ALCO
HAZMAT

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December 22, 1994

Ms. Susan Hugo
Alameda County Health Care Services Agency
Department of Environmental Health
Hazardous Materials Division
80 Swan Way, Room 200
Oakland, CA 94621

STID 331

RE: Semi-Annual Groundwater Monitoring Report
Former Servisco Uniform Services, Inc.
958 28th Street, Oakland, California

✓

Dear Ms. Hugo:

Enclosed please find the Semi-Annual Groundwater Monitoring Report for the referenced site.

As you may note, the results of chemical analyses indicate consistently low BTEX concentrations and groundwater elevations indicate that the hydraulic gradient is relatively flat.

If you have questions or comments regarding our investigation or this report, please feel free to contact me at (310) 578-1241, or Bob Robbins at (608) 592-3222.

Sincerely,

James W. Van Nortwick, Jr., Ph.D., P.E.
Project Manager

encl: Semi-Annual Groundwater Monitoring Report

cc: Robert J. Robbins, C.P.G.
Phillip Krejci
Bea Slater

RMT, INC.

RMT, INC. – LOS ANGELES
4640 ADMIRALTY WAY • SUITE 301
MARINA DEL REY, CA • 90292-6621
310/578-1241 • 310/821-3280 FAX

SEMI-ANNUAL GROUNDWATER MONITORING
AT THE
FORMER SERVISCO UNIFORM SERVICES, INC.
958 28TH STREET
OAKLAND, CALIFORNIA

PREPARED FOR

ARAMARK UNIFORM SERVICES, INC.
SCHAUMBURG, ILLINOIS

PREPARED BY
RMT, INC.
MARINA DEL REY, CALIFORNIA

DECEMBER 1994

James W. Van Nortwick, Jr., Ph.D., P.E.
Project Manager

RMT, INC. — LOS ANGELES
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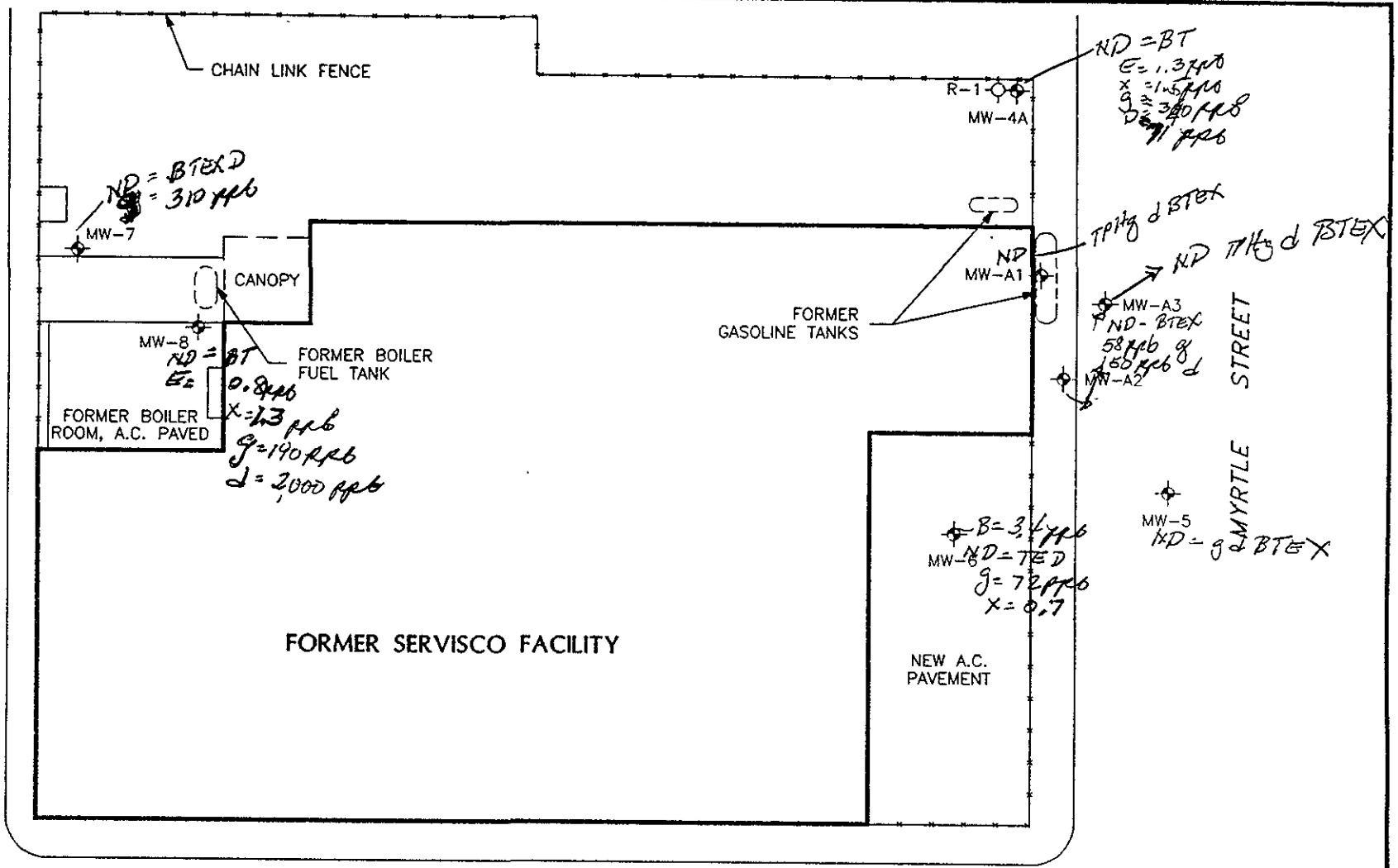
Section 1
INTRODUCTION

