GROUNDWATER MONITORING REPORT
Sampling Round Five

PACO PUMPS, INC.
9201 San Leandro Street
Oakland, California

June 28, 1994

Report Prepared for:

PACO PUMPS, INC.
9201 San Leandro Street
Oakland, California 94603-1237

GROUNDWATER MONITORING REPORT
Sampling Round Five
PACO PUMPS, INC.
9201 San Leandro Street, Oakland, California

Jonas and Associates Inc. Job No. PCO-220

Prepared by:

Mr. Mark L. Jonas
Principal Hydrogeologist
Jonas and Associates Inc.
2815 Mitchell Drive
Walnut Creek, California 94598
(510) 933-5360

Technical Review by:

Dr. Vida G. Wright, P.E.
Professional Engineer #C042147

June 28, 1994

GROUNDWATER MONITORING REPORT
Sampling Round Five

PACO PUMPS, INC.
9201 San Leandro Street
Oakland, California

June 28, 1994

Prepared for:

PACO PUMPS, INC.
Oakland, California

Prepared by:

Jonas and Associates Inc.
Walnut Creek, California
(510) 933-5360

GROUNDWATER MONITORING REPORT
Sampling Round Five

PACO PUMPS, INC.
9201 San Leandro Street
Oakland, California

TABLE OF CONTENTS

TABLE OF CONTENTS i
LIST OF TABLES ii
LIST OF FIGURES ii
LIST OF APPENDICES ii

1.0 INTRODUCTION 1
1.1 Site Description 1
1.2 Scope of Report 3

2.0 MONITORING WELLS AND HYDROGEOLOGY 4
2.1 Monitoring Wells 4
2.1.1 Construction Details 4
2.1.2 Monitoring Well Survey 7
2.2 Hydrogeologic Cross Section 7

3.0 ROUND FIVE GROUNDWATER SAMPLING AND ANALYSIS 9
3.1 Groundwater Sampling Procedures 9
3.2 Groundwater Sampling Results 10
3.2.1 Analytical Results 11
3.2.2 Results of Water Level and Free Product Measurements 13

4.0 REFERENCES 15

TABLE OF CONTENTS[con't]

LIST OF TABLES

Page

Table 2-1: Well Construction Details 6
Table 2-2: Monitoring Well Survey Data 7
Table 3-1: May 1994 (Round Five) Groundwater Results 11
Table 3-2: Round Five Groundwater Level & Free Product Measurements 13

LIST OF FIGURES

Page

Figure 1-1: Regional Location 2
Figure 2-1: Monitoring Wells 5
Figure 2-2: Hydrogeologic Cross Section 8
Figure 3-1: May 26, 1994 Groundwater Sampling Results 12
Figure 3-2: May 1994 - Spring Season Potentiometric/Water Table 14

LIST OF APPENDICES

Appendix A: Summary Tables of Laboratory Results
Appendix B: Chain of Custody Records
Appendix C: Laboratory Reports

GROUNDWATER MONITORING REPORT
Sampling Round Five

PACO PUMPS, INC.
9201 San Leandro Street
Oakland, California
June 28, 1994

1.0 INTRODUCTION

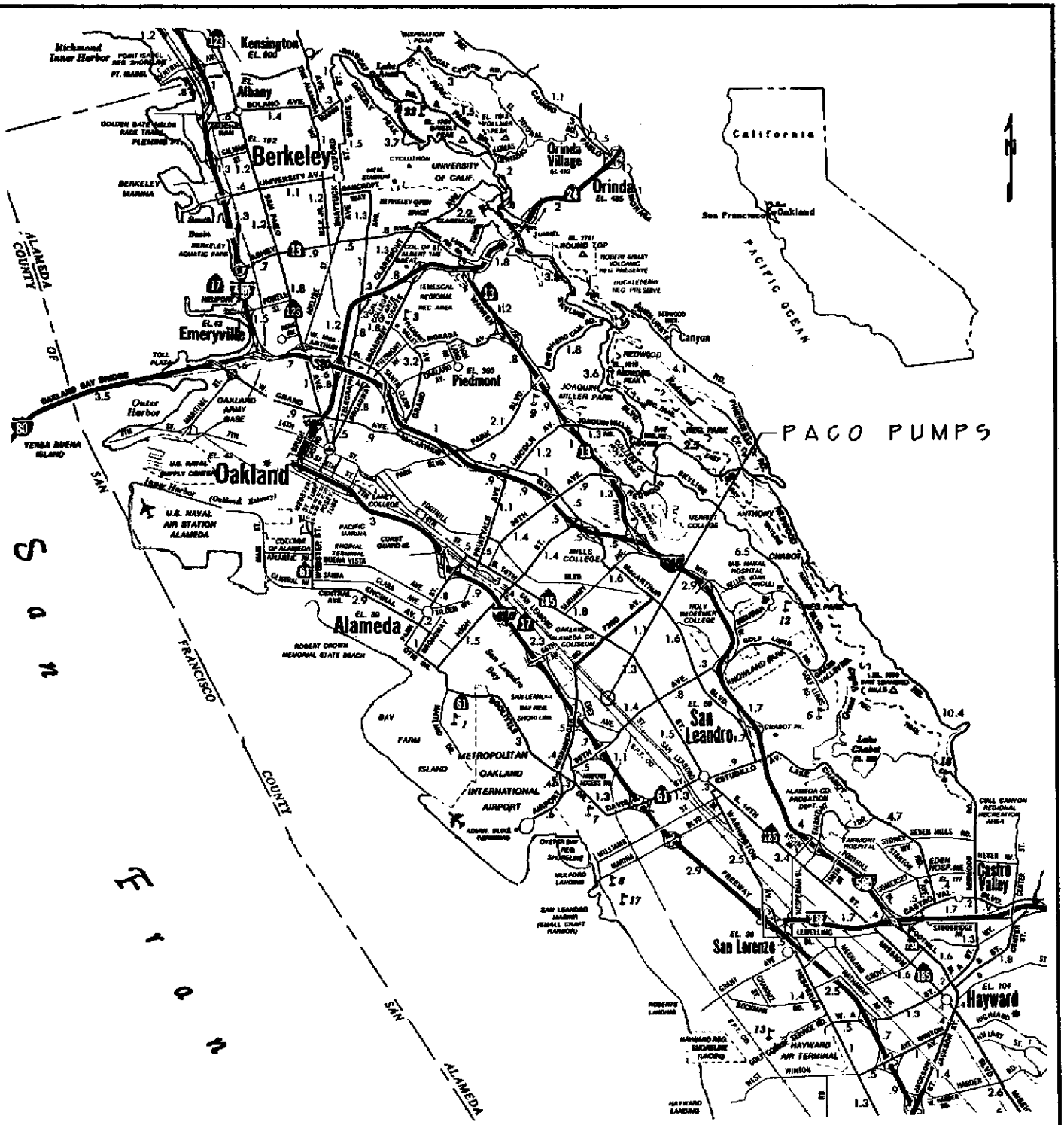
Jonas and Associates Inc. (J&A) has been retained by PACO Pumps Inc. (PACO or PACO Pumps) to perform the groundwater monitoring program at their property located at 9201 San Leandro Street, in Oakland, California 94603-1237. To date, five groundwater sampling rounds have been performed at this facility. The first four sampling rounds were presented in previous documents, identified in Section 4.0 References. This report presents the results of the fifth groundwater sampling round, performed on May 26, 1994.

PACO Pumps' environmental representative for this project is Mr. John Lilla {(415) 925-3100}. The lead agency for this project is the Alameda County Health Care Services Agency, Department of Environmental Health, Hazardous Division (Alameda County Health Services). The address of Alameda County Health Services is 80 Swan Way, Room 200, Oakland, California 94621. The agency representative is Ms. Eva Chu {(510) 271-4530}.

1.1 Site Description

The PACO Pumps facility presented in this report is located at 9201 San Leandro Street, in Oakland, California. Prior to May 1992, PACO Pumps had an active facility at this location. The facility contained a manufacturing, engineering, and storage building, a purchasing and data processing building, a warehouse, a welding shop, employee parking, and outside storage. Apparently, the property also had two underground tanks used for the storage of gasoline. The property is largely secured by a Cyclone fence and gates. PACO Pumps closed this facility and removed its equipment. Currently, this property is leased to a local company which primarily uses it to warehouse glassware. Adjacent to the PACO Pumps property is Saint Vincent DePaul Resale, where a previous investigation by Subsurface Consultants Inc. (1992) identified the presence of various chemicals on their site. Numerous drums were previously stored on the Saint Vincent DePaul's property.

The regional location of the property is presented in Figure 1-1. The facility is located in Township 2 South, Range 3 West, Section 22, Mount Diablo Baseline and Meridian. The land is essentially flat. Prior to moving, PACO Pumps' Environmental Protection Agency identification number for the facility was CAD088772629.



Regional Location

PACO PUMPS
Oakland, California

Prepared by

JONAS AND ASSOCIATES INC.

Date: 10-11-1991	Figure 1-1	Drawing Number PC0217-10/91-1-1
Scale as shown		

Drawn by M.J. 10-11-1991 | Drawing Number PC0217-10/91-1-1 | Figure 1-1

1.2 Scope of Report

This "Groundwater Monitoring Report, Sampling Round Five" is presented in four sections and three appendices. Section 1, Introduction, provides a brief description of the site and the scope of the report. Section 2, Monitoring Wells and Hydrogeology, presents the well construction details for the four monitoring wells, the results of an elevation and location survey, and a local hydrogeologic cross-section. Section 3, Groundwater Sampling and Analysis, presents Round Five groundwater sampling procedures and results, along with water level and free product measurements. Section 4, References, cites various references relevant to this report.

The appendices of the report include groundwater analysis summary tables, chain-of-custody records, and laboratory data sheets.

2.0 MONITORING WELLS AND HYDROGEOLOGY

This section of the report presents a brief history and construction details of the four monitoring wells located at the PACO Pumps' 9201 San Leandro Street facility. In addition, a summary of the location and elevation survey performed by Kier & Wright is provided. A local hydrogeologic cross-section is also presented using lithologic logs from on-site monitoring well boreholes.

2.1 Monitoring Wells

Four monitoring wells are located at the PACO Pumps' facility. These monitoring wells were drilled and installed during a period from November 3 through November 9, 1992. The J&A February 1993 "First Quarterly Status Report, PACO Pumps, 9201 San Leandro Street" presents the installation details and the rational for locating and sampling each of the monitoring wells. All of the monitoring wells are screened at an apparently transmissive sandy clay found underneath the facility. Figure 2-1 presents the locations of the four monitoring wells, the Round Five analyses performed at each well, the previous excavation site, suspected former underground storage tank locations, Saint Vincent DePaul, and other on-site structures.

2.1.1 Construction Details

All of the four monitoring wells are constructed in boreholes drilled to depths of 21 feet. One pilot borehole next to the borehole for monitoring well 9MW3 was drilled down to a depth of 30 feet to collect lithologic samples for analyses. Each of four monitoring wells have a fifteen foot well screen set between 5¼ to 20¼ feet below ground surface (bgs). The wells have a casing and screen diameter of four inches, placed in an 8½ inch borehole.

