HARZA *Consulting Engineers and Scientists*

February 21, 1995

Mr. David Johnson
Mills College
5000 MacArthur Boulevard
Oakland, CA 94613

Re: January 1995 Ground Water Sampling Report
Mills College Corporation Yard, Oakland, California
Project No.: K275-H

Dear Mr. Johnson:

Enclosed please find our report for the above referenced project. We are submitting copies to Juliet Shin of Alameda County Health Care Services and to the Regional Water Quality Control Board on your behalf.

Should you have any questions or require additional information, please do not hesitate to contact me.

Sincerely,

Harza Consulting Engineers and Scientists

Derek D. Armentrout
Project Chemist

DA:aa\encl.
Copies: Addressee (1)
Distribution (2)

K275-H reports\28429
02-21-95

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January 1995
Ground Water Sampling Report
Mills College Corporation Yard
Oakland, California

February 21, 1995

Prepared For:

Mills College
5000 MacArthur Boulevard
Oakland, CA 94613

Prepared By:

Harza Consulting Engineers and Scientists
425 Roland Way
Oakland, CA 94621

Derek D. Armentrout
Project Chemist

Dennis Laduzinsky, C.E.G.
Head, Geology and Hydrogeology

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HARZA

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Ground Water Sampling Report
Mills College Corporation Yard
Oakland, California

1.0 INTRODUCTION

This report presents the results of the January 1995 ground water sampling performed at the Mills College Corporation Yard in Oakland, California. The project location is shown on the Site Vicinity Map (Figure 1).

The purpose of the investigation has been to evaluate the extent of petroleum hydrocarbons in ground water related to a previously removed gasoline underground storage tank (UST) at the site. This investigation was performed to comply with the continuing monitoring program under the jurisdiction of Alameda County Health Care Services Agency (ACHCSA).

2.0 BACKGROUND

In October 1988, a 1,000-gallon gasoline UST was removed from the Corporation Yard facility. A report prepared by Blaine Tech Services, Inc. of San Jose, California, indicated that soil samples collected from a depth of 21 feet below ground surface (bgs) following tank removal contained moderately high levels of total petroleum hydrocarbons as gasoline (TPHg). It is understood that 100 cubic yards of contaminated soils were excavated from the tank pit area at the time of tank removal and aerated on-site. The ACHCSA subsequently issued a letter, dated February 15, 1989, requesting investigation of the vertical and lateral extent of petroleum hydrocarbons in soil and ground water related to the former tank.

Beginning in June 1989, Harza (formerly Kaldveer Associates) performed soil and ground water quality investigations at the site, consisting of the installation and sampling of three ground water monitoring wells and two additional shallow soil borings.

The results of these investigations, presented in a report titled "Soil and Ground Water Testing Report For Mills College Corporation Yard", dated May 7, 1991, indicated that the majority of gasoline contamination in the unsaturated zone near the tanks appeared to have been removed during the soil excavation program. Analysis of ground water samples collected from the monitoring wells since June 1989 have indicated the presence of TPHg at concentrations up to 11 parts per million (ppm).

The measured ground water flow direction at the site has usually been toward the south, beneath the existing Corporation Yard buildings, but recently has exhibited a shift toward the west.

In May 1994, well MW-4 was installed downgradient of the Corporation Yard along Seminary Avenue in response to the ACHCSA letter of April 23, 1993 requesting an additional downgradient monitoring point. In their September 7, 1994 letter, the ACHCSA expressed concern that well MW-4 was not screened in the same aquifer as wells MW-1 through MW-3, and requested an investigation to determine if well MW-4 was hydraulically connected to the other wells. A geologic and geo-chemical investigation was performed in October 1994, and indicated that the well was most likely hydraulically connected to wells MW-1 through MW-3 at depth, but a conclusive determination could not be made, particularly along the upper surface of the ground water where floating hydrocarbons, such as gasoline, tend to reside. The ACHCSA has requested that quarterly ground water monitoring be performed at the site.

3.0 SCOPE OF SERVICES

The investigation consisted of the following tasks:

- Measuring ground water levels in all wells for use in developing a ground water elevation contour map.
- Collecting ground water samples from the four wells at the site.
- Analyzing ground water samples for TPHg using EPA Method 5030/GCFID, and for purgeable aromatic compounds (benzene, toluene, ethylbenzene, and xylenes or BTEX) using EPA Method 8020.
- Preparing this report.

4.0 FIELD INVESTIGATION

4.1 Well Sampling

The four monitoring wells were sampled on January 18, 1995. Following an initial ground water level measurement, a minimum of three well-casing volumes of water were purged from each well using a Teflon bailer. Purging consisted of the gradual removal of water from the well until physical parameters such as pH, temperature, and electrical conductivity stabilized.