1.1 Background

Servisco Uniform Services, Inc., (Servisco) formerly maintained two underground gasoline storage tanks and an underground boiler fuel storage tank at the property located at 958 28th Street, in Oakland, California. All three storage tanks were removed from the site in 1988, however, evidence of a release was identified in the vicinity of the 7,000-gallon gasoline storage tank and the boiler fuel storage tank during the tank removal activities. In response to the observations noted during the tank removal activities, a preliminary subsurface investigation was conducted in February 1989, and included the installation of three groundwater monitoring wells (MW-A1, MW-A2, and MW-A3) in the vicinity of the former 7,000-gallon gasoline storage tank.

Based on the results of the investigation, additional subsurface sampling activities were conducted to further define the extent of petroleum hydrocarbon-impacted soil and groundwater. Field activities were conducted during the period March 1990, through February 1994, and included the advancement of 17 soil borings (SB-1 through SB-17), the installation of five additional groundwater monitoring wells (MW-4, MW-4A, MW-5, MW-6, and MW-7) and a product recovery well (R-1), the abandonment of monitoring well MW-4, the advancement of eight Geoprobe borings (GP-1 through GP-8), and the excavation of approximately 40-yd^3 of soil in the vicinity of the former boiler fuel storage tank. The soil borings and groundwater monitoring wells are located in the vicinity of the former gasoline and boiler fuel storage tanks, the recovery well is located along the northern property boundary, and the Geoprobe borings are located off-site along the northeast section of the former Servisco facility. The locations of the soil borings, groundwater monitoring wells, product recovery well, Geoprobe borings, and the former underground storage tanks are presented in Figure 1.

The results of the subsurface investigations indicate that the extent of petroleum hydrocarbon-impacted soil appears to be confined to the area immediately surrounding the former 7,000-gallon gasoline storage tank and the northeast corner of the facility, while the extent of petroleum hydrocarbon-impacted groundwater is limited to the area immediately downgradient of the 7,000-gallon gasoline storage tank formerly located along the eastern edge of the existing facility.



LEGEND:

- MW-8 GROUNDWATER MONITORING WELL
- R-1 RECOVERY WELL

0 40 80

APPROXIMATE SCALE IN FEET

SITE PLAN

FORMER SERVISCO UNIFORM SERVICES INC.
958 28th STREET
OAKLAND, CALIFORNIA

RMT INC.

