

February 1, 1999

ENVIRONMENTAL
PROTECTION

99 FEB -2 AM 9:56

Mr. Larry Seto
ALAMEDA COUNTY HEALTH CARE SERVICES AGENCY
ENVIRONMENTAL PROTECTION
1131 Harbor Bay Parkway, Suite 250
Alameda, CA 94502-6577

**RE: Annual Groundwater Monitoring Report
ARAMARK Uniform Services, Inc.
330 Chestnut Street, Oakland, California**


Dear Mr. Seto:

Please find attached one copy of the Annual Groundwater Monitoring Report for the above referenced facility.

If you have any questions or comments about the attached report, please feel free to contact me at (310) 645-6970 or David B. McKenzie at (312) 575 0200.

Sincerely,

RMT, Inc.



Tariq Ahmad
Technical Manager

cc: Mr. Samuel J. Niemann, The Wetlands Company (2)
Mr. Phil Krejci, ARAMARK Uniform Services, Inc. (without attachments)
Mr. David B. McKenzie, RMT, Inc.



RMT, Inc.
6065 Bassett Pkwy. 2nd Floor
Creston, CA 90230 6607
310 645 6970 310/645 6971 FAX
Armark, Oakland seto199.doc

**ANNUAL GROUNDWATER
MONITORING
AND
PRODUCT RECOVERY
PROGRESS REPORT**

January

**ARAMARK Uniform Services, Inc.
330 Chestnut Street
Oakland, California**

Prepared for
ARAMARK Uniform Services, Inc.
Schaumburg, Illinois

Prepared by
RMT, Inc.
Culver City, California

January 1999



Tariq Ahmad
Technical Manager



David B. McKenzie, P.E.
Project Manager



RMT, INC.
6065 BRISQ PARK 2ND FLOOR
CULVER CITY CA 90230 6601
310 645 6970 310, 645 6971 FAX

1.2 Former Diesel Fuel Dispenser and Mop Oil UST Area

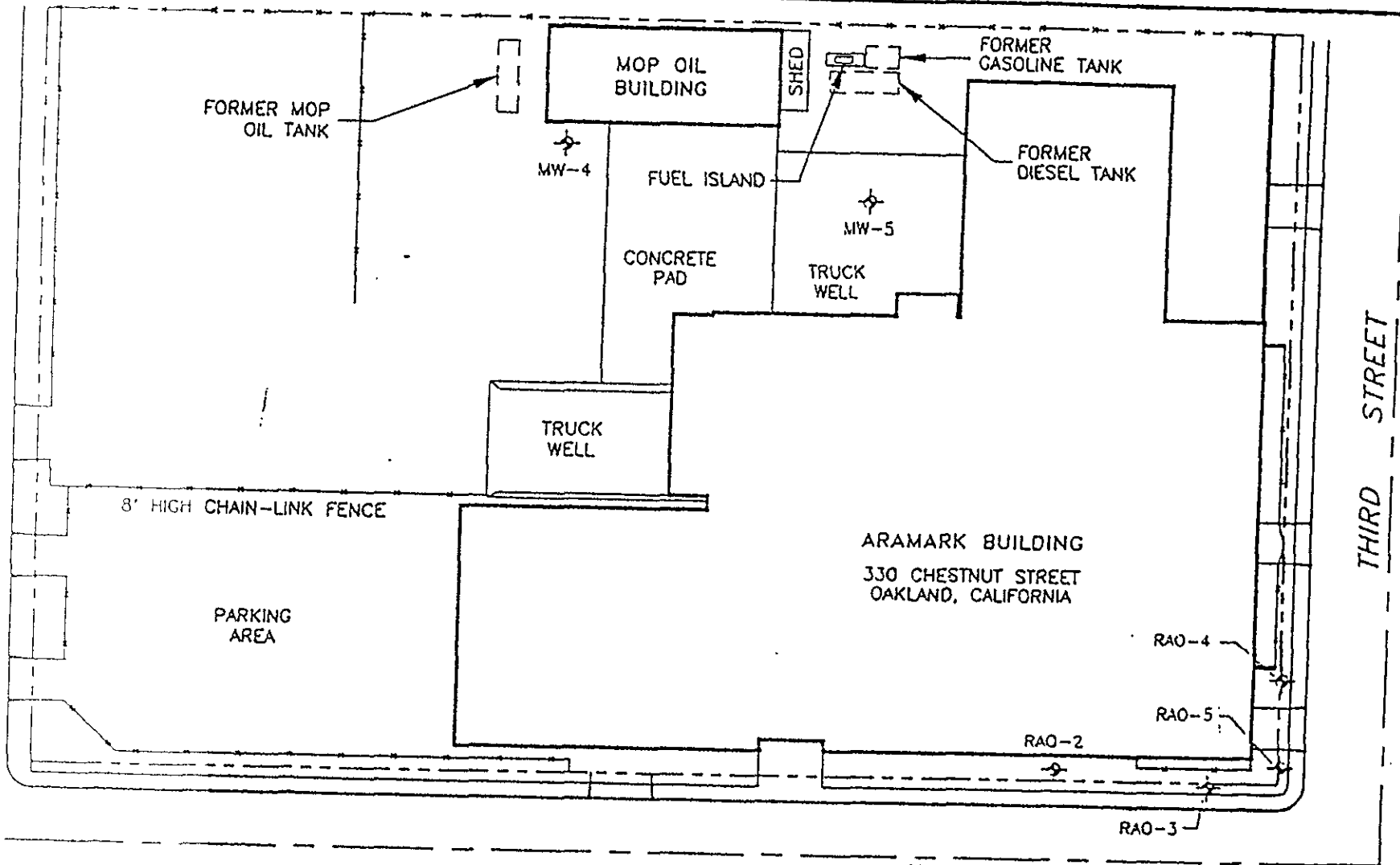
Two single-walled, steel, underground petroleum hydrocarbon storage tanks were maintained at this facility to supply fuel for the delivery vehicles (Figure 1). In addition, an underground mop oil storage tank was also maintained at the facility. RMT was retained by ARAMARK to document the removal and disposal of the underground storage tanks and perform soil sampling as required by the ACHCS. Tank removal activities were conducted during the period of September 1993 through January 1994. The results of the chemical analyses performed on the soil samples collected from the floor of the former diesel fuel dispenser vault excavations, the former mop oil tank excavation, and in the vicinity of the eastern section of the loading dock identified the presence of petroleum hydrocarbons.