Following purging, samples were decanted from the bailer into appropriate sample containers, labeled, and placed in refrigerated storage for transport to the laboratory under chain-of-custody control. The bailer was washed with trisodium phosphate (TSP) and rinsed with deionized water between wells to reduce the potential for cross contamination. Purge water was contained on-site in 55-gallon drums. Monitoring well sampling logs are attached to this report as Appendix A.

4.2 Ground Water Gradient

Well-top elevations have been surveyed to a common datum and water levels were measured in each well. Well-top elevations, depth to water, and calculated water-surface elevations are presented in Table 1. These data are used to generate the ground water elevation contours presented on Figure 2. Ground water elevation data collected during this investigation indicate ground water has a gradient of 0.006 foot per foot to the west. This flow direction is westward of the direction that has historically been observed at the site.

5.0 ANALYTICAL RESULTS

5.1 Laboratory Procedures

Ground water samples were analyzed by American Environmental Network (AEN) of Pleasant Hill, California. AEN is certified by the California Environmental Protection Agency for the analyses performed. Samples from each well were analyzed for TPHg using EPA Method 5030/GCFID, and for BTEX using EPA Method 8020.

5.2 Analytical Results

The results of the chemical analyses are presented in Table 2 and laboratory analytical results are attached to this report as Appendix B. A historical summary of ground water sample analytical results is also included in Table 2.

TPHg was detected in the sample from well MW-1 at a concentration of 5.9 ppm. BTEX compounds were detected in the sample from MW-1 at concentrations of 1.5, 0.088, 0.13 and 0.14 ppm, respectively. A petroleum odor and a slight hydrocarbon sheen on the water surface were recognized during the purging of the well.

TPHg was detected in the sample from well MW-2 at 0.7 ppm. Benzene was also detected in the sample at 0.21 ppm. In the sample from well MW-3, TPHg was detected at 0.07 ppm and benzene was detected at 0.012 ppm. No TPHg or BTEX compounds were detected in the sample from well MW-4.

6.0 CONCLUSIONS

The sampling performed between June 1989 and January 1995 have shown a fluctuation in reported TPHg and BTEX concentrations, although no trends are apparent. Ground water elevations measured during this, and the previous investigation, indicate a continued shift in flow direction toward the west, from the general southerly flow direction historically measured at the site. The gradient remains relatively flat. The reason for the shift in flow direction is unknown and may be related to natural changes that occur during transitions from extended drought conditions to more normal rainfall patterns. It should be noted that the latest water level measurements were made in January 1995 following an extended period of severe rainfall.

7.0 LIMITATIONS

The purpose of a geologic/hydrogeologic study is to reasonably characterize existing site conditions based on the geology/hydrogeology of the area. In performing such a study, a balance must be struck between a reasonable investigation into the site conditions and an exhaustive analysis of each conceivable condition. The following paragraphs discuss the assumptions and parameters under which such a study is conducted.

No investigation is thorough enough to detect every geologic/hydrogeologic condition of interest at a given site. If conditions have not been identified during the study, such a finding should not therefore be construed as a guarantee of the absence of such conditions at the site, but rather as the result of the services performed within the scope, limitations, and cost of the work performed.

We are unable to report on or accurately predict events that may change the site conditions after the described services are performed, whether occurring naturally or caused by external forces. We cannot assume responsibility for conditions we were not authorized to evaluate, or conditions not generally recognized as predictable when services were performed.

Geologic/hydrogeologic conditions may exist at the site that cannot be identified solely by visual observation. Where subsurface exploratory work was performed, our professional opinions are based in part on interpretation of data from discrete sampling locations that may not represent actual conditions at unsampled locations.

TABLES

TABLE 1
Ground Water Elevation Data
Ground Water Sampling Report
Mills College Corporation Yard, Oakland, California
(Reported in feet)

Monitoring Well	Relative Well-Top Elevation (1)	Depth to Water	Ground Water Elevation
June 1989:			
MW-1	100.00	19.44	80.56
MW-2	99.98	19.36	80.62
MW-3	100.01	19.40	80.61
December 1990:			
MW-1	100.00	22.05	77.95
MW-2	99.98	21.96	78.02
MW-3	100.01	22.00	78.01
June 1991:			
MW-1	100.00	20.85	79.15
MW-2	99.98	20.76	79.22
MW-3	100.01	20.81	79.20
March 1992:			
MW-1	100.00	19.87	80.13
MW-2	99.98	19.92	80.06
MW-3	100.01	19.82	80.19
October 1992:			
MW-1	100.00	21.69	78.31
MW-2	99.98	21.60	78.38
MW-3	100.01	21.65	78.36
May 1994:			
MW-1	100.00	19.66	80.34
MW-2	99.97	19.62	80.35
MW-3	100.01	19.60	80.41
MW-4	88.88	13.60	75.28
June 1994:			
MW-1	100.00	19.72	80.28
MW-2	99.97	19.65	80.32
MW-3	100.01	19.65	80.36
MW-4	88.88	14.01	74.87

