Jonas & Associates Inc.

SITE CHARACTERIZATION REPORT
and
WORK PLAN

PACO PUMPS INC.
9201 San Leandro Street
Oakland, California

October 16, 1992

Jonas & Associates Inc.

Report Prepared for:

PACO Pumps, Inc.
9201 San Leandro Street
Oakland, California 94603

SITE CHARACTERIZATION REPORT AND WORK PLAN
PACO PUMPS, INC.
9201 SAN LEANDRO STREET
OAKLAND, CALIFORNIA

Jonas & Associates Inc. Job No. PCO-220-01-SAII

Prepared by

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October 16, 1992

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and
WORK PLAN

Jonas & Associates Inc.

PACO PUMPS INC.
9201 San Leandro Street
Oakland, California
October 7, 1992

1.0 INTRODUCTION

1.1 Overview

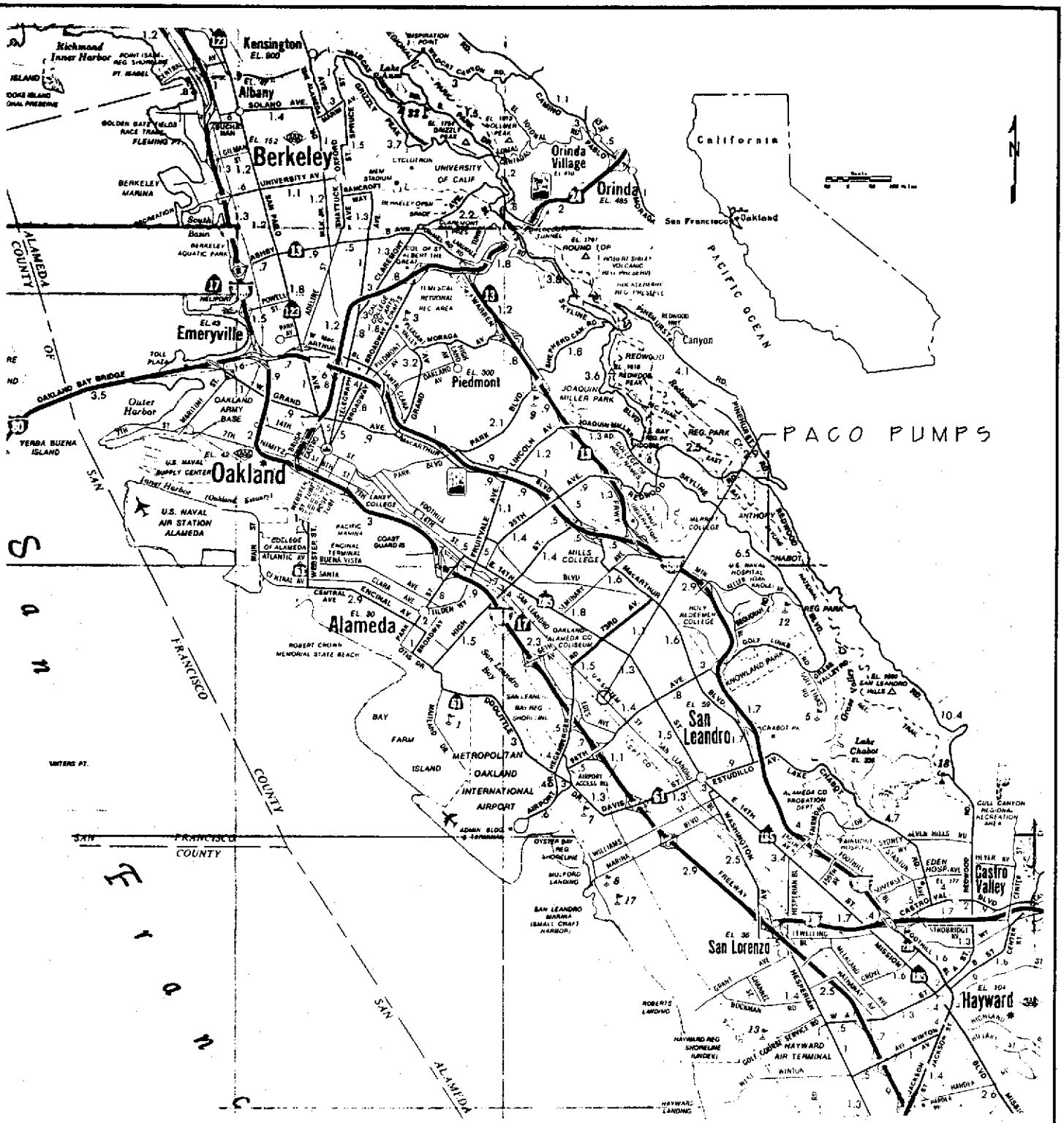
Jonas and Associates Inc. has been requested by PACO Pumps Inc. to perform a general site characterization of its property located at 9201 San Leandro Street, in Oakland, California 94604. This report presents the results of the initial site characterization study of PACO Pumps' facility. In addition, the report also presents recommendations for future work for further site characterization.

PACO Pumps' environmental representative for this project is Mr. Scott Liddicoat. The lead agency for this project is the Alameda County Health Care Services Agency, Department of Environmental Health, Hazardous Division (Alameda County Health Services). The address of Alameda County Health Services is 80 Swan Way, Room 200, Oakland, California 94621. The project representative for Alameda County Health Services is Ms. Eva Chu.

Figure 1-1 identifies the regional location of the property. The survey location of the facility is Township 2 South, Range 3 West, Section 22, Mount Diablo Baseline and Meridian. At this location, the land is essentially flat. A general map of the facility is presented in Figure 1-2.

Prior to May 1992, PACO Pumps had an active facility at their 9201 San Leandro Street 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. Currently, the equipment used for manufacturing activities, along with parts and products, have been removed from the facility. The buildings still remain. The facility is largely bound by a Cyclone fence and gates. The Environmental Protection Agency identification number for PACO Pumps' 9201 San Leandro Street facility is CAD088772629.

The primary objective of the initial site characterization study for the facility is to assess if industrial activities at the property may have resulted in the contamination of soil. The basis for this concern are the possible products and wastes associated with some of the support activities necessary for the manufacturing of pump assemblages. An example is: machines that use oil tend to have oily wastes. The facility was primarily used for the engineering, manufacturing, construction, and storage of pumps and pump systems. To determine a rationale for the selection of sampling locations and the analyses to be performed, historic maps of the facility were reviewed, and current activities and conditions were observed.



Regional Location

PACO PUMPS

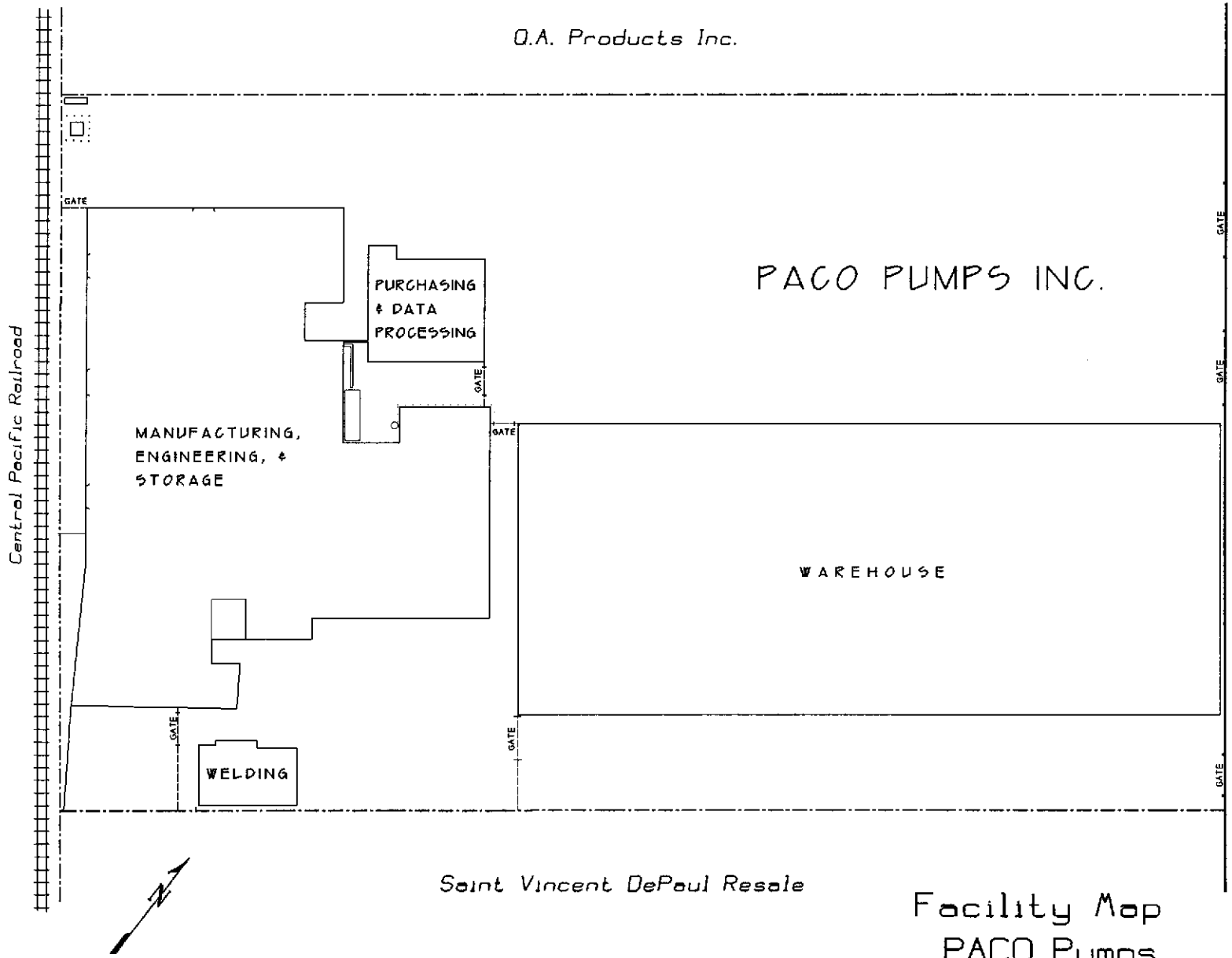
Oakland, California

Prepared by

JONAS AND ASSOCIATES INC.

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

Figure 1-1 | Drawing Number PC0217-10/91-1-1 | Checked by | Approved by | 10-11-1991 | Drawn by



Drawn by: A.J. 5-29-1992
Checked by / Approved by:
Drawing Number PCO220-5/92:FI-2
Figure 1-2

Facility Map
PACO Pumps
9201 San Leandro Street
Oakland, California

Prepared by
JONAS & ASSOCIATES INC.

By May 1992, PACO Pumps' manufacturing activities at this facility had ceased.

Date: 5-29-1992
Locations Approx.

Figure 1-2

Drawing Number PCO220-5/92:FI-2

For the site characterization study, a total of twenty-five soil samples were collected. In addition, one water sample was collected from backwash from a filter associated with a pump testing tank. Most of these samples were analyzed for priority pollutant metals, volatile organic compounds, and total extractable petroleum hydrocarbons as diesel, kerosene, and motor oil. In addition, selected soil samples were analyzed for base/neutral/acid extractables, chlorinated pesticides, total petroleum hydrocarbons as gasoline, and total extractable petroleum hydrocarbons as diesel, along with benzene, toluene, ethyl benzene, and total xylenes. Eighteen of the soil samples were composites of discrete samples collected from depths of 0 to 0.5 feet and 1 to 1.5 feet. Seven discrete soil samples were also collected: five from 3 to 3.5 feet deep, and two from 0 to 0.5 feet below an asphalt surface.

During the study, an underground storage tank was identified on a 1954 Factory Insurance Association Map. An attempt was made to find the tank by excavating in the general location identified by the 1954 map. No tank was found, but pipes, debris, and possibly fill associated with an underground storage tank were identified. In the suspected location around the underground tank, soil containing elevated concentrations of gasoline and its constituents were excavated with a backhoe. The excavation of soils around the suspected tank and the sampling results are presented in this report.

This report presents the procedures and results of a site characterization study performed by Jonas and Associates Inc., of PACO Pumps' engineering and manufacturing facility, in Oakland, California. But in addition to being a site characterization report it is also a work plan, describing recommended activities to be performed at the site. These include the installation and sampling of groundwater monitoring wells, along with the sampling and analyzing soil from borings and near surface. The scope of this recommended work was based upon discussions with representatives of PACO Pumps and Alameda County Health Services. Further review and discussions with PACO Pumps' identified other necessary data which needed to be collected. The scope of work for the work plan is based upon these recommendations.

1.2 Project Objectives and Scope of Report

The primary objectives of the initial site characterization study presented in this document were to collect and analyze samples:

1/ below a previous excavation, which had been filled;

2/ from areas where industrial activities may have resulted in waste discharges;

3/ from general locations where specific industrial activities are unknown; and

4/ of water and particulate matter from the pump testing tank.

Results from this study were used to define the need for further site characterization, also presented in this document as a recommended scope of work to be performed.

The overall objectives of the excavation activities in the area of the suspected underground storage tank was to attempt to find and remove the tank if it was present, excavate soil with elevated concentrations, and properly dispose of the piping and contaminated soil.

The objectives of the recommended scope of work for future activities at this facility have five elements:

1/ Install and sample a groundwater monitoring well and determine if selected contaminants exist in groundwater immediately downgradient of an excavation in an area of a suspected underground storage tank;

2/ Install and sample a groundwater monitoring well underneath the current warehouse and determine if selected contaminants exist in groundwater immediately downgradient from an area where a suspected underground storage tank may have been present;

3/ Install and sample two groundwater monitoring wells and determine if selected contaminants exist in groundwater underlying areas with previously detected elevated concentrations in soil;

4/ From the soil borings associated with the monitoring wells, collect and analyze soil samples from selected horizons to provide a vertical profile of selected constituents, if they are detected; and

5/ Collect selected soil samples in areas where previous soil samples contained metal concentrations exceeding ten times the Soluble Threshold Limit Concentrations (STLCs) and have them analyzed using the Waste Extraction Test (WET).

This Site Characterization Report and Work Plan is presented in eleven sections and eleven appendices. Section 1, Introduction, provides overview of the facility, the site characterization study, and recommended future work. This section also presents project objectives, the scope of the report, and identifies various sources of information. Section 2, Facility History, offers a brief history of activities at the facility. After presenting the facility's history, Section 3, Physical Setting, presents the local geography, climate, regional geology, and hydrogeology, along with a brief discussion of surface water features. This is followed by Section 4, Sampling Rationale, Procedures, and Results, which identifies sampling rationale, methods and procedures, and the analytical results. Sampling results are also evaluated and discussed in this section of the report. Section 5, Excavation Activities, is dedicated to describing the excavation activities

associated with an attempt to find a previous underground storage tank, along with sampling procedures and results associated with the excavation. These sections form the basis for the recommendations for further site characterization. Section 6, Recommended Characterization of Groundwater, presents recommended scope of work for groundwater monitoring well installation and sampling. Section 7, Recommended Analysis of Soil, offers the rationale and procedures for further soil characterization with respect to characterization of soil in the borings associated with monitoring well installations, and preforming a WET analysis to determine if leachable constituents in selected samples exceed STLCs. Section 8, Reports, provides the scope of future quarterly reports and, upon completion of the total project, a site characterization and remediation report. An estimate duration schedule is presented in Section 9, Proposed Schedule. Section 10, Project Summary, presents a summary of the project. Section 11, References, offers the citations for the references used in the evaluation of various environmental issues associated with the facility.

The appendices of the report include summary tables of sampling results, chain-of-custody records, raw laboratory data, statistic analysis on detected metals, a local soil investigations associated with the construction of BART, and permits and manifests associated with excavation activities. The three final appendices in this report are aerial photographs, pictures of site characterization sampling, and pictures of soil excavation.

1.3 Sources of Information

Much of the information presented in this report was provided by personnel at PACO Pumps. They supplied reports, maps, and earlier figures associated with the property. In general, the history of waste management activities of previous owners is unknown. The other sources of information for this project includes Jonas and Associates' standards of procedures for sampling, our corporate Health and Safety Plan, and the analytical results. Other information used in the study and work plan was obtained in federal and state regulations and guidance manuals, and from scientific literature.

2.0 FACILITY HISTORY

PACO Pumps Inc., formerly called Pacific Pumping Company, originally opened in 1906 at a facility in San Francisco. In 1946 they moved their facility to 9201 San Leandro Street, Oakland, California, after acquiring the property from a tent manufacturing company. Previous to tent manufacturing, the site was reportedly a foundry. Around 1975 PACO Pumps purchased the facility at 845 92nd Avenue, across the street from their original facility. In 1992 PACO Pumps moved their facility at 9201 San Leandro Street to 800 Koomey Road, Brookshire, Texas. Currently, both of PACO Pumps' Oakland facilities are for sale.

2.1 Brief History of Land Usage

PACO Pumps property located at 9201 San Leandro Street, Oakland, California, was predominately used as an engineering, manufacturing, storage, and shipping facility. Support activities for pump and pump system manufacturing included machining (milling, turning, drilling), welding, and assembly. Assembled pumps were painted, tested, packaged, and shipped. Other supporting activities included further pump testing, quality control, engineering, storage, packing, and shipping. In 1990, PACO Pumps 9201 San Leandro Street facility employed approximately 217 people.

The facility covers approximately 4.8 acres and includes approximately 103,650 square feet of manufacturing and engineering areas, office space, and warehouse space. The site has four main buildings, along with outside storage and parking. The main manufacturing and engineering building includes approximately 41,500 square feet of floor space, and when it was active it included metal laths, drills, a pump testing facility, oil storage, a quality control room, an engineering department, casting storage, and a computer room. A one story building, adjacent to the manufacturing and engineering building, included approximately 3,450 square feet which included office space for purchasing, data processing, and manufacturing management. Adjacent to San Leandro Street, PACO Pumps' warehouse covers approximately 57,000 square feet and was used for storage, shipping, receiving, and contained paint booths, paint storage, offices, and a lunch/break area. A welding shop and pipe shop were include in a 1,700 square foot building. Outside of the welding shop was an air compressor under an overhang. Outside areas included parking, truck docks, pipe and round bar storage, pump and pump system storage, metal waste storage, and a power transformer. Except for a limited area southwest of the manufacturing and engineering building, the other outside areas are either surfaced with asphalt or concrete. Outside sewer grates are also present.

Review of previous land use maps and from discussions with some long-time PACO Pumps' employees indicated the presence of two underground storage tanks used to supply fuel. Evidence exists that these two underground storage tanks have apparently been previously removed. One tank was identified on a 1954 map as a 550 gallon gasoline tank and was said to have been located in an outside storage area, just

southeast of the manufacturing and engineering building. Recent excavation activities did not find the tank, but during the excavation piping, possible fill, and tank debris were found. The general location of the other tank was identified by a long-time employee. A proposal by the firm that built the warehouse did state that they planned to remove the tank prior to constructing the building. These will be further discussed in the document.

Local land use is predominately industrial. Along the southwest boundary of PACO Pumps facility are the railroad tracks of the Central Pacific Railroad. To the southeast of PACO Pumps facility is Saint Vincent DePaul. To the northeast of the facility is San Leandro Street, an industrial thoroughfare, then elevated BART tracks above the Western Pacific railroad track. Across San Leandro Street is PACO Pumps' 845 92nd Street facility and other light industry. Just beyond the northwest boundary of the facility is light industry. Approximately one mile to the west of the facility is the Oakland Airport. Approximately one mile to the northwest is the Oakland Coliseum Complex.

The facility is located within the one-hundred year flood plain. No water supply wells are present on the facility. Water at the facility is supplied by the East Bay Municipal Water District. Precipitation at the facility either is directly collected and discharged to sewer grates, percolates through the asphalt surface or limited ground space, or evaporates. No stream or creek is present on the facility. The closest natural drainage is San Leandro Creek, located approximately one mile southwest of the site. The tidal reaches of San Leandro Bay is approximately one mile west of the facility. San Leandro Bay joins the San Francisco Bay west of Alameda.

2.2 Waste Generation

Processes employed in the manufacturing of pumps and pump systems results in the generation of oily metal wastes, metal scraps, waste paint, spent rags, waste oil, waste coolant, and pump testing wastewater. In addition, in the past PACO Pumps apparently used underground storage tanks for fuel. PACO Pumps has also stated that they stored wastes on-site until they are disposed of. Both storm sewers and East Bay MUD's sanitary sewer exists for the discharge of fluids. Solid wastes are predominately collected by Oakland Scavenger Company.

Various waste streams have been previously sampled by Jonas and Associates, with the results documented. Supporting information on October 9, 1990 sampling of paint sludge is presented in a Jonas and Associates report submitted to PACO Pumps', titled Characterization of Selected Hazardous Wastes Generated By PACO Pumps 9201 San Leandro Street, dated November 14, 1990. A discussion of the spent coolant results is presented in a November 15, 1990 letter titled Waste Characterization of Spent Coolant and a May 21, 1991 report titled Spent Coolant Characterization for PACO Pumps Inc. Other documents which provide insights into various waste streams associated with the facility is the August 20, 1990 Facility Compliance Audit. Appendix E of this report presents EPA's June 26, 1990 Site Inspection Reassessment for the facility.

The following 1990 table presents a list of potential wastes previously associated with PACO Pumps' manufacturing facility:

Table 2-1
General Manufacturing Wastes
PACO Pumps - 9201 San Leandro Street
Oakland, California

Process	Probable Waste
Machining	metal scraps, oily metal wastes, grinding filter paper, spent coolant, waste oil
Cleaning Parts	spent lacquer thinner, rags, spent Safety Kleen solvents
Painting	paint sludge, paint booth wastewater, waste paint
Pumps Testing	wastewater
Various Processes	drums and cans

Pump manufacturing can be considered a five-step process: machining, welding, assembly, painting, and packaging. The machining process includes milling, turning, and grinding. After welding and assembly, the parts are painted.

Painting of pumps and pump systems equipment apparently generates several types of liquid wastes; lacquer thinner, paint booth wastewater, waste paint sludges, and waste paint. Lacquer thinner was used to wipe down the equipment before they were painted. The Material Safety Data Sheet identifies Lacquer Wash Thinner as containing oxygenated hydrocarbons, aromatics (not benzene), esters, methyl ethyl ketone, paraffins, and acetone.

Historically, PACO Pump Blue Air-Dry Enamel (PACO Blue) paint was reported to have contained toluene, xylenes, methyl ethyl ketone, 1,1,1-trichloroethane, and acetone, along with other constituents. Various formulations were used, with a recent formulation to meet requirements of the Bay Area Air Quality Management District. The principle constituent of paint sludge is notably PACO Blue paint, but laboratory analysis also detected the presence of 2-butanone, 4-methyl-2-pentanone, and ethyl benzene, along with barium, chromium, cobalt, copper, lead, nickel, and zinc. The lead concentration in paint sludge sample SG1DM2-100990 (October 9, 1990) at 1,600 mg/kg exceeded the Total Threshold Limit Concentration for lead. The paint booth sludge and paint booth wastewater is generated in the process of painting pumps in a waterwash paint spray booth.

On October 9, 1990 sample SG1DM1-100990 of spent coolant detected 1,1,1-trichloroethane, toluene, ethyl benzene, and xylenes, along with beryllium, cadmium, chromium, copper, and lead. Coolant was used in tooling and grinding machines.

Appendix G presents ingredients of paint sludge, lacquer wash thinner, and spent coolant, in addition to three different formulations of PACO Blue "Alkyd Air Dry Enamel".

3.0 PHYSICAL SETTING

3.1 Local Geography

The site is located just west of San Leandro Street, in Oakland, California, within Alameda County. The property is in the flatlands of Oakland, located approximately two miles east of the Oakland International Airport. Just west of the Oakland International Airport is San Francisco Bay. Approximately one mile west of the site is a tidal slough of San Leandro Bay. San Leandro Bay is a relatively small body of water between Alameda Island and Oakland, with a diameter of roughly one mile. San Leandro Bay hydraulically interacts with the much larger San Francisco Bay.

The general topography in the area of the site is relatively flat, with a gentle slope towards the northwest. The ground level elevation of the property ranges from approximately 15 to 20 feet above mean sea level (MSL).

Local land use includes manufacturing, storage, and light industrial. San Leandro Street is an industrial thoroughfare.

3.2 Climate

The climatic pattern in the San Francisco Bay Area is characterized by partly cloudy moderate summers without significant precipitation, and mild winters with precipitation from passing storms. During the summer, the presence of semi-permanent atmospheric high pressure (Pacific High) dominates the regional climate. Winds during the summer are primarily from the northwest. Summer fog and low clouds often form during late evenings. The fog usually lifts and the low clouds evaporate as land areas warm during the morning. Generally, the Pacific High weakens during the winter. During the winter season, three different weather patterns typically form: 1) fog associated with the Pacific High, 2) clear skies, cool nights, and warm days associated with continental controls, and 3) variable cloudiness, shifting and gusty winds, and precipitation associated with storms. Severe storms are rare in this region of California.

Winds at the site are primarily from the north, northwest, and southwest. Winds from the north and northwest are typically associated with the summer Pacific High. Winds from the southwest are characteristically associated with storm systems. Wind speeds associated with these storms are usually less than 30 miles per hour.

Temperatures at the site are moderated by San Francisco Bay. Average mean monthly temperatures range from approximately 43°F to 70°F. The warmest month tends to be September and the coolest is January.

Average precipitation south of the site at the Oakland Airport is 18.7 inches. Approximately 95 percent of regional precipitation occurs from October through April,

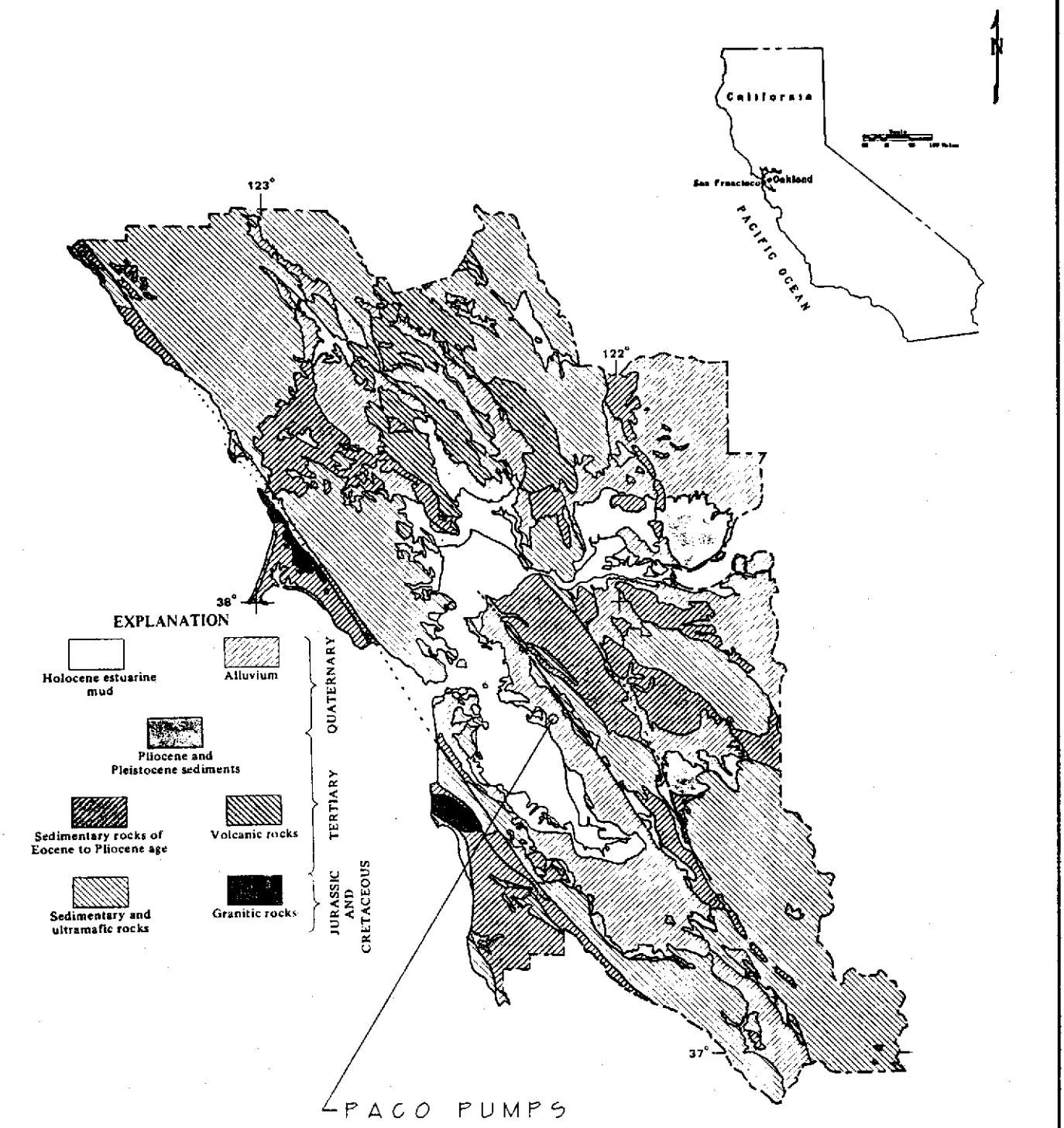
and is primarily associated with storm systems moving eastward. Morning drizzle is relatively common during the summer. Snowfall is rare.

3.3 Regional Geology

The site is probably located at the distal end of a gentle westward-sloping alluvial plain bordering estuarine marsh environments. The alluvial plain is probably Quaternary in age, representing relatively recent deposits. Generally, alluvial plains tend to contain consolidated to unconsolidated clays, silts, sands, and gravels, and bordering the San Francisco Bay, organic-rich clays and silts. These deposits also tend to increase in thickness westward from their base at the Berkeley/Oakland Hills. The alluvial deposits are considered to be underlain by the bedrock of the Mesozoic Franciscan Formation. The Franciscan Formation is a complex assemblage of serpentinite, greenstone, graywacke, chert, shale, sandstone, and schist, found on many of the ridges and mountains in the San Francisco Bay Region. Figure 3-1 presents the regional geology of the San Francisco Bay region.

Geologically, the depositional history within the San Francisco Bay Area is relatively young (less than two to three million years old). Deposition along the flanks of local uplands was largely controlled by repeated variations in sea level and precipitation. Changes in sea level were caused by the cyclic advance and retreat of continental ice during the last ice age, which ended approximately 10,000 years ago. During the last Pleistocene glacial period, sea level was 300 to 400 feet lower than what it is today (Halley et al. 1979). A 400 foot lowering of sea level would have San Francisco Bay receding beyond the Golden Gate. During the ice age local climate was probably wetter. All of these events contributed to changing sedimentation patterns, with a possible coarsening of clastics downslope due to a lowering of the hydraulic baselevel during the ice age and increased precipitation. Alternatively, during periods of high sea level the San Francisco Bay rose into the valleys, and finer-grained estuarine sediments were deposited. Generally, alluvial deposits are coarser in the uplands and fine downslope. In the San Francisco Bay Area alluvial fan sediments interface with estuarine marsh deposits along the border of the current and prehistoric Bay.

Dominant processes depositing local sediments were probably alluvial, fluvial, and estuarine. Superimposed on the alluvial, fluvial, and estuarine processes was cyclic Pleistocene glaciation, causing the dramatic changes in sea level and significant variation in regional precipitation. This depositional history probably has resulted in a complex sedimentary sequence characterized by irregular interbedding and interfingering of coarse- and fine-grained deposits. Because the site is located close to San Francisco Bay, many of the more recent and shallow sediment are probably fine-grained and characteristic of lower fan deposits and estuarine marshes. Coarser sediments may have been deposited in the ancestral drainages.



Geology of San Francisco Bay Region
PACO PUMPS
Oakland, California

Prepared by

JONAS AND ASSOCIATES INC.

Date: 10-11-1991 Scale as shown	Figure 3-1	Drawing Number PC0217-10/91:F3-1

Figure 3-1 | Drawing Number PC0217-10/91:F3-1 | M.J. 10-11-1991 | Checked by | Approved by | Drawn by

Stratigraphy in the area of the facility is discussed in a 1965 report by Bechtel Corporation titled San Francisco Bay Area Rapid Transit District Soil Investigation. Their investigation was performed in support of the building of BART, whose tracks are above San Leandro Street and adjacent to PACO's facility and the Western Pacific railroad tracks. Bechtel (1965) found that the soil profile along this segment of the railroad tracks consists of firm sedimentary deposits of silty and sandy clays, clayey and silty sands and gravels, and other sand-silt-clay mixtures which are overlain in some areas by shallow recent fill. Bechtel defined these as alluvial deposit of the Temescal formation. They considered that in this location the Temescal formation is underlain by the Alameda formation, but this was not confirmed because the boring depth was generally around 80 feet below ground level.

Becthel (1965) provided three borings in the location of the PACO Pumps' facility at 92nd Avenue and San Leandro Street. These borings are identified as A-704-72, A-704-73, and A-704-155. Their logs, location map, and soils data are presented in Appendix F of this report. The following Table 3-1 presents a summary of stratigraphy in the three borings:

Table 3-1
BART Soil Borings

Boring	Stratigraphy
A-704-72	0'-8':fill; 8'-20':sandy clay; 20'-57':silty sand; 57'-82':sandy clay
A-704-73	0'-4':fill; 4'-64':sandy clay; 64'-82':clay
A-704-155	0'-5':fill; 5'-14':clay; 14'-26':clayey sand; 26'-61':silty clay

3.4 Regional Hydrogeology

The site probably lies within the Alameda Bay Plain Groundwater Basin. Most groundwater is currently not used due to a general tendency for low permeability in local alluvium, limited thickness of transmissive units, and salt water intrusion along the border of the bay. Because wells with good borehole documentation are rare, the basin's hydrogeologic conditions are not well characterized.

Much of the groundwater recharge into the alluvium underlying the site is probably from drainage through sediments in the flatland and higher up on the alluvial fan. Across the basin, recharge from infiltration of rainfall is probably limited by the low permeability of shallow clays and by the large amount of paved areas with drainage collection. Because much of the site is covered with bare soil, infiltration leading to some groundwater recharge may occur at the facility.

Groundwater in the BART soil borings (Bechtel 1965) was measured at approximately 6 to 13 feet above mean sea level. Local groundwater is probably influenced by the sloughs, bays, and inlets of San Francisco Bay. But because of the significant presence of clay in the subsurface it is unlikely that groundwater levels would show diurnal changes due to tidal interaction. But tidal influences at the site cannot be ruled out until local groundwater wells are adequately monitored.

Shallow groundwater probably eventually discharges into San Francisco Bay. San Francisco Bay is the probable destination of most groundwater in the Oakland area unless it is captured by groundwater extraction wells. But because of its general poor quality, groundwater is generally not used for domestic uses and the area does not have large scale agriculture. If groundwater transport in the area of the site is in a west to northwesterly direction, than the groundwater probably discharges into San Leandro Bay before it eventually enters San Francisco Bay. South Slough is a tidal reach of San Leandro Bay, approximately one mile to the west of the site. The main body of San Leandro Bay is northwest of the facility.

A library search was performed to obtain information on the hydrogeology in the general area of the Oakland, California site. Apparently, very little information is available. In general, two potential aquifers in the general area are the Merritt Sand and the Alameda Formation (DWR 1982). The Merritt Sand is composed of a fine-grained sand, silt, and clay. The Alameda Formation is a marine deposit that commonly contains alternating layers of sandy clay and sand. Permeability of the Alameda Formation is moderate to low. The Alameda Formation is used as a limited source of water within the Oakland area. However, limited data is available on the number of active wells, recharge rate, regional groundwater levels, and water quality.

In the location of the facility the groundwater appears to be slightly brackish, probably due to the location of San Francisco Bay. Local groundwater is considered non-potable (E&E 1985). In E&E's (1985) report they cited four wells within three miles of PACO's facility. Three are domestic wells, all located southeast of the facility and "do not appear susceptible to potential contamination by PACO". The fourth well is apparently an unused municipal well owned by the Union Water Company, located approximately 2 miles from PACO Pumps (Alameda County Flood Control and Water Conservation District 1985). As stated in E&E's (1985) report, groundwater flow southwest, towards San Francisco Bay, and the majority of local groundwater is considered non-potable in this area.

Two borings presented in the Bechtel (1965) report are located adjacent to the facility and present water levels in 1965. These water levels may be more representative of pre-drought conditions. The water levels were measured daily for at least three days following drilling. The following Table 3-2 presents water levels in 1965, with respect to depth below surface and their elevation above mean sea level.

Table 3-2
Groundwater Levels in BART Soil Borings

Boring	Groundwater Below Surface (feet)	Groundwater Elevation (feet m.s.l)
A-704-70	-9.2' (4-20-65)	+5.7'
A-704-71	-7.7' (4-20-65)	+8.5'
A-704-72	-4.9' (4-20-65)	+10.5'
A-704-73	-4.8' (4-20-65)	+13.1'

Since the borings presented in Table 3-2 all are parallel to San Leandro Street, we cannot determine the hydraulic groundwater gradient in 1965. But it does indicate that a significant gradient did exist, but the actual cause of this gradient is unknown (e.g, natural versus a pumped condition). San Leandro Street is a northwest - southeast corridor. Boring A-704-70 is northwest of boring A-704-73.

3.5 Surface Water

The facility is located approximately 1.5 mile southeast from San Leandro Bay. The San Leandro Bay hydraulically connects with the San Francisco Bay through the Oakland Inner Harbor and a channel south of Alameda Island.

No ponds are located on or adjacent to the facility. The closest stream course is San Leandro Creek, which is located approximately one mile southwest of the facility. The headwaters of the San Leandro Creek are in the location of Chabot Regional Park in the Berkeley Hills, to the east. Water in Lake Chabot empties into San Leandro Creek which then flows in a westerly direction. In the area around Highway 880, San Leandro Creek then turns toward the north and eventually empties into South Slough which connects with San Leandro Bay. As stated earlier, South Slough is approximately one mile west of the facility. South Slough appears to undergo tidal elevation changes.

The site is located within the one-hundred year flood plain (USDA 1981, USGS 1977).

A storm drain apparently is present at the site. Storm drains in this region of Oakland typically empty into South Slough, which connects with San Leandro Bay and then San Francisco Bay. Potable water for the region and sanitary sewage services are provided by East Bay Municipal Utility District (East Bay MUD).

4.0 SAMPLING RATIONALE, PROCEDURES, AND RESULTS

Soil sampling by Jonas and Associates Inc. at PACO Pumps' 9201 San Leandro Street facility occurred during three sampling events. One of the events was associated with June through August 1992 excavation activities, during an attempt to find a previously identified underground storage tank and to remove soil with elevated concentrations of petroleum products. Excavation activities and associated soil sampling are presented in Section 5.0 Excavation Activities. The other two sampling events occurred on October 1, 1991, and April 9, 13, and 14, 1992. These sampling events are presented in this section of the report. Summary sheets of the analytical results are provided in Appendix A. The chain-of-custody records are provided in Appendix B. Laboratory data sheets are presented in Appendix C. Appendix J presents pictures of site characterization sampling.

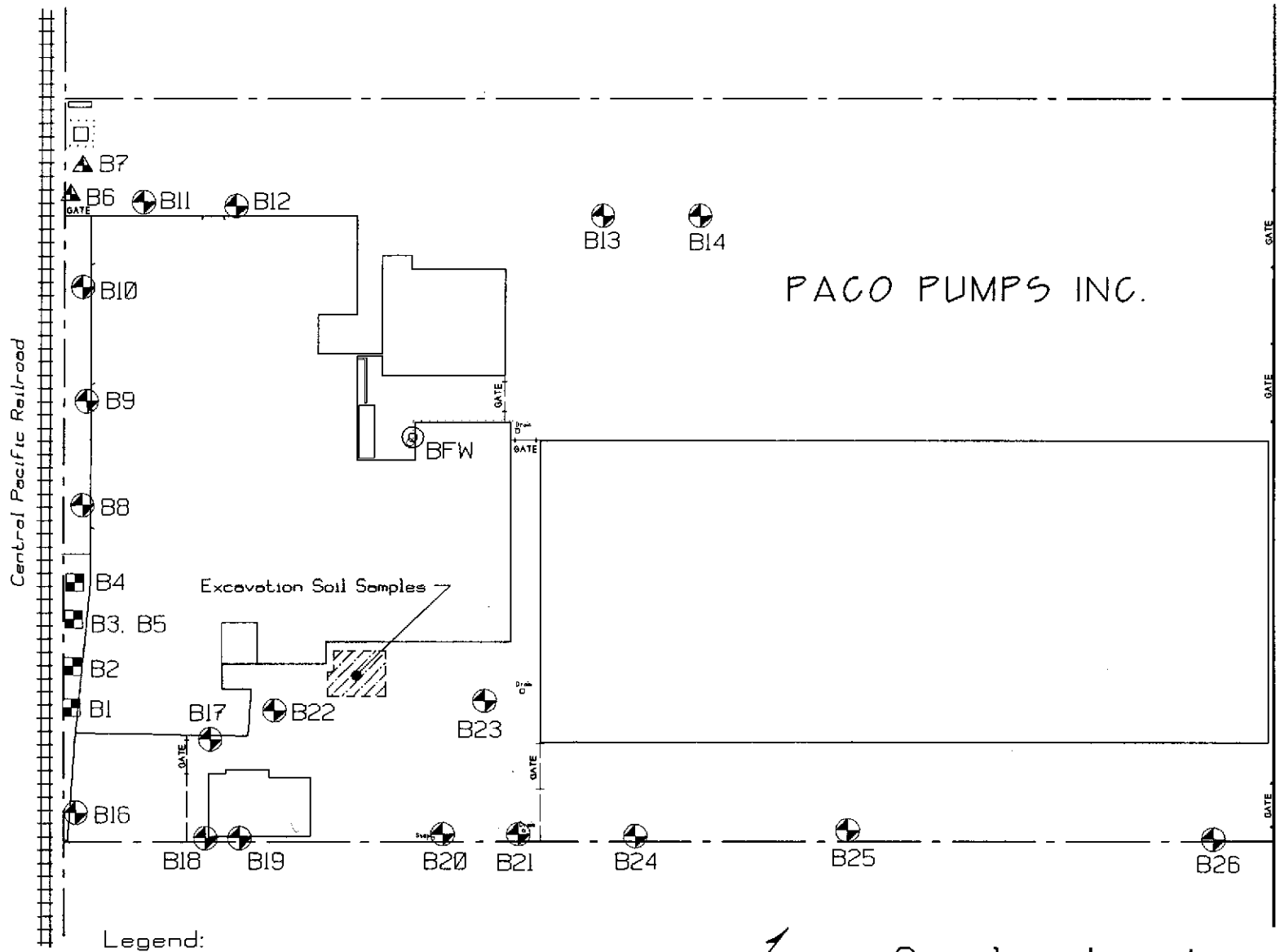
For the two sampling efforts which occurred in October 1991 and April 1992, a total of twenty-five soil samples and one water sample were collected. Most of these samples were analyzed for metals, volatile organics, and petroleum hydrocarbons. Selected samples were analyzed for base/neutral/acid extractables, and chlorinated pesticides which includes polychlorinated biphenyls (PCBs). Eighteen of the soil samples were composites of discrete samples collected from depths of 0 to 0.5 feet and 1 to 1.5 feet. Seven discrete soil samples were also collected: five from 3 to 3.5 feet deep, and two from 0 to 0.5 feet below an asphalt surface. Figure 4-1 presents the sampling locations for the October 1991 and April 1992 sampling events.

4.1 Sampling Rationale

Possible historic and recent activities, along with various chemicals and elements which may have been associated with manufacturing wastes, form the basis for the selection of the October 1991 and April 1992 sampling locations and analyses. Specific areas of interest were identified by Jonas and Associates Inc. with support from PACO Pumps.

October 1, 1991 Samples of Previous Excavation

The sampling rationale, methodology, and results for samples B1-3.5, B2-3.5, B3-3.5, B4-3.5, and B5-3.5, collected on October 1, 1991, are presented in Jonas and Associates Inc. October 30, 1991 Soil Characterization Report, Soil Excavation Area - PACO Pumps Inc., 9201 San Leandro Street, Oakland, California. In summary, in 1987 a soil contamination investigation and cleanup was performed in a small area just south and behind the manufacturing and engineering building. This work was apparently performed by Dames & Moore (1987), and Crosby & Overton. Other documents relevant to excavation, sampling, and filling activities are Cutcliffe (1988), Dames & Moore (1987), Trace Analytical Lab (1987), and Van Aken (1987).



Legend:

- Composite Soil Sample 0-0.5' & 1.0'-1.5'
- Discrete Soil Sample 3.0-3.5'
- Discrete Soil Sample 0-0.5'
- Water Sample

Scale

40 0 40 80 Feet

Sampling Locations
PACO Pumps
9201 San Leandro Street
Oakland, California

Prepared by

JONAS & ASSOCIATES INC.

Date: 5-8-1992 Locations Approx.	Figure 4-1	Drawing Number PC0220-5/92:F4-1

Drawn by	A.J.	
5-8-1992	Checked by	
	Approved by	

Drawing Number PC0220-5/92:F4-1

Figure 4-1

Prior to excavation activities, Dames & Moore (1987) collected eight soil samples on July 27, 1987 and analyzed them for volatile organics; base/neutral/acid extractables; extractable petroleum hydrocarbons, and polychlorinated biphenyls. One sample was analyzed for metals. Dames & Moore's investigation identified elevated concentrations of petroleum hydrocarbons as motor oil and toluene. No PCBs were identified. Metal concentrations were below the California Total Threshold Limit Concentration (TTLC) used to classify hazardous wastes. According to a memorandum from Steve Cutcliffe of PACO Pumps, on October 27, 1987, testing by Crosby & Overton was performed to determine the extend of contamination and to formulate a cleanup strategy. Soil was excavated from four locations, down to depths ranging from 18 inches to 36 inches. Five samples were apparently collected of the excavated material. As stated in a interoffice correspondence from Mr. Bruce Van Aken "The analysis showed that sample #4 had 380 mg/kg of hydrocarbons (solvents) and sample #3 had traces of heavy oil and grease". Contaminated soil was said to have been excavated and replaced with relatively clean fill. In 1991, Jonas and Associates Inc. was retained by PACO Pumps to perform soil sampling below the clean fill in the area of the previous excavation. For the investigation, five soil samples were collected from 3 to 3.5 feet deep and analyzed for volatile organics, petroleum hydrocarbons, and chlorinated pesticides which includes polychlorinated biphenyls. Three of the five samples were analyzed for base/neutral/acid extractables.

October 1, 1991 Assessment of Stained Asphalt/Concrete Area

In 1991, PACO Pumps retained Jonas and Associates Inc. to perform a soil investigation of an area where metal scraps were stored. It is located at the western boundary of their property, adjacent to the Central Pacific railroad tracks and a neighboring facility. The floor of this area is covered with asphalt and concrete, which extends into an asphalted parking lot. Drums and bins containing scrap metals area temporarily stored at this location. Staining was also observed. A transformer is also present just adjacent to this area. In order to determine whether a release of chemicals has occurred in this area, two shallow soil samples were collected and analyzed. These samples are identified as B6-0.5 and B7-0.5, and were analyzed for volatile organics, petroleum hydrocarbons, base/neutral/acid extractables, Title 26 metals, and chlorinated pesticides including polychlorinated biphenyls. This investigation is detailed in an October 30, 1991 report titled Soil Characterization Report, Stained Asphalt/Concrete Area - PACO Pumps Inc., 9201 San Leandro Street, Oakland, California.

