GROUNDWATER MONITORING AND PRODUCT RECOVERY PROGRESS REPORT

ARAMARK UNIFORM SERVICES, INC.
330 CHESTNUT STREET
OAKLAND, CALIFORNIA

Jan 96

PREPARED FOR

ARAMARK UNIFORM SERVICES, INC.
SCHAUMBURG, ILLINOIS

PREPARED BY

RMT, INC.
MARINA DEL REY, CA

JANUARY 1996

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Project Engineer

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Section 1
INTRODUCTION

1.1 Former Diesel Fuel UST Area

ARAMARK Uniform Services, Inc., (ARAMARK) owns and operates an industrial laundry facility located at 330 Chestnut Street in Oakland, California. A 2,000-gallon underground diesel fuel storage tank was formerly maintained at this facility to supply fuel for the operation of a boiler. The diesel fuel storage tank was removed from the facility in December 1988 and a tank closure documentation report was submitted to the Alameda County Environmental Health Department (ACEHD). Based on the information presented in the tank documentation report, the ACEHD requested that ARAMARK conduct post-closure sampling activities to determine whether the soil and groundwater surrounding the underground storage tank had been impacted by petroleum hydrocarbons.

Remedial investigation activities were conducted by RMT from March 1989, through November 1992, and included the advancement of soil borings and four groundwater monitoring wells (RAO-1 through RAO-4) in the vicinity of the former excavation area. The results of chemical analyses performed on groundwater samples collected from monitoring wells RAO-1 and RAO-2 identified the presence of total petroleum hydrocarbons (TPH) and benzene, toluene, and xylenes (BTX) and free-product was consistently observed in the groundwater monitoring well located within the former underground storage tank excavation (RAO-3). Because the results of the sampling activities indicated that the extent of petroleum hydrocarbon contamination was limited to the former tank excavation, a product recovery canister was installed in December 1992. To date, the product recovery system has recovered approximately 7,897-mL of free-product, however, the quantity of product recovered each sampling interval has significantly decreased. In addition, with the exception of the chemical analyses performed on groundwater samples collected during February 1995, the presence of TPH or BTX has not been identified in any groundwater sample collected since May 1993.

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 In addition, an underground mop oil

storage tank was also maintained at the facility. RMT, Inc. (RMT), was retained by ARAMARK to document the removal and disposal of the underground storage tanks and perform soil sampling as required by the ACEHD. 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 ACEHD, ARAMARK engaged the services of RMT, Inc., 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 identified the presence of total petroleum hydrocarbons, TPH-MS and TPH-D concentrations are generally less than 2-mg/L. In addition, the presence of BTEX has never been identified at concentrations above the method detection limit in either monitoring well. A site plan showing the location of the former diesel fuel tanks and the mop oil tank is presented in Figure 1.

