THE MARK GROUP, INC.
ENGINEERS & GEOLOGISTS

Transmittal

Date	Project
July 26, 1995	93-1185002.10

To	Attention
Alameda County Health Agency 1131 Harbor Bay Parkway Alameda, California 94502	Ms. Madhilla Logan

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Quantity	Description
1	REPORT - Quarterly Groundwater Monitoring Program May 1995 South Shore Shopping Center 2375 Shoreline Drive Alameda, California

95 JUL 27 PM 2:39

Comments

The referenced document is enclosed for your review and comment.

Sent by

Alan D. Gibbs
Associate

QUARTERLY GROUNDWATER MONITORING PROGRAM
MAY 1995
SOUTH SHORE SHOPPING CENTER
2375 SHORELINE DRIVE
ALAMEDA, CALIFORNIA

93-1185002.82
July 25, 1995

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THE MARK GROUP, INC.
ENGINEERS & GEOLOGISTS

July 25, 1995
93-1185002.82

95 JUL 27 PM 2:39

Mr. Gregory Baum
Vice President/General Counsel
Harsch Investment Corp.
P.O. Box 2708
1121 S. W. Salmon Street
Portland, Oregon 97208

Subject: FINAL REPORT - Quarterly Groundwater Monitoring Program
May 1995
South Shore Shopping Center
2375 Shoreline Drive
Alameda, California

Dear Mr. Baum:

The MARK Group, Inc. is pleased to submit the enclosed Final Quarterly Groundwater Monitoring Program Report for work conducted at the South Shore Shopping Center. This work was conducted pursuant to the requirements of the Alameda County Health Agency.

We appreciate the opportunity to be of continued service. Should you have any questions or comments regarding this report, please contact Mr. Alan D. Gibbs, R.G. or the undersigned at (510) 946-1055.

Sincerely,

The MARK Group, Inc.

David K. Rogers, P.E., C.E.G.
Principal

DKR:RSS:blm
QTLYJUN.LTR

cc: Mr. Tom Hargett, Texaco
Mr. Murray Stevens, Kamur
Mr. Mike Dosen, Harsch
Mr. Frank Hamedi, Soil Tech

PROFESSIONAL CERTIFICATION

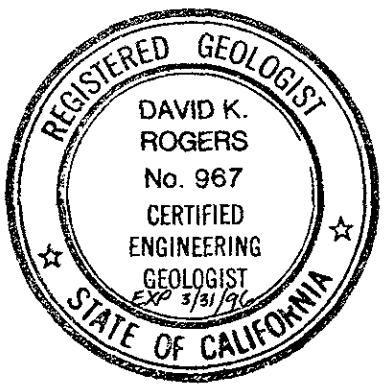
QUARTERLY GROUNDWATER MONITORING PROGRAM
MAY 1995
SOUTH SHORE SHOPPING CENTER
2375 SHORELINE DRIVE
ALAMEDA, CALIFORNIA

July 25, 1995

93-1185002.82

This report has been prepared by the staff of The MARK Group, Inc. under the professional supervision of the Principal and senior staff whose seal(s) and signature(s) appear hereon.

The findings, recommendations, specifications or professional opinions are presented, within the limits prescribed by the client, after being prepared in accordance with generally accepted professional engineering and geologic practice. There is no other warranty, either expressed or implied.



David K. Rogers, P.E., C.E.G.
Principal

Alan D. Gibbs, R.G.
Associate

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1.0 INTRODUCTION

1.1 Objective

This Quarterly Monitoring Program Report for groundwater samples collected May 9, 1995 was prepared by The MARK Group, Inc. (MARK) and summarizes the results of the groundwater sampling and analysis conducted at the South Shore Shopping Center, Alameda, California (Drawing 1-1). The work being conducted is pursuant to the requirements established by the Alameda County Health Agency (ACHA).

This report satisfies the quarterly groundwater monitoring requirements for the following parties:

- Kamur Industries, Inc. (Southshore Car Wash);
- Texaco Refining and Marketing, Inc. (Texaco) monitoring related to a former Texaco Service Station, currently Lyons Restaurant; and
- Harsch Investment Corp. (Harsch) monitoring related to a former Dry Cleaner site.

1.2 Scope of Work

The scope of the work for this Quarterly Monitoring Program consisted of conducting groundwater monitoring and sampling for May 1995. The work was performed utilizing sampling methods and procedures specified in the Quality Assurance Project Plan [QAPP, (MARK, 1994)] which was included as Appendix A in the report entitled "Quarterly Groundwater Monitoring Program, April, 1994, Southshore Shopping Center" (MARK, August 2, 1994). The scope of work included the following:

- Measuring static water levels in 20 monitoring wells (Appendix A);
- Recording groundwater field parameters (pH, temperature, specific conductance and turbidity) from five Monitoring Wells (MW-16, MW-17, MW-19, MW-22, and MW-23);
- Purging and sampling each of the five monitoring wells associated with Harsch and Texaco. Monitoring Wells MW-12 and MW-24 were purged and sampled by Soil Tech Engineering (STE);

TABLE 1-1: Monitoring Program For Second Quarter 1995
South Shore Shopping Center
Alameda, California

Well No.	Water Level	pH, EC, Temp	TPH as Gasoline	BTEX	TPH as Diesel	O&G	VOCs
MW-1	Closed						
MW-2	X						
MW-3	X						
MW-4	Damaged						
MW-5B	X						
MW-6	Closed						
MW-7B	X						
MW-8B	X						
MW-9	X						
MW-10	X						
MW-11	X						
MW-12	X		X(a)	X(a)		X(a)	X(b)
MW-13	Closed						
MW-14	No Access						
MW-15	X						
MW-16	X	X	X	X			X
MW-17	X	X	X	X			X
MW-18	X						
MW-19	X	X	X	X			X
MW-20	X						
MW-21	X						-
MW-22	X	X	X	X	X		X
MW-23	X	X	X	X			X
MW-24	X		X(a)	X(a)			X(b)
MW-25	X						

Notes:

(a) - Samples collected by Soil Tech Engineers, Analysis by Priority Environmental Laboratory.
(b) - Samples collected by Soil Tech Engineers, Analysis by McCampbell Analytical Laboratory.

Explanation:

EC	=	Electrical Conductivity
Temp	=	Temperature
BTEX	=	Benzene, Toluene, Ethylbenzene, and Xylenes
TPH	=	Total Petroleum Hydrocarbons
O&G	=	Oil and Grease
VOCs	=	Volatile Organic Compounds

in Tables 2-2 and 2-3, and in Appendix D.

Groundwater sampling and water level measurements for the Harsch and Texaco monitoring network were conducted by Mr. Geoffery Fiedler, R.G., under the direct supervision of Mr. Alan D. Gibbs, R.G. Mr. Fiedler has over 8 years experience in hydrogeology and groundwater sampling techniques. All employees involved in this project have completed 40 hours of health and safety training in accordance with 29 CFR 1910.120, and are experienced with the general sampling protocols used.

2.2 Analytical Methods

Groundwater samples collected by MARK from the Harsch and Texaco monitoring wells and the samples collected by STE (VOCs analysis) were submitted to McCampbell for analysis. McCampbell is certified by the State of California, Department of Health Services to conduct the required analyses. The groundwater samples were analyzed by McCampbell in accordance with the following Environmental Protection Agency (EPA) methods:

- EPA Method 8015/8020, for total petroleum hydrocarbons as gasoline (TPH-g) and benzene, toluene, ethylbenzene, and xylenes (BTEX);
- EPA Method 8015 (modified) for total petroleum hydrocarbons as diesel (TPH-d)(monitoring well MW-22 only); and
- EPA Method 601, for chlorinated hydrocarbons (VOCs).

STE submitted groundwater samples from Kamur's wells MW-12 and MW-24 to Priority Environmental Laboratory (PEL). Samples from these wells were analyzed by PEL for TPH-g, and BTEX. The groundwater sample from Monitoring Well MW-12 was additionally analyzed for the presence of oil and grease by EPA Method 5520. The laboratory analytical test results for this monitoring period are summarized in Tables 2-2 and 2-3. McCampbell's analytical report is presented in Appendix B. PEL's analytical report is presented in Appendix C.

2.3 Quality Assurance/Quality Control

The Quality Assurance and Quality Control (QA/QC) program utilized during this monitoring program reporting period incorporated the following field and laboratory QA/QC methods:

- Chain-of-custody control of samples;
- Laboratory methods:
  - matrix spikes;
  - matrix spike duplicates;
  - method blanks;
  - QC spikes; and
  - QC spike duplicates.

QA/QC laboratory reports are presented in Appendix B.