In response to the request from the ACHCS, ARAMARK engaged the services of RMT to conduct soil and groundwater sampling activities in the vicinity of the former diesel fuel dispenser vaults and mop oil tank. Field activities were conducted on May 5, 1995 and included the advancement of two soil borings and the installation of two groundwater monitoring wells; MW-4 located in the vicinity of the former underground mop oil storage tank and MW-5 located in the vicinity of the former diesel fuel dispenser vaults (See Figure 1). Although the results of the chemical analyses performed on groundwater samples collected from the monitoring wells during 1995 identified the presence of total petroleum hydrocarbons at concentrations generally below 2 mg/L, TPH as stoddard solvent (TPH-SS) and TPH as diesel fuel (TPH-D) concentrations have been below detection limits throughout 1996 and during the 1997 sampling event. In addition, the presence of BTEX has never been identified at concentrations above the method detection limit in either monitoring well. In response to a letter from Mr. Larry Seto of ACHCS dated July 31, 1998, the sampling of wells MW-4 and MW-5 has been discontinued, however, wells MW-4 and MW-5 will not be abandoned until site closure has been granted. On August 27, 1998, at the request of ACHCS, monitoring well RAO-5 was installed downgradient of RAO-3, to replace damaged well RAO-1.

1.3 Purpose and Scope

The purpose of this report is to summarize the methods, procedures, and results of 4th quarter activities conducted at the ARAMARK facility on January 14, 1999. The scope of work conducted during this reporting period included the following tasks:

- Measurement of the depth to groundwater in monitoring wells RAO-2, RAO-3, RAO-4, RAO-5, MW-4, and MW-5.
- The application of a 5-percent solution of hydrogen peroxide to product recovery well RAO-3.

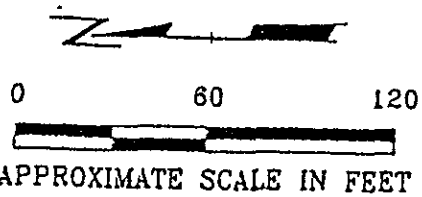



LEGEND:



GROUNDWATER MONITORING WELL

CHESTNUT STREET



PROJECT: ARAMARK UNIFORM SERVICES OAKLAND, CALIFORNIA		
SHEET TITLE: SITE PLAN		
DRAWN BY: CRB	SCALE: 1" = 60'-0"	PROJ. NO. 12013.11
CHECKED BY:		FILE NO. 1102
APPROVED BY:	DATE PRINTED:	FIGURE 1
DATE: MAY 1995		
		
RMT Inc. - Los Angeles Phone: 310/378-1241 4640 Admiralty Way Suite 301 Mano Del Rey, CA 90292		



Section 2

Groundwater Monitoring Activities

Groundwater sampling activities were conducted on January 14, 1999, and included obtaining static water level measurements from monitoring wells RAO-2, RAO-3, RAO-4, RAO-5, MW-4, and MW-5.

2.1 Static Water Level Measurements

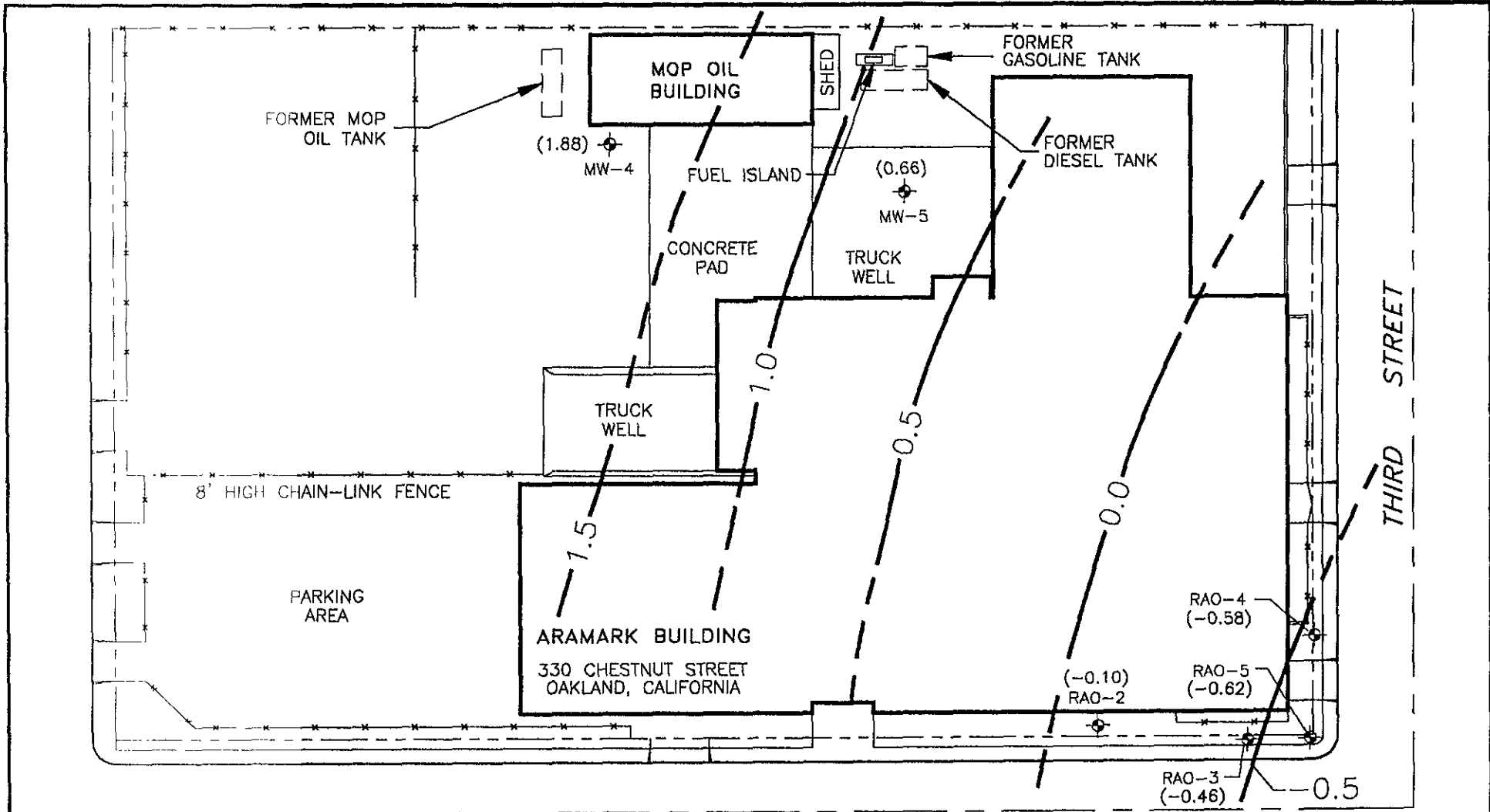
Prior to collecting groundwater samples, the depth to groundwater was measured in each monitoring well using an electronic water level indicator. Static water levels measured on January 14, 1999 indicate that the depth to groundwater ranged from approximately 8.24 ft to 9.50 ft below ground surface (bgs) and the groundwater surface elevation ranged from approximately -0.62 ft to 1.88 ft above mean sea level (MSL). Groundwater elevation data is summarized in Table 1.

