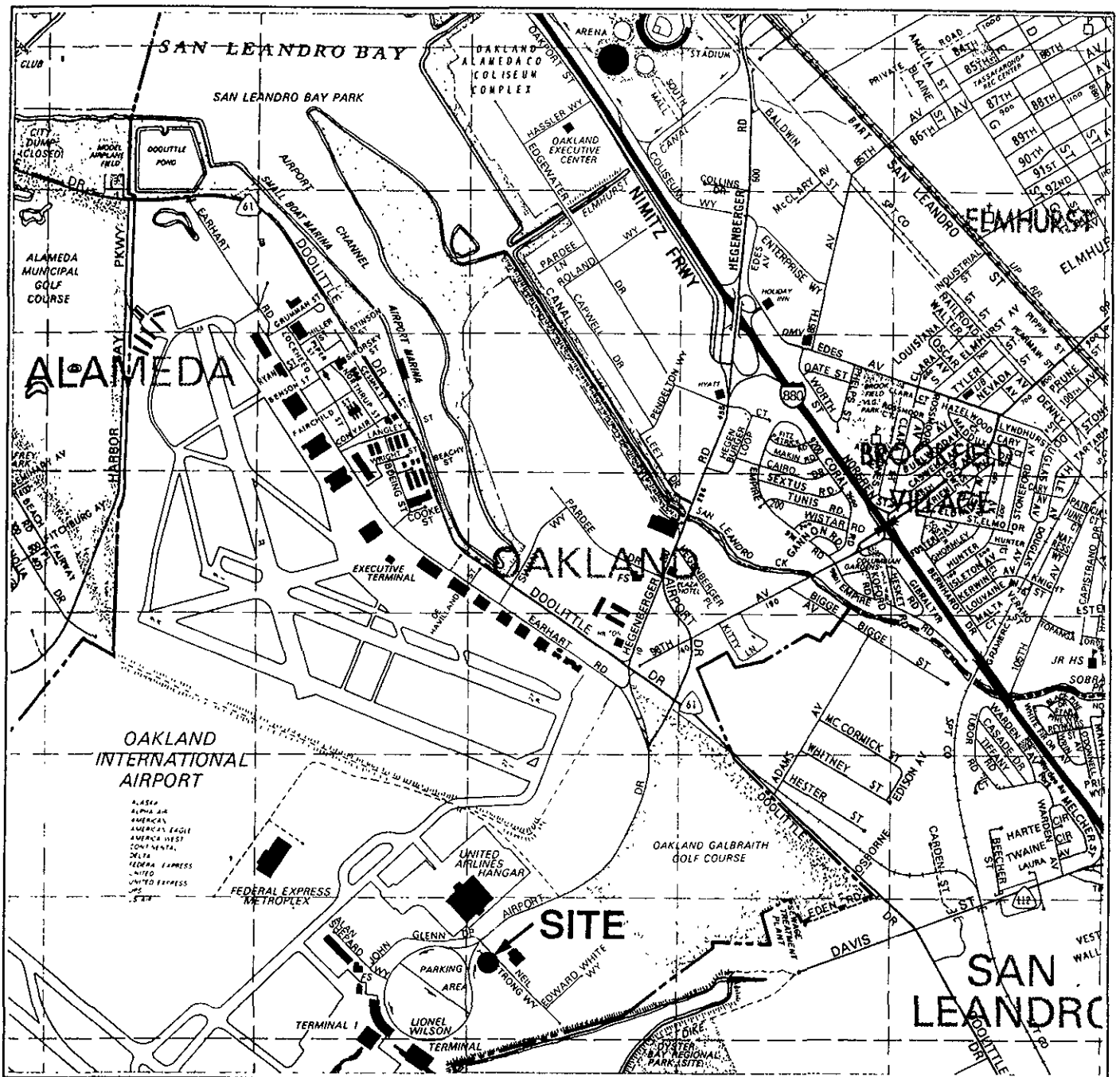
<sup>2</sup> Measuring Point is north side of top of PVC well casing.

<sup>3</sup> National Geodetic Vertical Datum of 1929.

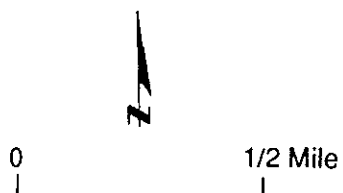
<sup>4</sup> Monitoring Well MW-1 was sealed and abandoned on February 26, 1991.

<sup>5</sup> Monitoring well MW-1A was installed on April 1, 1991.

<sup>6</sup> The top of the PVC casing for well MW-2 was repaired on March 13, 1991. The measuring point elevation of well MW-2 was resurveyed on April 9, 1991. The new measuring point elevation is 4.07 ft. NGVD.

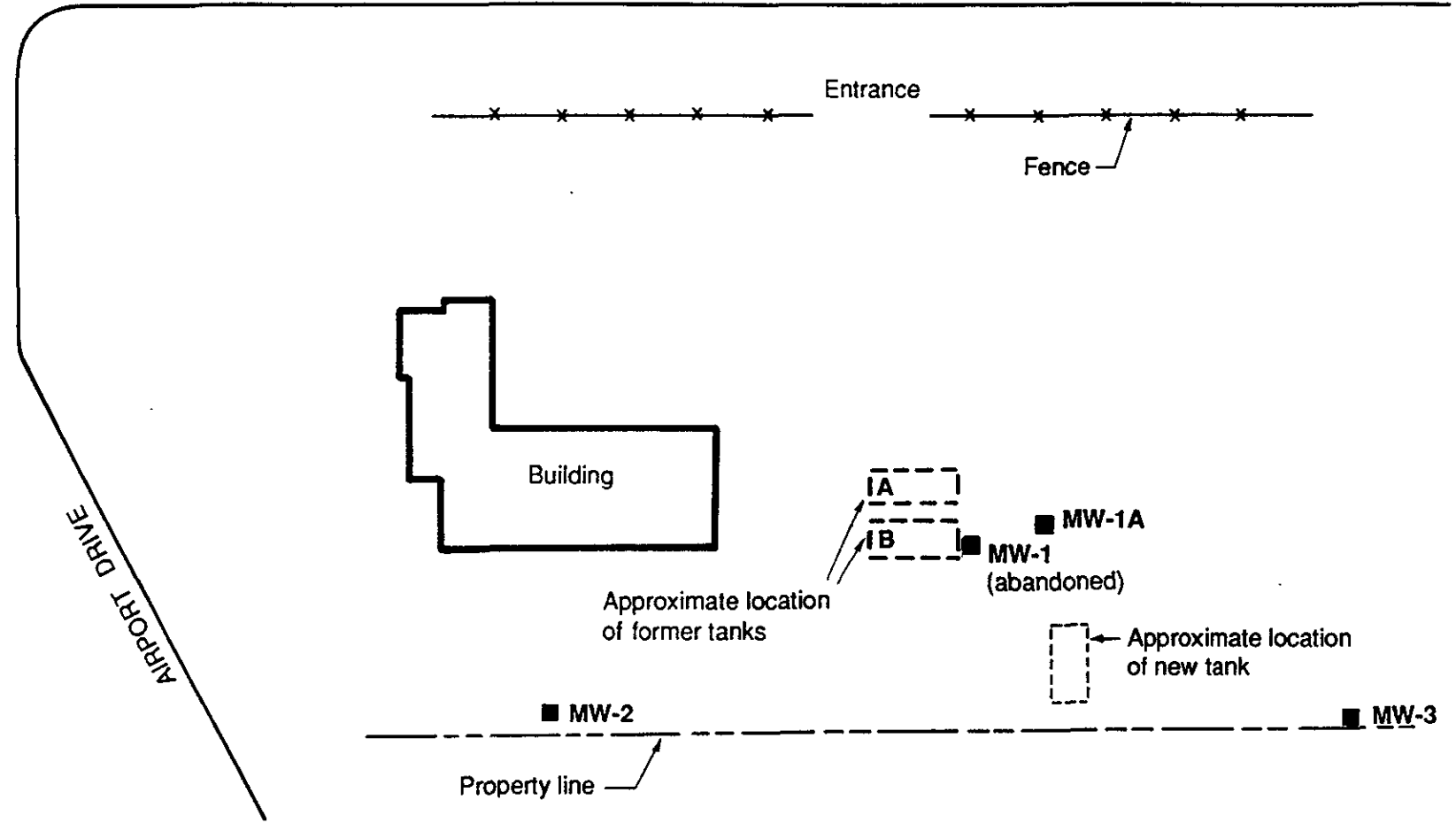


Source: The Thomas Guide,  
 Alameda and Santa Clara Counties Street Guide and Directory,  
 1989 Edition