Table 2-1: Groundwater Elevations
South Shore Shopping Center
Alameda, California

Well ID	Date Measured	Well Elevation (feet)	Depth to Water	Groundwater Elevations (feet) City of Alameda Datum
MW-1	(Destroyed)			
MW-2	04/26/94	7.44	5.77	1.67
	10/18/94		7.27	0.17
	02/14/95		5.15	2.29
	05/09/95		5.65	1.79
MW-3	04/26/94	6.78	5.39	1.39
	10/18/94		6.68	0.10
	02/14/95		4.62	2.16
	05/09/95		5.17	1.61
MW-4	(Damaged)			
MW-5B	04/26/94	5.08	4.00	1.08
	10/18/94		5.07	0.01
	02/14/95		3.00	2.08
	05/09/95		3.63	1.45
MW-6B	(Destroyed)			
MW-7B	04/26/94	5.52	4.43	1.09
	10/18/94		5.44	0.08
	02/14/95		3.70	1.82
	05/09/95		4.13	1.39
MW-8B	04/26/94	6.15	6.33	-0.18
	10/18/94		6.54	-0.39
	02/14/95		5.57	0.58
	05/09/95		6.16	-0.01
MW-9	04/26/94	5.65	NR	--
	10/18/94		NR	--
	02/14/95		4.98	0.67
	05/09/95		5.49	0.16
MW-10	04/26/94	7.97	6.58	1.39
	10/18/94		7.69	0.28
	02/14/95		6.13	1.84
	05/09/95		6.50	1.47
MW-11	04/26/94	6.96	5.54	1.42
	10/18/94		6.68	0.28
	02/14/95		4.93	2.03
	05/09/95		5.32	1.64
MW-12	04/26/94	8.31	6.41	1.9
	10/18/94		8.00	0.31
	02/14/95		5.64	2.67
	05/09/95		6.48	1.83
MW-13	(Destroyed)			

Table 2-1: Groundwater Elevations
South Shore Shopping Center
Alameda, California

Well ID	Date Measured	Well Elevation (feet)	Depth to Water	Groundwater Elevations (feet) City of Alameda Datum
MW-14	04/26/94	5.76	5.07	0.69
	10/18/94		5.89	-0.13
	02/14/94		4.08	1.68
	05/09/95		Not Measured	–
MW-15	04/26/94	4.47	3.46	1.01
	10/18/94		8.85	-0.38
	02/14/95		3.09	1.38
	05/09/95		3.68	0.79
MW-16	04/26/94	3.52	2.93	0.59
	10/18/94		3.85	-0.33
	02/14/95		3.78	-0.26
	05/09/95		4.16	-0.64
MW-17	04/26/94	3.32	3.38	-0.06
	10/18/94		3.76	-0.44
	02/14/95		2.90	0.42
	05/09/95		3.52	-0.20
MW-18	04/26/94	4.72	4.84	-0.12
	11/04/94		4.65	0.07
	02/14/95		4.42	0.30
	05/09/95		5.01	-0.29
MW-19	04/26/94	5.28	5.09	0.19
	10/18/94		5.58	-0.30
	02/14/95		4.55	0.73
	05/09/95		5.05	0.23
MW-20	04/26/94	6.66	7.11	-0.45
	10/18/94		7.61	-0.95
	02/14/95		5.80	0.86
	05/09/95		6.31	0.35
MW-21	04/26/94	6.48	6.6	-0.12
	10/18/94		7.11	-0.63
	02/14/95		5.90	-0.58
	05/09/95		6.52	-0.04
MW-22	04/26/94	7.81	7.57	0.24
	10/18/94		8.16	-0.35
	02/14/95		6.52	1.29
	05/09/95		7.19	0.62
MW-23	04/26/94	7.09	4.45	2.64
	10/18/94		6.54	0.55
	02/14/95		4.76	2.33
	05/09/95		5.15	1.94
MW-24	04/26/94	9.19	8.49	0.70
	10/18/94		9.10	0.09
	02/14/95		7.87	1.32
	05/095/95		8.15	1.04

Table 2-1: Groundwater Elevations
South Shore Shopping Center
Alameda, California

Well ID	Date Measured	Well Elevation (feet)	Depth to Water	Groundwater Elevations (feet) City of Alameda Datum
MW-25	04/26/94	9.41	9.15	0.26
	10/18/94		9.55	-0.14
	02/14/95		8.75	0.66
	05/09/95		8.86	0.55

Notes:

1. Groundwater levels measured from the top of the PVC well casing.
2. Well elevations surveyed with reference to the City of Alameda datum (+3.41 feet msl).

NR = Not recorded.

Table 2-2: Groundwater Analytical Results - Total Petroleum Hydrocarbons and BTEX
South Shore Shopping Center
Alameda, California

Well No.	Date Sample	TPH as Diesel	TPH as Gasoline	Oil\Grease	Benzene	Toluene	Xylenes	Ethylbenzene
Texaco Wells								
MW-22	04/28/94	<0.05	<0.05	NT	<0.0005	<0.0005	<0.0005	<0.0005
	10/18/94	<0.05	<0.05	NT	<0.0005	<0.0005	<0.0005	<0.0005
	02/15/95	<0.05	<0.05	NT	<0.0005	<0.0005	<0.0005	<0.0005
	05/09/95	<0.05	<0.05	NT	<0.0005	<0.0005	<0.0005	<0.0005
Harsch Wells								
MW-16	05/2/94	<0.05	<0.05	NT	<0.0005	<0.0005	<0.0005	<0.0005
	10/18/94	NT	<0.05	NT	<0.0005	<0.0005	<0.0005	<0.0005
	02/15/95	NT	<0.05	NT	<0.0005	<0.0005	<0.0005	<0.0005
	05/09/95	NT	<0.05	NT	<0.0005	<0.0005	<0.0005	<0.0005
MW-17	04/29/94	<0.05	<0.05	NT	<0.0005	<0.0005	<0.0005	<0.0005
	10/18/94	NT	<0.05	NT	<0.0005	<0.0005	<0.0005	<0.0005
	02/15/95	NT	<0.05	NT	<0.0005	<0.0005	<0.0005	<0.0005
	05/09/95	NT	<0.05	NT	<0.0005	<0.0005	<0.0005	<0.0005
MW-19	04/29/94	<0.05	<0.05	NT	<0.0005	<0.0005	<0.0005	<0.0005
	10/18/94	NT	<0.05	NT	<0.0005	<0.0005	<0.0005	<0.0005
	02/15/95	NT	<0.05	NT	<0.0005	<0.0005	<0.0005	<0.0005
	05/09/95	NT	<0.05	NT	<0.0005	<0.0005	<0.0005	<0.0005
MW-23	05/2/94	<0.05	<0.05	NT	<0.0005	<0.0005	<0.0005	<0.0005
	10/18/94	NT	<0.05	NT	<0.0005	<0.0005	<0.0005	<0.0005
	02/15/95	NT	<0.05	NT	<0.0005	<0.0005	<0.0005	<0.0005
	05/09/95	NT	<0.05	NT	<0.0005	<0.0005	<0.0005	<0.0005
Kamur Wells								
MW-12	04/27/94	NT	**160**	NT	**1.3**	**6.3**	**12.0**	**1.4**
	10/18/94	NT	**77.0**	NT	**5.2**	**6.2**	**22.0**	**13.0**
	02/15/95	NT	**68.0**	NT	**1.1**	**6.2**	**15.0**	**2.0**
	02/14/95(ST)	NT	**68.0**	**2.3**	**0.12**	**0.2**	**0.71**	**0.18**
	05/09/95(ST)	NT	**16.0**	<0.5	**0.071**	**0.130**	**0.20**	**0.110**
MW-24	02/15/95	NT	**29.0**	NT	**7.7**	**1.6**	**2.1**	**1.2**
	02/14/95(ST)	NT	**4.1**	NT	**0.053**	**0.021**	**0.046**	**0.02**
	05/09/95(ST)	NT	**8.9**	NT	**0.180**	**0.048**	**0.15**	**0.061**
MW-25	04/27/94	NT	<0.05	NT	<0.0005	<0.0005	<0.0005	<0.0005
	10/18/94	NT	<0.05	NT	<0.0005	<0.0005	<0.001	<0.0005
PMCL		NA	NA	NA	0.001	1.0	1.75	0.68

Explanation:

All results are in milligrams per liter
BTEX = Benzene, toluene, ethylbenzene, and xylenes
NT = Not tested
NR = Analytical results not reported by laboratory
NA = Not Available
PMCL = Primary Maximum Contaminant Level
ST = Analytical Results Provided by Soil Tech Engineering
TPH = Total Petroleum Hydrocarbons

