ENVIRONMENTAL
PROTECTION
95 OCT 18 PM 1:20

JONAS & ASSOCIATES INC.
Environmental Consultants

Jonas & Associates Inc.

GROUNDWATER MONITORING REPORT
Sampling Rounds Nine and Ten

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

October 15, 1995

Report Prepared for:

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

GROUNDWATER MONITORING REPORT
Sampling Rounds Nine and Ten
PACO PUMPS, INC.
9201 San Leandro Street, Oakland, California

Jonas and Associates Inc. Job No. PCO-220

Prepared by:

Mark L. Jonas
Hydrogeologist
Jonas and Associates Inc.
2815 Mitchell Drive, Suite 209
Walnut Creek, California 94598
(510) 933-5360

Technical Review by:

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

October 15, 1995

GROUNDWATER MONITORING REPORT
Sampling Rounds Nine and Ten

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

October 15, 1995

Prepared for:

PACO PUMPS, INC.
Oakland, California

Prepared by:

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

GROUNDWATER MONITORING REPORT
Sampling Rounds Nine and Ten

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

TABLE OF CONTENTS

TABLE OF CONTENTS[con't]

LIST OF TABLES

LIST OF FIGURES

LIST OF APPENDICES

GROUNDWATER MONITORING REPORT
Sampling Rounds Nine and Ten

PACO PUMPS, INC.
9201 San Leandro Street
Oakland, California
October 15, 1995

1.0 INTRODUCTION

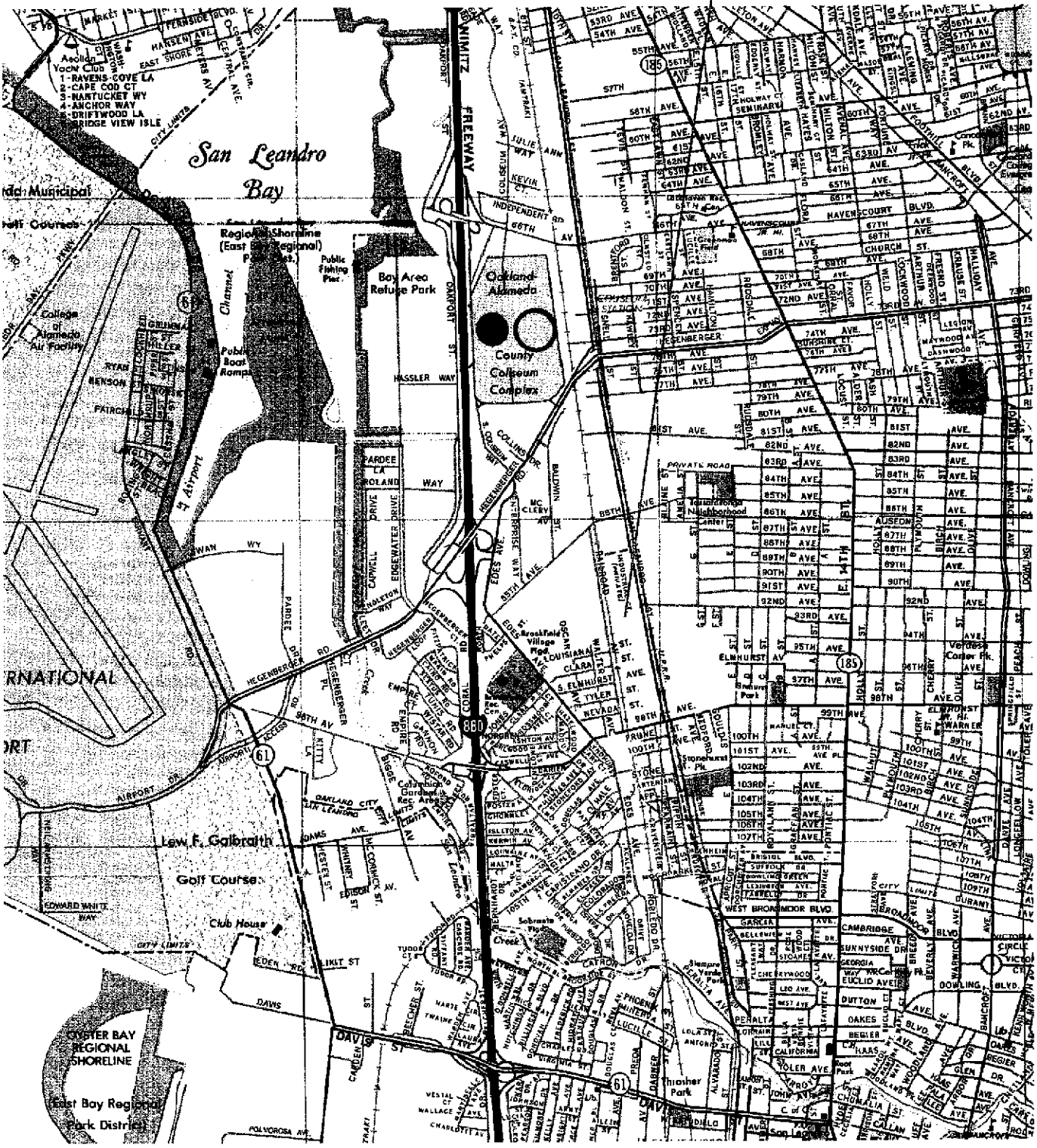
Jonas and Associates Inc. (J&A) has been retained by PACO Pumps Inc. (PACO or PACO Pumps) to perform the groundwater monitoring program at their property located at 9201 San Leandro Street, in Oakland, California 94603-1237. To date, ten groundwater sampling rounds have been performed at this facility. The first eight sampling rounds are presented in previous documents, identified in Section 4.0 References. This report presents the results of the ninth groundwater sampling round performed on May 31, 1995, and the tenth groundwater sampling round performed on August 8, 9 and 28, 1995. The report also presents information on the installation of Oxygen Release Compound (ORC) in monitoring well 9MW3.

PACO Pumps' environmental representative for this project is Mr. John Lilla {(512) 314-8500}. 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 1131 Harbor Bay Parkway, 2nd Floor, Alameda, California 94502. The agency representative is Ms. Eva Chu {(510) 567-6762}.

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

9201 SAN LEANDRO STREET

OAKLAND, CALIFORNIA

1" = 1/2 MILE

Figure 1-1

DRAWING NUMBER: PCO220-Fig 1

1.2 Scope of Report

This "Groundwater Monitoring Report, Sampling Rounds Nine and Ten" is presented in five sections and four appendices. Section 1, Introduction, provides a brief description of the site and the scope of the report. Section 2, Monitoring Wells and Hydrogeology, presents general well construction details for the five monitoring wells, the results of elevation and location surveys, and a local hydrogeologic cross-section. Section 3, Use of Oxygen Release Compound in Monitoring Well 9MW3, provide a description of the use and installation of ORC in Monitoring Well 9MW3. Section 4, Groundwater Sampling and Analysis, present rounds nine and ten groundwater sampling procedures and results, along with water level and free product measurements. Section 5, References, cites various references relevant to this report.

The appendices of the report include groundwater analysis summary tables, chain-of-custody records, laboratory data sheets, and the field instructions for the Hach Dissolved Oxygen Test Kit.

2.0 MONITORING WELLS AND HYDROGEOLOGY

This section of the report presents a brief history and construction details of the five monitoring wells located at the PACO Pumps' 9201 San Leandro Street facility. In addition, a summary of the location and elevation surveys 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

Five monitoring wells are located at the PACO Pumps' facility. Four of 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. Monitoring well 9MW5 was drilled and installed on August 12, 1994. The installation details and rational for monitoring well 9MW5 are presented in the J&A August 1994 "Groundwater Monitoring Report, Sampling Round Six, PACO Pumps, 9201 San Leandro Street, Oakland, California". All of the monitoring wells are screened in an apparently transmissive fine sand to silty clay found underneath the facility. Figure 2-1 presents the locations of the five monitoring wells, the round nine and round ten 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 five 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 five monitoring wells have a fifteen foot well screen set between approximately 5 to 20 feet below ground surface (bgs). The wells have a casing and screen diameter of four inches, placed in an 8½ inch borehole.

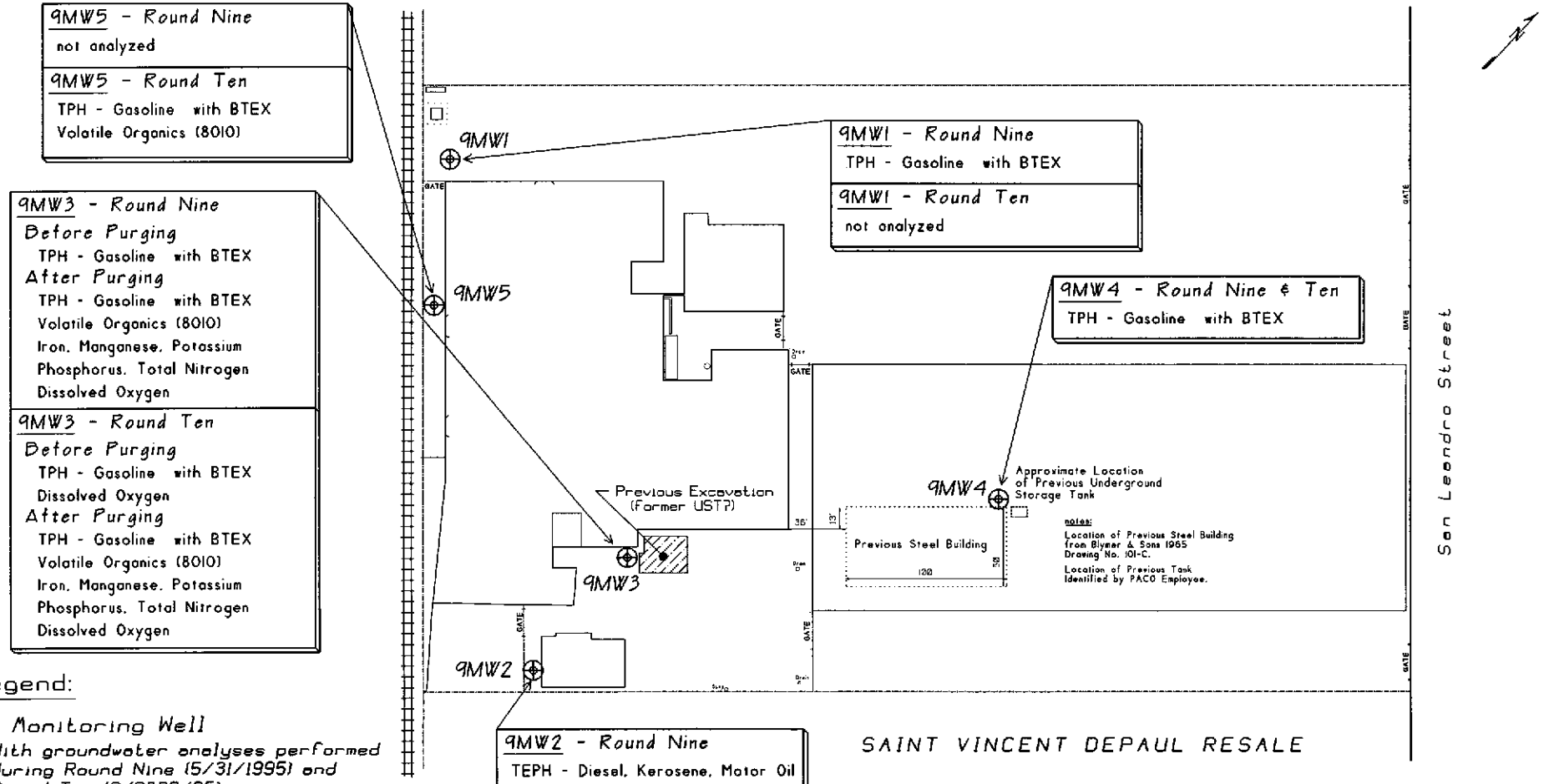
Monitoring well 9MW1 was constructed on November 4, 1992. The well was installed in a western corner of the facility adjacent to the former manufacturing building, and next to a transformer and the Central Pacific Railroad track. The lithology encountered during drilling ranged from an apparent fill, 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,

Drawn by M.J. 10-15-1995

Drawning Number PCO220-10/95:G910F2-1

Figure 2-1



Legend:

⊕ *Monitoring Well*
With groundwater analyses performed during Round Nine (5/31/1995) and Round Ten (8/9&28/95).

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'
9MW5	8-12-1994	21'	4"	8.5"	5.25'-20.25'	4.25'-21'

Scale
50 0 50 100 Feet

Monitoring Wells and Rounds Nine & Ten Groundwater Analyses

PACO Pumps Inc.
9201 San Leandro Street
Oakland, California

Prepared by
JONAS & ASSOCIATES INC.

Date: 10-15-1995
Locations Approx.

Figure 2-1

Drawing Number
PCO220-10/95:G910F2-1

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.

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". Monitoring well 9MW3 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.

Monitoring well 9MW5 was constructed on August 12, 1994. The well was installed adjacent to the southwest fenceline of the facility and next to the former manufacturing building and the Central Pacific Railroad track. The lithology encountered during drilling ranged from a gravelly sandy clay to a sandy clay between 2 and 21 feet bgs. This well is considered by the agency to represent downgradient conditions for the facility. During drilling activities, depth to first water was not able to be clearly identified. After the screen was installed, the well water level was measured at 8.22 feet bgs on August 24, 1994.

The following Table 2-1 present a summary of construction details for monitoring wells 9MW1, 9MW2, 9MW3, 9MW4, and 9MW5.

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

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"
9MW5	8/12/1994	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.. In September 1994 they surveyed monitoring well 9MW5. 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.

