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SUPPLEMENTAL SUBSURFACE INVESTIGATION FOR STID 553 - FORMER GRIMIT AUTO AND REPAIR 1970 SEMINARY AVENUE OAKLAND, CALIFORNIA

July 25, 1997

Prepared by

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Geology / Engineering Geology / Environmental Studies

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July 25, 1997

E-10-1B-192B
HCEnvtRpts:SeminaryOakland/7/97

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

RE: **SUPPLEMENTAL SUBSURFACE INVESTIGATION**
STID 553 - FORMER GRIMIT AUTO AND REPAIR
1970 SEMINARY AVENUE
OAKLAND, CALIFORNIA

Dear Mr. Grimit:

Enclosed is our supplemental subsurface investigation report for the property located at 1970 Seminary Avenue, Oakland, California. The report contains a description of our investigation and results of soil and ground water sample analyses. The general scope of investigation was presented in our confirming agreement/proposal dated April 21, 1997 (costs modified May 16, 1997), and our project status/investigation plan, dated May 23, 1997.

The primary purpose of this report is to document the supplemental field investigation. Tier Two RBCA evaluation will be conducted following the next scheduled round of "quarterly" ground water sampling, scheduled for September, 1997. Thus, this report does <u>not</u> include conclusions or recommendations.

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

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TRANSMITTAL

TO Alameda County Health
1131 Harbor Bay Pkwy Suite 250
Alameda CA 94502-6577

DATE 7/27/97
VIA US Mail
FAX NO. _____

ATTENTION [redacted]

PROJECT 1970 Seminary Oakland

JOB NO. E-10-13-1923

DESCRIPTION (STID -553)
July 25, 1997 Report

Number of pages, including cover page, if FAX _____

COMMENTS _____

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- ✓ As requested
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COPY TO D-Grimit

BY David F. Hoexter

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

Rev. 7/6/93

SUPPLEMENTAL
SUBSURFACE
INVESTIGATION

For

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

To

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

Prepared by:

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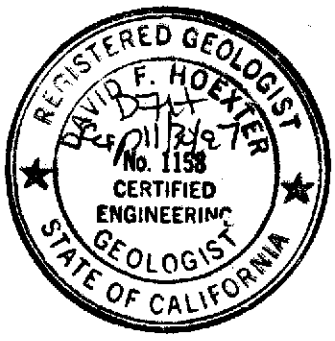
Palo Alto, California 94303

July 25, 1997



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

EXECUTIVE SUMMARY

Three supplemental ground water monitoring wells were installed, to provide additional information for a planned ASTM RBCA Tier Two evaluation. The three new and six pre-existing wells were sampled for selected parameters. The analyses, as discussed in the report, indicate variably elevated levels of petroleum hydrocarbons and halogenated volatile organic compounds. Ground water flow is also variable, with "shallow" ("perched") ground water flow nearly diametrically opposed in direction to "deeper" ground water flow.

Various physical parameters were also evaluated. The results are presented herein.

An additional round of well sampling and water level measurements is planned for September, 1997. This will be followed by ASTM RBCA Tier Two evaluation of the site. Thus, this report does not contain conclusions or recommendations.

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STID #553
FORMER GRIMIT AUTO AND REPAIR
1970 SEMINARY AVENUE
OAKLAND, CALIFORNIA

1.0 INTRODUCTION

This report presents the results of a supplemental subsurface investigation of soil and ground water quality at the former Grimit Auto and Repair site, located at 1970 Seminary Avenue, Oakland, California. The project location is shown on the Site Location Map, Figure 1. This investigation has been conducted in response to requirements for additional subsurface investigation by the Alameda County Health Care Services Agency, specifically a letter to the property owner, Doyle Grimit, dated March 11, 1997.

The scope of services generally provided during this investigation consisted of collecting and analyzing soil and ground water samples from six pre-existing and three newly installed ground water monitoring wells. The soil and ground water samples were variously analyzed for total petroleum hydrocarbons as gasoline (TPH-G) and for purgeable aromatic compounds (BTEX) and MTBE; for petroleum oil; for halogenated volatile organic compounds; and for semi-volatile organic compounds (SVOC). Physical testing of parameters required for ASTM RBCA Tier Two evaluation was also conducted. Sampling locations and site layout are shown on Figure 2, Site Plan.

The scope of work was presented in our project status/investigation plan, dated May 23, 1997, verbally approved by Alameda County Health on May 28, 1997. The general scope of work was also approved by the State Water Resources Control Board, UST Cleanup Fund, in its cost pre-approval letter to the owner, dated May 20, 1997.

The primary purpose of this report has been to document the supplemental field investigation. Tier Two RBCA evaluation will be conducted following the next scheduled round of ground water sampling, scheduled for September, 1997. Thus, this report does <u>not</u> include conclusions or recommendations.

2.0 BACKGROUND

A detailed background description is included in our April 22, 1996 report. The project site is located at 1970 Seminary Avenue, at the southern corner of the Seminary Avenue - Harmon Avenue intersection, in Oakland, Alameda County, California. The immediate site vicinity is primarily residential. The site is currently utilized as an automotive repair facility. The property is owned by Mr. Doyle Grimit, and is leased to the repair facility.

The site is approximately 50 by 100 feet in plan dimension. Three former gasoline and one former waste oil tank were removed in 1989. Fuel has not been dispensed since that time. One inactive hydraulic lift remains at the the site within the service building.

Three exploratory borings and one monitoring well (MW-1) were installed by Kaldveer Associates in August, 1990 (report dated September 28, 1990). The well was sampled once by Kaldveer. Limited soil excavation was subsequently conducted at the location of the former waste oil tank. Hoexter Consulting subsequently sampled the well three times. In January and February, 1994, Hoexter Consulting conducted further subsurface investigation, including installation of two additional wells. Additional monitoring was followed by a supplemental investigation conducted in March, 1996, which included four soil borings and three additional monitoring wells. The following report (April 22, 1996) included a preliminary ASTM RBCA Tier One evaluation of the data. The referenced May 15, 1996 Alameda County letter followed and commented upon the April, 1996 subsurface investigation report.

More recently, a preliminary evaluation of remedial action alternatives was conducted, and a report issued July 28, 1996. The evaluation report recommended supplemental ground water contaminant plume definition and further soil source delineation, followed by preparation of a remedial action feasibility study, development of a corrective action plan, and initiation of soil / ground water remediation. Finally, two additional quarterly ground water sampling events occurred, reported on October 21, 1996 and January 28, 1997.

The previous subsurface investigations indicated complex soil and ground water conditions consisting of interbedded discontinuous relatively thin lenses of silty and clayey sediments, with relatively limited deposits of "clean" sand or gravel. Based on the investigations, there are two connected and overlapping ground water contamination zones, a "perched" or shallow zone ranging from 7 to 13 feet, and a deeper zone of from 20 to 30 feet. Based on well development and purging data, the strata yield relatively low volumes of water, and there is poor conductivity between strata. There are also two depth zones of soil contamination; shallower soils, to approximately 15 feet depth, are generally more highly contaminated than deeper soils, which are primarily saturated.

Based on our investigations, contamination consists of gasoline (TPH-G), purgeable aromatic compounds (BTEX), and halogenated volatile compounds (HVOC), particularly PCE, TCE, and DCE. The data are summarized in this report (Tables 2 and 3). BTEX and individual HVOC levels exceed California MCLs, and the ASTM RBCA Tier 1 analysis indicates that screening levels (see following discussion) are exceeded for soil volatilization to the air, soil and ground water vapor intrusion to buildings, and ground water ingestion.

On February 15, 1997, Hoexter Consulting issued its "Corrective/Interim Remedial Action Plan" for the site. Prior to initiating the recommended remediation, the Alameda County Health Department requested that Hoexter Consulting install the additional monitoring recommended in the report, and then conduct addition, Tier Two, RBCA analysis. The current report documents the supplemental investigation.

3.0 SCOPE OF SERVICES

The work performed during this investigation consisted of the following tasks:

1. Review of previous investigations and information on the site.

2. Site reconnaissance to locate monitoring well and exploratory boring locations and utilities.

3. Discussions with the property owner, and with the Alameda County Health Department and State Underground Storage Tank Fund representatives.

4. Preparation of a brief work plan.

5. Drilling of three exploratory borings with a truck-mounted auger rig, to a maximum drilled depth of 32 feet and sampled depth of 30 feet, for soil and ground water sample collection. Conversion of the borings to ground water monitoring wells. Sampling of six previously installed monitoring wells. Development, and subsequent sampling of the three newly installed monitoring wells. Water samples were obtained by using a polyethylene bailer in the developed and purged monitoring wells). Surveying of well head elevations.

6. Analysis of soil and ground water samples by contract analytical and geotechnical laboratories.

7. Brief evaluation of the data and preparation of this report.

8. Conclusions and recommendations are **not** included in this report (see text, Sections 1 and 8).

4.0 FIELD INVESTIGATION

4.1 Monitoring Well and Exploratory Boring Rationale

The three supplemental monitoring wells were intended to provide supplemental ground water gradient and quality information. The wells complemented the two previously installed sets of variable depth wells (approximately 20 and approximately 30 to 35 feet). Well MW-7 (32 feet) is located down-gradient of the source area. Well MW-8 (20 feet) is in the apparent up-gradient direction of the shallow (perched?) ground water, and well MW-9 (20 feet) is in the apparent down-gradient direction of the shallow ground water.

4.2 Drilling and Sampling

The field investigation was conducted on June 17, 1997. The borings and wells were completed by Exploration GeoServices of San Jose, California. The driller holds a valid C-57 contractor's license. The monitoring well permits issued by the Alameda County, Zone 7 Water Agency are included in Appendix A.

The investigation consisted of drilling a total of three soil borings at the approximate locations shown on Figure 2, and the completion of each of the borings as monitoring wells. The wells are identified as MW- 7, MW-8, and MW-9.

The borings were drilled with a conventional hollow stem auger drill rig, equipped with 8-inch diameter hollow stem augers. Soils encountered during drilling were classified in the field by our geologist by visual examination, in accordance with the Unified Soil Classification System. A log of the borings and monitoring well completion is presented in Appendix A.

Soil samples were collected with a two-inch diameter Modified California type split spoon sampler at three to five-foot intervals to the total depth drilled. The samples were retained in stainless steel tubes (liners). The sampler was driven with a standard 140-pound hammer falling 30 inches. The number of blows required to drive the sampler the final 12 inches of an 18-inch drive, or the actual distance driven if less than 18 inches, is recorded as the penetration resistance (blows/foot) on the boring logs. The samples were examined for logging, sealed with teflon tape and teflon lids, secured with "duct tape", labeled and immediately placed in refrigerated storage. A chain-of-custody form was initiated in the field and accompanied the samples to the analytical laboratory.

The augers were steam-cleaned prior to drilling and between borings. The sampler was thoroughly cleaned with an "Alconox" / tri-sodium phosphate (TSP) solution between samples, to reduce the potential for cross-contamination.

4.3 Well Construction Details

Details of the well installation are included in Appendix A, along with the boring log for the well. Well construction commenced immediately following the drilling and sampling of each boring.

Well MW-7 was completed to approximately 32 feet below the ground surface. Wells MW-8 and 9 were completed to approximately 20 feet below the ground surface. MW-7 was completed with 22 feet of 0.01 inch slotted Schedule 40 PVC well screen packed with 2/16 washed RMC Lonestar sand filter material. The sand was placed to approximately one foot above the top of the perforations. The well seal consisted of 12-inches of 3/8-inch, hydrated bentonite pellets added to the top of the filter pack, and then filling the

remaining annular space with a Portland cement grout mixture. MW-8 and MW-9 were similarly completed, with 15 feet of slotted casing. All three wells were completed at the ground surface with a locking cap and traffic-rated water-tight box, standing slightly above grade.

4.4 Well Development

Well development was performed on June 20, 1997. The well development utilized a tight-fitting surge block on a rod followed by rapid bailing and pumping, to efficiently remove sediment through the sand pack and casing, and from the well.

4.5 Well Sampling

The caps of all nine wells were loosened on June 20, 1997, to allow the water levels in the wells to equilibrate. Depth to ground water was then measured on the morning of June 23, 1997, utilizing an electronic well sounder. The wells were subsequently purged and sampled by our staff. Those wells which equilibrated to approximately 80 per cent of their initial water level were sampled June 23, 1997; the remaining wells were sampled on June 25, 1997. Two of the remaining wells (MW-3 and MW-9) had recovered to less than 80 per cent on June 23. At the apparent rate of recovery, several additional days would have been required for 80 per cent recovery, and thus they were sampled with less recovery than desired. A new, disposable polyethylene bailer was used to purge and sample each well.

Prior to purging, a sounding with the bailer for floating product was conducted. A thin sheen of oil was noted on the initial MW-1 bail. Four casing volumes of water were then purged from the well with the bailer prior to sampling. Temperature, pH and conductivity were monitored while each well volume was purged. Ground water samples were collected from the well with the bailer following the purging. The samples were decanted into laboratory-supplied containers, labelled and placed in refrigerated storage immediately after sampling.

The samples were delivered under chain of custody control to the laboratory on the same day following sampling. Purge water collected during the well sampling was held for appropriate disposal. Well purge and sampling logs are attached to this report as a part of Appendix C.

The well development and sampling equipment were cleaned with a TSP and "Alconox" solution, and rinsed with water, and then purified water.

4.6 Surveying

The wells were surveyed on June 20, 1997 (City Oakland datum) by Anders P. Deak, California Licensed Land Surveyor 4739. The elevation data are summarized on Table 1, and a copy of the well elevation survey is included in Appendix A.

4.7 Subsurface Conditions

Based on the current and previous investigations, the site is underlain by relatively thinly lensed sediments of limited lateral extent. Silty and clayey deposits predominate, with relatively limited deposits of "clean" sand or gravel. Typical stratigraphic cross sections from previous indications are presented in our April 22, 1996 report.

The attached boring logs and related information Appendix A depict location-specific subsurface conditions encountered during our field investigation. The approximate

locations of the monitoring wells were determined by taping and should be considered accurate only to the degree implied by the method used. The passage of time could result in changes in the surface or subsurface conditions due to natural occurrences or human intervention.

Petroleum hydrocarbon odors were observed in each well.

Ground water was initially noted at varying depths below the ground surface. Apparently perched ground water was encountered during drilling at a depth of approximately five to six feet in well MW-8, located within the backfill of the former waste oil UST. Following well development, stabilized ground water was measured at approximately the same depth. Water was not encountered during drilling in the similarly completed well MW-9, and following well development, stabilized at a depth of approximately 17 feet.

