

FOURTH QUARTER 1998

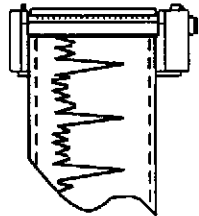
ENVIRONMENTAL PROTECTION

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QUARTERLY GROUNDWATER MONITORING REPORT

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

Prepared by:



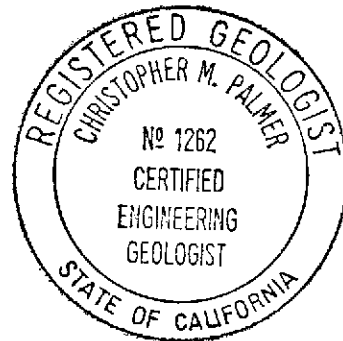
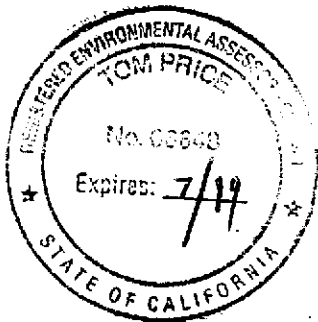
ENVIRONMENTAL TESTING & MGMT.
111 N. MARKET ST., 6th FLOOR
SAN JOSE, CALIFORNIA 95113
408.938.0939 FAX: 408.938.3929

Prepared For:

Mr. Seung Lee
301 E. 14th Street
San Leandro, California

Tom Price
Tom Price, REA, CHMM
Project Manager

Christopher M. Palmer
Christopher M. Palmer, RG, CEG, HG
Project Geologist



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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 fourth quarter of 1998 and January 1999 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 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 and a brief description of the progress of the development of corrective actions at the site.

This quarter the quarterly groundwater sampling and testing program was expanded to include ten (10) wells which were installed for the site. Also sampled this quarter was a well installed by the City of San Leandro on the north side of West Broadmoor.

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 FOURTH QUARTER, 1998/JANUARY 1999

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

- **December 30, 1998** - ETM measured groundwater elevations and collected groundwater samples from monitoring wells MW-1, MW-2, MW-3, MW-4, MW-5, MW-6, MW-8, MW-9, MW-10, MW-11, MW-1A. The samples were submitted to a Department of Health Services (DHS)-certified laboratory for analysis of Total Petroleum Hydrocarbons as Gasoline (TPHg), Benzene, Toluene, Ethyl Benzene, and Xylenes (BTEX), tert-Butanol (TBA), Methyl tert-Butyl Ether (MTBE), Diisopropyl ether (DIPE), Ethyl-tert-butyl ether (ETBE), and tert-Amyl methyl ether (TAME).
- **January 22, 1999** - Fredric V. Allen, Inc. measured elevations of groundwater monitoring wells for the project. The report is included in **Appendix A**.

IV. GROUNDWATER ELEVATION AND GRADIENT

Static groundwater level elevation data collected on December 30, 1998, indicated that over the area of the project, the elevation of the shallow groundwater surface ranged from 24.57 to 25.14 feet above mean sea level. The estimated groundwater flow direction was to the westerly (approximate gradient = 0.002 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. **Table 2** presents historic groundwater 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 expansion of the groundwater monitoring program this quarter indicates that the observed groundwater flow direction is consistent with previous observations.

V. GROUNDWATER SAMPLING AND ANALYTICAL RESULTS

On December 30, 1998, groundwater samples were collected from MW-1, MW-2, MW-3, MW-4, MW-5, MW-6, MW-8, MW-9, MW-10, MW-11, MW-1A following the groundwater sampling procedures presented in **Appendix B**. The groundwater samples were analyzed for TPHg, BTEX by EPA Methods 5030, 8015, and 8020 as tabulated on **Table 3**. The groundwater samples were also analyzed TBA, MTBE, DIPE, ETBE, and TAME using EPA Methods 8260 as tabulated on **Table 4**. All samples were tested by Entech Analytical Labs, Inc. of Sunnyvale, California. The laboratory report and chain-of-custody documents are included in **Appendix C**. The field sampling data sheets are presented in **Appendix D**. The quality assurance/quality control description is included in

Appendix E. Historic groundwater chemical test data by EPA Methods 5030, 8015, and 8020 is tabulated in **Table 5**.

Selected BTEX chemical constituents continue to exceed their respective California Drinking Water Maximum Contaminant Levels (MCLs) or Federal Action Levels (AL) (**Table 3**). No gasoline oxygenate additive-related compounds were detected in any samples tested by EPA Method 8260 with the exception of 51 µg/L at MW-10.

The sample from MW-1, located upgradient of the former gasoline tank area, contained: TPHg at 78,000 micrograms per liter (µg/L); benzene at 5,200 µg/L which exceeds its MCL of 1 µg/L; toluene at 24,000 µg/L which exceeds its MCL of 150 µg/L; ethyl benzene at 3,200 µg/L which exceeds its MCL of 700 µg/L, and; total xylenes at 19,000 µg/L which exceeds its MCL of 1,750 µg/L. Oxygenated compounds were not detected above detection reporting limits.

The sample from MW-2, located down gradient of the former gasoline tank area, contained 9,300 µg/L of TPHg, 510 µg/L of benzene, 96 µg/L of toluene, 450 µg/L of ethyl benzene, and 480 µg/L of total xylenes. Oxygenated compounds were not detected above detection reporting limits.

Monitoring well MW-3, also located down gradient of the former gasoline tank area, contained 34,000 µg/L of TPHg, 4,200 µg/L of benzene, 770 µg/L of toluene, 2,300 µg/L of ethyl benzene, and 9,000 µg/L of total xylenes. Oxygenated compounds were not detected above detection reporting limits.

Monitoring well MW-4, located in the former UST area, contained 12,000 µg/L of TPHg, 1,200 µg/L of benzene, 1,100 µg/L of toluene, 290 µg/L of ethyl benzene, and 1,400 µg/L of total xylenes. Oxygenated compounds were not detected above detection reporting limits.

Monitoring well MW-5 contained 170 µg/L of TPHg, 1.1 µg/L of benzene, <0.5 µg/L of toluene, <0.5 µg/L of ethyl benzene, and 0.83 µg/L of total xylenes. Oxygenated compounds were not detected above detection reporting limits.

Monitoring well MW-6 contained 400 µg/L of TPHg, 1.0 µg/L of benzene, <0.5 µg/L of toluene, <0.5 µg/L of ethyl benzene, and 4.8 µg/L of total xylenes. Oxygenated compounds were not detected above detection reporting limits.

Monitoring well MW-8 contained 2,200 µg/L of TPHg, 70 µg/L of benzene, 0.94 µg/L of toluene, 26 µg/L of ethyl benzene, and 15 µg/L of total xylenes. Oxygenated compounds were not detected above detection reporting limits.

Monitoring well MW-9 contained 25,000 µg/L of TPHg, 23 µg/L of benzene, <10 µg/L of toluene, 180 µg/L of ethyl benzene, and 620 µg/L of total xylenes. Oxygenated compounds were not detected above detection reporting limits.

Monitoring well MW-10 contained 6,900 µg/L of TPHg, 130 µg/L of benzene, 19 µg/L of toluene, 140 µg/L of ethyl benzene, and 210 µg/L of total xylenes. TBA was detected at a concentration of 51 µg/L however other oxygenated compounds were not detected above detection reporting limits.

Monitoring well MW-11 contained 80 µg/L (blind duplicate: 78 µg/L) of TPHg, <0.5 µg/L (blind duplicate: <0.5 µg/L) of benzene, <0.5 µg/L (blind duplicate: <0.5 µg/L) of toluene, 0.93 µg/L (blind duplicate: 0.89 µg/L) of ethyl benzene, and 1.6 µg/L (blind duplicate: 1.8 µg/L) of total xylenes. Oxygenated compounds were not detected above detection reporting limits.

VI. DISCUSSION AND CONCLUSIONS

According to our workplan dated February 3, 1998 we intended to include the private well located at the 141 Farrelly residence in our sampling and testing program however, the electric pump at that well was not operating and therefore not sampled this quarter. During the next quarter, we intend to remove the pump for possible repair or use a different pump to facilitate sampling the well.

Available data, including data from the fourth quarter 1998 monitoring events, indicate that groundwater flow patterns beneath the site are consistent with previous monitoring events for the project.

Selected wells' various chemical constituents continue to exceed their respective California Drinking Water Maximum Contaminant Levels (MCLs) or Federal Action Levels (AL).

The results of the continued soil and water investigation (SWI) and monitoring events are consistent with the reconnaissance SWI conducted by ETM in 1996. Elevated levels of gasoline constituents in groundwater indicate that interim corrective action is warranted.

VII. RECOMMENDATIONS

We recommend that two additional monitoring wells be installed; one close to the intersection of Lafayette Avenue/W. Broadmoor and one close to the intersection of Lafayette Avenue/Garcia Avenue to locate the down-gradient edge of the plume.

