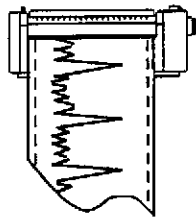


SECOND QUARTER 1998  
QUARTERLY GROUNDWATER MONITORING PROGRAM  
REPORT

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GERMAN AUTOCRAFT  
301 E. 14TH STREET, SAN LEANDRO, CALIFORNIA

Prepared by:



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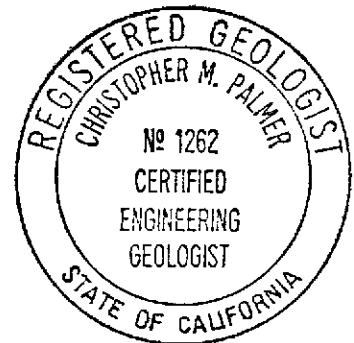
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Report issued July 10, 1998

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## I. INTRODUCTION

Environmental Testing & Management (ETM) has continued the quarterly groundwater monitoring program and related environmental activities completed during the calendar second quarter of 1998 at German Autocraft located at 301 East 14th Street in the City of San Leandro, Alameda County, California (Figure 1). This report is submitted to the Alameda County Department of Environmental Health (ACDEH) on behalf of Mr. Seung Lee, owner of German Autocraft.

The SWI (report dated June 7, 1995) involved an off-site soil and groundwater sampling program which defined the migration limit of the German Autocraft fuel release at approximately 240 feet northwest of the former tank pit in the shallow aquifer. The results of the SWI were presented in a technical report issued by ETM on July 12, 1996. The quarterly monitoring program is performed to meet the requirements of the ACDEH.

The purpose of this quarterly monitoring program is to evaluate groundwater quality in the area of five former underground fuel storage tanks (USTs) that were removed in 1990. Data accumulated from the program will be used to assess seasonal groundwater level fluctuations, changing groundwater quality conditions, and provide data which will support the development of corrective action plans at the site.

The quarterly monitoring program presents a description of the groundwater monitoring activities, a compilation of groundwater quality and elevation data, maintenance of the passive skimmer system in the former tank pit area, and a brief description of the progress of the development of corrective actions at the site.

## I. INTRODUCTION

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## **II. BACKGROUND**

German Autocraft is located at 301 E. 14th Street in San Leandro (see Location Map, **Figure 1**). The approximate locations of buildings, property boundaries, and adjacent streets are presented on the Site Map, **Figure 2**. For detailed descriptions of prior environmental activities at the subject site, please refer to the references section of this report for a listing of reports which have been submitted to the ACDEH.

## **III. WORK PERFORMED DURING SECOND QUARTER, 1998**

Work included groundwater level gauging and sampling, data analysis, and report preparation. Activity highlights during this period are as follows:

- **June 6, 1998** - ETM measured groundwater elevations and collected groundwater samples from monitoring wells MW-1, MW-2, and MW-3. The samples from MW-1, MW-2, and MW-3 were submitted to a Department of Health Services (DHS)-certified laboratory for analysis of Total Petroleum Hydrocarbons as Gasoline (TPHg), tert-Butanol, Methyl tert-Butyl Ether (MtBE), Diisopropyl ether, Ethyl-tert-butyl ether, tert-Amylmethyl ether, and Benzene, Toluene, Ethyl Benzene, and Xylenes (BTEX). The passive skimmer system at MW-4 was removed for replacement of the filter system. Approximately 15 gallons of groundwater was bailed out of MW-4 to check for separate phase product.

## **IV. GROUNDWATER ELEVATION AND GRADIENT**

Static groundwater level elevation data collected from on-site groundwater wells on June 6, 1998, indicated that the elevation of the shallow groundwater surface beneath the site ranged from 30.41

to 30.69 feet above mean sea level. The estimated groundwater flow direction was to the west (approximate gradient = 0.003 ft/ft).

**Table 1** presents the recent groundwater elevation data and **Figure 3** shows estimated groundwater flow direction as interpreted from the groundwater potentiometric elevation data.

The potentiometric groundwater elevation at the site was observed to drop approximately three (3) feet compared to the gauging event of the previous quarter.

The observed hydraulic gradient at the subject site is very flat. The gradient may change due to groundwater recharge or extraction, seasonal changes and natural aquifer outflow.

## **V. GROUNDWATER SAMPLING AND ANALYTICAL RESULTS**

On June 6, 1998, groundwater samples were collected from MW-1, MW-2, and MW-3 following the groundwater sampling procedures presented in **Appendix A**. The groundwater samples were analyzed for TPHg, BTEX, tert-Butanol, MtBE, Diisopropyl ether, Ethyl-tert-butyl ether, and tert-Amylmethyl ether using EPA Methods 5030, modified 8015, 8020, 8240 by Entech Analytical Labs, Inc. of Sunnyvale, California. The laboratory report and chain-of-custody documents are included in **Appendix B**. The field sampling data sheets are presented in **Appendix C**. The quality assurance/quality control description is included in **Appendix D**. Historic groundwater chemical test data is presented in **Table 4**.

Compared to the previous quarter, the results of the recent groundwater testing showed a general variation in TPHg and BTEX concentrations as some analyte concentrations increased while others decreased. No gasoline oxygenate additive-related compounds were detected in any samples tested by EPA Method 8240. Most of the BTEX chemical constituents continue to exceed their respective

California Drinking Water Maximum Contaminant Levels (MCLs) or Federal Action Levels (AL) (Table 3).

The sample from MW-1, located upgradient of the former gasoline tank area, contained: TPHg at 110,000 micrograms per liter ( $\mu\text{g/L}$ ); tert-Butanol at  $<20 \mu\text{g/L}$ ; MtBE at  $<5 \mu\text{g/L}$ ; Diisopropyl ether at  $<5 \mu\text{g/L}$ ; ethyl-tert-butyl ether at  $<5 \mu\text{g/L}$ , tert-Amylmethyl ether at  $<5 \mu\text{g/L}$ ; benzene at 7,600  $\mu\text{g/L}$  which exceeds its MCL of 1  $\mu\text{g/L}$ ; toluene at 32,000  $\mu\text{g/L}$  which exceeds its MCL of 150  $\mu\text{g/L}$ ; ethyl benzene at 4,800  $\mu\text{g/L}$  which exceeds its MCL of 700  $\mu\text{g/L}$ , and; total xylenes at 23,000  $\mu\text{g/L}$  which exceeds its MCL of 1,750  $\mu\text{g/L}$ .

