

ALAMEDA COUNTY
HEALTH CARE SERVICES

AGENCY
DAVID J. KEARS, Agency Director



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

January 23, 2004

Mr. Phil Krejci
Aramark Uniform Services
2300 Warrenville Road
Downers Grove, IL 60515-1765

Dear Mr. Krejci:

Subject: Fuel Leak Site Case Closure Aramark Uniform Services, 330 Chestnut St.,
Oakland CA 94607; Case No. RO0000446

This letter confirms the completion of a site investigation and remedial action for the five (5) underground storage tanks, 1-2,000, 1-5,000, 1-12,000, 1-10,000 and 1-550 gallon, formerly located at the above-described location. Thank you for your cooperation throughout this investigation. Your willingness and promptness in responding to our inquiries concerning the former underground storage tank(s) are greatly appreciated.

Based on information in the above-referenced file and with the provision that the information provided to this agency was accurate and representative of site conditions, this agency finds that the site investigation and corrective action carried out at your underground storage tank(s) site is in compliance with the requirements of subdivisions (a) and (b) of Section 25299.37 of the Health and Safety Code and with corrective action regulations adopted pursuant to Section 25299.77 of the Health and Safety Code and that no further action related to the petroleum release(s) at the site is required.

This notice is issued pursuant to subdivision (h) of Section 25299.37 of the Health and Safety Code.

Please contact our office if you have any questions regarding this matter.

Sincerely,

A handwritten signature in black ink, appearing to read 'Mee Ling Tung'. The signature is fluid and cursive.

Mee Ling Tung
Director
Alameda County Environmental Health

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HEALTH CARE SERVICES

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Downers Grove, IL 60515-1765

Dear Mr. Krejci:

Subject: Fuel Leak Site Case Closure Aramark Union Services, 330 Chesnut St.,
Oakland, CA 94607; Case No. RO0000446

This letter transmits the enclosed underground storage tank (UST) case closure letter in accordance with Chapter 6.75 (Article 4, Section 25299.37[h]). The State Water Resources Control Board adopted this letter on February 20, 1997. As of March 1, 1997, the Alameda County Environmental Health (ACEH) is required to use this case closure letter for all UST leak sites. We are also transmitting to you the enclosed case closure summary. These documents confirm the completion of the investigation and cleanup of the reported release at the subject site. The subject fuel leak case is closed.

SITE INVESTIGATION AND CLEANUP SUMMARY

Please be advised that the following conditions exist at the site:

- Up to 41,000 ppm TPH as diesel, 670 ppm TPH as kerosene, 8200 ppm oil and grease and 0.76, 2.6, 4.4 ppm toluene, ethyl benzene and xylenes, respectively, remain in soils at this site.
- Up to 21,000 ppb TPH as diesel and 1.3, 0.75, 3.3, and 21 ppb benzene, toluene, ethyl benzene and xylenes, respectively, remain in groundwater at this site.

If you have any questions, please call Barney Chan at (510) 567-6765. Thank you.

Sincerely,

Donna L. Drogos, P.E.
I.OP Program Manager

Enclosures:

1. Case Closure Letter
2. Case Closure Summary

cc Ms. Betty Graham (w enc)
Regional Water Quality Control Board

San Francisco Bay Region
1515 Clay Street, Suite 1400
Oakland, CA 94612

Mr. Toru Okamoto (w/enc)
State Water Resources Control Board
Underground Storage Tank Cleanup Fund
P.O. Box 944212
Sacramento, CA 94244-2120

City of Oakland Fire Department OES, 1615 MLK Jr. Way, Oakland, CA 94612 (w/enc)

✓ B. Chan (w/orig enc), D. Drogos (w/enc), R. Garcia-LaGrille (w/enc)

**CASE CLOSURE SUMMARY
LEAKING UNDERGROUND FUEL STORAGE TANK - LOCAL OVERSIGHT PROGRAM**

I. AGENCY INFORMATION

Date: October 21, 2003

Agency Name: Alameda County Environmental Health	Address: 1131 Harbor Bay Parkway
City/State/Zip: Alameda, CA 94502-6577	Phone: (510) 567-6765
Responsible Staff Person: Barney Chan	Title: Hazardous Materials Specialist

II. CASE INFORMATION

CALIFORNIA REGIONAL WATER
bls
 JAN - 9 2004
 QUALITY CONTROL BOARD

Site Facility Name: Aramark Uniform Services		
Site Facility Address: 330 Chestnut St., Oakland CA 94607		
RB Case No.: --	Local Case No.: STID # 692	LOP Case No.: RO0000446
URF Filing Date: 8/21/89	SWEEPS No.: ---	APN: 004-0021-004-00

Responsible Parties	Addresses	Phone Numbers
Aramark Uniform Services., c/o Phil Krejci	2300 Warrenville Road, Downers Grove, IL 60515-1765	1-800-404-0234

Tank I.D. No	Size in Gallons	Contents	Closed In Place/Removed?	Date
1	2,000	Diesel Fuel	Removed	12/16/88
2	5,000	Gasoline	Removed	7/29/93
3	12,000	Diesel fuel	Removed	7/29/93
4	10,000	Mop oil	Removed	7/29/93
5	550	Waste oil	Removed	2/7/89
Piping			Assumed removed w/USTs	12/88, 2/89 & 7/93

III. RELEASE AND SITE CHARACTERIZATION INFORMATION

Cause and Type of Release: Tank 1 leak detected while performing integrity test, no observed leaks in any other UST		
Site characterization complete? Yes	Date Approved By Oversight Agency: -----	
Monitoring wells installed? Yes	Number: 7	Proper screened interval? Yes
Highest GW Depth Below Ground Surface: 8.43'	Lowest Depth: 1.5'	Flow Direction: south-south west, see log for gradient and flow direction
Most Sensitive Current Use: Potential drinking water source		

Summary of Production Wells in Vicinity: No active production wells identified in vicinity of site.	
Are drinking water wells affected? No	Aquifer Name: Oakland Sub Area, East Bay Plain
Is surface water affected? No	Nearest SW Name: Oakland Inner Harbor is ~2000' to the south
Off-Site Beneficial Use Impacts (Addresses/Locations): none identified	
Reports on file? Yes	Where are reports filed? Alameda County Environmental Health and City of Oakland Fire Services OES

TREATMENT AND DISPOSAL OF AFFECTED MATERIAL

Material	Amount (Include Units)	Action (Treatment or Disposal w/Destination)	Date
Tank	1-2000 gallon diesel 1-5000 gallon gasoline 1-12000 gallon diesel 1-10000 gallon mop oil 1-550 gallon waste oil	Disposed, H&H Shipyard, San Francisco, CA Disposed, Erickson, Richmond, CA Disposed, Erickson, Richmond, CA Disposed, Erickson, Richmond, CA Disposed, Erickson, Richmond, CA	12/16/88 07/29/03 07/29/03 07/29/03 07/29/03
Piping	Unknown amount	Presumed disposed with USTs during removal	
Free Product	9.5 liters (2.5 gallons)	Disposed, Evergreen Oil Inc., Newark, CA	12/92-6/15/01
Soil	30 cy	Disposed at Port Costa Materials, Inc. Port Costa, CA	01/24/94
Groundwater	30 gallons of hydrogen peroxide added according to Table 2 Schedule	Treatment	See Attachment 15

MAXIMUM DOCUMENTED CONTAMINANT CONCENTRATIONS BEFORE AND AFTER CLEANUP
(Please see Attachments for additional information on contaminant locations and concentrations)

Contaminant	Soil (ppm)		Water (ppb)	
	Before	After	Before	After
TPH (Gas)	ND	ND	NA	NA
TPH (Diesel)	41,000	41,000	2,000,000	21,000
TPH (Kerosene)	670	670	NA	ND
Oil & Grease	8200	8200	NA	NA
Benzene	<0.005	<0.005	16	1.3
Toluene	0.76	0.76	1	0.75
Ethyl Benzene	2.6	2.6	55	3.3
Xylene	4.4	4.4	86	21
Heavy Metals	**	**	NA	NA
MTBE (if not analyzed, explain below)	---	---	---	<2.0*
Other (8240/8270) (HVOCs & semi VOCs)	ND	ND	NA	NA

* other oxygenates and lead scavengers not analyzed

** ND Cd: 35ppm Cr: 18 ppm Pb: 36 ppm Zn: (Ni) not analyzed. heavy metals not analyzed in groundwater

Site History and Description of Corrective Actions:

ARAMARK owns and operates an industrial laundry facility located at 330 Chestnut Street in Oakland, California. The location of this facility is shown in Attachment 1. A site plan, showing the location of all former tanks and all monitoring wells at the facility, along with a historical gradient diagram are included in Attachment 2 & 3.

Former Underground Storage Tanks

On December 16, 1988, a 2,000-gallon single wall, steel diesel fuel underground storage tank (UST), located at the southwest corner of the ARAMARK laundry building, was excavated and removed from service. Two soil samples (#1 & #2) collected at a depth of 8' bgs from the base of the excavation after the removal of the UST exhibited 6,900 mg/kg and 8,100 mg/kg of total petroleum hydrocarbons as diesel (TPH-D) and 3,000 and 3,700 mg/kg Oil and Grease. See Attachment 4 and analytical report results. Because of the close proximity of the UST to the existing ARAMARK building, underground high-pressure gas lines, and sidewalk, over-excavation of native soils beneath and surrounding the UST was not performed. Instead, with agreement from Alameda County Environmental Health (ACEH), a subsurface investigation was performed which included the installation of four groundwater monitoring wells (RAO-1, RAO-2, RAO-3, and RAO-4).

On February 7, 1989, a 550-gallon waste oil UST, located at the southwest corner of the mop oil building, was excavated and removed from service. One soil sample collected from the base of the excavation following the UST removal did not contain detectable concentrations of benzene, ethyl benzene, toluene, and xylenes (BETX), or TEPH, but did detect 75 mg/kg oil and grease based on dry weight. Because the other waste oil analytes were not run originally, in September 1989, an additional soil sample was collected at a depth of 8 ¼' bgs from beneath the location of the former waste oil UST. This sample was ND for BETX, total petroleum hydrocarbons as gasoline (TPH-G), volatile organic compounds (VOCs), and semi-volatile organic compounds (SVOCs). Low to ND levels of the metals: lead, cadmium, chromium and zinc were reported. No further investigation of this tank was performed. See Attachment 5 and attachment AA.

On July 29, 1993, a 5,000-gallon gasoline UST, a 12,000-gallon diesel fuel UST, and a 10,000-gallon mop oil UST were excavated and removed from service. The 5,000-gallon gasoline UST and the 12,000-gallon diesel fuel UST were both located at the south end of the mop oil building, whereas, the 10,000-gallon mop oil UST was located at the north end of the mop oil building. During the UST removal activities, petroleum hydrocarbon contamination was evident in the vicinity of the diesel fuel fill pipe and dispenser island (23 to 9,400 mg/kg of TPH-D), and in the vicinity of the mop oil UST. The soil samples taken from the ends of the gasoline tank at 11.5-13' bgs were ND for TPHg and BTEX. The soil samples taken from the ends of the mop oil tank at 13-14' bgs were ND for TRPH (TPH-MS/K/MO). See Attachment 6 & 7.

Mop oil is a type of mineral oil and is essentially non-volatile. It is not expected to have an impact on human health, but may have a deleterious affect on ecological species due to its water insolubility. On January 24, 1994, approximately 30 cubic yards (90,920 lbs) of TPH-D impacted soil was excavated from the diesel fuel dispenser islands and transported to Port Costa Materials, Inc. of Port Costa, California for recycling. Confirmation soil samples (A, C, D & E) taken at 1, 8-9.5' bgs, did not detect appreciable TPHd or BTEX. See Attachment 8 & 9. The diesel tank stockpile soil results ranged from ND to 36 ppm for TPHd and were ND for TPHg and BTEX. The mop oil stockpile soil results ranged from 110 to 290 ppm TRPH. Both stockpiles were approved for reuse as back-fill.