Table 2-3: Groundwater Analytical Results - Volatile Organic Compounds
South Shore Shopping Center
Alameda, California

Well No.	Date Sample	Chloro-benzene	1,2-DCA	1,1-DCE	Trans 1,2-DCE	PCE	TCE	Chloroform	Cis 1,2-DCE
Texaco Wells									
MW-22	04/28/94	<0.001	**0.015**	<0.002	<0.001	<0.001	<0.002	<0.001	NR
	10/18/94	<0.0005	**0.014**	<0.0005	<0.0005	<0.0005	<0.0005	**0.00065**	<0.0005
	02/15/95	<0.0005	**0.0082**	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
	05/09/95	<0.0005	**0.011**	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
Harsch Wells									
MW-16	05/2/94	<0.001	**0.002**	<0.002	<0.001	<0.001	<0.002	<0.001	NR
	10/18/94	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	**0.0061**	<0.0005
	02/15/95	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
	05/09/95	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
MW-17	04/29/94	<0.001	<0.002	<0.002	<0.001	**0.0024**	<0.002	<0.001	NR
	10/18/94	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	**0.004**	<0.0005
	02/15/95	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
	05/09/95	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
MW-19	04/29/94	<0.001	<0.002	<0.002	<0.001	**0.0011**	<0.002	<0.001	NR
	10/18/94	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	**0.0046**	<0.0005
	02/15/95	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
	05/09/95	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
MW-23	05/2/94	<0.001	<0.002	<0.002	<0.001	<0.001	<0.002	<0.001	NR
	10/18/94	<0.0005	**0.00053**	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
	02/15/95	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
	05/09/95	<0.0005	**0.00099**	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
Kamur Wells									
MW-12	04/27/94	<0.001	<0.002	<0.002	<0.001	**0.0039**	<0.002	<0.001	NR
	10/18/94	NT	NT	NT	NT	NT	NT	NT	<0.0005
	02/15/95	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
	05/09/95	<0.0005	**0.003**	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
MW-24	02/15/95	<0.0005	**0.0066**	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
	05/09/95	<0.0005	**0.0055**	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	**0.0011**
MW-25	04/27/94	<0.001	**0.0093**	<0.002	<0.001	**0.0039**	<0.002	<0.001	NR
	10/18/94	<0.0005	**0.0052**	<0.0005	<0.0005	<0.0005	<0.0005	**0.0013**	<0.0005
	02/15/95	NT	NT	NT	NT	NT	NT	NT	NT
	05/09/95	NT	NT	NT	NT	NT	NT	NT	NT
PMCL		0.03	0.0005	0.006	0.01	0.005	0.005	0.1	0.006

Explanation:

All results are in milligrams per liter
DCA = Dichloroethane
DCE = Dichloroethene
PCE = Tetrachloroethene
TCE = Trichloroethene
BTEX = Benzene, toluene, ethylbenzene, and xylenes
NS = Not sampled
NT = Not tested
NR = Analytical results not reported by laboratory
NA = Not Available
PMCL = Primary Maximum Contaminant Level
ST = Analytical Results Provided by Soil Tech Engineering

3.0 RESULTS OF THE SELF-MONITORING PROGRAM

3.1 Groundwater Gradient

There are presently 22 monitoring wells associated with the South Shore Shopping Center and site. Because one of these wells is damaged (MW-4) and one (MW-14) was not monitored during this event, 20 wells were utilized to evaluate the site groundwater flow conditions. Based on the most recent water elevation data collected during May 1995 (see Table 1-1), groundwater generally flows northwest, west, and southwest. However, the measured groundwater elevations indicate localized steep gradients, groundwater low and high areas, and varied groundwater flow directions. Groundwater elevations and flow directions are illustrated in Drawing 2-1. The groundwater elevations are referenced to City of Alameda datum which is 3.41 feet above mean sea level (MSL).

3.2 Analytical Results

The analytical results for monitoring wells MW-12, MW-16, MW-17, MW-19, MW-22, MW-23, and MW-24 are presented in Tables 2-2 and 2-3 and are discussed herein. The laboratory analytical reports are included in Appendices B and C. Historical groundwater quality analytical results are summarized in Appendix D. The groundwater sample analytical results indicate:

- TPH-g and BTEX were not detected in the groundwater samples from monitoring wells MW-16, MW-17, MW-19, MW-22, and MW-23.
- The TPH-g concentrations reported by STE for monitoring wells MW-12 and MW-24 were: MW-12 - 16 mg/l; MW-24 - 8.9 mg/l;
- Oil and grease was not detected in the sample collected by STE from monitoring well MW-12;
- TPH-d was not detected in samples collected from monitoring well MW-22;
- STE reported detecting benzene in samples from monitoring wells MW-12 (0.071 mg/l) and MW-24 (0.180 mg/l);
- STE reported detecting Toluene in samples collected from monitoring wells MW-12 (0.130 mg/l) and MW-24 (0.048 mg/l). Toluene was not detected in the remaining wells;

- STE reported detecting xylene in monitoring wells MW-12 (0.20 mg/l) and MW-24 (0.15 mg/l).;
- STE reported detecting ethylbenzene in samples from monitoring wells MW-12 (0.110 mg/l) and MW-24 (0.061 mg/l);
- 1,2-dichloroethane (1,2 DCA) was not detected above the method detection limit of 0.0005 mg/l in monitoring wells MW-16, MW-17, and MW-19. 1,2 DCA was detected in the samples collected from MW-12 (0.003 mg/l), MW-23 (0.00099 mg/l), MW-24 (0.0055 mg/l), and MW-22 (0.011 mg/l). The California Primary Maximum Contaminant Level (PMCL) for 1,2 DCA is 0.0005 mg/l. Drawing 3-1 shows the distribution of 1,2 DCA detected in groundwater samples collected during this quarter;
- Cis 1,2-dichloroethene was detected at a reported concentration of 0.0011 mg/l in the sample from monitoring well MW-24. Cis 1,2-dichloroethene was not detected in any of the other groundwater samples;
- Chlorobenzene, chloroform, 1,1-dichloroethene, trans 1,2-dichloroethene, tetrachloroethene, and trichloroethene were not detected in any of the well samples analyzed during this quarter; and
- A travel blank was submitted to McCampbell for BTEX analyses. The BTEX constituents were not detected in the travel blank.

3.3 Quality Assurance/Quality Control

The QA/QC program was designed to:

- Establish the necessary activities to control the quality of sample collection, analysis, and data validations; and
- Guide assessment of the precision, accuracy, and completeness of the data.

The sampling methods and protocols have been specified in the QAPP. Relevant sections of the QAPP specify the methods and protocols for the groundwater sample collection, handling, and shipment; water level measurements; purging; and analytical methods.

Laboratory in-house QA/QC results were reported by McCampbell and PEL to indicate that all matrix spikes, matrix spike duplicates, method blanks, QC spike, and QC spike duplicate results are within acceptable laboratory limits.

4.0 CONCLUSIONS

4.1 Groundwater Quality

Water level measurements indicate that groundwater flow is complex and continues to flow generally north, west, or southerly toward the bay (Drawing 2-1). The groundwater flow pattern is consistent with the previous quarter. The data suggests that surface water infiltration and subsurface conditions may be influencing the site groundwater flow direction and gradient. Other factors potentially influencing the site groundwater flow conditions may include:

- Variation in thicknesses and type of fill material used;
- Surface water infiltration through variable ground cover;
- Total Dissolved Solids (TDS) and locations of saltwater interface;
- Depth to well screen; and
- Leaking pipes, buried utility trenches, etc.

During this monitoring period, seven monitoring wells were sampled. 1,2 DCA was detected in groundwater samples from monitoring wells MW-12 (0.003 mg/l), MW-22 (00.011 mg/l), MW-23 (0.00099 mg/l), and MW-24 (0.0055 mg/l). 1,2 DCA has not previously been detected in monitoring well MW-12. These other concentrations are similar in magnitude to the concentrations reported previously.