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. FOURTH QUARTER 1998 GROUNDWATER POTENTIOMETRIC SURFACE
ELEVATION DATA**

		December 30, 1998	
WELL	CASING ELEVATION ¹	Depth to Groundwater	Groundwater Elevation
MW-1	49.49	24.36	25.13
MW-2	50.01	25.08	24.93
MW-3	49.32	24.33	24.99
MW-4	49.60	24.55	25.05
MW-5	49.57	24.51	25.06
MW-6	48.06	22.92	25.14
MW-8	49.35	24.60	24.75
MW-9	48.77	23.98	24.79
MW-10	49.92	25.35	24.57
MW-11	47.93	23.15	24.78
MW-1A	48.24	23.60	24.64
141 Farrelly	48.81	-	-

¹Elevations in feet above mean sea level.

DATE	MW-1	MW-2	MW-3	MW-4	MW-5	MW-6	MW-8	MW-9	MW-10	MW-11	MW-1A	141 Farralley
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	-	-	-	-	-	-	-	-	-
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	-	-	-	-	-	-	-	-	-
9/30/98	25.95	25.68	25.75	-	-	-	-	-	-	-	-	-
12/30/98	25.13	24.93	24.99	25.05	25.06	25.14	24.75	24.79	24.57	24.78	24.64	-

TABLE 3. GROUNDWATER CHEMICAL TEST RESULTS (EPA METHOD 8015/8020)

Locations: MW-1, MW-2, MW-3, MW-4, MW-5, MW-6, MW-8, MW-9, MW-10, MW-11, MW-1A

Date Sampled: December 30, 1998 Units: µg/L

WELL	TPHg	BENZENE	TOLUENE	ETHYL-BENZENE	XYLENES
MW-1	78,000	5,200	24,000	3,200	19,000
MW-2	9,300	510	96	450	480
MW-3	34,000	4,200	770	2,300	9,000
MW-4	12,000	1,200	1,100	290	1,400
MW-5	170	1.1	<0.5	<0.5	0.83
MW-6	400	1.0	<0.5	<0.5	4.8
MW-8	2,200	70	0.94	26	15
MW-9	25,000	23	<10	180	620
MW-10	6,900	130	19	140	210
MW-11 ²	80	<0.5	<0.5	0.93	1.6
	78	<0.5	<0.5	0.89	1.8
MW-1A	51	<0.5	<0.5	<0.5	<0.5
MCL/AL ³	-	1	150	700	1,750

²A blind duplicate sample of MW-11 was labeled "MW-12" and submitted as a blind duplicate. No quality control/quality assurance problems are apparent.

³Maximum 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. GROUNDWATER CHEMICAL TEST RESULTS (EPA METHOD 8260)

Locations: MW-1, MW-2, MW-3, MW-4, MW-5, MW-6, MW-8, MW-9, MW-10, MW-11, MW-1A

Date Sampled: December 30, 1998 Units: µg/L

WELL	TBA	MTBE	DIPE	ETBE	TAME
MW-1	<2000	<500	<500	<500	<500
MW-2	<200	<50	<50	<50	<50
MW-3	<2,000	<500	<500	<500	<500
MW-4	<400	<100	<100	<100	<100
MW-5	<20	<5	<5	<5	<5
MW-6	<20	<5	<5	<5	<5
MW-8	<200	<50	<50	<50	<50
MW-9	<200	<50	<50	<50	<50
MW-10	51	<5	<5	<5	<5
MW-11	<20	<5	<5	<5	<5
MW-11 ⁴	<20	<5	<5	<5	<5
MW-1A	<200	<50	<50	<50	<50

⁴A blind duplicate sample of MW-11 was labeled "MW-12" and submitted as a blind duplicate. No quality control/quality assurance problems are apparent.

TABLE 5. HISTORIC GROUNDWATER CHEMICAL TEST RESULTS (EPA METHOD 8015/8020)

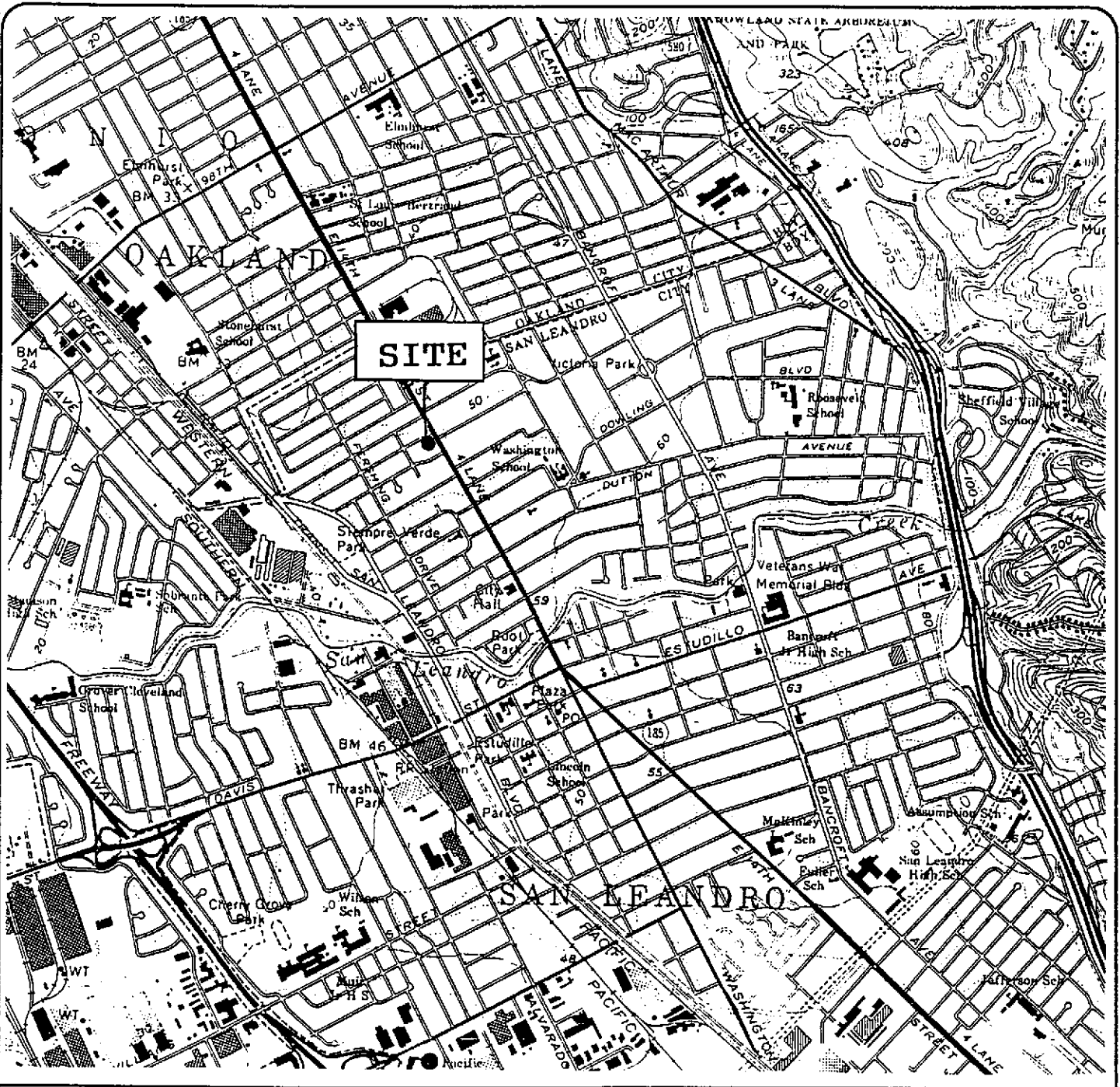
Locations: MW-1, MW-2, MW-3, MW-4, MW-5, MW-6, MW-8, MW-9, MW-10, MW-11, MW-1A. Units: $\mu\text{g/L}$

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

WELL	DATE	TPHg	BENZENE	TOLUENE	ETHYL-BENZENE	XYLENES
MW-1	4/25/97	180,000	6,900	20,000	2,600	13,000
	4/25/97	170,000	6,500	20,000	2,500	13,000
	7/17/97	220,000	8,300	41,000	2,700	16,000
	10/21/97	240,000	9,400	33,000	3,300	22,000
	3/10/98	120,000	11,000	46,000	3,700	21,000
	6/6/98	110,000	7,600	32,000	4,800	23,000
	9/30/98	140,000	5,800	29,000	3,500	18,000
	12/30/98	78,000	5,200	24,000	3,200	19,000
MW-2	1/6/95	980,000	9,400	5,600	19,000	42,000
	7/6/95	71,000	5,300	1,800	6,100	9,000
	10/2/95	40,000	2,900	200	2,800	3,600
	1/12/96	260,000	2,600	2,200	6,300	7,800
	4/13/96	30,000	1,900	370	2,300	2,400
	7/26/96	180,000	1,400	640	2,100	5,000
	10/21/96	62,000	2,100	<0.5	2,100	2,700
	1/28/97	46,000	1,500	94	1,800	2,000
	4/25/97	23,000	790	26	820	730
	7/17/97	95,000	2,200	<0.5	3,100	4,300
	10/21/97	31,000	2,000	<0.5	2,100	1,900
	3/10/98	19,000	730	44	820	1,000
	6/6/98	16,000	670	1,100	510	1,200
	9/30/98	24,000	600	77	680	580
12/30/98	9,300	510	96	450	480	