Subsurface Investigation/Remedial Action: 2,000-gallon Diesel Fuel UST

On June 7, 1989, monitoring wells RAO-1 through RAO-4 were installed in the vicinity of the former 2,000-gallon diesel fuel UST. RAO-2 was located up-gradient, RAO-1 and RAO-4 down-gradient and RAO-3 within the former tank pit. Soil samples from all wells except RAO-3 were ND for TPHd, BTEX and Oil and Grease. The soil sample from 8' from RAO-3 exhibited 22,529 ppm TPHd, 8,200 ppm TOG and ND, 0.075, 0.84, 2.7 ppm BTEX, respectively. The results of the initial quarterly groundwater sampling identified the presence of TPHd and BTEX only in RAO-3, where free-phase hydrocarbons were observed. Attached are the boring logs for these wells and RAO-5, the replacement well for RAO-1, which was later damaged and properly destroyed. The soil type was fairly consistent at this site. Beneath either the asphalt or fill material cap, fine sand to clayey sand was encountered all the way to groundwater, which appears at approximately 8-10' bgs.

In 9 1990, a supplemental subsurface investigation was performed in the vicinity of the former 2,000-gallon diesel fuel UST to define the lateral and vertical extents of diesel fuel contamination. Soil borings, SB-1 through SB-6 were advanced around and within the former tank pit to a depth of 9.5-11' bgs. Little to no water entered the boreholes, therefore, no groundwater sample was collected. It is noted that first encountered groundwater is near the soil sample depths and beneath the equilibrated depth to water. Based on the results, the lateral extent of soil contamination was confined to within 10 feet of the former UST limits, and the vertical extent was confined between 5 and 11 feet below ground surface (bgs). SB-1-9, the 9' bgs sample located within the tank pit exhibited 41,000 ppm TPHd. See Attachment 10 & 11 and the respective boring logs.

Quarterly groundwater sampling at monitoring wells RAO-1 through RAO-4 was resumed in November 1992 at the request of Alameda County Environmental Health (ACEH). In addition, a free-product collection canister with a semi-permeable membrane was installed at RAO-3 in November 1992 to remove free-phase hydrocarbons.

TPH¹D concentrations in wells RAO-1, RAO-2, and RAO-4 have never exceeded 1 mg/L during the entire monitoring period. A predominant southwest gradient has been observed at the site.

See Attachment 3, a rose diagram. In 8/98 RAO-1 was destroyed and replaced by RAO-5. A summary of analytical data for monitoring wells RAO-1 through RAO-5 is attached (Attachment 12).

A total of 9,522 ml (2.52 gallons) of free-phase hydrocarbon was recovered from RAO-3 from December 1992 through March 2001 (see attached product recovery log, Table 3). In addition, to free product recovery activities, approximately 5 gallons of 5 percent strength hydrogen peroxide (H₂O₂) was added to RAO-3 on a quarterly basis from January 1996 through January 2000, to destroy residual hydrocarbons (see attached hydrogen peroxide addition log, Attachment 15).

Subsurface Investigation/Remedial Action: Former Diesel Fuel Dispenser and Mop Oil Area

On May 5, 1995, at the request of ACEH, two monitoring wells (MW-4 and MW-5) were installed down-gradient of the former diesel fuel dispenser vaults (associated with the 12,000-gallon diesel fuel UST), and down-gradient of the former mop oil UST. Gradient was presumed similar to that determined in wells installed around the former 2000 gallon diesel tank. Neither of these wells contained detectable concentrations of BETX during quarterly sampling events conducted from 1995 through 1996. TPH-D, which was detected at concentrations up to 2.1 mg/l from 1995 and 1996 has been non-detect in these wells since this time. A summary of analytical data for monitoring wells MW-4 and MW-5 is attached (Attachment 12) along with the boring logs for these wells.

IV. CLOSURE

Does completed corrective action protect existing beneficial uses per the Regional Board Basin Plan? Yes No		
Does completed corrective action protect potential beneficial uses per the Regional Board Basin Plan? Yes No		
Does corrective action protect public health for current land use? Alameda County Environmental Health staff does not make specific determinations concerning public health risk. However, based upon the information available in our files to date, it does not appear that the release would present a risk to human health based upon current land use and conditions.		
Site Management Requirements: This site is to be included in the City of Oakland Permit Tracking System. Case closure for this fuel leak site is granted for industrial use of the property only. If a change in land use to residential or other conservative scenario occurs at this property, Alameda County Environmental Health must be notified and the case re-evaluated.		
Should corrective action be reviewed if land use changes? Yes		
Monitoring Wells Decommissioned: No	Number Decommissioned: 1	Number Retained: 6
List Enforcement Actions Taken: None		
List Enforcement Actions Rescinded: NA		

V. ADDITIONAL COMMENTS, DATA, ETC.

<p>Considerations and/or Variances:</p> <p>Residual soil and groundwater contamination exists at the site. Utilities and the presence of a building prevent additional soil removal and the plume appears to be limited to 20' downgradient of former UST.</p> <p>Conclusion: Site closure is recommended based upon:</p> <ul style="list-style-type: none"> • Source removal to the extent possible has been done. All underground tanks and impacted soil have been removed. The impacted soil and groundwater beneath the former 2000 gallon diesel tank could not be removed because of utilities and proximity to the existing building but it appears to be confined, approximately 10-20' from the former tank. • Adequate site characterization has been performed. Borings advanced around the former 2000 gallon diesel tank have shown that the extent of soil contamination is confined to a 10' perimeter down-gradient of the tank. Although groundwater was not collected from the borings around this tank, the plume has not migrated beyond well RAO-5, which is approximately 20' down-gradient of the former tank illustrating that the plume is not moving. • No wells, drinking water aquifers, surface water or other sensitive receptors are likely to be impacted by this release. • The site does not appear to present a significant risk to human health or the environment under the current industrial land

use scenario. The main chemical release is that of diesel fuel beneath the former 2000 gallon UST. This area is located on the sidewalk next to the existing building. The only likely exposure to impacted soil or groundwater would be to utility workers performing subsurface activities. This site will be included in the City of Oakland Permit Tracking System and an appropriate health and safety plan observed if any subsurface work is performed in the area of the impacted soil and groundwater.

Alameda County Environmental Health staff believe that the levels of residual contamination do not pose a significant threat to water resources, public health and safety, and the environment under the current industrial land use based upon the information available in our files to date. Residual soil and groundwater contamination in the vicinity of the former diesel UST, underneath the sidewalk, appears localized and attenuating. ACEH staff recommends closure for the site.

VI. LOCAL AGENCY REPRESENTATIVE DATA

Prepared by: Barney Chan	Title: Hazardous Materials Specialist
Signature: <i>Barney Chan</i>	Date: 1/7/04
Approved by: Donna L. Drogos, P.E.	Title: Supervising Hazardous Materials Specialist
Signature: <i>Donna L. Drogos</i>	Date: 01/02/04

This closure approval is based upon the available information and with the provision that the information provided to this agency was accurate and representative of site conditions.

VII. REGIONAL BOARD NOTIFICATION

Regional Board Staff Name: Betty Graham, PE	Title: Associate Water Resources Control Engineer
RB Response: Concur, based solely upon information contained in this case closure summary.	Date Submitted to RB:
Signature: <i>Betty Graham</i>	Date: 01/16/04

Attachments:

1. Site Vicinity Map
2. Site Plan
3. Flow Direction and Hydraulic Gradient
4. 2000 gallon Diesel Tank and Analytical Results (2 pages)
5. 550 gallon Waste Oil Tank and Analytical Results (2 pages)
6. Sample Locations for UST Removals
7. Tank Removal Analytical Results
8. Over-excavation Area and Samples After Over-excavation
9. Soil Excavation Dimensions and Analytical Results
10. 9/90 Investigation Site Plan
11. Analytical Results for 9 90 Soil Samples
12. Groundwater Monitoring Results and Historical DTW (5 pages)
13. Analytical Results for Soil Samples RAO-1 through RAO-4
14. Hydrogen Peroxide Addition Schedule
15. Product Recovery Log (4 pages)
16. Boring Logs (13 pages)

This document, including CASE CLOSURE LETTER, shall be retained by the lead agency as part of the official site file.



TN 15 1/2°



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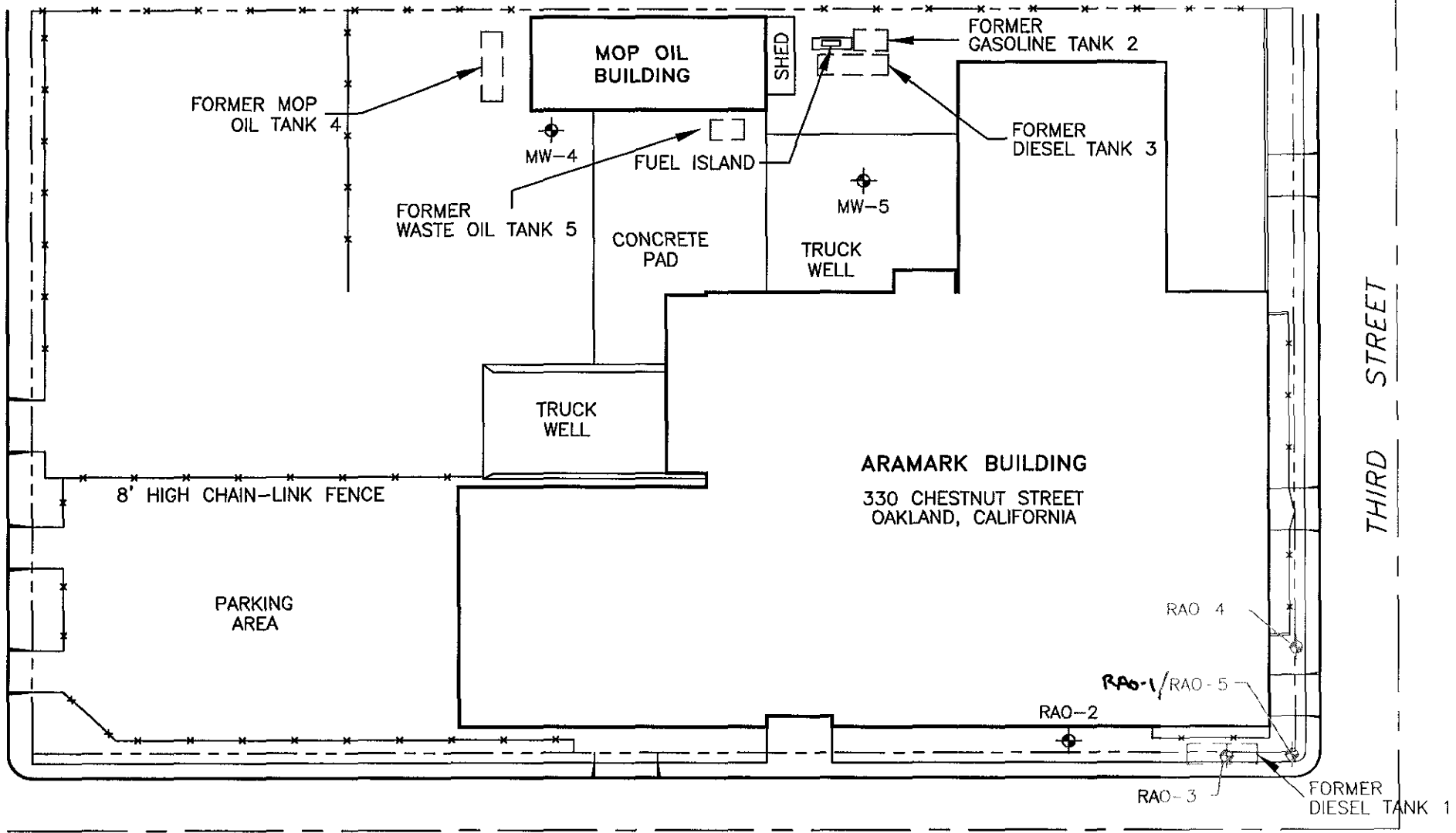