4.8 Ground Water Flow

Well-top elevations were surveyed to the City of Oakland datum and ground water levels were measured in each well using the top of 2-inch PVC casing (north side) as reference point. 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 ("deeper" wells).

Stabilized ground water levels within all nine wells were measured on June 23, 1997. The ground water data indicate an apparent gradient direction to the northwest (N 44 W), with an approximate gradient of 0.24 foot per foot, in the "shallow" water bearing zone. The data indicate an apparent gradient direction to the east southeast (S 68 E), with an approximate gradient of 0.07 foot per foot, in the "deeper" water bearing zone.

The data indicate an apparent downward flow from the "shallow" zone to the "deeper" zone, and diametrically opposed flow directions. The flow gradients are steeper than would be anticipated for a site in this setting. The wells were able to ventilate, and thus equilibrate, for three days. The measured levels were verified. The ground water data and interpreted results will be repeated and verified in September, 1997, prior to conducting the planned ASTM RBCA Tier Two evaluation.

5.0 ANALYTICAL TEST RESULTS

5.1 Laboratory Procedures

The samples were variously analyzed for the following:

- Total petroleum hydrocarbons as gasoline (TPH-G) using EPA Method 5030/8015.
- Purgeable aromatic compounds (BTEX) and methyl tert-butyl ether (MTBE) using EPA Method 8020.
- Halogenated volatile organic compounds (HVOC) by EPA Method 8010.
- Oil and grease (total recoverable petroleum, TRPH) using SM 5520B/F, gravimetric with cleanup.
- Polynuclear aromatic hydrocarbons (PNA or PAH), by EPA Method 8270A.

Most of the soil and ground water samples were analyzed by McCampbell Analytical of Pacheco, California The PNA testing was subbed to Chromalab, of Pleasanton, California. Both laboratories are certified by the State of California Environmental Protection Agency for the requested analyses.

5.2 Analytical Results

5.2.1 Soil Samples

Results of the soil sample analyses are presented on Tables 2A and 2B, and the laboratory reports are attached to this report as Appendix B. Two samples were tested, both from a depth of approximately nine feet, and both from near the source area.

The test results indicated that gasoline ranged from non-detect (MW-7) to 71 mg/kg (milligrams per kilogram, or ppm) (MW-8), with equivalent levels of BTEX and MTBE compounds. Oil and grease was not detected in MW-7; oil and grease was detected at a concentration of 2400 ppm in the MW-8 sample, obtained from within the former waste oil tank location. However, HVOC concentrations were relatively low, ranging from non-detect to a maximum of 1.5 ppm PCE.

5.2.2 Ground Water Samples

Results of the ground water sample analyses from are presented on Tables 3A, 3B, and 3C, and the laboratory reports are attached to this report as Appendix C. Samples from all nine wells were variously analyzed for the above-referenced analyses. During the two previous sampling events, analysis of dissolved oxygen, ferrous iron, nitrate, and sulfate was conducted. These compounds were not tested for during the current sampling round.

The ground water data results are highly variable, both between wells and from the previous, January, 1997 sampling event to the current event. For example, gasoline, MTBE and BTEX were not detected in the MW-3 sample; previous results ranged from non-detect (initial sampling) to 2300 ppb gasoline. Conversely, gasoline, MTBE and BTEX increased sharply in MW-5. Elevated levels of gasoline continued to be present in MW-1 (40,000 ppb) and MW-4 (6200 ppb), and were observed in the new MW-7, as well. Elevated levels of gasoline were also noted in the new well MW-9, 32,000 ppb.

HVOC levels were similar to previous sample rounds, with no clear indicated trend. One sample for analysis of polynuclear aromatic compounds (PNA) was obtained from well MW-1. This was the first analysis for PNAs at the site. This well historically exhibits the most elevated contaminant levels. Phenanthrene and naphthalene were identified in this sample, at concentrations of 12 and 2200 ppb, respectively.

6.0 PHYSICAL TEST RESULTS

6.1 Laboratory Procedures

Two representative soil samples were tested for various physical parameters. The samples were tested by Cooper Testing Laboratory, of Mountain View, California. The samples were tested for organic carbon content; water content; bulk density; and porosity. Results of the tests will be used in the planned ASTM RBCA Tier Two evaluation.

6.2 Test Results

Results of the soil sample tests are presented on Table 4, and the laboratory reports are attached to this report as Appendix D. The samples are from a depth of approximately eight feet at representative locations, one near the source area (MW-7) and one along Seminary Avenue (MW-9).

Organic carbon ranged from 2.1 to 2.9 per cent, averaging 2.5 per cent. Water content ranged from 15.6 to 18.3, averaging 17.0 per cent. Bulk density (equivalent to dry density) ranged from 113.3 to 118.5 per cent, averaging 115.9 pounds per cubic foot. Porosity ranged from 30.0 to 33.8 per cent, averaging 31.9 per cent.

7.0 DISCUSSION

The purpose of this subsurface investigation was to obtain representative soil and ground water samples, and to analyze these samples for the compounds apparently introduced to the site during its operation as a gasoline station. Samples were obtained from six existing and three new monitoring wells. The monitoring wells were placed in representative locations to obtain both soil and ground water samples.

The previous subsurface investigations indicated complex soil and ground water conditions consisting of interbedded discontinuous relatively thin lenses of silty and clayey sediments, with relatively limited deposits of "clean" sand or gravel. Based on the previous investigations, and verified by the current study, there are two interconnected ground water contamination zones, a "perched" or shallow zone ranging from 7 to 13 feet, and a deeper zone of from 20 to 30 feet. Based on well development and purging data, the strata yield relatively low volumes of water, and there is poor conductivity between strata. There are also two depth zones of soil contamination; shallower soils, to approximately 15 feet depth, are generally more highly contaminated than deeper soils, which are primarily saturated.

In general, the analytical test results and our field observations indicated that elevated levels of petroleum hydrocarbons and HVOC are present at the site within all nine wells, to various degrees. These compounds are present at particularly elevated concentrations in the wells located near the former gasoline and waste oil USTs. Of particular note in relation to the three new wells was that the level of detected gasoline was much greater in the "deeper" MW-7 than the nearby "shallow" MW-8. Also of note was the apparent elevated gasoline detected in MW-9, a "shallow" well with a very low water level and very slow recovery time from purging.

The investigation included first-time analysis for PNAs. Two PNAs, phenanthrene and naphthalene, were detected. These compounds commonly occur in oil, which is present in this well.

As discussed briefly in Section 4.8 and in previous reports, ground water elevations and gradient direction vary greatly between the "shallow" and "deeper" wells. Thus, there appear to be two ground water zones. However, there is no obvious continuous aquitard to separate the two zones; rather, ground water is most likely present primarily in discontinuous lenses of relatively more permeable strata within less permeable sediments. Based on the very slow recovery time for wells following purging, the strata are most likely of overall low permeability.

8.0. CONCLUSIONS AND RECOMMENDATIONS

The purpose of this investigation has been to obtain supplemental information for the planned ASTM RBCA Tier Two evaluation. Conclusions and recommendations will be included with the planned RBCA Tier Two evaluation report, which will be prepared subsequent to the next scheduled (September, 1997) "quarterly" ground water sampling round.

9.0 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.

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

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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 ("deep")			
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
1/15/97		13.34	23.63
6/23/97	36.99	19.91	17.08
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
MW-3 ("shallow")			
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
1/15/97		6.23	30.71

Table 1 continued following page

Table 1 continued

Well Number and Date of Measurement	Reference Elevation (2)	Depth to Water	Relative Ground Water Elevation (2)
MW-3 (cont')			
6/23/97	36.94	9.65	27.29
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	15.57
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	36.77	21.91	14.86
MW-6 ("shallow")			
3/25-26/96	36.42	8.52	27.90
10/7/96		12.82	23.60
1/15/97		7.72	28.70
6/23/97	36.42	11.42	25.00
MW-7 ("deep")			
6/23/97	36.83	19.93	16.90
MW-8 ("shallow")			
6/23/97	36.55	5.74	30.81
MW-9 ("shallow")			
6/23/97	36.70	17.04	19.66

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 2A

SOIL

SUMMARY OF ANALYTICAL TEST RESULTS - PETROLEUM HYDROCARBONS

(Results reported in parts per **million**, mg/kg) (1) (2)

Sample	TPH-Gasoline	Benzene	Toluene	Ethyl-Benzene	Xylenes	Oil and Grease/MD	HVOC
Initial UST Removal Confirmation Testing							
Gasoline USTs							
South tank	22	ND	ND	ND	ND	NA	NA
South tank	ND	ND	ND	ND	ND	NA	NA
Center tank	20	ND	0.031	ND	0.200	NA	NA
North tank	ND	0.068	ND	ND	ND	NA	NA
	21	2.4	2.9	0.320	1.7	NA	NA
Waste Oil UST							
1	NA	0.093	0.510	0.480	1.7	5500/760 (6)	**ND**
2	NA	0.160	0.400	0.810	2.4	7200/460 (6)	**ND**
Previous Kaldveer Investigation							
EB-1							
16.0	4	NA	NA	NA	NA	NA	NA
21.0	0.5	NA	NA	NA	NA	NA	NA
26.0	50	NA	NA	NA	NA	NA	NA
EB-2							
10.0	NA	NA	NA	NA	NA	4,200	NA
16.0	NA	NA	NA	NA	NA	ND	NA
EB-3							
10.0	NA	NA	NA	NA	NA	2,800	NA
16.0	NA	NA	NA	NA	NA	150	NA

Table continued following page

Table 2 continued

Sample	TPH-Gasoline	Benzene	Toluene	Ethyl-Benzene	Xylenes	Oil and Grease	HVOC
Waste Oil Tank Overexcavation Confirmation Testing							
1 (south side)	190	ND	ND	0.58	1.3	15,000/2700	NA
2 (west side)	ND	ND	ND	ND	ND	9,800 1,200/61	NA
3 (east side)	4.4	ND	ND	0.0083	0.021	890 11,000/4400	NA
4 (north side)	12	0.0042	ND	0.0091	0.021	7,500 410/250	NA
5 (west floor)	270	ND	3.5	1.3	ND	230 5,500/670	NA
6 (east floor)	260	ND	ND	1.2	2.5	3,700 3,500/680	NA
Stockpile	11	0.0031	ND	0.044	0.094 1,000	2,200 1,500/710	
Initial Hoexter Investigation							
MW-2							
10.5-11.0	910	ND	0.76	4.2	6.1	38	NA
16.0-16.5	ND	ND	0.022	ND	ND	ND	NA
20.5-21.0 25.5-26.0 (3)	ND	ND	ND	ND	ND	ND	NA
MW-3							
10.5-11.0	ND	ND	0.020	ND	ND	ND	NA
20.5-21.0	1.2	0.17	0.047	ND	0.085	NA	NA
April, 1996 Hoexter Investigation							
EB-4							
7.5-8.0	300	ND	ND	3.3	8.3	820	**ND**
14.5-15.0	63	ND	ND	ND	0.82	3600	**Det** (5)
EB-5							
3.5-4.0	ND	ND	ND	ND	ND	NA	NA
7.5-8.0	130	ND	ND	0.55	1.3	NA	NA
12.5-13.0120	ND	ND	0.84	1.4	NA	NA	
18.0-18.5 19.5-20.0 (3)	4.5	0.025	0.015	0.028	0.078	240	**Det** (5)
EB-7							
9.0-9.5	ND	ND	ND	ND	ND	ND	NA
14.0-14.5ND	ND	ND	ND	ND	NA	NA	
20.0-20.5 23.0-23.5 (3)	130	ND	0.38	1.9	2.9	620	**ND**

Table continued following page

Table 2 continued

Sample	TPH-Gasoline	MTBE	Benzene	Toluene	Ethyl-Benzene	Xylenes	Oil and Grease	HVOC
MW-4								
16.0-16.5	13	NA	0.038	0.015	ND	0.023	NA	NA
26.0-26.5								
31.0-31.5 (3)	68	NA	0.21	0.092	0.15	0.39	190	NA
36.0-36.5	5.4	NA	ND	0.008	0.015	0.011	NA	NA
MW-5								
11.0-11.5	9.7	NA	ND	0.019	ND	0.038	NA	NA
21.0-21.5	ND	NA	ND	ND	ND	ND	NA	NA
21.0-21.5								
35.5-36.0 (3)	NA	NA	NA	NA	NA	NA	ND	NA
MW-6								
11.0-11.5								
16.0-16.5 (3)	10	NA	0.037	0.033	0.18	0.46	ND	NA
MW-7								
9.0-9.5	ND	ND	ND	ND	ND	ND	ND	**Det** (5)
MW-8								
9.0-9.5	71	ND	0.095	0.087	0.13	0.28	2400	**Det** (5)

Notes to Table 2A

(1) ND = non-detect
(2) NA = not applicable
(3) Composite
(4) Chromatogram patterns/comments
    G - gas
    WG - weathered gas
    NGM - non-gas mix, > C9
    NDM - non-diesel mix, generally C7 - C12/13
(5) Detected: see Table 2B
(6) TOG/Motor Oil

TABLE 2B

SOIL

SUMMARY OF ANALYTICAL TEST RESULTS - HALOGENATED VOLATILE ORGANIC COMPOUNDS

(Results reported in parts per **million**, mg/kg) (1) (2)

Sample	CA	1,2 DCB	1,2 DCA	cis 1,2 DCE	trns 1,2 DCE	1,2 DCP	PCE	TCE	VCL
EB-4									
7.5-8.0	ND	ND	ND	ND	ND	ND	ND	ND	ND
14.5-15.0	ND	1.7	ND	ND	ND	ND	1.8	0.82	ND
EB-5									
18.0-18.5									
19.5-20.0 (3)	ND	ND	ND	ND	ND	ND	0.52	ND	ND
EB-7									
20.0-20.5									
23.0-23.5 (3)	ND	ND	ND	ND	ND	ND	ND	ND	ND
MW-7									
9.0-9.5	ND	ND	ND	ND	ND	ND	ND	0.0081	ND
MW-8									
9.0-9.5	ND	0.055	ND	0.031	ND	ND	1.5	0.22	ND

Notes to Table 2B

(1) ND = non-detect
(2) NA = 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 DCP	1,2 Dichloropropane
PCE	Tetrachloroethene (perchloroethene)
TCE	Trichloroethene
VCL	Vinyl chloride

TABLE 3A

GROUND WATER

SUMMARY OF ANALYTICAL TEST RESULTS - PETROLEUM HYDROCARBONS (8)

