APRIL, 1999
GROUND WATER SAMPLING REPORT
FOR
STID 553 - GRIMIT AUTO AND REPAIR
1970 SEMINARY AVENUE
OAKLAND, CALIFORNIA

May 12, 1999

Prepared by

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Geology / Engineering Geology / Environmental Studies

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May 12, 1999

E-10-1C-261C HCQuartEnvtRpts:Sem.1970/11(5/99)

Mr. Doyle Grimit 14366 Lark Street San Leandro, California 94578

RE: APRIL, 1999

GROUND WATER SAMPLING REPORT STID 553 - GRIMIT AUTO AND REPAIR 1970 SEMINARY AVENUE OAKLAND, CALIFORNIA

Dear Mr. Grimit:

Enclosed is our April, 1999 ground water sampling report for the property located at 1970 Seminary Avenue, corner of Harmon, in Oakland, California. This sampling round is the seventeenth round performed by Hoexter Consulting and others at the site, dating from August, 1990. This sampling event is the second to be conducted following ASTM RBCA Tier Two evaluation of the site. The results of previous sampling events are included in the analytical results summary tables.

The results of this investigation indicate that the water samples from the nine on-site wells continue to range from relatively low to elevated levels of total petroleum hydrocarbons as gasoline (TPH-G); purgeable aromatic compounds (BTEX) and MTBE; oil (total recoverable petroleum hydrocarbons, TRPH); and halogenated volatile compounds (HVOC). The analyses indicate that all analyzed compounds remain at levels of the same order-of-magnitude as previous results, with an overall, average decline in contaminant levels since initiation of sampling, particularly in wells more distant from the source area.

Ground water levels rose appreciably from the previous December, 1998 sampling event, approaching or exceeding the previous highest recorded levels. Ground water gradient directions, which differ between the "shallow" and "deep" wells, were similar to previous sampling events.

We recommend that copies of the enclosed report be submitted to the Alameda County Health Care Services Agency. The next round of sampling is currently scheduled to be conducted during October, 1999. Please note that in the body of this report, we recommend Mr. Doyle Grimit: E-10-1C-261C; May 12, 1999; Page 2

that consideration be made for conditional site closure, requiring biannual ground water sampling to verify that conditions improve or remain essentially unchanged.

We appreciate the opportunity to provide services to you on this project and trust this report meets your needs at this time. If you have any questions, or require additional information, please do not hesitate to call.

Very truly yours,

HOEXTER CONSULTING, INC.

David F. Hoexter, RG/CEG/REA

0-374

Principal Geologist

Copies: Addressee (2)

Alameda County Health Care Services Agency (1)
Attention: Eva Chu, Hazardous Materials Specialist

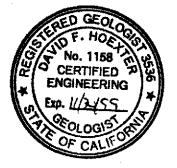
APRIL, 1999 GROUND WATER SAMPLING REPORT

For

STID 553 - Grimit Auto and Repair 1970 Seminary Avenue Oakland, California

To

Mr. Doyle Grimit 14366 Lark Street San Leandro, California 94578



May 12, 1999

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David F. Hoexter, RG/CEG/REA Principal Geologist

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APRIL, 1999 GROUND WATER SAMPLING REPORT FOR STID 553 - GRIMIT AUTO AND REPAIR 1970 SEMINARY OAKLAND, CALIFORNIA

1.0 INTRODUCTION

This report presents the results of the April, 1999 ground water sampling at 1970 Seminary Avenue, Oakland, California. The project location is shown on the Location Map, Figure 1. The scope of services provided during this investigation consisted primarily of collecting and analyzing ground water samples from nine on-site monitoring wells. Ground water samples were analyzed for petroleum hydrocarbons and halogenated volatile organic compounds. Well locations are shown on Figure 2, Site Plan.

2.0 FIELD INVESTIGATION

The ground water monitoring wells were sampled April 24, 1999 by representatives of Hoexter Consulting, Inc. Due to past, very slow equilibration of ground water levels, the well caps were loosened on April 22, 1999, two days prior to the planned purging and sampling. The wells were then secured with the caps sufficiently loose to allow venting, and left to equilibrate over the following approximately 48 hours. Following water level measurements on the morning of April 24, 1999, the wells were purged and sampled.

As noted, the well caps were loosened two days prior to the water level measurement, to allow the water level in the wells to equilibrate. Following ground water level measurement (Table 1) at the time of purging, each well was checked for free-product with the bailer, and then four well-casing volumes of water were purged from the well (due to rapid draw-down of the water level, three well volumes were removed from well MW-9). A dedicated polyethylene bailer was employed for each well. Ground water parameters, including temperature, pH and specific conductivity, were measured prior to and following each purge volume removal.

The samples were collected using the bailer, placed in appropriate sample containers supplied by the analytical laboratory, labeled, and placed in refrigerated storage for transport to the laboratory under chain-of-custody control. All sampling equipment was thoroughly cleaned with "Alconox" detergent and rinsed with distilled water prior to sampling the well. Monitoring well sampling logs and the chain of custody are attached to this report as a part of Appendix A.

Prior to purging, and following a period of two days for the wells to stabilize, ground water levels were measured in each well using the top of 2-inch PVC casing (north side) as reference point. The ground water elevation increased notably in the five "deeper" wells, and increased to a lesser extent in the four "shallow" wells, compared to the prior (December, 1998) sampling event. The five "deeper" wells averaged an elevation increase of 2.78 feet, with all five wells increasing; the four "shallow" wells increased an average of 0.50 feet, with two wells increasing and two wells decreasing in elevation.

Well-top elevations, depth to water, and calculated water-surface elevations are presented in Table 1. These data have been used to generate the Ground Water Contour and Gradient Direction Maps, Figures 3A ("shallow wells") and 3B ("deep wells").

The ground water gradient direction and inclination are essentially consistent with the previous data. The data for the four "shallow" wells indicate a gradient direction towards Seminary Avenue. The apparent gradient varies across the site, but averages 0.17 foot per foot in the source area. The approximate gradient direction is North 59° West. The data for the five "deeper" wells indicate a gradient direction away from Seminary towards the southeast. The apparent gradient varies across the site, but averages 0.07 foot per foot. The approximate gradient direction is South 44° East.

The data appear to indicate a downward gradient from a relatively shallow (perched?) zone represented by the four "shallow" wells, to the deeper zone represented by the five "deeper" wells, particularly in the source area. Based on the slow equilibration and recovery time following purging, we infer a relatively slow ground water flow rate, despite the unusually steep gradient.

3.0 ANALYTICAL RESULTS

3.1 Laboratory Procedures

The ground water samples were analyzed by McCampbell Analytical, Inc. of Pacheco, California. McCampbell Analytical is certified by the State of California EPA/DTSC for the conducted analyses. The samples were analyzed as follows:

- Total petroleum hydrocarbons as gasoline (TPH-G) using EPA Method 5030/8015.
- Purgeable aromatic compounds (BTEX) and MTBE using EPA Method 8020.
- Oil and grease (total recoverable petroleum, TRPH) using SM 5520B/F, gravimetric with cleanup.
- Halogenated volatile organic compounds (HVOC) by EPA Method 8010.

3.2 Observations and Analytical Results

Free product was not observed in the initial sounding of the wells, although a sheen (floating film) of oil was observed in well MW-1, and shortly after purging began, in well MW-4. The purge water from well MW-1 contained globules of "oil", which were observed in earlier sampling rounds.

The results of the chemical analyses are presented on Tables 2, 3 and 4, and are attached to this report as a part of Appendix A. Analytical results of all previous testing are also included. The current analytical results indicate that TRPH, TPH-G, and BTEX compounds, as well as HVOCs, are present at elevated levels which are generally on the same order of magnitude as the most recent, previous analyses.

Two MW-1 samples for analysis of TPH-G and related compounds were obtained. TPH-G was present in the initial sample at 33,000 ug/l (equivalent to parts per billion, ppb). This represents a decrease from previous sampling events, although a similar order of magnitude. MTBE was not detected at an elevated detection limit of 200 ppb; the BTEX compounds in MW-1 were of similar order of magnitude to previous sampling events. Oil and grease were detected at 140,000 ppb, similar to most of the sampling events. The subsequent bailer

extraction exhibited a sheen of product. A second TPH-G/MTBE/BTEX sample was obtained; the sample results were similar, with the exception of MTBE, detected at a concentration of 1,100 ppb

TPH-G, MTBE and BTEX levels variably rose and declined in the other eight wells. Detected levels in wells MW-2 through 9, as during previous sampling events, are generally one to two orders of magnitude less than in MW-1. Oil/grease were detected only in wells MW-1 and MW-4. Various HVOCs were detected in each well. See Table 3 for the presence and concentrations of particular HVOCs.

4.0 CONCLUSIONS AND RECOMMENDATIONS

ASTM Tier Two evaluation of the site, as discussed in the Hoexter Consulting September 3, 1998 addendum letter, resulted in the conclusion that contaminant levels at the site are less than the respective Tier Two SSTLs. Ground water gradient conditions, although variable, are essentially the same as previous sampling events. Overall, the site exhibits a variable but overall decline in contaminant levels, particularly in the wells more distant from the source area. We therefore recommend that regulatory agencies consider granting conditional site closure, requiring biannual ground water sampling to verify that conditions improve or remain essentially unchanged.

5.0 LIMITATIONS

This report has been prepared according to generally accepted geologic and environmental practices. No other warranty, either expressed or implied as to the methods, results, conclusions or professional advice provided is made. It should be recognized that certain limitations are inherent in the evaluation of subsurface conditions, and that certain conditions may not be detected during an investigation of this type. If you wish to reduce the level of uncertainty associated with this study, we should be contacted for additional consultation.

The analysis, conclusions and recommendations contained in this report are based on site conditions as they existed at the time of our investigation; review of previous reports relevant to the site conditions; and laboratory results from an outside analytical laboratory. Changes in the information or data gained from any of these sources could result in changes in our conclusions or recommendations. If such changes do occur, we should be advised so that we can review our report in light of those changes.