TABLE 1
Ground Water Elevation Data
Ground Water Sampling Report
Mills College Corporation Yard, Oakland, California
(Reported in feet)

Monitoring Well	Relative Well-Top Elevation (1)	Depth to Water	Ground Water Elevation
October 1994:			
MW-1	100.00	20.17	79.83
MW-2	99.97	20.10	79.87
MW-3	100.01	20.08	79.93
MW-4	88.88	17.95	70.93
January 1995:			
MW-1	100.00	17.46	82.54
MW-2	99.97	17.48	82.49
MW-3	100.01	17.30	82.71
MW-4	88.88	10.76	78.12

NOTES
(1): Well-top elevations are based on an arbitrary datum of 100.00 feet at MW-1.

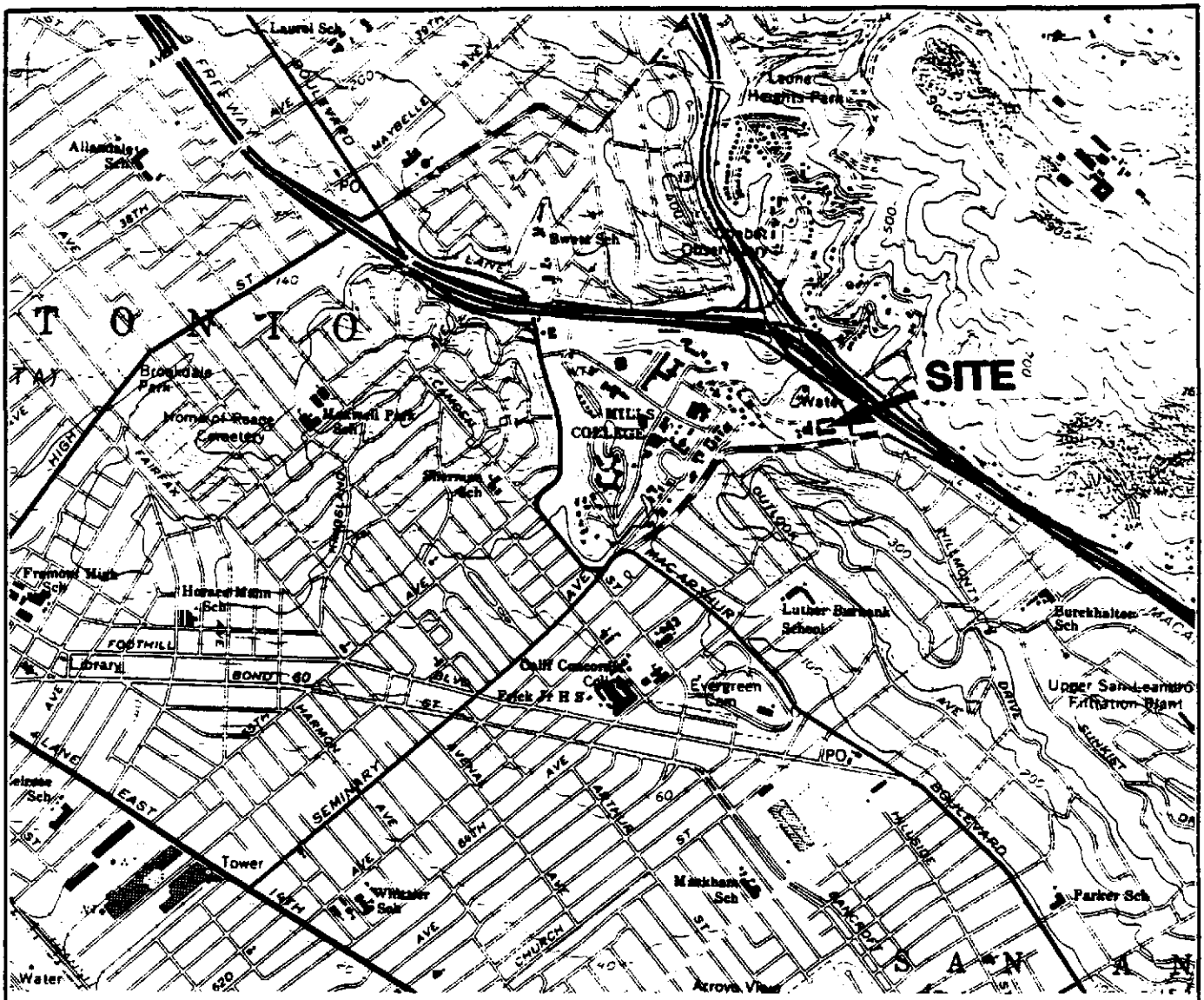
TABLE 2
Summary of Ground Water Sample Analyses
Ground Water Sampling Report
Mills College Corporation Yard, Oakland, California
(Reported in parts per million, or milligrams per liter)