ATTACHMENT 1

SITE LOCATION MAP

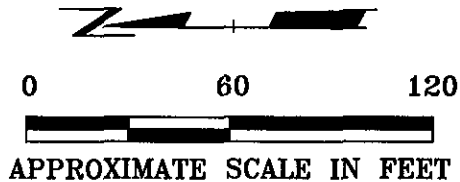
ARAMARK UNIFORM SERVICES
 330 CHESTNUT STREET
 OAKLAND, CALIFORNIA

DRAWN BY	CA ELEA
APPROVED BY	T A-VAD
PROJECT NUMBER	1201319
FILE NUMBER	AP/STENAP/Aramark-Cor 080300
DATE	October 2001



LEGEND:


 GROUNDWATER MONITORING WELL
 RAO-3



PROJECT: ARAMARK UNIFORM SERVICES
OAKLAND, CALIFORNIA

SHEET TITLE: SITE PLAN

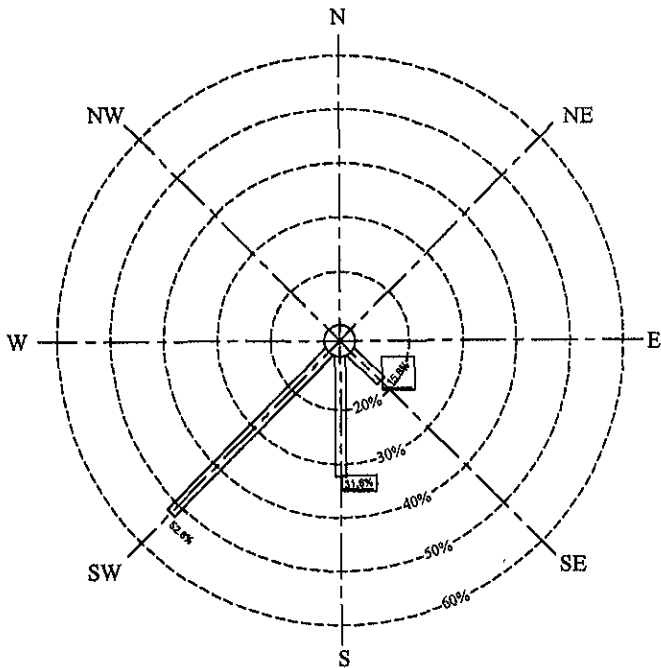
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APPROVED BY: DBM	DATE PRINT:	
DATE: MARCH 2001		

ATTACHMENT 2

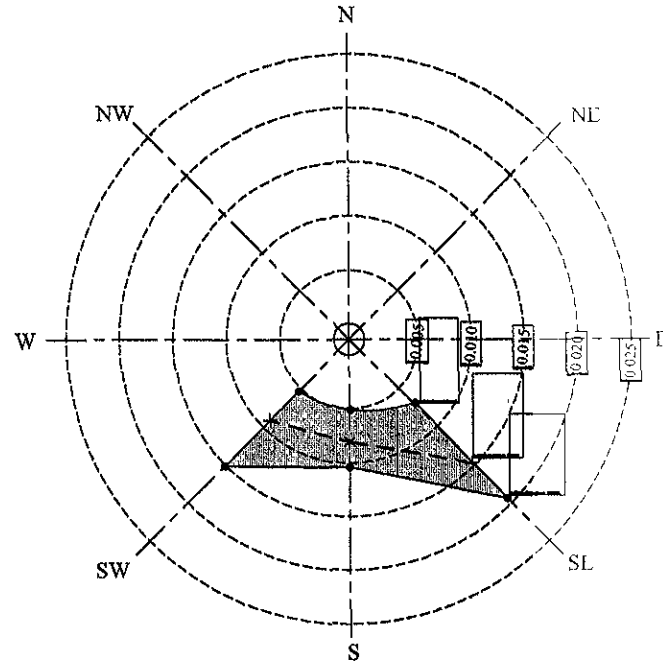
RMT Inc. - Los Angeles
Phone: 310/645-6970
6065 Bristol Parkway
2nd Floor
Cuiver City, CA 90230-6601



FLOW DIRECTION



HYDRAULIC GRADIENT



Report Issue Date	Date	Direction	Gradient (ft)
401	1/19/01	SW	0.01
400	2/2/00	SW	0.01
109	1/14/99	SW	0.007
1079	8/28/98	SW	0.007
398	1/17/98	SW	0.01
307	2/18/97	SW	0.01
197	1/15/96	SW	0.008
396	8/6/96	SE	0.0187
896	6/10/96	SW	0.007

Report Issue Date	Date	Direction	Gradient (ft)
399	2/1/95	SW	0.01
1295	11/14/95	SW	0.015
995	8/2/95	S	0.009
695	5/6/95	SE	0.008
395 (S)	2/5/95	SE	0.02
1294 (S)	11/18/94	S	0.005
994 (S)	8/12/94	S	0.01
594 (S)	1/28/94	S	0.0062
(S)	8/2/93	S	0.006
(S)	5/11/93	S	0.007

Direction	No. of Occurrences	Frequency	Gradient, ft		
			HI	Low	Avg
Southwest	10	0.628	0.015	0.008	0.0092
South	6	0.318	0.010	0.006	0.0067
Southeast	3	0.158	0.020	0.008	0.0140
Total	19	1.000			

NOTES

1. GRADIENT AND FLOW DIRECTION DETERMINATIONS PRIOR TO JUNE 1995 BASED ON WATER LEVEL ELEVATIONS ONLY AT 3 MONITORING WELLS.
2. BAR GRAPH REPRESENTS FREQUENCY OF OCCURRENCE IN INDICATED DIRECTION
3. FREQUENCY OF FLOW DIRECTION BASED ON WATER LEVEL MEASUREMENTS TAKEN FROM MAY 1993 TO JANUARY 2001.

ARAMARK UNIFORM SERVICES
OAKLAND, CALIFORNIA

FLOW DIRECTION AND HYDRAULIC GRADIENT

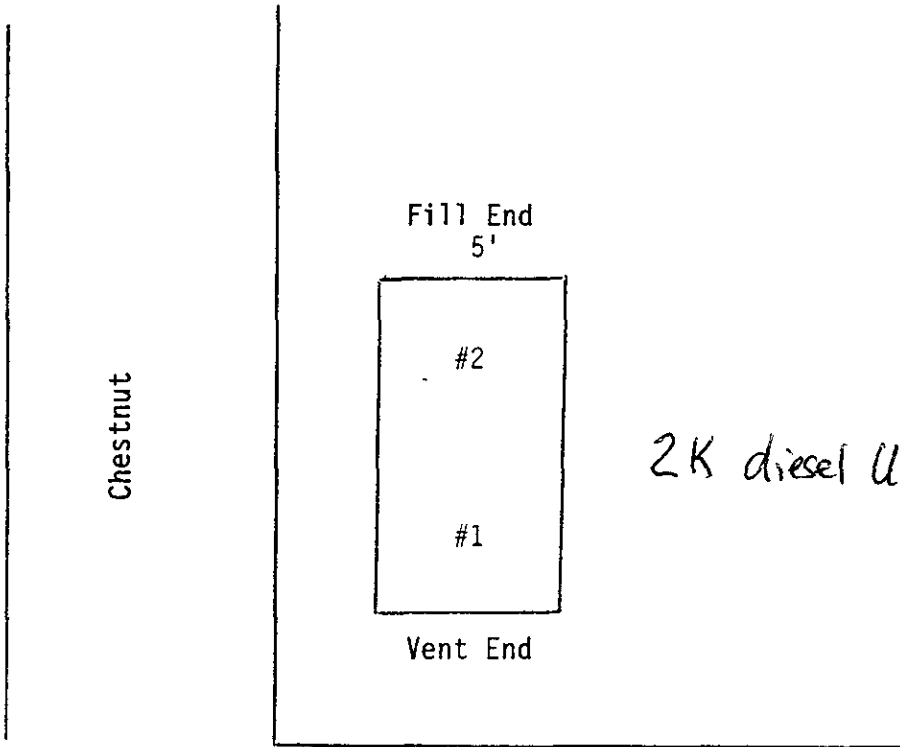
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CHECKED BY:	DBW	FILE NUMBER	120131901.DWG
APPROVED BY:		DATE	OCTOBER 2001



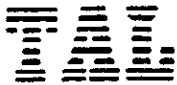
1143 HIGHLAND DRIVE, SUITE B
ANN ARBOR, MI 48108-2237
P.O. BOX 991 48108-0991
PHONE 734-971-7080
FAX 734-971-9027

7/23/01 8:16 AM
 Drawing Name: 120131901.dwg
 Operator Name: JAW
 Scale: 1"=1'
 Plot Time: 10/1/01 10:15 AM
 Absolute Xref's: No xref's Attached.

Aratex
330 Chestnut Street
Oakland, California



3rd Street



DATE: 1/18/89
 LOG NO.: 6803
 DATE SAMPLED: 12/16/88
 DATE RECEIVED: 12/16/88

CUSTOMER: Cottle Engineering
 REQUESTER: Dave Cottle
 PROJECT: ARATEX, 330 Chestnut Street, Oakland, CA

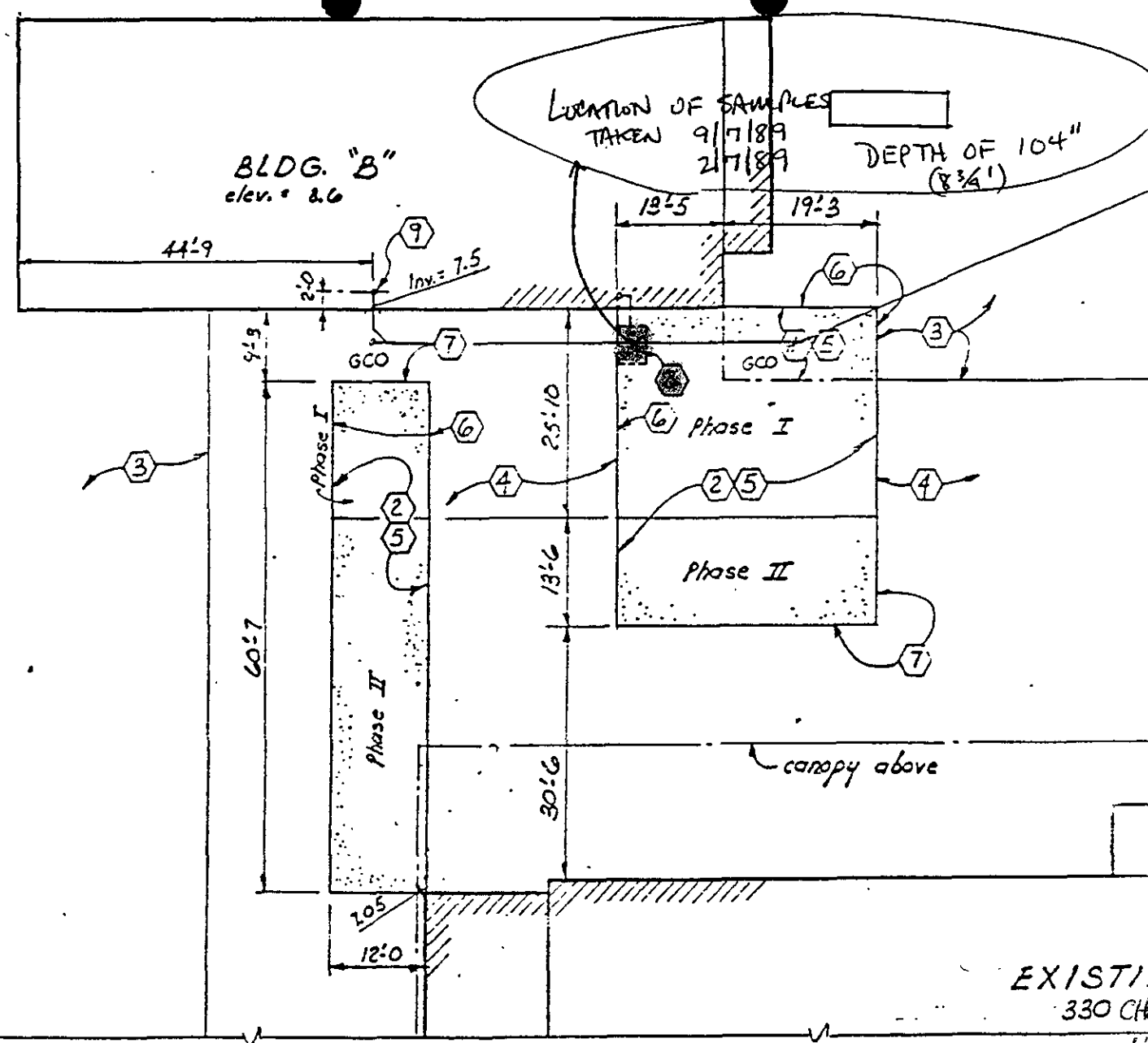
Sample Type: Soil **2K diesel UST**

Method and Constituent	Units	No. 1 Vent End		No. 2 Fill End	
		Concentration	Detection Limit	Concentration	Detection Limit
DHS Method:					
Total Petroleum Hydrocarbons as Diesel	mg/kg	6,900	100	8,100	100
Modified EPA Method 8020:					
Benzene	mg/kg	< 0.1	0.1	< 0.1	0.1
Toluene	mg/kg	< 0.1	0.1	0.34	0.1
Xylenes	mg/kg	4	0.7	4.4	0.7
Ethyl Benzene	mg/kg	0.76	0.2	0.77	0.2
Standard Method 503E, Hydrocarbons:					
Oil and Grease	mg/kg	3,000	10	3,700	10