WELL	DATE	TPHg	BENZENE	TOLUENE	ETHYL-BENZENE	XYLENES
MW-3	1/6/95	740,000	11,000	2,300	8,300	28,000
	7/6/95	86,000	12,000	8,600	4,900	19,000
	10/2/95	100,000	15,000	11,000	6,000	20,000
	1/12/96	84,000	6,500	4,100	3,200	12,000
	4/13/96	48,000	7,600	3,600	2,800	9,400
	7/26/96	62,000	6,400	3,100	3,000	11,000
	10/21/96	110,000	5,400	2,400	2,500	9,800
	1/28/97	130,000	5,500	15,000	2,300	12,000
	4/25/97	180,000	6,900	20,000	2,600	13,000
	7/17/97	69,000	5,100	1,100	1,800	8,600
	10/21/97	58,000	4,300	1,300	2,100	8,000
	3/10/98	25,000	3,000	1,300	1,100	3,700
	6/6/98	52,000	4,400	1,900	2,300	6,900
	9/30/98	42,000	4,300	1,400	1,800	6,600
12/30/98	34,000	4,200	770	2,300	9,000	
MW-4	12/30/98	12,000	1,200	1,100	290	1,400
MW-5	12/30/98	170	1.1	<0.5	<0.5	0.83
MW-6	12/30/98	400	1.0	<0.5	<0.5	4.8
MW-8	12/30/98	2,200	70	0.94	26	15
MW-9	12/30/98	25,000	23	<10	180	620
MW-10	12/30/98	6,900	130	19	140	210
MW-11	12/30/98	80	<0.5	<0.5	0.93	1.6

WELL	DATE	TPHg	BENZENE	TOLUENE	ETHYL- BENZENE	XYLENES
MW-1A	5/30/97	12,000	18	8.7	90	540
	12/30/98	51	<0.5	<0.5	<0.5	<0.5
141 Farrelly	4/6/96	<50	<0.5	<0.5	<0.5	<0.5



EXPLANATION:

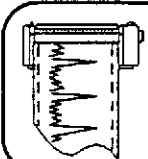
Scale: 1"=2000'

0 1000' 2000'



Base Map Reference:

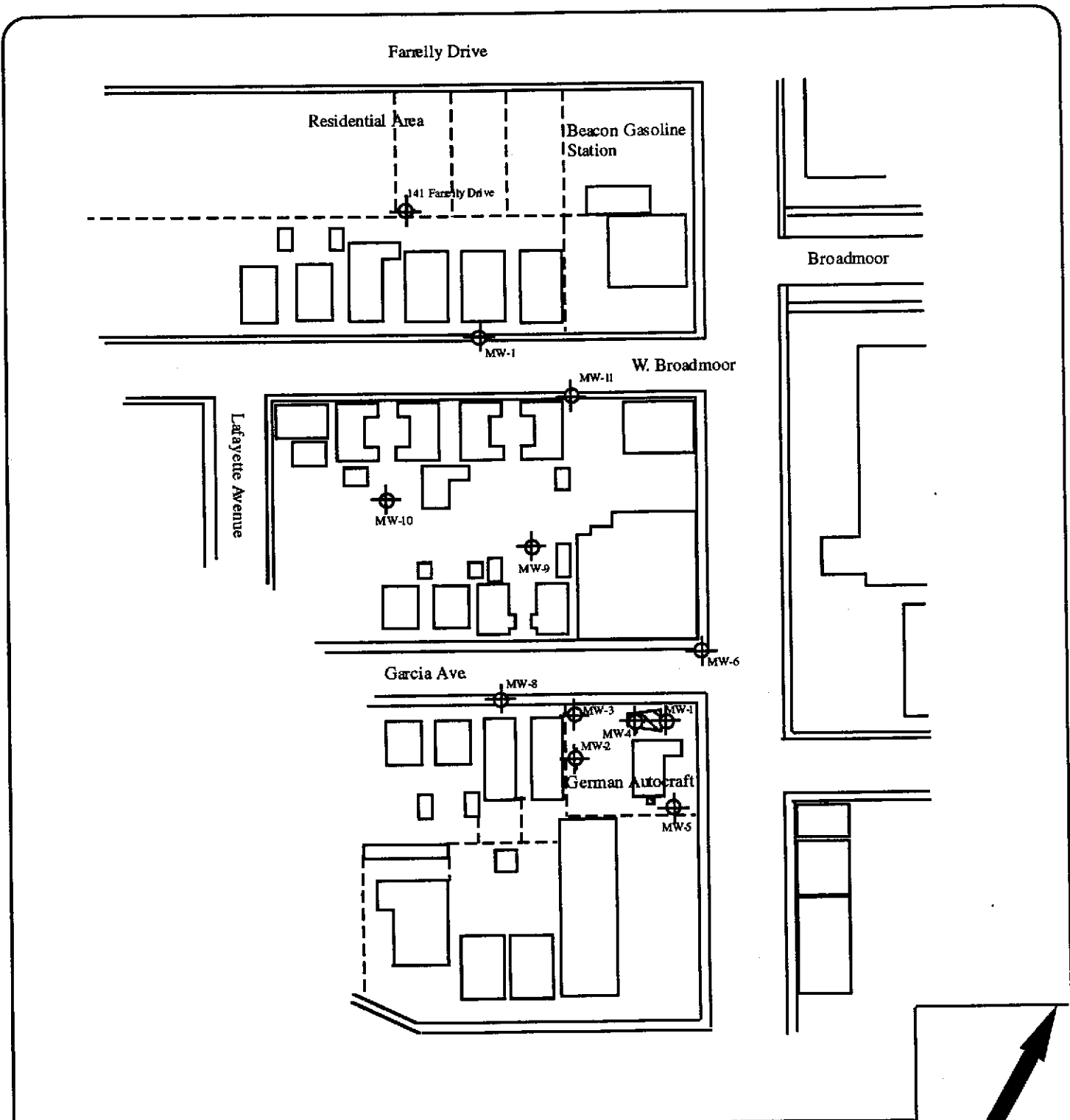
U.S.G.S. San Leandro 7.5 Minute Topographic, Quadrangle.



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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:

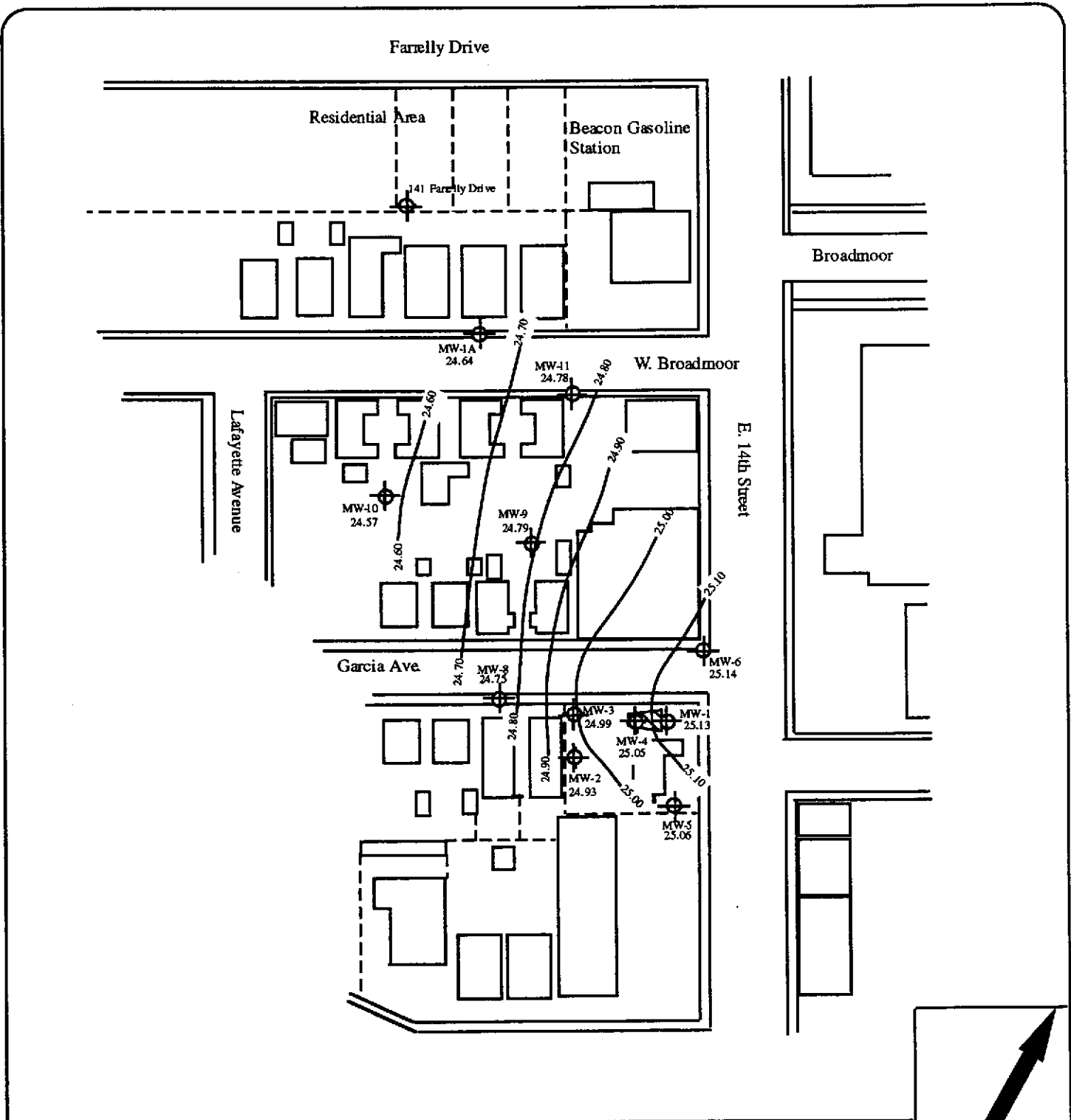
- 0 60' 120'
- Scale: 1"=120'
- Streets/Buildings
- Groundwater Monitoring Well
- Former Tank Pit Areas
- Buildings