April 9, 13, & 14, 1992 Additional Site Characterization Sampling

In general, the rationale for additional site characterization sampling at PACO Pumps' facility was to sample soil in potential areas of concern and to provide a general array of soil samples at various locations at the site. Many of the sampling locations were selected with guidance from PACO Pumps. The samples were collected on April 9, 13 and 14, 1992. Samples were collect as composites of 0 to 0.5 feet and 1 to 1.5 feet in depth. The rationale for these relatively shallow samples was to identify, if it was present

at the location, contamination that is discharged to the surface and seeps downward. The rationale for the composite sampling was to collect a sample just below the asphalt/concrete surface to represent a relatively "worst case" for a surface spill, and composite it with a deeper sample so potential biasing due to volatilization at the surface would be offset. Vertical profiling was not performed during this sampling event. The one water sample was collected to determine what was the general chemical character of water and particulate matter in the pump testing tank. The water sample was unfiltered to analyze both solubilized constituents and chemicals associated with the particulate matter.

The rationale for selecting laboratory analyses was to analyze for selected chemicals which may have been associated with various waste streams associated with manufacturing activities. Metals, volatile organics, and petroleum hydrocarbons were analyzed for.

The general rationale for selecting soil sampling locations, are as follows:

- Stained surfaces;
- Oil/chemical storage;
- General storage;
- Location of possible discharge pipe;
- Surface water drainage;
- Along fenceline with Saint Vincent DePaul; and
- Confirmatory samples.

The following Table 4-1 presents the soil samples collected during the April 1992 sampling event with the general rationale for the sampling location.

Table 4-1
April 9 & 13, 1992 Samples and Rationale for Sampling Location
PACO Pumps - 9201 San Leandro Street
Oakland, California

Sample	Rationale for Sampling Location
B8-0.5&1.5; B9-0.5&1.5; B10-0.5&1.5	Oil/Chemical Storage; General Storage
B11-0.5&1.5; B12-0.5&1.5	Stained Surfaces; General Storage
B13-0.5&1.5; B14-0.5&1.5	Confirmatory Samples; General Storage
B16-0.5&1.5	Surface Water Drainage; General Storage
B17-0.5&1.5;	Stained Surface; General Storage
B18-0.5&1.5	Stained Surface; Fenceline w/ Saint Vincent DePaul
B19-0.5&1.5	Stained Surface; Apparent Discharge Pipe
B20-0.5&1.5; B21-0.5&1.5	Surface Water Drainage; Fenceline w/ Saint Vincent DePaul; General Storage
B22-0.5&1.5; B23-0.5&1.5	Confirmatory Samples; General Storage
B24-0.5&1.5; B25-0.5&1.5; B26-0.5&1.5	Fenceline w/ Saint Vincent DePaul; Confirmatory Samples; General Storage

4.2 Samples Collected

The collection of samples by Jonas and Associates Inc. occurred during three sampling events. On October 1, 1991 five soil samples were collected (B1-3.5; B2-3.5; B3-3.5; B4-3.5; B5-3.5) in a previous excavation area and two samples (B6-0.5; B7-0.5) in an area where metal scraps are apparently stored. These samples were collected near the southwest boundary of the facility. During a second sampling event, soil samples were collected on April 9 and 13, 1992, at various locations across the facility. These samples are identified as B8-0.5&1.5 through B14-0.5&1.5 and B16-0.5&1.5 through B26-0.5&1.5. A B15-0.5&1.5 was originally going to be collected from soil in the area of the outside pump testing tank, but no as-builts were available which identified the locations of underground utilities and piping, and therefore no soil sample was collected in this location. A second approach was taken to characterize the outside pump testing tank by collecting an unfiltered sample of backwash from a filter unit for the testing tank. This liquid sample was collected on April 14, 1992 and identified as BFW. A third sampling event was associated with the June through August 1992 excavation activities, during an attempt to find a previously identified underground storage tank and to remove soil with elevated concentrations of petroleum products. Excavation activities and associated soil sampling are presented in Section 5.0 Excavation Activities of this report.

On October 1, 1991, five soil samples from a previous 1987 excavation area were collected approximately 3 to 3.5 feet below the surface. According to previous records, this depth should be below the fill that was reported to have been placed into excavation. The other two samples collected on October 1, 1991 were relatively shallow: 0 to 0.5 feet below the bottom of an asphalt surface. These were sampled at a depth which may represent a "worst case" for a surface spill or discharge onto the asphalt. This is particularly true for PCBs, heavy petroleum hydrocarbons, base/neutral/acid extractables, and metals, because of their relatively low partial pressure (e.g., relatively low rate of volatilization). The eighteen samples collected on April 9 and 13, 1992 all were collected as composites of discrete samples collected at 0 to 0.5 feet and 1 to 1.5 feet in depth. Soil samples from the walls of the excavation activities associated with the attempt to find the underground storage tank, were collected 6 feet below the surface.

Locating Sampling Points

To provide an approximation of the twenty-five borehole locations and one water sample, the field team used a tape measure and a facility map. Locations were identified with respect to building and fencelines. This surveying effort generally provides a fair approximation of the sampling locations. Buildings and fencelines were measured and used in conjunction with previous figures of the facility to build a scaled CADD drawing of the facility. This facility map was then used in the field identifying known points for measurements of sampling locations.

Sample Names

The name of each soil sample is identified by two fields. Examples are B1-3.5 and B8-0.5&1.5. Soil sample B1-3.5 represents vertical boring location 1 with a discrete sample collected from 3 to 3.5 feet below the ground surface or underlying an asphalt/concrete surface. Soil sample B8-0.5&1.5 is a composite sample in vertical boring 8, of discrete samples collected at depths of 0 to 0.5 feet and 1 to 1.5 feet below the ground surface or underlying an asphalt/concrete surface. The one liquid sample collected is identified as BFW. BFW represents a water sample of backwash from a filter unit.

4.3 Sampling Procedures and Protocols

At each selected sampling location, clean and decontaminated equipment was used. At each borehole a sample was collected at pre-specified depth in a brass tube using a drive sampler. With soil samples collected from 1 to 1.5 feet depth, an auger was used to remove overlying soil from the borehole. A drive sampler was then used to collect the sample in a six inch brass sleeve. Each sleeve was removed from the drive sampler, capped, labeled and then placed inside a chilled cooler. The ice chest contained chilled "blue ice" and maintained a cold temperature for the samples. Upon completion of each borehole sampling, the borehole was filled with the soil generated in the process.

Each sample was identified on the chain-of-custody record associated with the project. The samples were maintained under cold conditions in an ice chest, initially with chilled "blue ice".

The samples were transferred to ChromaLab's facility in Richmond, California. ChromaLab Inc. is certified by the California Department of Health Services (DHS) for the analysis of organic and inorganic materials in hazardous wastes, soils, wastewater, and drinking water (California Certification 1094). A laboratory representative signed the chain-of-custody form and provided a copy to Jonas and Associates Inc. Eventually the signed original of the chain-of-custody was returned to Jonas and Associates Inc. with the laboratory results. The original chain-of-custody form and the signed laboratory sheets are provided in an original copy of the Site Characterization Report and Work Plan presented to PACO Pumps. Appendix B in this report presents the completed chain-of-custody records.

Decontamination

Prior to any sampling, the equipment was decontaminated. At the site, the decontamination of equipment took place in a specific decontamination zone designated for the facility. All non-disposable equipment was decontaminated according to the following procedures:

- Dry manual scrub;
- Manual scrub with distilled water and an appropriate soap solution;
- Distilled water rinse;
- Dilute nitric acid rinse;
- Distilled water rinse; and then
- Air dry.

Distilled water was supplied by a high pressure spray unit. All decontamination was performed on a rubberized drop cloth. Rubber gloves were used during decontamination procedures and sampling.

Field Logbook

A project field logbook was used to document the following:

- Date and time of log entries;
- Field conditions (weather, terrain, hazards, etc.);
- Personnel present during field operations;
- Field measurements;
- Sample numbers, time, and depth;
- Any unusual sample characterization; and
- Other general considerations.

Chain-of-Custody

A chain-of-custody record accompanied samples when they were shipped to the laboratory. The chain-of-custody record documents transfer of samples from one party to another. Information noted on the form is as follows:

- Project number;
- Sample identification number;
- Date and time of sampling;
- Type of sample; and
- Type of analysis to be performed.

4.4 Laboratory Methods

The soil and water samples collected during the field efforts were all analyzed by ChromaLab, in their San Ramon facility, in California. All samples were preserved in an iced cooler. Eighteen samples were submitted associated with this project. The chain-of-custody records documenting each sample, was signed as received by the laboratory.

Table 4-2 presents the laboratory analysis and EPA method(s) used for each sample.

Table 4-2
Soil and Water
Sample and Laboratory Analyses
PACO Pumps - 9201 San Leandro Street
Oakland, California

Analysis	Sample I.D.
Title 26 TTLC CAM 17 Metals soil: (3005/3050/6010)	soil: B6-0.5; B7-0.5
Priority Pollutant 13 Metals water: (3010/6010/7000) soil: (3050/6010/7000)	water: BFW soil: B8-0.5&1.5; B9-0.5&1.5; B10-0.5&1.5; B11-0.5&1.5; B12-0.5&1.5; B13-0.5&1.5; B14-0.5&1.5; B16-0.5&1.5; B17-0.5&1.5; B18-0.5&1.5; B19-0.5&1.5; B20-0.5&1.5; B21-0.5&1.5; B22-0.5&1.5; B23-0.5&1.5; B24-0.5&1.5; B25-0.5&1.5; B26-0.5&1.5
Volatile Organics water: (624) soil: (8240)	water: BRW soil: B1-3.5; B2-3.5; B3-3.5; B4-3.5; B5-3.5; B6-0.5; B7-0.5; B8-0.5&1.5; B9-0.5&1.5; B10-0.5&1.5; B11-0.5&1.5; B12-0.5&1.5; B13-0.5&1.5; B14-0.5&1.5; B16-0.5&1.5; B17-0.5&1.5; B18-0.5&1.5; B19-0.5&1.5; B20-0.5&1.5; B21-0.5&1.5; B22-0.5&1.5; B23-0.5&1.5; B24-0.5&1.5; B25-0.5&1.5; B26-0.5&1.5
Base/Neutrals/Acid Extractables soil: (8270)	soil: B1-3.5; B3-3.5; B5-3.5; B6-0.5; B7-0.5
Chlorinated Pesticides soil: (8080)	soil: B1-3.5; B2-3.5; B3-3.5; B4-3.5; B5-3.5; B6-0.5; B7-0.5
TPH as Gasoline soil: (5030/8015) TEPH as Diesel soil: (3550/8015) Benzene,Toluene,Ethyl Benzene,Xylenes soil: (8020)	soil: B1-3.5; B2-3.5; B3-3.5; B4-3.5; B5-3.5; B6-0.5; B7-0.5
TEPH as Diesel TEPH as Kerosene TEPH as Motor Oil water: (3510/8015) soil: (3550/8015)	water: BFW soil: B8-0.5&1.5; B9-0.5&1.5; B10-0.5&1.5; B11-0.5&1.5; B12-0.5&1.5; B13-0.5&1.5; B14-0.5&1.5; B16-0.5&1.5; B17-0.5&1.5; B18-0.5&1.5; B19-0.5&1.5; B20-0.5&1.5; B21-0.5&1.5; B22-0.5&1.5; B23-0.5&1.5; B24-0.5&1.5; B25-0.5&1.5; B26-0.5&1.5

4.5 Laboratory Results

The analytical results of sampling on October 1, 1991 and April 9, 13, and 14, 1992, are presented in summary tables in Appendix A. Appendix B presents the chain-of-custody records. Appendix C provides the laboratory data sheets. Table 4-3 presents the concentrations of detected organic chemicals and petroleum hydrocarbons. Figure 4-2 graphically displays the results of the analysis for metals. Figure 4-3 presents detected volatile organics, base/neutral/acid extractables, and chlorinated pesticides. Figure 4-4 provides the results of analyzing samples for petroleum hydrocarbons.

Table 4-3
Detected Organic Chemicals and Petroleum Hydrocarbons
PACO PUMPS - 9201 San Leandro Street
Oakland, California

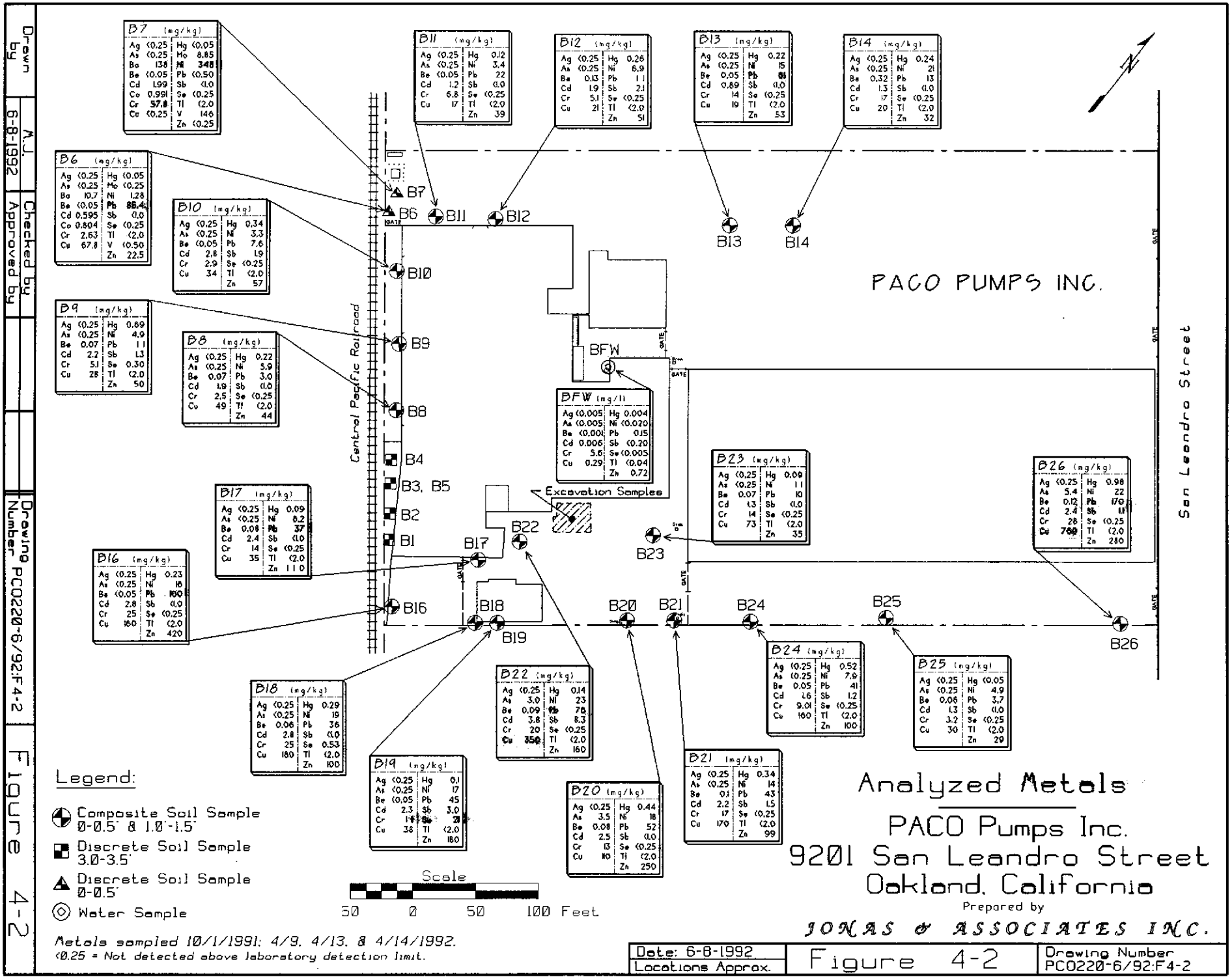
Sample I.D. and Sampling Area	Analysis for Organics	Detected Organics
BFW	Volatile Organics (624) TEPH-D,K,MO (3510/8015)	TEPH-Diesel: 0.310 mg/l TEPH-Motor Oil: 1.6 mg/l
B1-3.5	Volatile Organics (8240) Base/Neutrals/Acid Extractables (8270) Chlorinated Pesticides (8080) TPH-G/TEPH-D (5030/3550/8015) BTEX (8020)	none detected
B2-3.5	Volatile Organics (8240) Chlorinated Pesticides (8080) TPH-G/TEPH-D (5030/3550/8015) BTEX (8020)	none detected
B3-3.5	Volatile Organics (8240) Base/Neutrals/Acid Extractables (8270) Chlorinated Pesticides (8080) TPH-G/TEPH-D (5030/3550/8015) BTEX (8020)	none detected
B4-3.5	Volatile Organics (8240) Chlorinated Pesticides (8080) TPH-G/TEPH-D (5030/3550/8015) BTEX (8020)	none detected
B5-3.5	Volatile Organics (8240) Base/Neutrals/Acid Extractables (8270) Chlorinated Pesticides (8080) TPH-G/TEPH-D (5030/3550/8015) BTEX (8020)	none detected
B6-0.5	Volatile Organics (8240) Base/Neutrals/Acid Extractables (8270) Chlorinated Pesticides (8080) TPH-G/TEPH-D (5030/3550/8015) BTEX (8020)	PCB 1260: **0.400 mg/kg** ↑ exceeds PRGs
B7-0.5	Volatile Organics (8240) Base/Neutrals/Acid Extractables (8270) Chlorinated Pesticides (8080) TPH-G/TEPH-D (5030/3550/8015) BTEX (8020)	↓ PCB 1260: **0.670 mg/kg**
B8-0.5&1.5	Volatile Organics (8240) TEPH-D,K,MO (3550/8015)	TEPH-Diesel: 22 mg/kg TEPH-Motor Oil: 110 mg/kg
B9-0.5&1.5	Volatile Organics (8240) TEPH-D,K,MO (3550/8015)	TEPH-Motor Oil: 660 mg/kg
B10-0.5&1.5	Volatile Organics (8240) TEPH-D,K,MO (3550/8015)	TEPH-Diesel: 27 mg/kg TEPH-Motor Oil: 63 mg/kg
B11-0.5&1.5	Volatile Organics (8240) TEPH-D,K,MO (3550/8015)	TEPH-Diesel: 120 mg/kg TEPH-Motor Oil: 410 mg/kg
B12-0.5&1.5	Volatile Organics (8240) TEPH-D,K,MO (3550/8015)	none detected
B13-0.5&1.5	Volatile Organics (8240) TEPH-D,K,MO (3550/8015)	TEPH-Diesel: 55 mg/kg TEPH-Motor Oil: 98 mg/kg
B14-0.5&1.5	Volatile Organics (8240) TEPH-D,K,MO (3550/8015)	TEPH-Motor Oil: 21 mg/kg

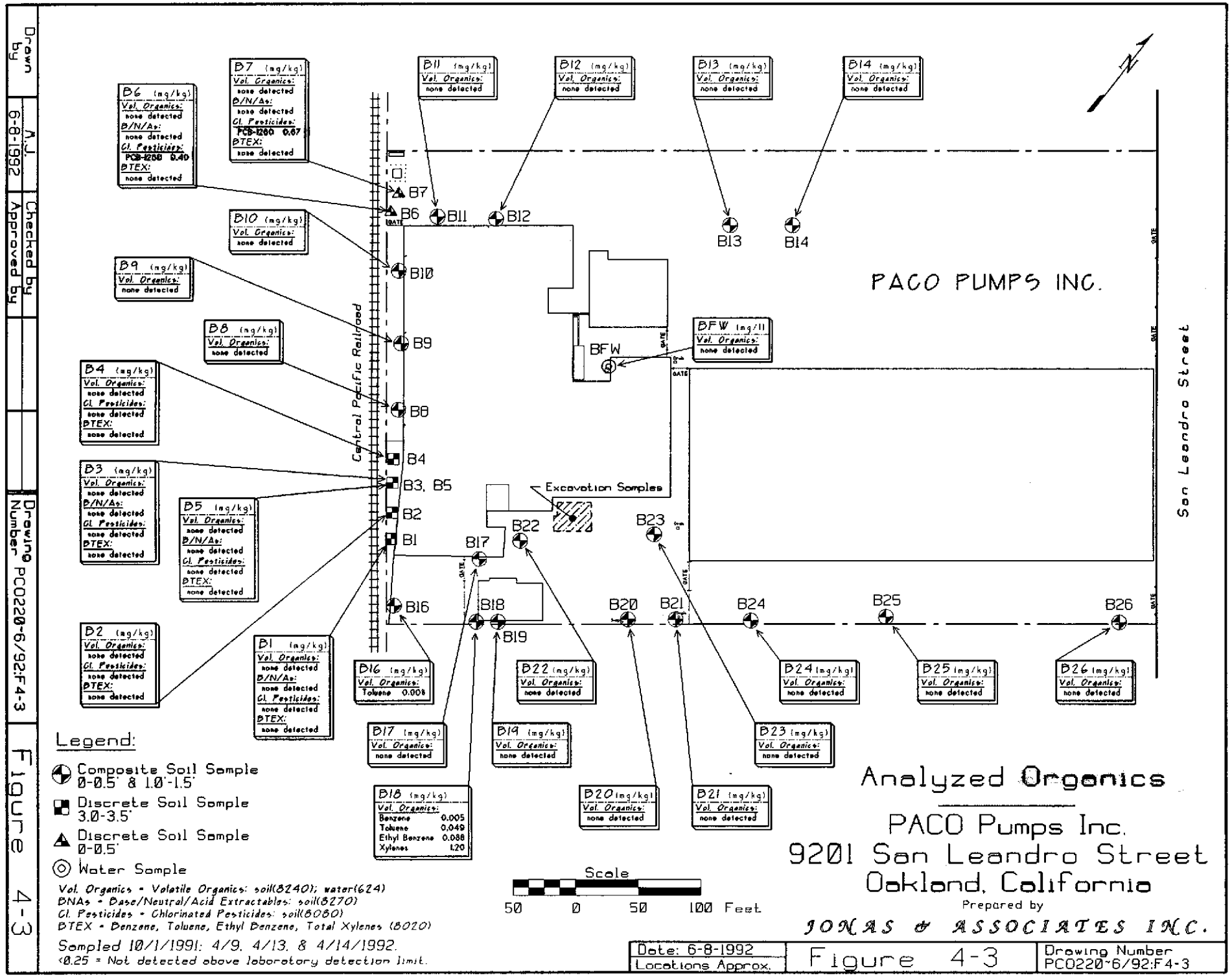
notes: TPH-G = Total Petroleum Hydrocarbons as Gasoline;
TEPH-D,K,MO = Total Extractable Petroleum Hydrocarbons as Diesel, Kerosene, & Motor Oil
TPH-G/TEPH-D = Total Petroleum Hydrocarbons as Gasoline & Total Extractable Petroleum Hydrocarbons as Diesel
BTEX = Benzene, Toluene, Ethyl Benzene, Total Xylenes

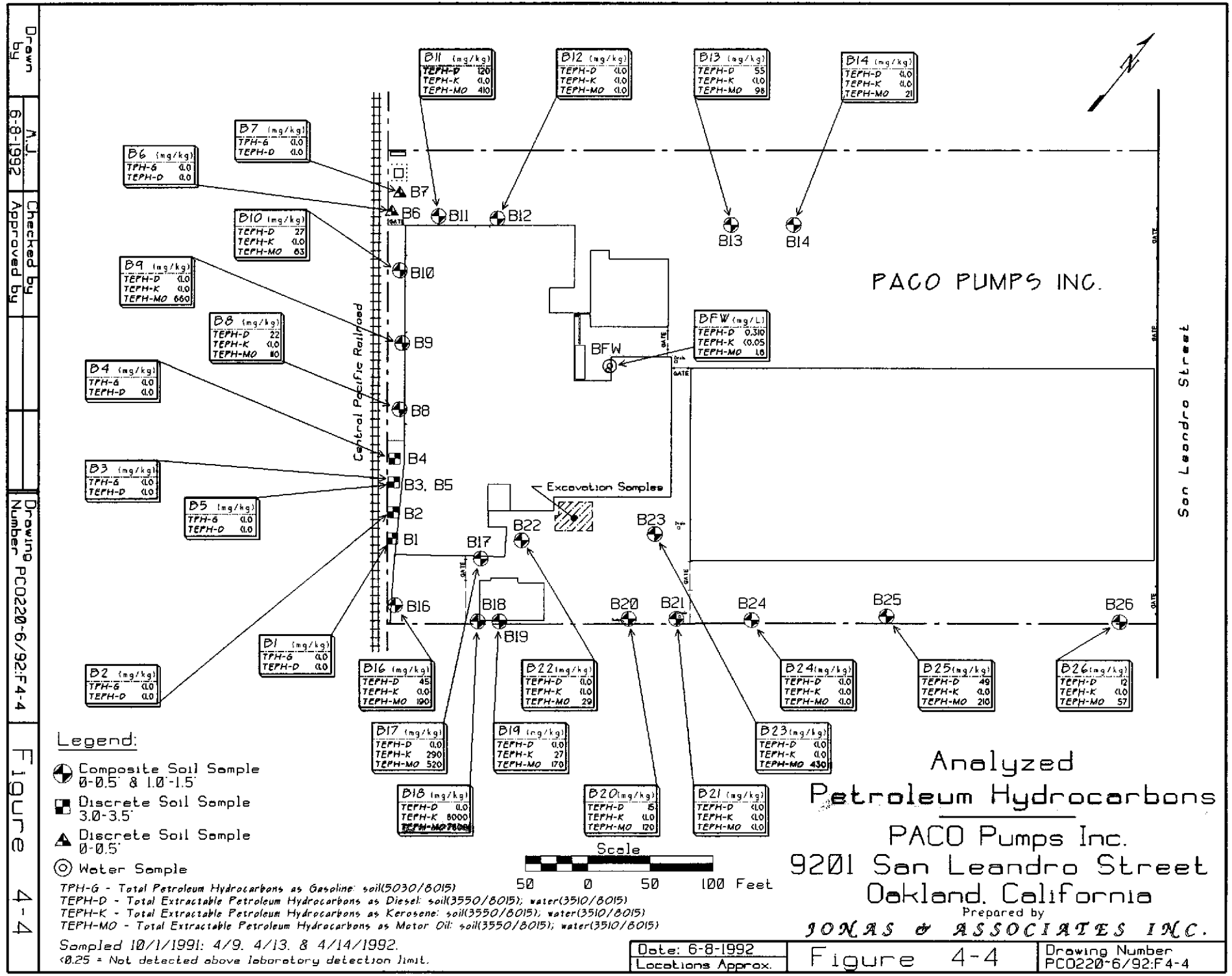
Table 4-3con't
Detected Organic Chemicals and Petroleum Hydrocarbons
PACO PUMPS - 9201 San Leandro Street
Oakland, California

Sample I.D. and Sampling Area	Analysis for Organics	Detected Organics
B16-0.5&1.5	Volatile Organics (8240) TEPH-D,K,MO (3550/8015)	Toluene: 0.008 mg/kg TEPH-Diesel: 45 mg/kg TEPH-Motor Oil: 190 mg/kg
B17-0.5&1.5	Volatile Organics (8240) TEPH-D,K,MO (3550/8015)	TEPH-Kerosene: 290 mg/kg TEPH-Motor Oil: 520 mg/kg
B18-0.5&1.5	Volatile Organics (8240) TEPH-D,K,MO (3550/8015)	Benzene: 0.005 mg/kg Ethyl Benzene: 0.088 mg/kg Toluene: 0.049 mg/kg Total Xylenes: 1.20 mg/kg TEPH-Kerosene: 8000 mg/kg TEPH-Motor Oil: 7800
B19-0.5&1.5	Volatile Organics (8240) TEPH-D,K,MO (3550/8015)	TEPH-Kerosene: 27 mg/kg TEPH-Motor Oil: 170 mg/kg
B20-0.5&1.5	Volatile Organics (8240) TEPH-D,K,MO (3550/8015)	TEPH-Diesel: 15 mg/kg TEPH-Motor Oil: 120 mg/kg
B21-0.5&1.5	Volatile Organics (8240) TEPH-D,K,MO (3550/8015)	none detected
B22-0.5&1.5	Volatile Organics (8240) TEPH-D,K,MO (3550/8015)	TEPH-Motor Oil: 29 mg/kg
B23-0.5&1.5	Volatile Organics (8240) TEPH-D,K,MO (3550/8015)	TEPH-Motor Oil: 430 mg/kg
B24-0.5&1.5	Volatile Organics (8240) TEPH-D,K,MO (3550/8015)	none detected
B25-0.5&1.5	Volatile Organics (8240) TEPH-D,K,MO (3550/8015)	TEPH-Diesel: 49 mg/kg TEPH-Motor Oil: 210 mg/kg
B26-0.5&1.5	Volatile Organics (8240) TEPH-D,K,MO (3550/8015)	TEPH-Diesel: 12 mg/kg TEPH-Motor Oil: 57 mg/kg

notes: TEPH-D,K,MO = Total Extractable Petroleum Hydrocarbons as Diesel, Kerosene, & Motor Oil


B7 (mg/kg)
Ag <0.25 Hg <0.05
As <0.25 Mo 8.85
Ba 138 Ni 348
Be <0.05 Pb <0.50
Cd 1.99 Sb <1.0
Co 0.991 Se <0.25
Cr 57.8 Tl <2.0
Cu <0.25 V 146
Zn <0.25
B6 (mg/kg)
Ag <0.25 Hg <0.05
As <0.25 Mo <0.25
Ba 10.7 Ni 1.28
Be <0.05 Pb 88.4
Cd 0.595 Sb <1.0
Co 0.804 Se <0.25
Cr 2.63 Tl <2.0
Cu 67.8 V <0.50
Zn 22.5
B11 (mg/kg)
Ag <0.25 Hg 0.12
As <0.25 Ni 3.4
Be <0.05 Pb 22
Cd 1.2 Sb <1.0
Cr 6.8 Se <0.25
Cu 17 Tl <2.0
Zn 39
B12 (mg/kg)
Ag <0.25 Hg 0.26
As <0.25 Ni 6.9
Ba 0.13 Pb 11
Cd 1.9 Sb 2.1
Cr 5.1 Se <0.25
Cu 21 Tl <2.0
Zn 51
B13 (mg/kg)
Ag <0.25 Hg 0.22
As <0.25 Ni 15
Be 0.05 Pb 66
Cd 0.89 Sb <1.0
Cr 14 Se <0.25
Cu 19 Tl <2.0
Zn 53
B14 (mg/kg)
Ag <0.25 Hg 0.24
As <0.25 Ni 21
Be 0.32 Pb 13
Cd 1.3 Sb <1.0
Cr 17 Se <0.25
Cu 20 Tl <2.0
Zn 32
B10 (mg/kg)
Ag <0.25 Hg 0.34
As <0.25 Ni 3.3
Be <0.05 Pb 7.6
Cd 2.8 Sb 1.9
Cr 2.9 Se <0.25
Cu 34 Tl <2.0
Zn 57
B9 (mg/kg)
Ag <0.25 Hg 0.69
As <0.25 Ni 4.9
Be 0.07 Pb 11
Cd 2.2 Sb 1.3
Cr 5.1 Se 0.30
Cu 28 Tl <2.0
Zn 50
B8 (mg/kg)
Ag <0.25 Hg 0.22
As <0.25 Ni 5.9
Be 0.07 Pb 3.0
Cd 1.9 Sb <1.0
Cr 2.5 Se <0.25
Cu 49 Tl <2.0
Zn 44
BFW (mg/l)
Ag <0.005 Hg 0.004
As <0.005 Ni <0.020
Be <0.001 Pb 0.15
Cd 0.006 Sb <0.20
Cr 5.6 Se <0.005
Cu 0.29 Tl 0.04
Zn 0.72
B23 (mg/kg)
Ag <0.25 Hg 0.09
As <0.25 Ni 11
Be 0.07 Pb 10
Cd 1.3 Sb <1.0
Cr 14 Se <0.25
Cu 73 Tl <2.0
Zn 35
B26 (mg/kg)
Ag <0.25 Hg 0.98
As 5.4 Ni 22
Be 0.12 Pb 170
Cd 2.4 Sb 1.1
Cr 28 Se <0.25
Cu 760 Tl <2.0
Zn 280
B17 (mg/kg)
Ag <0.25 Hg 0.09
As <0.25 Ni 8.2
Be 0.08 Pb 37
Cd 2.4 Sb <1.0
Cr 14 Se <0.25
Cu 35 Tl <2.0
Zn 110
B16 (mg/kg)
Ag <0.25 Hg 0.23
As <0.25 Ni 16
Be <0.05 Pb 160
Cd 2.8 Sb <1.0
Cr 25 Se <0.25
Cu 160 Tl <2.0
Zn 420
B18 (mg/kg)
Ag <0.25 Hg 0.29
As <0.25 Ni 19
Be 0.06 Pb 36
Cd 2.8 Sb <1.0
Cr 25 Se 0.53
Cu 180 Tl <2.0
Zn 100
B22 (mg/kg)
Ag <0.25 Hg 0.14
As 3.0 Ni 23
Be 0.09 Pb 78
Cd 3.8 Sb 8.3
Cr 20 Se <0.25
Cu 350 Tl <2.0
Zn 160
B24 (mg/kg)
Ag <0.25 Hg 0.52
As <0.25 Ni 7.9
Be 0.05 Pb 41
Cd 1.6 Sb 1.2
Cr 9.01 Se <0.25
Cu 160 Tl <2.0
Zn 100
B25 (mg/kg)
Ag <0.25 Hg <0.05
As <0.25 Ni 4.9
Be 0.06 Pb 3.7
Cd 1.3 Sb <1.0
Cr 3.2 Se <0.25
Cu 30 Tl <2.0
Zn 29
B19 (mg/kg)
Ag <0.25 Hg 0.1
As <0.25 Ni 17
Be <0.05 Pb 45
Cd 2.3 Sb 3.0
Cr 19 Se 2.1
Cu 38 Tl <2.0
Zn 180
B20 (mg/kg)
Ag <0.25 Hg 0.44
As 3.5 Ni 18
Be 0.08 Pb 52
Cd 2.5 Sb <1.0
Cr 13 Se <0.25
Cu 110 Tl <2.0
Zn 250
B21 (mg/kg)
Ag <0.25 Hg 0.34
As <0.25 Ni 14
Be 0.1 Pb 43
Cd 2.2 Sb 1.5
Cr 17 Se <0.25
Cu 170 Tl <2.0
Zn 99
B7
B6
B11
B12
B13
B14
B10
B9
B8
BFW
B4
B3, B5
B2
B1
B17
B22
B23
B16
B18
B20
B21
B24
B25
B19
B26
Excavation Samples
Central Pacific Railroad
PACO PUMPS INC.
San Leandro Street
GATE
Legend:
Composite Soil Sample 0-0.5' & 1.0'-1.5'
Discrete Soil Sample 3.0-3.5'
Discrete Soil Sample 0-0.5'
Water Sample
Scale
50 0 50 100 Feet
Metals sampled 10/1/1991; 4/9, 4/13, & 4/14/1992.
<0.25 = Not detected above laboratory detection limit.
Analyzed Metals
PACO Pumps Inc.
9201 San Leandro Street
Oakland, California
Prepared by
JONAS & ASSOCIATES INC.
Date: 6-8-1992
Locations Approx.
Figure 4-2
Drawing Number PCO220-6/92:F4-2
Drawn by M.J.
6-8-1992
Checked by
Approved by
Drawing Number PCO220-6/92:F4-2
Figure 4-2


Drawn by
A.J.
9-8-1992
Checked by
Approved by
Drawing Number PC0220-6/92:F4-3
Figure 4-3
B7 (mg/kg) Vol. Organics: none detected B/N/As: none detected Cl. Pesticides: PCB-1260 0.07 BTEX: none detected
B11 (mg/kg) Vol. Organics: none detected
B12 (mg/kg) Vol. Organics: none detected
B13 (mg/kg) Vol. Organics: none detected
B14 (mg/kg) Vol. Organics: none detected
B6 (mg/kg) Vol. Organics: none detected B/N/As: none detected Cl. Pesticides: PCB-1260 0.40 BTEX: none detected
B10 (mg/kg) Vol. Organics: none detected
B9 (mg/kg) Vol. Organics: none detected
B8 (mg/kg) Vol. Organics: none detected
BFW (mg/l) Vol. Organics: none detected
B4 (mg/kg) Vol. Organics: none detected Cl. Pesticides: none detected BTEX: none detected
B3 (mg/kg) Vol. Organics: none detected B/N/As: none detected Cl. Pesticides: none detected BTEX: none detected
B5 (mg/kg) Vol. Organics: none detected B/N/As: none detected Cl. Pesticides: none detected BTEX: none detected
B2 (mg/kg) Vol. Organics: none detected Cl. Pesticides: none detected BTEX: none detected
B1 (mg/kg) Vol. Organics: none detected B/N/As: none detected Cl. Pesticides: none detected BTEX: none detected
B16 (mg/kg) Vol. Organics: Toluene 0.008
B22 (mg/kg) Vol. Organics: none detected
B24 (mg/kg) Vol. Organics: none detected
B25 (mg/kg) Vol. Organics: none detected
B26 (mg/kg) Vol. Organics: none detected
B17 (mg/kg) Vol. Organics: none detected
B19 (mg/kg) Vol. Organics: none detected
B23 (mg/kg) Vol. Organics: none detected
B18 (mg/kg) Vol. Organics: Benzene 0.005 Toluene 0.049 Ethyl Benzene 0.088 Xylenes 1.20
B20 (mg/kg) Vol. Organics: none detected
B21 (mg/kg) Vol. Organics: none detected
B7
B6
B11
B12
B13
B14
B10
B9
B8
B4
B3, B5
B2
B1
B17
B22
B23
B16
B18
B19
B20
B21
B24
B25
B26
PACO PUMPS INC.
Central Pacific Railroad
San Leandro Street
GATE
Excavation Samples
Legend:
Composite Soil Sample 0-0.5' & 1.0'-1.5'
Discrete Soil Sample 3.0-3.5'
Discrete Soil Sample 0-0.5'
Water Sample
Vol. Organics - Volatile Organics: soil(8240); water(624)
BNAs - Base/Neutral/Acid Extractables: soil(8270)
Cl. Pesticides - Chlorinated Pesticides: soil(8080)
BTEX - Benzene, Toluene, Ethyl Benzene, Total Xylenes (8020)
Sampled 10/1/1991: 4/9, 4/13, & 4/14/1992.
<0.25 = Not detected above laboratory detection limit.
Scale
50 0 50 100 Feet
Analyzed Organics
PACO Pumps Inc.
9201 San Leandro Street
Oakland, California
Prepared by
JONAS & ASSOCIATES INC.
Date: 6-8-1992
Locations Approx.
Figure 4-3
Drawing Number PC0220-6/92:F4-3


Drawn by
M.J.
6-8-1992
Checked by
Approved by
Drawing Number PCO220-6/92:F4-4
Figure 4-4
B11 (mg/kg) TEPH-D 120 TEPH-K <1.0 TEPH-MO 410
B12 (mg/kg) TEPH-D <1.0 TEPH-K <1.0 TEPH-MO <1.0
B13 (mg/kg) TEPH-D 55 TEPH-K <1.0 TEPH-MO 98
B14 (mg/kg) TEPH-D <1.0 TEPH-K <1.0 TEPH-MO 21
B7 (mg/kg) TPH-G <1.0 TEPH-D <1.0
B6 (mg/kg) TPH-G <1.0 TEPH-D <1.0
B10 (mg/kg) TEPH-D 27 TEPH-K <1.0 TEPH-MO 63
B9 (mg/kg) TEPH-D <1.0 TEPH-K <1.0 TEPH-MO 660
B8 (mg/kg) TEPH-D 22 TEPH-K <1.0 TEPH-MO 80
B4 (mg/kg) TPH-G <1.0 TEPH-D <1.0
B3 (mg/kg) TPH-G <1.0 TEPH-D <1.0
B5 (mg/kg) TPH-G <1.0 TEPH-D <1.0
B1 (mg/kg) TPH-G <1.0 TEPH-D <1.0
B2 (mg/kg) TPH-G <1.0 TEPH-D <1.0
BFW (mg/L) TEPH-D 0.310 TEPH-K <0.05 TEPH-MO 1.0
B16 (mg/kg) TEPH-D 45 TEPH-K <1.0 TEPH-MO 190
B22 (mg/kg) TEPH-D <1.0 TEPH-K <1.0 TEPH-MO 29
B24 (mg/kg) TEPH-D <1.0 TEPH-K <1.0 TEPH-MO <1.0
B25 (mg/kg) TEPH-D 49 TEPH-K <1.0 TEPH-MO 210
B26 (mg/kg) TEPH-D 12 TEPH-K <1.0 TEPH-MO 57
B17 (mg/kg) TEPH-D <1.0 TEPH-K 290 TEPH-MO 520
B19 (mg/kg) TEPH-D <1.0 TEPH-K 27 TEPH-MO 170
B23 (mg/kg) TEPH-D <1.0 TEPH-K <1.0 TEPH-MO 430
B18 (mg/kg) TEPH-D <1.0 TEPH-K 8000
B20 (mg/kg) TEPH-D 15 TEPH-K <1.0 TEPH-MO 120
B21 (mg/kg) TEPH-D <1.0 TEPH-K <1.0 TEPH-MO <1.0
Central Pacific Railroad
PACO PUMPS INC.
San Leandro Street
Excavation Samples
B1 B2 B3, B5 B4 B6 B7 B8 B9 B10 B11 B12 B13 B14 B16 B17 B18 B19 B20 B21 B22 B23 B24 B25 B26 BFW
GATE
Legend:
Composite Soil Sample 0-0.5' & 1.0'-1.5'
Discrete Soil Sample 3.0-3.5'
Discrete Soil Sample 0-0.5'
Water Sample
Scale
50 0 50 100 Feet
TPH-G - Total Petroleum Hydrocarbons as Gasoline: soil(5030/8015)
TEPH-D - Total Extractable Petroleum Hydrocarbons as Diesel: soil(3550/8015); water(3510/8015)
TEPH-K - Total Extractable Petroleum Hydrocarbons as Kerosene: soil(3550/8015); water(3510/8015)
TEPH-MO - Total Extractable Petroleum Hydrocarbons as Motor Oil: soil(3550/8015); water(3510/8015)
Sampled 10/1/1991: 4/9, 4/13, & 4/14/1992.
<0.25 = Not detected above laboratory detection limit.
Analyzed
Petroleum Hydrocarbons
PACO Pumps Inc.
9201 San Leandro Street
Oakland, California
Prepared by
JONAS & ASSOCIATES INC.
Date: 6-8-1992
Locations Approx.
Figure 4-4
Drawing Number PCO220-6/92:F4-4

With respect to the analysis for metals, fifteen metals were detected. The two metals which were not detected were silver and thallium. The metals which were detected include:

arsenic	barium	beryllium	cadmium
cobalt	chromium	copper	mercury
molybdenum	nickel	lead	antimony
selenium	vanadium	zinc	

As will be discussed in the following section, metals are naturally occurring and the simple detection of a metal does not necessary indicate that it was associated with an anthropogenic (human) source.

4.6 Discussion of Results

As identified in the previous section, twenty-five soil samples and one water sample were collected at PACO Pumps 9201 San Leandro facility. Sampling data are presented in Appendices A, B, and C of this report. The sampling locations are presented on Figure 4-1. Figures 4-2, 4-3, and 4-4 present the results of the analyses for metals, various organics suites, and petroleum hydrocarbons, respectively. In summary, of all the organic analytes tested for only the following were detected: total extractable petroleum hydrocarbons as diesel, motor oil, and kerosene; PCB 1260; and benzene, toluene, ethyl benzene, and total xylenes. Fifteen metals were also detected, with most in a range representing natural conditions. A presentation of specific analytical results are presented under the following subheadings.

Volatile Organics Compounds

All of the twenty-five soil samples and one water sample were analyzed for the volatile organic suite of compounds using EPA Method 8240, for analysis of soil, and EPA Method 624, for analyzing water. Only benzene, toluene, ethyl benzene and total xylenes, were detected in soil. No volatile organics were detected in water sample BFW, of the backwash from the filter unit for the pump testing tank. Toluene was detected only in two soil samples: B16-0.5&1.5 at 0.008 mg/kg, and B18-0.5&1.5 at 0.049 mg/kg. The only other volatile organics detected was also in soil sample B18-0.5&1.5, with concentrations of benzene at 0.005 mg/kg, ethyl benzene at 0.088 mg/kg, and total xylenes at 1.20 mg/kg. Complete analytical results for volatile organics are presented in Table A2, within Appendix A of this report.

Soil sample B16-0.5&1.5 was collected in an area that ponds surface water runoff during periodic rains. The sampling boring is located at the southern corner of the facility, near a large security wall in an area previously used for general storage. Soil sample B18-0.5&1.5 was sampled in an area with stained soil near an air compressor and adjacent

to the fenceline with Saint Vincent DePaul. It is recommended that a monitoring well be placed in the general location of B18-0.5&1.5 to determine if the volatile organic detected are above regulatory levels appropriate for underlying groundwater.

Base/Neutral/Acid Extractables

The suite of chemicals identified as base/neutral/acid extractables (BNAs), also known as semi-volatiles, were analyzed for in five samples: B1-3.5, B3-3.5, B5-3.5, B6-0.5, and B7-0.5. The BNA suite of analyses was performed using EPA Method 8270. These samples were all collected on October 1, 1991, and represent samples underneath a 1987 excavation and in a location where metal scraps and machine shavings have been temporarily stored in bins and drums. Of the five soil samples analyzed, none detected any base/neutral/acid extractables. Laboratory results for the analysis of base/neutral/acid extractables are presented in Table A3, of Appendix A.

Chlorinated Pesticides

The chlorinated pesticides suite of chemicals using EPA Method 8080 includes pesticides, insecticides, and polychlorinated biphenyls (PCBs). Table A4 in Appendix A presents the chlorinated pesticides results. Seven soil samples were analyzed using EPA Method 8080, these are identified as B1-3.5, B2-3.5, B3-3.5, B4-3.5, B5-3.5, B6-0.5 and B7-0.5. These represent discrete soil samples from depths of 3 to 3.5 feet and 0 to 0.5 feet. All of these samples were collected relatively near the southwestern fenceline of the facility. On the other side of the cyclone fence are the Central Pacific railroad tracks. No chlorinated pesticides, insecticides, or PCBs were detected in the samples underlying the 1987 excavation adjacent to the manufacturing and engineering building. These samples are identified as B1-3.5 through B5-3.5.

Soil samples B6-0.5 and B7-0.5 where collected in a location where metal scraps and machine shavings are stored in bins and drums, adjacent to a relatively modern transformer. The polychlorinated biphenyl PCB 1260 was detected in both of these samples. No other Method 8080 analytes were detected. Soil samples B6-0.5 and B7-0.5 had PCB 1260 concentrations of 0.400 mg/kg and 0.670 mg/kg, respectively. Both samples were collected just below an asphalt surface, down to a depth of 0.5 feet.

PCB is one of the rare compounds which actually does have promulgated soil cleanup level. The requirement is stated in Code of Federal Regulations, Title 40, §761, Subpart G PCB Spill Cleanup Policy as:

> "PCB contaminated soil should be removed to 10 mg/kg, provided that soil is excavated to a minimum depth of 10 inches. The excavated soil should be replaced with clean soil (less than 1 mg/kg PCBs)"

The PCB concentrations that were detected are well below this federal cleanup level.

It is recommended that a monitoring well be installed in this area to analyze for various constituents which may be present in the underlying groundwater.

Total Petroleum Hydrocarbons

During the October 1991 and April 1992 sampling events, all twenty-five soil samples and one water sample were analyzed for various petroleum hydrocarbons. The results are presented in Table A5 of Appendix A.

