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

August 8, 1991

McCULLEY, FRICK & GILMAN, INC.
Consulting Hydrologists and Geologists

8/19

Noted E. P. SO. AUG 20 1991

LAW OFFICES OF
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WRITER'S DIRECT DIAL NUMBER

(408) 947-4044

August 15, 1991

LD = L.
Site address: Neil Armstrong Way, Oakland
Site name: Avis Rent a Car Airport

Ms. Cynthia Chapman
Department of Environmentnal Health
Hazardous Materials Program
80 Swan Way, Room 200
Oakland, California 94621

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

Dear Ms. Chapman:

Enclosed please find Avis' Quarterly Ground-Water Monitoring Report dated August 8, 1991, prepared by McCulley, Frick & Gilman on the remediation being conducted at the Oakland Airport rental car facility.

Please let us know if you have any questions or comments.

Very truly yours,

Beth 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.

10870176

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.

August 8, 1991

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

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

LIST OF APPENDICES

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 July 1991 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 ground-water monitoring was performed in accordance with the monitoring program outlined in Section 5.0 of the report prepared by MFG entitled "Additional Soil Excavation and Quarterly Ground-Water Monitoring Report", dated May 20, 1991.

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 July 17, 1991 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 July 17, 1991. Prior to collecting a sample, each well was purged using a positive displacement hand pump. Wells MW-1A, MW-2 and MW-3 were pumped dry after removal of approximately 3 casing volumes (4 gallons), 3.5 casing volumes (5.5 gallons), and 2 casing volumes (3 gallons), respectively. 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	20	7.3	12,000
MW-2	18	7.3	3,900
MW-3	18	7.4	20,000

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

A. 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

B. 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 (modified EPA Method 8020)
C. PNA's (EPA Method 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 respective laboratory method reporting limits in the ground-water samples collected from wells MW-1A, MW-2 and MW-3.

PNA's were also not detected above their respective laboratory method reporting limits in the ground-water samples collected from wells MW-1A, MW-2 and MW-3. However, the surrogate spike recoveries (a laboratory quality control criterion) for the samples from wells MW-1A, MW-3 and the laboratory method blank were below the laboratory's quality control limits (see laboratory report in Appendix A) when these samples were initially extracted and analyzed on July 19 and 20, 1991. Consequently, the samples were re-extracted on July 30, 1991, which was approximately six days beyond the holding time for the PNA analysis. PNA's were not detected in the samples from wells MW-1A and MW-3 which were re-extracted and reanalyzed on July 30 and 31, 1991 (Appendix A).

Although the PNA results must be qualified by the quality control criteria discussed above, these analytical results are supported by the following facts: 1) PNA's were not detected in the samples from wells MW-1A, MW-2 and MW-3 in either of the sets of analyses performed by the laboratory; 2) PNA's have not been reported previously in samples from wells MW-1A, MW-2 and MW-3; and 3) the other target constituents (TPH as gasoline and BTEX) were not detected in the samples from wells MW-1A, MW-2 and MW-3. Ground-water samples collected from wells MW-1A, MW-2 and MW-3 are proposed to be analyzed for PNA's again during the next quarterly monitoring period (Section 4.0).

3.0 EVALUATION OF LATERAL HYDRAULIC GRADIENT

MFG measured the depth to ground water in wells MW-1A, MW-2 and MW-3 on July 17, 1991 (Table 2). The depth to water in the wells ranged from approximately six to seven 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. A potentiometric surface map of the shallow ground water on July 17, 1991 was constructed using these data and is shown in Figure 7. The potentiometric surface contours illustrate that the direction of the lateral hydraulic gradient on July 17, 1991 was southeast, with an approximate magnitude of 0.003.

Water level measurements performed periodically at the Site since May 1990 indicate that the direction of the lateral hydraulic gradient has varied from south-southeast to east-southeast. Historical potentiometric surface maps of the shallow ground water at the Site are included in Figures 3 through 6.

4.0 RECOMMENDATIONS

MFG recommends that quarterly ground-water monitoring at the Site continue in accordance with the monitoring program outlined in Section 5.0 of the report prepared by MFG entitled "Additional Soil Excavation and Quarterly Ground-Water Monitoring Report", dated May 20, 1991. Ground-water monitoring at the Site will be performed for one additional period and will consist of:

(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 ground-water samples will be analyzed for total petroleum hydrocarbons (TPH) as gasoline; benzene, toluene, ethylbenzene, total xylenes (BTEX); and polynuclear aromatic hydrocarbons (PNA's) using the methods discussed in Section 2.2 of this report.

The anticipated sampling date for the next quarterly monitoring is October 1991. A quarterly ground-water monitoring report will be prepared and submitted approximately 30 days after receipt of the final analytical results. The anticipated submittal date for this report is November 1991. If the target constituents are again not detected in the next quarterly monitoring event, MFG would recommend that the Site be considered for closure by the Alameda County Department of Environmental Health and the Regional Water Quality Control Board, San Francisco Bay Region.

5qtroak.rpt

TABLE 1
(Page 1 of 2)

SUMMARY OF CHEMICAL ANALYSES OF GROUND-WATER SAMPLES[1]

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

WELL NO.	SAMPLE NO.	DATE SAMPLED	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)
		Reporting Limit:	0.05	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[2] [0.05][3]	2.2	0.25	0.033[4]
	MW-1	26-Sep-90	0.66	ND [0.0025]	0.004	0.028	0.046	0.016	ND
	MW-1	17-Dec-90[5]	1.6	0.19	ND [0.005]	0.063	0.027	0.039	0.023[6]
MW-1A[7]	MW-1A	30-Apr-91	ND	ND	ND	ND	ND	ND	ND
	MW-1A	17-Jul-91	ND	ND	ND	ND	ND	ND	ND
MW-2	MW-2	23-May-90	ND	ND	ND	ND	ND	ND	ND
	MW-2	26-Sep-90	ND	ND	ND	ND	ND	ND	ND
	MW-2	17-Dec-90	ND	ND	ND	ND	ND	ND	ND
	MW-2	13-Mar-91	ND	ND	ND	ND	ND	ND	ND
	MW-2	17-Jul-91	ND	ND	ND	ND	ND	ND	ND

TABLE 1
(Page 2 of 2)

SUMMARY OF CHEMICAL ANALYSES OF GROUND-WATER SAMPLES[1]

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

WELL NO.	SAMPLE NO.	DATE SAMPLED	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)
		Reporting Limit:	0.05	0.0005	0.0005	0.0005	0.0005	0.01	0.01
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

NOTES:

[1] Constituents in the EPA Method 8270 or 8310 analyses (PNA's) which are not listed were not detected in ground-water samples.

