

March 17, 1994

Mr. Robert Mibach  
Peralta Community College District  
333 East 8th Street  
Oakland, CA 94606

RE: Field Investigation  
and Results of Groundwater Sampling at  
Peralta Maintenance Yard, 501 5th Avenue, Oakland, California  
Permit No. 95064

Dear Mr. Mibach:

Thank you for providing ACC with the opportunity to present this report. The enclosed report describes the materials and procedures used during a field investigation performed at the Peralta Maintenance Yard, Oakland, California. ACC's investigative approach was to drill and install four groundwater monitoring wells. This work was performed to evaluate the vertical extent of groundwater contamination.

Soil samples collected during drilling were submitted to Chromalab, Inc. for petroleum hydrocarbon analyses, in accordance with the "Tri Regional Guidelines for Underground Storage Tank Sites".

The results of the chemical analysis of the soil samples indicated below detectable levels of Total Petroleum Hydrocarbons (TPH) as diesel, TPH as gasoline and Benzene, Toluene, Ethylbenzene, and Total Xylenes (BTEX) from two of the four borings. Soil samples from borings MW-2 and MW-3 indicated detectable levels of constituents.

Analysis of the groundwater samples from monitoring wells MW-1 and MW-4 indicated below detectable levels of petroleum hydrocarbons. Groundwater samples from monitoring wells MW-2 and MW-3 indicated elevated concentrations of hydrocarbons.

If you have any comments regarding this report, please call me.

Sincerely,

  
Misty C. Kaltreider  
Geologist

cc: Mr. Thomas Peacock - Alameda County Health Care Services - Division of  
Hazardous Materials  
Mr. Wyman Hong - Alameda County Flood Control and Water Conservation District, Zone 3

ALCO  
HAZMAT  
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**SOIL AND GROUNDWATER INVESTIGATION**

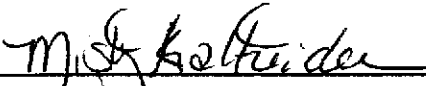
**PERALTA COMMUNITY COLLEGE - MAINTENANCE YARD  
501 5TH AVENUE  
OAKLAND, CALIFORNIA, 94606**

Prepared for:


Mr. Thomas Peacock  
Hazardous Materials Specialist  
Alameda County Health Care Services Agency  
Division of Hazardous Materials

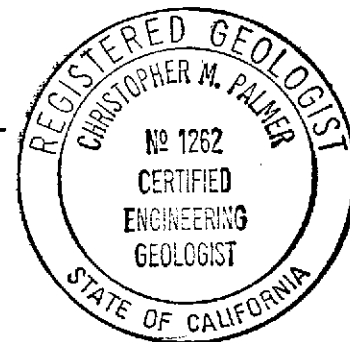
March 1994

Prepared by:

  
\_\_\_\_\_  
Misty Kaltreider  
Project Geologist

Reviewed by:

  
\_\_\_\_\_  
Christopher M. Palmer, CEG #1262  
Certified Engineering Geologist



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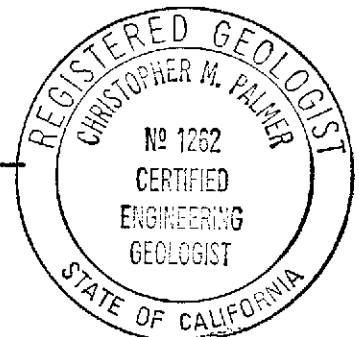


Misty Kaltreider  
Project Geologist

Reviewed by:



Christopher M. Palmer, CEG #1262  
Certified Engineering Geologist



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Figure 1	Site Plan
Figure 2	Sample Results - Soil
Figure 3	Sample Results - Groundwater
Figure 4	Groundwater Gradient - 2/14/94
Appendix A	Chain of Custody Forms and Analytical Results - Soil
Appendix B	Notes of Well Sampling
Appendix C	Lithologic Logs, Unified Soil Classification System and Monitoring Well Details
Appendix D	Chain of Custody Form and Analytical Results - Groundwater

## **1.0 INTRODUCTION**

This report presents the procedures and findings of a soil and groundwater investigation conducted by ACC Environmental Consultants, Inc., ("ACC") on behalf of the Peralta Community College District, site owner at 501 5th Avenue, Oakland, California. The project objective, as described in the Work Plan prepared on April 27, 1993, was to drill and install four groundwater monitoring wells to evaluate the extent of groundwater impact from the previous underground storage of petroleum products.

## **2.0 BACKGROUND**

Five underground storage tanks were installed prior to the 1960's. The tanks were used for storage of fuel and waste oil for the City of Oakland Corporation Yard. The tanks consisted of two 6,000-gallon gasoline, one 2,000-gallon diesel, one 2,000-gallon ethyl (premium) gasoline and one 550-gallon waste oil tank. In 1980 Peralta Community College District acquired the property. The District abandoned the existing five underground tanks by filling with water and installed three fiberglass underground storage tanks. The new tanks consisted of two 6,000-gallon and one 4,000-gallon fiberglass tanks to store gasoline. The new tanks were installed approximately 150 feet from the original tanks.

In 1992, the five originals underground storage tanks were removed. A total of eight soil samples and one grab groundwater sample was collected from the excavation. Laboratory analysis of the soil indicated up to 228 parts per million (ppm) of Total Petroleum Hydrocarbons (TPH) as diesel, 134 ppm to TPH as gasoline, 2,407 parts per billion (ppb) benzene, 4,617 ppb toluene, 7,170 ppb ethylbenzene, 6,147 ppb total xylenes and 5,477 ppm oil and grease. Laboratory analysis of the water collected in the excavation indicated 170 ppm TPH as diesel, 15 ppm TPH as gasoline, 286 ppb benzene, 698 ppb toluene, 300 ppb ethylbenzene, 808 ppb total xylenes and 284 ppm oil and grease.

In September 1992, a preliminary study was performed by Environ of Emeryville to evaluate the soil and groundwater conditions on the site and on neighboring sites. This study indicated that hydrocarbons constituents are regional.

In November of 1992, ACC performed a site assessment of the soil around the former tank excavation. Hydrocarbons as gasoline and motor oil were observed in the soil and groundwater collected from the borings. Laboratory analysis of the soil indicated up to 370 ppm of TPH as gasoline, 12 ppm TPH as diesel, 5,342 ppm motor oil, 76.94 ppm benzene, 73.9 ppm toluene, 30.4 ppm ethylbenzene, and 95.41 ppm xylenes.

In November 1994, three underground gasoline tanks were removed from the property. Soil samples collected from the excavation indicated up to 1.3 ppm TPH as gasoline, 190 ppb benzene, and 18 ppb toluene. Initial groundwater sample collected from the excavation indicated 27 ppm TPH as gasoline, 1,200 ppb benzene, 5,100 ppb toluene, 690 ppb ethylbenzene and 5,700 ppb xylenes.

Approximately 3,500 gallons of water was removed from the excavation. Subsequent groundwater sample was collected. Analysis of the second groundwater sample from the excavation indicated .21 ppm TPH as gasoline, and 14 ppb xylenes.

Due to the elevated levels reported in the soil and groundwater on-site, additional groundwater investigations are required from the regulatory agencies.

### 3.0 SITE DESCRIPTION

The site consists of several warehouse/office buildings surrounded by a fenced parking lot. The older tanks were situated within the fenced yard adjacent to the northern entrance, the newer tanks were situated near the southern entrance (Figure 2).

### 4.0 FIELD PROCEDURES

Borings MW-1, MW-2, MW-3, and MW-4 were drilled on February 7, 1994 using a B-53 mobile drill rig equipped with 8-inch outside diameter hollow-stem augers. Concurrent with drilling, subsurface soil samples were obtained with a Modified California Sampler equipped with three six-inch long brass liners. The sampler and brass liners were pre-cleaned prior to use and between sample drives by washing them with a trisodium phosphate (TSP) and potable water solution, a potable water rinse, and distilled water rinse.

Soil samples were collected every five feet, at any noted changes in lithology, and at the capillary fringe. Subsurface soil samples were obtained by drilling to the desired depth interval and then driving the sampler eighteen inches into undisturbed material.

An HNU photoionization detector (PID) was used during drilling and sampling procedures to detect field evidence of volatile hydrocarbon vapor in the soil.

Soil sample and drill cuttings were prescreened in the field for volatile organic compounds with a PID calibrated for Hexane. Upon removal from the sampler, each end of the brass liner was covered with Teflon tape and plastic caps, labeled, and stored in an ice-filled cooler to be transported under chain of custody to Chromalab, Inc., a Cal-EPA certified analytical laboratory.

A minimum of two soil samples were selected from each boring and submitted to ChromaLab for analysis according to the "Tri-Regional Board Staff Recommendations for Preliminary Evaluation and Investigation of Underground Tank Sites", dated August 10, 1990. Samples from the borings were submitted for analysis for Total Petroleum Hydrocarbons (TPH) as gasoline by EPA test method 5030 and benzene, toluene, ethylbenzene, and total xylenes (BTEX) by EPA test method 8020. In addition, samples collected from borings MW-1, MW-2, and MW-3 were submitted for analysis of TPH as diesel by EPA test method 8015-Modified and total oil and grease by EPA test method 5520, E & F. Copies of the analytical results and chain of custody forms are provided in Appendix A.

The soil cuttings and samples were logged by an ACC geologist during drilling operations. Soil cuttings are described in accordance with the Unified Soil Classification System. Lithologic logs of the borings and the Unified Soil Classification System are attached in Appendix B. Soil cuttings were stockpiled on-site and covered with Visqueen pending acceptance at an approved disposal facility.