Soil samples collected on October 1, 1991, identified as B1-3.5, B2-3.5, B3-3.5, B4-3.5, B5-3.5, B6-0.5, B7-0.5, were all analyzed for total petroleum hydrocarbons (TPH) as gasoline (EPA Method 5030/8015), and total extractable petroleum hydrocarbons as diesel (EPA Method 3550/8015), along with benzene, toluene, ethyl benzene, and total xylenes (EPA Method 8020). None of these constituents were detected in these soil samples.

All eighteen soil samples collected during April 9, 13, and 14, 1992 were analyzed for total extractable petroleum hydrocarbons (TEPH) as diesel, kerosene, and motor oil (EPA Method 3550/8015). The soil samples which were analyzed include B8-0.5&1.5 through B14-0.5&1.5 and B16-0.5&1.5 through B26-0.5&1.5. TEPH as diesel was detected in eight of the eighteen soil samples, with a highest concentration of 120 mg/kg (B11-0.5&1.5). TEPH as kerosene was detected in three samples, but with a highest concentration of 8,000 mg/kg (B18-0.5&1.5). TEPH as motor oil was detected in over 80% of the soil samples analyzed, or fifteen of the eighteen samples analyzed. The highest concentration detected of TEPH as motor oil was 7,800 mg/kg (B18-0.5&1.5). Assuming a concentration equal to the detection limit, the average concentration of TEPH as motor oil for the eighteen soil samples is just over 600 mg/kg. If we removed the 7,800 mg/kg from the statistical population, the average concentration of TEPH as motor oil in soil is just over 180 mg/kg for the facility.

It was determined through discussions with Alameda County Health Services to install monitoring wells in various locations and then sample and analyze the groundwater for petroleum hydrocarbons. This will aid in determining if the elevated concentrations in soil have resulted in elevated concentrations of various petroleum hydrocarbons in underlying groundwater.

Priority Pollutant Metals

Metals are found naturally in soil. Whereas it is reasonable to assume that the finding of organic chemicals or petroleum hydrocarbons in soil or waste is associated with some anthropogenic activity, this correlation with metals in soils is not as easily made.

The sampling effort presented in this section detected fifteen of the seventeen metals. But only two samples (B6-0.5; B7-0.5) analyzed for all Title 26 CAM 17 metals (EPA

Methods 3005/3050/6010). Eighteen soil samples and the one water sample (BFW) were analyzed for the 13 priority pollutant metals (EPA Methods 3050/6010/7000). The priority pollutant metals suite does not analyze for barium, cobalt, molybdenum, and vanadium, when compared with the Title 26 CAM metals suite. Unfiltered water sample BFW, of the backwash of the filter unit for the pump testing tank, detected concentrations of cadmium (0.006 mg/l), chromium (5.6 mg/l), copper (0.29 mg/l), mercury (0.004 mg/l), lead (0.15 mg/l), and zinc (0.72 mg/l). Table A1 of Appendix A presents the results of the analysis for various metals.

Comparison of Metals with Background Concentrations

To provide a preliminary indication of the meaning of these detected concentrations of metals in soils, the following Table 4-4 presents the metal results found at the PACO Pumps facility versus "typical" background concentrations generally found in California and the United States.

Table 4-4
Metals Results and Background Concentrations
PACO PUMPS - 9201 San Leandro Street Facility
Oakland, California

Metal	Soil Samples (mg/kg)	California Native Soils[a] (mg/kg)	Western U.S. Native Soils[b] (mg/kg)	Native Soils[c] Typical Range (mg/kg)
Ag - Silver	ND(0.25)	-	<0.5 - 5	0.1 - 5.0
As - Arsenic	ND(0.25) - 5.4	5.3 - 8.3	<0.3 - 97	0.1 - 40
Ba - Barium	10.7 - 138	600 - 850	70 - 5000	100 - 3500
Be - Beryllium	ND(0.05) - 0.32	< 1	<10 - 300	0.1 - 40
Cd - Cadmium	0.595 - 3.8	-	<1 - 10	0.01 - 7.0
Co - Cobalt	0.804 - 0.991	12.5 - >70	<3 - 50	1.0 - 40
Cr - Chromium	2.5 - 57.8	85 - >2000	3 - 1500	5.0 - 3000
Cu - Copper	ND(0.25) - **760**	25 - 40	2 - 300	2.0 - 100
Hg - Mercury	ND(0.05) - 0.98	0.17 - 0.26	0.01 - 4.6	0.01 - 0.8
Mo - Molybdenum	ND(0.25) - **8.85**	-	-	0.2 - 5.0
Ni - Nickel	1.28 - 348	25 - >700	<3 - 700	5.0 - 1000
Pb - Lead	ND(0.50) - 170	25 - >700	<7 - 700	2.0 - 200
Sb - Antimony	ND(1.00) - 8.3	<1	-	0.6 - 10
Se - Selenium	ND(0.25) - **21**	-	-	0.1 - 2.0
Tl - Thallium	ND(2.00)	-	-	-
V - Vanadium	ND(0.50) - 146	125 - >500	7 - 500	20 - 500
Zn - Zinc	ND(0.25) - 420	97 - >3500	<10 - 2000	60 - 2000

notes a: Shacklette and Boerngen, 1984
b: Connor and Shacklette, 1975
c: Dragun, 1988

As identified in Table 4-4, most of the metal concentrations are within the range of "typical" values for native non-impacted soils. But two and possibly three metal concentrations appears to be elevated. In B26-0.5&1.5, **copper was detected at a** concentration **of 760 mg/kg**. Sample **B26**-0.5&1.5 was collected along the fenceline with Saint Vincent DePaul, within approximately thirty feet of San Leandro Street. The second highest concentration of copper is **350 mg/kg**, detected in sample **B22**-0.5&1.5. Both of these copper concentrations are probably elevated above native conditions. A **selenium** concentration of **21 mg/kg was** detected in soil sample **B19**-0.5&1.5. This sample was collected behind the welding shop in a location below a discharge pipe. One of the two samples analyzed for molybdenum may represent a slightly elevated concentration. Soil sample B7-0.5 detected molybdenum at 8.85 mg/kg.

Site-specific background concentrations were not available, so the comparison of the concentrations found in soil with widespread background concentrations only provide a general indication on non-anthropogenic levels for metals. These concentrations are of interest as a general guideline and represent a wide range of conditions and soil types that may or may not be found at PACO Pumps' facility.

Statistical Analysis for Metals in Soil

To evaluate the distribution of detected metal concentrations in samples collected from PACO Pumps 9201 San Leandro Street facility, a statistical analysis was performed. The statistical package used is GEO-EAS. It is a package distributed by the U.S. Environmental Protection Agency - Office of Research and Development (U.S EPA 1991). The basic concept behind the following statistical analysis of metals is that naturally occurring metals should represent a single statistical population with a relatively homogeneous distribution. Similar naturally occurring (geologic, physical, chemical) processes should result in this type of population distribution. Metal concentrations resulting from non-natural processes may result in a second statistical population. If the presence of natural and non-natural populations have different distributions, then the overall distribution is identified as heterogenous. A helpful statistic to determine heterogenous versus more homogeneous distributions is the percent coefficient of variance: defined as the standard deviation over the mean, presented as a percentage. A more homogeneous distribution will typically have a percent coefficient of variance less than 100%. If the percent coefficient of variance is greater than 100%, then non-natural processes may have resulted in a heterogeneous concentration distribution, such as would typically result from waste discharge to land. Elevated concentrations can be identified by removing them from the statistical population until the resulting data set has a percent coefficient of variance of less than 100%.

Appendix D presents statistics, histograms, and probability plots for each of the detected metals. Table 4-5 presents a summary of the statistical analysis. For each detected metal its mean, minimum, median, maximum, percent coefficient of variance, and its standard deviation for a normal distribution is presented.

As is indicated by these results, arsenic, copper, nickel, and selenium had percent coefficient of variances significantly greater than 100%. Lead, antimony, and zinc had coefficient of variances only slightly greater than 100%.

Table 4-5
Statistics on Soil Results
PACO PUMPS - 9201 San Leandro Street
Oakland, California

Metal	Concentration in mg/kg				% Coef. Var. {%SD/Mean}	Std. Dev.
	Mean	Minimum	Median	Maximum		
As - Arsenic	0.81	ND(0.25)	0.25	5.4	**176.1%**	1.42
Be - Beryllium	0.08	ND(0.05)	0.065	0.32	73.7%	0.06
Cd - Cadmium	2.0	0.595	2.1	3.8	38.6%	0.77
Cr - Chromium	14.7	2.5	13.5	57.8	87.9%	12.9
Cu - Copper	116	ND(0.25)	43.5	760	**149.8%**	173.9
Hg - Mercury	0.27	ND(0.05)	0.23	0.98	86.8%	0.24
Ni - Nickel	28.4	1.28	12.5	348	**265.7%**	75.5
Pb - Lead	41.4	ND(0.50)	36.5	170	**101.2%**	41.9
Sb - Antimony	1.62	ND(1.00)	1.00	8.30	**102.1%**	1.66
Se - Selenium	1.30	ND(0.25)	0.25	21	**355.5%**	4.64
Zn - Zinc	105	ND(0.25)	55	420	**100.1%**	105.7

To determine which concentration(s) might belong to a distinct population, elevated concentrations were removed from the statistical population. The goal was to remove the concentrations which would result in the remaining statistical population achieving a coefficient of variance less than 100%. Table 4-6 present the samples and concentrations which need to be removed from the statistical population to decrease the percent coefficient of variance below 100%.

Table 4-6
Metal Concentrations Resulting in Coefficient of Variance > 100%
PACO PUMPS - 9201 San Leandro Street
Oakland, California

Metal	Metal Concentration Removed from Statistical Population	Original Coefficient of Variance for Metal Concentrations	Coefficient of Variance after Metal Concentration(s) is removed
As - Arsenic	B20-0.5&1.5: 3.5 mg/kg B22-0.5&1.5: 3.0 mg/kg B26-0.5&1.5: 5.4 mg/kg	176.1%	0.000% (only ND(0.25))
Cu - Copper	B22-0.5&1.5: 350 mg/kg B26-0.5&1.5: 760 mg/kg	149.8%	89.9%
Ni - Nickel	B7-0.5: 348 mg/kg	265.7%	61.5%
Pb - Lead	B26-0.5&1.5: 170 mg/kg	101.2%	86.0%
Sb- Antimony	B22-0.5&1.5: 8.3 mg/kg	102.1%	41.7%
Se - Selenium	B19-0.5&1.5: 21 mg/kg	355.5%	24.2%
Zn - Zinc	B16-0.5&1.5: 420 mg/kg	100.1%	87.1%

In conclusion, the statistical analysis indicates that certain arsenic, copper, nickel, and selenium concentrations may not represent background concentrations. In addition, certain lead, antimony, and zinc samples may be slightly elevated, since the percent coefficient of variance for the complete population of samples was sightly above 100%.

This type of analysis of data is not a determination of what constitutes hazardous concentrations, but it does identify possible constituents of concern.

Comparison of Metal Concentrations to Hazardous Waste Levels

Table 4-7 presents the range of results for metals in soils at PACO Pumps and their Total Threshold Limit Concentration (TTLC) values. Generally, if soil concentrations exceed their TTLC and they have undergone placement, they are considered a hazardous waste. As identified in Table 4-7, none of the detected metal concentrations exceeds the TTLC value defining it as a hazardous waste, if it undergoes placement. But four, and possibly five metals, exceeded ten times the Soluble Threshold Limit Concentration (STLC). **The four metals which clearly exceeded 10 times the STLCs are copper, nickel, lead, and selenium.** Chromium exceed ten times the STLC if the chemical species is chromium VI, but a typical valence for chromium is as chromium III. As identified in Table 4-7, the TTLC and STLC are significantly higher for chromium III compared to chromium VI. But an actual speciation test is required to determine whether chromium found in a sample is as chromium III or chromium VI. Sampling results with concentrations greater than 10 x STLC are presented in Figure 4-5, along with other possibly elevated concentrations.

The potentially elevated concentration for chromium of 57.8 mg/kg was detected in soil sample B7-0.5, in a location where metal scraps and shaving were stored in bins and drums. Copper concentrations exceeded 10 X STLC in two locations: B26-0.5&1.5 (760 mg/kg) and B22-0.5&1.5 (350 mg/kg). Nickel exceed 10 x STLC only in sample B7-0.5&1.5. Lead exceeded 10 x STLC in six of the twenty samples analyzed. Selenium exceeded 10 x STLC in only one sample, B19-0.5&1.5. This sample was collected from behind the previous welding shop.

The regulatory meaning of the metal concentration values representing ten times the STLC is arbitrary, but it typically indicates that selected locations should be resampled and analyzed with a leachability analysis. The typical leachability analysis for this type of sample is the California Waste Extraction Test (WET) for comparison with STLC values, or the federal Toxicity Characteristic Leaching Procedure (TCLP) for comparison with EP Toxicity levels. Recommendations for future sampling and analysis using the Waste Extraction Test are presented in Section 7.0 Recommended Analysis of Soil. In addition, **in the location where an elevated chromium concentration was identified, a chromium leachability test is recommended with a determination of whether the chromium is chromium VI or chromium III.**

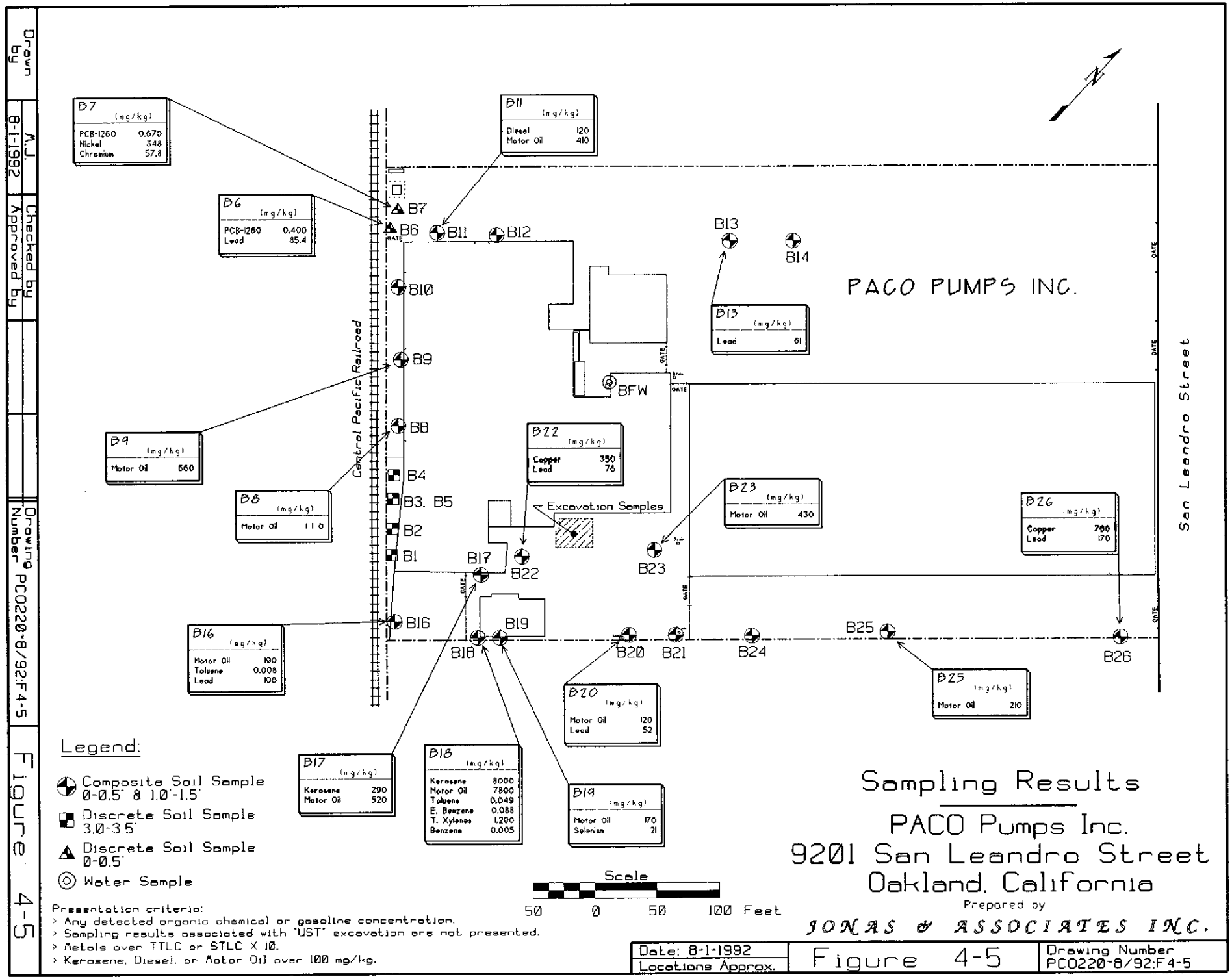

Drawn by
M.J.
8-1-1992
Checked by
Approved by
Drawing Number PC0220-8/92:F4-5
Figure 4-5
B7 (mg/kg) PCB-1260 0.670 Nickel 348 Chromium 57.8
B11 (mg/kg) Diesel 120 Motor Oil 410
B6 (mg/kg) PCB-1260 0.400 Lead 85.4
B13 (mg/kg) Lead 61
B9 (mg/kg) Motor Oil 560
B8 (mg/kg) Motor Oil 110
B22 (mg/kg) Copper 350 Lead 76
B23 (mg/kg) Motor Oil 430
B26 (mg/kg) Copper 700 Lead 170
B16 (mg/kg) Motor Oil 190 Toluene 0.008 Lead 100
B25 (mg/kg) Motor Oil 210
B20 (mg/kg) Motor Oil 120 Lead 52
B17 (mg/kg) Kerosene 290 Motor Oil 520
B18 (mg/kg) Kerosene 8000 Motor Oil 7800 Toluene 0.049 E. Benzene 0.088 T. Xylenes 1.200 Benzene 0.005
B19 (mg/kg) Motor Oil 170 Selenium 21
B7
B6
B11
B12
B13
B14
B10
B9
B8
B4
B3. B5
B2
B1
B17
B22
B16
B19
B18
B20
B21
B24
B25
B26
B23
BFW
PACO PUMPS INC.
Central Pacific Railroad
San Leandro Street
Excavation Samples
N
Legend:
Composite Soil Sample 0-0.5' & 1.0'-1.5'
Discrete Soil Sample 3.0-3.5'
Discrete Soil Sample 0-0.5'
Water Sample
Scale
50 0 50 100 Feet
Presentation criteria:
› Any detected organic chemical or gasoline concentration.
› Sampling results associated with "UST" excavation are not presented.
› Metals over TTLC or STLC X 10.
› Kerosene, Diesel, or Motor Oil over 100 mg/kg.
Sampling Results
PACO Pumps Inc.
9201 San Leandro Street
Oakland, California
Prepared by
JONAS & ASSOCIATES INC.
Date: 8-1-1992
Locations Approx.
Figure 4-5
Drawing Number PC0220-8/92:F4-5

Table 4-7
Range of Soil Concentrations, TTLC, & STLC
PACO PUMPS - 9201 San Leandro Street
Oakland, California

Metal	Soil Samples (mg/kg)	TTLC (mg/kg)	STLC (mg/L)	STLC X 10
Ag - Silver	ND(0.25)	500	5	50
As - Arsenic	ND(0.25) - 5.4	500	5	50
Ba - Barium	10.7 - 138	10,000	100	1000
Be - Beryllium	ND(0.05) - 0.32	75	0.75	7.5
Cd - Cadmium	0.595 - 3.8	100	1	10
Co - Cobalt	0.804 - 0.991	8000	80	800
Cr - Chromium	2.5 - **57.8**	2500 (III) 500 (VI)	560 (III) 5 (VI)	5600 (III) **50** (VI)
Cu - Copper	ND(0.25) - **760**	2500	25	**250**
Hg - Mercury	ND(0.05) - 0.98	20	0.2	2
Mo - Molybdenum	ND(0.25) - 8.85	3500	350	3500
Ni - Nickel	1.28 - **348**	2000	20	**200**
Pb - Lead	ND(0.50) - **170**	1000	5.0	**50**
Sb - Antimony	ND(1.00) - 8.3	500	15	150
Se - Selenium	ND(0.25) - **21**	100	1.0	**10**
Tl - Thallium	ND(2.00)	700	7.0	70
V - Vanadium	ND(0.50) - 146	2400	24	240
Zn - Zinc	ND(0.25) - 420	5000	250	2500

Comparison of Water Sample with Various Regulatory Standards and Criteria for Metals

Water sample BFW was collected on April 14, 1992. It was collected as a sample of backwash from the filter unit associated with the outside pump testing tank. When the outside pump testing tank was in use, the filter unit would be periodically backwashed. The effluent backwash was discharged into a sewer system. No volatile organics were identified in the unfiltered sample. But 0.310 mg/l TEPH as diesel and 1.6 mg/l of TEPH as motor oil were detected in the sample. Sample BFW was analyzed for the thirteen priority pollutant metals, using EPA Methods 3005/3050/6010. The following metals were detected in unfiltered water sample BFW and their concentrations:

cadmium (0.006 mg/l)	chromium (5.6 mg/l)	copper (0.29 mg/l)
mercury (0.004 mg/l)	lead (0.15 mg/l)	zinc (0.72 mg/l)

Table 4-8 presents Federal and State Maximum Contaminant Levels, San Francisco Bay Basin Plan Effluent Limits, and national ambient water quality criteria for various metals. The first two standards are for drinking water. The last three are for discharge to surface water bodies.

Table 4-8
Metals, MCLs, Effluent Limits, and Ambient Water Quality Criteria

Metal	Federal MCLs (mg/L)	Calif. MCLs (mg/L)	BP Effluent[a] Limits (mg/L)	AWQC[b] (mg/L)	AWQC[c] (mg/L)
Ag - Silver	0.05	0.05	0.0023	0.0023	0.00012
As - Arsenic	0.05	0.05	0.02		
Cd - Cadmium	0.005	0.010	0.010	0.093	0.0011
Cr - Chromium	0.1[f]	0.05[f]	0.011[e]	10.0[d]	0.2[d]
Cu - Copper	1.30	-	0.020	0.0029	0.012
Hg - Mercury	0.002	0.002	0.001	0.000025	0.000012
Ni - Nickel	-	-	0.0071	0.0083	0.016
Pb - Lead	0.005	0.05	0.0056	0.0056	0.0032
Zn - Zinc	-	-	0.058	0.086	0.11

notes: a/ Effluent Limitations for Discharge to Shallow Surface Waters - San Francisco Basin Water Quality Control Plan.
b/ National Ambient Water Quality Criteria for protection of marine aquatic life (chronic). Non-enforceable criteria.
c/ National Ambient Water Quality Criteria for protection of freshwater aquatic life (chronic). Non-enforceable criteria.
d/ Chromium III; e/ Total Chromium VI; f/ Total Chromium

Risk Assessment

The determination of whether a concentration would be considered as hazardous if it would undergo placement is different than the allowable concentration which can remain in soil with no remedial action. To make such a determination, typically a risk assessment study is performed. Briefly, a risk assessment is based upon the following rule:

HAZARD →→ EXPOSURE PATHWAY →→ RISK

To determine non-water based risks associated with soil, typically the ingestion and inhalation pathways are analyzed. Shallow samples are used to characterize surface conditions. Potential receptors are identified (e.g., children eating dirt, people breathing air). Estimates of chemical-bearing fugitive dust and loading rates to receptors are calculated. These are then used with risk criteria to determine potential overall risk.

Once the risk is quantified, then a determination needs to be made to define the acceptable risk. This information can be applied to necessary remediation action or for the mitigation of impacts. If a concentration was to exist in soil then its impact on groundwater can not exceed the defined beneficial use of that water (e.g., drinking water supply). Groundwater concentrations may not exceed federal or state drinking water standards. A groundwater based risk assessment would of course require a groundwater monitoring well. A risk assessment is outside the scope of this investigation.

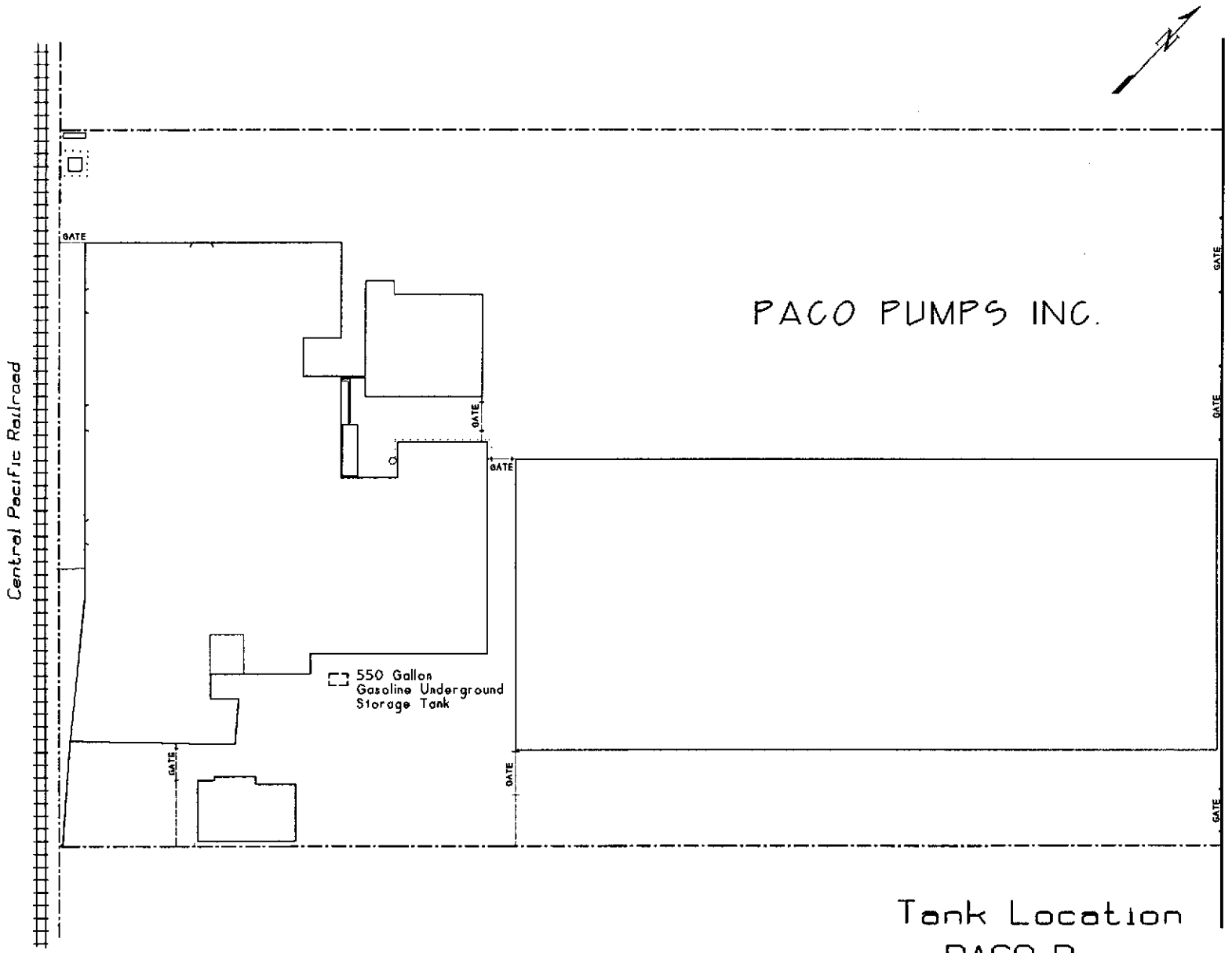
5.0 EXCAVATION ACTIVITIES

5.1 Overview of Excavation Activities and Results

This section of the report presents information associated with the initial attempt to find the underground storage tank, the sampling of the walls of the excavation and of the excavated material, analytical results, and associated excavation activities. Prior to any excavation activities to attempt to find the underground gasoline tank, a Permit Application - Underground Storage Tank Removal - PACO Pumps Inc., 9201 San Leandro Street, Oakland, California was submitted to Alameda County Health Services for review and approval. This Permit Application was submitted prior to finding the tank, to expedite the removal process if a tank was found. No underground storage tank was found, so according to Alameda County Health Services the Permit Application, along with Form A and B of the State Water Resources Control Board's Underground Storage Tank Permit Application, are not required or necessary. The Permit Application, non-hazardous waste manifests for the excavated soil, and a Bay Area Air Quality Management District permit for excavation activities are presented in Appendix H of this report. In the suspected location of the underground storage tank, piping, possible tank debris and fill material indicated that the tank had probably been previously removed. Sampling results associated with excavation activities are presented in summary Table A6 in Appendix A. Chain-of-Custody records and laboratory data are presented in Appendix B and C, respectively. Pictures associated soil excavation activities is presented in Appendix K.

The underground gasoline tank in the area of interest was initially identified on a Factory Insurance Association map for Pacific Pumping Company, Oakland, California, file number P.629, and dated November 19, 1954. The notation on the 1954 insurance map identified a 550 gallon gasoline tank, adjacent to a pump. The earlier 1954 configuration of the building was superimposed with a CADD system onto the current building configuration at the facility, to determine a potential location for the tank. Figure 5-1 presents the approximate location of the underground storage tank identified by superimposing the earlier map on the current building configuration, with some adjustments after excavation activities identified where the tank probably did exist. Assuming the tank had a diameter of four feet, the length would need to be approximately six feet to hold the stated 550 gallons. PACO Pumps employees we talked with did not recall the use of the tank and pump to discharge fuel, and some considered that the tank had probably not been in use for twenty years. None of the PACO Pumps employees interviewed knew that the tank had been removed, or what was the date or year that the removal occurred.

After approval of the Permit Application by the Alameda County Health Services, initial excavation and sampling activities commenced on June 29, 1992. Even though an underground storage tank was not found, elevated concentrations of petroleum products were identified which lead to further excavation. Additional excavations and soil



Drawn by
Checked by
Approved by
M.J.
5-8-1992
Drawing Number PC0220-5/92:F5-1
Figure 5-1

notes:

Location of 550 gallon tank from 1954 Factory Insurance Association Map - File No. P.629.

Tank Location
PACO Pumps
9201 San Leandro Street
Oakland, California

Prepared by
JONAS & ASSOCIATES INC.

Date: 5-8-1992	Figure 5-1	Drawing Number
Locations Approx.		PC0220-5/92:F5-1

samplings occurred on July 27, August 3, and August 11/12, 1992. Subsequent sampling of the soil pile occurred to further characterize the material for proper disposal. On October 1, 1992, approximately 310 tons of excavated soil was removed from the site by a licensed hauler and disposed of in a Class III landfill. Currently, PACO Pumps has approval from the Alameda County Health Services to fill the hole with pea gravel, cover with a rock base, and surface the area with asphalt. Following is a summary of the various findings associated attempting to find the tank and the subsequent excavation activities:

- » No tank was found in the excavation, only piping and debris.
- » No diesel was found in the initial sample analyzed for diesel.
- » Gasoline, benzene, ethyl benzene, toluene, and xylenes were detected in soil samples.
- » Elevated soil concentrations resulted in phased excavation activities.
- » Excavation dates included June 29, July 27, August 3, and August 11, 1992.
- » By August 11, 1992 approximately 250 cubic yards of soil had been excavated, down to a depth of approximately 9 feet.
- » Following are the highest concentrations which exist in the ground as of August 11, 1992: TPH as gasoline = 13 mg/kg; benzene = 2.10 mg/kg; toluene = 0.018 mg/kg; ethyl benzene = 0.340 mg/kg; total xylenes = 0.190 mg/kg.
- » Remaining concentrations are apparently elevated adjacent to the buildings. As of August 11, 1992, excavation has occurred up to four feet from the foundation of the building and subsequent excavation is not recommended to maintain structural integrity of the foundation.

The excavation contractor AFA Construction Inc. was responsible for excavation of the soil, along with the placement onto plastic and covering of the soil. Licenses for AFA Construction Inc. are presented in Appendix H. The California certified analytical laboratory used for sample analysis was ChromaLab Inc. in San Ramon, California 94583. The collection, transport, and disposal of the soil was contracted to ERTHCO, located in Rancho Cordova, California.

5.2 Excavation and Sampling Activities

Prior to proceeding with excavation activities, representatives of the Alameda County Health Care Services Agency and the Oakland City Fire Department were contacted at least three working days in advance of the site work. As stated previously, the Permit Application for removal of an underground storage tank was approved by Alameda County Health Services prior to any excavation. The sampling protocols used for the sampling of the excavation and pile are presented under Section 4.3 Sampling Procedures and Protocols. Figure 5-2 presents the sampling results and areas of excavation and associated dates.

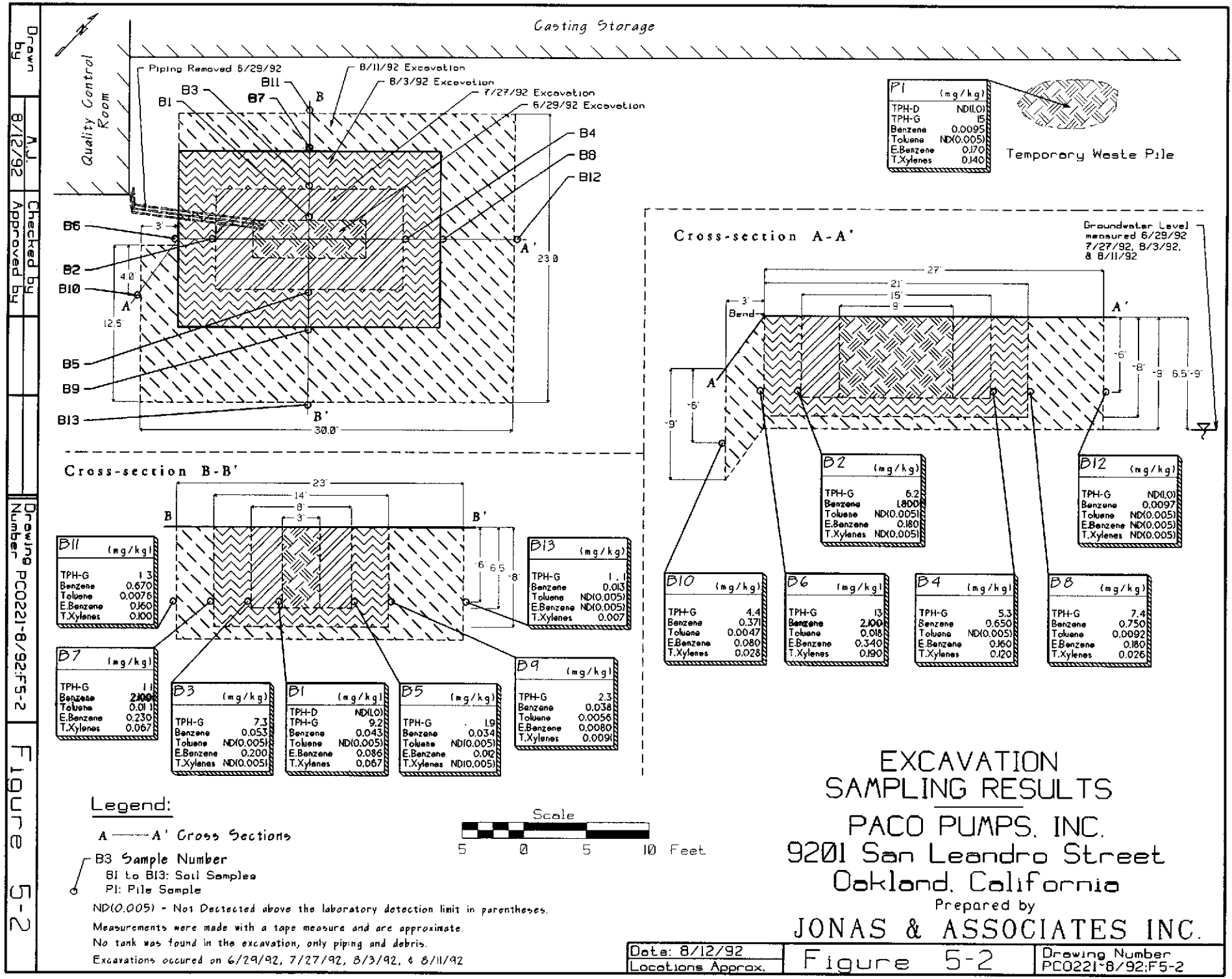

Drawn by
A.J.
8/12/92
Checked by
Approved by
Drawing Number
PC0221-8/92:F5-2
Figure 5-2
Casting Storage
Quality Control Room
Piping Removed 6/29/92
8/11/92 Excavation
8/3/92 Excavation
7/27/92 Excavation
6/29/92 Excavation
B1
B3
B11
B7
B
B4
B8
B12
B6
B2
B10
B5
B9
B13
A
A'
B'
3'
4.0
12.5'
23.0'
30.0'
P1 (mg/kg)
TPH-D ND(1.0)
TPH-G 15
Benzene 0.0095
Toluene ND(0.005)
E.Benzene 0.170
T.Xylenes 0.140
Temporary Waste Pile
Cross-section A-A'
Groundwater Level measured 6/29/92 7/27/92, 8/3/92, & 8/11/92
27'
21'
15'
9'
3' Bend
-6'
-8'
-9'
6.5'-9'
B2 (mg/kg)
TPH-G 6.2
Benzene 1.800
Toluene ND(0.005)
E.Benzene 0.180
T.Xylenes ND(0.005)
B12 (mg/kg)
TPH-G ND(1.0)
Benzene 0.0097
Toluene ND(0.005)
E.Benzene ND(0.005)
T.Xylenes ND(0.005)
B10 (mg/kg)
TPH-G 4.4
Benzene 0.371
Toluene 0.0047
E.Benzene 0.080
T.Xylenes 0.028
B6 (mg/kg)
TPH-G 13
Benzene 2,100
Toluene 0.018
E.Benzene 0.340
T.Xylenes 0.190
B4 (mg/kg)
TPH-G 5.3
Benzene 0.650
Toluene ND(0.005)
E.Benzene 0.160
T.Xylenes 0.120
B8 (mg/kg)
TPH-G 7.4
Benzene 0.750
Toluene 0.0092
E.Benzene 0.180
T.Xylenes 0.026
Cross-section B-B'
23'
14'
8'
3'
6'
6.5'
8'
B11 (mg/kg)
TPH-G 1.3
Benzene 0.670
Toluene 0.0078
E.Benzene 0.160
T.Xylenes 0.100
B13 (mg/kg)
TPH-G 1.1
Benzene 0.013
Toluene ND(0.005)
E.Benzene ND(0.005)
T.Xylenes 0.007
B7 (mg/kg)
TPH-G 1.1
Benzene 2,100
Toluene 0.011
E.Benzene 0.230
T.Xylenes 0.067
B3 (mg/kg)
TPH-G 7.3
Benzene 0.053
Toluene ND(0.005)
E.Benzene 0.200
T.Xylenes ND(0.005)
B1 (mg/kg)
TPH-D ND(1.0)
TPH-G 9.2
Benzene 0.043
Toluene ND(0.005)
E.Benzene 0.086
T.Xylenes 0.067
B5 (mg/kg)
TPH-G 1.9
Benzene 0.034
Toluene ND(0.005)
E.Benzene 0.012
T.Xylenes ND(0.005)
B9 (mg/kg)
TPH-G 2.3
Benzene 0.038
Toluene 0.0056
E.Benzene 0.0080
T.Xylenes 0.009
Legend:
A —— A' Cross Sections
B3 Sample Number
B1 to B13: Soil Samples
P1: Pile Sample
ND(0.005) - Not Detected above the laboratory detection limit in parentheses.
Measurements were made with a tape measure and are approximate.
No tank was found in the excavation, only piping and debris.
Excavations occured on 6/29/92, 7/27/92, 8/3/92, & 8/11/92
Scale
5 0 5 10 Feet
EXCAVATION SAMPLING RESULTS
PACO PUMPS, INC.
9201 San Leandro Street
Oakland, California
Prepared by
JONAS & ASSOCIATES INC.
Date: 8/12/92
Locations Approx.
Figure 5-2
Drawing Number
PC0221-8/92:F5-2

Table 5-1 presents the analysis used for the various samples:

Table 5-1
Sample and Laboratory Analyses
Associated with Excavation Activities
PACO Pumps - 9201 San Leandro Street
Oakland, California

Analysis	Sample I.D.
Total Petroleum Hydrocarbons as Gasoline soil: (5030/8015) Benzene, Toluene, Ethyl Benzene, Xylenes soil: (8020)	soil: P1; B1; B2; B3; B4; B5; B6; B7; B8; B9; B10; B11; B12; B13
Total Extractable Petroleum Hydrocarbons as Diesel soil: (3550/8015)	soil: P1; B1
Lead soil: (7420)	soil: P1

Following is a chronology of various dates and a discussion of excavation and sampling activities:

June 29/30, 1992

After approval was provided by Alameda County Health Services, excavation activities commenced with AFA Construction Inc. by defining the work area and location for material storage. The general area where the work was to occur is in a low traffic area, due to the moving of PACO's staff from the facility, and controlled access with gates and a cyclone fence. The area was covered with asphalt and concrete.

Initially a small area was excavated in the general location of where the CADD figure indicated that the tank may be present. Subsequently, pipes were identified adjacent to the building which may have been associated with a fuel pumping system. Identification of the pipes resulted in shifting of the excavation along the pipe, assuming they would end at the underground storage tank. The excavated pipes ended in fill containing relatively small pieces of metal possibly associated with a tank. As stated previously, no tank had been found.

Excavation in the area of suspected fill for the previous tank extended to an approximate depth of 6 feet below the surface. The excavation had a width of approximately 3 feet by 9 feet in length. A drive sample down six feet below the surface in the northwest wall of the excavation was collected on June 30, 1992, identified as B1. A composite grab sample was also collected of the excavated pile, identified as P1. Both of these samples were analyzed for total petroleum hydrocarbons (TPH) as gasoline (EPA Method 5030/8015), and total extractable petroleum hydrocarbons (TEPH) as diesel (EPA Method 3550/8015), along with benzene, toluene, ethyl benzene, and total xylenes

(BTEX; EPA Method 8020). Sample P1 of the excavated pile was also analyzed for lead using EPA Method 7420. Excavated soil in the pile was placed onto plastic and after it was sampled, it was covered with plastic and secured.

Moderately elevated concentrations of TPH as gasoline, benzene, ethyl benzene, and total xylenes were detected in both of the samples from the excavation (B1) and from the pile (P1). Lead was also detected in P1 at 89 mg/kg. No TEPH as diesel was detected in either of the samples. Oversight of the sampling activities, interpretation of the results, and the general direction of future activities were determined through discussions with Mr. Barney Chan, of Alameda County Health Services. After Mr. Chan reviewed the sampling results it was determined that it would be appropriate to excavate additional material.

July 27, 1992

Initially an air jack hammer was used to score a line through the asphalt and concrete three feet beyond the June 29, 1992 location of the excavation. A backhoe, under the direction of AFA Construction Inc., then removed the asphalt and concrete in the area of the excavation and then proceeded to excavate the soil down to six feet in depth and out three feet. Four drive samples were collected in brass tubes six feet down at each excavation wall. Each sample was analyzed for TPH as gasoline and for the BTEX suite. These soil samples are identified as B2, B3, B4, and B5. As identified by the sampling results for this event, benzene was detected in all four samples ranging from 0.034 mg/kg (B5) to 1.80 mg/kg (B2). TPH as gasoline was also detected in all four samples, with a range of concentrations from 1.9 mg/kg (B5) to 7.3 mg/kg (B3). Ethyl benzene and xylenes were also detected. After discussions with Mr. Barney Chan, it was determined that additional excavation would be required because of the find of elevated concentrations.

The excavated soil was placed on plastic and covered with plastic, prior to AFA Construction leaving the facility.

August 3, 1992

It was again decided to excavate laterally three more feet and to increase the depth to eight feet below the surface. After the new extent of the excavation was scored with a jack hammer, AFA Construction's backhoe removed soil to the new dimensions. The dimensions of this new excavation was 21 feet long by 14 feet wide, with a depth of approximately 8 feet. Four more soil samples, using a brass tube driver, were collected six feet below the surface, in the walls of the excavation, and are identified as B6, B7, B8, and B9.

Soil samples B6 and B7 both detected 2.10 mg/kg benzene, along with 13 mg/kg and 11 mg/kg TPH as gasoline, respectively. Along with TPH as gasoline, and benzene, all four

samples also detected toluene, ethyl benzene, and total xylenes at elevated concentrations. It was determined that a fourth excavation would be performed.

August 11/12, 1992 Why wasn't SS collected at 9' bgs ?,

The fourth excavation event enlarged the hole to approximately 30 feet in length by 27 feet in width, down to a depth of 9 feet below the surface. In total, approximately 250 cubic yards of material had been removed from the excavation. Four additional soil samples were collected from 6 feet below the surface at each newly excavated wall. These samples, identified as B10, B11, B12, and B13, were analyzed for TPH as gasoline and BTEX. Concentrations appeared to be generally lower in the excavation walls away from the building, but were still at significant levels adjacent to the building. Soil sample B11, within approximately four feet from the building foundation, detected TPH as gasoline at 13 mg/kg and benzene at 0.670 mg/kg.

After review of these results, Mr. Barney Chan agreed that it would be appropriate to fill the excavation with gravel and place a monitoring well downgradient from the excavation to determine if groundwater is impacted. Results of the groundwater monitoring well would be used to determine further actions associated with the excavation. In addition, the excavation could not extend closer to the building without potentially impacting the building's foundation. The natural material which was being excavated was a dark brown sandy clay to a silty clay.

Section 6.0 Recommended Characterization of Groundwater presents an implementation strategy for monitoring groundwater downgradient from the location of the tank excavation.

Table 5-2 presents a summary table of the detected organic chemicals and petroleum hydrocarbons associated with the excavation activities.

5.3 Post-Excavation Activities

ERTHCO was subcontracted to manage the proper removal and disposal of the excavated soil. ERTHCO is located at 3255 Monier Court, in Rancho Cordova, California. All sampling results associated with the excavation activities were transmitted to ERTHCO.

On October 1, 1992, ERTHCO Environmental Services oversaw the collection, removal, transport, and disposal to a Class III landfill of approximately 310 tons of soil. The "non-hazardous waste" manifests for the soil are presented in Appendix H.

On October 13 and 14, 1992, AFA Construction Inc. managed the filling of the excavation with 3/8" #4 pea gravel, twelve inches of Class II rock, and three inches of asphalt surfacing.