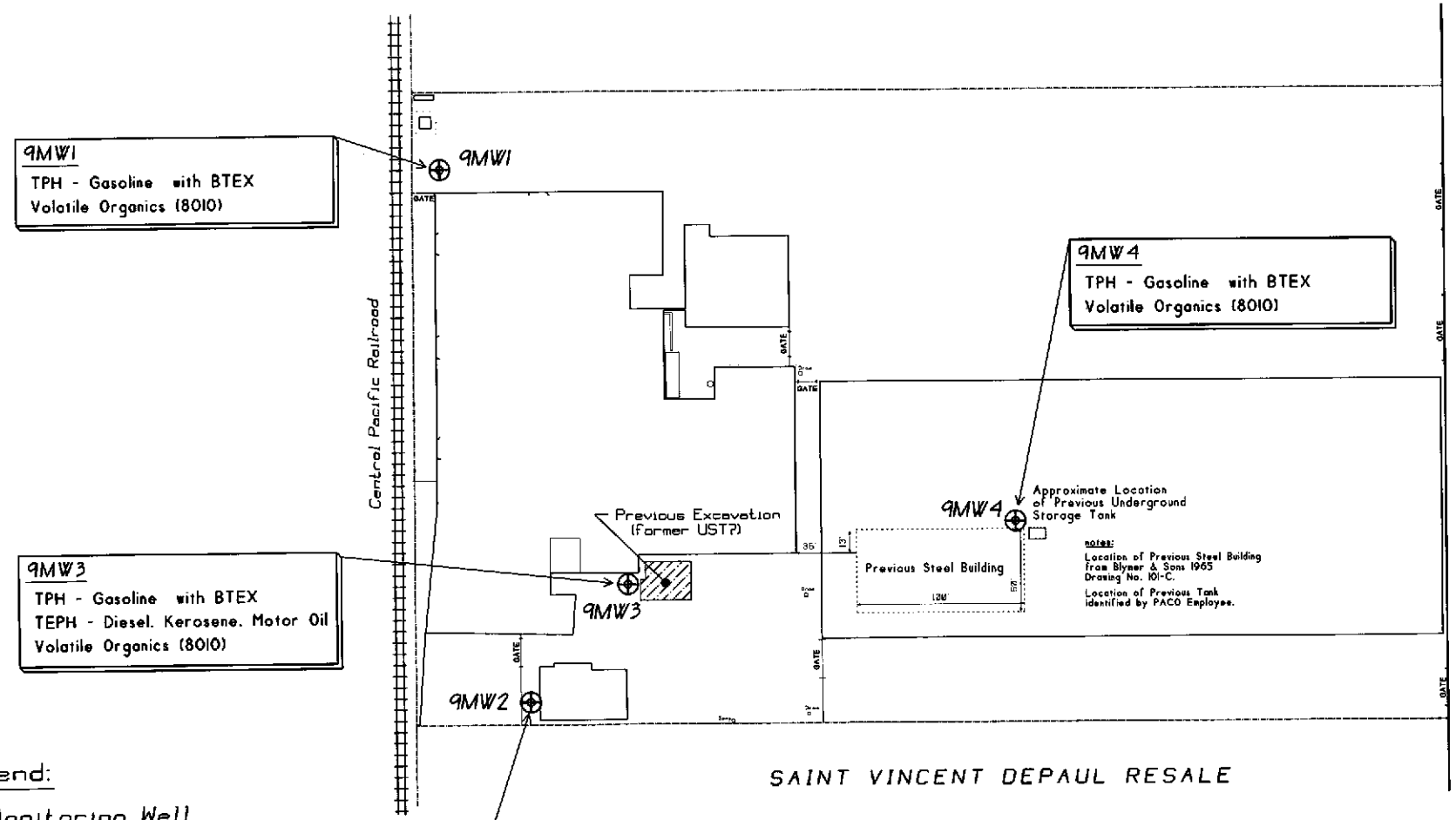
Monitoring well 9MW1 was constructed on November 4, 1992. The well was installed in a western corner of the facility adjacent to the former manufacturing building, and next to a transformer and the Central Pacific Railroad track. The lithology encountered during drilling ranged from an apparent fill, comprised of a silty gravel to a gravelly sand clay, to a sandy clay between 5 and 21 feet bgs. During drilling, first water was encountered at an approximate depth of 16 feet bgs. Measurement of first water is only approximate because of the difficulty in identifying water while drilling with a hollow stem auger. After the screen was installed, the well water level was measured at 9.74 feet bgs on November 15, 1992.

Monitoring well 9MW2 is located adjacent to the former welding shop and next to the Saint Vincent DePaul fenceline. The well was installed on November 3, 1992. The lithology encountered during drilling was gravelly silty sand, probably a fill material, and a sandy clay located from 4 feet to the bottom of the borehole at 21 feet bgs. First water was not clearly identified. On November 16, 1992 water level in monitoring well 9MW2 was measured at 10.45 feet bgs.

Drawn by M.J. 5-20-1994

Drawning Number PCO220-5/94:G5F2-1

Figure 2-1



Legend:

⊕ *Monitoring Well*
With groundwater analyses performed during Round Five (5/26/1994)

TPH = Total Petroleum Hydrocarbons
TEPH = Total Extractable Petroleum Hydrocarbons
BTEX = Benzene, Toluene, Ethyl Benzene, Total Xylenes
UST = Underground Storage Tank

Well	Date Installed	Total Depth	Casing Diameter	Borehole Diameter	Screen Depth	Sand Pack Depth
9MW1	11-4-1992	21'	4"	8.5"	5.25'-20.25'	4.25'-21'
9MW2	11-3-1992	21'	4"	8.5"	5.25'-20.25'	4.25'-21'
9MW3	11-4-1992	21'	4"	8.5"	5.25'-20.25'	4.25'-21'
9MW4	11-9-1992	21'	4"	8.5"	5.25'-20.25'	4.25'-21'

Scale
50 0 50 100 Feet

Monitoring Wells and Round Five Groundwater Analyses

PACO Pumps Inc.
9201 San Leandro Street
Oakland, California

Prepared by
JONAS & ASSOCIATES INC.

Date: 5-20-1994
Locations Approx.

Figure 2-1

Drawing Number
PCO220-5/94:G5F2-1

Monitoring well 9MW3 is located adjacent to a previous excavation where a former underground storage tank may have been present. No tank was found, but remnants of a former tank appears to have been identified during the excavation. The tank was reportedly used to store gasoline. Excavation activities and results were documented in the October 16, 1992 "Site Characterization Report and Work Plan, PACO Pumps, 9201 San Leandro Street, Oakland, California". The well was drilled next to the excavation area and constructed on November 4, 1992. During drilling of the borehole for monitoring well 9MW3, the lithology encountered was 2 feet of an apparent fill composed of gravelly silty sand and a sandy clay between 2 and 21 feet bgs. A pilot boring adjacent to 9MW3 also found sandy clay between 20 and 30 feet bgs. First water was not definitively identified. After the construction of monitoring well 9MW3, the well water level was measured at 10.64 bgs.

Monitoring well 9MW4 was constructed on November 9, 1992. The location of the well is apparently near a former UST, which was said to have been located below the floor of the current warehouse. Prior to drilling the borehole for the monitoring well, 1¼ feet of flooring and sub-base was cored with a diamond-studded core barrel. The flooring and sub-base appears to be 6" of concrete, 6" of rock, and 3" of asphalt. Below the flooring and sub-base was a sandy clay down to a depth of 21 feet. During drilling, first water was identified at an approximate depth of 13.5 feet bgs. On November 16, 1992 well water was measured at 9.41 feet bgs.

The following Table 2-1 present a summary of construction details for monitoring wells 9MW1, 9MW2, 9MW3, and 9MW4:

Table 2-1
Monitoring Well Construction Details
PACO PUMPS - 9201 San Leandro Street
Oakland, California

Well Number	Date Completed	Casing Diameter	~ Depth in feet bgs					Borehole Diameter
			Screen {0.020"}	Sand Pack {#3 Sand}	Bentonite Seal	Portland Cement[1]	Borehole	
9MW1	11/4/1992	4"	5¼ - 20¼	4¼ - 21	3¾ - 4¼	¼ - 3¾	21	8½"
9MW2	11/3/1992	4"	5¼ - 20¼	4¼ - 21	3¾ - 4¼	¼ - 3¾	21	8½"
9MW3	11/4/1992	4"	5¼ - 20¼	4¼ - 21	3¾ - 4¼	¼ - 3¾	21	8½"
9MW4	11/9/1992	4"	5¼ - 20¼	4¼ - 21	3¾ - 4¼	¼ - 3¾	21	8½"

notes: [1] = Portland Cement mixed with ~5% bentonite for plasticity.
bgs = below ground surface

2.1.2 Monitoring Well Survey

During August 1993, monitoring wells 9MW1, 9MW2, 9MW3, and 9MW4 were surveyed by Kier & Wright Civil Engineers & Surveyors, Inc. The locations of the wells were surveyed using the California State Coordinate System which identifies the well locations using Eastings and Northings, in feet. The monitoring wells were surveyed at a point representing the north side mark on top of the PVC casing. The survey was based on the City of Oakland Benchmark 721, located at 92nd Avenue and G Street. The following Table 2-2 presents the monitoring well survey results.

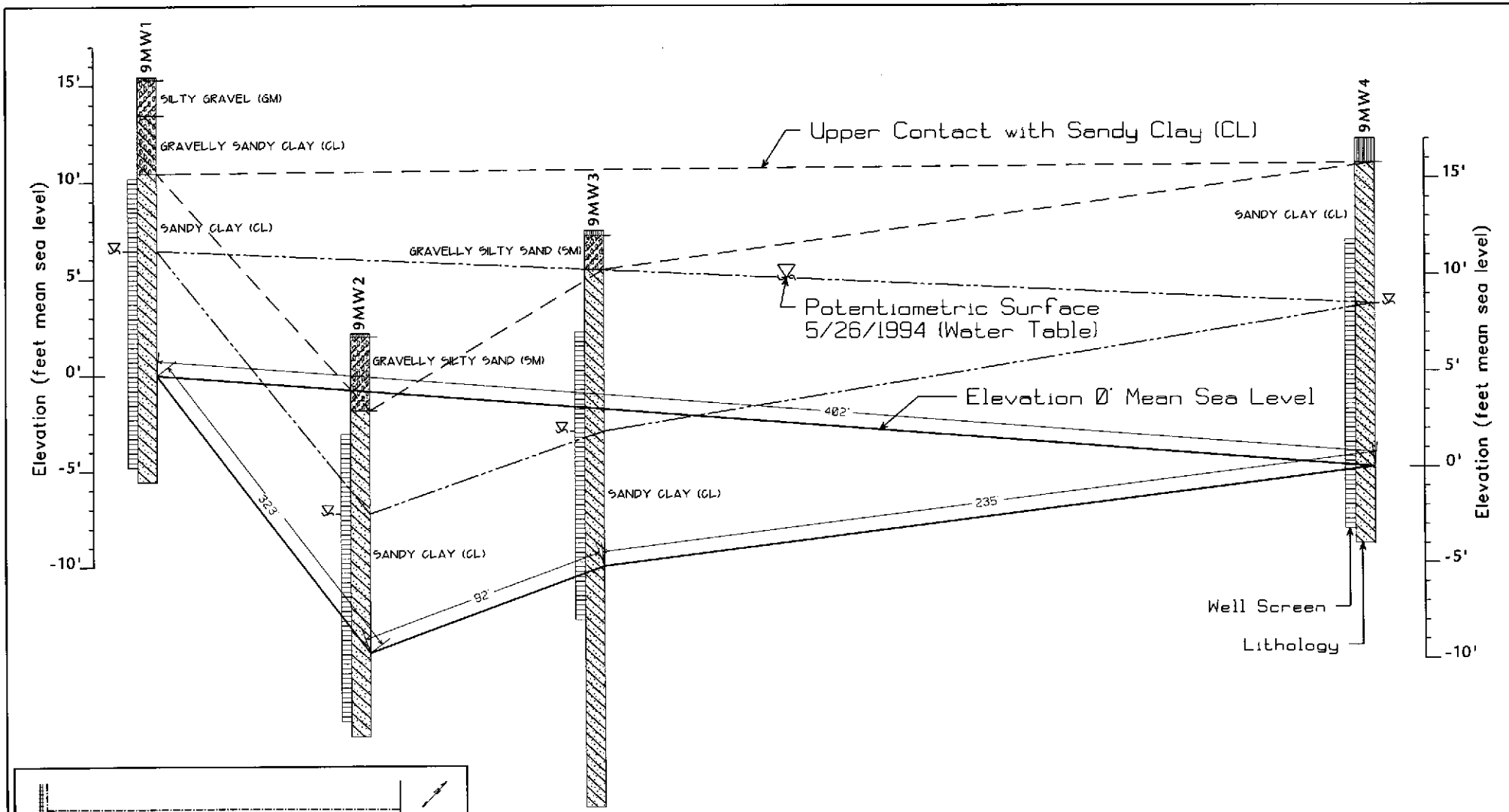
Table 2-2
Monitoring Well Survey Data
PACO PUMPS - 9201 San Leandro Street
Oakland, California