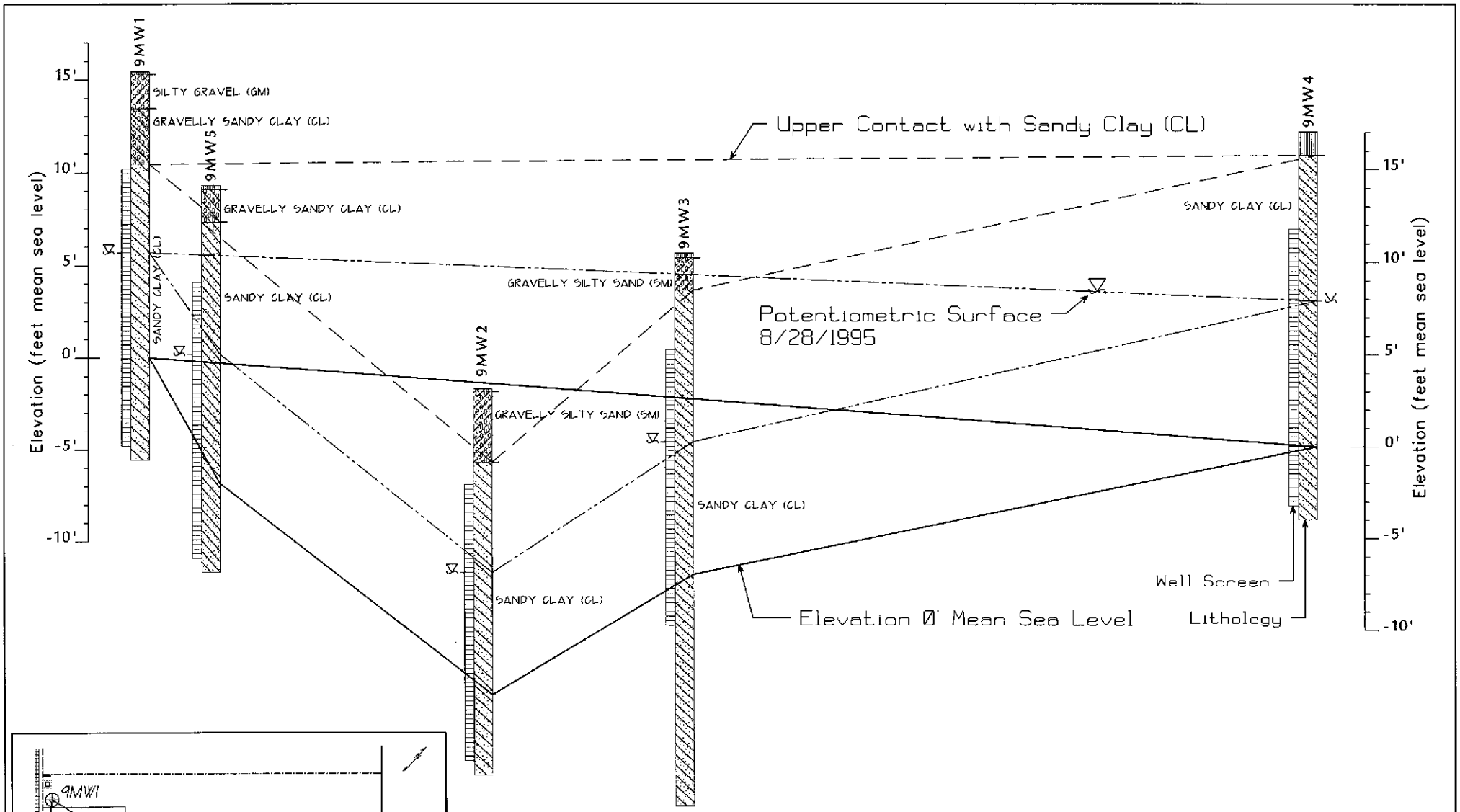
Table 2-2
Monitoring Well Survey Data
PACO PUMPS - 9201 San Leandro Street

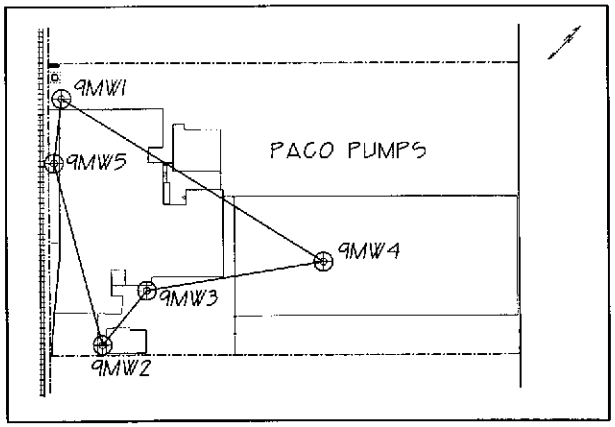
Well	Easting	Northing	M.S.L. Elevation
9MW1	1512710.22	456699.01	Top PVC: 15.51'
9MW2	1512968.11	456507.34	Top PVC: 16.83'
9MW3	1512963.22	456602.8	Top PVC: 17.13'
9MW4	1513102.34	456789.38	Top PVC: 17.08'
9MW5	1512763.21	456638.62	Top PVC: 15.93'

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: 10-15-1995 Locations Approx.	Figure 2-2	Drawing Number PCO220-10/95:G9102-2

3.0 USE OF OXYGEN RELEASE COMPOUND IN MONITORING WELL 9MW3

In response to the finding of elevated concentrations of petroleum products in monitoring well 9MW3, during a March 2, 1995 meeting with the Alameda County Health Care Services Agency recommended the use of Oxygen Release Compound (ORC) in the well. On May 2, 1995, J&A and PACO submitted an Oxygen Enhanced Bioremediation Work Plan (Work Plan) for use of ORC to hopefully enhance intrinsic bioremediation around monitoring well 9MW3. As proposed in the Work Plan, the approach is to place ORC filter socks into monitoring well 9MW3. The ORC socks would then slowly release oxygen into the aquifer. This increase in oxygen concentration may increase the biodegradation of various petroleum products detected in and around monitoring well 9MW3. On May 5, 1995, Alameda County gave approval to the Work Plan. The ORC was installed on May 31, 1995, after round nine sampling.

3.1 Rational for Use of the ORC Approach

The basis for use of the ORC is the apparent presence of elevated concentrations of various petroleum products detected in groundwater samples collected from monitoring well 9MW3. Monitoring well 9MW3 is located adjacent to a suspected underground gasoline tank (UST). Excavation of this area occurred in 1992. During the excavation no tank was found, but the elevated concentrations of TPH-Gasoline and BTEX detected in soil samples resulted in the removal of approximately 250 cubic yards of soil.

Currently, Alameda County Health Services is not requiring pump and treat remediation at the PACO site. In addition, because of the relatively low permeability of the aquifer, limited extent of TPH-Gasoline and BTEX, and relatively poor ambient groundwater quality, use of the Non-Attainment Area policy may be appropriate. A discussion of this policy is in the Regional Water Quality Control Board, October 21, 1994, draft memorandum titled "Implementation of Ground Water Non-Attainment Areas". As stated in this memorandum in Section 1 General Rationale for Non-Attainment Areas "*The non-attainment area concept was adopted in recognition of the following:...Natural biodegradation, with adequate source removal, may provide an acceptable cleanup strategy for sites with limited impacts*". Excavation activities in 1992 may be considered as adequate source removal. Natural biodegradation may be enhanced with use of an ORC approach. Apparently, enhancement of intrinsic biodegradation is not necessary to achieve Non-Attainment Area status, but it is considered by Alameda County Health to be a prudent and a relatively cost-effective approach which may result in significant improvement of groundwater quality.

3.2 The ORC System

The basic premise of the ORC approach is that oxygen is often the limiting factor in aerobic bioremediation. Delivering oxygen should cause aerobic microbes to thrive. This should increase the rate of intrinsic biodegradation, thereby resulting in significantly lower concentrations of petroleum hydrocarbons in groundwater. Site-specific factors may impact the effectiveness of the ORC approach. Actual results can

only be determined by using the ORC socks for a period of time in conjunction with sampling and analysis of local groundwater.

The Oxygen Release Compound used in monitoring well 9MW3 was supplied by the following firm:

REGENESIS Bioremediation Products
27130A Paseo Espada, Suite 1407
San Juan Capistrano, California 92675
(714) 443-3136
(714) 443-3140 fax
contact: Craig A. Sandefur (Manager of Product Applications)

As stated by the manufacturer, "*The product releases oxygen when it comes in contact with water as shown by the following equation:*

$$MgO_2 + H_2O \rightarrow \frac{1}{2}O_2\uparrow + Mg(OH)_2$$

The by-products of the reaction are oxygen and magnesium hydroxide (Milk of Magnesia). ORC is environmentally safe to use". The oxygen produced by the reaction of magnesium oxide and water is then available to enhance aerobic bioremediation.

3.3 Installation of the ORC into Monitoring Well 9MW3

Prior to the installation of the ORC system into monitoring well 9MW3 on May 31, 1995, the filter socks were laced together, the well water level was measured, and groundwater samples were collected for analysis. Since Regenesis recommended that groundwater samples be collected prior to and after purging of the well, samples were collected before and after purging and both sets of samples were analyzed for Total Petroleum Hydrocarbons as Gasoline (TPH-Gasoline), Benzene, Toluene, Ethyl Benzene, and Total Xylenes (BTEX). In addition, as recommended, groundwater samples from the well were analyzed for iron, manganese, potassium, phosphorous, and total nitrogen to define baseline nutrients and possible complexing agents. Dissolve oxygen was also sampled and measured in the field. The results of these analyses are presented in Section 4 of this report.

On May 31, 1995, after measuring the well water level in monitoring well 9MW3 and collection of round nine groundwater samples, it was determined that eleven ORC filter socks should be used. After the filter socks were laced together, they were then lowered into the well. The configuration of the filter socks were calculated to fill the screen to just above the water level. The filter socks were secured with a retrieval rope and the well cover was sealed.

For the August 1995 sampling round ten, the ORC filter socks needed to be removed prior to the collection of the well water level and water quality samples. On August 9,

1995 the removal of the ORC filter socks proved to be difficult and Regenesis in conjunction with Gregg Drilling was called in to remove the socks from the well. The socks were then successfully removed from the well on August 25, 1995 and a water level and water quality samples were collected August 28, 1995. After the well water level was collected, a sample was collect and measured for dissolved oxygen in the field using a Hach Dissolved Oxygen Test Kit. For round ten, groundwater samples were collected prior to and after purging of the well. These samples were analyzed for TPH-Gasoline, and BTEX. Additional samples were collected after purging the well for analysis of EPA Method 8010 Volatile Halogenated Organics, iron, manganese, potassium, phosphorous, and total nitrogen. Dissolved oxygen was also measured after purging the well. The results of these analyses are presented in the following section.

Figure 3-1 presents a schematic of the installed ORC system in monitoring well 9MW3.

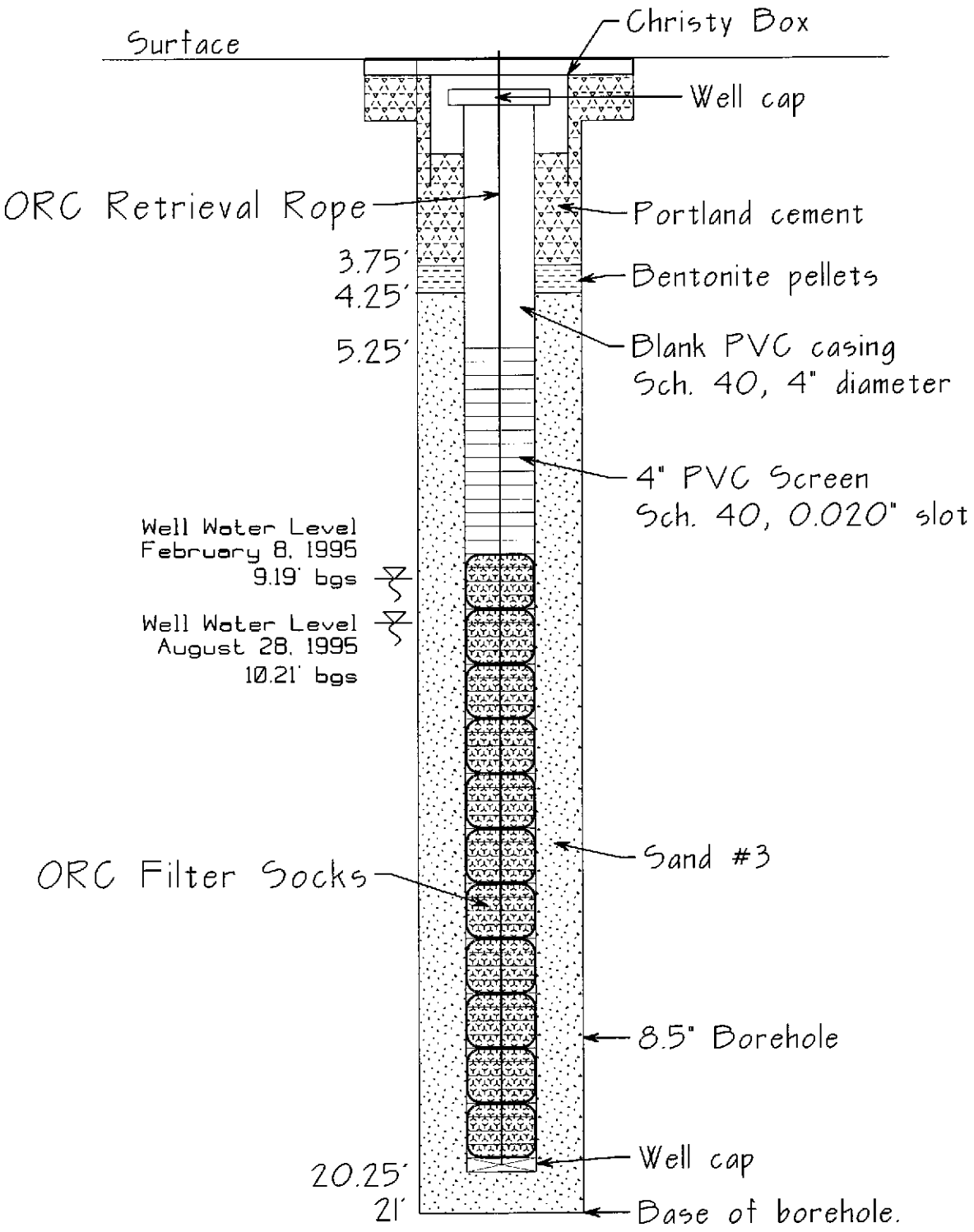


Figure 3-1

Drawing Number PCO220-10/95:F3-1

Drawn by M.J. 10-15-1995

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

Schematic of ORC System in Well 9MW3

Prepared by
JONAS & ASSOCIATES INC.