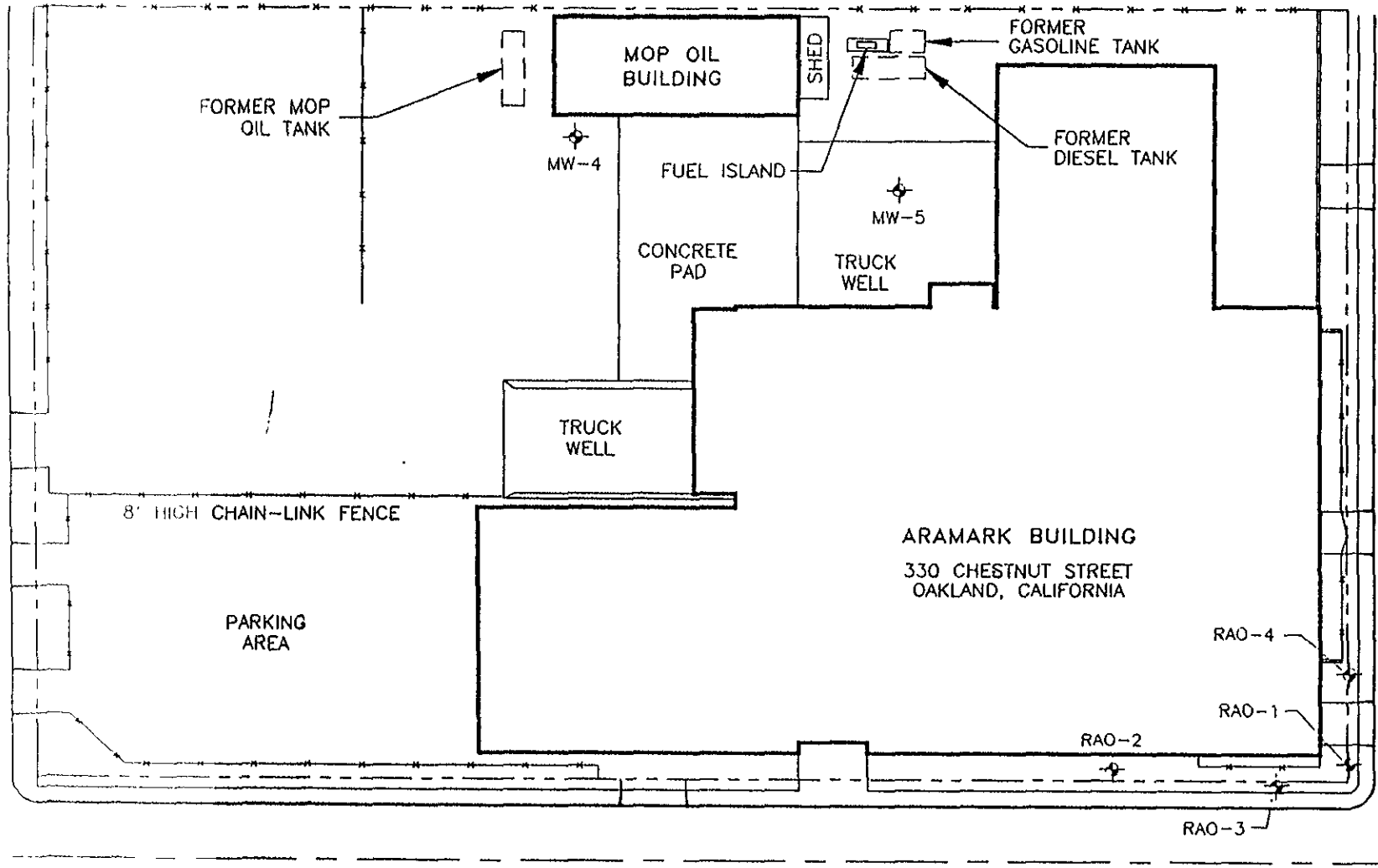
1.3 Purpose and Scope

The purpose of this report is to summarize the results of the groundwater monitoring activities conducted on November 15, 1996, at the ARAMARK facility. Groundwater monitoring activities were conducted in accordance with revised sampling requirements stipulated in a letter by Jennifer Eberle of the Alameda County Health Care Services Agency, dated November 12, 1996, and presented in Appendix D. The scope of work conducted during the groundwater investigation included the following:

- Measurement of the depth to groundwater in monitoring wells RAO-1, RAO-2, RAO-3, RAO-4, MW-4, and MW-5,
- The purging and sampling of monitoring wells MW-4 and MW-5,

- The purging and sampling of product recovery well RAO-3 in accordance with ACEHD letter dated November 6, 1995, and

- The chemical analyses of groundwater samples collected from monitoring wells RAO-3, MW-4 and MW-5.



LEGEND:

MW-5 GROUNDWATER MONITORING WELL

0 60 120

APPROXIMATE SCALE IN FEET

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: 310/578-1241
4640 Admiralty Way
Suite 301
Marina Del Rey, CA 90292

Section 2

GROUNDWATER MONITORING ACTIVITIES

Groundwater sampling activities were conducted on November 15, 1996, and included obtaining static water level measurements and groundwater samples from monitoring wells MW-4 and MW-5. Groundwater samples were also collected from product recovery well RAO-3.

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. Three rounds of groundwater heights were taken to assess any variability in measurement.