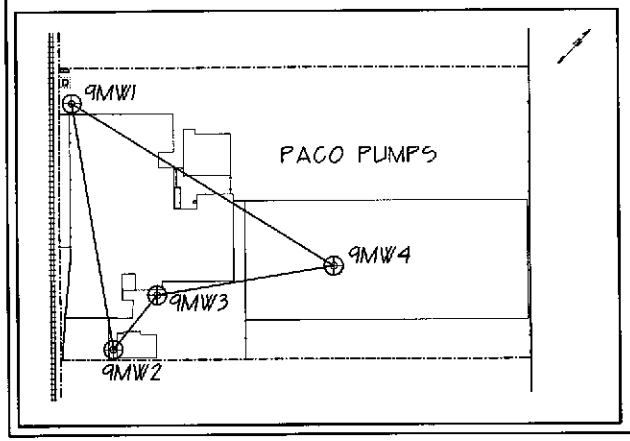
Well	Easting	Northing	M.S.L. Elevation
9MW1	1512710.22	456699.01	Top PVC: 15.51'
9MW2	1512968.11	456507.34	Top PVC: 16.83'
9MW3	1512963.22	456602.8	Top PVC: 17.13'
9MW4	1513102.34	456789.38	Top PVC: 17.08'

Legend - M.S.L.: Mean Sea Level
Top PVC: Top north edge of PVC casing.

2.2 Hydrogeologic Cross Section

Figure 2-2 presents a hydrogeologic cross section using potentiometric and lithologic data associated with the monitoring wells.





5'
0'
Vertical Scale

Hydrogeologic Cross Section

PACO Pumps Inc.
9201 San Leandro Street
Oakland, California

Prepared by
JONAS & ASSOCIATES INC.

Date: 5-31-1994 Locations Approx.	Figure 2-2	Drawing Number PCO220-5/94:G5F2-2

3.0 ROUND FIVE GROUNDWATER SAMPLING AND ANALYSIS

Following is a discussion of the procedures and results associated with Round Five groundwater sampling of monitoring wells 9MW1, 9MW2, 9MW3, and 9MW4. Sampling for this round occurred on May 26, 1994 and represents spring seasonal conditions. Also included are Round Five water level and free product measurements.

A summary of all laboratory results from samples collected from the on-site monitoring wells is presented in Appendix A. The chain-of-custody record for the May 26, 1994 Round Five groundwater sampling event is presented in Appendix B. The laboratory data sheets associated with this sampling event are presented in Appendix C.

3.1 Groundwater Sampling Procedures

The fifth round of groundwater sampling was performed on May 26, 1994 and represents spring groundwater conditions. During the sampling event, the general groundwater sampling procedures presented in the "Site Characterization Report and Work Plan" (J&A 1992) for the facility were followed. After samples were collected and labeled, they were placed into ice chests chilled with blue ice for transport to the Chromalab analytical laboratory. A chain-of-custody record was completed and signed by a representative of Jonas & Associates Inc. and upon delivery, by a representative of Chromalab Inc. The analysis and results of groundwater samples collected during Round Five are presented in Section 3.2. The following section presents relevant information associated with sampling each of the four monitoring wells.

Sampling Monitoring Well 9MW1

Prior to purging the well, the depth to groundwater in monitoring well 9MW1 was measured at 9.06 feet below the top of the casing. The water level was measured with an electronic water level indicator on a stretch resistent measuring tape. After measuring the depth to groundwater, a clear bailer was placed into the well to collect a water sample for visual observations. No petroleum products were identified floating on groundwater in monitoring well 9MW1. After assessing for the presence of floating product, approximately 25 gallons of groundwater was removed from the well. A well volume was calculated at approximately seven gallons. Temperature, pH, and electric conductivity were measured after each five gallons of purging. These parameters appeared to stabilize and were recorded on our groundwater sampling form. Monitoring well 9MW1 appeared to recover relatively rapidly during purging activities. Purged water was collected in dated and labeled 55-gallon drums for temporary storage. After purging the well, groundwater samples were collected with a clean bailer. The Round Five groundwater samples from monitoring well 9MW1 are identified as GW9-MW1-Q5. Four Volatile Organic Analysis (VOA) containers with HCl preservative were collected for analyses for Total Petroleum Hydrocarbons as Gasoline (TPH-G) (EPA Methods 5030/8015); Benzene, Toluene, Ethyl Benzene, and Total Xylenes (BTEX) (EPA Method 602); and Volatile Halogenated Organics (EPA Method 8010).

Sampling Monitoring Well 9MW2

Prior to purging, the water level in monitoring well 9MW2 was measured at 9.58 feet below the top of the casing. A clean, clear bailer was then used to collect a sample from the surface of the groundwater. A slight "oily" sheen was noted. The well was then purged of 25 gallons of well water. During completion of the purging activities the temperature, pH, and electric conductivity appeared to stabilize. During purging activities, the well appeared to recover relatively rapidly. Four VOA containers with HCl preservative were collected for analyses for TPH-G (EPA Methods 5030/8015); BTEX (EPA Method 602); and Volatile Halogenated Organics (EPA Method 8010). Two liters were also collected for Total Extractable Petroleum Hydrocarbons as -Diesel, -Kerosene, and -Motor Oil (TEPH-D,-K,-MO) (EPA Methods 3510/8015). The Round Five groundwater samples from monitoring well 9MW2 are identified as GW9-MW2-Q5.

Sampling Monitoring Well 9MW3

During this sampling event, the water level in monitoring well 9MW3 was measured at 10.04 feet below the top of the casing. A slight "oily" sheen was identified. After approximately 20 gallons were purged from the well, four VOA containers with HCL were collected for analyses of TPH-G (EPA Methods 5030/8015); BTEX (EPA Method 602); and Volatile Halogenated Organics (EPA Method 8010). Two liters were also collected for analysis of TEPH-D,-K,-MO (EPA Methods 3510/8015). Prior to sampling, temperature, pH, and electric conductivity of the purge water appeared to stabilize. During purging activities, recovery of the well was slower than the other monitoring wells. The Round Five groundwater samples for monitoring well 9MW3 are identified as GW9-MW3-Q5.

Sampling Monitoring Well 9MW4

During this sampling event, the groundwater level in monitoring well 9MW4 was measured at 8.57 feet below the top of the casing. No floating products were identified in this well The well was purged of approximately 25 gallons. Prior to sampling this well, temperature, pH, and electric conductivity of the purge water appeared to stabilize. Recovery of the well during purging was relatively rapid. Four VOA containers with HCl were used to collect groundwater for analysis of TPH-G (EPA Methods 5030/8015); BTEX (EPA Method 602); and Volatile Halogenated Organics (EPA Method 8010). The Round Five groundwater samples for monitoring well 9MW4 are identified as GW9-MW4-Q5.

3.2 Groundwater Sampling Results

This section of the report presents the analytical results for the Round Five groundwater sampling event. Water level and free product measurements are also presented.

3.2.1 Analytical Results

As stated previously, summary tables, the Round Five chain-of-custody records and laboratory data sheets are presented in Appendix A, B, and C, respectively. The following Table 3-1 present a summary of the analyses performed and the analytes detected during the Round Five sampling event. Figure 3-1 provides a graphical display of the analytical results.

Table 3-1
May 1994 (Round Five)
Groundwater Sampling Results
PACO PUMPS - 9201 San Leandro Street
Oakland, California