The sample from MW-2, located down gradient of the former gasoline tank area, contained 16,000  $\mu\text{g/L}$  of TPHg, tert-Butanol at  $<20 \mu\text{g/L}$ ; MtBE at  $<5 \mu\text{g/L}$ ; Diisopropyl ether at  $<5 \mu\text{g/L}$ ; ethyl-tert-butyl ether at  $<5 \mu\text{g/L}$ , tert-Amylmethyl ether at  $<5 \mu\text{g/L}$ ;  $<5 \mu\text{g/L}$  of MtBE, 670  $\mu\text{g/L}$  of benzene, 1,100  $\mu\text{g/L}$  of toluene, 510  $\mu\text{g/L}$  of ethyl benzene, and 1,200  $\mu\text{g/L}$  of total xylenes.

Monitoring well MW-3, also located down gradient of the former gasoline tank area, contained 52,000  $\mu\text{g/L}$  of TPHg, tert-Butanol at  $<20 \mu\text{g/L}$ ; MtBE at  $<5 \mu\text{g/L}$ ; Diisopropyl ether at  $<5 \mu\text{g/L}$ ; ethyl-tert-butyl ether at  $<5 \mu\text{g/L}$ , tert-Amylmethyl ether at  $<5 \mu\text{g/L}$ ; 4,400  $\mu\text{g/L}$  of benzene, 1,900  $\mu\text{g/L}$  of toluene, 2,300  $\mu\text{g/L}$  of ethyl benzene, and 6,900  $\mu\text{g/L}$  of total xylenes.

## VI. CONCLUSIONS

Available data, including data from the second quarter 1998 monitoring events, indicate that groundwater flow patterns beneath the site are consistent with previous monitoring events during 1995, 1996, and 1997. Groundwater flowed toward the west at the single gauging event of the second calendar quarter of 1998.

The recent groundwater sampling event showed a general variation in concentrations of TPHg and BTEX from those concentrations measured in the previous quarter. Various chemical constituents continue to exceed their respective California Drinking Water Maximum Contaminant Levels (MCLs) or Federal Action Levels (AL) at MW-1, MW-2 and MW-3.

## **VII. RECOMMENDATIONS**

We recommend that the monitoring wells continue to be monitored and gauged on a quarterly basis to comply with the ACDEH requirements and to assess trends in constituent concentrations over time. The data will be used to support development of a corrective action plan at the site.

## **VIII. LIMITATIONS**

The data, information, interpretations and recommendations contained in this report are presented to meet current suggested regulatory requirements for determining groundwater quality on the site. Environmental Testing & Mgmt. is not responsible for laboratory errors or completeness of other consultants reports, and no warranty is made or implied therein.

The conclusions and professional opinions presented herein were developed by ETM in accordance with current regulatory guidance and the opinions expressed are subject to revisions in light of new information which may develop in the future.



## **IX. REFERENCES**

California Code of Regulations, Title 22, 66260.21, "Environmental Health Standards", 6/23/95.

Code of Federal Regulations, 40 CFR 260, "Hazardous Waste Management System: General, 7/1/94.

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- Environmental Testing and Management, *Fourth Quarter 1995 Environmental Activities Report*, German Autocraft, 301 East 14th Street, San Leandro, California, February, 1995.
- Woodward-Clyde Consultants, *Hydrogeology of Central San Leandro and Remedial Investigation of Regional Groundwater Contamination, San Leandro Plume, San Leandro, California, Volume I*, December 23, 1993.

**TABLE 1. SECOND QUARTER 1998 GROUNDWATER POTENTIOMETRIC SURFACE  
ELEVATION DATA**

		June 6, 1998	
WELL	CASING ELEVATION <sup>1</sup>	Depth to Groundwater	Groundwater Elevation
MW-1	49.61	18.92	30.69
MW-2	50.14	19.73	30.41
MW-3	49.44	18.97	30.47

<sup>1</sup>Elevations in feet above mean sea level.

**TABLE 2. HISTORIC GROUNDWATER POTENTIOMETRIC SURFACE ELEVATION DATA**

DATE	Groundwater Surface Elevation <sup>2</sup>		
	MW-1	MW-2	MW-3
12/31/90	19.15 <sup>3</sup>	-	-
2/10/95	29.59	29.62	29.57
7/7/95	26.63	26.47	26.50
8/10/95	25.58	25.40	25.44
9/11/95	24.68	24.49	24.54
10/2/95	24.12	23.94	24.00
11/7/95	23.36	23.13	23.21
12/8/95	22.77	22.55	22.62
1/12/96	24.35	24.20	24.25
2/12/96	29.04	29.03	29.00
3/12/96	31.75	31.60	31.67
4/13/96	29.43	29.25	29.26
5/14/96	27.89	27.68	27.71
6/20/96	27.19	26.97	27.00
7/26/96	25.95	25.74	25.76
8/19/96	25.16	24.97	25.01
9/17/96	24.44	24.22	24.27
10/21/96	23.63	23.43	23.48

<sup>2</sup>Elevations in feet above mean sea level.

<sup>3</sup>This elevation was determined by using the depth of 30.46' measured by The Environmental Construction Company shortly after installation of MW-1 on December 31, 1990 and the surveyed top of casing elevation of 49.61 at MW-1 on January 6, 1995.