Date: 10-15-1995 | Figure 3-1 | Drawing Number PCO220-10/95:F3-1

4.0 ROUNDS NINE AND TEN GROUNDWATER SAMPLING AND ANALYSIS

Following is a discussion of the procedures and results associated with rounds nine and ten groundwater sampling of monitoring wells 9MW1, 9MW2, 9MW3, 9MW4, and 9MW5. Sampling for round nine occurred on May 31, 1995 and represents spring seasonal conditions. Sampling round ten was performed on August 8, 9 and 28, 1995 and represent summer seasonal conditions. Also presented in this section are associated 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 records for the May 31, 1995 round nine and August 9 and 28, 1995 round ten groundwater samples are presented in Appendix B. Water levels for round ten were collected for four wells on August 8, 1995 and all five wells on August 28, 1995. The laboratory data sheets associated with these sampling events are presented in Appendix C.

4.1 Groundwater Sampling Procedures

The ninth round of groundwater sampling was performed on May 31, 1995 and represents spring groundwater conditions. The tenth round of groundwater sampling was performed on August 8, 9 and 28, 1995 and represents summer groundwater conditions. During these sampling events, 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. Chain-of-custody records were completed and signed by representatives of Jonas & Associates Inc. and, upon delivery, by a representative of Chromalab Inc.. The analysis and results of groundwater samples collected during round nine and ten are presented in Section 4.3. The following section presents relevant information associated with the sampling of each of the five monitoring wells.

Sampling Monitoring Well 9MW1

Round Nine

Prior to purging the well, the depth to groundwater in monitoring well 9MW1 was measured at 9.35 feet below the top of the casing. This measurement was collected on May 31, 1995. The water level was measured with an electronic water level indicator on a stretch-resistant 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 eight gallons. Temperature and electric conductivity were measured after each five gallons of purging. These parameters appeared to stabilize and were recorded on a 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. Two Volatile Organic Analysis (VOA) containers with HCl preservative were collected for analyses for Total Petroleum Hydrocarbons as Gasoline (TPH-Gasoline; EPA Methods 5030/8015M); Benzene, Toluene, Ethyl Benzene, and Total Xylenes (BTEX; EPA Method 602/8020). The round nine groundwater samples from monitoring well 9MW1 are identified as GW9-MW1-Q9.

Round Ten

On August 8, 1995 water level was measured at 9.16 feet below the top of the casing. Subsequently, on August 28, 1995 water level in monitoring well 9MW2 was measured at a depth, below the top of the casing, of 9.14 feet. As agreed to by the Alameda County Health Care Services Agency, no water quality samples needed to be collected from this well for this sampling round.

Sampling Monitoring Well 9MW2

Round Nine

Prior to purging, the water level in monitoring well 9MW2 was measured on May 31, 1995 at 9.48 feet below the top of the casing. A clean bailer was then used to collect a sample from the surface of the groundwater. A slight "oily" sheen was noted floating on the water. The well was then purged of 25 gallons of well water. During purging activities, the temperature and electric conductivity of the extracted groundwater appeared to stabilize. During purging activities, the well appeared to recover relatively rapidly. Two one-liter amber containers were then collected for Total Extractable Petroleum Hydrocarbons as -Diesel, -Kerosene, and -Motor Oil (TEPH-D,-K,-MO; EPA Methods 3510/8015). The round nine groundwater sample from monitoring well 9MW2 are identified as GW9-MW2-Q9.

Round Ten

On August 8, 1995 the water level in monitoring well 9MW2 was measured at 9.64 feet, below the top of the casing. Subsequently, on August 28, 1995 water level in monitoring well 9MW2 was measure at a depth 9.60 feet. Water quality samples were collected on August 9, 1995. Using a clear bailer, no floating product or sheen was identified in the well water. After purging approximately 25 gallons, groundwater samples were collected for TPH-Gasoline; BTEX; TEPH-D,-K,-MO; and Volatile Halogenated Organics (EPA Method 8010). These samples and results are identified as GW9-MW2-Q10.

Sampling Monitoring Well 9MW3

Round Nine

For this sampling event on May 31, 1995 the water level in monitoring well 9MW3 was measured at 10.16 feet below the top of the casing. An initial water sample was then collected with a bailer and a slight "oily" sheen was identified floating on the water. Because the ORC socks were to be installed in this well after completion of round nine sampling, a modified sampling strategy was used. The three goals of this sampling strategy were to 1/ collect samples prior to purging the well for future evaluation of the effectiveness of the ORC system in removing contaminants, 2/ collect samples for the

standard set of analytes after the well has been adequately purged, and 3/ collect samples to define baseline nutrients for bioremedation, possible antagonistic chemicals, and dissolved oxygen. Therefore, prior to purging of the well two VOA containers with HCl were collected for analyses of TPH-Gasoline and BTEX. The well was then purged of approximately 25 gallons. During purging of the well, temperature and electric conductivity were measured and appeared to stabilize. During purging activities, recovery of the well was slower than the other monitoring wells. Four more VOA containers with HCl were collected for analyses of TPH-Gasoline, BTEX, and Volatile Halogenated Organics. Two one-liter containers were also collected for analysis of Iron, Manganese, and Potassium (EPA Method 3010AM/6010); Phosphorous (Method 365.2); Total Nitrogen (Method 351.3/300); and Dissolved Oxygen (Hach OX-2P Test Kit). The round nine groundwater samples for monitoring well 9MW3 are identified as GW9-MW3-Q9P for the samples collected prior to purging and GW9-MW3-Q9 for the samples collected after purging. The ORC was installed in monitoring well 9MW3 after the collection of the GW9-MW3-Q9P and GW9-MW3-Q9 samples.

Round Ten

On August 8, 1995, prior to the collection of a water level measurement, the sampling team attempted to remove the ORC socks from monitoring well 9MW3. But the socks appeared to catch in the well and were not able to be removed. Therefore, no water level measurement was collected on that date and no samples were able to be collected on August 9, 1995. The ORC socks were subsequently removed from the well by Regenesis and Gregg Drilling on August 25, 1995 and groundwater samples, including water level, were collected on August 28, 1995. On August 28, 1995, the water level in monitoring well 9MW3 was measured at 9.92 feet below the top of the casing. No free product of sheen appeared to be present floating on the well water. As part of the evaluation of the ORC system, prior to purging the well two VOA containers (with HCl preservative) of groundwater were collected for analysis of TPH-Gasoline, and BTEX. The well was then subsequently purged of approximately 25 gallons and six additional containers were filled with groundwater for analysis of TPH-Gasoline, BTEX, Volatile Halogenated Organics, Iron, Manganese, Potassium, Phosphorous, and Total Nitrogen. Another sample was collected for field measurements of Dissolved Oxygen. The round ten groundwater samples from monitoring well 9MW3 are identified as GW9-MW3-Q10P for the samples collected prior to purging and GW9-MW3-Q10 for the samples collected after purging.

Sampling Monitoring Well 9MW4

Round Nine

For the round nine sampling event, on May 31, 1995 the groundwater level in monitoring well 9MW4 was measured at 8.32 feet below the top of the casing. No floating products were identified from groundwater initially removed from this well. The well was then purged of approximately 25 gallons. Temperature and electric conductivity of the purge water appeared to stabilize. Recovery of the well during purging was relatively rapid. Two VOA containers (with HCl) were used to collect

groundwater for analysis of TPH-Gasoline and BTEX. These samples and results are identified as GW9-MW4-Q9.

Round Ten

On August 8, 1995 the water level in monitoring well 9MW4 was measured at 8.66 feet below the top of the casing. Subsequently, on August 28, 1995 water level in monitoring well 9MW3 was measure at a depth of 8.57 feet. Water quality samples were collected on August 9, 1995. Using a bailer to collect an initial sample of groundwater, no floating product or sheen was identified in the well water. After purging approximately 27 gallons, groundwater samples were collected for TPH-Gasoline and BTEX. These samples and results are identified as GW9-MW4-Q10.

Sampling Monitoring Well 9MW5

Round Nine

On May 31, 1995, the depth to groundwater in monitoring well 9MW5 was measured at 8.74 feet below the top of the casing. As agreed to by the agency, there were no round nine ground water samples collected from monitoring well 9MW5.

Round Ten

On August 8, 1995 the water level in monitoring well 9MW5 was measured at 8.93 feet below the top of the casing. Subsequently, on August 28, 1995 water level in monitoring well 9MW3 was measure at a depth 8.88 feet. Water quality samples were collected on August 9, 1995. Using a bailer to collect initial groundwater, no floating product or sheen was identified in the well water. After purging approximately 25 gallons, groundwater samples were collected for TPH-Gasoline, BTEX, and Volatile Halogenated Organics. Samples for this round are identified as GW9-MW5-Q10.

4.2 Measurements of Dissolved Oxygen from Monitoring Well 9MW3 Sample

To evaluate the Dissolved Oxygen (DO) prior to and after installation of the ORC in monitoring well 9MW3, measurements of dissolved oxygen were performed in the field with a Hach Dissolved Oxygen Test Kit, model OX-2P. This approach was recommended by Regenesis, the provider of the ORC. The Hach DO Test Kit was supplied directly from the following company:

Hach Company	P.O. Box 389
1(800) 227-4224	Loveland, Colorado 80539

During sampling round nine, DO was measured after purging monitoring well 9MW3 on May 31, 1995, but prior to installation of the ORC in the well. Prior to the collection of samples for round ten, the ORC socks were removed from monitoring well 9MW3 and DO was measured prior to and after purging. These measurements occurred on August 28, 1995. The results of all of the DO measurements are presented in the following section, which presents groundwater sampling results for both rounds nine and ten. Appendix D of this report provides the test instructions used in the field to measure DO with the Hach DO Test Kit.

4.3 Groundwater Sampling Results

This section of the report presents the analytical results for the round nine and round ten groundwater sampling events. Water level and free product measurements are also presented.

4.3.1 Analytical Results

As stated previously, summary tables, the round nine and round ten chain-of-custody records and laboratory data sheets are presented in Appendix A, B, and C, respectively. The following Table 4-1 present a summary of the analyses performed and the analytes detected during the round nine groundwater sampling event. Figure 4-1 provides a graphical display of the round nine analytical results. Results of sampling round ten sampling event are presented in Table 4-2 and Figure 4-2.

Table 4-1
May 1995 - Round Nine
Groundwater Sampling Results

Sample I.D.	Analysis	Detected Analytes	(in mg/L)
GW9-MW1-Q9	TEPH as Gasoline (5030/8015M)	none detected	
	BTEX (602/8020)	none detected	
GW9-MW2-Q9	TEPH as Diesel, Kerosene, Motor Oil (3510/8015M)	none detected	
GW9-MW3-Q9P (prior to purging)	TPH as Gasoline (5030/8015M)	TPH Gasoline	9.1
	BTEX (602/8020)	Benzene	2.800
		Toluene	0.160
		Ethyl Benzene	0.091
		Total Xylenes	0.072
GW9-MW3-Q9	TPH as Gasoline (5030/8015M)	TPH Gasoline	5.3
	BTEX (602/8020)	Benzene	1.300
		Toluene	0.170
		Ethyl Benzene	0.037
		Total Xylenes	0.044
	Volatile Halogenated Organics (8010)	Vol. Halo. Organics	ND
	Iron, Manganese, Potassium (3010AM/6010)	Iron	3.2
		Manganese	3.3
		Potassium	1.4
	Phosphorus (365.2)	Phosphorus	0.09
	Total Nitrogen (351.3/300)	Total Nitrogen	ND(0.2)
	Dissolved Oxygen (Hach OX-2P)	Dissolved Oxygen	11
GW9-MW4-Q9	TPH as Gasoline (5030/8015M)	TPH Gasoline	0.08
	BTEX (602/8020)	Benzene	0.013
		Toluene	0.0006
		Ethyl Benzene	0.0023
		Total Xylenes	0.0012
GW9-MW5-Q9	not analyzed		

Legend - TPH: Total Petroleum Hydrocarbons
TEPH: Total Extractable Petroleum Hydrocarbons
BTEX: Benzene, Toluene, Ethyl Benzene, Total Xylenes
ND / ND(0.05): none detected / not detected with detection limit

Drawn by M.J. 10-15-1995

Drawning Number PCO220-10/95:G910F4-1

Figure 4-1

9MW1 (Water Elev.:+6.16')

May 31, 1995 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)

9MW5 (Water Elev.:+7.19')

May 31, 1995 sampling results:

Not Sampled/Analyzed

9MW3 (Water Elev.:+6.97')

May 31, 1995 sampling results:

Prior to Purging:

(mg/L)

TPH-Gasoline	9.1
Benzene	2.800
Toluene	0.160
Ethyl Benzene	0.091
Total Xylenes	0.072

After Purging:

(mg/L)		(mg/L)
TPH-Gasoline	5.3	Iron 3.2
Benzene	1.300	Manganese 3.3
Toluene	0.170	Potassium 1.4
Ethyl Benzene	0.037	Phosphorus 0.09
Total Xylenes	0.044	Total Nitrogen ND(0.2)
Detected Method 8010 Volatile Organics: None Detected		Dissolved Oxygen 11

9MW2 (Water Elev.:+7.35')

May 31, 1995 sampling results:

(mg/L)

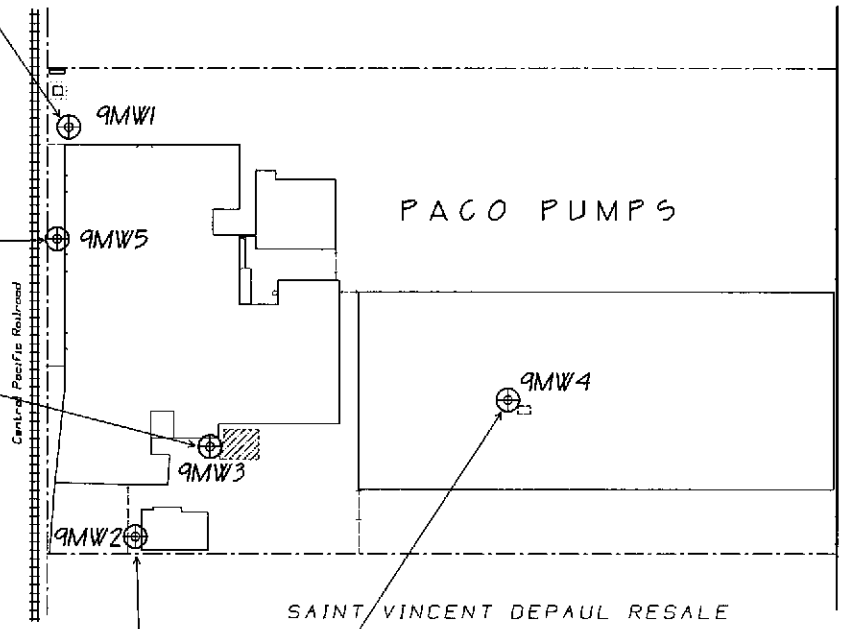
TEPH-Diesel	ND(0.050)
TEPH-Kerosene	ND(0.050)
TEPH-Motor Oil	ND(0.500)

9MW4 (Water Elev.:+8.76')

May 31, 1995 sampling results:

(mg/L)

TPH-Gasoline	0.08
Benzene	0.013
Toluene	0.0006
Ethyl Benzene	0.0023
Total Xylenes	0.0012



Legend:

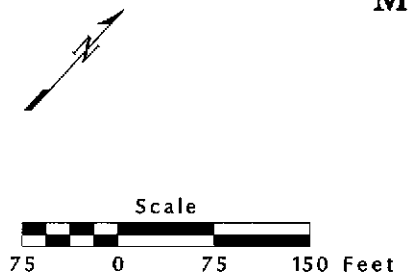
⊕ Monitoring Well

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'
9MW5	8-24-1994	21'	4"	8.5"	5.25'-20.25'	4.25'-21'



May 31, 1995 Groundwater Sampling Results

PACO Pumps Inc.
9201 San Leandro Street
Oakland, California

Prepared by
JONAS & ASSOCIATES INC.