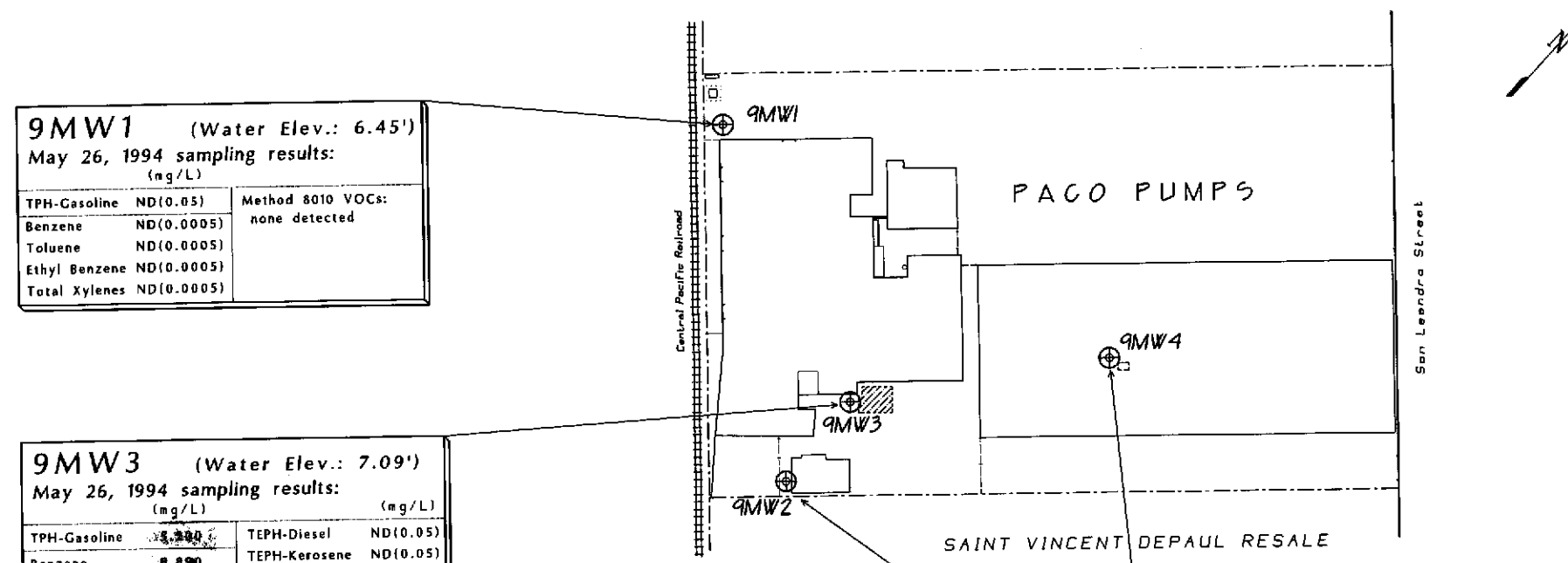
Sample I.D.	Analysis	Detected Analytes	
GW9-MW1-Q5	TEPH as Gasoline (3510/8015)	none detected	
	BTEX (602)	none detected	
	Volatile Halogenated Organics (8010)	none detected	
GW9-MW2-Q5	TPH as Gasoline (5030/8015)	Benzene:	0.0023 mg/L
	BTEX (602)	Toluene:	0.0008 mg/L
	Volatile Halogenated Organics (8010)	1,1-Dichloroethane:	0.0016 mg/L
	TEPH as Diesel, Kerosene, Motor Oil (3510/8015)		
GW9-MW3-Q5	TPH as Gasoline (5030/8015)	TPH Gasoline:	5.200 mg/L
	BTEX (602)	Benzene:	0.890 mg/L
	Volatile Halogenated Organics (8010)	Toluene:	0.180 mg/L
	TEPH as Diesel, Kerosene, Motor Oil (3510/8015)	Ethyl Benzene:	0.045 mg/L
		Total Xylenes:	0.043 mg/L
		1,2-Dichloroethane:	0.250 mg/L
GW9-MW4-Q5	TEPH as Gasoline (3510/8015)	TPH as Gasoline:	0.130 mg/L
	BTEX (602)	Benzene:	0.014 mg/L
	Volatile Halogenated Organics (8010)	Toluene:	0.0032 mg/L
		Ethyl Benzene:	0.0061 mg/L
		Total Xylenes:	0.0047 mg/L
		1,2-Dichloroethane:	0.0025 mg/L

Legend - TPH: Total Petroleum Hydrocarbons
TEPH: Total Extractable Petroleum Hydrocarbons
BTEX: Benzene, Toluene, Ethyl Benzene, Total Xylenes

Drawn by M.J. 6-6-1994

Drawning Number PCO220-6/94:G5F3-1

Figure 3-1



9MW1 (Water Elev.: 6.45')

May 26, 1994 sampling results:

	(mg/L)
TPH-Gasoline	ND(0.05)
Benzene	ND(0.0005)
Toluene	ND(0.0005)
Ethyl Benzene	ND(0.0005)
Total Xylenes	ND(0.0005)

Method 8010 VOCs: none detected

9MW3 (Water Elev.: 7.09')

May 26, 1994 sampling results:

	(mg/L)
TPH-Gasoline	[illegible]
Benzene	[illegible]
Toluene	0.180
Ethyl Benzene	0.045
Total Xylenes	0.043

	(mg/L)
TEPH-Diesel	ND(0.05)
TEPH-Kerosene	ND(0.05)
TEPH-Motor Oil	ND(0.5)

Detected Method 8010 Volatile Organics:
1,2-DCA [illegible]

9MW2 (Water Elev.: 7.25')

May 26, 1994 sampling results:

	(mg/L)
TPH-Gasoline	ND(0.05)
Benzene	0.0023
Toluene	0.0080
Ethyl Benzene	ND(0.0005)
Total Xylenes	ND(0.0005)

	(mg/L)
TEPH-Diesel	ND(0.05)
TEPH-Kerosene	ND(0.05)
TEPH-Motor Oil	ND(0.5)

Detected Method 8010 Volatile Organics:
1,1-DCA [illegible]

9MW4 (Water Elev.: 8.51')

May 26, 1994 sampling results:

	(mg/L)
TPH-Gasoline	0.130
Benzene	0.014
Toluene	0.0032
Ethyl Benzene	0.0061
Total Xylenes	0.0047

Detected Method 8010 Volatile Organics:
1,2-DCA 0.0025

Legend:

⊕ Monitoring Well

TPH = Total Petroleum Hydrocarbons

TEPH = Total Extractable Petroleum Hydrocarbons

ND(0.05) = Not Detected above laboratory detection limit in parentheses.

Well	Date Installed	Total Depth	Casing Diameter	Borehole Diameter	Screen Depth	Sand Pack Depth
9MW1	11-4-1992	21'	4"	8.5"	5.25'-20.25'	4.25'-21'
9MW2	11-3-1992	21'	4"	8.5"	5.25'-20.25'	4.25'-21'
9MW3	11-4-1992	21'	4"	8.5"	5.25'-20.25'	4.25'-21'
9MW4	11-9-1992	21'	4"	8.5"	5.25'-20.25'	4.25'-21'

Scale
75 0 75 150 Feet

May 26, 1994 Groundwater Sampling Results

PACO Pumps Inc.
9201 San Leandro Street
Oakland, California

Prepared by
JONAS & ASSOCIATES INC.

Date: 6-6-1994
Locations Approx.

Figure 3-1

Drawing Number PCO220-6/94:G5F3-1

3.2.2 Results of Water Level and Free Product Measurements

During each sampling round, water level measurements are recorded and a determination is made with respect to the presence or absence of a floating product or sheen.

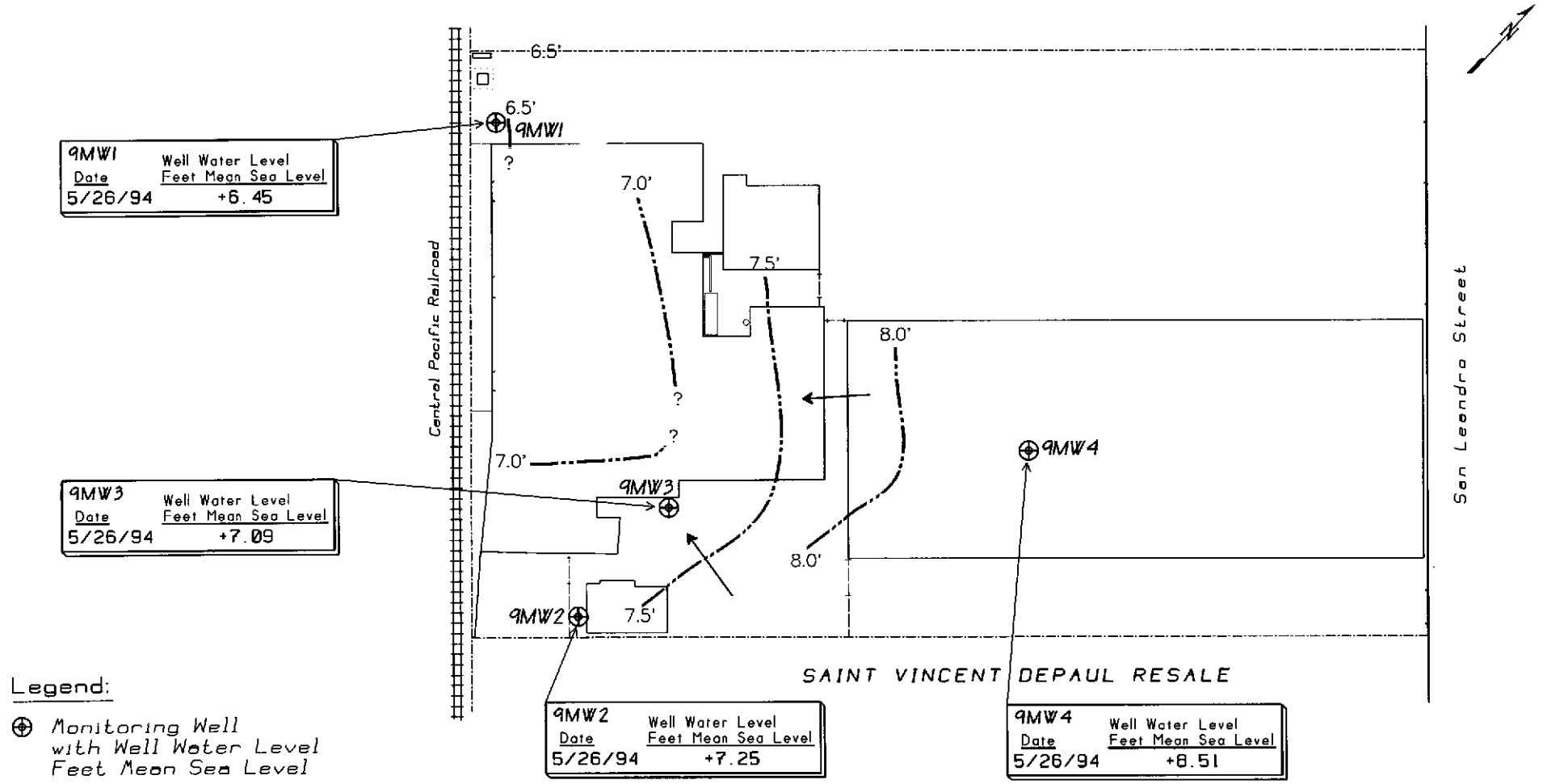
The following Table 3-2 provides a summary of the May 26, 1994 Round Five groundwater level and free product measurements. Water level elevations, with respect to mean sea level, were calculated using the results of the Kier & Wright survey.

Table 3-2
Round Five - May 26, 1994
Groundwater Level and Free Product Measurement
PACO PUMPS - 9201 San Leandro Street
Oakland, California

Date	Well ID	Surveyed Casing Elevation M.S.L.	Water Level from Top of Casing		Free Product
			Depth	Elevation M.S.L.	
5/26/1994	9MW1	15.51'	9.06'	6.45'	no free product
5/26/1994	9MW2	16.83'	9.58'	7.25'	slight "oily" sheen
5/26/1994	9MW3	17.13'	10.04'	7.09'	slight "oily" sheen
5/26/1994	9MW4	17.08'	8.57'	8.51'	no free product

Notes - » Elevation with respect to mean sea level (M.S.L.) and Kier & Wright survey.

Figures 3-2, graphically presents the results of the well water level collected during the Round Five sampling event. As identified in Figure 3-2, based upon groundwater elevation data from monitoring wells 9MW2, 9MW3, and 9MW4, the direction of groundwater flow during May 1994 is in a westerly direction from the Saint Vincent DePaul facility to PACO Pumps' property.



Well	Date Installed	Total Depth	Casing Diameter	Borehole Diameter	Screen Depth	Sand Pack Depth
9MW1	11-4-1992	21'	4"	8.5"	5.25'-20.25'	4.25'-21'
9MW2	11-3-1992	21'	4"	8.5"	5.25'-20.25'	4.25'-21'
9MW3	11-4-1992	21'	4"	8.5"	5.25'-20.25'	4.25'-21'
9MW4	11-9-1992	21'	4"	8.5"	5.25'-20.25'	4.25'-21'

Scale
50 0 50 100 Feet

May 1994 - Spring Season Potentiometric/Water Table

PACO Pumps Inc.
9201 San Leandro Street
Oakland, California

Prepared by
JONAS & ASSOCIATES INC.

