December 20, 1993

ST ID 337

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

RE: Semi-Annual Groundwater Monitoring
Aratex Services, Inc., 958 28th Street, Oakland, California

Dear Ms. Hugo:

Enclosed please find the results of the semi-annual groundwater monitoring activities conducted at the referenced facility. A summary of site activities, previous chemical analyses, and product recovery well operation activities are also included for your review. As you may note, the results of chemical analyses performed on groundwater samples collected from monitoring wells MW-A1, MW-A3, and MW-5 did not identify the presence of petroleum hydrocarbons above the method detection limits. In addition, the results from monitoring wells MW-A2, MW-4A, MW-6, and MW-7 indicate that contaminant concentrations are generally lower those identified during the previous sampling events.

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

Sincerely,

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

enc: Semi-Annual Groundwater Monitoring Report

cc: Robert J. Robbins, C.P.G.
Phillip Krejci
Bea Slater
File: 728/Tanks

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
ARATEX SERVICES, INC.
958 28TH STREET
OAKLAND, CALIFORNIA

PREPARED FOR

ARATEX SERVICES, INC.
OAKLAND, CALIFORNIA

PREPARED BY
RMT, INC.
MARINA DEL REY, CALIFORNIA

DECEMBER 1993

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

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Section 1
SITE HISTORY AND BACKGROUND

Golden State Linen Service owns the property located at 958 28th Street in Oakland, California. Through 1986 the property was leased by Servisco Corporation (SERVISCO) and operated as an industrial dry cleaning facility. During that period, SERVISCO maintained a 500-gallon underground boiler fuel storage tank, a 1,000-gallon underground gasoline storage tank, and a 7,000-gallon underground gasoline storage tank to supply fuel for service vehicles and plant operations. In 1986, Aratex Services, Inc., (ARATEX) acquired SERVISCO, assumed the lease, and continued to conduct dry cleaning operations until vacating the property in 1988. As part of vacating the leased site, ARATEX agreed to remove the underground storage tanks from the property. In May 1988, ARATEX engaged the services of IT Corporation to supervise and document the removal of the underground storage tanks and perform soil sampling activities in accordance with the Alameda County Health Care Services Agency (ACHCSA) regulations. A site plan, showing the locations of the former underground storage tanks, is presented in Figure 1.