Hoexter Consulting, Inc. 734 Torreya Court, Palo Alto, California 9430-4160 (650) 494-2505

TABLE 1

GROUND WATER ELEVATION DATA

(All Measurements in Feet)

Well Number and Date of Measurement	Reference Elevation (2)	Relative Ground Water Elevation (2)		
MW-1 ("deep")				
8/6/90	37.0	21.5	15.5	
1/28/92		21.0	16.0	
4/27/92		20.95	1 6.05	
8/10/92		22.20	14.8	
2/11/94		15.93 (3)	21.07 (3)	
2/28/94		13.85 (4)	23.15 (4)	
9/9/94		20.19	16. 81	
12/28/94		14.91	22.09	
4/13/95		14.18	22.82	
11/1/95		20.90	16.10	
3/8/96		11.82	25.18	
3/25-26/96	36.97	13.54	23.43	
10/7/96		21.41	15.59	
1/15/97		13.34	23.63	
6/23/97	36.99	19.91	17.08	
10/6/97		21.55	15.44	
12/12/98		16.24	20.75	
4/24/99		14.21	22.78	
MW-2 ("deep")				
2/11/94	36.40	14.16(3)	22.24(3)	
2/28/94		16.01 (4)	20.39 (4)	
9/9/94		18.96	17.44	
12/28/94		21.42	14.98	
4/13/95		19.69	16.71	
11/1/95		21.91	14.49	
3/8/96		14.56 (6)	21.84 (6)	
3/25-26/96	36.39	10.84	25.55	
10/7/96		18.41	17.98	
1/15/97		10.07	26.32	
6/23/97	36.40	13.73	22.67	
10/6/97		17.03	19.37	
12/12/98		11.39	25.01	
4/24/99		10.45	25.95	
MW-3 ("shallow")				
2/11/94	36.94	4 07 (2)	29.97 (3)	
2/11/94	30.74	6.97 (3)	29.20 (4)	
9/9/94		7.74 (4) 9.68	27.26	
12/28/94		9.68 8.15	27.20 28.79	
4/13/95		8.15 8.05	28.89	
11/1/95		8.03 7.82	29.12	
3/8/96		5.69	31.25	
3/25-26/96	36,94	6.91	30.03	
3/23-20/70	JU:34	0.71	50.05	

Table continued following page

Table 1 continued

Well Number and Date of Measurement	Reference Elevation (2)	Depth to Water	Relative Ground Water Elevation
MW-3 (cont')			(2)
6/23/97	36.94	9. 65	27.29
10/6/97		10.53	26.41
12/12/98		7.12	29.82
4/24/99		7.17	29.77
MW-4 ("deep")			
3/25-26/96	36.46	14.14	22.32
10/7/96		22,31	14.15
1/15/97		13.78	22.68
6/23/97	36.47	20.90 22.77	15.57 13.60
10/6/97 12/12/98			19.31
4/24/99		17.16 14.55	21.92
<u>-</u>		14,55	21.92
MW-5 ("deep")			
3/25-26/96	36.77	15.63	21.14
10/7/96		22.86	13.91
1/15/97		17.33	19.44
6/23/97	36 <i>.</i> 77	21.91	14.86
10/6/97		24.26	12.51
12/12/98		20.66	16.11
4/24/99		17.19	19.58
MW-6 ("shallow")			
3/25-26/96	36.42	8.52	27.90
10/7/96		1 2.82	23.60
1/15/97		7.72	28.70
6/23/97	36.42	11.42	25.00
10/6/97		1 2.67	23.75
12/ 12 /98		9.15	27.27
4/24/99		8.56	27.86
MW-7 ("deep")			
6/23/97	36.83	19.93	16.90
10/6/97		21.43	15.40
12/12/98		1 6.56	20.27
4/24/99		14.48	22.35
MW-8 ("shallow")			
6/23/97	36.55	5.74	30.81
10/6/97		5.69	30.86
12/12/98		4.01	32.54
4/24/99		4.40	32.15
MW-9 ("shallow")			
6/23/97	36.70	17.04	19.66
10/6/97		19.17	20.53
12/12/98		14.18	22.52
4/24/99		12.33	24.37

Notes to Table 1

(1) N/A = not applicable.

(2) Elevations from a survey conducted by Andreas Deak, California Licensed Land Surveyor, March 21, 1996, City of Oakland datum.

(3) Well under pressure when locking cap removed; water level may not have been stabilized.

(4) Depth to water was measured over a 120 minute period; indicated depths appear to be stabilized readings.
 (5) Surveyed elevations of wells MW 1 and MW-2 varied to 0.02 foot on March 21, 1996 survey as compared

to February 11, 1994 survey; previously calculated measurements of elevation have not been modified to reflect the new survey data. Similar slight survey differences on June 20, 1997 have not been corrected.

(6) Well not stabilized (water level rising).

TABLE 2
GROUND WATER

SUMMARY OF ANALYTICAL TEST RESULTS - PETROLEUM HYDROCARBONS

(Results reported in parts per billion, ppb/ug/l) (1)

Well and Date	TPH Gasoline	MTBE	Benzene	Toluene	Ethyl- Benzene	Xylenes	Oil & Grease HVOC (7)
MW-1 ("deep	p")						11.00(1)
8/6/90 (2)	54,000	NA	3,500	3,200	1,900	9,400	7,600
1/28/92	2,000,000	NA	7,400	17,000	28,000	120,000	7,500 (5)
4/27/92 (3)	500,000	NA	3,400	6,400	10,000	45,000	440,000 (6)
4/27/92 (4)	175,000	NA	4,200	4,400	3,200	14,600	N/A
8/10/92	170,000	NA	4,200	4,200	3,300	15,900	120,000 (6)
2/11/94	1,800,000	NΑ	ND	5,100	5,200	23,900	16,000 (6)
9/9/94	23,000,000	NΑ	56,000	61,000	9,100	137,000	880,000 (6)
12/28/94	55,000	NΑ	3,700	5,300	1,400	5,800	83,000 (6)
4/13/95	45,000	NΑ	2,800	3,400	1,200	5,100	50,000 (5)
11/1/95	44,000	NA	2,600	3,400	1, 400	5,900	52,000 (5)
3/25/96	45,000	NA	3,000	4,100	1,600	6,800	46,000 (5) (7)
10/8/96	55,000	490	3,300	4,500	1,700	7,100	11,000 (5) (7)
1/16/97	48,000	310	2,600	3,200	1,300	5,300	110,000 (5) (7)
6/23/97	40,000	ND<100	2,300	3,500	1,500	6,300	190,000 (5) (7)
10/7/97	45,000	ND<680	2,500	3,600	1,700	6,800	150,000 (5) (7)
12/12/98	39,000	ND<1,500	3,000	100	1,400	5,800	67,000 (5) (7)
4/24/99	33,000	ND<200	2,300	3,300	1,100	4,100	140,000(5) (7)
4/24/99 (8)	41,000	1,100	2,500	3,700	1,500	5,700	N/A
MW-2 ("deep	p")						
2/11/94	130	NA	22	1.1	5.2	7.3	ND (6)
9/9/94	1,000	NΑ	89	ND	ND	6.9	ND (6)
12/28/94	330	NΑ	100	3.8	5.4	4.7	5100 (6)
4/13/95	1,300	NΑ	280	6.9	33	23	ND (5)
11/1/95	100	NA	9.9	ND	ND	ND	ND (5)
3/25/96	4,500	NA	470	57	220	280	ND (5) (7)
10/8/96	710	41	1.9	0.54	1.0	1.0	ND (5) (7)
1/16/97	330	12	41	2.4	1.3	9.9	ND (5) (7)
6/23/97	280	10	12	0.69	ND	13	NA (7)
10/7/97	320	ND<35	4.5	ND	ND	ND	NA (7)
12/12/98	290	ND<11	21	0.76	10	19	ND (5) (7)
4/24/99	360	21	36	1.3	9.2	19	ND<5000 (5) (7)
MW-3 ("sha	llow")					,	
2/11/94	ND	NA	ND	ND	ND	ND	ND (6)
9/ 9/94	710	NA	10	ND	ND	3.5	ND (6)
12/28/94	2,300	NA	7.8	ND	130	73	ND (6)
4/13/95	1,700	NΑ	2.9	ND	61	24	ND (5)
11/1/95	1,100	NΑ	4.4	ND	27	22	ND (5)
3/25/96	2,300	ΝA	4.0	0.96	120	65	ND (5) (7)
10/8/96	160	ND	ND	0.5	1.2	0.77	ND (5) (7)
1/16/97	1,800	7.1	2.8	0.68	48	66	ND<5000 (5) (7)

Table continued following page

Table 2 continued

Well and Date	TPH Gasoline	МТВЕ	Benzene	Toluene	Ethyl- Benzene	Xylenes	Oil & Grease HVOC (7)					
MW-3 ("shallow") (continued)												
6/23/97 10/7/97 12/12/98 4/24/99	ND ND 1,900 2100	ND ND ND ND	ND ND 1.8 1.5	ND ND 0.78 0.85	ND ND 78 79	ND ND 42 43	NA (7) NA (7) ND (5) (7) ND<5000 (5) (7)					
MW-4 ("deep")	1											
3/26/96 10/8/96 1/16/97 6/23/97 10/7/97 12/12/98 4/24/99	9,900 7,800 4,800 6,200 4,400 3,500 3,100	NA 140 84 160 85 110 ND<10	4,000 3,900 1,900 2,800 1,800 1,500 1,700	40 33 21 20 14 13 22	71 31 2.5 20 18 39 67	100 40 27 23 14 14 21	ND (5) (7) ND (5) (7) 5,200 (5) (7) ND (5) (7) ND (5) (7) ND (5) (7) 7,500 (5) (7)					
MW-5 ("deep"))											
3/26/96 10/8/96 1/16/97 6/23/97 10/7/97 12/12/98 4/24/99	1,200 6,700 3,000 12,000 10,000 11,000 9,300	NA 190 90 150 ND<480 ND<660 ND<100	43 260 150 410 310 400 390	8.2 92 68 170 62 120 290	83 410 190 920 530 740 820	95 370 180 800 500 480 770	ND (5) (7) ND (5) (7) ND (5) (7) NA (7) NA (7) ND (5) (7) ND<5000 (5) (7)					
MW-6 ("shailo	w")											
3/26/96 10/8/96 1/15/97 6/23/97 10/7/97 12/12/98 4/24/99	9,900 1,300 6,500 3,100 960 2,500 2,900	NA '57 220 100 ND<74 ND<160 ND<10	1,000 120 570 410 78 230 430	150 2.3 65 16 3.4 10 33	470 1.4 170 110 1.8 92 160	720 4.0 630 140 5.8 110 200	ND (5) (7) ND (5) (7) ND (5) (7) NA (7) NA (7) ND (5) (7) ND<5000 (5) (7)					
MW-7 (deep")												
6/23/97 10/7/97 12/12/98 4/24/99	8,700 7,500 5,000 5,500	ND<20 ND<310 ND<190 ND<10	950 1,,100 640 640	260 86 43 180	520 280 200 290	380 150 55 210	ND (5) (7) ND (5) (7) ND (5) (7) ND<5000 (5) (7)					
MW-8 ("shailo	w")					·	•					
6/23/97 10/7/97 12/12/98 4/24/99	610 120 ND ND	5.9 ND ND ND	25 6.9 ND ND	1.4 ND ND ND	4.3 ND ND ND	2.4 ND ND ND	ND (5) (7) ND (5) (7) ND (5) (7) ND<5000 (5) (7)					