Drawn by M.J. 6-6-1994
Drawing Number PCO220-6/94:G5F3-2
Figure 3-2

Date: 6-6-1994
Locations Approx.

Figure 3-2

Drawing Number
PCO220-6/94:G5F3-2

4.0 REFERENCES

California Department of Water Resources, 1982. "Phase I Water Well Survey, Proposed Oakland Inner Harbor Deepening Project, Central District", September 1982.

Jonas & Associates Inc., 1992. "Site Characterization Report and Work Plan, PACO Pumps, 9201 San Leandro Street, Oakland, California", October 16, 1992.

_____, 1993. "First Quarterly Status Report, PACO Pumps, 9201 San Leandro Street, Oakland, California", February 24, 1993.

_____, 1993. "Groundwater Monitoring Report, Sampling Round One, Two, and Three, PACO Pumps, 9201 San Leandro Street, Oakland, California", December 10, 1993.

_____, 1994. "Groundwater Monitoring Report, Sampling Round One Through Four, PACO Pumps, 9201 San Leandro Street, Oakland, California", April 15, 1994.

Subsurface Consultants Inc., 1992. "Soil Contamination Assessment Drum Storage Areas, St. Vincent DePaul Distribution Center, 9234 San Leandro Street, Oakland, California", December 16, 1992.

Appendix A

Summary Tables of Laboratory Results

Table A/GW1

TPH-GASOLINE & BTEX GROUNDWATER RESULTS
PACO PUMPS - 9201 SAN LEANDRO STREET

Sample I.D.	Sampling Date	Depth (feet)	Matrix	Lab	TPH-Gasoline (5030/8015) (mg/L)	Benzene (602) (mg/L)	Toluene (602) (mg/L)	Ethyl Benzene (602) (mg/L)	Total Xylenes (602) (mg/L)
Monitoring Well 9MW1									
GW9-MW1-Q5	5/26/92	5¼'-20¼'$_{screen}$	water	CrLab	ND(0.050)	ND(0.0005)	ND(0.0005)	ND(0.0005)	ND(0.0005)
Monitoring Well 9MW2									
GW9-MW2-Q1	11/16/92	5¼'-20¼'$_{screen}$	water	CrLab	ND(0.050)	ND(0.0005)	ND(0.0005)	ND(0.0005)	ND(0.0015)
GW9-MW2-Q2	3/9/93	5¼'-20¼'$_{screen}$	water	CrLab	ND(0.050)	ND(0.0005)	ND(0.0005)	ND(0.0005)	ND(0.0005)
GW9-MW2-Q3[1]	7/21/93	5¼'-20¼'$_{screen}$	water	CrLab	ND(0.050)	ND(0.0005)	ND(0.0005)	ND(0.0005)	ND(0.0005)
GW9-MW2-Q4	1/29/94	5¼'-20¼'$_{screen}$	water	CrLab	ND(0.050)	ND(0.002)[2]	ND(0.002)[2]	ND(0.002)[2]	ND(0.002)[2]
GW9-MW2-Q5	5/26/94	5¼'-20¼'$_{screen}$	water	CrLab	ND(0.050)	0.0023	0.0008	ND(0.0005)	ND(0.0005)
Monitoring Well 9MW3									
GW9-MW3-Q1	11/16/92	5¼'-20¼'$_{screen}$	water	CrLab	40.000	2.900	6.700	0.550	1.700
GW9-MW3-Q2	3/9/93	5¼'-20¼'$_{screen}$	water	CrLab	12.000	1.000	0.300	0.110	0.170
GW9-MW3-Q3[1]	7/21/93	5¼'-20¼'$_{screen}$	water	CrLab	3.400	0.420	0.063	0.036	0.037
GW9-MW3-Q4	1/29/94	5¼'-20¼'$_{screen}$	water	CrLab	5.600	0.910[2]	0.220[2]	0.047[2]	0.036[2]
GW9-MW3-Q5	5/26/94	5¼'-20¼'$_{screen}$	water	CrLab	5.200	0.890	0.180	0.045	0.043
Monitoring Well 9MW4									
GW9-MW4-Q1	11/16/92	5¼'-20¼'$_{screen}$	water	CrLab	0.560	0.066	0.073	0.016	0.130
GW9-MW41-Q1	11/16/92	5¼'-20¼'$_{screen}$	water	CrLab	0.520	0.063	0.067	0.015	0.140
GW9-MW4-Q2	3/9/93	5¼'-20¼'$_{screen}$	water	CrLab	0.750	0.067	0.012	0.029	0.062
GW9-MW4-Q3	7/21/93	5¼'-20¼'$_{screen}$	water	CrLab	0.250	0.021	0.0042	0.0084	0.011
GW9-MW4-Q4	1/29/94	5¼'-20¼'$_{screen}$	water	CrLab	0.180	0.028	0.0022	0.0062	0.010
GW9-MW4-Q5	5/26/94	5¼'-20¼'$_{screen}$	water	CrLab	0.130	0.014	0.0032	0.0061	0.0047

notes: TPH: Total Petroleum Hydrocarbons
BTEX: Benzene, Toluene, Ethyl Benzene, Total Xylenes
CrLab: Chromalab, Inc. (San Ramon, California)
[1] = probably corrected, apparently switched.
[2] = EPA Method 624
ND(0.1) = Not Detected above the laboratory detection limit in parentheses.

Table A/GW2

TEPH & PCB GROUNDWATER RESULTS
PACO PUMPS - 9201 SAN LEANDRO STREET

Sample I.D.	Sampling Date	Depth (feet)	Matrix	Lab	TEPH-Diesel (3510/8015) (mg/L)	TEPH-Kerosene (3510/8015) (mg/L)	TEPH-Motor Oil (3510/8015) (mg/L)	PCBs (608 mod.) (mg/L)
Monitoring Well 9MW1								
GW9-MW1-Q1	11/15/92	5¼'-20¼'$_{screen}$	water	CrLab	ND(0.050)	ND(0.050)	ND(0.5)	ND(0.05)
GW9-MW1-Q2	3/9/93	5¼'-20¼'$_{screen}$	water	CrLab	0.140	ND(0.050)	ND(0.5)	ND(0.0005)
GW9-MW1-Q3	7/21/93	5¼'-20¼'$_{screen}$	water	CrLab	ND(0.050)	ND(0.050)	ND(0.5)	-
GW9-MW1-Q4	1/29/94	5¼'-20¼'$_{screen}$	water	CrLab	ND(0.050)	ND(0.050)	ND(0.5)	-
Monitoring Well 9MW2								
GW9-MW2-Q1	11/16/92	5¼'-20¼'$_{screen}$	water	CrLab	ND(0.050)	0.590	9.5	-
GW9-MW2-Q2	3/9/93	5¼'-20¼'$_{screen}$	water	CrLab	0.430	0.210	4.3	-
GW9-MW2-Q3[1]	7/21/93	5¼'-20¼'$_{screen}$	water	CrLab	ND(0.050)	ND(0.050)	0.52	-
GW9-MW2-Q4	1/29/94	5¼'-20¼'$_{screen}$	water	CrLab	ND(0.050)	ND(0.050)	0.68	-
GW9-MW2-Q5	5/26/94	5¼'-20¼'$_{screen}$	water	CrLab	ND(0.050)	ND(0.050)	ND(0.5)	-
Monitoring Well 9MW3								
GW9-MW3-Q1	11/16/92	5¼'-20¼'$_{screen}$	water	CrLab	ND(0.050)	ND(0.050)	ND(0.5)	-
GW9-MW3-Q2	3/9/93	5¼'-20¼'$_{screen}$	water	CrLab	0.290	ND(0.050)	ND(0.5)	-
GW9-MW3-Q3[1]	7/21/93	5¼'-20¼'$_{screen}$	water	CrLab	ND(0.050)	ND(0.050)	ND(0.5)	-
GW9-MW3-Q4	1/29/94	5¼'-20¼'$_{screen}$	water	CrLab	ND(0.050)	ND(0.050)	ND(0.5)	-
GW9-MW3-Q5	5/26/94	5¼'-20¼'$_{screen}$	water	CrLab	ND(0.050)	ND(0.050)	ND(0.5)	-
Monitoring Well 9MW4								
GW9-MW4-Q1	11/16/92	5¼'-20¼'$_{screen}$	water	CrLab	ND(0.050)	ND(0.050)	ND(0.5)	-
GW9-MW41-Q1	11/16/92	5¼'-20¼'$_{screen}$	water	CrLab	ND(0.050)	ND(0.050)	ND(0.5)	-
GW9-MW4-Q2	3/9/93	5¼'-20¼'$_{screen}$	water	CrLab	ND(0.050)	ND(0.050)	ND(0.5)	-
GW9-MW4-Q3	7/21/93	5¼'-20¼'$_{screen}$	water	CrLab	ND(0.050)	ND(0.050)	ND(0.5)	-
GW9-MW4-Q4	1/29/94	5¼'-20¼'$_{screen}$	water	CrLab	ND(0.050)	ND(0.050)	ND(0.5)	-

notes: TEPH: Total Extractable Petroleum Hydrocarbons
PCBs: Polychlorinated Biphenyls
CrLab: Chromalab, Inc. (San Ramon, California)
[1] = probably corrected, apparently switched.
ND(0.004) = Not Detected above the laboratory detection limit in parentheses.