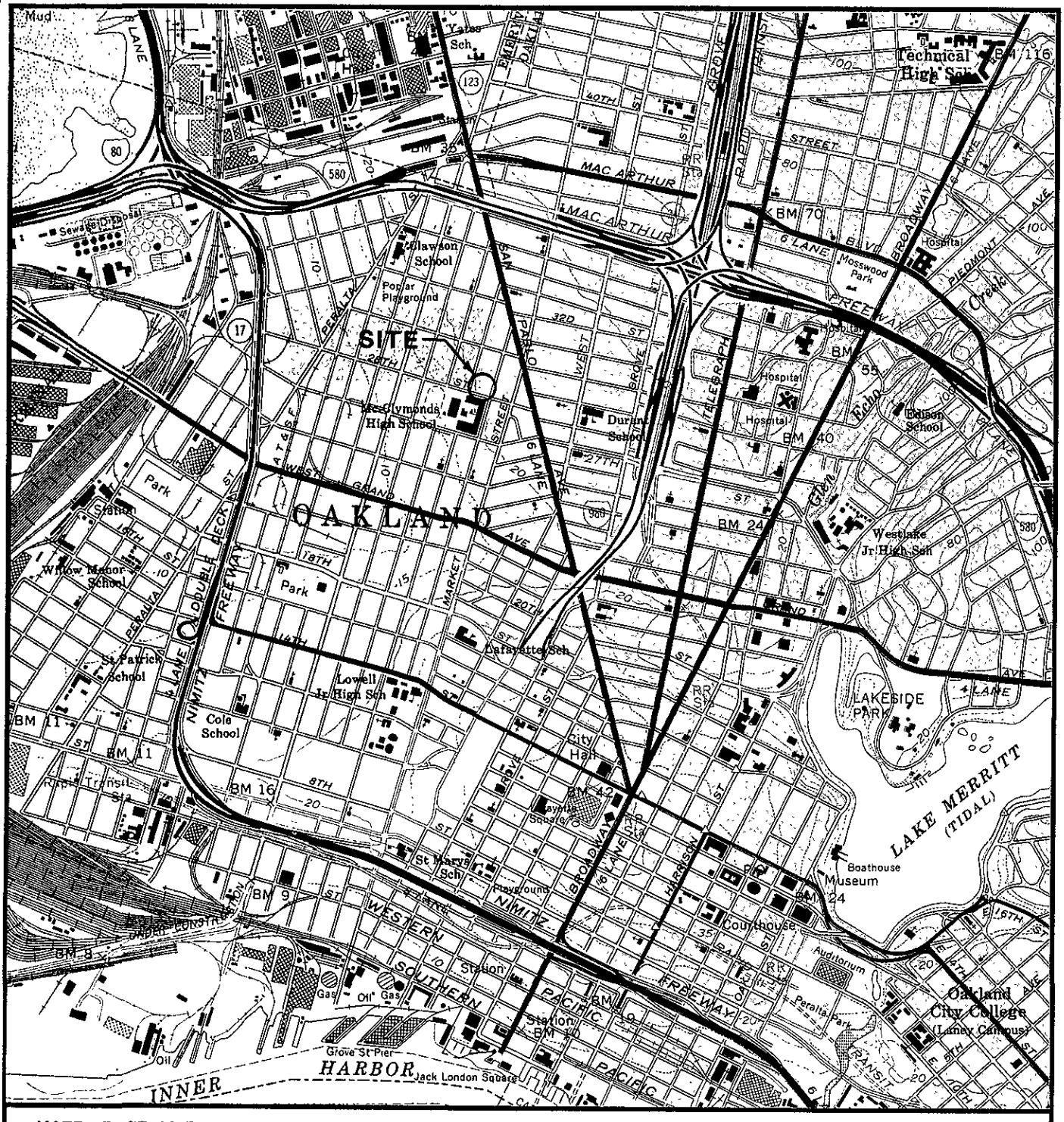
The results of chemical analyses performed on soil samples obtained from the floor of the 1,000-gallon gasoline storage tank excavation did not identify the presence of petroleum hydrocarbons, therefore, no additional investigation of this area was required by the ACHCSA. However, because evidence of petroleum product releases were identified during the removal of the 500-gallon boiler fuel storage tank and the 7,000-gallon gasoline storage tank, the ACHCSA requested that additional sampling activities be conducted to determine the extent of contamination in these areas. In response to this request, ARATEX engaged the services of IT Corporation to conduct a post-closure investigation. Field activities were conducted in February 1989, and included the installation of three groundwater monitoring wells (MW-A1, MW-A2, and MW-A3). The results of this investigation identified the presence of total petroleum hydrocarbons as gasoline (TPH-G), total petroleum hydrocarbons as diesel (TPH-D), benzene, toluene, ethylbenzene, or xylenes (BTEX) in the soil and groundwater in the vicinity of the former gasoline storage tank. Based on these results, in a letter dated May 8, 1989, the ACHCSA requested that ARATEX conduct additional sampling activities and initiate a groundwater monitoring program.

In June 1989, ARATEX engaged the services of RMT, Inc., (RMT) to conduct a subsurface investigation to further define the extent of contamination and develop a groundwater monitoring program. Field activities were conducted by RMT from March 1990 through November 1990 and included the advancement of several soil borings, the installation of three monitoring wells (MW-4, MW-5, and MW-6), and quarterly groundwater monitoring activities. Evidence of free-product was identified in a sandy gravel layer located in the vadose zone (unsaturated soils) during the installation of groundwater monitoring well MW-4 (monitoring well MW-4 is located along the northern property boundary approximately 70-ft from the former 1,000-gallon gasoline storage tank). The presence of petroleum hydrocarbons was also identified in the unsaturated soil samples collected from soil borings located near the former 7,000-gallon gasoline storage tank.

The results of chemical analyses performed on groundwater samples collected in March 1990, and November 1990, from monitoring wells located in the vicinity of the former 7,000-gallon tank excavation area (MW-A1, MW-A2, and MW-A3) indicated that the concentrations of TPH-G and BTEX had decreased significantly from previous sampling events. In addition, groundwater samples collected from monitoring wells MW-5 and MW-6 did not identify the presence of petroleum contamination. Based on these results, the lateral extent of soil and groundwater contamination was determined to be limited to the area immediately surrounding the former 7,000-gallon gasoline storage tank.

The results of the subsurface investigation and groundwater monitoring activities were presented to the ACHCSA in a meeting held on October 17, 1990. During this meeting, the ACHCSA requested that ARATEX investigate the potential source of free-product identified in monitoring well MW-4 and conduct groundwater monitoring activities on a semi-annual basis for a period of one year.