DWN. BY: CRB	
APPROVED BY:	
DATE: NOVEMBER 1994	
PROJ.# 12012.16	
FILE # 1611	

FIGURE 1

In July 1993, Aramark Uniform Services, Inc. (ARAMARK), engaged the services of RMT, Inc., (RMT) to prepare a soil vapor extraction (SVE) pilot-scale test workplan to determine the feasibility of *in-situ* volatilization for the remediation of the petroleum hydrocarbon-impacted soil underlying the northeast section of the former Servisco facility. The workplan was submitted to the Alameda County Health Care Services Agency (ACHCSA) in September 1993, and approved in a letter dated January 27, 1994. In addition, based on a review of the reports in the case file for the former Servisco facility, the ACHCSA requested that a groundwater monitoring well be installed in the vicinity of the former boiler fuel storage tank and that additional sampling activities be conducted to investigate the source of the free-product identified during the advancement of the off-site Geoprobe borings. In response to the request from the ACHCSA, ARAMARK engaged the services of RMT to 1) conduct a SVE pilot-scale test; 2) install a groundwater monitoring well downgradient and within 10-ft of the former underground boiler fuel storage tank, and 3) prepare a subsurface investigation workplan to determine the concentration of petroleum hydrocarbons currently present in the soils and confirm that no free-product is present underlying the former ARAMARK facility.

1.2 Purpose & Scope

The purpose of this report is to summarize the results of the groundwater monitoring activities conducted on November 17, 1994, at the former SERVISCO facility. The scope of work conducted during the groundwater investigation included the following:

- The purging and sampling of eight groundwater monitoring wells, and
- The chemical analyses of groundwater samples for the presence of benzene, toluene, ethylbenzene, and xylene (BTEX), and total petroluem hydrocarbon as gasoline (TPH-G) and diesel (TPH-D) using EPA SW-846 Method 8020 and Method 8015M.

Section 2
GROUNDWATER MONITORING ACTIVITIES

Groundwater monitoring activities were conducted by RMT on November 17, 1994, and included obtaining static water level measurements and groundwater samples. The methods and procedures used during the groundwater monitoring activities are presented in the following sections.