DATE	MW-1	MW-2	MW-3
11/27/96	24.28	24.09	24.13
12/27/96	28.23	28.03	28.11
1/28/97	33.02	32.71	32.78
4/25/97	27.14	26.88	26.94
7/17/97	24.55	24.31	24.37
10/21/97	22.85	22.69	22.73
3/10/98	34.35	34.20	34.13
6/6/98	30.69	30.41	30.47

**TABLE 3. GROUNDWATER CHEMICAL TEST RESULTS**

Locations: MW-1, MW-2, MW-3

Date Sampled: June 6, 1998 Units: µg/L

WELL	TPHg	BENZENE	TOLUENE	ETHYL-BENZENE	XYLENES	MtBE <sup>4</sup>
MW-1	110,000	7,600	32,000	4,800	23,000	<5
MW-2	16,000	670	1,100	510	1,200	<5
MW-3	52,000	4,400	1,900	2,300	6,900	<5
MCL/AL <sup>5</sup>	-	1	150	700	1,750	35

<sup>4</sup>MtBE = methyl-tert-butyl-ether. The California Regional Water Quality Control Board initiated the requirement of quantitation of MtBE as an additional analyte for EPA Method 8020 as of January 12, 1996.

<sup>5</sup>Maximum Contaminant Level or Action Level as established by the State of California, Division of Drinking Water and Environmental Management, Department of Health Services "Summary, Maximum Contaminant and Action Levels" November, 1994.

**TABLE 4. HISTORIC GROUNDWATER CHEMICAL TEST RESULTS**

Locations: MW-1, MW-2, MW-3

Units:  $\mu\text{g/L}$ 

WELL	DATE	TPHg	BENZENE	TOLUENE	ETHYL-BENZENE	XYLENES	MtBE
MW-1	12/31/90	51,000	2,200	1,200	<0.5	760	N/A <sup>6</sup>
	1/6/95	110,000	13,000	15,000	4,800	13,000	N/A
	1/6/95	580,000	29,000	41,000	17,000	43,000	N/A
	7/6/95	49,000	8,000	17,000	1,900	9,700	N/A
	7/6/95	47,000	4,800	9,500	930	5,000	N/A
	10/2/95	120,000	16,000	36,000	3,300	17,000	N/A
	10/2/95	160,000	20,000	47,000	5,000	23,000	N/A
	1/12/96	1,100,000	11,000	18,000	15,000	51,000	18,000 <sup>7</sup>
	1/12/96	98,000	2,100	4,600	2,500	10,000	<5,000
	4/13/96	53,000	1,300	2,900	2,100	10,000	<5,000
	4/13/96	58,000	820	3,600	2,800	12,000	<5,000
	7/26/96	91,000	2,900	7,200	2,900	14,000	<5,000
	7/26/96	67,000	2,300	5,500	2,500	11,000	<5,000
	10/21/96	210,000	4,800	17,000	2,300	15,000	N/A
	10/21/96	210,000	5,400	18,000	2,600	11,000	N/A
	1/28/97	120,000	5,600	15,000	2,100	11,000	N/A
	1/28/97	130,000	5,500	15,000	2,300	12,000	N/A

<sup>6</sup>N/A = Not Analyzed. The California Regional Water Quality Control Board initiated the requirement of quantitation of MtBE as an additional analyte for EPA Method 8020 as of January 12, 1996. The samples not analyzed for MtBE in this table pre-date the recent new requirement.

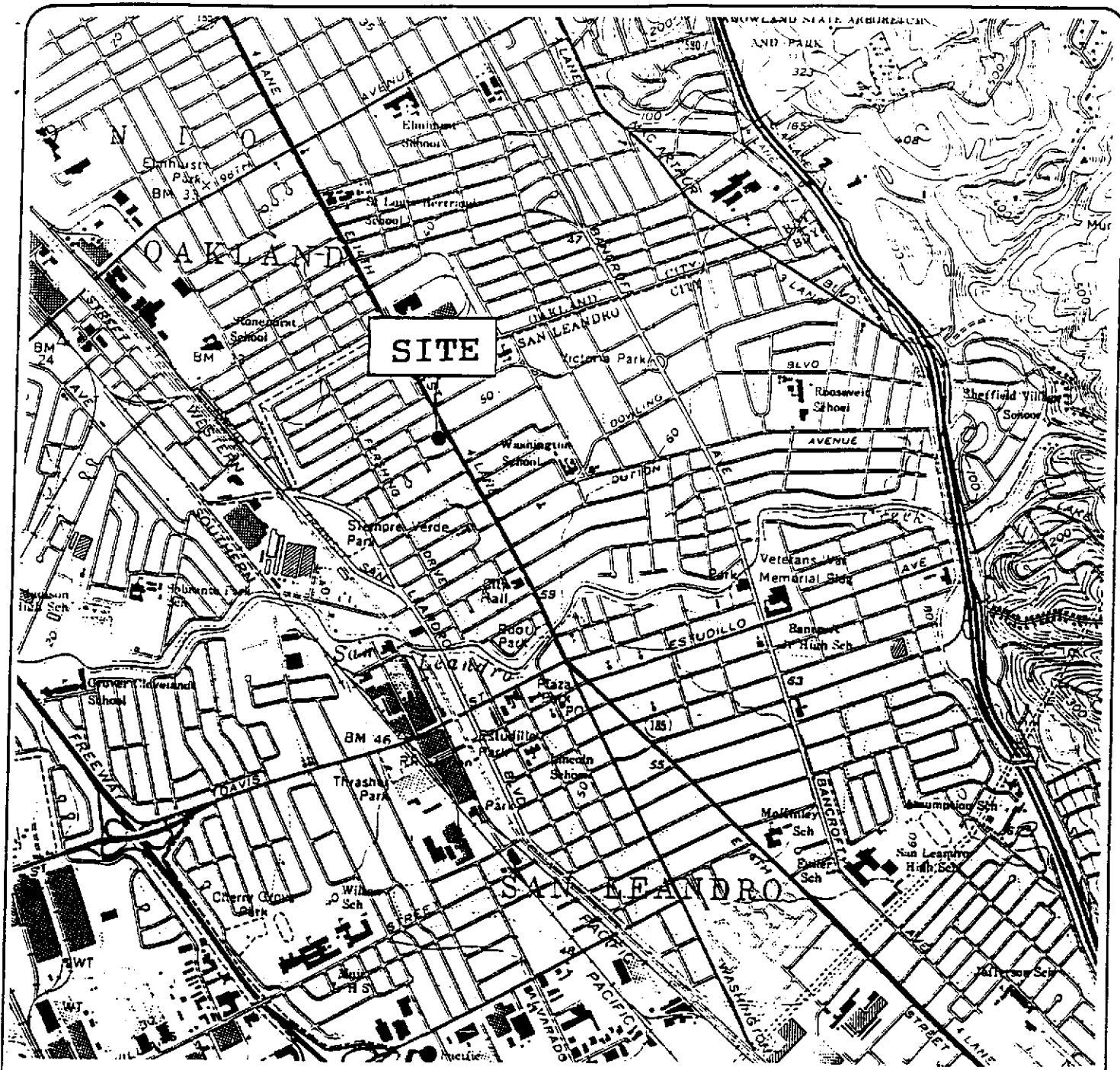
<sup>7</sup>This value may be inaccurate. Please refer to the second quarter 1996 report which includes an evaluation of MtBE which cast doubt on the validity of this laboratory test.

