OCTOBER, 1996 "QUARTERLY" GROUND WATER SAMPLING REPORT FOR STID 553 - GRIMIT AUTO AND REPAIR 1970 SEMINARY AVENUE OAKLAND, CALIFORNIA

October 21, 1996

Prepared by

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TRANSMITTAL

TO Alameda County Health - Haz Mat. DATE 10/28/96
1131 Harbor Bay Parkway #250 VIA US Mail
Alameda CA 94502-6577 FAX NO. _____

ATTENTION Dale Klettke

PROJECT 1970 Seminary JOB NO. E-10-1B-192B
Oakland CA / STID 553

DESCRIPTION 10/2/96 "Quarterly" Report

Number of pages, including cover page, if FAX _____

COMMENTS _____

ACTION

_____ As requested
__Y__ For your use
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_____ Other _____

COPY TO Doyle Grimit BY David F. Hoexter
David F. Hoexter

If enclosures are not as noted, kindly notify us at once

Rev. 7/6/93

Geology / Engineering Geology / Environmental Studies

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DAVID F. HOEXTER, RG/CEG/REA

734 Torreya Court
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October 21, 1996

E-10-1B-192B
HCQuartEnvtRpts:Seminary1970/8(10/96)

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

RE: **OCTOBER, 1996 "QUARTERLY"**
GROUND WATER SAMPLING REPORT
STID 553 - GRIMIT AUTO AND REPAIR
1970 SEMINARY AVENUE
OAKLAND, CALIFORNIA

Dear Mr. Grimit:

Enclosed is our October, 1996 ground water sampling report for the property located at 1970 Seminary Avenue, corner of Harmon, in Oakland, California This sampling round is the twelfth performed by Hoexter Consulting and others at the site, dating from August, 1990. The results of an initial sampling round by Kaldveer Associates, Inc, following well installation, and the previous Hoexter Consulting quarterly and sub-surface investigation sampling, are included in the analytical results summary table.

The results of this investigation indicate that the water samples from the six 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 the previous March, 1996 results. In addition, at the request of the Alameda County Health Care Services Agency Local Oversight Program (LOP) representative, baseline analyses were conducted for dissolved oxygen, ferrous iron, nitrate and sulfate, in anticipation of planned remediation. These latter tests were not initially budgeted.

Ground water levels declined appreciably from the previous March, 1996 sampling event. The wells dewatered during the course of purging, and it was necessary to return the following day to obtain viable samples once the water levels had recovered.

Evaluation of remedial alternatives has been accomplished since the March, 1996 sampling event. We recommended in our July 28, 1996 report that you proceed with remediation of the site. The Alameda County LOP representative, in his September 24, 1996 review letter, concurred with this recommendation. We are therefore currently preparing a proposal and cost estimate to prepare a remedial action plan, including feasibility testing of soil vapor extraction (SVE).

We recommend that copies of the enclosed report be submitted to the Alameda County Health Care Services Agency. The next round of sampling is scheduled to be conducted during January, 1997.

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
Principal Geologist

Copies: Addressee (2)
Alameda County Health Care Services Agency (1)
Attention: Mr. Dale Klettke, Hazardous Materials Specialist

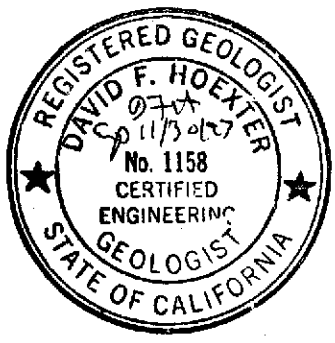
OCTOBER, 1996 "QUARTERLY"
GROUND WATER SAMPLING REPORT

For

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

To

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



October 21, 1996

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

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OCTOBER, 1996 QUARTERLY GROUND WATER SAMPLING REPORT FOR STID 553 - GRIMIT AUTO AND REPAIR 1970 SEMINARY OAKLAND, CALIFORNIA

I. INTRODUCTION

This report presents the results of the October, 1996 ground water sampling at 1970 Seminary, Oakland, California. The project location is shown on the Location Map, Figure 1. The scope of services provided during this investigation consisted of collecting and analyzing ground water samples from six on-site monitoring wells. Ground water samples were analyzed for petroleum hydrocarbons, solvents, and additional parameters. Well locations are shown on the Ground Water Data Maps, Figures 2A and 2B.

II. FIELD INVESTIGATION

The ground water monitoring wells were sampled by representatives of Hoexter Consulting, Inc. Due to past, very slow equilibration of ground water levels, the well caps were loosened on October 4, 1996, three days prior to the planned purging and sampling. The wells were then secured with the caps sufficiently loose to allow venting, and left over the following weekend to equilibrate. Following water level measurements, the wells were purged on October 7, and sampled October 8, 1996.

As noted, the well caps were loosened October 4, 1996, to allow the water level in the wells to equilibrate. Following an initial ground water level measurement (Table 1) on October 7, 1996 at the time of purging, each well was checked for free-product with the bailer, and then three to four well-casing volumes of water were purged from the well. 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.

Following purging of three to four well volumes, it was noted that the wells were either effectively dewatered, or drawn down to less than 80 per cent of the static water level. Thus, the well caps were left loosely in place overnight to allow the wells to vent and the water levels to rise, and the sampling was conducted the following day, October 8, 1996.

The samples were collected using the polyethylene 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. The laboratory is California Department of Health Services approved for the requested analyses.

Prior to purging, ground water levels were measured in each well using the top of 2-inch PVC casing (north side) as reference point. Water levels were measured at least twice in each well; the final set of measurements are thought to be essentially representative of stabilized ground water levels in the wells. The depths to ground water dropped notably

from the prior (March, 1996) sampling event: the two "shallow" wells declined 2.60 and 4.30 feet; the four "deeper" wells each declined from 7.23 to 8.17 feet.

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 Data Maps, Figures 2A and 2B. Figure 2A, representing the "deeper" wells, presents our interpretation of ground water elevation contours and flow.

The ground water flow direction and gradient are essentially consistent with the previous, March, 1996 data. The data for the two "shallow" wells appear to indicate an apparent flow towards Seminary Avenue. The two wells are relatively close together, and there is not a third well to provide a triangular configuration for water flow calculation. The data for the four "deeper" wells indicate flow away from Seminary towards the south. The apparent flow gradient varies from approximately 0.08 foot per foot on the east to approximately 0.13 foot per foot on the west. This gradient is marginally steeper than the gradient calculated from the March, 1996 data.

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

III. ANALYTICAL RESULTS

A. Laboratory Procedures

The ground water samples were analyzed by McCampbell Analytical, Inc. of Pacheco, California, with several parameters sub-contracted to GeoAnalytical Laboratories, Inc. of Modesto, California. Both laboratories are certified by the State of California Environmental Protection Agency 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 organics (HVOC) using EPA Method 8010.
- Dissolved oxygen using EPA Method 360.1.
- Ferrous iron using SM-3500-Fe.
- Nitrate and sulfate using SM-300.

Note that some of the TRPH analyses from *previous* sampling rounds were analyzed by the infrared method of analysis. It is our understanding that the two analytical methods produce essentially the same results.

The dissolved oxygen, ferrous iron, nitrate and sulfate were analyzed at the request of the Alameda County Health Care Services Agency Local Oversight Program (LOP)

representative, to establish a baseline in anticipation of planned remediation. This was the initial sampling round for these parameters.

B. Analytical Results

Free product was not observed in the initial sounding of the wells, although as previously observed, a sheen (floating film) of oil was observed in well MW-1 as well as 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 Table 2 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 HVOC, are present at elevated levels which are generally on the same order of magnitude as the most recent, previous analyses (March, 1996).

TPH-G was present in MW-1 at 55,000 ug/l (equivalent to parts per billion, ppb). This represents an increase on the order of 20 per cent over the previous three sampling events, dating to April, 1995. The BTEX compounds in MW-1 were present at essentially the same levels as most recently detected (March, 1996). TRPH appears to have declined; this may be a result of declining ground water levels within the ground water-contaminant "smear zone". HVOC levels appear to have declined, although this is likely an artifact of an increase in laboratory detection limits.