Table continued following page

Table 2 continued

Well and Date	TPH Gasoline	мтве	Benzene	Toluene	Ethyl- Benzene	Xylenes	Oil & Grease HVOC (7)
MW-9 ("shall	ow")						
6/23/97 10/7/97 12/12/98 4/24/99	32,000 33,000 3,400 3,100	250 ND<690 ND<78 22	340 880 160 130	280 350 14 18	1,500 1900 220 220	4,300 4,700 210 190	ND (5) (7) ND (5) (7) ND (5) (7) ND (5) (7)
EB-4 ("grab"	gw sample)	•					
3/8/96	15,000	NA	780	840	1,300	590	7,500 (5) (7)
MCL	NA	NA	1	150	700	1,750	NA

Notes to Table 2

(1) ND - non-detect; N/A - not applicable

(2) Kaldveer Associates report, September, 1990(3) Sequoia Analytical Laboratory

(4) Applied Remediation Laboratory

(5) Gravimetric Method
(6) Infrared Method
(7) HVOC detected: see Table 3
(8) Free-phase product observed in bailer (additional sample)

TABLE 3

GROUND WATER

SUMMARY OF ANALYTICAL TEST RESULTS - HALOGENATED VOLATILE ORGANIC COMPOUNDS (HVOC)

(Results reported in parts per billion, ppb/ug/l) (1) (2)

Well and Date	CA	1,2 DCB	1,2 DCA	cis 1,2 DCE	trns 1,2 DCE	1,2 DCP	PCE	TCE	VCL		
MW-1 ("deep")											
3/25/96 10/8/96 1/16/97 6/23/97 10/7/97 12/12/98	ND<5 ND<20 NA ND<2 3.5 ND<2.5	NA 10 7.4 7.4	5.3 ND<20 NA 4.1 2.2 ND<2.5	82 45 NA 130 82 26	ND<5 ND<20 NA 3.7 3.8 ND<2.5	ND<5 ND<20 NA ND<2 ND<2 ND<2.5	ND<5 ND<20 NA 5.0 ND<3 ND<2.7	7.8 ND<20 NA 23 9.5 ND<2.5	25 26 NA 54 68 7.3		
4/24/99 (8) MW-2 ("dee	2.1	9.9	3.5	61	2.8	2.0	ND<4.2	ND<1.5	22		
141 44 -2 (UCC	Ψ <i>)</i>					•					
3/25/96 10/8/96 1/16/97 6/23/97 10/7/97 12/12/98 4/24/99	ND<0.5 ND<0.5 NA ND<0.5 ND<0.5 ND<0.5 ND<0.5	ND<0.5 ND<0.5 NA ND<0.5 ND<0.5 ND<0.5 ND<0.5	8.7 15 NA 9.7 18 16 13	11 9.6 NA 8.0 11 9.4 7.8	ND<0.5 ND<0.5 NA ND<0.5 ND<0.5 ND<0.5 ND<0.5	1.0 1.1 NA 0.86 1.2 1.1 0.92	ND<0.5 ND<0.5 NA ND<0.5 ND<0.5 ND<1 ND<0.5	3.2 6.6 NA 9.6 15 7.5 8.4	0.92 ND<0.5 NA ND<0.5 ND<0.5 ND<0.5 ND<0.5		
MW-3 ("sha	llow")										
3/25/96 10/8/96 1/16/97 6/23/97 10/7/97 12/12/98 4/24/99	ND<0.5 ND<0.5 NA ND<0.5 ND<0.5 ND<0.5 ND<0.5	ND<0.5 ND<0.5 NA ND<0.5 ND<0.5 ND<0.5 ND<0.5	0.56 1.1 NA 0.54 ND<0.5 0.51 ND<0.5	1.2 0.87 NA 0.76 ND<0.5 0.82 0.65	ND<0.5 ND<0.5 NA ND<0.5 ND<0.5 ND<0.5 ND<0.5	ND<0.5 ND<0.5 NA ND<0.5 ND<0.5 ND<0.5 ND<0.5	ND<0.5 ND<0.5 NA ND<0.5 ND<0.5 ND<1 ND<0.5	ND<0.5 ND<0.5 NA ND<0.5 ND<0.5 ND<0.5 ND<0.5	ND<0.5 ND<0.5 NA ND<0.5 ND<0.5 ND<0.5 ND<0.5		
MW-4 ("dee	p")										
3/26/96 10/8/96 1/16/97 6/23/97 (5) 10/7/97 12/12/98 (7 4/24/99	ND<8 ND<15 NA 3.6 ND<8) ND<3.5 ND<8.5	22 22 NA 21 20 18 20	ND<8 4.9 NA 5.3 ND<8 ND<3.5 ND<8.5	300 320 NA 340 380 150 390	9.2 ND<15 NA 10 9.9 12	ND<8 ND<15 NA ND<3 ND<8 ND<8 ND<8.5	38 52 NA 11 ND<12 ND<4.5 33	150 130 NA 110 56 12 240	44 60 NA 83 56 57 43		
MW-5 ("dee	p")										
3/26/96 10/8/96 1/16/97 6/23/97 (5) 10/7/97	1.4 ND<2.5 NA 2.0 1.9	ND<0.5 ND<2.5 NA 2.1 1.4	2.1 4.9 NA 2.0 2.8	6.2 4.4 NA 7.2 3.4	ND<0.5 ND<2.5 NA 0.71 ND<0.5	ND<0.5 ND<2.5 NA ND<0.5 ND<0.5	ND<0.5 ND<2.5 NA ND<0.5 ND<0.5	ND<0.5 ND<2.5 NA ND<0.5 ND<0.5	10 9.4 NA 13 10		

Continued following page

	_	_		
Tal	sle.	3	continued	

Well and Date	CA	1,2 DCB	1,2 DCA	cis 1,2 DCE	trns 1,2 DCE	1,2 DCP	PCE	TCE	VCL		
MW-5 ("deep") continued											
12/12/98 4/24/99	1.4 ND<1	2.0 1.9	1.1 1.9	3.7 4.8	ND<1 ND<1	ND<1 ND<1	ND<1.5 ND<1	ND<1 ND<1	5.8 6.3		
MW-6 ("shail	ow")										
3/26/96 10/8/96 1/16/97 6/23/97 10/7/97 12/12/98 (7) 4/24/99 MW-7 ("deep"	0.93 ND<2	ND<0.5 ND<0.5 NA ND<0.5 ND<0.5 ND<0.5 ND<0.5	ND<2	15 9.9 NA 10 7.9 8.4 17	ND<0.5 ND<0.5 NA ND<0.5 ND<0.5 ND<0.5 ND<0.5	1.9 ND<0.5 NA ND<0.5 ND<0.5 ND<0.5 0.89	0.77 ND<0.5 NA ND<0.5 ND<0.5 ND<1 ND<1	2 0.57 NA 0.63 0.82 ND<0.5 0.73	ND<0.5 0.59 1.5 ND<2		
12/12/98 4/24/99 MW-8 ("shali	ND<2 ND<2	2.2 2.4	ND<2 ND<2	97 31	ND<2 ND<2	ND<2 ND<2	ND<3.5 9.3	ND≪2 82	ND<2 ND<2		
6/23/97 10/7/97 12/12/98 4/24/99	ND<1 ND<0.5 ND<0.5 ND<0.5	5.4 1.1 ND<0.5 ND<0.5	ND<1 ND<0.5 ND<0.5 ND<0.5	64 16 3.4 1.9	ND<1 ND<0.5 ND<0.5 ND<0.5	ND<1 ND<0.5 ND<0.5 ND<0.5	97 30 4.8 3.4	100 27 4.7 3.4	ND<1 ND<0.5 ND<0.5 ND<0.5		
MW-9 (shallo	ow")										
6/23/97 (5) 10/7/97 (6) 12/12/98 4/24/99	ND<1 ND<0.5 ND<0.5 ND<0.5	2.1 1.6 0.7 0.81	ND<1 2.1 0.53 0.52	7.4 21 1.9 3.1	ND<1 ND<0.5 ND<0.5 ND<0.5	ND<1 0.7 ND<0.5 ND<0.5	3.5 ND<2 ND<1 ND<0.5	1.4 0.53 ND<0.5 ND<0.5	ND<1 2.7 ND<0.5 ND<0.5		
EB-4 (grab)											
3/8/96	ND	ND	ND	42	ND	ND	130	340	ND		
MCL	NA	600	0.5	6	10	5	7	5	0.5		

Notes to Table 3

- (1) ND = non-detect; reporting limit 0.5 ug/l (ppb) unless otherwise stated
- (2) N/A = not applicable
- (3) Composite
- (4) Abbreviations as follows:

CA Chloroethane
1,2 DCB 1,2 Dichlorobenzene
1,2 DCA 1,2 Dichloroethane
cis 1,2 DCE cis 1,2 Dichloroethene
trans 1,2 DCE trans 1,2 Dichloroethene

1,2 Dichloropropane
Tetrachloroethene (perchloroethen
trichloroethene
vinyl chloride

1.2 DCP

PCE

TCE

VCL

(5) 6/23/97 additional detections:

MW-4, 4.8 ppb 1,4-Dichlorobenzene MW-5, 0.53 ppb 1,4-Dichlorobenzene MW-9 2.1 ppb chloroform (tetrachloromethane)

(6) 10/7/97 additional detections:

MW-9, 0.65 chloroform (tetrachloromethane)

(7) 12/12/98 additional detections:

MW-4, 6.2 ppb 1,3-Dichlorobenzene MW-4, 4.8 ppb 1,4-Dichlorobenzene MW-6, 8.9 ppb 1,1,1-Trichloroethane

(8) 4/24/99 additional detections: MW-1, 1.6 ppb chloroform MW-1, 2.5 1,4-Dichlorobenzene

TABLE 4

GROUND WATER

SUMMARY OF ANALYTICAL TEST RESULTS -POLYNUCLEAR AROMATIC HYDROCARBONS (PNA, PAH)

(Results reported in parts per billion, ppb/ug/l) (1) (2) (3)

Well and Date	Phenanthrene	Naphthalene
MW-1 ("deep")		
6/23/97 10/7/97 12/12/98	12 ND<100 N/A	2200 810 N/A
MCL	N/A	N/A