2.2 Groundwater Sample Collection

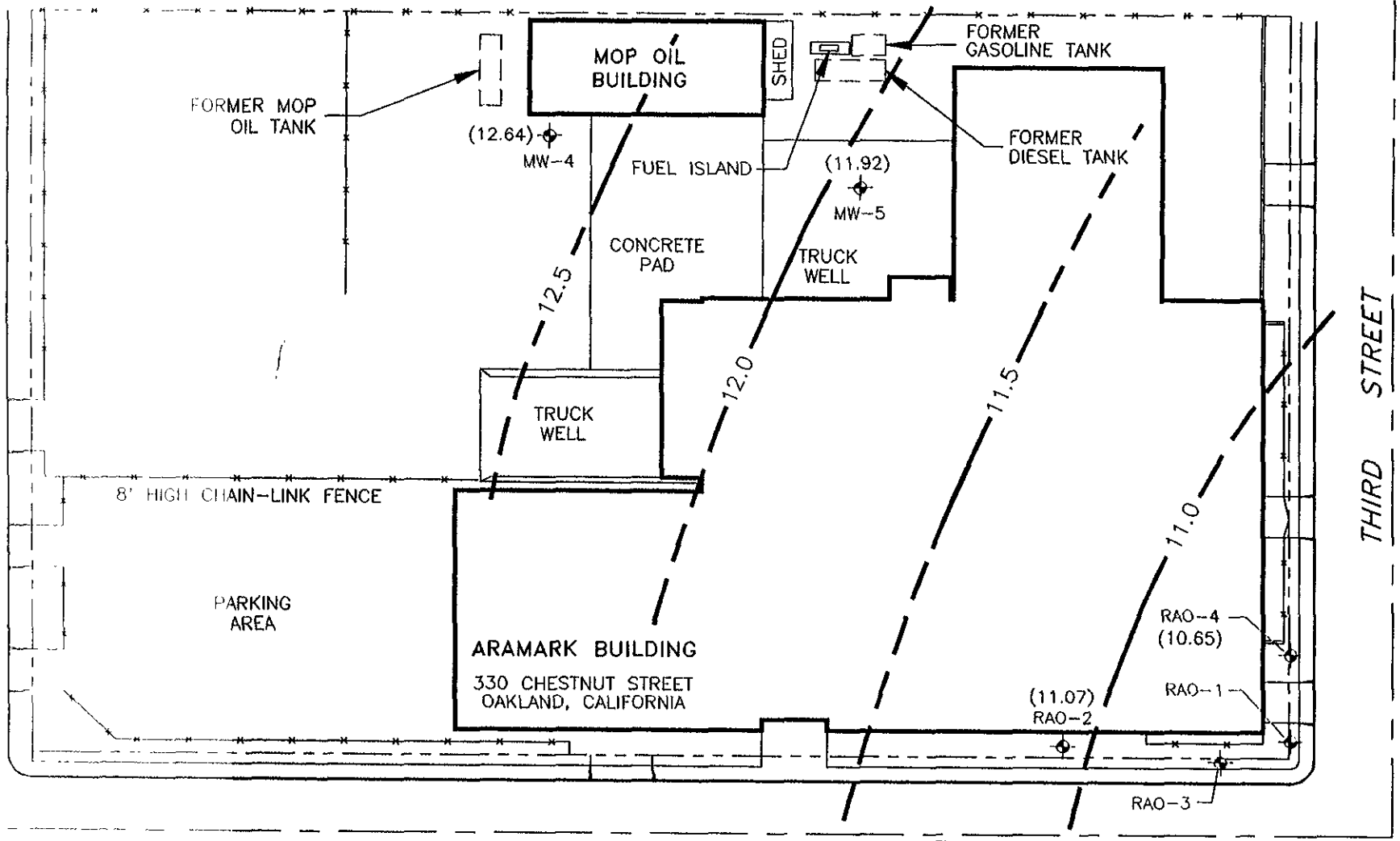
Groundwater samples were collected from monitoring wells MW-4 and MW-5, and from product recovery well RAO-3. Prior to sampling, each monitoring well was purged using a bailer. A minimum of three well casing volumes (casing and sand pack volume) were extracted from each well before collecting groundwater samples. The temperature, pH, 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. The purging bailer 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 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 stored on ice pending transport 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.

2.3 Groundwater Flow

Static water level measurements obtained on November 15, 1996, are summarized in Table 1 and the water table map generated from the water level data is presented in Figure 2. The groundwater flow direction is southeast with a gradient of approximately 0.005-ft/ft.