Additional field activities were conducted from November 1990, through November 1992, and included the installation of two additional groundwater monitoring wells (MW-4A and MW-7) to further define the extent of groundwater contamination and help determine the groundwater flow direction; the abandonment of monitoring well MW-4 to reduce the potential of free-product migration from the unsaturated zone to the groundwater; the installation of a product recovery well (R-1) to recover free-product identified in the unsaturated sandy gravel layer near monitoring well MW-4; and semi-annual groundwater sampling activities.



NOTE: BASE MAP TAKEN FROM OAKLAND WEST, CALIFORNIA USGS 7.5 Min. QUADRANGLE

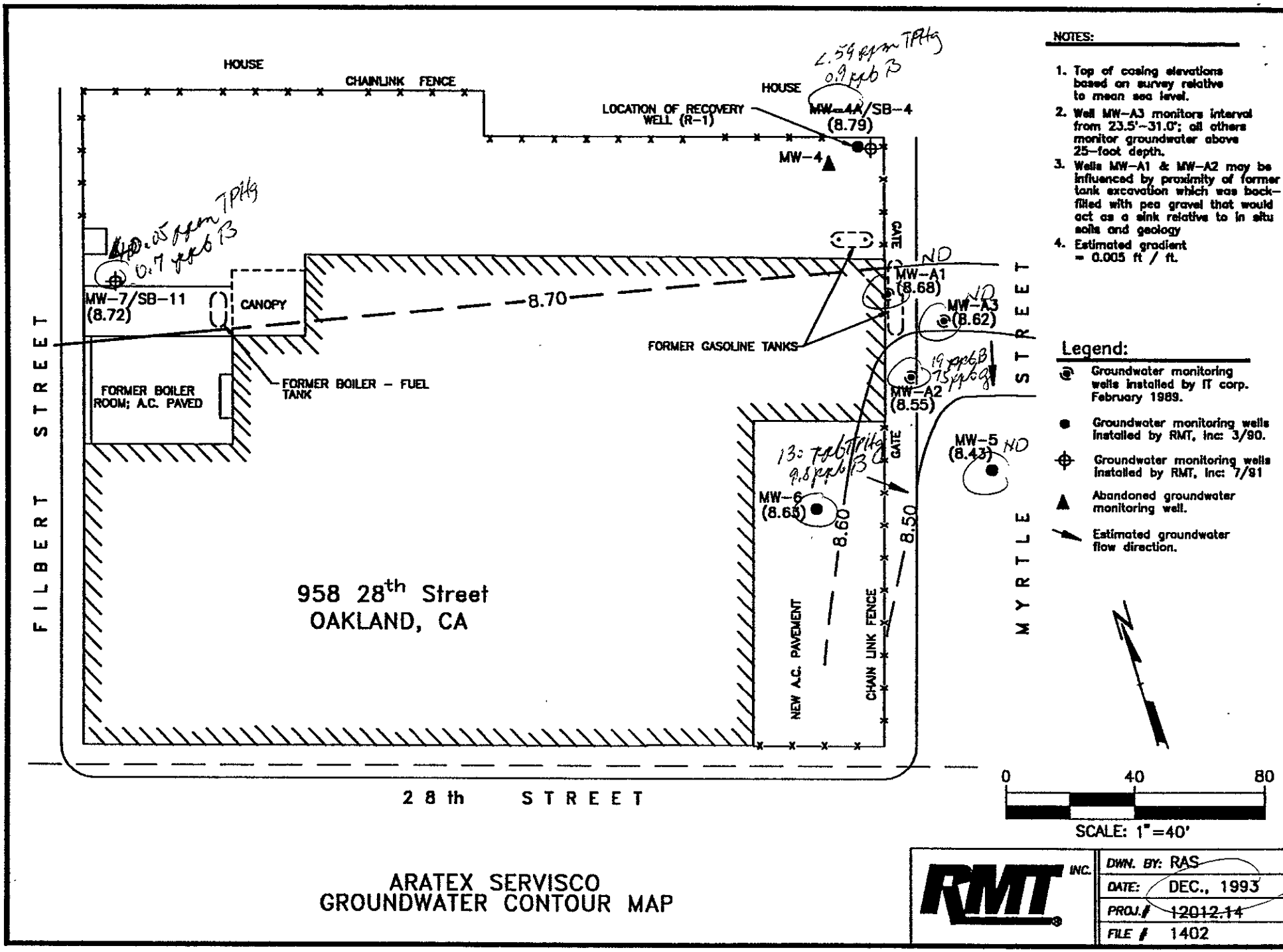
ARATEX – SERVISCO
OAKLAND, CALIFORNIA
SITE LOCATION MAP

NORTH
SCALE: 1 = 2000

RMT INC.