[2] ND = Not Detected at or above the reporting limit indicated at top of column.

[3] [ ] Indicates reporting limit other than that indicated at top of column.

[4] The PNA compound 2-methyl-naphthalene was detected at a concentration of 0.033 mg/L.

[5] Monitoring Well MW-1 was sealed and abandoned on February 26, 1991.

[6] The PNA compound acenaphthene was detected at a concentration of 0.023 mg/L.

[7] Monitoring Well MW-1A was installed on April 1, 1991.

TABLE 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[1])	MEASURING POINT ELEVATION[2] (ft NGVD[3])	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[4]	5.69	3.34	-2.35
MW-1A	30-Apr-91[5]	5.10	3.20	-1.90
	17-Jul-91	5.73	3.20	-2.53
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[6]	-2.02
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

NOTES:

1 BMP = Below Measuring Point.

2 Measuring Point is north side of top of PVC well casing.

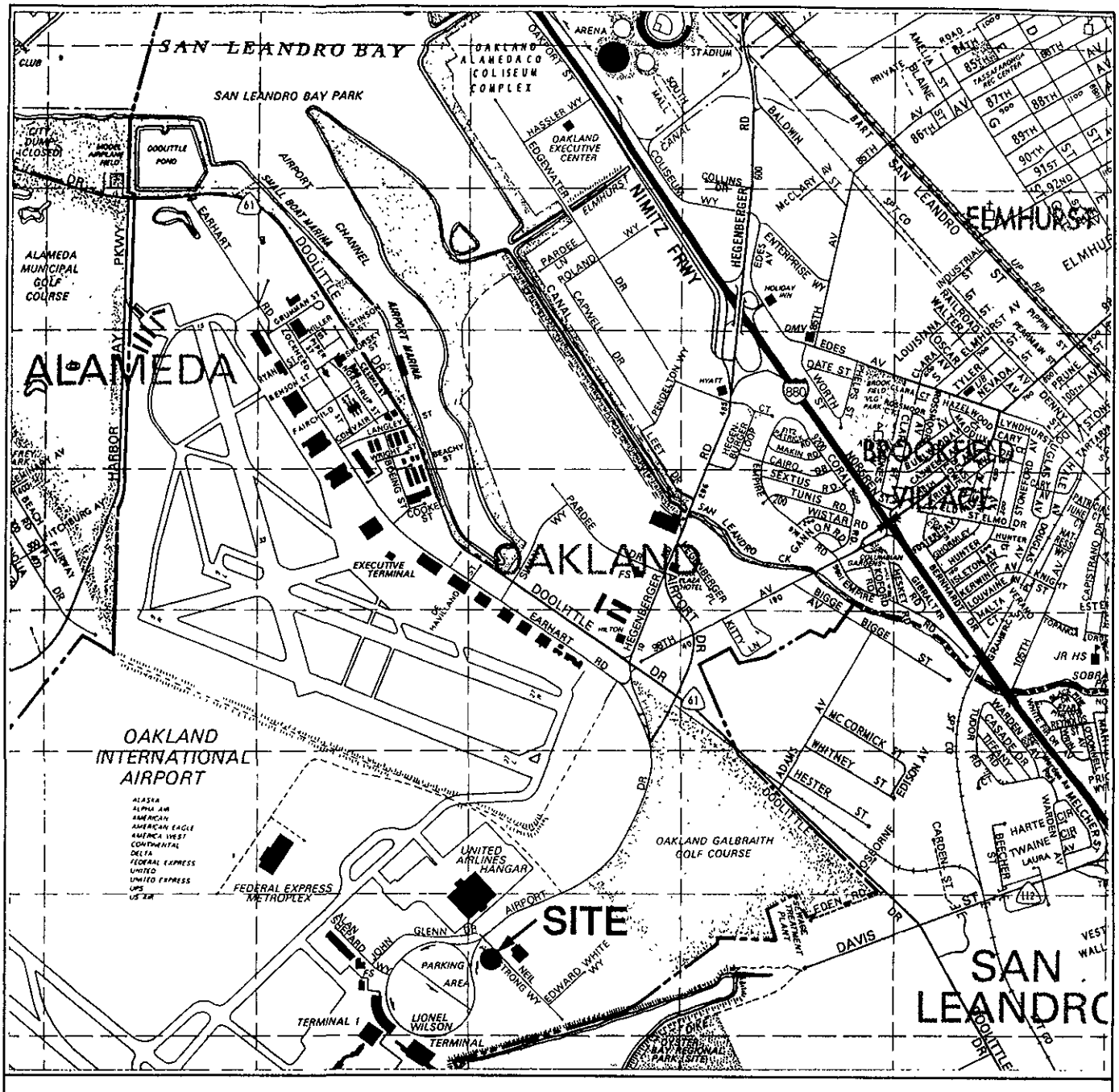
3 National Geodetic Vertical Datum of 1929.

[4] Monitoring Well MW-1 was sealed and abandoned on February 26, 1991.

[5] Monitoring well MW-1A was installed on April 1, 1991.

[6] 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.