Table 1
Static Water Level Measurement - January 14, 1999



Monitoring Well Location	TOC Elevation (ft above MSL)	Depth to Water (ft below TOC)	Groundwater Elevation (ft above MSL)
RAO-2	8.44	8.54	-0.10
RAO-3	7.92	8.38	-0.46
RAO-4	8.02	8.60	-0.58
RAO-5	7.62	8.24	-0.62
MW-4	11.38	9.50	1.88
MW-5	9.79	9.13	0.66

2.2 Groundwater Elevation and Flow Direction

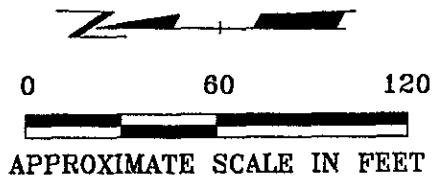
The groundwater flow observed in January 1999 is in a southwestern direction with a hydraulic gradient of 0.007 ft/ft, consistent with previous flow directions and measured hydraulic gradients at the site. A groundwater contour map is presented in Figure 2




LEGEND:

-  MW-5 GROUNDWATER MONITORING WELL
-  1.5 LINE OF EQUAL GROUNDWATER IN FEET ABOVE MEAN SEA-LEVEL DASHED WHERE INFERRED
- (1.88) GROUNDWATER ELEVATION (IN FEET ABOVE MSL)

CHESTNUT STREET



PROJECT: ARAMARK UNIFORM SERVICES OAKLAND, CALIFORNIA		
SHEET TITLE: GROUNDWATER CONTOUR MAP - JANUARY 1999		
DRAWN BY: CRB	SCALE: 1" = 60'-0"	PROJ. NO. 12013.11
CHECKED BY:		FILE NO. 1102
APPROVED BY:	DATE PRINTED:	FIGURE 2
DATE: MAY 1995		
		RMT Inc. - Los Angeles Phone: 310/578-1241 4640 Admiralty Way Suite 301 Marina Del Rey, CA 90292

2.3 Groundwater Sample Collection

Groundwater samples were collected from monitoring wells RAO-2, RAO-3, RAO-4, and RAO-5 on January 14, 1999. Prior to sampling, each monitoring well was purged using a single use disposable Teflon bailer. 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 removed.

After each monitoring well had recharged to within 80 percent of its pre-purge volume (approximately 15 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 shipped on ice to a commercial independent California-certified laboratory according to USEPA protocol, including chain-of-custody procedures. Groundwater sample collection data are presented in Appendix A.

2.4 Chemical Analyses of Groundwater Samples

Groundwater samples collected from monitoring wells RAO-2, RAO-3, RAO-4, and RAO-5 were chemically analyzed for the presence of TPH-D and BTEX using US EPA SW-846 Methods 8010M and 8020, respectively. The results of the chemical analyses are summarized in Table 2, and a copy of the laboratory report is included in Appendix B. All laboratory analyses were conducted by BC Laboratories, Inc., of Bakersfield, California.

Table 2
Chemical Analyses of Groundwater (Former Diesel Fuel UST Area)

Sample Location	Sampling Date	Parameter (ug/L)				
		Benzene	Toluene	Ethylbenzene	Xylenes	TPH-D
RAO-1	Damaged monitoring well abandoned August 27, 1998					
	02-01-96	<0.5	<0.5	<0.5	<0.5	820
	08-02-95	<0.5	<0.5	<0.5	<0.5	<50
	05-05-95	<0.5	<0.5	<0.5	<0.5	<50
	02-03-95	<0.5	<0.5	<0.5	<0.5	560
	11-18-94	<1.0	<1.0	<1.0	<1.0	<50
	08-12-94	<1.0	<1.0	<1.0	<1.0	<50
	04-28-94	<1.0	<1.0	<1.0	<1.0	<50
	01-29-94	<1.0	<1.0	<1.0	<1.0	<50
	11-11-93	<0.5	<0.5	<0.5	<0.5	<50
	08-02-93	<0.3	<0.3	<0.3	<0.5	<10
	05-11-93	0.4	0.5	<0.3	1.0	<10
RAO-2	01-14-99	<0.3	<0.3	<0.3	<0.6	<200
	01-17-98	<0.3	<0.3	<0.3	<0.6	<200
	02-18-97	<0.3	<0.3	<0.3	<0.6	<200
	11-14-95	<0.5	<0.5	<0.5	<0.5	870
	08-02-95	<0.5	<0.5	<0.5	<0.5	<50
	05-05-95	<0.5	<0.5	<0.5	<0.5	<50
	02-03-95	<0.5	<0.5	<0.5	<0.5	<50
	11-18-94	<1.0	<1.0	<1.0	<1.0	<50
	08-12-94	<1.0	<1.0	<1.0	<1.0	<50
	04-28-94	<1.0	<1.0	<1.0	<1.0	<50
	01-29-94	<1.0	<1.0	<1.0	<1.0	<50
	11-11-93	<0.5	<0.5	<0.5	<0.5	<50
	08-02-93	<0.3	<0.3	<0.3	<0.5	<10
	05-11-93	0.4	1.0	<0.3	1.0	56

Table 2 (Cont'd)
Chemical Analyses of Groundwater (Former Diesel Fuel UST Area)