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

Well and Date	TPH Gasoline	MTBE	Benzene	Toluene	Ethyl-Benzene	Xylenes	Oil & Grease HVOC (7)
MW-1 ("deep")							
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	NA	ND	5,100	5,200	23,900	16,000 (6)
9/9/94	23,000,000	NA	56,000	61,000	9,100	137,000	880,000 (6)
12/28/94	55,000	NA	3,700	5,300	1,400	5,800	83,000 (6)
4/13/95	45,000	NA	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)
6/23/97	40,000	ND<100	2300	3500	1500	6300	190,000 (5)
MW-2 ("deep")							
2/11/94	130	NA	22	1.1	5.2	7.3	ND (6)
9/9/94	1,000	NA	89	ND	ND	6.9	ND (6)
12/28/94	330	NA	100	3.8	5.4	4.7	5100 (6)
4/13/95	1300	NA	280	6.9	33	23	ND (5)
11/1/95	100	NA	9.9	ND	ND	ND	ND (5)
3/25/96	4500	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)
6/23/97	280	10	12	0.69	ND	13	NA
MW-3 ("shallow")							
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	NA	2.9	ND	61	24	ND (5)
11/1/95	1,100	NA	4.4	ND	27	22	ND (5)
3/25/96	2,300	NA	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 (5)
6/23/97	ND	ND	ND	ND	ND	ND	NA

Table continued following page

Table 3A continued

Well and Date	TPH Gasoline	MTBE	Benzene	Toluene	Ethyl-Benzene	Xylenes	Oil & Grease HVOC (7)
MW-4 ("deep")							
3/26/96	9,900	NA	4,000	40	71	100	ND (5) (7)
10/8/96	7,800	140	3,900	33	31	40	ND (5) (7)
1/16/97	4,800	84	1,900	21	2.5	27	5,200 (5)
6/23/97	6,200	160	2,800	20	20	23	ND (5)
MW-5 ("deep")							
3/26/96	1,200	NA	43	8.2	83	95	ND (5) (7)
10/8/96	6,700	190	260	92	410	370	ND (5) (7)
1/16/97	3,000	90	150	68	190	180	ND (5)
6/23/97	12,000	150	410	170	920	800	NA
MW-6 ("shallow")							
3/26/96	9,900	NA	1,000	150	470	720	ND (5) (7)
10/8/96	1,300	57	120	2.3	1.4	4.0	ND (5) (7)
1/15/97	6,500	220	570	65	170	630	ND (5)
6/23/97	3,100	100	410	16	110	140	NA
MW-7 (deep")							
6/23/97	8,700	ND<20	950	260	520	380	ND (5)
MW-8 ("shallow")							
6/23/97	610	5.9	25	1.4	4.3	2.4	ND (5)
MW-9 ("shallow")							
6/23/97	32,000	250	340	280	1,500	4,300	ND (5)
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	1750	NA

Notes to Table 3A

(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 3B

GROUND WATER

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

(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
1/16/97	NA	NA	NA	NA	NA	NA	NA	NA	NA
6/23/97	ND<2	10	4.1	130	3.7	ND<2	5.0	23	54
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
1/16/97	NA	NA	NA	NA	NA	NA	NA	NA	NA
6/23/97	ND<0.5	ND<0.5	9.7	8.0	ND<0.5	0.86	ND<0.5	9.6	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
1/16/97	NA	NA	NA	NA	NA	NA	NA	NA	NA
6/23/97	ND<0.5	ND<0.5	0.54	0.76	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
1/16/97	NA	NA	NA	NA	NA	NA	NA	NA	NA
6/23/97 (5)	3.6	21	5.3	340	10	ND<3	11	110	83
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
1/16/97	NA	NA	NA	NA	NA	NA	NA	NA	NA
6/23/97 (5)	2.0	2.1	2.0	7.2	0.71	ND<0.5	ND<0.5	ND<0.5	13
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
1/16/97	NA	NA	NA	NA	NA	NA	NA	NA	NA
6/23/97	ND<0.5	ND<0.5	1.6	10	ND<0.5	ND<0.5	ND<0.5	0.63	0.50

Continued following page

Table 3B 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-7 ("deep")									
6/23/97	0.93	1.6	ND<0.5	2.4	1.2	ND<0.5	9.8	17	1.5
MW-8 ("shallow")									
6/23/97	ND<1	5.4	ND<1	64	ND<1	ND<1	97	100	ND<1
MW-9 (shallow")									
6/23/97 (5)	ND<1	2.1	ND<1	7.4	ND<1	ND<1	3.5	1.4	ND<1
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 3B

(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 (perchloroeth
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		

(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

TABLE 3C

GROUND WATER

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

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

Well and Date	Phenanthrene	Naphthalene
MW-1 ("deep")		
6/23/97	12	2200
MCL	NA	NA

Notes to Table 3C

(1) ND = non-detect
(2) NA = not applicable

TABLE 3D

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
1/16/97	1.4	3.6	ND	ND
6/23/97	NA	NA	NA	NA
MW-2 ("deep")				
10/8/96	3.7	ND	3	25
1/16/97	5.4	0.28	3	25
6/23/97	NA	NA	NA	NA
MW-3 ("shallow")				
10/8/96	3.8	ND	ND	5
1/16/97	5.2	ND	ND	5
6/23/97	NA	NA	NA	NA
MW-4 ("deep")				
10/8/96	3.0	ND	ND	ND
1/16/97	4.7	0.75	ND	5
6/23/97	NA	NA	NA	NA
MW-5 ("deep")				
10/8/96	2.8	ND	ND	8
1/16/97	3.4	0.38	ND	9
6/23/97	NA	NA	NA	NA
MW-6 ("shallow")				
10/8/96	2.7	ND	ND	6
1/16/97	2.7	0.28	ND	8
6/23/97	NA	NA	NA	NA

Notes to Table 3D

(1) ND = non-detect
(2) NA = not applicable

TABLE 4

SOIL

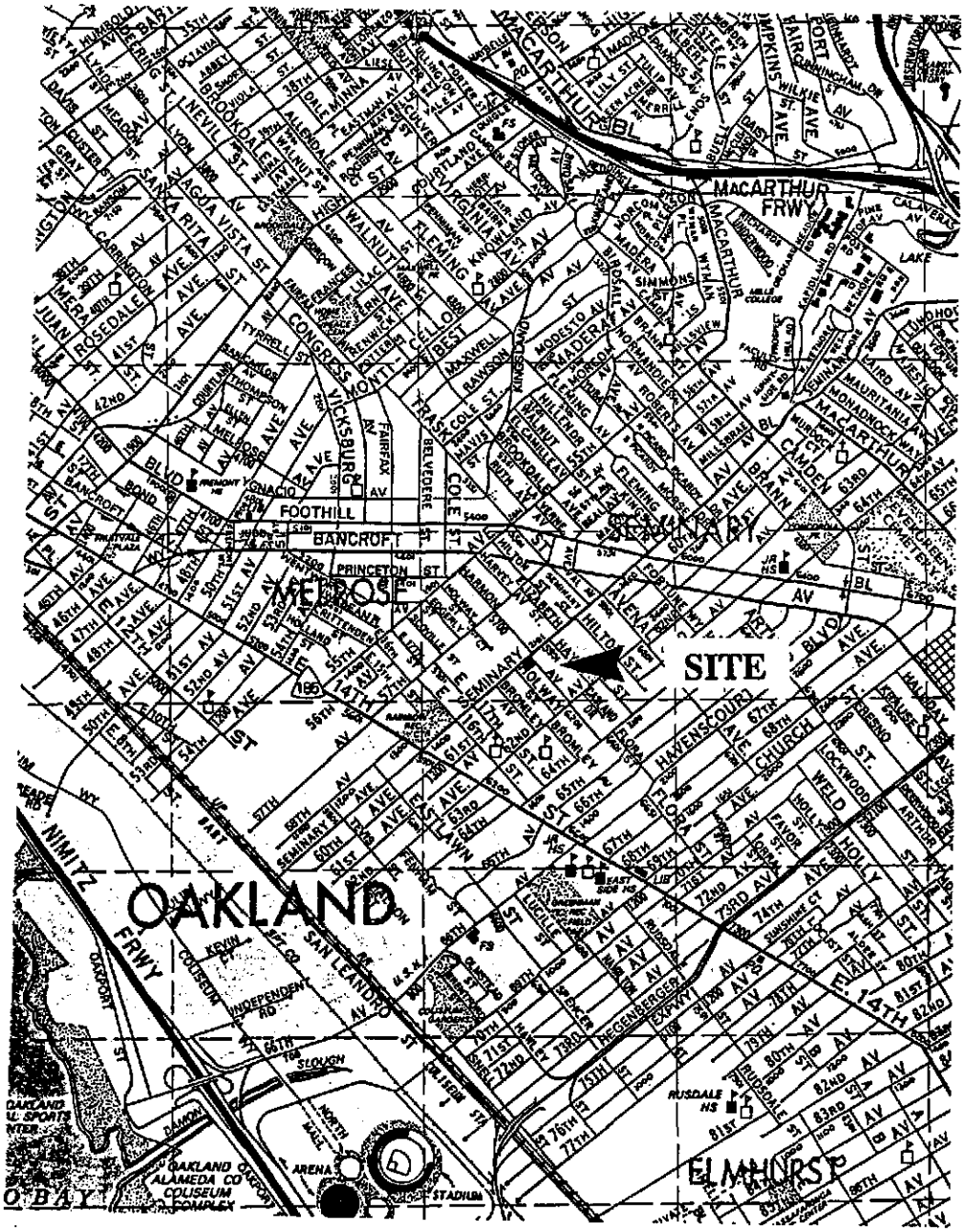
SUMMARY OF PHYSICAL TEST RESULTS

(Units as indicated)

Sample	Organic Carbon (%)	Water Content (%)	Bulk Density (pcf) (1)	Porosity (%)
MW-7				
8.0-8.5	2.9	18.3	113.3	33.8
MW-9				
8.0-8.5	2.1	15.6	118.5	30.0
Average				
Two samples	2.5	17.0	115.9	31.9

Notes

(1) pcf = pounds per cubic foot



ALAMEDA COUNTY

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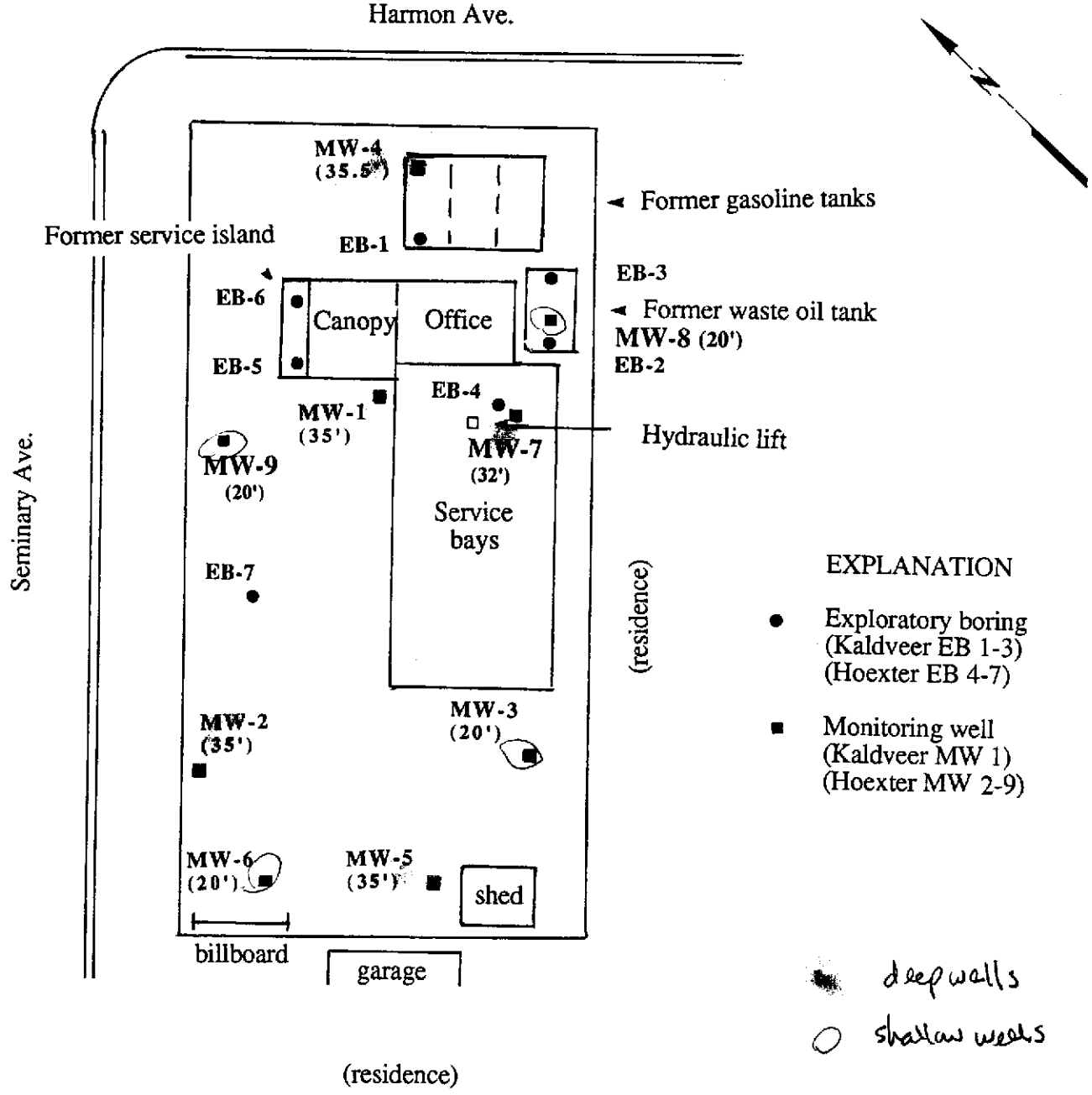
LOCATION MAP