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SAN JOSE, CA 95113

German Autocraft
301 East 14th Street
San Leandro, California


Figure 2
Date: 11/98



EXPLANATION:

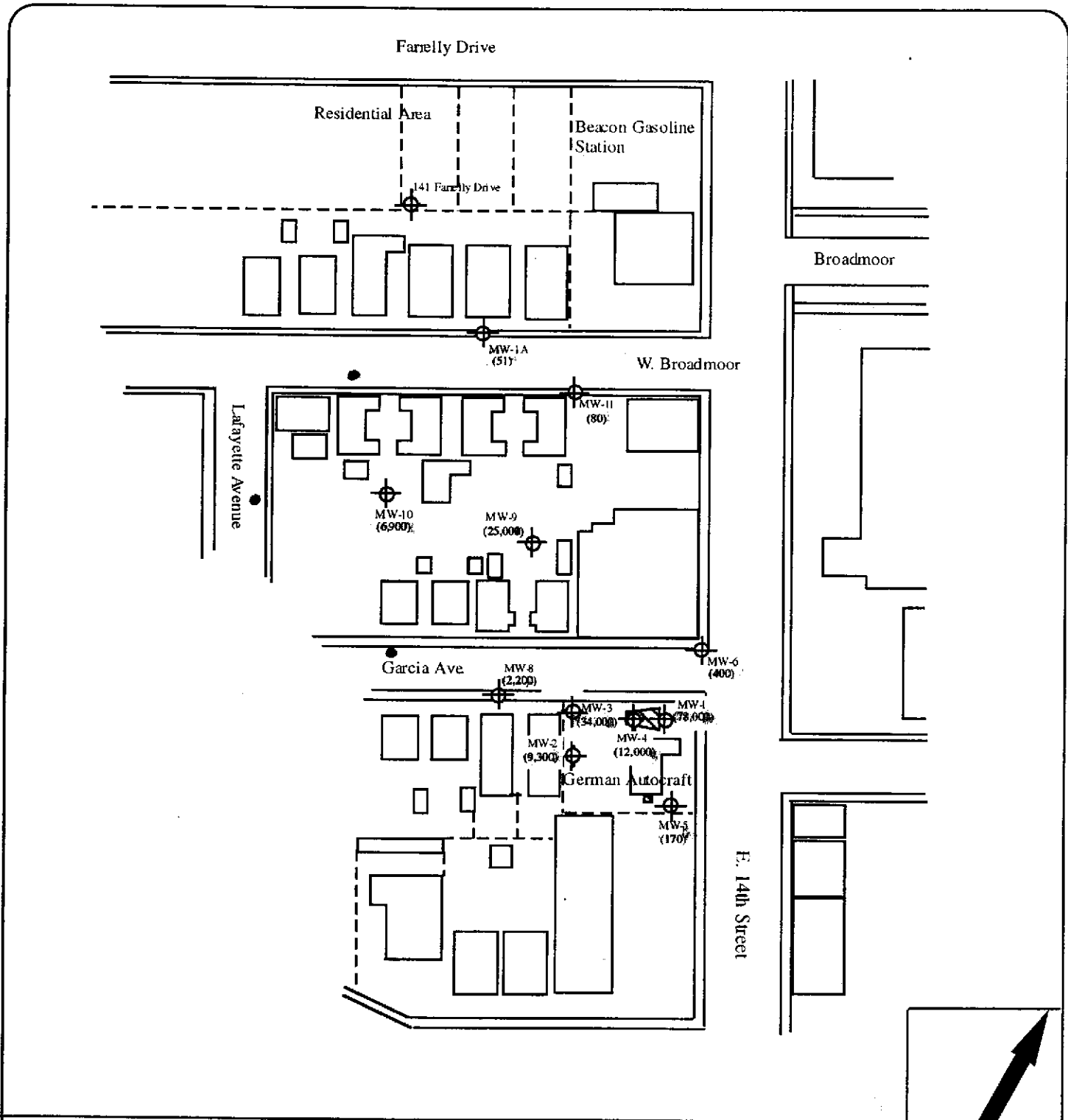
- 0 60' 120'
-
- Scale: 1"=120'
-
- Streets/Buildings
-
- Groundwater Monitoring Well
-
- Former Tank Pit Areas
-
- Buildings
-
- 25.00 Groundwater Potentiometric Elevation (MSL)




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 SAN JOSE, CA 95113

**GROUNDWATER POTENTIOMETRIC SURFACE
 ELEVATION ISOCONTOUR MAP**
German Autocraft
 301 East 14th Street
 San Leandro, California


Figure 3
 Date: 2/99



EXPLANATION:

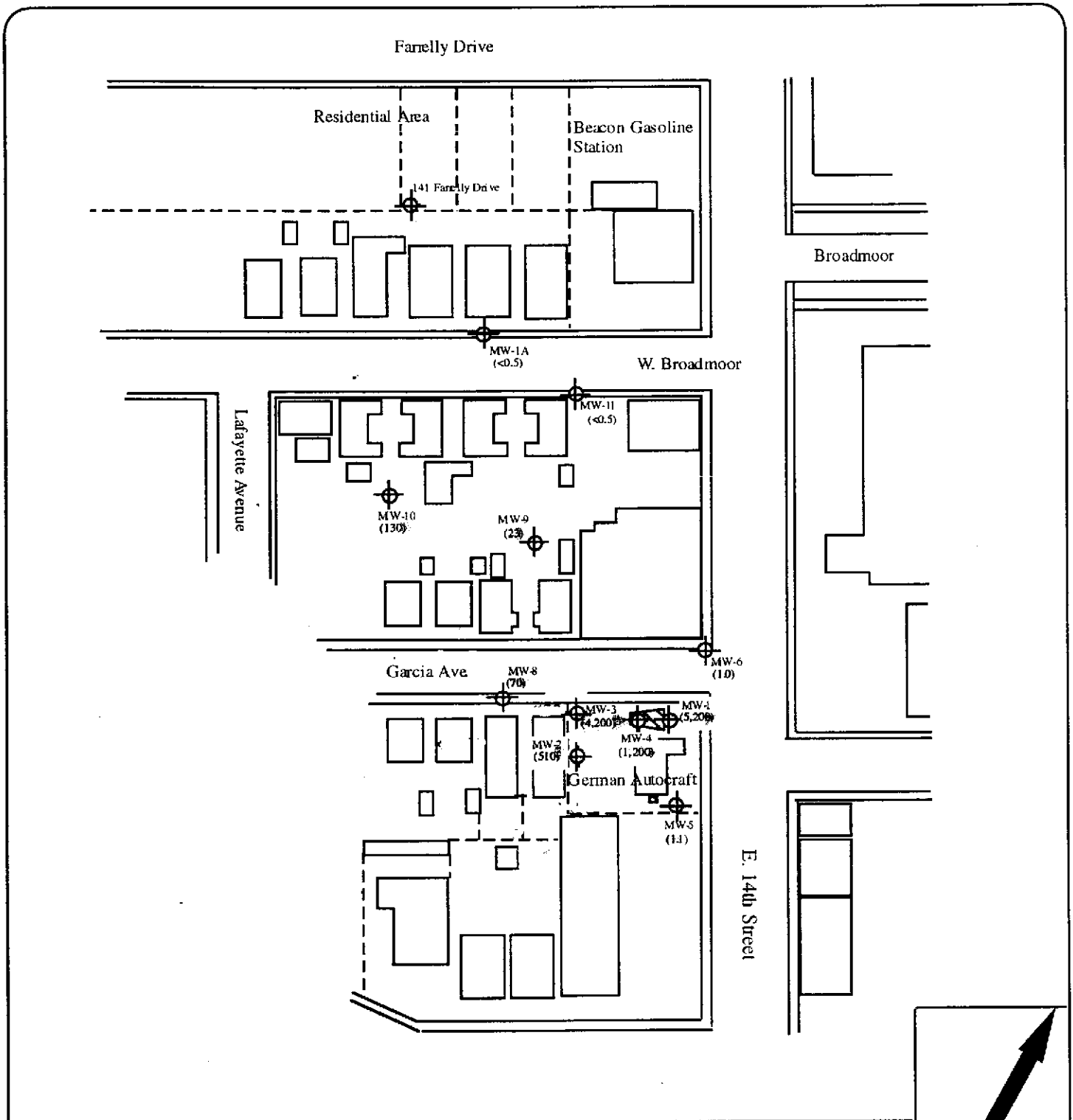
- 0 60' 120'
- Scale: 1"=120'
- Streets/Buildings
- ⊕ Groundwater Monitoring Well
- ▨ Former Tank Pit Areas
- Buildings