<b>LOCATION MAP</b> <b>Avis Rent A Car System, Inc. Facility</b> <b>Oakland International Airport</b> <b>Oakland, California</b>		
McCulley, Frick & Gilman, Inc.	Project No. 90-2143	Figure 1

NEIL ARMSTRONG WAY



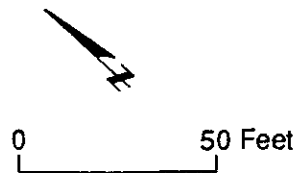
EXPLANATION

MW-2 ■ Location of monitoring well

Notes:

1. Well MW-1 abandoned on February 26, 1991.
2. Well MW-1A installed on April 1, 1991.

Source: Adapted from Blaine Tech Services, Inc.  
Sampling Report 890825M1, dated August 25, 1989

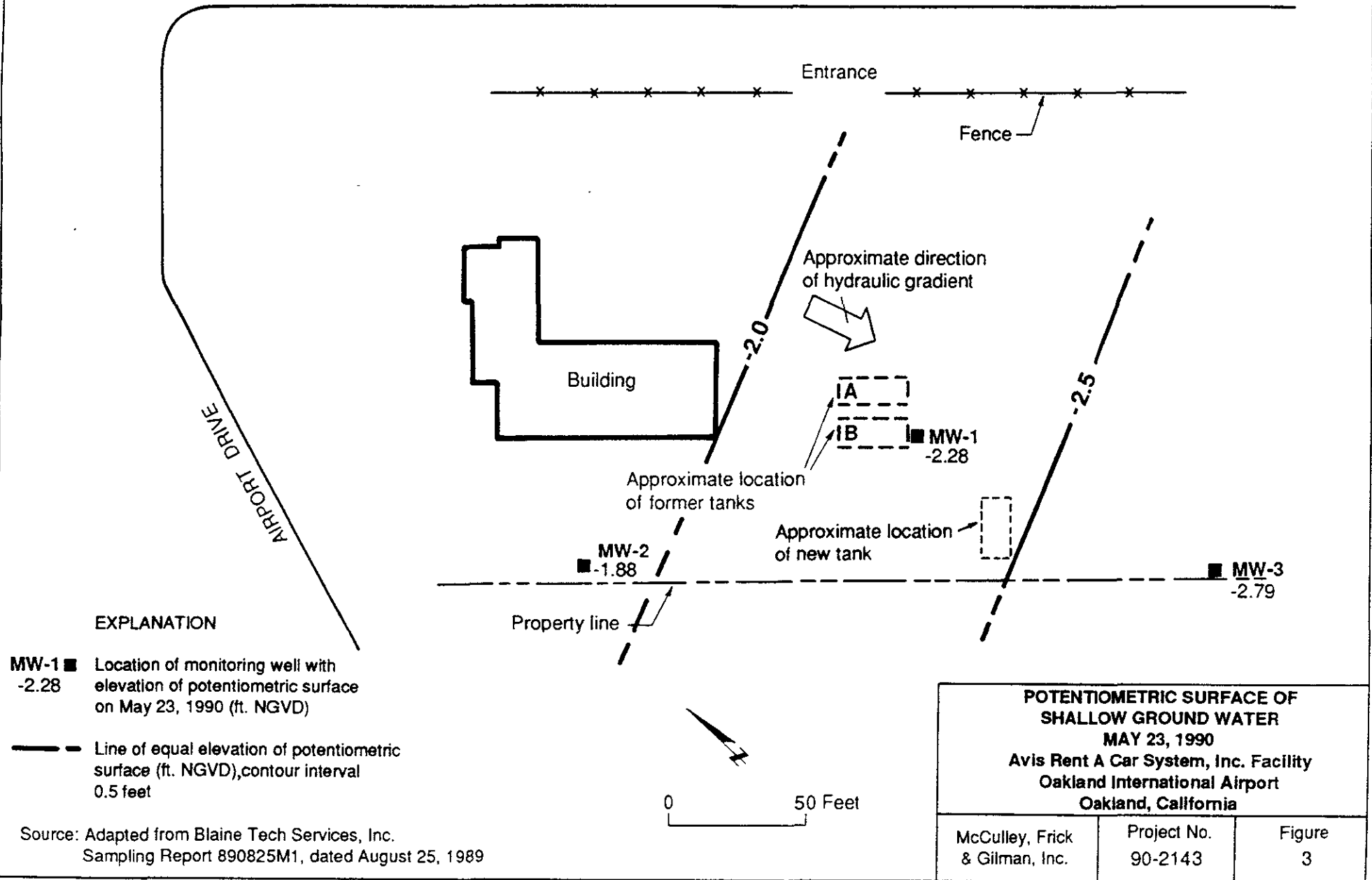


<b>SITE PLAN</b> Avis Rent A Car System, Inc. Facility Oakland International Airport Oakland, California		
McCulley, Frick & Gilman, Inc.	Project No. 90-2143	Figure 2