2.1 Static Water Level Measurement Procedures

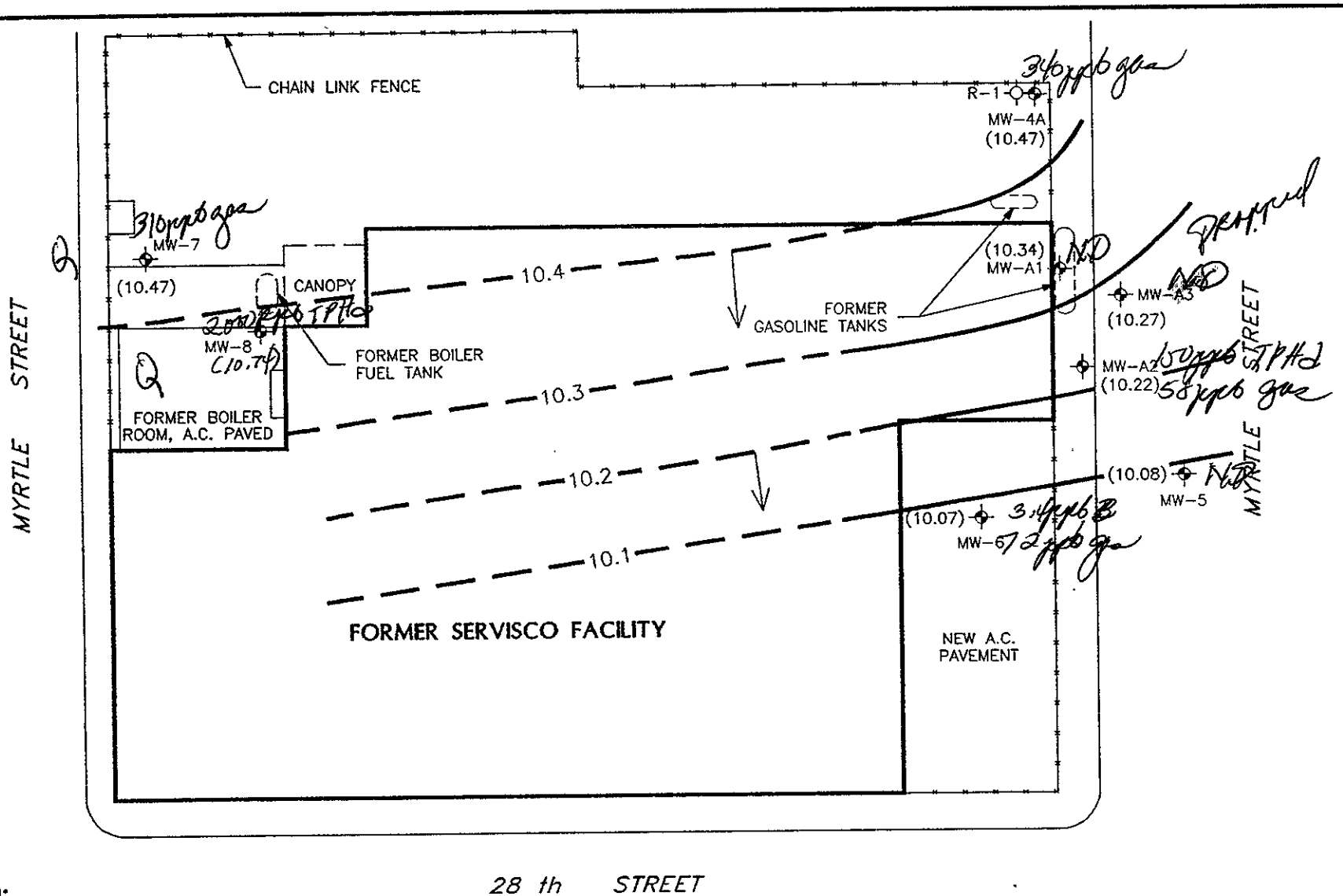
Prior to collecting groundwater samples, the depth to groundwater was measured in each well using an electronic water level indicator. The depth-to-water measurements and the corresponding groundwater surface elevations for the November 1994 monitoring activities are summarized in Table 1 and the groundwater contour map is presented in Figure 2.

TABLE 1
Groundwater Elevation Measurements

Monitoring Well Location	Casing Elevation (ft above MSL)	Depth-to-Water (ft-bgs)	Groundwater Elevation (ft above MSL)
MW-A1	23.50	13.16	10.34
MW-A2	22.87	12.65	10.22
MW-A3	23.08	12.81	10.27
MW-4A	24.13	13.66	10.47
MW-5	22.89	12.81	10.08
MW-6	23.37	13.30	10.07
MW-7	21.37	10.90	10.47
MW-8	22.23	11.49	10.74

2.2 Groundwater Sample Collection

Groundwater samples were collected from monitoring wells MW-A1 through MW-4A, and MW-5 through MW-8. Prior to sampling, each monitoring well was purged using an disposable bailer until groundwater characteristics stabilized (i.e., temperature, pH, and conductivity). A minimum of three well casing volumes (casing and sand pack volume) were extracted from each well before collecting groundwater samples. The temperature, pH, and conductivity of the extracted groundwater was measured and recorded at least once per well casing volume. The well casing volume was determined by measuring and recording the static water level and calculating the well volume.



LEGEND:

- MW-8 — GROUNDWATER MONITORING WELL
- R-1 — RECOVERY WELL
- 10.3 — GROUNDWATER ELEVATION CONTOUR IN FEET ABOVE MEAN SEA LEVEL
- (10.47) — GROUNDWATER ELEVATION IN FEET ABOVE MEAN SEA LEVEL
- ESTIMATED DIRECTION OF GROUNDWATER FLOW

GROUNDWATER CONTOUR MAP
(NOVEMBER, 1994)
FORMER SERVISCO UNIFORM SERVICES INC.
958 28th STREET
OAKLAND, CALIFORNIA

0 40 80
APPROXIMATE SCALE IN FEET

RMT INC.