Hugh R. McLean

Hugh R. McLean
 Supervisory Chemist

550 gallon waste oil tank



PARTIAL SITE PLAN

SPECIAL NOTES

- | | |
|---|-----------------------|
| 1. (E) Asph. paving to be removed | 6. Sawcut this l. |
| 2. (E) Conc. " " " " | 7. (E) constr. jt |
| 3. (E) Asph. paving to remain | 8. Remove (E) 550 gal |
| 4. (E) Conc. " " " " | oil tank incl. |
| 5. New 5" conc. slab w/ #3 @ 18" o.c.b.w., | patch flr. insl. |
| finish grade to match (E), weakened | 9. Stub 4" φ CI |
| plane or constr. joints @ 20'-0" max. o.c.b.w., | 10. Stub 4" φ CI |
| recompact to 6" subgrade to 90%. | 11. Trench, backfil. |

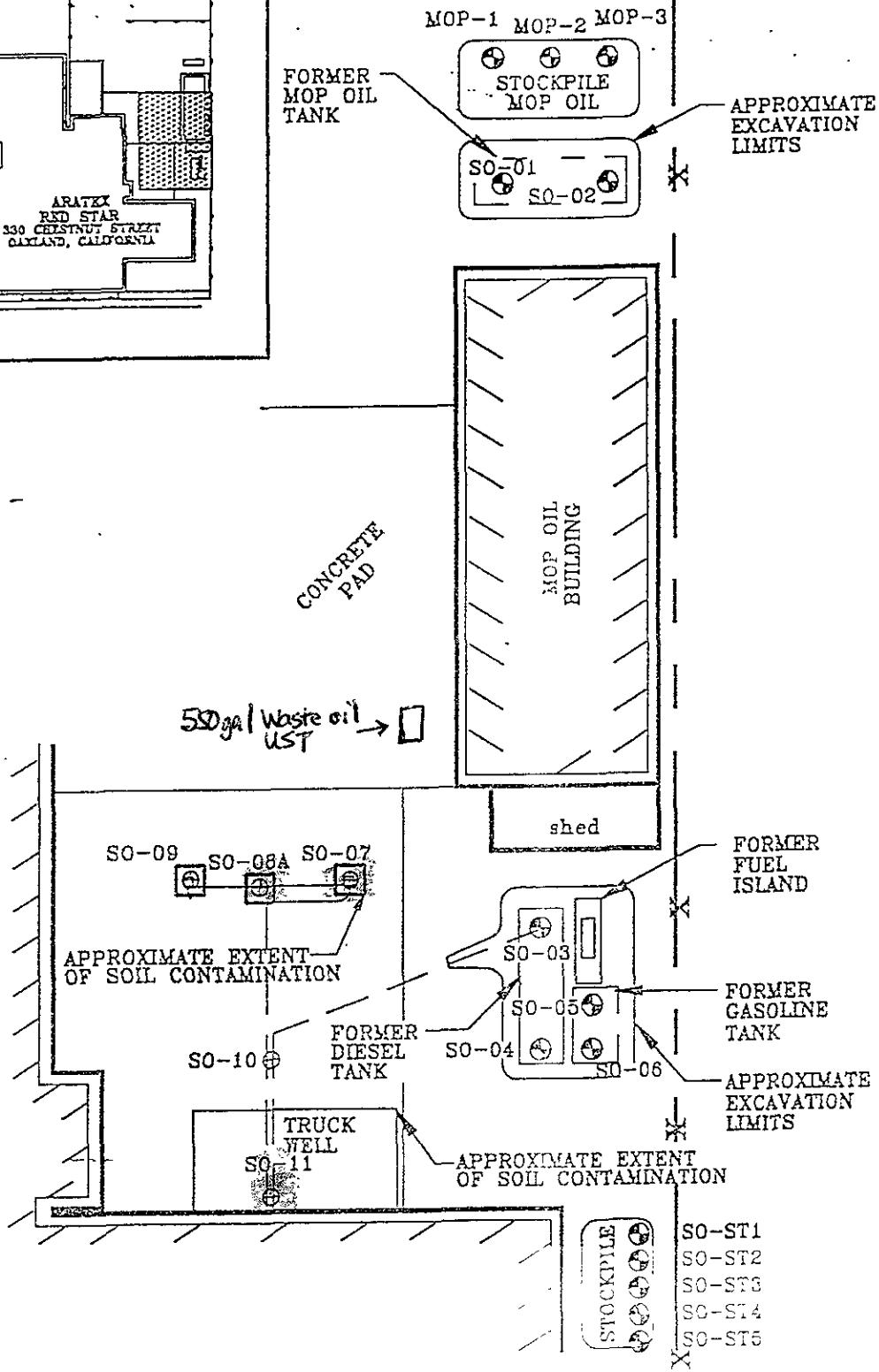
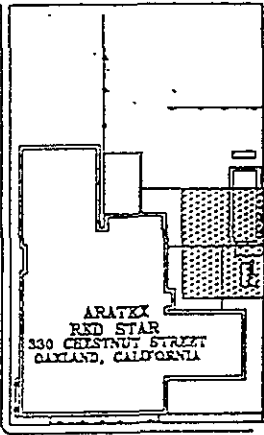
UNDERGROUND TANK CLOSURE/MODIFICATION PLANS

ATTACHMENT AA

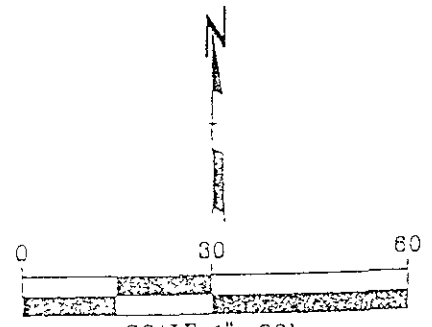
SAMPLING RESULTS
(Soil)

(2/7/89)

Tank or Area	Contaminant	Location & Depth	Results (specify units)
550 gal waste oil		SAMPLE #1 2' BELOW MIDDLE OF TANK PIT	
	BENZENE		ND
	ETHYL BENZENE		ND
	TOLUENE		ND
	XYLENE		ND
	TOTAL OIL & GREASE - AS RECEIVED BASIS		64 mg/kg
	- DRY MATTER BASIS		75 mg/kg
	TOTAL EXTRACTABLE H.C.	✓	ND
	- AS DIESEL		ND
9/89	SVOCs HVOCs Lead, cadmium, Chromium Zinc	8 3/4' bgs	ND = None Detected ND ND 18, ND, 35, 36 mg/kg



- SO-ST1
- SO-ST2
- SO-ST3
- SO-ST4
- SO-ST5



SAMPLING LOCATIONS
TANK REMOVAL ACTIVITIES

RMT INC. DWY BY. RAS
DATE FEB., 1994
PROJ 12013.11

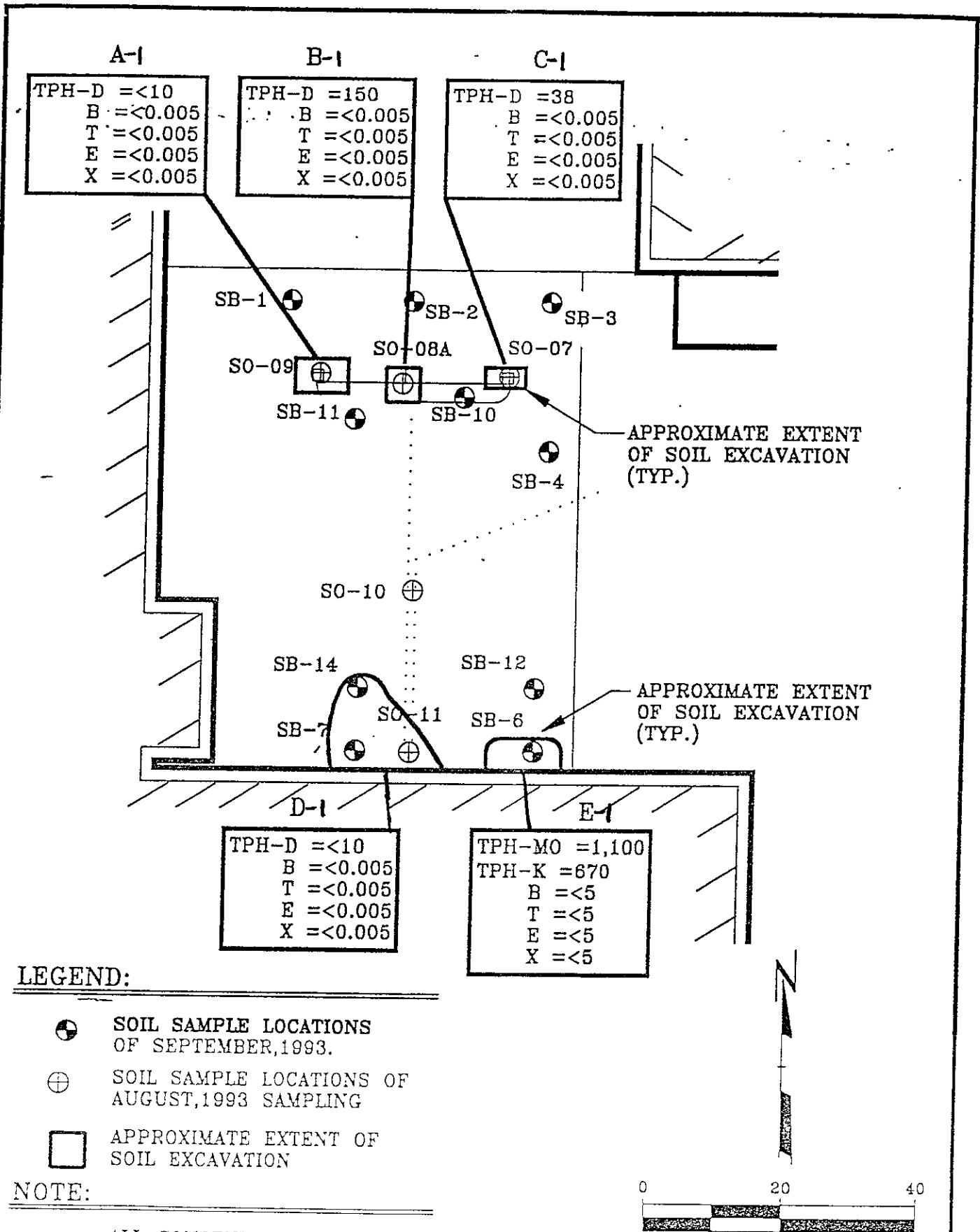
**Chemical Analyses – Tank Removal Activities (Sampled 7/30/93 and 8/2/93)
(Corresponding to Figure 4)**