Date: 10-15-1995
Locations Approx.

Figure 4-1

Drawing Number PCO220-10/95:G910F4-1

Table 4-2
August 1995 - Round Ten
Groundwater Sampling Results

Sample I.D.	Analysis	Detected Analytes	(in mg/L)
GW9-MW1-Q10	not analyzed		
GW9-MW2-Q10	TPH as Gasoline (5030/8015M)	none detected	
	BTEX (602/8020)	none detected	
	TEPH as Diesel, Kerosene, Motor Oil (3510/8015M)	none detected	
	Volatile Halogenated Organics (8010)	none detected	
GW9-MW3-Q10P (prior to purging)	TPH as Gasoline (5030/8015M)	TPH Gasoline	1.4
	BTEX (602/8020)	Benzene	ND(0.0005)
		Toluene	ND(0.0005)
		Ethyl Benzene	0.0017
		Total Xylenes	0.0079
	Dissolved Oxygen (Hach OX-2P)	Dissolved Oxygen	64
GW9-MW3-Q10	TPH as Gasoline (5030/8015M)	TPH Gasoline	4.8
	BTEX (602/8020)	Benzene	2.500
		Toluene	0.150
		Ethyl Benzene	0.053
		Total Xylenes	0.044
	Volatile Halogenated Organics (8010)	Vol. Halo. Organics	V
		1,2-DCA	0.100
		others	ND
	Iron, Manganese, Potassium (3010AM/6010)	Iron	ND(0.1)
		Manganese	1.2
		Potassium	34
	Phosphorus (365.2)	Phosphorus	1.0
	Total Nitrogen (351.3/300)	Total Nitrogen	ND(0.2)
	Dissolved Oxygen (Hach OX-2P)	Dissolved Oxygen	20
GW9-MW4-Q10	TPH as Gasoline (5030/8015M)	TPH Gasoline	ND(0.05)
	BTEX (602/8020)	Benzene	0.0036
		Toluene	ND(0.0005)
		Ethyl Benzene	0.0014
		Total Xylenes	0.0006
GW9-MW5-Q10	TEPH as Gasoline (5030/8015M)	none detected	
	BTEX (602/8020)	none detected	
	Volatile Halogenated Organics (8010)	none detected	

Legend - TPH: Total Petroleum Hydrocarbons
TEPH: Total Extractable Petroleum Hydrocarbons
BTEX: Benzene, Toluene, Ethyl Benzene, Total Xylenes
1,2-DCA: 1,2-Dichloroethane
ND / ND(0.05): none detected / not detected with detection limit

Drawn by M.J. 10-15-1995

Drawing Number PCO220-10/95:G910F4-2

Figure 4-2

9MW5

August 9, 1995 sampling results:

	(mg/L)		(mg/L)
TPH-Gasoline	ND(0.05)	Detected Method 8010 Volatile Organics:	
Benzene	ND(0.0005)	None Detected	
Toluene	ND(0.0005)		
Ethyl Benzene	ND(0.0005)		
Total Xylenes	ND(0.0005)		

9MW1

August 9, 1995 sampling results:

Not Sampled/Analyzed

9MW3

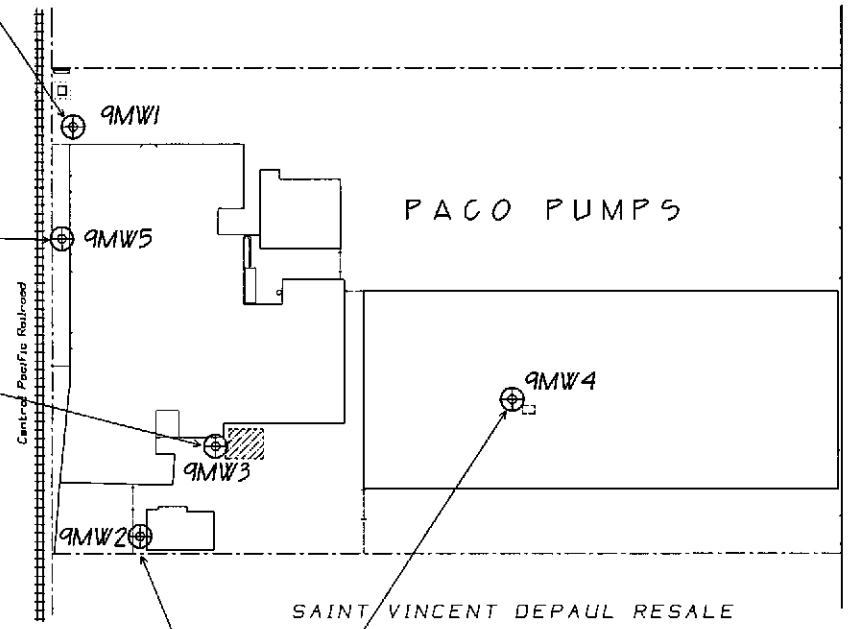
August 28, 1995 sampling results:

Prior to Purging:

	(mg/L)		(mg/L)
TPH-Gasoline	1.4	Dissolved Oxygen	64
Benzene	ND(0.0005)		
Toluene	ND(0.0005)		
Ethyl Benzene	0.0017		
Total Xylenes	0.0079		

After Purging:

	(mg/L)		(mg/L)
TPH-Gasoline	4.8	Iron	ND(0.1)
Benzene	2.500	Manganese	1.2
Toluene	0.150	Potassium	34
Ethyl Benzene	0.053	Phosphorus	1.0
Total Xylenes	0.044	Total Nitrogen	ND(0.2)
Detected Method 8010 Volatile Organics:		Dissolved Oxygen	20
1,2-DCA	0.100		



9MW2

August 9, 1995 sampling results:

	(mg/L)		(mg/L)
TPH-Gasoline	ND(0.05)	TEPH-Diesel	ND(0.050)
Benzene	ND(0.0005)	TEPH-Kerosene	ND(0.050)
Toluene	ND(0.0005)	TEPH-Motor Oil	ND(0.500)
Ethyl Benzene	ND(0.0005)	Detected Method 8010 Volatile Organics:	
Total Xylenes	ND(0.0005)	None Detected	

9MW4

August 9, 1995 sampling results:

	(mg/L)
TPH-Gasoline	ND(0.05)
Benzene	0.0036
Toluene	ND(0.0005)
Ethyl Benzene	0.0014
Total Xylenes	0.0006

Legend:

⊕ Monitoring Well

TPH = Total Petroleum Hydrocarbons

TEPH = Total Extractable Petroleum Hydrocarbons

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

1,2-DCA = 1,2-Dichloroethane

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'
9MW5	8-24-1994	21'	4"	8.5"	5.25'-20.25'	4.25'-21'

N

Scale

75 0 75 150 Feet

August 1995 Groundwater Sampling Results

PACO Pumps Inc.
9201 San Leandro Street
Oakland, California

Prepared by

JONAS & ASSOCIATES INC.

Date: 10-15-1995
Locations Approx.

Figure 4-2

Drawing Number PCO220-10/95:G910F4-2

4.3.2 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 4-3 and Table 4-4 provides a summary of groundwater levels and free product measurements for the May 31, 1995 round nine and the August 8 and 28, 1995 round ten, respectively. Water level elevations, with respect to mean sea level, were calculated using the results of the Kier & Wright surveys.

Table 4-3
Round Nine - May 31, 1995
Groundwater Level and Free Product Measurement

Date	Well ID	Surveyed Casing Elevation M.S.L.	Water Level from Top of Casing Depth	Water Level from Top of Casing Elevation M.S.L.	Pavement vs. Casing Top	Free Product
5/31/1995	9MW1	15.51'	9.35'	6.16'	0.40'	no free product
5/31/1995	9MW2	16.83'	9.48'	7.35'	0.40'	slight "oily" sheen
5/31/1995	9MW3	17.13'	10.16'	6.97'	0.29'	slight "oily" sheen
5/31/1995	9MW4	17.08'	8.32'	8.76'	0.54'	no free product
5/31/1995	9MW5	15.93'	8.74'	7.19'	0.25'	no free product

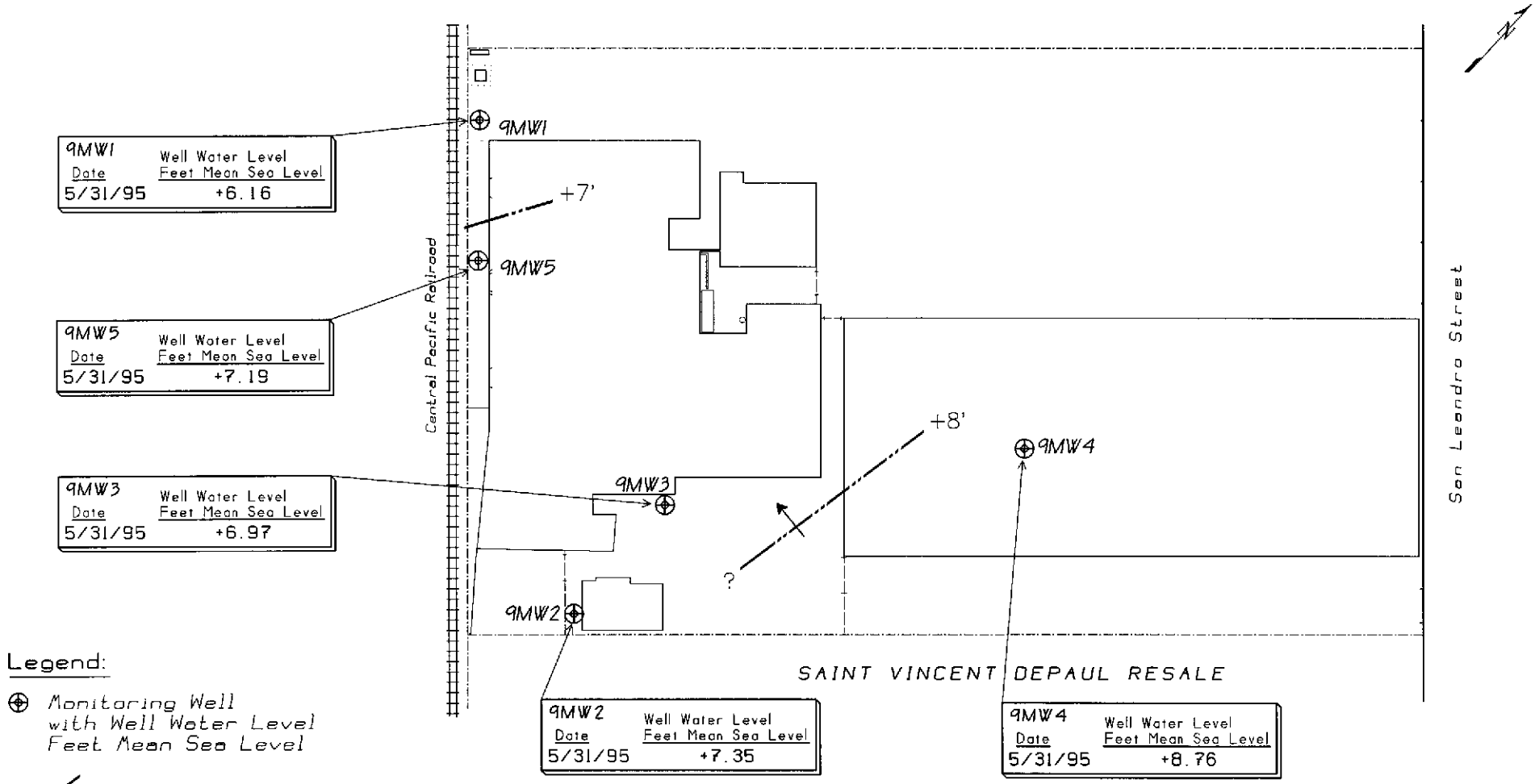
Notes -» Elevation with respect to mean sea level (M.S.L.) and Kier & Wright survey.