TPH-G and BTEX declined in four of the other five wells. Detected levels in these wells are generally one to two orders of magnitude less than in MW-1. TRPH was not detected in wells MW-2 through 6. The suite of detected HVOC compounds is essentially the same as the only previous sampling round (March, 1996). Several previously detected compounds appear not to be present; this is probably due to increased detection limits.

Dissolved oxygen ranged from a low of 1.5 ppm in MW-1 to a maximum of 3.8 ppm. Ferrous iron was not detected. Nitrate was detected in one well, MW-2. Sulfate ranged from non-detect to a maximum of 25 ppm. As described, this was the initial sampling round for these four parameters.

IV. RECOMMENDATIONS

We recommend proceeding with the approved remedial action plan and soil vapor extraction (SVE) feasibility testing.

V. 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. 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.

* * * * * * * * * * * * * * * * * * * *

TABLE 1

GROUND WATER ELEVATION DATA

(All Measurements in Feet)

Well Number and Date of Measurement	Reference Elevation (2)	Depth to Water	Relative Ground Water Elevation (2)
MW-1			
8/6/90	37.0	21.5	15.5
1/28/92		21.0	16.0
4/27/92		20.95	16.05
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
MW-2			
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
MW-3			
2/11/94	36.94	6.97 (3)	29.97 (3)
2/28/94		7.74 (4)	29.20 (4)
9/9/94		9.68	27.26
12/28/94		8.15	28.79
4/13/95		8.05	28.89
11/1/95		7.82	29.12
3/8/96		5.69	31.25
3/25-26/96	36.94	6.91	30.03
10/7/96		9.51	27.43

Table 1 continued

MW-4			
3/25-26/96	36.46	14.14	22.32
10/7/96		22.31	14.15
MW-5			
3/25-26/96	36.77	15.63	21.14
10/7/96		22.86	13.91
MW-6			
3/25-26/96	36.42	8.52	27.90
10/7/96		12.82	23.60

Notes

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

TABLE 2A

GROUND WATER

SUMMARY OF ANALYTICAL TEST RESULTS - PETROLEUM HYDROCARBONS (8)

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

Well and Date	TPH Gasoline (8)	Benzene	Toluene	Ethyl-benzene	Xylenes	Oil & Grease HVOC (7)
MW-1	("deep")					
8/6/90 (2)	54,000	3,500	3,200	1,900	9,400	7,600
1/28/92	2,000,000	7,400	17,000	28,000	120,000	75,000 (5)
4/27/92 (3)	500,000	3,400	6,400	10,000	45,000	440,000 (6)
4/27/92 (4)	175,000	4,200	4,400	3,200	14,600	N/A
8/10/92	170,000	4,200	4,200	3,300	15,900	120,000 (6)
2/11/94	1,800,000	ND	5,100	5,200	23,900	16,000 (6)
9/9/94	23,000,000	56,000	61,000	9,100	137,000	880,000 (6)
12/28/94	55,000	3,700	5,300	1,400	5,800	83,000 (6)
4/13/95	45,000	2,800	3,400	1,200	5,100	50,000 (5)
11/1/95	44,000	2,600	3,400	1,400	5,900	52,000 (5)
3/25/96	45,000	3,000	4,100	1,600	6,800	46,000 (5) (7)
[illegible]	[illegible]	3,300	4,500	1,700	[illegible]	[illegible] (5) (7)
MW-2	("deep")					
2/11/94	130	22	1.1	5.2	7.3	ND (6)
9/9/94	1,000	89	ND	ND	6.9	ND (6)
12/28/94	330	100	3.8	5.4	4.7	5100 (6)
4/13/95	1300	280	6.9	33	23	ND 5)
11/1/95	100	9.9	ND	ND	ND	ND (5)
3/25/96	4500	470	57	220	280	ND (5) (7)
10/8/96	710	1.9	0.54	1.0	1.0	ND (5) (7)
MW-3	("shallow")					
2/11/94	ND	ND	ND	ND	ND	ND (6)
9/9/94	710	10	ND	ND	3.5	ND (6)
12/28/94	2,300	7.8	ND	130	73	ND (6)
4/13/95	1,700	2.9	ND	61	24	ND (5)
11/1/95	1,100	4.4	ND	27	22	ND (5)
3/25/96	2,300	4.0	0.96	120	65	ND (5) (7)
10/8/96	160	ND	0.5	1.2	0.77	ND (5) (7)
MW-4	("deep")					
3/26/96	9,900	4,000	40	71	100	ND (5) (7)
10/8/96	7,800	3,900	33	31	40	ND (5) (7)

Table 2A continued

Well and Date	TPH Gasoline (8)	Benzene	Toluene	Ethyl-benzene	Xylenes	Oil & Grease HVOC (7)
MW-5	("deep")					
3/26/96	1,200	43	8.2	83	95	ND (5) (7)
10/8/96	[illegible]	[illegible]	92	410	370	ND (5) (7)
MW-6	("shallow")					
3/26/96	9,900	1,000	150	470	720	ND (5) (7)
10/8/96	[illegible]	120	2.3	1.4	[illegible]	ND (5) (7)
EB-4						
3/8/96	15,000	780	840	1,300	590	7,500 (5) (7)
MCL	NA	1	150	700	1750	NA

Notes

(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 2C
(8) MTBE see Table 2B

TABLE 2B

GROUND WATER

SUMMARY OF ANALYTICAL TEST RESULTS - MTBE

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

Well and Date	MTBE
MW-1("deep") 10/8/96	490
MW-2 ("deep") 10/8/96	41
MW-3 ("shallow") 10/8/96	ND
MW-4 ("deep") 10/8/96	140
MW-5 ("deep") 10/8/96	190
MW-6 ("shallow") 10/8/96	57

TABLE 2C

GROUND WATER

SUMMARY OF ANALYTICAL TEST RESULTS - HALOGENATED VOLATILE ORGANIC COMPOUNDS

(Results reported in parts per **billion**, 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	ND<5	7.2	5.3	82	ND<5	ND<5	ND<5	7.8	25
10/8/96	ND<20	ND<20	ND<20	45	ND<20	ND<20	ND<20	ND<20	26
MW-2 ("deep")									
3/25/96	ND<0.5	ND<0.5	8.7	11	ND<0.5	1.0	ND<0.5	3.2	0.92
10/8/96	ND<0.5	ND<0.5	15	9.6	ND<0.5	1.1	ND<0.5	6.6	ND<0.5
MW-3 ("shallow")									
3/25/96	ND<0.5	ND<0.5	0.56	1.2	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5
10/8/96	ND<0.5	ND<0.5	1.1	0.87	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5
MW-4 ("deep")									
3/26/96	ND<8	22	ND<8	300	9.2	ND<8	38	150	44
10/8/96	ND<15	22	4.9	320	ND<15	ND<15	52	130	60
MW-5 ("deep")									
3/26/96	1.4	ND<0.5	2.1	6.2	ND<0.5	ND<0.5	ND<0.5	ND<0.5	10
10/8/96	ND<2.5	ND<2.5	4.9	4.4	ND<2.5	ND<2.5	ND<2.5	ND<2.5	9.4
MW-6 ("shallow")									
3/26/96	ND<0.5	ND<0.5	3.9	15	ND<0.5	1.9	0.77	2	ND<0.5
10/8/96	ND<0.5	ND<0.5	2.3	9.9	ND<0.5	ND<0.5	ND<0.5	0.57	ND<0.5

Continued following page

Table 2C continued

EB-4									
3/8/96 (grab)	ND	ND	ND	42	ND	ND	130	340	ND
MCL	NA	600	0.5	6	10	5	7	5	0.5

Notes

(1) ND = non-detect
(2) NA = not applicable
(3) Composite
(4) Abbreviations as follows:

CA	Chloroethane	1,2 DCP	1,2 Dichloropropane
1,2 DCB	1,2 Dichlorobenzene	PCE	Tetrachloroethene (perchloroethene)
1,2 DCA	1,2 Dichloroethane	TCE	trichloroethene
cis 1,2 DCE	cis 1,2 Dichloroethene	VCL	vinyl chloride
trans 1,2 DCE	trans 1,2 Dichloroethene		

TABLE 2D

GROUND WATER

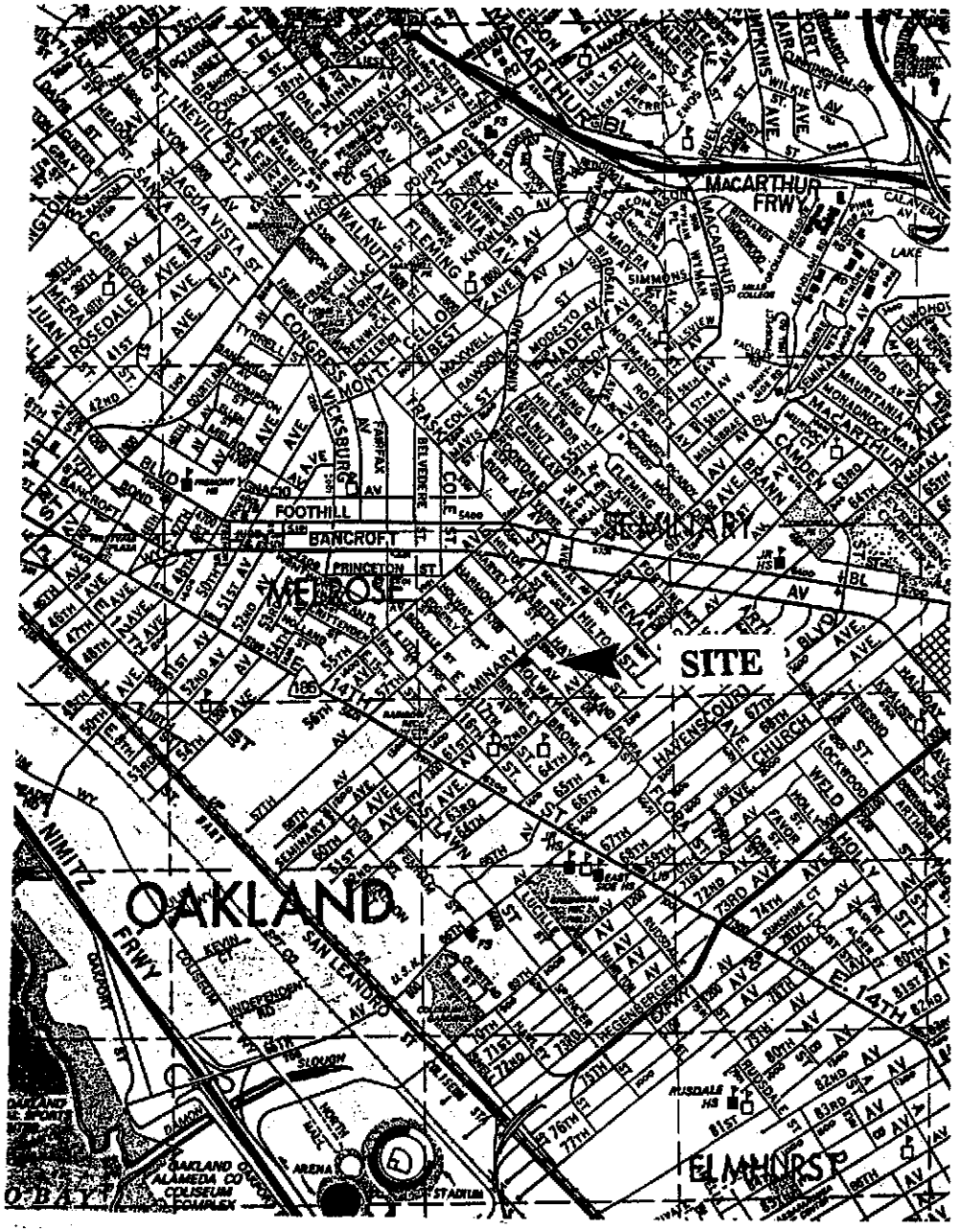
SUMMARY OF ANALYTICAL TEST RESULTS - ADDITIONAL PARAMETERS

(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
MW-2 ("deep") 10/8/96	3.7	ND	3	25
MW-3 ("shallow") 10/8/96	3.8	ND	ND	5
MW-4 ("deep") 10/8/96	3.0	ND	ND	ND
MW-5 ("deep") 10/8/96	2.8	ND	ND	8
MW-6 ("shallow") 10/8/96	2.7	ND	ND	6

Notes

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



ALAMEDA COUNTY

1991 *Thomas Guide.*

0 ¼ ½ ¾ 1 MILES
0 .1 .2 .5 1 KILOMETERS

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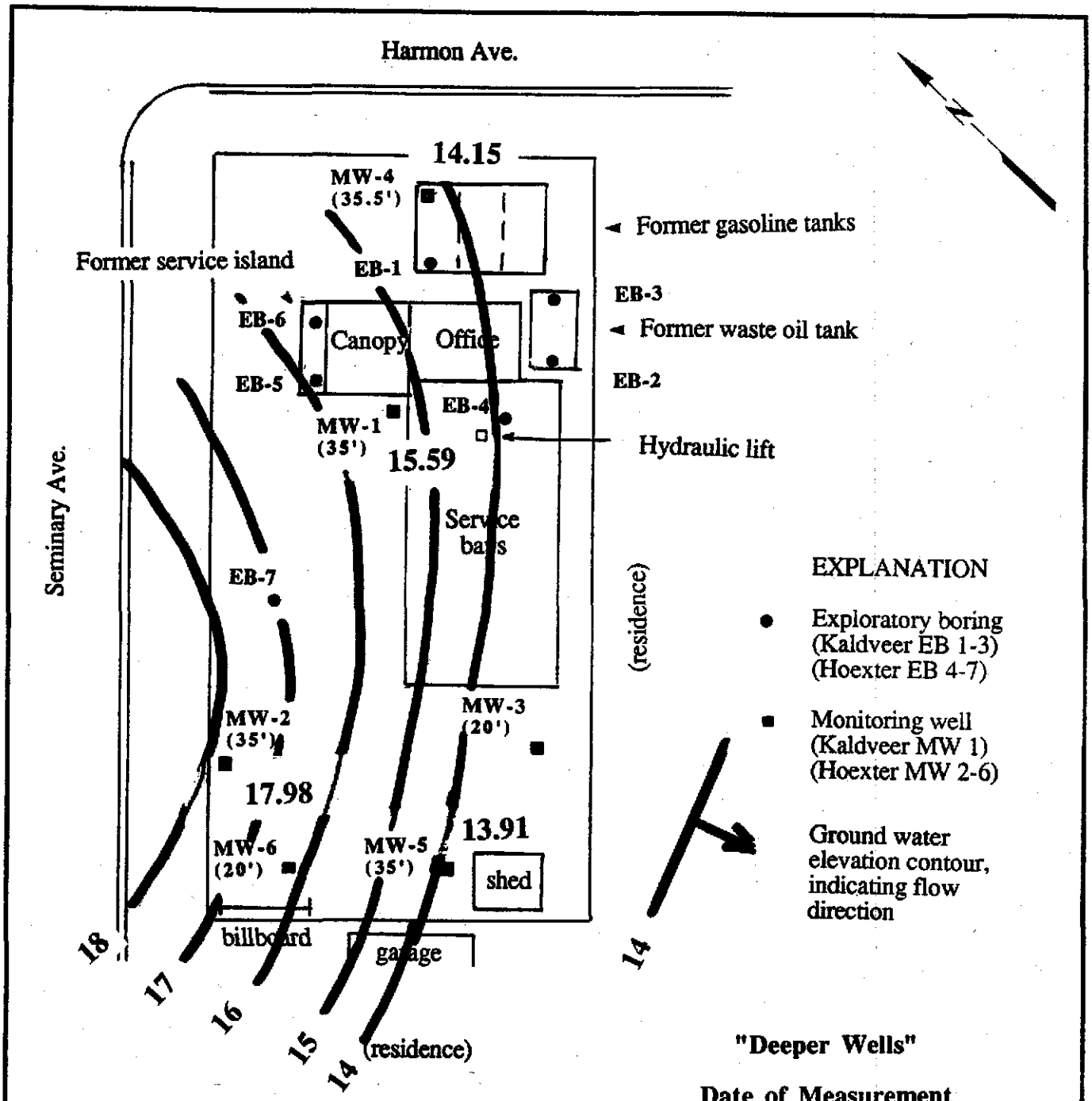
LOCATION MAP