1970 Seminary Ave.
Oakland, California

Project No.	Date	Figure 1
E-10-1B-192B	July, 1997	



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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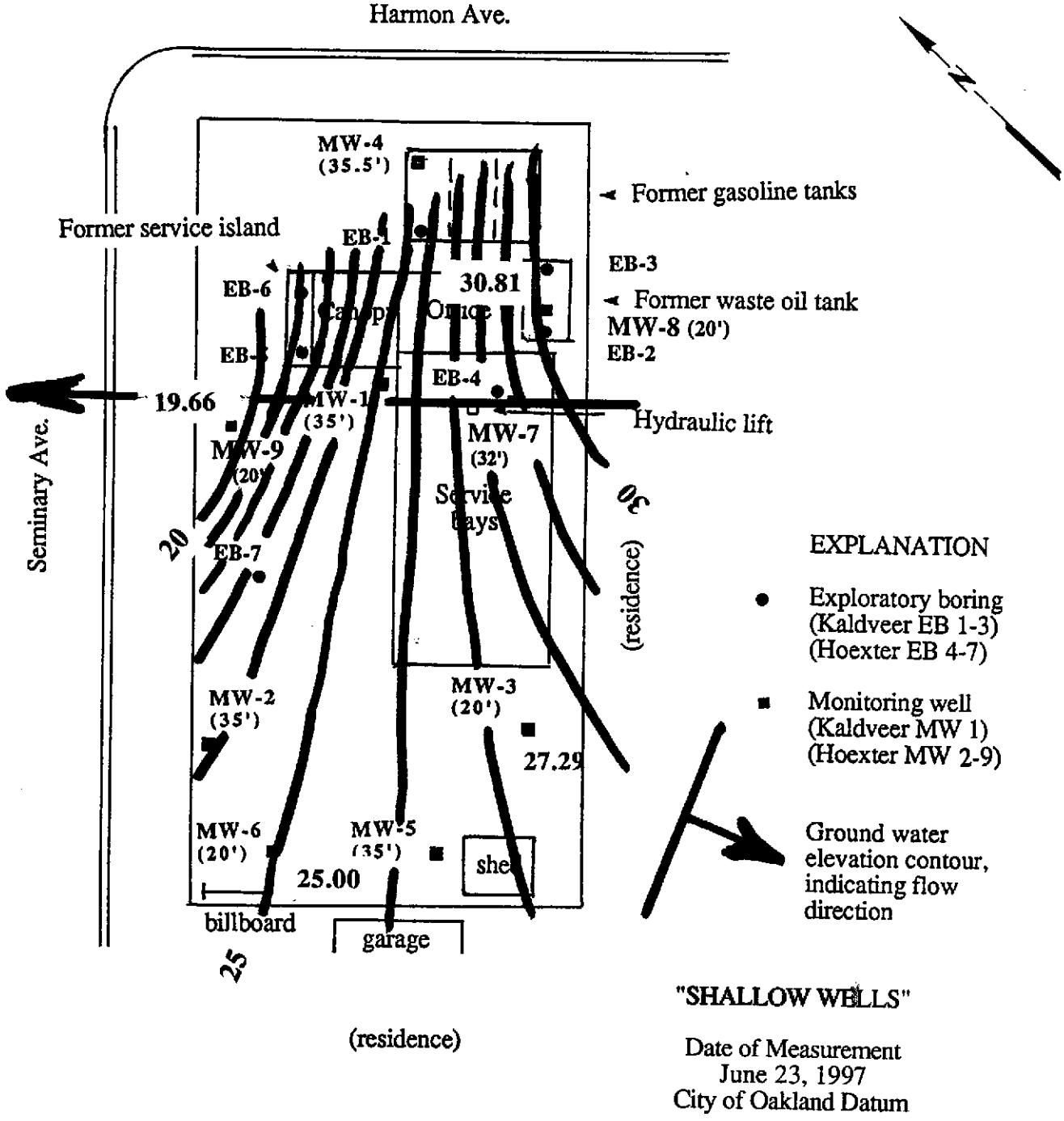
SITE PLAN

1970 Seminary Ave.
Oakland, California

Project No.	Date	Figure 2
E-10-1B-192B	July, 1997	



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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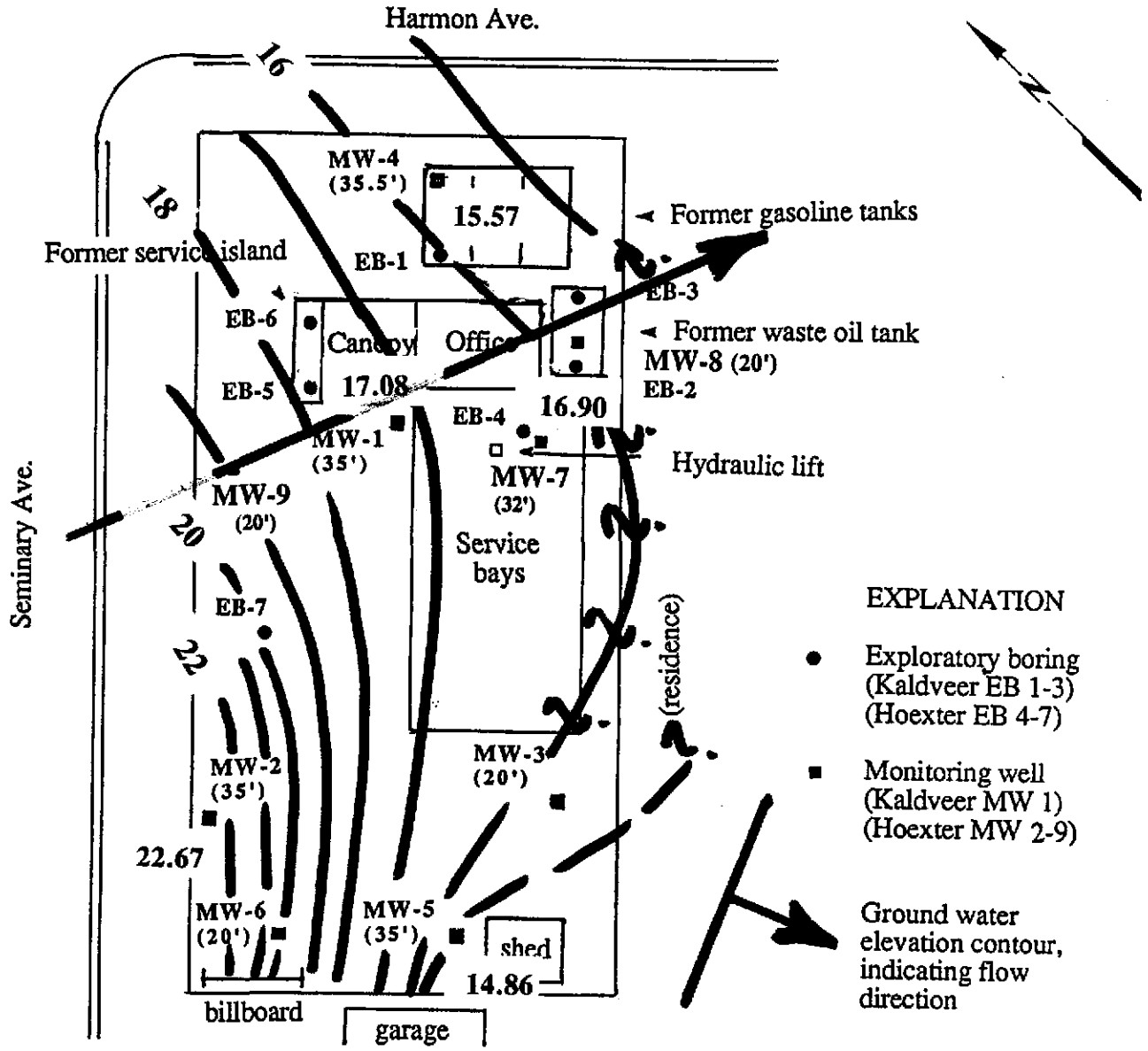
GROUND WATER CONTOUR AND GRADIENT DIRECTION MAP

1970 Seminary Ave.
Oakland, California

Project No.	Date	Figure
E-10-1B-192B	July, 1997	3A



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

HOEXTER CONSULTING
Geology
Engineering Geology
Environmental Studies

GROUND WATER CONTOUR AND GRADIENT DIRECTION MAP

1970 Seminary Ave.
Oakland, California

Project No.	Date	Figure
E-10-1B-192B	July, 1997	3B

APPENDIX A

SURVEY DATA
MONITORING WELL AND EXPLORATORY BORING PERMITS
EXPLORATORY BORING AND WELL COMPLETION LOGS
AND EXPLANATION

ZONE 7 WATER AGENCY

E-10-18-192B

5997 PARKSIDE DRIVE PLEASANTON, CALIFORNIA 94588 VOICE (510) 484-2600
FAX (510) 462-3914

DRILLING PERMIT APPLICATION

FOR APPLICANT TO COMPLETE

LOCATION OF PROJECT 1970 Seminary
Oakland CA

CLIENT
Name Doyle Grimit
Address 14366 Lark St Voice 510-357-5133
City San Leandro CA Zip 94578

APPLICANT
Name Hoexter Consulting Inc
Attn: David F. Hoexter Fax 415-494-2505
Address 734 Torreya Ct. Voice 415-494-2505 } same
City Palo Alto CA Zip 94303

TYPE OF PROJECT

Well Construction		Geotechnical Investigation	
Cathodic Protection		General	
Water Supply		Contamination	
Monitoring	X	Well Destruction	

PROPOSED WATER SUPPLY WELL USE

Domestic		Industrial		Other	
Municipal		Irrigation			

DRILLING METHOD:

Mud Rotary		Air Rotary		Auger	X
Cable		Other			

DRILLER'S LICENSE NO. 484288 (C-57) Exploration Geoservices

WELL PROJECTS

Drill Hole Diameter	8	in.	Maximum		
Casing Diameter	2	in.	Depth	35	ft.
Surface Seal Depth	5	ft.	Number	3	

GEOTECHNICAL PROJECTS

Number of Borings			Maximum		
Hole Diameter		in.	Depth		ft.

ESTIMATED STARTING DATE 6/9/97
ESTIMATED COMPLETION DATE 6/13/97

I hereby agree to comply with all requirements of this permit and Alameda County Ordinance No. 73-68.

APPLICANT'S SIGNATURE David F. Hoexter Date 5/26/97

FOR OFFICE USE

PERMIT NUMBER 97346
LOCATION NUMBER

PERMIT CONDITIONS

Circled Permit Requirements Apply

(A.) GENERAL
1. A permit application should be submitted so as to arrive at the Zone 7 office five days prior to proposed starting date.
2. Submit to Zone 7 within 60 days after completion of permitted work the original Department of Water Resources Water Well Drillers Report or equivalent for well Projects, or drilling logs and location sketch for geotechnical projects.
3. Permit is void if project not begun within 90 days of approval date.

(B.) WATER WELLS, INCLUDING PIEZOMETERS
1. Minimum surface seal thickness is two inches of cement grout placed by tremie.
2. Minimum seal depth is 50 feet for municipal and industrial wells or 20 feet for domestic and irrigation wells unless a lesser depth is specially approved. Minimum seal depth for monitoring wells is the maximum depth practicable or 20 feet.

C. GEOTECHNICAL. Backfill bore hole with compacted cuttings or heavy bentonite and upper two feet with compacted material. In areas of known or suspected contamination, tremied cement grout shall be used in place of compacted cuttings.

D. CATHODIC. Fill hole above anode zone with concrete placed by tremie.

E. WELL DESTRUCTION. See attached.

Approved Wyman Hong Date 11 Jun 97
Wyman Hong

91992

PRIMARY DIVISIONS			GROUP SYMBOL	SECONDARY DIVISIONS
COARSE GRAINED SOILS — MORE THAN HALF OF MATERIAL IS LARGER THAN NO. 200 SIEVE SIZE	GRAVELS — MORE THAN HALF OF COARSE FRACTION IS LARGER THAN NO. 4 SIEVE	CLEAN GRAVELS (LESS THAN 5% FINES)	GW	Well graded gravels, gravel-sand mixtures, little or no fines.
			GP	Poorly graded gravels or gravel-sand mixtures, little or no fines.
		GRAVEL WITH FINES	GM	Silty gravels, gravel-sand-silt mixtures, non-plastic fines.
			GC	Clayey gravels, gravel-sand-clay mixtures, plastic fines.
	SANDS — MORE THAN HALF OF COARSE FRACTION IS SMALLER THAN NO. 4 SIEVE	CLEAN SANDS (LESS THAN 5% FINES)	SW	Well graded sands, gravelly sands, little or no fines.
			SP	Poorly graded sands or gravelly sands, little or no fines.
		SANDS WITH FINES	SM	Silty sands, sand-silt mixtures, non-plastic fines.
			SC	Clayey sands, sand-clay mixtures, plastic fines.
FINE GRAINED SOILS — MORE THAN HALF OF MATERIAL IS SMALLER THAN NO. 200 SIEVE SIZE	SILTS AND CLAYS — LIQUID LIMIT IS LESS THAN 50%		ML	Inorganic silts and very fine sands, rock flour, silty or clayey fine sands or clayey silts with slight plasticity.
			CL	Inorganic clays of low to medium plasticity, gravelly clays, sandy clays, silty clays, lean clays.
			OL	Organic silts and organic silty clays of low plasticity.
	SILTS AND CLAYS — LIQUID LIMIT IS GREATER THAN 50%		MH	Inorganic silts, micaceous or diatomaceous fine sandy or silty soils, elastic silts.
			CH	Inorganic clays of high plasticity, fat clays.
			OH	Organic clays of medium to high plasticity, organic silts.
HIGHLY ORGANIC SOILS			Pt	Peat and other highly organic soils.

DEFINITION OF TERMS

U.S. STANDARD SERIES SIEVE				CLEAR SQUARE SIEVE OPENINGS				
200	40	10	4	3/4"	3"	12"		
SILTS AND CLAYS	SAND			GRAVEL		COBBLES	BOULDERS	
	FINE	MEDIUM	COARSE	FINE	COARSE			

GRAIN SIZES

SANDS AND GRAVELS	BLOWS/FOOT†
VERY LOOSE	0 - 4
LOOSE	4 - 10
MEDIUM DENSE	10 - 30
DENSE	30 - 50
VERY DENSE	OVER 50

RELATIVE DENSITY

SILTS AND CLAYS	STRENGTH‡	BLOWS/FOOT†
VERY SOFT	0 - 1/4	0 - 2
SOFT	1/4 - 1/2	2 - 4
FIRM	1/2 - 1	4 - 8
STIFF	1 - 2	8 - 16
VERY STIFF	2 - 4	16 - 32
HARD	OVER 4	OVER 32

CONSISTENCY

†Number of blows of 140 pound hammer falling 30 inches to drive a 2 inch O.D. (1-3/8 inch I.D.) split spoon (ASTM D-1586).

‡Unconfined compressive strength in tons/sq. ft. as determined by laboratory testing or approximated by the standard penetration test (ASTM D-1586), pocket penetrometer, torvane, or visual observation.

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

KEY TO EXPLORATORY BORING LOGS
Unified Soil Classification System (ASTM D-2487)

1970 Seminary Ave.
Oakland, California

PROJECT NO.	DATE	Figure
E-10-1B-192B	July, 1997	

PROJECT: 1970 Seminary Avenue, Oakland, California

BORING NO: Explanation

DATE DRILLED/LOGGED BY

TYPE OF BORING/DIAMETER

SURFACE ELEVATION

HAMMER WEIGHT

DESCRIPTION OF MATERIALS:

PID = Photoionizaton Detector

Driven sample interval (5.5-7.0'), indicating number of blows per last 12" of drive and interval retained for possible chemical analysis.