DWN. BY: CRB	
APPROVED BY:	
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FIGURE 2

After each monitoring well had recharged to within 80 percent of its pre-purge volume (approximately 30-min) groundwater samples were collected utilizing a disposable Teflon bailer equipped with a teflon stopcock, and dispensed directly into 40-mL borosilicate vials with teflon septa and screw caps. All samples were preserved using hydrochloric acid and stored on ice pending transport to a commercial independent California-certified laboratory following standard chain-of-custody procedures. Groundwater collection data are presented in Appendix A.

2.3 Chemical Analyses of Groundwater

Groundwater samples obtained from each monitoring well was analyzed for the presence of BTEX and TPH-G/TPH-D using EPA SWA-846 Method 8020 and Method 8015M. The results of groundwater monitoring activities conducted during the past 2-yrs indicate that little or no migration has occurred. The results of the laboratory analyses are presented in Table 2. All laboratory analyses were conducted by Curtis & Tompkins, Ltd., Laboratory, Inc., of Berkeley, California, and a copy of the laboratory report is included in Appendix B.

2.4 Disposal of Purged Groundwater

Groundwater generated during the groundwater sampling activities was placed in 55-gallon DOT-approved drums, labeled with the date, site name, location, and monitoring well number, and stored in a secured area pending characterization and disposal. Copies of waste manifests will be provided upon disposal.

TABLE 2

Chemical Analyses of Groundwater

Monitoring Well Location	Sampling Date	Parameter (µg/L)				TPH-G (mg/L)	TPH-D (mg/L)
		Benzene	Toluene	Ethyl-benzene	Total Xylene		
MW-A1	03-08-89	120	150	60	2100	7.2	12
annual	05-31-89	250	57	11	210	5.8	5.07
	09-13-89	16	12	8.9	37	2.7	1.0
	12-05-89	3.6	<0.2	4.7	24.3	0.5	<0.5
	03-21-90	3.6	<0.2	4.7	24.3	1.3	<0.5
	11-13-90	1.3	<0.5	<0.5	35.3	0.296	--
	07-18-91	<0.5	<0.5	<0.5	<0.5	<0.05	<0.05
	12-11-91	0.3	<0.3	<0.3	1	0.092	<0.01
	11-04-92	<0.3	<0.3	<0.3	<0.5	<0.01	<0.01
	05-12-93	1.0	<0.3	<0.3	0.6	<0.01	--
	11-12-93	<0.5	<0.5	<0.5	<0.5	<0.05	--
	04-27-94	1.5	<0.5	<0.5	<0.5	<0.05	<0.05
	11-17-94	<0.5	<0.5	<0.5	<0.5	<0.05	<0.05
MW-A2	03-08-89	380	200	<0.3	10	5.2	7.7
semi annual	05-31-89	150	4	<0.3	11	<0.5	<0.5
	09-13-89	56	4.4	4.8	11	1.9	0.6
	12-05-89	63	10	21	2.9	3.5	<0.5
	03-21-90	35	2.4	<0.2	18.9	1.1	<0.5
	11-13-90	32.5	2.4	<0.5	3.4	0.719	--
	07-18-91	28	<0.5	<0.5	<0.5	<0.05	<0.05
	12-11-91	90	3	2	2	0.44	<0.01
	11-04-92	150	6	10	9	0.41	<0.01
	05-12-93	140	5	8	8	0.480	--
	11-12-93	19	<0.5	0.7	<0.5	0.075	--
	04-27-94	51	1.6	3.3	1.9	0.210	<0.05
	11-17-94	<0.5	<0.5	<0.5	<0.5	0.058	0.15
MW-A3	03-08-89	<0.3	<0.3	<0.3	<0.3	<0.5	<0.5
	05-31-89	<0.3	<0.3	<0.3	<0.3	<0.5	0.93
drop	09-13-89	<0.3	<0.3	<0.3	<0.3	<0.5	<0.5
	12-05-89	<0.3	<0.3	<0.3	<0.3	<0.5	<0.5
	03-21-90	<0.2	<0.2	<0.2	<1.0	<0.5	<0.5
	11-13-90	<0.5	<0.5	<0.5	<0.5	<0.05	--
	07-18-91	<0.5	<0.5	<0.5	<0.5	<0.05	<0.05
	12-11-91	<0.3	<0.3	<0.3	<0.5	<0.01	<0.01
	11-04-92	<0.3	<0.3	<0.3	<0.5	<0.01	<0.01
	05-12-93	<0.3	<0.3	<0.3	<0.5	<0.01	--
	11-12-93	<0.5	<0.5	<0.5	<0.5	<0.5	--
	04-27-94	<0.5	<0.5	<0.5	<0.5	<0.5	<0.05
	11-17-94	<0.5	<0.5	<0.5	<0.5	<0.5	<0.05