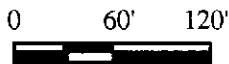

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 SAN JOSE, CA 95113

VICINITY MAP WITH GROUNDWATER TPH CONCENTRATIONS
German Autocraft
 301 East 14th Street
 San Leandro, California

Figure 4
 Date: 2/99




EXPLANATION:



Scale: 1"=120'

- Streets/Buildings
- ⊕ Groundwater Monitoring Well
- ▨ Former Tank Pit Areas
- Buildings




ENVIRONMENTAL TESTING & MGMT.
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 SAN JOSE, CA 95113

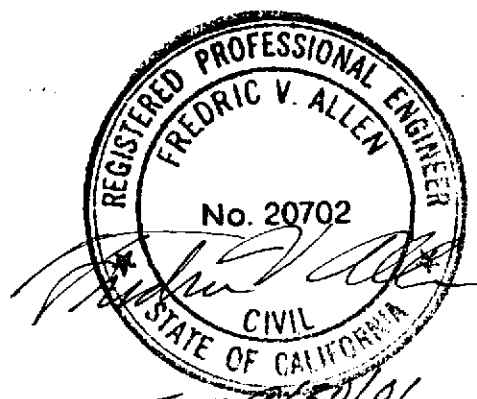
**VICINITY MAP WITH GROUNDWATER
 BENZENE CONCENTRATIONS**
German Autocraft
 301 East 14th Street
 San Leandro, California

Figure 5
 Date: 2/99

	BS	FS	HI	FLEV.	
T 3					
BS @ TP#2	4.30		53.82	<u>49.52</u>	
MW #11		5.89		49.93	
MW #1A		5.58		48.24	
MON E14/BROAD		6.65		47.17	TP#3
				(47.17)	Per City Surveyor
TA					
BS MON E14 BROAD	5.13		52.30	<u>47.17</u>	TP#3
MON FARELLY @ PONTIAC		5.17		47.13	TP#4
T 5					
BS MON Fareilly @ Pontiac	6.39		53.52	<u>47.13</u>	
MW #1A FARELLY NORTH COCKER		4.71		48.81	

GERMAN AUTO CRAFT
301 EAST 14th Street
SAN LEANORO, CA

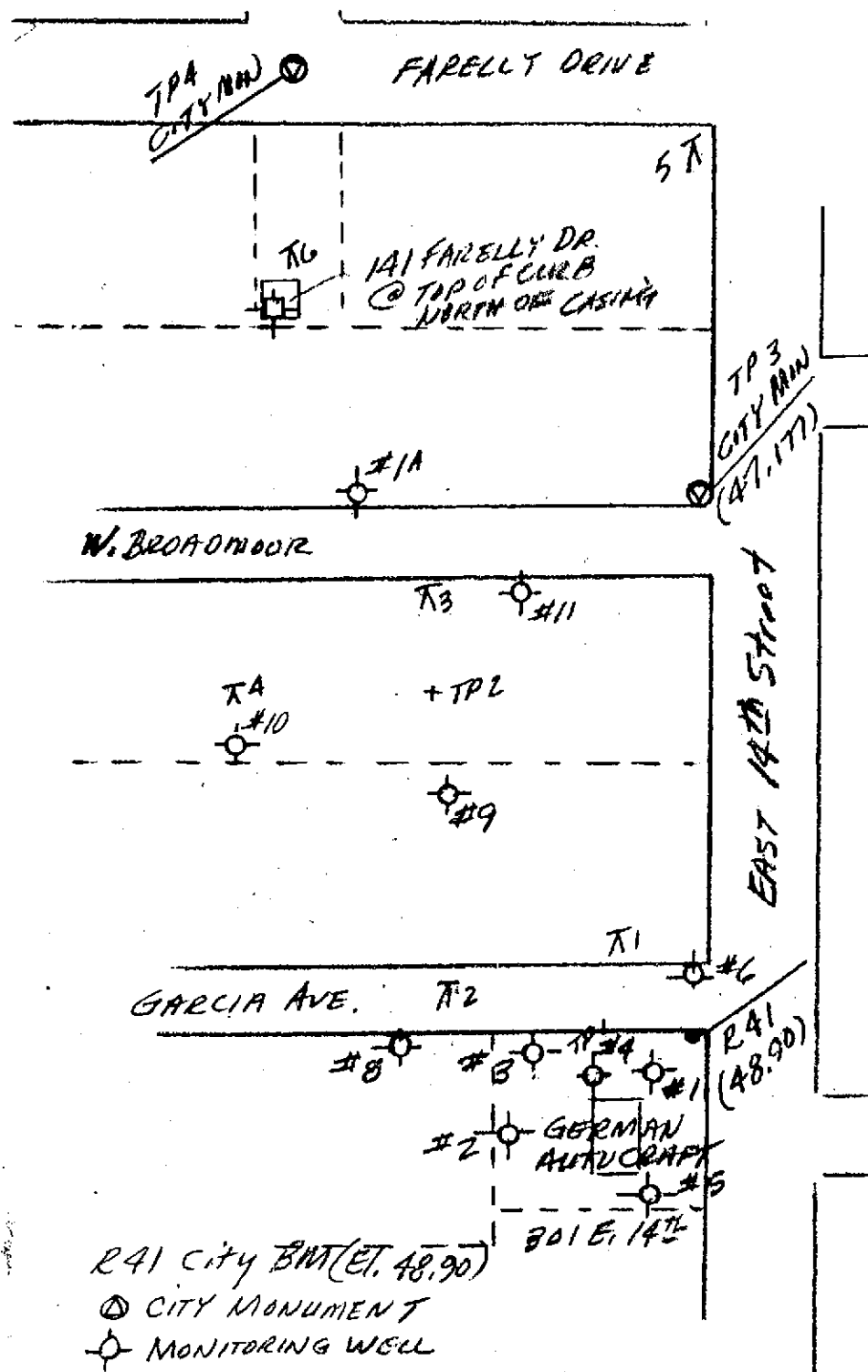
T Allen
1 Tyrone ? (From ET&M)



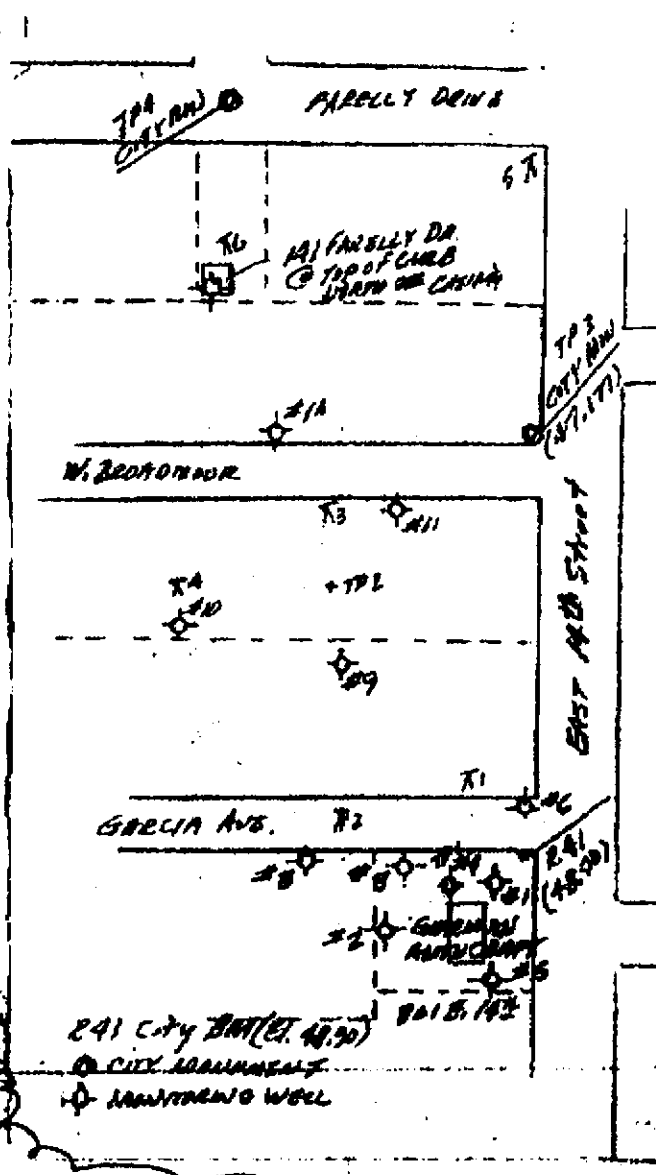
ERN 07/30/01
MONITORING WELL ELEVATIONS
© RIM OF CASING EXCEPT 1A1 FARELLY
© TOP OF CURB

FOR:
ENVIRONMENTAL TESTING & MGMT.
111 N. MARKET ST. 6th Floor.
SAN JOSE, CA 95113.