Table 5-2
Detected Organic Chemicals and Petroleum Hydrocarbons Associated with Excavation Activities
PACO PUMPS - 9201 San Leandro Street
Oakland, California

Sample I.D.	Analysis for Organics	Detected Organics
P1 (stockpile)	TPH-G w/ BTEX TEPH-D; Lead	TPH as Gasoline: 15 mg/kg Benzene: 0.0095 mg/kg Ethyl Benzene: 0.170 mg/kg Total Xylenes: 0.140 mg/kg Lead: 89 mg/kg
B1	TPH-G w/ BTEX TEPH-D	TPH as Gasoline: 9.2 mg/kg Benzene: 0.043 mg/kg Ethyl Benzene: 0.086 mg/kg Total Xylenes: 0.067 mg/kg
B2	TPH-G w/ BTEX	TPH as Gasoline: 6.2 mg/kg Benzene: 1.800 mg/kg Ethyl Benzene: 0.180 mg/kg
B3	TPH-G w/ BTEX	TPH as Gasoline: 7.3 mg/kg Benzene: 0.053 mg/kg Ethyl Benzene: 0.200 mg/kg
B4	TPH-G w/ BTEX	TPH as Gasoline: 5.3 mg/kg Benzene: 0.650 mg/kg Ethyl Benzene: 0.160 mg/kg Total Xylenes: 0.014 mg/kg
B5	TPH-G w/ BTEX	TPH as Gasoline: 1.9 mg/kg Benzene: 0.034 mg/kg Ethyl Benzene: 0.012 mg/kg
B6	TPH-G w/ BTEX	TPH as Gasoline: 13 mg/kg Benzene: 2.100 mg/kg Toluene: 0.018 mg/kg Ethyl Benzene: 0.340 mg/kg Total Xylenes: 0.190 mg/kg
B7	TPH-G w/ BTEX	TPH as Gasoline: 11 mg/kg Benzene: 2.100 mg/kg Toluene: 0.011 mg/kg Ethyl Benzene: 0.230 mg/kg Total Xylenes: 0.067 mg/kg
B8	TPH-G w/ BTEX	TPH as Gasoline: 7.4 mg/kg Benzene: 0.750 mg/kg Toluene: 0.0092 mg/kg Ethyl Benzene: 0.180 mg/kg Total Xylenes: 0.026 mg/kg
B9	TPH-G w/ BTEX	TPH as Gasoline: 2.3 mg/kg Benzene: 0.038 mg/kg Toluene: 0.0056 mg/kg Ethyl Benzene: 0.0080 mg/kg Total Xylenes: 0.0091 mg/kg
B10	TPH-G w/ BTEX	TPH as Gasoline: 4.4 mg/kg Benzene: 0.371 mg/kg Toluene: 0.0047 mg/kg Ethyl Benzene: 0.080 mg/kg Total Xylenes: 0.028 mg/kg
B11	TPH-G w/ BTEX	TPH as Gasoline: 13 mg/kg Benzene: 0.670 mg/kg Toluene: 0.0076 mg/kg Ethyl Benzene: 0.160 mg/kg Total Xylenes: 0.100 mg/kg
B12	TPH-G w/ BTEX	Benzene: 0.0097 mg/kg
B13	TPH-G w/ BTEX	TPH as Gasoline: 1.1 mg/kg Benzene: 0.013 mg/kg Total Xylenes: 0.007 mg/kg

notes: TPH-G = Total Petroleum Hydrocarbons as Gasoline
BTEX = Benzene, Toluene, Ethyl Benzene, Total Xylenes
TEPH-D = Total Extractable Petroleum Hydrocarbons as Diesel

6.0 RECOMMENDED CHARACTERIZATION OF GROUNDWATER

To characterize the groundwater quality underlying PACO Pumps facility, four monitoring wells are proposed. Installation and monitoring of these wells were recommended after discussions with Alameda County Health Services, PACO Pumps, and Jonas and Associates in an August 12, 1992 meeting. It is also recommended that the wells be 4-inches in diameter, with a probable depth of 20 feet. Initially a 30 foot pilot boring will define stratigraphy to place the screen in an optimal location for collecting groundwater samples and to measure a floating product, if it is present. Soil samples will also be collected from the borings and will be analyzed for an appropriate suite of chemicals. Recommended analysis for soil collected from the borings associated with the monitoring wells is presented in Section 7.0 Recommended Analysis of Soil.

The locations of the proposed monitoring wells are based upon an assumed northwesterly direction of groundwater transport. This direction would be in accord with groundwater recharging along the base of the Berkeley Hills and then moving towards South Slough and San Leandro Bay. This is direction is also supported by water level measurements in previous boreholes used to engineer BART. Currently it appears that larger scale pumping of groundwater is not occurring in the vicinity of the site, probably because of the relatively low quality of the groundwater. Measuring the water levels in the installed wells should provide the local gradient for groundwater transport.

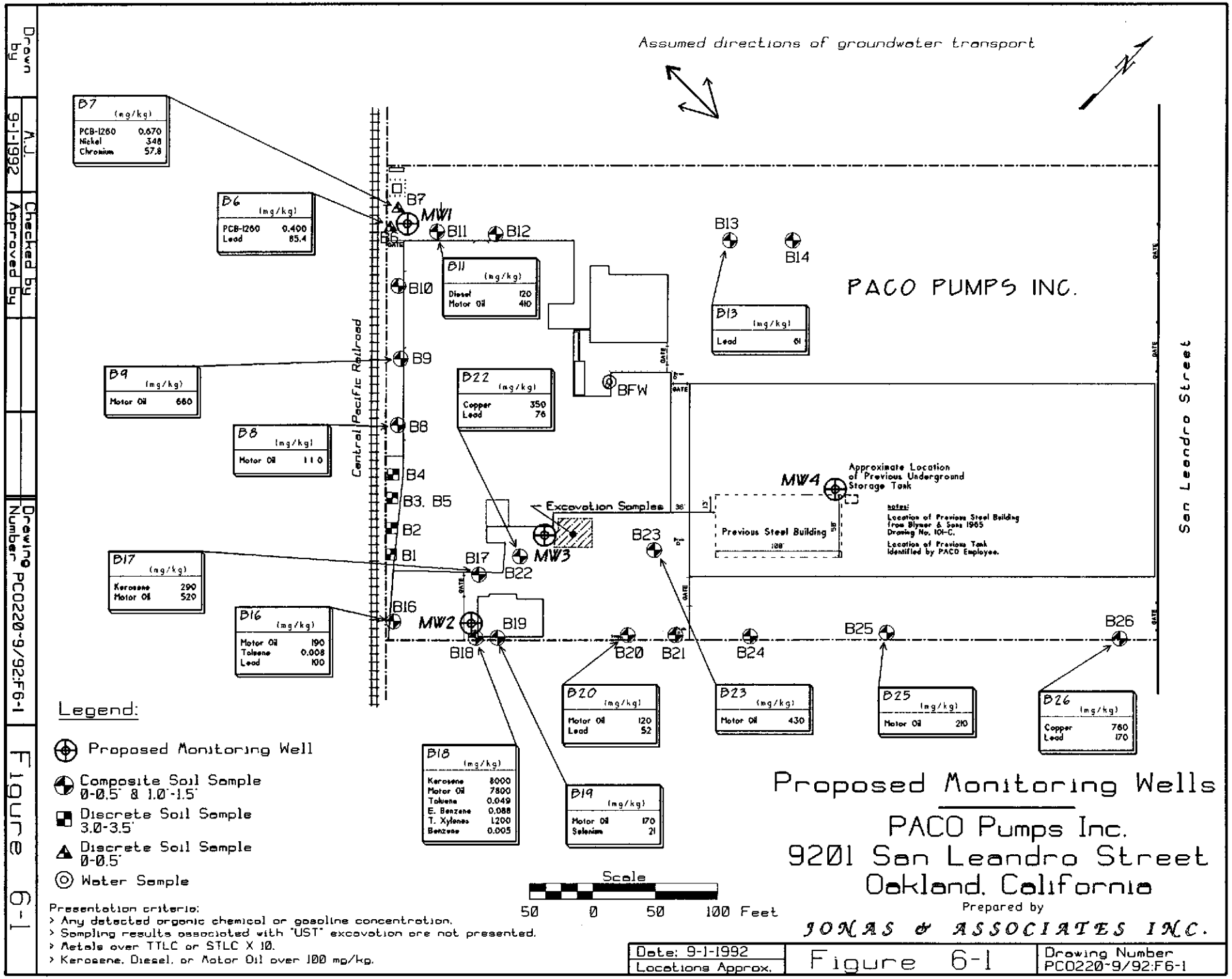
6.1 Rationale for Monitoring Wells and Borehole Analyses

Jonas & Associates Inc. is proposing the installation of four monitoring wells. Figure 6-1 identifies the locations of the four proposed monitoring well wells, along with previous soil sampling results. The rationale for each proposed monitoring well is presented under the following subheadings:

MW1

Monitoring well MW1 is proposed to be installed in an area near B6-0.5, B7-0.5, and B11-0.5&1.5. These soil samples detected elevated concentrations of PCB 1260, and TEPH as diesel and motor oil, along with potentially elevated concentrations of nickel, chromium, and lead. In addition, MW1 may be downgradient from the pump testing tank. Monitoring well MW1 should aid in determining if the elevated concentrations detected in shallow soils have impacted underlying groundwater. At least initially, groundwater should be analyzed for PCBs, TEPH as diesel and motor oil, and metals.

Another reason for selecting the location of MW1 is to sample the soil in the monitoring well boring for Soluble Threshold Limit Concentrations (STLCs) for lead, nickel, and chromium (III versus VI), using the waste extraction test (WET). It is proposed that these metals be analyzed from a composite soil sample collected from 0 to 0.5 and 1 to 1.5 feet below the surface. Deeper borehole soil samples are proposed to be analyzed for PCBs,


Assumed directions of groundwater transport
N
PACO PUMPS INC.
Central Pacific Railroad
San Leandro Street
B7 (mg/kg)
PCB-1260 0.670
Nickel 348
Chromium 57.8
B6 (mg/kg)
PCB-1260 0.400
Lead 85.4
B11 (mg/kg)
Diesel 120
Motor Oil 410
B13 (mg/kg)
Lead 61
B9 (mg/kg)
Motor Oil 660
B22 (mg/kg)
Copper 350
Lead 76
B8 (mg/kg)
Motor Oil 110
B17 (mg/kg)
Kerosene 290
Motor Oil 520
B16 (mg/kg)
Motor Oil 190
Toluene 0.008
Lead 100
B20 (mg/kg)
Motor Oil 120
Lead 52
B23 (mg/kg)
Motor Oil 430
B25 (mg/kg)
Motor Oil 210
B26 (mg/kg)
Copper 760
Lead 170
B18 (mg/kg)
Kerosene 8000
Motor Oil 7800
Toluene 0.049
E. Benzene 0.088
T. Xylenes 1200
Benzene 0.005
B19 (mg/kg)
Motor Oil 170
Selenium 21
MW1
MW2
MW3
MW4
BFW
B1
B2
B3, B5
B4
B10
B12
B14
B18
B21
B24
Excavation Samples
Approximate Location of Previous Underground Storage Tank
Previous Steel Building
notes:
Location of Previous Steel Building from Blymer & Sons 1965 Drawing No. 101-C.
Location of Previous Tank identified by PACO Employee.
Legend:
Proposed Monitoring Well
Composite Soil Sample 0-0.5' & 1.0'-1.5'
Discrete Soil Sample 3.0-3.5'
Discrete Soil Sample 0-0.5'
Water Sample
Scale
50 0 50 100 Feet
Presentation criteria:
> Any detected organic chemical or gasoline concentration.
> Sampling results associated with "UST" excavation are not presented.
> Metals over TTLC or STLC X 10.
> Kerosene, Diesel, or Motor Oil over 100 mg/kg.
Proposed Monitoring Wells
PACO Pumps Inc.
9201 San Leandro Street
Oakland, California
Prepared by
JONAS & ASSOCIATES INC.
Date: 9-1-1992
Locations Approx.
Figure 6-1
Drawing Number PCO220-9/92:F6-1
Drawn by
M.J.
9-1-1992
Checked by
Approved by
Drawing Number PCO220-9/92:F6-1
Figure 6-1

TEPH as diesel and motor oil at 5', 10' and 15', to define a vertical profile for these constituents if they are detected.

MW2

Previous soil samples in the area proposed to install monitoring well MW2 contained elevated concentrations of TEPH as kerosene and motor oil, BTEX, and selenium. Monitoring well MW2 would also be located along the fenceline with Saint Vincent DePaul and it may also be downgradient of this neighboring facility. Therefore, it may also be used to characterize what may be coming onto PACO Pumps facility from an upgradient source. To determine if overlying concentrations have impacted underlying groundwater it is recommended that the groundwater be sampled for TEPH as kerosene and motor oil, along with BTEX or volatile organics. In addition, because of the elevated concentrations of BTEX identified in sample B18-0.5&1.5, it is also recommended that TPH as gasoline be tested in a groundwater sample from monitoring well MW2.

Soil samples collected from the monitoring well boring in the approximate location of B18-0.5&1.5, at a minimum, can be analyzed for TEPH as kerosene and motor oil, and BTEX. It is recommended that soil samples be collected at 5', 10', and 15' below the surface. This type of analysis will aid in determining if constituents detected near the surface have migrated downward.

MW3

The location of MW3 is proposed to be immediately downgradient from the excavation associated with the attempt to find an underground storage tank. To determine if elevated concentrations detected in the area of the excavation impacted groundwater, it is proposed that the groundwater be analyzed for TPH as gasoline and BTEX. In addition, because TEPH as motor oil was detected in soils near the excavation, the monitoring well will aid in determining if TEPH as motor oil is present in the groundwater.

In addition, because soil samples were only collected at 6 feet below the surface, the boring for the monitoring well provides an opportunity for vertical profiling. It is proposed that soil samples collected at 5', 10', 15', and 20' be tested for TPH as gasoline, and BTEX.

MW4

The proposed location of monitoring well MW4 is to determine if there is an impact to underlying groundwater from a previous underground storage tank, which was said to located in an area currently underneath the floor of the warehouse. A long-time PACO employee identified the general location of the tank. But in a proposal by CSB Construction, prior to foundation work and the construction of the warehouse, it

proposed to "Remove existing gasoline pump and underlying storage tank from site. Fill tank space with compacted soil (95% compaction)".

By superimposing the dimensions of the previous building on the current building, the potential location of the previous underground storage tank can be approximated. Using this proposed monitoring well, it is recommended that the groundwater be monitored for TPH as gasoline and TEPH as diesel, along with benzene, toluene, ethyl benzene, and total xylenes. Soil samples collected in the boring for the monitoring well can be analyzed for the same constituents at depths of 0.5', 5', 10', and 15'.

6.2 Proposed Construction of Monitoring Wells

The scope of work for this phase of the project includes drilling, installation, and development of four groundwater monitoring wells. It is anticipated that these wells will be approximately 20 feet deep, with 15 foot screens. But the actual placement of the screen and its length will be based upon the finding of the 30 foot pilot boring.

Prior to monitoring well installation, the location of existing underground utility lines will be assessed. This determination will be made through discussions with the facility owner and through consultation with the utility district. County personnel will be notified at least two working days prior to initiation of on-site work.

Well Drilling

The soil boring for the monitoring well will be drilled utilizing a steam-cleaned hollow-stem auger. The outer diameter of the borehole and auger will be probably around 8 inches, with an anticipated depth of 30 feet. Hollow-stem auger drilling is accomplished through use of a hollow central shaft with an attached spiral scroll. Each section of the auger is aligned so that a continuous scroll is formed. A bit is attached at the bottom of the first auger flight. Cuttings created by the bit are removed by the scroll as the auger stem is turned. The cuttings will be collected in drums and set aside for appropriate disposal. This method is suitable for relatively shallow drilling in unconsolidated formations. Each boring will be completed as a monitoring well/extraction well.

Soil samples will be collected from each of the four boreholes for the monitoring wells. Specific analytes and sampling depths for the borings are presented in Section 7.0 Recommended Sampling and Analysis of Soil.

Well Construction

It is anticipated that the groundwater monitoring wells will be completed with a 15-foot long screen, with a 0.02-inch slot size, but the results of the 30 foot pilot boring will determine the appropriate strata to screen. The screen will be connected to sections of 5-foot long riser pipe. It is proposed that the diameter of the well be four inches to allow

for its possible use as an extraction well and to increase the potential for better development of the well. In order to anticipate the possibility of floating product, the screen will also be extended approximately four feet above the water table. A schematic diagram of the proposed well construction is provided in Figure 6-2.

It is currently anticipated that the monitoring well will be constructed of Schedule 40 PVC screen and a PVC riser. If PVC is selected, all joints will be flush threaded and no solvents or cements will be used on the PVC. Stainless steel, or a combination of stainless steel and PVC, may be used to maximize its future utility as an extraction well. The riser and screen will be cleaned before use. A well cap will be placed on the screen at the end of the casing.

A filter pack consisting of silica sand will be placed in the annular space at the well screen and carried one foot above the top of the screen. Based upon previous experience in drilling in the flatlands of the San Francisco Bay Area, a sand number 3 will probably be used as the filter pack. A bentonite seal, 1 foot thick and composed of one-half inch pellets, will be placed above the sand pack, and the remaining annular space will be filled with portland cement grout. Frequent measurements with a tape will be made during placement of materials to ensure that proper amounts of material will be placed and that seals will be properly positioned. The grout used to finish the well will consist of neat Portland cement modified with sodium bentonite to reduce shrinkage. The grout will be tamped regularly to avoid formation of voids. The ratio of cement to bentonite will be approximately 20:1 on a weight basis. Water and then bentonite will be added to the Portland cement.

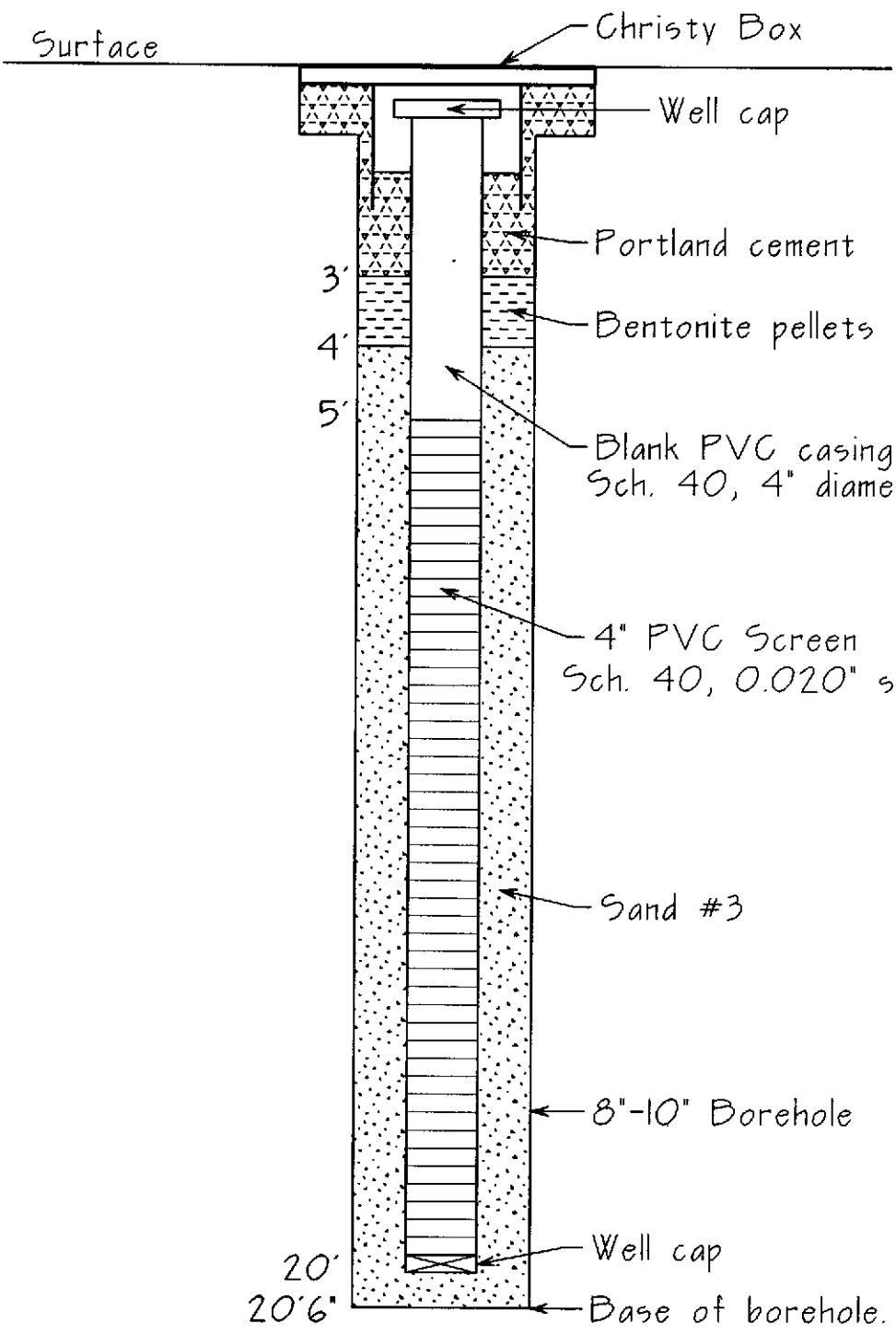
Since the well will be located in a traffic area, the well head will be completed approximately 3 inches to 1 foot below the grade with a locking utility box and a steel cover.

When constructing the well, maximum effort will be made to avoid contamination of the well construction materials. The PVC construction materials will be procured clean from the fabricators. The following procedures will be followed to prevent contamination:

- All screens and casings will be cleaned before installation;
- All filter-pack material will be added directly from the bag (spilled material will not be taken from the ground and placed in the boring); and
- The steel tape used to sound for depth during installation will be steam-cleaned prior to boring installation.

Additional precautions to be taken during well construction include:

- Ensuring that no foreign material enters the well casing during construction;



PACO PUMPS INC.
9201 San Leandro Street
Oakland, California

Schematic Diagram for
Proposed Well Construction

Prepared by
JONAS & ASSOCIATES INC.

Figure 6-2

Drawing Number PCO220-7/92:F6-2

Drawn by M.J. 7-15-1992

Checked by

Approved by

Not to Scale

Date: 7-15-1992

Figure 6-2

Drawing Number PCO220-7/92:F6-2

- Making frequent soundings when placing the filter pack, bentonite, and grout into the annular space;
- Noting the total casing length in the borehole with respect to the surface; and
- Recording all final measurements, problems, and comments in the field log book.

Well Development

When well construction is complete and the grout column is cured for a minimum of 24 hours, well development will be performed by use of a submersible pump. Well development will be initiated by lowering a submersible pump into the well. The pump will be connected directly to an outlet in the building onsite. The pump will be placed in the center of the well screen. Approximately three to five well volumes will be removed during development. Well volume will be calculated using the formula:

$$V = \pi(h/4)\ \{D_c^2(1-n)+nD_p^2\}$$

where V = volume of standing water in well, ft^3
π = 3.14
D_p = diameter of filter pack, ft
D_c = diameter of well casing, ft
n = porosity of the filter pack, decimal fraction
h = height of standing water in well, ft

The variable *h* is determined by subtracting the depth to water from the total well depth. The value *n* is 0.3. To convert the well volume to gallons, *V* is multiplied by 7.48 gallons per cubic feet. Water level and well depth are measured with a sounding device.

The monitoring well will be pumped until the discharge is relatively clear, colorless, and free of particulates or until indicator parameters have stabilized or five well volumes have been evacuated. Indicator parameters which will be determined during well development include pH, temperature, and conductivity. Water from equipment cleaning and development will be stored in 55-gallon drums. Once analytical results are obtained, wastewater will be disposed of appropriately.

Waste Handling Procedures

During installation of the groundwater monitoring well and purging of well water, drill cuttings, clays, and liquid waste will be produced. It is currently anticipated that the volume of these liquid and solid wastes will be temporarily stored in separate 55-gallon drums approved by the Department of Transportation. Each drum will be labeled with the following information:

- Source of waste;
- Date drummed;
- Type of waste; and
- Initials of person labeling the drum.

Material collected in the drums will be characterized and properly disposed of. Hazardous waste will be manifested and transported off-site by a licensed hauler to a licensed treatment/storage/disposal facility. In addition, materials that become contaminated during sampling or other field activities that cannot be decontaminated and reused, will be drummed for proper disposal. Field equipment which may require disposal includes Tyvek suits, gloves, and respirator filters, as well as disposable sampling equipment.

6.3 Groundwater Sampling Plan

As stated previously, four monitoring wells are proposed for installation at PACO Pumps' 9201 San Leandro Street facility. The following Table 6-1 presents the proposed monitoring well with the proposed groundwater analysis, for at least the first round of sampling. Subsequent groundwater sampling can be based upon the findings in the initial round of sampling.

Table 6-1
Proposed Analyses for Groundwater Monitoring Wells
PACO Pumps - 9201 San Leandro Street
Oakland, California

Proposed Groundwater Monitoring Well	Proposed Groundwater Analysis
MW1	PCBs, diesel, motor oil, metals
MW2	gasoline, kerosene, motor oil, BTEX or volatile organics
MW3	gasoline, motor oil, BTEX
MW4	gasoline, diesel, BTEX

Sample Collection Procedures and Analysis

Twenty-four hours after development of the monitoring well, the thickness of any floating product in the monitoring well will be measured. A clear bailer will be used to collect a sample from the monitoring well. The sample will be inspected in the field for floating product, odor, and sheen. If present, any free product in the bailer will also be measured.

After analyzing for free product, the well will then be purged using a submersible pump. At least three saturated well volumes of water will be removed. During purging, field measurements of the groundwater temperature, pH, and conductivity probe will be made

and recorded periodically. Water samples for laboratory analysis will not be collected until temperature, pH, and conductivity have stabilized or five well volumes have been removed.

After purging the standing water from the well, it will then be sampled with a bailer. One sample will be collected and submitted for chemical analysis. For the first quarter sampling a duplicate sample will be collected and an adequate amount of groundwater will be collected for a laboratory matrix spike analysis. For the benzene, toluene, ethyl benzene, and toluene sample will be collected in glass vials, specifically designed to prevent the loss of volatile constituents from the sample. The glass vials will be carefully filled and checked after filling to insure that no head space exists in sample containers. Presence of head space could result in volatilization of volatile constituents. The sample to be analyzed for total petroleum hydrocarbons as gasoline and diesel will use large amber bottles. All bottles will be labeled before filling to prevent misidentification. Once filled, samples will be placed in an ice chest with ice packs. Each cooler will contain sufficient ice and/or ice packs to ensure that proper temperature of approximately 4° Celsius is maintained and will be packed in a manner to prevent damage to sample containers. Field Chain-of-Custody records, completed at the time of sample collection, will accompany the samples inside the cooler for shipment to ChromaLab Inc., a State-certified analytical laboratory located in San Ramon, California. All coolers will be delivered to the ChromaLab's laboratory by Jonas & Associates field personnel within 24 hours after sampling. This form summarizes the sample conditions as reported by the laboratory. A complete set of field notes will be maintained for all sampling activities.

It is anticipated that the groundwater monitoring wells will be sampled quarterly, with a re-analysis of the need for continued sampling based upon the findings of the first two sampling rounds.

7.0 RECOMMENDED SAMPLING AND ANALYSIS OF SOIL

During the drilling of each of the boreholes for the four proposed monitoring wells, soil samples should be collected. Borehole samples will aid in determining if various chemicals of concern are present, in addition to supporting the vertical profiling of chemicals. The rationale for various analysis of soil samples from monitoring well boreholes are presented in Section 6.1 Rationale for Monitoring Wells and Borehole Analyses.

It is also proposed that at selected locations, Soluble Threshold Limit Concentration (STLC) analysis be performed for specific metals using the waste extraction test (WET). In addition, the STLC analysis for chromium will need to define its species (III versus VI), because each chromium species has its own threshold limit concentration.

During soil sampling the protocols presented in Section 4.2 Sampling Procedures and Protocols will be followed. Figure 7-1 identifies proposed soil samples.

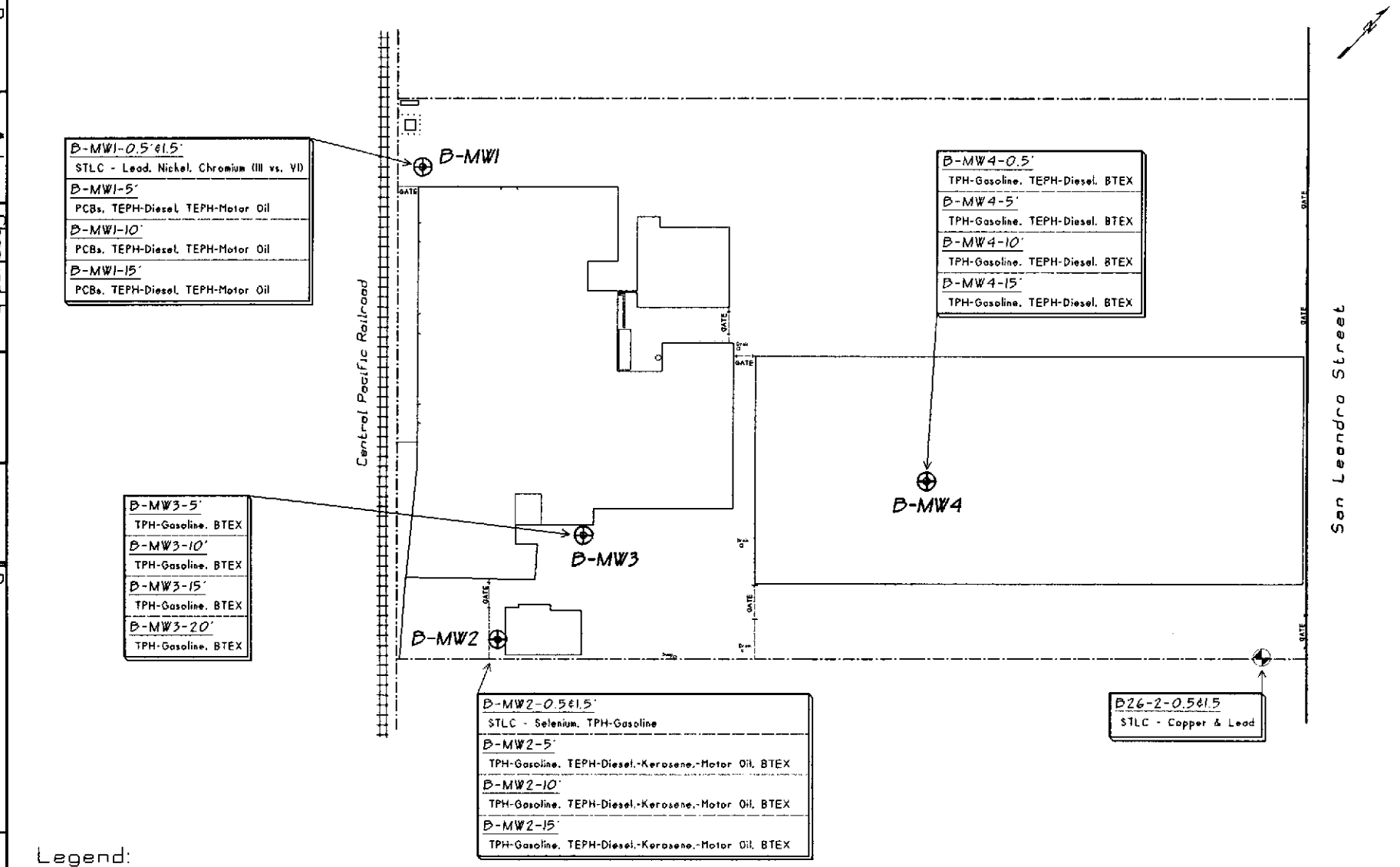
7.1 Soluble Threshold Limit Concentration

As presented earlier, various metals were detected with concentrations exceeding ten times the STLC analysis. No metals exceed the Total Threshold Limit Concentration, defining a hazardous waste concentration in mg/kg. The following Table 7-1 presents those samples and metals which exceeded ten times the STLC.

Table 7-1
Soil Samples Which Exceed 10 X STLC
PACO PUMPS - 9201 San Leandro Street
Oakland, California

Sample I.D.	Analyte and Concentration > 10 X STLC
B6-0.5	Lead: 85.4 mg/kg
B7-0.5	Chromium[1]: 57.8 mg/kg Nickel: 348 mg/kg
B13-0.5&1.5	Lead: 61 mg/kg
B16-0.5&1.5	Lead: 100 mg/kg
B19-0.5&1.5	Selenium: 21 mg/kg
B20-0.5&1.5	Lead: 52 mg/kg
B22-0.5&1.5	Copper: 350 mg/kg Lead: 76 mg/kg
B26-0.5&1.5	Copper: 760 mg/kg Lead: 170 mg/kg

note: 1/ Exceeds Cr (VI), but not Cr (III).



Legend:

⊕ Proposed Monitoring Well / Boring

◒ Composite Soil Sample 0-0.5' & 1.0'-1.5'

STLC = Soluble Threshold Limit Concentration

TPH = Total Petroleum Hydrocarbons

TEPH = Total Extractable Petroleum Hydrocarbons

B-AW3-4.5 = Discrete Soil Sample from 4' to 4.5' Collected From Boring For Monitoring Well 3

B-AW2-0.5&1.5 = Composite Sample from 0 to 0.5' & 1' to 1.5' Collected From Boring for Monitoring Well 2

B26-2-0.5'&1.5' = Second Composite Soil Sample from 0 to 0.5' & 1 to 1.5' at B26

Scale

50 0 50 100 Feet

Proposed Soil Samples

PACO Pumps Inc.

9201 San Leandro Street

Oakland, California

Prepared by

JONAS & ASSOCIATES INC.

Date: 9-8-1992
Locations Approx.

Figure 7-1

Drawing Number PC0220-9/92:F7-1

Drawn by A.J.

Checked by

Approved by

9-8-1992

Drawing Number PC0220-9/92:F7-1

Figure 7-1

After discussions with the Alameda County Health Services, it was determined that STLC analysis can focus on three specific areas, represented by previous soil samples: 1) B6/B7; 2) B19; and 3) B26. Recommended metals to be analyzed using the WET analysis to compare it with the STLC, is as follows:

1) B6/B7: Lead, Chromium, and Nickel
2) B19: Selenium
3) B26: Copper and Lead

Sampling locations B6/B7 and adjacent to B19 are proposed locations for monitoring well borings. STLC samples in these two area will be collected during drilling activities. Sampling point B26, will be resampled with a drive sampler and auger as a composite of 0 to 0.5 feet and 1 to 1.5 feet in depth.

To determine which valence the chromium exists in, an analysis of the leachable concentrations should be performed accompanied by a speciation test to determine the actual valence of the chromium in the leachate. With a determination of the chromium's valence, the proper STLC value can then be compared to the leachable concentration.

7.2 Borehole Sampling During Monitoring Well Construction

As previously stated, it is recommended that four monitoring wells be installed. During the initial construction phases of each monitoring well, it is also recommended that borehole soil samples be collected. Following is a table presenting the monitoring wells and the proposed analysis at various depths:

Table 7-2
Proposed Soil Samples from Monitoring Well Borings
PACO PUMPS - 9201 San Leandro Street
Oakland, California

Monitoring Well Boring	Sampling Depth and Analyte
MW1 Boring	0-0.5'&1-1.5': STLC-lead, -nickel, & -chromium (III vs. VI) 4.5-5': PCBs; TEPH as -diesel & -motor oil 9.5-10': PCBs; TEPH as -diesel & -motor oil 14.5-15': PCBs; TEPH as -diesel & -motor oil
MW2 Boring	0-0.5'&1-1.5': STLC selenium; TPH as gasoline 4.5-5': TPH as gasoline; TEPH as -diesel, -kerosene, & -motor oil; & BTEX 9.5-10': TPH as gasoline; TEPH as -diesel, -kerosene, & -motor oil; & BTEX 14.5-15': TPH as gasoline; TEPH as -diesel, -kerosene, & -motor oil; & BTEX
MW3 Boring	4.5-5': TPH as gasoline; & BTEX 9.5-10': TPH as gasoline; & BTEX 14.5-15': TPH as gasoline; & BTEX 19.5-20': TPH as gasoline; & BTEX
MW4 Boring	0-0.5: TEPH as diesel; TPH as gasoline; & BTEX 4.5-5': TEPH as diesel; TPH as gasoline; & BTEX 9.5-10': TEPH as diesel; TPH as gasoline; & BTEX 14.5-15': TEPH as diesel; TPH as gasoline; & BTEX

8.0 REPORTS

8.1 Quarterly Status Reports

Quarterly status reports will be prepared upon the receipt of the groundwater analytical results. These reports will include background information, sample collection procedures, decontamination and post-sampling procedures, sample documentation, sample shipment, and a summary and interpretation of analytical results; as well as reports of any additional activities taken place during the quarter.

8.2 Site Characterization and Remediation Report

Upon completion of the site investigation and receipt of the laboratory analytical data, Jonas & Associates Inc. will prepare a detailed report documenting the results of the site investigation and remedial actions. The report will include copies of the boring logs, site plan, interpretation of records review and analytical results, an assessment of the extent of soil and groundwater contamination, summary of remediation activities and results, and recommendations for further investigations, if necessary.

9.0 PROPOSED SCHEDULE

Jonas & Associates is prepared to commence field activities within two weeks upon receiving approval of this Work Plan from Alameda County Health Services. This schedule also assumes contractor availability, regulatory permit approval, access to the project site and no unusual unforeseen site or weather conditions.

It is proposed that the scope of work presented in this document, including the first round of groundwater samples, can be completed within three to four weeks after approval is given and funding allocated. After the monitoring wells have been installed and initially sampled, they would then be sampled in three months. All sampling results would be submitted to Alameda County Health Services in a Quarterly Status Report.

10.0 PROJECT SUMMARY

A site characterization sampling effort was performed at PACO Pumps 9201 San Leandro Street facility. On October 1, 1991 and April 9, 13, and 14, 1992 a total of twenty-five soil samples were collected. In addition, one water sample was collected from backwash from a filter associated with a pump testing tank. Most of these samples were analyzed for priority pollutant metals, volatile organic compounds, and total extractable petroleum hydrocarbons as diesel, kerosene, and motor oil. In addition, selected soil samples were analyzed for base/neutral/acid extractables, chlorinated pesticides, total petroleum hydrocarbons as gasoline, and total extractable petroleum hydrocarbons as diesel, along with benzene, toluene, ethyl benzene, and total xylenes.

Eighteen of the soil samples were composites of discrete samples collected from depths of 0 to 0.5 feet and 1 to 1.5 feet. Seven discrete soil samples were also collected: five from 3 to 3.5 feet deep, and two from 0 to 0.5 feet below an asphalt surface. These samples were analyzed for priority pollutant metals, volatile organics, and total extractable petroleum hydrocarbons as diesel, kerosene, and motor oil. Four soil samples were analyzed for total petroleum hydrocarbons as gasoline. Fifteen of the seventeen soil samples were a composite of 0 to 0.5 feet and 1 to 1.5 feet in depth.

On a 1954 Factory Insurance Association Map an underground storage tank was identified adjacent to the manufacturing and engineering building. An attempt was made to find the tank by excavating in the general location identified by the 1954 map. No tank was found, but pipes, debris, and possibly fill associated an underground storage tank were identified. Elevated concentrations of TPH as gasoline, and benzene, toluene, ethyl benzene, and total xylenes where detected during excavation activities. Currently, elevated concentrations still exist in the soil, but results of a proposed monitoring well adjacent to the excavation will be removed to determine if the overlying soil has impacted underlying groundwater.

The proposed scope of work includes four monitoring wells, vertical sampling in boreholes, STLC analysis of specific metals, and the speciation of chromium in leachate.

11.0 REFERENCES

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Appendix A

Summary Tables of Laboratory Results

Table A1
PACO PUMPS - 9201 San Leandro Street Facility
PRIORITY POLLUTANT/CAM METALS
{milligrams chemical per liter liquid or milligrams chemical per kilogram soil}

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
BFW	4/14/92	from pipe	Water	CrLab	ND(0.005)	ND(0.005)	-	ND(0.001)	0.006	-	5.6	0.29	0.004	-	ND(0.020)
B6-0.5	10/1/91	0-0.5	Soil	CrLab	ND(0.25)	ND(0.25)	10.7	ND(0.05)	0.595	0.804	2.63	67.8	ND(0.05)	ND(0.25)	1.28
B7-0.5	10/1/91	0-0.5	Soil	CrLab	ND(0.25)	ND(0.25)	138	ND(0.05)	1.99	0.991	57.8	ND(0.25)	ND(0.05)	8.85	348
B8-0.5&1.5	4/13/92	0-0.5/1-1.5	Soil	CrLab	ND(0.25)	ND(0.25)	-	0.07	1.9	-	2.5	49	0.22	-	5.9
B9-0.5&1.5	4/13/92	0-0.5/1-1.5	Soil	CrLab	ND(0.25)	ND(0.25)	-	0.07	2.2	-	5.1	28	0.69	-	4.9
B10-0.5&1.5	4/13/92	0-0.5/1-1.5	Soil	CrLab	ND(0.25)	ND(0.25)	-	ND(0.05)	2.8	-	2.9	34	0.34	-	3.3
B11-0.5&1.5	4/9/92	0-0.5/1-1.5	Soil	CrLab	ND(0.25)	ND(0.25)	-	ND(0.05)	1.2	-	6.8	17	0.12	-	3.4
B12-0.5&1.5	4/9/92	0-0.5/1-1.5	Soil	CrLab	ND(0.25)	ND(0.25)	-	0.13	1.9	-	5.1	21	0.26	-	6.9
B13-0.5&1.5	4/9/92	0-0.5/1-1.5	Soil	CrLab	ND(0.25)	ND(0.25)	-	0.05	0.89	-	14	19	0.22	-	15
B14-0.5&1.5	4/9/92	0-0.5/1-1.5	Soil	CrLab	ND(0.25)	ND(0.25)	-	0.32	1.3	-	17	20	0.24	-	21
B16-0.5&1.5	4/13/92	0-0.5/1-1.5	Soil	CrLab	ND(0.25)	ND(0.25)	-	ND(0.05)	2.8	-	25	160	0.23	-	16
B17-0.5&1.5	4/13/92	0-0.5/1-1.5	Soil	CrLab	ND(0.25)	ND(0.25)	-	0.08	2.4	-	14	35	0.09	-	6.2
B18-0.5&1.5	4/13/92	0-0.5/1-1.5	Soil	CrLab	ND(0.25)	ND(0.25)	-	0.06	2.8	-	25	180	0.29	-	19
B19-0.5&1.5	4/13/92	0-0.5/1-1.5	Soil	CrLab	ND(0.25)	ND(0.25)	-	ND(0.05)	2.3	-	11	38	0.1	-	17
B20-0.5&1.5	4/13/92	0-0.5/1-1.5	Soil	CrLab	ND(0.25)	3.5	-	0.08	2.5	-	13	110	0.44	-	18
B21-0.5&1.5	4/13/92	0-0.5/1-1.5	Soil	CrLab	ND(0.25)	ND(0.25)	-	0.1	2.2	-	17	170	0.34	-	14
B22-0.5&1.5	4/13/92	0-0.5/1-1.5	Soil	CrLab	ND(0.25)	3.0	-	0.09	3.8	-	20	350	0.14	-	23
B23-0.5&1.5	4/13/92	0-0.5/1-1.5	Soil	CrLab	ND(0.25)	ND(0.25)	-	0.07	1.3	-	14	73	0.09	-	11
B24-0.5&1.5	4/13/92	0-0.5/1-1.5	Soil	CrLab	ND(0.25)	ND(0.25)	-	0.05	1.6	-	9.01	160	0.52	-	7.9
B25-0.5&1.5	4/13/92	0-0.5/1-1.5	Soil	CrLab	ND(0.25)	ND(0.25)	-	0.06	1.3	-	3.2	30	ND(0.05)	-	4.9
B26-0.5&1.5	4/13/92	0-0.5/1-1.5	Soil	CrLab	ND(0.25)	5.4	-	0.12	2.4	-	28	760	0.98	-	22

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

Table A1[con't]

PACO PUMPS - 9201 San Leandro Street Facility

PRIORITY POLLUTANT/CAM METALS

{milligrams chemical per liter liquid or milligrams chemical per kilogram soil}

Sample I.D.	Sampling Date	Depth (feet)	Matrix	Lab	Pb Lead	Sb Antimony	Se Selenium	Tl Thallium	V Vanadium	Zn Zinc
BFW	4/14/92	from pipe	Water	CrLab	0.15	ND(0.20)	ND(0.005)	ND(0.04)	-	0.72
B6-0.5	10/1/91	0-0.5	Soil	CrLab	85.4	ND(1.00)	ND(0.25)	ND(2.00)	ND(0.50)	22.5
B7-0.5	10/1/91	0-0.5	Soil	CrLab	ND(0.50)	ND(1.00)	ND(0.25)	ND(2.00)	146	ND(0.25)
B8-0.5&1.5	4/13/92	0-0.5/1-1.5	Soil	CrLab	3.0	ND(1.00)	ND(0.25)	ND(2.00)	-	44
B9-0.5&1.5	4/13/92	0-0.5/1-1.5	Soil	CrLab	11	1.3	0.30	ND(2.00)	-	50
B10-0.5&1.5	4/13/92	0-0.5/1-1.5	Soil	CrLab	7.6	1.9	ND(0.25)	ND(2.00)	-	57
B11-0.5&1.5	4/9/92	0-0.5/1-1.5	Soil	CrLab	22	ND(1.00)	ND(0.25)	ND(2.00)	-	39
B12-0.5&1.5	4/9/92	0-0.5/1-1.5	Soil	CrLab	11	2.1	ND(0.25)	ND(2.00)	-	51
B13-0.5&1.5	4/9/92	0-0.5/1-1.5	Soil	CrLab	61	ND(1.00)	ND(0.25)	ND(2.00)	-	53
B14-0.5&1.5	4/9/92	0-0.5/1-1.5	Soil	CrLab	13	ND(1.00)	ND(0.25)	ND(2.00)	-	32
B16-0.5&1.5	4/13/92	0-0.5/1-1.5	Soil	CrLab	100	ND(1.00)	ND(0.25)	ND(2.00)	-	420
B17-0.5&1.5	4/13/92	0-0.5/1-1.5	Soil	CrLab	37	ND(1.00)	ND(0.25)	ND(2.00)	-	110
B18-0.5&1.5	4/13/92	0-0.5/1-1.5	Soil	CrLab	36	ND(1.00)	0.53	ND(2.00)	-	100
B19-0.5&1.5	4/13/92	0-0.5/1-1.5	Soil	CrLab	45	3.0	21	ND(2.00)	-	180
B20-0.5&1.5	4/13/92	0-0.5/1-1.5	Soil	CrLab	52	ND(1.00)	ND(0.25)	ND(2.00)	-	250
B21-0.5&1.5	4/13/92	0-0.5/1-1.5	Soil	CrLab	43	1.5	ND(0.25)	ND(2.00)	-	99
B22-0.5&1.5	4/13/92	0-0.5/1-1.5	Soil	CrLab	76	8.3	ND(0.25)	ND(2.00)	-	160
B23-0.5&1.5	4/13/92	0-0.5/1-1.5	Soil	CrLab	10	ND(1.00)	ND(0.25)	ND(2.00)	-	35
B24-0.5&1.5	4/13/92	0-0.5/1-1.5	Soil	CrLab	41	1.2	ND(0.25)	ND(2.00)	-	100
B25-0.5&1.5	4/13/92	0-0.5/1-1.5	Soil	CrLab	3.7	ND(1.00)	ND(0.25)	ND(2.00)	-	29
B26-0.5&1.5	4/13/92	0-0.5/1-1.5	Soil	CrLab	170	1.1	ND(0.25)	ND(2.00)	-	280

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

Table A2
PACO PUMPS - 9201 San Leandro Street Facility
VOLATILE ORGANICS
{milligrams chemical per liter liquid or milligrams chemical per kilogram soil}

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
BFW	4/14/92	from pipe	liquid	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)
B1-3.5	10/1/91	3-3.5	soil	CrLab	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)
B2-3.5	10/1/91	3-3.5	soil	CrLab	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)
B3-3.5	10/1/91	3-3.5	soil	CrLab	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)
B4-3.5	10/1/91	3-3.5	soil	CrLab	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)
B5-3.5	10/1/91	3-3.5	soil	CrLab	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)
B6-0.5	10/1/91	0-0.5	soil	CrLab	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)
B7-0.5	10/1/91	0-0.5	soil	CrLab	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)
B8-0.5&1.5	4/13/92	0-0.5/1-1.5	soil	CrLab	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)
B9-0.5&1.5	4/13/92	0-0.5/1-1.5	soil	CrLab	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)
B10-0.5&1.5	4/13/92	0-0.5/1-1.5	soil	CrLab	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)
B11-0.5&1.5	4/9/92	0-0.5/1-1.5	soil	CrLab	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)
B12-0.5&1.5	4/9/92	0-0.5/1-1.5	soil	CrLab	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)
B13-0.5&1.5	4/9/92	0-0.5/1-1.5	soil	CrLab	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)
B14-0.5&1.5	4/9/92	0-0.5/1-1.5	soil	CrLab	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)
B16-0.5&1.5	4/13/92	0-0.5/1-1.5	soil	CrLab	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)
B17-0.5&1.5	4/13/92	0-0.5/1-1.5	soil	CrLab	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)
B18-0.5&1.5	4/13/92	0-0.5/1-1.5	soil	CrLab	ND(0.005)	**0.005**	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)
B19-0.5&1.5	4/13/92	0-0.5/1-1.5	soil	CrLab	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)
B20-0.5&1.5	4/13/92	0-0.5/1-1.5	soil	CrLab	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)
B21-0.5&1.5	4/13/92	0-0.5/1-1.5	soil	CrLab	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)
B22-0.5&1.5	4/13/92	0-0.5/1-1.5	soil	CrLab	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)
B23-0.5&1.5	4/13/92	0-0.5/1-1.5	soil	CrLab	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)
B24-0.5&1.5	4/13/92	0-0.5/1-1.5	soil	CrLab	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)
B25-0.5&1.5	4/13/92	0-0.5/1-1.5	soil	CrLab	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)
B26-0.5&1.5	4/13/92	0-0.5/1-1.5	soil	CrLab	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)

notes: CrLab: ChromaLab Inc.
ND(0.004) = Not Detected above the laboratory detection limit in parentheses.
BFW collected from filter backwash.
0-0.5/1-1.5: composite sample of 0 to 0.5' and 1' to 1.5' below ground level.