1970 Seminary Ave.
Oakland, California

Project No.	Date	Figure 1
E-10-1B-192B	October, 1996	



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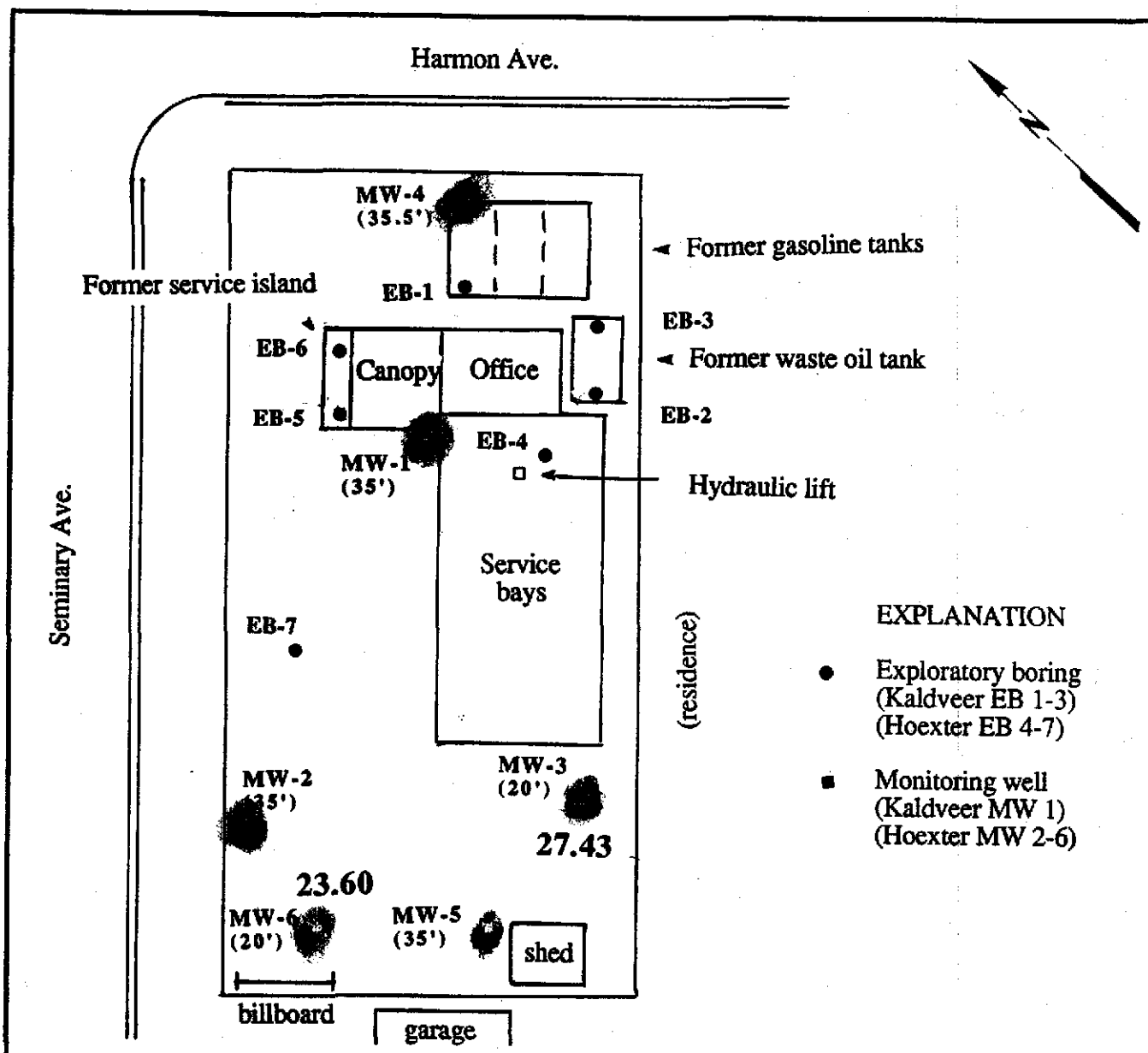
GROUND WATER DATA MAP

1970 Seminary Ave.
Oakland, California

Project No.	Date	Figure 2A
E-10-1B-192B	October, 1996	



City of Oakland datum

Base: A. Deak, Licensed Land Surveyor, 3/21/96 (wells, streets & property line); Hoexter field sketch, 10/25/93 (explor. borings, other features)

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GROUND WATER DATA MAP

1970 Seminary Ave.
Oakland, California

Project No.	Date	Figure 2B
E-10-1B-192B	October, 1996	

APPENDIX A

WATER SAMPLE LOG
CHAIN OF CUSTODY
ANALYTICAL TEST RESULTS

HOEXTER CONSULTING

E-10-13-1913

Groundwater Sampling Field Log

Project Name/ No: 1970 Seminary, Oakland
Client: D. Grimit
Project Manager: DF Hoexter
Sampler: DFH | JF
Casing Diameter: 2 inch X 3 inch ____ 4 inch ____ 6 inch ____ Other: ____

Lab I.D.: 69968
Date: 10/7/96
Sample Location/I.D.: MW-1
Start Time: ____

Depth of Well (feet): 35
Depth to Water (feet): 21.41* (10/7/96) / 21.78 (10/8/96)
Sample Depth (feet): ____

Calculated Purged Volume: 8.8
Actual Purged Volume 10
13.59' wtr → 2.2 gal

Field Measurements

Time	Cum	Volume (gal.)	pH (units)	E.C. (umhos/cm)	Temperature Degrees F	Color (visual)	Other
1228	0	0	5.14	910	70.8	clear	sl. odor
1259	2.5	2.5	4.73	914	70.5	sl. cloudy	small floating globules
1310	5	2.5	4.80	905	70.7		sheen, strong odor
1321	7.5	2.5	4.77	901	70.5		
1335	10	2.5	4.72	899	70.6	✓	

Purge Method

____ 2" Bladder Pump ✓ Bailer ____ Well Wizard ✓ Dedicated
____ Submersible Pump ____ Cenetrifugal Pump ____ Dipper ____ Other polyethyl.
____ Pneumatic Displacement Pump

Sample Method

____ 2" Bladder Pump ✓ Bailer ____ Well Wizard ✓ Dedicated
____ Surface Sampler ____ Dipper ____ Fultz Pump ____ Other polyethyl.

Well Integrity: OK
Remarks: Slight sheen of oil on initial bail; oil globules in purge water after initial volume. Well nearly dewatered following removal of fourth volume. Sampled 10/8/96 15:15.
Signature: DF Hoexter

Volumes Per Unit Length Selected Well Casing Diameters

Well Casing I.D. (inches)	Volume Per Unit Length Gal/ft	Cubic 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

Conversion Factors

To Convert	Into	Multiply
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

HOEXTER CONSULTING

E-10-13-192B

Groundwater Sampling Field Log

Project Name/ No: 1970 Seminary, Oakland
Client: D. Grimit
Project Manager: D.F. Hoexter
Sampler: DFH | JF
Casing Diameter: 2 inch X 3 inch ____ 4 inch ____ 6 inch ____ Other: ____

Lab I.D.: 69969
Date: 10/7/96
Sample Location/I.D.: MW-2
Start Time: ____

Depth of Well (feet): 35
Depth to Water (feet): 18.41* (10/7/96)
Sample Depth (feet): ____
24.27 (10/8/96)

Calculated Purged Volume: 10.8
Actual Purged Volume 12
16.59' wtr → 2.7 gal.