Sample Date	TPH Gasoline	Benzene	Toluene	Ethylbenzene	Xylenes
MW-1:					
June 1989	11	2.1	1.9	0.031	1.4
December 1990	2.5	0.4	0.21	0.056	0.31
June 1991	16	2	1.1	0.41	2.8
March 1992	1.6	0.26	0.1	0.47	0.12
October 1992	2.8	0.33	0.13	0.06	0.2
October 1992(D)	4.2	0.54	0.23	0.08	0.36
May 1994	3.4	0.6	0.11	0.11	0.15
October 1994	8.7	1.0	0.29	0.14	0.36
January 1995	5.9	1.5	0.088	0.13	0.14
MW-2:					
June 1989	ND	ND	ND	ND	ND
December 1990	ND	ND	ND	ND	ND
June 1991	ND	0.005	ND	ND	ND
March 1992	0.09	0.047	0.0005	ND	ND
October 1992	ND	0.003	ND	ND	ND
May 1994	0.2	0.084	0.0006	ND	ND
October 1994	0.2	0.13	ND	ND	ND
January 1995	0.7	0.21	ND	ND	ND
MW-3:					
June 1989	ND	ND	ND	ND	ND
December 1990	0.05	0.011	ND	ND	ND
June 1991	0.1	0.007	ND	ND	ND
March 1992	0.09	0.27	0.0009	ND	ND
October 1992	ND	0.005	ND	ND	ND
May 1994	ND	0.005	ND	ND	ND
October 1994	ND	0.004	ND	ND	ND
January 1995	0.07	0.012	ND	ND	ND
MW-4:					
May 1994	ND	ND	ND	ND	ND
October 1994	ND	ND	ND	ND	ND
January 1995	ND	ND	ND	ND	ND

NOTES

TPH:	Total petrolum hydrocarbons
ND:	Not detected at or above the laboratory method reporting limits
(D):	Duplicate sample analytical results

FIGURES



BASE: U.S.G.S. Oakland East 7.5 Minute Quadrangle (topographic)