LEGEND:

MW-5 — GROUNDWATER MONITORING WELL

12.0 — LINE OF EQUAL GROUNDWATER IN FEET ABOVE MEAN SEA-LEVEL DASHED WHERE INFERRED

(11.07) — GROUNDWATER ELEVATION (IN FEET ABOVE MSL)

0 60 120

APPROXIMATE SCALE IN FEET

PROJECT:
ARAMARK UNIFORM SERVICES
OAKLAND, CALIFORNIA

SHEET TITLE:
WATER TABLE MAP - NOVEMBER 15, 1996

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.
RMT Inc. - Los Angeles
Phone: 310/578-1241
4640 Admiralty Way
Suite 301
Marina Del Rey, CA 90292

Table 1

Static Water Level Measurement

Monitoring Well Location	TOC Elevation (ft above MSL)	Depth to Water (ft below TOC)	Groundwater Elevation (ft above MSL)
RAO-1	19.08	--	--
RAO-2	19.57	8.50	11.07
RAO-4	19.30	8.65	10.65
MW-4	22.69	10.05	12.64
MW-5	21.09	9.17	11.92

2.4 Chemical Analyses of Groundwater

Groundwater samples collected from product recovery well RAO-3 were analyzed for the presence of BTEX and TPH-D using EPA SW-846 Method 8020 and Method 8015M, respectively and groundwater samples collected from monitoring wells MW-4 and MW-5 were analyzed for the presence of TPH-D using EPA SW-846 Method 8015M. The results of the laboratory analyses are summarized in Table 2 (diesel fuel UST Area) and Table 3 (former diesel fuel dispenser and mop oil UST area) 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	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	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

not done 11-96

Table 2 (Continued)

Chemical Analyses of Groundwater (Former Diesel Fuel UST Area)

Sample Location	Sampling Date	Parameter (ug/L)				
		Benzene	Toluene	Ethylbenzene	Xylenes	TPH-D
RAO-3	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[a]	1.8	<0.3	3.0	5.5	2,000,000
	02-01-96[a]	16	<0.5	55	<0.5	1,700,000
RAO-4	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

a = Free product was identified in product recovery well RAO-3

Table 3

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

Sample Location	Sampling Date	Parameter (ug/L)						
		Benzene	Toluene	Ethylbenzene	Xylenes	TPH-SS	TPH-K	TPH-D
MW-4	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	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[a]	<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

a = The chromatogram does not resemble the stoddard hydrocarbon standard.

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 pending off-site disposal.

Section 3

PRODUCT RECOVERY ACTIVITIES

In December 1992, a 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 ACEHD 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 ACEHD approval, RMT added approximately 15-gallons of a dilute solution (5%) of hydrogen peroxide (H_2O_2) to product recovery RAO-3 on a monthly basis during the period between November 1995 and January 1996 to help remove the residual petroleum hydrocarbons present within the well packing. Product recovery activities conducted during the first and second quarter resulted in the recovery of approximately 400-mL and 800-mL of free-product, respectively.

Approximately 15-mL of free product was recovered from the product recovery well during the fourth quarter activities (September through December, 1996). A total of 7,897-mL of free-product has been recovered since product recovery operations began (December 1992). A summary of the product recovery operations is presented in Appendix C.

GROUNDWATER SAMPLING INFORMATION

Project Name:	ARAMARK - OAKLAND
Project Number:	
Sampling Date:	NOVEMBER, 15, 1996

Monitoring Well Location	Purge Number	Purge Volume (gal)	Temp (°C)	pH	Turbidity (NTU)	DTW (ft-bgs)	Cond (µS/cm)
RAO-1	1		WELL DAMAGED			—	
	2						
	3						
RAO-2	1					8.50	
	2						
	3						
RAO-3	1	1	68.7	6.9	—	8.34	1.73
	2	3	68.1	6.8	25.6		1.73
	3						
RAO-4	1					8.65	
	2						
	3						
MW-4	1	1	67.6	6.7	11.6	10.05	1.45
	2	—					
	3		DRY @ 1-GALLON				
MW-5	1	1	67.8	6.7	8.11	9.17	1.60
	2						
	3		DRY @ 2-GALLONS				

APPENDIX B

LABORATORY REPORT

BC LABORATORIES, INC.