Sample Location	Sample Depth (ft-bgs)	Parameter (mg/kg)								
		TPH-G	TPH-D	TPH-MS/K/MO TRPH	TPH (418.1)	Benzene	Toluene	Ethyl- benzene	Xylene	Lead
MOP OIL EXCAVATION										
SO-01	14	---	---	BMDL	---	---	---	---	---	---
SO-02	13	---	---	BMDL	---	---	---	---	---	---
GASOLINE/DIESEL FUEL EXCAVATION										
SO-03	12	---	<1	---	---	<0.010	<0.010	<0.010	<0.15	<5
SO-04	13	---	<10	---	---	<0.010	<0.010	<0.010	<0.15	---
SO-05	11.5	<1	---	---	---	<0.010	<0.010	<0.010	<0.15	<5
SO-06	13	<1	---	---	---	<0.010	<0.010	<0.010	<0.15	<5
DIESEL FUEL DISPENSER VAULTS/REGULATOR EXCAVATION										
SO-07	5	---	1,300	---	---	0.014	0.021	<0.005	<0.15	---
SO-08	5	---	9,400	---	---	<0.010	<0.010	<0.010	<0.15	---
SO-09	4	---	62	---	---	<0.010	<0.010	<0.010	0.59	---
SO-10	2	---	<10	---	---	<0.010	<0.010	<0.010	<0.15	---
SO-11	1	---	4,200	---	---	0.010	0.009	<0.005	0.015	---
STOCKPILED SOIL – GASOLINE/DIESEL FUEL EXCAVATION										
SO-ST1	NA	<1	36	---	---	<0.010	<0.010	<0.010	<0.15	21
SO-ST2	NA	<1	23	---	---	<0.010	<0.010	<0.010	<0.15	18
SO-ST3	NA	<1	<10	---	---	<0.010	<0.010	<0.010	<0.15	9
SO-ST4	NA	<1	<10	---	---	<0.010	<0.010	<0.010	<0.15	26
SO-ST5	NA	<1	<10	---	---	<0.010	<0.010	<0.010	<0.15	44
STOCKPILED SOIL – MOP OIL EXCAVATION										
MOP-1	NA	---	---	---	290	---	---	---	---	---
MOP-2	NA	---	---	---	110	---	---	---	---	---
MOP-3	NA	---	---	---	140	---	---	---	---	---

BMDL - Below Method Detection Limit
 TPH-MS = 10 mg/kg
 TPH-K = 10 mg/kg
 TPH-MO = 100 mg/kg
 TRPH = 5 mg/kg

NA - Not Applicable
 --- - Not Analyzed

ATTACHMENT 7



A-1
 TPH-D = <10
 B = <0.005
 T = <0.005
 E = <0.005
 X = <0.005

B-1
 TPH-D = 150
 B = <0.005
 T = <0.005
 E = <0.005
 X = <0.005

C-1
 TPH-D = 38
 B = <0.005
 T = <0.005
 E = <0.005
 X = <0.005

D-1
 TPH-D = <10
 B = <0.005
 T = <0.005
 E = <0.005
 X = <0.005

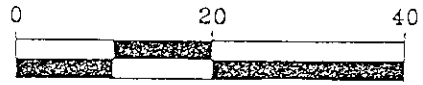
E-1
 TPH-MO = 1,100
 TPH-K = 670
 B = <5
 T = <5
 E = <5
 X = <5

LEGEND:

- SOIL SAMPLE LOCATIONS OF SEPTEMBER, 1993.
- ⊕ SOIL SAMPLE LOCATIONS OF AUGUST, 1993 SAMPLING
- APPROXIMATE EXTENT OF SOIL EXCAVATION

NOTE:

ALL CONCENTRATIONS
 IN mg/Kg



RMT INC.	DWN BY
	DATE. FEB., 1994
	PROJ # 12013.11
	FILE # 1107

**Excavation Area Dimensions and Sampling Depths
(Corresponding to Figure 7)**

Excavation Area (See Figure 7)	Approximate Excavation Dimensions
A - Diesel Fuel Dispenser Vault	8-ft x 5-ft x 9.5-ft deep
B - Diesel Fuel Dispenser Vault	4-ft x 5-ft x 8.0-ft deep
C - Diesel Fuel Dispenser Vault	3-ft x 6-ft x 8.0-ft deep
D - Diesel Fuel Regulator	10-ft x 12-ft x 9.0-ft deep
E - Eastern Section of Loading Dock	5-ft x 6-ft x 3.0-ft deep

**Chemical Analyses - Soil Excavation Activities
(Corresponding to Figure 7)**

Sample Location	Sample Depth (ft bgs)	Parameter (mg/kg)				
		TPH-D	Benzene	Toluene	Ethylbenzene	Xylene
A-1	9.5	<10	<0.005	<0.005	<0.005	<0.005
B-1	8.0	150	<0.005	<0.005	<0.005	<0.005
C-1	8.0	38	<0.005	<0.005	<0.005	<0.005
D-1	9.0	<10	<0.005	<0.005	<0.005	<0.005
E-1	1.0	<10 ^a	<0.500 ^b	<0.500 ^b	<0.500 ^b	<0.500 ^b

a - Hydrocarbon pattern not indicative of diesel fuel. The presence of TPH as kerosene (TPH-K) and TPH as motor oil (TPH-MO) were identified at concentrations of 670-mg/kg and 1,100-mg/kg, respectively.

b - Raised detection limit due to high concentration of non-target hydrocarbons in sample.

ATTACHMENT 9

Legend :

- RAO-x ⊕ Ground Water Monitoring Well ; RMT 6/89
- SB-x ⊕ Soil Boring ; RMT 9/90
- Plant
- - - - - Estimated limits of Dec.1988 Tank Removal and backfill
- x-x-x- Fence, 6-Foot high chain link
- ⊕ Concrete cut out for boring and Replaced at completion.

MAIN OFFICE →
↑ RAO-2 (not shown)

Chestnut Street

1/2%
Overhead Power Lines

Sidewalk
Fence →

Gas Distrib. Syst. (above ground)

NOTES

1. September drilling by HEW Drilling of East Palo Alto, Co. under direction of RMT's engineer
2. All borings grouted at completion and surface restored to original condition
3. Boring locations taped from existing structures and triangulation.
4. Ground water gradient from March 24,1990

DISTANCES

	RAO-3 to	SB-1	8' - 6"
Boiler Room	RAO-3 to	SB-2	12' - 0"
	RAO-3 to	SB-3	5' - 6"
	RAO-3 to	SB-4	10' - 0"
	RAO-3 to	SB-5	16' - 6"
	RAO-3 to	SB-6	13' - 6"

SB-5 ⊕

SB-3 ⊕

RAO-3 ⊕

SB-1 ⊕

SB-2 ⊕

RAO-1 ⊕

RAO-4 (not shown) →

Storm Drain

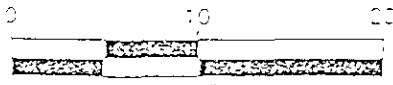
Driveway

Power Pole

Sidewalk

Overhead Power Lines

Third Street



SEPTEMBER 1990 INVESTIGATION / SITE PLAN

ARATEX FACILITY # 516
330 Chestnut Street
Oakland, Ca.



DATE BY PLS
DATE DEC 07 1990
PFD # 800 00
FILE # 18000303

Chemical Analyses of Soil Samples
(Corresponding to Figure 3)

Sample Location	Sampling Date	Benzene (ug/kg)	Toluene (ug/kg)	Ethyl benzene (ug/kg)	Total Xylenes (ug/kg)	TPH-D (mg/kg)	Oil and Grease (mg/kg)	TPH-G
SB-1-7	9/25/90	<5	<5	<5	<15	89	--	--
SB-1-9	9/25/90	<5	763	2,560	4,430	41,000	--	--
SB-2-7	9/25/90	<5	292	906	1,120	9,900	--	--
SB-2-9	9/25/90	<5	300	596	1,060	2,600	--	--
SB-3-7	9/25/90	<5	388	1,110	1,600	4,400	--	--
SB-3-9	9/25/90	<5	159	<5	319	4,600	--	--
SB-4-7	9/25/90	<5	<5	<5	<15	11	--	--
SB-4-9	9/25/90	<5	<5	17	<15	1,200	--	--
SB-5-7	9/25/90	<5	<5	<5	<15	<1	--	--
SB-5-9	9/25/90	<5	<5	<5	<15	<1	--	--
SB-6-7	9/25/90	<5	<5	<5	<15	1.1	--	--
SB-6-9	9/25/90	<5	<5	<5	<15	1.3	--	--

-- Not Analyzed

Attachment 11

Table 1
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	01-19-01	<0.5	<0.5	<0.5	<1	<100
	02-02-00	<0.3	<0.3	<0.3	<0.6	<200
	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 1 (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	05-16-01	1.3	0.75	3.3	21	21,000
	01-19-01	<0.5	<0.5	<0.5	<1	14,000
	09-14-00	<0.5	<0.5	0.62	<1	2,700
	02-02-00	<0.5	<0.5	<0.5	<1	10,000
	10-05-99	<0.5	<0.5	0.67	5.2	950
	07-30-99	<0.3	<0.3	0.46	<0.6	4,900
	04-07-99 ^a	--	--	--	--	--
	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	01-19-01	<0.5	<0.5	<0.5	<1	120
	02-02-00	<0.5	<0.5	<0.5	<1	<200
	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	01-19-01	<0.5	<0.5	<0.5	<1	--

^a Free product seen identified, no sample collected for analysis

Table 1
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*	<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
Blank	8/28/98	<1.0	<1.0	<1.0	<1.0	--	--	--

--: Not Analyzed.

3.4 Purged Groundwater Disposal

Groundwater extracted during monitoring well development and 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.



LABORATORY ANALYSIS RESULTS

Client: RMT, Inc.
Project No.: N/A
Project Name: Aramark, Oakland
Sample Matrix: Water
Method: MTBE (EPA 8260B)

AA Project No.: A349130
Date Received: 10/01/01
Date Reported: 10/03/01
Units: ug/L

AA I.D. No.	Client I.D. No.	Date Sampled	Date Analyzed	Results	MRL
127197	MW-5	09/28/01	10/02/01	<2	2
127198	Trip	09/28/01	10/02/01	<2	2

MRL: Method Reporting Limit


George Havalias
Laboratory Director

Attachment B
Historical Depth to Groundwater Measurements at Site Wells
Aramark Uniform Services
Oakland, CA

Date	Depth to Water at Wells (ft)						
	MW-4a	MW-5a	RAO-1b	RAO-2	RAO-3c	RAO-4	RAO-5
11-May-93			8.43	8.32		8.68	
2-Aug-93			8.48	8.50		8.75	
29-Jan-94			8.70	8.62		8.96	
12-Aug-94			8.86	8.02		9.11	
18-Nov-94			8.11	8.10		8.40	
3-Feb-95			7.68	7.42		8.55	
5-May-95	11.50	10.30	7.82	7.64		8.07	
2-Aug-95	9.91	8.77	8.07	7.98		8.35	
14-Nov-95	10.18	10.31		9.65		9.84	
1-Feb-96	9.10	8.32	7.60	7.65		8.17	
10-May-96	9.37	8.55	7.89	7.97		8.40	
6-Aug-96	9.71	9.86		8.18		9.35	
15-Nov-96	10.05	9.17		8.50		8.65	
18-Feb-97	8.94	8.24		7.61		7.93	
17-Jan-98	8.43	7.71		7.10		7.42	
28-Aug-98	9.28	8.48		7.89			7.62
14-Jan-99	9.50	9.13		8.54	8.38	8.60	8.24
2-Feb-00				7.80	7.90		7.60
19-Jan-01				8.31	8.31		8.07
Lowest GW Elevation	11.50	10.31	8.86	9.65	8.38	9.84	8.24
Highest GW Elevation	8.43	7.71	7.60	7.10	7.90	7.42	7.60

a: Wells installed in 1995

b: Well abandoned in 1998 and replaced by well RAO-5

c: Depth to water measured only when no free product is identified

TABLE 3-2

ANALYTICAL RESULTS OF SOIL SAMPLES

Boring Number	Sample Depth (Feet)	TPH-D ¹ Diesel Range (mg/kg)	Aromatic Volatile Hydrocarbons ² (ug/kg)				Oil ³ and Grease (mg/kg)
			Benzene	Toluene	Ethylbenzene	Xylenes	
RAO-1	5	ND	ND	ND	ND	ND	ND
RAO-1	10	ND	ND	ND	ND	ND	ND
RAO-1	20	ND	ND	ND	ND	ND	ND
RAO-2	5	ND	ND	ND	ND	ND	ND
RAO-2	10	ND	ND	ND	ND	ND	ND
RAO-2	15	ND	ND	ND	ND	ND	ND
RAO-2	20	ND	ND	ND	ND	ND	ND
RAO-3	8	22,529	ND	75	840	2,700	8,200
RAO-3	15	ND	ND	ND	ND	ND	ND
RAO-3	20	3	ND	ND	ND	ND	ND
RAO-4	5	ND	ND	ND	ND	ND	ND
RAO-4	10	ND	ND	ND	ND	ND	ND

1 TPH-D - Total Petroleum Hydrocarbons as diesel; analyses performed by EPA Method 8015M (modified). Detection limits of 2 mg/kg.