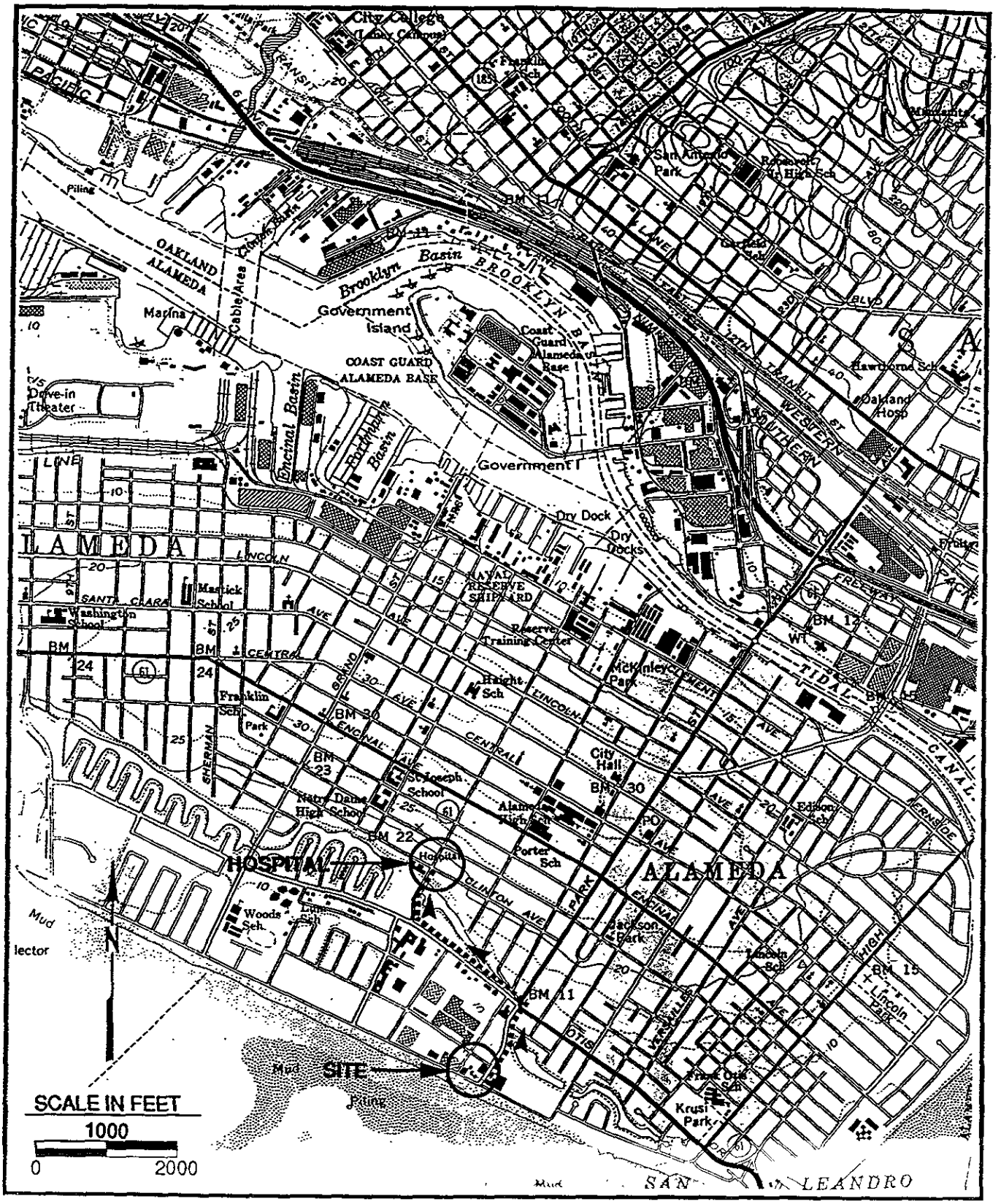
Chloroform was not detected in any of the groundwater samples collected during this quarter.

Groundwater samples collected by STE from monitoring wells MW-12 and MW-24 were analyzed for TPH-g and BTEX. The reported TPH-g and BTEX concentrations are generally consistent with concentrations reported during previous quarters.

5.0 RECOMMENDATIONS

Monitoring Well MW-4 is damaged and no longer operable as a Monitoring Well. This well should be destroyed and sealed. This well was originally installed to define the horizontal extent of chemical impacts to groundwater. MARK sees no need at this time to replace this monitoring well. The next quarterly groundwater sampling event should be scheduled for August 1995.

Drawings



SITE LOCATION MAP

PREPARED BY RSS REVIEWED BY ADG DATE 6/22/94

THE MARK GROUP, INC.
ENGINEERS & GEOLOGISTS

Quarterly Groundwater Monitoring Program
Southshore Shopping Center
Corner of Shoreline Drive & Park Avenue
Alameda, California

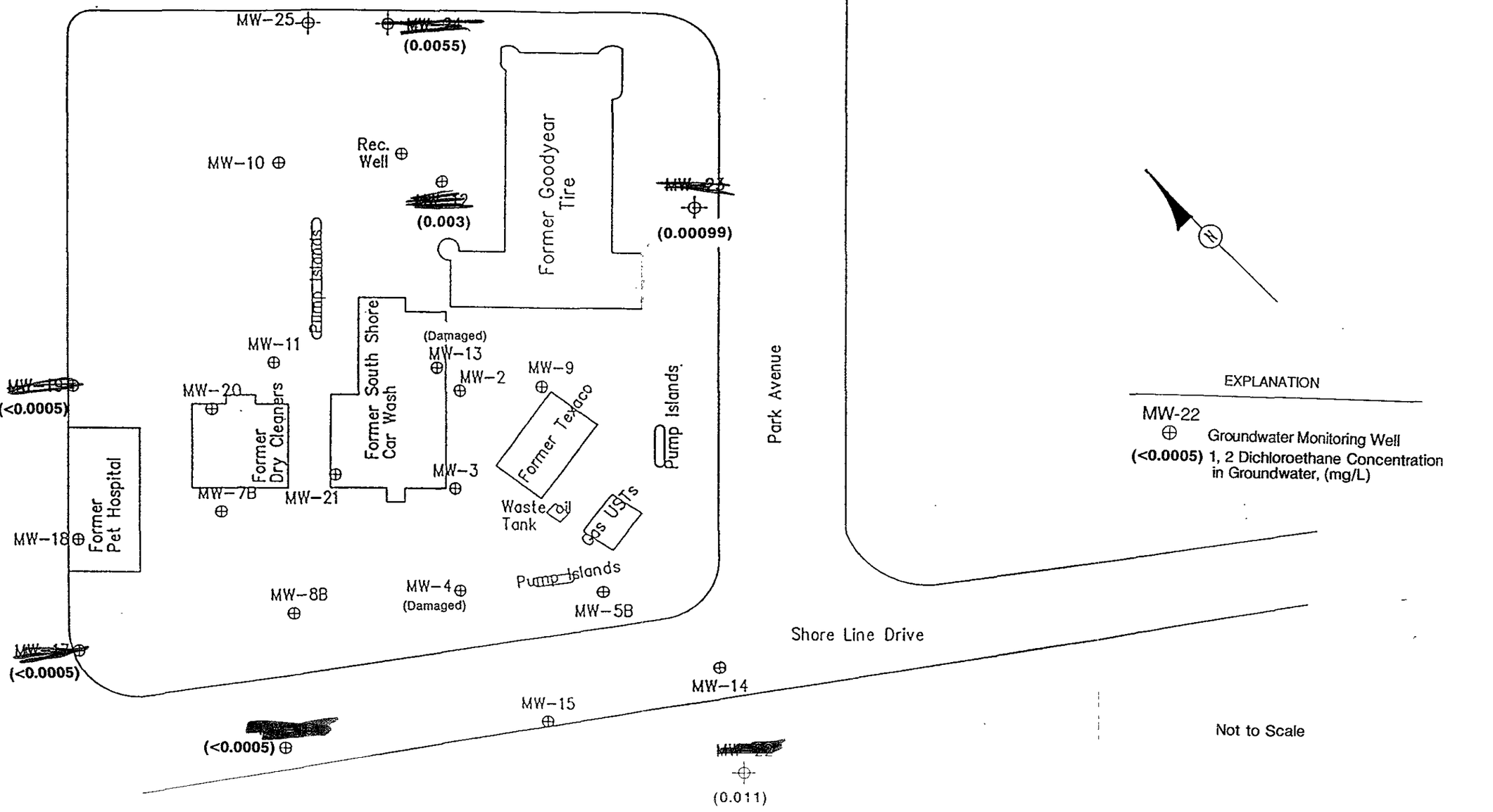
PROJECT NO.
93-1175306

DRAWING NO.
1-1

T&LCK (5/26/92)

Approved By _____ Date 7-25-95

Prepared By GAF



EXPLANATION

MW-22 ⊕ Groundwater Monitoring Well

(<0.0005) 1, 2 Dichloroethane Concentration in Groundwater, (mg/L)

Not to Scale

1, 2 DICHLOROETHANE CONCENTRATION FOR SAMPLED WELLS 5/12/95

THE MARK GROUP, INC.
ENGINEERS & GEOLOGISTS

Quarterly Groundwater Monitoring Program
South Shore Shopping Center
Corner of Shoreline Drive & Park Avenue
Alameda, California

PROJECT NO
92-1175306.