Field Measurements

Time	Cum	Volume (gal.)	pH (units)	E.C. (umhos/cm)	Temperature Degrees F	Color (visual)	Other
1100	0	0	4.95	795	69.3	clear	
1112	3	3	4.84	764	68.6	sl. cloudy	
1124	6	3	4.95	790	68.1	cloudy	
1138	9	3	4.82	818	68.2	↓	
1150	12	3	4.99	818	68.4	↓	

Purge Method

____ 2" Bladder Pump X Bailer ____ Well Wizard X Dedicated
____ Submersible Pump ____ Cenetrifugal Pump ____ Dipper ____ Other
____ Pneumatic Displacement Pump polyethyl.

Sample Method

____ 2" Bladder Pump X Bailer ____ Well Wizard X Dedicated
____ Surface Sampler ____ Dipper ____ Fultz Pump ____ Other
polyethyl.

Well Integrity: OK
Remarks: No sheen or odor or product on initial bail; well nearly dewatered following removal of fourth volume.
Sampled 10/8/96 14:55
Signature: D. J. Hoexter

Volumes Per Unit Length Selected Well Casing Diameters

Well Casing I.D. (inches)	Volume Per Unit Length Gal/ft	Cubic 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

Conversion Factors

To Convert	Into	Multiply
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

HOEXTER CONSULTING

E-10-1B-192B

Groundwater Sampling Field Log

Project Name/ No: 1970 Seminary Oakland
Client: D. Grimit
Project Manager: DF Hoexter
Sampler: DFH | JF
Casing Diameter: 2 inch X 3 inch ____ 4 inch ____ 6 inch ____ Other: ____

Lab I.D.: 69970
Date: 10/7/96
Sample Location/I.D.: MW-3
Start Time: ____

Depth of Well (feet): 20
Depth to Water (feet): 9.51 * (10/7/96)
Sample Depth (feet): ____ 16.76 (10/8/96)

Calculated Purged Volume: 5.1
Actual Purged Volume 6
10.49 gal. wtr → 1.7 gal

Field Measurements

Time	Cum	Volume (gal.)	pH (units)	E.C. (umhos/cm)	Temperature Degrees F	Color (visual)	Other
1005	0	0	5.03	572	67.6	clear	
1010	2	2	4.86	576	67.4	sl. cloudy	
1016	4	2	4.95	573	67.0		
1022	6	2	4.98	565	66.3		

Purge Method

____ 2" Bladder Pump X Bailer ____ Well Wizard X Dedicated
____ Submersible Pump ____ Cenetrifugal Pump ____ Dipper ____ Other poly ethyl
____ Pneumatic Displacement Pump

Sample Method

____ 2" Bladder Pump X Bailer ____ Well Wizard X Dedicated
____ Surface Sampler ____ Dipper ____ Fultz Pump ____ Other poly ethyl

Well Integrity: OK
Remarks: No odor, sheen or prod. initial bail. Sl. H_2S odor. Well dewatered following third well volume purge.

Signature: D. J. Hoexter

Sampled 10/8/96 14:10

Volumes Per Unit Length Selected Well Casing Diameters

Well Casing I.D. (inches)	Volume Per Unit Length Gal/ft	Cubic 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

Conversion Factors

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

HOEXTER CONSULTING

E-10-13-192 B

Groundwater Sampling Field Log

Project Name/ No: 1970 Seminary, Oakland
Client: D. Grimit
Project Manager: D. F. Hoexter
Sampler: DFH | JF
Casing Diameter: 2 inch X 3 inch ____ 4 inch ____ 6 inch ____ Other: ____

Lab I.D.: 69971
Date: 10/7/96
Sample Location/I.D.: MW-4
Start Time: ____

Depth of Well (feet): 35
Depth to Water (feet): 22.31 (10/7/96)
Sample Depth (feet): ____ 22.96 (10/8/96)

Calculated Purged Volume: 6.21
Actual Purged Volume 7.5
12.69' wtr → 2.07 gal

Field Measurements

Time	Cum	Volume (gal.)	pH (units)	E.C. (umhos/cm)	Temperature Degrees F	Color (visual)	Other
1019	0	0	4.71	960	68.2		
1027	2.5	2.5	4.75	956	68.4	cloudy - brown & sheen	
1139	5	2.5	4.75	973	68.2	on purge wtr in	
1155	7.5	2.5	4.81	982	69.1	bucket	

Purge Method

____ 2" Bladder Pump ✓ Bailer ____ Well Wizard ✓ Dedicated
____ Submersible Pump ____ Cenetrifugal Pump ____ Dipper ____ Other
____ Pneumatic Displacement Pump

polyethyl

Sample Method

____ 2" Bladder Pump ✓ Bailer ____ Well Wizard ✓ Dedicated
____ Surface Sampler ____ Dipper ____ Fultz Pump ____ Other

polyethyl

Well Integrity: OK
Remarks: No odor sheen or prod. initial bail, sheen on purge water surface from second purge volume. Well dewatered following third well volume removal. Sampled 10/8/96 15:35
Signature: D. F. Hoexter

Volumes Per Unit Length Selected Well Casing Diameters

Well Casing I.D. (inches)	Volume Per Unit Length Gal/ft	Cubic 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

Conversion Factors

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

HOEXTER CONSULTING

E-10-18-192B

Groundwater Sampling Field Log

Project Name/ No: 1970 Seminary, Oakland
Client: D. Grimit
Project Manager: D.F. Hoexter
Sampler: DFH / JF
Casing Diameter: 2 inch x 3 inch ____ 4 inch ____ 6 inch ____ Other: ____

Lab I.D.: 69972
Date: 10/7/96
Sample Location/I.D.: MW-5
Start Time: ____

Depth of Well (feet): 35
Depth to Water (feet): 22.86 *(10/7/96)
Sample Depth (feet): ____ 23.76 (10/8/96)

Calculated Purged Volume: 7.92
Actual Purged Volume 8
12.14' WH -> 1.98 gal.

Field Measurements

Time	Cum	Volume (gal.)	pH (units)	E.C. (umhos/cm)	Temperature Degrees F	Color (visual)	Other
1015	0	0	4.83	702	67.1	clear	
1023	2	2	4.85	816	66.3	lgt. brwn.	sl. odor
1031	4	2	4.83	837	66.2		
1039	6	2	4.84	862	66.1		
1046	8	2	4.91	871	66.6		

Purge Method

____ 2" Bladder Pump x Bailer ____ Well Wizard x Dedicated
____ Submersible Pump ____ Cenetrifugal Pump ____ Dipper ____ Other polyethyl
____ Pneumatic Displacement Pump

Sample Method

____ 2" Bladder Pump x Bailer ____ Well Wizard x Dedicated
____ Surface Sampler ____ Dipper ____ Fultz Pump ____ Other polyethyl

Well Integrity: Good
Remarks: No sheen, product or odor on initial purge, 4' WH. following purging. Sampled 10/8/96 14:35

Signature: D. J. Hoexter

Volumes Per Unit Length Selected Well Casing Diameters

Well Casing I.D. (inches)	Volume Per Unit Length Gal/ft	Cubic 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

Conversion Factors

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

E-10-1B-192B

HOEXTER CONSULTING

Groundwater Sampling Field Log

Project Name/ No: 1970 Seminary, Oakland
Client: D. Gromit
Project Manager: D.F. Hoekter
Sampler: DFH | JF
Casing Diameter: 2 inch X 3 inch _____ 4 inch _____ 6 inch _____ Other: _____