ND - Not detected at the limit of detection.

2 Aromatic Volatile Hydrocarbons (BTX&E) analyses performed by EPA Method 8020. Detection limits of 0.3 ug/kg.

3 Oil and grease analyses performed by EPA Method 503. Detection limits of 100 mg/kg.

Attachment 13

Table 3
Product Recovery Log
Well 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	0	8.63	0.00
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	0	8.02	0.00
12-14-92	30	200	8.28	8.29	0.01
12-15-92	0	0	0	8.32	0.00
12-16-92	0	0	0	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

Product Recovery Log

Well 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)
11-11-93	40	80	7.98	7.91	0.07
12-10-93	20	25	8.62	8.59	0.03
01-29-94	0	0	0	8.76	0.00
03-10-94	0	0	0	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	0	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	0	9.24	0.00
08-25-94	0	550	0	8.78	0.00
08-31-94	0	550	0	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	0	8.86	0.00
10-07-94	0	550	0	8.74	0.00
10-14-94	0	520	0	8.80	0.00
10-21-94	0	520	0	8.88	0.00
10-28-94	0	525	0	8.90	0.00
11-04-94	0	550	0	8.00	0.00
11-09-94	0	520	0	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

**Product Recovery Log
Well 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)
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	0	7.86	0.00
06-09-95	0	330	0	7.80	0.00
06-16-95	0	170	0	7.87	0.00
06-23-95	0	300	0	7.99	0.00
06-30-95	0	300	0	7.88	0.00
07-07-95	0	280	0	7.82	0.00
07-14-95	0	290	0	7.86	0.00
07-21-95	0	540	0	7.90	0.00
07-28-95	0	500	0	7.92	0.00
08-04-95	0	480	0	7.86	0.00
08-11-95	0	530	0	7.88	0.00
08-18-95	0	520	0	7.86	0.00
08-25-95	0	500	0	7.90	0.00
09-05-95	0	310	0	8.15	0.00
09-12-95	0	400	0	8.10	0.00
09-19-95	0	390	0	8.20	0.00
09-26-95	0	380	0	8.25	0.00
10-03-95	0	385	0	8.15	0.00
10-10-95	0	230	0	8.42	0.00
10-17-95	0	240	0	8.39	0.00
10-24-95	0	250	0	8.40	0.00
10-31-95	0	255	0	8.44	0.00
11-07-95	0	260	0	8.42	0.00
11-14-95	0	400	0	8.43	0.00
11-21-95	0	420	0	8.48	0.00
11-28-95	0	480	0	8.50	0.00
12-05-95	0	400	0	8.55	0.00
12-15-95	0	550	0	8.40	0.00
12-22-95	0	490	0	8.36	0.00

**Product Recovery Log
Well 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)
12-29-95	0	570	0	7.85	0.00
01-05-96	0	560	0	7.82	0.00
01-12-96	0	480	0	7.52	0.00
01-19-96	0	460	0	7.54	0.00
01-26-96	0	450	0	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	0	7.76	0
05-17-96	0	480	0	7.78	0
05-24-96	0	490	0	7.90	0
05-31-96	10	495	7.60	7.60	0
06-08-96	0	490	0	7.72	0
06-14-96	10	490	7.72	7.72	0
06-21-96	0	480	0	7.74	0
06-28-96	0	490	0	7.76	0
07-05-96	0	485	0	7.75	0
07-12-96	0	495	0	7.76	0
07-19-96	10	400	7.90	7.90	0
07-26-96	0	425	0	7.85	0
08-02-96	0	420	0	7.90	0
08-16-96	0	430	0	7.82	0
08-30-96	0	450	0	7.80	0
09-13-96	10	550	8.15	8.15	0
09-27-96	0	500	0	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	0	8.26	0
11-22-96	0	525	0	8.10	0
12-06-96	0	500	0	8.20	0
12-23-96	0	540	0	7.92	0

**Product Recovery Log
Well 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)
01-03-97	10	510	7.46	7.46	0
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	0	7.90	0
05-09-97	0	450	0	7.92	0
05-23-97	0	400	0	7.94	0
06-06-97	10	490	7.77	7.77	0
06-20-97	10	520	8.04	8.04	0
07-03-97	10	170	7.95	7.95	0
07-18-97	0	490	0	8.10	0
08-01-97	0	495	0	8.20	0
08-15-97	0	480	0	8.30	0
08-29-97	0	490	0	8.40	0
09-11-97	0	290	0	8.15	0
09-26-97	0	505	0	8.09	0
10-10-97	0	100	0	8.19	0
10-24-97	0	250	0	8.24	0
11-07-97	0	540	0	8.21	0
11-21-97	0	550	0	7.60	0
12-05-97	0	560	0	7.22	0
12-19-97	0	500	0	7.24	0
01-02-98	50	520	7.00	7.00	0
01-16-98	40	540	7.00	7.00	0
01-30-98	40	530	7.20	7.20	0
02-13-98	50	500	7.10	7.10	0
02-27-98	220	510	6.99	6.99	0
03-13-98	120	300	6.96	6.96	0
07-06-98	10	520	7.20	7.20	0
07-24-98	5	495	7.30	7.30	0
08-07-98	0	300	0	7.40	0
08-21-98	0	250	0	7.45	0
09-04-98	0	100	0	7.46	0
09-18-98	0	300	0	7.44	0
10-12-98	0	370	0	7.75	0
10-16-98	0	220	0	7.40	0
10-30-98	0	240	0	7.60	0
11-13-98	0	250	0	7.62	0

**Product Recovery Log
Well 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)
11-27-98	0	260	0	7.61	0
12-11-98	0	210	0	7.90	0
12-28-98	0	100	0	8.16	0
01-11-99	0	100	0	8.36	0
01-25-99	0	240	0	8.60	0
02-09-99	0	210	0	8.18	0
02-26-99	0	320	0	8.19	0
03-12-99	0	460	0	8.00	0
03-26-99	0	500	0	7.80	0
04-07-99	5	510	7.84	7.84	0
04-12-99	10	520	7.80	7.80	0
04-23-99	25	500	7.40	7.40	0
05-07-99	15	520	7.80	7.80	0
05-21-99	10	500	7.80	7.80	0
06-04-99	10	520	7.75	7.75	0
06-18-99	15	500	7.70	7.70	0
07-02-99	10	520	7.40	7.40	0
07-16-99	5	500	7.80	7.80	0
07-30-99	0	500	0	7.75	0
08-13-99	0	475	0	7.78	0
08-27-99	0	490	0	7.77	0
09-13-99	0	500	0	8.00	0
09-30-99	0	480	0	8.10	0
10-15-99	0	500	0	8.30	0
10-29-99	0	470	0	8.20	0
11-12-99	0	480	0	8.16	0
11-26-99	0	500	0	8.12	0
12-10-99	0	470	0	8.18	0
12-23-99	0	480	0	8.14	0
01-06-00	0	500	0	8.12	0
01-20-00	0	480	0	8.20	0
02-03-00	0	400	0	7.60	0
02-23-00	0	500	0	7.03	0
03-10-00	10	500	7.08	7.08	0
03-27-00	20	510	7.75	7.75	0
04-03-00	15	480	7.60	7.60	0
04-17-00	20	410	8.00	8.00	0
05-01-00	15	380	7.40	7.40	0
05-15-00	5	275	7.47	7.47	0
05-30-00	0	320	0	7.45	0
06-12-00	0	110	0	7.58	0
06-26-00	0	90	0	7.56	0

**Product Recovery Log
Well 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)
07-16-00	0	240	0	7.38	0
07-24-00	0	360	0	7.58	0
08-07-00	0	425	0	7.80	0
08-21-00	0	400	0	7.60	0
09-12-00	0	500	0	7.82	0
09-25-00	0	530	0	7.78	0
10-10-00	0	560	7.75	7.75	0.00
10-23-00	0	500	7.62	7.62	0.00
11-06-00	0	520	7.74	7.74	0.00
11-20-00	0	588	7.65	7.65	0.00
12-04-00	0	320	7.80	7.80	0.00
12-18-00	0	420	7.86	7.86	0.00
01-02-01	0	400	7.75	7.75	0.00
01-15-01	0	440	7.78	7.78	0.00
02-06-01	0	400	7.58	7.58	0.00
02-20-01	0	510	7.76	7.76	0.00
03-05-01	0	500	7.84	7.84	0.00
03-19-01	0	500	7.68	7.68	0.00
04-02-01	0	480	7.80	7.80	0.00
04-23-01	0	360	7.70	7.70	0.00
05-07-01	0	500	7.68	7.68	0.00
05-21-01	0	380	7.70	7.70	0.00
06-04-01	0	400	7.80	7.80	0.00
06-15-01	0	360	7.76	7.76	0.00
Total to Date	9,507				

**Table 2
Hydrogen Peroxide Addition Schedule**

Date	Quantity Added (gal)	%Hydrogen Peroxide Solution
November 1995	15	5
January 1996	5	5
April 1996	5	5
July 1996	5	5
November 1996	5	5
January 1997	5	5
April 1997	5	5
July 1997	5	5
November 1997	5	5
January 1998	5	5
April 1998	5	5
July 1998	5	5
November 1998	5	5
January 1999	5	5
April 1999	5	5
July 1999	5	5
November 1999	5	5
January 2000	5	5
Total	100	

Attachment 15



LOG OF TEST BORING

F-203 (R 01-87)

BORING NO. SB-1

SHEET NO. 1 OF 1

PROJECT NAME ARATEX #516 VZI-RJ/FS

PROJECT NO. 1622.03

LOCATION Oakland, CA

INSTALLATION 09/25/90

CONTRACTOR HEW Drilling

SURFACE ELEV. _____

DRILLING METHOD HSA

BOREHOLE DIA. 7.5 IN.

SAMPLING NOTES

VISUAL CLASSIFICATION AND GENERAL OBSERVATIONS

INTERVAL NO.	TYPE	RECOVERY		MOISTURE	
		N	IN		DEPTH

(PPM)

A	SS	13	12		5
B	SS	191	9		
C	SS	689	18		
D	SS	1248+	18		10

SAND, fine, brownish yellow, loose, dry, (SP), (Fill).

Silty fine SAND, dark brown, loose, damp (SP-SM).

-with occasional brownish yellow clayey SAND pockets at 5'.

-moist below 6.5' with slight olive green discoloration, faint diesel odor.

-below 7.5' wet with trace free water.
-below 8' olive green with strong diesel like odor.