5QTRTAB2.OAK



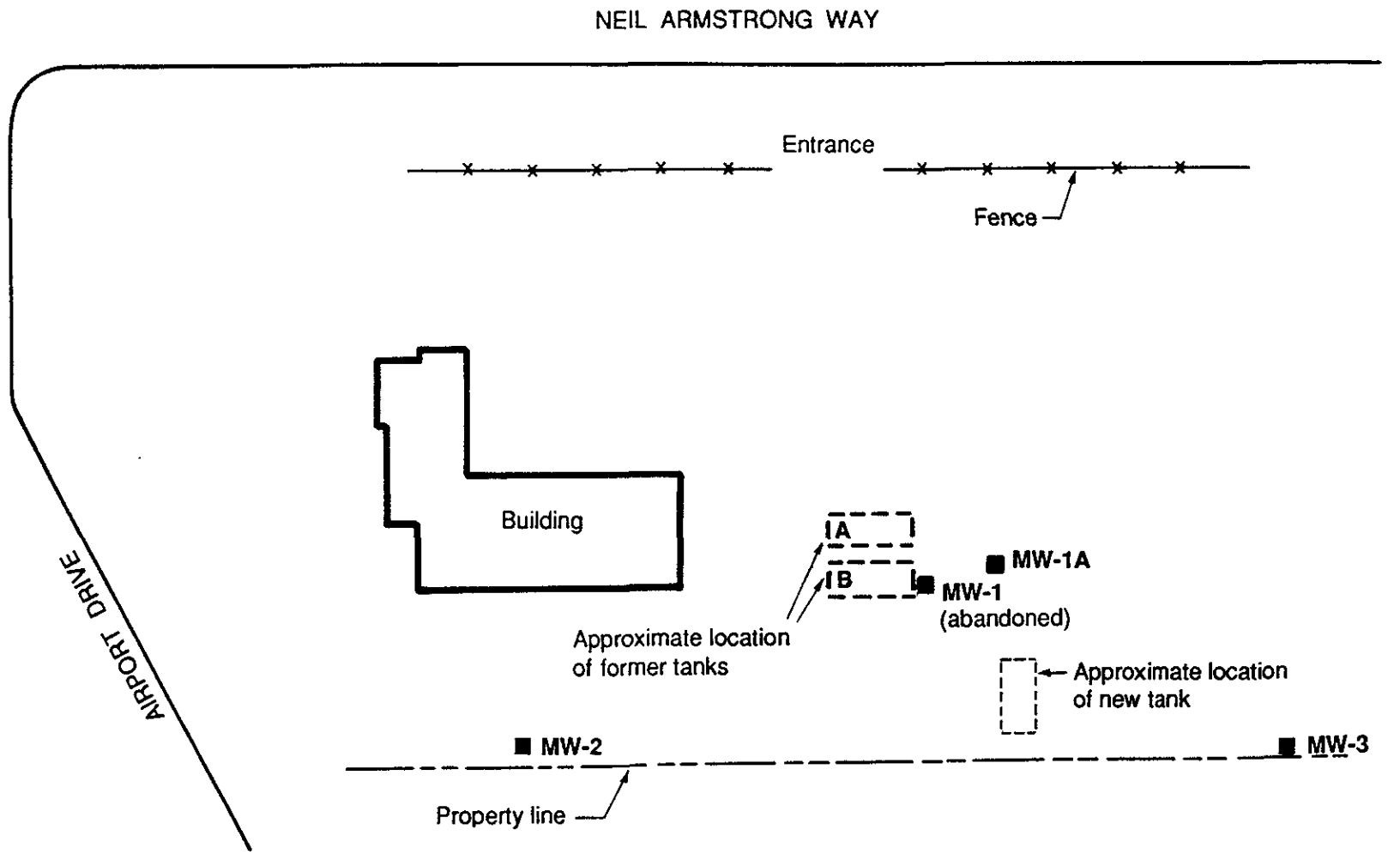
Source: The Thomas Guide,
Alameda and Santa Clara Counties Street Guide and Directory,
1989 Edition

N

0 1/2 Mile

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

McCulley, Frick & Gilman, Inc.	Project No. 90-2143	Figure 1



EXPLANATION

MW-2 ■ Location of monitoring well

Notes:

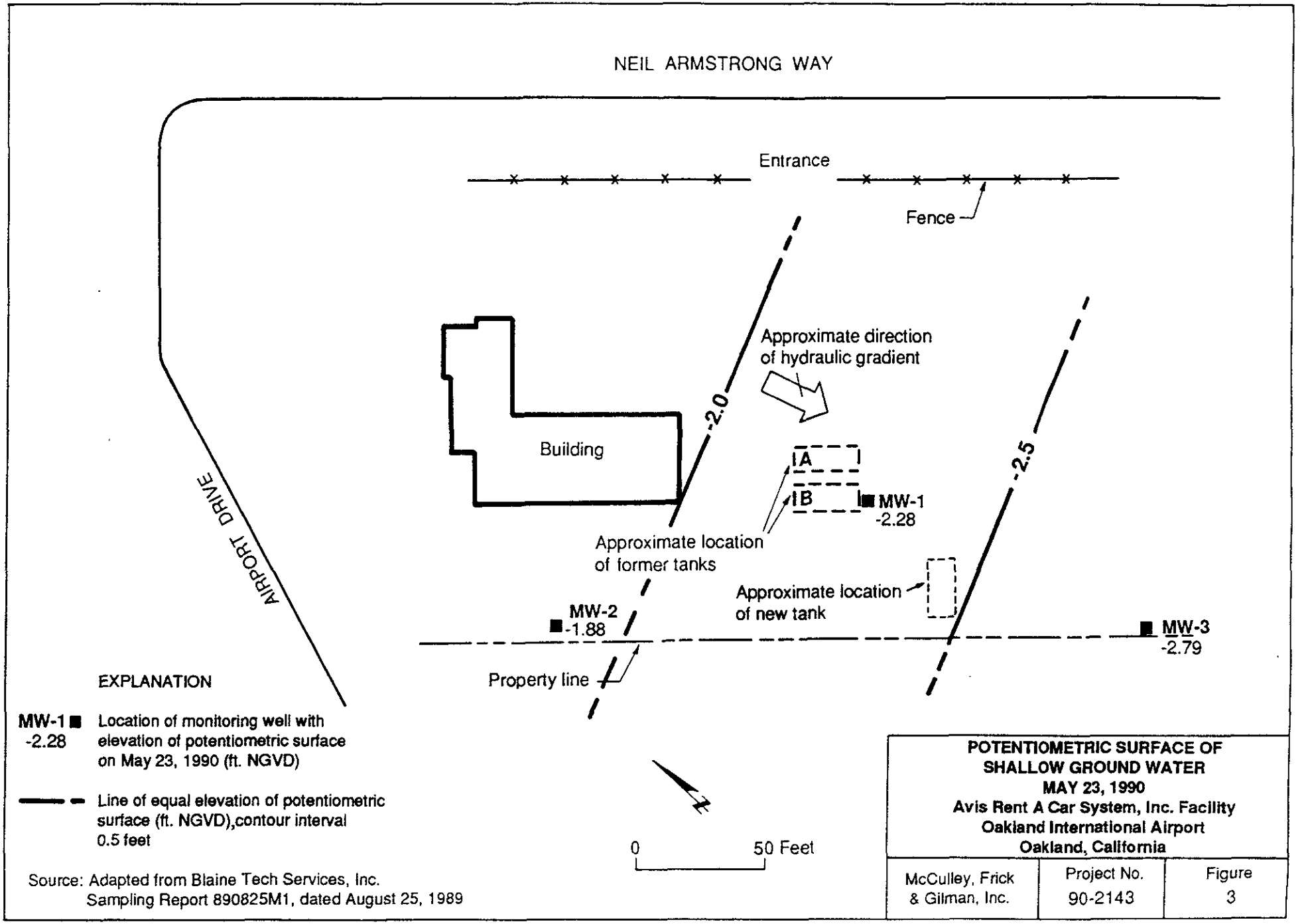
1. Well MW-1 abandoned on February 26, 1991.
2. Well MW-1A installed on April 1, 1991.