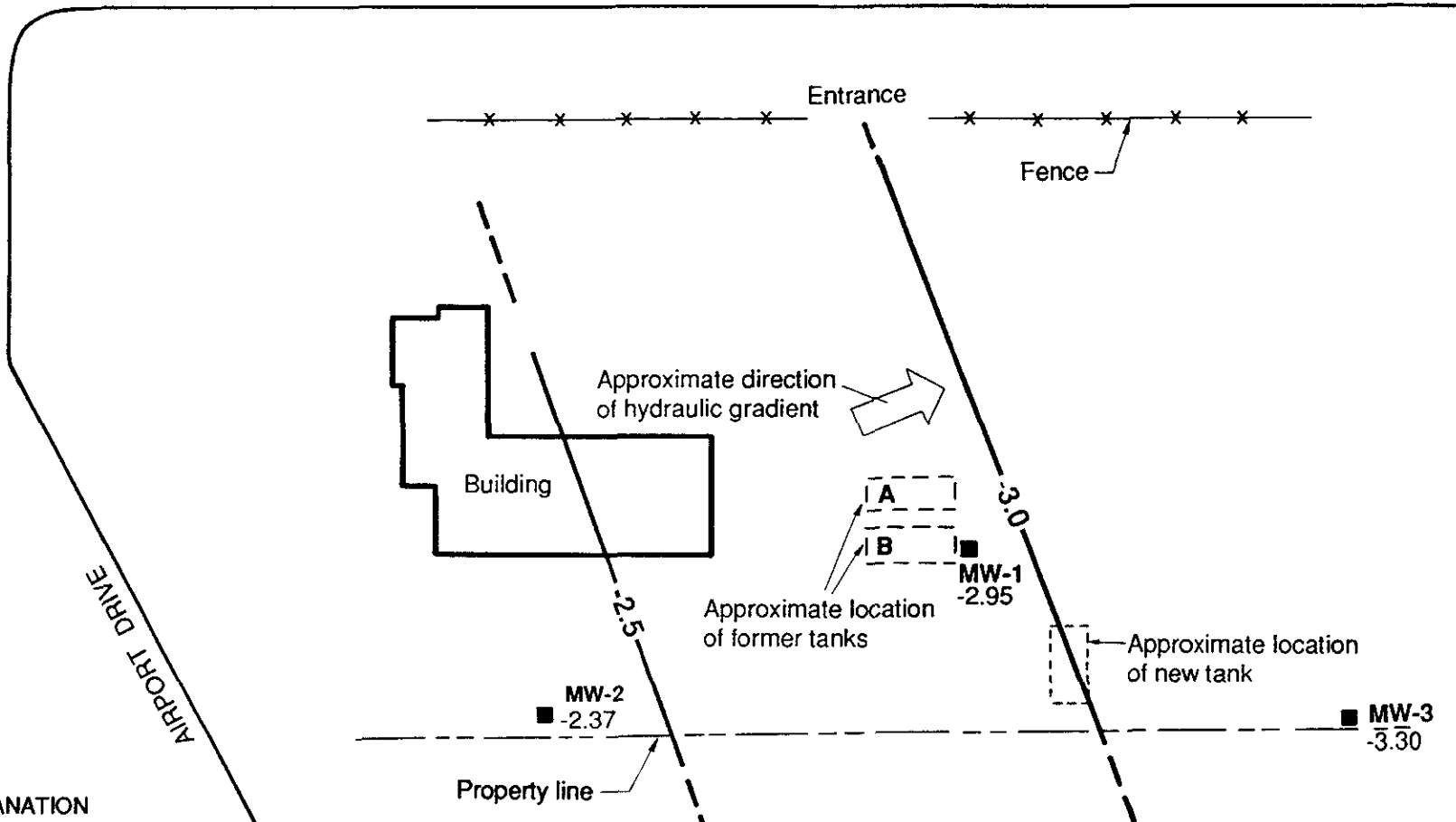
NEIL ARMSTRONG WAY

AIRPORT DRIVE



Source: Adapted from Blaine Tech Services, Inc.  
Sampling Report 890825M1, dated August 25, 1989

NEIL ARMSTRONG WAY



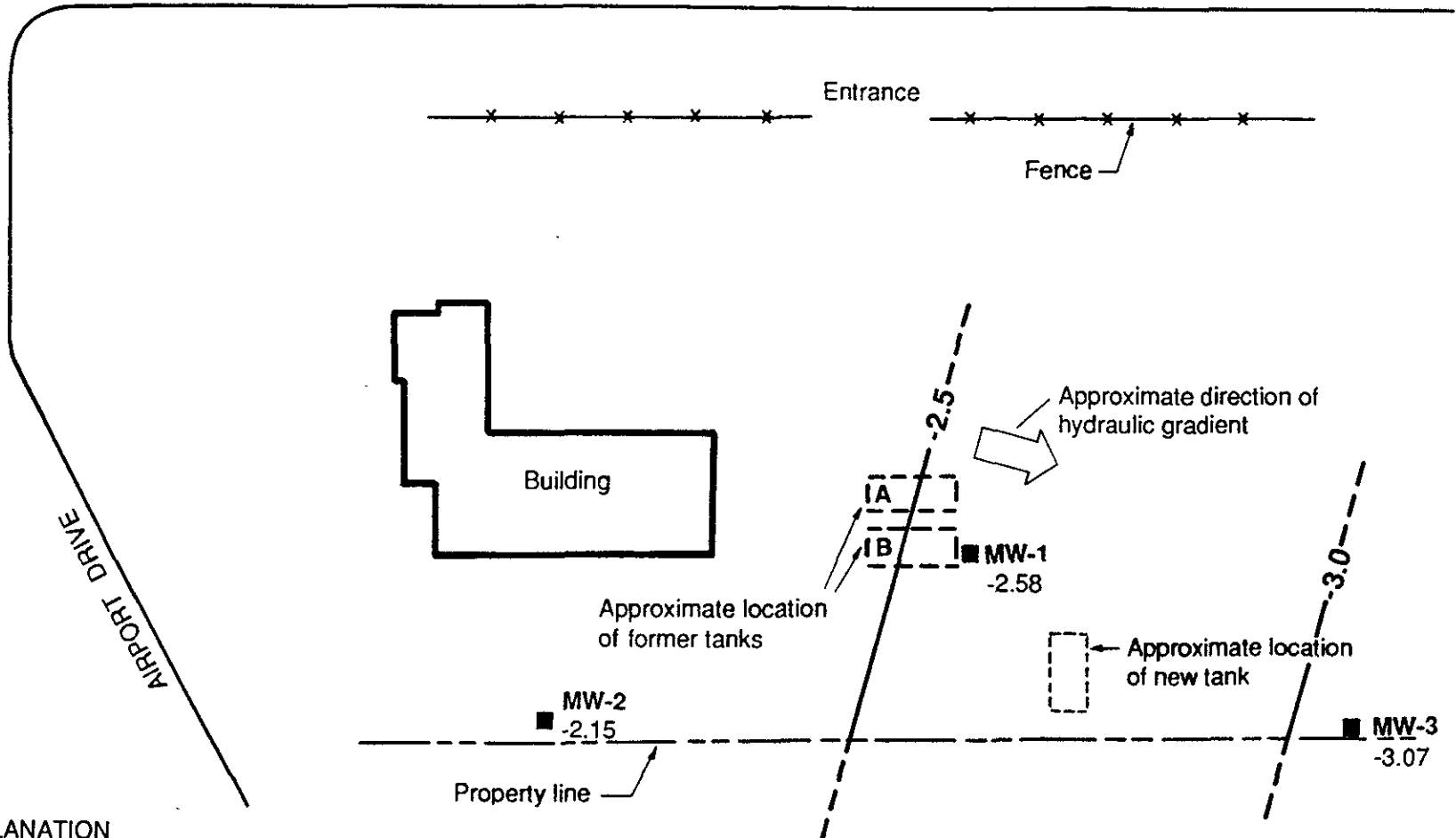
**EXPLANATION**

- MW-1** ■ Location of monitoring well with elevation of potentiometric surface on September 26, 1990
- Line of equal elevation of potentiometric surface (ft. NGVD), contour interval 0.5 feet

Source: Adapted from Blaine Tech Services, Inc. Sampling Report 890825M1, dated August 25, 1989

<b>POTENTIOMETRIC SURFACE OF SHALLOW GROUND WATER</b> September 26, 1990 Avis Rent A Car System, Inc. Facility Oakland International Airport Oakland, California		
McCulley, Frick, & Gilman, Inc.	Project No. 90-2143	Figure 4