DWN. BY:	RAS
DATE	AUG., 1992
PROJ.#	12012.11
FILE #	12012117

FIGURE 1



NOTES:

1. Top of casing elevations based on survey relative to mean sea level.
2. Well MW-A3 monitors interval from 23.5'-31.0'; all others monitor groundwater above 25-foot depth.
3. Wells MW-A1 & MW-A2 may be influenced by proximity of former tank excavation which was back-filled with pea gravel that would act as a sink relative to in situ soils and geology
4. Estimated gradient = 0.005 ft / ft.

Legend:

- Groundwater monitoring wells installed by IT corp. February 1989.
- Groundwater monitoring wells installed by RMT, Inc: 3/90.
- Groundwater monitoring wells installed by RMT, Inc: 7/91
- Abandoned groundwater monitoring well.
- Estimated groundwater flow direction.

RMT INC.	DWN. BY: RAS
	DATE: DEC., 1993
	PROJ.# 12012.14
	FILE # 1402

ARATEX SERVISCO
GROUNDWATER CONTOUR MAP

FIGURE 2

Section 2
GROUNDWATER MONITORING ACTIVITIES

Groundwater monitoring activities were conducted by RMT on November 12, 1993, and included obtaining static water level measurements and groundwater samples.

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. Table 1 presents the depth-to-water measures and the corresponding groundwater surface elevations for this round of sampling. The details of the static water level measurement procedures are presented in Appendix A and a groundwater contour map is presented in Figure 2.

TABLE 1

Depth-to-Water and Groundwater Surface Elevation Measurements
November 12, 1993

Monitoring Well	Measuring Point (1) Elevation (feet above msl)	Depth-to-Water (feet)	Groundwater Elevation (feet)
MW-A1	23.50	14.82	8.68
MW-A2	22.87	14.32	8.55
MW-A3	23.08	14.46	8.62
MW-4A	24.13	15.34	8.79
MW-5	22.89	14.46	8.43
MW-6	23.37	14.74	8.63
MW-7	21.37	12.65	8.72

1 - Locations and measuring point elevation (black mark on top of casing) were surveyed by Kier & Wright Civil Engineers & Surveyors, Inc. in July 1991. Measures were calculated using City of Oakland bench mark No. 2578. All elevation are reported in feet above mean sea level (msl)

Groundwater Sample Collection

Groundwater samples were collected from monitoring wells MW-A1, MW-A2, MW-A3, MW-4A, MW-5, MW-6, and MW-7. Prior to sampling, each monitoring well was purged using an electric submersible pump until groundwater characteristics stabilized (i.e., temperature, pH, conductivity, and turbidity). A minimum of three well casing volumes (casing and sand pack volume) were extracted from each well before collecting groundwater samples. The temperature, pH, conductivity, and turbidity 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. The purging pump was decontaminated between each sampling event by rinsing with tap water to remove particulates, washing with a tri-sodium phosphate solution, and rinsing with deionized water.

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 according to USEPA protocol, including chain-of-custody procedures. Groundwater sampling field logs are presented in Appendix A, and chain-of-custody documents are included in Appendix B.

Chemical Analyses of Groundwater

Groundwater samples obtained from each monitoring well was analyzed for the presence of VOC using EPA SWA-846 Method 8020 and total petroleum hydrocarbons as gasoline using the California Water Resources Board Draft Method for TPH. 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.

The results of chemical analyses performed on groundwater samples collected from monitoring wells MW-A2, MW-4A, and MW-6 identified the presence of TPH-G and ethyl benzene. The concentrations of TPH-G ranged between 0.59 and 0.075 mg/L, while ethyl

benzene ranged from 0.7 to 3.1 μg/L. Benzene was identified in groundwater samples collected from monitoring wells MW-A2, MW-4A, MW-6, and MW-7 in concentrations ranging from 0.7 μg/L to 19 μg/L. Total xylenes were identified in groundwater samples collected from MW-4A and MW-6 at concentrations of 1.4 and 1.1 μg/L, respectively. Toluene was not detected in this round of sampling.