Approximate depth of contact between soil/rock types

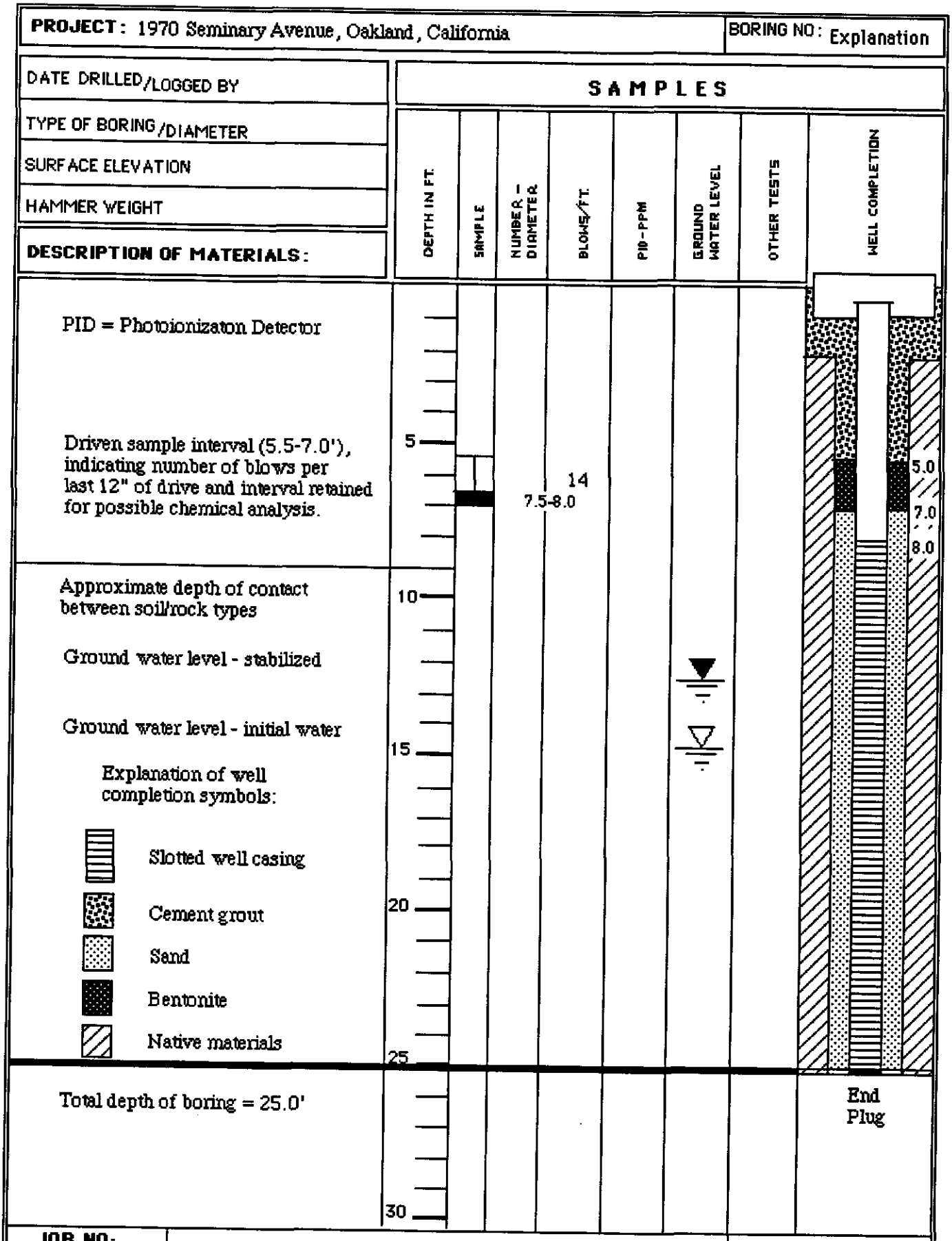
Ground water level - stabilized

Ground water level - initial water

Explanation of well completion symbols:

- Slotted well casing
- Cement grout
- Sand
- Bentonite
- Native materials

Total depth of boring = 25.0'



JOB NO: E-10-1B-192B

HOEXTER CONSULTING, INC.

FIGURE: Expl.

PROJECT: 1970 Seminary Avenue, Oakland, California | **BORING NO:** MW-7

DATE DRILLED/LOGGED BY 6/17/97/JF

TYPE OF BORING/DIAMETER 8"HSA

SURFACE ELEVATION

HAMMER WEIGHT 140 lb.

DESCRIPTION OF MATERIALS:

SAMPLES Page 1 of 2

DEPTH IN FT.	DESCRIPTION OF MATERIALS	SAMPLE	NUMBER - DIAMETER	BLOWS/FT.	PID - PPM	GROUND WATER LEVEL	OTHER TESTS	WELL COMPLETION
	Concrete - 4"							
	CL: Sandy clay, dark brown, slightly plastic, slightly damp, slight odor.				Sl. odor			
5	SM/GM: silty fine to coarse sand and sandy silty gravel, with fine to coarse sand lense, dark brown, moist, med. dense; slight to strong odor at base.			15	strong odor			
10	CL: clay, dark brown, green and black mottled, slightly moist, very stiff; slight odor.			23	sl. odor			
	GC: sandy clayey gravel to 1-1/2", brwn, dense, sl moist, sl. odor.			40	sl. odor			
15	SM: silty fine to coarse sand, brown, moist, med. dense; moderate odor; clay lenses.			22	mod. odor			
20	CH: Clay, brown and black, trace fine sand, plastic, stiff, moist; no odor.			13	no odor			
25	SC/SW: clayey sand grading to fine to coarse sand, brown to brown-gray, dense, moist to wet; slight odor.			25	sl. odor			
30	GW: see description following page.			35				

6.5

8.5

10

JOB NO: E-10-1B-192B

HOEXTER CONSULTING, INC.

FIGURE: MW-7

PROJECT: 1970 Seminary Avenue, Oakland, California

BORING NO: **MW-7**

DATE DRILLED/LOGGED BY 6/17/97/JF

TYPE OF BORING/DIAMETER 8"HSA

SURFACE ELEVATION

HAMMER WEIGHT 140 lb.

DESCRIPTION OF MATERIALS:

SAMPLES Page 2 of 2

DEPTH IN FT.	SAMPLE	NUMBER - DIAMETER	BLOWS/FT.	PID - PPM	GROUND WATER LEVEL	OTHER TESTS	WELL COMPLETION

GW: sandy gravel to 1", brown-gray, dense, wet, possible odor.

30

TD = 32' drilled, 32' sampled, 30' sampled.

35

End Plug

8/25/97

why was deep well screened 10'-32' - potential x-contam

Completed well with 2" diameter 0.010 slot casing; RMC Lonestar 2/16 washed Monterey lapis lustre sand; bentonite pellet seal; and RMC Lonestar Type I-II portland cement.

Exploration GeoServices "limited access rig"

* Two-inch Mod. CA. sampler

Note: The stratification lines represent the approximate boundaries between soil types and the transition may be gradual.

JOB NO: E-10-1B-192B

HOEXTER CONSULTING, INC.

FIGURE: MW-7

PROJECT: 1970 Seminary Avenue, Oakland, California | BORING NO: **MW-8**

DATE DRILLED/LOGGED BY 6/17/97/JF

TYPE OF BORING/DIAMETER 8"HSA

SURFACE ELEVATION

HAMMER WEIGHT 140 lb.

DESCRIPTION OF MATERIALS:

SAMPLES

DEPTH IN FT.	SAMPLE	NUMBER – DIAMETER	BLOWS/FT.	PID-PPM	GROUND WATER LEVEL	OTHER TESTS	WELL COMPLETION
GP: pea gravel backfill of waste oil UST excavation							
5							
wet						Perched in back-fill (initial and stabilized)	3.2 4.0 5.0
CL: fine sandy and gravelly clay, brown with orange and gray mottles, very stiff, moist. Slight odor			37	Sl. odor			
10			66				
GC: sandy clayey gravel, gray-brown, moist to wet at base, very dense; gravel clasts to 1-1/2"; slight odor.							
15			30	Sl. odor			
CL: clay and gravally clay, brown with gray mottles, moist and wet. Sl. odor. Gravel max. 5%.				Sl. to no odor			
20			24				
TD = 20'							End Plug
25							
30							

Completed well with 2" diameter 0.010 slot casing; RMC Lonestar 2/16 washed Monterey lapis lustre sand; bentonite pellet seal; and RMC Lonestar Type I-II portland cement.

Exploration GeoServices "limited access rig"

* Two-inch Mod. CA. sampler

Note: The stratification lines represent the approximate boundaries between soil types and the transition may be gradual.

JOB NO: E-10-1B-192B

HOEXTER CONSULTING, INC.

FIGURE: MW-8

PROJECT: 1970 Seminary Avenue, Oakland, California | BORING NO: **MW-9**

DATE DRILLED/LOGGED BY 6/17/97/JF

TYPE OF BORING/DIAMETER 8"HSA

SURFACE ELEVATION

HAMMER WEIGHT 140 lb.

DESCRIPTION OF MATERIALS:

SAMPLES

DEPTH IN FT.	SAMPLE	NUMBER – DIAMETER	BLOWS/FT.	PID-PPM	GROUND WATER LEVEL	OTHER TESTS	WELL COMPLETION

Asphalt, approx. 2"

CL/CH: locally silty and gravelly clay, dark brown, mod. plastic, sl. damp, stiff. No odor.

GC: clayey angular gravel, brown, damp; angular clasts; dense to very dense. No odor.

CL/ML: sandy silt and fine sandy silty clay, brown mottled orange and gray, damp, no odor.

SM: silty fine to coarse sand, brown, dense, sl. moist, no odor.

CL: clay and sandy clay, brown to brown-gray at base, stiff, damp; slight to moderate odor at base.

SP: sand, brown-gray, med. dense, moist, moderate odor.

5 — 60 — No odor

10 — 23 — No odor

55 — No odor

15 — 26 — Sl. odor

20 — 15 — Mod. odor

No wtr. at time of drilling

2.0

4.0

5.0

End plug

TD = 20'

Exploration GeoServices "limited access rig"

* Two-inch Mod. CA. sampler

Note: The stratification lines represent the approximate boundaries between soil types and the transition may be gradual.

25

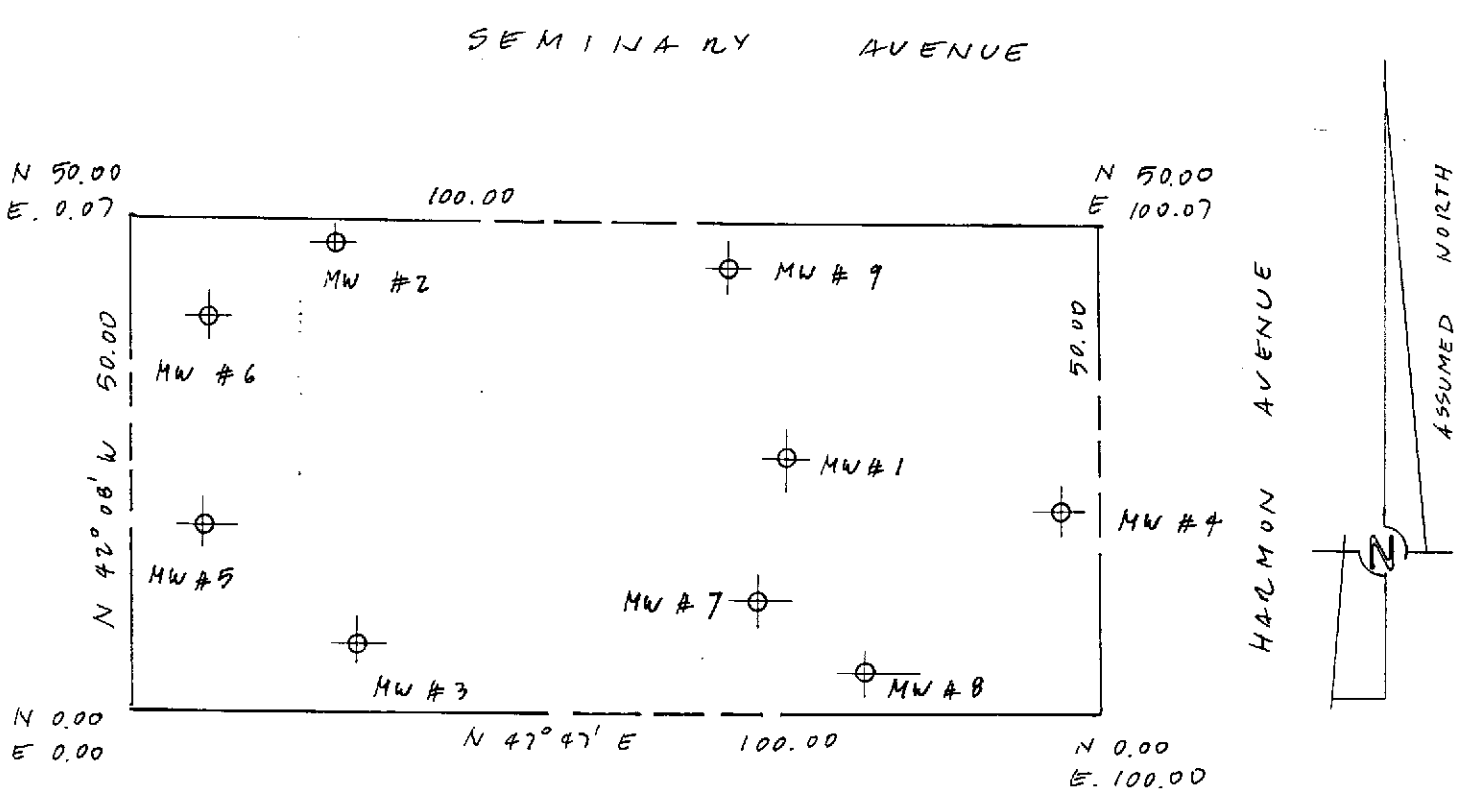
30

Completed well with 2" diameter 0.010 slot casing; RMC Lonestar 2/16 washed Monterey lapis lustre sand; bentonite pellet seal; and RMC Lonestar Type I-II portland cement.

JOB NO: E-10-1B-192B

HOEXTER CONSULTING, INC.