November 27, 1996

TARIQ AHMAD
RMT INC.
4640 ADMIRALITY WAY
SUITE 301
MARINA DEL REY, CA 90292

Subject: Laboratory Submission No.: 96-13385
Samples Received: 11/15/96

Dear Mr. Ahmad:

The samples(s) listed on the Chain of Custody report were received by BC Laboratories, Inc. on 11/15/96.

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. 250.

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 96-13385 when calling for assistance.

Sincerely,

Cheryl Ferguson

Cheryl Ferguson
Project Manager
BC Laboratories, Inc.

RMT LABORATORIES

96-13385 CHAIN OF CUSTODY RECORD

NO. 64467

DISTRIBUTION SD

744 Heartland Trail, P O Box 8923 • Madison, WI 53708-8923 • Phone (608) 831-4444 • FAX (608) 831-7530

Project No

Project/Client: Aramark - Oakland

Project Manager/Contact Person: Tariq Ahmad

Lab No	Yr 96 Date	Time	Sample Station ID	Total Number Of Containers	MATRIX	Analyses Requested: 8015 - DIESEL	BTEX - 8020	Comments:
-1	11/15		MW-4	1	WATER	X		
-2			MW-5	1		X		
-3			RAO-3	4		X	X	
-4			BLANK	3			X	

Filtered (Yes/No)

Preserved (Code)

PRESERVED CODES
A - NONE
B - HNO_3
C - H_2SO_4
D - NaOH
E - HCl
F - METHANOL
G - _____

SPECIAL INSTRUCTIONS

SAMPLER Relinquished by (Sig.)	Date/Time	Received by (Sig.)	Date/Time
T. H	11/15/96	John M Knight	11-15-96 1320
Relinquished by (Sig.) John M Knight	Date/Time 11-15-96 2050	Received by (Sig.) Michelle L. Owen	Date/Time 1550 pm 11/15/96
Relinquished by (Sig.)	Date/Time	Received by (Sig.)	Date/Time

HAZARDS ASSOCIATED WITH SAMPLES
- ☐ Flammable
- ☐ Corrosive
- ☐ Highly Toxic
- ☐ Other (list) _____

Turn Around (circle one) Normal Rush

Report Due _____

(For Lab Use Only)

Receipt Temp: _____ Receipt pH (Wet/Metals) _____

Temp Blank Y N

Custody Seal Present/Absent Intact/Not Intact Seal #'s

F-268 (R6/95)

WHITE - LABORATORY COPY YELLOW - REPORT APPENDIX PINK - SAMPLER/SUBMITTER

BC LABORATORIES INC.

LAB NUMBER 63385	TIME RECEIVED: 8:50 pm	DATE RECEIVED: 1/15/96	RECEIVED BY: MG

SHIPPING SPECIFICATIONS

Federal Express ☐ UPS ☐ Hand Delivery ☐

BC Lab Field Service ☒ Other ☐ (Specify) _____

SHIPPING CONTAINER

Ice Chest ☒ Box ☐

None ☐ Other ☐ (Specify) _____

SAMPLE CONDITION

Ice Chest ID _____	Ice Chest ID _____	Ice Chest ID _____	Ice Chest ID _____	Ice Chest ID _____	Ice Chest ID _____
Temperature 4 °C	Temperature _____ °C	Temperature _____ °C	Temperature _____ °C	Temperature _____ °C	Temperature _____ °C

Ice ☐ Blue Ice ☒ None ☐ If temperature is not between 2 and 6 °C please explain: _____

Custody Seals: Ice Chest ☐ Containers ☐ None ☒

All samples received? Yes ☒ No ☐ All samples intact? Yes ☒ No ☐ Description match COC? Yes ☒ No ☐

SAMPLE CONTAINERS

Sample #	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
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			3	3																
VOA SET (3 VIALS, 1TB)																				
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																				
QT QA/QC																				
QT AMBER	X	X	X																	
8 OZ. JAR																				
32 OZ JAR																				
SOIL SLEEVE																				
PCB VIAL																				
PLASTIC BAG																				