TI	B/S	F/S	HI	ELEV.	ELEV. PER BRIAN SPACE-CITY SURVEYOR
BS R41	5.54		54.44	<u>48.90</u>	
SWC E14 ^{1/2} GARCIA.					
MW#1		4.95		49.49	
MW#5		4.87		49.57	
MW#3		5.12		49.32	TP#1
MW#2		4.43		50.01	
MW#6		6.38		48.06	
TI					
BS MW#3	5.80		55.12	<u>49.32</u>	
MW#4		5.52		49.60	
MW#8		5.77		49.35	
MW#9		6.35		48.77	
⊕ TP#2		5.60		49.52	TP#2



T1	B/S	F/S	HI	ELEV.	ELEV. OF BOTTN
BS R#1	5.54		54.84	48.40	54.84
MW#1		4.95		49.49	
MW#5		4.87		49.57	
MW#3		5.12		49.32	(TP#1)
MW#2		4.43		50.01	
MW#6		6.30		48.06	
2.					
BS MW#3	5.80		55.12	49.32	
MW#9		5.52		49.60	
MW#8		5.77		49.35	
v.24		6.35		48.77	
TP#2		5.60		49.52	TP#2
TP#2	5.27		54.79	49.52	TP#2
MW#10 (RIM)	4.57			50.22	



*NOTE: Elev. Shown for MW#10 is on the rim of the cover. Adjust to top of casing elevation. 3.60' IS.

Post-It® Fax Note	7671	Date	2/10/99	Page	1
To	Tom Price	From	Fred Allen		
Co./Dept.		Co.	Francis V. Allen, Inc.		
Phone #		Phone #	650/345-7564		
Fax #	408/938-3929	Fax #	650/345-8607		

APPENDIX B: 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 D**.

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.

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

Date: 1/8/99
 Date Received: 12/31/98
 Project: GA
 PO #:
 Sampled By: Client

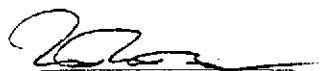
Certified Analytical Report

Water Sample Analysis:

Sample ID	MW-1			MW-1A			MW-2				
Sample Date	12/30/98			12/30/98			12/30/98				
Sample Time											
Lab #	E23444			E23445			E23446				
	Result	DF	DLR	Result	DF	DLR	Result	DF	DLR	PQL	Method
Results in µg/Liter:											
Analysis Date	1/4-1/5/99			1/7/99			1/4/99				
TPH-Gas	78,000	40	2000	51 ^x	1.0	50	9,300	20	1000	50	8015M
Benzene	5,200	200	100	ND	1.0	0.50	510	20	10	0.50	8020
Toluene	24,000	200	100	ND	1.0	0.50	96	20	10	0.50	8020
Ethyl Benzene	3,200	200	100	ND	1.0	0.50	450	20	10	0.50	8020
Xylenes	19,000	200	100	ND	1.0	0.50	480	20	10	0.50	8020
Analysis Date	1/5/99			1/5/99			1/5/99				
tert-Butanol	ND ¹	100	2000	ND ¹	10	200	ND ¹	10	200	20	8260
MTBE	ND ¹	100	500	ND ¹	10	50	ND ¹	10	50	5.0	8260
Diisopropyl ether	ND ¹	100	500	ND ¹	10	50	ND ¹	10	50	5.0	8260
Ethyl-tert-butyl ether	ND ¹	100	500	ND ¹	10	50	ND ¹	10	50	5.0	8260
tert-Amylmethyl ether	ND ¹	100	500	ND ¹	10	50	ND ¹	10	50	5.0	8260

DF=Dilution Factor ND= None Detected above DLR PQL=Practical Quantitation Limit DLR=Detection Reporting Limit

1. Sample diluted due to high concentrations of non-target hydrocarbons
2. Analysis performed by Entech Analytical Labs, Inc. (CA ELAP #2224)



Michelle L. Anderson, Lab Director

Entech Analytical Labs, Inc.

CA ELAP# 2224

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

Date: 1/8/99
Date Received: 12/31/98
Project: GA
PO #:
Sampled By: Client


Certified Analytical Report

Water Sample Analysis:

Sample ID	MW-3			MW-4			MW-5				
Sample Date	12/30/98			12/30/98			12/30/98				
Sample Time											
Lab #	E23447			E23448			E23449				
	Result	DF	DLR	Result	DF	DLR	Result	DF	DLR	PQL	Method
Results in µg/Liter:											
Analysis Date	1/4/99			1/4/99			1/7/99				
TPH-Gas	34,000	20	1000	12,000	20	1000	170	1.0	50	50	8015M
Benzene	4,200	20	10	1,200	20	10	1.1	1.0	0.50	0.50	8020
Toluene	770	20	10	1,100	20	10	ND	1.0	0.50	0.50	8020
Ethyl Benzene	2,300	20	10	290	20	10	ND	1.0	0.50	0.50	8020
Xylenes	9,000	20	10	1,400	20	10	0.83	1.0	0.50	0.50	8020
Analysis Date	1/5/99			1/5/99			1/5/99				
tert-Butanol	ND ¹	100	2000	ND ¹	20	400	ND	1.0	20	20	8260
MTBE	ND ¹	100	500	ND ¹	20	100	ND	1.0	5.0	5.0	8260
Diisopropyl ether	ND ¹	100	500	ND ¹	20	100	ND	1.0	5.0	5.0	8260
Ethyl-tert-butyl ether	ND ¹	100	500	ND ¹	20	100	ND	1.0	5.0	5.0	8260
tert-Amylmethyl ether	ND ¹	100	500	ND ¹	20	100	ND	1.0	5.0	5.0	8260

DF=Dilution Factor ND= None Detected above DLR PQL=Practical Quantitation Limit DLR=Detection Reporting Limit

1. Sample diluted due to high concentrations of non-target hydrocarbons
2. Analysis performed by Entech Analytical Labs, Inc. (CA ELAP #2224)


Michelle L. Anderson, Lab Director

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Attn: Tom Price

Date: 1/8/99
Date Received: 12/31 98
Project: GA
PO #:
Sampled By: Client

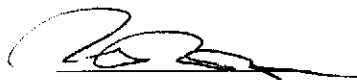
Certified Analytical Report

Water Sample Analysis:

Sample ID	MW-6									
Sample Date	12/30/98									
Sample Time										
Lab #	E23450									
	Result	DF	DLR						PQL	Method
Results in µg/Liter:										
Analysis Date	1/4/99									
TPH-Gas	400	1.0	50						50	8015M
Benzene	1.0	1.0	0.50						0.50	8020
Toluene	ND	1.0	0.50						0.50	8020
Ethyl Benzene	ND	1.0	0.50						0.50	8020
Xylenes	4.8	1.0	0.50						0.50	8020
Analysis Date	1/5/99									
tert-Butanol	ND	1.0	20						20	8260
MTBE	ND	1.0	5.0						5.0	8260
Diisopropyl ether	ND	1.0	5.0						5.0	8260
Ethyl-tert-butyl ether	ND	1.0	5.0						5.0	8260
tert-Amylmethyl ether	ND	1.0	5.0						5.0	8260

DF=Dilution Factor ND= None Detected above DLR PQL=Practical Quantitation Limit DLR=Detection Reporting Limit

Analysis performed by Entech Analytical Labs, Inc. (CA ELAP #2224)


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CA ELAP# 2224

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

Date: 1/8/99
Date Received: 12/31/98
Project: GA
PO #:
Sampled By: Client

Certified Analytical Report

Water Sample Analysis:

Sample ID	MW-8			MW-9			MW-10				
Sample Date	12/30/98			12/30/98			12/30/98				
Sample Time											
Lab #	E23438			E23439			E23440				
	Result	DF	DLR	Result	DF	DLR	Result	DF	DLR	PQL	Method
Results in µg/Liter:											
Analysis Date	1/7/99			1/5/99			1/4/99				
TPH-Gas	2,200	1.0	50	25,000	20	1000	6,900	20	1000	50	8015M
Benzene	70	1.0	0.50	23	20	10	130	20	10	0.50	8020
Toluene	0.94	1.0	0.50	ND	20	10	19	20	10	0.50	8020
Ethyl Benzene	26	1.0	0.50	180	20	10	140	20	10	0.50	8020
Xylenes	15	1.0	0.50	620	20	10	210	20	10	0.50	8020
Analysis Date	1/5/99			1/5/99			1/5/99				
tert-Butanol	ND ¹	10	200	ND ¹	10	200	51	1.0	20	20	8260
MTBE	ND ¹	10	50	ND ¹	10	50	ND	1.0	5.0	5.0	8260
Diisopropyl ether	ND ¹	10	50	ND ¹	10	50	ND	1.0	5.0	5.0	8260
Ethyl-tert-butyl ether	ND ¹	10	50	ND ¹	10	50	ND	1.0	5.0	5.0	8260
tert-Amylmethyl ether	ND ¹	10	50	ND ¹	10	50	ND	1.0	5.0	5.0	8260


DF=Dilution Factor

ND= None Detected above DLR

PQL=Practical Quantitation Limit

DLR=Detection Reporting Limit

1. Sample diluted due to high concentrations of non-target hydrocarbons
2. Analysis performed by Entech Analytical Labs, Inc. (CA ELAP #2224)



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Attn: Tom Price

Date: 1/8/99
Date Received: 12/31/98
Project: GA
PO #:
Sampled By: Client

Certified Analytical Report

Water Sample Analysis:

Sample ID	MW-11			MW-12			MW-13				
Sample Date	12/30/98			12/30/98			12/30/98				
Sample Time											
Lab #	E23441			E23442			E23443				
	Result	DF	DLR	Result	DF	DLR	Result	DF	DLR	PQL	Method
Results in µg/Liter:											
Analysis Date	1/4/99			1/4/99			1/4/99				
TPH-Gas	80	1.0	50	78	1.0	50	ND	1.0	50	50	8015M
Benzene	ND	1.0	0.50	ND	1.0	0.50	ND	1.0	0.50	0.50	8020
Toluene	ND	1.0	0.50	ND	1.0	0.50	ND	1.0	0.50	0.50	8020
Ethyl Benzene	0.93	1.0	0.50	0.89	1.0	0.50	ND	1.0	0.50	0.50	8020
Xylenes	1.6	1.0	0.50	1.8	1.0	0.50	ND	1.0	0.50	0.50	8020
Analysis Date	1/5/99			1/5/99			1/5/99				
tert-Butanol	ND	1.0	20	ND	1.0	20	ND	1.0	20	20	8260
MTBE	ND	1.0	5.0	ND	1.0	5.0	ND	1.0	5.0	5.0	8260
Diisopropyl ether	ND	1.0	5.0	ND	1.0	5.0	ND	1.0	5.0	5.0	8260
Ethyl-tert-butyl ether	ND	1.0	5.0	ND	1.0	5.0	ND	1.0	5.0	5.0	8260
tert-Amylmethyl ether	ND	1.0	5.0	ND	1.0	5.0	ND	1.0	5.0	5.0	8260

DF=Dilution Factor ND= None Detected above DLR PQL=Practical Quantitation Limit DLR=Detection Reporting Limit

Analysis performed by Entech Analytical Labs, Inc. (CA ELAP #2224)



Michelle L. Anderson, Lab Director

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STANDARD LAB QUALIFIERS

July, 1998

All Entech lab reports now reference standard lab qualifiers. These qualifiers are noted in the adjacent column to the analytical result and are adapted from the U.S. EPA CLP program. The current qualifier list is as follows:

Qualifier	Description
U	Compound was analyzed for but not detected
J	Estimated valued for tentatively identified compounds or if result is below PQL but above MDL
N	Presumptive evidence of a compound (for Tentatively Identified Compounds)
B	Analyte is found in the associated Method Blank
E	Compounds whose concentrations exceed the upper level of the calibration range
D	Multiple dilutions reported for analysis; discrepancies between analytes may be due to dilution
X	Results within quantitation range; chromatographic pattern not typical of fuel

QUALITY CONTROL RESULTS SUMMARY

METHOD: Gas Chromatography

QC Batch #: GBG2990107

Matrix: Water

Units: µg/L

Date Analyzed: 01/07/99

Quality Control Sample: Blank Spike

PARAMETER	Method #	MB µg/L	SA µg/L	SR µg/L	SP µg/L	SP % R	SPD µg/L	SPD %R	RPD	QC LIMITS	
										RPD	%R
Benzene	8020	<0.50	40	ND	40	101	38	95	5.2	25	78-118
Toluene	8020	<0.50	40	ND	40	100	38	95	5.2	25	78-117
Ethyl Benzene	8020	<0.50	40	ND	40	100	38	96	4.3	25	87-110
Xylenes	8020	<0.50	120	ND	121	101	115	96	5.0	25	85-112
Gasoline	8015	<50.0	500	ND	509	102	450	90	12.3	25	81-113

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

All

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

QUALITY CONTROL RESULTS SUMMARY

METHOD: Gas Chromatography

QC Batch #: GBG2990104

Matrix: Water

Units: µg/L

Date Analyzed: 01/04/99

Quality Control Sample: Blank Spike

PARAMETER	Method #	MB µg/L	SA µg/L	SR µg/L	SP µg/L	SP % R	SPD µg/L	SPD %R	RPD	QC LIMITS	
										RPD	%R
Benzene	8020	<0.50	40	ND	38	94	37	92	2.7	25	78-118
Toluene	8020	<0.50	40	ND	38	94	37	92	1.5	25	78-117
Ethyl Benzene	8020	<0.50	40	ND	40	100	38	95	5.7	25	87-110
Xylenes	8020	<0.50	120	ND	118	98	114	95	2.8	25	85-112
Gasoline	8015	<50.0	500	ND	480	96	475	95	1.0	25	81-113

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

All

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

Volatile Organic Compounds

QC Batch #: WGCMS990104

Matrix: Water

Units: µg/L

Date analyzed:

01/04/99

Spiked Sample:

Blank Spike

PARAMETER	Method #	SA	SR	SP	SP	SPD	SPD	RPD	QC LIMITS	
		µg/L	µg/L	µg/L	%R	µg/L	%R		RPD	%R
Methyl-tert-butyl ether	8240/8260	40	ND	38	95	41	103	8.3	25	50-150
Diisopropyl ether	8240/8260	40	ND	40	99	41	103	3.5	25	50-150
tert-Butyl ethyl ether	8240/8260	40	ND	39	97	41	102	5.0	25	50-150
Tert-amyl methyl ether	8240/8260	40	ND	40	100	43	106	6.6	25	50-150

Oxygenates Only

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

39201 Cherry St.
 Newark.
 5674

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: ENVTEST Mgmt
 Address: 111 N Market St 6 Flr
SAN JOSE CA 95113
 Contact: Tom Price
 Telephone #: 938 0939
 Date Received: 12-31-98
 Turn Around: Normal

Project ID: GA
 Purchase Order #:

Sampler/Company:	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/g	BTEX	oxysulfates	82-60						
E23438	MW-8	G	W	12/30/98		chilly HCl	VLAS	✓	✓	✓	✓						
E23439	MW-9	↓	↓	↓		↓	↓	✓	✓	✓	✓						
E23440	MW-10	↓	↓	↓		↓	↓	✓	✓	✓	✓						
E23441	MW-11	↓	↓	↓		↓	↓	✓	✓	✓	✓						
E23442	MW-12	↓	↓	↓		↓	↓	✓	✓	✓	✓						
E23443	MW-13	↓	↓	↓		↓	↓	✓	✓	✓	✓						
E23444																	

Relinq. By: <u>Tom Price</u>	Received By: <u>J. Medina</u>	Date: <u>12-31-98</u>	Time: <u>11:15 AM</u>
Relinq. By: <u>J. Medina</u>	Received By: <u>VINARO</u>	Date: <u>12-31-96</u>	Time: <u>11:50 AM</u>
Relinq. By:	Received By: <u>12/31/98</u>	Date: <u>12:30 AM</u>	Time:

Entech Analytical Labs, Inc.

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Chain of Custody/Analysis Work Order

Client: ENV. TEST Mgmt
 Address: 111 N Market St 6 Flr.
SAN JOSE CA 95113
 Contact: Tom Price
 Telephone #: 938 0939
 Date Received: 12-31-98
 Turn Around: Normal

Project ID: GA
 Purchase Order #: _____

Sampler/Company:	Telephone #:
Special Instructions/Comments	

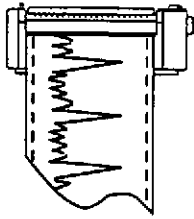
LAB USE ONLY

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	TPH8/ BTEX	ORGANICS 8260						
E23444	MW-1 (1)	G	W	12/30/98		Chill HCl	VOLAS	✓	✓						
E23445	MW-1A (2A)	↓	↓	↓			↓	✓	✓						
E23446	MW-2							✓	✓						
E23447	MW-3							✓	✓						
E23448	MW-4							✓	✓						
E23449	MW-5							✓	✓						
E23450	MW-6							✓	✓						
Relinqu. By: <u>Tom Price</u>				Received By: <u>J. Merlin</u>				Date: <u>12-31-98</u>		Time: <u>11:15 AM</u>					
Relinqu. By: <u>J. Merlin</u>				Received By: <u>VANUO</u>				Date: <u>12-31-98</u>		Time: <u>11:50 AM</u>					
Relinqu. 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: 12/30/98

Project Name: GA

Project No.: _____

Well No./Description: MW-1

Depth of Well: 37.22

1 Well Volume: 2.0

Depth to Water: 24.36

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 _____

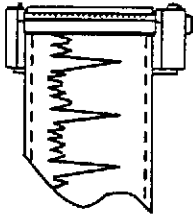
Odor: No Yes, Describe slight H.C.

Field Measurements:

Time	Volume	pH	Temp.	E.C.	Color
<u>4:00</u>	<u>2.0</u>	<u>6.9</u>	<u>57</u>	<u>0.59</u>	_____
<u>4:05</u>	<u>4.0</u>	<u>6.9</u>	<u>56</u>	<u>0.59</u>	_____
<u>4:10</u>	<u>6.5</u>	<u>6.9</u>	<u>56</u>	<u>0.55</u>	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____

Remarks: _____

Sampler: _____



ENVIRONMENTAL TESTING & MGMT.

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

Date: 12/31/98

Project Name: GA

Project No.: _____

Well No./Description: MW-2

Depth of Well: 33.80

1 Well Volume: 1.4

Depth to Water: 25.08

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 _____

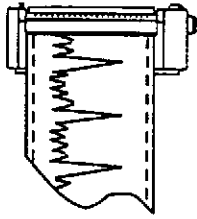
Odor: No Yes, Describe mod HCl

Field Measurements:

Time	Volume	pH	Temp.	E.C.	Color
<u>422</u>	<u>1.4</u>	<u>6.7</u>	<u>51</u>	<u>0.98</u>	_____
<u>427</u>	<u>2.8</u>	<u>6.7</u>	<u>51</u>	<u>0.98</u>	_____
<u>430</u>	<u>4.2</u>	<u>6.8</u>	<u>50</u>	<u>0.94</u>	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____

Remarks: _____

Sampler: _____



ENVIRONMENTAL TESTING & MGMT.