TABLE 2

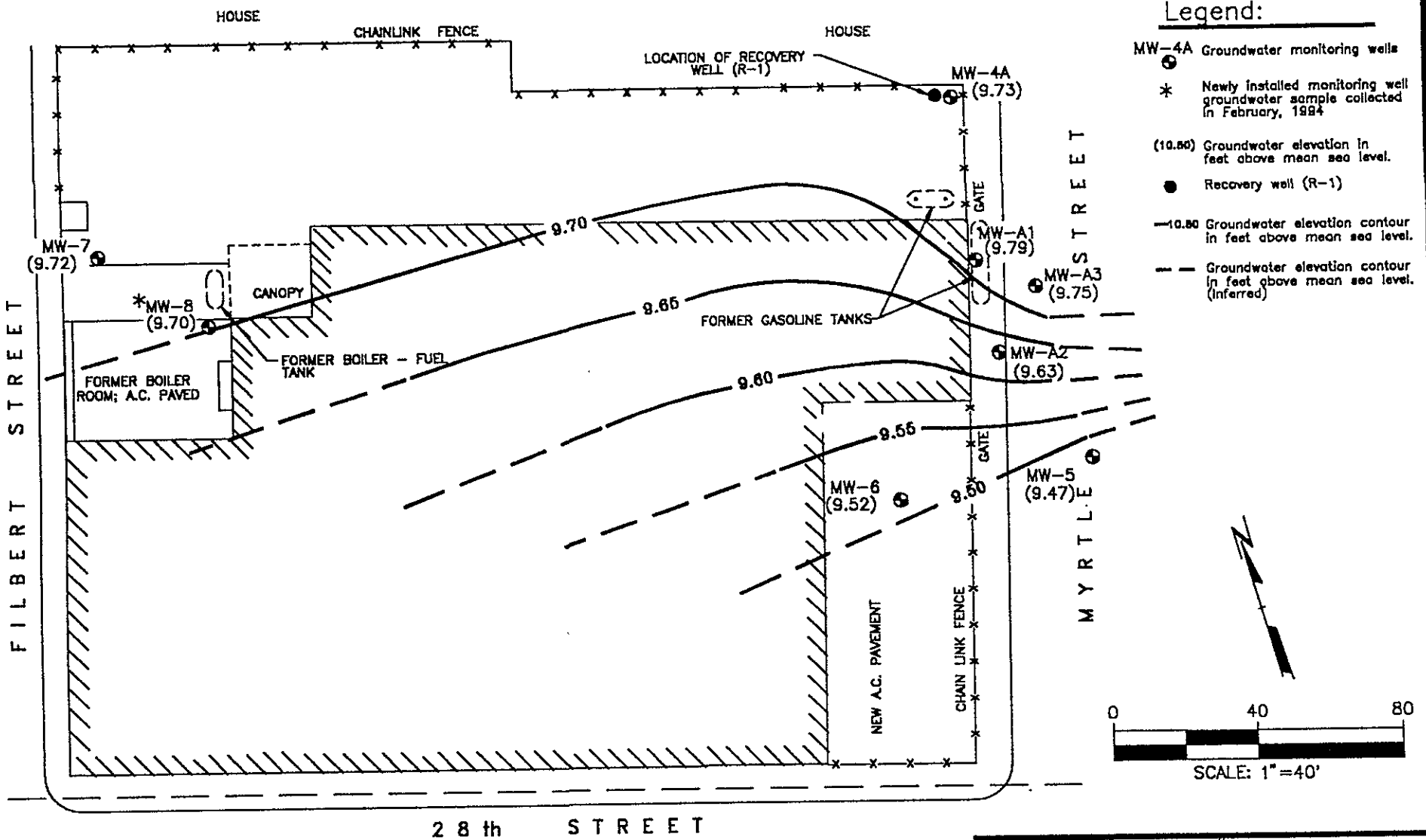
Chemical Analyses of Groundwater

Monitoring Well Location	Sampling Date	Parameter (µg/L)				TPH-G (mg/L)	TPH-D (mg/L)
		Benzene	Toluene	Ethyl-benzene	Total Xylene		
MW-4A	07-19-91	68	3.0	8.0	31	2.60	<0.05
	12-11-91	2	<0.3	<0.3	<0.5	0.29	<0.01
	11-04-92	<0.3	0.5	0.5	1	0.59	<0.01
	05-12-93	190	8	6.9	42	1.30	--
	11-12-93	0.9	<0.5	2.6	1.4	<0.590	--
	04-27-94	9.5	2.1	5.3	2.4	0.570	<0.05
	11-17-94	<0.5	<0.5	1.3	1.5	0.340	0.071
MW-5	03-22-90	<0.2	<0.2	<0.2	<1.0	<0.5	<0.5
	11-13-90	<0.5	<0.5	<0.5	<0.5	<0.05	--
	07-19-91	<0.5	<0.5	<0.5	<0.5	<0.05	<0.05
	12-11-91	<0.3	<0.3	<0.3	<0.5	<0.01	<0.01
	11-05-92	<0.3	<0.3	<0.3	<0.5	<0.01	<0.01
	05-12-93	0.4	<0.3	<0.3	<0.5	<0.01	--
	11-12-93	<0.5	<0.5	<0.5	<0.5	<0.05	--
	04-27-94	<0.5	<0.5	<0.5	<0.5	<0.05	<0.05
	11-17-94	<0.5	<0.5	<0.5	<0.5	<0.05	<0.05
MW-6	03-22-90	<0.2	<0.2	<0.2	<1.0	<0.5	<0.5
	11-13-90	7.9	<0.5	<0.5	1.8	0.07	--
	07-19-91	42	1.0	3.0	9.0	0.30	<0.05