DRAWING NO
3-1

Appendix A

THE MARK GROUP
ENGINEERS & GEOLOGISTS

Field Water Level Measurements

P1 OF 2

DATE: 5/9/96

PROJECT No.: 92-1175306

PERSONNEL: G. FIEDLER

HOW MEASURED/DEVICE: E-TAPE

LAST CALIBRATION DATE: FACTORY

WEATHER: OVERCAST/DRIZZLE CALM WARM COMMENTS:

Time	Well No.	Predicted or Measured Tide Level*	Top of Casing Elevation (Measuring Point)	Depth Below Top of Casing (MP)	Water Level Elevation
1324	MW-12		8.31	6.48	1.83
1326	MW-24		9.19	8.15	1.04
1328	MW-25		9.41	8.86	0.55
1315	MW-10		7.97	6.50	1.47
1317	MW-11		6.96	5.32	1.64
1330	MW-13	DESTROYED (PER NOORI-STE)	—	—	—
1323	MW-2		7.44	5.65	1.79
1328	MW-3		6.78	5.17	1.61
1331	MW-4	DAMAGED	—	—	—
1335	MW-9B		5.65	5.49	0.16
1339	MW-5B		5.08	3.63	1.45
1341	MW-7B		5.52	4.13	1.39
1340	MW-19		5.28	5.05	0.23
1347	MW-20		6.66	6.31	0.35
[illegible]	MW-21		[illegible]	[illegible]	[illegible]
[illegible]	[illegible]		4.47	[illegible]	0.79
1402	[illegible]		[illegible]	4.16	[illegible]
1405	MW-22		[illegible]	[illegible]	[illegible]

* TIDE TABLE REFERENCE:

THE MARK GROUP
ENGINEERS & GEOLOGISTS

Field Water Level Measurements

P2 OF 2

DATE: 5/9/95

PERSONNEL: G. FEDLER

WEATHER: SEE P 1

PROJECT No.: 92-1175306

HOW MEASURED/DEVICE: E-TAPE

LAST CALIBRATION DATE: FACTORY

COMMENTS:

Time	Well No.	Predicted or Measured Tide Level*	Top of Casing Elevation (Measuring Point)	Depth Below Top of Casing (MP)	Water Level Elevation
—	MW-14	NOT MEASURED	5.76	—	—
1409	MW-23		7.09	5.15	1.94
1414	MW-18		4.72	5.01	-0.29
1416	MW-17		3.32	3.52	-0.20
1420	MW-8B		6.15	6.16	-0.01

* TIDE TABLE REFERENCE:

THE MARK GROUP
ENGINEERS & GEOLOGISTS, INC.

Water Purging & Sampling Log

Date 5/9/95 Sample Location MW-16

Project Name SOUTHSHORE CENTER Project No. 92-1175302

Weather Conditions OVERCAST/DRIZZLE, CALM, WARM

Observations/Comments

Samples Collected By G. FIEDLER

QUALITY CONTROL

Purging/Sampling Method BAILED / TEFLON BAILER

Method to Measure Water Level E-TAPE

Pump Lines or Bailer Ropes: (new) cleaned dedicated

Method of Cleaning Bailer/Pump DISPOSABLE

pH Meter No. HYDAC Date Calibrated 5/9/95

Sp Conductance Meter No. HYDAC Date Calibrated 5/9/95

PURGING AND SAMPLING DATA

Water Level (below MP) Start 3.52 End 10.6

TD = 30.1

CV = (30.1 - 3.52) .17 = 4.5g

Measuring Point (MP) TOP OF PVC

Time	Pump Rate (gpm)	Discharge (gallons)	pH	Temp (°C) (°F)	Sp Cond (µmhos/cm)	Color	Odor	Turbidity
1450	BEGIN PURGING WELL					DARK GRAY	H_2S	HIGH - SILTY
1457		4	7.0	68.5	>20,000	〃	〃	MOD.
1505		9	6.9	68.7	〃	MOD. GRAY	〃	MOD.
1512		15	6.8	68.0	〃	〃	〃	MOD.
1520	SAMPLED WELL							
1540		18	6.8	68.2	〃	〃	〃	MOD.

Total Discharge 18 GALLONS Casing Volumes 4

Method of Disposal of Discharge Water STORED ONSITE IN 55g DRUM

THE MARK GROUP
ENGINEERS & GEOLOGISTS, INC.

Water Purging & Sampling Log

Date 5/9/95 Sample Location MW-22

Project Name SOUTHSHORE CENTER Project No. 92-1175302

Weather Conditions OVERCAST/DRIZZLE, CALM, WARM

Observations/Comments

Samples Collected By G. FIENKEL

QUALITY CONTROL

Purging/Sampling Method BAILED / TEFLON BAILER

Method to Measure Water Level E-TAPE

Pump Lines or Bailer Ropes: (new) cleaned dedicated

Method of Cleaning Bailer/Pump DISPOSABLE

pH Meter No. HYDAC Date Calibrated 5/9/95

Sp Conductance Meter No. HYDAC Date Calibrated 5/9/95

PURGING AND SAMPLING DATA

Water Level (below MP) Start 7.19 End 7.86

TD 24.1
CV = (24.1 - 7.2) .17 = 2.9g

Measuring Point (MP) TOP OF PVC

Time	Pump Rate (gpm)	Discharge (gallons)	pH	Temp (°C)	Sp Cond (µmhos/cm)	Color	Odor	Turbidity
1605	BEGIN PURGING WELL					BROWN	NONE	SILTY
1610		3	7.8	62.8	900	"	"	"
1614		6	7.7	62.8	1620	"	"	"
1620		9	7.7	62.8	1650	"	"	"
1625	SAMPLED WELL							
1635		12	7.7	62.8	1690	"	"	"

Total Discharge 12 GALLONS Casing Volumes 4

Method of Disposal of Discharge Water STORED ONSITE IN 55g DRUM

THE MARK GROUP
ENGINEERS & GEOLOGISTS, INC.

Water Purging & Sampling Log

Date 5/9/95 Sample Location MW-23

Project Name SOUTHSHORE CENTER Project No. 92-1175302

Weather Conditions OVERCAST/DRIZZLE, CALM, WARM

Observations/Comments

Samples Collected By G. FIEMEGA

QUALITY CONTROL

Purging/Sampling Method BAILED/TEFLON BAILER

Method to Measure Water Level E-TAPE

Pump Lines or Bailer Ropes: (new) cleaned dedicated

Method of Cleaning Bailer/Pump DISPOSABLE

pH Meter No. HYDAC Date Calibrated 5/9/95

Sp Conductance Meter No. HYDAC Date Calibrated 5/9/95

PURGING AND SAMPLING DATA

Water Level (below MP) Start 5.15 End 5.52

TD 18.6'

CV (18.6 - 5.15) .17 = 2.39

Measuring Point (MP) TOP OF PVC

Time	Pump Rate (gpm)	Discharge (gallons)	pH	Temp (°C)(°F)	Sp Cond (µmhos/cm)	Color	Odor	Turbidity
1645	BEGIN PURGING WELL					LT GRAY	NONE	SLIGHT
1651		2.5	7.7	63.6	270	"	"	"
1657		5.0	7.5	64.3	288	"	"	"
1704		7.5	7.5	64.4	290	"	"	"
1710	SAMPLED WELL							
1720		10	7.5	64.4	292	"	"	"

Total Discharge 4 GALLONS Casing Volumes 4

Method of Disposal of Discharge Water STORED ONSITE IN 55G DRUM

Sheet 1 of 1

THE MARK GROUP
ENGINEERS & GEOLOGISTS, INC.

Water Purging & Sampling Log

Date 5/9/95 Sample Location MW-19

Project Name SOUTHSHORE CENTER Project No. 92-1175302

Weather Conditions OVERCAST/DRIZZLE, CALM, WARM

Observations/Comments

Samples Collected By G. FIEDLER

QUALITY CONTROL

Purging/Sampling Method BAILED / TEFLON BAILER

Method to Measure Water Level E-TAPE

Pump Lines or Bailer Ropes: (new) cleaned dedicated

Method of Cleaning Bailer/Pump DISPOSABLE

pH Meter No. HYDAC Date Calibrated 5/9/95

Sp Conductance Meter No. HYDAC Date Calibrated 5/9/95

PURGING AND SAMPLING DATA

Water Level (below MP) Start 5.05 End 5.76

TD = 24.9

CV = (24.9 - 5.05) 0.17 = 3.4g

Measuring Point (MP) TOP OF PVC

Time	Pump Rate (gpm)	Discharge (gallons)	pH	Temp (°C/°F)	Sp Cond (µmhos/cm)	Color	Odor	Turbidity
1740	BEGIN PURGING WELL					LT GRAY	H_2S	LOW
1745		3.5	6.6	66	16,000	"	"	"
1750		7.0	6.6	67	16,500	"	"	"
1755		10.5	6.5	67	17,000	"	"	"
1805	SAMPLED WELL							
1810		14	6.6	66	16,400	"	"	"

Total Discharge 14 GALLONS Casing Volumes 4

Method of Disposal of Discharge Water STORED ONSITE IN 55g DRUM

Sheet 1 of 1

THE MARK GROUP
ENGINEERS & GEOLOGISTS, INC.