#### 4.1 Monitoring Well Construction and Development

Monitoring wells MW-1, MW-2, MW-3 and MW-4 were installed within borings MW-1, MW-2, MW-3 and MW-4, respectively, upon completion of drilling. Well construction details are attached in Appendix B. The four monitoring Wells were installed with well casings consisting of 2-inch I.D. Schedule 40 PVC with 12 feet of 0.020-inch factory slotted screen below 5 feet of solid casing.

The wells were installed with Lonestar #2/12 sand used as annular fill to at least one foot above the top of the screen. One-half foot of 1/4-inch pelletized bentonite was placed between the annular sand and neat cement seal. "Christy" boxes were cemented over the tops of the PVC casings and set slightly above grade to drain surface waters away from the well head. Locking expansion plugs with locks were placed on each well.

The wells were developed on February 12, 1994, by bailing with precleaned disposal Teflon bailers. Each well was developed until development water was clear and essentially free of fine material. Approximately four well volumes of water were removed from each well and placed in sealed 55-gallon drums on-site. The drums were labeled pending analytical results.

#### 4.2 Groundwater Sampling

Groundwater samples were taken on February 14, 1994 from monitoring wells MW-1, MW-2, MW-3 and MW-4. Prior to groundwater sampling the depth to the surface of the water table was measured from the top of the PVC casing using a Solinst Water Level Meter. Information regarding well elevations and groundwater level measurements is summarized in Table 1.

**TABLE 1 - Groundwater Depth Information**

<u>Well No.</u>	<u>Date Sampled</u>	<u>TOC Elevation</u>	<u>Depth to Groundwater (Ft)</u>	<u>Groundwater Elevation (Ft.)</u>
<u>MW-1</u>	02/14/94	6.78 MSL	3.69	3.09
<u>MW-2</u>	02/14/94	8.70 MSL	4.7	4.0
<u>MW-3</u>	02/14/94	8.83 MSL	4.57	4.26
<u>MW-4</u>	02/14/94	5.45 MSL	1.69	3.76

Notes: All measurements in feet  
MSL = Mean Sea Level  
TOC = Top of Casing

After water-level measurements were taken, each on-site well was purged by hand using a precleaned disposable Teflon bailer for each well. Groundwater ph, temperature and electrical conductivity were monitored during well purging. Each well was considered to be purged when these parameters stabilized. Three to four well volumes were removed to purge each well. Worksheets of conditions monitored during purging are attached in Appendix C.

After the groundwater level had recovered to a minimum of approximately 80 percent of its static level, water samples were obtained using designated disposable Teflon bailers. Two 40 ml VOA vials, without headspace, and two 1-liter amber jars were filled from the water collected from each monitoring well.

The samples were preserved on ice and submitted to Chromalab Inc. under chain of custody protocol. Laboratory results with chain of custody forms are attached in Appendix D.

## 5.0 FINDINGS

### 5.1 Subsurface Conditions

During drilling and sampling activities, the site was observed to be covered with a baserock/asphalt cap except the former gasoline tank excavation (near monitoring well MW-4). Below the cap, the subsurface soils consisted of approximately 2 to 4 feet of fill material consisting of brown gravelly sand with clay. Below the fill, black plastic clay (locally known as Bay Mud) was encountered to the depth investigated of 16-1/2 feet below the surface.

During drilling and sampling field evidence of volatile organics (i.e. discoloration and odor) were detected from borings MW-2 and MW-3 from approximately 5 to 6 feet below ground surface. No evidence of volatile organics was detected in borings MW-1 and MW-4.

Groundwater was encountered at approximately 4-1/2 to 7 feet below ground surface (bgs) during drilling in borings MW-1, MW-2, and MW-3. In boring MW-4 groundwater was encountered at approximately 3 feet bgs during drilling. Monitoring wells MW-1, MW-2, MW-3 and MW-4 were completed to the drilled depth in each boring of 15 feet below ground surface. Groundwater appears to be unconfined and the aquifer contact is indistinct. A lower lithologic contract was not observed, hence the entire strata is currently considered to be the water bearing zone.

### 5.2 Analytical Results - Soil

Two soil samples were collected from each boring and submitted Chromalab for analysis of TPH as gasoline with BTEX. Samples chosen for analysis were collected at the Fill material and Bay Mud interface and capillary fringe. Samples collected from boring MW-2 and MW-3 indicated that detectable levels of constituents. A summary of the results are illustrated below. Copy of the analytical results with chain of custody form is attached in Appendix A.

TABLE 2 - Analytical Results - Soil

Boring Number	Sample Number	TPH-g (ppm)	TPH-d (ppm)	Benzene (ppb)	Toluene (ppb)	Ethylbenzene (ppb)	Xylenes (ppb)	Oil/Grease (ppm)
MW-1	6-1/2	<1.0	<1.0	<5.0	<5.0	<5.0	<5.0	<50
	11	<1.0	<1.0	<5.0	<5.0	<5.0	<5.0	<50
MW-2	6-1/2	680	13*	<5.0	<5.0	1200	<5.0	150
	11-1/2	<1.0	<1.0	<5.0	<5.0	<5.0	<5.0	<50
MW-3	6-1/2	1.1	<1.0	<5.0	6.9	<5.0	<5.0	<50
	11-1/2	<1.0	<1.0	<5.0	<5.0	<5.0	<5.0	<50
MW-4	6-1/2	<1.0	---	<5.0	<5.0	<5.0	<5.0	---
	11-1/2	<1.0	---	<5.0	<5.0	<5.0	<5.0	---

\*46 ppm of motor oil found in sample

### 5.3 Analytical Results - Groundwater

One groundwater sample each from monitoring wells MW-1, MW-2, MW-3, and MW-4 was collected and submitted to Chromalab for analysis for TPH as gasoline by EPA test method 5030 and BTEX by



EPA test method 602 and total lead by EPA method 3010/6010. In addition to the above analyses, groundwater collected from monitoring wells MW-1, MW-2, and MW-3 were analyzed for TPH as diesel by EPA Test Method 8015-Modified and total oil and grease by EPA Method 5520 B & F. Analysis results from the groundwater samples are summarized in Table 3 and Figure 2. Copies of the analytical results are attached in Appendix D.

**TABLE 3 - Analytical Results - Groundwater**

Well Number	TPH-g (ppb)	TPH-d (ppb)	Benzene (ppb)	Toluene (ppb)	Ethylbenzene (ppb)	Xylenes (ppb)	Oil/Grease (ppm)	Lead (ppm)
MW-1	<50	<50	<0.5	<0.5	<0.5	<0.5	<1.0	0.01
MW-2	200	<50	1.7	<0.5	1.1	1.1	<1.0	<0.01
MW-3	780	<50	0.6	0.6	1.7	2.7	<1.0	<0.01
MW-4	<50	<50	<0.5	<0.5	<0.5	<0.5	<1.0	0.01

Note: ug/L = parts per billion (ppb)

#### 5.4 Groundwater Gradient

Prior to calculating the groundwater gradient, elevations for the on-site monitoring wells were surveyed by Ron Archer Civil Engineer, Inc. to an accuracy of one-hundredth of a foot. The well elevation was surveyed at the top of the PVC well casing. The elevations of the monitoring wells were established relative to a nearby benchmark located in the intersection of 7th Street and 5th Avenue.

The groundwater gradient was calculated using the on-site monitoring wells. The location of the wells is shown on Figure 1 - Site Plan. Groundwater elevations were collected from the wells on February 14, 1994. The gradient was evaluated by triangulation using the elevation of the potentiometric surface measured with respect to Mean Sea Level datum. As shown in Figure 3, general direction of flow is southwest at a gradient of 0.01 foot per foot.