NEIL ARMSTRONG WAY



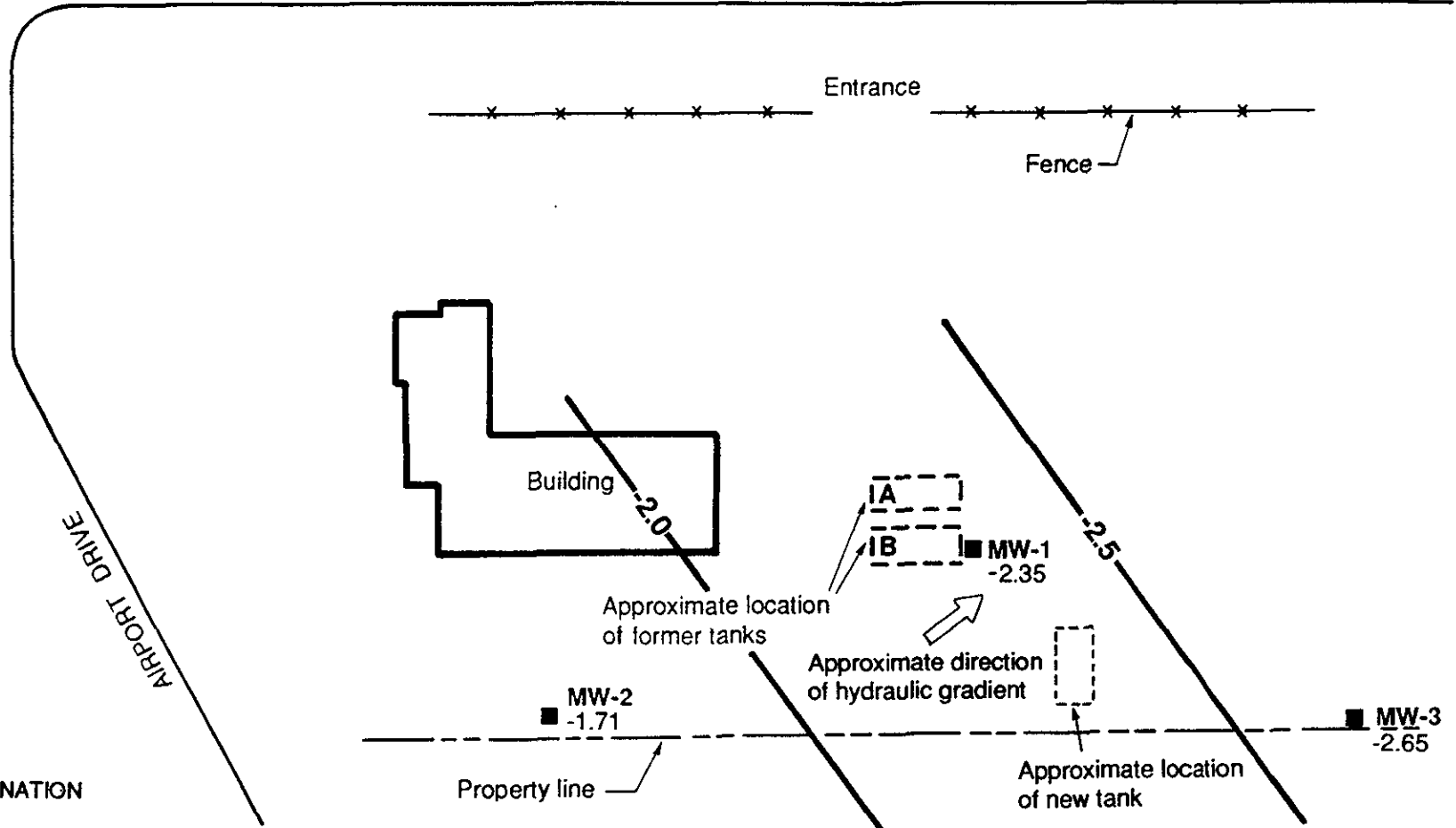
EXPLANATION

- MW-1 ■ Location of monitoring well with elevation of potentiometric surface on December 17, 1990 (ft. NGVD) -2.58
- — Line of equal elevation of potentiometric surface (ft. NGVD), contour interval 0.5 feet

Source: Adapted from Blaine Tech Services, Inc.  
Sampling Report 890825M1, dated August 25, 1989

<b>POTENTIOMETRIC SURFACE OF SHALLOW GROUND WATER DECEMBER 17, 1990 Avis Rent a Car System, Inc. Facility Oakland International Airport Oakland, California</b>		
McCulley, Frick & Gilman, Inc.	Project No. 90-2143	Figure 5

NEIL ARMSTRONG WAY

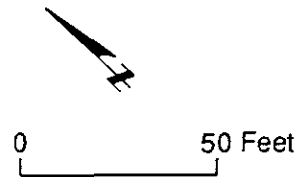


**EXPLANATION**

MW-1 ■ Location of monitoring well with elevation of potentiometric surface on February 26, 1991 (ft. NGVD)

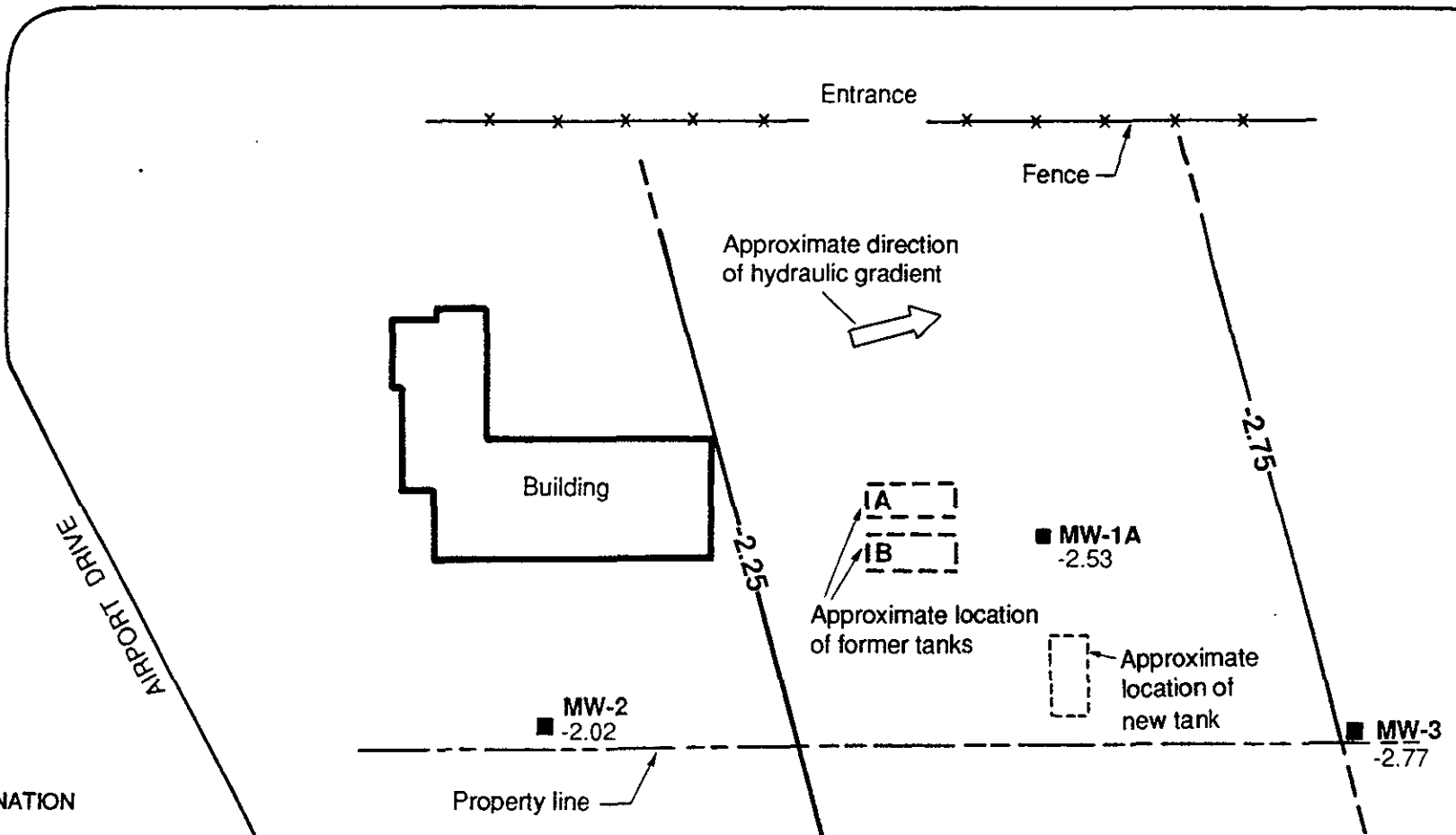
— Line of equal elevation of potentiometric surface (ft. NGVD), contour interval 0.5 feet

Source: Adapted from Blaine Tech Services, Inc. Sampling Report 890825M1, dated August 25, 1989



<b>POTENTIOMETRIC SURFACE OF SHALLOW GROUND WATER</b> <b>FEBRUARY 26, 1991</b> <b>Avis Rent A Car System, Inc. Facility</b> <b>Oakland International Airport</b> <b>Oakland, California</b>		
McCulley, Frick & Gilman, Inc.	Project No. 90-2143	Figure 6