Table 4-4
Round Ten - August 1995
Groundwater Level and Free Product Measurement

Date	Well ID	Surveyed Casing Elevation M.S.L.	Water Level from Top of Casing Depth	Water Level from Top of Casing Elevation M.S.L.	Pavement vs. Casing Top	Free Product
8/28/1995	9MW1	15.51'	9.14'	6.37'	0.40'	not sampled (8/9/95)
8/28/1995	9MW2	16.83'	9.60'	7.23'	0.40'	no free product (8/9/95)
8/28/1995	9MW3	17.13'	9.92'	7.21'	0.29'	no free product (8/28/95)
8/28/1995	9MW4	17.08'	8.57'	8.51'	0.54'	no free product (8/9/95)
8/28/1995	9MW5	15.93'	8.88'	7.05'	0.25'	no free product (8/9/95)

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

Figures 4-3 and 4-4 graphically presents the results of the well water levels collected during the round nine and round ten sampling events, respectively. As identified in these figures, based upon groundwater elevation data from monitoring wells 9MW1, 9MW2, 9MW3, 9MW4, and 9MW5, the apparent direction of groundwater flow during May and August 1995 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'
9MW5	8-12-1994	21'	4"	8.5"	5.25'-20.25'	4.25'-21'

Scale
50 0 50 100 Feet

May 1995 - Spring Season Potentiometric/Water Table

PACO Pumps Inc.
9201 San Leandro Street
Oakland, California

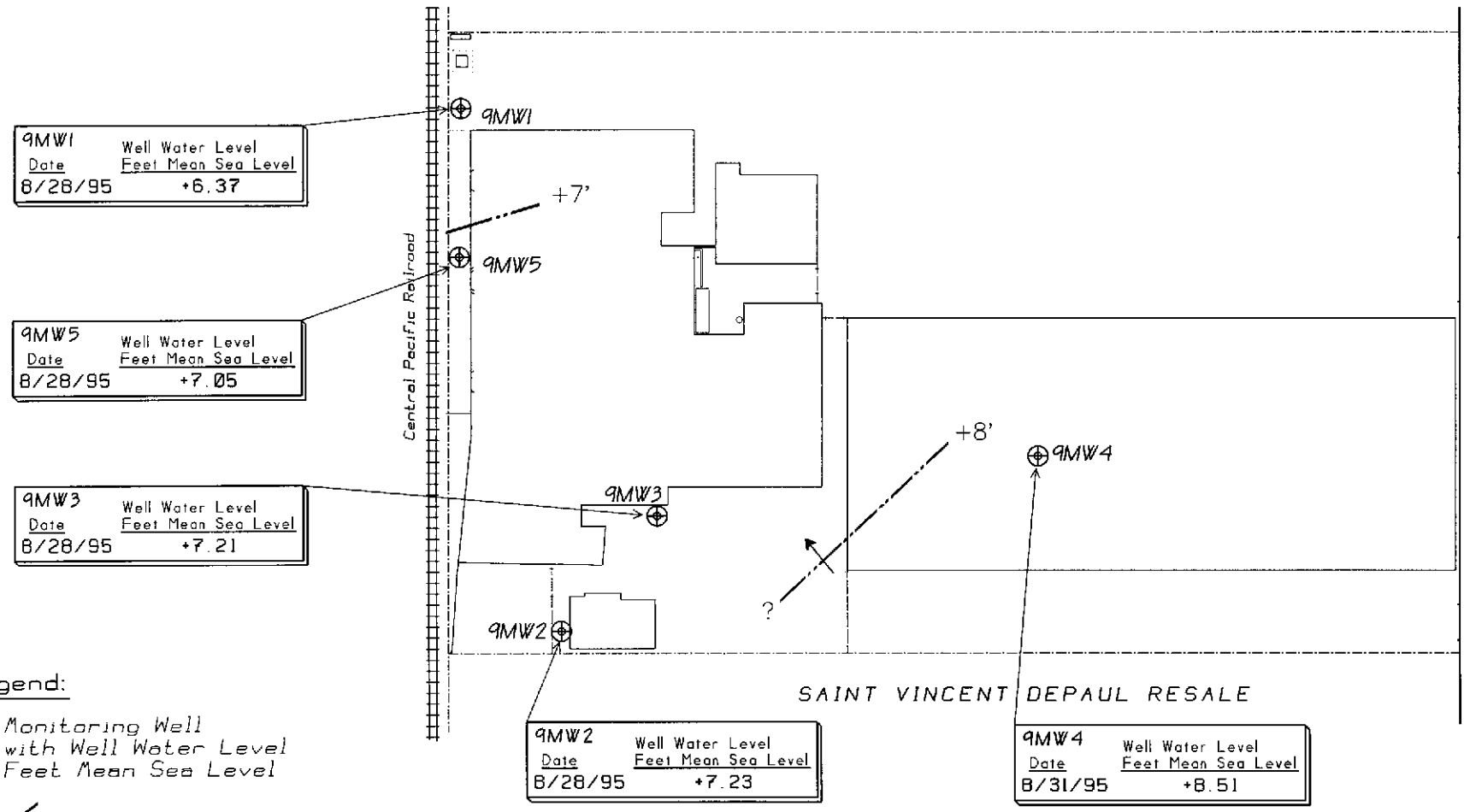
Prepared by
JONAS & ASSOCIATES INC.

Date: 10-15-1995
Locations Approx.

Figure 4-3

Drawing Number PCO220-10/95:G910F4-3

Drawing Number PCO220-10/95:G910F4-3 Figure 4-3



Legend:

⊕ Monitoring Well with Well Water Level Feet Mean Sea Level

8/28/95 Equipotential Line

Assumed Groundwater Flow Direction

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'
9MW5	8-12-1994	21'	4"	8.5"	5.25'-20.25'	4.25'-21'

Scale
50 0 50 100 Feet

August 1995 - Summmer Season Potentiometric/Water Table

PACO Pumps Inc.
9201 San Leandro Street
Oakland, California

Prepared by
JONAS & ASSOCIATES INC.

Date: 10-15-1995
Locations Approx.

Figure 4-4

Drawing Number PCO220-10/95:G910F4-4

Figure 4-4
Drawing Number PCO220-10/95:G910F4-4

5.0 REFERENCES

Alameda County Health Care Services Agency, 1994. letter titled "Workplan Approval for Paco Pumps, 9201 San Leandro St. Oakland 94603", July 1, 1994 letter to J&A.

_____, 1995. letter titled "Sampling Frequency at Former Paco Pumps, Inc, 9201 San Leandro St, Oakland 94603", March 9, 1995 letter to Mr. John Lilla.

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.

_____, 1994. "Work Plan, Installation of Monitoring Well 9MW5, PACO Pumps, 9201 San Leandro Street, Oakland, California", June 13, 1994.

_____, 1994. "Groundwater Monitoring Report, Sampling Round Five, PACO Pumps, 9201 San Leandro Street, Oakland, California", June 28, 1994.

_____, 1994. "Groundwater Monitoring Report, Sampling Round Six, PACO Pumps, 9201 San Leandro Street, Oakland, California", August 24, 1994.

_____, 1994. "Groundwater Monitoring Report, Sampling Round Seven, PACO Pumps, 9201 San Leandro Street, Oakland, California", November 22, 1994.

_____, 1995. "Groundwater Monitoring Report, Sampling Round Eight, PACO Pumps, 9201 San Leandro Street, Oakland, California", March 15, 1995.

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	5/26/94	5¼'-20¼'$_{screen}$	water	CrLab	ND(0.050)	ND(0.0005)	ND(0.0005)	ND(0.0005)	ND(0.0005)
GW9-MW1-Q6	9/24/94	5¼'-20¼'$_{screen}$	water	CrLab	ND(0.050)	ND(0.0005)	ND(0.0005)	ND(0.0005)	ND(0.0005)
GW9-MW1-Q7	11/22/94	5¼'-20¼'$_{screen}$	water	CrLab	ND(0.050)	ND(0.0005)	ND(0.0005)	ND(0.0005)	ND(0.0005)
GW9-MW1-Q8	2/8/95	5¼'-20¼'$_{screen}$	water	CrLab	ND(0.050)	ND(0.0005)	ND(0.0005)	ND(0.0005)	ND(0.0005)
GW9-MW1-Q9	5/31/95	5¼'-20¼'$_{screen}$	water	CrLab	ND(0.05)	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)
GW9-MW2-Q6	9/24/94	5¼'-20¼'$_{screen}$	water	CrLab	ND(0.050)	0.0061	0.0014	0.0005	0.0006
GW9-MW2-Q7	11/22/94	5¼'-20¼'$_{screen}$	water	CrLab	ND(0.050)	0.0034	0.0018	ND(0.0005)	0.0005
GW9-MW2-Q8	2/8/95	5¼'-20¼'$_{screen}$	water	CrLab	ND(0.050)	0.0045	0.0013	ND(0.0005)	0.0005
GW9-MW2-Q10	8/9/95	5¼'-20¼'$_{screen}$	water	CrLab	ND(0.05)	ND(0.0005)	ND(0.0005)	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
GW9-MW3-Q6	9/24/94	5¼'-20¼'$_{screen}$	water	CrLab	5.200	0.580	0.076	0.029	0.022
GW9-MW3-Q7	11/22/94	5¼'-20¼'$_{screen}$	water	CrLab	2.200	0.670	0.130	0.031	0.028
GW9-MW3-Q8	2/8/95	5¼'-20¼'$_{screen}$	water	CrLab	2.900	0.780	0.120	0.031	0.033
GW9-MW3-Q9P	5/31/95	5¼'-20¼'$_{screen}$	water	CrLab	9.1	2.800	0.160	0.091	0.072
GW9-MW3-Q9	5/31/95	5¼'-20¼'$_{screen}$	water	CrLab	5.3	1.300	0.170	0.037	0.044
GW9-MW3-Q10P	8/28/95	5¼'-20¼'$_{screen}$	water	CrLab	1.4	ND(0.0005)	ND(0.0005)	0.0017	0.0079
GW9-MW3-Q10	8/28/95	5¼'-20¼'$_{screen}$	water	CrLab	4.8	2.500	0.150	0.053	0.044

con't following page

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 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
GW9-MW4-Q6	9/24/94	5¼'-20¼'$_{screen}$	water	CrLab	0.070	0.0067	0.0009	0.0028	0.0026
GW9-MW4-Q7	11/22/94	5¼'-20¼'$_{screen}$	water	CrLab	0.090	0.016	0.0017	0.0056	0.0034
GW9-MW4-Q8	2/8/95	5¼'-20¼'$_{screen}$	water	CrLab	0.090	0.017	0.0013	0.0055	0.0030
GW9-MW4-Q9	5/31/95	5¼'-20¼'$_{screen}$	water	CrLab	0.08	0.013	0.0006	0.0023	0.0012
GW9-MW4-Q10	8/9/95	5¼'-20¼'$_{screen}$	water	CrLab	ND(0.05)	0.0036	ND(0.0005)	0.0014	0.0006
Monitoring Well 9MW5									
GW9-MW5-Q6	9/24/94	5¼'-20¼'$_{screen}$	water	CrLab	ND(0.050)	ND(0.0005)	ND(0.0005)	ND(0.0005)	ND(0.0005)
GW9-MW5-Q7	11/22/94	5¼'-20¼'$_{screen}$	water	CrLab	ND(0.050)	ND(0.0005)	ND(0.0005)	ND(0.0005)	ND(0.0005)
GW9-MW5-Q8	2/8/95	5¼'-20¼'$_{screen}$	water	CrLab	ND(0.050)	ND(0.0005)	ND(0.0005)	ND(0.0005)	ND(0.0005)
GW90MW5-Q10	8/9/95	5¼'-20¼'$_{screen}$	water	CrLab	ND(0.05)	ND(0.0005)	ND(0.0005)	ND(0.0005)	ND(0.0005)

notes: TPH: Total Petroleum Hydrocarbons

BTEX: Benzene, Toluene, Ethyl Benzene, Total Xylenes

[1] = probably corrected, apparently switched.

[2] = EPA Method 624

ND(0.1) = Not Detected above the laboratory detection limit in parentheses.

GW9-MW3-Q9P: Sampled prior to purging. For baseline study for use of Oxygen Release Compound (ORC).

GW9-MW3-Q9: Sampled after purging. Installed ORC after collection of sample.

GW9-MW3-Q10P: Sampled after removal of ORC and prior to purging.

GW9-MW3-Q10: Sampled after purging.

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)	-
GW9-MW2-Q6	9/24/94	5¼'-20¼'$_{screen}$	water	CrLab	ND(0.050)	ND(0.050)	0.6	-
GW9-MW2-Q7	11/22/94	5¼'-20¼'$_{screen}$	water	CrLab	ND(0.050)	ND(0.050)	1.0	-
GW9-MW2-Q8	2/8/95	5¼'-20¼'$_{screen}$	water	CrLab	ND(0.050)	ND(0.050)	0.550	-
GW9-MW2-Q9	5/31/95	5¼'-20¼'$_{screen}$	water	CrLab	ND(0.050)	ND(0.050)	ND(0.500)	-
GW9-MW2-Q10	8/9/95	5¼'-20¼'$_{screen}$	water	CrLab	ND(0.050)	ND(0.050)	ND(0.500)	-
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)	-
GW9-MW3-Q6	9/24/94	5¼'-20¼'$_{screen}$	water	CrLab	ND(0.050)	0.082	ND(0.5)	-
GW9-MW3-Q7	11/22/94	5¼'-20¼'$_{screen}$	water	CrLab	ND(0.050)[2]	ND(0.050)	ND(0.5)	-
GW9-MW3-Q8	2/8/95	5¼'-20¼'$_{screen}$	water	CrLab	ND(0.050)[2]	ND(0.050)	ND(0.500)	-

con't on following page

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 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)	-
Monitoring Well 9MW5								
GW9-MW5-Q6	9/24/94	5¼'-20¼'$_{screen}$	water	CrLab	0.130	ND(0.050)	ND(0.5)	-
GW9-MW5-Q7	11/22/94	5¼'-20¼'$_{screen}$	water	CrLab	ND(0.050)[2]	ND(0.050)	ND(0.5)	-
GW9-MW5-Q8	2/8/95	5¼'-20¼'$_{screen}$	water	CrLab	ND(0.050)[3]	ND(0.050)	ND(0.5)	-

notes:

TEPH: Total Extractable Petroleum Hydrocarbons

PCBs: Polychlorinated Biphenyls

ND(0.004) = Not Detected above the laboratory detection limit in parentheses.

[1] = probably corrected, apparently switched.

[2] = Unknown compounds were found in the Diesel range with the estimated concentration of 0.083 mg/L.

[3] = Unknown compounds were found in the Diesel range with the estimated concentration of 0.190 ug/L.