#### 6.0 CONCLUSION

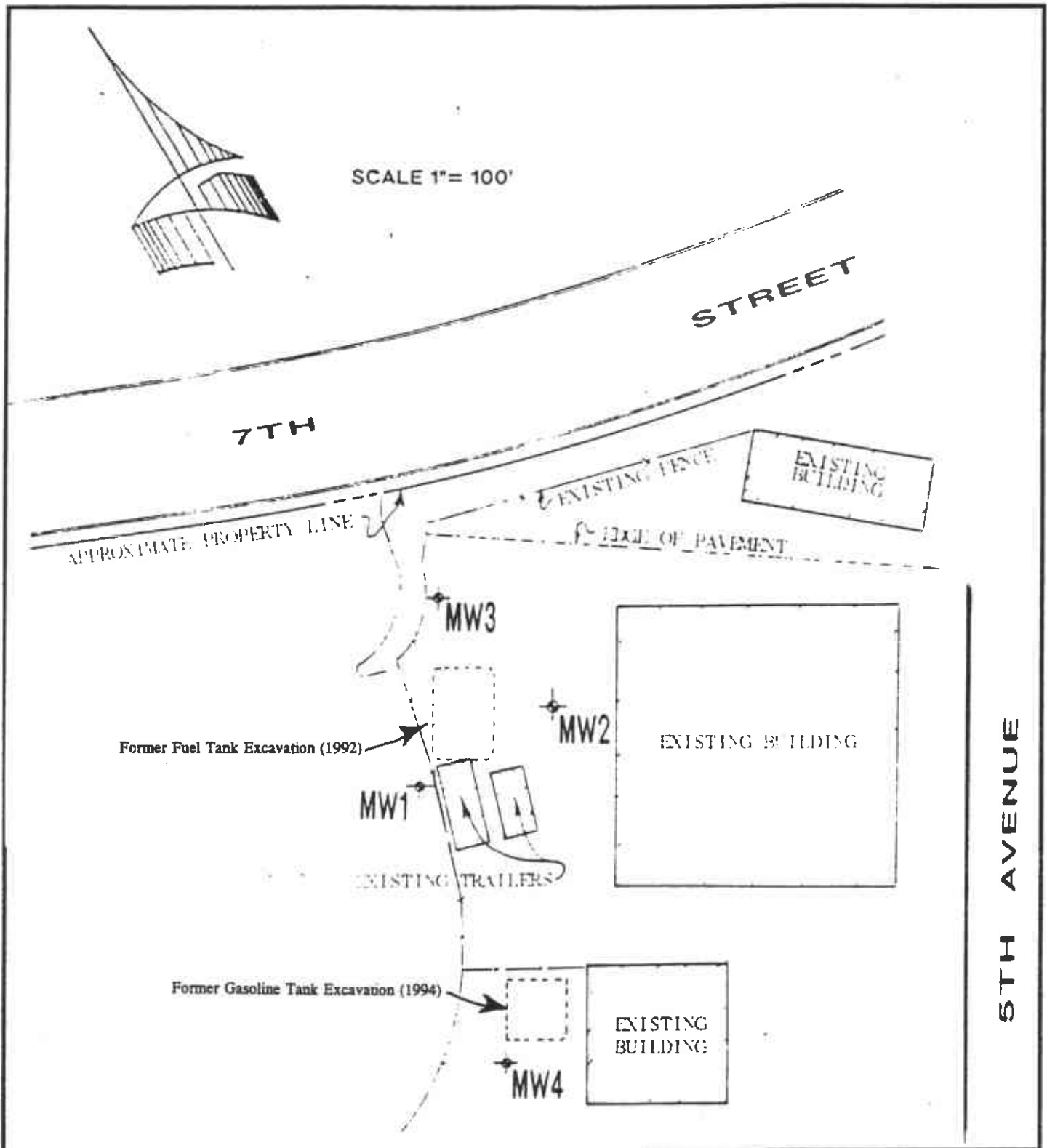
The data and observations discussed herein indicate that ~~groundwater has been impacted~~ due to an unauthorized hydrocarbon release. The analytical parameters used for soil and groundwater sampling performed were in accordance with the guidance document "Tri-Regional Water Quality Control Boards Staff Recommendations for Preliminary Evaluation and Investigation of Underground Tank Sites", dated August 10, 1990, for gasoline tanks.

Laboratory analysis of the groundwater samples collected from monitoring wells MW-1 and MW-4 indicated below detectable levels of constituents evaluated. The groundwater results indicated a downgradient extent of groundwater contamination. Laboratory analysis of groundwater collected from monitoring wells MW-2 and MW-3 (upgradient of the former tank excavations) indicated detectable levels of constituents. Samples collected from borings MW-2 and MW-3 indicated detectable levels of TPH as diesel, TPH as gasoline with BTEX. Motor oil was reported in the soil from boring MW-2. However, the motor oil was not detected in the groundwater sample from monitoring well MW-2 and therefore motor oil does not appear to impact the groundwater. TPH as diesel was only detected in the soil from boring MW-2.

## 7.0 RECOMMENDATIONS

Groundwater samples collected on-site indicated below detectable levels of TPH as diesel. Pursuant to the Tri-Regional Board guidelines, groundwater sampling and monitoring of the on-site wells should continue on a quarterly basis. On behalf of Peralta Community College District, ACC requests a reduction in groundwater monitoring and analysis. ACC proposes to monitor and sample all four groundwater monitoring wells on-site for TPH as gasoline with BTEX. TPH as diesel will only be tested in the groundwater from monitoring well MW-2.

Results from the two upgradient monitoring well indicate an upgradient source(s) of contamination. Further investigation may be requested from regulatory agencies to determine the extent and source(s) of this release.



Site Plan  
Peralta Maintenance Yard  
Oakland, CA

February 14, 1994

Drawn By: MCK

Project: 6045-4

Figure 1

SCALE 1" = 100'

STREET

7TH

APPROXIMATE PROPERTY LINE

EXISTING FENCE

EXISTING BUILDING

EDGE OF PAVEMENT

**MW-3** Depth

	8-1/2	11-1/2
TPH-g	1.1	<1.0
TPH-d	<1.0	<1.0
Benzene	<.0005	<.0005
Toluene	.0089	<.0005
E. Benzene	<.0005	<.0005
Xylenes	<.0005	<.0005
Oil/Grease	<50	<50

MW3

**MW-2** Depth

	8-1/2	11-1/2
TPH-g	<.0005	<1.0
TPH-d	13	<1.0
Benzene	<.0005	<.0005
Toluene	<.0005	<.0005
E. Benzene	1.2	<.0005
Xylenes	<.0005	<.0005
Oil/Grease	<50	<50

MW2

**MW-1** Depth

	6-1/2	11
TPH-g	<1.0	<1.0
TPH-d	<1.0	<1.0
Benzene	<.0005	<.0005
Toluene	<.0005	<.0005
E. Benzene	<.0005	<.0005
Xylenes	<.0005	<.0005
Oil/Grease	<50	<50

MW1

**MW-4** Depth

	8-1/2	11-1/2
TPH-g	<1.0	<1.0
TPH-d	NA	NA
Benzene	<.0005	<.0005
Toluene	<.0005	<.0005
E. Benzene	<.0005	<.0005
Xylenes	<.0005	<.0005
Oil/Grease	NA	NA

MW4

Former Tank Excavations

5TH AVENUE

LEGEND

All Results Reported in Parts Per Million (ppm)  
 TPH-g = Total Petroleum Hydrocarbons as gasoline  
 TPH-d = Total Petroleum Hydrocarbons as diesel  
 Depth Indicated in Feet Below Ground Surface

**Soil Results**  
 Peralta Maintenance Yard  
 Oakland, CA

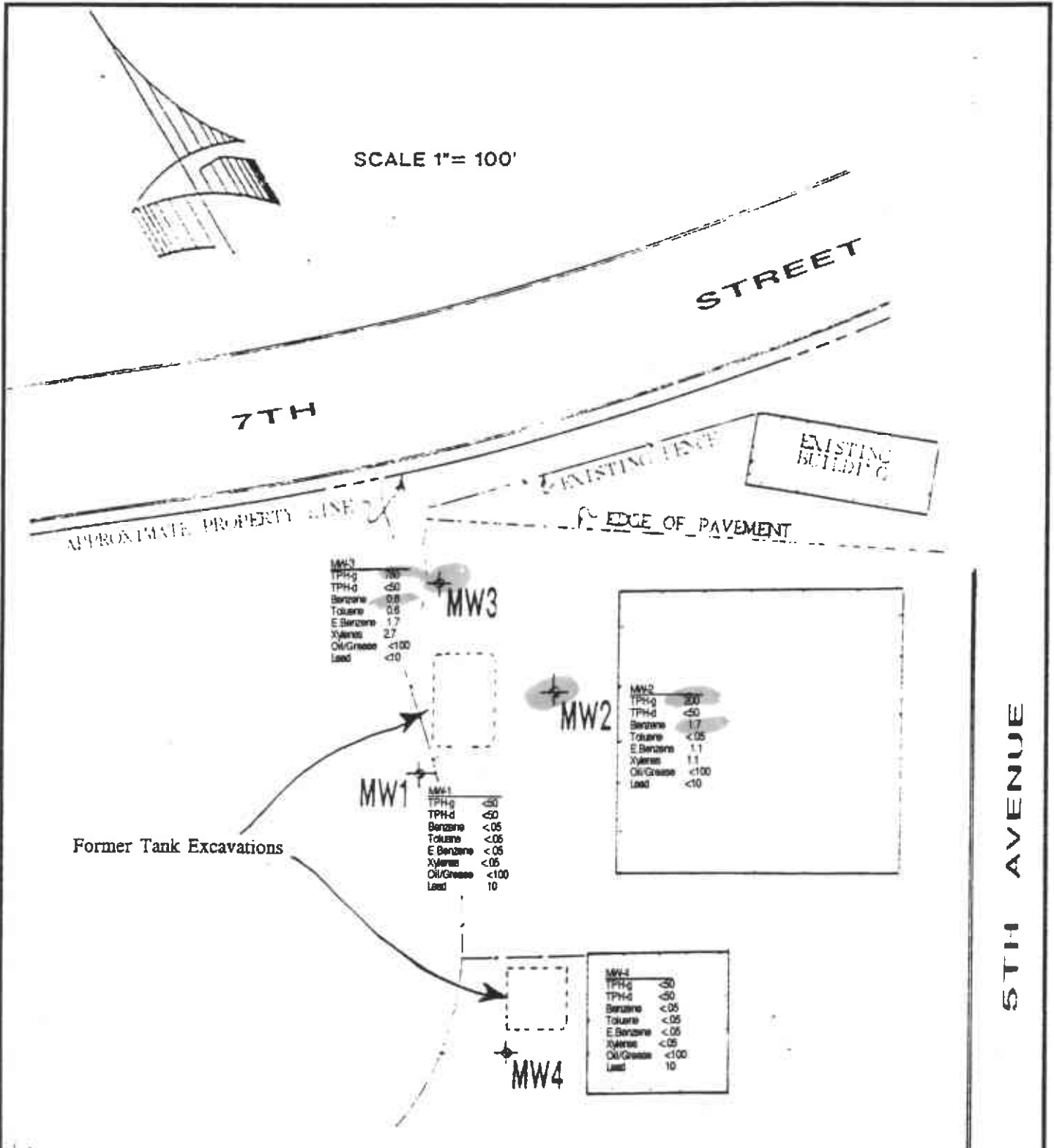
February 14, 1994

Drawn By: MCK

Project: 6045-4

Figure 2

SCALE 1" = 100'