FIGURE: MW-9



NO	N	E	RIM EL.	CASING EL.	
MW-1	26.69	66.31	37.31	36.99	
MW-2	48.75	21.25	36.70	36.40	
MW-3	7.26	22.82	37.30	36.94	
MW-4	21.31	94.52	36.97	36.47	
MW-5	19.83	7.39	37.15	36.77	
MW-6	40.31	8.21	36.76	36.42	
MW-7	11.85	64.57	37.25	36.83	
MW-8	4.10	75.79	37.16	36.55	
MW-9	46.03	61.67	37.06	36.70	

LICENSED LAND SURVEYOR
ANDREAS P. DEAK
No. 4739
STATE OF CALIFORNIA

ELEVATIONS ON MONITORING WELLS AT HIGHEST POINT.

CLIENT: HOEXTER CONSULTING

ANDREAS DEAK
LICENSED LAND SURVEYOR
2116 BUENA VISTA AVENUE ALAMEDA CA 94501
PHONE: 865-4289

DATE 06-20-1997
SCALE 1" = 20'
SURVEY DEAK
PLAT DEAK
APN 38-3211-1-4
JOB NO.

APPENDIX B

CHAINS OF CUSTODY AND ANALYTICAL TEST RESULTS - SOIL

McCAMPBELL ANALYTICAL INC.
110 Second Avenue South, #D7, Pacheco, CA 94553
Telephone : 510-798-1620 Fax : 510-798-1622
http://www.mccampbell.com E-mail: main@mccampbell.com

Hoexter Consulting Engineering Geology 734 Torreya Court Palo Alto, CA 94303	Client Project ID: E-10-1B-192B; 1970 Seminary, Oakland	Date Sampled: 06/17/97
		Date Received: 06/25/97
	Client Contact: David Hoexter	Date Extracted: 06/25/97
	Client P.O:	Date Analyzed: 06/25/97

07/03/97

Dear David:

Enclosed are:

1). the results of **2** samples from your **E-10-1B-192B; 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

8905 XHC39

CHAIN-OF-CUSTODY RECORD

Project Number	Project Name
E-10-1B-192B	1970 Seminary, Oakland

Sampler's Name (printed): J. Forsythe

77967
77968

Boring Number	Date	Time	Soil	Water	Sample Location or Depth	Sample Number	Number/Type of Containers	Analytical Tests: TPH-G/BTEX/MTBE	8010	5520 D/E/F
MW-7	6/17/97		X		9.0 - 9.5		(1) 6" S.S. TUBE	X	X	X
MW-8	↓		X		9.0 - 9.5		↓	X	X	X

ICE/T° ✓
GOOD CONDITION ✓
HEAD SPACE ABSENT ✓
PRESERVATIVE | VOAS | O&G | METALS | OTHER
APPROPRIATE CONTAINERS ✓

Relinquished by: (Signature)	Date/Time		Received by: (Signature)
[signature]	6/18/97	11:25	[signature]
[signature]	6/23/97	15:45	[signature] AERO #729
[signature]	6/25/97	4:34	Received for Laboratory by: (Signature) [signature] MAI

Ship To: McCampbell Analytical, 110 2nd Ave S # D-7, Pacheco CA

Attention:

Phone No: 510-798-1620

Requested Turnaround Time: Normal

Contact: David Hoexter

Phone: 415-494-2505

Remarks: Analyze per RWQCB LUFT Guidelines, Note holding time/sampling date

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

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Hoexter Consulting Engineering Geology 734 Torreya Court Palo Alto, CA 94303	Client Project ID: E-10-1B-192B; 1970 Seminary, Oakland	Date Sampled: 06/17/97
		Date Received: 06/25/97
	Client Contact: David Hoexter	Date Extracted: 06/26/97
	Client P.O:	Date Analyzed: 06/26-06/27/97

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	% Recovery Surrogate
77967	MW-7	S	ND	ND	ND	ND	ND	ND	98
77968	MW-8	S	71,b,d	ND<0.1	0.095	0.087	0.13	0.28	101
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, wipe samples in ug/wipe, soil and sludge samples in mg/kg, and all TCLP and SPLP extracts in ug/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

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Hoexter Consulting Engineering Geology 734 Torreya Court Palo Alto, CA 94303	Client Project ID: E-10-1B-192B; 1970 Seminary, Oakland	Date Sampled: 06/17/97
		Date Received: 06/25/97
	Client Contact: David Hoexter	Date Extracted: 06/27-07/02/97
	Client P.O:	Date Analyzed: 06/27-07/02/97

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*
77967	MW-7	S	ND
77968	MW-8	S	2400
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, 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.

DHS Certification No. 1644

Edward Hamilton, Lab Director

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Hoexter Consulting	Client Project ID: E-10-1B-192B; 1970 Seminary, Oakland	Date Sampled: 06/17/97
Engineering Geology		Date Received: 06/25/97
734 Torreya Court	Client Contact: David Hoexter	Date Extracted: 06/25/97
Palo Alto, CA 94303	Client P.O:	Date Analyzed: 06/25-06/27/97

Volatile Halocarbons

EPA method 601 or 8010

Lab ID	77967	77968		
Client ID	MW-7	MW-8		
Matrix	S	S		
Compound	Concentration*			
Bromodichloromethane	ND	ND<15	ND	ND
Bromoform[b]	ND	ND<15	ND	ND
Bromomethane	ND	ND<15	ND	ND
Carbon Tetrachloride[c]	ND	ND<15	ND	ND
Chlorobenzene	ND	ND<15	ND	ND
Chloroethane	ND	ND<15	ND	ND
2-Chloroethyl Vinyl Ether[d]	ND	ND<15	ND	ND
Chloroform [e]	ND	ND<15	ND	ND
Chloromethane	ND	ND<15	ND	ND
Dibromochloromethane	ND	ND<15	ND	ND
1,2-Dichlorobenzene	ND	55	ND	ND
1,3-Dichlorobenzene	ND	ND<15	ND	ND
1,4-Dichlorobenzene	ND	ND<15	ND	ND
Dichlorodifluoromethane	ND	ND<15	ND	ND
1,1-Dichloroethane	ND	ND<15	ND	ND
1,2-Dichloroethane	ND	ND<15	ND	ND
1,1-Dichloroethene	ND	ND<15	ND	ND
cis 1,2-Dichloroethene	ND	31	ND	ND
trans 1,2-Dichloroethene	ND	ND<15	ND	ND
1,2-Dichloropropane	ND	ND<15	ND	ND
cis 1,3-Dichloropropene	ND	ND<15	ND	ND
trans 1,3-Dichloropropene	ND	ND<15	ND	ND
Methylene Chloride[f]	ND<10	ND<30	ND	ND
1,1,2,2-Tetrachloroethane	ND	ND<15	ND	ND
Tetrachloroethene	ND	1500	ND	ND
1,1,1-Trichloroethane	ND	ND<15	ND	ND
1,1,2-Trichloroethane	ND	ND<15	ND	ND
Trichloroethene	8.1	220	ND	ND
Trichlorofluoromethane	ND	ND<15	ND	ND
Vinyl Chloride[g]	ND	ND<15	ND	ND
% Recovery Surrogate	97	106		
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

(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.

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

QC REPORT FOR HYDROCARBON ANALYSES

Date: 06/26/97 Matrix: Soil

Analyte	Concentration (mg/kg) Sample (#75868)	MS	MSD	Amount Spiked	% Recovery MS	MSD	RPD
TPH (gas)	0.000	1.731	1.753	2.03	85	86	1.3
Benzene	0.000	0.162	0.164	0.2	81	82	1.2
Toluene	0.000	0.172	0.172	0.2	86	86	0.0
Ethylbenzene	0.000	0.164	0.164	0.2	82	82	0.0
Xylenes	0.000	0.490	0.490	0.6	82	82	0.0
TPH (diesel)	0	327	330	300	109	110	1.0
TRPH (oil and grease)	0.0	23.2	22.7	20.8	112	109	2.2

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

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

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

QC REPORT FOR HYDROCARBON ANALYSES

Date: 06/27/97 Matrix: Soil

Analyte	Concentration (mg/kg) Sample (#75868)	MS	MSD	Amount Spiked	% Recovery MS	MSD	RPD
TPH (gas)	0.000	1.731	1.753	2.03	85	86	1.3
Benzene	0.000	0.162	0.164	0.2	81	82	1.2
Toluene	0.000	0.172	0.172	0.2	86	86	0.0
Ethylbenzene	0.000	0.164	0.164	0.2	82	82	0.0
Xylenes	0.000	0.490	0.490	0.6	82	82	0.0
TPH (diesel)	0	328	332	300	109	111	1.4
TRPH (oil and grease)	0.0	22.8	22.5	20.8	110	108	1.3

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

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

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

QC REPORT FOR EPA 8010/8020/EDB

Date: 06/26/97-06/27/97 Matrix: Soil

Analyte	Concentration (ug/kg)				% Recovery		
	Sample (#75868)	MS	MSD	Amount Spiked	MS	MSD	RPD
1,1-DCE	0	110	112	100	110	112	1.8
Trichloroethene	0	96	97	100	96	97	1.0
EDB	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Chlorobenzene	0	100	99	100	100	99	1.0
Benzene	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Toluene	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Chlorobz (PID)	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

APPENDIX C

GROUND WATER SAMPLING FIELD LOGS
CHAINS OF CUSTODY AND
ANALYTICAL TEST RESULTS - WATER

HOEXTER CONSULTING

Groundwater Sampling Field Log

Project Name/ No.: 1970 Seminary, Oakland
Client: D. Grant
Project Manager: DJH
Sampler: DJH / JF
Casing Diameter: 2 inch X 3 inch ____ 4 inch ____ 6 inch ____ Other: ____

Lab I.D.: 77958
Date: 6/23/97
Sample Location/I.D.: MW-1
Start Time: ____

Depth of Well (feet): 35
Depth to Water (feet): 19.91
Sample Depth (feet): ____

Calculated Purged Volume: 9.85
Actual Purged Volume 10

35 - 19.91 = 15.09 → 2.465 gal

Field Measurements

Time	Cum	Volume (gal.)	pH (units)	E.C. (umhos/cm)	Temperature Degrees F	Color (visual)	Other
1210	0	0	6.74	835	66.0		
1235	2.5	2.5	6.81	853	66.6	cloudy	
1255	5	2.5	6.88	859	67.4		
1309	7.5	2.5	6.84	840	69.8		
1319	10	2.5	6.81	845	68.6	↓	

Purge Method

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

Sample Method

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

Well Integrity: OK
Remarks: Initial bailer extraction & moderate sheen + odor. Small drawdown & globules on purge water surface. Sampled 6/23/97 at 1820, 77% recovery

Signature: DJH

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

MW-1

HOEXTER CONSULTING

Groundwater Sampling Field Log

Project Name/ No: 1970 Seminary, Oakland
Client: D. Gremit
Project Manager: DJH
Sampler: DJH / JF
Casing Diameter: 2 inch X 3 inch ____ 4 inch ____ 6 inch ____ Other: ____

Lab I.D.: 77959
Date: 6/23/97
Sample Location/I.D.: MW-2
Start Time: ____

Depth of Well (feet): 35
Depth to Water (feet): 13.73
Sample Depth (feet): ____

Calculated Purged Volume: 13.88
Actual Purged Volume 14
(35 - 13.73) = 21.27 → 3.47 gal/vol -

Field Measurements

Time	Cum	Volume (gal.)	pH (units)	E.C. (umhos/cm)	Temperature Degrees F	Color (visual)	Other
/	/	/	/	/	/	clear	
1315	3.5	3.5	6.79	826	68.3	sl. cloudy	
1336	7	3.5	6.80	945	67.9		
1348	10.5	3.5	6.86	729	67.2		
1400	14	3.5	6.82	878	67.8		

Purge Method

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

Sample Method

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

Well Integrity: OK
Remarks: No odor, sheanor product initial extraction, slow recovery, unable to sample 6/23. Sampled 6/25/97 13:15 @ 84% recovery -

Signature: D. J. 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

MW-2

HOEXTER CONSULTING

Groundwater Sampling Field Log

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

Lab I.D.: 77960
Date: 6/23/97
Sample Location/I.D.: MW-3
Start Time: ____

Depth of Well (feet): 20
Depth to Water (feet): 9.65
Sample Depth (feet): ____

Calculated Purged Volume: 6.76
Actual Purged Volume 8

20 - 9.65 = 10.35'
→ 1.69 gal

Field Measurements

Time	Cum	Volume (gal.)	pH (units)	E.C. (umhos/cm)	Temperature Degrees F	Color (visual)	Other
1117	0	0	6.73	522	65.9	clear	
1124	2	2	6.68	531	65.0		
1132	4	2	6.74	538	64.5		
1141	6	2	6.71	536	64.3		
1245	8	2	6.76	545	64.7		

Purge Method

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

Sample Method

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

Well Integrity: OK
Remarks: No odor, sheen or prod on initial extraction. Slow recovery, unable to sample 6/23/97. Sampled 6/25/97 @ 13:24, 41% recovery

Signature: D. H. [illegible]

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

MW-3

HOEXTER CONSULTING

Groundwater Sampling Field Log

Project Name/ No.: 1970 Seminary, Oakland
Client: Dr. Ermit
Project Manager: DJH
Sampler: DJH / JF
Casing Diameter: 2 inch X 3 inch ____ 4 inch ____ 6 inch ____ Other: ____

Lab I.D.: 77961
Date: 6/23/97
Sample Location/I.D.: MW-4
Start Time: ____

Depth of Well (feet): ~~20~~ 35
Depth to Water (feet): 20.90
Sample Depth (feet): ____

Calculated Purged Volume: 9.2
Actual Purged Volume 10

35 - 20.9 = 14.1'
→ 2.3 gal/vol

Field Measurements

Time	Cum	Volume (gal.)	pH (units)	E.C. (umhos/cm)	Temperature Degrees F	Color (visual)	Other
1110	0	0	6.78	879	67.1	clear	
1121	2.5	2.5	6.78	536	66.6	green-gray/sl-sheen + odor	
1133	5	2.5	6.79	918	66.4		
1142	7.5	2.5	6.86	915	66.3	well evacuated	
1405	10	2.5	6.98	891	67.8		

Purge Method

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

Sample Method

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

Well Integrity: OK
Remarks: No odor, sheen or prod. initial extractions Sl-sheen + odor after initial volume extracted. Slow recovery, not able to sample on 6/23/97. Sampled 6/25/97 1335 @ 97% recovery
Signature: DJH

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

MW-4

HOEXTER CONSULTING

Groundwater Sampling Field Log

Project Name/ No: 1970 Seminary, Oakland
Client: D - Grimit
Project Manager: DHH
Sampler: DHH | JF
Casing Diameter: 2 inch x 3 inch ____ 4 inch ____ 6 inch ____ Other: ____

Lab I.D.: 77962
Date: 6/23/97
Sample Location/I.D.: MW-5
Start Time: ____

Depth of Well (feet): 35
Depth to Water (feet): 21.91
Sample Depth (feet): ____

Calculated Purged Volume: 8.5
Actual Purged Volume 10 =

35 - 21.91 = 13.09'

→ 2.14 gal

Field Measurements

Time	Cum	Volume (gal.)	pH (units)	E.C. (umhos/cm)	Temperature Degrees F	Color (visual)	Other
1011	0	0	6.59	641	65.0	clear	
1021	2.5	2.5	6.76	761	65.4	lgt. gray-brown,	
1030	5	2.5	6.74	816	65.0	sl. H_2S odor	
1046	7.5	2.5	6.78	819	65.3	Dewatered w/ 15 gal.	
1146	10	2.5	6.84	819	65.3	TO 50	

Purge Method

✓

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

Sample Method

✓ ✓

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

Well Integrity: OK
Remarks: No odor, sheen or prod. on initial extraction
Sampled 17:40 6/23/97 @ 81% recovery

Signature: DHH 7.24-C

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

MW-5

HOEXTER CONSULTING

Groundwater Sampling Field Log

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

Lab I.D.: 77963
Date: 6/23/97
Sample Location/I.D.: MW-6
Start Time: ____

Depth of Well (feet): 20
Depth to Water (feet): 11.42
Sample Depth (feet): ____

Calculated Purged Volume: 5.6
Actual Purged Volume 6=

20 - 11.42 = 8.58' wtr. → 1.4 gal/vol

Field Measurements

Time	Cum	Volume (gal.)	pH (units)	E.C. (umhos/cm)	Temperature Degrees F	Color (visual)	Other
✓	✓	✓	✓	✓	✓	clear	
1225	1.5	1.5	6.76	824	66.1	Sl. cloudy	
1230	3	1.5	6.78	815	66.1	↓	
1234	4.5	1.5	6.86	816	66.0	↓	Dewatered
1325	6	1.5	6.84	870	66.4		

Purge Method

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

Sample Method

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

Well Integrity: OK
Remarks: No odor, sheen or product on initial extraction
Sampled 6/23/97 17:30 @ 88% recovery

Signature: D. J. F.