Table A/GW3

VOLATILE ORGANIC COMPOUND GROUNDWATER RESULTS
PACO PUMPS - 9201 SAN LEANDRO STREET
{mg/L}

Sample I.D.	Sampling Date	Depth (feet)	Matrix	Lab	Acetone	Benzene	Bromodichloro-methane	Bromoform	Bromo-methane	Carbon Tetrachloride	Chloro-benzene	Chloro-ethane	2-Chloroethyl Vinyl Ether	Chloroform	Chloro-methane
Monitoring Well 9MW1															
GW9-MW1-Q5	5/26/94	5¼'-20¼'$_{screen}$	water	CrLab	-	ND(0.0005)	ND(0.0005)	ND(0.0005)	ND(0.0005)	ND(0.0005)	ND(0.0005)	ND(0.0005)	ND(0.0005)	ND(0.0005)	ND(0.0005)
Monitoring Well 9MW2															
GW9-MW2-Q1	11/15/92	5¼'-20¼'$_{screen}$	water	CrLab	ND(0.002)	ND(0.002)	ND(0.002)	ND(0.002)	ND(0.002)	ND(0.002)	ND(0.002)	ND(0.002)	ND(0.002)	ND(0.002)	ND(0.002)
GW9-MW2-Q2	3/9/93	5¼'-20¼'$_{screen}$	water	CrLab	ND(0.002)	ND(0.002)	ND(0.002)	ND(0.002)	ND(0.002)	ND(0.002)	ND(0.002)	ND(0.002)	ND(0.002)	ND(0.002)	ND(0.002)
GW9-MW2-Q4	1/29/94	5¼'-20¼'$_{screen}$	water	CrLab	ND(0.005)	ND(0.002)	ND(0.002)	ND(0.002)	ND(0.002)	ND(0.002)	ND(0.002)	ND(0.002)	ND(0.002)	ND(0.002)	ND(0.002)
GW9-MW2-Q5	5/26/94	5¼'-20¼'$_{screen}$	water	CrLab	-	0.0023	ND(0.0005)	ND(0.0005)	ND(0.0005)	ND(0.0005)	ND(0.0005)	ND(0.0005)	ND(0.0005)	ND(0.0005)	ND(0.0005)
Monitoring Well 9MW3															
GW9-MW3-Q3[1]	7/21/93	5¼'-20¼'$_{screen}$	water	CrLab	ND(0.002)	0.450	ND(0.002)	ND(0.002)	ND(0.002)	ND(0.002)	ND(0.002)	ND(0.002)	ND(0.002)	ND(0.002)	ND(0.002)
GW9-MW3-Q4	1/29/94	5¼'-20¼'$_{screen}$	water	CrLab	ND(0.002)	0.910	ND(0.002)	ND(0.002)	ND(0.002)	ND(0.002)	ND(0.002)	ND(0.002)	ND(0.002)	ND(0.002)	ND(0.002)
GW9-MW3-Q5	5/26/94	5¼'-20¼'$_{screen}$	water	CrLab	-	0.890	ND(0.0005)	ND(0.0005)	ND(0.0005)	ND(0.0005)	ND(0.0005)	ND(0.0005)	ND(0.0005)	ND(0.0005)	ND(0.0005)
Monitoring Well 9MW4															
GW9-MW4-Q5	5/26/94	5¼'-20¼'$_{screen}$	water	CrLab	-	0.014	ND(0.0005)	ND(0.0005)	ND(0.0005)	ND(0.0005)	ND(0.0005)	ND(0.0005)	ND(0.0005)	ND(0.0005)	ND(0.0005)

Sample I.D.	Sampling Date	Depth (feet)	Matrix	Lab	Dibromo-chloromethane	1,2-Di-bromoethane	1,2-Dichloro-benzene	1,3-Dichloro-benzene	1,4-Dichloro-benzene	1,1-Dichloro-ethane	1,2-Dichloro-ethane	1,1-Dichloro-ethene	cis 1,2-Dichloroethene	trans 1,2-Dichloroethene	1,2-Dichloro-propane
Monitoring Well 9MW1															
GW9-MW1-Q5	5/26/94	5¼'-20¼'$_{screen}$	water	CrLab	ND(0.0005)	ND(0.0005)	ND(0.0005)	ND(0.0005)	ND(0.0005)	ND(0.0005)	ND(0.0005)	ND(0.0005)	ND(0.0005)	ND(0.0005)	ND(0.0005)
Monitoring Well 9MW2															
GW9-MW2-Q1	11/15/92	5¼'-20¼'$_{screen}$	water	CrLab	ND(0.002)	-	ND(0.002)	ND(0.002)	ND(0.002)	0.0026	ND(0.002)	ND(0.002)	ND(0.002)	ND(0.002)	ND(0.002)
GW9-MW2-Q2	3/9/93	5¼'-20¼'$_{screen}$	water	CrLab	ND(0.002)	-	ND(0.002)	ND(0.002)	ND(0.002)	ND(0.002)	ND(0.002)	ND(0.002)	ND(0.002)	ND(0.002)	ND(0.002)
GW9-MW2-Q4	1/29/94	5¼'-20¼'$_{screen}$	water	CrLab	ND(0.002)	-	-	-	-	ND(0.002)	ND(0.002)	ND(0.002)	ND(0.002)	ND(0.002)	ND(0.002)
GW9-MW2-Q5	5/26/94	5¼'-20¼'$_{screen}$	water	CrLab	ND(0.0005)	ND(0.0005)	ND(0.0005)	ND(0.0005)	ND(0.0005)	0.0016	ND(0.0005)	ND(0.0005)	ND(0.0005)	ND(0.0005)	ND(0.0005)
Monitoring Well 9MW3															
GW9-MW3-Q3[1]	7/21/93	5¼'-20¼'$_{screen}$	water	CrLab	ND(0.002)	-	ND(0.002)	ND(0.002)	ND(0.002)	ND(0.002)	0.330	ND(0.002)	ND(0.002)	ND(0.002)	ND(0.002)
GW9-MW3-Q4	1/29/94	5¼'-20¼'$_{screen}$	water	CrLab	ND(0.002)	-	-	-	-	ND(0.002)	0.180	ND(0.002)	ND(0.002)	ND(0.002)	ND(0.002)
GW9-MW3-Q5	5/26/94	5¼'-20¼'$_{screen}$	water	CrLab	ND(0.0005)	ND(0.0005)	ND(0.0005)	ND(0.0005)	ND(0.0005)	ND(0.0005)	0.250	ND(0.0005)	ND(0.0005)	ND(0.0005)	ND(0.0005)
Monitoring Well 9MW4															
GW9-MW4-Q5	5/26/94	5¼'-20¼'$_{screen}$	water	CrLab	ND(0.0005)	ND(0.0005)	ND(0.0005)	ND(0.0005)	ND(0.0005)	ND(0.0005)	0.0025	ND(0.0005)	ND(0.0005)	ND(0.0005)	ND(0.0005)

con't on following page

Table A/GW3con't

VOLATILE ORGANIC COMPOUND GROUNDWATER RESULTS
PACO PUMPS - 9201 SAN LEANDRO STREET
{mg/L}

Sample I.D.	Sampling Date	Depth (feet)	Matrix	Lab	cis-1,3-Di-chloropropene	trans-1,3-Di-chloropropene	Ethyl-Benzene	Freon 113	2-Hexanone	Methyl Ethyl Ketone	Methyl Isobutyl Ketone	Methylene Chloride	Styrene	1,1,2,2-Tetra-chloroethane	Tetra-chloroethene
Monitoring Well 9MW1															
GW9-MW1-Q5	5/26/94	5¼'-20¼'$_{screen}$	water	CrLab	ND(0.0005)	ND(0.0005)	ND(0.0005)	ND(0.0005)	-	-	-	ND(0.005)	-	ND(0.0005)	ND(0.0005)
Monitoring Well 9MW2															
GW9-MW2-Q1	11/15/92	5¼'-20¼'$_{screen}$	water	CrLab	ND(0.002)	ND(0.002)	ND(0.002)	-	-	ND(0.002)	ND(0.002)	ND(0.002)	-	ND(0.002)	ND(0.002)
GW9-MW2-Q2	3/9/93	5¼'-20¼'$_{screen}$	water	CrLab	ND(0.002)	ND(0.002)	ND(0.002)	-	-	ND(0.002)	ND(0.002)	ND(0.002)	-	ND(0.002)	ND(0.002)
GW9-MW2-Q4	1/29/94	5¼'-20¼'$_{screen}$	water	CrLab	ND(0.002)	ND(0.002)	ND(0.002)	-	ND(0.002)	ND(0.002)	ND(0.002)	ND(0.005)	ND(0.002)	ND(0.002)	ND(0.002)
GW9-MW2-Q5	5/26/94	5¼'-20¼'$_{screen}$	water	CrLab	ND(0.0005)	ND(0.0005)	ND(0.0005)	ND(0.0005)	-	-	-	ND(0.005)	-	ND(0.0005)	ND(0.0005)
Monitoring Well 9MW3															
GW9-MW3-Q3[1]	7/21/93	5¼'-20¼'$_{screen}$	water	CrLab	ND(0.002)	ND(0.002)	0.049	-	-	ND(0.002)	ND(0.002)	ND(0.002)	-	ND(0.002)	ND(0.002)
GW9-MW3-Q4	1/29/94	5¼'-20¼'$_{screen}$	water	CrLab	ND(0.002)	ND(0.002)	0.047	-	ND(0.002)	ND(0.002)	ND(0.002)	ND(0.005)	ND(0.002)	ND(0.002)	ND(0.002)
GW9-MW3-Q5	5/26/94	5¼'-20¼'$_{screen}$	water	CrLab	ND(0.0005)	ND(0.0005)	0.0045	ND(0.0005)	-	-	-	ND(0.005)	-	ND(0.0005)	ND(0.0005)
Monitoring Well 9MW4															
GW9-MW4-Q5	5/26/94	5¼'-20¼'$_{screen}$	water	CrLab	ND(0.0005)	ND(0.0005)	0.0061	ND(0.0005)	-	-	-	ND(0.005)	-	ND(0.0005)	ND(0.0005)

Sample I.D.	Sampling Date	Depth (feet)	Matrix	Lab	Toluene	1,1,1-Tri-chloroethane	1,1,2-Tri-chloroethane	Tri-chloroethene	Trichlorofluoro-methane	Vinyl Acetate	Vinyl Chloride	Total Xylenes
Monitoring Well 9MW1												
GW9-MW1-Q5	5/26/94	5¼'-20¼'$_{screen}$	water	CrLab	ND(0.0005)	ND(0.0005)	ND(0.0005)	ND(0.0005)	ND(0.0005)	-	ND(0.0005)	ND(0.0005)
Monitoring Well 9MW2												
GW9-MW2-Q1	11/15/92	5¼'-20¼'$_{screen}$	water	CrLab	ND(0.002)	ND(0.002)	ND(0.002)	ND(0.002)	ND(0.002)	-	ND(0.002)	ND(0.002)
GW9-MW2-Q2	3/9/93	5¼'-20¼'$_{screen}$	water	CrLab	ND(0.002)	ND(0.002)	ND(0.002)	ND(0.002)	ND(0.002)	-	ND(0.002)	ND(0.002)
GW9-MW2-Q4	1/29/94	5¼'-20¼'$_{screen}$	water	CrLab	ND(0.002)	ND(0.002)	ND(0.002)	ND(0.002)	ND(0.002)	ND(0.002)	ND(0.002)	ND(0.002)
GW9-MW2-Q5	5/26/94	5¼'-20¼'$_{screen}$	water	CrLab	0.0008	ND(0.0005)	ND(0.0005)	ND(0.0005)	ND(0.0005)	-	ND(0.0005)	ND(0.0005)
Monitoring Well 9MW3												
GW9-MW3-Q3[1]	7/21/93	5¼'-20¼'$_{screen}$	water	CrLab	0.050	ND(0.002)	ND(0.002)	0.0024	ND(0.002)	-	ND(0.002)	0.047
GW9-MW3-Q4	1/29/94	5¼'-20¼'$_{screen}$	water	CrLab	0.220	ND(0.002)	ND(0.002)	ND(0.002)	ND(0.002)	ND(0.002)	ND(0.002)	0.036
GW9-MW3-Q5	5/26/94	5¼'-20¼'$_{screen}$	water	CrLab	0.180	ND(0.0005)	ND(0.0005)	ND(0.0005)	ND(0.0005)	-	ND(0.0005)	0.043
Monitoring Well 9MW4												
GW9-MW4-Q5	5/26/94	5¼'-20¼'$_{screen}$	water	CrLab	0.0032	ND(0.0005)	ND(0.0005)	ND(0.0005)	ND(0.0005)	-	ND(0.0005)	0.0047

notes: CrLab: Chromalab Inc.
[1] = probably corrected, apparently not GW9-MW2-Q3.
ND(0.002) = Not Detected above the laboratory detection limit in parentheses.