Former Tank Excavations

LEGEND

All Results Reported in Parts Per Billion (ppb)  
 TPH-g = Total Petroleum Hydrocarbons as gasoline  
 TPH-d = Total Petroleum Hydrocarbons as diesel

**Groundwater Results**  
**Peralta Maintenance Yard**  
**Oakland, CA**

5TH AVENUE

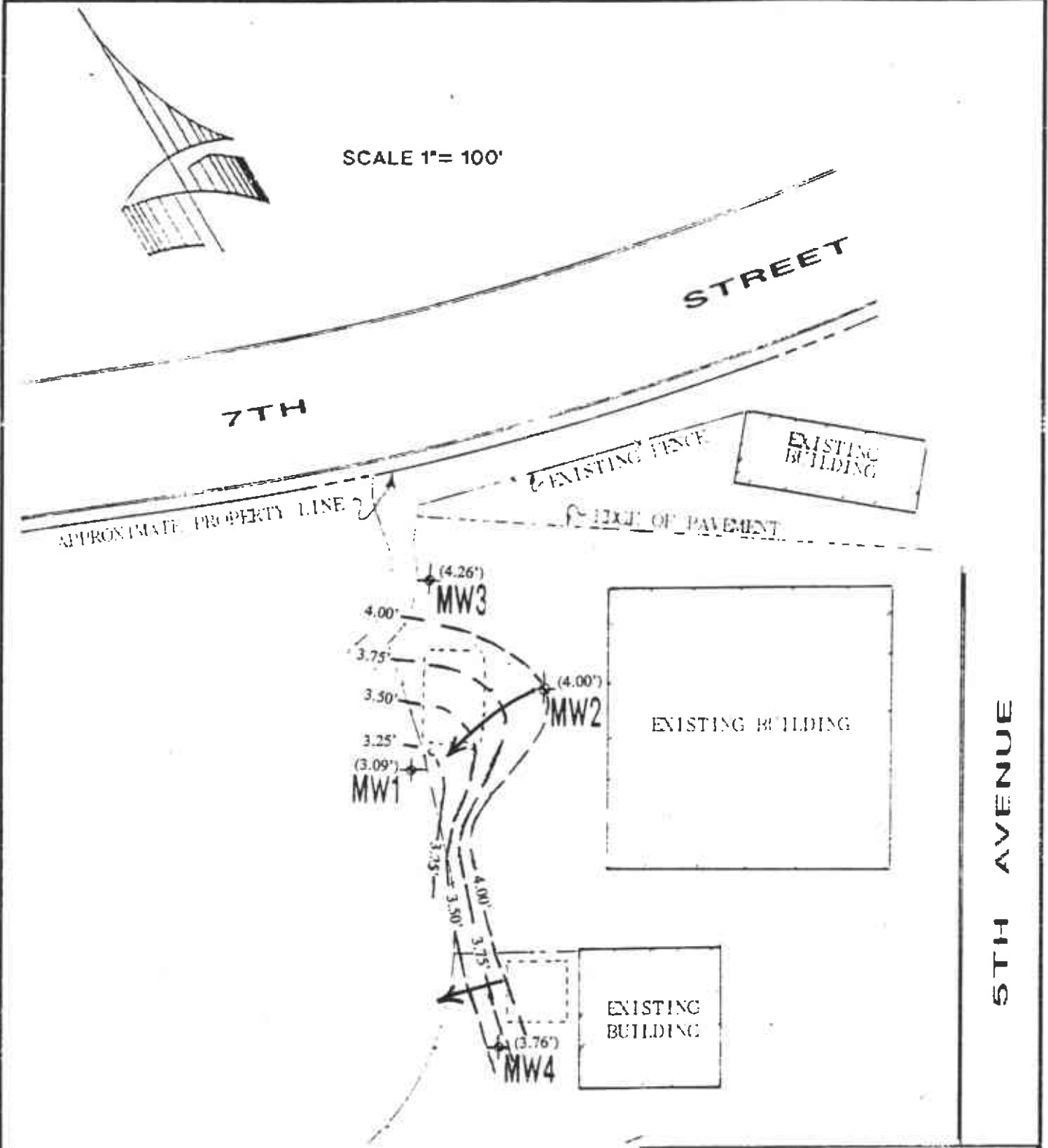
February 14, 1994

Drawn By: MCK

Project: 6045-4

Figure 3

SCALE 1" = 100'



Groundwater Gradient  
 Peralta Maintenance Yard  
 Oakland, CA

Elevations in Feet Above Mean Sea Level

February 14, 1994	Drawn By: MCK	Project: 6045-4	Figure 4
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# CHROMALAB, INC.

Environmental Laboratory (1094)

5 DAYS TURNAROUND

February 15, 1994

ChromaLab File#: 9402131

ACC ENVIRONMENTAL CONSULTANTS

Atten: Misty Kaltreider

Project: PERALTA  
Submitted: February 9, 1994

Project#: 6045-4

re: 8 samples for Gasoline and BTEX analysis.

Matrix: SOIL

Sampled on: February 7, 1994

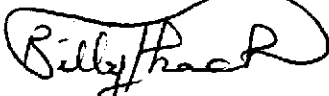
Analyzed on: February 10, 1994

Method: EPA 5030/8015/8020

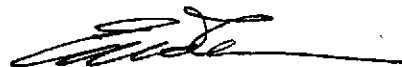
Run#: 2222

Lab #	SAMPLE ID	Gasoline (mg/Kg)	Benzene (ug/Kg)	Toluene (ug/Kg)	Ethyl Benzene (ug/Kg)	Total Xylenes (ug/Kg)
43290	MW-1-6 1/2	N.D.	N.D.	N.D.	N.D.	N.D.
43291	MW-1-11	N.D.	N.D.	N.D.	N.D.	N.D.
43292	MW-2-6 1/2	680	N.D.	N.D.	1200	N.D.
43293	MW-2-11 1/2	N.D.	N.D.	N.D.	N.D.	N.D.
43294	MW-3-6 1/2	1.1	N.D.	6.9	N.D.	N.D.
43295	MW-3-11 1/2	N.D.	N.D.	N.D.	N.D.	N.D.
43296	MW-4-6 1/2	N.D.	N.D.	N.D.	N.D.	N.D.
43297	MW-4-11 1/2	N.D.	N.D.	N.D.	N.D.	N.D.
DETECTION LIMITS		1.0	5.0	5.0	5.0	5.0
BLANK		N.D.	N.D.	N.D.	N.D.	N.D.
BLANK SPIKE RECOVERY(%)		107	104	110	114	117

ChromaLab, Inc.



Billy Thach  
Chemist



Eric Tam  
Laboratory Director

# CHROMALAB, INC.

Environmental Laboratory (1094)

5 DAYS TURNAROUND

February 15, 1994

ChromaLab File No.: 9402131

ACC ENVIRONMENTAL CONSULTANTS

Attn: Misty Kaltreider

RE: Six soil samples for Oil & Grease analysis

Project Name: PERALTA

Project Number: 6045-4

Date Sampled: February 7, 1994


Date Submitted: February 9, 1994

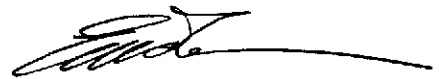
Date Analyzed: February 11, 1994

## RESULTS:

Sample I.D.	Oil & Grease (mg/Kg)
MW-1-6 1/2	N.D.
MW-1-11	N.D.
MW-2-6 1/2	150
MW-2-11 1/2	N.D.
MW-3-6 1/2	N.D.
MW-3-11 1/2	N.D.
BLANK	N.D.
DETECTION LIMIT	50
METHOD OF ANALYSIS	STD METHOD 5520 E & F

ChromaLab, Inc.

  
Carolyn M. House  
Analyst

  
Eric Tam  
Laboratory Director

cc



# CHROMALAB, INC.

Environmental Laboratory (1094)

5 DAYS TURNAROUND

February 15, 1994

ChromaLab File No.: 9402131

ACC ENVIRONMENTAL CONSULTANTS

Attn: Misty Kaltreider

RE: Six soil samples for Diesel analysis

Project Name: PERALTA

Project Number: 6045-4

Date Sampled: February 7, 1994 Date Submitted: February 9, 1994

Date Extracted: February 11, 1994 Date Analyzed: February 11, 1994


RESULTS:

<u>Sample I.D.</u>	<u>Diesel (mg/Kg)</u>
MW-1-6 1/2	N.D.
MW-1-11	N.D.
MW-2-6 1/2	13*
MW-2-11 1/2	N.D.
MW-3-6 1/2	N.D.
MW-3-11 1/2	N.D.

\* 46 mg/Kg of motor oil found in sample.

BLANK	N.D.
SPIKE RECOVERY	99%
DUP SPIKE RECOVERY	103%
DETECTION LIMIT	1.0
METHOD OF ANALYSIS	3550/8015

ChromaLab, Inc.