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)
GW9-MW1-Q6	9/24/94	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)
GW9-MW1-Q7	11/22/94	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)
GW9-MW1-Q8	2/8/95	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)
GW9-MW2-Q6	9/24/94	5¼'-20¼'$_{screen}$	water	CrLab	-	0.0061	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)
GW9-MW2-Q7	11/22/94	5¼'-20¼'$_{screen}$	water	CrLab	-	0.0034	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)
GW9-MW2-Q8	2/8/95	5¼'-20¼'$_{screen}$	water	CrLab	-	0.0045	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)
GW9-MW2-Q10	8/9/95	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 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)
GW9-MW3-Q6	9/24/94	5¼'-20¼'$_{screen}$	water	CrLab	-	0.580	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)
GW9-MW3-Q7	11/22/94	5¼'-20¼'$_{screen}$	water	CrLab	-	0.670	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)
GW9-MW3-Q8	2/8/95	5¼'-20¼'$_{screen}$	water	CrLab	-	0.780	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)
GW9-MW3-Q9	5/31/95	5¼'-20¼'$_{screen}$	water	CrLab	-	1.300	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)
GW9-MW3-Q10	8/28/95	5¼'-20¼'$_{screen}$	water	CrLab	-	2.500	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)
GW9-MW4-Q6	9/24/94	5¼'-20¼'$_{screen}$	water	CrLab	-	0.0067	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)
GW9-MW4-Q7	11/22/94	5¼'-20¼'$_{screen}$	water	CrLab	-	0.016	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)
GW9-MW4-Q8	2/8/95	5¼'-20¼'$_{screen}$	water	CrLab	-	0.017	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 9MW5															
GW9-MW5-Q6	9/24/94	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)
GW9-MW5-Q7	11/22/94	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)
GW9-MW5-Q8	2/8/95	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)
GW9-MW5-Q10	8/9/95	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)

con't on following page

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

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)
GW9-MW1-Q6	9/24/94	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)
GW9-MW1-Q7	11/22/94	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)
GW9-MW1-Q8	2/8/95	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)	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)
GW9-MW2-Q6	9/24/94	5¼'-20¼'$_{screen}$	water	CrLab	ND(0.0005)	-	ND(0.0005)	ND(0.0005)	ND(0.0005)	0.0010	ND(0.0005)	ND(0.0005)	ND(0.0005)	ND(0.0005)	ND(0.0005)
GW9-MW2-Q7	11/22/94	5¼'-20¼'$_{screen}$	water	CrLab	ND(0.0005)	-	ND(0.0005)	ND(0.0005)	ND(0.0005)	0.0005	ND(0.0005)	ND(0.0005)	ND(0.0005)	ND(0.0005)	ND(0.0005)
GW9-MW2-Q8	2/8/95	5¼'-20¼'$_{screen}$	water	CrLab	ND(0.0005)	-	ND(0.0005)	ND(0.0005)	ND(0.0005)	0.0007	ND(0.0005)	ND(0.0005)	ND(0.0005)	ND(0.0005)	ND(0.0005)
GW9-MW2-Q10	8/9/95	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 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)
GW9-MW3-Q6	9/24/94	5¼'-20¼'$_{screen}$	water	CrLab	ND(0.0005)	-	ND(0.0005)	ND(0.0005)	ND(0.0005)	ND(0.0005)	0.190	ND(0.0005)	ND(0.0005)	ND(0.0005)	ND(0.0005)
GW9-MW3-Q7	11/22/94	5¼'-20¼'$_{screen}$	water	CrLab	ND(0.0005)	-	ND(0.0005)	ND(0.0005)	ND(0.0005)	ND(0.0005)	0.160	ND(0.0005)	ND(0.0005)	ND(0.0005)	ND(0.0005)
GW9-MW3-Q8	2/8/95	5¼'-20¼'$_{screen}$	water	CrLab	ND(0.0005)	-	ND(0.0005)	ND(0.0005)	ND(0.0005)	ND(0.0005)	0.160	ND(0.0005)	ND(0.0005)	ND(0.0005)	ND(0.0005)
GW9-MW3-Q9	5/31/95	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)
GW9-MW3-Q10	8/28/95	5¼'-20¼'$_{screen}$	water	CrLab	ND(0.0005)	-	ND(0.0005)	ND(0.0005)	ND(0.0005)	ND(0.0005)	0.100	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)
GW9-MW4-Q6	9/24/94	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)
GW9-MW4-Q7	11/22/94	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)
GW9-MW4-Q8	2/8/95	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 9MW5															
GW9-MW5-Q6	9/24/94	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)
GW9-MW5-Q7	11/22/94	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)
GW9-MW5-Q8	2/8/95	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)
GW9-MW5-Q10	8/9/95	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)

con't on following page

Table A/GW3[con'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
Monttorng 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)
GW9-MW1-Q6	9/24/94	5¼'-20¼'$_{screen}$	water	CrLab	ND(0.0005)	ND(0.0005)	ND(0.0005)	-	-	-	-	ND(0.005)	-	ND(0.0005)	ND(0.0005)
GW9-MW1-Q7	11/22/94	5¼'-20¼'$_{screen}$	water	CrLab	ND(0.0005)	ND(0.0005)	ND(0.0005)	-	-	-	-	ND(0.005)	-	ND(0.0005)	ND(0.0005)
GW9-MW1-Q8	2/8/95	5¼'-20¼'$_{screen}$	water	CrLab	ND(0.0005)	ND(0.0005)	ND(0.0005)	-	-	-	-	ND(0.005)	-	ND(0.0005)	ND(0.0005)
Monttorng 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)
GW9-MW2-Q6	9/24/94	5¼'-20¼'$_{screen}$	water	CrLab	ND(0.0005)	ND(0.0005)	0.0005	-	-	-	-	ND(0.005)	-	ND(0.0005)	ND(0.0005)
GW9-MW2-Q7	11/22/94	5¼'-20¼'$_{screen}$	water	CrLab	ND(0.0005)	ND(0.0005)	ND(0.0005)	-	-	-	-	ND(0.005)	-	ND(0.0005)	ND(0.0005)
GW9-MW2-Q8	2/8/95	5¼'-20¼'$_{screen}$	water	CrLab	ND(0.0005)	ND(0.0005)	ND(0.0005)	-	-	-	-	ND(0.005)	-	ND(0.0005)	ND(0.0005)
GW9-MW2-Q10	8/9/95	5¼'-20¼'$_{screen}$	water	CrLab	ND(0.0005)	ND(0.0005)	ND(0.0005)	-	-	-	-	ND(0.0005)	-	ND(0.0005)	ND(0.0005)
Monttoring 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)	0.045	ND(0.0005)	-	-	-	ND(0.005)	-	ND(0.0005)	ND(0.0005)
GW9-MW3-Q6	9/24/94	5¼'-20¼'$_{screen}$	water	CrLab	ND(0.0005)	ND(0.0005)	0.029	-	-	-	-	ND(0.005)	-	ND(0.0005)	ND(0.0005)
GW9-MW3-Q7	11/22/94	5¼'-20¼'$_{screen}$	water	CrLab	ND(0.0005)	ND(0.0005)	0.031	-	-	-	-	ND(0.005)	-	ND(0.0005)	ND(0.0005)
GW9-MW3-Q8	2/8/95	5¼'-20¼'$_{screen}$	water	CrLab	ND(0.0005)	ND(0.0005)	0.031	-	-	-	-	ND(0.005)	-	ND(0.0005)	ND(0.0005)
GW9-MW3-Q9	5/31/95	5¼'-20¼'$_{screen}$	water	CrLab	ND(0.0005)	ND(0.0005)	0.037	-	-	-	-	ND(0.0005)	-	ND(0.0005)	ND(0.0005)
GW9-MW3-Q10	8/9/95	5¼'-20¼'$_{screen}$	water	CrLab	ND(0.0005)	ND(0.0005)	0.053	-	-	-	-	ND(0.0005)	-	ND(0.0005)	ND(0.0005)
Monttoring 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)
GW9-MW4-Q6	9/24/94	5¼'-20¼'$_{screen}$	water	CrLab	ND(0.0005)	ND(0.0005)	0.0028	-	-	-	-	ND(0.005)	-	ND(0.0005)	ND(0.0005)
GW9-MW4-Q7	11/22/94	5¼'-20¼'$_{screen}$	water	CrLab	ND(0.0005)	ND(0.0005)	0.0056	-	-	-	-	ND(0.005)	-	ND(0.0005)	ND(0.0005)
GW9-MW4-Q8	2/8/95	5¼'-20¼'$_{screen}$	water	CrLab	ND(0.0005)	ND(0.0005)	0.0055	-	-	-	-	ND(0.005)	-	ND(0.0005)	ND(0.0005)
Monttoring Well 9MW5															
GW9-MW5-Q6	9/24/94	5¼'-20¼'$_{screen}$	water	CrLab	ND(0.0005)	ND(0.0005)	ND(0.0005)	-	-	-	-	ND(0.005)	-	ND(0.0005)	ND(0.0005)
GW9-MW5-Q7	11/22/94	5¼'-20¼'$_{screen}$	water	CrLab	ND(0.0005)	ND(0.0005)	ND(0.0005)	-	-	-	-	ND(0.005)	-	ND(0.0005)	ND(0.0005)
GW9-MW5-Q8	2/8/95	5¼'-20¼'$_{screen}$	water	CrLab	ND(0.0005)	ND(0.0005)	ND(0.0005)	-	-	-	-	ND(0.005)	-	ND(0.0005)	ND(0.0005)
GW9-MW5-Q10	8/9/95	5¼'-20¼'$_{screen}$	water	CrLab	ND(0.0005)	ND(0.0005)	ND(0.0005)	-	-	-	-	ND(0.0005)	-	ND(0.0005)	ND(0.0005)

con't on following page

Table A/GW3[con't]

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

Sample I.D.	Sampling Date	Depth (feet)	Matrix	Lab	Toluene	1,1,1-Tri-chloroethane	1,1,2-Tri-chloroethane	Tri-chloroethene	Trichlorofluoro-methane	Trichloro-trifluoroethane	Vinyl Acetate	Vinyl Chloride	Total Xylenes
Monttortng 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)
GW9-MW1-Q6	9/24/94	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)
GW9-MW1-Q7	11/22/94	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)
GW9-MW1-Q8	2/8/95	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)
Monttortng 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)
GW9-MW2-Q6	9/24/94	5¼'-20¼'$_{screen}$	water	CrLab	0.0014	ND(0.0005)	ND(0.0005)	ND(0.0005)	ND(0.0005)	ND(0.0005)	-	ND(0.0005)	0.0006
GW9-MW2-Q7	11/22/94	5¼'-20¼'$_{screen}$	water	CrLab	0.0018	ND(0.0005)	ND(0.0005)	ND(0.0005)	ND(0.0005)	ND(0.0005)	-	ND(0.0005)	0.0005
GW9-MW2-Q8	2/8/95	5¼'-20¼'$_{screen}$	water	CrLab	0.0013	ND(0.0005)	ND(0.0005)	ND(0.0005)	ND(0.0005)	ND(0.0005)	-	ND(0.0005)	0.0005
GW9-MW2-Q10	8/9/95	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)
Monttoring 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
GW9-MW3-Q6	9/24/94	5¼'-20¼'$_{screen}$	water	CrLab	0.076	ND(0.0005)	ND(0.0005)	ND(0.0005)	ND(0.0005)	ND(0.0005)	-	ND(0.0005)	0.022
GW9-MW3-Q7	11/22/94	5¼'-20¼'$_{screen}$	water	CrLab	0.130	ND(0.0005)	ND(0.0005)	ND(0.0005)	ND(0.0005)	ND(0.0005)	-	ND(0.0005)	0.028
GW9-MW3-Q8	2/8/95	5¼'-20¼'$_{screen}$	water	CrLab	0.120	ND(0.0005)	ND(0.0005)	ND(0.0005)	ND(0.0005)	ND(0.0005)	-	ND(0.0005)	0.033
GW9-MW3-Q9	5/31/95	5¼'-20¼'$_{screen}$	water	CrLab	0.170	ND(0.0005)	ND(0.0005)	ND(0.0005)	ND(0.0005)	ND(0.0005)	-	ND(0.0005)	0.044
GW9-MW3-Q10	8/9/95	5¼'-20¼'$_{screen}$	water	CrLab	0.150	ND(0.0005)	ND(0.0005)	ND(0.0005)	ND(0.0005)	ND(0.0005)	-	ND(0.0005)	0.044
Monttortng 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
GW9-MW4-Q6	9/24/94	5¼'-20¼'$_{screen}$	water	CrLab	0.0009	ND(0.0005)	ND(0.0005)	ND(0.0005)	ND(0.0005)	ND(0.0005)	-	ND(0.0005)	0.0026
GW9-MW4-Q7	11/22/94	5¼'-20¼'$_{screen}$	water	CrLab	0.0017	ND(0.0005)	ND(0.0005)	ND(0.0005)	ND(0.0005)	ND(0.0005)	-	ND(0.0005)	0.0034
GW9-MW4-Q8	2/8/95	5¼'-20¼'$_{screen}$	water	CrLab	0.0013	ND(0.0005)	ND(0.0005)	ND(0.0005)	ND(0.0005)	ND(0.0005)	-	ND(0.0005)	0.0030
Monttortng Well 9MW5													
GW9-MW5-Q6	9/24/94	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)
GW9-MW5-Q7	11/22/94	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)
GW9-MW5-Q8	2/8/95	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)
GW9-MW5-Q10	8/9/95	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)

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.

Table A/GW5

INORGANIC GROUNDWATER RESULTS
PACO PUMPS - 9201 SAN LEANDRO STREET

Sample I.D.	Sampling Date	Depth (feet)	Matrix	Lab	Total Nitrogen (351.3/300) (mg/L)	Phosphorus (365.2) (mg/L)	Iron (3010AM/6010) (mg/L)	Manganese (3010AM/6010) (mg/L)	Potassium (3010AM/6010) (mg/L)
Monitoring Well 9MW3									
GW9-MW3-Q9	5/31/95	5¼'-20¼'$_{screen}$	water	GeoAnal	ND(0.2)	0.09			
				CrLab			3.2	3.3	1.4
GW9-MW3-Q10	8/28/95	5¼'-20¼'$_{screen}$	water	GeoAnal	ND(0.2)	1.0			
				CrLab			ND(0.1)	1.2	34

notes: GeoAnal: GeoAnalytical Laboratories, Inc.
CrLab: Chromalab Inc.
ND(0.25) = Not Detected above the laboratory detection limit in parentheses.
GW9-MW3-Q9: Sampled after purging, but prior to installation of Oxygen Release Compound (ORC) in well.
GW9-MW3-Q10: Sampled after removal of ORC and purging of the well.