Table A/GW4

METALS GROUNDWATER RESULTS
PACO PUMPS - 9201 SAN LEANDRO STREET
{mg/L}

Sample I.D.	Sampling Date	Depth (feet)	Matrix	Lab	Ag Silver	As Arsenic	Ba Barium	Be Beryllium	Cd Cadmium	Co Cobalt	Cr Chromium	Cu Copper	Hg Mercury	Mo Molybdenum	Ni Nickel
Monitoring Well 9MW1															
GW9-MW1-Q1	11/15/92	5¼'-20¼'$_{screen}$	water	CrLab	ND(0.005)	ND(0.005)	0.18	0.002	ND(0.001)	ND(0.01)	ND(0.01)	0.007	ND(0.001)	ND(0.005)	ND(0.020)
GW9-MW1-Q2	3/9/93	5¼'-20¼'$_{screen}$	water	CrLab	ND(0.005)	ND(0.005)	0.19	ND(0.001)	ND(0.001)	ND(0.01)	ND(0.01)	ND(0.005)	0.003	ND(0.005)	ND(0.020)
GW9-MW1-Q3	7/21/93	5¼'-20¼'$_{screen}$	water	CrLab	0.011	ND(0.005)	0.27	ND(0.001)	ND(0.001)	ND(0.01)	ND(0.01)	0.007	ND(0.001)	0.010	ND(0.020)
GW9-MW1-Q4	1/29/94	5¼'-20¼'$_{screen}$	water	CrLab	ND(0.005)	ND(0.005)	0.12	ND(0.001)	ND(0.001)	ND(0.01)	ND(0.01)	ND(0.005)	ND(0.001)	ND(0.005)	ND(0.02)

Sample I.D.	Sampling Date	Depth (feet)	Matrix	Lab	Pb Lead	Sb Antimony	Se Selenium	Tl Thallium	V Vanadium	Zn Zinc
Monitoring Well 9MW1										
GW9-MW1-Q1	11/15/92	5¼'-20¼'$_{screen}$	water	CrLab	ND(0.010)	ND(0.020)	0.021	ND(0.01)	ND(0.01)	ND(0.005)
GW9-MW1-Q2	3/9/93	5¼'-20¼'$_{screen}$	water	CrLab	ND(0.010)	0.03	0.04	ND(0.01)	ND(0.01)	0.03
GW9-MW1-Q3	7/21/93	5¼'-20¼'$_{screen}$	water	CrLab	ND(0.010)	ND(0.020)	ND(0.01)	ND(0.01)	ND(0.01)	0.015
GW9-MW1-Q4	1/29/94	5¼'-20¼'$_{screen}$	water	CrLab	ND(0.01)	ND(0.02)	0.018	0.12	0.010	ND(0.005)
Monitoring Well 9MW2										
GW9-MW2-Q2	3/9/93	5¼'-20¼'$_{screen}$	water	CrLab			0.08			
GW9-MW2-Q3	7/21/93	5¼'-20¼'$_{screen}$	water	CrLab			ND(0.01)			
GW9-MW2-Q4	1/29/94	5¼'-20¼'$_{screen}$	water	CrLab			0.026			
Monitoring Well 9MW3										
GW9-MW3-Q3	7/21/93	5¼'-20¼'$_{screen}$	water	CrLab			ND(0.01)			
GW9-MW3-Q4	1/29/94	5¼'-20¼'$_{screen}$	water	CrLab			0.025			

notes: CrLab: Chromalab Inc.
ND(0.25) = Not Detected above the laboratory detection limit in parentheses.

Appendix B

Chain-of-Custody Records

CHROMALAB, INC.

2239 SUBM #: 9405353
CLIENT: JONAS
DUE: 06/03/94
REF: 16612

Order No. 16612
2353/52481 – 52484

Chain of Custody

ATE _____ PAGE 1 OF 1

PROJ. MGR. M.L. Jonas/V.G. Wright,PE
COMPANY Jonas & Associates Inc.
ADDRESS 2815 Mitchell Drive, Suite 209
Walnut Creek, California 94598

SAMPLERS (SIGNATURE) (PHONE NO.)

Jonas & Associates Inc. (510) 933-5360

SAMPLE ID.	DATE	TIME	MATRIX	LAB ID.	TPH - Gasoline (EPA 5030, 8015)	TPH - Gasoline (5030, 8015) w/BTeX (EPA 602,8020)	TPH - Diesel, K., MO (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 E&F)	PESTICIDES/PCB (EPA 608, 8080)	PHENOLS (EPA 604, 8040)	TOTAL RECOVERABLE HYDROCARBONS (EPA 418.1)		METALS: Cd, Cr, Pb, Zn, Ni	CAM METALS (17)	PRIORITY POLLUTANT METALS (13)	EXTRACTION (TCLP, STLC)					NUMBER OF CONTAINERS
GW9-MW1-Q5	5/26/94	0900	GW			X			X																4
GW9-MW2-Q5	5/26/94	1450	GW			X	X		X																6
GW9-MW3-Q5	5/26/94	1405	GW			X	X		X																6
GW9-MW4-Q5	5/26/94	1045	GW			X			X																4
						2 VOA w/HCL	2 Liter		2 VOA w/HCL																

PROJECT INFORMATION

PROJECT NAME: 9201 PACO Pumps
PROJECT NUMBER: PCO-220
SHIPPING ID. NO.
VIA: hand-to-hand

SAMPLE RECEIPT

TOTAL NO. OF CONTAINERS	
CHAIN OF CUSTODY SEALS	
REC'D GOOD CONDITION/COLD	
CONFORMS TO RECORD	
LAB NO.	

SPECIAL INSTRUCTIONS/COMMENTS:
5 day TAT

RELINQUISHED BY 1.	RELINQUISHED BY 2.	RELINQUISHED BY 3.
(SIGNATURE) Mark Jonas (TIME) 1600	(SIGNATURE) (TIME)	(SIGNATURE) (TIME)
(PRINTED NAME) Mark L. Jonas (DATE) 5/26/94	(PRINTED NAME) (DATE)	(PRINTED NAME) (DATE)
(COMPANY) Jonas & Assoc. Inc.	(COMPANY)	(COMPANY)
RECEIVED BY 1.	**RECEIVED BY 2.**	**RECEIVED BY (LABORATORY) 3.**
(SIGNATURE) (TIME)	(SIGNATURE) (TIME)	(SIGNATURE) 1600 (TIME)
(PRINTED NAME) (DATE)	(PRINTED NAME) (DATE)	(PRINTED NAME) Alex Tam (DATE) 5/26/94
(COMPANY)	(COMPANY)	(LAB) Chromalab, Inc.

CHROMALAB, INC.

Environmental Services (SDB)

June 3, 1994 *ChromaLab File#:* 9405353

JONAS & ASSOCIATES, INC.

Atten: M. Jonas/V. Wright

Project: 9201 PACO PUMPS *Project#:* PCO-220
Received: May 26, 1994

re: 4 samples for Gasoline and BTEX analysis.

Matrix: WATER
Sampled: May 26, 1994 *Lab Run#:* 2986 *Analyzed:* June 1, 1994
Method: EPA 5030/8015/602

Lab # SAMPLE ID	Gasoline (ug/L)	Benzene (ug/L)	Toluene (ug/L)	Ethyl Benzene (ug/L)	Total Xylenes (ug/L)
52481 GW9-MW1-Q5	N.D.	N.D.	N.D.	N.D.	N.D.
52482 GW9-MW2-Q5	N.D.	2.3	0.80	N.D.	N.D.
52483 GW9-MW3-Q5	5200	890	180	45	43
52484 GW9-MW4-Q5	130	14	3.2	6.1	4.7
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(%)	80	111	120	111	117

ChromaLab, Inc.

Jack Kelly
Chemist

Eric Tam
Laboratory Director

JACK 13:07:14

2239 Omega Road, #1 • San Ramon, California 94583
510/831-1788 • Facsimile 510/831-8798
Federal ID #68-0140157

CHROMALAB, INC.

Environmental Services (SDB)

June 1, 1994 ChromaLab File No.: 9405353

JONAS & ASSOCIATES, INC.

Attn: M. Jonas/V. Wright

RE: Two water samples for TEPH analysis

Project Name: 9201 PACO PUMPS
Project Number: PCO-220
Date Sampled: May 26, 1994 Date Submitted: May 26, 1994
Date Extracted: May 31, 1994 Date Analyzed: May 31, 1994

RESULTS:

Sample I.D.	Kerosene (µg/L)	Diesel (µg/L)	Motor Oil (mg/L)
GW9-MW2-Q5	N.D.	N.D.	N.D.
GW9-MW3-Q5	N.D.	N.D.	N.D.
BLANK	N.D.	N.D.	N.D.
SPIKE RECOVERY	--	101%	--
DUP SPIKE RECOVERY	--	94%	--
DETECTION LIMIT	50	50	0.5
METHOD OF ANALYSIS	3510/8015	3510/8015	3510/8015

ChromaLab, Inc.

Alex Tam
Analytical Chemist

Eric Tam
Laboratory Director

gg

2239 Omega Road, #1 • San Ramon, California 94583
510/831-1788 • Facsimile 510/831-8798
Federal ID #68-0140157

CHROMALAB, INC.

Environmental Services (SDB)

June 3, 1994 *ChromaLab File#:* 9405353

JONAS & ASSOCIATES, INC.

Atten: M. Jonas/V. Wright

Project: 9201 PACO PUMPS *Project#:* PCO-220
Received: May 26, 1994

re: One sample for Volatile Halogenated Organics analysis.

Sample: **GW9-MW1-Q5** *Matrix:* WATER
Sampled: May 26, 1994 *Lab#:* 52481 *Run:* 3001 *Analyzed:* June 1, 1994
Method: EPA 8010

ANALYTE	RESULT (ug/L)	REPORTING LIMIT (ug/L)	BLANK RESULT (ug/L)	BLANK SPIKE RESULT (%)
CHLOROMETHANE	N.D.	0.5	N.D.	--
VINYL CHLORIDE	N.D.	0.5	N.D.	--
BROMOMETHANE	N.D.	0.5	N.D.	--
CHLOROETHANE	N.D.	0.5	N.D.	--
TRICHLOROFLUOROMETHANE	N.D.	0.5	N.D.	--
1,1-DICHLOROETHENE	N.D.	0.5	N.D.	--
METHYLENE CHLORIDE	N.D.	5	N.D.	--
TRANS-1,2-DICHLOROETHENE	N.D.	0.5	N.D.	--
CIS-1,2-DICHLOROETHENE	N.D.	0.5	N.D.	--
1,1-DICHLOROETHANE	N.D.	0.5	N.D.	102
CHLOROFORM	N.D.	0.5	N.D.	--
1,1,1-TRICHLOROETHANE	N.D.	0.5	N.D.	--
CARBON TETRACHLORIDE	N.D.	0.5	N.D.	--
1,2-DICHLOROETHANE	N.D.	0.5	N.D.	--
TRICHLOROETHENE	N.D.	0.5	N.D.	102
1,2-DICHLOROPROPANE	N.D.	0.5	N.D.	--
BROMODICHLOROMETHANE	N.D.	0.5	N.D.	--
2-CHLOROETHYLVINYL ETHER	N.D.	0.5	N.D.	--
TRANS-1,3-DICHLOROPROPENE	N.D.	0.5	N.D.	--
CIS-1,3-DICHLOROPROPENE	N.D.	0.5	N.D.	--
1,1,2-TRICHLOROETHANE	N.D.	0.5	N.D.	--
TETRACHLOROETHENE	N.D.	0.5	N.D.	99
DIBROMOCHLOROMETHANE	N.D.	0.5	N.D.	--
CHLOROBENZENE	N.D.	0.5	N.D.	--
BROMOFORM	N.D.	0.5	N.D.	--
1,1,2,2-TETRACHLOROETHANE	N.D.	0.5	N.D.	99
1,3-DICHLOROBENZENE	N.D.	0.5	N.D.	--
1,4-DICHLOROBENZENE	N.D.	0.5	N.D.	--
1,2-DICHLOROBENZENE	N.D.	0.5	N.D.	--
FREON 113	N.D.	0.5	N.D.	--
1,2-DIBROMOETHANE	N.D.	0.5	N.D.	--

ChromaLab, Inc.