  
Alex Tam  
Analytical Chemist

  
Eric Tam  
Laboratory Director

# CHROMALAB, INC.

DOHS 1094

SUBM #: 9402131  
 CLIENT: ACC  
 DUE: 02/16/94  
 REF: 15130

Order # 15130  
 131/43290-43297

## Chain of Custody

DATE 2/9/94 PAGE 1 OF 1

PROJ. MGR. <u>Misty Kalthreider</u> COMPANY <u>ACC Environmental</u> ADDRESS <u>1000 Atlantic Ave, Suite 110</u> <u>Alameda, CA 94501</u>					ANALYSIS REPORT															
					TPH - Gasoline (EPA 5030, 8015)	TPH - Gasoline (5030, 8015) w/BTEX (EPA 602, 8020)	TPH - Diesel (EPA 3510/3550, 8015)	PURGEABLE AROMATICS BTEX (EPA 602, 8020)	PURGEABLE HALOCARBONS (EPA 601, 8010)	VOLATILE ORGANICS (EPA 624, 8240, 524.2)	BASE/NEUTRALS, ACIDS (EPA 625/627, 8270, 525)	TOTAL OIL & GREASE (EPA 5520, B+F, E+F)	PCB (EPA 608, 8080)	PESTICIDES (EPA 608, 8080)	TOTAL RECOVERABLE HYDROCARBONS (EPA 418.1)	METALS: Cd, Cr, Pb, Zn, Ni	CAM METALS (17)	PRIORITY POLLUTANT METALS (13)	TOTAL LEAD	EXTRACTION (TCLP, STLC)
SAMPLERS (SIGNATURE) <u>Misty Kalthreider</u> (PHONE NO.) <u>(510) 522-8190</u>					SAMPLE ID.	DATE	TIME	MATRIX	PRESERV.											
	✓ MW-1 - 6 1/2	2/7/94	9:50	S	cold			X	X											1
	✓ MW-1 - 11		9:00																	1
	✓ MW-2 - 6 1/2		10:50																	1
	✓ MW-2 - 11 1/2		11:00																	1
	✓ MW-3 - 6 1/2		1:00																	1
	✓ MW-3 - 11 1/2		1:10																	1
	✓ MW-4 - 6 1/2		<del>2:50</del>																	1
	✓ MW-4 - 11 1/2		3:00																	1

PROJECT INFORMATION				SAMPLE RECEIPT				RELINQUISHED BY 1.		RELINQUISHED BY 2.		RELINQUISHED BY 3.							
PROJECT NAME: <u>Peralta</u>		TOTAL NO. OF CONTAINERS		HEAD SPACE		REC'D GOOD CONDITION/COLD		CONFORMS TO RECORD		SIGNATURE <u>Misty Kalthreider</u>		SIGNATURE		SIGNATURE					
PROJECT NUMBER: <u>10045-4</u>										(TIME) <u>2/7/94</u>		(TIME)		(TIME)					
P.O.# <u>10045-4</u>										(DATE)		(DATE)		(DATE)					
TAT		STANDARD 5-DAY		24		48		72		OTHER		(COMPANY)		(COMPANY)					
SPECIAL INSTRUCTIONS/COMMENTS:														RECEIVED BY 1.		RECEIVED BY 2.		RECEIVED BY (LABORATORY) 3.	
														SIGNATURE		SIGNATURE		SIGNATURE	
														(TIME)		(TIME)		(TIME)	
														(PRINTED NAME)		(PRINTED NAME)		(PRINTED NAME)	
(DATE)		(DATE)		(DATE)															
(COMPANY)		(COMPANY)		(LAB)															

Well Sampling Well Development 

check one

Well Number: MW1Job Number: 6045-4Job Name: Penaha Maintenance YardDate: 2-14-94Sampler: Fallin / CullertDepth to Water (measured from TOC): 3.69'

3.69

Inside Diameter of Casing: 2"Depth of Boring: 15'Method of well development/purging: PurgingAmount of Water Bailed/Pumped from well: 7.9 gallonsDepth to Water after well development: ~~3.69'~~ \*Not Fully RechargedDepth to water prior to sampling: mean 3.9' w/ 80%Bailed water stored on-site? How? 55 G. DrumNumber of well volumes removed: 4TSP wash, distilled rinse, new rope? NEW

## Water Appearance:

	yes	no
froth		✓
irridescence		✓
oil	✓	✓
smell	✓	
product		✓
other, describe		✓

Gallons Removed	pH	EC	Temp
5	6.46	1.49	60.9
10	6.61	1.61	60.7
15	6.30	1.30	60.1
20	6.15	1.28	59.6
25	6.17	1.28	59.2
30	6.19	1.28	59.3
35	6.15	1.28	59.3
40			
45			
50			

## Samples Obtained:

TPH (gasoline) TPH (diesel) TPH (motor oil) BTXE EPA 624 EPA 625 EPA 608 PCBs only Metals Other, specify  To6, LeadField Blank

Well Sampling  Well Development  check one

Well Number: MW 2

Job Number: 6045-4

Job Name: PERALTA COMMUNITY Coll.

Date: 2/14/94

Sampler: B. Calbert

Depth to Water (measured from TOC): 4.7<sup>\*\*</sup> ft 4

Inside Diameter of Casing: 2"

Depth of Boring: 15'

Method of well development/purging: PER BAIL

Amount of Water Bailed/Pumped from well: 7 gal

Depth to Water after well development: —

Depth to water prior to sampling: 4.68

Bailed water stored on-site ? How ? 55 gal drums

Number of well volumes removed: 4

TSP wash, distilled rinse, new rope ? New

Water Appearance:

	yes	no
froth		✓
iridescence		✓
oil		✓
smell	✓	
product		✓
other, describe		✓

Gallons Removed	pH	EC	Temp
5	6.8	9.68	63.9
10	6.50	9.65	64.0
15	6.51	9.67	63.9
20	6.53	9.65	64.1
25	6.54	9.68	64.0
30			
35			
40			
45			
50			

Samples Obtained:

- TPH (gasoline)
- TPH (diesel)
- TPH (motor oil)
- BTXE
- EPA 624
- EPA 625
- EPA 608
- PCBs only
- Metals
- Other, specify
- Field Blank

Well Sampling  Well Development  check one

Well Number: MW3

Job Number: 6045-4

Job Name: PERMITA Community Coll.

Date: 2/14/94

Sampler: T. Fallon & B. Culbert

Depth to Water (measured from TOC): 4.57 Ft 4.26

Inside Diameter of Casing: 2"

Depth of Boring: 15'

Method of well development/purging: Bail

Amount of Water Bailed/Pumped from well: 7.2 gallons

Depth to Water after well development: —

Depth to water prior to sampling: 4.57 Ft

Bailed water stored on-site? How? 55 Gallon Drum

Number of well volumes removed: 4

TSP wash, distilled rinse, new rope? NEW

Water Appearance:

	yes	no
froth		<input checked="" type="checkbox"/>
irridescence		<input checked="" type="checkbox"/>
oil	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
smell	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
product		<input checked="" type="checkbox"/>
other, describe		<input checked="" type="checkbox"/>

Gallons Removed	pH	EC	Temp
5	7.12	0.86	62.9
10	6.99	.82	61.5
15	6.87	.78	61.7
20	6.96	.76	61.7
25	6.92	.78	61.8
30			
35			
40			
45			
50			

Samples Obtained:

- TPH (gasoline)
- TPH (diesel)
- TPH (motor oil)
- BTXE
- EPA 624
- EPA 625
- EPA 608
- PCBs only
- Metals
- Other, specify TOG, LEAD
- Field Blank

Well Sampling  Well Development  check one

Well Number: MW 4

Job Number: 6045-4

Job Name: Percutter Maintenance Yard

Date: 2-14-93

Sampler: Folhm / Colbert

Depth to Water (measured from TOC): 1.69'

3 23

Inside Diameter of Casing: 2'

Depth of Boring: 15'

Method of well development/purging: bailed

Amount of Water Bailed/Pumped from well: 9 gallons

Depth to Water after well development: —

Depth to water prior to sampling: 1.59

Bailed water stored on-site ? How ? 55 gal drum

Number of well volumes removed: 4

TSP wash, distilled rinse, new rope ? New

Water Appearance:

	yes	no
froth		✓
irridescence		✓
oil		✓
smell		✓
product		✓
other, describe		✓

Samples Obtained:

- TPH (gasoline)
- TPH (diesel)
- TPH (motor oil)
- BTXE
- EPA 624
- EPA 625
- EPA 608
- PCBs only
- Metals
- Other, specify
- Field Blank

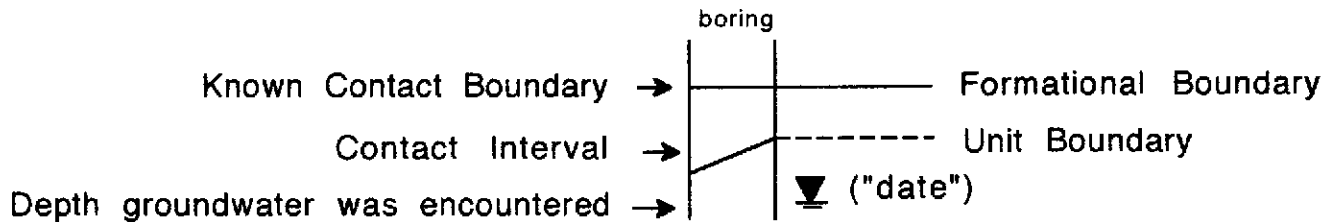
Gallons Removed	pH	EC	Temp
5	7.23	1.87	46.3
10	7.59	0.60	55.5
15	7.49	0.57	55.3
20	7.31	0.61	55.3
25	7.29	0.67	55.3
30	7.28	0.64	55.3
35		0.61	55.5
40			
45			
50			