Disposal of Purged Groundwater

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

TABLE 2

Summary of Groundwater Sample Analyses

Monitoring Well Location	Sampling Date	EPA SW-846 Method 8020 (µg/l)				TPH-G (mg/l)	TPH-D (mg/l)	TPH-other
		Benzene	Toluene	Ethylbenzene	Total Xylene			
MW-A1	3-8-89	120	150	60	2100	7.2	12	--
	5-31-89	250	57	11	210	5.8	5.07	--
	9-13-89	16	12	8.9	37	2.7	1.0	--
	12-5-89	3.6	<0.2	4.7	24.3	0.5	<0.5	--
	3-21-90	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	--	--
	7-18-91	<0.5	<0.5	<0.5	<0.5	<0.05	<0.05	ND
	12-11-91	0.3	<0.3	<0.3	1	0.092	<0.01	--
	11-4-92	<0.3	<0.3	<0.3	<0.5	<0.01	<0.01	
	5-12-93	1.0	<0.3	<0.3	0.6	<0.01	--	--
	11-12-93	<0.5	<0.5	<0.5	<0.5	<0.05	--	--
MW-A2	3-8-89	380	200	<0.3	10	5.2	7.7	--
	5-31-89	150	4	<0.3	11	<0.5	<0.5	--
	9-13-89	56	4.4	4.8	11	1.9	0.6	--
	12-5-89	63	10	21	2.9	3.5	<0.5	--
	3-21-90	35	2.4	<0.2	18.9	1.1	<0.5	--
	11-13-90	32.5	2.4	<0.5	3.4	0.719	--	--
	7-18-91	28	<0.5	<0.5	<0.5	<0.05	<0.05	ND
	12-11-91	90	3	2	2	0.44	<0.01	--
	11-4-92	150	6	10	9	0.41	<0.01	
	5-12-93	140	5	8	8	0.480	--	--
	11-12-93	19	<0.5	0.7	<0.5	0.075	--	--
MW-A3	3-8-89	<0.3	<0.3	<0.3	<0.3	<0.5	<0.5	--
	5-31-89	<0.3	<0.3	<0.3	<0.3	<0.5	0.93	--
	9-13-89	<0.3	<0.3	<0.3	<0.3	<0.5	<0.5	--
	12-5-89	<0.3	<0.3	<0.3	<0.3	<0.5	<0.5	--
	3-21-90	<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	--	--
	7-18-91	<0.5	<0.5	<0.5	<0.5	<0.05	<0.05	ND
	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	
	5-12-93	<0.3	<0.3	<0.3	<0.5	<0.01	--	--
	11-12-93	<0.5	<0.5	<0.5	<0.5	<0.05	--	--

Note: -- - Not analyzed for this constituent
* - Free product present
TPH-G - TPH as Gasoline
TPH-D - TPH as Diesel

TABLE 2 (Continued)

Summary of Groundwater Sample Analyses

Monitoring Well Location	Sampling Date	EPA SW-846 Method 8020 (µg/l)				TPH-G (mg/l)	TPH-D (mg/l)	TPH-other
		Benzene	Toluene	Ethylbenzene	Total Xylene			
MW-4	3-22-90*	1500	17	<10	2020	20	<0.5	–
MW-4A	7-19-91	68	3.0	8.0	31	2.60	<0.05	ND
	12-11-91	2	<0.3	<0.3	<0.5	0.29	<0.01	–
	11-4-92	<0.3	0.5	0.5	1	0.59	<0.01	
	5-12-93	190	8	6.9	42	1.30	–	–
	11-12-93	0.9	<0.5	2.6	1.4	<0.590	–	–
MW-5	3-22-90	<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	–	–
	7-19-91	<0.5	<0.5	<0.5	<0.5	<0.05	<0.05	ND
	12-11-91	<0.3	<0.3	<0.3	<0.5	<0.01	<0.01	–
	11-5-92	<0.3	<0.3	<0.3	<0.5	<0.01	<0.01	
	5-12-93	0.4	<0.3	<0.3	<0.5	<0.01	–	–
	11-12-93	<0.5	<0.5	<0.5	<0.5	<0.05	–	–
MW-6	3-22-90	<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	–	–
	7-19-91	42	1.0	3.0	9.0	0.30	<0.05	ND
	12-11-91	8	<0.3	<0.3	<0.5	0.16	<0.01	–
	11-4-92	8	<0.3	2	1	0.11	<0.01	
	5-12-93	16	0.6	3	2	0.18	–	–
	11-12-93	9.8	<0.5	3.1	1.1	0.13	–	–
MW-7	7-19-91	<0.5	<0.5	<0.5	<0.5	<0.05	<0.05	ND
	12-11-91	<0.3	<0.3	<0.3	<0.5	0.18	<0.01	–
	11-4-92	1	<0.3	<0.3	<0.5	<0.01	<0.01	–
	5-12-93	2	<0.3	<0.3	<0.5	<0.01	<0.01	–
	11-12-93	0.7	<0.5	<0.5	<0.5	<0.05	–	–

Note: – - Not analyzed for this constituent
* - Free product present
TPH-G - TPH as Gasoline
TPH-D - TPH as Diesel

NO FREE PRODUCT RECOVERED to date in RI