Sample Location	Sampling Date	Parameter (ug/L)				
		Benzene	Toluene	Ethylbenzene	Xylenes	TPH-D
RAO-3	01-14-99	0.30	<0.3	<0.3	<0.6	1,900
	08-28-98 ^a	--	--	--	--	--
	01-17-98 ^a	--	--	--	--	--
	10-17-97	0.79	<0.3	3.6	3.5	46,000
	11-15-96	0.33	<0.3	0.61	<0.6	24,000
	08-06-96	0.45	<0.3	<0.3	<0.6	11,000
	05-10-96	1.8	<0.3	3.0	5.5	2,000,000
	02-01-96	16	<0.5	55	<0.5	1,700,000
RAO-4	01-14-99	0.30	<0.3	<0.3	<0.6	340
	01-17-98	<0.3	<0.3	<0.3	0.71	<200
	02-18-97	<0.3	<0.3	<0.3	<0.6	<200
	11-14-95	<0.5	<0.5	<0.5	<0.5	800
	08-02-95	<0.5	<0.5	<0.5	<0.5	<50
	05-05-95	<0.5	<0.5	<0.5	<0.5	<50
	02-03-95	<0.5	<0.5	<0.5	<0.5	<50
	11-18-94	<1.0	<1.0	<1.0	<1.0	<50
	08-12-94	<1.0	<1.0	<1.0	<1.0	<50
	04-28-94	<1.0	<1.0	<1.0	<1.0	<50
	01-29-94	<1.0	<1.0	<1.0	<1.0	<50
	11-11-93	<0.5	<0.5	<0.5	<0.5	<50
	08-02-93	<0.3	<0.3	<0.3	<0.5	<10
05-11-93	<0.3	<0.3	<0.3	<0.5	<10	
RAO-5	01-14-99	<0.3	<0.3	<0.3	0.75	<200
	08-28-98	<1.0	<1.0	<1.0	<1.0	<200
Blank	01/14/99	<0.3	<0.3	<0.3	<0.6	--

a: Free product sheen identified.

Table 3
Chemical Analyses of Groundwater (Former Dispenser and Mop Oil UST Area)

Sample Location	Sampling Date	Parameter (ug/L)						
		Benzene	Toluene	Ethyl Benzene	Xylenes	TPH-SS	TPH-K	TPH-D
MW-4	01-17-98	--	--	--	--	<200	<200	<200
	02-18-97	--	--	--	--	<200	<200	<200
	11-15-96	--	--	--	--	--	--	<200
	08-06-96	<0.3	<0.3	<0.3	<0.6	<200	<200	<200
	05-10-96	<0.3	<0.3	<0.3	<0.3	<200	<200	<200
	02-01-96	<0.5	<0.5	<0.5	<0.5	<500	<500	<500
	11-14-95	<0.5	<0.5	<0.5	<0.5	--	--	1,100
	08-02-95	--	--	--	--	--	--	180
	05-05-95	--	--	--	--	--	--	500
MW-5	01-17-98	--	--	--	--	<200	<200	<200
	02-18-97	--	--	--	--	<200	<200	<200
	11-15-96	--	--	--	--	--	--	<200
	08-06-96	<0.3	<0.3	<0.3	<0.6	<200	<200	<200
	05-10-96	<0.3	<0.3	<0.3	<0.3	<200	<200	350
	02-01-96	<0.5	<0.5	<0.5	<0.5	840 ^b	<500	<500
	11-14-95	<0.5	<0.5	<0.5	<0.5	--	--	2,100
	08-02-95	<0.5	<0.5	<0.5	<0.5	--	--	380
	05-05-95	<0.5	<0.5	<0.5	<0.5	--	--	1,100

b: Laboratory report indicates that the results of the chemical analyses do not resemble the standard hydrocarbon standard.
 --: Not Analyzed.

2.5 Disposal of Purged Groundwater

Groundwater extracted during monitoring well purging activities was contained in 55-gal DOT-approved drums, labeled with the date, generator's name, site location, source, and stored on-site in a designated area pending disposal.



Section 3

Product Recovery Activities

In December 1992, a passive product recovery system, consisting of a removable canister (a buoy sheathed by a semi-permeable hydrophobic membrane atop a product storage sump) was installed in monitoring well RAO-3 located in the vicinity of the former diesel fuel UST excavation. During the period from December 1992 through May 1995, approximately 6,202-mL of free-product was recovered, however, product recovery activities conducted during the period from June 1995 through October 1995 did not result in the recovery of any additional free product. Based on these findings, in November 1995, the ACHCS requested that ARAMARK collect groundwater samples from the product recovery well to determine the groundwater quality in the vicinity of the former diesel fuel UST excavation, however, it was agreed that the sampling activities would be postponed until the residual petroleum hydrocarbon buildup on the well screen and in the surrounding sand pack could be remediated. With ACHCS approval, RMT added approximately 15-gallons of a dilute solution (5%) of hydrogen peroxide (H_2O_2) to monitoring well RAO-3 on a quarterly basis during the period between November 1995 and December 1997 in order to remove any residual petroleum hydrocarbons that may still have remained within the well packing.

On August 18, 1997, and April 24, 1998, monitoring well RAO-3 was subjected to augmented liquid extraction (ALE) to remove free phase hydrocarbons (FPH) and dissolved phase contamination from the vicinity of the wellbore. A vacuum truck was used to apply a vacuum pressure at well RAO-3 by inserting a slotted drop pipe inside the sealed well for approximately 40 minutes. Monitoring well RAO-3 was allowed to recharge for approximately 15 minutes before the vacuum was applied for an additional 20 minutes. A total of 15 gallons of FPH and approximately 650 gallons of an oil/water mixture were removed during the two ALE events, respectively. Wastewater generated was transported as non-RCRA hazardous waste to the Evergreen Oil recycling facility located in Newark, California.

No free product was recovered from monitoring well RAO-3 during the 4th quarter period (October through December 1998) using the passive product recovery canister. Since inception of free product collection activities (December 1992), approximately 7.32 gallons of free product have been recovered to date using the passive product recovery canister. A summary of product recovery operations is presented in Appendix C



Appendix A

Groundwater Sample Collection Data

GROUNDWATER SAMPLE COLLECTION DATA

Project Name:	Aramark - Oakland
Sampling Date	01/14/99
Sampled By:	Yoonkee Min (RMT, Inc.)