0.57

## UNIFIED SOIL CLASSIFICATION SYSTEM

MAJOR DIVISIONS				TYPICAL NAMES	
COARSE GRAINED SOILS more than half > #200 sieve	<b>GRAVELS</b> more than half coarse fraction is larger than No. 4 sieve	CLEAN GRAVELS WITH LITTLE OR NO FINES	GW		well graded gravels, gravel-sand mixtures
			GP		poorly graded gravels, gravel-sand mixtures
		GRAVELS WITH OVER 12% FINES	GM		silty gravels, poorly graded gravel-sand silt mixtures
			GC		clayey gravels, poorly graded gravel-sand clay mixtures
	<b>SANDS</b> more than half coarse fraction is smaller than No. 4 sieve	CLEAN SANDS WITH LITTLE OR NO FINES	SW		well graded sands, gravelly sands
			SP		poorly graded sands, gravelly sands
		SANDS WITH OVER 12% FINES	SM		silty sands, poorly graded sand-silt mixtures
			SC		clayey sands, poorly graded sand-clay mixtures
FINE GRAINED SOILS more than half < #200 sieve	<b>SILTS AND CLAYS</b> liquid limit less than 50		ML		inorg. silts and v.fine sands, rock flour silty or clayey sands, or clayey silts w/sl. plasticity
			CL		inorg. clays of low-med plasticity, gravelly clays, sandy clays, silty clays, lean clays
			OL		organic clays and organic silty clays of low plasticity
	<b>SILTY AND CLAYS</b> liquid limit greater than 50		MH		inorganic silty, micaceous or diatomaceous fine sandy or silty soils, elastic silts
			CH		inorganic clays of high plasticity, fat clays
			OH		organic clays of medium to high plasticity organic silts
	<b>HIGHLY ORGANIC SOILS</b>		Pt		peat and other highly organic soils

### LEGEND FOR BORING LOGS



ACC ENVIRONMENTAL CONSULTANTS  
 1000 ATLANTIC AVENUE, SUITE 110  
 ALAMEDA, CA 94501

Soil Classification System

Project No. 6045-4

Date: 2/7/94

DRN: MCK

Peralta Maintenance Yard  
 Oakland, CA



Gregg Drilling and Testing. 8" Hollow Stem Auger.	Blows/6"	HNu (ppm)	SAMPLE #	SAMPLE	Depth (feet)	Equipment: B-53 Drill Rig Logged By: M. Kaltreider PROJECT: Peralta Maintenance Yard Start Date: 2/7/94
Soil color described using Munsell soil color charts <u>Color code</u>  (Gley 3)			MW1 6-1/2		0	Asphalt: 4" lift. Lt. brown silty gravel (GM) & clayey gravel (GC), med grained, dense (baserock)
					2	Bay Mud: Black clay (CH), with very fine sand lamini, (<1" thick), with silt very plastic, medium stiff, wet.
					4	Same as above, with wood pieces.
					6	Same as above, very soft, saturated
					8	BOTTOM OF BORING @ 15 FEET
			10			
			12			
			14			
			16			
			18			
			20			
			22			
			24			
			26			
			28			
MW1 11		6	BOTTOM OF BORING @ 15 FEET			
		8				
		10				
		12				
		14				
MW1 16		10	BOTTOM OF BORING @ 15 FEET			
		12				
		14				
		16				
		18				


ACC ENVIRONMENTAL CONSULTANTS  
1000 ATLANTIC AVENUE, SUITE 110  
ALAMEDA, CA 94501

JOB NO. 6045-4  
DATE: 2/7/94

LOG OF BORING MW-1  
Peralta Maintenance Yard  
Oakland, CA

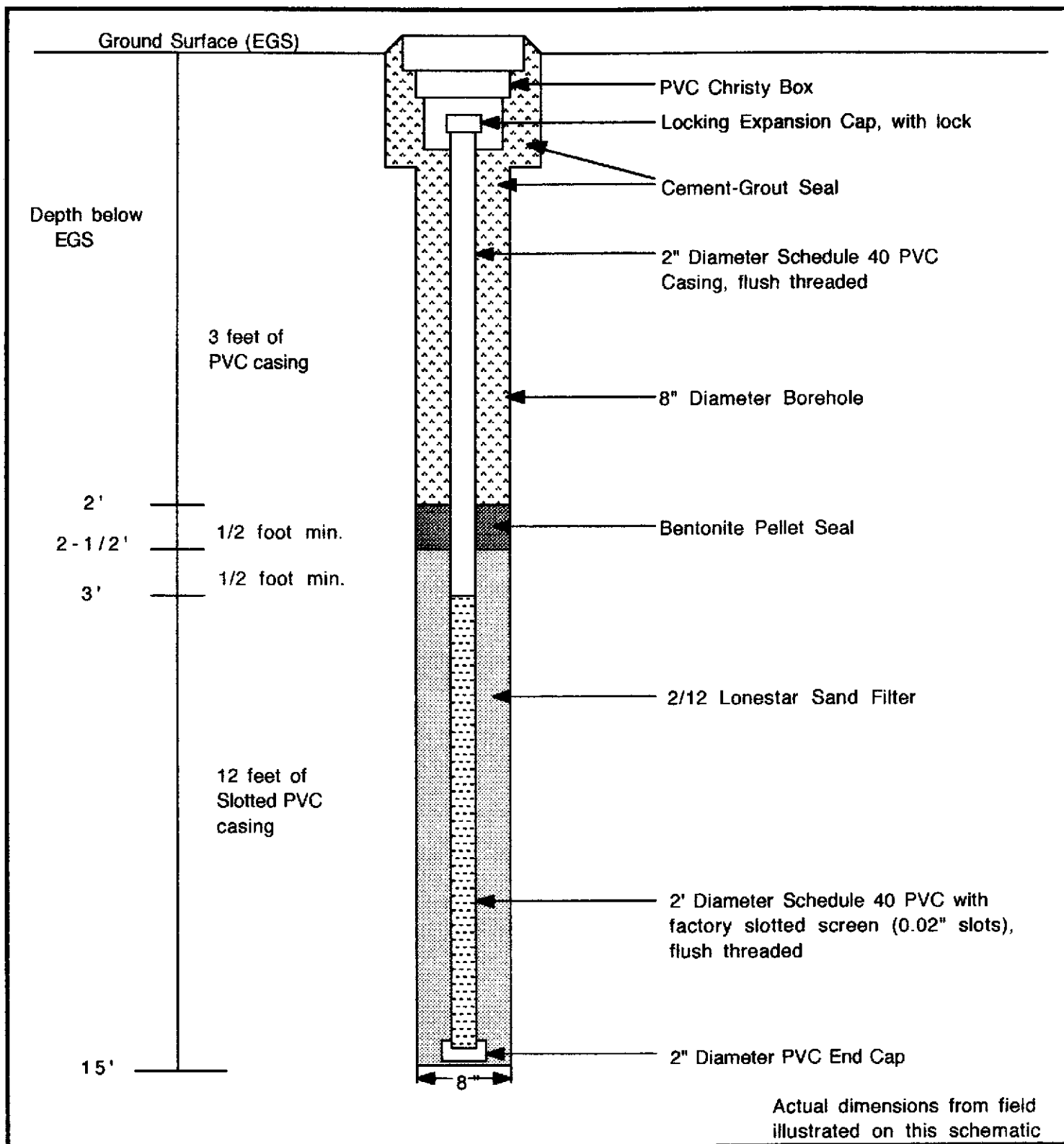


Gregg Drilling and Testing. 8" Hollow Stem Auger.	Blows/6"	HNu (ppm)	SAMPLE #	SAMPLE	Depth (feet)	Equipment: B-53 Drill Rig Logged By: M. Kaltreider PROJECT: Peralta Maintenance Yard Start Date: 2/7/94
Soil color described using Munsell soil color charts <u>Color code</u>  (5GY - 4/1)	3	10±	MW2 6-1/2		0	Asphalt: 4" lift. Lt. brown silty gravel (GM) & clayey gravel (GC), med grained, dense (baserock)  Dark greenish grey clay (CH) with trace sand, slightly plastic, soft, moderate hydrocarbon odor.
					2	
(Gley 3)	2	0	MW2 11-1/2		10	Bay Mud: Black clay (CH), very plastic, soft, saturated.  Same as above, very soft, saturated
					12	
ACC ENVIRONMENTAL CONSULTANTS 1000 ATLANTIC AVENUE, SUITE 110 ALAMEDA, CA 94501					JOB NO. 6045-4	LOG OF BORING MW-2
					DATE: 2/7/94	Peralta Maintenance Yard Oakland, CA

Gregg Drilling and Testing. 8" Hollow Stem Auger.	Blows/6"	HNu (ppm)	SAMPLE #	SAMPLE	Depth (feet)	Equipment: B-53 Drill Rig Logged By: M. Kaltreider PROJECT: Peralta Maintenance Yard Start Date: 2/7/94
Soil color described using Munsell soil color charts <u>Color code</u>  (5GY - 4/1)          (Gley 3)	1	1 +	MW3 6 - 1/2		0 2 4 6 8 10 12 14 16 18 20 22 24 26 28	Asphalt: 4" lift. Lt. brown silty gravel (GM) & clayey gravel (GC), med grained, dense (baserock) <u>Second layer Asphalt/baserock.</u>  Bay Mud: Dark greenish grey clay (CH) with trace sand, slightly plastic, soft, saturated.     Same as above, very soft, with shell fragments, saturated  BOTTOM OF BORING @ 15 FEET

ACC ENVIRONMENTAL CONSULTANTS 1000 ATLANTIC AVENUE, SUITE 110 ALAMEDA, CA 94501	JOB NO. 6045-4	LOG OF BORING MW-3
	DATE: 2/7/94	Peralta Maintenance Yard Oakland, CA