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

MW-6

HOEXTER CONSULTING

Groundwater Sampling Field Log

Project Name/ No.: 1970 Seminary, Oak (.
Client: D- Gremit
Project Manager: DJH
Sampler: DJH / JF
Casing Diameter: 2 inch x 3 inch ____ 4 inch ____ 6 inch ____ Other: ____

Lab I.D.: 77964
Date: 6/23/97
Sample Location/I.D.: MW-7
Start Time: ____

Depth of Well (feet): 32
Depth to Water (feet): 19.93
Sample Depth (feet): ____

Calculated Purged Volume: 7.88
Actual Purged Volume 8

32 - 19.93 = 12.07'
→ 1.97 gal

Field Measurements

Time	Cum	Volume (gal.)	pH (units)	E.C. (umhos/cm)	Temperature Degrees F	Color (visual)	Other
1417	0	0	7.43	2010	68.1	clear	
1425	2	2	7.32	1810	66.3	med. brwn.	
1435	4	2	7.10	1510	66.9		
1445	6	2	7.10	1330	66.2		
1454	8	2	7.06	1090	66.5		

Purge Method

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

Sample Method

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

Well Integrity: OK
Remarks: No odor, sheen or prod initial bailer extraction.
Sampled 6/23/97 @ 17:50 @ 89% recovery

Signature: DJH

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

MW-7

HOEXTER CONSULTING

Groundwater Sampling Field Log

Project Name/ No.: 1970 Seminary, Okl.
Client: D. Grimes
Project Manager: DJH
Sampler: DJH / JF
Casing Diameter: 2 inch X 3 inch ____ 4 inch ____ 6 inch ____ Other: ____

Lab I.D.: 77965
Date: 6/23/97
Sample Location/I.D.: MW-8
Start Time: ____

Depth of Well (feet): 20
Depth to Water (feet): 5.74
Sample Depth (feet): ____

Calculated Purged Volume: 9.31
Actual Purged Volume 10
20 - 5.74 = 14.26' → 2.33 gal/vol.

Field Measurements

Time	Cum	Volume (gal.)	pH (units)	E.C. (umhos/cm)	Temperature Degrees F	Color (visual)	Other
1013	0	0	7.19	275	67.8	clear	
1026	2.5	2.5	7.12	291	66.3	med-brown/brss. sheen	
1031	5	2.5	7.15	286	66.2		(no odor)
1039	7.5	2.5	7.16	275	66.3		
1046	10	2.5	7.20	259	66.1		

Purge Method

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

Sample Method

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

Well Integrity: OK
Remarks: No odor, sheen or prod initial bailer extraction. Sampled 6/23/97 17:17 @ 99% recovery

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

MW-8

HOEXTER CONSULTING

Groundwater Sampling Field Log

Project Name/ No.: 1970 Seminary, Oak.
Client: D. Grimit
Project Manager: DJH
Sampler: DFH / JE
Casing Diameter: 2 inch X 3 inch ____ 4 inch ____ 6 inch ____ Other: ____

Lab I.D.: 77966
Date: 6/23/97
Sample Location/I.D.: MW-9
Start Time: ____

Depth of Well (feet): 20
Depth to Water (feet): 17.04
Sample Depth (feet): ____

Calculated Purged Volume: ~~1.03~~ 1.44
Actual Purged Volume 1.5

20 - 17.04 = 2.96 → 0.485 gal/vol

Field Measurements

Time	Cum	Volume (gal.)	pH (units)	E.C. (umhos/cm)	Temperature Degrees F	Color (visual)	Other
1338	0	0	7.32	2260	70.1	clear	
1343	0.5	0.5	7.21	2290	68.1	med. brown	
1347	1.0	0.5	7.21	2310	68.4		
1353	1.5	0.5	7.19	2230	68.0		evacuated

Purge Method

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

Sample Method

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

Well Integrity: OK
Remarks: No odor, sheen or product on initial bailer extraction. Evacuated well after three volumes removed & slow recovery; unable to sample 6/23. Sampled 6/25 @ 1345 @ only 28% recovery
Signature: DFH

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

MW-9

McCAMPBELL ANALYTICAL INC.
110 Second Avenue South, #D7, Pacheco, CA 94553
Telephone : 510-798-1620 Fax : 510-798-1622
http://www.mccampbell.com E-mail: main@mccampbell.com

Hoexter Consulting Engineering Geology 734 Torreya Court Palo Alto, CA 94303	Client Project ID: #E-10-1B-192B; 1970 Seminary, Oakland	Date Sampled: 06/23/97
		Date Received: 06/25/97
	Client Contact: David Hoexter	Date Extracted: 06/25/97
	Client P.O:	Date Analyzed: 06/25/97

07/03/97

Dear David:

Enclosed are:

1). the results of **9** samples from your **#E-10-1B-192B; 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

8904 XHC38

CHAIN-OF-CUSTODY RECORD

Pg 1 of 1

77958 7796
77959 7796
77960 7796
77961 7796

Project Number: E-10-1B-192B

Project Name: 1970 Seminary, Oakland

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

	Boring Number	Date	Time	Soil	Water	Sample Location or Depth	Sample Number	Number/Type of Containers	TPH-G/BTEX/MTBE	SM 5520 B/F	HVOC 8010	PNA by 8270			Remarks
(x)	MW-1	6/23/97	18:20		X		VOA	3	X		X				Pres HCL 58
	↓	↓	↓		↓		1-L	1		X					No pres 58
							1-Lamber	1				X			No pres ~~60~~ 58
(x)	MW-2	6/25	13:15				VOA	3	X		X				Pres HCL 59
(x)	MW-3	6/25	13:25				VOA	3	X		X				Pres HCL 60
(x)	MW-4	6/25	13:35				VOA	3	X		X				Pres HCL 61
		↓	↓				1-L	1		X					No pres 61
x	MW-5	6/23	17:40				VOA	3	X		X				Pres HCL 62
(x)	MW-6	6/23	17:30				VOA	3	X		X				Pres HCL 63
x	MW-7	6/23	17:50				VOA	3	X		X				Pres HCL 64
		↓	↓				1-L	1		X					No pres 64
x2	MW-8	6/23	17:47				VOA	3	X		X				Pres HCL 65
		↓	↓				1-L	1		X					No pres 65
x5	MW-9	6/25	13:45		↓		VOA	3	X		X				Pres HCL 66
		↓	↓				1-L	1	X	X	X				No pres 66

77966

Relinquished by: (Signature)	Date/Time	Received by: (Signature)
D F Hoexter	6/25/97 15:45	Tabitha Pimentel AERO #129
Relinquished by: (Signature) Tabitha C. Pimentel	Date/Time 6/25/97 17:34	Received by: (Signature) J Milenic MAI
Relinquished by: (Signature)	Date/Time	Received for Laboratory by: (Signature)

Ship To: McCampbell Analytical, 110 2nd Ave S #D-7, Pacheco CA

Attention:

Phone No: 510-798-1620

Requested Turnaround Time: Normal

Contact: David Hoexter **Phone** 415-494-2505

Remarks: Analyze per RWQCB LUFT Guidelines

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

	VOAS	O&G	METALS	OTHER
PRESERVATIVE	✓			

APPROPRIATE CONTAINERS ✓

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

McCAMPBELL ANALYTICAL INC.
110 Second Avenue South, #D7, Pacheco, CA 94553
Telephone : 510-798-1620 Fax : 510-798-1622
http://www.mccampbell.com E-mail: main@mccampbell.com

Hoexter Consulting	Client Project ID: #E-10-1B-192B; 1970 Seminary, Oakland	Date Sampled: 06/23/97
Engineering Geology		Date Received: 06/25/97
734 Torreya Court	Client Contact: David Hoexter	Date Extracted: 06/28-06/30/97
Palo Alto, CA 94303	Client P.O:	Date Analyzed: 06/28-06/30/97

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	% Recovery Surrogate
77958	MW-1	W	40,000,a,h	ND<100	2300	3500	1500	6300	105
77959	MW-2	W	280,a	10	12	0.69	ND	13	111
77960	MW-3	W	ND	ND	ND	ND	ND	ND	107
77961	MW-4	W	6200,a	160	2800	20	20	23	106
77962	MW-5	W	12,000,a	150	410	170	920	800	98
77963	MW-6	W	3100,a	100	410	16	110	140	95
77964	MW-7	W	8700,a	ND<20	950	260	520	380	110
77965	MW-8	W	610,a	5.9	25	1.4	4.3	24	94
77966	MW-9	W	32,000,a,i	250	340	280	1500	4300	93
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, wipe samples in ug/wipe, soil and sludge samples in mg/kg, and all TCLP and SPLP extracts in ug/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

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

Hoexter Consulting Engineering Geology 734 Torreya Court Palo Alto, CA 94303	Client Project ID: #E-10-1B-192B; 1970 Seminary, Oakland	Date Sampled: 06/23/97
		Date Received: 06/25/97
	Client Contact: David Hoexter	Date Extracted: 06/27-07/02/97
	Client P.O:	Date Analyzed: 06/27-07/02/97

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*
77958	MW-1	W	190
77961	MW-4	W	ND
77964	MW-7	W	ND
77965	MW-8	W	ND
77966	MW-9	W	ND,i
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, 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.

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, Oakland Client Contact: David Hoexter Client P.O:	Date Sampled: 06/23/97 Date Received: 06/25/97 Date Extracted: 06/25/97 Date Analyzed: 06/25-06/27/97

Volatile Halocarbons

EPA method 601 or 8010

Lab ID	77958	77959	77960	77961
Client ID	MW-1	MW-2	MW-3	MW-4
Matrix	W	W	W	W
Compound	Concentration*			
Bromodichloromethane	ND<2	ND	ND	ND<3
Bromoform[b]	ND<2	ND	ND	ND<3
Bromomethane	ND<2	ND	ND	ND<3
Carbon Tetrachloride[c]	ND<2	ND	ND	ND<3
Chlorobenzene	ND<2	ND	ND	ND<3
Chloroethane	ND<2	ND	ND	3.6
2-Chloroethyl Vinyl Ether[d]	ND<2	ND	ND	ND<3
Chloroform[e]	ND<2	ND	ND	ND<3
Chloromethane	ND<2	ND	ND	ND<3
Dibromochloromethane	ND<2	ND	ND	ND<3
1,2-Dichlorobenzene	10	ND	ND	21
1,3-Dichlorobenzene	ND<2	ND	ND	ND<3
1,4-Dichlorobenzene	ND<2	ND	ND	4.8
Dichlorodifluoromethane	ND<2	ND	ND	ND<3
1,1-Dichloroethane	ND<2	ND	ND	ND<3
1,2-Dichloroethane	4.1	9.7	0.54	5.3
1,1-Dichloroethene	ND<2	ND	ND	ND<3
cis 1,2-Dichloroethene	130	8.0	0.76	340
trans 1,2-Dichloroethene	3.7	ND	ND	10
1,2-Dichloropropane	ND<2	0.86	ND	ND<3
cis 1,3-Dichloropropene	ND<2	ND	ND	ND<3
trans 1,3-Dichloropropene	ND<2	ND	ND	ND<3
Methylene Chloride[f]	ND<2	ND	ND	ND<3
1,1,2,2-Tetrachloroethane	ND<2	ND	ND	ND<3
Tetrachloroethene	5.0	ND	ND	11
1,1,1-Trichloroethane	ND<2	ND	ND	ND<3
1,1,2-Trichloroethane	ND<2	ND	ND	ND<3
Trichloroethene	23	9.6	ND	110
Trichlorofluoromethane	ND<2	ND	ND	ND<3
Vinyl Chloride[g]	54	ND	ND	83
% Recovery Surrogate	108	107	106	106
Comments	h			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.