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

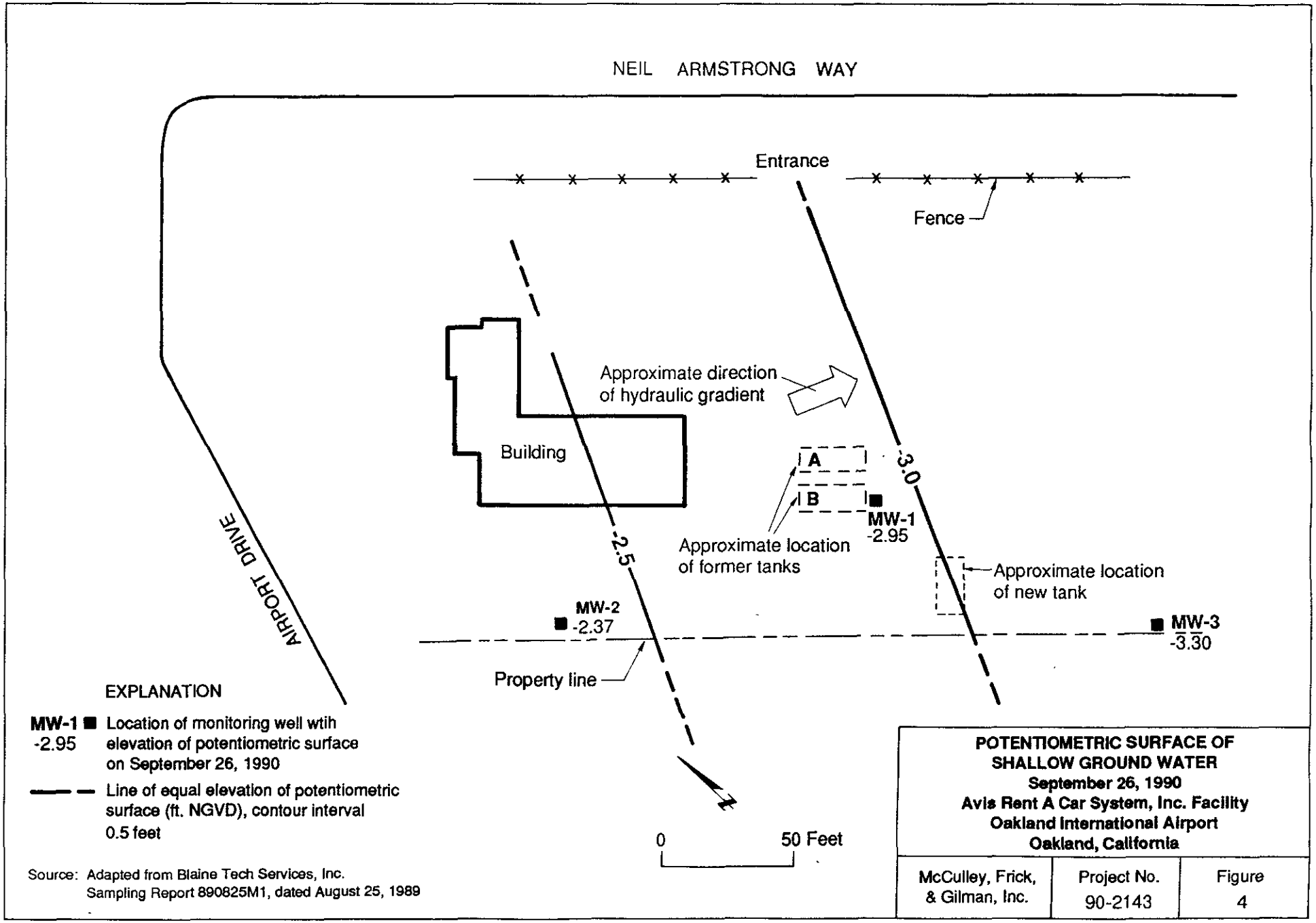
0 50 Feet

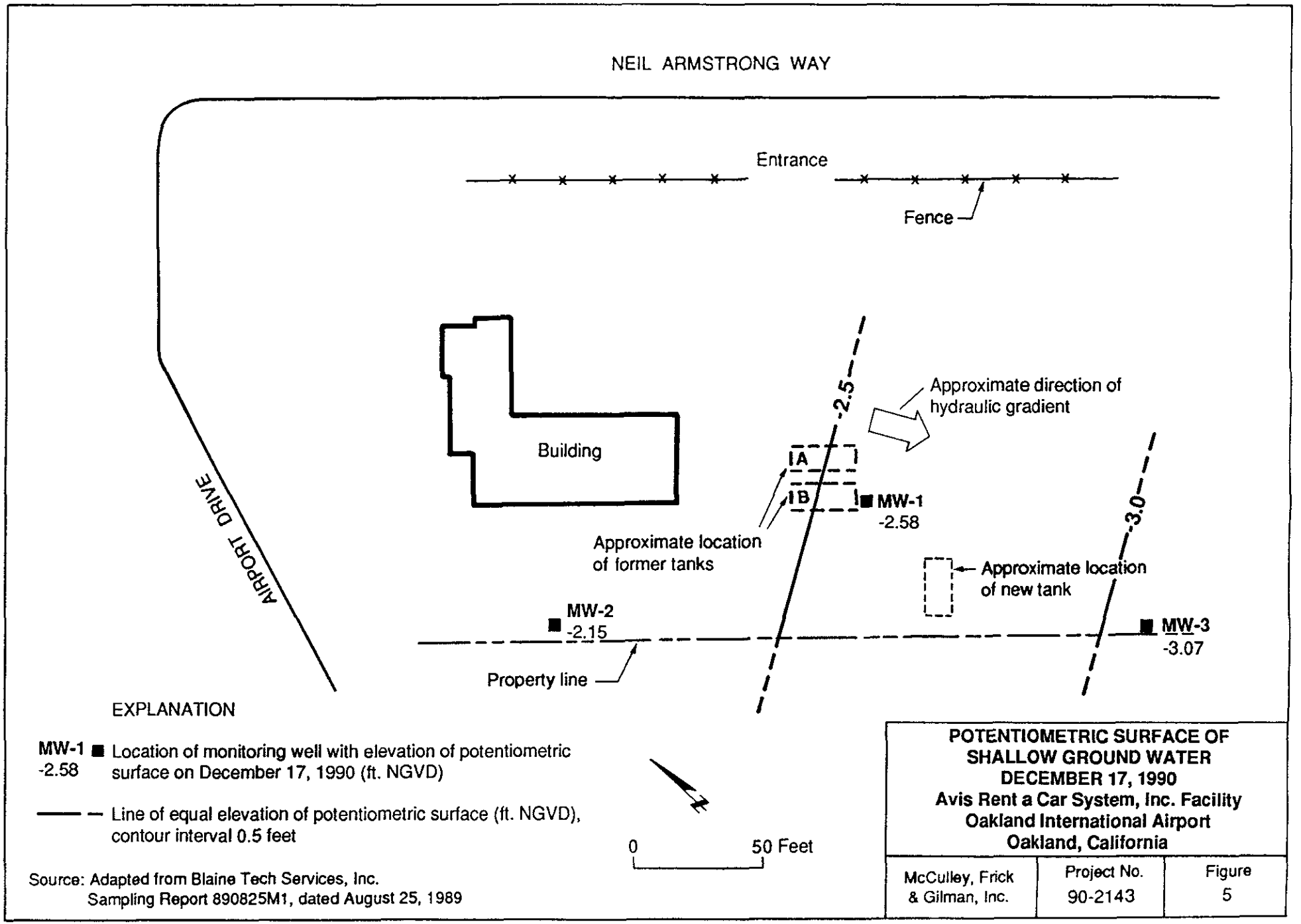
SITE PLAN
Avis Rent A Car System, Inc. Facility
Oakland International Airport
Oakland, California