Monitoring Well	Purge Number	Volume (Gal)	Temp (°C)	pH	Turbidity (NTU)	Cond. (uS/cm)	DTW (ft)
RAO-2	1	1		7.10	77.9	210	8.54
	2	3		7.06	82.1	210	
	3	5		7.02	96.7	220	
RAO-3	1	1		6.91	>200	170	8.38
	2	3		6.85	96.4	180	
	3	5		6.81	29.7	170	
RAO-4	1	1		7.12	20.1	270	8.60
	2	3		7.04	30.2	280	
	3	5		7.10	33.1	280	
RAO-5	1	1		7.30	>200	1100	8.24
	2	3		7.26	63.9	1100	
	3	5		7.26	42.4	1100	
MW-4							9.50
MW-5							9.13



Appendix B

Laboratory Report

BC Laboratories, Inc.

Celebrating our 50th Year

January 27, 1999

YOONKEE MIN
RMT INC.
4640 ADMIRALITY WAY
SUITE 301
MARINA DEL REY, CA 90292

Subject: Laboratory Submission No.: 99-00566
Samples Received: 01/14/99

Dear Mr. Min:

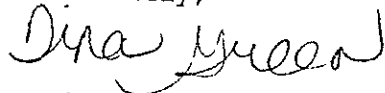
The samples(s) listed on the Chain of Custody report were received by BC Laboratories, Inc. on 01/14/99.

Enclosed please find the analytical data for the testing requested. If you have any questions regarding this report please contact me at (805)327-4911, ext. 204.

Any unused sample will be stored on our premises for a minimum of 30 days (excluding bacteriologicals) at which time they will be disposed unless otherwise requested at the time of sample receipt. A disposal fee of \$5 per sample may apply for solid sample matrices.

Please refer to submission number 99-00566 when calling for assistance.

Sincerely,



Tina Green
Project Coordinator
BC Laboratories, Inc.

CHAIN OF CUSTODY

LABORATORIES, INC. 4100 Atlas Court - Bakersfield, CA 93308
(805) 327-4911 - FAX (805) 327-1918

Report To: **RMT**
 Name: **Yoonkee Min**
 Address:
 City:
 State: Zip:
 Attn: **Yoonkee Min**
 Phone: **(310) 645-6970**

Project: **ARAMARK - Oakland**
 Project #: **12013**
 Sampler Name:
Y. Min

Submission #
99-5666

Analysis Requested

DISTRIBUTION

MATRIX

DW - Drinking Water
 GW - Ground Water
 WW - Waste Water
 S - Soil
 O - Oil
 SL - Sludge
 M - Miscellaneous

Turn Around Time Requested

Number and Container Type

Lab #	Sample Description	Date & Time Sampled	TPH	Diesel	8015M	8020	BTEX	DW	GW	WW	S	O	SL	M	Turn Around Time Requested	Number and Container Type
-1	RA0-5	1/14/99	X	X											6W	3
-2	RA0-2	↓	X	X											6W	3
-3	RA0-3		X	X											6W	3
-4B	Trip Blank		X												M	1
-5	RA0-4	1/14/99	X	X											6W	3

NUMBERING CHECKED BY *[Signature]*

11855

Billing Information:			Report Drinking Water on State Form ?	Y / N	Comments:
Name:			Send Copy to State of Calif.	Y / N	
Address:			Relinquished by: (Signature)	<i>Yoonkee Min</i>	Received by: (Signature)
City	State	Zip	Relinquished by: (Signature)	<i>[Signature]</i>	<i>[Signature]</i>
Attention:			Relinquished by: (Signature)	<i>[Signature]</i>	<i>Chussy Ford</i>
PO #			Relinquished by: (Signature)		
BC Lab. Field Service			Relinquished by: (Signature)		
Time :	Miles:		Relinquished by: (Signature)		
Equipment:	Fiat Rate:		Relinquished by: (Signature)		

Submission #: 99-566

Project Code:

SHIPPING INFORMATION

SHIPPING CONTAINER

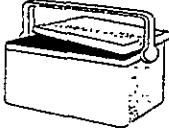
Federal Express UPS Hand Delivery
 BC Lab Field Service Other (Specify)

Ice Chest None
 Box Other (Specify)

Refrigerant: Ice Blue Ice None Other Comments:

Custody Seals: Ice Chest Containers None Comments:
 Intact? Yes No Intact? Yes No

All samples received? Yes No All samples containers intact? Yes No Description(s) match COC? Yes No



Ice Chest ID: Small Red Date/Time 1/14/99
 Temperature: 5.8 °C
 Thermometer ID: 518.17 Analyst Init CFRD
 Emissivity .90
 Container T.B. Blank

Ice Chest ID: Date/Time
 Temperature: °C
 Thermometer ID: Analyst Init
 Emissivity
 Container

SAMPLE CONTAINERS

SAMPLE NUMBERS

	1	2	3	4	5	6	7	8	9	10	11	12
QT GENERAL MINERAL/ GENERAL PHYSICAL												
PT PE UNPRESERVED												
QT INORGANIC CHEMICAL METALS												
PT INORGANIC CHEMICAL METALS												
PT CYANIDE												
PT NITROGEN FORMS												
PT TOTAL SULFIDE												
2oz. NITRATE / NITRITE												
100ml TOTAL ORGANIC CARBON												
QT TOX												
PT CHEMICAL OXYGEN DEMAND												
100ml PHENOLICS												
40ml VOA VIAL TRAVEL BLANK												
40ml VOA VIAL		2	2	2		2						
QT EPA 413.1, 413.2, 418.1												
PT ODOR												
RADIOLOGICAL												
BACTERIOLOGICAL												
PT EPA 504												
QT EPA 508/608/8080												
QT EPA 515.1/8150												
QT EPA 525												
QT EPA 525 TRAVEL BLANK												
100ml EPA 547												
100ml EPA 531.1												
QT EPA 548												
QT EPA 549												
QT EPA 632												
QT EPA 8015M		1	1	1		1						
QT QA/QC												
QT AMBER												
8 OZ. JAR												
32 OZ. JAR												
SOIL SLEEVE												
PCB VIAL												
PLASTIC BAG												

Comments:

Sample Numbering Completed By CFRD

Date/Time 1/14/99 23:25



LABORATORIES, INC.