Michael Mitchell
Chemist

Eric Tam
Laboratory Director

MIKE 10:41:07

2239 Omega Road, #1 • San Ramon, California 94583
510/831-1788 • Facsimile 510/831-8798
Federal ID #68-0140157

CHROMALAB, INC.

Environmental Services (SDB)

June 3, 1994 *ChromaLab File#:* 9405353

JONAS & ASSOCIATES, INC.

Atten: M. Jonas/V. Wright

Project: 9201 PACO PUMPS *Project#:* PCO-220
Received: May 26, 1994

re: One sample for Volatile Halogenated Organics analysis.

Sample: **GW9-MW2-Q5** *Matrix:* WATER
Sampled: May 26, 1994 *Lab#:* 52482 *Run:* 3001 *Analyzed:* June 1, 1994
Method: EPA 8010

ANALYTE	RESULT (ug/L)	REPORTING LIMIT (ug/L)	BLANK RESULT (ug/L)	BLANK SPIKE RESULT (%)
CHLOROMETHANE	N.D.	0.5	N.D.	--
VINYL CHLORIDE	N.D.	0.5	N.D.	--
BROMOMETHANE	N.D.	0.5	N.D.	--
CHLOROETHANE	N.D.	0.5	N.D.	--
TRICHLOROFLUOROMETHANE	N.D.	0.5	N.D.	--
1,1-DICHLOROETHENE	N.D.	0.5	N.D.	--
METHYLENE CHLORIDE	N.D.	5	N.D.	--
TRANS-1,2-DICHLOROETHENE	N.D.	0.5	N.D.	--
CIS-1,2-DICHLOROETHENE	N.D.	0.5	N.D.	--
1,1-DICHLOROETHANE	1.6	0.5	N.D.	102
CHLOROFORM	N.D.	0.5	N.D.	--
1,1,1-TRICHLOROETHANE	N.D.	0.5	N.D.	--
CARBON TETRACHLORIDE	N.D.	0.5	N.D.	--
1,2-DICHLOROETHANE	N.D.	0.5	N.D.	--
TRICHLOROETHENE	N.D.	0.5	N.D.	102
1,2-DICHLOROPROPANE	N.D.	0.5	N.D.	--
BROMODICHLOROMETHANE	N.D.	0.5	N.D.	--
2-CHLOROETHYLVINYL ETHER	N.D.	0.5	N.D.	--
TRANS-1,3-DICHLOROPROPENE	N.D.	0.5	N.D.	--
CIS-1,3-DICHLOROPROPENE	N.D.	0.5	N.D.	--
1,1,2-TRICHLOROETHANE	N.D.	0.5	N.D.	--
TETRACHLOROETHENE	N.D.	0.5	N.D.	99
DIBROMOCHLOROMETHANE	N.D.	0.5	N.D.	--
CHLOROBENZENE	N.D.	0.5	N.D.	--
BROMOFORM	N.D.	0.5	N.D.	--
1,1,2,2-TETRACHLOROETHANE	N.D.	0.5	N.D.	99
1,3-DICHLOROBENZENE	N.D.	0.5	N.D.	--
1,4-DICHLOROBENZENE	N.D.	0.5	N.D.	--
1,2-DICHLOROBENZENE	N.D.	0.5	N.D.	--
FREON 113	N.D.	0.5	N.D.	--
1,2-DIBROMOETHANE	N.D.	0.5	N.D.	--

ChromaLab, Inc.

Michael Mitchell
Chemist

Eric Tam
Laboratory Director

MIKE 10:41:07

2239 Omega Road, #1 • San Ramon, California 94583
510/831-1788 • Facsimile 510/831-8798
Federal ID #68-0140157

CHROMALAB, INC.

Environmental Services (SDB)

June 3, 1994 *ChromaLab File#:* 9405353

JONAS & ASSOCIATES, INC.

Atten: M. Jonas/V. Wright

Project: 9201 PACO PUMPS *Project#:* PCO-220
Received: May 26, 1994

re: One sample for Volatile Halogenated Organics analysis.

Sample: **GW9-MW3-Q5** *Matrix:* WATER
Sampled: May 26, 1994 *Lab#:* 52483 *Run:* 3001 *Analyzed:* June 1, 1994
Method: EPA 8010

ANALYTE	RESULT (ug/L)	REPORTING LIMIT (ug/L)	BLANK RESULT (ug/L)	BLANK SPIKE RESULT (%)
CHLOROMETHANE	N.D.	0.5	N.D.	--
VINYL CHLORIDE	N.D.	0.5	N.D.	--
BROMOMETHANE	N.D.	0.5	N.D.	--
CHLOROETHANE	N.D.	0.5	N.D.	--
TRICHLOROFLUOROMETHANE	N.D.	0.5	N.D.	--
1,1-DICHLOROETHENE	N.D.	0.5	N.D.	--
METHYLENE CHLORIDE	N.D.	5	N.D.	--
TRANS-1,2-DICHLOROETHENE	N.D.	0.5	N.D.	--
CIS-1,2-DICHLOROETHENE	N.D.	0.5	N.D.	--
1,1-DICHLOROETHANE	N.D.	0.5	N.D.	102
CHLOROFORM	N.D.	0.5	N.D.	--
1,1,1-TRICHLOROETHANE	N.D.	0.5	N.D.	--
CARBON TETRACHLORIDE	N.D.	0.5	N.D.	--
1,2-DICHLOROETHANE	250	0.5	N.D.	--
TRICHLOROETHENE	N.D.	0.5	N.D.	102
1,2-DICHLOROPROPANE	N.D.	0.5	N.D.	--
BROMODICHLOROMETHANE	N.D.	0.5	N.D.	--
2-CHLOROETHYLVINYL ETHER	N.D.	0.5	N.D.	--
TRANS-1,3-DICHLOROPROPENE	N.D.	0.5	N.D.	--
CIS-1,3-DICHLOROPROPENE	N.D.	0.5	N.D.	--
1,1,2-TRICHLOROETHANE	N.D.	0.5	N.D.	--
TETRACHLOROETHENE	N.D.	0.5	N.D.	99
DIBROMOCHLOROMETHANE	N.D.	0.5	N.D.	--
CHLOROBENZENE	N.D.	0.5	N.D.	--
BROMOFORM	N.D.	0.5	N.D.	--
1,1,2,2-TETRACHLOROETHANE	N.D.	0.5	N.D.	99
1,3-DICHLOROBENZENE	N.D.	0.5	N.D.	--
1,4-DICHLOROBENZENE	N.D.	0.5	N.D.	--
1,2-DICHLOROBENZENE	N.D.	0.5	N.D.	--
FREON 113	N.D.	0.5	N.D.	--
1,2-DIBROMOETHANE	N.D.	0.5	N.D.	--

ChromaLab, Inc.

Michael Mitchell
Chemist

Eric Tam
Laboratory Director

MIKE 10:41:07

2239 Omega Road, #1 • San Ramon, California 94583
510/831-1788 • Facsimile 510/831-8798
Federal ID #68-0140157

CHROMALAB, INC.

Environmental Services (SDB)

June 3, 1994 *ChromaLab File#:* 9405353

JONAS & ASSOCIATES, INC.

Atten: M. Jonas/V. Wright

Project: 9201 PACO PUMPS *Project#:* PCO-220
Received: May 26, 1994

re: One sample for Volatile Halogenated Organics analysis.

Sample: **GW9-MW4-Q5** *Matrix:* WATER
Sampled: May 26, 1994 *Lab#:* 52484 *Run:* 3001 *Analyzed:* June 1, 1994
Method: EPA 8010

ANALYTE	RESULT (ug/L)	REPORTING LIMIT (ug/L)	BLANK RESULT (ug/L)	BLANK SPIKE RESULT (%)
CHLOROMETHANE	N.D.	0.5	N.D.	--
VINYL CHLORIDE	N.D.	0.5	N.D.	--
BROMOMETHANE	N.D.	0.5	N.D.	--
CHLOROETHANE	N.D.	0.5	N.D.	--
TRICHLOROFLUOROMETHANE	N.D.	0.5	N.D.	--
1,1-DICHLOROETHENE	N.D.	0.5	N.D.	--
METHYLENE CHLORIDE	N.D.	5	N.D.	--
TRANS-1,2-DICHLOROETHENE	N.D.	0.5	N.D.	--
CIS-1,2-DICHLOROETHENE	N.D.	0.5	N.D.	--
1,1-DICHLOROETHANE	N.D.	0.5	N.D.	102
CHLOROFORM	N.D.	0.5	N.D.	--
1,1,1-TRICHLOROETHANE	N.D.	0.5	N.D.	--
CARBON TETRACHLORIDE	N.D.	0.5	N.D.	--
1,2-DICHLOROETHANE	2.5	0.5	N.D.	--
TRICHLOROETHENE	N.D.	0.5	N.D.	102
1,2-DICHLOROPROPANE	N.D.	0.5	N.D.	--
BROMODICHLOROMETHANE	N.D.	0.5	N.D.	--
2-CHLOROETHYLVINYL ETHER	N.D.	0.5	N.D.	--
TRANS-1,3-DICHLOROPROPENE	N.D.	0.5	N.D.	--
CIS-1,3-DICHLOROPROPENE	N.D.	0.5	N.D.	--
1,1,2-TRICHLOROETHANE	N.D.	0.5	N.D.	--
TETRACHLOROETHENE	N.D.	0.5	N.D.	99
DIBROMOCHLOROMETHANE	N.D.	0.5	N.D.	--
CHLOROBENZENE	N.D.	0.5	N.D.	--
BROMOFORM	N.D.	0.5	N.D.	--
1,1,2,2-TETRACHLOROETHANE	N.D.	0.5	N.D.	99
1,3-DICHLOROBENZENE	N.D.	0.5	N.D.	--
1,4-DICHLOROBENZENE	N.D.	0.5	N.D.	--
1,2-DICHLOROBENZENE	N.D.	0.5	N.D.	--
FREON 113	N.D.	0.5	N.D.	--
1,2-DIBROMOETHANE	N.D.	0.5	N.D.	--

ChromaLab, Inc.

Michael Mitchell
Chemist

Eric Tam
Laboratory Director

MIKE 10:41:07

2239 Omega Road, #1 • San Ramon, California 94583
510/831-1788 • Facsimile 510/831-8798
Federal ID #68-0140157