McCulley, Frick & Gilman, Inc.	Project No. 90-2143	Figure 2



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

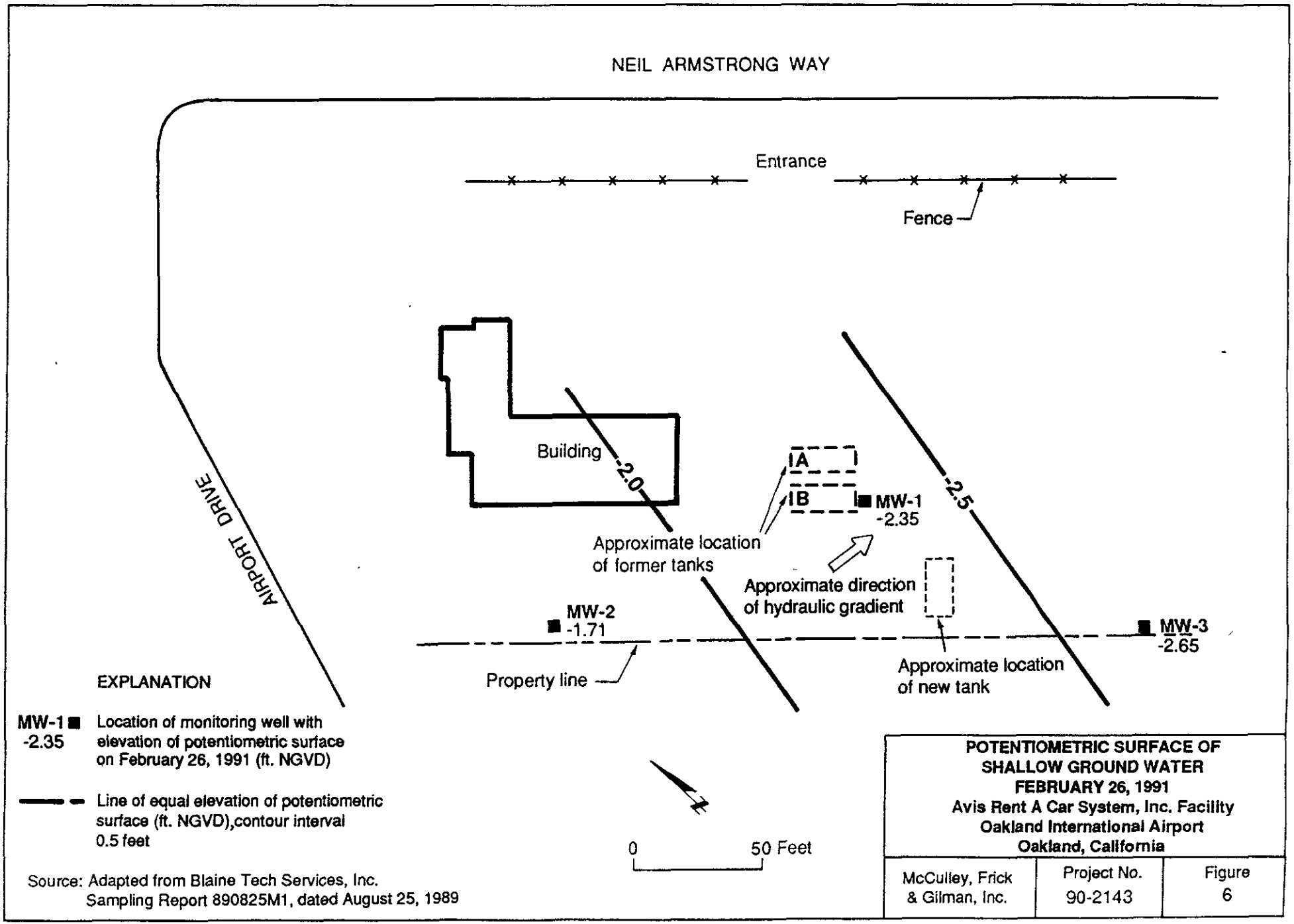

NEIL ARMSTRONG WAY
Entrance
Fence
Approximate direction of hydraulic gradient
Building
A
B
MW-1
-2.95
-3.0
-2.5
Approximate location of former tanks
Approximate location of new tank
MW-2
-2.37
MW-3
-3.30
Property line
AIRPORT DRIVE
0
50 Feet
EXPLANATION
MW-1 -2.95 Location of monitoring well wtih elevation 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
POTENTIOMETRIC SURFACE OF SHALLOW GROUND WATER
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



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

POTENTIOMETRIC SURFACE OF SHALLOW GROUND WATER DECEMBER 17, 1990
Avis Rent a Car System, Inc. Facility
Oakland International Airport
Oakland, California