Lab I.D.: 69973
Date: 10/7/96
Sample Location/I.D.: MW-6
Start Time: _____

Depth of Well (feet): 20
Depth to Water (feet): 12.82 (10/7/96)
Sample Depth (feet): _____ 13.86 (10/8/96)

Calculated Purged Volume: 3.5 l
Actual Purged Volume 6
7.18' wtr → 1.175 cal

Field Measurements

Time	Cum	Volume (gal.)	pH (units)	E.C. (umhos/cm)	Temperature Degrees F	Color (visual)	Other
1040	0	0	4.77	896	69.5		
1046	2	2	4.84	948	70.2	cloudy - brown	
1056	4	2	4.80	938	68.8		
1340	6	2	4.90	998	69.5		

Purge Method

_____ 2" Bladder Pump X Bailer ____ Well Wizard Y Dedicated
_____ Submersible Pump _____ Cenetrifugal Pump ____ Dipper ____ Other
_____ Pneumatic Displacement Pump polyethyl

Sample Method

_____ 2" Bladder Pump X Bailer ____ Well Wizard Y Dedicated
_____ Surface Sampler _____ Dipper ____ Fultz Pump ____ Other
polyethyl

Well Integrity: OK
Remarks: No odor shown or pred. on initial bail. SI H_2S (-) odor while purging. Well nearly dewatered following third purge volume. Sampled 10/8/96 15:15
Signature: D. F. H

Volumes Per Unit Length Selected Well Casing Diameters

Well Casing I.D. (inches)	Volume Per Unit Length Gal/ft	Cubic 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

Conversion Factors

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

7366AHC19

CHAIN-OF-CUSTODY RECORD

Pg 1 of 2

Project Number	Project Name
E-10-1B-192B	1970 Seminary Ave. Oakland CA

Sampler's Name (printed): D. Hoexter, J. Forsythe

Boring Number	Date	Time	Soil	Water	Sample Location or Depth	# Samples	Number/Type of Containers	TPH-G/BTEX/MTBE	SM 5520 C/F	8010 HVOC	Dissolved Oxygen	Ferrous Iron	Nitrate + sulfate	Remarks
* MW-1	10/8/96	15:55		↓		4	VOA	X		X				Preserved HCL
	↓	↓		↓		1	1l amber		X					
	↓	↓		↓		1	amber				X			69968
	↓	↓		↓		1	amber					X		
	↓	↓		↓		1	plastic						X	
* MW-2	↓	14:55		↓		4	VOA	X		X				Preserved HCL
	↓	↓		↓		1	amber		X					
	↓	↓		↓		1	amber				X			69969
	↓	↓		↓		1	amber					X		
	↓	↓		↓		1	plastic						X	
* MW-3	↓	14:10		↓		4	VOA	X		X				Preserved HCL
	↓	↓		↓		1	amber		X					
	↓	↓		↓		1	amber				X			69970
	↓	↓		↓		1	amber					X		
	↓	↓		↓		1	plastic						X	

Relinquished by: (Signature)	Date/Time	Received by: (Signature)
[signature]	10/8/96 17:20	[signature]
Relinquished by: (Signature)	Date/Time	Received by: (Signature)
Relinquished by: (Signature)	Date/Time	Received for Laboratory by: (Signature) In LAB upon Arrival

ICE/T° ✓ GOOD CONDITION ✓ HEAD SPACE ABSENT ✓

PRESERVATIVE ✓ APPROPRIATE CONTAINERS ✓

VOAS	O&G	METALS	OTHER
✓		X	Fe Filtered + pres.

Ship To: McCampbell Anal. 110 2nd Ave S. # D-7 Pacheco CA 94553

Attention: E. Hamilton

Phone No: 510-798-1620

Requested Turnaround Time: Normal

Contact: David F. Hoexter

Phone 415-494-2505

Hoexter Consulting
Engineering Geology
734 Torreya Court
Palo Alto, CA 94303

Remarks: *Please filter and preserve Fe samples (not done in field). All anal per Reg. Board LUFT Guidelines.

7366 AHC 19

CHAIN-OF-CUSTODY RECORD

Pg 2 of 2

Project Number	Project Name
E-6-18 1925	1970 Seminary, Oakland CA

Sampler's Name (printed): DFH / JF

Boring Number	Date	Time	Soil	Water	Sample Location or Depth	# Samples / Number	Number / Type of Containers	Analytical Tests: TPH-G/BTEX/MTBE	SM 5520 C/F	5010 HVOC	Dissolved Oxygen	Ferrous Iron	Nitrate + Sulfate	Remarks
+ MW-4	10/8/96	1535				4	VOA	X		X				HCl preserved
						1	amber		X		X			69971
						1	amber			X		X		
						1	amber				X			
						1	plastic					X		
+ MW-5		1435				4	VOA	X		X				HCl preserved
						1	amber		X					
						1	amber				X			69972
						1	amber					X		
						1	plastic						X	
+ MW-6		1515				4	VOA	X		X				HCl preserved
						1	amber		X					
						1	amber				X			69973
						1	amber					X		
						1	plastic						X	

Relinquished by: (Signature) Dan Hoexter	Date/Time 10/8/96 17:00	Received by: (Signature) Angela Rydelius
Relinquished by: (Signature)	Date/Time	Received by: (Signature)
Relinquished by: (Signature)	Date/Time	Received for Laboratory by: (Signature)

Ship To: McCampbell Anal.

Attention:

Phone No:

Requested Turnaround Time:

Contact:

Phone

Remarks: (See pg 1)

ICE/T ✓
GOOD CONDITION ✓
HEAD SPACE ABSENT ✓

PRESERVATIVE APPROPRIATE CONTAINERS ✓

VOAS	O&G	METALS	OTHER
✓		X	

Fe Filtered and pres. In LAB upon arrival.

Hoexter Consulting
Engineering Geology
734 Torreya Court
Palo Alto, CA 94303

McCAMPBELL ANALYTICAL INC.
110 2nd Avenue South, #D7, Pacheco, CA 94553
Tele: 510-798-1620 Fax: 510-798-1622

10/18/96

Dear David:

Enclosed are:

1). the results of 6 samples from your # **E-10-1B-192B; 1970 Seminary Ave., 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.

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

McCAMPBELL ANALYTICAL INC.
110 2nd Avenue South, #D7, Pacheco, CA 94553
Tele: 510-798-1620 Fax: 510-798-1622

Hoexter Consulting Engineering Geology 734 Torreya Court Palo Alto, CA 94303	Client Project ID: # E-10-1B-192B; 1970 Seminary Ave., Oakland	Date Sampled: 10/08/96
		Date Received: 10/08/96
	Client Contact: David Hoexter	Date Extracted: 10/08-10/09/96
	Client P.O:	Date Analyzed: 10/08-10/09/96

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)+	MTBE	Benzene	Toluene	Ethylben-zene	Xylenes	% Rec. Surrogate
69968	MW-1	W	55,000,a,h	490	3300	4500	1700	7100	103
69969	MW-2	W	710,c,a	41	1.9	0.54	1.0	1.0	104
69970	MW-3	W	160,a	ND	ND	0.50	1.2	0.77	106
69971	MW-4	W	7800,a,h	140	3900	33	31	40	94
69972	MW-5	W	6700,a	190	260	92	410	370	106
69973	MW-6	W	1300,c,a	57	120	2.3	1.4	4.0	110#
Reporting Limit unless otherwise stated; ND means not detected above the reporting limit		W	50 ug/L	5.0	0.5	0.5	0.5	0.5	
		S	1.0 mg/kg	0.05	0.005	0.005	0.005	0.005	

* water and vapor samples are reported in ug/L, soil and sludge samples in mg/kg, and all TCLP extracts in mg/L

cluttered chromatogram; sample peak coelutes with surrogate peak

+ 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.