WELL	DATE	TPHg	BENZENE	TOLUENE	ETHYL-BENZENE	XYLENES	MtBE
MW-1	4/25/97	180,000	6,900	20,000	2,600	13,000	N/A
	4/25/97	170,000	6,500	20,000	2,500	13,000	N/A
	7/17/97	220,000	8,300	41,000	2,700	16,000	N/A
	10/21/97	240,000	9,400	33,000	3,300	22,000	<5
	3/10/98	120,000	11,000	46,000	3,700	21,000	<5
	6/6/98	110,000	7,600	32,000	4,800	23,000	<5
MW-2	1/6/95	980,000	9,400	5,600	19,000	42,000	N/A
	7/6/95	71,000	5,300	1,800	6,100	9,000	N/A
	10/2/95	40,000	2,900	200	2,800	3,600	N/A
	1/12/96	260,000	2,600	2,200	6,300	7,800	<12,500
	4/13/96	30,000	1,900	370	2,300	2,400	520 <sup>8</sup>
	7/26/96	180,000	1,400	640	2,100	5,000	<5,000
	10/21/96	62,000	2,100	<0.5	2,100	2,700	N/A
	1/28/97	46,000	1,500	94	1,800	2,000	N/A
	4/25/97	23,000	790	26	820	730	N/A
	7/17/97	95,000	2,200	<0.5	3,100	4,300	N/A
	10/21/97	31,000	2,000	<0.5	2,100	1,900	<5
	3/10/98	19,000	730	44	820	1,000	<5
	6/6/98	16,000	670	1,100	510	1,200	<5
MW-3	1/6/95	740,000	11,000	2,300	8,300	28,000	N/A
	7/6/95	86,000	12,000	8,600	4,900	19,000	N/A
	10/2/95	100,000	15,000	11,000	6,000	20,000	N/A

<sup>8</sup>This value may be inaccurate. Please refer to the second quarter 1996 report which includes an evaluation of MtBE which cast doubt on the validity of this laboratory test.



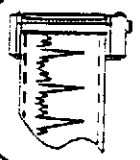
WELL	DATE	TPHg	BENZENE	TOLUENE	ETHYL- BENZENE	XYLENES	MtBE
MW-3	1/12/96	84,000	6,500	4,100	3,200	12,000	<5,000
	4/13/96	48,000	7,600	3,600	2,800	9,400	<2,500
	7/26/96	62,000	6,400	3,100	3,000	11,000	<2,500
	10/21/96	110,000	5,400	2,400	2,500	9,800	N/A
	1/28/97	130,000	5,500	15,000	2,300	12,000	N/A
	4/25/97	180,000	6,900	20,000	2,600	13,000	N/A
	7/17/97	69,000	5,100	1,100	1,800	8,600	N/A
	10/21/97	58,000	4,300	1,300	2,100	8,000	<5
	3/10/98	25,000	3,000	1,300	1,100	3,700	<5
	6/6/98	52,000	4,400	1,900	2,300	6,900	<5