FIELD TEMPERATURE FORM

Date: 1-14-99

Time: 15:33

Completed By: JM

Temperature: 2 C

Type of bottle Used: TEMP BLANK

Transportation Container: COOLER

Refrigerant: W+B ICE

Custody Seals: NO

Comments: _____

Samples were picked up at: OAKLAND OROAMARK

From: (signature if possible)

Purgeable Aromatics
and
Total Petroleum Hydrocarbons

RMT INC.
4640 ADMIRALITY WAY
SUITE 301
MARINA DEL REY, CA 90292
Attn: YOONKEE MIN 310-645-6970

Date Reported: 01/20/99
Date Received: 01/14/99
Laboratory No.: 99-00566-2


Project Number: 12013
Sampling Location: ARAMARK-OAKLAND
Sample ID: RAO-2
Sample Matrix: Groundwater
Sample Collected By: Y. MIN

Date Collected: 01/14/99
Date Extracted-8020: 01/18/99
Date Analyzed-8020: 01/18/99
Date Extracted-8015M(d): 01/18/99
Date Analyzed-8015M(d): 01/20/99

<u>Constituents</u>	<u>Analysis Results</u>	<u>Reporting Units</u>	<u>Practical Quantitation Limit</u>
Benzene	None Detected	µg/L	0.3
Toluene	None Detected	µg/L	0.3
Ethyl Benzene	None Detected	µg/L	0.3
Total Xylenes	None Detected	µg/L	0.6
Surrogate % Recovery	104.	%	70-130
Total Petroleum Hydrocarbons (diesel)	None Detected	µg/L	200.
Surrogate % Recovery	99.	%	32-143

TEST METHOD: TPH by D.O.H.S. / L.U.F.T. Manual Method - Modified EPA 8015
Individual constituents by EPA Method 5030/8020.

California D.O.H.S. Cert #1186, AZ License: AZ0345


Stuart G. Buttram
Department Supervisor

Purgeable Aromatics
and
Total Petroleum Hydrocarbons

RMT INC.
4640 ADMIRALITY WAY
SUITE 301
MARINA DEL REY, CA 90292
Attn: YOONKEE MIN 310-645-6970

Date Reported: 01/20/99
Date Received: 01/14/99
Laboratory No.: 99-00566-3

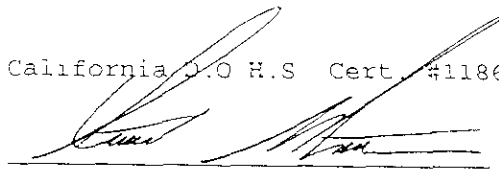
Project Number: 12013
Sampling Location: ARAMARK-OAKLAND
Sample ID: RAO-3
Sample Matrix: Groundwater
Sample Collected By: Y. MIN

Date Collected: 01/14/99
Date Extracted-8020: 01/19/99
Date Analyzed-8020: 01/19/99
Date Extracted-8015M(d): 01/18/99
Date Analyzed-8015M(d): 01/20/99

<u>Constituents</u>	<u>Analysis Results</u>	<u>Reporting Units</u>	<u>Practical Quantitation Limit</u>
Benzene	0.30	µg/L	0.3
Toluene	None Detected	µg/L	0.3
Ethyl Benzene	None Detected	µg/L	0.3
Total Xylenes	None Detected	µg/L	0.6
Surrogate % Recovery	100.	%	70-130
Total Petroleum Hydrocarbons (diesel)	1900.	µg/L	200.
Surrogate % Recovery	93.	%	32-143

TEST METHOD: TPH by D.O.H.S. / L.U.F.T. Manual Method - Modified EPA 8015
Individual constituents by EPA Method 5030/8020.

California D.O.H.S. Cert. #1186, AZ License: AZ0345


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4640 ADMIRALITY WAY
SUITE 301
MARINA DEL REY, CA 90292
Attn: YOONKEE MIN 310-645-6970

Date Reported: 01/20/99
Date Received: 01/14/99
Laboratory No.: 99-00566-4TB

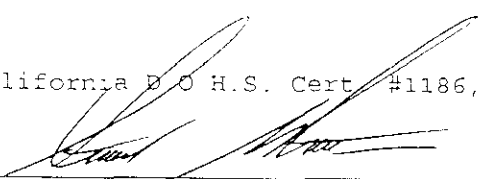
Project Number: 12013
Sampling Location: ARAMARK-OAKLAND
Sample ID: TRIP BLANK
Sample Matrix: Blank Water
Sample Collected By: Y. MIN

Date Collected: 01/14/99
Date Extracted-8020: 01/18/99
Date Analyzed-8020: 01/18/99

<u>Constituents</u>	<u>Analysis Results</u>	<u>Reporting Units</u>	<u>Practical Quantitation Limit</u>
Benzene	None Detected	µg/L	0.3
Toluene	None Detected	µg/L	0.3
Ethyl Benzene	None Detected	µg/L	0.3
Total Xylenes	None Detected	µg/L	0.6
Surrogate % Recovery	102.	%	70-130

TEST METHOD: TPH by D.O.H.S. / L.U.F.T. Manual Method - Modified EPA 8015
Individual constituents by EPA Method 5030/8020.

California D.O.H.S. Cert #1186, AZ License: AZ0345


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Department Supervisor



Appendix C

Product Recovery Logs



Passive Product Recovery Observations (RAO-3)

Sampling Date	Volume of Product Removed (mL)	Volume of Water Removed (mL)	Depth to Product (ft-bgs)	Depth to Water (ft-bgs)	Thickness of Product (ft)
12-03-92	0	20	8.65	8.67	0.02
12-04-92	0	0	8.61	8.63	0.02
12-08-92	18	0	8.52	8.52	0.00
12-09-92	10	0	8.24	8.24	0.00
12-10-92	0	3	8.02	8.02	0.00
12-14-92	30	200	8.28	8.29	0.01
12-15-92	0	0	8.32	8.32	0.00
12-16-92	0	0	8.52	8.52	0.00
12-18-92	18	0	8.63	8.66	0.03
12-21-92	10	0	8.39	8.42	0.03
12-22-92	20	30	8.56	8.58	0.02
12-23-92	18	0	8.35	8.37	0.02
12-24-92	22	0	8.42	8.53	0.11
12-28-92	15	0	8.53	8.64	0.01
12-29-92	20	0	8.58	8.60	0.02
12-30-92	18	0	8.22	8.24	0.02
01-04-93	23	18	8.45	8.47	0.02
01-05-93	12	0	8.28	8.30	0.02
01-06-93	10	0	8.05	8.48	0.43
01-07-93	8	0	8.64	8.66	0.02
01-08-93	3	10	8.36	8.37	0.01
01-11-93	8	0	8.02	8.16	0.14
01-12-93	13	8	7.68	8.06	0.38
01-13-93	45	0	7.64	8.04	0.40
01-14-93	40	0	8.00	8.32	0.32
01-15-93	40	0	7.98	8.30	0.32
01-18-93	48	0	8.00	8.11	0.11
01-19-93	50	0	8.00	8.22	0.22
01-20-93	44	0	8.00	8.02	0.02
01-21-93	5	40	7.84	8.00	0.16
01-22-93	450	42	7.74	7.98	0.24
02-04-93	25	500	7.99	8.45	0.46
03-25-93	380	70	8.11	8.20	0.09
04-09-93	500	18	8.11	8.20	0.09
04-23-93	210	60	7.49	7.51	0.02
05-03-93	560	90	8.54	8.58	0.04
05-11-93	38	114	8.35	8.45	0.10