NEIL ARMSTRONG WAY



**EXPLANATION**

**MW-2** ■ Location of monitoring well with elevation of potentiometric surface -2.02

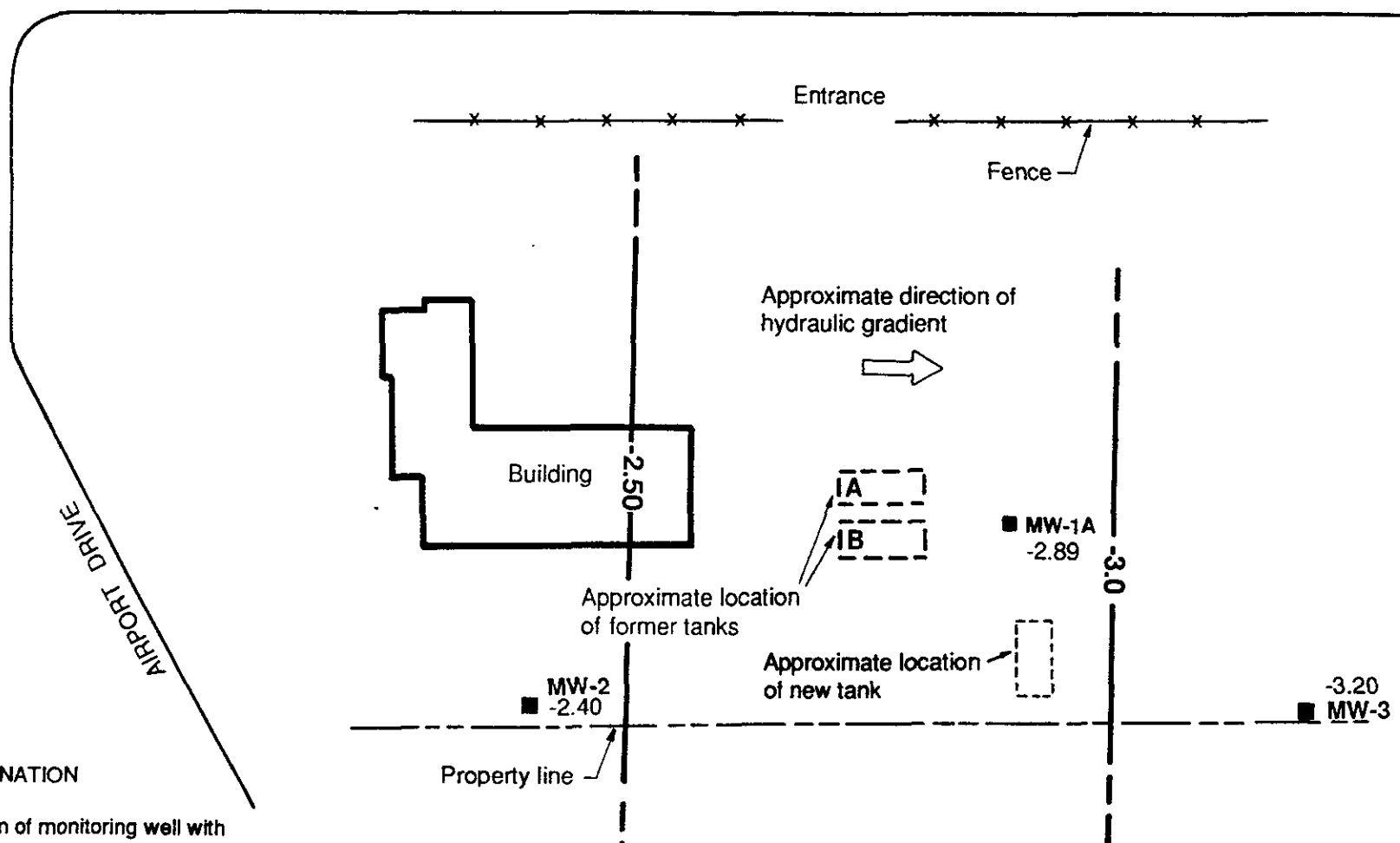
— Line of equal elevation of potentiometric surface (ft. NGVD), contour interval 0.5 feet

0 50 Feet

<b>POTENTIOMETRIC SURFACE OF SHALLOW GROUND WATER</b> <b>JULY 17, 1991</b> <b>Avis Rent A Car System, Inc. Facility</b> <b>Oakland International Airport</b> <b>Oakland, California</b>		
McCulley, Frick & Gilman, Inc.	Project No. 90-2143	Figure 7

Source: Adapted from Blaine Tech Services, Inc. Sampling Report 890825M1, dated August 25, 1989

NEIL ARMSTRONG WAY



EXPLANATION

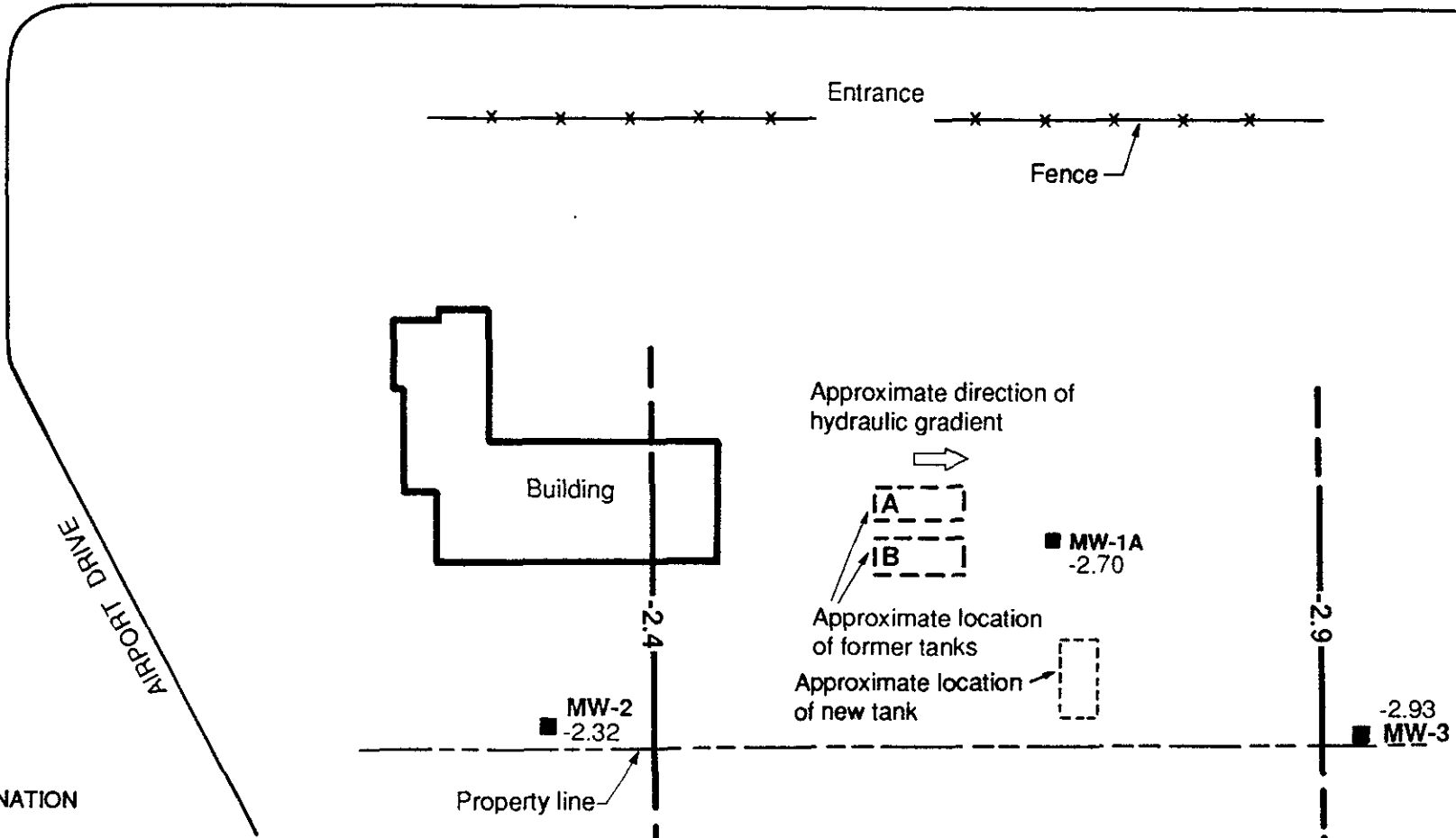
MW-2 ■ Location of monitoring well with elevation of potentiometric surface