Notes to Table 4

- (1) ND = non-detect
- (2) N/A = not applicable
- (3) Detected compounds only

TABLE 5

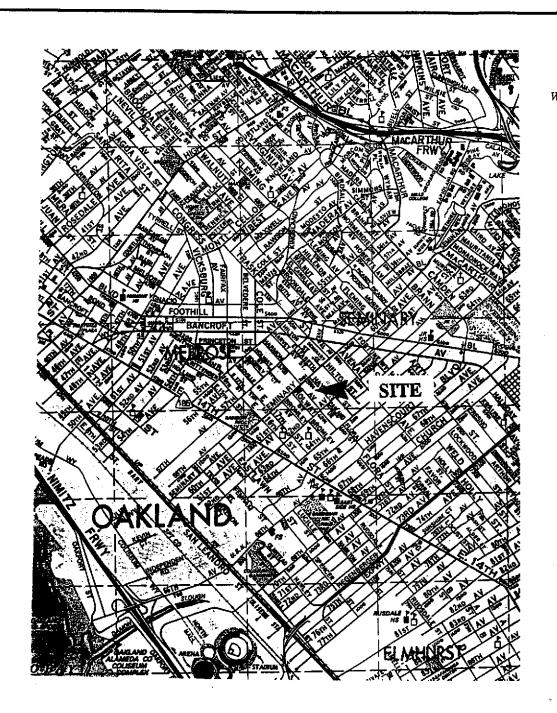
GROUND WATER

SUMMARY OF ANALYTICAL TEST RESULTS - ADDITIONAL CHEMICAL PARAMETERS

(Results reported in parts per million, mg/l) (1)

Well and Date	Dissolved Oxygen	Ferrous Iron	Nitrate	Sulfate
MW-1 ("deep")				
10/8/96	1.5	ND	ND	ND
1/1 6/97	1.4	3.6	ND	ND
6/23/97	N/A	N/A	N/A	N/A
10/7/97	N/A	N/A	N/A	N/A
12/12/98	N/A	N/A	N/A	N/A
MW-2 ("deep")				
10/8/96	3.7	ND	3	25
1/16/97	5.4	0.28	3	25
6/23/97	N/A	N/A	N/A	N/A
10/7/97	N/A	N/A	N/A	N/A
12/12/98	N/A	N/A	N/A	N/A
MW-3 ("shailow")				
10/8/96	3.8	ND	ND	5
1/16/97	5.2	ND	ND	5
6/23/97	N/A	N/A	N/A	N/A
10/7/97	N/A	N/A	N/A	N/A
12/12/98	N/A	N/A	N/A	N/A
MW-4 ("deep")				
10/8/96	3.0	ND	ND	ND
1/16/97	4.7	0.75	ND	5
6/23/97	N/A	N/A	N/A	N/A
10/7/97	N/A	N/A	N/A	N/A
12/12/98	N/A	N/A	N/A	N/A
MW-5 ("deep")				
10/8/96	2.8	ND	ND	8
1/ 16/97	3.4	0.38	ND	9
6/23/97	N/A	N/A	N/A	N/A
10/7/97	N/A	N/A	N/A	N/A
12/12/98	N/A	N/A	N/A	N/A
MW-6 ("shallow")			•	¢
10/8/96	2.7	ND	ND	6
1/1 6/97	2.7	0.28	ND	8
6/23/97	N/A	N/A	N/A	N/A
10/ 7/97	N/A	N/A	N/A	N/A
12/12/98	N/A	N/A	N/A	N/A

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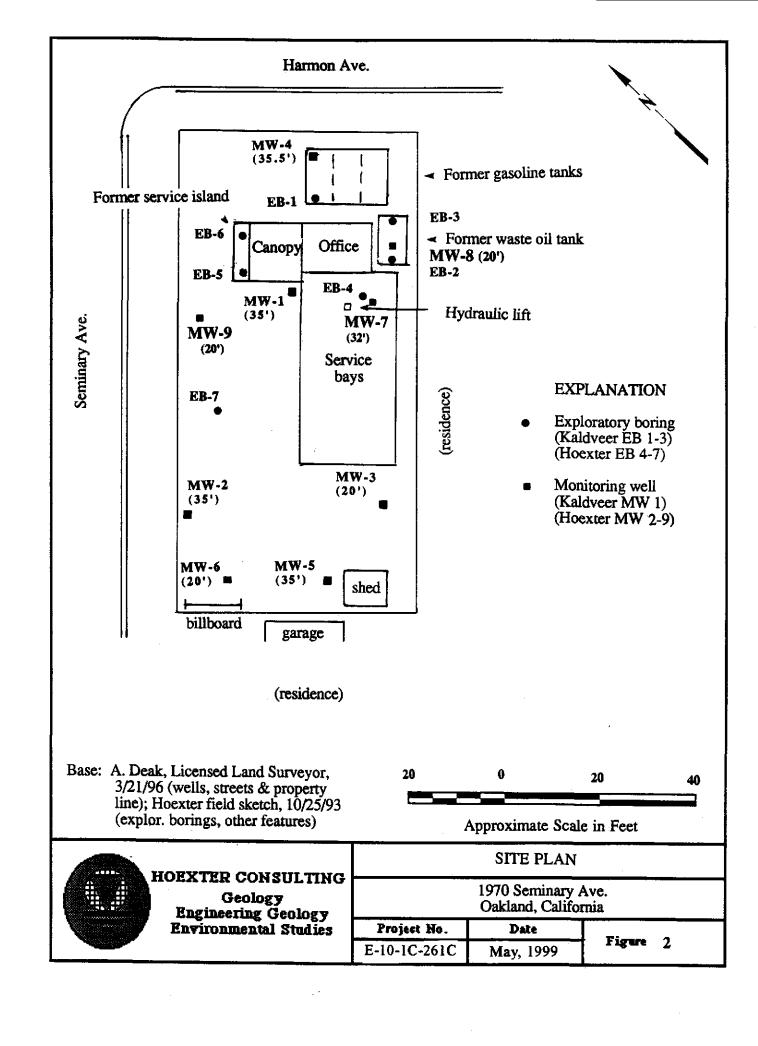
HOEXTER CONSULTING
Geology

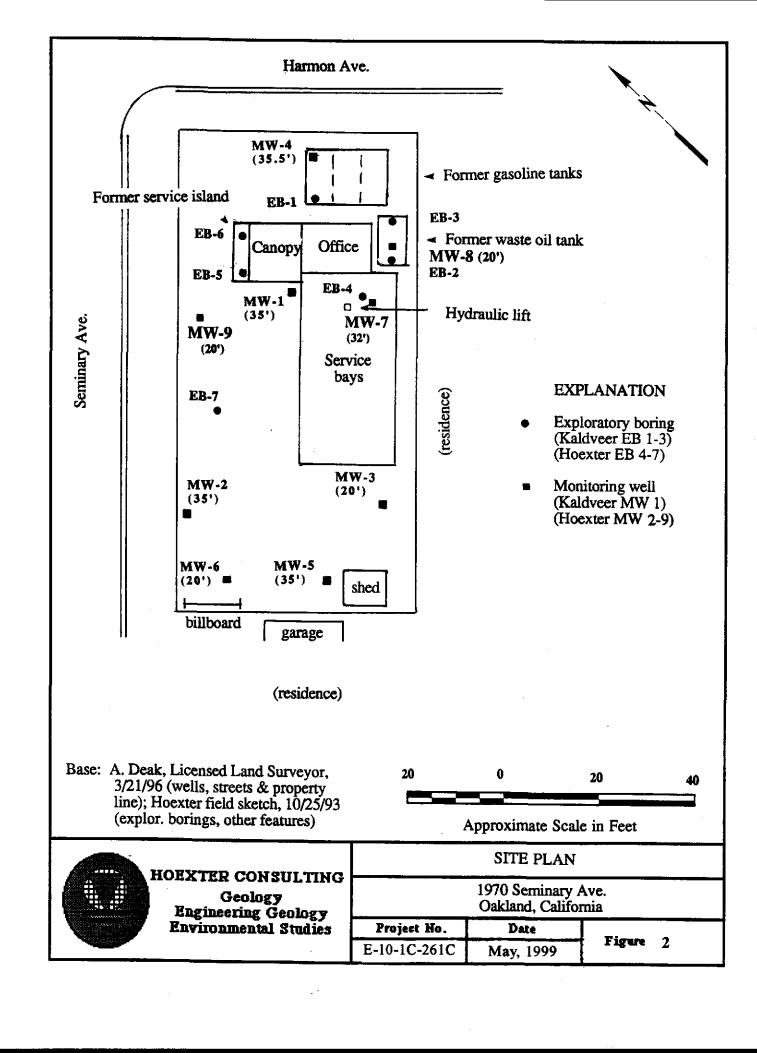
Geology Engineering Geology Environmental Studies