Table A2[con't]

PACO PUMPS - 9201 San Leandro Steet Facility

VOLATILE ORGANICS

{milligrams chemical per liter liquid or milligrams chemical per kilogram soil}

Sample I.D.	Sampling Date	Depth (feet)	Matrix	Lab	Dibromo-chloromethane	1,2-Dichloro-benzene	1,3-Dichloro-benzene	1,4-Dichloro-benzene	1,1-Dichloro-ethane	1,2-Dichloro-ethane	1,1-Dichloro-ethene	Total 1,2-Dichloroethene	1,2-Dichloro-propane	cis-1,3-Di-chloropropene	trans-1,3-Di-chloropropene
BFW	4/14/92	from pipe	liquid	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)
B1-3.5	10/1/91	3-3.5	soil	CrLab	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)
B2-3.5	10/1/91	3-3.5	soil	CrLab	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)
B3-3.5	10/1/91	3-3.5	soil	CrLab	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)
B4-3.5	10/1/91	3-3.5	soil	CrLab	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)
B5-3.5	10/1/91	3-3.5	soil	CrLab	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)
B6-0.5	10/1/91	0-0.5	soil	CrLab	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)
B7-0.5	10/1/91	0-0.5	soil	CrLab	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)
B8-0.5&1.5	4/13/92	0-0.5/1-1.5	soil	CrLab	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)
B9-0.5&1.5	4/13/92	0-0.5/1-1.5	soil	CrLab	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)
B10-0.5&1.5	4/13/92	0-0.5/1-1.5	soil	CrLab	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)
B11-0.5&1.5	4/9/92	0-0.5/1-1.5	soil	CrLab	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)
B12-0.5&1.5	4/9/92	0-0.5/1-1.5	soil	CrLab	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)
B13-0.5&1.5	4/9/92	0-0.5/1-1.5	soil	CrLab	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)
B14-0.5&1.5	4/9/92	0-0.5/1-1.5	soil	CrLab	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)
B16-0.5&1.5	4/13/92	0-0.5/1-1.5	soil	CrLab	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)
B17-0.5&1.5	4/13/92	0-0.5/1-1.5	soil	CrLab	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)
B18-0.5&1.5	4/13/92	0-0.5/1-1.5	soil	CrLab	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)
B19-0.5&1.5	4/13/92	0-0.5/1-1.5	soil	CrLab	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)
B20-0.5&1.5	4/13/92	0-0.5/1-1.5	soil	CrLab	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)
B21-0.5&1.5	4/13/92	0-0.5/1-1.5	soil	CrLab	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)
B22-0.5&1.5	4/13/92	0-0.5/1-1.5	soil	CrLab	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)
B23-0.5&1.5	4/13/92	0-0.5/1-1.5	soil	CrLab	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)
B24-0.5&1.5	4/13/92	0-0.5/1-1.5	soil	CrLab	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)
B25-0.5&1.5	4/13/92	0-0.5/1-1.5	soil	CrLab	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)
B26-0.5&1.5	4/13/92	0-0.5/1-1.5	soil	CrLab	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)

notes: CrLab: Chromalab Inc.
ND(0.004) = Not Detected above the laboratory detection limit in parentheses.
BFW collected from filter backwash.
0-0.5/1-1.5: composite sample of 0 to 0.5' and 1' to 1.5' below ground level.

Table A2con't

PACO PUMPS - 9201 San Leandro Steet Facility

VOLATILE ORGANICS

{milligrams chemical per liter liquid or milligrams chemical per kilogram soil}

Sample I.D.	Sampling Date	Depth (feet)	Matrix	Lab	Ethyl-Benzene	Methyl Ethyl Ketone	Methyl Isobutyl Ketone	Methylene Chloride	1,1,2,2-Tetra-chloroethane	Tetra-chloroethene	Toluene	1,1,1-Tri-chloroethane	1,1,2-Tri-chloroethane	Tri-chloroethene	Trichlorofluoro-methane
BFW	4/14/92	from pipe	liquid	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)
B1-3.5	10/1/91	3-3.5	soil	CrLab	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)
B2-3.5	10/1/91	3-3.5	soil	CrLab	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)
B3-3.5	10/1/91	3-3.5	soil	CrLab	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)
B4-3.5	10/1/91	3-3.5	soil	CrLab	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)
B5-3.5	10/1/91	3-3.5	soil	CrLab	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)
B6-0.5	10/1/91	0-0.5	soil	CrLab	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)
B7-0.5	10/1/91	0-0.5	soil	CrLab	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)
B8-0.5&1.5	4/13/92	0-0.5/1-1.5	soil	CrLab	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)
B9-0.5&1.5	4/13/92	0-0.5/1-1.5	soil	CrLab	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)
B10-0.5&1.5	4/13/92	0-0.5/1-1.5	soil	CrLab	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)
B11-0.5&1.5	4/9/92	0-0.5/1-1.5	soil	CrLab	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)
B12-0.5&1.5	4/9/92	0-0.5/1-1.5	soil	CrLab	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)
B13-0.5&1.5	4/9/92	0-0.5/1-1.5	soil	CrLab	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)
B14-0.5&1.5	4/9/92	0-0.5/1-1.5	soil	CrLab	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)
B16-0.5&1.5	4/13/92	0-0.5/1-1.5	soil	CrLab	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	**0.008**	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)
B17-0.5&1.5	4/13/92	0-0.5/1-1.5	soil	CrLab	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)
B18-0.5&1.5	4/13/92	0-0.5/1-1.5	soil	CrLab	**0.088**	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	**0.049**	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)
B19-0.5&1.5	4/13/92	0-0.5/1-1.5	soil	CrLab	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)
B20-0.5&1.5	4/13/92	0-0.5/1-1.5	soil	CrLab	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)
B21-0.5&1.5	4/13/92	0-0.5/1-1.5	soil	CrLab	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)
B22-0.5&1.5	4/13/92	0-0.5/1-1.5	soil	CrLab	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)
B23-0.5&1.5	4/13/92	0-0.5/1-1.5	soil	CrLab	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)
B24-0.5&1.5	4/13/92	0-0.5/1-1.5	soil	CrLab	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)
B25-0.5&1.5	4/13/92	0-0.5/1-1.5	soil	CrLab	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)
B26-0.5&1.5	4/13/92	0-0.5/1-1.5	soil	CrLab	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)

notes: CrLab: Chromalab Inc.
ND(0.004) = Not Detected above the laboratory detection limit in parentheses.
BFW collected from filter backwash.
0-0.5/1-1.5: composite sample of 0 to 0.5' and 1' to 1.5' below ground level.

Table A2con't

PACO PUMPS - 9201 San Leandro Street Facility

VOLATILE ORGANICS

{milligrams chemical per liter liquid or milligrams chemical per kilogram soil}

Sample I.D.	Sampling Date	Depth (feet)	Matrix	Lab	Vinyl Chloride	Total Xylenes
BFW	4/14/92	from pipe	liquid	CrLab	ND(0.002)	ND(0.002)
B1-3.5	10/1/91	3-3.5	soil	CrLab	ND(0.005)	ND(0.005)
B2-3.5	10/1/91	3-3.5	soil	CrLab	ND(0.005)	ND(0.005)
B3-3.5	10/1/91	3-3.5	soil	CrLab	ND(0.005)	ND(0.005)
B4-3.5	10/1/91	3-3.5	soil	CrLab	ND(0.005)	ND(0.005)
B5-3.5	10/1/91	3-3.5	soil	CrLab	ND(0.005)	ND(0.005)
B6-0.5	10/1/91	0-0.5	soil	CrLab	ND(0.005)	ND(0.005)
B7-0.5	10/1/91	0-0.5	soil	CrLab	ND(0.005)	ND(0.005)
B8-0.5&1.5	4/13/92	0-0.5/1-1.5	soil	CrLab	ND(0.005)	ND(0.005)
B9-0.5&1.5	4/13/92	0-0.5/1-1.5	soil	CrLab	ND(0.005)	ND(0.005)
B10-0.5&1.5	4/13/92	0-0.5/1-1.5	soil	CrLab	ND(0.005)	ND(0.005)
B11-0.5&1.5	4/9/92	0-0.5/1-1.5	soil	CrLab	ND(0.005)	ND(0.005)
B12-0.5&1.5	4/9/92	0-0.5/1-1.5	soil	CrLab	ND(0.005)	ND(0.005)
B13-0.5&1.5	4/9/92	0-0.5/1-1.5	soil	CrLab	ND(0.005)	ND(0.005)
B14-0.5&1.5	4/9/92	0-0.5/1-1.5	soil	CrLab	ND(0.005)	ND(0.005)
B16-0.5&1.5	4/13/92	0-0.5/1-1.5	soil	CrLab	ND(0.005)	ND(0.005)
B17-0.5&1.5	4/13/92	0-0.5/1-1.5	soil	CrLab	ND(0.005)	ND(0.005)
B18-0.5&1.5	4/13/92	0-0.5/1-1.5	soil	CrLab	ND(0.005)	**1.20**
B19-0.5&1.5	4/13/92	0-0.5/1-1.5	soil	CrLab	ND(0.005)	ND(0.005)
B20-0.5&1.5	4/13/92	0-0.5/1-1.5	soil	CrLab	ND(0.005)	ND(0.005)
B21-0.5&1.5	4/13/92	0-0.5/1-1.5	soil	CrLab	ND(0.005)	ND(0.005)
B22-0.5&1.5	4/13/92	0-0.5/1-1.5	soil	CrLab	ND(0.005)	ND(0.005)
B23-0.5&1.5	4/13/92	0-0.5/1-1.5	soil	CrLab	ND(0.005)	ND(0.005)
B24-0.5&1.5	4/13/92	0-0.5/1-1.5	soil	CrLab	ND(0.005)	ND(0.005)
B25-0.5&1.5	4/13/92	0-0.5/1-1.5	soil	CrLab	ND(0.005)	ND(0.005)
B26-0.5&1.5	4/13/92	0-0.5/1-1.5	soil	CrLab	ND(0.005)	ND(0.005)

notes: CrLab: Chromalab Inc.
ND(0.004) = Not Detected above the laboratory detection limit in parentheses.
BFW collected from filter backwash.
0-0.5/1-1.5: composite sample of 0 to 0.5' and 1' to 1.5' below ground level.

Table A3
PACO PUMPS - 9201 San Leandro Street Facility
BASE/NEUTRAL/ACID EXTRACTABLES
{milligrams chemical per kilogram soil}

Sample I.D.	Sampling Date	Depth (feet)	Matrix	Lab	Acenaphthene	Acenaphthylene	Anthracene	Benzo(a) Anthracene	Benzo(b) Fluoranthene	Benzo(k) Fluoranthene	Benzo(g,h,i) Perylene	Benzo(a) Pyrene	Benzoic Acid	Benzyl Alcohol	4-Bromophenyl Phenyl Ether
B1-3.5	10/1/91	3-3.5	Soil	CrLab	ND(0.05)	ND(0.05)	ND(0.05)	ND(0.05)	ND(0.05)	ND(0.05)	ND(0.05)	ND(0.05)	ND(0.25)	ND(0.10)	ND(0.05)
B3-3.5	10/1/91	3-3.5	Soil	CrLab	ND(0.05)	ND(0.05)	ND(0.05)	ND(0.05)	ND(0.05)	ND(0.05)	ND(0.05)	ND(0.05)	ND(0.25)	ND(0.10)	ND(0.05)
B5-3.5	10/1/91	3-3.5	Soil	CrLab	ND(0.05)	ND(0.05)	ND(0.05)	ND(0.05)	ND(0.05)	ND(0.05)	ND(0.05)	ND(0.05)	ND(0.25)	ND(0.10)	ND(0.05)
B6-0.5	10/1/91	0-0.5	Soil	CrLab	ND(0.05)	ND(0.05)	ND(0.05)	ND(0.05)	ND(0.05)	ND(0.05)	ND(0.05)	ND(0.05)	ND(0.25)	ND(0.10)	ND(0.05)
B7-0.5	10/1/91	0-0.5	Soil	CrLab	ND(0.05)	ND(0.05)	ND(0.05)	ND(0.05)	ND(0.05)	ND(0.05)	ND(0.05)	ND(0.05)	ND(0.25)	ND(0.10)	ND(0.05)

Sample I.D.	Sampling Date	Depth (feet)	Matrix	Lab	Di-n-Butyl Phthalate	Butylbenzyl-phthalate	4-Chloro-3-Methylphenol	4-Chloro-Phenyl Phenyl Ether	4-Chloro-aniline	Bis(2-Chloro-ethoxy)Methane	Bis(2-Chloro-ethyl)Ether	Bis(2-Chloro-isopropyl)Ether	2-Chloronaph-thalene	2-Chloro-phenol	Chrysene
B1-3.5	10/1/91	3-3.5	Soil	CrLab	ND(0.05)	ND(0.05)	ND(0.10)	ND(0.05)	ND(0.10)	ND(0.05)	ND(0.05)	ND(0.05)	ND(0.05)	ND(0.05)	ND(0.05)
B3-3.5	10/1/91	3-3.5	Soil	CrLab	ND(0.05)	ND(0.05)	ND(0.10)	ND(0.05)	ND(0.10)	ND(0.05)	ND(0.05)	ND(0.05)	ND(0.05)	ND(0.05)	ND(0.05)
B5-3.5	10/1/91	3-3.5	Soil	CrLab	ND(0.05)	ND(0.05)	ND(0.10)	ND(0.05)	ND(0.10)	ND(0.05)	ND(0.05)	ND(0.05)	ND(0.05)	ND(0.05)	ND(0.05)
B6-0.5	10/1/91	0-0.5	Soil	CrLab	ND(0.05)	ND(0.05)	ND(0.10)	ND(0.05)	ND(0.10)	ND(0.05)	ND(0.05)	ND(0.05)	ND(0.05)	ND(0.05)	ND(0.05)
B7-0.5	10/1/91	0-0.5	Soil	CrLab	ND(0.05)	ND(0.05)	ND(0.10)	ND(0.05)	ND(0.10)	ND(0.05)	ND(0.05)	ND(0.05)	ND(0.05)	ND(0.05)	ND(0.05)

notes: CrLab: Chromalab Inc.
ND(0.05) = Not Detected above the laboratory detection limit in parentheses.

Table A3 con't

PACO PUMPS - 9201 San Leandro Street Facility

BASE/NEUTRAL/ACID EXTRACTABLES

{milligrams chemical per kilogram soil}

Sample I.D.	Sampling Date	Depth (feet)	Matrix	Lab	Dibenzo(a,h) Anthracene	Dibenzo-furan	1,2-Dichloro-benzene	1,3-Dichloro-benzene	1,4-Dichloro-benzene	3,3'-Dichloro-benzidine	2,4-Dichloro-phenol	Diethyl Phthalate	Dimethyl Phthalate	2,4-Dimethyl-phenol	4,6-Dinitro-2-Methyl Phenol
B1-3.5	10/1/91	3-3.5	Soil	CrLab	ND(0.05)	ND(0.05)	ND(0.05)	ND(0.05)	ND(0.05)	ND(0.10)	ND(0.05)	ND(0.05)	ND(0.05)	ND(0.05)	ND(0.25)
B3-3.5	10/1/91	3-3.5	Soil	CrLab	ND(0.05)	ND(0.05)	ND(0.05)	ND(0.05)	ND(0.05)	ND(0.10)	ND(0.05)	ND(0.05)	ND(0.05)	ND(0.05)	ND(0.25)
B5-3.5	10/1/91	3-3.5	Soil	CrLab	ND(0.05)	ND(0.05)	ND(0.05)	ND(0.05)	ND(0.05)	ND(0.10)	ND(0.05)	ND(0.05)	ND(0.05)	ND(0.05)	ND(0.25)
B6-0.5	10/1/91	0-0.5	Soil	CrLab	ND(0.05)	ND(0.05)	ND(0.05)	ND(0.05)	ND(0.05)	ND(0.10)	ND(0.05)	ND(0.05)	ND(0.05)	ND(0.05)	ND(0.25)
B7-0.5	10/1/91	0-0.5	Soil	CrLab	ND(0.05)	ND(0.05)	ND(0.05)	ND(0.05)	ND(0.05)	ND(0.10)	ND(0.05)	ND(0.05)	ND(0.05)	ND(0.05)	ND(0.25)

Sample I.D.	Sampling Date	Depth (feet)	Matrix	Lab	2,4-Dinitro-phenol	2,4-Dinitro-toluene	2,6-Dinitro-toluene	Bis(2-Ethyl-hexyl)Pthalate	Fluor-anthene	Fluorene	Hexachloro-benzene	Hexachloro-butadiene	Hexachlorocyclo-pentadiene	Hexachloro-ethane	Indeno(1,2,3 C,D)Pyrene
B1-3.5	10/1/91	3-3.5	Soil	CrLab	ND(0.25)	ND(0.05)	ND(0.05)	ND(0.05)	ND(0.05)	ND(0.05)	ND(0.05)	ND(0.05)	ND(0.05)	ND(0.05)	ND(0.05)
B3-3.5	10/1/91	3-3.5	Soil	CrLab	ND(0.25)	ND(0.05)	ND(0.05)	ND(0.05)	ND(0.05)	ND(0.05)	ND(0.05)	ND(0.05)	ND(0.05)	ND(0.05)	ND(0.05)
B5-3.5	10/1/91	3-3.5	Soil	CrLab	ND(0.25)	ND(0.05)	ND(0.05)	ND(0.05)	ND(0.05)	ND(0.05)	ND(0.05)	ND(0.05)	ND(0.05)	ND(0.05)	ND(0.05)
B6-0.5	10/1/91	0-0.5	Soil	CrLab	ND(0.25)	ND(0.05)	ND(0.05)	ND(0.05)	ND(0.05)	ND(0.05)	ND(0.05)	ND(0.05)	ND(0.05)	ND(0.05)	ND(0.05)
B7-0.5	10/1/91	0-0.5	Soil	CrLab	ND(0.25)	ND(0.05)	ND(0.05)	ND(0.05)	ND(0.05)	ND(0.05)	ND(0.05)	ND(0.05)	ND(0.05)	ND(0.05)	ND(0.05)

notes: CrLab: Chromalab Inc.
ND(0.05) = Not Detected above the laboratory detection limit in parentheses.

Table A3 con't
PACO PUMPS - 9201 San Leandro Street Facility
BASE/NEUTRAL/ACID EXTRACTABLES
{milligrams chemical per kilogram soil}

Sample I.D.	Sampling Date	Depth (feet)	Matrix	Lab	Iso-phorone	2-Methylnaph-thalene	2-Methyl-phenol	4-Methyl-phenol	Naphthalene	2-Nitro-aniline	3-Nitro-aniline	4-Nitro-aniline	Nitro-benzene	2-Nitro-phenol	4-Nitro-phenol
B1-3.5	10/1/91	3-3.5	Soil	CrLab	ND(0.05)	ND(0.05)	ND(0.05)	ND(0.05)	ND(0.05)	ND(0.05)	ND(0.25)	ND(0.25)	ND(0.05)	ND(0.05)	ND(0.25)
B3-3.5	10/1/91	3-3.5	Soil	CrLab	ND(0.05)	ND(0.05)	ND(0.05)	ND(0.05)	ND(0.05)	ND(0.05)	ND(0.25)	ND(0.25)	ND(0.05)	ND(0.05)	ND(0.25)
B5-3.5	10/1/91	3-3.5	Soil	CrLab	ND(0.05)	ND(0.05)	ND(0.05)	ND(0.05)	ND(0.05)	ND(0.05)	ND(0.25)	ND(0.25)	ND(0.05)	ND(0.05)	ND(0.25)
B6-0.5	10/1/91	0-0.5	Soil	CrLab	ND(0.05)	ND(0.05)	ND(0.05)	ND(0.05)	ND(0.05)	ND(0.05)	ND(0.25)	ND(0.25)	ND(0.05)	ND(0.05)	ND(0.25)
B7-0.5	10/1/91	0-0.5	Soil	CrLab	ND(0.05)	ND(0.05)	ND(0.05)	ND(0.05)	ND(0.05)	ND(0.05)	ND(0.25)	ND(0.25)	ND(0.05)	ND(0.05)	ND(0.25)

Sample I.D.	Sampling Date	Depth (feet)	Matrix	Lab	N-Nitroso-Di-N-Propylamine	N-Nitro-sodiphenylamine	Di-N-Octyl-phthalate	Pentachloro-phenol	Phenanthrene	Phenol	Pyrene	1,2,4-Trichloro-benzene	2,4,5-Tri-chlorophenol	2,4,6-Trichloro-phenol
B1-3.5	10/1/91	3-3.5	Soil	CrLab	ND(0.05)	ND(0.05)	ND(0.05)	ND(0.25)	ND(0.05)	ND(0.05)	ND(0.05)	ND(0.05)	ND(0.05)	ND(0.05)
B3-3.5	10/1/91	3-3.5	Soil	CrLab	ND(0.05)	ND(0.05)	ND(0.05)	ND(0.25)	ND(0.05)	ND(0.05)	ND(0.05)	ND(0.05)	ND(0.05)	ND(0.05)
B5-3.5	10/1/91	3-3.5	Soil	CrLab	ND(0.05)	ND(0.05)	ND(0.05)	ND(0.25)	ND(0.05)	ND(0.05)	ND(0.05)	ND(0.05)	ND(0.05)	ND(0.05)
B6-0.5	10/1/91	0-0.5	Soil	CrLab	ND(0.05)	ND(0.05)	ND(0.05)	ND(0.25)	ND(0.05)	ND(0.05)	ND(0.05)	ND(0.05)	ND(0.05)	ND(0.05)
B7-0.5	10/1/91	0-0.5	Soil	CrLab	ND(0.05)	ND(0.05)	ND(0.05)	ND(0.25)	ND(0.05)	ND(0.05)	ND(0.05)	ND(0.05)	ND(0.05)	ND(0.05)

notes: CrLab: Chromalab Inc.
ND(0.05) = Not Detected above the laboratory detection limit in parentheses.

Table A4
PACO PUMPS - 9201 San Leandro Street Facility
CHLORINATED PESTICIDES
{milligrams chemical per kilogram soil}

Sample I.D.	Sampling Date	Depth (feet)	Matrix	Lab	Aldrin	α-BHC	β-BHC	γ-BHC (Lindane)	δ-BHC	Chlordane	p,p'-DDT	p,p'-DDE	p,p'-DDD	Dieldrin	Endosulfan I
B1-3.5	10/1/91	3-3.5	Soil	CrLab	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.100)	ND(0.050)	ND(0.010)	ND(0.050)	ND(0.010)	ND(0.050)
B2-3.5	10/1/91	3-3.5	Soil	CrLab	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.100)	ND(0.050)	ND(0.010)	ND(0.050)	ND(0.010)	ND(0.050)
B3-3.5	10/1/91	3-3.5	Soil	CrLab	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.100)	ND(0.050)	ND(0.010)	ND(0.050)	ND(0.010)	ND(0.050)
B4-3.5	10/1/91	3-3.5	Soil	CrLab	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.100)	ND(0.050)	ND(0.010)	ND(0.050)	ND(0.010)	ND(0.050)
B5-3.5	10/1/91	3-3.5	Soil	CrLab	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.100)	ND(0.050)	ND(0.010)	ND(0.050)	ND(0.010)	ND(0.050)
B6-0.5	10/1/91	0-0.5	Soil	CrLab	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.100)	ND(0.050)	ND(0.010)	ND(0.050)	ND(0.010)	ND(0.050)
B7-0.5	10/1/91	0-0.5	Soil	CrLab	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.100)	ND(0.050)	ND(0.010)	ND(0.050)	ND(0.010)	ND(0.050)

Sample I.D.	Sampling Date	Depth (feet)	Matrix	Lab	Endosulfan II	Endosulfan Sulfate	Endrin	Endrin Aldehyde	Heptachlor	Heptachlor Epoxide	p,p'-Methoxy-chlor	PCB's	Toxaphene
B1-3.5	10/1/91	3-3.5	Soil	CrLab	ND(0.050)	ND(0.100)	ND(0.010)	ND(0.050)	ND(0.010)	ND(0.010)	ND(0.100)	ND(0.100)	ND(0.100)
B2-3.5	10/1/91	3-3.5	Soil	CrLab	ND(0.050)	ND(0.100)	ND(0.010)	ND(0.050)	ND(0.010)	ND(0.010)	ND(0.100)	ND(0.100)	ND(0.100)
B3-3.5	10/1/91	3-3.5	Soil	CrLab	ND(0.050)	ND(0.100)	ND(0.010)	ND(0.050)	ND(0.010)	ND(0.010)	ND(0.100)	ND(0.100)	ND(0.100)
B4-3.5	10/1/91	3-3.5	Soil	CrLab	ND(0.050)	ND(0.100)	ND(0.010)	ND(0.050)	ND(0.010)	ND(0.010)	ND(0.100)	ND(0.100)	ND(0.100)
B5-3.5	10/1/91	3-3.5	Soil	CrLab	ND(0.050)	ND(0.100)	ND(0.010)	ND(0.050)	ND(0.010)	ND(0.010)	ND(0.100)	ND(0.100)	ND(0.100)
B6-0.5	10/1/91	0-0.5	Soil	CrLab	ND(0.050)	ND(0.100)	ND(0.010)	ND(0.050)	ND(0.010)	ND(0.010)	ND(0.100)	0.400*	ND(0.100)
B7-0.5	10/1/91	0-0.5	Soil	CrLab	ND(0.050)	ND(0.100)	ND(0.010)	ND(0.050)	ND(0.010)	ND(0.010)	ND(0.100)	0.670*	ND(0.100)

notes: CrLab: Chromalab Inc.
ND(0.05) = Not Detected above the laboratory detection limit in parentheses.
* PCB 1260

Table A5
PACO PUMPS - 9201 San Leandro Street Facility
PETROLEUM HYDROCARBONS
(milligrams chemical per liter liquid or milligrams chemical per kilogram soil)

Sample I.D.	Sampling Date	Depth (feet)	Matrix	Lab	TPH Gasoline	Benzene	Toluene	Ethyl Benzene	Total Xylenes	TEPH Diesel	TEPH Kerosene	TEPH Motor Oil
BFW	4/14/92	from pipe	liquid	CrLab	-	-	-	-	-	0.310	ND(0.050)	1.6
B1-3.5	10/1/91	3-3.5	soil	CrLab	ND(1.0)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(1.0)	-	-
B2-3.5	10/1/91	3-3.5	soil	CrLab	ND(1.0)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(1.0)	-	-
B3-3.5	10/1/91	3-3.5	soil	CrLab	ND(1.0)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(1.0)	-	-
B4-3.5	10/1/91	3-3.5	soil	CrLab	ND(1.0)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(1.0)	-	-
B5-3.5	10/1/91	3-3.5	soil	CrLab	ND(1.0)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(1.0)	-	-
B6-0.5	10/1/91	0-0.5	soil	CrLab	ND(1.0)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(1.0)	-	-
B7-0.5	10/1/91	0-0.5	soil	CrLab	ND(1.0)	ND(0.005)	ND(0.005)	ND(0.005)	ND(0.005)	ND(1.0)	-	-
B8-0.5&1.5	4/13/92	0-0.5/1-1.5	soil	CrLab	-	-	-	-	-	22	ND(1.0)	110
B9-0.5&1.5	4/13/92	0-0.5/1-1.5	soil	CrLab	-	-	-	-	-	ND(1.0)	ND(1.0)	660
B10-0.5&1.5	4/13/92	0-0.5/1-1.5	soil	CrLab	-	-	-	-	-	27	ND(1.0)	63
B11-0.5&1.5	4/9/92	0-0.5/1-1.5	soil	CrLab	-	-	-	-	-	120	ND(1.0)	410
B12-0.5&1.5	4/9/92	0-0.5/1-1.5	soil	CrLab	-	-	-	-	-	ND(1.0)	ND(1.0)	ND(1.0)
B13-0.5&1.5	4/9/92	0-0.5/1-1.5	soil	CrLab	-	-	-	-	-	55	ND(1.0)	98
B14-0.5&1.5	4/9/92	0-0.5/1-1.5	soil	CrLab	-	-	-	-	-	ND(1.0)	ND(1.0)	21
B16-0.5&1.5	4/13/92	0-0.5/1-1.5	soil	CrLab	-	-	-	-	-	45	ND(1.0)	190
B17-0.5&1.5	4/13/92	0-0.5/1-1.5	soil	CrLab	-	-	-	-	-	ND(1.0)	290	520
B18-0.5&1.5	4/13/92	0-0.5/1-1.5	soil	CrLab	-	-	-	-	-	ND(1.0)	8000	7800
B19-0.5&1.5	4/13/92	0-0.5/1-1.5	soil	CrLab	-	-	-	-	-	ND(1.0)	27	170
B20-0.5&1.5	4/13/92	0-0.5/1-1.5	soil	CrLab	-	-	-	-	-	15	ND(1.0)	120
B21-0.5&1.5	4/13/92	0-0.5/1-1.5	soil	CrLab	-	-	-	-	-	ND(1.0)	ND(1.0)	ND(1.0)
B22-0.5&1.5	4/13/92	0-0.5/1-1.5	soil	CrLab	-	-	-	-	-	ND(1.0)	ND(1.0)	29
B23-0.5&1.5	4/13/92	0-0.5/1-1.5	soil	CrLab	-	-	-	-	-	ND(1.0)	ND(1.0)	430
B24-0.5&1.5	4/13/92	0-0.5/1-1.5	soil	CrLab	-	-	-	-	-	ND(1.0)	ND(1.0)	ND(1.0)
B25-0.5&1.5	4/13/92	0-0.5/1-1.5	soil	CrLab	-	-	-	-	-	49	ND(1.0)	210
B26-0.5&1.5	4/13/92	0-0.5/1-1.5	soil	CrLab	-	-	-	-	-	12	ND(1.0)	57

notes: CrLab: Chromalab Inc.
ND(0.004) = Not Detected above the laboratory detection limit in parentheses.
BFW collected from filter backwash.
TPH: Total Petroleum Hydrocarbons
TEPH: Total Extractable Petroleum Hydrocarbons

Table A6
PACO PUMPS - 9201 San Leandro Street Facility
-- Excavation Samples --
PETROLEUM HYDROCARBONS
{milligrams chemical per liter liquid or milligrams chemical per kilogram soil}

Sample I.D.	Sampling Date	Depth (feet)	Matrix	Lab	TPH Gasoline	Benzene	Toluene	Ethyl Benzene	Total Xylenes	TEPH Diesel	Lead
P1	6/30/92	0.5-1	soil	CrLab	15	0.0095	ND(0.005)	0.170	0.140	ND(1.0)	89
B1	6/30/92	6	soil	CrLab	9.2	0.043	ND(0.005)	0.086	0.067	ND(1.0)	-
B2	7/27/92	6	soil	CrLab	6.2	1.800	ND(0.005)	0.180	ND(0.005)	-	-
B3	7/27/92	6	soil	CrLab	7.3	0.053	ND(0.005)	0.200	ND(0.005)	-	-
B4	7/27/92	6	soil	CrLab	5.3	0.650	ND(0.005)	0.160	0.014	-	-
B5	7/27/92	6	soil	CrLab	1.9	0.034	ND(0.005)	0.012	ND(0.005)	-	-
B6	8/3/92	6	soil	CrLab	13	2.100	0.018	0.340	0.190	-	-
B7	8/3/92	6	soil	CrLab	11	2.100	0.011	0.230	0.067	-	-
B8	8/3/92	6	soil	CrLab	7.4	0.750	0.0092	0.180	0.026	-	-
B9	8/3/92	6	soil	CrLab	2.3	0.038	0.0056	0.0080	0.0091	-	-
B10	8/12/92	6	soil	CrLab	4.4	0.371	0.0047	0.080	0.028	-	-
B11	8/12/92	6	soil	CrLab	13	0.670	0.0076	0.160	0.100	-	-
B12	8/12/92	6	soil	CrLab	ND(1.0)	0.0097	ND(0.005)	ND(0.005)	ND(0.005)	-	-
B13	8/12/92	6	soil	CrLab	1.1	0.013	ND(0.005)	ND(0.005)	0.007	-	-

notes: CrLab: Chromalab Inc.
ND(0.005) = Not Detected above the laboratory detection limit in parentheses.
TPH: Total Petroleum Hydrocarbons
TEPH: Total Extractable Petroleum Hydrocarbons

CHROMALAB, INC.

2239 Omega Road, #
415/831-1788

CHROMALAB FILE # 1091017
ORDER # 3653

Chain of Custody

DATE 10/2/91 PAGE 1 OF 1

PROJ. MGR R. Jonas
COMPANY Jonas + Associates Inc.
ADDRESS 1056 Dale Place
Concord, CA 94518

SAMPLERS (SIGNATURE) R. Jonas
(PHONE NO.) 510-676-8554

SAMPLE ID.	DATE	TIME	MATRIX	LAB ID.	TPH - Gasoline (EPA 5030)	TPH - Gasoline (5020, 8015 w/BTEX (EPA 602, 8020)	TPH - Diesel (EPA 3510, 8550, 8015)	PURGEABLE AROMATICS BTEX (EPA 602, 8020)	PURGEABLE HALOCARBONS (EPA 601, 8010)	VOLATILE ORGANICS (EPA 624, 8240)	BASE/NEUTRALS, ACIDS (EPA 625/627, 8270)	TOTAL OIL & GREASE (EPA 5520 D&F)	PESTICIDES/PCB (EPA 608, 8080)	PHENOLS (EPA 604, 8040)	Ti Zr 26 Metals	METALS: Cd, Cr, Pb, Zn	CAM METALS (18) w/Cr VI	PRIORITY POLLUTANT METALS (13)	NUMBER OF CONTAINERS
B1-3.5-10191	10/1/91	12:50	Soil			X	X			X	X		X						
B2-3.5-10191	10/1/91	1:05	Soil			X	X			X	X		X						
B3-3.5-10191	10/1/91	1:35	Soil			X	X			X	X		X						
B4-3.5-10191	10/1/91	2:20	Soil			X	X			X	X		X						
B5-3.5-10191	10/1/91	1:35	Soil			X	X			X	X		X						
B6-0.5-10191	10/1/91	12:10	Soil			X	X			X	X		X		X				
B7-0.5-10191	10/1/91	11:50	Soil			X	X			X	X		X		X				

PROJECT INFORMATION

PROJECT NAME: PACO Pumps Soil
PROJECT NUMBER: R. Jonas
SHIPPING ID. NO.: Hand delivered
VIA:

SAMPLE RECEIPT

TOTAL NO. OF CONTAINERS	7
CHAIN OF CUSTODY SEALS	
REC'D GOOD CONDITION/COLD	
CONFORMS TO RECORD	
LAB NO.	

SPECIAL INSTRUCTIONS/COMMENTS:

RELINQUISHED BY 1.	RELINQUISHED BY 2.	RELINQUISHED BY 3.
(SIGNATURE) Romona Jonas (TIME) 11:30	(SIGNATURE) (TIME)	(SIGNATURE) (TIME)
(PRINTED NAME) Romona Jonas (DATE) 10/2/91	(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) 11:30 AM (TIME)
(PRINTED NAME) (DATE)	(PRINTED NAME) (DATE)	(PRINTED NAME) DAVID DUONG 10/02/91 (DATE)
(COMPANY)	(COMPANY)	(LAB) Chromalab, Inc.

[redacted] before Discarding Samples

CHROMALAB, INC.

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415/831-1788 • Facsimile 415/831-8798

CHROMALAB FILE # 492137
ORDER # 6098

C[redacted]

DATE 4/14/92 PAGE 1 OF 3

PROJ. MGR. Romena Jonas
COMPANY Jonas & Associates Inc.
ADDRESS 1056 Dale Place
Concord, California 94518

SAMPLERS (SIGNATURE) R. Jonas + M. Jonas (PHONE NO.) (510) 676-8554

ANALYSIS REPORT

SAMPLE ID.	DATE	TIME	MATRIX	LAB ID.	TPH - Gasoline (EPA 5030)	TPH - Gasoline (5030, 8015) w/BTEX (EPA 602, 8020)	TPH - Diesel (EPA 3510, 3550, 8015	PURGEABLE AROMATICS BTEX (EPA 602, 8020)	PURGEABLE HALOCARBONS (EPA 601, 8010)	VOLATILE ORGANICS (EPA 624, 8240)	BASE/NEUTRALS, ACIDS (EPA 625/627, 8270)	TOTAL OIL & GREASE (EPA 5520 D&F)	PESTICIDES/PCB (EPA 608, 8080)	PHENOLS (EPA 604, 8040)			METALS: Cd, Cr, Pb, Zn	CAM METALS (18) w/Cr VI	PRIORITY POLLUTANT METALS (13)	TPH-KDM					NUMBER OF CONTAINERS
B8-0.5 B8-1.5 [Composite]	4/13/92	10:35	Soil							X									X						2
B9-0.5 B9-1.5	4/13/92	11:15																							2
B10-0.5 B10-1.5	4/13/92	12:10																							2
B11-0.5 B11-1.5	4/9/92	6:20																							2
B12-0.5 B12-1.5	4/9/92	5:45																							2
B13-0.5 B13-1.5	4/9/92	4:35																							2
B14-0.5 B14-1.5	4/9/92	5:15																							2
B16-0.5 B16-1.5	4/13/92	1:20																							2
B17-0.5 B17-1.5	4/13/92	2:28																							2

PROJECT INFORMATION

PROJECT NAME: PACO 9201
PROJECT NUMBER: PCO-220-01-PHII
SHIPPING ID. NO.
VIA: hand delivered

SAMPLE RECEIPT

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

SPECIAL INSTRUCTIONS/COMMENTS:
Composite Two sleeves [i.e. B8-0.5+ B8-1.5]
analyze The composite. Retain the sample for Future analysis.
B11 - please composite The white color portion of The B11-1.5 sample with B11-0.5. Ignore the brown color portion of B11-1.5.

RELINQUISHED BY 1.	RELINQUISHED BY 2.	RELINQUISHED BY 3.
[signature] 4:15		
(SIGNATURE) (TIME)	(SIGNATURE) (TIME)	(SIGNATURE) (TIME)
Romena Jonas 4/14/92		
(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.**
		Cindy Cook 4:15 pm
(SIGNATURE) (TIME)	(SIGNATURE) (TIME)	(SIGNATURE) (TIME)
		Cindy Cook 4/14/92
(PRINTED NAME) (DATE)	(PRINTED NAME) (DATE)	(PRINTED NAME) (DATE)
		Chromalab
(COMPANY)	(COMPANY)	(LAB)

...isolating samples

CHROMALAB, INC.

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Chain of Custody

DATE 4/14/92 PAGE 2 OF 3

PROJ. MGR R. Jonas
COMPANY Jonas & Associates Inc.
ADDRESS 1056 Dale Place
Concord, California 94518

SAMPLERS (SIGNATURE) R. & M. Jonas (PHONE NO.) (510) 676-8554

ANALYSIS REPORT

SAMPLE ID.	DATE	TIME	MATRIX	LAB ID.	TPH - Gasoline (EPA 5030)	TPH - Gasoline (5030, 8015) w/BTEX (EPA 602, 8020)	TPH - Diesel (EPA 3510, 3550, 8015	PURGEABLE AROMATICS BTEX (EPA 602, 8020)	PURGEABLE HALOCARBONS (EPA 601, 8010)	VOLATILE ORGANICS (EPA 624, 8240)	BASE/NEUTRALS, ACIDS (EPA 625/627, 8270)	TOTAL OIL & GREASE (EPA 5520 D&F)	PESTICIDES/PCB (EPA 608, 8080)	PHENOLS (EPA 604, 8040)			METALS: Cd, Cr, Pb, Zn	CAM METALS (18) w/Cr VI	PRIORITY POLLUTANT METALS (13)	TPH-KDM					NUMBER OF CONTAINERS
~~B15-0.5~~ ~~B15-1.5~~	~~4/13/92~~	~~12:40~~	Soil	(RJ)						X									X						
B18-0.5 B18-1.5	4/13/92	2:00																							2
B19-0.5 B19-1.5	4/13/92	2:30																							2
B22-0.5 B22-1.5	4/13/92	3:00																							2
B23-0.5 B23-1.5		3:30																							2
B20-0.5 B20-1.5		4:10																							2
B21-0.5 B21-1.5		4:30																							2
B24-0.5 B24-1.5		5:00																							2
B25-0.5 B25-1.5		5:30																							2

PROJECT INFORMATION

PROJECT NAME: PACO 9201
PROJECT NUMBER: PCO-220d-PH1
SHIPPING ID. NO.
VIA: hand delivered

SAMPLE RECEIPT

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

SPECIAL INSTRUCTIONS/COMMENTS: Composite Two Sleeves [i.e. B8-0.5' & B8-1.5'] per borehole. Retain the original sample for future analysis.

RELINQUISHED BY 1.	RELINQUISHED BY 2.	RELINQUISHED BY 3.
R. Jonas 4:15		
(SIGNATURE) (TIME)	(SIGNATURE) (TIME)	(SIGNATURE) (TIME)
Romera Jonas		
(PRINTED NAME) (DATE)	(PRINTED NAME) (DATE)	(PRINTED NAME) (DATE)
Jonas & Associates 4/14/92		
(COMPANY)	(COMPANY)	(COMPANY)
RECEIVED BY 1.	**RECEIVED BY 2.**	**RECEIVED BY (LABORATORY) 3.**
		Carey Cook 4/15
(SIGNATURE) (TIME)	(SIGNATURE) (TIME)	(SIGNATURE) (TIME)
		Carey Cook 4/14/92
(PRINTED NAME) (DATE)	(PRINTED NAME) (DATE)	(PRINTED NAME) (DATE)
		Chromalab
(COMPANY)	(COMPANY)	(LAB)

Tico - Call before Discarding Samples

CHROMALAB, INC.

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Chain of Custody

DATE 4/14/92 PAGE 3 OF 3

PROJ. MGR. R. Jonas
COMPANY Jonas & Associates Inc.
ADDRESS 1056 Dale Place
Concord, California 94518

SAMPLERS (SIGNATURE) R. Jonas (PHONE NO.) (510) 676-8554

SAMPLE ID.	DATE	TIME	MATRIX	LAB ID.	TPH - Gasoline (EPA 5030)	TPH - Gasoline (5030, 8015) w/BTEX (EPA 602, 8020)	TPH - Diesel (EPA 3510, 3550, 8015)	PURGEABLE AROMATICS BTEX (EPA 602, 8020)	PURGEABLE HALOCARBONS (EPA 601, 8010)	VOLATILE ORGANICS (EPA 624, 8240)	BASE/NEUTRALS, ACIDS (EPA 625/627, 8270)	TOTAL OIL & GREASE (EPA 5520 D&F)	PESTICIDES/PCB (EPA 608, 8080)	PHENOLS (EPA 604, 8040)			METALS: Cd, Cr, Pb, Zn	CAM METALS (18) w/Cr VI	PRIORITY POLLUTANT METALS (13)	TPH-KDM					NUMBER OF CONTAINERS
B26-0.5 & B26-1.5 Composite	4/13/92	6:00	Soil							X									X	X					2
BFW-water	4/14/92	2:00	Water							X									X	X					4

→ Contains No Preservative

Total of 3 sheets

PROJECT INFORMATION

PROJECT NAME: PACO 9201
PROJECT NUMBER: PCO-220-01-PHII
SHIPPING ID. NO.
VIA: hand delivered

SAMPLE RECEIPT

TOTAL NO. OF CONTAINERS	40
CHAIN OF CUSTODY SEALS	
REC'D GOOD CONDITION/COLD	
CONFORMS TO RECORD	
LAB NO.	

SPECIAL INSTRUCTIONS/COMMENTS: Composite Two sleeves per borehole [i.e. B26-0.5 & B2-1.5] Retain original sample for future analysis.

RELINQUISHED BY 1.	RELINQUISHED BY 2.	RELINQUISHED BY 3.
R. Jonas 4:15 (SIGNATURE) (TIME)	(SIGNATURE) (TIME)	(SIGNATURE) (TIME)
Romena Jonas (PRINTED NAME) (DATE)	(PRINTED NAME) (DATE)	(PRINTED NAME) (DATE)
Jonas & Associates 4/14/92 (COMPANY)	(COMPANY)	(COMPANY)
RECEIVED BY 1.	**RECEIVED BY 2.**	**RECEIVED BY (LABORATORY) 3.**
(SIGNATURE) (TIME)	(SIGNATURE) (TIME)	Gary Cook 4:14 (SIGNATURE) (TIME)
(PRINTED NAME) (DATE)	(PRINTED NAME) (DATE)	Gary Cook 4/14/92 (PRINTED NAME) (DATE)
(COMPANY)	(COMPANY)	Chromalab (LAB)

CHROMALAB, INC.

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

6904

DATE 6/30/92 PAGE 1 OF 1

PROJ. MGR. M. Jonas
COMPANY Jonas & Associates
ADDRESS 1056 Oak Place
Concord, CA 94518
SAMPLERS (SIGNATURE) (PHONE NO.)