— Line of equal elevation of potentiometric surface (ft. NGVD), contour interval 0.5 feet

Source: Adapted from Blaine Tech Services, Inc. Sampling Report 890825M1, dated August 25, 1989

<b>POTENTIOMETRIC SURFACE OF SHALLOW GROUND WATER</b> OCTOBER 18, 1991 Avis Rent A Car System, Inc. Facility Oakland International Airport Oakland, California		
McCulley, Frick & Gilman, Inc.	Project No. 90-2143	Figure 8

NEIL ARMSTRONG WAY



**EXPLANATION**

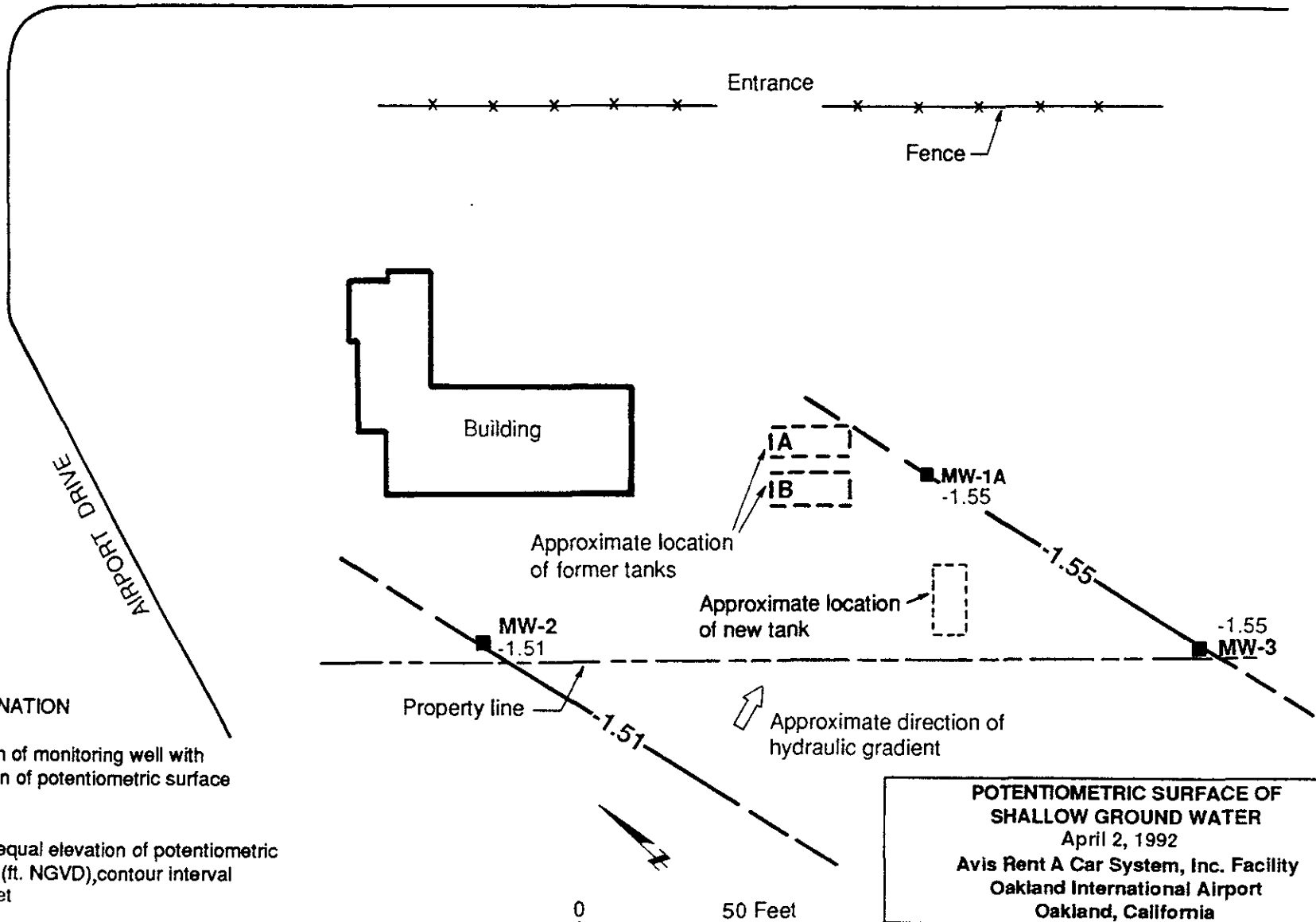
MW-2 ■ Location of monitoring well with elevation of potentiometric surface -2.32

— Line of equal elevation of potentiometric surface (ft. NGVD), contour interval 0.5 feet

Source: Adapted from Blaine Tech Services, Inc. Sampling Report 890825M1, dated August 25, 1989

<b>POTENTIOMETRIC SURFACE OF SHALLOW GROUND WATER</b> January 3, 1992 Avis Rent A Car System, Inc. Facility Oakland International Airport Oakland, California		
McCulley, Frick & Gilman, Inc.	Project No. 90-2143	Figure 9

NEIL ARMSTRONG WAY



**EXPLANATION**

- MW-2** ■ Location of monitoring well with elevation of potentiometric surface -1.51
- Line of equal elevation of potentiometric surface (ft. NGVD), contour interval 0.04 feet

Source: Adapted from Blaine Tech Services, Inc. Sampling Report 890825M1, dated August 25, 1989

<b>POTENTIOMETRIC SURFACE OF SHALLOW GROUND WATER</b> April 2, 1992 Avis Rent A Car System, Inc. Facility Oakland International Airport Oakland, California		
McCulley, Frick & Gilman, Inc.	Project No. 90-2143	Figure 10



**APPENDIX A**

**Laboratory Report and Chain-of-Custody Record  
for  
Ground Water Samples**

**ANAMETRIX INC**

Environmental & Analytical Chemistry  
 1961 Concourse Drive, Suite E, San Jose, CA 95131  
 (408) 432-8192 • Fax (408) 432-8198

RECEIVED

APR 15 1992

**REPORT**

McCULLLEY, FRICK  
& GILMAN, INC.

MR. EDWARD CONTI  
 McCULLLEY, FRICK & GILMAN, INC.  
 5 THIRD STREET, SUITE 400  
 SAN FRANCISCO, CA 94103

Workorder # : 9204058  
 Date Received : 04/03/92  
 Project ID : 90-2143  
 Purchase Order: N/A

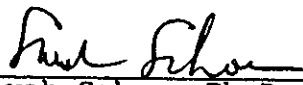
The following samples were received at Anametrix, Inc. for analysis :

ANAMETRIX ID	CLIENT SAMPLE ID
9204058- 1	MW-2
9204058- 2	MW-3
9204058- 3	MW-1A
9204058- 4	TRAVEL BLANK

This report consists of 9 pages not including the cover letter, and is organized in sections according to the specific Anametrix laboratory group or section which performed the analysis(es) and generated the data. The Report Summary that precedes each section will help you determine which Anametrix group is responsible for those test results, and will bear the signatures of the department supervisor and the chemist who have reviewed the analytical data. Please refer all questions to the department supervisor who signed the form.