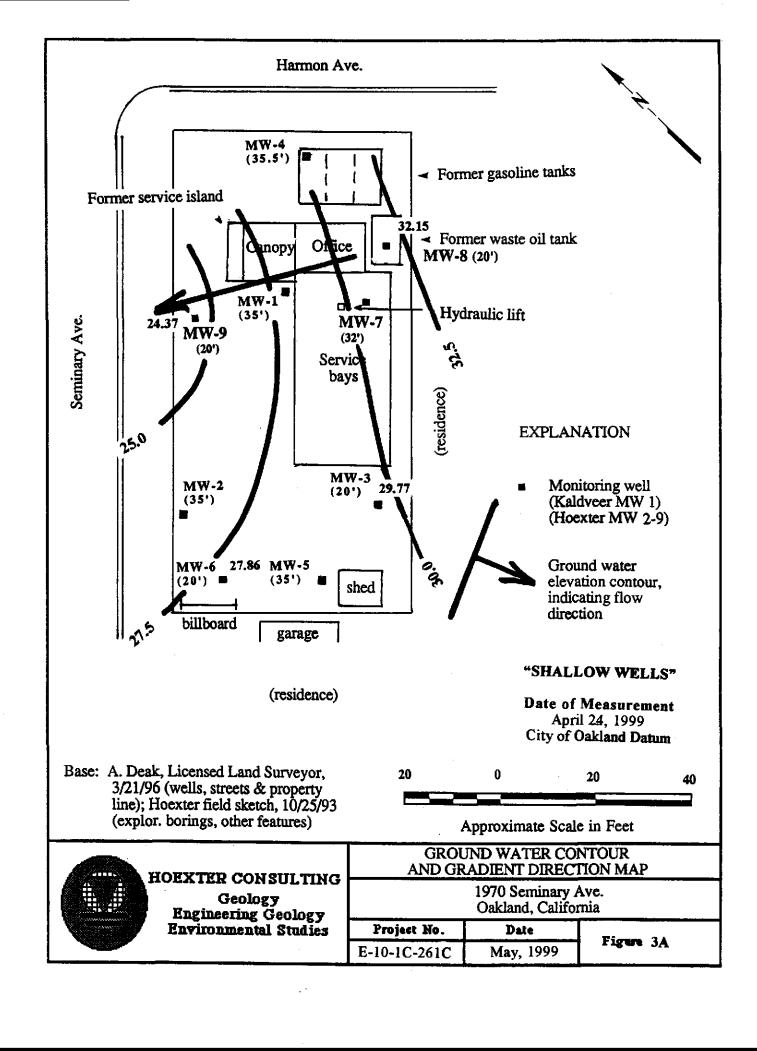
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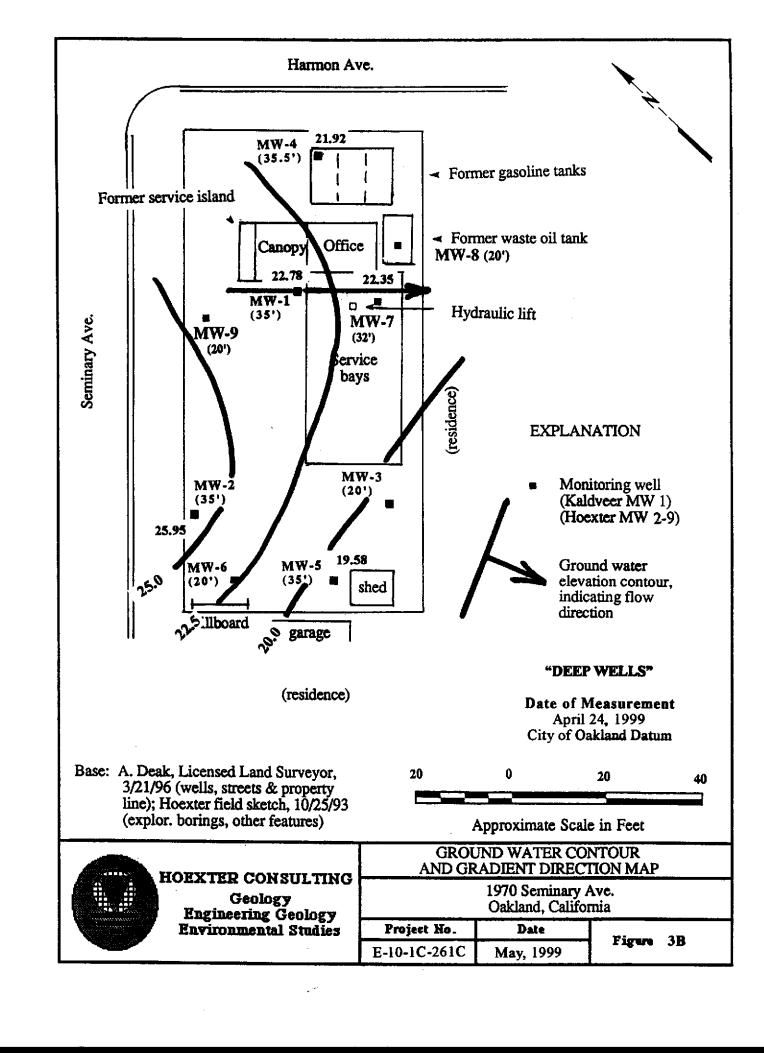
1970 Seminary Ave. Oakland, California

	<u> </u>		
Project No.	Date	T-1	4
E-10-1C-261C	May, 1999	Figure	1









APPENDIX A

WATER SAMPLE LOGS CHAIN OF CUSTODY ANALYTICAL TEST RESULTS

Project Name/ No: 1970 Seminary Ock Client: D- Grimit Project Manager: DF- thought Sampler: De viv / Forry the Casing Diameter: 2 inch 3 inch Depth of Well (feet): 35 Depth to Water (feet): 14.21 Sample Depth (feet):	Lab I.D.: 09873,09882 Date: 4/24/99 Sample Location/I.D.: Hw - / Start Time: 4 inch 6 inch Other: Calculated Purged Volume: 13.55 pal Actual Purged Volume 14.0
Field Meas	
Volume pH E.C. (units) (umhos/c)	Temperature Color Other m) Degrees F 63.7 64.7 65.2 65.1/
Submersible Pump — Bailer — Cenetrifug — Pneumatic Displacement Pump	Well Wizard Dedicated Tal Pump Dipper Other
Sample Me	ethod
2" Bladder Pump Bailer Dipper	Well Wizard Dedicated Fultz Pump Other
Well Integrity: OH - pand 4/22/99 Remarks: Initial pure moderate Sough 1630 + PH-G (no uss. oil) (obs oil) 3 1637 TOG Signature: D. 7-H	Joseph Sw 4/24/99 Joseph Str. 01/9/05- 1631 Huc (obs oil) : 1632 TPH-G
Volumes Per Unit Length Selected Well Casing Diameters	Conversion Factors
Volume Per Unit Length Well Casing Cubic I.D. (inches) Gal/ft Ft/ft L/M L/Ft 1.5 0.0918 0.0123 1.140 0.3475 2.0 0.1632 0.0218 2.027 0.6178 3.0 0.3672 0.0491 4.560 1.3900 4.0 0.6528 0.0873 8.107 2.4710 6.0 1.4690 0.1963 18.240 5.5600	To Convert Into Mulitply Ft. of Water Lbs/sq.in. 0.4335 Lbs/Sq. inch Ft. of Water 2.3070 Cubic feet Gallons 7.4800 Gallons Liters 3.7850 Feet Meters 0.30048 Inches Centimeters 2.5400 MW-/

Projec Sample	t Manage	D.F.	Hoext	nery Ockle		Date: Sampl Start T	0.: <u>098</u> <u>4/24</u> e Location/ ime:Oti	199 I.D.: <u>Hω - 2</u>
	Depth to	Well (feet): Water (feet): Depth (feet):	35	5			•	Volume: 16.0 5 ume5
				Field Measure	ments	24.5	5 whr -	¥.0 gel/vel
Time	Cum	Volume (gal.)	pH (units)	E.C.	Temperatur		Color (visual)	Other
1127		- 4	6.56	903	63.5		Elear	
1202			6.57		64.1			
1213	16		6,58	<u> </u>	64.6			
	Subm	adder Pump iersible Pum matic Displa	q	—— Cenetrifugal i		Well V Dipper	Vizard	Dedicated Other
				Sample Metho	<u>)d</u>			
		adder Pump ce Sampler		Bailer Dipper		Well W Fultz Pi	izard	Dedicated Other
Remark	ntegrity: . ks: んし ここ	oder	pardue 152	4/22/89: m t, show	easured a	Sw 4	1/24/99 19 TPH-	G ;
Signati	ıre: D.	<u> </u>	4			-		
Volumes I	Per Unit Lengt	th Selected Well C	sing Diame	en	•	Conversion	Factors	
Well Casin <u>I.D. (inche</u> 1.5 2.0 3.0	(a) G 0. 0.	Cubic Selfs Puft Puft 0918 0.0123 1632 0.0218 3672 0.0491	L/M 1.140 2.027 4.560	L/Ft 0.3475 0.6178 1.3900	To Conver Ft. of Wate Lbs/Sq. inc Cubic feet). 	Into Lbs/sq.in. 0.433 Ft. of Water Gallons	2.3070 7.4800
4.0 6.0	0.	6528 0.0873 4690 0.1963	8.107 18.240	2.4710 5.5600	Gallons Feet Inches		Liters Meters Centimeters	3.7850 0.30048 2.5400

Project Sample	Managerer: 14 Depth of Depth to	r: D.F.	20 7-17	ony Ockle	inch		ation/I.D.: Other: urged Volume d Volume	Mw - 3
				Field Measure		,		() = / = /
Time /015 /031	2.25 4.50	Volume (gal.) Z.25	pH (units) 639 6.47	610	Degrees F		nal)	Other
	6.75 9.w		6,42	612	61.0		-}* 	
	Subm	adder Pump ersible Pum matic Displa	р	— Cenetrifugal 1		Well Wizard Dipper		Dedicated Other
				Sample Metho	<u>od</u>			
 -		adder Pump ce Sampler		Bailer Dipper		Well Wizard Fultz Pump		Dedicated Other
Well Ir Remari		OH -	produ	4/22/99; 1439 TOG	···	7. 1	124/99 137 TPH algal (3	1-G;
Signan		5 7-1	A C			bottom of Conversion Factors	iscles, s	ink to
Well Casin I.D. finche 1.5 2.0 3.0 4.0 6.0	volume Per (1g s) G: 0.0 0.0 0.0	A Selected Well C Unit Length Cubic sl/ft Ft/ft 0918 0.0123 1632 0.0218 3672 0.0491 6528 0.0873 4690 0.1963	L/M L 1.140 0 2.027 0 4.560 1 8.107 2	/FL .3475 .6178 .3900 .4710 .5600	To Convert Ft. of Water Lbs/Sq. inch Cubic feet Gallons Feet Inches		n. 0.4335 ater 2.3 7.4 3.7 0.3	uliply 3070 4800 7850 30048 5400 Y W - 3

Project Name/No: 1970 Seminary Client: D- Gramit Project Manager: D.F. Hooght Sampler: Hooght/Forrythe Casing Diameter: 2 inch 3 in Depth of Well (feet): 35.5 Depth to Water (feet): 14.55 Sample Depth (feet):		Lab I.D.: Oqq Date: 4/7.4 Sample Location/I Start Time: Oth Calculated Purged Volumed Volume Actual Purged Volume	/99 i.D.: <u>Μω - </u>
E	ield Measurements		20,000
Volume pH (gal.) (units) 1238 3.5 3.5 6.52 1248 7.0 6.52 1259 10.5 6.53 1309 14.0 V 6.53	E.C. Temper (umhos/cm) Degre	es F (visual) 7 6 Cleudy fry 2	Other Other
2" Bladder Pump Submersible Pump Pneumatic Displacement Pump	Bailer Cenetrifugal Pump	Well Wizard Dipper	Dedicated Other
S	Sample Method		
~ ~ ~	Bailer Dipper LUSS: mecsur Somp	Well Wizard Fultz Pump -05 \cup 4/24/9 \cup -05 \cup 1559 \text{TPH-C}	Dedicated Other
Signature: D. 7-14	-		
Volumes Per Unit Length Selected Well Casing Diameters Volume Per Unit Length Well Casing Cubic I.D. (inches) Gal/ft Ft/ft L/M L/Ft 1.5 0.0918 0.0123 1.140 0.347 2.0 0.1632 0.0218 2.027 0.617 3.0 0.3672 0.0911 4.550 1.500	Ft. oi 5 Lbs/5	Conversion Factors Convert Into f Water Lbs/sq.in. 0.433 Sq. inch Ft. of Water c feet Gallons	2.3070
3.0 0.3672 0.0491 4.560 1.390 4.0 0.6528 0.0873 8.107 2.471 6.0 1.4690 0.1963 18.240 5.560	O Gallo	ons Liters Meters	7.4800 3.7850 0.30048 2.5400 IM W - 4