ANALYSIS REPORT

SAMPLE ID.	DATE	TIME	MATRIX	LAB ID.	TPH - Gasoline (EPA 5030, 8015)	TPH - Gasoline (5030, 8015) w/BTeX (EPA 602,8020)	TPH - Diesel (EPA 3510/3550, 8015)	PURGEABLE AROMATICS BTEX (EPA 602, 8020)	PURGEABLE HALOCARBONS (EPA 601, 8010)	VOLATILE ORGANICS (EPA 624, 8240, 524.2)	BASE/NEUTRALS, ACIDS (EPA 625/627, 8270, 525)	TOTAL OIL & GREASE (EPA 5520 E&F)	PESTICIDES/PCB (EPA 608, 8080)	PHENOLS (EPA 604, 8040)	TOTAL RECOVERABLE HYDROCARBONS (EPA 418.1)	Pb	METALS: Cd, Cr, Pb, Zn, Ni	CAM METALS (17)	PRIORITY POLLUTANT METALS (13)	EXTRACTION (TCLP, STLC)					NUMBER OF CONTAINERS
UST2-63092-B1	6/30/92	1145				X	X																		1
UST2-63092-P1	6/30/92	1200				X	X									X									1

PROJECT INFORMATION

PROJECT NAME: 9201 PACO UST
PROJECT NUMBER: PCO-221
SHIPPING ID. NO.
VIA:

SAMPLE RECEIPT

TOTAL NO. OF CONTAINERS	2
CHAIN OF CUSTODY SEALS	
REC'D GOOD CONDITION/COLD	
CONFORMS TO RECORD	
LAB NO.	

SPECIAL INSTRUCTIONS/COMMENTS:
STD T.A.T.

RELINQUISHED BY 1.	RELINQUISHED BY 2.	RELINQUISHED BY 3.
(SIGNATURE) Mark Jonas (TIME) 1545	(SIGNATURE) (TIME)	(SIGNATURE) (TIME)
(PRINTED NAME) Mark Jonas (DATE) 6/30/92	(PRINTED NAME) (DATE)	(PRINTED NAME) (DATE)
(COMPANY) Jonas & Assoc.	(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) SEAN HACSEP (DATE) 1545
(COMPANY)	(COMPANY)	(LAB) CHROMALAB 6/30/92

CHROMALAB, INC.

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Chain of Custody

DATE 7/27/92 PAGE 1 OF 1

PROJ. MGR. M. Jonas
COMPANY Jonas & Associates Inc.
ADDRESS 1056 Dale Place
Concord, California 94518

SAMPLERS (SIGNATURE) Mark Jonas (PHONE NO.) (510) 676-8554

SAMPLE ID.	DATE	TIME	MATRIX	LAB ID.	TPH - Gasoline (EPA 5030)	TPH - Gasoline (5030, 8015) w/BTEX (EPA 602, 8020)	TPH - Diesel (EPA 3510, 3550, 8015)	PURGEABLE AROMATICS BTEX (EPA 602, 8020)	PURGEABLE HALOCARBONS (EPA 601, 8010)	VOLATILE ORGANICS (EPA 624, 8240)	BASE/NEUTRALS, ACIDS (EPA 625/627, 8270)	TOTAL OIL & GREASE (EPA 5520 D&F)	PESTICIDES/PCB (EPA 608, 8080)	PHENOLS (EPA 604, 8040)	METALS: Cd, Cr, Pb, Zn	CAM METALS (18) w/Cr VI	PRIORITY POLLUTANT METALS (13)	NUMBER OF CONTAINERS
B2-72792-6'	7/27/92	1145	Soil			X												1
B3-72792-6'	7/27/92	1150	Soil			X												1
B4-72792-6'	7/27/92	1155	Soil			X												1
B5-72792-6'	7/27/92	1200	Soil			X												1

ANALYSIS REPORT

PROJECT # 7182

PROJECT INFORMATION

PROJECT NAME: 9201 PACO UST
PROJECT NUMBER: PCO-221
SHIPPING ID. NO.:
VIA:

SAMPLE RECEIPT

TOTAL NO. OF CONTAINERS	4
CHAIN OF CUSTODY SEALS	
REC'D GOOD CONDITION/COLD	
CONFORMS TO RECORD	
LAB NO	

SPECIAL INSTRUCTIONS/COMMENTS:
Please call before disposing.
2 day turn around

RELINQUISHED BY 1.	RELINQUISHED BY 2.	RELINQUISHED BY 3.
Mark Jonas 1410		
(SIGNATURE) (TIME)	(SIGNATURE) (TIME)	(SIGNATURE) (TIME)
Mark Jonas 7/27/92		
(PRINTED NAME) (DATE)	(PRINTED NAME) (DATE)	(PRINTED NAME) (DATE)
Mark Jonas & Assoc. Inc		
(COMPANY)	(COMPANY)	(COMPANY)
RECEIVED BY 1.	**RECEIVED BY 2.**	**RECEIVED BY (LABORATORY) 3.**
		1410
(SIGNATURE) (TIME)	(SIGNATURE) (TIME)	(SIGNATURE) (TIME)
		Kevin Kelly 7/27/92
(PRINTED NAME) (DATE)	(PRINTED NAME) (DATE)	(PRINTED NAME) (DATE)
		CHROMALAB
(COMPANY)	(COMPANY)	(LAB)

CHROMALAB, INC.

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510/831-1788 • Facsimile 510/831-8798

Chain of Custody

DATE 8/3/92 PAGE 1 OF 1

PROJ. MGR. M. Jones
COMPANY Jones & Associates Inc
ADDRESS 1056 Oak Place
Concord, CA 94518

SAMPLERS (SIGNATURE) Mark Jones (PHONE NO.) (510) 676-8554

SAMPLE ID.	DATE	TIME	MATRIX	LAB ID.	TPH - Gasoline (EPA 5030, 8015)	TPH - Gasoline (5030, 8015) w/BTeX (EPA 602,8020)	TPH - Diesel (EPA 3510/3550, 8015)	PURGEABLE AROMATICS BTEX (EPA 602, 8020)	PURGEABLE HALOCARBONS (EPA 601, 8010)	VOLATILE ORGANICS (EPA 624, 8240, 524.2)	BASE/NEUTRALS, ACIDS (EPA 625/627, 8270, 525)	TOTAL OIL & GREASE (EPA 5520 E&F)	PESTICIDES/PCB (EPA 608, 8080)	PHENOLS (EPA 604, 8040)	TOTAL RECOVERABLE HYDROCARBONS (EPA 418.1)		METALS: Cd, Cr, Pb, Zn, Ni	CAM METALS (17)	PRIORITY POLLUTANT METALS (13)	EXTRACTION (TCLP, STLC)			NUMBER OF CONTAINERS
B6-8392-6'	8/3/92	1400	Soil			X																	1
B7-8392-6'	8/3/92	1405	Soil			X																	1
B8-8392-6'	8/3/92	1410	Soil			X																	1
B9-8392-6'	8/3/92	1415	Soil			X																	1

CHROMALAB FILE # 9208
ORDER # 7420

PROJECT INFORMATION

PROJECT NAME: 9201 PACO UST REM
PROJECT NUMBER: PCO-221-01-UST
SHIPPING ID. NO.
VIA:

SAMPLE RECEIPT

TOTAL NO. OF CONTAINERS	4
CHAIN OF CUSTODY SEALS	
REC'D GOOD CONDITION/COLD	
CONFORMS TO RECORD	
LAB NO.	

SPECIAL INSTRUCTIONS/COMMENTS:
Please call before disposing of sample.
Three ~~Two~~ day turn around. mj

RELINQUISHED BY 1.	RELINQUISHED BY 2.	RELINQUISHED BY 3.
Mark Jones 1500 (SIGNATURE) (TIME)	(SIGNATURE) (TIME)	(SIGNATURE) (TIME)
Mark Jones (PRINTED NAME) (DATE)	(PRINTED NAME) (DATE)	(PRINTED NAME) (DATE)
Jones & Associates (COMPANY)	(COMPANY)	(COMPANY)
RECEIVED BY 1.	**RECEIVED BY 2.**	**RECEIVED BY (LABORATORY) 3.**
(SIGNATURE) (TIME)	(SIGNATURE) (TIME)	1500 (SIGNATURE) (TIME)
(PRINTED NAME) (DATE)	(PRINTED NAME) (DATE)	Yin Kwong Tam 8/3 (PRINTED NAME) (DATE)
(COMPANY)	(COMPANY)	Chromalab (LAB)

CHROMALAB, INC.

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

CHROMALAB FILE # 052087
ORDER # 7341

Tody

DATE 8/12/92 PAGE 1 OF 1

PROJ. MGR. Mark Jones
COMPANY Jones & Associates Inc.
ADDRESS 1056 Dale Place
Concord, CA 94518

SAMPLERS (SIGNATURE) Mark Jones (PHONE NO.) (510) 676-8554

SAMPLE ID.	DATE	TIME	MATRIX	LAB ID.	TPH - Gasoline (EPA 5030, 8015)	TPH - Gasoline (5030, 8015) w/BTeX (EPA 602,8020)	TPH - Diesel (EPA 3510/3550, 8015)	PURGEABLE AROMATICS BTEX (EPA 602, 8020)	PURGEABLE HALOCARBONS (EPA 601, 8010)	VOLATILE ORGANICS (EPA 624, 8240, 524.2)	BASE/NEUTRALS, ACIDS (EPA 625/627, 8270, 525)	TOTAL OIL & GREASE (EPA 5520 E&F)	PESTICIDES/PCB (EPA 608, 8080)	PHENOLS (EPA 604, 8040)	TOTAL RECOVERABLE HYDROCARBONS (EPA 418.1)		METALS: Cd, Cr, Pb, Zn, Ni	CAM METALS (17)	PRIORITY POLLUTANT METALS (13)	EXTRACTION (TCLP, STLC)					NUMBER OF CONTAINERS
B10-81292-6'						X																			1
B11-81292-6'						X																			1
B12-81292-6'						X																			1
B12-81292-6'						X																			1

PROJECT INFORMATION

PROJECT NAME: 7201 PACO UST REM
PROJECT NUMBER: PCO-721-01-UST
SHIPPING ID. NO.
VIA:

SAMPLE RECEIPT

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

SPECIAL INSTRUCTIONS/COMMENTS:

3 day turn around
Please call before disposing of samples

RELINQUISHED BY 1.	RELINQUISHED BY 2.	RELINQUISHED BY 3.
(SIGNATURE) Mark Jones (TIME) 1415	(SIGNATURE) (TIME)	(SIGNATURE) (TIME)
(PRINTED NAME) Mark Jones (DATE) 8-12-92	(PRINTED NAME) (DATE)	(PRINTED NAME) (DATE)
(COMPANY) Jones & Assoc.	(COMPANY)	(COMPANY)

RECEIVED BY 1.	RECEIVED BY 2.	RECEIVED BY (LABORATORY) 3.
(SIGNATURE) (TIME)	(SIGNATURE) (TIME)	(SIGNATURE) Gary Cook (TIME) 14:20
(PRINTED NAME) (DATE)	(PRINTED NAME) (DATE)	(PRINTED NAME) Gary Cook (DATE) 8/12/92
(COMPANY)	(COMPANY)	(LAB) Chromalab

CHROMALAB, INC.

Environmental Laboratory (1094)

5 DAYS TURNAROUND

October 9, 1991 ChromaLab File No.: 1091017 F

JONAS & ASSOCIATES, INC.

Attn: R. Jonas

RE: One soil sample for TTLC CAM 17 Metals analysis

Project Name: PACO PUMPS SOIL
Date Sampled: Oct. 1, 1991 Date Submitted: Oct. 2, 1991
Date Analyzed: October 8, 1991

RESULTS: Sample I.D.: B6-0.5-10191

Metals	Concentration (mg/kg)	Detection Limit (mg/kg)	% Spiked Recovery	Regulatory Levels (mg/kg)
*Ag	N.D.	0.25	97.6%	500
As	N.D.	0.25	90.3%	500
Ba	10.7	0.25	102.3%	10000
Be	N.D.	0.05	103.2%	75
Cd	0.595	0.05	72.0%	100
Co	0.804	0.50	97.0%	8000
Cr	2.63	0.50	97.3%	2500
Cu	67.8	0.25	105.6%	2500
Hg	N.D.	0.05	91.4%	20
Mo	N.D.	0.25	87.1%	3500
Ni	1.28	0.50	97.2%	2000
Pb	85.4	0.50	93.6%	1000
*Sb	N.D.	1.00	101.5%	500
Se	N.D.	0.25	87.6%	100
Tl	N.D.	2.00	100.1%	700
V	N.D.	0.50	104.4%	2400
Zn	22.5	0.25	102.2%	5000

Method of Analysis: 3050/6010
*Method of Analysis: 3005/6010

ChromaLab, Inc.

David Duong
Chief Chemist

Eric Tam
Laboratory Director

CHROMALAB, INC.

Environmental Laboratory (1094)

5 DAYS TURNAROUND

October 9, 1991 ChromaLab File No.: 1091017 G

JONAS & ASSOCIATES, INC.

Attn: R. Jonas

RE: One soil sample for TTLC CAM 17 Metals analysis

Project Name: PACO PUMPS SOIL
Date Sampled: Oct. 1, 1991 Date Submitted: Oct. 2, 1991
Date Analyzed: October 8, 1991

RESULTS: Sample I.D.: B7-0.5-10191

Metals	Concentration (mg/kg)	Detection Limit (mg/kg)	% Spiked Recovery	Regulatory Levels (mg/kg)
*Ag	N.D.	0.25	97.6%	500
As	N.D.	0.25	90.3%	500
Ba	138	0.25	102.3%	10000
Be	N.D.	0.05	103.2%	75
Cd	1.99	0.05	72.0%	100
Co	0.991	0.50	97.0%	8000
Cr	57.8	0.50	97.3%	2500
Cu	N.D.	0.25	105.6%	2500
Hg	N.D.	0.05	91.4%	20
Mo	8.85	0.25	87.1%	3500
Ni	348	0.50	97.2%	2000
Pb	N.D.	0.50	93.6%	1000
*Sb	N.D.	1.00	101.5%	500
Se	N.D.	0.25	87.6%	100
Tl	N.D.	2.00	100.1%	700
V	146	0.50	104.4%	2400
Zn	N.D.	0.25	102.2%	5000

Method of Analysis: 3050/6010
*Method of Analysis: 3005/6010

ChromaLab, Inc.

David Duong
Chief Chemist

Eric Tam
Laboratory Director

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

CHROMALAB, INC.

Environmental Laboratory (1094)

5 DAYS TURNAROUND

April 29, 1992 ChromaLab File No.: 0492137

JONAS & ASSOCIATES

Attn: Romena Jonas

RE: One water sample for Priority Pollutants Metals (13) analysis

Project Name: PACO9201
Project Number: PCO-220-01-PHII
Date Sampled: Apr. 13, 1992 Date Submitted: Apr. 14, 1992
Date Analyzed: Apr 28, 1992

RESULTS: Sample I.D.: BFW

Metals	Concentration (mg/L)	Detection Limit (mg/L)
Antimony (Sb)	N.D.	0.20
Arsenic (As)	N.D.	0.005
Beryllium (Be)	N.D.	0.001
Cadmium (Cd)	0.006	0.001
Chromium (Cr)	5.6	0.01
Copper (Cu)	0.29	0.005
Lead (Pb)	0.15	0.010
Mercury (Hg)	0.004	0.001
Nickel (Ni)	N.D.	0.020
Selenium (Se)	N.D.	0.005
Silver (Ag)	N.D.	0.005
Thallium (Tl)	N.D.	0.04
Zinc (Zn)	0.72	0.005

Method of Analysis: 3010/6010/7000

ChromaLab, Inc.

Refaat A. Mankarious
Inorganics Supervisor

Eric Tam
Laboratory Director

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CHROMALAB, INC.

Analytical Laboratory (E694)

5 DAYS TURNAROUND

April 29, 1992 ChromaLab File No.: 0492137

JONAS & ASSOCIATES

Attn: Romena Jonas

RE: One soil sample for Priority Pollutants Metals (13) analysis

Project Name: PACO9201
Project Number: PCO-220-01-PHI1
Date Sampled: Apr. 13, 1992 Date Submitted: Apr. 14, 1992
Date Analyzed: Apr 28, 1992

RESULTS: Sample I.D.: B8-0.5,B8-1.5 COMP

Metals	Concentration (mg/Kg)	Detection Limit (mg/Kg)
Antimony (Sb)	N.D.	1.00
Arsenic (As)	N.D.	0.25
Beryllium (Be)	0.07	0.05
Cadmium (Cd)	1.9	0.05
Chromium (Cr)	2.5	0.50
Copper (Cu)	49	0.25
Lead (Pb)	3.0	0.50
Mercury (Hg)	0.22	0.05
Nickel (Ni)	5.9	0.50
Selenium (Se)	N.D.	0.25
Silver (Ag)	N.D.	0.25
Thallium (Tl)	N.D.	2.00
Zinc (Zn)	44	0.25

Method of Analysis: 3050/6010/7000

ChromaLab, Inc.

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CHROMALAB, INC.

Analytical Laboratory (E694)

5 DAYS TURNAROUND

April 29, 1992 ChromaLab File No.: 0492137

JONAS & ASSOCIATES

Attn: Romena Jonas

RE: One soil sample for Priority Pollutants Metals (13) analysis

Project Name: PACO9201
Project Number: PCO-220-01-PHII
Date Sampled: Apr. 13, 1992 Date Submitted: Apr. 14, 1992
Date Analyzed: Apr 28, 1992

RESULTS: Sample I.D.: B9-0.5,B9-1.5 COMP

Metals	Concentration (mg/Kg)	Detection Limit (mg/Kg)
Antimony (Sb)	1.3	1.00
Arsenic (As)	N.D.	0.25
Beryllium (Be)	0.07	0.05
Cadmium (Cd)	2.2	0.05
Chromium (Cr)	5.1	0.50
Copper (Cu)	28	0.25
Lead (Pb)	11	0.50
Mercury (Hg)	0.69	0.05
Nickel (Ni)	4.9	0.50
Selenium (Se)	0.30	0.25
Silver (Ag)	N.D.	0.25
Thallium (Tl)	N.D.	2.00
Zinc (Zn)	50	0.25

Method of Analysis: 3050/6010/7000

ChromaLab, Inc.

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CHROMALAB, INC.

Analytical Laboratory (E694)

5 DAYS TURNAROUND

April 29, 1992 ChromaLab File No.: 0492137

JONAS & ASSOCIATES

Attn: Romena Jonas

RE: One soil sample for Priority Pollutants Metals (13) analysis

Project Name: PACO9201
Project Number: PCO-220-01-PHII
Date Sampled: Apr. 13, 1992 Date Submitted: Apr. 14, 1992
Date Analyzed: Apr 28, 1992

RESULTS: Sample I.D.: B10-0.5,B10-1.5 COMP

Metals	Concentration (mg/Kg)	Detection Limit (mg/Kg)
Antimony (Sb)	1.9	1.00
Arsenic (As)	N.D.	0.25
Beryllium (Be)	N.D.	0.05
Cadmium (Cd)	2.8	0.05
Chromium (Cr)	2.9	0.50
Copper (Cu)	34	0.25
Lead (Pb)	7.6	0.50
Mercury (Hg)	0.34	0.05
Nickel (Ni)	3.3	0.50
Selenium (Se)	N.D.	0.25
Silver (Ag)	N.D.	0.25
Thallium (Tl)	N.D.	2.00
Zinc (Zn)	57	0.25

Method of Analysis: 3050/6010/7000

ChromaLab, Inc.

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CHROMALAB, INC.

Analytical Laboratory (E694)

5 DAYS TURNAROUND

April 29, 1992 ChromaLab File No.: 0492137

JONAS & ASSOCIATES

Attn: Romena Jonas

RE: One soil sample for Priority Pollutants Metals (13) analysis

Project Name: PACO9201
Project Number: PCO-220-01-PHII
Date Sampled: Apr. 13, 1992 Date Submitted: Apr. 14, 1992
Date Analyzed: Apr 28, 1992

RESULTS: Sample I.D.: B11-0.5,B11-1.5 COMP

Metals	Concentration (mg/Kg)	Detection Limit (mg/Kg)
Antimony (Sb)	N.D.	1.00
Arsenic (As)	N.D.	0.25
Beryllium (Be)	N.D.	0.05
Cadmium (Cd)	1.2	0.05
Chromium (Cr)	6.8	0.50
Copper (Cu)	17	0.25
Lead (Pb)	22	0.50
Mercury (Hg)	0.12	0.05
Nickel (Ni)	3.4	0.50
Selenium (Se)	N.D.	0.25
Silver (Ag)	N.D.	0.25
Thallium (Tl)	N.D.	2.00
Zinc (Zn)	39	0.25

Method of Analysis: 3050/6010/7000

ChromaLab, Inc.

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CHROMALAB, INC.

Analytical Laboratory (E694)

5 DAYS TURNAROUND

April 29, 1992 ChromaLab File No.: 0492137

JONAS & ASSOCIATES

Attn: Romena Jonas

RE: One soil sample for Priority Pollutants Metals (13) analysis

Project Name: PACO9201
Project Number: PCO-220-01-PHII
Date Sampled: Apr. 13, 1992 Date Submitted: Apr. 14, 1992
Date Analyzed: Apr 28, 1992

RESULTS: Sample I.D.: B12-0.5,B12-1.5 COMP

Metals	Concentration (mg/Kg)	Detection Limit (mg/Kg)
Antimony (Sb)	2.1	1.00
Arsenic (As)	N.D.	0.25
Beryllium (Be)	0.13	0.05
Cadmium (Cd)	1.9	0.05
Chromium (Cr)	5.1	0.50
Copper (Cu)	21	0.25
Lead (Pb)	11	0.50
Mercury (Hg)	0.26	0.05
Nickel (Ni)	6.9	0.50
Selenium (Se)	N.D.	0.25
Silver (Ag)	N.D.	0.25
Thallium (Tl)	N.D.	2.00
Zinc (Zn)	51	0.25

Method of Analysis: 3050/6010/7000

ChromaLab, Inc.

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CHROMALAB, INC.

Analytical Laboratory (E694)

5 DAYS TURNAROUND

April 29, 1992 ChromaLab File No.: 0492137

JONAS & ASSOCIATES

Attn: Romena Jonas

RE: One soil sample for Priority Pollutants Metals (13) analysis

Project Name: PACO9201
Project Number: PCO-220-01-PHII
Date Sampled: Apr. 13, 1992 Date Submitted: Apr. 14, 1992
Date Analyzed: Apr 28, 1992

RESULTS: Sample I.D.: B13-0.5,B13-1.5 COMP

Metals	Concentration (mg/Kg)	Detection Limit (mg/Kg)
Antimony (Sb)	N.D.	1.00
Arsenic (As)	N.D.	0.25
Beryllium (Be)	0.05	0.05
Cadmium (Cd)	0.89	0.05
Chromium (Cr)	14	0.50
Copper (Cu)	19	0.25
Lead (Pb)	61	0.50
Mercury (Hg)	0.22	0.05
Nickel (Ni)	15	0.50
Selenium (Se)	N.D.	0.25
Silver (Ag)	N.D.	0.25
Thallium (Tl)	N.D.	2.00
Zinc (Zn)	53	0.25

Method of Analysis: 3050/6010/7000

ChromaLab, Inc.

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CHROMALAB, INC.

Analytical Laboratory (E694)

5 DAYS TURNAROUND

April 29, 1992 ChromaLab File No.: 0492137

JONAS & ASSOCIATES

Attn: Romena Jonas

RE: One soil sample for Priority Pollutants Metals (13) analysis

Project Name: PACO9201
Project Number: PCO-220-01-PHII
Date Sampled: Apr. 13, 1992 Date Submitted: Apr. 14, 1992
Date Analyzed: Apr 28, 1992

RESULTS: Sample I.D.: B14-0.5,B14-1.5 COMP

Metals	Concentration (mg/Kg)	Detection Limit (mg/Kg)
Antimony (Sb)	N.D.	1.00
Arsenic (As)	N.D.	0.25
Beryllium (Be)	0.32	0.05
Cadmium (Cd)	1.3	0.05
Chromium (Cr)	17	0.50
Copper (Cu)	20	0.25
Lead (Pb)	13	0.50
Mercury (Hg)	0.24	0.05
Nickel (Ni)	21	0.50
Selenium (Se)	N.D.	0.25
Silver (Ag)	N.D.	0.25
Thallium (Tl)	N.D.	2.00
Zinc (Zn)	32	0.25

Method of Analysis: 3050/6010/7000

ChromaLab, Inc.

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Analytical Laboratory (E694)

5 DAYS TURNAROUND

April 29, 1992 ChromaLab File No.: 0492137

JONAS & ASSOCIATES

Attn: Romena Jonas

RE: One soil sample for Priority Pollutants Metals (13) analysis

Project Name: PACO9201
Project Number: PCO-220-01-PHII
Date Sampled: Apr. 13, 1992 Date Submitted: Apr. 14, 1992
Date Analyzed: Apr 28, 1992

RESULTS: Sample I.D.: B16-0.5,B16-1.5 COMP

Metals	Concentration (mg/Kg)	Detection Limit (mg/Kg)
Antimony (Sb)	N.D.	1.00
Arsenic (As)	N.D.	0.25
Beryllium (Be)	N.D.	0.05
Cadmium (Cd)	2.8	0.05
Chromium (Cr)	25	0.50
Copper (Cu)	160	0.25
Lead (Pb)	100	0.50
Mercury (Hg)	0.23	0.05
Nickel (Ni)	16	0.50
Selenium (Se)	N.D.	0.25
Silver (Ag)	N.D.	0.25
Thallium (Tl)	N.D.	2.00
Zinc (Zn)	420	0.25

Method of Analysis: 3050/6010/7000

ChromaLab, Inc.

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CHROMALAB, INC.

Analytical Laboratory (E694)

5 DAYS TURNAROUND

April 29, 1992 ChromaLab File No.: 0492137

JONAS & ASSOCIATES

Attn: Romena Jonas

RE: One soil sample for Priority Pollutants Metals (13) analysis

Project Name: PACO9201
Project Number: PCO-220-01-PHII
Date Sampled: Apr. 13, 1992 Date Submitted: Apr. 14, 1992
Date Analyzed: Apr 28, 1992

RESULTS: Sample I.D.: B17-0.5,B17-1.5 COMP

Metals	Concentration (mg/Kg)	Detection Limit (mg/Kg)
Antimony (Sb)	N.D.	1.00
Arsenic (As)	N.D.	0.25
Beryllium (Be)	0.08	0.05
Cadmium (Cd)	2.4	0.05
Chromium (Cr)	14	0.50
Copper (Cu)	35	0.25
Lead (Pb)	37	0.50
Mercury (Hg)	0.09	0.05
Nickel (Ni)	6.2	0.50
Selenium (Se)	N.D.	0.25
Silver (Ag)	N.D.	0.25
Thallium (Tl)	N.D.	2.00
Zinc (Zn)	110	0.25

Method of Analysis: 3050/6010/7000

ChromaLab, Inc.

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Analytical Laboratory (E694)

5 DAYS TURNAROUND

April 29, 1992 ChromaLab File No.: 0492137

JONAS & ASSOCIATES

Attn: Romena Jonas

RE: One soil sample for Priority Pollutants Metals (13) analysis

Project Name: PACO9201
Project Number: PCO-220-01-PHII
Date Sampled: Apr. 13, 1992 Date Submitted: Apr. 14, 1992
Date Analyzed: Apr 28, 1992

RESULTS: Sample I.D.: B18-0.5,B18-1.5 COMP

Metals	Concentration (mg/Kg)	Detection Limit (mg/Kg)
Antimony (Sb)	N.D.	1.00
Arsenic (As)	N.D.	0.25
Beryllium (Be)	0.06	0.05
Cadmium (Cd)	2.8	0.05
Chromium (Cr)	25	0.50
Copper (Cu)	180	0.25
Lead (Pb)	36	0.50
Mercury (Hg)	0.29	0.05
Nickel (Ni)	19	0.50
Selenium (Se)	0.53	0.25
Silver (Ag)	N.D.	0.25
Thallium (Tl)	N.D.	2.00
Zinc (Zn)	100	0.25

Method of Analysis: 3050/6010/7000

ChromaLab, Inc.

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CHROMALAB, INC.

Analytical Laboratory (E694)

5 DAYS TURNAROUND

April 29, 1992 ChromaLab File No.: 0492137

JONAS & ASSOCIATES

Attn: Romena Jonas

RE: One soil sample for Priority Pollutants Metals (13) analysis

Project Name: PACO9201
Project Number: PCO-220-01-PHII
Date Sampled: Apr. 13, 1992 Date Submitted: Apr. 14, 1992
Date Analyzed: Apr 28, 1992

RESULTS: Sample I.D.: B19-0.5,B19-1.5 COMP

Metals	Concentration (mg/Kg)	Detection Limit (mg/Kg)
Antimony (Sb)	3.0	1.00
Arsenic (As)	N.D.	0.25
Beryllium (Be)	N.D.	0.05
Cadmium (Cd)	2.3	0.05
Chromium (Cr)	11	0.50
Copper (Cu)	38	0.25
Lead (Pb)	45	0.50
Mercury (Hg)	0.1	0.05
Nickel (Ni)	17	0.50
Selenium (Se)	21	0.25
Silver (Ag)	N.D.	0.25
Thallium (Tl)	N.D.	2.00
Zinc (Zn)	180	0.25

Method of Analysis: 3050/6010/7000

ChromaLab, Inc.

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CHROMALAB, INC.

Analytical Laboratory (E694)

5 DAYS TURNAROUND

April 29, 1992 ChromaLab File No.: 0492137

JONAS & ASSOCIATES

Attn: Romena Jonas

RE: One soil sample for Priority Pollutants Metals (13) analysis

Project Name: PACO9201
Project Number: PCO-220-01-PHII
Date Sampled: Apr. 13, 1992 Date Submitted: Apr. 14, 1992
Date Analyzed: Apr 28, 1992

RESULTS: Sample I.D.: B20-0.5,B20-1.5 COMP

Metals	Concentration (mg/Kg)	Detection Limit (mg/Kg)
Antimony (Sb)	N.D.	1.00
Arsenic (As)	3.5	0.25
Beryllium (Be)	0.08	0.05
Cadmium (Cd)	2.5	0.05
Chromium (Cr)	13	0.50
Copper (Cu)	110	0.25
Lead (Pb)	52	0.50
Mercury (Hg)	0.44	0.05
Nickel (Ni)	18	0.50
Selenium (Se)	N.D.	0.25
Silver (Ag)	N.D.	0.25
Thallium (Tl)	N.D.	2.00
Zinc (Zn)	250	0.25

Method of Analysis: 3050/6010/7000

ChromaLab, Inc.

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CHROMALAB, INC.

Analytical Laboratory (E694)

5 DAYS TURNAROUND

April 29, 1992 ChromaLab File No.: 0492137

JONAS & ASSOCIATES

Attn: Romena Jonas

RE: One soil sample for Priority Pollutants Metals (13) analysis

Project Name: PACO9201
Project Number: PCO-220-01-PHII
Date Sampled: Apr. 13, 1992 Date Submitted: Apr. 14, 1992
Date Analyzed: Apr 28, 1992

RESULTS: Sample I.D.: B21-0.5,B21-1.5 COMP

Metals	Concentration (mg/Kg)	Detection Limit (mg/Kg)
Antimony (Sb)	1.5	1.00
Arsenic (As)	N.D.	0.25
Beryllium (Be)	0.1	0.05
Cadmium (Cd)	2.2	0.05
Chromium (Cr)	17	0.50
Copper (Cu)	170	0.25
Lead (Pb)	43	0.50
Mercury (Hg)	0.34	0.05
Nickel (Ni)	14	0.50
Selenium (Se)	N.D.	0.25
Silver (Ag)	N.D.	0.25
Thallium (Tl)	N.D.	2.00
Zinc (Zn)	99	0.25

Method of Analysis: 3050/6010/7000

ChromaLab, Inc.

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CHROMALAB, INC.

Analytical Laboratory (E694)

5 DAYS TURNAROUND

April 29, 1992 ChromaLab File No.: 0492137

JONAS & ASSOCIATES

Attn: Romena Jonas

RE: One soil sample for Priority Pollutants Metals (13) analysis

Project Name: PACO9201
Project Number: PCO-220-01-PHII
Date Sampled: Apr. 13, 1992 Date Submitted: Apr. 14, 1992
Date Analyzed: Apr 28, 1992

RESULTS: Sample I.D.: B22-0.5,B22-1.5 COMP

Metals	Concentration (mg/Kg)	Detection Limit (mg/Kg)
Antimony (Sb)	8.3	1.00
Arsenic (As)	3.0	0.25
Beryllium (Be)	0.09	0.05
Cadmium (Cd)	3.8	0.05
Chromium (Cr)	20	0.50
Copper (Cu)	350	0.25
Lead (Pb)	76	0.50
Mercury (Hg)	0.14	0.05
Nickel (Ni)	23	0.50
Selenium (Se)	N.D.	0.25
Silver (Ag)	N.D.	0.25
Thallium (Tl)	N.D.	2.00
Zinc (Zn)	160	0.25

Method of Analysis: 3050/6010/7000

ChromaLab, Inc.

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CHROMALAB, INC.

Environmental Laboratory (1094)

5 DAYS TURNAROUND

April 29, 1992 ChromaLab File No.: 0492137

JONAS & ASSOCIATES

Attn: Romena Jonas

RE: One soil sample for Priority Pollutants Metals (13) analysis

Project Name: PACO9201
Project Number: PCO-220-01-PHII
Date Sampled: Apr. 13, 1992 Date Submitted: Apr. 14, 1992
Date Analyzed: Apr 28, 1992

RESULTS: Sample I.D.: B23-0.5,B23-1.5 COMP

Metals	Concentration (mg/Kg)	Detection Limit (mg/Kg)
Antimony (Sb)	N.D.	1.00
Arsenic (As)	N.D.	0.25
Beryllium (Be)	0.07	0.05
Cadmium (Cd)	1.3	0.05
Chromium (Cr)	14	0.50
Copper (Cu)	73	0.25
Lead (Pb)	10	0.50
Mercury (Hg)	0.09	0.05
Nickel (Ni)	11	0.50
Selenium (Se)	N.D.	0.25
Silver (Ag)	N.D.	0.25
Thallium (Tl)	N.D.	2.00
Zinc (Zn)	35	0.25

Method of Analysis: 3050/6010/7000

ChromaLab, Inc.

Refaat A. Mankarious
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CHROMALAB, INC.

Analytical Laboratory (E694)

5 DAYS TURNAROUND

April 29, 1992 ChromaLab File No.: 0492137

JONAS & ASSOCIATES

Attn: Romena Jonas

RE: One soil sample for Priority Pollutants Metals (13) analysis

Project Name: PACO9201
Project Number: PCO-220-01-PHII
Date Sampled: Apr. 13, 1992 Date Submitted: Apr. 14, 1992
Date Analyzed: Apr 28, 1992

RESULTS: Sample I.D.: B24-0.5,B24-1.5 COMP

Metals	Concentration (mg/Kg)	Detection Limit (mg/Kg)
Antimony (Sb)	1.2	1.00
Arsenic (As)	N.D.	0.25
Beryllium (Be)	0.05	0.05
Cadmium (Cd)	1.6	0.05
Chromium (Cr)	9.01	0.50
Copper (Cu)	160	0.25
Lead (Pb)	41	0.50
Mercury (Hg)	0.52	0.05
Nickel (Ni)	7.9	0.50
Selenium (Se)	N.D.	0.25
Silver (Ag)	N.D.	0.25
Thallium (Tl)	N.D.	2.00
Zinc (Zn)	100	0.25

Method of Analysis: 3050/6010/7000

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Analytical Laboratory (E694)

5 DAYS TURNAROUND

April 29, 1992 ChromaLab File No.: 0492137

JONAS & ASSOCIATES

Attn: Romena Jonas

RE: One soil sample for Priority Pollutants Metals (13) analysis

Project Name: PACO9201
Project Number: PCO-220-01-PHII
Date Sampled: Apr. 13, 1992 Date Submitted: Apr. 14, 1992
Date Analyzed: Apr 28, 1992

RESULTS: Sample I.D.: B25-0.5,B25-1.5 COMP

Metals	Concentration (mg/Kg)	Detection Limit (mg/Kg)
Antimony (Sb)	N.D.	1.00
Arsenic (As)	N.D.	0.25
Beryllium (Be)	0.06	0.05
Cadmium (Cd)	1.3	0.05
Chromium (Cr)	3.2	0.50
Copper (Cu)	30	0.25
Lead (Pb)	3.7	0.50
Mercury (Hg)	N.D.	0.05
Nickel (Ni)	4.9	0.50
Selenium (Se)	N.D.	0.25
Silver (Ag)	N.D.	0.25
Thallium (Tl)	N.D.	2.00
Zinc (Zn)	29	0.25

Method of Analysis: 3050/6010/7000

ChromaLab, Inc.

Refaat A. Mankarious
Inorganics Supervisor

Eric Tam
Laboratory Director

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Federal ID #68-0140157

CHROMALAB, INC.

Analytical Laboratory (E694)

5 DAYS TURNAROUND

April 29, 1992 ChromaLab File No.: 0492137

JONAS & ASSOCIATES

Attn: Romena Jonas

RE: One soil sample for Priority Pollutants Metals (13) analysis

Project Name: PACO9201
Project Number: PCO-220-01-PHII
Date Sampled: Apr. 13, 1992 Date Submitted: Apr. 14, 1992
Date Analyzed: Apr 28, 1992

RESULTS: Sample I.D.: B26-0.5,B26-1.5 COMP

Metals	Concentration (mg/Kg)	Detection Limit (mg/Kg)
Antimony (Sb)	1.1	1.00
Arsenic (As)	5.4	0.25
Beryllium (Be)	0.12	0.05
Cadmium (Cd)	2.4	0.05
Chromium (Cr)	28	0.50
Copper (Cu)	760	0.25
Lead (Pb)	170	0.50
Mercury (Hg)	0.98	0.05
Nickel (Ni)	22	0.50
Selenium (Se)	N.D.	0.25
Silver (Ag)	N.D.	0.25
Thallium (Tl)	N.D.	2.00
Zinc (Zn)	280	0.25

Method of Analysis: 3050/6010/7000

ChromaLab, Inc.

Refaat A. Mankarious
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Eric Tam
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CHROMALAB, INC.

Environmental Laboratory (1094)

5 DAYS TURNAROUND

April 29, 1992

ChromaLab File # 0492137 S

Jonas & Associates, Inc.
Date Sampled: Apr. 14, 1992
Date of Analysis: Apr. 24, 1992

Attn: Romena Jonas
Date Submitted: Apr. 14, 1992

Project Name: PACO 9201
Sample I.D.: BFW-Water
Method of Analysis: EPA 624

Project No.: PCO-220-01-PHII

Detection Limit: 2.0 µg/l

COMPOUND NAME	µg/l	Spike Recovery
CHLOROMETHANE	N.D.	---
VINYL CHLORIDE	N.D.	---
BROMOMETHANE	N.D.	---
CHLOROETHANE	N.D.	---
TRICHLOROFLUOROMETHANE	N.D.	---
1,1-DICHLOROETHENE	N.D.	92.4% 103%
METHYLENE CHLORIDE	N.D.	---
1,2-DICHLOROETHENE (TOTAL)	N.D.	---
1,1-DICHLOROETHANE	N.D.	---
CHLOROFORM	N.D.	---
1,1,1-TRICHLOROETHANE	N.D.	---
CARBON TETRACHLORIDE	N.D.	---
1,2-DICHLOROETHANE	N.D.	---
BENZENE	N.D.	---
TRICHLOROETHENE	N.D.	97.2% 112%
1,2-DICHLOROPROPANE	N.D.	---
BROMODICHLOROMETHANE	N.D.	---
2-CHLOROETHYLVINYLETHER	N.D.	---
TRANS-1,3-DICHLOROPROPENE	N.D.	---
TOLUENE	N.D.	---
CIS-1,3-DICHLOROPROPENE	N.D.	---
1,1,2-TRICHLOROETHANE	N.D.	---
TETRACHLOROETHENE	N.D.	104% 118%
DIBROMOCHLOROMETHANE	N.D.	---
CHLOROBENZENE	N.D.	---
ETHYL BENZENE	N.D.	---
BROMOFORM	N.D.	---
1,1,2,2-TETRACHLOROETHANE	N.D.	119% 84.4%
1,3-DICHLOROBENZENE	N.D.	---
1,4-DICHLOROBENZENE	N.D.	---
1,2-DICHLOROBENZENE	N.D.	---
TOTAL XYLENES	N.D.	---
ACETONE	N.D.	---
METHYL ETHYL KETONE	N.D.	---
METHYL ISOBUTYL KETONE	N.D.	---

ChromaLab, Inc.

Yiu Tam
Analytical Chemist

Eric Tam
Lab Director

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CHROMALAB, INC.

Analytical Laboratory (E694)

5 DAYS TURNAROUND

October 09, 1991 — ChromaLab File # 1091017 A

Client: Jonas & Associates, Inc. — Attn: Romena Jonas
Date Sampled: Oct. 01, 1991 — Date Submitted: Oct. 02, 1991
Date Analyzed: Oct. 08, 1991

Project Name: PACO PUMPS SOIL
Sample I.D.: B1-3.5-1019
Method of Analysis: 8240 — Detection Limit: 5.0 µg/kg

COMPOUND NAME	µg/kg	Spike Recovery
CHLOROMETHANE	N.D.	---
VINYL CHLORIDE	N.D.	---
BROMOMETHANE	N.D.	---
CHLOROETHANE	N.D.	---
TRICHLOROFLUOROMETHANE	N.D.	---
1,1-DICHLOROETHENE	N.D.	91.8% 93.5%
METHYLENE CHLORIDE	N.D.	---
1,2-DICHLOROETHENE (TOTAL)	N.D.	---
1,1-DICHLOROETHANE	N.D.	---
CHLOROFORM	N.D.	---
1,1,1-TRICHLOROETHANE	N.D.	---
CARBON TETRACHLORIDE	N.D.	---
1,2-DICHLOROETHANE	N.D.	---
BENZENE	N.D.	94.7% 96.0%
TRICHLOROETHENE	N.D.	---
1,2-DICHLOROPROPANE	N.D.	---
BROMODICHLOROMETHANE	N.D.	---
2-CHLOROETHYLVINYLETHER	N.D.	---
TRANS-1,3-DICHLOROPROPENE	N.D.	---
TOLUENE	N.D.	92.5% 93.6%
CIS-1,3-DICHLOROPROPENE	N.D.	---
1,1,2-TRICHLOROETHANE	N.D.	---
TETRACHLOROETHENE	N.D.	---
DIBROMOCHLOROMETHANE	N.D.	---
CHLOROBENZENE	N.D.	91.0% 91.8%
ETHYLBENZENE	N.D.	---
BROMOFORM	N.D.	---
1,1,2,2-TETRACHLOROETHANE	N.D.	---
1,3-DICHLOROBENZENE	N.D.	---
1,4-DICHLOROBENZENE	N.D.	---
1,2-DICHLOROBENZENE	N.D.	---
TOTAL XYLENES	N.D.	---
ACETONE	N.D.	---
METHYL ETHYL KETONE	N.D.	---
METHYL ISOBUTYL KETONE	N.D.	---

ChromaLab, Inc.

David Duong
Senior Chemist

Eric Tam
Lab Director

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CHROMALAB, INC.

Analytical Laboratory (E694)

5 DAYS TURNAROUND

October 09, 1991 — ChromaLab File # 1091017 B

Client: Jonas & Associates, Inc. — Attn: Romena Jonas
Date Sampled: Oct. 01, 1991 — Date Submitted: Oct. 02, 1991
Date Analyzed: Oct. 08, 1991

Project Name: PACO PUMPS SOIL
Sample I.D.: B2-3.5-1019
Method of Analysis: 8240 — Detection Limit: 5.0 µg/kg

COMPOUND NAME	µg/kg	Spike Recovery
CHLOROMETHANE	N.D.	---
VINYL CHLORIDE	N.D.	---
BROMOMETHANE	N.D.	---
CHLOROETHANE	N.D.	---
TRICHLOROFLUOROMETHANE	N.D.	---
1,1-DICHLOROETHENE	N.D.	91.8% 93.5%
METHYLENE CHLORIDE	N.D.	---
1,2-DICHLOROETHENE (TOTAL)	N.D.	---
1,1-DICHLOROETHANE	N.D.	---
CHLOROFORM	N.D.	---
1,1,1-TRICHLOROETHANE	N.D.	---
CARBON TETRACHLORIDE	N.D.	---
1,2-DICHLOROETHANE	N.D.	---
BENZENE	N.D.	94.7% 96.0%
TRICHLOROETHENE	N.D.	---
1,2-DICHLOROPROPANE	N.D.	---
BROMODICHLOROMETHANE	N.D.	---
2-CHLOROETHYLVINYLETHER	N.D.	---
TRANS-1,3-DICHLOROPROPENE	N.D.	---
TOLUENE	N.D.	92.5% 93.6%
CIS-1,3-DICHLOROPROPENE	N.D.	---
1,1,2-TRICHLOROETHANE	N.D.	---
TETRACHLOROETHENE	N.D.	---
DIBROMOCHLOROMETHANE	N.D.	---
CHLOROBENZENE	N.D.	91.0% 91.8%
ETHYLBENZENE	N.D.	---
BROMOFORM	N.D.	---
1,1,2,2-TETRACHLOROETHANE	N.D.	---
1,3-DICHLOROBENZENE	N.D.	---
1,4-DICHLOROBENZENE	N.D.	---
1,2-DICHLOROBENZENE	N.D.	---
TOTAL XYLENES	N.D.	---
ACETONE	N.D.	---
METHYL ETHYL KETONE	N.D.	---
METHYL ISOBUTYL KETONE	N.D.	---

ChromaLab, Inc.

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Eric Tam
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CHROMALAB, INC.

Analytical Laboratory (E694)

5 DAYS TURNAROUND

October 09, 1991 — ChromaLab File # 1091017 C

Client: Jonas & Associates, Inc. — Attn: Romena Jonas
Date Sampled: Oct. 01, 1991 — Date Submitted: Oct. 02, 1991
Date Analyzed: Oct. 08, 1991

Project Name: PACO PUMPS SOIL
Sample I.D.: B3-3.5-1019
Method of Analysis: 8240 — Detection Limit: 5.0 µg/kg

COMPOUND NAME	µg/kg	Spike Recovery
CHLOROMETHANE	N.D.	---
VINYL CHLORIDE	N.D.	---
BROMOMETHANE	N.D.	---
CHLOROETHANE	N.D.	---
TRICHLOROFLUOROMETHANE	N.D.	---
1,1-DICHLOROETHENE	N.D.	91.8% 93.5%
METHYLENE CHLORIDE	N.D.	---
1,2-DICHLOROETHENE (TOTAL)	N.D.	---
1,1-DICHLOROETHANE	N.D.	---
CHLOROFORM	N.D.	---
1,1,1-TRICHLOROETHANE	N.D.	---
CARBON TETRACHLORIDE	N.D.	---
1,2-DICHLOROETHANE	N.D.	---
BENZENE	N.D.	94.7% 96.0%
TRICHLOROETHENE	N.D.	---
1,2-DICHLOROPROPANE	N.D.	---
BROMODICHLOROMETHANE	N.D.	---
2-CHLOROETHYLVINYLETHER	N.D.	---
TRANS-1,3-DICHLOROPROPENE	N.D.	---
TOLUENE	N.D.	92.5% 93.6%
CIS-1,3-DICHLOROPROPENE	N.D.	---
1,1,2-TRICHLOROETHANE	N.D.	---
TETRACHLOROETHENE	N.D.	---
DIBROMOCHLOROMETHANE	N.D.	---
CHLOROBENZENE	N.D.	91.0% 91.8%
ETHYLBENZENE	N.D.	---
BROMOFORM	N.D.	---
1,1,2,2-TETRACHLOROETHANE	N.D.	---
1,3-DICHLOROBENZENE	N.D.	---
1,4-DICHLOROBENZENE	N.D.	---
1,2-DICHLOROBENZENE	N.D.	---
TOTAL XYLENES	N.D.	---
ACETONE	N.D.	---
METHYL ETHYL KETONE	N.D.	---
METHYL ISOBUTYL KETONE	N.D.	---

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CHROMALAB, INC.