[Note: 0 recovery on initial sampling with 18" recovery on resampling]

End of Boring at 9.5 Ft.
Sampling Completed to 11.0 Ft.

Notes:

1. No water accumulation in boring
2. Boring collapsed to 7-foot depth on auger removal.

GENERAL NOTES

WATER LEVEL OBSERVATIONS

DATE STARTED 25 SEP 90

WHILE DRILLING

DATE COMPLETED 25 SEP 90

AT COMPLETION

RIG CME 45B

AFTER DRILLING

CREW CHIEF B. Douglas

CAVE-IN: DATE/TIME _____ DEPTH _____

LOGGED BY Batchko CHECKED [Signature]

WATER: DATE/TIME _____ DEPTH _____



LOG OF TEST BORING

F-203 (R 01-87)

BORING NO. SB-2

SHEET NO. 1 OF 1

PROJECT NAME ARATEX #516 VZI-RI/FS

PROJECT NO. 1622.03

LOCATION Oakland, CA

INSTALLATION 09/25/90

CONTRACTOR HEW Drilling

SURFACE ELEV. _____

DRILLING METHOD HSA

BOREHOLE DIA. 7.5 IN.

SAMPLING NOTES

INTERVAL NO.	TYPE	RECOVERY		MOISTURE	DEPTH
		N	IN		

VISUAL CLASSIFICATION AND GENERAL OBSERVATIONS

INTERVAL NO.	TYPE	N	IN	MOISTURE	DEPTH	VISUAL CLASSIFICATION AND GENERAL OBSERVATIONS
		(PPM)				SAND, fine, reddish brown, some silt, loose, dry, with occasional brick fragments, (SP), (Fill). -moist below 2.5'.
A	SS		2		5	SAND, medium to fine, brownish yellow, loose, moist, with some silt, trace clay, (SP-SM). -brick obstructing sampler just above the shoe.
B	SS	36	10			-with several medium gravel-sized brick fragments.
C	SS	Over	18			Silty fine SAND, olive green, trace clay, medium, wet, trace free water and free product, strong diesel odor, (SP-SM).
D	SS	Over	18		10	-strong diesel odor. -lost bottom 6" on retrieval.
						End of Boring at 9.5 Ft. Sampling Completed to 11.0 Ft. Notes: 1. No water accumulation in boring during advancement. 2. "Over" indicates PID Readings exceed meters range. 3. Boring collapsed to 6 1/2-foot depth on auger removal.

GENERAL NOTES

DATE STARTED 25 SEP 90

DATE COMPLETED 25 SEP 90

RIG CME 45B

CREW CHIEF B. Douglas

LOGGED L. Batchko CHECKED [Signature]

WATER LEVEL OBSERVATIONS

WHILE DRILLING

AT COMPLETION

AFTER DRILLING _____

CAVE-IN: DATE/TIME _____ DEPTH _____

WATER: DATE/TIME _____ DEPTH _____



LOG OF TEST BORING

F-203 (R 01-87)

BORING NO. SB-3
 SHEET NO. 1 OF 1
 PROJECT NO. 1622.03
 INSTALLATION 09/25/90
 SURFACE ELEV. _____
 BOREHOLE DIA. 7.5 IN.

PROJECT NAME ARATEX #516 VZI-RI/FS
 LOCATION Oakland, CA
 CONTRACTOR HEW Drilling
 DRILLING METHOD HSA

SAMPLING NOTES

INTERVAL NO.	TYPE	RECOVERY		MOISTURE	DEPTH
		N	IN		
		(PPM)			
A	SS		0		5
B	SS	671	18		
C	SS	392	18		

VISUAL CLASSIFICATION AND GENERAL OBSERVATIONS

4-inch thick concrete sidewalk.

SAND, fine, dark brown to dark gray, some silt, trace coarse gravel, loose, dry, (SW-SP), (Base-Fill).

Silty fine SAND, dark brown, trace clay, medium, moist, (SP-SM).

-below 5' brown, dense, with some clay.

-moist to wet below 6'.

-below 7' wet with trace free water, trace free product, olive green, and diesel-like odor.

-no free product evident below 8'.

-with small reddish-brown, medium sand pockets below 8' with slight odor.

10
End of Boring at 8 Ft.
Sampling Completed to 9.5 Ft.

GENERAL NOTES

DATE STARTED 25 SEP 90
 DATE COMPLETED 25 SEP 90
 RIG CME 45B
 CREW CHIEF B Douglas
 LOGGED Z. Batchko CHECKED ZB

WATER LEVEL OBSERVATIONS

WHILE DRILLING _____
 AT COMPLETION _____
 AFTER DRILLING _____
 GAGE-IN: DATE/TIME _____ DEPTH _____
 WATER: DATE/TIME _____ DEPTH _____



LOG OF TEST BORING

F-203 (R 01-87)

BORING NO. SB-4

SHEET NO. 1 OF 1

PROJECT NAME ARATEX #516 VZI-RI/FS

PROJECT NO. 1622.03

LOCATION Oakland, CA

INSTALLATION 09/25/90

CONTRACTOR HEW Drilling

SURFACE ELEV. _____

DRILLING METHOD HSA

BOREHOLE DIA. 7.5 IN.

SAMPLING NOTES

VISUAL CLASSIFICATION AND GENERAL OBSERVATIONS

INTERVAL		RECOVERY		MOISTURE	
NO.	TYPE	N	IN		DEPTH

		(PPM)			
A	SS	33	15		5
B	SS	58	18		
C	SS	1248	18		
D	SS	Over	18		10

Topsoil.

Silty SAND, fine, dark brown, medium, dry, (SP).
-moist below 2'.

Silty SAND, medium to fine, brownish-yellow, medium, with ferric nodules and trace green gray silty CLAY pockets, slight odor, (SP-SM).

Silty SAND, fine, dark brown, dense, wet, some clay, strong diesel-like odor, (SP-SM).

-with occasional medium sand pockets below 9.5', strong odor.

End of Boring at 9.5 Ft.
Sampling Completed to 11.0 Ft.

GENERAL NOTES

WATER LEVEL OBSERVATIONS

DATE STARTED 25 SEP 90

WHILE DRILLING

DATE COMPLETED 25 SEP 90

AT COMPLETION

RIG CME 45B

AFTER DRILLING

CREW CHIEF B. Douglas

CAVE-IN: DATE/TIME _____ DEPTH _____

LOGGED Z. Batchko CHECKED JB

WATER: DATE/TIME _____ DEPTH _____



LOG OF TEST BORING

F-203 (R 01-87)

BORING NO. SB-5
 SHEET NO. 1 OF 1
 PROJECT NO. 1622.03
 INSTALLATION 09/25/90
 SURFACE ELEV. _____
 BOREHOLE DIA. 7.5 IN.

PROJECT NAME ARATEX #516 VZI-RI/ES
 LOCATION Oakland, CA
 CONTRACTOR HEW Drilling
 DRILLING METHOD HSA

SAMPLING NOTES

INTERVAL		RECOVERY		MOISTURE	
NO.	TYPE	N	IN		DEPTH

VISUAL CLASSIFICATION AND GENERAL OBSERVATIONS

NO.	TYPE	N	IN	DEPTH
		(PPM)		
A	SS	1	18	5
B	SS	n/d	18	
C	SS	2	18	

6-inch thick a/c pavement.

SAND, fine, dark brown to olive gray, sme silt, trace coarse gravel, medium, dry, (SW), (Base-Fill).

SAND, fine, dark brown to brownish yellow, some silt, trace clay, medium, moist. (SP-SM)

-with occasional fine roots to 5.5'.
 -grading to medium and fine sand with depth.
 -wet below 5.5'

-trace free water below 6'.

End of Boring at 8 Ft.
 Sampling Completed to 9.5 Ft.

GENERAL NOTES

DATE STARTED 25 SEP 90
 DATE COMPLETED 25 SEP 90
 RIG CME 45B
 CREW CHIEF B. Douglas
 LOGGED BY Batchko CHECKED Bjb

WATER LEVEL OBSERVATIONS

WHILE DRILLING _____
 AT COMPLETION _____
 AFTER DRILLING _____
 GAGE- IN: DATE/TIME _____ DEPTH _____
 WATER: DATE/TIME _____ DEPTH _____



LOG OF TEST BORING

F-203 (R 01-87)

BORING NO. SB-6

SHEET NO. 1 OF 1

PROJECT NAME ARATEX #516 VZI-RI/FS

PROJECT NO. 1622.03

LOCATION Oakland, CA

INSTALLATION 09/25/90

CONTRACTOR HEW Drilling

SURFACE ELEV. _____

DRILLING METHOD HSA

BOREHOLE DIA. 7.5 IN.

SAMPLING NOTES

INTERVAL		RECOVERY		MOISTURE
NO.	TYPE	N	IN	DEPTH

VISUAL CLASSIFICATION AND GENERAL OBSERVATIONS

INTERVAL NO.	TYPE	RECOVERY N	RECOVERY IN	MOISTURE	DEPTH	VISUAL CLASSIFICATION AND GENERAL OBSERVATIONS
		(PPM)				4-inch thick concrete sidewalk.
						SAND, dark brown-olive gray, some silt, trace coarse gravel, medium, dry, (SW), (Base-Fill).
A	SS	36	18		5	SAND, fine, brownish yellow, some silt, moist, (SP-SM). -grading slightly coarser with depth.
B	SS	12	18			-trace free water below 6.5' and medium to fine SAND.
C	SS	19	18			
					10	End of Boring at 8.0 Ft. Sampling Completed to 9.5 Ft.

GENERAL NOTES

DATE STARTED 25 SEP 90

DATE COMPLETED 25 SEP 90

RIG CME 45B

CREW CHIEF B Douglas

LOGGED BY Batchko CHECKED [Signature]

WATER LEVEL OBSERVATIONS

WHILE DRILLING

AT COMPLETION

AFTER DRILLING _____

CAVE-IN: DATE/TIME _____ DEPTH _____

WATER: DATE/TIME _____ DEPTH _____



LOG OF TEST BORING

F-203 (R 01-87)

PROJECT NAME ARATEX - OAKLAND
 LOCATION 3RD & CHESTNUT ST OAKLAND, CA
 CONTRACTOR ANDERSON GEOTECH.
 DRILLING METHOD HSA

BORING NO. RA01
 SHEET NO. 1 OF 1
 PROJECT NO. 1622.01
 INSTALLATION 6/7/89
 SURFACE ELEV. _____
 BOREHOLE DIA. 8 IN.

SAMPLING NOTES

INTERVAL NO.	TYPE	RECOVERY		MOISTURE	DEPTH
		N	IN		

VISUAL CLASSIFICATION AND GENERAL OBSERVATIONS

GENERAL WELL CONSTRUCTION

INTERVAL NO.	TYPE	N	IN	MOISTURE	DEPTH	VISUAL CLASSIFICATION AND GENERAL OBSERVATIONS	GENERAL WELL CONSTRUCTION
					0	Fill material. (peat), organic, loose. dark brown.	
5	SS	49	11		5	Very fine to fine SAND, moderate brown, moist.	
10	SS	48	12		10	Medium Clayey SAND, moderate yellowish brown, trace organics, moist.	
					15	Medium SAND, dark-yellowish brown.	
					16	CLAY.	
20	SS	95	12		20	Medium Clayey SAND, dark-yellowish brown, trace organics, soft.	
					25	EOB at about 25.0 ft.	
					30		
					35		

GENERAL NOTES

WATER LEVEL OBSERVATIONS

DATE STARTED 7 JUN 89
 DATE COMPLETED 7 JUN 89
 RIG MOBILE B-34
 CREW CHIEF SWARTOUT
 LOGGED LYVERSE CHECKED _____

WHILE DRILLING ∇ _____ 9.0 FT.
 AT COMPLETION ∇ _____ 8.1 FT.
 AFTER DRILLING _____
 GAVE-UP: DATE/TIME _____ DEPTH _____
 WATER: DATE/TIME 6/8/89 @ 07:45 DEPTH 7.90 FT.