Anametrix is certified by the California Department of Health Services (DHS) to perform environmental testing under Certificate Number 1234. A detailed list of the approved fields of testing can be obtained by calling our office, or the DHS Environmental Laboratory Accreditation Program at (415)540-2800.

If you have any further questions or comments on this report, please give us a call as soon as possible. Thank you for using Anametrix.

  
 Sarah Schoen, Ph.D.  
 Laboratory Director

4-14-92  
 Date

REPORT SUMMARY  
ANAMETRIX, INC. (408)432-8192

MR. EDWARD CONTI  
McCULLEY, FRICK & GILMAN, INC.  
5 THIRD STREET, SUITE 400  
SAN FRANCISCO, CA 94103

Workorder # : 9204058  
Date Received : 04/03/92  
Project ID : 90-2143  
Purchase Order: N/A  
Department : GC  
Sub-Department: PEST

SAMPLE INFORMATION:

ANAMETRIX SAMPLE ID	CLIENT SAMPLE ID	MATRIX	DATE SAMPLED	METHOD
9204058- 3	MW-1A	WATER	04/02/92	8310

RECEIVED

APR 15 1992

McCULLEY, FRICK  
& GILMAN, INC.

REPORT SUMMARY  
ANAMETRIX, INC. (408)432-8192

MR. EDWARD CONTI  
McCULLEY, FRICK & GILMAN, INC.  
5 THIRD STREET, SUITE 400  
SAN FRANCISCO, CA 94103

Workorder # : 9204058  
Date Received : 04/03/92  
Project ID : 90-2143  
Purchase Order: N/A  
Department : GC  
Sub-Department: PEST

QA/QC SUMMARY :

- No QA/QC problems encountered for samples.

RECEIVED

APR 15 1992

McCULLEY, FRICK  
& GILMAN, INC.

Paul Homan 4-9-92  
Department Supervisor Date

Sean Ranelid 4/9/92  
Chemist Date

ORGANIC ANALYSIS DATA SHEET -- EPA METHOD 610/8310  
 ANAMETRIX, INC. (408) 432-8192

Sample I.D. : 90-2143 MW-1A  
 Matrix : WATER  
 Date sampled : 4/02/92  
 Date ext. : 4/08/92  
 Date analyzed: 4/09/92  
 Dilut. factor: NONE

Anamatrix I.D. : 9204058-03  
 Analyst : *two*  
 Supervisor : *SR*  
 Date released : 4/09/92  
 Volume ext. : 1000 mL  
 Instrument ID : HP17

CAS #	Compound Name	Reporting Limit (ug/L)	Amount Found (ug/L)
91-20-3	* Naphthalene	10	ND
91-57-6	* 2-Methylnaphthalene	5.0	ND
208-96-8	* Acenaphthylene	10	ND
83-32-9	* Acenaphthene	10	ND
86-73-7	* Fluorene	10	ND
85-01-8	* Phenanthrene	5.0	ND
120-12-7	* Anthracene	5.0	ND
206-44-0	* Fluoranthene	5.0	ND
129-00-0	* Pyrene	5.0	ND
56-55-3	* Bnz (a) Anthracene	5.0	ND
218-01-9	* Chrysene	5.0	ND
205-99-2	* Bnz (b) Fluoranthene	5.0	ND
207-08-9	* Bnz (k) Fluoranthene	5.0	ND
50-32-8	* Bnz (a) Pyrene	5.0	ND
53-70-3	* DiBnz (ah) Anthracene	5.0	ND
191-24-2	* Bnz (g, h, i) Perylene	5.0	ND
193-39-5	* Indeno(123cd) Pyrene	5.0	ND
% Surrogate Recovery		34-121%	62%

ND : Not detected at or above the practical quantitation limit for the method.

RECEIVED

MAY - 8 1992

McCULLEY, FRICK & GILMAN, INC.

ORGANIC ANALYSIS DATA SHEET -- EPA METHOD 610/8310  
 ANAMETRIX, INC. (408) 432-8192

Sample I.D. : BLANK  
 Matrix : WATER  
 Date sampled : N/A  
 Date ext. : 4/08/92  
 Date analyzed: 4/09/92  
 Dilut. factor: NONE

Anamatrix I.D. : PAHBLK4892  
 Analyst : *seo*  
 Supervisor : *SK*  
 Date released : 4/09/92  
 Volume ext. : 1000 mL  
 Instrument ID : HP17

CAS #	Compound Name	Reporting Limit (ug/L)	Amount Found (ug/L)
91-20-3	* Naphthalene	10	ND
91-57-6	* 2-Methylnaphthalene	5.0	ND
208-96-8	* Acenaphthylene	10	ND
83-32-9	* Acenaphthene	10	ND
86-73-7	* Fluorene	10	ND
85-01-8	* Phenanthrene	5.0	ND
120-12-7	* Anthracene	5.0	ND
206-44-0	* Fluoranthene	5.0	ND
129-00-0	* Pyrene	5.0	ND
56-55-3	* Bnz (a) Anthracene	5.0	ND
218-01-9	* Chrysene	5.0	ND
205-99-2	* Bnz (b) Fluoranthene	5.0	ND
207-08-9	* Bnz (k) Fluoranthene	5.0	ND
50-32-8	* Bnz (a) Pyrene	5.0	ND
53-70-3	* DiBnz (ah) Anthracene	5.0	ND
191-24-2	* Bnz (g, h, i) Perylene	5.0	ND
193-39-5	* Indeno (123cd) Pyrene	5.0	ND
% Surrogate Recovery		34-121%	62%

ND : Not detected at or above the practical quantitation limit for the method.

RECEIVED

MAY - 8 1992

McCULLY, FRICK & GILMAN, INC.

POLYNUCLEAR AROMATIC HYDROCARBONS METHOD SPIKE REPORT  
 EPA METHOD 610/8310  
 ANAMETRIX, INC. (408)432-8192

Sample I.D. : METHOD SPIKE  
 Matrix : WATER  
 Date sampled : N/A  
 Date extracted: 04/08/92  
 Date analyzed : 04/09/92

RECEIVED

APR 15 1992

McCULLEY, FRICK  
& GILMAN, INC.

Anamatrix I.D. : METHOD SPK  
 Analyst : JLO  
 Supervisor : STR  
 Date released : 04/09/92  
 Instrument I.D.: HP17

COMPOUND	SPIKE AMT. (ug/L)	MS (ug/L)	%REC MS	MSD (ug/L)	%REC MSD	RPD	%REC LIMITS
Naphthalene	100	43	43%	45	45%	5%	35-125%
Acenaphthene	100	41	41%	38	38%	-8%	35-125%
Fluorene	100	56	56%	56	56%	0%	35-125%
Benzo(a)anthracene	20	13	65%	13	65%	0%	35-125%
Chrysene	20	12	60%	12	60%	0%	35-125%

\* Limits established by Anamatrix, Inc.

REPORT SUMMARY  
ANAMETRIX, INC. (408)432-8192

MR. EDWARD CONTI  
McCULLEY, FRICK & GILMAN, INC.  
5 THIRD STREET, SUITE 400  
SAN FRANCISCO, CA 94103

Workorder # : 9204058  
Date Received : 04/03/92  
Project ID : 90-2143  
Purchase Order: N/A  
Department : GC  
Sub-Department: TPH

SAMPLE INFORMATION:

ANAMETRIX SAMPLE ID	CLIENT SAMPLE ID	MATRIX	DATE SAMPLED	METHOD
9204058- 1	MW-2	WATER	04/02/92	TPHg/BTEX
9204058- 2	MW-3	WATER	04/02/92	TPHg/BTEX
9204058- 3	MW-1A	WATER	04/02/92	TPHg/BTEX
9204058- 4	TRAVEL BLANK	WATER	04/02/92	TPHg/BTEX

RECEIVED

APR 15 1992

McCULLEY, FRICK  
& GILMAN, INC.