Analytical Laboratory (E694)

5 DAYS TURNAROUND

October 09, 1991 — ChromaLab File # 1091017 D

Client: Jonas & Associates, Inc. — Attn: Romena Jonas
Date Sampled: Oct. 01, 1991 — Date Submitted: Oct. 02, 1991
Date Analyzed: Oct. 08, 1991

Project Name: PACO PUMPS SOIL
Sample I.D.: B4-3.5-1019
Method of Analysis: 8240 — Detection Limit: 5.0 µg/kg

COMPOUND NAME	µg/kg	Spike Recovery
CHLOROMETHANE	N.D.	---
VINYL CHLORIDE	N.D.	---
BROMOMETHANE	N.D.	---
CHLOROETHANE	N.D.	---
TRICHLOROFLUOROMETHANE	N.D.	---
1,1-DICHLOROETHENE	N.D.	91.8% 93.5%
METHYLENE CHLORIDE	N.D.	---
1,2-DICHLOROETHENE (TOTAL)	N.D.	---
1,1-DICHLOROETHANE	N.D.	---
CHLOROFORM	N.D.	---
1,1,1-TRICHLOROETHANE	N.D.	---
CARBON TETRACHLORIDE	N.D.	---
1,2-DICHLOROETHANE	N.D.	---
BENZENE	N.D.	94.7% 96.0%
TRICHLOROETHENE	N.D.	---
1,2-DICHLOROPROPANE	N.D.	---
BROMODICHLOROMETHANE	N.D.	---
2-CHLOROETHYLVINYLETHER	N.D.	---
TRANS-1,3-DICHLOROPROPENE	N.D.	---
TOLUENE	N.D.	92.5% 93.6%
CIS-1,3-DICHLOROPROPENE	N.D.	---
1,1,2-TRICHLOROETHANE	N.D.	---
TETRACHLOROETHENE	N.D.	---
DIBROMOCHLOROMETHANE	N.D.	---
CHLOROBENZENE	N.D.	91.0% 91.8%
ETHYLBENZENE	N.D.	---
BROMOFORM	N.D.	---
1,1,2,2-TETRACHLOROETHANE	N.D.	---
1,3-DICHLOROBENZENE	N.D.	---
1,4-DICHLOROBENZENE	N.D.	---
1,2-DICHLOROBENZENE	N.D.	---
TOTAL XYLENES	N.D.	---
ACETONE	N.D.	---
METHYL ETHYL KETONE	N.D.	---
METHYL ISOBUTYL KETONE	N.D.	---

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CHROMALAB, INC.

Analytical Laboratory (E694)

5 DAYS TURNAROUND

October 09, 1991 — ChromaLab File # 1091017 E

Client: Jonas & Associates, Inc. — Attn: Romena Jonas
Date Sampled: Oct. 01, 1991 — Date Submitted: Oct. 02, 1991
Date Analyzed: Oct. 08, 1991

Project Name: PACO PUMPS SOIL
Sample I.D.: B5-3.5-1019
Method of Analysis: 8240 — Detection Limit: 5.0 µg/kg

COMPOUND NAME	µg/kg	Spike Recovery
CHLOROMETHANE	N.D.	---
VINYL CHLORIDE	N.D.	---
BROMOMETHANE	N.D.	---
CHLOROETHANE	N.D.	---
TRICHLOROFLUOROMETHANE	N.D.	---
1,1-DICHLOROETHENE	N.D.	91.8% 93.5%
METHYLENE CHLORIDE	N.D.	---
1,2-DICHLOROETHENE (TOTAL)	N.D.	---
1,1-DICHLOROETHANE	N.D.	---
CHLOROFORM	N.D.	---
1,1,1-TRICHLOROETHANE	N.D.	---
CARBON TETRACHLORIDE	N.D.	---
1,2-DICHLOROETHANE	N.D.	---
BENZENE	N.D.	94.7% 96.0%
TRICHLOROETHENE	N.D.	---
1,2-DICHLOROPROPANE	N.D.	---
BROMODICHLOROMETHANE	N.D.	---
2-CHLOROETHYLVINYLETHER	N.D.	---
TRANS-1,3-DICHLOROPROPENE	N.D.	---
TOLUENE	N.D.	92.5% 93.6%
CIS-1,3-DICHLOROPROPENE	N.D.	---
1,1,2-TRICHLOROETHANE	N.D.	---
TETRACHLOROETHENE	N.D.	---
DIBROMOCHLOROMETHANE	N.D.	---
CHLOROBENZENE	N.D.	91.0% 91.8%
ETHYLBENZENE	N.D.	---
BROMOFORM	N.D.	---
1,1,2,2-TETRACHLOROETHANE	N.D.	---
1,3-DICHLOROBENZENE	N.D.	---
1,4-DICHLOROBENZENE	N.D.	---
1,2-DICHLOROBENZENE	N.D.	---
TOTAL XYLENES	N.D.	---
ACETONE	N.D.	---
METHYL ETHYL KETONE	N.D.	---
METHYL ISOBUTYL KETONE	N.D.	---

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CHROMALAB, INC.

Analytical Laboratory (E694)

5 DAYS TURNAROUND

October 09, 1991 — ChromaLab File # 1091017 F

Client: Jonas & Associates, Inc. — Attn: Romena Jonas
Date Sampled: Oct. 01, 1991 — Date Submitted: Oct. 02, 1991
Date Analyzed: Oct. 08, 1991

Project Name: PACO PUMPS SOIL
Sample I.D.: B6-0.5-1019
Method of Analysis: 8240 — Detection Limit: 5.0 ug/kg

COMPOUND NAME	ug/kg	Spike Recovery
CHLOROMETHANE	N.D.	---
VINYL CHLORIDE	N.D.	---
BROMOMETHANE	N.D.	---
CHLOROETHANE	N.D.	---
TRICHLOROFLUOROMETHANE	N.D.	---
1,1-DICHLOROETHENE	N.D.	91.8% 93.5%
METHYLENE CHLORIDE	N.D.	---
1,2-DICHLOROETHENE (TOTAL)	N.D.	---
1,1-DICHLOROETHANE	N.D.	---
CHLOROFORM	N.D.	---
1,1,1-TRICHLOROETHANE	N.D.	---
CARBON TETRACHLORIDE	N.D.	---
1,2-DICHLOROETHANE	N.D.	---
BENZENE	N.D.	94.7% 96.0%
TRICHLOROETHENE	N.D.	---
1,2-DICHLOROPROPANE	N.D.	---
BROMODICHLOROMETHANE	N.D.	---
2-CHLOROETHYLVINYLETHER	N.D.	---
TRANS-1,3-DICHLOROPROPENE	N.D.	---
TOLUENE	N.D.	92.5% 93.6%
CIS-1,3-DICHLOROPROPENE	N.D.	---
1,1,2-TRICHLOROETHANE	N.D.	---
TETRACHLOROETHENE	N.D.	---
DIBROMOCHLOROMETHANE	N.D.	---
CHLOROBENZENE	N.D.	91.0% 91.8%
ETHYLBENZENE	N.D.	---
BROMOFORM	N.D.	---
1,1,2,2-TETRACHLOROETHANE	N.D.	---
1,3-DICHLOROBENZENE	N.D.	---
1,4-DICHLOROBENZENE	N.D.	---
1,2-DICHLOROBENZENE	N.D.	---
TOTAL XYLENES	N.D.	---
ACETONE	N.D.	---
METHYL ETHYL KETONE	N.D.	---
METHYL ISOBUTYL KETONE	N.D.	---

ChromaLab, Inc.

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CHROMALAB, INC.

Analytical Laboratory (E694)

5 DAYS TURNAROUND

October 09, 1991 — ChromaLab File # 1091017 F

Client: Jonas & Associates, Inc. — Attn: Romena Jonas
Date Sampled: Oct. 01, 1991 — Date Submitted: Oct. 02, 1991
Date Analyzed: Oct. 08, 1991

Project Name: PACO PUMPS SOIL
Sample I.D.: B6-3.5-1019
Method of Analysis: 8240 — Detection Limit: 5.0 µg/kg

COMPOUND NAME	µg/kg	Spike Recovery
CHLOROMETHANE	N.D.	---
VINYL CHLORIDE	N.D.	---
BROMOMETHANE	N.D.	---
CHLOROETHANE	N.D.	---
TRICHLOROFLUOROMETHANE	N.D.	---
1,1-DICHLOROETHENE	N.D.	91.8% 93.5%
METHYLENE CHLORIDE	N.D.	---
1,2-DICHLOROETHENE (TOTAL)	N.D.	---
1,1-DICHLOROETHANE	N.D.	---
CHLOROFORM	N.D.	---
1,1,1-TRICHLOROETHANE	N.D.	---
CARBON TETRACHLORIDE	N.D.	---
1,2-DICHLOROETHANE	N.D.	---
BENZENE	N.D.	94.7% 96.0%
TRICHLOROETHENE	N.D.	---
1,2-DICHLOROPROPANE	N.D.	---
BROMODICHLOROMETHANE	N.D.	---
2-CHLOROETHYLVINYLETHER	N.D.	---
TRANS-1,3-DICHLOROPROPENE	N.D.	---
TOLUENE	N.D.	92.5% 93.6%
CIS-1,3-DICHLOROPROPENE	N.D.	---
1,1,2-TRICHLOROETHANE	N.D.	---
TETRACHLOROETHENE	N.D.	---
DIBROMOCHLOROMETHANE	N.D.	---
CHLOROBENZENE	N.D.	91.0% 91.8%
ETHYLBENZENE	N.D.	---
BROMOFORM	N.D.	---
1,1,2,2-TETRACHLOROETHANE	N.D.	---
1,3-DICHLOROBENZENE	N.D.	---
1,4-DICHLOROBENZENE	N.D.	---
1,2-DICHLOROBENZENE	N.D.	---
TOTAL XYLENES	N.D.	---
ACETONE	N.D.	---
METHYL ETHYL KETONE	N.D.	---
METHYL ISOBUTYL KETONE	N.D.	---

ChromaLab, Inc.

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Eric Tam
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CHROMALAB, INC.

Analytical Laboratory (E694)

5 DAYS TURNAROUND

October 09, 1991 — ChromaLab File # 1091017 G

Client: Jonas & Associates, Inc. — Attn: Romena Jonas
Date Sampled: Oct. 01, 1991 — Date Submitted: Oct. 02, 1991
Date Analyzed: Oct. 08, 1991

Project Name: PACO PUMPS SOIL
Sample I.D.: B7-0.5-1019
Method of Analysis: 8240 — Detection Limit: 5.0 ug/kg

COMPOUND NAME	ug/kg	Spike Recovery
CHLOROMETHANE	N.D.	---
VINYL CHLORIDE	N.D.	---
BROMOMETHANE	N.D.	---
CHLOROETHANE	N.D.	---
TRICHLOROFLUOROMETHANE	N.D.	---
1,1-DICHLOROETHENE	N.D.	91.8% 93.5%
METHYLENE CHLORIDE	N.D.	---
1,2-DICHLOROETHENE (TOTAL)	N.D.	---
1,1-DICHLOROETHANE	N.D.	---
CHLOROFORM	N.D.	---
1,1,1-TRICHLOROETHANE	N.D.	---
CARBON TETRACHLORIDE	N.D.	---
1,2-DICHLOROETHANE	N.D.	---
BENZENE	N.D.	94.7% 96.0%
TRICHLOROETHENE	N.D.	---
1,2-DICHLOROPROPANE	N.D.	---
BROMODICHLOROMETHANE	N.D.	---
2-CHLOROETHYLVINYLETHER	N.D.	---
TRANS-1,3-DICHLOROPROPENE	N.D.	---
TOLUENE	N.D.	92.5% 93.6%
CIS-1,3-DICHLOROPROPENE	N.D.	---
1,1,2-TRICHLOROETHANE	N.D.	---
TETRACHLOROETHENE	N.D.	---
DIBROMOCHLOROMETHANE	N.D.	---
CHLOROBENZENE	N.D.	91.0% 91.9%
ETHYLBENZENE	N.D.	---
BROMOFORM	N.D.	---
1,1,2,2-TETRACHLOROETHANE	N.D.	---
1,3-DICHLOROBENZENE	N.D.	---
1,4-DICHLOROBENZENE	N.D.	---
1,2-DICHLOROBENZENE	N.D.	---
TOTAL XYLENES	N.D.	---
ACETONE	N.D.	---
METHYL ETHYL KETONE	N.D.	---
METHYL ISOBUTYL KETONE	N.D.	---

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Eric Tam
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CHROMALAB, INC.

Analytical Laboratory (E694)

5 DAYS TURNAROUND

October 09, 1991 — ChromaLab File # 1091017 G

Client: Jonas & Associates, Inc. — Attn: Romena Jonas
Date Sampled: Oct. 01, 1991 — Date Submitted: Oct. 02, 1991
Date Analyzed: Oct. 08, 1991

Project Name: PACO PUMPS SOIL
Sample I.D.: B7-3.5-1019
Method of Analysis: 8240 — Detection Limit: 5.0 µg/kg

COMPOUND NAME	µg/kg	Spike Recovery
CHLOROMETHANE	N.D.	---
VINYL CHLORIDE	N.D.	---
BROMOMETHANE	N.D.	---
CHLOROETHANE	N.D.	---
TRICHLOROFLUOROMETHANE	N.D.	---
1,1-DICHLOROETHENE	N.D.	91.8% 93.5%
METHYLENE CHLORIDE	N.D.	---
1,2-DICHLOROETHENE (TOTAL)	N.D.	---
1,1-DICHLOROETHANE	N.D.	---
CHLOROFORM	N.D.	---
1,1,1-TRICHLOROETHANE	N.D.	---
CARBON TETRACHLORIDE	N.D.	---
1,2-DICHLOROETHANE	N.D.	---
BENZENE	N.D.	94.7% 96.0%
TRICHLOROETHENE	N.D.	---
1,2-DICHLOROPROPANE	N.D.	---
BROMODICHLOROMETHANE	N.D.	---
2-CHLOROETHYLVINYLETHER	N.D.	---
TRANS-1,3-DICHLOROPROPENE	N.D.	---
TOLUENE	N.D.	92.5% 93.6%
CIS-1,3-DICHLOROPROPENE	N.D.	---
1,1,2-TRICHLOROETHANE	N.D.	---
TETRACHLOROETHENE	N.D.	---
DIBROMOCHLOROMETHANE	N.D.	---
CHLOROBENZENE	N.D.	91.0% 91.8%
ETHYLBENZENE	N.D.	---
BROMOFORM	N.D.	---
1,1,2,2-TETRACHLOROETHANE	N.D.	---
1,3-DICHLOROBENZENE	N.D.	---
1,4-DICHLOROBENZENE	N.D.	---
1,2-DICHLOROBENZENE	N.D.	---
TOTAL XYLENES	N.D.	---
ACETONE	N.D.	---
METHYL ETHYL KETONE	N.D.	---
METHYL ISOBUTYL KETONE	N.D.	---

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CHROMALAB, INC.

Environmental Laboratory (1094)

5 DAYS TURNAROUND

April 29, 1992 — ChromaLab File # 0492137 A

Jonas & Associates, Inc. — Attn: Romena Jonas
Date Sampled: Apr. 13, 1992 — Date Submitted: Apr. 14, 1992
Date of Analysis: Apr. 23, 1992

Project Name: PACO 9201 — Project No.: PCO-220-01-PHII
Sample I.D.: B 8-0.5&1.5
Method of Analysis: EPA 8240 — Detection Limit: 5.0 µg/kg

COMPOUND NAME	µg/kg	Spike Recovery
CHLOROMETHANE	N.D.	---
VINYL CHLORIDE	N.D.	---
BROMOMETHANE	N.D.	---
CHLOROETHANE	N.D.	---
TRICHLOROFLUOROMETHANE	N.D.	---
1,1-DICHLOROETHENE	N.D.	88.1% 86.1%
METHYLENE CHLORIDE	N.D.	---
1,2-DICHLOROETHENE (TOTAL)	N.D.	---
1,1-DICHLOROETHANE	N.D.	---
CHLOROFORM	N.D.	---
1,1,1-TRICHLOROETHANE	N.D.	---
CARBON TETRACHLORIDE	N.D.	---
1,2-DICHLOROETHANE	N.D.	---
BENZENE	N.D.	---
TRICHLOROETHENE	N.D.	95.6% 111%
1,2-DICHLOROPROPANE	N.D.	---
BROMODICHLOROMETHANE	N.D.	---
2-CHLOROETHYLVINYLETHER	N.D.	---
TRANS-1,3-DICHLOROPROPENE	N.D.	---
TOLUENE	N.D.	---
CIS-1,3-DICHLOROPROPENE	N.D.	---
1,1,2-TRICHLOROETHANE	N.D.	---
TETRACHLOROETHENE	N.D.	118% 114%
DIBROMOCHLOROMETHANE	N.D.	---
CHLOROBENZENE	N.D.	---
ETHYL BENZENE	N.D.	---
BROMOFORM	N.D.	---
1,1,2,2-TETRACHLOROETHANE	N.D.	84.2% 98.9%
1,3-DICHLOROBENZENE	N.D.	---
1,4-DICHLOROBENZENE	N.D.	---
1,2-DICHLOROBENZENE	N.D.	---
TOTAL XYLENES	N.D.	---
ACETONE	N.D.	---
METHYL ETHYL KETONE	N.D.	---
METHYL ISOBUTYL KETONE	N.D.	---

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Eric Tam
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CHROMALAB, INC.

Environmental Laboratory (1094)

5 DAYS TURNAROUND

April 29, 1992 — ChromaLab File # 0492137 B

Jonas & Associates, Inc. — Attn: Romena Jonas
Date Sampled: Apr. 13, 1992 — Date Submitted: Apr. 14, 1992
Date of Analysis: Apr. 23, 1992

Project Name: PACO 9201 — Project No.: PCO-220-01-PHII
Sample I.D.: B 9-0.5&1.5
Method of Analysis: EPA 8240 — Detection Limit: 5.0 µg/kg

COMPOUND NAME	µg/kg	Spike Recovery
CHLOROMETHANE	N.D.	---
VINYL CHLORIDE	N.D.	---
BROMOMETHANE	N.D.	---
CHLOROETHANE	N.D.	---
TRICHLOROFLUOROMETHANE	N.D.	---
1,1-DICHLOROETHENE	N.D.	88.1% 86.1%
METHYLENE CHLORIDE	N.D.	---
1,2-DICHLOROETHENE (TOTAL)	N.D.	---
1,1-DICHLOROETHANE	N.D.	---
CHLOROFORM	N.D.	---
1,1,1-TRICHLOROETHANE	N.D.	---
CARBON TETRACHLORIDE	N.D.	---
1,2-DICHLOROETHANE	N.D.	---
BENZENE	N.D.	---
TRICHLOROETHENE	N.D.	95.6% 111%
1,2-DICHLOROPROPANE	N.D.	---
BROMODICHLOROMETHANE	N.D.	---
2-CHLOROETHYLVINYLETHER	N.D.	---
TRANS-1,3-DICHLOROPROPENE	N.D.	---
TOLUENE	N.D.	---
CIS-1,3-DICHLOROPROPENE	N.D.	---
1,1,2-TRICHLOROETHANE	N.D.	---
TETRACHLOROETHENE	N.D.	118% 114%
DIBROMOCHLOROMETHANE	N.D.	---
CHLOROBENZENE	N.D.	---
ETHYL BENZENE	N.D.	---
BROMOFORM	N.D.	---
1,1,2,2-TETRACHLOROETHANE	N.D.	84.2% 98.9%
1,3-DICHLOROBENZENE	N.D.	---
1,4-DICHLOROBENZENE	N.D.	---
1,2-DICHLOROBENZENE	N.D.	---
TOTAL XYLENES	N.D.	---
ACETONE	N.D.	---
METHYL ETHYL KETONE	N.D.	---
METHYL ISOBUTYL KETONE	N.D.	---

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CHROMALAB, INC.

Environmental Laboratory (1094)

5 DAYS TURNAROUND

April 29, 1992 — ChromaLab File # 0492137 C

Jonas & Associates, Inc. — Attn: Romena Jonas
Date Sampled: Apr. 13, 1992 — Date Submitted: Apr. 14, 1992
Date of Analysis: Apr. 23, 1992

Project Name: PACO 9201 — Project No.: PCO-220-01-PHII
Sample I.D.: B 10-0.5&1.5
Method of Analysis: EPA 8240 — Detection Limit: 5.0 µg/kg

COMPOUND NAME	µg/kg	Spike Recovery
CHLOROMETHANE	N.D.	---
VINYL CHLORIDE	N.D.	---
BROMOMETHANE	N.D.	---
CHLOROETHANE	N.D.	---
TRICHLOROFLUOROMETHANE	N.D.	---
1,1-DICHLOROETHENE	N.D.	88.1% 86.1%
METHYLENE CHLORIDE	N.D.	---
1,2-DICHLOROETHENE (TOTAL)	N.D.	---
1,1-DICHLOROETHANE	N.D.	---
CHLOROFORM	N.D.	---
1,1,1-TRICHLOROETHANE	N.D.	---
CARBON TETRACHLORIDE	N.D.	---
1,2-DICHLOROETHANE	N.D.	---
BENZENE	N.D.	---
TRICHLOROETHENE	N.D.	95.6% 111%
1,2-DICHLOROPROPANE	N.D.	---
BROMODICHLOROMETHANE	N.D.	---
2-CHLOROETHYLVINYLETHER	N.D.	---
TRANS-1,3-DICHLOROPROPENE	N.D.	---
TOLUENE	N.D.	---
CIS-1,3-DICHLOROPROPENE	N.D.	---
1,1,2-TRICHLOROETHANE	N.D.	---
TETRACHLOROETHENE	N.D.	118% 114%
DIBROMOCHLOROMETHANE	N.D.	---
CHLOROBENZENE	N.D.	---
ETHYL BENZENE	N.D.	---
BROMOFORM	N.D.	---
1,1,2,2-TETRACHLOROETHANE	N.D.	84.2% 98.9%
1,3-DICHLOROBENZENE	N.D.	---
1,4-DICHLOROBENZENE	N.D.	---
1,2-DICHLOROBENZENE	N.D.	---
TOTAL XYLENES	N.D.	---
ACETONE	N.D.	---
METHYL ETHYL KETONE	N.D.	---
METHYL ISOBUTYL KETONE	N.D.	---

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CHROMALAB, INC.

Environmental Laboratory (1094)

5 DAYS TURNAROUND

April 29, 1992 — ChromaLab File # 0492137 D

Jonas & Associates, Inc. — Attn: Romena Jonas
Date Sampled: Apr. 09, 1992 — Date Submitted: Apr. 14, 1992
Date of Analysis: Apr. 23, 1992

Project Name: PACO 9201 — Project No.: PCO-220-01-PHII
Sample I.D.: B 11-0.5&1.5
Method of Analysis: EPA 8240 — Detection Limit: 5.0 µg/kg

COMPOUND NAME	µg/kg	Spike Recovery
CHLOROMETHANE	N.D.	---
VINYL CHLORIDE	N.D.	---
BROMOMETHANE	N.D.	---
CHLOROETHANE	N.D.	---
TRICHLOROFLUOROMETHANE	N.D.	---
1,1-DICHLOROETHENE	N.D.	88.1% 86.1%
METHYLENE CHLORIDE	N.D.	---
1,2-DICHLOROETHENE (TOTAL)	N.D.	---
1,1-DICHLOROETHANE	N.D.	---
CHLOROFORM	N.D.	---
1,1,1-TRICHLOROETHANE	N.D.	---
CARBON TETRACHLORIDE	N.D.	---
1,2-DICHLOROETHANE	N.D.	---
BENZENE	N.D.	---
TRICHLOROETHENE	N.D.	95.6% 111%
1,2-DICHLOROPROPANE	N.D.	---
BROMODICHLOROMETHANE	N.D.	---
2-CHLOROETHYLVINYLETHER	N.D.	---
TRANS-1,3-DICHLOROPROPENE	N.D.	---
TOLUENE	N.D.	---
CIS-1,3-DICHLOROPROPENE	N.D.	---
1,1,2-TRICHLOROETHANE	N.D.	---
TETRACHLOROETHENE	N.D.	118% 114%
DIBROMOCHLOROMETHANE	N.D.	---
CHLOROBENZENE	N.D.	---
ETHYL BENZENE	N.D.	---
BROMOFORM	N.D.	---
1,1,2,2-TETRACHLOROETHANE	N.D.	84.2% 98.9%
1,3-DICHLOROBENZENE	N.D.	---
1,4-DICHLOROBENZENE	N.D.	---
1,2-DICHLOROBENZENE	N.D.	---
TOTAL XYLENES	N.D.	---
ACETONE	N.D.	---
METHYL ETHYL KETONE	N.D.	---
METHYL ISOBUTYL KETONE	N.D.	---

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CHROMALAB, INC.

Environmental Laboratory (1094)

5 DAYS TURNAROUND

April 29, 1992 — ChromaLab File # 0492137 E

Jonas & Associates, Inc. — Attn: Romena Jonas
Date Sampled: Apr. 09, 1992 — Date Submitted: Apr. 14, 1992
Date of Analysis: Apr. 23, 1992

Project Name: PACO 9201 — Project No.: PCO-220-01-PHII
Sample I.D.: B 12-0.5&1.5
Method of Analysis: EPA 8240 — Detection Limit: 5.0 µg/kg

COMPOUND NAME	µg/kg	Spike Recovery
CHLOROMETHANE	N.D.	---
VINYL CHLORIDE	N.D.	---
BROMOMETHANE	N.D.	---
CHLOROETHANE	N.D.	---
TRICHLOROFLUOROMETHANE	N.D.	---
1,1-DICHLOROETHENE	N.D.	88.1% 86.1%
METHYLENE CHLORIDE	N.D.	---
1,2-DICHLOROETHENE (TOTAL)	N.D.	---
1,1-DICHLOROETHANE	N.D.	---
CHLOROFORM	N.D.	---
1,1,1-TRICHLOROETHANE	N.D.	---
CARBON TETRACHLORIDE	N.D.	---
1,2-DICHLOROETHANE	N.D.	---
BENZENE	N.D.	---
TRICHLOROETHENE	N.D.	95.6% 111%
1,2-DICHLOROPROPANE	N.D.	---
BROMODICHLOROMETHANE	N.D.	---
2-CHLOROETHYLVINYLETHER	N.D.	---
TRANS-1,3-DICHLOROPROPENE	N.D.	---
TOLUENE	N.D.	---
CIS-1,3-DICHLOROPROPENE	N.D.	---
1,1,2-TRICHLOROETHANE	N.D.	---
TETRACHLOROETHENE	N.D.	118% 114%
DIBROMOCHLOROMETHANE	N.D.	---
CHLOROBENZENE	N.D.	---
ETHYL BENZENE	N.D.	---
BROMOFORM	N.D.	---
1,1,2,2-TETRACHLOROETHANE	N.D.	84.2% 98.9%
1,3-DICHLOROBENZENE	N.D.	---
1,4-DICHLOROBENZENE	N.D.	---
1,2-DICHLOROBENZENE	N.D.	---
TOTAL XYLENES	N.D.	---
ACETONE	N.D.	---
METHYL ETHYL KETONE	N.D.	---
METHYL ISOBUTYL KETONE	N.D.	---

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CHROMALAB, INC.

Environmental Laboratory (1094)

5 DAYS TURNAROUND

April 29, 1992 — ChromaLab File # 0492137 F

Jonas & Associates, Inc. — Attn: Romena Jonas
Date Sampled: Apr. 09, 1992 — Date Submitted: Apr. 14, 1992
Date of Analysis: Apr. 23, 1992

Project Name: PACO 9201 — Project No.: PCO-220-01-PHII
Sample I.D.: B 13-0.5&1.5
Method of Analysis: EPA 8240 — Detection Limit: 5.0 µg/kg

COMPOUND NAME	µg/kg	Spike Recovery
CHLOROMETHANE	N.D.	---
VINYL CHLORIDE	N.D.	---
BROMOMETHANE	N.D.	---
CHLOROETHANE	N.D.	---
TRICHLOROFLUOROMETHANE	N.D.	---
1,1-DICHLOROETHENE	N.D.	88.1% 86.1%
METHYLENE CHLORIDE	N.D.	---
1,2-DICHLOROETHENE (TOTAL)	N.D.	---
1,1-DICHLOROETHANE	N.D.	---
CHLOROFORM	N.D.	---
1,1,1-TRICHLOROETHANE	N.D.	---
CARBON TETRACHLORIDE	N.D.	---
1,2-DICHLOROETHANE	N.D.	---
BENZENE	N.D.	---
TRICHLOROETHENE	N.D.	95.6% 111%
1,2-DICHLOROPROPANE	N.D.	---
BROMODICHLOROMETHANE	N.D.	---
2-CHLOROETHYLVINYLETHER	N.D.	---
TRANS-1,3-DICHLOROPROPENE	N.D.	---
TOLUENE	N.D.	---
CIS-1,3-DICHLOROPROPENE	N.D.	---
1,1,2-TRICHLOROETHANE	N.D.	---
TETRACHLOROETHENE	N.D.	118% 114%
DIBROMOCHLOROMETHANE	N.D.	---
CHLOROBENZENE	N.D.	---
ETHYL BENZENE	N.D.	---
BROMOFORM	N.D.	---
1,1,2,2-TETRACHLOROETHANE	N.D.	84.2% 98.9%
1,3-DICHLOROBENZENE	N.D.	---
1,4-DICHLOROBENZENE	N.D.	---
1,2-DICHLOROBENZENE	N.D.	---
TOTAL XYLENES	N.D.	---
ACETONE	N.D.	---
METHYL ETHYL KETONE	N.D.	---
METHYL ISOBUTYL KETONE	N.D.	---

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CHROMALAB, INC.

Environmental Laboratory (1094)

5 DAYS TURNAROUND

April 29, 1992 — ChromaLab File # 0492137 G

Jonas & Associates, Inc. — Attn: Romena Jonas
Date Sampled: Apr. 09, 1992 — Date Submitted: Apr. 14, 1992
Date of Analysis: Apr. 23, 1992

Project Name: PACO 9201 — Project No.: PCO-220-01-PHII
Sample I.D.: B 14-0.5&1.5
Method of Analysis: EPA 8240 — Detection Limit: 5.0 µg/kg

COMPOUND NAME	µg/kg	Spike Recovery
CHLOROMETHANE	N.D.	---
VINYL CHLORIDE	N.D.	---
BROMOMETHANE	N.D.	---
CHLOROETHANE	N.D.	---
TRICHLOROFLUOROMETHANE	N.D.	---
1,1-DICHLOROETHENE	N.D.	88.1% 86.1%
METHYLENE CHLORIDE	N.D.	---
1,2-DICHLOROETHENE (TOTAL)	N.D.	---
1,1-DICHLOROETHANE	N.D.	---
CHLOROFORM	N.D.	---
1,1,1-TRICHLOROETHANE	N.D.	---
CARBON TETRACHLORIDE	N.D.	---
1,2-DICHLOROETHANE	N.D.	---
BENZENE	N.D.	---
TRICHLOROETHENE	N.D.	95.6% 111%
1,2-DICHLOROPROPANE	N.D.	---
BROMODICHLOROMETHANE	N.D.	---
2-CHLOROETHYLVINYLETHER	N.D.	---
TRANS-1,3-DICHLOROPROPENE	N.D.	---
TOLUENE	N.D.	---
CIS-1,3-DICHLOROPROPENE	N.D.	---
1,1,2-TRICHLOROETHANE	N.D.	---
TETRACHLOROETHENE	N.D.	118% 114%
DIBROMOCHLOROMETHANE	N.D.	---
CHLOROBENZENE	N.D.	---
ETHYL BENZENE	N.D.	---
BROMOFORM	N.D.	---
1,1,2,2-TETRACHLOROETHANE	N.D.	84.2% 98.9%
1,3-DICHLOROBENZENE	N.D.	---
1,4-DICHLOROBENZENE	N.D.	---
1,2-DICHLOROBENZENE	N.D.	---
TOTAL XYLENES	N.D.	---
ACETONE	N.D.	---
METHYL ETHYL KETONE	N.D.	---
METHYL ISOBUTYL KETONE	N.D.	---

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CHROMALAB, INC.

Environmental Laboratory (1094)

5 DAYS TURNAROUND

April 29, 1992 — ChromaLab File # 0492137 H

Jonas & Associates, Inc. — Attn: Romena Jonas
Date Sampled: Apr. 13, 1992 — Date Submitted: Apr. 14, 1992
Date of Analysis: Apr. 24, 1992

Project Name: PACO 9201 — Project No.: PCO-220-01-PHII
Sample I.D.: B 16-0.5&1.5
Method of Analysis: EPA 8240 — Detection Limit: 5.0 µg/kg

COMPOUND NAME	µg/kg	Spike Recovery
CHLOROMETHANE	N.D.	---
VINYL CHLORIDE	N.D.	---
BROMOMETHANE	N.D.	---
CHLOROETHANE	N.D.	---
TRICHLOROFLUOROMETHANE	N.D.	---
1,1-DICHLOROETHENE	N.D.	92.4% 103%
METHYLENE CHLORIDE	N.D.	---
1,2-DICHLOROETHENE (TOTAL)	N.D.	---
1,1-DICHLOROETHANE	N.D.	---
CHLOROFORM	N.D.	---
1,1,1-TRICHLOROETHANE	N.D.	---
CARBON TETRACHLORIDE	N.D.	---
1,2-DICHLOROETHANE	N.D.	---
BENZENE	N.D.	---
TRICHLOROETHENE	N.D.	97.2% 112%
1,2-DICHLOROPROPANE	N.D.	---
BROMODICHLOROMETHANE	N.D.	---
2-CHLOROETHYLVINYLETHER	N.D.	---
TRANS-1,3-DICHLOROPROPENE	N.D.	---
TOLUENE	8.0	---
CIS-1,3-DICHLOROPROPENE	N.D.	---
1,1,2-TRICHLOROETHANE	N.D.	---
TETRACHLOROETHENE	N.D.	104% 118%
DIBROMOCHLOROMETHANE	N.D.	---
CHLOROBENZENE	N.D.	---
ETHYL BENZENE	N.D.	---
BROMOFORM	N.D.	---
1,1,2,2-TETRACHLOROETHANE	N.D.	119% 84.4%
1,3-DICHLOROBENZENE	N.D.	---
1,4-DICHLOROBENZENE	N.D.	---
1,2-DICHLOROBENZENE	N.D.	---
TOTAL XYLENES	N.D.	---
ACETONE	N.D.	---
METHYL ETHYL KETONE	N.D.	---
METHYL ISOBUTYL KETONE	N.D.	---

ChromaLab, Inc.

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Eric Tam
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Federal ID #68-0140157

CHROMALAB, INC.

Environmental Laboratory (1094)

5 DAYS TURNAROUND

April 29, 1992 — ChromaLab File # 0492137 I

Jonas & Associates, Inc. — Attn: Romena Jonas
Date Sampled: Apr. 13, 1992 — Date Submitted: Apr. 14, 1992
Date of Analysis: Apr. 24, 1992

Project Name: PACO 9201 — Project No.: PCO-220-01-PHII
Sample I.D.: B 17-0.5&1.5
Method of Analysis: EPA 8240 — Detection Limit: 5.0 µg/kg

COMPOUND NAME	µg/kg	Spike Recovery
CHLOROMETHANE	N.D.	---
VINYL CHLORIDE	N.D.	---
BROMOMETHANE	N.D.	---
CHLOROETHANE	N.D.	---
TRICHLOROFLUOROMETHANE	N.D.	---
1,1-DICHLOROETHENE	N.D.	92.4% 103%
METHYLENE CHLORIDE	N.D.	---
1,2-DICHLOROETHENE (TOTAL)	N.D.	---
1,1-DICHLOROETHANE	N.D.	---
CHLOROFORM	N.D.	---
1,1,1-TRICHLOROETHANE	N.D.	---
CARBON TETRACHLORIDE	N.D.	---
1,2-DICHLOROETHANE	N.D.	---
BENZENE	N.D.	---
TRICHLOROETHENE	N.D.	97.2% 112%
1,2-DICHLOROPROPANE	N.D.	---
BROMODICHLOROMETHANE	N.D.	---
2-CHLOROETHYLVINYLETHER	N.D.	---
TRANS-1,3-DICHLOROPROPENE	N.D.	---
TOLUENE	N.D.	---
CIS-1,3-DICHLOROPROPENE	N.D.	---
1,1,2-TRICHLOROETHANE	N.D.	---
TETRACHLOROETHENE	N.D.	104% 118%
DIBROMOCHLOROMETHANE	N.D.	---
CHLOROBENZENE	N.D.	---
ETHYL BENZENE	N.D.	---
BROMOFORM	N.D.	---
1,1,2,2-TETRACHLOROETHANE	N.D.	119% 84.4%
1,3-DICHLOROBENZENE	N.D.	---
1,4-DICHLOROBENZENE	N.D.	---
1,2-DICHLOROBENZENE	N.D.	---
TOTAL XYLENES	N.D.	---
ACETONE	N.D.	---
METHYL ETHYL KETONE	N.D.	---
METHYL ISOBUTYL KETONE	N.D.	---

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CHROMALAB, INC.

Environmental Laboratory (1094)

5 DAYS TURNAROUND

April 29, 1992 — ChromaLab File # 0492137 J

Jonas & Associates, Inc. — Attn: Romena Jonas
Date Sampled: Apr. 13, 1992 — Date Submitted: Apr. 14, 1992
Date of Analysis: Apr. 24, 1992

Project Name: PACO 9201 — Project No.: PCO-220-01-PHII
Sample I.D.: B 18-0.5&1.5
Method of Analysis: EPA 8240 — Detection Limit: 5.0 µg/kg

COMPOUND NAME	µg/kg	Spike Recovery
CHLOROMETHANE	N.D.	---
VINYL CHLORIDE	N.D.	---
BROMOMETHANE	N.D.	---
CHLOROETHANE	N.D.	---
TRICHLOROFLUOROMETHANE	N.D.	---
1,1-DICHLOROETHENE	N.D.	92.4% 103%
METHYLENE CHLORIDE	N.D.	---
1,2-DICHLOROETHENE (TOTAL)	N.D.	---
1,1-DICHLOROETHANE	N.D.	---
CHLOROFORM	N.D.	---
1,1,1-TRICHLOROETHANE	N.D.	---
CARBON TETRACHLORIDE	N.D.	---
1,2-DICHLOROETHANE	N.D.	---
BENZENE	5.0	---
TRICHLOROETHENE	N.D.	97.2% 112%
1,2-DICHLOROPROPANE	N.D.	---
BROMODICHLOROMETHANE	N.D.	---
2-CHLOROETHYLVINYLETHER	N.D.	---
TRANS-1,3-DICHLOROPROPENE	N.D.	---
TOLUENE	49	---
CIS-1,3-DICHLOROPROPENE	N.D.	---
1,1,2-TRICHLOROETHANE	N.D.	---
TETRACHLOROETHENE	N.D.	104% 118%
DIBROMOCHLOROMETHANE	N.D.	---
CHLOROBENZENE	N.D.	---
ETHYL BENZENE	88	---
BROMOFORM	N.D.	---
1,1,2,2-TETRACHLOROETHANE	N.D.	119% 84.4%
1,3-DICHLOROBENZENE	N.D.	---
1,4-DICHLOROBENZENE	N.D.	---
1,2-DICHLOROBENZENE	N.D.	---
TOTAL XYLENES	1200	---
ACETONE	N.D.	---
METHYL ETHYL KETONE	N.D.	---
METHYL ISOBUTYL KETONE	N.D.	---

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CHROMALAB, INC.

Environmental Laboratory (1094)

5 DAYS TURNAROUND

April 29, 1992 — ChromaLab File # 0492137 K

Jonas & Associates, Inc. — Attn: Romena Jonas
Date Sampled: Apr. 13, 1992 — Date Submitted: Apr. 14, 1992
Date of Analysis: Apr. 24, 1992

Project Name: PACO 9201 — Project No.: PCO-220-01-PHII
Sample I.D.: B 19-0.5&1.5
Method of Analysis: EPA 8240 — Detection Limit: 5.0 µg/kg

COMPOUND NAME	µg/kg	Spike Recovery
CHLOROMETHANE	N.D.	---
VINYL CHLORIDE	N.D.	---
BROMOMETHANE	N.D.	---
CHLOROETHANE	N.D.	---
TRICHLOROFLUOROMETHANE	N.D.	---
1,1-DICHLOROETHENE	N.D.	92.4% 103%
METHYLENE CHLORIDE	N.D.	---
1,2-DICHLOROETHENE (TOTAL)	N.D.	---
1,1-DICHLOROETHANE	N.D.	---
CHLOROFORM	N.D.	---
1,1,1-TRICHLOROETHANE	N.D.	---
CARBON TETRACHLORIDE	N.D.	---
1,2-DICHLOROETHANE	N.D.	---
BENZENE	N.D.	---
TRICHLOROETHENE	N.D.	97.2% 112%
1,2-DICHLOROPROPANE	N.D.	---
BROMODICHLOROMETHANE	N.D.	---
2-CHLOROETHYLVINYLETHER	N.D.	---
TRANS-1,3-DICHLOROPROPENE	N.D.	---
TOLUENE	N.D.	---
CIS-1,3-DICHLOROPROPENE	N.D.	---
1,1,2-TRICHLOROETHANE	N.D.	---
TETRACHLOROETHENE	N.D.	104% 118%
DIBROMOCHLOROMETHANE	N.D.	---
CHLOROBENZENE	N.D.	---
ETHYL BENZENE	N.D.	---
BROMOFORM	N.D.	---
1,1,2,2-TETRACHLOROETHANE	N.D.	119% 84.4%
1,3-DICHLOROBENZENE	N.D.	---
1,4-DICHLOROBENZENE	N.D.	---
1,2-DICHLOROBENZENE	N.D.	---
TOTAL XYLENES	N.D.	---
ACETONE	N.D.	---
METHYL ETHYL KETONE	N.D.	---
METHYL ISOBUTYL KETONE	N.D.	---

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CHROMALAB, INC.

Environmental Laboratory (1094)

5 DAYS TURNAROUND

April 29, 1992 — ChromaLab File # 0492137 N

Jonas & Associates, Inc. — Attn: Romena Jonas
Date Sampled: Apr. 13, 1992 — Date Submitted: Apr. 14, 1992
Date of Analysis: Apr. 24, 1992

Project Name: PACO 9201 — Project No.: PCO-220-01-PHII
Sample I.D.: B 20-0.5&1.5
Method of Analysis: EPA 8240 — Detection Limit: 5.0 µg/kg

COMPOUND NAME	µg/kg	Spike Recovery
CHLOROMETHANE	N.D.	---
VINYL CHLORIDE	N.D.	---
BROMOMETHANE	N.D.	---
CHLOROETHANE	N.D.	---
TRICHLOROFLUOROMETHANE	N.D.	---
1,1-DICHLOROETHENE	N.D.	92.4% 103%
METHYLENE CHLORIDE	N.D.	---
1,2-DICHLOROETHENE (TOTAL)	N.D.	---
1,1-DICHLOROETHANE	N.D.	---
CHLOROFORM	N.D.	---
1,1,1-TRICHLOROETHANE	N.D.	---
CARBON TETRACHLORIDE	N.D.	---
1,2-DICHLOROETHANE	N.D.	---
BENZENE	N.D.	---
TRICHLOROETHENE	N.D.	97.2% 112%
1,2-DICHLOROPROPANE	N.D.	---
BROMODICHLOROMETHANE	N.D.	---
2-CHLOROETHYLVINYLETHER	N.D.	---
TRANS-1,3-DICHLOROPROPENE	N.D.	---
TOLUENE	N.D.	---
CIS-1,3-DICHLOROPROPENE	N.D.	---
1,1,2-TRICHLOROETHANE	N.D.	---
TETRACHLOROETHENE	N.D.	104% 118%
DIBROMOCHLOROMETHANE	N.D.	---
CHLOROBENZENE	N.D.	---
ETHYL BENZENE	N.D.	---
BROMOFORM	N.D.	---
1,1,2,2-TETRACHLOROETHANE	N.D.	119% 84.4%
1,3-DICHLOROBENZENE	N.D.	---
1,4-DICHLOROBENZENE	N.D.	---
1,2-DICHLOROBENZENE	N.D.	---
TOTAL XYLENES	N.D.	---
ACETONE	N.D.	---
METHYL ETHYL KETONE	N.D.	---
METHYL ISOBUTYL KETONE	N.D.	---

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CHROMALAB, INC.

Environmental Laboratory (1094)

5 DAYS TURNAROUND

April 29, 1992 — ChromaLab File # 0492137 O

Jonas & Associates, Inc. — Attn: Romena Jonas
Date Sampled: Apr. 13, 1992 — Date Submitted: Apr. 14, 1992
Date of Analysis: Apr. 24, 1992

Project Name: PACO 9201 — Project No.: PCO-220-01-PHII
Sample I.D.: B 21-0.5&1.5
Method of Analysis: EPA 8240 — Detection Limit: 5.0 µg/kg

COMPOUND NAME	µg/kg	Spike Recovery
CHLOROMETHANE	N.D.	---
VINYL CHLORIDE	N.D.	---
BROMOMETHANE	N.D.	---
CHLOROETHANE	N.D.	---
TRICHLOROFLUOROMETHANE	N.D.	---
1,1-DICHLOROETHENE	N.D.	92.4% 103%
METHYLENE CHLORIDE	N.D.	---
1,2-DICHLOROETHENE (TOTAL)	N.D.	---
1,1-DICHLOROETHANE	N.D.	---
CHLOROFORM	N.D.	---
1,1,1-TRICHLOROETHANE	N.D.	---
CARBON TETRACHLORIDE	N.D.	---
1,2-DICHLOROETHANE	N.D.	---
BENZENE	N.D.	---
TRICHLOROETHENE	N.D.	97.2% 112%
1,2-DICHLOROPROPANE	N.D.	---
BROMODICHLOROMETHANE	N.D.	---
2-CHLOROETHYLVINYLETHER	N.D.	---
TRANS-1,3-DICHLOROPROPENE	N.D.	---
TOLUENE	N.D.	---
CIS-1,3-DICHLOROPROPENE	N.D.	---
1,1,2-TRICHLOROETHANE	N.D.	---
TETRACHLOROETHENE	N.D.	104% 118%
DIBROMOCHLOROMETHANE	N.D.	---
CHLOROBENZENE	N.D.	---
ETHYL BENZENE	N.D.	---
BROMOFORM	N.D.	---
1,1,2,2-TETRACHLOROETHANE	N.D.	119% 84.4%
1,3-DICHLOROBENZENE	N.D.	---
1,4-DICHLOROBENZENE	N.D.	---
1,2-DICHLOROBENZENE	N.D.	---
TOTAL XYLENES	N.D.	---
ACETONE	N.D.	---
METHYL ETHYL KETONE	N.D.	---
METHYL ISOBUTYL KETONE	N.D.	---

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CHROMALAB, INC.