Project M Sampler: Casing Di	ame/No: 1970 D- Grimit anager: DF- ameter: 2 include the feet of Well (feet): apth of Well (feet): apph Depth (feet):	Hookey orrythe 1 2 3				1/99 I.D.: Mw - 5
			Field Measure	ments		, ,
1042 1050 11W 1	Volume (gal.) 3 6 9 2" Bladder Pump Submersible Pum Pneumatic Displa	p	E.C. (umhos/cm)	62.7 62.3 63.1 63.2	(visual) Llady	Other -lsT-502 9 Dedicated Other
			Sample Metho	<u>d</u>		
Well Integ Remarks:	2" Bladder Pump Surface Sampler Trity: OK — AD Production The-		en, what,		Well Wizard Fultz Pump Messived Miss odur TOG	Dedicated Other 4/24/99
Signature: Volumes Per U	^ -	4		,	Conversion Factors	
Well Casing I.D. (inches) 1.5 2.0 3.0 4.0 6.0	Gal/ft Ft/ft 0.0918 0.0123 0.1632 0.0218 0.3672 0.0491 0.6528 0.0873 1.4690 0.1963	2.027 0.6 4.560 1.3 8.107 2.4	Ft. 3475 5178 1900 1710 5600	To Conver Ft. of Wate Lbs/Sq. inc Cubic feet Gallons Feet Inches	tr Lbs/sq.in. 0.43:	Multiply 2.3070 7.4800 3.7850 0.30048 2.5400

Depth of Well (feet): 20		Lab I.D.: OS Date: 4/24/9 Sample Location/I.D Start Time: 6 inch Other Calculated Purged Vol Actual Purged Volum	iα D.: <u>Μω - 6</u>
Depth to Water (feet): 8.56 Sample Depth (feet):		Actual Purged Volum	
Field Measur	rements		,
Volume	61.8 od	(visual) Sl. clady	Other Dedicated Other
Sample Met	hod		
2" Bladder Pump Bailer Surface Sampler Dipper Well Integrity: OH - Open well 4 Remarks: M pelot offer shoot 1509 Hwe; 1575 706; -		Well Wizard Fultz Pump Masser J Sure J Sure J Sure J Soy TP.	Dedicated Other 4/24/55 H- 5,
Signature: D. 37-14			
Volumes Per Unit Length Selected Well Casing Diameters Volume Per Unit Length Well Casing Cubic I.D. (inches) Gal/ft Ft/ft L/M L/Ft 1.5 0.0918 0.0123 1.140 0.3475 2.0 0.1632 0.0218 2.027 0.6178 3.0 0.3672 0.0491 4.560 1.3900 4.0 0.6528 0.0873 8.107 2.4710 6.0 1.4690 0.1963 18.240 5.5600	To Conver Ft. of Wate Lbs/Sq. inc Cubic feet Gallons Feet Inches	er Lbs/sq.in. 0.4335	Multiply 2.3070 7.4800 3.7850 0.30048 2.5400

Project Manag Sampler: Casing Diame	ger: DF- ter: 2 include Well (feet): to Water (feet):	Horas	2	nch	Date: Sampl Start 7 6 inch	fime:Othe	39 D.: <u>Hω - 7</u>
Sample	Depth (feet):						2.865 d./vs
			Field Measure				7 /00
Time Cum	Volume (gal.)	pH (units)	E.C. (umhos/cm)	Temperatur Degrees F		Color (visual)	Other
1310 3	. 3	6:47	8/4	64.4			
1319 6		6.47	823	63.7		St-cludy	boun
1330 9		6.61	753	63.6)
1347 12	<i>y</i>	6.63	<u>771</u>	64.1			/
2" I	Bladder Pump		Purge Method Bailer		Well V	Wizard	
Sub	mersible Pum umatic Displa	P	_ Cenetrifugal F	Pump	Dipper		Other
			Sample Metho	<u>d</u>			
	Bladder Pump face Sampler		Bailer Dipper		Well W Fultz P	/izard	Dedicated Other
Well Integrity: Remarks: O	17	Openal 1. The	well 4/22/9	5 : m	. vde	9 gw 4/	24/99
Signature: D	27-1	1 <u> </u>		,			
Volumes Per Unit Ler	ngth Selected Well C	asing Diameter			Conversion	n Factors	
Volume Pe Well Casing	er Unit Length Cubic	A		To Conver	t	In to	Mulitply
I.D. (inches) 1.5 2.0 3.0 4.0 6.0	Gal/ft Fl/ft 0.0918 0.0123 0.1632 0.0218 0.3672 0.0491 0.6528 0.0873 1.4690 0.1963	1.140 0 2.027 0 4.560 1 8.107 2	/[t] .3475 .6178 .3900 .4710 .5600	Ft. of Wate Lbs/Sq. inc Cubic feet Gallons Feet Inches		Lbs/sq.in. 0.4335 Ft. of Water Gallons Liters Meters Centimeters	2.3070 7.4800 3.7850 0.30048 2.5400

Project Name/No: 1970 Seminary Ockled Client: D- Grimit	Lab I.D.: 05880
Project Manager > 5	Date: 4/7.4/99
Project Manager: D.F. Hoekt	Sample Location/I.D.: $\underline{H} \omega - \underline{8}$
Sampler: 1 Forry the	Start Time:
Casing Diameter: 2 inch 3 inch 4 inch	h6 inch Other:
Depth of Well (feet): 20 Depth to Water (feet): 440 Sample Depth (feet):	Calculated Purged Volume: 10.29 Actual Purged Volume 12 15. 6 fr wtr > 2.55
Field Measureme	
Time Cum (gal.) PH E.C. Te	Color Other Degrees F (visual)
1208 3 3 6.66 229	6/4/
1215 6 6.75 217 _	60.4 possible st-shoon
	60.4 Dosille st-shoon
1235 12 1 6.80 216	61.4
Durgo Mothod	
Purge Method	
2" Bladder Pump Bailer Submersible Pump Cenetrifugal Pum Pneumatic Displacement Pump	— Well Wizard — Dedicated — Other
Sample Method	
2" Bladder Pump Bailer	<i>\</i>
	Well Wizard Dedicated
	Fultz Pump Other
Well Integrity: OH - open well 4/22/99	500 masured 5 w 4/24/99
Remarks: OK - No product show when	· possible slight show from
1544- TDG	2 TPH-G: 1543 HUDE.
Signature: D. 7-14	
Volumes Per Unit Length Selected Well Casing Diameters	Conversion Factors
Wall Caring	To Convert Into Mulitply
LD. (inches) Gal/ft Ft/ft L/M L/Ft	
1.5 0.0918 0.0123 1.140 0.3475	FL of Water Lbs/sq.in. 0.4335 Lbs/Sq. inch FL of Water 2.3070
3.0 0.3673 0.0404 4.40	Cubic feet Gallons 7.4800
4.0 0.6528 0.0873 8.107 2.4710	Gallons Liters 3.7850
6.0 1.4690 0.1963 18.240 5.5600	Neter
	$\mathcal{H}\omega$ –
	1

Client:	<u> </u>	(2) LI M	MT		inery O	<u>دلا</u> (بر	I	Date:	D. <u>: </u>	99
Projec	t Manage	r: _ <u>D</u>	<u>F_</u>	-pex	<u> </u>					.D.: <u>Hw - 9</u>
Carina	er: 1	POSAIN	<u>-/ (-</u>	0/17 Y	he					
Casing	Diamete	er:	2 inch	`	3 inch	4 i	nch	6 inch	Oth	er:
	Depth of Depth to Sample 1	Water (feet):	12.3	3			Actual	Purged Volu	olume: 55el me 3.5ge > 1.255el/
					Field Me	easure	ments			
₩		Volum		pН	E.C		Temperatu		Color	Other
Time	Cum	(gal.)		(units) (umho	s/cm)	Degrees I	-	(visual)	
<i>1</i> 059	1.25	1.2	5	6.58	- <u>-</u>	7	63.0	•	clare	
1104		1.25		6.61	-			•	Sl. clar	
							63.5	•	<u> </u>	×7
1107	7.3	1.0	_	6.61	103	<u> </u>	63-6	•		
_	_					_				
			_	·	_					
					Purge N	Method	1			
	2" B: Subn Pneu	nersible	Pum	p	Bailer Cenetri Pump	fugal F	Pump	. Well V . Dipper	Vizard	Dedicated Other
					Sample	Metho	<u>d</u>			
	ים ייכ	ladder F)		V 5 11					V
		ace Sam			Bailer Dipper			Well W Fultz P		Dedicated
		4-1-				,		Tuitz F	ump	Other
	itegrity: .	OK		10	product	5/he			116	
Remar	1	<u>9</u> 2 1532	<u>~</u>	unel'	<u>4/24 </u>	9	macsin	-8 5	U 4/29	<u> </u>
<u> 50-</u>	avo /	3 32	7 1	1 - (2	- 15 >	3 1	HVOC;	17	10G	
Signati	ıre: D.	<u>.)</u>	7-V	45			-	m gener	volume o	witted due
Volumes 1	Per Unit Leng	th Selected	Well Ca	sine Diam	eters			Conversion	n Factors	
Well Casi	Volume Per	Unit Lengt	h Cubic	9			To Conve	rt	Into	Mulitply
LD. (inche	<u>s) (</u>	Gal/ft F	t/ft	L/M_	_L/Ft_		Ft. of Wat	er	Lbs/sq.in. 0.4335	5
1.5 2.0			0.0123	1.140	0.3475		Lbs/Sq. in	ıch	Ft. of Water	2.3070
3.0			0.0218 0.0491	2.027 4.560	0.6178 1.3900		Cubic feet	ı	Gallons	7.4800
4.0	0	0.6528 0	.0873	8.107	2,4710		Gallons Feet		Liters Meters	3.7850 0.30048
6.0	1	1.4 690 0	.1963	18.240	5.5600		Inches		Centimeters	2.5400



110 2nd Avenue South, #D7, Pacheco, CA 94553-5560 Telephone: 925-798-1620 Fax: 925-798-1622 http://www.mccampbell.com E-mail: main@mccampbell.com

Hoexter Consulting	Client Project ID: #E10-1C-261C	Date Sampled: 04/24/99
Engineering Geology		Date Received: 04/26/99
734 Torreya Court	Client Contact: David Hoexter	Date Extracted: 04/26/99
Palo Alto, CA 94303	Client P.O:	Date Analyzed: 04/26/99

05/03/99

Dear David:

Enclosed are:

- 1). the results of 9 samples from your #E10-1C-261C project,
- 2). a QC report for the above samples
- 3). a copy of the chain of custody, and
- 4). a bill for analytical services.