Comments: _____

Completed by: _____

BC LABORATORIES

Total Petroleum Hydrocarbons

RMT INC.
4640 ADMIRALITY WAY
SUITE 301
MARINA DEL REY, CA 90292
Attn: TARIQ AHMAD 310-578-1241

Date Reported: 11/25/96
Date Received: 11/15/96
Laboratory No.: 96-13385-1

Sample Description: ARAMARK-OAKLAND: MW-4 SAMPLED BY TARIQ AHMAD

Sample Matrix: Water

Date Collected: 11/15/96
Date Extracted-8015M(d): 11/20/96
Date Analyzed-8015M(d): 11/22/96

Constituents	Analysis Results	Reporting Units	Practical Quantitation Limit
Total Petroleum Hydrocarbons (diesel)	None Detected	µg/L	200.
Surrogate % Recovery	77.	%	57-137

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

California D O H S Cert #1186

Stuart G Buttram
Department Supervisor

BC LABORATORIES

Total Petroleum Hydrocarbons

RMT INC.
4640 ADMIRALITY WAY
SUITE 301
MARINA DEL REY, CA 90292
Attn: TARIQ AHMAD 310-578-1241

Date Reported: 11/25/96
Date Received: 11/15/96
Laboratory No.: 96-13385-2

Sample Description: ARAMARK-OAKLAND: MW-5 SAMPLED BY TARIQ AHMAD

Sample Matrix: Water

Date Collected: 11/15/96
Date Extracted-8015M(d): 11/20/96
Date Analyzed-8015M(d): 11/22/96

Constituents	Analysis Results	Reporting Units	Practical Quantitation Limit
Total Petroleum Hydrocarbons (diesel)	None Detected	µg/L	200.
Surrogate % Recovery	86.	%	57-137

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

California D.O.H.S. Cert #1186

Stuart G Buttram
Department Supervisor

BC LABORATORIES

Purgeable Aromatics and Total Petroleum Hydrocarbons

RMT INC.
4640 ADMIRALITY WAY
SUITE 301
MARINA DEL REY, CA 90292
Attn: TARIQ AHMAD 310-578-1241

Date Reported: 11/25/96
Date Received: 11/15/96
Laboratory No.: 96-13385-3

Sample Description: ARAMARK-OAKLAND: RAO-3 SAMPLED BY TARIQ AHMAD

Sample Matrix: Water

Date Collected: 11/15/96
Date Extracted-8020: 11/19/96
Date Analyzed-8020: 11/19/96
Date Extracted-8015M(d): 11/20/96
Date Analyzed-8015M(d): 11/22/96

Constituents	Analysis Results	Reporting Units	Practical Quantitation Limit
Benzene	0.33	µg/L	0.3
Toluene	None Detected	µg/L	0.3
Ethyl Benzene	0.61	µg/L	0.3
Total Xylenes	None Detected	µg/L	0.6
Surrogate % Recovery	107.	%	70-130
Total Petroleum Hydrocarbons (diesel)	24000.	µg/L	4000.
Surrogate % Recovery	100.	%	57-137

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

Note: PQL's were raised due to high concentration of target analytes requiring sample dilution.

California D O H S. Cert. #1186

Stuart G. Buttram
Department Supervisor

BC LABORATORIES

Purgeable Aromatics and Total Petroleum Hydrocarbons

RMT INC.
4640 ADMIRALITY WAY
SUITE 301
MARINA DEL REY, CA 90292
Attn: TARIQ AHMAD 310-578-1241

Date Reported: 11/21/96
Date Received: 11/15/96
Laboratory No.: 96-13385-4

Sample Description: ARAMARK-OAKLAND: BLANK

Sample Matrix: Water

Date Collected: 11/15/96
Date Extracted-8020: 11/20/96
Date Analyzed-8020: 11/20/96

Constituents	Analysis Results	Reporting Units	Practical Quantitation Limit
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	93.	%	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

Stuart G Buttram
Department Supervisor

APPENDIX C

PRODUCT RECOVERY OBSERVATIONS

Product Recovery Observations

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
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

Product Recovery Observations

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)
05-03-94	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
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

Product Recovery Observations

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)
05-12-95	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
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