DHS Certification No. 1644

Edward Hamilton, Lab Director

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Hoexter Consulting	Client Project ID: #E-10-1B-192B; 1970 Seminary, Oakland	Date Sampled: 06/23/97
Engineering Geology		Date Received: 06/25/97
734 Torreya Court	Client Contact: David Hoexter	Date Extracted: 06/25/97
Palo Alto, CA 94303	Client P.O:	Date Analyzed: 06/25-06/27/97

Volatile Halocarbons

EPA method 601 or 8010

Lab ID	77962	77963	77964	77965
Client ID	MW-5	MW-6	MW-7	MW-8
Matrix	W	W	W	W
Compound	Concentration*			
Bromodichloromethane	ND	ND	ND	ND<1
Bromoform[b]	ND	ND	ND	ND<1
Bromomethane	ND	ND	ND	ND<1
Carbon Tetrachloride[c]	ND	ND	ND	ND<1
Chlorobenzene	ND	ND	ND	ND<1
Chloroethane	2.0	ND	0.93	ND<1
2-Chloroethyl Vinyl Ether[d]	ND	ND	ND	ND<1
Chloroform[e]	ND	ND	ND	ND<1
Chloromethane	ND	ND	ND	ND<1
Dibromochloromethane	ND	ND	ND	ND<1
1,2-Dichlorobenzene	2.1	ND	1.6	5.4
1,3-Dichlorobenzene	ND	ND	ND	ND<1
1,4-Dichlorobenzene	0.53	ND	ND	ND<1
Dichlorodifluoromethane	ND	ND	ND	ND<1
1,1-Dichloroethane	ND	ND	ND	ND<1
1,2-Dichloroethane	2.0	1.6	ND	ND<1
1,1-Dichloroethene	ND	ND	ND	ND<1
cis 1,2-Dichloroethene	7.2	10	2.4	64
trans 1,2-Dichloroethene	0.71	ND	1.2	ND<1
1,2-Dichloropropane	ND	ND	ND	ND<1
cis 1,3-Dichloropropene	ND	ND	ND	ND<1
trans 1,3-Dichloropropene	ND	ND	ND	ND<1
Methylene Chloride[f]	ND	ND	ND	ND<1
1,1,2,2-Tetrachloroethane	ND	ND	ND	ND<1
Tetrachloroethene	ND	ND	9.8	97
1,1,1-Trichloroethane	ND	ND	ND	ND<1
1,1,2-Trichloroethane	ND	ND	ND	ND<1
Trichloroethene	ND	0.63	17	100
Trichlorofluoromethane	ND	ND	ND	ND<1
Vinyl Chloride[g]	13	0.50	1.5	ND<1
% Recovery Surrogate	115	108	111	105
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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Hoexter Consulting	Client Project ID: #E-10-1B-192B; 1970 Seminary, Oakland	Date Sampled: 06/23/97
Engineering Geology		Date Received: 06/25/97
734 Torreya Court	Client Contact: David Hoexter	Date Extracted: 06/25/97
Palo Alto, CA 94303	Client P.O:	Date Analyzed: 06/25-06/27/97

Volatile Halocarbons

EPA method 601 or 8010

Lab ID	77966			
Client ID	MW-9			
Matrix	W			
Compound	Concentration*			
Bromodichloromethane	ND<1			
Bromoform[b]	ND<1			
Bromomethane	ND<1			
Carbon Tetrachloride[c]	ND<1			
Chlorobenzene	ND<1			
Chloroethane	ND<1			
2-Chloroethyl Vinyl Ether[d]	ND<1			
Chloroform [e]	2.1			
Chloromethane	ND<1			
Dibromochloromethane	ND<1			
1,2-Dichlorobenzene	2.1			
1,3-Dichlorobenzene	ND<1			
1,4-Dichlorobenzene	ND<1			
Dichlorodifluoromethane	ND<1			
1,1-Dichloroethane	ND<1			
1,2-Dichloroethane	ND<1			
1,1-Dichloroethene	ND<1			
cis 1,2-Dichloroethene	7.4			
trans 1,2-Dichloroethene	ND<1			
1,2-Dichloropropane	ND<1			
cis 1,3-Dichloropropene	ND<1			
trans 1,3-Dichloropropene	ND<1			
Methylene Chloride[f]	ND<1			
1,1,2,2-Tetrachloroethane	ND<1			
Tetrachloroethene	3.5			
1,1,1-Trichloroethane	ND<1			
1,1,2-Trichloroethane	ND<1			
Trichloroethene	1.4			
Trichlorofluoromethane	ND<1			
Vinyl Chloride[g]	ND<1			
% Recovery Surrogate	108			
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

(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.

DHS Certification No. 1644

Edward Hamilton, Lab Director

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QC REPORT FOR HYDROCARBON ANALYSES

Date: 06/27/97 Matrix: Water

Analyte	Concentration (mg/L) Sample #(77919)	MS	MSD	Amount Spiked	% Recovery MS	MSD	RPD
TPH (gas)	0.0	110.4	109.7	100.0	110.4	109.7	0.6
Benzene	0.0	10.0	9.8	10.0	100.0	98.0	2.0
Toluene	0.0	10.3	10.1	10.0	103.0	101.0	2.0
Ethyl Benzene	0.0	9.7	9.8	10.0	97.0	98.0	1.0
Xylenes	0.0	29.2	29.8	30.0	97.3	99.3	2.0
TPH (diesel)	0	136	138	150	90	92	2.0
TRPH (oil & grease)	0	26.5	27.2	23.7	112	115	2.6

% 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: 06/28/97 Matrix: Water

Analyte	Concentration (mg/L) Sample #(77919)	MS	MSD	Amount Spiked	% Recovery MS	MSD	RPD
TPH (gas)	0.0	110.4	109.7	100.0	110.4	109.7	0.6
Benzene	0.0	10.0	9.8	10.0	100.0	98.0	2.0
Toluene	0.0	10.3	10.1	10.0	103.0	101.0	2.0
Ethyl Benzene	0.0	9.7	9.8	10.0	97.0	98.0	1.0
Xylenes	0.0	29.2	29.8	30.0	97.3	99.3	2.0
TPH (diesel)	0	132	133	150	88	89	0.4
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: 06/30/97 Matrix: Water

Analyte	Concentration (mg/L) Sample #(77834)	MS	MSD	Amount Spiked	% Recovery MS	MSD	RPD
TPH (gas)	0.0	113.7	111.9	100.0	113.7	111.9	1.6
Benzene	0.0	10.3	10.4	10.0	103.0	104.0	1.0
Toluene	0.0	11.0	11.1	10.0	110.0	111.0	0.9
Ethyl Benzene	0.0	11.1	11.2	10.0	111.0	112.0	0.9
Xylenes	0.0	33.2	33.1	30.0	110.7	110.3	0.3
TPH (diesel)	0	132	133	150	88	89	0.4
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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Tele: 510-798-1620 Fax: 510-798-1622

QC REPORT FOR EPA 8010/8020/EDB

Date: 06/25/97-06/27/97 Matrix: Water

Analyte	Concentration (ug/L)				% Recovery		
	Sample #(76680)	MS	MSD	Amount Spiked	MS	MSD	RPD
1,1-DCE	0.0	10.4	11.2	10.0	104	112	7.4
Trichloroethene	0.0	9.2	9.6	10.0	92	96	4.3
EDB	0.0	8.6	8.6	10.0	86	86	0.0
Chlorobenzene	0.0	9.9	10.3	10.0	99	103	4.0
Benzene	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Toluene	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Chlorobz (PID)	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

McCAMPBELL ANALYTICAL

110 2nd AVENUE, # D7
PACHECO, CA 94553

(510) 798-1620 FAX (510) 798-1622

CHAIN OF CUSTODY RECORD

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

REPORT TO: ED HAMILTON BILL TO: MAI

PROJECT NUMBER: 8904 PROJECT NAME: DH-E-10-1B-192B

PROJECT LOCATION: Oakland

ANALYSIS REQUEST | OTHER

JOB #: 9706329 REP: MV
CLIENT: MCCAM
DATE: 07/03/97
SHIP #: 34376

SAMPLE ID	LOCATION	SAMPLING DATE	SAMPLING TIME	# CONTAINERS	TYPE CONTAINERS	MATRIX: WATER	SOIL	AIR	SLUDGE	OTHER	METHOD PRESERVED: HCL	HNO_3	ICE	OTHER	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	PNA by 8270	COMMENTS
MW-1		6/23	1820	1	4R	X							X														X	

RELINQUISHED BY: Milenic DATE 6/26 TIME 1330 RECEIVED BY:

RELINQUISHED BY: DATE 6-26-97 TIME 1417 RECEIVED BY:

RELINQUISHED BY: DATE 6/26/97 TIME 1417 RECEIVED BY LABORATORY: Chris Rowley

REMARKS:

CHROMALAB, INC.

Environmental Services (SDB)

July 2, 1997 *Submission #:* 9706329

MCCAMPBELL ANALYTICAL, INC.

Atten: Ed Hamilton

Project: DH-E-10-1B-192B *Project#:* 8904
Received: June 26, 1997

re: One sample for Polynuclear Aromatic Hydrocarbons (PAHs) analysis.
Method: *SW846 Method 8270A Nov 1990*

Client Sample ID: **MW-1**
Spl#: 137275 *Matrix:* WATER *Extracted:* June 30, 1997
Sampled: June 23, 1997 *Run#:* 7548 *Analyzed:* June 30, 1997

ANALYTE	RESULT (ug/L)	REPORTING LIMIT (ug/L)	BLANK RESULT (ug/L)	BLANK SPIKE (%)	DILUTION FACTOR
ACENAPHTHYLENE	N.D.	10	N.D.	--	5
ACENAPHTHENE	N.D.	10	N.D.	62.7	5
FLUORENE	N.D.	25	N.D.	--	5
PHENANTHRENE	12	10	N.D.	--	5
ANTHRACENE	N.D.	10	N.D.	--	5
FLUORANTHENE	N.D.	10	N.D.	--	5
PYRENE	N.D.	10	N.D.	74.3	5
BENZO(A)ANTHRACENE	N.D.	10	N.D.	--	5
CHRYSENE	N.D.	10	N.D.	--	5
BENZO(B)FLUORANTHENE	N.D.	10	N.D.	--	5
BENZO(K)FLUORANTHENE	N.D.	10	N.D.	--	5
BENZO(A)PYRENE	N.D.	10	N.D.	--	5
INDENO(1,2,3-CD)PYRENE	N.D.	10	N.D.	--	5
DIBENZO(A,H)ANTHRACENE	N.D.	10	N.D.	--	5
BENZO(GHI)PERYLENE	N.D.	10	N.D.	--	5
NAPHTHALENE	2200	50	N.D.	--	25

Note: *Nitrobenzene-d5 (surrogate) outside of QC control limit due to matrix interference.*

Michael Lee
Chemist

Chip Poalinelli
Operations Manager

1220 Quarry Lane • Pleasanton, California 94566-4756
(510) 484-1919 • Facsimile (510) 484-1096
Federal ID #68-0140157

APPENDIX D

CHAIN OF CUSTODY AND PHYSICAL TEST RESULTS - SOIL

COOPER
TESTING LABORATORY

COOPER TESTING LABORATORY
1951 Colony, Unit X
Mountain View, California 94043
Tel: 415 968-9472 FAX: 415 968-4228

LETTER OF TRANSMITTAL

TO: Hoexter Consulting
734 Torreya Court
Palo Alto, CA 94303

DATE: June 25, 1997

PROJECT: E-10-1B-192B

CTL#: 298-001

ENCLOSED: Laboratory soil test data.

REMARKS:

COOPER TESTING LABS

CHAIN-OF-CUSTODY RECORD

Project Number	Project Name
E-10-1B-192B	1970 SEMINARY, OAKLAND

Sampler's Name (printed): J. FORSYTHE

Number/Type of Containers

Analytical Tests: ASTM 2974 org. cont. | W/C + DD | Sp. Gravity / porosity

Boring Number	Date	Time	Soil	Water	Sample Location or Depth	Sample Number	Number/Type of Containers	ASTM 2974 org. cont.	W/C + DD	Sp. Gravity / porosity			Remarks
MW-7	6/17/97		X		MW-7 8.0-8.5		(1) SS 6" tube	X	X	X			
"	↓		X		" 11.0-11.5		↓						not delivered
MW-9	↓		X		MW-9 8.0-8.5		↓	X	X	X			
"9	↓		X		" 11.0-11.5		↓						not delivered

Relinquished by: (Signature)	Date/Time	Received by: (Signature)
[signature]	6/18/97 11:25	[signature] 7.14
Relinquished by: (Signature)	Date/Time	Received by: (Signature)
		Dave Martin
Relinquished by: (Signature)	Date/Time	Received for Laboratory by: (Signature)
[signature]	6/18/97 14:05	[signature]

Ship To: Cooper Testing Labs
1951-X Colony St
Mtn. View

Attention: Dave Cooper

Phone No: 415-968-9472

Requested Turnaround Time: normal

Contact: David F. Hoexter

Phone: 415-494-2505

Remarks: include copy of this COC with reporting of results

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

COOPER TESTING LABS

MOISTURE DENSITY - POROSITY DATA SHEET

Job #	298-001
Client	Hoexter
Project/Location	E-10-1B-192B
Date	6/23/97

Boring #	MW-7	MW-9			
Depth (ft)	8-8.5	8-8.5			
Soil Type	yellow brown sandy CLAY	olive clayey SAND			
Specific Gravity	2.74	2.71			
Volume Total cc	251.479	263.894			
Volume of Solids	166.594	184.821			
Volume of Voids	84.885	79.073			
Void Ratio	0.510	0.428			
Porosity %	33.8%	30.0%			
Saturation %	98.4%	98.8%			
Moisture %	18.3%	15.6%			
Dry Density (pcf)	113.3	118.5			

Remarks

Specific Gravity
ASTM D-854

Cooper Testing Lab

Job#: 298-001 Date: 06/23/97
Client: Hoexter By: DC
Project: E-10-1B-192B

Boring:	MW-7	MW-9				
Sample:						
Depth, ft.:	8-8.5	8-8.5				
Soil Classification: (visual)	yellow brown sandy CLAY	olive clayey SAND				
Wt. of Pycnometer Soil & Water, gm:	348.74	315.68				
Temp. centigrade:	22	22				
Wt. of Pycnometer & Water, gm:	316.1	274.49				
Wt. Dry Soil, gm:	51.43	65.33				
Temp. Correction Factor:	1	1				
Specific Gravity:	2.74	2.71	ERR	ERR	ERR	ERR

Remarks: The temperature correction factor is shown as 1 if the weight of the pycnometer is taken from the lab temperature correction curve.

Organic Content
ASTM D2974

Cooper Testing Lab

JOB NO.: 298-001					
CLIENT: Hoexter			DATE:	06/23/97	
PROJECT E-10-1B-192B			BY:	DC	
BORING:	MW-7	MW-9			
SAMPLE:					
DEPTH, ft.:	8-8.5	8-8.5			
SOIL CLASSIFICATION: (visual)	yellow brown sandy CLAY	olive clayey SAND			
SOIL, ORGANICS & DISH, gm:	136.59	142.96			
SOIL & DISH, gm:	135.08	141.72			
DISH, gm:	84.54	82.67			
SOIL, gm:	50.54	59.05	0	0	0
SOIL & ORGANICS, gm:	52.05	60.29	0	0	0
% ORGANICS:	2.9	2.1	ERR	ERR	ERR