All analyses were completed satisfactorily and all QC samples were found to be within our control limits. If you have any questions please contact me. McCampbell Analytical Laboratories strives for excellence in quality, service and cost. Thank you for your business and I look forward to working with you again.

Joh h H Edward Hamilton, Lab Director

Hoexter Consulting	Client Project ID: #E10-1C-261C	Date Sampled: 04/24/99
Engineering Geology		Date Received: 04/26/99
734 Torreya Court	Client Contact: David Hoexter	Date Extracted: 04/26-04/28/99
Palo Alto, CA 94303	Client P.O:	Date Analyzed: 04/26-04/28/99

Gasoline Range (C6-C12) Volatile Hydrocarbons as Gasoline*, with Methyl tert-Butyl Ether* & BTEX*

EPA methods 5030, modified 8015, and 8020 or 602; California RWQCB (SF Bay Region) method GCFID(5030)

Lab ID	Client ID	Matrix	TPH(g) ⁺	МТВЕ	Benzene	Toluene	Ethylben- zene	Xylenes	% Recovery Surrogate
09873	MW-1	MW-1 W 33,000,a,h		ND<200	2300	3300	1100	4100	104
09874	MW-2	w	360,a	21 30		1.3 9.2		19	1 04
09875	MW-3	w	2100,b,j	ND	1.5	0.85	79	43	101
09876	MW-4	w	3100,a,h	ND<10	1700	22	67	21	#
09877	MW-5	W-5 W 930		ND<100	390	290	820	770	100
09878	MW-6	w	2900,a	ND<10	430	33	160	200	106
09879	MW-7	w	5500,a,h	ND<10	640	180	290 210		#
09880	MW-8	w	ND	ND	ND	ND	ND	ND	111
09881	MW-9	W	3100,a	22	130	18	220	190	97
	g Limit unless e stated; ND	w	50 ug/L	5.0	0.5	0.5	0.5	0.5	,
means not detected above the reporting limit		S	1.0 mg/kg	0.05	0.005	0.005	0.005	0.005	

[•] water and vapor samples are reported in ug/L, wipe samples in ug/wipe, soil and sludge samples in mg/kg, and all TCLP and SPLP extracts in ug/L

Edward Hamilton, Lab Director

[&]quot; cluttered chromatogram; sample peak coelutes with surrogate peak

[&]quot;The following descriptions of the TPH chromatogram are cursory in nature and McCampbell Analytical is not responsible for their interpretation: a) unmodified or weakly modified gasoline is significant; b) heavier gasoline range compounds are significant(aged gasoline?); c) lighter gasoline range compounds (the most mobile fraction) are significant; d) gasoline range compounds having broad chromatographic peaks are significant; biologically altered gasoline?; e) TPH pattern that does not appear to be derived from gasoline (?); f) one to a few isolated peaks present; g) strongly aged gasoline or diesel range compounds are significant; h) lighter than water immiscible sheen is present; i) liquid sample that contains greater than ~5 vol. % sediment; j) no recognizable pattern.



ND

Hoexter Cons	Hoexter Consulting		Date Sampled: 04/24/99
Engineering (Date Received: 04/26/99
734 Torreya	Court	Client Contact:	David Hoexter Date Extracted: 04/26/99
Palo Alto, CA	A 94303	Client P.O:	Date Analyzed: 04/26-04/30/9
EPA methods 41			ase (with Silica Gel Clean-up) * &F or 503 D&E for solids and 5520 B&F or 503 A&E for liquids
Lab ID	Client ID	Matrix	Oil & Grease*
09873	MW-1	w	140,h
00874	MW-2	w	ND

****		1 "	
09876	MW-4	w	7.5,h
09877	MW-5	w	ND
09878	MW-6	w	ND
09879	MW-7	w	ND,h
09880	MW-8	w	ND
09881	MW-9	w	ND

* water samples are reported in mg/L, wipe samples in mg/wipe, soil and sludge samples in mg/kg, and all TCLP / STLC / SPLP extracts in
mg/L

h) lighter than water immiscible sheen is present; i) liquid sample that contains greater than ~5vol. % sediment.

W

M Lov Edward Hamilton, Lab Director

5 mg/L

50 mg/kg

Reporting Limit unless otherwise stated; ND means not detected above

the reporting limit

09875

MW-3

Hoexter Consulting	Client Project ID:	#E10-1C-261C	Date Sampled: 04/24/99 Date Received: 04/26/99											
Engineering Geology														
734 Torreya Court	Client Contact: Da	wid Hoexter	Date Extracted:	04/26-04/29/99										
Palo Alto, CA 94303	Client P.O:		Date Analyzed:	04/26-04/29/99										
EPA method 601 or 8010														
Lab ID	09873	09874	09875	09876										
Client ID	MW-I	MW-2	MW-3	MW-4										
Matrix	W	w	W	W										
Compound		Concent	ration											
Bromodichloromethane	ND<1.5	ND	ND	ND<8.5										
Bromoform ^(b)	ND<1.5	ND	ND	ND<8.5										
Bromomethane	ND<1.5	ND	ND	ND<8.5										
Carbon Tetrachloride ^(c)	ND<1.5	ND ND	ND	ND<8.5										
Chlorobenzene	ND<1.5	ND ND	ND	ND<8.5										
Chloroethane	2.1	ND	ND	ND<8.5										
2-Chloroethyl Vinyl Ether ^(d)	ND<1.5	ND ND	ND ND	ND<8.5										
Chloroform (e)	1.6	ND	ND	ND<8.5										
Chloromethane	ND<1.5	ND	ND	ND<8.5										
Dibromochloromethane	ND<1.5	ND ND	ND	ND<8.5										
1,2-Dichlorobenzene	9.9	ND	ND	20										
1,3-Dichlorobenzene	ND<1.5	ND	ND	ND<8.5										
1.4-Dichlorobenzene	2.5	ND	ND ND	ND<8.5										
Dichlorodifluoromethane	ND<1.5	ND ND	ND	ND<8.5										
1,1-Dichloroethane	ND<1.5	ND ND	ND ND	ND<8.5										
1,2-Dichloroethane	3.5	13	ND	ND<8.5										
1,1-Dichloroethene	ND<1.5	ND ND	ND	ND<8.5										
cis 1,2-Dichloroethene	61	7.8	0.65	390										
trans 1.2-Dichloroethene	2.8	ND ND	ND	12										
1,2-Dichloropropane	2.0	0.92	ND	ND<8.5										
cis 1,3-Dichloropropene	ND<1.5	ND ND	ND	ND<8.5										
trans 1,3-Dichloropropene	ND<1.5	ND ND	ND ND	ND<8.5										
Methylene Chloride ^(f)	ND<3.7	ND<1	ND×1	ND<14										
1,1,2,2-Tetrachloroethane	ND<1.5	ND ND	ND	ND<8.5										
Tetrachloroethene	ND<4.2	ND	ND	33										
1,1,1-Trichloroethane	ND<1.5	ND	ND	ND<8.5										
1.1.2-Trichloroethane	ND<1.5	ND	ND	ND<8.5										
Trichloroethene	ND<1.5	8.4	ND	240										
Trichlorofluoromethane	ND<1.5	ND	ND	ND<8.5										
Vinyl Chloride ^(g)	22	ND	ND	43										
% Recovery Surrogate			103	100										
	115	102	103	h										
Comments	h													

^{*} water and vapor samples and all TCLP & SPLP extracts are reported in ug/L, soil and sludge samples in ug/kg, wipe samples in ug/wipe Reporting limit unless otherwise stated: water/TCLP/SPLP extracts, ND<0.5ug/L; soils and sludges, ND<5ug/kg; wipes, ND<0.2ug/wipe ND means not detected above the reporting limit; N/A means analyte not applicable to this analysis

⁽b) tribromomethane; (c) tetrachloromethane; (d) (2-chloroethoxy)ethene; (e) trichloromethane; (f) dichloromethane; (g) chloroethene; (h) a lighter than water immiscible sheen is present; (i) liquid sample that contains greater than ~5 vol. % sediment; (j) sample diluted due to high organic content.

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http://www.mccampbell.com E-mail: main@mccampbell.com

Hoexter Consulting	Client Project ID:	#E10-1C-261C	Date Sampled: (Date Sampled: 04/24/99 Date Received: 04/26/99				
Engineering Geology			Date Received:					
734 Torreya Court	Client Contact: Da	wid Hoexter	Date Extracted:	04/26-04/29/99				
Palo Alto, CA 94303	Client P.O:		Date Analyzed:	04/26-04/29/99				
EPA method 601 or 8010	Volatile	Halocarbons		***				
Lab ID	09877	09878	09879	09880				
Client ID	MW-5	MW-6	MW-7	MW-8				
Matrix	W	W	W	W				
Compound		Concent	tration					
Bromodichloromethane	ND<1	ND	ND<2	ND				
Bromoform ^(b)	ND<1	ND	ND<2	ND				
Bromomethane	ND<1	ND	ND<2	ND				
Carbon Tetrachloride(c)	ND<1	ND	ND<2	ND				
Chlorobenzene	ND<1	ND	ND<2	ND				
Chloroethane	ND<1	ND	ND<2	ND				
2-Chloroethyl Vinyl Ether(d)	ND<1	NĎ	ND<2	ND				
Chloroform (e)	ND<1	ND	ND<2	ND				
Chloromethane	ND<1	ND	ND<2	ND				
Dibromochloromethane	ND<1	ND	ND<2	ND				
1,2-Dichlorobenzene	1.9	ND	2.4	ND				
1,3-Dichlorobenzene	ND<1	ND	ND<2	ND				
1,4-Dichlorobenzene	ND<1	ND	ND<2	ND				
Dichlorodifluoromethane	ND<1	ND	ND<2	ND				
1,1-Dichloroethane	ND<1	ND	ND<2	ND				
1,2-Dichloroethane	1.9	2.3	ND<2	ND				
1,1-Dichloroethene	ND <i< td=""><td>ND</td><td>ND<2</td><td>ND</td></i<>	ND	ND<2	ND				
cis 1,2-Dichloroethene	4.8	17	31	1.9				
trans 1,2-Dichloroethene	ND<1	ND	ND<2	ND				
1,2-Dichloropropane	ND<1	0.89	ND<2	ND				
cis 1,3-Dichloropropene	ND<1	ND	ND<2	ND				
trans 1,3-Dichloropropene	ND<1	ND	ND<2	ND				
Methylene Chloride(f)	ND<2	ND<1	ND<4	ND<1				
1,1,2,2-Tetrachloroethane	ND<1	ND	ND<2	ND				
Tetrachloroethene	ND<1	ND<1	9.3	3.4				
1,1,1-Trichloroethane	ND <i< td=""><td>ND</td><td>ND<2</td><td>ND</td></i<>	ND	ND<2	ND				
1,1,2-Trichloroethane	ND<1	ND	ND<2	ND				
Trichloroethene	ND<1	0.73	82	3.4				
Trichlorofluoromethane	ND<1	ND	ND<2	ND				
Vinyl Chloride ^(g)	6.3	0.59	ND<2	ND				
% Recovery Surrogate	111	107	102	102				
Comments	j		ħ					