Water Purging & Sampling Log

Date 5/9/95 Sample Location MW-17

Project Name SOUTHSHORE CENTER Project No. 92-1175302

Weather Conditions OVERCAST/DRIZZLE, CALM, WARM

Observations/Comments

Samples Collected By G. FIEMEGL

QUALITY CONTROL

Purging/Sampling Method BAILED/TEFLON BAILER

Method to Measure Water Level E-TAPE

Pump Lines or Bailer Ropes: (new) cleaned dedicated

Method of Cleaning Bailer/Pump DISPOSABLE

pH Meter No. HYDAC Date Calibrated 5/9/95

Sp Conductance Meter No. HYDAC Date Calibrated 5/9/95

PURGING AND SAMPLING DATA

Water Level (below MP) Start 4.16 End 4.62

TD = 24.8

CV = (24.8 - 4.16) .17 = 3.5g

Measuring Point (MP) TOP OF PVC

Time	Pump Rate (gpm)	Discharge (gallons)	pH	Temp (°C)	Sp Cond (µmhos/cm)	Color	Odor	Turbidity
1820 BEGIN PURGING WELL						DARK GRAY	H_2S	SLIGHT SILT MODERATE
1823		3.5	7.3	65	15,840	"	"	"
1830		7.0	7.2	66	15,850	"	"	"
1837		10.5	7.1	66	16,360	"	"	"
1850 SAMPLED WELL								
1900		14	7.1	66	16,800	"	"	"

Total Discharge 14 GALLONS Casing Volumes 4

Method of Disposal of Discharge Water STORED ONSITE IN 55g DRUM

Sheet 1 of 1

THE MARK GROUP
ENGINEERS & GEOLOGISTS, INC.

Conductivity Meter Calibration Log

Meter No. YSI 32C

Date	Temp (°C)F	Standard/Actual	Standard/Actual	Standard/Actual	Project No.	Operator	Comments
5/9/95	74	1,000/1028	10,000/10570		92-1175306	GAF	

THE MARK GROUP
ENGINEERS & GEOLOGISTS, INC.

pH Meter Calibration Log

Meter No. HYDAC

Date	Temp (°F)	Standard/Actual	Standard/Actual	Standard/Actual	Project No.	Operator	Comments
5/9/95	74	7.00/7.04	10.00/9.93		92-1175306	GAF	

Appendix B

McCAMPBELL ANALYTICAL INC.

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

05/19/95

Dear Jeff:

Enclosed are:

1). the results of **8** samples from your **South Shore, Alameda** project,

2). a QC report for the above samples

3). a copy of the chain of custody, and

4). a bill for analytical services.

If you have any questions please contact me. McCampbell Analytical Laboratories strives for excellence in quality, service and cost. Thank you for your business and I look forward to working with you again.

Yours truly,

Edward Hamilton

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

The Mark Group Hookston Square, # 120 3480 Buskirk Avenue Pleasant Hill, CA 94523	Client Project ID: South Shore, Alameda	Date Sampled: 05/09/95
		Date Received: 05/10/95
	Client Contact: Jeff Fiedler	Date Extracted: 05/11-05/12/95
	Client P.O:	Date Analyzed: 05/11-05/12/95

Gasoline Range (C6-C12) Volatile Hydrocarbons as Gasoline*, with 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)+	Benzene	Toluene	Ethylbenzene	Xylenes	% Rec. Surrogate
52352	Trip Blank	W	---	ND	ND	ND	ND	103
52353	MW-16	W	ND	ND	ND	ND	ND	99
52354	MW-22	W	ND	ND	ND	ND	ND	100
52355	MW-23	W	ND	ND	ND	ND	ND	103
52356	MW-19	W	ND	ND	ND	ND	ND	101
52357	MW-17	W	ND	ND	ND	ND	ND	101
Reporting Limit unless otherwise stated; ND means not detected above the reporting limit		W	50 ug/L	0.5	0.5	0.5	0.5	
		S	1.0 mg/kg	0.005	0.005	0.005	0.005	

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

cluttered chromatogram, sample peak coelutes with surrogate peak

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

DHS Certification No 1644

Edward Hamilton, Lab Director

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

The Mark Group Hookston Square, # 120 3480 Buskirk Avenue Pleasant Hill, CA 94523	Client Project ID: South Shore, Alameda	Date Sampled: 05/09/95
		Date Received: 05/10/95
	Client Contact: Jeff Fiedler	Date Extracted: 05/10/95
	Client P.O:	Date Analyzed: 05/10/95

Diesel Range (C10-C23) Extractable Hydrocarbons as Diesel *

EPA methods modified 8015, and 3550 or 3510; California RWQCB (SF Bay Region) method GCFID(3550) or GCFID(3510)

Lab ID	Client ID	Matrix	TPH(d)+	% Recovery Surrogate
52360	MW-22	W	ND	98
Reporting Limit unless otherwise stated; ND means not detected above the reporting limit		W	50 ug/L	
		S	1.0 mg/kg	

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

cluttered chromatogram resulting in coeluted surrogate and sample peaks, or, surrogate peak is on elevated baseline, or, surrogate has been diminished by dilution of original extract

+ 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 diesel is significant, b) diesel range compounds are significant; no recognizable pattern, c) aged diesel? is significant), d) gasoline range compounds are significant, e) medium boiling point pattern that does not match diesel (?); f) one to a few isolated peaks present, g) oil range compounds are significant, h) lighter than water immiscible sheen is present, i) liquid sample that contains greater than ~ 5 vol % sediment

DHS Certification No 1644

Edward Hamilton, Lab Director

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

The Mark Group Hookston Square, # 120 3480 Buskirk Avenue Pleasant Hill, CA 94523	Client Project ID: South Shore, Alameda	Date Sampled: 05/09/95
		Date Received: 05/10/95
	Client Contact: Jeff Fiedler	Date Extracted: 05/10/95
	Client P.O:	Date Analyzed: 05/10/95

Volatile Halocarbons

EPA method 601 or 8010

Lab ID	52353	52354	52355	52356
Client ID	MW-16	MW-22	MW-23	MW-19
Matrix	W	W	W	W
Compound	Concentration*			
Bromodichloromethane	ND	ND	ND	ND
Bromoform(b)	ND	ND	ND	ND
Bromomethane	ND	ND	ND	ND
Carbon Tetrachloride(c)	ND	ND	ND	ND
Chlorobenzene	ND	ND	ND	ND
Chloroethane	ND	ND	ND	ND
2-Chloroethyl Vinyl Ether(d)	ND	ND	ND	ND
Chloroform (e)	ND	ND	ND	ND
Chloromethane	ND	ND	ND	ND
Dibromochloromethane	ND	ND	ND	ND
1,2-Dichlorobenzene	ND	ND	ND	ND
1,3-Dichlorobenzene	ND	ND	ND	ND
1,4-Dichlorobenzene	ND	ND	ND	ND
Dichlorodifluoromethane	ND	ND	ND	ND
1,1-Dichloroethane	ND	ND	ND	ND
1,2-Dichloroethane	ND	11	0.99	ND
1,1-Dichloroethene	ND	ND	ND	ND
cis 1,2-Dichloroethene	ND	ND	ND	ND
trans 1,2-Dichloroethene	ND	ND	ND	ND
1,2-Dichloropropane	ND	ND	ND	ND
cis 1,3-Dichloropropene	ND	ND	ND	ND
trans 1,3-Dichloropropene	ND	ND	ND	ND
Methylene Chloride(f)	ND	ND	ND	ND
1,1,2,2-Tetrachloroethane	ND	ND	ND	ND
Tetrachloroethene	ND	ND	ND	ND
1,1,1-Trichloroethane	ND	ND	ND	ND
1,1,2-Trichloroethane	ND	ND	ND	ND
Trichloroethene	ND	ND	ND	ND
Trichlorofluoromethane	ND	ND	ND	ND
Vinyl Chloride(g)	ND	ND	ND	ND
% Recovery Surrogate	89	90	89	90
Comments				