DHS Certification No. 1644

Edward Hamilton, Lab Director

McCAMPBELL ANALYTICAL INC. | 110 2nd Avenue South, #D7, Pacheco, CA 94553
Tele: 510-798-1620 Fax: 510-798-1622

Hoexter Consulting Engineering Geology	Client Project ID: # E-10-1B-192B; 1970 Seminary Ave., Oakland	Date Sampled: 10/08/96
		Date Received: 10/08/96
734 Torreya Court	Client Contact: David Hoexter	Date Extracted: 10/16/96
Palo Alto, CA 94303	Client P.O:	Date Analyzed: 10/16/96

Petroleum Oil & Grease (with Silica Gel Clean-up) *

EPA methods 413.1, 9070 or 9071; Standard Methods 5520 D/E&F or 503 D&E for solids and 5520 B&F or 503 A&E for liquids

Lab ID	Client ID	Matrix	Oil & Grease*
69968	MW-1	W	11,h
69969	MW-2	W	ND
69970	MW-3	W	ND
69971	MW-4	W	ND,h
69972	MW-5	W	ND
69973	MW-6	W	ND
Reporting Limit unless otherwise stated; ND means not detected above the reporting limit		W	5 mg/L
		S	50 mg/kg

* water samples are reported in mg/L and soil and sludge samples in mg/kg

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

DHS Certification No. 1644

Edward Hamilton, Lab Director

McCAMPBELL ANALYTICAL INC.
110 2nd Avenue South, #D7, Pacheco, CA 94553
Tele: 510-798-1620 Fax: 510-798-1622

Hoexter Consulting Engineering Geology	Client Project ID: # E-10-1B-192B; 1970 Seminary Ave., Oakland	Date Sampled: 10/08/96
		Date Received: 10/08/96
734 Torreya Court	Client Contact: David Hoexter	Date Extracted: 10/09-10/12/96
Palo Alto, CA 94303	Client P.O:	Date Analyzed: 10/09-10/12/96

Volatile Halocarbons

EPA method 601 or 8010

Lab ID	69968	69969	69970	69971
Client ID	MW-1	MW-2	MW-3	MW-4
Matrix	W	W	W	W
Compound	Concentration*			
Bromodichloromethane	ND< 20	ND	ND	ND< 15
Bromoform(b)	ND< 20	ND	ND	ND< 15
Bromomethane	ND< 20	ND	ND	ND< 15
Carbon Tetrachloride(c)	ND< 20	ND	ND	ND< 15
Chlorobenzene	ND< 20	ND	ND	ND< 15
Chloroethane	ND< 20	ND	ND	ND< 15
2-Chloroethyl Vinyl Ether(d)	ND< 20	ND	ND	ND< 15
Chloroform	ND< 20	ND	ND	ND< 15
Chloromethane	ND< 20	ND	ND	ND< 15
Dibromochloromethane	ND< 20	ND	ND	ND< 15
1,2-Dichlorobenzene	ND< 20	ND	ND	22
1,3-Dichlorobenzene	ND< 20	ND	ND	ND< 15
1,4-Dichlorobenzene	ND< 20	ND	ND	ND< 15
Dichlorodifluoromethane	ND< 20	ND	ND	ND< 15
1,1-Dichloroethane	ND< 20	ND	ND	ND< 15
1,2-Dichloroethane	ND< 20	15	1.1	4.9
1,1-Dichloroethene	ND< 20	ND	ND	ND< 15
cis 1,2-Dichloroethene	45	9.6	0.87	320
trans 1,2-Dichloroethene	ND< 20	ND	ND	ND< 15
1,2-Dichloropropane	ND< 20	1.1	ND	ND< 15
cis 1,3-Dichloropropene	ND< 20	ND	ND	ND< 15
trans 1,3-Dichloropropene	ND< 20	ND	ND	ND< 15
Methylene Chloride(f)	ND< 20	ND	ND	ND< 15
1,1,2,2-Tetrachloroethane	ND< 20	ND	ND	ND< 15
Tetrachloroethene	ND< 20	ND	ND	52
1,1,1-Trichloroethane	ND< 20	ND	ND	ND< 15
1,1,2-Trichloroethane	ND< 20	ND	ND	ND< 15
Trichloroethene	ND< 20	6.6	ND	130
Trichlorofluoromethane	ND< 20	ND	ND	ND< 15
Vinyl Chloride(g)	26	ND	ND	60
% Recovery Surrogate	107	101	102	108
Comments	h, j			h

* water and vapor samples are reported in ug/L, soil and sludge samples in ug/kg and all TCLP extracts in ug/L.

Reporting limit unless otherwise stated: water/TCLP extracts, ND< 0.5ug/L; soil and sludge, ND< 5ug/kg

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; (f) dichloromethane; (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

DHS Certification No. 1644

Edward Hamilton, Lab Director

McCAMPBELL ANALYTICAL INC.
110 2nd Avenue South, #D7, Pacheco, CA 94553
Tele: 510-798-1620 Fax: 510-798-1622

Hoexter Consulting Engineering Geology	Client Project ID: # E-10-1B-192B; 1970 Seminary Ave., Oakland	Date Sampled: 10/08/96
		Date Received: 10/08/96
734 Torreya Court	Client Contact: David Hoexter	Date Extracted: 10/09-10/12/96
Palo Alto, CA 94303	Client P.O:	Date Analyzed: 10/09-10/12/96

Volatile Halocarbons

EPA method 601 or 8010

Lab ID	69972	69973		
Client ID	MW-5	MW-6		
Matrix	W	W		
Compound	Concentration*			
Bromodichloromethane	ND< 2.5	ND		
Bromoform(b)	ND< 2.5	ND		
Bromomethane	ND< 2.5	ND		
Carbon Tetrachloride(c)	ND< 2.5	ND		
Chlorobenzene	ND< 2.5	ND		
Chloroethane	ND< 2.5	ND		
2-Chloroethyl Vinyl Ether(d)	ND< 2.5	ND		
Chloroform	ND< 2.5	ND		
Chloromethane	ND< 2.5	ND		
Dibromochloromethane	ND< 2.5	ND		
1,2-Dichlorobenzene	ND< 2.5	ND		
1,3-Dichlorobenzene	ND< 2.5	ND		
1,4-Dichlorobenzene	ND< 2.5	ND		
Dichlorodifluoromethane	ND< 2.5	ND		
1,1-Dichloroethane	ND< 2.5	ND		
1,2-Dichloroethane	4.9	2.3		
1,1-Dichloroethene	ND< 2.5	ND		
cis 1,2-Dichloroethene	4.4	9.9		
trans 1,2-Dichloroethene	ND< 2.5	ND		
1,2-Dichloropropane	ND< 2.5	ND		
cis 1,3-Dichloropropene	ND< 2.5	ND		
trans 1,3-Dichloropropene	ND< 2.5	ND		
Methylene Chloride(f)	ND< 2.5	ND		
1,1,2,2-Tetrachloroethane	ND< 2.5	ND		
Tetrachloroethene	ND< 2.5	ND		
1,1,1-Trichloroethane	ND< 2.5	ND		
1,1,2-Trichloroethane	ND< 2.5	ND		
Trichloroethene	ND< 2.5	0.57		
Trichlorofluoromethane	ND< 2.5	ND		
Vinyl Chloride(g)	9.4	ND		
% Recovery Surrogate	108	102		
Comments	j			

* water and vapor samples are reported in ug/L, soil and sludge samples in ug/kg and all TCLP extracts in ug/L.