^{*} water and vapor samples and all TCLP & SPLP extracts are reported in ug/L, soil and sludge samples in ug/kg, wipe samples in ug/wipe Reporting limit unless otherwise stated: water/TCLP/SPLP extracts, ND<0.5ug/L; soils and sludges, ND<5ug/kg; wipes, ND<0.2ug/wipe ND means not detected above the reporting limit; N/A means analyte not applicable to this analysis

⁽b) tribromomethane; (c) tetrachloromethane; (d) (2-chloroethoxy)ethene; (e) trichloromethane; (f) dichloromethane; (g) chloroethene; (h) a lighter than water immiscible sheen is present; (i) liquid sample that contains greater than ~5 vol. % sediment; (j) sample diluted due to high organic content.

Hoexter Consulting	Client Project ID: #	E10-1C-261C	Date Sampled: 04/24/99 Date Received: 04/26/99 Date Extracted: 04/26-04/29/99				
Engineering Geology							
734 Torreya Court	Client Contact: Day	rid Hoexter					
Palo Alto, CA 94303	Client P.O:		Date Analyzed	04/26-04/29/99			
TD. 1.1601 0010	Volatile	Halocarbons					
EPA method 601 or 8010 Lab ID	09881						
Client ID	MW-9						
Matrix	W						
Compound		Concentra	tion	'			
Bromodichloromethane	ND						
Bromoform ^(h)	ND		· · · · · · · · · · · · · · · · · · ·				
Bromomethane	ND						
Carbon Tetrachloride(c)	ND						
Chlorobenzene	ND						
Chloroethane	ND						
2-Chloroethyl Vinyl Ether(d)	ND						
Chloroform (6)	ND						
Chloromethane	ND						
Dibromochloromethane	ND						
1,2-Dichlorobenzene	0.81						
1,3-Dichlorobenzene	ND						
1,4-Dichlorobenzene	ND			<u> </u>			
Dichlorodifluoromethane	ND						
1,1-Dichloroethane	ND						
1,2-Dichloroethane	0.52						
1,1-Dichloroethene	ND						
cis 1,2-Dichloroethene	3.1						
trans 1,2-Dichloroethene	ND ND			<u> </u>			
1,2-Dichloropropane	ND ND						
cis 1,3-Dichloropropene	ND ND			-			
trans 1,3-Dichloropropene Methylene Chloride ⁽ⁱ⁾	ND<1						
1,1,2,2-Tetrachloroethane	ND-1						
Tetrachloroethene	ND						
1,1,1-Trichloroethane	ND						
1,1,2-Trichloroethane	ND			,			
Trichloroethene	ND	 -					
Trichlorofluoromethane	ND						
Vinyl Chloride ^(g)	ND			_			
% Recovery Surrogate	104						
Comments							

^{*} water and vapor samples and all TCLP & SPLP extracts are reported in ug/L, soil and sludge samples in ug/kg, wipe samples in ug/wipe Reporting limit unless otherwise stated: water/TCLP/SPLP extracts, ND<0.5ug/L; soils and sludges, ND<5ug/kg; wipes, ND<0.2ug/wipe ND means not detected above the reporting limit; N/A means analyte not applicable to this analysis

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QC REPORT FOR HYDROCARBON ANALYSES

Date: 04/25/99-04/26/99 Matrix: WATER

	Concent:	ration	(ug/L)		% Reco	very	- 1
Analyte	Sample (#09710) MS 		MSD	Amount Spiked	MS	MSD	RPD
TPH (gas)	0.0	103.1	103.9	100.0	103.1	103.9	0.8
Toluene	0.0	9.6.		10.0	96.0	99.0	3.1
Ethyl Benzene Xylenes	0.0	9.9 29.4	10.0 29.9	10.0 30.0	99.0 98.0	100.0 99.7	1.0
 TPH(diesel)	0.0	7840	7558	7500	105	101	3.7
TRPH (oil & grease)	0	22300	23300	23700	94	98	4.4

* Rec. = (MS - Sample) / amount spiked x 100

RPD = $(MS - MSD) / (MS + MSD) \times 2 \times 100$

QC REPORT FOR EPA 8010/8020/EDB

Date: 04/25/99-04/26/99 Matrix: WATER

Conce	ntratio	% Reco				
Sample (#09234) 	MS	MS MSD		MS	MSD	RPD
0.0	10.0	9.8	10.0	100	98	2.0
0.0	9.1	9.0	10.0	91	90	1.1
0.0	8.9	8.9	10.0	8 9	89	0.0
0.0	9.7	9.7	10.0	97	97	0.0
N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Sample (#09234) 0.0 0.0 0.0 0.0 N/A N/A	Sample (#09234) MS	Sample (#09234) MS MSD 0.0 10.0 9.8 0.0 9.1 9.0 0.0 8.9 8.9 0.0 9.7 9.7 N/A N/A N/A N/A N/A	Sample	Sample	Sample

% Rec. = (MS - Sample) / amount spiked x 100

RPD = (MS - MSD) / (MS + MSD) \times 2 \times 100

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	Remarks:	AU	AOV	s pr	1 860	ed t	KL X	ICEVE TOWN	/ 150. L	/ F	RESE	RVATIO	//Y 🛫	₹08G	METALS OTHER	E	ngineering Geology 734 Torreya Court Palo Alto, CA 94303
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Project Number From Name E-10 - 12 - 2612 Sampler's Name (printed) Howards Remarks Rema								-					100					
E-10 - 1C - 26 1C Sampler's Name (printed) However) Farsy the Boring Number Date Time Soil Water Sample Location or Depth Boring Number Date Time Soil Water Sample Location or Depth Boring Number Date Time Soil Water Sample Location or Depth Date Time Soil Water Soil Water Sample Location or Depth Date Time Soil Water Soil								C	HAIN-OF-CU	STODY REC	CORD					· · · · · · · · · · · · · · · · · · ·		
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Hoexter Consulting	Client Project ID: #E-101C-261C; 1970	Date Sampled: 04/24/99			
Engineering Geology	Seminary, Oakland	Date Received: 04/26/99			
734 Torreya Court	Client Contact: David Hoexter	Date Extracted: 04/26/99			
Palo Alto, CA 94303	Client P.O:	Date Analyzed: 04/26/99			

05/03/99

Dear David:

Enclosed are:

- 1). the results of 1 samples from your #E-16-1C-261C; 1970 Seminary, Oakland project,
- 2). a QC report for the above samples
- 3). a copy of the chain of custody, and
- 4). a bill for analytical services.

All analyses were completed satisfactorily and all QC samples were found to be within our control limits. If you have any questions please contact me. McCampbell Analytical Laboratories strives for excellence in quality, service and cost. Thank you for your business and I look forward to working with you again.

Yours truly,

Edward Hamilton Lab Director

Hoexter Consulting	Client Project ID: #E-1 6 -1C-261C; 1970	Date Sampled: 04/24/99			
Engineering Geology	Seminary, Oakland	Date Received: 04/26/99			
734 Torreya Court	Client Contact: David Hoexter	Date Extracted: 04/27/99			
Palo Alto, CA 94303	Client P.O:	Date Analyzed: 04/27/99			

Gasoline Range (C6-C12) Volatile Hydrocarbons as Gasoline*, with Methyl tert-Butyl Ether* & BTEX*

Lab ID	ds 5030, modified	Matrix	TPH(g) ⁺	мтве	Benzene	Toluene	Ethylben- zene	Xylenes	% Recovery Surrogate
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otherwi	g Limit unless se stated; ND	w	50 ug/L	5.0	0.5	0.5	0.5	0.5	_
	t detected above porting limit	s	1.0 mg/kg	0.05	0.005	0.005	0.005	0.005	

^{*} water and vapor samples are reported in ug/L, wipe samples in ug/wipe, soil and sludge samples in mg/kg, and all TCLP and SPLP extracts in ug/L

Edward Hamilton, Lab Director

^{*} cluttered chromatogram; sample peak coelutes with surrogate peak

[&]quot;The following descriptions of the TPH chromatogram are cursory in nature and McCampbell Analytical is not responsible for their interpretation: a) unmodified or weakly modified gasoline is significant; b) heavier gasoline range compounds are significant(aged gasoline?); c) lighter gasoline range compounds (the most mobile fraction) are significant; d) gasoline range compounds having broad chromatographic peaks are significant; biologically altered gasoline?; e) TPH pattern that does not appear to be derived from gasoline (?); f) one to a few isolated peaks present; g) strongly aged gasoline or diesel range compounds are significant; h) lighter than water immiscible sheen/product is present; i) liquid sample that contains greater than ~5 vol. % sediment; j) no recognizable pattern.

QC REPORT FOR HYDROCARBON ANALYSES

Date: 04/26/99-04/27/99 Matrix: WATER

	Concent	ration	(ug/L)		% Reco			
Analyte 	Sample (#09710) MS		MSD	Amount Spiked	MS	MSD	RPD	
TPH (gas)	0.0	103.1	103.9	100.0	103.1	103.9 97.0	0.8	
Benzene Toluene Ethyl Benzene	0.0	9.9 9.6 9.9	9.7 9.9 10.0	10.0 10.0 10.0	96.0	99.0 100.0	3.1 1.0	
Xylenes	0.0	29.4	29.9	30.0	98.0	99.7	1.7	
 TPH(diesel)	0.0	7840	7558	7500	105	101	3.7	
TRPH (oil & grease)	0	22300	23300	23700	94	98	4.4	

 $RPD = (MS - MSD) / (MS + MSD) \times 2 \times 100$

[%] Rec. = (MS - Sample) / amount spiked \times 100

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