Product Recovery Observations

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)
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
05-17-96	0	480	7.78	7.78	0
05-24-96	0	490	7.90	7.90	0
05-31-96	10	495	7.60	7.60	0
06-08-96	0	490	7.72	7.72	0
06-14-96	10	490	7.72	7.72	0
06-21-96	0	480	7.74	7.74	0
06-28-96	0	490	7.76	7.76	0
07-05-96	0	485	7.75	7.75	0
07-12-96	0	495	7.76	7.76	0
07-19-96	10	400	7.90	7.90	0
07-26-96	0	425	7.85	7.85	0
08-02-96	0	420	7.90	7.90	0
08-16-96	0	430	7.82	7.82	0
08-30-96	0	450	7.80	7.80	0
09-13-96	10	550	8.15	8.15	0
09-27-96	0	500	8.20	8.20	0
10-11-96	0	525	8.30	8.30	0
10-25-96	5	545	8.28	8.28	0
11-08-96	0	500	8.26	8.26	0
Total to Date	7,897				

APPENDIX D

ALAMEDA COUNTY HEALTH CARE SERVICES AGENCY LETTER

ALAMEDA COUNTY
HEALTH CARE SERVICES
AGENCY
DAVID J. KEARS, Agency Director

ENVIRONMENTAL HEALTH SERVICES
ENVIRONMENTAL PROTECTION
1131 Harbor Bay Parkway, #250
Alameda, CA 94502-6577
(510) 567-6700 FAX (510) 337-9335

November 12, 1996
STID 692

Attn: Phil Krejci
Aramark Uniform Services Inc.
1827 Walden Office Square
Suite 200
Schaumburg IL 60173

RE: Aramark (formerly known as Aratex) site #516, 330 Chestnut St., Oakland CA 94607

Dear Mr. Krejci,

I understand that you have replaced Mr. Robert Robbins as our Aramark environmental contact. Since our last letter, dated 11/6/95, the following documents have been received in this office:

1) "Groundwater Monitoring and Product Recovery Progress Report," prepared by RMT, dated December 1995;

2) "Groundwater Monitoring and Product Recovery Progress Report," prepared by RMT, dated March 1996;

3) "Groundwater Monitoring and Product Recovery Progress Report," prepared by RMT, dated May 1996; and

4) "Groundwater Monitoring and Product Recovery Progress Report," prepared by RMT, dated August 1996.

Upon evaluation of the data, it appears that a reduction in sampling frequency/analytes is warranted. Wells RAO1, RAO2, and RAO4 should be sampled/monitored annually for TPH-d and BTEX. Annual sampling/monitoring should occur in the first quarter (January through March), so as to account for the seasonal high groundwater table. Well RAO3 should continue to be sampled (for TPH-d and BTEX) quarterly, if no free product is present. If free product is present, the thickness should be evaluated. Removal of free product should continue weekly, when present. Wells MW4 and MW5 may also be sampled/monitored annually for TPH-ss, TPH-k, TPH-d, and BTEX, assuming the 4th quarter results are similar to the previous quarters

As per a telecon with Kevin Bate of RMT today, RAO3 will be remediated/oxygenated on a quarterly basis with a solution of 3.5 to 4.5% hydrogen peroxide. This well was reportedly remediated/oxygenated between 11/95 and 1/96, in an attempt to unclog the well screen. The volume of the product removed in February 1996 was greatly augmented. However, the product

removed since May 1996 has greatly decreased. It is possible, if not likely, that the well screen has again become clogged with the viscous petroleum hydrocarbon compound.

Sampling reports may be submitted annually, and should include potentiometric maps. However, free product removal updates should be submitted quarterly, along with RAO3 sampling results.

If you have any questions, please contact me directly at 510-567-6761; our fax number is 510-337-9335. **Your consultant is encouraged to submit reports on double-sided paper in order to save precious trees.**

Sincerely,

Jennifer Eberle
Hazardous Materials Specialist

cc: Kevin Bate, RMT, 4640 Admiralty Way, Suite 301, Marina Del Rey, CA 90292-6621
Samuel Niemann, The Wetlands Co., LLC, PO Box 40998, Indianapolis IN 46240-0998
J. Eberle/file

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