**EXPLANATION:**

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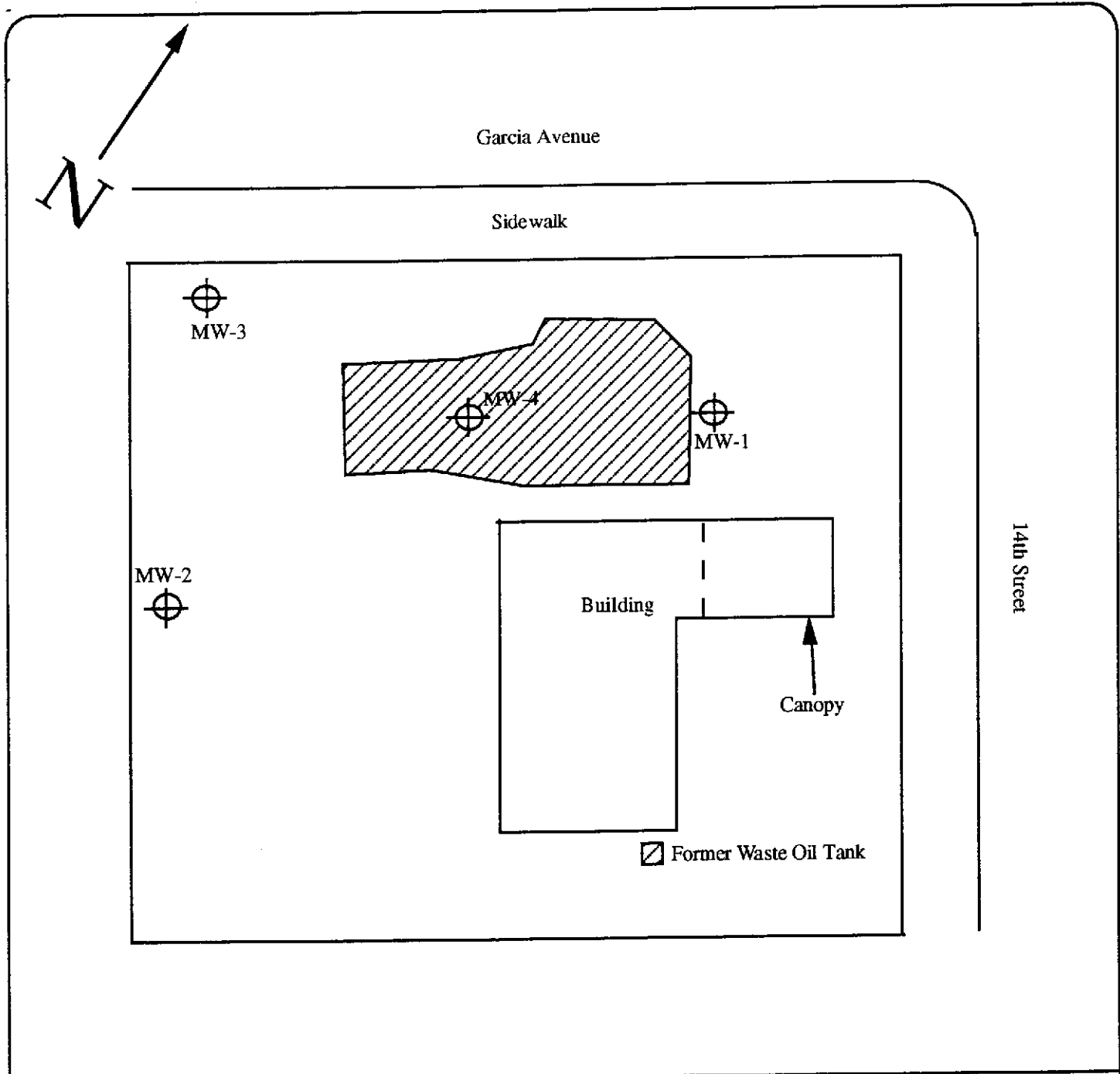
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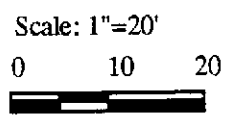
ENVIRONMENTAL TESTING & MGMT  
 111 N. MARKET ST. SUITE 600  
 SAN JOSE, CALIFORNIA 95113



LOCATION MAP  
 German Autocraft  
 301 East 14th Street  
 San Leandro, California

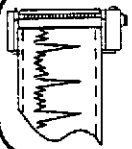
Figure 1  
 Project No. 94-52  
 Date: 3/97



EXPLANATION:



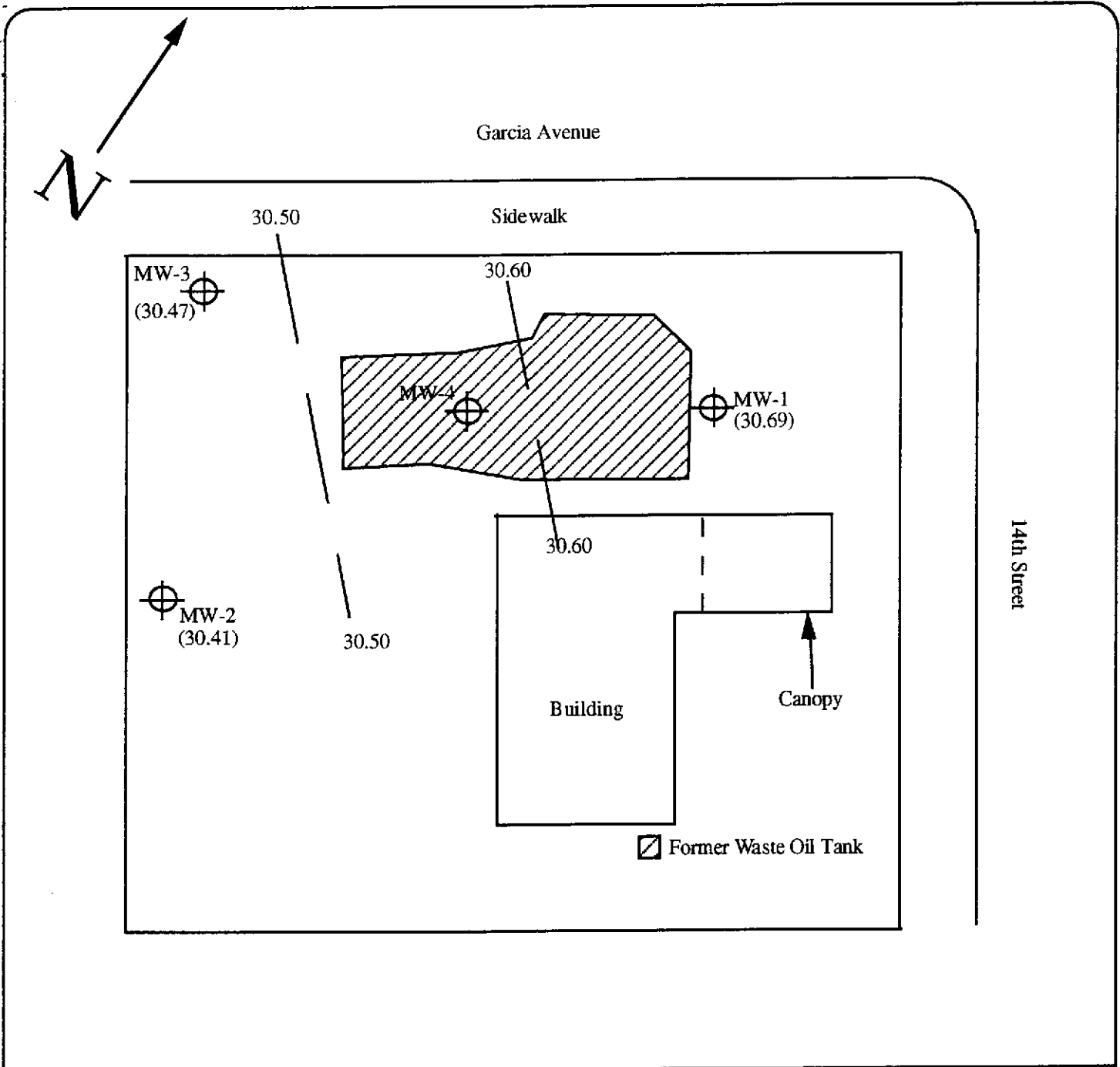
-  MW-1 Monitoring Well
-  Former Tank Pit/Removed Asphalt Areas