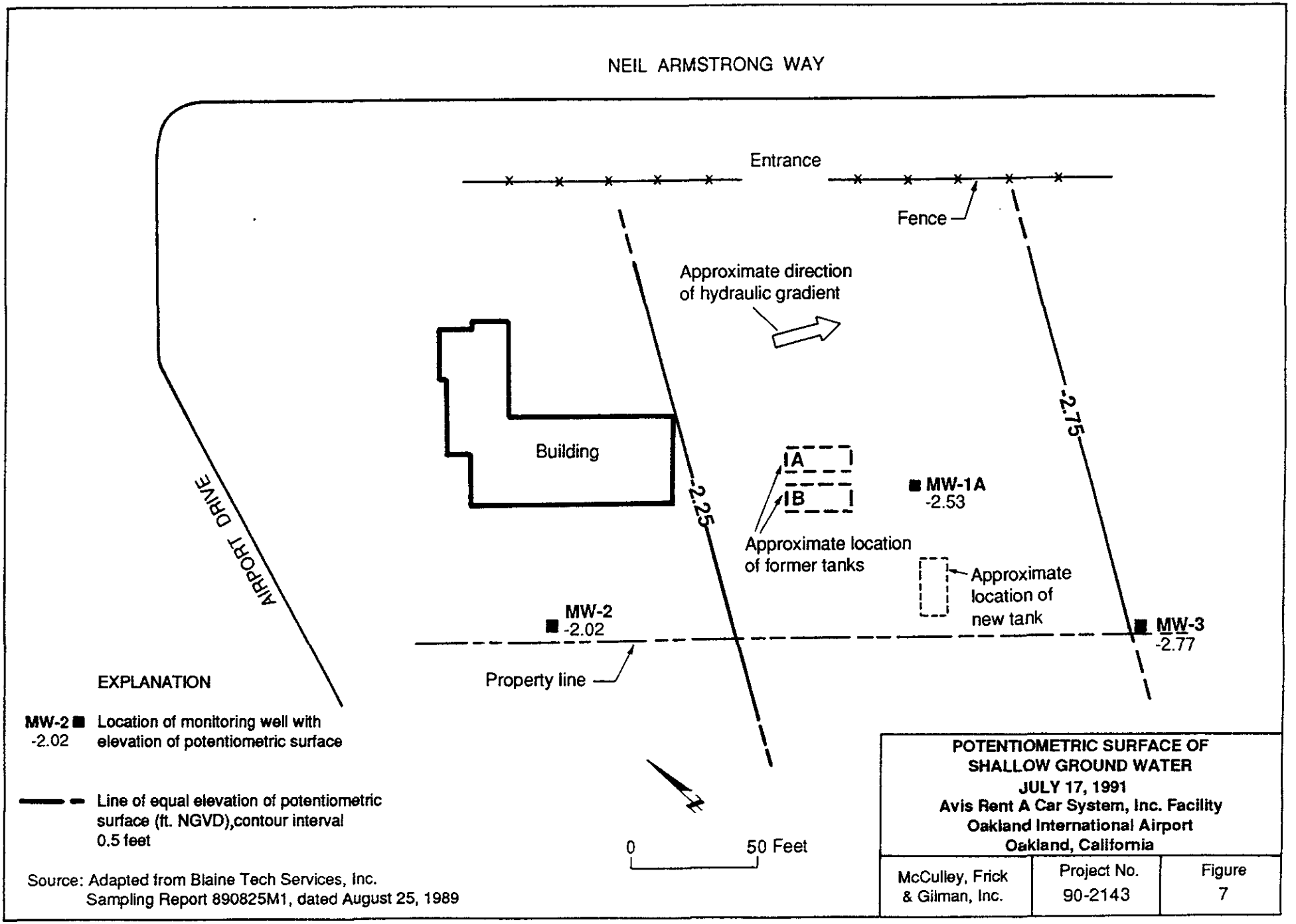
McCulley, Frick & Gilman, Inc.	Project No. 90-2143	Figure 5



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

POTENTIOMETRIC SURFACE OF SHALLOW GROUND WATER FEBRUARY 26, 1991
Avis Rent A Car System, Inc. Facility
Oakland International Airport
Oakland, California

McCulley, Frick & Gilman, Inc.	Project No. 90-2143	Figure 6


NEIL ARMSTRONG WAY
Entrance
Fence
Approximate direction of hydraulic gradient
Building
AIRPORT DRIVE
-2.25
-2.75
1A
1B
MW-1A
-2.53
Approximate location of former tanks
Approximate location of new tank
MW-2
-2.02
MW-3
-2.77
Property line
EXPLANATION
MW-2 -2.02 Location of monitoring well with elevation of potentiometric surface
Line of equal elevation of potentiometric surface (ft. NGVD),contour interval 0.5 feet
0
50 Feet
Source: Adapted from Blaine Tech Services, Inc. Sampling Report 890825M1, dated August 25, 1989
POTENTIOMETRIC SURFACE OF SHALLOW GROUND WATER
JULY 17, 1991
Avis Rent A Car System, Inc. Facility
Oakland International Airport
Oakland, California
McCulley, Frick & Gilman, Inc.
Project No. 90-2143
Figure 7

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

REPORT

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

Workorder # : 9107183
Date Received : 07/17/91
Project ID : 90-2143
Purchase Order: N/A

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

ANAMETRIX ID	CLIENT SAMPLE ID
9107183- 1	MW-2
9107183- 2	MW-3
9107183- 3	MW-1A
9107183- 4	TRIP BLANK

This report consists of 15 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 Manager

8-02-91
Date

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

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

Workorder # : 9107183
Date Received : 07/17/91
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
9107183- 1	MW-2	WATER	07/17/91	8310
9107183- 2	MW-3	WATER	07/17/91	8310
9107183- 3	MW-1A	WATER	07/17/91	8310

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

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

Workorder # : 9107183
Date Received : 07/17/91
Project ID : 90-2143
Purchase Order: N/A
Department : GC
Sub-Department: PEST

QA/QC SUMMARY :

- Samples MW-3, MW-1A, and the method blank from the first extraction on 07/19/91 had surrogate recoveries outside control limits. These samples were re-extracted past holding time on 07/30/91 and the surrogate recoveries were within control limits.