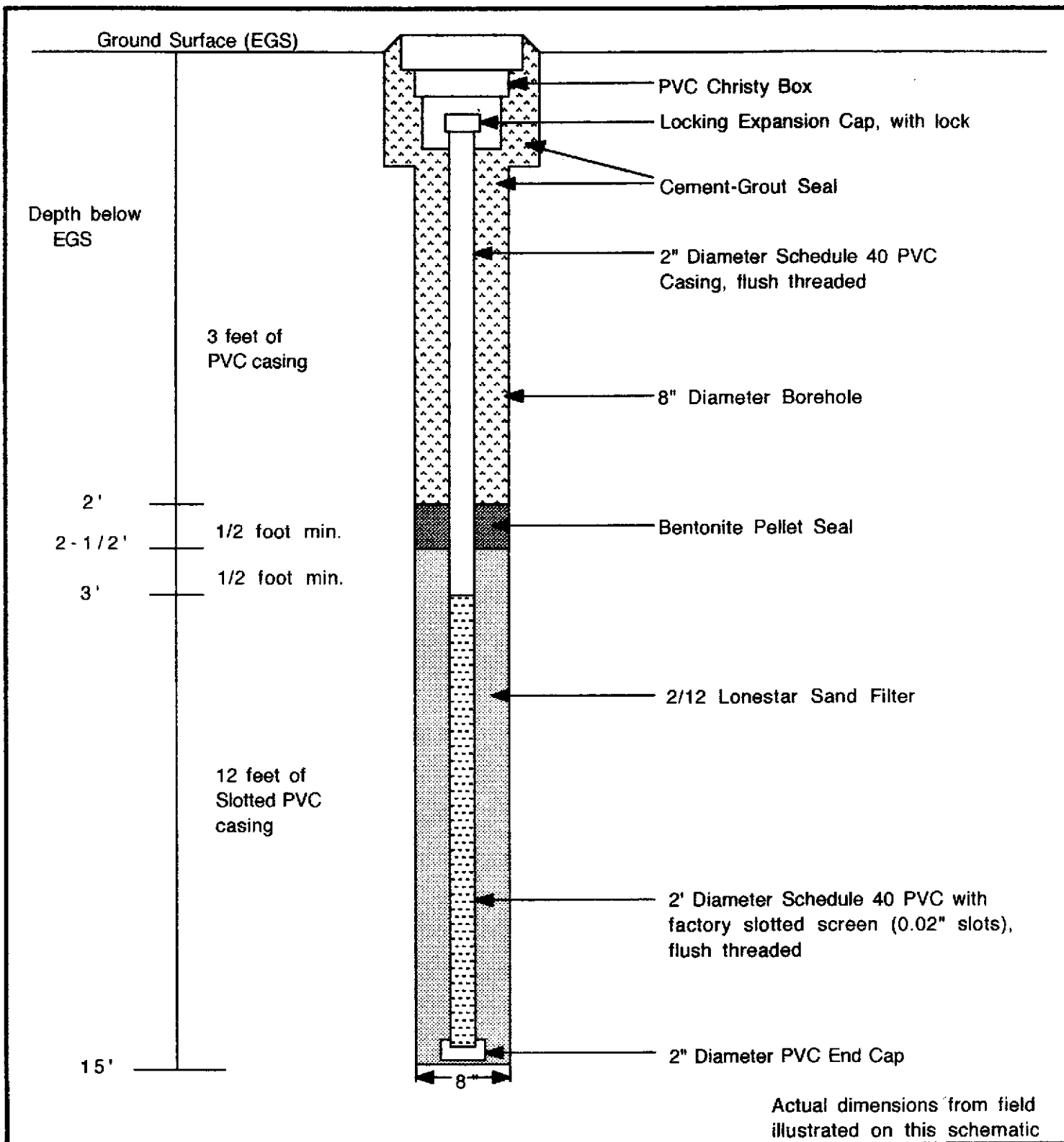
ACC Environmental Consultants  
 1000 Atlantic Avenue, Suite 110  
 Alameda, CA 94501

Job No.: 6045-4

Date: 2/7/94

Schematic of Monitoring  
 Well No.: MW-1

Peralta Maintenance Yard  
 Oakland, CA



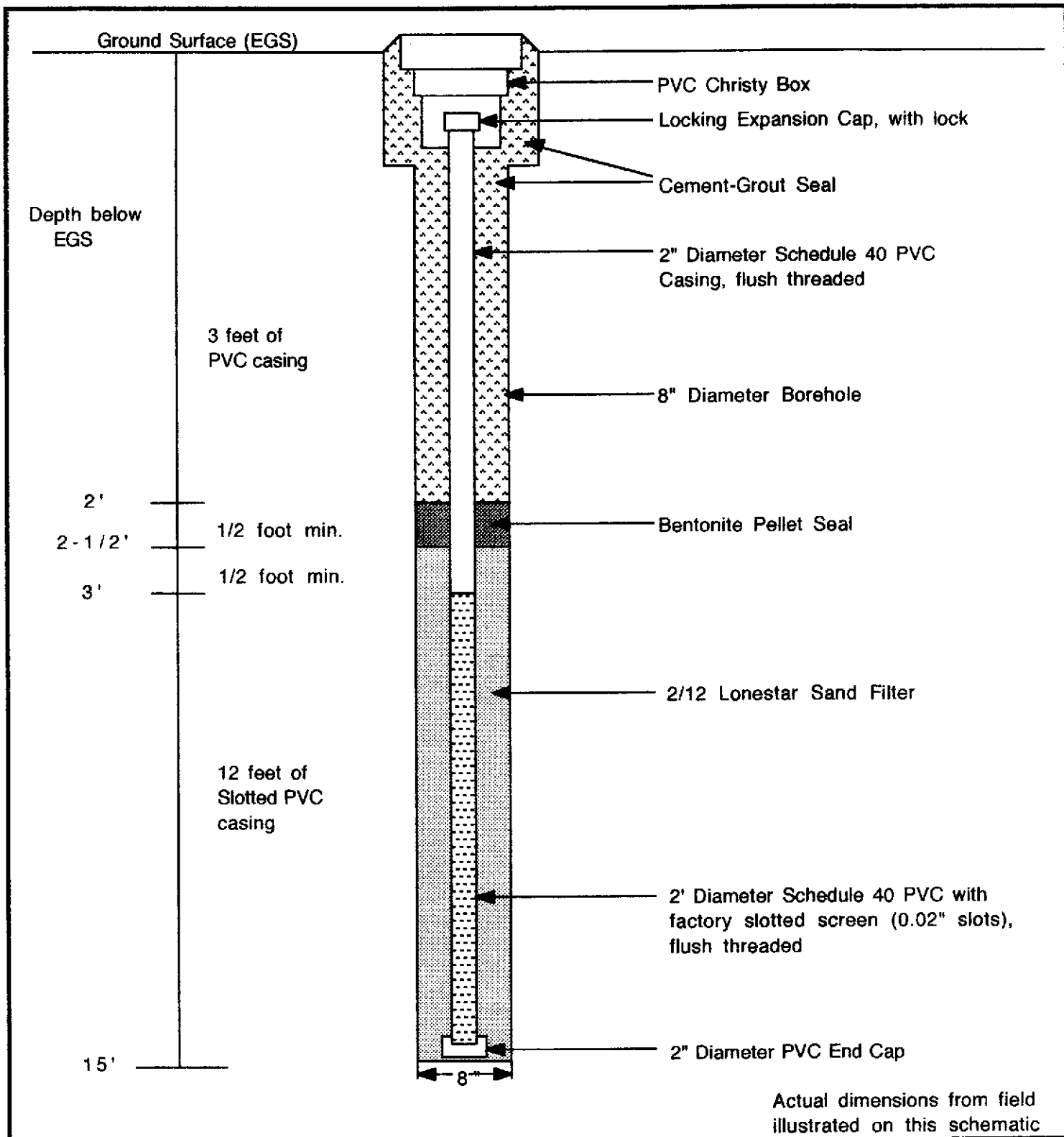
ACC Environmental Consultants  
 1000 Atlantic Avenue, Suite 110  
 Alameda, CA 94501