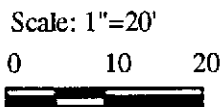
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SAN JOSE, CALIFORNIA 95113

SITE MAP  
German Autocraft  
301 East 14th Street  
San Leandro, California

Figure 2  
Project No. 94-52  
Date: 3/97



**EXPLANATION:**



MW-1 Monitoring Well

Former Tank Pit/Removed Asphalt Areas

30.50 Groundwater Elevation Contour Line (Feet above Mean Sea Level)

ENVIRONMENTAL TESTING & MGMT.  
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SAN JOSE, CALIFORNIA 95113

GROUNDWATER POTENTIOMETRIC SURFACE  
ELEVATION CONTOUR MAP 6/6/98  
German Autocraft  
301 East 14th Street  
San Leandro, California

Figure 3  
Date: 7/98

## APPENDIX A: FIELD SAMPLING AND GAUGING PROCEDURES

### GROUNDWATER LEVEL MEASURING AND SAMPLING:

Sampling procedures commenced with measuring static water levels in monitoring wells using an electronic water level indicator accurate to 0.01 inch. Groundwater samples were collected using Teflon™ or stainless steel bailers. The bailers were cleaned prior to lowering into the groundwater by washing with Liquinox or laboratory grade detergent, rinsing with tap water, and drying. Floating product thickness was measured by gently lowering a bailer or preferably an interface sampler into the well casing. The liquid level in the sampler was allowed to equilibrate with the liquid level in the well. After raising the sampler, the thickness of floating product, if present, was measured in the transparent sampler with a ruler or noting the presence of sheen and odor. The wells were then purged a minimum of four well volumes or until the parameters of temperature, conductance, and pH stabilized. Groundwater sampling field data sheets are presented in **Appendix C**.

Groundwater samples were collected by gently pouring from the bailer into a 40-milliliter vial until a positive meniscus formed at the top of the vial, each vial was capped, and visually inspected to make sure no bubbles were present. Sample containers are labeled for sampling point reference and chilled on ice immediately after collection. Chain-of-custody documentation was maintained until the samples were received by the laboratory.

# Entech Analytical Labs, Inc.

CA ELAP# 2224

525 Del Rey Avenue, Suite E • Sunnyvale, CA 94086 • (408) 735-1550 • Fax (408) 735-1554

Attn: Tom Price  
Environmental Testing &  
Management  
111 N. Market Street, Suite 600  
San Jose, CA 95113

Date:	6/15/98
Date Received:	6/8/98
Date Analyzed:	6/12-6/15/98
Project:	German Autocraft
Sampled By:	Client

## Certified Analytical Report

### Water Sample Analysis:

Test	MW-1	MW-2	MW-3	Units	PQL	EPA Method #
Sample Matrix	Water	Water	Water			
Sample Date	6/6/98	6/6/98	6/6/98			
Sample Time						
Lab #	E11061	E11062	E11063			
DF-Gas/BTEX	40	40	100			
TPH-Gas	110,000	16,000	52,000	µg/liter	50.0 µg/l	8015M
MTBE	760	ND	780	µg/liter	5.0 µg/l	8020
Benzene	7,600	670	4,400	µg/liter	0.5 µg/l	8020
Toluene	32,000 <sup>2</sup>	1,100	1,900	µg/liter	0.5 µg/l	8020
Ethyl Benzene	4,800	510	2,300	µg/liter	0.5 µg/l	8020
Xylenes	23,000	1,200	6,900	µg/liter	0.5 µg/l	8020
DF-EPA 8240	100 <sup>3</sup>	10 <sup>3</sup>	50 <sup>3</sup>			
tert-Butanol	ND	ND	ND	µg/liter	20 µg/l	8240
Methyl-tert-butyl ether	ND	ND	ND	µg/liter	5.0 µg/l	8240
Diisopropyl ether	ND	ND	ND	µg/liter	5.0 µg/l	8240
Ethyl-tert-butyl ether	ND	ND	ND	µg/liter	5.0 µg/l	8240
tert-Amylmethyl ether	ND	ND	ND	µg/liter	5.0 µg/l	8240

1. DLR=DF x PQL
2. DF=400
3. Sample diluted due to high levels of purgeable aromatics
4. Analysis performed by Entech Analytical Labs, Inc. (CAELAP #2224)



Michael N. Golden, Lab Director

DF=Dilution Factor  
DLR=Detection Reporting Limit

PQL=Practical Quantitation Limit  
ND=None Detected at or above DLR

**QUALITY CONTROL RESULTS SUMMARY**

Volatile Organic Compounds

QC Batch #: 8240W980613

Date analyzed: 06/13/98

Matrix: Water

Spiked Sample: E10607

Units: µg/L

PARAMETER	Method #	SA µg/L	SR µg/L	SP µg/L	SP %R	SPD µg/L	SPD %R	RPD	QC LIMITS	
									RPD	%R
1,1- Dichloroethene	624	25	ND	27	108%	27	108%	0.0	25	50-150
Benzene	624	25	2.9	28	100%	29	104%	3.9	25	50-150
Trichloroethene	624	25	ND	25	100%	26	104%	3.9	25	50-150
Toluene	624	25	ND	26	104%	27	108%	3.8	25	50-150
Chlorobenzene	624	25	ND	27	108%	28	112%	3.6	25	50-150

Definition of Terms:

- na: Not Analyzed in QC batch
- SA: Spike Added
- SR: Sample Result
- RPD(%): Duplicate Analysis - Relative Percent Difference
- SP Spike Result
- SP (%R) Spike % Recovery
- SPD: Spike Duplicate Result
- SPD (%R) Spike Duplicate % Recovery
- NC: Not Calculated

## QUALITY CONTROL RESULTS SUMMARY

METHOD: Gas Chromatography

QC Batch #: GBG2980612

Date Analyzed: 06/12/98

Matrix: Water

Quality Control Sample: E11074

Units: ug/L

PARAMETER	Method #	MB ug/L	SA ug/L	SR ug/L	SP ug/L	SP % R	SPD ug/L	SPD %R	RPD	QC LIMITS	
										RPD	%R
Benzene	8020	<0.50	40	ND	37	93	36	90	3.6	25	77-111
Toluene	8020	<0.50	40	ND	39	97	37	93	4.6	25	78-110
Ethyl Benzene	8020	<0.50	40	ND	39	98	38	95	3.6	25	78-112
Xylenes	8020	<0.50	120	ND	123	102	117	98	4.7	25	79-111
Gasoline	8015	<50.0	1000	ND	890	89	900	90	1.1	25	59-126

Note: LCS and LCSD results reported for the following Parameters:

Gasoline

Acceptable LCS and LCSD results are reported when matrix interferences cause MS and MSD results to fall outside established QC limits.

## Definition of Terms:

na: Not Analyzed in QC batch

MB: Method Blank

SA: Spike Added

SR: Sample Result

RPD(%): Duplicate Analysis - Relative Percent Difference

SP: Spike Result

SP (%R): Spike % Recovery

SPD: Spike Duplicate Result

SPD (%R): Spike % Recovery

NC: Not Calculated



## QUALITY CONTROL RESULTS SUMMARY

METHOD: Gas Chromatography

QC Batch #: GBG2980615

Matrix: Water

Units: ug/L

Date Analyzed: 06/15/98

Quality Control Sample: E11563

PARAMETER	Method #	MB ug/L	SA ug/L	SR ug/L	SP ug/L	SP % R	SPD ug/L	SPD %R	RPD	QC LIMITS	
										RPD	%R
Benzene	8020	<0.50	40	ND	38	94	38	94	0.1	25	77-111
Toluene	8020	<0.50	40	ND	37	93	38	94	0.9	25	78-110
Ethyl Benzene	8020	<0.50	40	ND	39	98	40	99	1.0	25	78-112
Xylenes	8020	<0.50	120	ND	122	102	123	103	1.0	25	79-111
Gasoline	8015	<50.0	1000	ND	860	86	930	93	7.8	25	59-126

Note: LCS and LCSD results reported for the following Parameters:

Gasoline

Acceptable LCS and LCSD results are reported when matrix interferences cause MS and MSD results to fall outside established QC limits.

## Definition of Terms:

na: Not Analyzed in QC batch

MB: Method Blank

SA: Spike Added

SR: Sample Result

RPD(%): Duplicate Analysis - Relative Percent Difference

SP: Spike Result

SP (%R): Spike % Recovery

SPD: Spike Duplicate Result

SPD (%R): Spike % Recovery

NC: Not Calculated

# Entech Analytical Labs, Inc.

525 Del Rey Avenue, Suite E • Sunnyvale, CA 94086 • Telephone: (408) 735-1550 (800) 287-1799 • Fax: (408) 735-1554

## Chain of Custody/Analysis Work Order

Client: German Autocraft  
 Address: 301 E 14 St  
San Leandro  
 Contact: \_\_\_\_\_  
 Telephone #: \_\_\_\_\_  
 Date Received: \_\_\_\_\_  
 Turn Around: NORMAL

Project ID: \_\_\_\_\_  
 Purchase Order #: \_\_\_\_\_

Sampler/Company: <u>Tom Price / Env. Testing &amp; Mgmt (408) 938-0939</u>	Telephone #: _____
Special Instructions/Comments 	

**LAB USE ONLY**

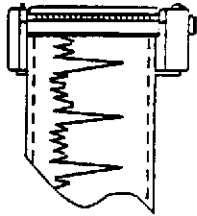
Samples arrived chilled and intact:

Yes No

Notes: \_\_\_\_\_

\_\_\_\_\_

Sample Information								Requested Analysis							
Lab #	Sample ID	Grab/Composite	Matrix	Date Collected	Time Collected	Pres.	Sample Container	TPH <sub>5</sub>	PEX <sub>L</sub>	MIPE	8260				
E11061	MW-1	G	W	6/6/98		HCl	40 ml Vials	✓	✓	✓	✓				
E11062	MW-2	↓	↓	↓		↓		✓	✓	✓	✓				
E11063	MW-3	↓	↓	↓		↓		✓	✓	✓	✓				
Relinquished By: <u>Jon Bruce</u>				Received By: <u>VITRANO</u>				Date: <u>6/8/98</u>		Time: <u>5:45pm</u>					
Relinquished By: _____				Received By: _____				Date: _____		Time: _____					
Relinquished By: _____				Received By: _____				Date: _____		Time: _____					



ENVIRONMENTAL TESTING & MGMT.

111 N. MARKET ST., SUITE 600  
SAN JOSE, CALIFORNIA 95113  
408.938.0939 FAX: 408.938.3929

Date: 6/6/98 Project Name: German Autocraft -  
Project No.: GA Well No./Description: MW-1  
Depth of Well: 38.45 1 Well Volume: 3.2  
Depth to Water: 18.92 / 19.05 after purge 4 Well Volumes: \_\_\_\_\_  
Casing Diameter:  2"  4" Actual Volume Purged: \_\_\_\_\_

Calculations:  
2" - \* 0.1632 20  
4" - \* 0.653 1.6  
120  
20 20

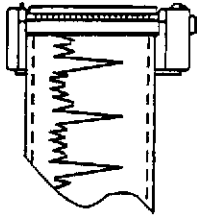
Purge Method:  Bailer  Displacement Pump  Impinger/Vacuum \_\_\_\_\_  
Sample Method:  Bailer  Other Specify: \_\_\_\_\_  
Sheen:  No  Yes, Describe 1/16 inch splashes.  
Odor:  No  Yes, Describe Gasoline