Stratos Dimos 8-2-91
Department Supervisor Date

Abdollah Haidar 8-2-91
Chemist Date

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

Sample I.D.	: 90-2143 MW-2	Anametrix I.D.	: 9107183-01
Matrix	: WATER	Analyst	: FA
Date sampled	: 07/17/91	Supervisor	: SD
Date ext.	: 07/19/91	Date released	: 08/01/91
Date analyzed	: 07/20/91	Volume ext.	: 1000 mL
Dilut. factor	: NONE	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	10	ND
208-96-8	* Acenaphthylene	10	ND
83-32-9	* Acenaphthene	10	ND
86-73-7	* Fluorene	10	ND
85-01-8	* Phenanthrene	5	ND
120-12-7	* Anthracene	5	ND
206-44-0	* Fluoranthene	5	ND
129-00-0	* Pyrene	5	ND
56-55-3	* Bnz(a)Anthracene	5	ND
218-01-9	* Chrysene	5	ND
205-99-2	* Bnz(b)Fluoranthene	5	ND
207-08-9	* Bnz(k)Fluoranthene	5	ND
50-32-8	* Bnz(a)Pyrene	5	ND
53-70-3	* DiBnz(ah)Anthracene	5	ND
191-24-2	* Bnz(g,h,i)Perylene	5	ND
193-39-5	* Indeno(123cd)Pyrene	5	ND
	% Surrogate Recovery	25-125%	28%

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

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

Sample I.D.	: 90-2143 MW-3	Anametrix I.D.	: 9107183-02
Matrix	: WATER	Analyst	: FH
Date sampled	: 07/17/91	Supervisor	: SD
Date ext.	: 07/19/91	Date released	: 08/01/91
Date analyzed	: 07/20/91	Volume ext.	: 900 mL
Dilut. factor	: NONE	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	10	ND
208-96-8	* Acenaphthylene	10	ND
83-32-9	* Acenaphthene	10	ND
86-73-7	* Fluorene	10	ND
85-01-8	* Phenanthrene	5	ND
120-12-7	* Anthracene	5	ND
206-44-0	* Fluoranthene	5	ND
129-00-0	* Pyrene	5	ND
56-55-3	* Bnz(a)Anthracene	5	ND
218-01-9	* Chrysene	5	ND
205-99-2	* Bnz(b)Fluoranthene	5	ND
207-08-9	* Bnz(k)Fluoranthene	5	ND
50-32-8	* Bnz(a)Pyrene	5	ND
53-70-3	* DiBnz(ah)Anthracene	5	ND
191-24-2	* Bnz(g,h,i)Perylene	5	ND
193-39-5	* Indeno(123cd)Pyrene	5	ND
	% Surrogate Recovery	25-125%	14%

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

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

Sample I.D.	: 90-2143 MW-3	Anametrix I.D.	: 9107183-02
Matrix	: WATER	Analyst	: EH
Date sampled	: 07/17/91	Supervisor	: SD
Date ext.	: 07/30/91	Date released	: 08/01/91
Date analyzed:	07/31/91	Volume ext.	: 1000 mL
Dilut. factor:	NONE	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	10	ND
208-96-8	* Acenaphthylene	10	ND
83-32-9	* Acenaphthene	10	ND
86-73-7	* Fluorene	10	ND
85-01-8	* Phenanthrene	5	ND
120-12-7	* Anthracene	5	ND
206-44-0	* Fluoranthene	5	ND
129-00-0	* Pyrene	5	ND
56-55-3	* Bnz(a)Anthracene	5	ND
218-01-9	* Chrysene	5	ND
205-99-2	* Bnz(b)Fluoranthene	5	ND
207-08-9	* Bnz(k)Fluoranthene	5	ND
50-32-8	* Bnz(a)Pyrene	5	ND
53-70-3	* DiBnz(ah)Anthracene	5	ND
191-24-2	* Bnz(g,h,i)Perylene	5	ND
193-39-5	* Indeno(123cd)Pyrene	5	ND
	% Surrogate Recovery	25-125%	74%

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

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

Sample I.D.	: 90-2143 MW-1A	Anametrix I.D.	: 9107183-03
Matrix	: WATER	Analyst	: FH
Date sampled	: 07/17/91	Supervisor	: SD
Date ext.	: 07/19/91	Date released	: 08/01/91
Date analyzed	: 07/20/91	Volume ext.	: 930 mL
Dilut. factor	: NONE	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	10	ND
208-96-8	* Acenaphthylene	10	ND
83-32-9	* Acenaphthene	10	ND
86-73-7	* Fluorene	10	ND
85-01-8	* Phenanthrene	5	ND
120-12-7	* Anthracene	5	ND
206-44-0	* Fluoranthene	5	ND
129-00-0	* Pyrene	5	ND
56-55-3	* Bnz(a)Anthracene	5	ND
218-01-9	* Chrysene	5	ND
205-99-2	* Bnz(b)Fluoranthene	5	ND
207-08-9	* Bnz(k)Fluoranthene	5	ND
50-32-8	* Bnz(a)Pyrene	5	ND
53-70-3	* DiBnz(ah)Anthracene	5	ND
191-24-2	* Bnz(g,h,i)Perylene	5	ND
193-39-5	* Indeno(123cd)Pyrene	5	ND
	% Surrogate Recovery	25-125%	16%

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

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

Sample I.D.	: 90-2143 MW-1A	Anametrix I.D.	: 9107183-03
Matrix	: WATER	Analyst	: FH
Date sampled	: 07/17/91	Supervisor	: SD
Date ext.	: 07/30/91	Date released	: 08/01/91
Date analyzed	: 07/31/91	Volume ext.	: 1000 mL
Dilut. factor	: NONE	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	10	ND
208-96-8	* Acenaphthylene	10	ND
83-32-9	* Acenaphthene	10	ND
86-73-7	* Fluorene	10	ND
85-01-8	* Phenanthrene	5	ND
120-12-7	* Anthracene	5	ND
206-44-0	* Fluoranthene	5	ND
129-00-0	* Pyrene	5	ND
56-55-3	* Bnz(a)Anthracene	5	ND
218-01-9	* Chrysene	5	ND
205-99-2	* Bnz(b)Fluoranthene	5	ND
207-08-9	* Bnz(k)Fluoranthene	5	ND
50-32-8	* Bnz(a)Pyrene	5	ND
53-70-3	* DiBnz(ah)Anthracene	5	ND
191-24-2	* Bnz(g,h,i)Perylene	5	ND
193-39-5	* Indeno(123cd)Pyrene	5	ND
	% Surrogate Recovery	25-125%	72%