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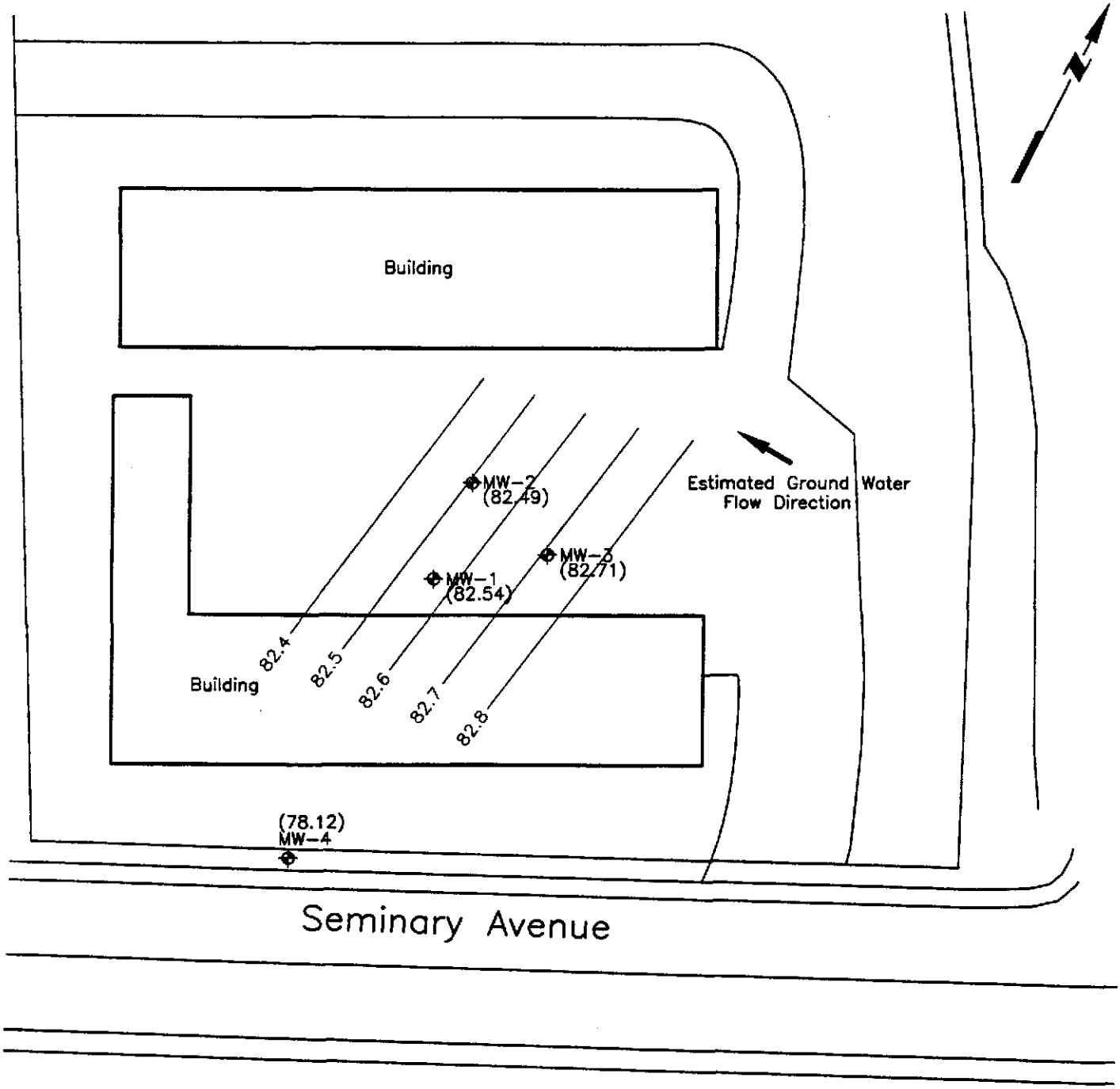
SITE VICINITY MAP

MILLS COLLEGE
CORPORATION YARD FACILITY
Oakland, California

PROJECT NO.	DATE	
K275-H	February 1995	Figure 1



LEGEND

◆ Existing Monitoring Well Location

———82.4 Ground Water Contour 1/18/95

Approximate scale in feet

0 50 100

ek275h2

HARZA

Consulting Engineers and Scientists

SITE PLAN

MILLS COLLEGE
CORPORATION YARD FACILITY
Oakland, California

PROJECT NO.	DATE	FIGURE NO.
K275-H	February 1995	2

APPENDIX A

Well Sampling Logs

HARZA

WATER SAMPLE LOG

Project Name: Mills College - Corporation Yard
Project Number: K275-H
Well Number: MW-1
Well Location:

Date: 1/18/95
Sampler: Derek Armentrout
Weather: clear

Well Construction

Date Completed:
Total Depth of Well: 32.5
Diameter: 2 inch
Well Elevation and Reference:

Sampling Equipment & Cleaning

Sampler Type: Teflon bailer
Method of Cleaning: TSP wash/DI rinse
Pump/Bailer Type: Teflon bailer
Method of Cleaning: TSP wash/DI rinse
pH Meter: Hydac
Conductivity Meter: Hydac
Comments:

Ground Water Levels:

Initial: 17.46
Final: 18.10
Reference Point: top of casing
Well Volume of Water: 2.5 gal

SAMPLING MEASUREMENTS

Time	Discharge (gal.) Per Time Period	Discharge (gal.) Cumulative	pH	Temp (°F)	Spec. Conductance (mmhos/cm) Field	Spec. Conductance (mmhos/cm) @ 25°C	Color/ Turbidity	Odor
1327	start	0						
1332		3	7.24	65.5	1250		BLACK / HIGH	PETR.
1337		6	7.10	63.0	1480		"	"
1342		9	7.05	63.4	1350		"	"
	SAMPLED							

Total Discharge: 9 gal
Casing Volumes Removed: 3.7
Method of Disposal: drummed on site

Comments:

HARZA
Consulting Engineers and Scientists

WATER SAMPLE LOG

Project No.	Date	Figure

WATER SAMPLE LOG

Project Name: Mills College - Corporation Yard
Project Number: K275-H
Well Number: MW-2
Well Location:

Date: 1/18/95
Sampler: Derek Armentrout
Weather: clear

Well Construction

Date Completed:
Total Depth of Well: 34.5
Diameter: 2 inch
Well Elevation and Reference:

Ground Water Levels:

Initial: 17.48
Final: 22.30
Reference Point: top of casing
Well Volume of Water: 2.8 gal

Sampling Equipment & Cleaning

Sampler Type: Teflon bailer
Method of Cleaning: TSP wash/DI rinse
Pump/Bailer Type: Teflon bailer
Method of Cleaning: TSP wash/DI rinse
pH Meter: Hydac
Conductivity Meter: Hydac
Comments:

SAMPLING MEASUREMENTS

Time	Discharge (gal.) Per Time Period	Discharge (gal.) Cumulative	pH	Temp (°F)	Spec. Conductance (mmhos/cm) Field	Spec. Conductance (mmhos/cm) @ 25°C	Color/ Turbidity	Odor
1255	start	0						
1300		3	7.81	67.1	920		ORANGE / HIGH	NONE
1305		6	7.45	64.0	1010		"	"
1311		9	7.36	63.1	920		"	"
	SAMPLED							

Total Discharge: 9 gal
Casing Volumes Removed: 3.2
Method of Disposal: drummed on site

Comments:

HARZA
Consulting Engineers and Scientists

WATER SAMPLE LOG

Project No.	Date	Figure

WATER SAMPLE LOG

Project Name: Mills College - Corporation Yard
Project Number: K275-H
Well Number: MW-3
Well Location:

Date: 1/18/95
Sampler: Derek Armentrout
Weather: clear

Well Construction

Date Completed:
Total Depth of Well: 32.5
Diameter: 2 inch
Well Elevation and Reference:

Sampling Equipment & Cleaning

Sampler Type: Teflon bailer
Method of Cleaning: TSP wash/DI rinse
Pump/Bailer Type: Teflon bailer
Method of Cleaning: TSP wash/DI rinse
pH Meter: Hydac
Conductivity Meter: Hydac
Comments:

Ground Water Levels:

Initial: 17.30
Final: 19.25
Reference Point: top of casing
Well Volume of Water: 2.5 gal

SAMPLING MEASUREMENTS

Time	Discharge (gal.) Per Time Period	Discharge (gal.) Cumulative	pH	Temp (°F)	Spec. Conductance (mmhos/cm) Field	Spec. Conductance (mmhos/cm) @ 25°C	Color/ Turbidity	Odor
1225	start	0						
1232		3	7.21	64.1	2860		GRAY / HIGH	none
1239		6	6.95	65.8	950		"	"
1243		9	6.87	64.6	870		"	"
	SAMPLED							

Total Discharge: 9 gal
Casing Volumes Removed: 3.6
Method of Disposal: drummed on site

Comments:

HARZA *Consulting Engineers and Scientists*	WATER SAMPLE LOG		
	Project No.	Date	Figure

WATER SAMPLE LOG

Project Name: Mills College - Corporation Yard
Project Number: K275-H
Well Number: MW-4
Well Location:

Date: 1/18/95
Sampler: Derek Armentrout
Weather: clear

Well Construction

Date Completed:
Total Depth of Well: 44.5
Diameter: 2 inch
Well Elevation and Reference:

Sampling Equipment & Cleaning

Sampler Type: Teflon bailer
Method of Cleaning: TSP wash/DI rinse
Pump/Bailer Type: peristaltic / Teflon bailer
Method of Cleaning: TSP wash/DI rinse
pH Meter: Hydac
Conductivity Meter: Hydac
Comments: Peristaltic pump used for first 5 gallons; bailer used thereafter

Ground Water Levels:

Initial: 10.76
Final: 26.10
Reference Point: top of casing
Well Volume of Water: 5.5 gal

SAMPLING MEASUREMENTS

Time	Discharge (gal.) Per Time Period	Discharge (gal.) Cumulative	pH	Temp (°F)	Spec. Conductance (mmhos/cm) Field	Spec. Conductance (mmhos/cm) @ 25°C	Color/ Turbidity	Odor
1018	start	0						
1047		6	7.02	64.2	2180		GRAY/MOD.	none
1110		12	7.40	66.9	2030		GRAY/HIGH	"
1141		17	7.36	65.4	1970		"	"
	SAMPLED							

Total Discharge: 17 gal
Casing Volumes Removed: 3 x 1
Method of Disposal: drummed on site

Comments:

HARZA *Consulting Engineers and Scientists*	WATER SAMPLE LOG		
	Project No.	Date	Figure

American Environmental Network

Certificate of Analysis

DOHS Certification: 1172 AIHA Accreditation: 11134

HARZA
425 ROLAND WAY
OAKLAND, CA 94621

ATTN: DEREK ARMENTROUT
CLIENT PROJ. ID: K275-H
CLIENT PROJ. NAME: MILLS COLLEGE

REPORT DATE: 01/31/95

DATE(S) SAMPLED: 01/18/95

DATE RECEIVED: 01/18/95

AEN WORK ORDER: 9501173

PROJECT SUMMARY:

On January 18, 1995, this laboratory received 4 water sample(s).