	12-11-91	8	<0.3	<0.3	<0.5	0.16	<0.01
	11-04-92	8	<0.3	2	1	0.11	<0.01
	05-12-93	16	0.6	3	2	0.18	--
	11-12-93	9.8	<0.5	3.1	1.1	0.13	--
	04-27-94	6.8	<0.5	3.2	1.9	0.100	<0.05
	11-17-94	3.4	<0.5	<0.5	0.7	0.072	<0.05
MW-7	07-19-91	<0.5	<0.5	<0.5	<0.5	<0.05	<0.05
	12-11-91	<0.3	<0.3	<0.3	<0.5	0.18	<0.01
	11-04-92	1	<0.3	<0.3	<0.5	<0.01	<0.01
	05-12-93	2	<0.3	<0.3	<0.5	<0.01	<0.01
	11-12-93	0.7	<0.5	<0.5	<0.5	<0.05	--
	04-27-94	1.4	<0.5	<0.5	<0.5	0.540	0.090
	11-17-94	<0.5	<0.5	<0.5	<0.50	0.310	<0.05
MW-8	02-22-94	3.2	<0.5	0.6	0.6	--	0.27
	04-27-94	1.7	0.5	<0.5	<0.5	0.120	2.1
	11-17-94	<0.5	<0.5	0.8	1.3	0.190	2.0

Section 3

PRODUCT RECOVERY ACTIVITIES

The product recovery canister installed in recovery well R-1 was inspected and no free product was observed. To date, no free-product has been recovered from the recovery system.



ARATEX - SERVISCO
GROUNDWATER CONTOUR MAP

RMT INC.

DWN. BY:	RAS
APPROVED BY:	JVN
DATE:	MAY, 1994
PROJ. #	12012.16
FILE #	1611

FIGURE 2