Passive Product Recovery Observations (RAO-3)

Sampling Date	Volume of Product Removed (mL)	Volume of Water Removed (mL)	Depth to Product (ft-bgs)	Depth to Water (ft-bgs)	Thickness of Product (ft)
05-20-93	1	0	8.39	8.42	0.03
06-02-93	5	65	8.37	8.41	0.04
06-18-93	100	0	8.46	8.57	0.14
07-09-93	150	0	8.20	8.25	0.05
11-11-93	40	80	7.98	7.91	0.07
12-10-93	20	25	8.62	8.59	0.03
01-29-94	0	0	8.76	8.76	0.00
03-10-94	0	0	8.63	8.63	0.00
05-03-94	1,976	658	8.93	9.15	0.22
06-17-94	6	565	8.85	8.85	0.00
06-21-94	1	540	8.50	8.52	0.02
06-28-94	5	400	8.69	8.71	0.01
07-08-94	26	500	8.61	8.61	0.00
07-14-94	0	400	8.73	8.73	0.00
07-20-94	20	500	8.60	8.62	0.02
07-26-94	60	560	8.68	8.71	0.03
08-02-94	21	500	8.46	8.50	0.04
08-12-94	30	640	7.74	7.79	0.05
08-18-94	0	550	9.24	9.24	0.00
08-25-94	0	550	8.78	8.78	0.00
08-31-94	0	550	8.74	8.74	0.00
09-09-94	150	375	7.74	7.76	0.02
09-15-94	0	525	8.93	8.93	0.00
09-22-94	5	305	8.97	8.99	0.02
09-30-94	0	420	8.86	8.86	0.00
10-07-94	0	550	8.74	8.74	0.00
10-14-94	0	520	8.80	8.80	0.00
10-21-94	0	520	8.88	8.88	0.00
10-28-94	0	525	8.90	8.90	0.00
11-04-94	0	550	8.00	8.00	0.00
11-09-94	0	520	7.99	7.99	0.00
11-18-94	80	430	8.05	8.15	0.10
11-25-94	130	300	8.00	7.99	0.01
11-30-94	30	260	7.94	7.95	0.01
12-09-94	30	480	8.03	8.07	0.04
12-16-94	30	120	7.96	7.99	0.03
12-22-94	20	500	8.06	8.09	0.03
12-29-94	80	360	7.71	7.73	0.02

Passive Product Recovery Observations (RAO-3)

Sampling Date	Volume of Product Removed (mL)	Volume of Water Removed (mL)	Depth to Product (ft-bgs)	Depth to Water (ft-bgs)	Thickness of Product (ft)
01-06-95	25	500	7.57	7.60	0.03
01-13-95	50	70	7.55	7.54	0.01
01-20-95	5	510	7.53	7.54	0.01
01-26-95	30	500	7.38	7.41	0.03
01-31-95	30	320	7.47	7.48	0.01
02-09-95	20	210	7.63	7.63	0.00
02-14-95	20	175	7.62	7.64	0.02
02-24-95	30	310	7.85	7.89	0.04
03-03-95	20	340	7.75	7.78	0.03
03-09-95	30	510	7.31	7.34	0.03
03-17-95	10	510	7.28	7.29	0.01
03-24-95	15	485	7.23	7.24	0.01
03-31-95	15	475	7.47	7.48	0.01
04-07-95	35	285	7.61	7.62	0.01
04-14-95	20	280	7.68	7.69	0.01
04-21-95	20	290	7.75	7.73	0.02
04-28-95	40	420	7.65	7.68	0.03
05-06-95	20	360	7.70	7.71	0.01
05-12-95	20	390	7.70	7.70	0.00
05-19-95	10	370	7.90	7.90	0.00
05-26-95	10	380	7.80	7.80	0.00
06-02-95	0	240	7.86	7.86	0.00
06-09-95	0	330	7.80	7.80	0.00
06-16-95	0	170	7.87	7.87	0.00
06-23-95	0	300	7.99	7.99	0.00
06-30-95	0	300	7.88	7.88	0.00
07-07-95	0	280	7.82	7.82	0.00
07-14-95	0	290	7.86	7.86	0.00
07-21-95	0	540	7.90	7.90	0.00
07-28-95	0	500	7.92	7.92	0.00
08-04-95	0	480	7.86	7.86	0.00
08-11-95	0	530	7.88	7.88	0.00
08-18-95	0	520	7.86	7.86	0.00
08-25-95	0	500	7.90	7.90	0.00
09-05-95	0	310	8.15	8.15	0.00
09-12-95	0	400	8.10	8.10	0.00
09-19-95	0	390	8.20	8.20	0.00
09-26-95	0	380	8.25	8.25	0.00

Passive Product Recovery Observations (RAO-3)