Table A/GW6

DISSOLVED OXYGEN GROUNDWATER RESULTS
PACO PUMPS - 9201 SAN LEANDRO STREET

Sample I.D.	Sampling Date	Depth (feet)	Matrix	Lab	Dissolved Oxygen (Hach OX-2P) (mg/L)
Monitoring Well 9MW3					
GW9-MW3-Q9	5/31/95	5¼'-20¼'$_{screen}$	water	field	11
GW9-MW3-Q10P	8/28/95	5¼'-20¼'$_{screen}$	water	field	64
GW9-MW3-Q10	8/28/95	5¼'-20¼'$_{screen}$	water	field	20

notes: field: Performed in field with Hach Dissolved Oxygen Test Kit (Model OX-2P).
GW9-MW3-Q9: Sampled after purging, but prior to installation of Oxygen Release Compound (ORC) in well.
GW9-MW3-Q10P: Sampled after removal of ORC, but prior to purging of the well.
GW9-MW3-Q10: Sampled after removal of ORC and purging of the well.

Appendix B

Chain-of-Custody Records

CHROMALAB, INC.

Environmental Services (SDB) (DOHS 1094)

SUBM #: 9508420 REP: GC
CLIENT: JONAS
DUE: 09/06/95
REF #:23637

Chain of Custody

DATE 8/28/95 PAGE 1 OF 1

PROJ. MGR	Mark Jonas/Vida Wright P.E.
COMPANY	Jonas & Associates Inc.
ADDRESS	2815 Mitchell Drive, Suite 209
	Walnut Creek, California 94598
SAMPLERS (SIGNATURE)	(PHONE NO.) (510) 933-5360
Jonas & Associates Inc.	(FAX NO.) (510) 933-5362

REPORT

SAMPLE ID.	DATE	TIME	MATRIX	PRESERV.	TPH - Gasoline (EPA 5030, 8015)	TPH - Gasoline (5030, 8015) w/BTEX (EPA 602, 8020)	TPH - Diesel, TEPH (EPA 3510/3550, 8015)	PURGEABLE AROMATICS BTEX (EPA 602, 8020)	PURGEABLE HALOCARBONS (EPA [redacted], 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)		LUFT METALS: Cd, Cr, Pb, Zn, Ni	CAM METALS (17)	PRIORITY POLLUTANT METALS (13)	TOTAL LEAD	EXTRACTION (TCLP, STLC)				NUMBER OF CONTAINERS
GW9-MW3-Q10P	1995 8-28	1424	GW			X																			2
GW9-MW3-Q10	8-28	1624	GW			X			X														X	X		6
						2 VOA W/HCL			2 VOA W/HCL													1 Plastic W/H2SO4	1 Plastic W/HNO3		

PROJECT INFORMATION

PROJECT NAME: Paco Pumps 9201 S.L.
PROJECT NUMBER: PCO-220
P.O. #:

SAMPLE RECEIPT

TOTAL NO. OF CONTAINERS	8
HEAD SPACE	
REC'D GOOD CONDITION/COLD	
CONFORMS TO RECORD	

TAT: STANDARD 5-DAY | | | 24 | 48 | 72 | OTHER

SPECIAL INSTRUCTIONS/COMMENTS:

GW9-MW3-Q10P: Sampled prior to purging for ORC evaluation.

RELINQUISHED BY 1.	RELINQUISHED BY 2.	RELINQUISHED BY 3.
(SIGNATURE) (TIME) 1353	(SIGNATURE) (TIME)	(SIGNATURE) (TIME)
Ellis Ishaya 8-29-95 (PRINTED NAME) (DATE)	(PRINTED NAME) (DATE)	(PRINTED NAME) (DATE)
Jonas & Associates Inc. (COMPANY)	(COMPANY)	(COMPANY)
RECEIVED BY 1.	**RECEIVED BY 2.**	**RECEIVED BY (LABORATORY) 3.**
(SIGNATURE) (TIME) 1333	(SIGNATURE) (TIME)	(SIGNATURE) (TIME)
B Morrow 8-29-95 (PRINTED NAME) (DATE)	(PRINTED NAME) (DATE)	(PRINTED NAME) (DATE)
Chromalab (COMPANY)	(COMPANY)	Chromalab, Inc. (LAB)

IZI/98988-98990 23346

CHROMALAB, INC.

Environmental Services (SDB) (DOHS 1094)

SUBM #: 9508171 REP: GC
CLIENT: JONAS
DUE: 08/18/95
REF #:23346

Chain of Custody

DATE 8/9/95 PAGE 1 OF 1

PROJ MGR Mark Jonas/Vida Wright P.E.
COMPANY Jonas & Associates Inc.
ADDRESS 2815 Mitchell Drive, Suite 209
Walnut Creek, California 94598

SAMPLERS (SIGNATURE) (PHONE NO.) (510) 933-5360
(FAX NO.) Jonas & Associates Inc. (510) 933-5362

REPORT

SAMPLE ID.	DATE	TIME	MATRIX	PRESERV.	TPH - Gasoline (EPA 5030, 8015)	TPH - Gasoline (5030, 8015) w/BTEX (EPA 602, 8020)	TPH - Diesel, ~~EXTRX~~ K, MO (EPA 3510/3550, 8015)	PURGEABLE AROMATICS BTEX (EPA 602, 8020)	PURGEABLE HALOCARBONS (EPA ~~602~~, 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)		LUFT METALS: Cd, Cr, Pb, Zn, Ni	CAM METALS (17)	PRIORITY POLLUTANT METALS (13)	TOTAL LEAD	EXTRACTION (TCLP, STLC)	Total Nitrogen, Phosphorous	Potassium, Iron Manganese		NUMBER OF CONTAINERS
GW9-MW2-Q10	8-9-95	1216	GW			X	X		X																6
~~GW9-MW3-Q10~~ (E1)			GW			X			X														X	X		~~6~~
~~GW9-MW3-Q10P~~ (E1)			GW			X																				~~2~~
GW9-MW4-Q10	8-9-95	1400	GW			X																				2
GW9-MW5-Q10	8-9-95	1103	GW			X			X														(E1)	(E1)		4
						2 VOA w/HCL	2 Liter (glass)		2 VOA w/HCL														~~1 Liter (glass)~~	~~1 Liter (glass)~~		

PROJECT INFORMATION

PROJECT NAME: Paco Pumps
PROJECT NUMBER: PCO-220
P.O. #:

SAMPLE RECEIPT

TOTAL NO. OF CONTAINERS	12 (E1) ~~20~~
HEAD SPACE	
REC'D GOOD CONDITION/COLD	
CONFORMS TO RECORD	

TAT: STANDARD 5-DAY | 24 | 48 | 72 | OTHER

SPECIAL INSTRUCTIONS/COMMENTS:
5 day-TAT
GW9-MW3-Q10P: Sampled prior to purging for ORC evaluation.

RELINQUISHED BY 1	RELINQUISHED BY 2	RELINQUISHED BY 3
(SIGNATURE) Givo Younani (TIME) 1210	(SIGNATURE) (TIME)	(SIGNATURE) (TIME)
(PRINTED NAME) Givo Younani (DATE) 8/11/95	(PRINTED NAME) (DATE)	(PRINTED NAME) (DATE)
(COMPANY) Jonas & Associates Inc.	(COMPANY)	(COMPANY)
RECEIVED BY 1	**RECEIVED BY 2**	**RECEIVED BY (LABORATORY) 3**
(SIGNATURE) (TIME)	(SIGNATURE) (TIME)	(SIGNATURE) (TIME)
(PRINTED NAME) (DATE)	(PRINTED NAME) (DATE)	(PRINTED NAME) (DATE)
(COMPANY)	(COMPANY)	(LAB) Chromalab, Inc.

2224

CHROMALAB, INC.

Environmental Services (SDB) (DOHS 1094)

Chain of Custody

DATE 5/31/95 PAGE 1 OF 1

PROJ. MGR	M. Jonas / V. Wright, P.E.
COMPANY	Jonas & Associates Inc.
ADDRESS	2815 Mitchell Drive, Suite 209
	Walnut Creek, California 94598
SAMPLERS (SIGNATURE)	(PHONE NO.) (510) 933-5360
Jonas & Associates Inc.	(FAX NO.) (510) 933-5362

REPORT

SAMPLE ID.	DATE	TIME	MATRIX	PRESERV.	TPH - Gasoline (EPA 5030, 8015)	TPH - Gasoline (5030, 8015) w/BTEX (EPA 602, 8020)	TRH x Diesel TEPH K,D,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, B+F, E+F)	PCB (EPA 608, 8080)	PESTICIDES (EPA 608, 8080)	TOTAL RECOVERABLE HYDROCARBONS (EPA 418.1)		LUFT METALS: Cd, Cr, Pb, Zn, Ni	CAM METALS (17)	PRIORITY POLLUTANT METALS (13)	TOTAL LEAD	EXTRACTION (TCLP, STLC)	Total Nitrogen, Phosphorous	Potassium, Iron, Manganese		NUMBER OF CONTAINERS
GW9-MW1-Q9	1995 5/31/95	10:22	GW			X																				2
GW9-MW2-Q9		12:06	GW				X																			2
GW9-MW3-Q9P		12:20	GW			X																				2
GW9-MW3-Q9		3:02	GW			X			X														X	X		6
GW9-MW4-Q9		2:02	GW			X																				2
						2 VOA w/HCl	2 Liter (glass)		2 VOA w/HCl														GLASS (1)	GLASS (1)		
																							1 Liter (plastic)	1 Liter (plastic)		

PROJECT INFORMATION	
PROJECT NAME	PACO 9201 S.L. Oakland
PROJECT NUMBER	PCO-220
P.O. #	

SAMPLE RECEIPT	
TOTAL NO. OF CONTAINERS	
HEAD SPACE	
REC'D GOOD CONDITION/COLD	
CONFORMS TO RECORD	

TAT	STANDARD 5-DAY			24	48	72	OTHER
	X						

SPECIAL INSTRUCTIONS/COMMENTS:
GW9-MW3-Q9P: Sampled prior to purging for ORC evaluation.

RELINQUISHED BY 1	RELINQUISHED BY 2	RELINQUISHED BY 3
(SIGNATURE) Dino Younani 10:36am (TIME)	(SIGNATURE) (TIME)	(SIGNATURE) (TIME)
(PRINTED NAME) Dino Younani 6-1-95 (DATE)	(PRINTED NAME) (DATE)	(PRINTED NAME) (DATE)
(COMPANY) Jonas & Associates Inc.	(COMPANY)	(COMPANY)
RECEIVED BY 1	**RECEIVED BY 2**	**RECEIVED BY (LABORATORY) 3**
(SIGNATURE) R. Marrow 1036 (TIME)	(SIGNATURE) (TIME)	(SIGNATURE) (TIME)
(PRINTED NAME) R. Marrow 6.1.95 (DATE)	(PRINTED NAME) (DATE)	(PRINTED NAME) Chromalab, Inc. (DATE)
(COMPANY) Chromalab	(COMPANY)	(LAB)

CHROMALAB, INC.

Environmental Services (SDB)

September 6, 1995 *Submission #:* 9508420

JONAS & ASSOCIATES, INC.

Atten: Mark Jonas/Vida Wright,PE

Project: PACO PUMPS 9201 S.L. *Project#:* PCO-220
Received: August 29, 1995

re: 2 samples for Gasoline and BTEX analysis.
Method: EPA 5030/8015M/602/8020

Sampled: August 28, 1995 *Matrix:* WATER
Run: 8279-2 *Analyzed:* August 30, 1995

Spl #	Sample ID	Gasoline (mg/L)	Benzene (ug/L)	Toluene (ug/L)	Ethyl Benzene (ug/L)	Total Xylenes (ug/L)
101180	GW9-MW3-Q10P	1.4	N.D.	N.D.	1.7	7.9
101181	GW9-MW3-Q10	4.8	2500	150	53	44
	For above sample:	*Detection limit : Benzene=10ug/l. Toluene,Ethyl benzene,xylenes=5ug/l. Gasoline=0.5mg/l*				
	Reporting Limits	0.05	0.5	0.5	0.5	0.5
	Blank Result	N.D.	N.D.	N.D.	N.D.	N.D.
	Blank Spike Result (%)	107	108	109	105	99

Billy Thach
Chemist

Ali Kharrazi
Organic Manager

1220 Quarry Lane • Pleasanton, California 94566-4756
(510) 484-1919 • Facsimile (510) 484-1096
Federal ID #68-0140157

CHROMALAB, INC.

Environmental Services (SDB)

September 6, 1995 *Submission #:* 9508420

JONAS & ASSOCIATES, INC.

Atten: Mark Jonas/Vida Wright,PE

Project: PACO PUMPS 9201 S.L. *Project#:* PCO-220
Received: August 29, 1995

re: One sample for Volatile Halogenated Organics analysis.
Method: EPA 8010

SampleID: **GW9-MW3-Q10**
Sample #: 101181 *Matrix:* WATER
Sampled: August 28, 1995 *Run:* 8337-O *Analyzed:* August 31, 1995

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.	112
METHYLENE CHLORIDE	N.D.	0.5	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.	--
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	100	2	N.D.	--
TRICHLOROETHENE	N.D.	0.5	N.D.	99
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.	--
DIBROMOCHLOROMETHANE	N.D.	0.5	N.D.	--
CHLOROBENZENE	N.D.	0.5	N.D.	99
BROMOFORM	N.D.	0.5	N.D.	--
1,1,2,2-TETRACHLOROETHANE	N.D.	0.5	N.D.	--
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.	--
TRICHLOROTRIFLUOROETHANE	N.D.	0.5	N.D.	--

Oleg Nemtsov
Chemist

Ali Kharrazi
Organic Manager

CHROMALAB, INC.

Environmental Services (SDB)

September 6, 1995 *Submission #:* 9508420

JONAS & ASSOCIATES, INC.