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

Date: 12/30/98

Project Name: GA.

Project No.: _____

Well No./Description: MW-3

Depth of Well: 34.80

1 Well Volume: 22.0

Depth to Water: 24.33

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 _____

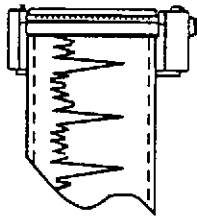
Odor: No Yes, Describe mild HC

Field Measurements:

Time	Volume	pH	Temp.	E.C.	Color
<u>500</u>	<u>2.0</u>	<u>6.9</u>	<u>54</u>	<u>0.7</u>	_____
<u>506</u>	<u>4.0</u>	<u>7.0</u>	<u>54</u>	<u>0.7</u>	_____
<u>510</u>	<u>6.0</u>	<u>7.0</u>	<u>52</u>	<u>0.6</u>	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____

Remarks: _____

Sampler: _____



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

Date: 12/30/98

Project Name: GA

Project No.: _____

Well No./Description: MW-4

Depth of Well: 34.20

1 Well Volume: 1.6

Depth to Water: 24.55

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 _____

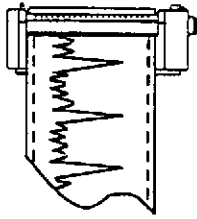
Odor: No Yes, Describe mild HC

Field Measurements:

Time	Volume	pH	Temp.	E.C.	Color
<u>520</u>	<u>1.6</u>	<u>7.0</u>	<u>56</u>	<u>0.52</u>	_____
<u>525</u>	<u>3.2</u>	<u>7.0</u>	<u>57</u>	<u>0.50</u>	_____
<u>530</u>	<u>5.0</u>	<u>7.0</u>	<u>55</u>	<u>0.50</u>	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____

Remarks: _____

Sampler: _____



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

Date: 12/30/98 Project Name: GA
Project No.: _____ Well No./Description: MW-5
Depth of Well: 30.10 1 Well Volume: 1.0
Depth to Water: 24.51 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 _____

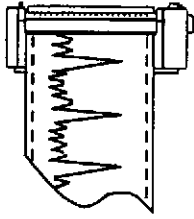
Odor: No Yes, Describe _____

Field Measurements:

Time	Volume	pH	Temp.	E.C.	Color
<u>2:00</u>	<u>1.0</u>	<u>6.5</u>	<u>62</u>	<u>0.72</u>	_____
<u>2:05</u>	<u>2.0</u>	<u>6.7</u>	<u>61</u>	<u>0.71</u>	_____
<u>2:10</u>	<u>3.0</u>	<u>6.8</u>	<u>60</u>	<u>0.68</u>	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____

Remarks: _____

Sampler: _____



ENVIRONMENTAL TESTING & MGMT.

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

Date: 12/30/98

Project Name: GA.

Project No.: _____

Well No./Description: MW-6

Depth of Well: 33.25

1 Well Volume: 1.8

Depth to Water: 22.92

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 _____

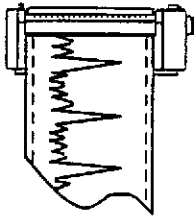
Odor: No Yes, Describe _____

Field Measurements:

Time	Volume	pH	Temp.	E.C.	Color
<u>340</u>	<u>1.8</u>	<u>7.0</u>	<u>56</u>	<u>0.60</u>	_____
<u>345</u>	<u>3.6</u>	<u>7.0</u>	<u>57</u>	<u>0.57</u>	_____
<u>350</u>	<u>5.5</u>	<u>6.9</u>	<u>55</u>	<u>0.55</u>	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____

Remarks: _____

Sampler: _____



ENVIRONMENTAL TESTING & MGMT.

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

Date: 12/30/98

Project Name: GA

Project No.: _____

Well No./Description: MW-8

Depth of Well: 29.50

1 Well Volume: 0.8

Depth to Water: 24.60

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 _____

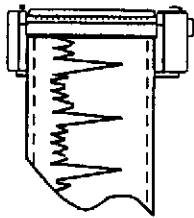
Odor: No Yes, Describe mill/string HC odor.

Field Measurements:

Time	Volume	pH	Temp.	E.C.	Color
<u>320</u>	<u>0.8</u>	<u>6.9</u>	<u>54</u>	<u>0.64</u>	_____
<u>325</u>	<u>1.6</u>	<u>7.0</u>	<u>52</u>	<u>0.58</u>	_____
<u>330</u>	<u>2.4</u>	<u>7.1</u>	<u>51</u>	<u>0.59</u>	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____

Remarks: _____

Sampler: _____



ENVIRONMENTAL TESTING & MGMT.

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

Date: 12/30/98

Project Name: GA

Project No.: _____

Well No./Description: MW-9

Depth of Well: 34.3

1 Well Volume: ~2.0

Depth to Water: 23.98

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 _____

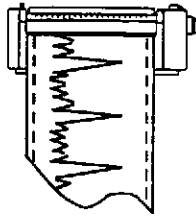
Odor: No Yes, Describe strong HC

Field Measurements:

Time	Volume	pH	Temp.	E.C.	Color
<u>3:02</u>	<u>2.0</u>	<u>7.8</u>	<u>59</u>	<u>0.64</u>	_____
<u>3:05</u>	<u>4.0</u>	<u>7.8</u>	<u>56</u>	<u>0.60</u>	_____
<u>3:10</u>	<u>6.0</u>	<u>7.1</u>	<u>54</u>	<u>0.60</u>	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____

Remarks: _____

Sampler: _____



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

Date: 12/30/98 Project Name: GA
Project No.: _____ Well No./Description: MW-10
Depth of Well: 38.90 1 Well Volume: 2.0
Depth to Water: 25.35 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 _____

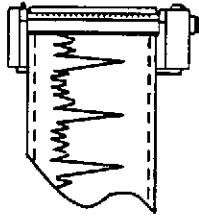
Odor: No Yes, Describe _____

Field Measurements:

Time	Volume	pH	Temp.	E.C.	Color
<u>220</u>	<u>2.0</u>	<u>7.0</u>	<u>56</u>	<u>0.60</u>	_____
<u>225</u>	<u>4.0</u>	<u>7.0</u>	<u>56</u>	<u>0.60</u>	_____
<u>236</u>	<u>7.0</u>	<u>7.1</u>	<u>55</u>	<u>0.58</u>	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____

Remarks: _____

Sampler: _____



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

Date: 12/30/98

Project Name: GA

Project No.: _____

Well No./Description: MW-11

Depth of Well: 34.30

1 Well Volume: 2.0

Depth to Water: 23.15

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 _____

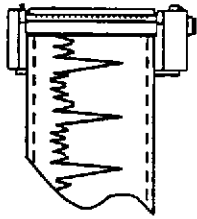
Odor: No Yes, Describe _____

Field Measurements:

Time	Volume	pH	Temp.	E.C.	Color
<u>240</u>	<u>2.0</u>	<u>6.9</u>	<u>54</u>	<u>0.53</u>	_____
<u>245</u>	<u>4.0</u>	<u>6.9</u>	<u>54</u>	<u>0.53</u>	_____
<u>250</u>	<u>6.0</u>	<u>7.0</u>	<u>53</u>	<u>0.50</u>	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____

Remarks: _____

Sampler: _____



ENVIRONMENTAL TESTING & MGMT.

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

Date: 12/30/98

Project Name: GA.

Project No.: _____

Well No./Description: MW-1A

Depth of Well: 33.45

1 Well Volume: 22.0

Depth to Water: 23.60

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
<u>145</u>	<u>2.0</u>	<u>6.9</u>	<u>54.5</u>	<u>0.53</u>	_____
<u>150</u>	<u>4.0</u>	<u>7.0</u>	<u>53</u>	<u>0.54</u>	_____
<u>155</u>	<u>6.0</u>	<u>7.0</u>	<u>52</u>	<u>0.5</u>	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____

Remarks: _____

Sampler: _____

APPENDIX E: QUALITY ASSURANCE/QUALITY CONTROL PROGRAM

The quality assurance/quality control measures used for groundwater sampling conducted on December 30, 1998 included the following:

- Groundwater samples were collected in triplicate 40 milliliter vials.
- A sample collected from MW-11 was labeled "MW-12" and submitted for volatile organic testing as a blind duplicate. No quality control/quality assurance problems are apparent.
- A trip blank sample was labeled "MW-13" and submitted for volatile organic testing as a blind duplicate. No quality control/quality assurance problems are apparent.

APPENDIX F: REPORT DISTRIBUTION LIST

Copies of this report have been mailed to the attention of the following parties:

Seung Lee
German Autocraft
301 E. 14th Street
San Leandro, California 94577

Scott O. Seery
Alameda County Department of Environmental Health
1131 Harbor Bay Parkway, #250
Alameda, California 94502-6577

Mike Bakaldin
City of San Leandro Fire Department
835 E. 14th Street, Suite 200
San Leandro, California 94577