Field Measurements:

Time	Volume	pH	Temp.	E.C.	Color
<u>10:37a</u>	<u>3.2</u>	<u>7.1</u>	<u>65</u>	<u>0.65 x 10<sup>3</sup></u> <del>0.5 x 10<sup>3</sup></del>	<u>Gray</u>
<u>10:49</u>	<u>6.4</u>	<u>6.6</u>	<u>65</u>	<u>0.66 x 10<sup>3</sup></u>	<u>"</u>
<u>10:56</u>	<u>9.6</u>	<u>6.6</u>	<u>64</u>	<u>0.64 x 10<sup>3</sup></u>	<u>"</u>
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____

Remarks: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Sampler: Tom Price / Dennis Meng



ENVIRONMENTAL TESTING & MGMT.  
 111 N. MARKET ST., SUITE 600  
 SAN JOSE, CALIFORNIA 95113  
 408.938.0939 FAX: 408.938.3929

Date: 6/6/98 Project Name: German Autoeraft  
 Project No.: GA Well No./Description: MW-2  
 Depth of Well: 33.90 1 Well Volume: 2.2 Gal  
 Depth to Water: 19.73 / 19.79 4 Well Volumes: \_\_\_\_\_  
 Casing Diameter:  2"  4" Actual Volume Purged: \_\_\_\_\_

2  
 0.16  
 14  
 164  
 16  
 224

Calculations:

2" - \* 0.1632  
 4" - \* 0.653

Purge Method:  Bailer  Displacement Pump  Impinger/Vacuum

Sample Method:  Bailer  Other Specify: \_\_\_\_\_

Sheen:  No  Yes, Describe 16 inch. splashes

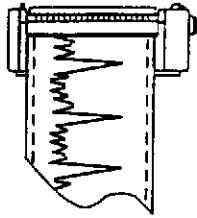
Odor:  No  Yes, Describe Gasoline

Field Measurements:

Time	Volume	pH	Temp.	E.C.	Color
<u>11:14a</u>	<u>2.2</u>	<u>6.6</u>	<u>63</u>	<u>1.23 x 10<sup>3</sup></u>	<u>Grey</u>
<u>11:14</u>	<u>4.4</u>	<u>6.6</u>	<u>64</u>	<u>1.23 x 10<sup>3</sup></u>	<u>Grey</u>
<u>11:19</u>	<u>6.6</u>	<u>6.7</u>	<u>64</u>	<u>1.19 x 10<sup>3</sup></u>	<u>Grey.</u>
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____

Remarks: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

Sampler: Tom Price / Dennis Mong



ENVIRONMENTAL TESTING & MGMT.  
 111 N. MARKET ST., SUITE 600  
 SAN JOSE, CALIFORNIA 95113  
 408.938.0939 FAX: 408.938.3929

Date: 6/6/98 Project Name: German Autocraft  
 Project No.: \_\_\_\_\_ Well No./Description: MW-3  
 Depth of Well: 34.92 1 Well Volume: 22 Gal.  
 Depth to Water: 18.97/19.70 4 Well Volumes: \_\_\_\_\_  
 Casing Diameter:  2"  4" Actual Volume Purged: \_\_\_\_\_

Calculations:

2" - \* 0.1632  
 4" - \* 0.653

Purge Method:  Bailer  Displacement Pump  Impinger/Vacuum \_\_\_\_\_

Sample Method:  Bailer  Other Specify: \_\_\_\_\_

Sheen:  No  Yes, Describe \_\_\_\_\_

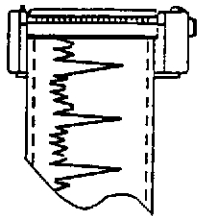
Odor:  No  Yes, Describe Gasoline

Field Measurements:

Time	Volume	pH	Temp.	E.C.	Color
<u>11:28a</u>	<u>2.2</u>	<u>6.7</u>	<u>65</u>	<u>0.71 x 10<sup>3</sup></u>	<u>Gray</u>
<u>11:30</u>	<u>4.4</u>	<u>6.7</u>	<u>64</u>	<u>0.71 x 10<sup>3</sup></u>	<u>Gray</u>
<u>11:36</u>	<u>6.6</u>	<u>6.6</u>	<u>63</u>	<u>0.70 x 10<sup>3</sup></u>	<u>Gray</u>
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____

Remarks: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

Sampler: Tom Price / Dennis Mang



ENVIRONMENTAL TESTING & MGMT.  
 111 N. MARKET ST., SUITE 600  
 SAN JOSE, CALIFORNIA 95113  
 408.938.0939 FAX: 408.938.3929

Date: 6/6/98 Project Name: German Aircraft  
 Project No.: \_\_\_\_\_ Well No./Description: MW-4  
 Depth of Well: \_\_\_\_\_ 1 Well Volume: 3.2 Gal.  
 Depth to Water: 19.2' 4 Well Volumes: \_\_\_\_\_  
 Casing Diameter:  2"  4" Actual Volume Purged: \_\_\_\_\_

Calculations:

2" - \* 0.1632  
 4" - \* 0.653

Purge Method:  Bailer  Displacement Pump  Impinger/Vacuum \_\_\_\_\_

Sample Method:  Bailer  Other Specify: \_\_\_\_\_

Sheen:  No  Yes, Describe \_\_\_\_\_

Odor:  No  Yes, Describe \_\_\_\_\_

Field Measurements:

Time	Volume	pH	Temp.	E.C.	Color
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____

Remarks: Water only (w/sheen) drained from skimmer.  
purged ~15 gallons from well, cleaned passive skimmer  
system / taking back to shop to replace screen/filter.

Sampler: Tom Price / Dennis Mong.

## APPENDIX D: QUALITY ASSURANCE/QUALITY CONTROL PROGRAM

The quality assurance/quality control measures used for groundwater sampling conducted on June 6, 1998 included the following:

- Groundwater samples were collected in triplicate 40 milliliter vials.