Client requested sample(s) be analyzed for organic parameters. Results of analysis are summarized on the following page(s).

Please see quality control report for a summary of QC data pertaining to this project.

If you have any questions, please contact Client Services at (510) 930-9090.

Larry Klein
Laboratory Director

HARZA

SAMPLE ID: MW-1
AEN LAB NO: 9501173-01
AEN WORK ORDER: 9501173
CLIENT PROJ. ID: K275-H

DATE SAMPLED: 01/18/95
DATE RECEIVED: 01/18/95
REPORT DATE: 01/31/95

ANALYTE	METHOD/ CAS#	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED
BTEX & Gasoline HCs	**EPA 8020**				
Benzene	71-43-2	1,500 *	0.5	ug/L	01/24/95
Toluene	108-88-3	88 *	0.5	ug/L	01/23/95
Ethylbenzene	100-41-4	130 *	0.5	ug/L	01/23/95
Xylenes, Total	1330-20-7	140 *	2	ug/L	01/23/95
Purgeable HCs as Gasoline	5030/GCFID	5.9 *	0.05	mg/L	01/24/95

ND = Not detected at or above the reporting limit
* = Value above reporting limit

HARZA

SAMPLE ID: MW-2
AEN LAB NO: 9501173-02
AEN WORK ORDER: 9501173
CLIENT PROJ. ID: K275-H

DATE SAMPLED: 01/18/95
DATE RECEIVED: 01/18/95
REPORT DATE: 01/31/95

ANALYTE	METHOD/ CAS#	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED
BTEX & Gasoline HCs	**EPA 8020**				
Benzene	71-43-2	210 *	0.5	ug/L	01/25/95
Toluene	108-88-3	ND	0.5	ug/L	01/23/95
Ethylbenzene	100-41-4	ND	0.5	ug/L	01/23/95
Xylenes, Total	1330-20-7	ND	2	ug/L	01/23/95
Purgeable HCs as Gasoline	5030/GCFID	0.7 *	0.05	mg/L	01/25/95

ND = Not detected at or above the reporting limit
* = Value above reporting limit

HARZA

SAMPLE ID: MW-3
AEN LAB NO: 9501173-03
AEN WORK ORDER: 9501173
CLIENT PROJ. ID: K275-H

DATE SAMPLED: 01/18/95
DATE RECEIVED: 01/18/95
REPORT DATE: 01/31/95

ANALYTE	METHOD/ CAS#	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED
BTEX & Gasoline HCs	EPA 8020				
Benzene	71-43-2	12 *	0.5	ug/L	01/23/95
Toluene	108-88-3	ND	0.5	ug/L	01/23/95
Ethylbenzene	100-41-4	ND	0.5	ug/L	01/23/95
Xylenes, Total	1330-20-7	ND	2	ug/L	01/23/95
Purgeable HCs as Gasoline	5030/GCFID	0.07 *	0.05	mg/L	01/23/95

ND = Not detected at or above the reporting limit
* = Value above reporting limit

HARZA

SAMPLE ID: MW-4
AEN LAB NO: 9501173-04
AEN WORK ORDER: 9501173
CLIENT PROJ. ID: K275-H

DATE SAMPLED: 01/18/95
DATE RECEIVED: 01/18/95
REPORT DATE: 01/31/95

ANALYTE	METHOD/ CAS#	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED
BTEX & Gasoline HCs	**EPA 8020**				
Benzene	71-43-2	ND	0.5	ug/L	01/23/95
Toluene	108-88-3	ND	0.5	ug/L	01/23/95
Ethylbenzene	100-41-4	ND	0.5	ug/L	01/23/95
Xylenes, Total	1330-20-7	ND	2	ug/L	01/23/95
Purgeable HCs as Gasoline	5030/GCFID	ND	0.05	mg/L	01/23/95

ND = Not detected at or above the reporting limit
* = Value above reporting limit

AEN (CALIFORNIA)
QUALITY CONTROL REPORT

AEN JOB NUMBER: 9501173

CLIENT PROJECT ID: K275-H

Quality Control and Project Summary

All laboratory quality control parameters were found to be within established limits.