Sampling Date	Volume of Product Removed (mL)	Volume of Water Removed (mL)	Depth to Product (ft-bgs)	Depth to Water (ft-bgs)	Thickness of Product (ft)
10-03-95	0	385	8.15	8.15	0.00
10-10-95	0	230	8.42	8.42	0.00
10-17-95	0	240	8.39	8.39	0.00
10-24-95	0	250	8.40	8.40	0.00
10-31-95	0	255	8.44	8.44	0.00
11-07-95	0	260	8.42	8.42	0.00
11-14-95	0	400	8.43	8.43	0.00
11-21-95	0	420	8.48	8.48	0.00
11-28-95	0	480	8.50	8.50	0.00
12-05-95	0	400	8.55	8.55	0.00
12-15-95	0	550	8.40	8.40	0.00
12-22-95	0	490	8.36	8.36	0.00
12-29-95	0	570	7.85	7.85	0.00
01-05-96	0	560	7.82	7.82	0.00
01-12-96	0	480	7.52	7.52	0.00
01-19-96	0	460	7.54	7.54	0.00
01-26-96	0	450	7.53	7.53	0.00
02-01-96	400	1000	7.03	7.12	0.09
02-09-96	275	480	7.34	7.36	0.02
02-16-96	75	400	7.35	7.37	0.02
02-23-96	100	360	7.33	7.36	0.03
03-01-96	100	350	7.32	7.34	0.02
03-08-96	90	360	7.34	7.36	0.02
03-15-96	95	355	7.35	7.37	0.02
03-22-96	90	360	7.33	7.35	0.02
03-29-96	80	350	7.34	7.36	0.02
04-05-96	90	355	7.44	7.47	0.03
04-12-96	70	360	7.48	7.50	0.02
04-19-96	75	350	7.58	7.60	0.02
04-26-96	60	500	7.74	7.75	0.01
05-03-96	50	460	7.75	7.76	0.01
05-10-96	0	100	7.76	7.76	0.00
05-17-96	0	480	7.78	7.78	0.00
05-24-96	0	490	7.90	7.90	0.00
05-31-96	10	495	7.60	7.60	0.00
06-08-96	0	490	7.72	7.72	0.00
06-14-96	10	490	7.72	7.72	0.00
06-21-96	0	480	7.74	7.74	0.00

Passive Product Recovery Observations (RAO-3)

Sampling Date	Volume of Product Removed (mL)	Volume of Water Removed (mL)	Depth to Product (ft-bgs)	Depth to Water (ft-bgs)	Thickness of Product (ft)
06-28-96	0	490	7.76	7.76	0.00
07-05-96	0	485	7.75	7.75	0.00
07-12-96	0	495	7.76	7.76	0.00
07-19-96	10	400	7.90	7.90	0.00
07-26-96	0	425	7.85	7.85	0.00
08-02-96	0	420	7.90	7.90	0.00
08-16-96	0	430	7.82	7.82	0.00
08-30-96	0	450	7.80	7.80	0.00
09-13-96	10	550	8.15	8.15	0.00
09-27-96	0	500	8.20	8.20	0.00
10-11-96	0	525	8.30	8.30	0.00
10-25-96	5	545	8.28	8.28	0.00
11-08-96	0	500	8.26	8.26	0.00
11-22-96	0	525	8.10	8.10	0.00
12-06-96	0	500	8.20	8.20	0.00
12-23-96	0	540	7.92	7.92	0.00
01-03-97	10	510	7.46	7.46	0.00
01-16-97	50	500	7.36	7.38	0.02
01-31-97	240	250	7.13	7.17	0.04
02-14-97	100	300	7.25	7.26	0.01
02-28-97	90	350	7.26	7.27	0.01
03-14-97	100	470	7.72	7.74	0.02
03-28-97	90	480	7.74	7.76	0.02
04-11-97	80	490	7.82	7.83	0.01
04-25-97	0	400	7.90	7.90	0.00
05-09-97	0	450	7.92	7.92	0.00
05-23-97	0	400	7.94	7.94	0.00
06-06-97	10	490	7.77	7.77	0.00
06-20-97	10	520	8.04	8.04	0.00
07-03-97	10	170	7.95	7.95	0.00
07-18-97	0	490	8.10	8.10	0.00
08-01-97	0	495	8.20	8.20	0.00
08-15-97	0	480	8.30	8.30	0.00
08-29-97	0	490	8.40	8.40	0.00
09-11-97	0	290	8.15	8.15	0.00
09-26-97	0	505	8.09	8.09	0.00
10-10-97	0	100	8.19	8.19	0.00
10-21-97	0	250	8.24	8.24	0.00

Passive Product Recovery Observations (RAO-3)

Sampling Date	Volume of Product Removed (mL)	Volume of Water Removed (mL)	Depth to Product (ft-bgs)	Depth to Water (ft-bgs)	Thickness of Product (ft)
11-07-97	0	540	8.21	8.21	0.00
11-21-97	0	550	7.60	7.60	0.00
12-05-97	0	560	7.22	7.22	0.00
12-19-97	0	500	7.24	7.24	0.00
01-02-98	50	520	7.00	7.00	0.00
01-16-98	40	540	7.00	7.00	0.00
01-30-98	40	530	7.20	7.20	0.00
02-13-98	50	500	7.10	7.10	0.00
02-27-98	220	510	6.99	6.99	0.00
03-13-98	120	300	6.96	6.96	0.00
03-27-98	90	350	6.98	6.98	0.00
04-10-98	50	400	7.20	7.20	0.00
04-24-98	0	450	7.22	7.22	0.00
05-08-98	0	460	7.28	7.28	0.00
05-22-98	0	450	7.40	7.40	0.00
06-05-98	0	570	7.18	7.18	0.00
06-19-98	10	500	7.15	7.15	0.00
07-05-98	5	495	7.18	7.18	0.00
07-06-98	10	520	7.20	7.20	0.00
07-24-98	5	495	7.30	7.30	0.00
08-07-98	0	300	7.40	7.40	0.00
08-21-98	0	250	7.45	7.45	0.00
08-28-98	0	510	7.44	7.44	0.00
09-04-98	0	100	7.46	7.46	0.00
09-18-98	0	300	7.44	7.44	0.00
10-02-98	0	370	7.75	7.75	0.00
10-16-98	0	220	7.40	7.40	0.00
10-30-98	0	240	7.60	7.60	0.00
11-13-98	0	250	7.62	7.62	0.00
11-27-98	0	260	7.61	7.61	0.00
12-11-98	0	210	7.90	7.90	0.00
12-28-98	0	100	8.16	8.16	0.00
01-11-99	0	100	8.36	8.36	0.00
Total to Date	9,377				

Augmented Liquid Extraction (RAO-3)

Sampling Date	Volume of Product Removed (gal)	Volume of Product/Water Removed (gal)
08-18-97	10	290
04-24-98	5	360