Job No.: 6045-4

Date: 2/7/94

Schematic of Monitoring  
 Well No.: MW-2

Peralta Maintenance Yard  
 Oakland, CA



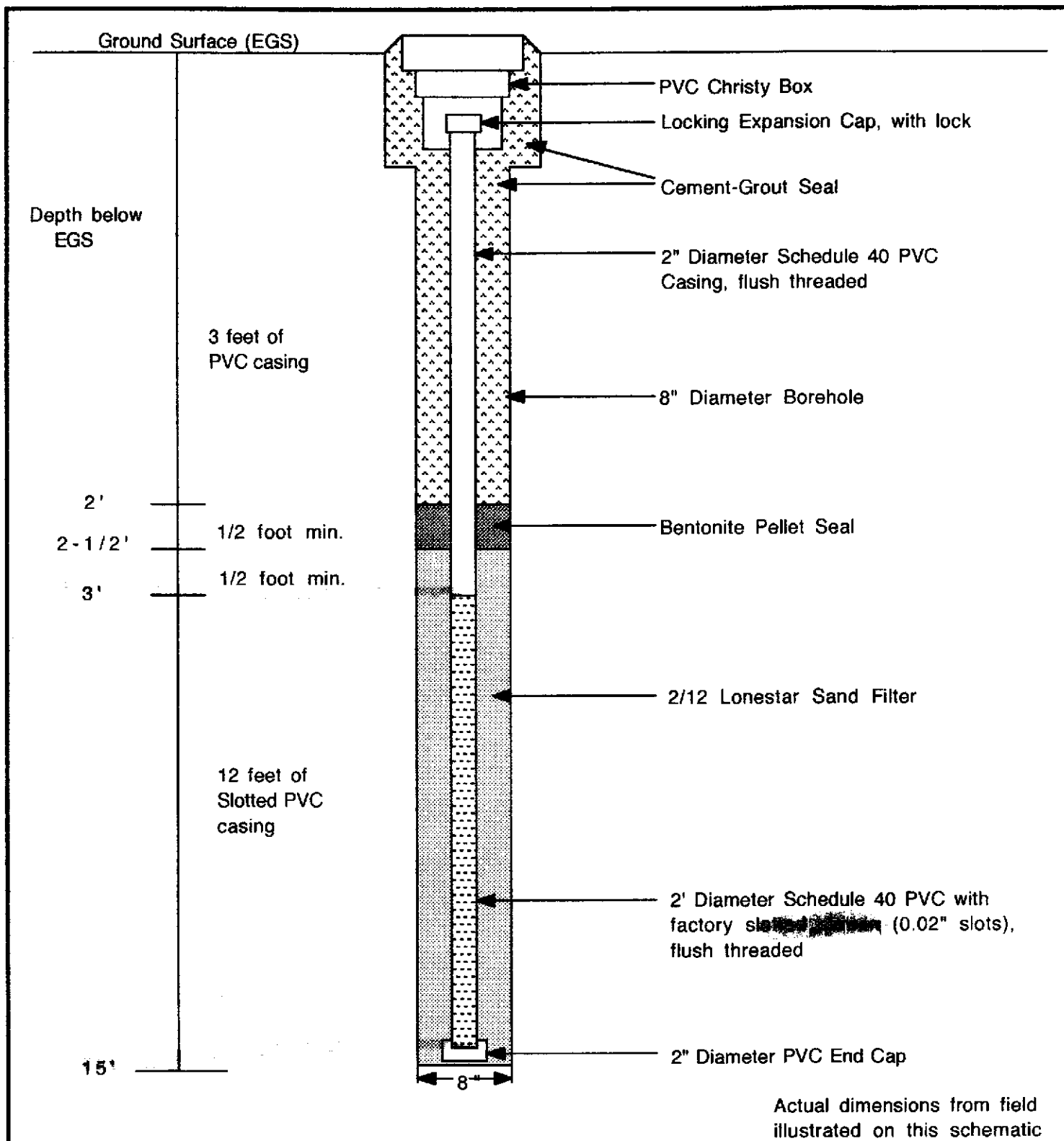
ACC Environmental Consultants  
 1000 Atlantic Avenue, Suite 110  
 Alameda, CA 94501

Job No.: 6045-4

Date: 2/7/94

Schematic of Monitoring  
 Well No.: ~~NW-3~~

Peralta Maintenance Yard  
 Oakland, CA



ACC Environmental Consultants 1000 Atlantic Avenue, Suite 110 Alameda, CA 94501	Job No.: 6045-4	Schematic of Monitoring Well No.: MW-4
	Date: 2/7/94	Peralta Maintenance Yard Oakland, CA

# RON ARCHER

CIVIL ENGINEER, INC.

CONSULTING • PLANNING • DESIGN • SURVEYING

4133 Mohr Ave., Suite E • Pleasanton, CA 94566  
(510) 462-9372

FEBRUARY 16, 1994

JOB NO. 2106

ELEVATIONS OF EXISTING MONITORING WELLS AT THE PERALTA COMMUNITY COLLEGE MAINTENANCE YARD, LOCATED AT 501 5TH AVENUE AT 7TH STREET, CITY OF OAKLAND, ALAMEDA COUNTY, CALIFORNIA.

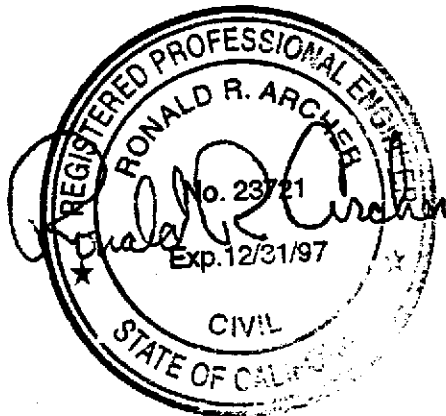
FOR: ACC ENVIRONMENTAL CONSULTANTS, INC.

BENCHMARK:

TOP OF PIN IN STANDARD CONCRETE MONUMENT AT THE INTERSECTION OF 7TH STREET AND 5TH AVENUE. ELEVATION TAKEN AS 14.376 M.S.L.

MONITORING WELL DATA TABLE

WELL DESIGNATION	ELEV	DESCRIPTION
MW1	6.78 7.11	TOP OF PVC CASING TOP OF BOX
MW2	8.70 9.14	TOP OF PVC CASING TOP OF BOX
MW3	8.83 9.17	TOP OF PVC CASING TOP OF BOX
MW4	5.45 6.31	TOP OF PVC CASING TOP OF BOX





# CHROMALAB, INC.

Environmental Laboratory (1094)

5 DAYS TURNAROUND

February 17, 1994

ChromaLab File#: 9402192

ACC ENVIRONMENTAL CONSULTANTS

Atten: Misty Kaltreider

Project: PERALTA MAINTENANCE YARD

Project#: 6045-4

Submitted: February 15, 1994

re: 4 samples for Gasoline and BTEX analysis.

Matrix: WATER

Sampled on: February 14, 1994

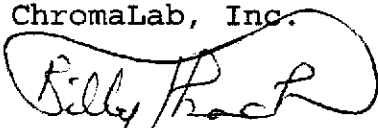
Analyzed on: February 16, 1994


Method: EPA 5030/8015/602

Run#: 2266

Lab #	SAMPLE ID	Gasoline (ug/L)	Benzene (ug/L)	Toluene (ug/L)	Ethyl Benzene (ug/L)	Total Xylenes (ug/L)
43742	MW1	N.D.	N.D.	N.D.	N.D.	N.D.
43743	MW2	200	1.7	N.D.	1.1	1.1
43744	MW3	780	0.60	0.60	1.7	2.7
43745	MW4	N.D.	N.D.	N.D.	N.D.	N.D.
DETECTION LIMITS		50	0.5	0.5	0.5	0.5
BLANK		N.D.	N.D.	N.D.	N.D.	N.D.
BLANK SPIKE RECOVERY(%)		106	113	118	116	115

ChromaLab, Inc.

  
Billy Thach  
Chemist

  
Eric Tam  
Laboratory Director

# CHROMALAB, INC.

Environmental Laboratory (1094)

5 DAYS TURNAROUND

February 23, 1994

ChromaLab File No.: 9402192

ACC ENVIRONMENTAL CONSULTANTS

Attn: Misty Kaltreider

RE: Three water samples for Oil & Grease analysis

Project Name: PERALTA MAINTENANCE YARD

Project Number: 6045-4

Date Sampled: Feb. 14, 1994


Date Submitted: Feb. 15, 1994

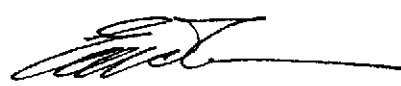
Date Analyzed: Feb. 18, 1994

RESULTS:

Sample I.D.	Oil & Grease (mg/L)
MW 1	N.D.
MW 2	N.D.
MW 3	N.D.
BLANK	N.D.
DETECTION LIMIT	1.0
METHOD OF ANALYSIS	STD METHOD 5520 B & F

ChromaLab, Inc.

  
Carolyn M. House  
Analyst

  
Eric Tam  
Laboratory Director

cc

# CHROMALAB, INC.

Environmental Laboratory (1094)

5 DAYS TURNAROUND

February 23, 1994

ChromaLab File No.: 9402192

ACC ENVIRONMENTAL CONSULTANTS

Attn: Misty Kaltreider

RE: Three water samples for Diesel analysis

Project Name: PERALTA MAINTENANCE YARD

Project Number: 6045-4

Date Sampled: February 14, 1994 Date Submitted: February 15, 1994


Date Extracted: February 23, 1994 Date Analyzed: February 23, 1994


## RESULTS:

<u>Sample I.D.</u>	<u>Diesel (<math>\mu\text{g/L}</math>)</u>
MW1	N.D.
MW2	N.D.
MW3	N.D.

BLANK	N.D.
BLANK SPIKE RECOVERY	95%
DETECTION LIMIT	50
METHOD OF ANALYSIS	3510/8015

ChromaLab, Inc.

  
Alex Tam  
Analytical Chemist

  
Eric Tam  
Laboratory Director

# CHROMALAB, INC.

Environmental Laboratory (1094)

5 DAYS TURNAROUND

February 23, 1994

ChromaLab File#: 9402192

ACC ENVIRONMENTAL CONSULTANTS

Atten: Misty Kaltreider

Project: PERALTA MAINTENANCE YARD  
Submitted: February 15, 1994

Project#: 6045-4

re: 4 samples for Lead analysis.

Matrix: WATER  
Sampled on: February 14, 1994  
Method: EPA 3010/6010

Extracted: February 18, 1994  
Analyzed on: February 22, 1994  
Run#: 2291

LAB #	CLIENT SAMPLE ID	RESULT (mg/L)	REPORTING LIMIT (mg/L)	BLANK RESULT (mg/L)	BLANK SPIKE RESULT (%)
43742	MW1	0.010	0.010	N.D.	95
43743	MW2	N.D.	0.010	N.D.	95
43744	MW3	0.020	0.010	N.D.	95
43745	MW4	0.010	0.010	N.D.	95

ChromaLab, Inc.

*Charles N. Woolley*  
Charles Woolley  
Chemist

*Refaat Mankarious*  
Refaat Mankarious  
Inorganics Supervisor