Definitions

Laboratory Control Sample (LCS)/Method Spike(s): Control samples of known composition. LCS and Method Spike data are used to validate batch analytical results.

Matrix Spike(s): Aliquot of a sample (aqueous or solid) with added quantities of specific compounds and subjected to the entire analytical procedure. Matrix spike and matrix spike duplicate QC data are advisory.

Method Blank: An analytical control consisting of all reagents, internal standards, and surrogate standards carried through the entire analytical process. Used to monitor laboratory background and reagent contamination.

Not Detected (ND): Not detected at or above the reporting limit.

Relative Percent Difference (RPD): An indication of method precision based on duplicate analysis.

Reporting Limit (RL): The lowest concentration routinely determined during laboratory operations. The RL is generally 1 to 10 times the Method Detection Limit (MDL). Reporting limits are matrix, method, and analyte dependent and take into account any dilutions performed as part of the analysis.

Surrogates: Organic compounds which are similar to analytes of interest in chemical behavior, but are not found in environmental samples. Surrogates are added to all blanks, calibration and check standards, samples, and spiked samples. Surrogate recovery is monitored as an indication of acceptable sample preparation and instrumental performance.

D: Surrogates diluted out.

#: Indicates result outside of established laboratory QC limits.

QUALITY CONTROL DATA

METHOD: EPA 8020, 5030 GCFID

AEN JOB NO: 9501173
INSTRUMENT: H
MATRIX: WATER

Surrogate Standard Recovery Summary

Date Analyzed	Client Id.	Lab Id.	Percent Recovery Fluorobenzene
01/23/95	MW-1	01	106
01/23/95	MW-2	02	100
01/23/95	MW-3	03	99
01/23/95	MW-4	04	99
QC Limits:			92-109

DATE ANALYZED: 01/23/95
SAMPLE SPIKED: LCS
INSTRUMENT: H

Laboratory Control Sample

Analyte	Spike Added (ug/L)	Percent Recovery	QC Limits Percent Recovery
Benzene	33.3	97	63-117
Toluene	97.5	97	67-114
Hydrocarbons as Gasoline	1000	86	63-120

Daily method blanks for all associated analytical runs showed no contamination over the reporting limit.

*** END OF REPORT ***

R-3, S-2

9501173

Lab Job # _____

CHAIN-OF-CUSTODY RECORD

Project Number	Project Name	Location
K275-H	MILLS COLLEGE	OAKLAND

Sampler's Name (printed): DEREK ARMENTROUT

KA Sample I.D. Number	Lab Sample I.D. Number	Date	Soil	Water	Number/Type of Container	Analytical Tests: Method 8015 - TPH as Gasoline	Method 8015 - TPH as Diesel	Method 8240 - Volatile Organics	Method 8270 - Semi-Volatile Organics	Method 8010 - Halogenated Volatile Organics	Method 8080 - Organochlorine Pesticides & PCB's	Waste Oil -	Metals - BTEX				Remarks
MW-1	01A-C	1/18/95		✓	3 VOA	X							X				
MW-2	02AC					X							X				
MW-3	03A-C					X							X				
MW-4	04A-C					X							X				

Relinquished by: (Signature)	Date/Time	Received by: (Signature)
[signature]	1/18/95 16:15	[signature]
[signature]	1/18/95 17:05	Received by: (Signature)
Relinquished by: (Signature)	Date/Time	Received for Laboratory by: (Signature) 1/18/95 17:05

Bill ~~Ship~~ To: DAVE JOHNSON
MILLS COLLEGE 5000 MACARTHUR BLVD
OAKLAND CA 94613
Attention: 430 2146
Phone No: _____

Requested Turnaround Time: STANDARD

Kaldveer Assoc. Contact: DEREK

Remarks: REPORT TO DEREK@HARZA
BILL TO DAVE JOHNSON @ MILLS WITH HARZA DISCOUNT

Please address correspondence and return cooler # _____ to:

Kaldveer Associates, Inc.
425 Roland Way
Oakland, California 94621
(415) 568-4001

Kaldveer Associates
Geoscience Consultants
A California Corporation

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HARZA

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Ms. Juliet Shin — 1 Copy
Alameda County Health Care Services Agency
Department of Environmental Health, Hazardous Materials Division
1131 Harbor Bay Parkway, 2nd Floor
Alameda, CA 94502-6577

Alameda County LUFT Case Officer — 1 Copy
Regional Water Quality Control Board
San Francisco Bay Region
2101 Webster Street, Suite 500
Oakland, CA 94612