LOG OF TEST BORING

F-203 (R 01-87)

BORING NO. RA02
 SHEET NO. 1 OF 1
 PROJECT NO. 1622.01
 INSTALLATION 6/8/89
 SURFACE ELEV. _____
 BOREHOLE DIA. 8 IN.

PROJECT NAME ARATEX - OAKLAND
 LOCATION 3RD & CHESTNUT ST. OAKLAND, CA
 CONTRACTOR ANDERSON GEOTECH.
 DRILLING METHOD HSA

SAMPLING NOTES

INTERVAL NO.	RECOVERY TYPE	MOISTURE		DEPTH
		N	IN	

VISUAL CLASSIFICATION AND GENERAL OBSERVATIONS

GENERAL WELL CONSTRUCTION

INTERVAL NO.	RECOVERY TYPE	MOISTURE N	MOISTURE IN	DEPTH	VISUAL CLASSIFICATION AND GENERAL OBSERVATIONS	GENERAL WELL CONSTRUCTION
				0	Organic (peat) FILL material, dusky brown.	
5	SS	57	12	5	Fine to medium SAND, moderate yellowish brown, some fine gravel (5mm).	
10	SS	58	12	10	Same as above, but with some clay. Clayey SAND, moderate brown, some iron stain.	
15	SS	36	12	15	Above grades to CLAY and SAND, grayish, stiff.	
20	SS	100	10	20	Same as above.	
				25	EOB at 27 ft.	
				30		
				35		

GENERAL NOTES

WATER LEVEL OBSERVATIONS

DATE STARTED 7 JUN 89
 DATE COMPLETED 7 JUN 89
 RIG MOBILE B-34
 CREW CHIEF SWARTOUT
 LOGGED LYVERSE CHECKED _____

WHILE DRILLING 9.0 FT.
 AT COMPLETION 8.1 FT.
 AFTER DRILLING _____
 GAGE IN: DATE/TIME _____ DEPTH _____
 WATER: DATE/TIME 6/8/89 07:45 DEPTH 8.00 FT.



LOG OF TEST BORING

F-203 (R 31-37)

BORING NO. RA03
 SHEET NO. 1 OF 1
 PROJECT NO. 1622.01
 INSTALLATION 6/8/89
 SURFACE ELEV. _____
 BOREHOLE DIA. 8 IN.

PROJECT NAME ARATEX - OAKLAND
 LOCATION 3RD & CHESTNUT ST. OAKLAND, CA
 CONTRACTOR ANDERSON GEOTECH.
 DRILLING METHOD HSA

SAMPLING NOTES

INTERVAL NO.	TYPE	RECOVERY		MOISTURE	DEPTH	VISUAL CLASSIFICATION AND GENERAL OBSERVATIONS	GENERAL WELL CONSTRUCT.
		N	IN				
						FILL material (tank pit). Medium to coarse SAND, brownish to black, little gravel.	
8	SS	67	10			Estimated bottom of tank pit (change in auger rotation). Clayey SAND, gray, hydrocarbon odor and staining.	
15	SS	35	8			Same as above, but pale yellowish brown, less clay than above.	
20	SS	42	5			Medium Clayey SAND, dark yellowish brown, some organic streaks, soft.	
						Boring terminated at 24.0 ft.	

GENERAL NOTES

DATE STARTED 8 JUN 89
 DATE COMPLETED 8 JUN 89
 RIG MOBILE B-34
 CREW CHIEF SWARTOUT
 LOGGED LYVERSE CHECKED _____

WATER LEVEL OBSERVATIONS

WHILE DRILLING 10.0 FT.
 AT COMPLETION _____
 AFTER DRILLING _____
 GAGE (IN): DATE/TIME _____ DEPTH _____
 WATER: DATE/TIME 6/8/89 12:20 DEPTH 8.35 FT.



LOG OF TEST BORING

F-203 (R 01-87)

PROJECT NAME ARATEX -- OAKLAND
 LOCATION 3RD & CHESTNUT ST. OAKLAND, CA
 CONTRACTOR ANDERSON GEOTECH.
 DRILLING METHOD HSA

BORING NO. RA04
 SHEET NO. 1 OF 1
 PROJECT NO. 1622.01
 INSTALLATION 6/8/89
 SURFACE ELEV. _____
 BOREHOLE DIA. 8 IN.

SAMPLING NOTES

INTERVAL NO.	RECOVERY TYPE	RECOVERY		MOISTURE IN.	DEPTH
		N	IN.		

5	SS	74	10		
10	SS	37	8		

VISUAL CLASSIFICATION AND GENERAL OBSERVATIONS

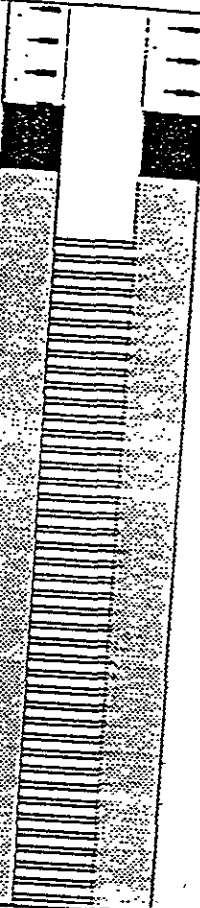
FILL material, peat, loose, dark brown.

Very fine to fine SAND, moderate brown.

Medium SAND, moderate yellowish brown, some clay.
CLAY, stiff, moist.

Medium SAND, dark yellowish brown.

GENERAL WELL CONSTRUCTION



EOB at 27 ft.

GENERAL NOTES

DATE STARTED 8 JUN 89
 DATE COMPLETED 8 JUN 89
 RIG MOBILE B-34
 CREW CHIEF SWARTOUT
 LOGGED LYVERSE CHECKED _____

WATER LEVEL OBSERVATIONS

WHILE DRILLING 10.0 FT.
 AT COMPLETION _____
 AFTER DRILLING _____
 GAVE-UP: DATE/TIME _____ DEPTH _____
 WATER: DATE/TIME 6/8/89 15:20 DEPTH 8.36 FT.



LOG OF TEST BORING

FN: 12013S95

BORING NO.: SBRA05

SHEET NO.: 1 OF 1

PROJECT NAME: ARAMARK UNIFORM SERVICES, INC.

LOCATION: OAKLAND, CALIFORNIA

CONTRACTOR: WEST HAZMAT

DRILLING METHOD: HOLLOW STEM AUGER

PROJECT NO.: 12013.15

INSTALLATION:

SURFACE ELEV.:

BOREHOLE DIA.: 8"

SAMPLING NOTES					DEPTH	VISUAL CLASSIFICATION AND GENERAL OBSERVATIONS
INTERVAL		RECOVERY %		PIU (ppm)		
NO.	TYPE	BLOWS				
RAG-5 @ 1'	SS	HAND AUGER	<2			SILT (SM): dark brown, slightly moist, no odor or stain.
RAG-5 @ 3'	SS	HAND AUGER	3.8			SILT (SM); with little fine sand, light brown, slightly moist, no odor or stain.
RAG-5 @ 5'	SS	50	50-8"	<2	5	SAND w/SILT (SP-SM): fine to medium sand, dark brown, moist, no odor or stain.
RAG-5 @ 10'	SS	100	11,14,13	<2	10	SILT (SM): dark brown, slight plasticity, wet, no odor or stain.
RAG-5 @ 12'	SS	100	15,15,20	<2		
RAG-5 @ 15'	SS	100	7,9,10	<2	15	SAND w/SILT (SW-SM): fine sand, slight plasticity, wet, dark brown with beige swirls and red stains, no odors.
RAG-5 @ 17'	SS	100	7,20,20-3"	<2		Same as above.
RAG-5 @ 20'	SS	80	20,30-1"	<2	20	
RAG-5 @ 22'	SS	80	13,30-3"	<2		SAND (SW): fine to medium sand, dark brown, moist, no odor or stain.
RAG-5 @ 25'	SS	80	22,30-1"	<2	25	
RAG-5 @ 30'	SS	80	18,30-2"	<2	30	Same as above.
Total Depth = 30'						

GENERAL NOTES

DATE STARTED: 8/27/98

DATE COMPLETED: 8/27/98

RIG: LIMITED ACCESS

CREW CHIEF: ADAM

LOGGED: YAM

CHECKED:

WATER LEVEL OBSERVATIONS

WHILE DRILLING: 9.0' bgs.

AT COMPLETION: 7.0' bgs.

AFTER DRILLING:

CAVE-IN DATE/TIME:

DEPTH:

WATER DATE/TIME:

DEPTH:



LOG OF TEST BORING
FN: 12013MW4

BORING NO.: MW-4
SHEET NO.: 1 OF 1
PROJECT NO.: 12013.13
INSTALLATION: _____
SURFACE ELEV.: _____
BOREHOLE DIA.: 8 INCHES

PROJECT NAME: ARAMARK OAKLAND
LOCATION: OAKLAND (MOP OIL BUILDING)
CONTRACTOR: WEST HAZMAT DRILLING
DRILLING METHOD: HOLLOW STEM AUGER

SAMPLING NOTES					VISUAL CLASSIFICATION AND GENERAL OBSERVATIONS	GENERAL WELL CONSTRUCT.
INTERVAL		RECOVERY				
NO.	TYPE	BLOWS	DEPTH			
					Asphaltic concrete pavement	
					Coarse sub-angular, well graded gravel, sub grade (GW).	
MW4-5	SOIL	70	4/5/9	5	Well graded, fine grained sand (SW), dark brown, slightly moist, no staining, no odor.	
MW4-7.5	SOIL	100	12/22/27		Well graded, fine sand (SW), light brown, slightly moist, no staining, no odor	
MW4-10	SOIL	100	12/17/24	10	Same as above, wet.	
				15		
				20		
				25		
				30		
					Total depth of boring = 17 feet bgs. Groundwater encountered at 13 feet.	

GENERAL NOTES

DATE STARTED 5/6/95
DATE COMPLETED 5/6/95
RIG MOBILE B-6*
CREW CHIEF _____
LOGGED KEVIN BATE CHECKED JIM VAN NORTWICK

WATER LEVEL OBSERVATIONS

WHILE DRILLING ▽ 13 FEET
AT COMPLETION ▼ _____
AFTER DRILLING _____
DATE/TIME _____ DEPTH _____
DATE/TIME _____ DEPTH _____



LOG OF TEST BORING

FN: 12013MW5

BORING NO.: MW-5

SHEET NO.: 1 OF 1

PROJECT NAME: ARAMARK OAKLAND
 LOCATION: OAKLAND (MOP OIL BUILDING)

PROJECT NO.: 12013.13

CONTRACTOR: WEST HAZMAT DRILLING

INSTALLATION:

DRILLING METHOD: HOLLOW STEM AUGER

SURFACE ELEV.:

BOREHOLE DIA.: 8 INCHES

SAMPLING NOTES					VISUAL CLASSIFICATION AND GENERAL OBSERVATIONS	GENERAL WELL CONSTRUCT.	
INTERVAL		RECOVERY		NO.			TYPE
BLOWS	DEPTH						
					Concrete pavement		
					Coarse sub-angular well graded gravel, sub grade (GW).		
MW5-5	SOIL	80	4/8/6	5	Well graded, fine grained sand (SW), dark brown, no staining, no odor.		
MW5-7.5	SOIL	100	10/15/18		Same as above, moist.		
MW5-10	SOIL	100	7/17/15	10	Same as above, wet.		
				15	Total depth of boring = 15 feet bgs. Groundwater encountered at 10 feet.		
				20			
				25			
				30			

GENERAL NOTES

DATE STARTED 5/6/95
 DATE COMPLETED 5/6/95
 PHONE NO. MOBILE B-61
 CREW CHIEF
 LOGGED KEVIN BATE CHECKED JIM VAN NORTWICK

WATER LEVEL OBSERVATIONS

WHILE DRILLING 10 FEET
 AT COMPLETION
 AFTER DRILLING
 CAVE-IN DATE/TIME DEPTH
 WATER DATE/TIME DEPTH