Atten: Mark Jonas/Vida Wright,PE

Project: PACO PUMPS 9201 S.L. *Project#:* PCO-220
Received: August 29, 1995

re: One sample for Metals analysis.
Method: EPA 3010A M/6010

SampleID: **GW9-MW3-Q10**
Sample #: 101181 *Matrix:* WATER *Extracted:* September 5, 1995
Sampled: August 28, 1995 *Run:* 8323-D *Analyzed:* September 6, 1995

Analyte	RESULT (mg/L)	REPORTING LIMIT (mg/L)	BLANK RESULT (mg/L)	BLANK SPIKE RESULT (%)
IRON	N.D.	0.1	N.D.	99
MANGANESE	1.2	0.02	N.D.	99
POTASSIUM	34	0.2	N.D.	98

Charles Woolley
Chemist

John S. Labash
Inorganic Supervisor

1220 Quarry Lane • Pleasanton, California 94566-4756
(510) 484-1919 • Facsimile (510) 484-1096
Federal ID #68-0140157

GeoAnalytical Laboratories, Inc.

1405 Kansas Avenue
Modesto, CA 95351

Phone (209) 572-0900
FAX (209) 572-0916

CERTIFICATE OF ANALYSIS

Phosphorus

Report # G242-03

ChromaLab
1220 Quarry Lane
Pleasanton CA 94566 - 4756

REVISED
Date of Report: 09/05/95
Date Received: 08/30/95
Date Started: 08/30/95
Date Completed: 09/05/95

Project Name: JONAS

Project # 9508420

Sample ID	Lab ID	Detection Limit	Method	Analyte	Results	Units mg/L
GW9-MW3-Q10	G33781	0.01	365.2	Phosphorus	1.0	
GW9-MW3-Q10	G33781	0.2	351.3/300	Total Nitrogen	ND	

Ramiro Salgado
Chemist

Certification # 1157

Donna Allsup
Laboratory Director

CHROMALAB, INC.

Environmental Services (SDB)

August 18, 1995 *Submission #:* 9508171

JONAS & ASSOCIATES, INC.

Atten: Mark Jonas/V. Wright,P.E.

Project: PACO PUMPS *Project#:* PCO-220
Received: August 11, 1995

re: 3 samples for Gasoline and BTEX analysis.
Method: EPA 5030/8015M/602/8020

Sampled: August 9, 1995 *Matrix:* WATER
Run: 8067-4 *Analyzed:* August 15, 1995

Spl #	Sample ID	Gasoline (mg/L)	Benzene (ug/L)	Toluene (ug/L)	Ethyl Benzene (ug/L)	Total Xylenes (ug/L)
98988	GW9-MW2-Q10	N.D.	N.D.	N.D.	N.D.	N.D.
98989	GW9-MW4-Q10	N.D.	3.6	N.D.	1.4	0.6
98990	GW9-MW5-Q10	N.D.	N.D.	N.D.	N.D.	N.D.
Reporting Limits		0.05	0.5	0.5	0.5	0.5
Blank Result		N.D.	N.D.	N.D.	N.D.	N.D.
Blank Spike Result (%)		89	111	109	109	107

Billy Thach
Chemist

Ali Kharrazi
Organic Manager

1220 Quarry Lane • Pleasanton, California 94566-4756
(510) 484-1919 • Facsimile (510) 484-1096
Federal ID #68-0140157

CHROMALAB, INC.

Environmental Services (SDB)

August 18, 1995 *Submission #:* 9508171

JONAS & ASSOCIATES, INC.

Atten: Mark Jonas/V. Wright,P.E.
Project: PACO PUMPS *Project#:* PCO-220
Received: August 11, 1995
re: 1 sample for Total Extractable Petroleum Hydrocarbons (TEPH) analysis.
Method: EPA 3510/8015M
Sampled: August 9, 1995 *Matrix:* WATER *Extracted:* August 15, 1995
Run: 8051-D *Analyzed:* August 16, 1995

Spl #	Sample ID	Kerosene (ug/L)	Diesel (ug/L)	Motor Oil (ug/L)
98988	GW9-MW2-Q10	N.D.	N.D.	N.D.
	Reporting Limits	50	50	500
	Blank Result	N.D.	N.D.	N.D.
	Blank Spike Result (%)	--	90	--

Dennis Mayugba
Chemist

Ali Kharrazi
Organic Manager

1220 Quarry Lane • Pleasanton, California 94566-4756
(510) 484-1919 • Facsimile (510) 484-1096
Federal ID #68-0140157

CHROMALAB, INC.

Environmental Services (SDB)

August 18, 1995 *Submission #:* 9508171

JONAS & ASSOCIATES, INC.

Atten: Mark Jonas/V. Wright,P.E.

Project: PACO PUMPS *Project#:* PCO-220
Received: August 11, 1995

re: One sample for Volatile Halogenated Organics analysis.
Method: EPA 8010

SampleID: **GW9-MW2-Q10**
Sample #: 98988 *Matrix:* WATER
Sampled: August 9, 1995 *Run:* 8114-O *Analyzed:* August 14, 1995

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.	76
METHYLENE CHLORIDE	N.D.	0.5	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.	--
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.	106
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.	--
DIBROMOCHLOROMETHANE	N.D.	0.5	N.D.	--
CHLOROBENZENE	N.D.	0.5	N.D.	98
BROMOFORM	N.D.	0.5	N.D.	--
1,1,2,2-TETRACHLOROETHANE	N.D.	0.5	N.D.	--
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.	--
TRICHLOROTRIFLUOROETHANE	N.D.	0.5	N.D.	--

Oleg Nemtsov
Chemist

Ali Kharrazi
Organic Manager

1220 Quarry Lane • Pleasanton, California 94566-4756
(510) 484-1919 • Facsimile (510) 484-1096
Federal ID #68-0140157

CHROMALAB, INC.

Environmental Services (SDB)

August 18, 1995 *Submission #:* 9508171

JONAS & ASSOCIATES, INC.

Atten: Mark Jonas/V. Wright,P.E.

Project: PACO PUMPS *Project#:* PCO-220
Received: August 11, 1995

re: One sample for Volatile Halogenated Organics analysis.
Method: EPA 8010

SampleID: **GW9-MW5-Q10**
Sample #: 98990 *Matrix:* WATER
Sampled: August 9, 1995 *Run:* 8114-O *Analyzed:* August 14, 1995

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.	76
METHYLENE CHLORIDE	N.D.	0.5	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.	--
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.	106
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.	--
DIBROMOCHLOROMETHANE	N.D.	0.5	N.D.	--
CHLOROBENZENE	N.D.	0.5	N.D.	98
BROMOFORM	N.D.	0.5	N.D.	--
1,1,2,2-TETRACHLOROETHANE	N.D.	0.5	N.D.	--
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.	--
TRICHLOROTRIFLUOROETHANE	N.D.	0.5	N.D.	--

Oleg Nemtsov
Chemist

Ali Kharrazi
Organic Manager

CHROMALAB, INC.

Environmental Services (SDB)

June 12, 1995 *Submission #:* 9506020

JONAS & ASSOCIATES, INC.

Atten: M. Jonas/V. Wright, P.E.

Project: PACO 9201 S.L. OAKLAND *Project#:* PCO-220
Received: June 1, 1995

re: 4 samples for Gasoline and BTEX analysis.

Matrix: WATER
Sampled: May 31, 1995 *Run#:* 7028 *Analyzed:* June 8, 1995
Method: EPA 5030/8015M/602/8020

Spl # CLIENT SMPL ID	Gasoline (mg/L)	Benzene (ug/L)	Toluene (ug/L)	Ethyl Benzene (ug/L)	Total Xylenes (ug/L)
90776 GW9-MW1-Q9	N.D.	N.D.	N.D.	N.D.	N.D.
90778 GW9-MW3-Q9P	9.1	2800	160	91	72
90779 GW9-MW3-Q9	5.3	1300	170	37	44
90780 GW9-MW4-Q9	0.08	13	0.6	2.3	1.2
Reporting Limits	0.05	0.5	0.5	0.5	0.5
Blank Result	N.D.	N.D.	N.D.	N.D.	N.D.
Blank Spike Result (%)	107	87	85	86	43

Jack Kelly
Chemist

Ali Kharrazi
Organic Manager

08/08 510-933-5362

1220 Quarry Lane • Pleasanton, California 94566-4756
(510) 484-1919 • Facsimile (510) 484-1096
Federal ID #68-0140157

N:QC PIERRE 13:00:11

CHROMALAB, INC.

Environmental Services (SDB)

June 8, 1995 *Submission #:* 9506020

JONAS & ASSOCIATES, INC.

Atten: M. Jonas/V. Wright, P.E.

Project: PACO 9201 S.L. OAKLAND *Project#:* PCO-220
Received: June 1, 1995

re: 1 sample for Total Extractable Petroleum Hydrocarbons (TEPH)

Matrix: WATER *Extracted:* June 3, 1995
Sampled: May 31, 1995 *Run#:* 6983 *Analyzed:* June 4, 1995
Method: EPA 3510/8015M

Spl # CLIENT SMPL ID	Kerosene (ug/L)	Diesel (ug/L)	Motor Oil (ug/L)
90777 GW9-MW2-Q9	N.D.	N.D.	N.D.
Reporting Limits	50	50	500
Blank Result	N.D.	N.D.	N.D.
Blank Spike Result (%)	--	75	--

Sirirat Chullakorn
Sirirat (Sindy) Chullakorn
Chemist

Ali Kharrazi
Organic Manager

CHROMALAB, INC.

Environmental Services (SDB)

June 8, 1995 *Submission #:* 9506020

JONAS & ASSOCIATES, INC.

Atten: M. Jonas/V. Wright, P.E.

Project: PACO 9201 S.L. OAKLAND *Project#:* PCO-220
Received: June 1, 1995

re: One sample for Volatile Halogenated Organics analysis.

Sample ID: **GW9-MW3-Q9**
Spl#: 90779 *Matrix:* WATER
Sampled: May 31, 1995 *Run#:* 7041 *Analyzed:* June 6, 1995
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.	107
METHYLENE CHLORIDE	N.D.	0.5	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.	--
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.	87
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.	--
DIBROMOCHLOROMETHANE	N.D.	0.5	N.D.	--
CHLOROBENZENE	N.D.	0.5	N.D.	91
BROMOFORM	N.D.	0.5	N.D.	--
1,1,2,2-TETRACHLOROETHANE	N.D.	0.5	N.D.	--
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.	--
TRICHLOROTRIFLUOROETHANE	N.D.	0.5	N.D.	--

Oleg Nemtsov
Chemist

Ali Kharrazi
Organic Manager

CHROMALAB, INC.

Environmental Services (SDB)

June 20, 1995 *Submission #:* 9506020

JONAS & ASSOCIATES, INC.

Atten: M. Jonas/V. Wright, P.E.

Project: PACO 9201 S.L. OAKLAND *Project#:* PCO-220
Received: June 1, 1995

re: One sample for Metals analysis.

Sample ID: **GW9-MW3-Q9**
Spl#: 92578 *Matrix:* WATER *Extracted:* June 19, 1995
Sampled: May 31, 1995 *Run:* 7223-C *Analyzed:* June 20, 1995
Method: EPA 3010A M/6010

ANALYTE	RESULT (mg/L)	REPORTING LIMIT (mg/L)	BLANK RESULT (mg/L)	BLANK SPIKE RESULT (%)
IRON	3.2	0.1	N.D.	109
MANGANESE	3.3	0.02	N.D.	103
POTASSIUM	1.4	0.2	N.D.	102

Charles Woolley
Chemist

John S. Labash
Inorganic Supervisor

1220 Quarry Lane • Pleasanton, California 94566-4756
(510) 484-1919 • Facsimile (510) 484-1096
Federal ID #68-0140157

GeoAnalytical Laboratories, Inc.

1405 Kansas Avenue
Modesto, CA 95351

Phone (209) 572-0900
FAX (209) 572-0916

CERTIFICATE OF ANALYSIS

Phosphorus

Report # G153-07

ChromaLab
1220 Quarry Lane
Pleasanton CA 94566 - 4756

Date of Report: 06/08/95
Date Received: 06/02/95
Date Started: 06/02/95
Date Completed: 06/07/95

Project Name: Jonas

Project # 9506020

Sample ID	Lab ID	Detection Limit	Method	Analyte	Results	Units mg/L
GW9-MW3-Q9	G32455	0.01	365.2	Phosphorus	0.09	
GW9-MW3-Q9	G32455	0.2	351.3/300	Total Nitrogen	ND	

Ramiro Salgado
Chemist

Certification # 1157

Donna Allsup
Laboratory Director

Appendix D

Hach DO Test Kit Instructions

Jonas & Associates Inc.

HACH
DISSOLVED OXYGEN TEST KIT
Model OX-2P

Dissolved Oxygen Test Instructions

1. Fill the Dissolved Oxygen bottle (round bottle with glass stopper) with the water to be tested by allowing the water to overflow the bottle for two or three minutes. To avoid trapping air bubbles in the bottle incline the bottle slightly and insert the stopper with a quick thrust. This will force air bubbles out. If bubbles become trapped in the bottle in Step 2 or 4 the sample should be discarded before repeating the test.

2. Use the clippers to open one Dissolved Oxygen 1 Reagent Powder Pillow and one Dissolved Oxygen 2 Reagent Powder Pillow. Add the contents of each of the pillows to the bottle. Stopper the bottle carefully to exclude air bubbles. Grip the bottle and stopper firmly; shake vigorously to mix. A flocculent (floc) precipitate will be formed. If oxygen is present in the sample the precipitate will be brownish orange in color. A small amount of powdered reagent may remain stuck to the bottom of the bottle. This will not affect the test results.

3. Allow the sample to stand until the floc has settled halfway in the bottle, leaving the upper half of the sample clear. Shake the bottle again. Again let it stand until the upper half of the sample is clear. Note the floc will not settle in samples with high concentrations of chloride, such as sea water. No interference with the test results will occur as long as the sample is allowed to stand for four to five minutes.

4. Use the clippers to open one Dissolved Oxygen 3 Reagent Powder Pillow. Remove the stopper from the bottle and add the contents of the pillow. Carefully restopper the bottle and shake to mix. The floc will dissolve and a yellow color will develop if oxygen is present.

5. Fill the plastic measuring tube level full of the sample prepared in Steps 1 through 4. Pour the sample into the square mixing bottle.

6. Add Sodium Thiosulfate Standard Solution drop by drop to the mixing bottle, swirling to mix after each drop. Hold the dropper vertically above the bottle and count each drop as it is added. Continue to add drops until the sample changes from yellow to colorless.

7. Each drop used to bring about the color change in Step 6 is equal to 1 mg/L of dissolved oxygen (DO).

Hach Company, P.O. Box 389, Loveland, Colorado 80539
1(800) 227-4224