REPORT SUMMARY  
ANAMETRIX, INC. (408)432-8192

MR. EDWARD CONTI  
McCULLEY, FRICK & GILMAN, INC.  
5 THIRD STREET, SUITE 400  
SAN FRANCISCO, CA 94103

Workorder # : 9204058  
Date Received : 04/03/92  
Project ID : 90-2143  
Purchase Order: N/A  
Department : GC  
Sub-Department: TPH

QA/QC SUMMARY :

- No QA/QC problems encountered for these samples.

RECEIVED

APR 15 1992

McCULLEY, FRICK  
& GILMAN, INC.

Cheryl Balmer 4/14/92  
Department Supervisor Date

Luca Sgar 4/14/92  
Chemist Date

ANALYSIS DATA SHEET - TOTAL PETROLEUM HYDROCARBONS  
(GASOLINE WITH BTEX)  
ANAMETRIX, INC. - (408) 432-8192

RECEIVED

Anametrix W.O.: 9204058  
Matrix : WATER  
Date Sampled : 04/02/92

APR 15 1992

Project Number : 90-2143  
Date Released : 04/13/92

McCULLEY, FRICK  
& GILMAN, INC.

Reporting Limit	Sample I.D.#	Sample I.D.#	Sample I.D.#	Sample I.D.#	Sample I.D.#
	MW-2	MW-3	MW-1A	TRAVEL BLANK	04B0408A
-----	-----	-----	-----	-----	-----
COMPOUNDS (ug/L)	-01	-02	-03	-04	BLANK
-----	-----	-----	-----	-----	-----
Benzene	0.5	ND	ND	ND	ND
Toluene	0.5	ND	ND	ND	ND
Ethylbenzene	0.5	ND	ND	ND	ND
Total Xylenes	0.5	ND	ND	ND	ND
TPH as Gasoline	50	ND	ND	ND	ND
% Surrogate Recovery	106%	106%	100%	113%	109%
Instrument I.D.	HP4	HP4	HP4	HP4	HP4
Date Analyzed	04/08/92	04/08/92	04/08/92	04/08/92	04/08/92
RLMF	1	1	1	1	1

- 
- ND - Not detected at or above the practical quantitation limit for the method.
  - TPHg - Total Petroleum Hydrocarbons as gasoline is determined by GCFID using modified EPA Method 8015 following sample purge and trap by EPA Method 5030.
  - BTEX - Benzene, Toluene, Ethylbenzene, and Total Xylenes are determined by modified EPA Method 8020 following sample purge and trap by EPA Method 5030.
  - RLMF - Reporting Limit Multiplication Factor.

Anametrix control limits for surrogate p-Bromofluorobenzene recovery are 53-147%.

All testing procedures follow California Department of Health Services (Cal-DHS) approved methods.

Luna Shor 4/14/92  
Analyst Date

Cheryl Beeman 4/14/92  
Supervisor Date

BTEX MATRIX SPIKE REPORT  
 EPA METHOD 5030 WITH GC/PID  
 ANAMETRIX, INC. (408) 432-8192

Sample I.D. : 90-2143 MW-3  
 Matrix : WATER  
 Date Sampled : 04/02/92  
 Date Analyzed : 04/08/92

Anamatrix I.D.: 9204058-03  
 Analyst : JS  
 Supervisor : CMJ  
 Date Released : 04/13/92  
 Instrument ID : HP4

COMPOUND	SPIKE AMT. (ug/L)	MS (ug/L)	REC MS	MSD (ug/L)	REC MSD	RPD	%REC LIMITS
Benzene	20	19	95%	18	90%	-5%	46-149
Toluene	20	18	90%	18	90%	0%	43-146
Ethylbenzene	20	18	90%	17	85%	-6%	51-138
M+P-Xylenes	13.3	12	90%	11	83%	-9%	39-161
O-Xylene	6.7	5.8	87%	5.6	84%	-4%	37-147
P-BFB			104%		104%		53-147

\* Limits established by Anamatrix, Inc.

RECEIVED

APR 15 1992

McCULLY, FRICK  
& GILMAN, INC.

9204058 #2 10 (19) FB 1820 FB

# CHAIN-OF-CUSTODY RECORD AND REQUEST FOR ANALYSIS

McCULLLEY, FRICK & GILMAN, INC. RECEIVED

NO. \_\_\_\_\_

737 29th Street, Suite 202  
Boulder, CO 80303  
TEL: (303) 447-1823  
FAX: (303) 447-1836

5818 Balcones Dr., Suite 202  
Austin, TX 78731  
TEL: (512) 371-1667  
FAX: (512) 454-4126

APR 15 1992  
McCULLLEY, FRICK & GILMAN, INC.

5 Third St., Suite 310-400  
San Francisco, CA 94103  
TEL: (415) 495-7110  
FAX: (415) 495-7107

PROJECT No.: 90-2143 PROJECT NAME: AVIS - Oakland Intl Airport PAGE: 1 OF: 1  
 SAMPLER (Signature): Mike E. Waite DATE: 4/2/92  
 METHOD OF SHIPMENT: Courier CARRIER/WAYBILL NO. \_\_\_\_\_ DESTINATION: Anametric  
 SPECIAL INSTRUCTIONS/HAZARDS: note condition of samples upon receipt

## SAMPLES

## ANALYSIS REQUEST

Lab No.	Sample Identification	Sample Collection		Matrix*	Preservation						Containers*			Methods				Handling			REMARKS (Special handling procedures, specific analytical methods, observations, etc.)					
		DATE	TIME		HCL	HNO3	H2SO4	COLD	NONE	OTHER	VOL. (ml)	TYPE*	No.	EPA 601/6010	EPA 602/6020	EPA 624/6240	EPA 625/6270	TPH as Gasoline	TPH as Diesel	BTEX		EPA 8210 (mm)	HOLD	RUSH	STANDARD	
1	<del>---</del> MW-2	4/2	14 <sup>56</sup>	AA	✓			✓			40	G	3					✓	✓						✓	samples received cold, no bubbles.
2	<del>---</del> MW-3	4/2	16 <sup>09</sup>	AA	✓			✓			40	G	3				✓	✓							✓	
3	--- MW-1A	4/2	17 <sup>20</sup>	AA				✓			1000	G	2						✓						✓	
9	--- MW-1A	4/2	17 <sup>20</sup>	AA	✓			✓			40	G	3				✓	✓							✓	
4	Travel Blank	---	---	AA	✓			✓			40	G	3				✓	✓							✓	

TOTAL NUMBER OF CONTAINERS 14

LABORATORY COMMENTS/ CONDITION OF SAMPLES

RELINQUISHED BY:					RECEIVED BY:		
SIGNATURE	PRINTED NAME	COMPANY	DATE	TIME	SIGNATURE	PRINTED NAME	COMPANY
<i>Mike E. Waite</i>	Mike E. Waite	McCully, Frick & Gilman	4/2/92	1508	<i>Edward P. Loma</i>	Edward P. Loma	MFG
<i>Edward P. Loma</i>	Edward P. Loma	MFG	4/2/92	0945	<i>Annette Carson</i>	ANNETTE CARSON	MFG
<i>Annette Carson</i>	ANNETTE CARSON	MFG	4/2/92	1144	<i>Farah Badie</i>	FARAH BADIE	ANAMETRIX
<i>Rennys Carmona</i>	RENNYS CARMONA	ANAMETRIX	4/3/92	1610			

\*KEY: Matrix AO-aqueous NA-nonaqueous SO-soil SL-sludge P-petroleum A-air OT-other Containers P-plastic G-glass T-tuffon B-brass OT-other

DISTRIBUTION: PINK: Field Copy YELLOW: Laboratory Copy WHITE: Return to Originator