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

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

Sample I.D.	: METHOD BLANK	Anametrix I.D.	: PWBL071991
Matrix	: WATER	Analyst	: FH
Date sampled	: N/A	Supervisor	: SP
Date ext.	: 07/19/91	Date released	: 08/01/91
Date analyzed	: 07/20/91	Volume ext.	: 1000 mL
Dilut. factor	: NONE	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	10	ND
208-96-8	* Acenaphthylene	10	ND
83-32-9	* Acenaphthene	10	ND
86-73-7	* Fluorene	10	ND
85-01-8	* Phenanthrene	5	ND
120-12-7	* Anthracene	5	ND
206-44-0	* Fluoranthene	5	ND
129-00-0	* Pyrene	5	ND
56-55-3	* Bnz(a)Anthracene	5	ND
218-01-9	* Chrysene	5	ND
205-99-2	* Bnz(b)Fluoranthene	5	ND
207-08-9	* Bnz(k)Fluoranthene	5	ND
50-32-8	* Bnz(a)Pyrene	5	ND
53-70-3	* DiBnz(ah)Anthracene	5	ND
191-24-2	* Bnz(g,h,i)Perylene	5	ND
193-39-5	* Indeno(123cd)Pyrene	5	ND
	% Surrogate Recovery	25-125%	18%

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

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

Sample I.D.	: METHOD BLANK	Anametrix I.D.	: PWBL073091
Matrix	: WATER	Analyst	: FH
Date sampled	: N/A	Supervisor	: SD
Date ext.	: 07/30/91	Date released	: 08/01/91
Date analyzed:	07/31/91	Volume ext.	: 1000 mL
Dilut. factor:	NONE	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	10	ND
208-96-8	* Acenaphthylene	10	ND
83-32-9	* Acenaphthene	10	ND
86-73-7	* Fluorene	10	ND
85-01-8	* Phenanthrene	5	ND
120-12-7	* Anthracene	5	ND
206-44-0	* Fluoranthene	5	ND
129-00-0	* Pyrene	5	ND
56-55-3	* Bnz(a)Anthracene	5	ND
218-01-9	* Chrysene	5	ND
205-99-2	* Bnz(b)Fluoranthene	5	ND
207-08-9	* Bnz(k)Fluoranthene	5	ND
50-32-8	* Bnz(a)Pyrene	5	ND
53-70-3	* DiBnz(ah)Anthracene	5	ND
191-24-2	* Bnz(g,h,i)Perylene	5	ND
193-39-5	* Indeno(123cd)Pyrene	5	ND
	% Surrogate Recovery	25-125%	76%

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

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: 07/30/91
Date analyzed : 07/31/91

Anametrix I.D : 9107183
Analyst : FH
Supervisor : SD
Date released : 08/02/91
Instrument I.D.: HP17

COMPOUND	SPIKE AMT. (ug/L)	MS (ug/L)	%REC MS	MSD (ug/L)	%REC MSD	RPD	%REC LIMITS
Naphthalene	100.0	71.0	71%	63.0	63%	-12%	25-125%
Acnaphthene	100.0	81.0	81%	66.0	66%	-20%	25-125%
Flurene	100.0	86.0	86%	76.0	76%	-12%	25-125%
Benzo(a)anthracene	20.0	18.0	90%	16.0	80%	-12%	25-125%
Chrysene	20.0	16.0	80%	14.0	70%	-13%	25-125%

* Limits established by Anametrix,InC.

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

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

Workorder # : 9107183
Date Received : 07/17/91
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
9107183- 1	MW-2	WATER	07/17/91	TPHg/BTEX
9107183- 2	MW-3	WATER	07/17/91	TPHg/BTEX
9107183- 3	MW-1A	WATER	07/17/91	TPHg/BTEX
9107183- 4	TRIP BLANK	WATER	07/17/91	TPHg/BTEX

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

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

Workorder # : 9107183
Date Received : 07/17/91
Project ID : 90-2143
Purchase Order: N/A
Department : GC
Sub-Department: TPH

QA/QC SUMMARY :

- No QA/QC problems encountered for these samples.

Cheryl Bedmer 7/29/91
Department Supervisor Date

Anna Shor 7/29/91
Chemist Date

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

Anametrix W.O.: 9107183
Matrix : WATER
Date Sampled : 07/17/91

Project Number : 90-2143
Date Released : 07/29/91

COMPOUNDS	Reporting Limit (ug/L)	Sample I.D.# MW-2 -01	Sample I.D.# MW-3 -02	Sample I.D.# MW-1A -03	Sample I.D.# TRIP BLANK -04	Sample I.D.# 04B0722A BLANK
Benzene	0.5	ND	ND	ND	ND	ND
Toluene	0.5	ND	ND	ND	ND	ND
Ethylbenzene	0.5	ND	ND	ND	ND	ND
Total Xylenes	0.5	ND	ND	ND	ND	ND
TPH as Gasoline	50	ND	ND	ND	ND	ND
% Surrogate Recovery		89%	104%	93%	74%	102%
Instrument I.D.		HP4	HP4	HP4	HP4	HP4
Date Analyzed		07/22/91	07/23/91	07/23/91	07/23/91	07/22/91
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 EPA Method 5030.
BTEX - Benzene, Toluene, Ethylbenzene, and Total Xylenes are determined by modified EPA Method 8020.
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.

Steve Sims 07/29/91
Analyst Date

Cheryl Bedman 7/30/91
Supervisor Date

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

Anametrix W.O.: 9107183
Matrix : WATER
Date Sampled : N/A

Project Number : 90-2143
Date Released : 07/29/91

COMPOUNDS	Reporting Limit (ug/L)	Sample I.D.# 04B0723A BLANK
Benzene	0.5	ND
Toluene	0.5	ND
Ethylbenzene	0.5	ND
Total Xylenes	0.5	ND
TPH as Gasoline	50	ND
% Surrogate Recovery		91%
Instrument I.D.		HP4
Date Analyzed		07/23/91
RLMF		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 EPA Method 5030.
BTEX - Benzene, Toluene, Ethylbenzene, and Total Xylenes are determined by modified EPA Method 8020.
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.

Steve Pace 07/29/91
Analyst Date

Cheryl Balman 7/29/91
Supervisor Date

TOTAL VOLATILE HYDROCARBON MATRIX SPIKE REPORT
EPA METHOD 5030 WITH GC/FID
ANAMETRIX, INC. (408) 432-8192

Sample I.D. : 90-2143 MW-1A
Matrix : WATER
Date Sampled : 07/17/91
Date Analyzed : 07/25/91

Anametrix I.D. : 9107183-03
Analyst : CF.
Supervisor : [signature]
Date Released : 07/29/91

COMPOUND	SPIKE AMT. (UG/L)	MS (UG/L)	%REC MS	MSD (UG/L)	%REC MSD	RPD	REC LIMITS
GASOLINE	1000	900	90%	930	93%	3%	48-145%
P-BFB			145%		122%		53-147%

* Limits established by Anametrix, Inc.