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

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

ND means not detected above the reporting limit, N/A means analyte not applicable to this analysis

(b) tribromomethane, (c) tetrachloromethane, (d) (2-chloroethoxy) ethene, (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

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

The Mark Group Hookston Square, # 120 3480 Buskirk Avenue Pleasant Hill, CA 94523	Client Project ID: South Shore, Alameda	Date Sampled: 05/09/95
		Date Received: 05/10/95
	Client Contact: Jeff Fiedler	Date Extracted: 05/10/95
	Client P.O:	Date Analyzed: 05/10/95

Volatile Halocarbons

EPA method 601 or 8010

Lab ID	52357	52358	52359	
Client ID	MW-17	MW-12	MW-24	
Matrix	W	W	W	
Compound	Concentration*			
Bromodichloromethane	ND	ND	ND	
Bromoform(b)	ND	ND	ND	
Bromomethane	ND	ND	ND	
Carbon Tetrachloride(c)	ND	ND	ND	
Chlorobenzene	ND	ND	ND	
Chloroethane	ND	ND	ND	
2-Chloroethyl Vinyl Ether(d)	ND	ND	ND	
Chloroform (e)	ND	ND	ND	
Chloromethane	ND	ND	ND	
Dibromochloromethane	ND	ND	ND	
1,2-Dichlorobenzene	ND	ND	ND	
1,3-Dichlorobenzene	ND	ND	ND	
1,4-Dichlorobenzene	ND	ND	ND	
Dichlorodifluoromethane	ND	ND	ND	
1,1-Dichloroethane	ND	ND	ND	
1,2-Dichloroethane	ND	3.0	5.5	
1,1-Dichloroethene	ND	ND	ND	
cis 1,2-Dichloroethene	ND	ND	1.1	
trans 1,2-Dichloroethene	ND	ND	ND	
1,2-Dichloropropane	ND	ND	ND	
cis 1,3-Dichloropropene	ND	ND	ND	
trans 1,3-Dichloropropene	ND	ND	ND	
Methylene Chloride(f)	ND	ND	ND	
1,1,2,2-Tetrachloroethane	ND	ND	ND	
Tetrachloroethene	ND	ND	ND	
1,1,1-Trichloroethane	ND	ND	ND	
1,1,2-Trichloroethane	ND	ND	ND	
Trichloroethene	ND	ND	ND	
Trichlorofluoromethane	ND	ND	ND	
Vinyl Chloride(g)	ND	ND	ND	
% Recovery Surrogate	89	99	94	
Comments				

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

Reporting limit unless otherwise stated water/TCLP extracts, ND< 0 5ug L, soil, ND< 5ug kg

ND means not detected above the reporting limit, N A means analyte not applicable to this analysis

(b) tribromomethane, (c) tetrachloromethane, (d) (2-chloroethoxy) ethene, (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

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: 05/09-05/10/95 Matrix: Water

Analyte	Concentration (ug/L)			Amount Spiked	% Recovery		RPD
	Sample	MS	MSD		MS	MSD	
TPH (gas)	0.0	102.4	94.6	100	102.4	94.6	7.9
Benzene	0	9.5	8.9	10	95.0	89.0	6.5
Toluene	0	9.6	9.1	10	96.0	91.0	5.3
Ethyl Benzene	0	9.9	9.1	10	99.0	91.0	8.4
Xylenes	0	30.4	30.3	30	101.3	101.0	0.3
TPH (diesel)	0	147	151	150	98	101	2.6
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

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: 05/11-05/12/95 Matrix: Water

Analyte	Concentration (ug/L)			Amount Spiked	% Recovery		RPD
	Sample	MS	MSD		MS	MSD	
TPH (gas)	0.0	97.2	92.6	100	97.2	92.6	4.8
Benzene	0	9.4	9	10	94.0	90.0	4.3
Toluene	0	9.6	9.2	10	96.0	92.0	4.3
Ethyl Benzene	0	9.6	9.3	10	96.0	93.0	3.2
Xylenes	0	29.7	28.8	30	99.0	96.0	3.1
TPH (diesel)	0	170	172	150	113	114	1.2
TRPH (oil & grease)	0	22500	21400	23700	95	90	5.0

% 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: 05/10/95 Matrix: Water

Analyte	Concentration (ug/L)				% Recovery		
	Sample	MS	MSD	Amount Spiked	MS	MSD	RPD
1,1-DCE	0.0	11.3	11.0	10.0	113	110	2.7
Trichloroethene	0.0	10.3	10.0	10.0	103	100	3.0
EDB	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Chlorobenzene	0.0	10.6	10.5	10.0	106	105	0.9
Benzene	0.0	11.0	11.0	10.0	110	110	0.0
Toluene	0.0	10.2	10.3	10.0	102	103	1.0
Chlorobz (PID)	0.0	10.3	10.4	10.0	103	104	1.0

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

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

4093AM6x97

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

REPORT TO: JEFF FISCHER BILL TO:
COMPANY: MARK GROUP
TELE: 510 946 1055 FAX #: 510 946 9813
PROJECT NUMBER: PROJECT NAME: SOUTHSHORE
PROJECT LOCATION: ALAMEDA SAMPLER SIGNATURE:

SAMPLE ID	LOCATION	SAMPLING DATE	SAMPLING TIME	# CONTAINERS	TYPE CONTAINERS	MATRIX: WATER	SOIL	AIR	SLUDGE	OTHER	METHOD PRESERVED: HCL	HNO_3	OTHER	BTEX & TPH as Gasoline (602/8020 & 8015)	TPH as Diesel (8015)	Total Petroleum Oil & Grease (5520 E&F/5520 B&F)	Total Petroleum Hydrocarbons (418.1)	EPA 601/8010	EPA 602/8020	EPA 608/8080	EPA 608/8080 - PCBs Only	EPA 624/8240/8260	EPA 625/8270	CAM - 17 Metals	- Priority Pollutant Metals	D (7240/7421/239.2/6010)	NIC LEAD	OTHER	COMMENTS
TB		5/9/95	1100			X					X			X	BTEX														
MW-16			1520			X					X			X			X												52352
MW-22			1625			X					X			X			X												52353
MW-23			1710			X					X			X			X												52354
MW-19			1805			X					X			X			X												52355
MW-17			1850			X					X			X			X												52356
MW-12			1330			X					X			X			X												52357
MW-24			1400			X					X			X			X												52358
MW-22			1625			X							X		X														52359
																													52360

HOLD
NORMAL TA

RELINQUISHED BY: DATE 5/10/95 TIME 0905 RECEIVED BY:
RELINQUISHED BY: DATE TIME RECEIVED BY:
RELINQUISHED BY: DATE TIME RECEIVED BY LABORATORY:

REMARKS:

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

Appendix C

PRIORITY ENVIRONMENTAL LABS
Precision Environmental Analytical Laboratory

May 12, 1995 PEL # 9505027

SOIL TECH ENGINEERING

Attn: Noori Ameli

Re: Two water samples for Gasoline/BTEX and Oil & Grease analyses.

Project name: 2351 Shoreline Dr., - Alameda
Project number: 8-90-418-SI

Date sampled: May 09, 1995 Date submitted: May 10, 1995
Date extracted: May 10-12, 1995 Date analyzed: May 10-12, 1995

RESULTS:

SAMPLE I.D.	Gasoline (ug/L)	Benzene (ug/L)	Toluene (ug/L)	Ethyl Benzene (ug/L)	Total Xylene (ug/L)	Oil & Grease (mg/L)
STMW-3(MW-12)	16000	71	130	110	200	N.D.
STMW-6(MW-24)	8900	180	48	61	150	---
Blank	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
Spiked Recovery	93.8%	89.1%	95.0%	86.8%	100.9%	---
Detection limit	50	0.5	0.5	0.5	0.5	0.5
Method of Analysis	5030 / 8015	602	602	602	602	5520 C & F

David Duong
Laboratory Director

1764 Houret Court Milpitas, CA. 95035 Tel: 408-946-9636 Fax: 408-946-9663

PEL

CHAIN OF CUSTODY RECORD

PROJ. NO.: 8-90-418-SI

NAME: 2351 Shorline Dr. ALAMEDA

SAMPLERS: (Signature) N. Ameli

Analyses Requested (2): TPHG/BTE&X; TO&G

NO.	DATE	TIME	SOIL	WATER	LOCATION	CONTAINER	TPHG/BTE&X	TO&G					REMARKS
1	5/9/95	15[10]		✓	STMW-3 (MW-12)	3	✓	✓					
2	5/9/95	14[15]		✓	STMW-6 (MW-24)	2	✓						

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
N. Ameli	5/10/95 10[10]				
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)

Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature)	Date / Time	Remarks
		[signature]	05/10/95 10:00 AM	

SOIL TECH ENGINEERING

Soil, Foundation and Geological Engineers

298 BROKAW ROAD, SANTA CLARA, CA 95050 ■ (408) 866-0919 ■ (415) 791-6406

Appendix D

[redacted] Te[redacted] Gro[redacted]r Anal[redacted]sults [redacted]994 [redacted]
South Shore Shopping Center
Texaco, Harsch, and Kamur

Well No	Date Sampled	TDS	TPH as Diesel	TPH as Gasoline	Benzene	Toluene	Xylenes	Ethyl-benzene	Chloro-benzene	1,2-Dichloro-ethane	1,1-Dichloro-ethene	trans-1,2-Di-chloroethene	Tetra-chloroethene	Trichloro-ethene
Texaco Wells														
MW-2	04/27/94	650	<0.05	<0.05	<0.0005	<0.0005	<0.0005	<0.0005	<0.001	<0.002	<0.002	<0.001	<0.001	<0.002
MW-3	04/27/94	850	<0.05	<0.05	<0.0005	<0.0005	<0.0005	<0.0005	<0.001	<0.002	<0.002	<0.001	0.0082	0.0014
MW-5B	04/28/94	2,700	<0.05	<0.05	<0.0005	<0.0005	<0.0005	<0.0005	<0.001	<0.002	<0.002	0.014	0.0012	0.01
MW-9	04/28/94	920	<0.05	1.9	0.52	0.0028	<0.0005	0.035	<0.001	<0.002	<0.002	<0.001	<0.001	<0.002
MW-14	04/27/94	840	<0.05	0.053	0.00095	<0.0005	0.015	0.0033	<0.001	0.0084	<0.002	<0.001	<0.001	<0.002
MW-14B	04/27/94	1,800	<0.05	0.054	0.00096	<0.0005	0.015	0.0034	<0.001	0.0097	<0.002	<0.001	<0.001	<0.002
MW-15	04/27/94	1,500	<0.05	<0.05	<0.0005	<0.0005	<0.0005	<0.0005	<0.001	<0.002	<0.002	<0.001	<0.001	<0.002
MW-22	04/28/94	2,000	<0.05	<0.05	<0.0005	<0.0005	<0.0005	<0.0005	<0.001	0.015	<0.002	<0.001	<0.001	<0.002
Harsch Wells														
MW-7B	04/29/94	1,300	<0.05	5.6	0.19	<0.0005	0.027	<0.0005	0.031	<0.002	0.0058	0.013	0.19	0.012
MW-8B	05/02/94	2,900	<0.05	0.14	0.0092	<0.0005	<0.0005	<0.0005	<0.001	<0.002	<0.002	0.023	0.07	0.057
MW-16	05/02/94	25,000	<0.05	<0.05	<0.0005	<0.0005	<0.0005	<0.0005	<0.001	<0.002	<0.002	<0.001	<0.001	<0.002
MW-17	04/29/94	18,000	<0.05	<0.05	<0.0005	<0.0005	<0.0005	<0.0005	<0.001	<0.002	<0.002	<0.001	0.0024	<0.002
MW-18	04/29/94	19,000	<0.05	<0.05	<0.0005	<0.0005	<0.0005	<0.0005	<0.001	<0.002	<0.002	<0.001	0.0014	<0.002
MW-19	04/29/94	20,000	<0.05	<0.05	<0.0005	<0.0005	<0.0005	<0.0005	<0.001	<0.002	<0.002	<0.001	0.0011	<0.002
MW-20	04/29/94	13,000	<0.05	0.057	0.021	<0.0005	<0.0005	<0.0005	<0.001	<0.002	<0.002	0.058	0.057	0.032
MW-21	04/29/94	20,000	<0.05	<0.05	<0.0005	<0.0005	<0.0005	<0.0005	<0.001	<0.002	<0.002	<0.001	<0.001	<0.002
MW-23	05/02/94	54	<0.05	<0.05	<0.0005	<0.0005	<0.0005	<0.0005	<0.001	<0.002	<0.002	<0.001	<0.001	<0.002
Kamur Wells														
MW-10	04/27/94	2,570	NT	90	3.6	3.2	5.3	1.2	<0.001	0.013	<0.002	0.002	0.0039	<0.002
MW-11	04/27/94	1,230	NT	<0.050	<0.0005	<0.0005	<0.0005	<0.0005	<0.001	<0.002	<0.002	0.0015	0.0025	0.0042
MW-12	04/27/94	510	NT	160	1.3	6.3	12	1.4	<0.001	<0.002	<0.002	<0.001	0.0039	<0.002
MW-24 *	04/27/94	560	NT	<0.050	<0.0005	<0.0005	<0.0005	<0.0005	<0.001	0.0065	<0.002	0.0018	0.0039	<0.002
MW-25 *	04/27/94	2,550	NT	38	3.0	1.2	2.0	0.71	<0.001	0.0093	<0.002	<0.001	0.0039	<0.002
Regulatory Limits														
PMCL		NA	NA	NA	0.001	1.0	1.75	0.68	0.03	0.0005	0.006	0.07	0.005	0.005

Explanation
All results are in milligrams per liter.
NT = Not tested
NA = Not available
TDS = Total Dissolved Solids Method 160.1.
TPH as Gasoline = Total Petroleum Hydrocarbons as Gasoline analyzed using EPA methods 5030 and TPH LUFT.
Benzene, Toluene, Xylenes and Ethylbenzene analyzed using method 602.
TPH as Diesel = Total Petroleum Hydrocarbons as Diesel analyzed using EPA method 3510 and TPH LUFT.
Priority Pollutants analyzed using EPA methods 5030 and 601.
PMCL = Primary Maximum Contaminant Level
MW-14B = Duplicate sample of MW-14

* Note Analytical shown for Monitoring Wells MW-24 and MW-25 appears to be reversed, based on October 1994 field notes and historical results of analyses.

Table 3-3

Analytical Summary for Groundwater Samples Collected in February 1993
All Concentrations in Micrograms per Liter (µg/l)

Sample I.D.	PCE	TCE	1,2-DCA	1,2-DCE	Benzene	Toluene	Xylenes	Ethylbenzene	Gas	Diesel	Oil & Grease	TDS	DTW	W.E.	C.E.
MW-5B	ND	3.4	0.4	5.0	210	4.2	2.0	1.9	640	2,400	NA	1,400	2.42	+2.66	5.08
MW-7B	5,800	540	ND	150	NA	NA	NA	NA	NA	NA	NA	1,100	3.33	+2.19	5.52
MW-8B	5.0	14	ND	9.0	NA	NA	NA	NA	NA	NA	NA	930	4.92	+1.23	6.15
MW-10	ND	9.5	ND	ND	210	480	1,200	510	66,000	NA	NA	NA	6.04	+2.06	8.10
MW-11	5.8	2.0	ND	ND	NA	NA	NA	NA	NA	NA	NA	630	4.95	+2.26	7.01
MW-12	ND	2.4	ND	ND	620	1,900	6,000	2,200	330,000	NA	3,900	NA	5.92	+2.41	8.33
MW-13	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	4.75	+2.70	7.45
MW-14	ND	ND	3.4	ND	ND	ND	ND	ND	ND	660	NA	2,000	3.42	+2.35	5.77
MW-15	ND	ND	ND	ND	ND	ND	ND	ND	ND	200	NA	880	3.50	+0.96	4.46
MW-16	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA	24,000	0.42	+3.10	3.52
MW-17	ND	ND	ND	NA	NA	NA	NA	NA	NA	NA	NA	18,000	2.50	+0.82	3.32
MW-18	ND	ND	ND	NA	NA	NA	NA	NA	NA	NA	NA	19,000	4.38	+0.34	4.72
MW-19	ND	ND	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	4.46	+0.82	5.28
MW-20	ND	ND	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	5.71	+0.95	6.66
MW-21	ND	ND	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	6.48
MW-22	ND	ND	22	ND	ND	ND	ND	ND	ND	120	NA	2,100	6.33	NA	NA
MW-23	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	160	3.42	NA	NA
MW-24 *	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA	NA	NA	NA	NA
MW-25 *	ND	11	ND	ND	100	230	500	270	33,000	NA	NA	NA	NA	NA	NA
MCL	5	5	0.5	6.0	1.0	NP	1,750	680	NP	NP	NP	---	---	---	---

- ND Not detected at or above analytical detection limits
- NA Not analyzed
- DTW Depth to water
- W.E. Water elevation

* Note Analytical shown for Monitoring Wells MW-24 and MW-25 appears to be reversed, based on October 1994 field notes and historical results of analyses.