Reporting limit unless otherwise stated: water/TCLP extracts, ND< 0.5ug/L; soil and sludge, ND< 5ug/kg

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; (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

DHS Certification No. 1644

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Hoexter Consulting Engineering Geology 734 Torreya Court Palo Alto, CA 94303	Client Project ID: # E-10-1B-192B; 1970 Seminary Ave., Oakland	Date Sampled: 10/08/96 Date Received: 10/08/96
	Client Contact: David Hoexter	Date Extracted: 10/08/96
	Client P.O:	Date Analyzed: 10/08/96

			Dissolved Oxygen
Analytical methods			EPA 360.1
Lab ID	Client ID	Matrix	DO*
69968	MW-1	W	1.5
69969	MW-2	W	3.7
69970	MW-3	W	3.8
69971	MW-4	W	3.0
69972	MW-5	W	2.8
69973	MW-6	W	2.7
Reporting Limit unless otherwisestated; ND means not detected above the reporting limit		W	1.0 mg/L at 25°C
		S	N/A

* water samples are reported in mg/L and soil samples in mg/kg

flashpoint values are reported in °C

° solid samples are extracted in accordance with CA Title 22, Chapter 11, Appendix II

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QC REPORT FOR HYDROCARBON ANALYSES

Date: 10/08/96 Matrix: Water

Analyte	Concentration (ug/L) Sample (#69801)	MS	MSD	Amount Spiked	% Recovery MS	MSD	RPD
TPH (gas)	0.0	108.8	103.4	100.0	108.8	103.4	5.0
Benzene	0.0	11.0	10.2	10.0	110.0	102.0	7.5
Toluene	0.0	12.0	10.3	10.0	120.0	103.0	15.2
Ethyl Benzene	0.0	11.3	10.3	10.0	113.0	103.0	9.3
Xylenes	0.0	36.0	30.8	30.0	120.0	102.7	15.6
TPH (diesel)	0	153	167	150	102	111	8.5
TRPH (oil & grease)	N/A	N/A	N/A	N/A	N/A	N/A	N/A

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

RPD = (MS - MSD) / (MS + MSD) x 2 x 100

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QC REPORT FOR HYDROCARBON ANALYSES

Date: 10/16/96 Matrix: Water

Analyte	Concentration (ug/L) Sample (#69800)	MS	MSD	Amount Spiked	% Recovery MS	% Recovery MSD	RPD
TPH (gas)	0.0	95.6	93.8	100.0	95.6	93.8	1.9
Benzene	0.0	9.2	9.1	10.0	92.0	91.0	1.1
Toluene	0.0	9.3	9.2	10.0	93.0	92.0	1.1
Ethyl Benzene	0.0	9.0	8.9	10.0	90.0	89.0	1.1
Xylenes	0.0	27.0	25.9	30.0	90.0	86.3	4.2
TPH (diesel)	0	159	169	150	106	113	6.4
TRPH (oil & grease)	0	25700	25900	23700	108	109	0.8

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

RPD = (MS - MSD) / (MS + MSD) x 2 x 100

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QC REPORT FOR EPA 8010/8020/EDB

Date: 10/09/96 Matrix: Water

Analyte	Concentration (ug/L) Sample (#69893)	MS	MSD	Amount Spiked	% Recovery MS	MSD	RPD
1,1-DCE	0.0	10.6	10.6	10.0	106	106	0.0
Trichloroethene	0.0	10.0	10.1	10.0	100	101	1.0
EDB	0.0	9.8	10.0	10.0	98	100	2.0
Chlorobenzene	0.0	11.2	11.5	10.0	112	115	2.6
Benzene	0.0	11.0	11.1	10.0	110	111	0.9
Toluene	0.0	10.6	10.8	10.0	106	108	1.9
Chlorobz (PID)	0.0	10.8	11.2	10.0	108	112	3.6

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

RPD = (MS - MSD) / (MS + MSD) x 2 x 100

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QC REPORT FOR EPA 8010/8020/EDB

Date: 10/12/96 Matrix: Water

Analyte	Concentration (ug/L) Sample (#69895)	MS	MSD	Amount Spiked	% Recovery MS	MSD	RPD
1,1-DCE	0.0	9.2	9.3	10.0	92	93	1.1
Trichloroethene	0.0	9.3	9.4	10.0	93	94	1.1
EDB	0.0	9.2	9.1	10.0	92	91	1.1
Chlorobenzene	0.0	10.7	10.6	10.0	107	106	0.9
Benzene	0.0	10.4	10.5	10.0	104	105	1.0
Toluene	0.0	10.1	10.1	10.0	101	101	0.0
Chlorobz (PID)	0.0	10.5	10.5	10.0	105	105	0.0

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

RPD = (MS - MSD) / (MS + MSD) x 2 x 100

GeoAnalytical Laboratories, Inc.

1405 Kansas Avenue
Modesto. CA 95351

Phone (209) 572-0900
FAX (209) 572-0916

CERTIFICATE OF ANALYSIS

Ferrous Iron /w

Report # H284-01
McCampbell Analytical
110 2nd Avenue #D7
Pacheco CA 94553

Date of Report: 10/15/96
Date Received: 10/10/96
Date Started: 10/10/96
Date Completed: 10/14/96

Project Name: HC-SA

Project # 7366

Sample ID	Lab ID	Detection Limit	Method	Analyte	Results	Units mg/L
MW-1	H34003	0.1	SM-3500-Fe	Ferrous Iron	ND	
		1.0	300	Nitrate	ND	
		1	300	Sulfate	ND	
MW-2	H34004	0.1	SM-3500-Fe	Ferrous Iron	ND	
		1.0	300	Nitrate	3	
		1	300	Sulfate	25	
MW-3	H34005	0.1	SM-3500-Fe	Ferrous Iron	ND	
		1.0	300	Nitrate	ND	
		1	300	Sulfate	5	
MW-4	H34006	0.1	SM-3500-Fe	Ferrous Iron	ND	
		1.0	300	Nitrate	ND	
		1	300	Sulfate	ND	
MW-5	H34007	0.1	SM-3500-Fe	Ferrous Iron	ND	
		1.0	300	Nitrate	ND	
		1	300	Sulfate	8	
MW-6	H34008	0.1	SM-3500-Fe	Ferrous Iron	ND	
		1.0	300	Nitrate	ND	
		1	300	Sulfate	6	

Ramiro Salgado
Chemist

Certification # 1157

Donna Allsup
Laboratory Director

H284-01

McCAMPBELL ANALYTICAL
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CHAIN OF CUSTODY RECORD

TURN AROUND TIME: ☐ RUSH ☐ 24 HOUR ☐ 48 HOUR ☒ 5 DAY ☐ ROUTINE

REPORT TO: Ed Hamilton BILL TO: MAI

PROJECT NUMBER: 7366 PROJECT NAME: HC-SA

PROJECT LOCATION:

SAMPLE ID	LOCATION	SAMPLING DATE	SAMPLING TIME	# CONTAINERS	TYPE CONTAINERS	MATRIX: WATER	SOIL	AIR	SLUDGE	OTHER	METHOD PRESERVED: HCL	HNO_3	ICE	OTHER	ANALYSIS REQUEST: EPA 601/8010	EPA 602/8020	EPA 608/8080	EPA 608/8080 – PCBs Only	EPA 624/8240/8260	EPA 625/8270	CAM – 17 Metals	EPA – Priority Pollutant Metals	LUFT Metals	LEAD (7240/7421/239.2/6010)	ORGANIC LEAD	RCI	OTHER: Ferrous Fe	Nitrate & Sulfate		COMMENTS
MW-1		10/8	1555		glass pint	X							X														X	X	H34003	69968
MW-2			1455		"	X							X														X	X	H34004	69969
MW-3			1416		"	X							X														X	X	H34005	69970
MW-4			1535		"	X							X														X	X	H34006	69971
MW-5			1435		"	X							X														X	X	H34007	69972
MW-6		↓	1515		"	X							X														X	X	H34008	69973

RELINQUISHED BY:	DATE	TIME	RECEIVED BY:
Angela Rydelius	10/9/96		
RELINQUISHED BY: A. Over Night	DATE 10/10/96	TIME 9:00 AM	RECEIVED BY: Ligia Cortez BS
RELINQUISHED BY:	DATE	TIME	RECEIVED BY LABORATORY:

REMARKS: WATCH HOLD TIME!! chilled/ABS