Environmental Laboratory (1094)

5 DAYS TURNAROUND

April 29, 1992 — ChromaLab File # 0492137 L

Jonas & Associates, Inc. — Attn: Romena Jonas
Date Sampled: Apr. 13, 1992 — Date Submitted: Apr. 14, 1992
Date of Analysis: Apr. 24, 1992

Project Name: PACO 9201 — Project No.: PCO-220-01-PHII
Sample I.D.: B 22-0.5&1.5
Method of Analysis: EPA 8240 — Detection Limit: 5.0 µg/kg

COMPOUND NAME	µg/kg	Spike Recovery
CHLOROMETHANE	N.D.	---
VINYL CHLORIDE	N.D.	---
BROMOMETHANE	N.D.	---
CHLOROETHANE	N.D.	---
TRICHLOROFLUOROMETHANE	N.D.	---
1,1-DICHLOROETHENE	N.D.	92.4% 103%
METHYLENE CHLORIDE	N.D.	---
1,2-DICHLOROETHENE (TOTAL)	N.D.	---
1,1-DICHLOROETHANE	N.D.	---
CHLOROFORM	N.D.	---
1,1,1-TRICHLOROETHANE	N.D.	---
CARBON TETRACHLORIDE	N.D.	---
1,2-DICHLOROETHANE	N.D.	---
BENZENE	N.D.	---
TRICHLOROETHENE	N.D.	97.2% 112%
1,2-DICHLOROPROPANE	N.D.	---
BROMODICHLOROMETHANE	N.D.	---
2-CHLOROETHYLVINYLETHER	N.D.	---
TRANS-1,3-DICHLOROPROPENE	N.D.	---
TOLUENE	N.D.	---
CIS-1,3-DICHLOROPROPENE	N.D.	---
1,1,2-TRICHLOROETHANE	N.D.	---
TETRACHLOROETHENE	N.D.	104% 118%
DIBROMOCHLOROMETHANE	N.D.	---
CHLOROBENZENE	N.D.	---
ETHYL BENZENE	N.D.	---
BROMOFORM	N.D.	---
1,1,2,2-TETRACHLOROETHANE	N.D.	119% 84.4%
1,3-DICHLOROBENZENE	N.D.	---
1,4-DICHLOROBENZENE	N.D.	---
1,2-DICHLOROBENZENE	N.D.	---
TOTAL XYLENES	N.D.	---
ACETONE	N.D.	---
METHYL ETHYL KETONE	N.D.	---
METHYL ISOBUTYL KETONE	N.D.	---

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CHROMALAB, INC.

Environmental Laboratory (1094)

5 DAYS TURNAROUND

April 29, 1992 — ChromaLab File # 0492137 M

Jonas & Associates, Inc. — Attn: Romena Jonas
Date Sampled: Apr. 13, 1992 — Date Submitted: Apr. 14, 1992
Date of Analysis: Apr. 24, 1992

Project Name: PACO 9201 — Project No.: PCO-220-01-PHII
Sample I.D.: B 23-0.5&1.5
Method of Analysis: EPA 8240 — Detection Limit: 5.0 µg/kg

COMPOUND NAME	µg/kg	Spike Recovery
CHLOROMETHANE	N.D.	---
VINYL CHLORIDE	N.D.	---
BROMOMETHANE	N.D.	---
CHLOROETHANE	N.D.	---
TRICHLOROFLUOROMETHANE	N.D.	---
1,1-DICHLOROETHENE	N.D.	92.4% 103%
METHYLENE CHLORIDE	N.D.	---
1,2-DICHLOROETHENE (TOTAL)	N.D.	---
1,1-DICHLOROETHANE	N.D.	---
CHLOROFORM	N.D.	---
1,1,1-TRICHLOROETHANE	N.D.	---
CARBON TETRACHLORIDE	N.D.	---
1,2-DICHLOROETHANE	N.D.	---
BENZENE	N.D.	---
TRICHLOROETHENE	N.D.	97.2% 112%
1,2-DICHLOROPROPANE	N.D.	---
BROMODICHLOROMETHANE	N.D.	---
2-CHLOROETHYLVINYLETHER	N.D.	---
TRANS-1,3-DICHLOROPROPENE	N.D.	---
TOLUENE	N.D.	---
CIS-1,3-DICHLOROPROPENE	N.D.	---
1,1,2-TRICHLOROETHANE	N.D.	---
TETRACHLOROETHENE	N.D.	104% 118%
DIBROMOCHLOROMETHANE	N.D.	---
CHLOROBENZENE	N.D.	---
ETHYL BENZENE	N.D.	---
BROMOFORM	N.D.	---
1,1,2,2-TETRACHLOROETHANE	N.D.	119% 84.4%
1,3-DICHLOROBENZENE	N.D.	---
1,4-DICHLOROBENZENE	N.D.	---
1,2-DICHLOROBENZENE	N.D.	---
TOTAL XYLENES	N.D.	---
ACETONE	N.D.	---
METHYL ETHYL KETONE	N.D.	---
METHYL ISOBUTYL KETONE	N.D.	---

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CHROMALAB, INC.

Environmental Laboratory (1094)

5 DAYS TURNAROUND

April 29, 1992 — ChromaLab File # 0492137 P

Jonas & Associates, Inc. — Attn: Romena Jonas
Date Sampled: Apr. 13, 1992 — Date Submitted: Apr. 14, 1992
Date of Analysis: Apr. 24, 1992

Project Name: PACO 9201 — Project No.: PCO-220-01-PHII
Sample I.D.: B 24-0.5&1.5
Method of Analysis: EPA 8240 — Detection Limit: 5.0 µg/kg

COMPOUND NAME	µg/kg	Spike Recovery
CHLOROMETHANE	N.D.	---
VINYL CHLORIDE	N.D.	---
BROMOMETHANE	N.D.	---
CHLOROETHANE	N.D.	---
TRICHLOROFLUOROMETHANE	N.D.	---
1,1-DICHLOROETHENE	N.D.	92.4% 103%
METHYLENE CHLORIDE	N.D.	---
1,2-DICHLOROETHENE (TOTAL)	N.D.	---
1,1-DICHLOROETHANE	N.D.	---
CHLOROFORM	N.D.	---
1,1,1-TRICHLOROETHANE	N.D.	---
CARBON TETRACHLORIDE	N.D.	---
1,2-DICHLOROETHANE	N.D.	---
BENZENE	N.D.	---
TRICHLOROETHENE	N.D.	97.2% 112%
1,2-DICHLOROPROPANE	N.D.	---
BROMODICHLOROMETHANE	N.D.	---
2-CHLOROETHYLVINYLETHER	N.D.	---
TRANS-1,3-DICHLOROPROPENE	N.D.	---
TOLUENE	N.D.	---
CIS-1,3-DICHLOROPROPENE	N.D.	---
1,1,2-TRICHLOROETHANE	N.D.	---
TETRACHLOROETHENE	N.D.	104% 118%
DIBROMOCHLOROMETHANE	N.D.	---
CHLOROBENZENE	N.D.	---
ETHYL BENZENE	N.D.	---
BROMOFORM	N.D.	---
1,1,2,2-TETRACHLOROETHANE	N.D.	119% 84.4%
1,3-DICHLOROBENZENE	N.D.	---
1,4-DICHLOROBENZENE	N.D.	---
1,2-DICHLOROBENZENE	N.D.	---
TOTAL XYLENES	N.D.	---
ACETONE	N.D.	---
METHYL ETHYL KETONE	N.D.	---
METHYL ISOBUTYL KETONE	N.D.	---

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CHROMALAB, INC.

Environmental Laboratory (1094)

5 DAYS TURNAROUND

April 29, 1992 — ChromaLab File # 0492137 Q

Jonas & Associates, Inc. — Attn: Romena Jonas
Date Sampled: Apr. 13, 1992 — Date Submitted: Apr. 14, 1992
Date of Analysis: Apr. 24, 1992

Project Name: PACO 9201 — Project No.: PCO-220-01-PHII
Sample I.D.: B 25-0.5&1.5
Method of Analysis: EPA 8240 — Detection Limit: 5.0 µg/kg

COMPOUND NAME	µg/kg	Spike Recovery
CHLOROMETHANE	N.D.	---
VINYL CHLORIDE	N.D.	---
BROMOMETHANE	N.D.	---
CHLOROETHANE	N.D.	---
TRICHLOROFLUOROMETHANE	N.D.	---
1,1-DICHLOROETHENE	N.D.	92.4% 103%
METHYLENE CHLORIDE	N.D.	---
1,2-DICHLOROETHENE (TOTAL)	N.D.	---
1,1-DICHLOROETHANE	N.D.	---
CHLOROFORM	N.D.	---
1,1,1-TRICHLOROETHANE	N.D.	---
CARBON TETRACHLORIDE	N.D.	---
1,2-DICHLOROETHANE	N.D.	---
BENZENE	N.D.	---
TRICHLOROETHENE	N.D.	97.2% 112%
1,2-DICHLOROPROPANE	N.D.	---
BROMODICHLOROMETHANE	N.D.	---
2-CHLOROETHYLVINYLETHER	N.D.	---
TRANS-1,3-DICHLOROPROPENE	N.D.	---
TOLUENE	N.D.	---
CIS-1,3-DICHLOROPROPENE	N.D.	---
1,1,2-TRICHLOROETHANE	N.D.	---
TETRACHLOROETHENE	N.D.	104% 118%
DIBROMOCHLOROMETHANE	N.D.	---
CHLOROBENZENE	N.D.	---
ETHYL BENZENE	N.D.	---
BROMOFORM	N.D.	---
1,1,2,2-TETRACHLOROETHANE	N.D.	119% 84.4%
1,3-DICHLOROBENZENE	N.D.	---
1,4-DICHLOROBENZENE	N.D.	---
1,2-DICHLOROBENZENE	N.D.	---
TOTAL XYLENES	N.D.	---
ACETONE	N.D.	---
METHYL ETHYL KETONE	N.D.	---
METHYL ISOBUTYL KETONE	N.D.	---

ChromaLab, Inc.

Yiu Tam
Analytical Chemist

Eric Tam
Lab Director

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CHROMALAB, INC.

Environmental Laboratory (1094)

5 DAYS TURNAROUND

April 29, 1992 — ChromaLab File # 0492137 R

Jonas & Associates, Inc. — Attn: Romena Jonas
Date Sampled: Apr. 13, 1992 — Date Submitted: Apr. 14, 1992
Date of Analysis: Apr. 24, 1992

Project Name: PACO 9201 — Project No.: PCO-220-01-PHII
Sample I.D.: B 26-0.5&1.5
Method of Analysis: EPA 8240 — Detection Limit: 5.0 µg/kg

COMPOUND NAME	µg/kg	Spike Recovery
CHLOROMETHANE	N.D.	---
VINYL CHLORIDE	N.D.	---
BROMOMETHANE	N.D.	---
CHLOROETHANE	N.D.	---
TRICHLOROFLUOROMETHANE	N.D.	---
1,1-DICHLOROETHENE	N.D.	92.4% 103%
METHYLENE CHLORIDE	N.D.	---
1,2-DICHLOROETHENE (TOTAL)	N.D.	---
1,1-DICHLOROETHANE	N.D.	---
CHLOROFORM	N.D.	---
1,1,1-TRICHLOROETHANE	N.D.	---
CARBON TETRACHLORIDE	N.D.	---
1,2-DICHLOROETHANE	N.D.	---
BENZENE	N.D.	---
TRICHLOROETHENE	N.D.	97.2% 112%
1,2-DICHLOROPROPANE	N.D.	---
BROMODICHLOROMETHANE	N.D.	---
2-CHLOROETHYLVINYLETHER	N.D.	---
TRANS-1,3-DICHLOROPROPENE	N.D.	---
TOLUENE	N.D.	---
CIS-1,3-DICHLOROPROPENE	N.D.	---
1,1,2-TRICHLOROETHANE	N.D.	---
TETRACHLOROETHENE	N.D.	104% 118%
DIBROMOCHLOROMETHANE	N.D.	---
CHLOROBENZENE	N.D.	---
ETHYL BENZENE	N.D.	---
BROMOFORM	N.D.	---
1,1,2,2-TETRACHLOROETHANE	N.D.	119% 84.4%
1,3-DICHLOROBENZENE	N.D.	---
1,4-DICHLOROBENZENE	N.D.	---
1,2-DICHLOROBENZENE	N.D.	---
TOTAL XYLENES	N.D.	---
ACETONE	N.D.	---
METHYL ETHYL KETONE	N.D.	---
METHYL ISOBUTYL KETONE	N.D.	---

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Yiu Tam
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CHROMALAB, INC.

Analytical Laboratory (E694)

5 DAYS TURNAROUND

October 10, 1991 ChromaLab File # 1091017 A

Client: Jonas & Associates, Inc.
Attn: Romena Jonas
Date Sampled: Oct. 01, 1991 Date Submitted: Oct. 02, 1991
Date Extracted: Oct. 07, 1991 Date Analyzed: Oct. 9, 1991

Project Name: PACO PUMPS SOIL
Sample I.D.: B1-3.5-10191
Method of Analysis: EPA 8270 Matrix: soil

COMPOUND NAME	Sample mg/Kg	MDL mg/Kg	Spike Recovery
PHENOL	N.D.	0.05	-----
BIS(2-CHLOROETHYL) ETHER	N.D.	0.05	91.5% 89.2%
2-CHLOROPHENOL	N.D.	0.05	-----
1,3-DICHLOROBENZENE	N.D.	0.05	-----
1,4-DICHLOROBENZENE	N.D.	0.05	-----
BENZYL ALCOHOL	N.D.	0.10	-----
1,2-DICHLOROBENZENE	N.D.	0.05	-----
2-METHYLPHENOL	N.D.	0.05	-----
BIS(2-CHLOROISOPROPYL)ETHER	N.D.	0.05	-----
4-METHYLPHENOL	N.D.	0.05	-----
N-NITROSO-DI-N-PROPYLAMINE	N.D.	0.05	-----
HEXACHLOROETHANE	N.D.	0.05	-----
NITROBENZENE	N.D.	0.05	-----
ISOPHORONE	N.D.	0.05	-----
2-NITROPHENOL	N.D.	0.05	-----
2,4-DIMETHYLPHENOL	N.D.	0.05	-----
BENZOIC ACID	N.D.	0.25	-----
BIS(2-CHLOROETHOXY)METHANE	N.D.	0.05	91.5% 93.2%
2,4-DICHLOROPHENOL	N.D.	0.05	-----
1,2,4-TRICHLOROBENZENE	N.D.	0.05	-----
NAPHTHALENE	N.D.	0.05	-----
4-CHLOROANILINE	N.D.	0.10	-----
HEXACHLOROBUTADIENE	N.D.	0.05	-----
4-CHLORO-3-METHYLPHENOL	N.D.	0.10	-----
2-METHYLNAPHTHALENE	N.D.	0.05	-----
HEXACHLOROCYCLOPENTADIENE	N.D.	0.05	-----
2,4,6-TRICHLOROPHENOL	N.D.	0.05	-----
2,4,5-TRICHLOROPHENOL	N.D.	0.05	-----
2-CHLORONAPHTHALENE	N.D.	0.05	-----
2-NITROANILINE	N.D.	0.25	-----
DIMETHYL PHTHALATE	N.D.	0.05	-----
ACENAPHTHYLENE	N.D.	0.05	-----
3-NITROANILINE	N.D.	0.25	-----
ACENAPHTHENE	N.D.	0.05	87.5% 88.2%
2,4-DINITROPHENOL	N.D.	0.25	-----
4-NITROPHENOL	N.D.	0.25	-----
DIBENZOFURAN	N.D.	0.05	-----

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CHROMALAB, INC.

Analytical Laboratory (E694)

5 DAYS TURNAROUND

ChromaLab File # 1091017 A

Project Name: PACO PUMPS SOIL
Sample I.D.: B1-3.5-10191
Method of Analysis: EPA 8270 Matrix: soil

COMPOUND NAME	Sample mg/Kg	MDL mg/Kg	Spike Recovery
2,4-DINITROTOLUENE	N.D.	0.05	-----
2,6-DINITROTOLUENE	N.D.	0.05	89.1% 87.1%
DIETHYL PHTHALATE	N.D.	0.05	-----
4-CHLORO-PHENYL PHENYL ETHER	N.D.	0.05	-----
FLUORENE	N.D.	0.05	-----
4-NITROANILINE	N.D.	0.25	-----
4,6-DINITRO-2-METHYL PHENOL	N.D.	0.25	-----
N-NITROSODIPHENYLAMINE	N.D.	0.05	-----
4-BROMOPHENYL PHENYL ETHER	N.D.	0.05	-----
HEXACHLOROBENZENE	N.D.	0.05	-----
PENTACHLOROPHENOL	N.D.	0.25	-----
PHENANTHRENE	N.D.	0.05	-----
ANTHRACENE	N.D.	0.05	-----
DI-N-BUTYL PHTHALATE	N.D.	0.05	-----
FLUORANTHENE	N.D.	0.05	-----
PYRENE	N.D.	0.05	-----
BUTYLBENZYLPHTHALATE	N.D.	0.05	-----
3,3'-DICHLOROBENZIDINE	N.D.	0.10	-----
BENZO(A)ANTHRACENE	N.D.	0.05	-----
BIS(2-ETHYLHEXYL)PHTHALATE	N.D.	0.05	-----
CHRYSENE	N.D.	0.05	86.1% 85.1%
DI-N-OCTYLPHTHALATE	N.D.	0.05	-----
BENZO(B)FLUORANTHENE	N.D.	0.05	-----
BENZO(K)FLUORANTHENE	N.D.	0.05	-----
BENZO(A)PYRENE	N.D.	0.05	-----
INDENO(1,2,3 C,D)PYRENE	N.D.	0.05	-----
DIBENZO(A,H)ANTHRACENE	N.D.	0.05	-----
BENZO(G,H,I)PERYLENE	N.D.	0.05	-----

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Eric Tam
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CHROMALAB, INC.

Analytical Laboratory (E694)

5 DAYS TURNAROUND

October 10, 1991 ChromaLab File # 1091017 C

Client: Jonas & Associates, Inc.
Attn: Romena Jonas
Date Sampled: Oct. 01, 1991 Date Submitted: Oct. 02, 1991
Date Extracted: Oct. 07, 1991 Date Analyzed: Oct. 9, 1991

Project Name: PACO PUMPS SOIL
Sample I.D.: B3-3.5-10191
Method of Analysis: EPA 8270 Matrix: soil

COMPOUND NAME	Sample mg/Kg	MDL mg/Kg	Spike Recovery
PHENOL	N.D.	0.05	-----
BIS(2-CHLOROETHYL) ETHER	N.D.	0.05	91.5% 89.2%
2-CHLOROPHENOL	N.D.	0.05	-----
1,3-DICHLOROBENZENE	N.D.	0.05	-----
1,4-DICHLOROBENZENE	N.D.	0.05	-----
BENZYL ALCOHOL	N.D.	0.10	-----
1,2-DICHLOROBENZENE	N.D.	0.05	-----
2-METHYLPHENOL	N.D.	0.05	-----
BIS(2-CHLOROISOPROPYL)ETHER	N.D.	0.05	-----
4-METHYLPHENOL	N.D.	0.05	-----
N-NITROSO-DI-N-PROPYLAMINE	N.D.	0.05	-----
HEXACHLOROETHANE	N.D.	0.05	-----
NITROBENZENE	N.D.	0.05	-----
ISOPHORONE	N.D.	0.05	-----
2-NITROPHENOL	N.D.	0.05	-----
2,4-DIMETHYLPHENOL	N.D.	0.05	-----
BENZOIC ACID	N.D.	0.25	-----
BIS(2-CHLOROETHOXY)METHANE	N.D.	0.05	91.5% 93.2%
2,4-DICHLOROPHENOL	N.D.	0.05	-----
1,2,4-TRICHLOROBENZENE	N.D.	0.05	-----
NAPHTHALENE	N.D.	0.05	-----
4-CHLOROANILINE	N.D.	0.10	-----
HEXACHLOROBUTADIENE	N.D.	0.05	-----
4-CHLORO-3-METHYLPHENOL	N.D.	0.10	-----
2-METHYLNAPHTHALENE	N.D.	0.05	-----
HEXACHLOROCYCLOPENTADIENE	N.D.	0.05	-----
2,4,6-TRICHLOROPHENOL	N.D.	0.05	-----
2,4,5-TRICHLOROPHENOL	N.D.	0.05	-----
2-CHLORONAPHTHALENE	N.D.	0.05	-----
2-NITROANILINE	N.D.	0.25	-----
DIMETHYL PHTHALATE	N.D.	0.05	-----
ACENAPHTHYLENE	N.D.	0.05	-----
3-NITROANILINE	N.D.	0.25	-----
ACENAPHTHENE	N.D.	0.05	87.5% 88.2%
2,4-DINITROPHENOL	N.D.	0.25	-----
4-NITROPHENOL	N.D.	0.25	-----
DIBENZOFURAN	N.D.	0.05	-----

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CHROMALAB, INC.

Analytical Laboratory (E694)

5 DAYS TURNAROUND

ChromaLab File # 1091017 C

Project Name: PACO PUMPS SOIL
Sample I.D.: B3-3.5-10191
Method of Analysis: EPA 8270 Matrix: soil

COMPOUND NAME	Sample mg/Kg	MDL mg/Kg	Spike Recovery
2,4-DINITROTOLUENE	N.D.	0.05	-----
2,6-DINITROTOLUENE	N.D.	0.05	89.1% 87.1%
DIETHYL PHTHALATE	N.D.	0.05	-----
4-CHLORO-PHENYL PHENYL ETHER	N.D.	0.05	-----
FLUORENE	N.D.	0.05	-----
4-NITROANILINE	N.D.	0.25	-----
4,6-DINITRO-2-METHYL PHENOL	N.D.	0.25	-----
N-NITROSODIPHENYLAMINE	N.D.	0.05	-----
4-BROMOPHENYL PHENYL ETHER	N.D.	0.05	-----
HEXACHLOROBENZENE	N.D.	0.05	-----
PENTACHLOROPHENOL	N.D.	0.25	-----
PHENANTHRENE	N.D.	0.05	-----
ANTHRACENE	N.D.	0.05	-----
DI-N-BUTYL PHTHALATE	N.D.	0.05	-----
FLUORANTHENE	N.D.	0.05	-----
PYRENE	N.D.	0.05	-----
BUTYLBENZYLPHTHALATE	N.D.	0.05	-----
3,3'-DICHLOROBENZIDINE	N.D.	0.10	-----
BENZO(A)ANTHRACENE	N.D.	0.05	-----
BIS(2-ETHYLHEXYL)PHTHALATE	N.D.	0.05	-----
CHRYSENE	N.D.	0.05	86.1% 85.1%
DI-N-OCTYLPHTHALATE	N.D.	0.05	-----
BENZO(B)FLUORANTHENE	N.D.	0.05	-----
BENZO(K)FLUORANTHENE	N.D.	0.05	-----
BENZO(A)PYRENE	N.D.	0.05	-----
INDENO(1,2,3 C,D)PYRENE	N.D.	0.05	-----
DIBENZO(A,H)ANTHRACENE	N.D.	0.05	-----
BENZO(G,H,I)PERYLENE	N.D.	0.05	-----

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CHROMALAB, INC.

Analytical Laboratory (E694)

5 DAYS TURNAROUND

October 10, 1991 ChromaLab File # 1091017 E

Client: Jonas & Associates, Inc.
Attn: Romena Jonas
Date Sampled: Oct. 01, 1991 Date Submitted: Oct. 02, 1991
Date Extracted: Oct. 07, 1991 Date Analyzed: Oct. 9, 1991

Project Name: PACO PUMPS SOIL
Sample I.D.: B5-3.5-10191
Method of Analysis: EPA 8270 Matrix: soil

COMPOUND NAME	Sample mg/Kg	MDL mg/Kg	Spike Recovery
PHENOL	N.D.	0.05	-----
BIS(2-CHLOROETHYL) ETHER	N.D.	0.05	91.5% 89.2%
2-CHLOROPHENOL	N.D.	0.05	-----
1,3-DICHLOROBENZENE	N.D.	0.05	-----
1,4-DICHLOROBENZENE	N.D.	0.05	-----
BENZYL ALCOHOL	N.D.	0.10	-----
1,2-DICHLOROBENZENE	N.D.	0.05	-----
2-METHYLPHENOL	N.D.	0.05	-----
BIS(2-CHLOROISOPROPYL)ETHER	N.D.	0.05	-----
4-METHYLPHENOL	N.D.	0.05	-----
N-NITROSO-DI-N-PROPYLAMINE	N.D.	0.05	-----
HEXACHLOROETHANE	N.D.	0.05	-----
NITROBENZENE	N.D.	0.05	-----
ISOPHORONE	N.D.	0.05	-----
2-NITROPHENOL	N.D.	0.05	-----
2,4-DIMETHYLPHENOL	N.D.	0.05	-----
BENZOIC ACID	N.D.	0.25	-----
BIS(2-CHLOROETHOXY)METHANE	N.D.	0.05	91.5% 93.2%
2,4-DICHLOROPHENOL	N.D.	0.05	-----
1,2,4-TRICHLOROBENZENE	N.D.	0.05	-----
NAPHTHALENE	N.D.	0.05	-----
4-CHLOROANILINE	N.D.	0.10	-----
HEXACHLOROBUTADIENE	N.D.	0.05	-----
4-CHLORO-3-METHYLPHENOL	N.D.	0.10	-----
2-METHYLNAPHTHALENE	N.D.	0.05	-----
HEXACHLOROCYCLOPENTADIENE	N.D.	0.05	-----
2,4,6-TRICHLOROPHENOL	N.D.	0.05	-----
2,4,5-TRICHLOROPHENOL	N.D.	0.05	-----
2-CHLORONAPHTHALENE	N.D.	0.05	-----
2-NITROANILINE	N.D.	0.25	-----
DIMETHYL PHTHALATE	N.D.	0.05	-----
ACENAPHTHYLENE	N.D.	0.05	-----
3-NITROANILINE	N.D.	0.25	-----
ACENAPHTHENE	N.D.	0.05	87.5% 88.2%
2,4-DINITROPHENOL	N.D.	0.25	-----
4-NITROPHENOL	N.D.	0.25	-----
DIBENZOFURAN	N.D.	0.05	-----

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CHROMALAB, INC.

Analytical Laboratory (E694)

5 DAYS TURNAROUND

ChromaLab File # 1091017 E

Project Name: PACO PUMPS SOIL
Sample I.D.: B5-3.5-10191
Method of Analysis: EPA 8270 Matrix: soil

COMPOUND NAME	Sample mg/Kg	MDL mg/Kg	Spike Recovery
2,4-DINITROTOLUENE	N.D.	0.05	-----
2,6-DINITROTOLUENE	N.D.	0.05	89.1% 87.1%
DIETHYL PHTHALATE	N.D.	0.05	-----
4-CHLORO-PHENYL PHENYL ETHER	N.D.	0.05	-----
FLUORENE	N.D.	0.05	-----
4-NITROANILINE	N.D.	0.25	-----
4,6-DINITRO-2-METHYL PHENOL	N.D.	0.25	-----
N-NITROSODIPHENYLAMINE	N.D.	0.05	-----
4-BROMOPHENYL PHENYL ETHER	N.D.	0.05	-----
HEXACHLOROBENZENE	N.D.	0.05	-----
PENTACHLOROPHENOL	N.D.	0.25	-----
PHENANTHRENE	N.D.	0.05	-----
ANTHRACENE	N.D.	0.05	-----
DI-N-BUTYL PHTHALATE	N.D.	0.05	-----
FLUORANTHENE	N.D.	0.05	-----
PYRENE	N.D.	0.05	-----
BUTYLBENZYLPHTHALATE	N.D.	0.05	-----
3,3'-DICHLOROBENZIDINE	N.D.	0.10	-----
BENZO(A)ANTHRACENE	N.D.	0.05	-----
BIS(2-ETHYLHEXYL)PHTHALATE	N.D.	0.05	-----
CHRYSENE	N.D.	0.05	86.1% 85.1%
DI-N-OCTYLPHTHALATE	N.D.	0.05	-----
BENZO(B)FLUORANTHENE	N.D.	0.05	-----
BENZO(K)FLUORANTHENE	N.D.	0.05	-----
BENZO(A)PYRENE	N.D.	0.05	-----
INDENO(1,2,3 C,D)PYRENE	N.D.	0.05	-----
DIBENZO(A,H)ANTHRACENE	N.D.	0.05	-----
BENZO(G,H,I)PERYLENE	N.D.	0.05	-----

ChromaLab, Inc.

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Eric Tam
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CHROMALAB, INC.

Analytical Laboratory (E694)

5 DAYS TURNAROUND

October 10, 1991 ChromaLab File # 1091017 F

Client: Jonas & Associates, Inc.
Attn: Romena Jonas
Date Sampled: Oct. 01, 1991 Date Submitted: Oct. 02, 1991
Date Extracted: Oct. 07, 1991 Date Analyzed: Oct. 9, 1991

Project Name: PACO PUMPS SOIL
Sample I.D.: B6-0.5-10191
Method of Analysis: EPA 8270 Matrix: soil

COMPOUND NAME	Sample mg/Kg	MDL mg/Kg	Spike Recovery
PHENOL	N.D.	0.05	-----
BIS(2-CHLOROETHYL) ETHER	N.D.	0.05	91.5% 89.2%
2-CHLOROPHENOL	N.D.	0.05	-----
1,3-DICHLOROBENZENE	N.D.	0.05	-----
1,4-DICHLOROBENZENE	N.D.	0.05	-----
BENZYL ALCOHOL	N.D.	0.10	-----
1,2-DICHLOROBENZENE	N.D.	0.05	-----
2-METHYLPHENOL	N.D.	0.05	-----
BIS(2-CHLOROISOPROPYL)ETHER	N.D.	0.05	-----
4-METHYLPHENOL	N.D.	0.05	-----
N-NITROSO-DI-N-PROPYLAMINE	N.D.	0.05	-----
HEXACHLOROETHANE	N.D.	0.05	-----
NITROBENZENE	N.D.	0.05	-----
ISOPHORONE	N.D.	0.05	-----
2-NITROPHENOL	N.D.	0.05	-----
2,4-DIMETHYLPHENOL	N.D.	0.05	-----
BENZOIC ACID	N.D.	0.25	-----
BIS(2-CHLOROETHOXY)METHANE	N.D.	0.05	91.5% 93.2%
2,4-DICHLOROPHENOL	N.D.	0.05	-----
1,2,4-TRICHLOROBENZENE	N.D.	0.05	-----
NAPHTHALENE	N.D.	0.05	-----
4-CHLOROANILINE	N.D.	0.10	-----
HEXACHLOROBUTADIENE	N.D.	0.05	-----
4-CHLORO-3-METHYLPHENOL	N.D.	0.10	-----
2-METHYLNAPHTHALENE	N.D.	0.05	-----
HEXACHLOROCYCLOPENTADIENE	N.D.	0.05	-----
2,4,6-TRICHLOROPHENOL	N.D.	0.05	-----
2,4,5-TRICHLOROPHENOL	N.D.	0.05	-----
2-CHLORONAPHTHALENE	N.D.	0.05	-----
2-NITROANILINE	N.D.	0.25	-----
DIMETHYL PHTHALATE	N.D.	0.05	-----
ACENAPHTHYLENE	N.D.	0.05	-----
3-NITROANILINE	N.D.	0.25	-----
ACENAPHTHENE	N.D.	0.05	87.5% 88.2%
2,4-DINITROPHENOL	N.D.	0.25	-----
4-NITROPHENOL	N.D.	0.25	-----
DIBENZOFURAN	N.D.	0.05	-----

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CHROMALAB, INC.

Analytical Laboratory (E694)

5 DAYS TURNAROUND

ChromaLab File # 1091017 F

Project Name: PACO PUMPS SOIL
Sample I.D.: B6-0.5-10191
Method of Analysis: EPA 8270 Matrix: soil

COMPOUND NAME	Sample mg/Kg	MDL mg/Kg	Spike Recovery
2,4-DINITROTOLUENE	N.D.	0.05	-----
2,6-DINITROTOLUENE	N.D.	0.05	89.1% 87.1%
DIETHYL PHTHALATE	N.D.	0.05	-----
4-CHLORO-PHENYL PHENYL ETHER	N.D.	0.05	-----
FLUORENE	N.D.	0.05	-----
4-NITROANILINE	N.D.	0.25	-----
4,6-DINITRO-2-METHYL PHENOL	N.D.	0.25	-----
N-NITROSODIPHENYLAMINE	N.D.	0.05	-----
4-BROMOPHENYL PHENYL ETHER	N.D.	0.05	-----
HEXACHLOROBENZENE	N.D.	0.05	-----
PENTACHLOROPHENOL	N.D.	0.25	-----
PHENANTHRENE	N.D.	0.05	-----
ANTHRACENE	N.D.	0.05	-----
DI-N-BUTYL PHTHALATE	N.D.	0.05	-----
FLUORANTHENE	N.D.	0.05	-----
PYRENE	N.D.	0.05	-----
BUTYLBENZYLPHTHALATE	N.D.	0.05	-----
3,3'-DICHLOROBENZIDINE	N.D.	0.10	-----
BENZO(A)ANTHRACENE	N.D.	0.05	-----
BIS(2-ETHYLHEXYL)PHTHALATE	N.D.	0.05	-----
CHRYSENE	N.D.	0.05	86.1% 85.1%
DI-N-OCTYLPHTHALATE	N.D.	0.05	-----
BENZO(B)FLUORANTHENE	N.D.	0.05	-----
BENZO(K)FLUORANTHENE	N.D.	0.05	-----
BENZO(A)PYRENE	N.D.	0.05	-----
INDENO(1,2,3 C,D)PYRENE	N.D.	0.05	-----
DIBENZO(A,H)ANTHRACENE	N.D.	0.05	-----
BENZO(G,H,I)PERYLENE	N.D.	0.05	-----

ChromaLab, Inc.

David Duong
Senior Chemist

Eric Tam
Lab Director

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CHROMALAB, INC.

Analytical Laboratory (E694)

5 DAYS TURNAROUND

October 10, 1991 — ChromaLab File # 1091017 G

Client: Jonas & Associates, Inc.
Attn: Romena Jonas
Date Sampled: Oct. 01, 1991 — Date Submitted: Oct. 02, 1991
Date Extracted: Oct. 07, 1991 — Date Analyzed: Oct. 9, 1991

Project Name: PACO PUMPS SOIL
Sample I.D.: B7-0.5-10191
Method of Analysis: EPA 8270 — Matrix: soil

COMPOUND NAME	Sample mg/Kg	MDL mg/Kg	Spike Recovery
PHENOL	N.D.	0.05	-----
BIS(2-CHLOROETHYL) ETHER	N.D.	0.05	91.5% 89.2%
2-CHLOROPHENOL	N.D.	0.05	-----
1,3-DICHLOROBENZENE	N.D.	0.05	-----
1,4-DICHLOROBENZENE	N.D.	0.05	-----
BENZYL ALCOHOL	N.D.	0.10	-----
1,2-DICHLOROBENZENE	N.D.	0.05	-----
2-METHYLPHENOL	N.D.	0.05	-----
BIS(2-CHLOROISOPROPYL)ETHER	N.D.	0.05	-----
4-METHYLPHENOL	N.D.	0.05	-----
N-NITROSO-DI-N-PROPYLAMINE	N.D.	0.05	-----
HEXACHLOROETHANE	N.D.	0.05	-----
NITROBENZENE	N.D.	0.05	-----
ISOPHORONE	N.D.	0.05	-----
2-NITROPHENOL	N.D.	0.05	-----
2,4-DIMETHYLPHENOL	N.D.	0.05	-----
BENZOIC ACID	N.D.	0.25	-----
BIS(2-CHLOROETHOXY)METHANE	N.D.	0.05	91.5% 93.2%
2,4-DICHLOROPHENOL	N.D.	0.05	-----
1,2,4-TRICHLOROBENZENE	N.D.	0.05	-----
NAPHTHALENE	N.D.	0.05	-----
4-CHLOROANILINE	N.D.	0.10	-----
HEXACHLOROBUTADIENE	N.D.	0.05	-----
4-CHLORO-3-METHYLPHENOL	N.D.	0.10	-----
2-METHYLNAPHTHALENE	N.D.	0.05	-----
HEXACHLOROCYCLOPENTADIENE	N.D.	0.05	-----
2,4,6-TRICHLOROPHENOL	N.D.	0.05	-----
2,4,5-TRICHLOROPHENOL	N.D.	0.05	-----
2-CHLORONAPHTHALENE	N.D.	0.05	-----
2-NITROANILINE	N.D.	0.25	-----
DIMETHYL PHTHALATE	N.D.	0.05	-----
ACENAPHTHYLENE	N.D.	0.05	-----
3-NITROANILINE	N.D.	0.25	-----
ACENAPHTHENE	N.D.	0.05	87.5% 88.2%
2,4-DINITROPHENOL	N.D.	0.25	-----
4-NITROPHENOL	N.D.	0.25	-----
DIBENZOFURAN	N.D.	0.05	-----

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CHROMALAB, INC.

Analytical Laboratory (E694)

5 DAYS TURNAROUND

ChromaLab File # 1091017 G

Project Name: PACO PUMPS SOIL
Sample I.D.: B7-0.5-10191
Method of Analysis: EPA 8270 Matrix: soil

COMPOUND NAME	Sample mg/Kg	MDL mg/Kg	Spike Recovery
2,4-DINITROTOLUENE	N.D.	0.05	-----
2,6-DINITROTOLUENE	N.D.	0.05	89.1% 87.1%
DIETHYL PHTHALATE	N.D.	0.05	-----
4-CHLORO-PHENYL PHENYL ETHER	N.D.	0.05	-----
FLUORENE	N.D.	0.05	-----
4-NITROANILINE	N.D.	0.25	-----
4,6-DINITRO-2-METHYL PHENOL	N.D.	0.25	-----
N-NITROSODIPHENYLAMINE	N.D.	0.05	-----
4-BROMOPHENYL PHENYL ETHER	N.D.	0.05	-----
HEXACHLOROBENZENE	N.D.	0.05	-----
PENTACHLOROPHENOL	N.D.	0.25	-----
PHENANTHRENE	N.D.	0.05	-----
ANTHRACENE	N.D.	0.05	-----
DI-N-BUTYL PHTHALATE	N.D.	0.05	-----
FLUORANTHENE	N.D.	0.05	-----
PYRENE	N.D.	0.05	-----
BUTYLBENZYLPHTHALATE	N.D.	0.05	-----
3,3'-DICHLOROBENZIDINE	N.D.	0.10	-----
BENZO(A)ANTHRACENE	N.D.	0.05	-----
BIS(2-ETHYLHEXYL)PHTHALATE	N.D.	0.05	-----
CHRYSENE	N.D.	0.05	86.1% 85.1%
DI-N-OCTYLPHTHALATE	N.D.	0.05	-----
BENZO(B)FLUORANTHENE	N.D.	0.05	-----
BENZO(K)FLUORANTHENE	N.D.	0.05	-----
BENZO(A)PYRENE	N.D.	0.05	-----
INDENO(1,2,3 C,D)PYRENE	N.D.	0.05	-----
DIBENZO(A,H)ANTHRACENE	N.D.	0.05	-----
BENZO(G,H,I)PERYLENE	N.D.	0.05	-----

ChromaLab, Inc.

David Duong
Senior Chemist

Eric Tam
Lab Director

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CHROMALAB, INC.

Analytical Laboratory (E694)

5 DAYS TURNAROUND

October 9, 1991 ChromaLab File No.: 1091017 A

JONAS & ASSOCIATES

Attn: R. Jonas

RE: 8080 ANALYSIS

Project Name: PACO PUMPS SOIL
Date Sampled: Oct. 1, 1991 Date Submitted: Oct. 2, 1991
Date Analyzed: October 4-8, 1991

RESULTS: Sample I.D.: B1-3.5-10191

CHLORINATED PESTICIDE ANALYSIS

Compounds	Concentration (µg/kg)	Detection Limit (µg/kg)	Spike Recovery
ALDRIN	N.D.	10	----
DIELDRIN	N.D.	10	87.4%
ENDRIN ALDEHYDE	N.D.	50	----
ENDRIN	N.D.	10	90.2%
HEPTACHLOR	N.D.	10	----
HEPTACHLOR EPOXIDE	N.D.	10	----
p,p' - DDT	N.D.	50	84.6%
p,p' - DDE	N.D.	10	93.1%
p,p' - DDD	N.D.	50	----
ENDOSULFAN I	N.D.	50	100.8%
ENDOSULFAN II	N.D.	50	----
α - BHC	N.D.	10	----
β - BHC	N.D.	10	----
γ - BHC (LINDANE)	N.D.	10	86.9%
δ - BHC	N.D.	10	----
ENDOSULFAN SULFATE	N.D.	100	----
p,p' - METHOXYCHLOR	N.D.	100	----
TOXAPHENE	N.D.	100	102.2%
PCB'S	N.D.	100	----
CHLORDANE	N.D.	100	----

ChromaLab, Inc.

David Duong
Chief Chemist

Eric Tam (by DD)
Eric Tam
Laboratory Director

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CHROMALAB, INC.

Analytical Laboratory (E694)

5 DAYS TURNAROUND

October 9, 1991 ChromaLab File No.: 1091017 B

JONAS & ASSOCIATES

Attn: R. Jonas

RE: 8080 ANALYSIS

Project Name: PACO PUMPS SOIL
Date Sampled: Oct. 1, 1991 Date Submitted: Oct. 2, 1991
Date Analyzed: October 4-8, 1991

RESULTS: Sample I.D.: B2-3.5-10191

CHLORINATED PESTICIDE ANALYSIS

Compounds	Concentration (µg/kg)	Detection Limit (µg/kg)	Spike Recovery
ALDRIN	N.D.	10	----
DIELDRIN	N.D.	10	87.4%
ENDRIN ALDEHYDE	N.D.	50	----
ENDRIN	N.D.	10	90.2%
HEPTACHLOR	N.D.	10	----
HEPTACHLOR EPOXIDE	N.D.	10	----
p,p' - DDT	N.D.	50	84.6%
p,p' - DDE	N.D.	10	93.1%
p,p' - DDD	N.D.	50	----
ENDOSULFAN I	N.D.	50	100.8%
ENDOSULFAN II	N.D.	50	----
α - BHC	N.D.	10	----
β - BHC	N.D.	10	----
γ - BHC (LINDANE)	N.D.	10	86.9%
δ - BHC	N.D.	10	----
ENDOSULFAN SULFATE	N.D.	100	----
p,p' - METHOXYCHLOR	N.D.	100	----
TOXAPHENE	N.D.	100	102.2%
PCB'S	N.D.	100	----
CHLORDANE	N.D.	100	----

ChromaLab, Inc.

David Duong
Chief Chemist

Eric Tam (by DD)
Eric Tam
Laboratory Director

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CHROMALAB, INC.

Analytical Laboratory (E694)

5 DAYS TURNAROUND

October 9, 1991 ChromaLab File No.: 1091017 C

JONAS & ASSOCIATES

Attn: R. Jonas

RE: 8080 ANALYSIS

Project Name: PACO PUMPS SOIL
Date Sampled: Oct. 1, 1991 Date Submitted: Oct. 2, 1991
Date Analyzed: October 4-8, 1991

RESULTS: Sample I.D.: B3-3.5-10191

CHLORINATED PESTICIDE ANALYSIS

Compounds	Concentration (µg/kg)	Detection Limit (µg/kg)	Spike Recovery
ALDRIN	N.D.	10	----
DIELDRIN	N.D.	10	87.4%
ENDRIN ALDEHYDE	N.D.	50	----
ENDRIN	N.D.	10	90.2%
HEPTACHLOR	N.D.	10	----
HEPTACHLOR EPOXIDE	N.D.	10	----
p,p' - DDT	N.D.	50	84.6%
p,p' - DDE	N.D.	10	93.1%
p,p' - DDD	N.D.	50	----
ENDOSULFAN I	N.D.	50	100.8%
ENDOSULFAN II	N.D.	50	----
α - BHC	N.D.	10	----
β - BHC	N.D.	10	----
γ - BHC (LINDANE)	N.D.	10	86.9%
δ - BHC	N.D.	10	----
ENDOSULFAN SULFATE	N.D.	100	----
p,p' - METHOXYCHLOR	N.D.	100	----
TOXAPHENE	N.D.	100	102.2%
PCB'S	N.D.	100	----
CHLORDANE	N.D.	100	----

ChromaLab, Inc.

David Duong
Chief Chemist

Eric Tam (by DD)
Eric Tam
Laboratory Director

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CHROMALAB, INC.

Analytical Laboratory (E694)

5 DAYS TURNAROUND

October 9, 1991 ChromaLab File No.: 1091017 D

JONAS & ASSOCIATES

Attn: R. Jonas

RE: 8080 ANALYSIS

Project Name: PACO PUMPS SOIL
Date Sampled: Oct. 1, 1991 Date Submitted: Oct. 2, 1991
Date Analyzed: October 4-8, 1991

RESULTS: Sample I.D.: B4-3.5-10191

CHLORINATED PESTICIDE ANALYSIS

Compounds	Concentration (µg/kg)	Detection Limit (µg/kg)	Spike Recovery
ALDRIN	N.D.	10	----
DIELDRIN	N.D.	10	87.4%
ENDRIN ALDEHYDE	N.D.	50	----
ENDRIN	N.D.	10	90.2%
HEPTACHLOR	N.D.	10	----
HEPTACHLOR EPOXIDE	N.D.	10	----
p,p' - DDT	N.D.	50	84.6%
p,p' - DDE	N.D.	10	93.1%
p,p' - DDD	N.D.	50	----
ENDOSULFAN I	N.D.	50	100.8%
ENDOSULFAN II	N.D.	50	----
α - BHC	N.D.	10	----
β - BHC	N.D.	10	----
γ - BHC (LINDANE)	N.D.	10	86.9%
δ - BHC	N.D.	10	----
ENDOSULFAN SULFATE	N.D.	100	----
p,p' - METHOXYCHLOR	N.D.	100	----
TOXAPHENE	N.D.	100	102.2%
PCB'S	N.D.	100	----
CHLORDANE	N.D.	100	----

ChromaLab, Inc.

David Duong
Chief Chemist

Eric Tam (by DD)
Eric Tam
Laboratory Director

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CHROMALAB, INC.

Analytical Laboratory (E694)

5 DAYS TURNAROUND

October 9, 1991 ChromaLab File No.: 1091017 E

JONAS & ASSOCIATES

Attn: R. Jonas

RE: 8080 ANALYSIS

Project Name: PACO PUMPS SOIL
Date Sampled: Oct. 1, 1991 Date Submitted: Oct. 2, 1991
Date Analyzed: October 4-8, 1991

RESULTS: Sample I.D.: B5-3.5-10191

CHLORINATED PESTICIDE ANALYSIS

Compounds	Concentration (µg/kg)	Detection Limit (µg/kg)	Spike Recovery
ALDRIN	N.D.	10	----
DIELDRIN	N.D.	10	87.4%
ENDRIN ALDEHYDE	N.D.	50	----
ENDRIN	N.D.	10	90.2%
HEPTACHLOR	N.D.	10	----
HEPTACHLOR EPOXIDE	N.D.	10	----
p,p' - DDT	N.D.	50	84.6%
p,p' - DDE	N.D.	10	93.1%
p,p' - DDD	N.D.	50	----
ENDOSULFAN I	N.D.	50	100.8%
ENDOSULFAN II	N.D.	50	----
α - BHC	N.D.	10	----
β - BHC	N.D.	10	----
γ - BHC (LINDANE)	N.D.	10	86.9%
δ - BHC	N.D.	10	----
ENDOSULFAN SULFATE	N.D.	100	----
p,p' - METHOXYCHLOR	N.D.	100	----
TOXAPHENE	N.D.	100	102.2%
PCB'S	N.D.	100	----
CHLORDANE	N.D.	100	----

ChromaLab, Inc.

David Duong
Chief Chemist

Eric Tam (by DD)
Eric Tam
Laboratory Director

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CHROMALAB, INC.

Analytical Laboratory (E694)

5 DAYS TURNAROUND

October 9, 1991 ChromaLab File No.: 1091017 F

JONAS & ASSOCIATES

Attn: R. Jonas

RE: 8080 ANALYSIS

Project Name: PACO PUMPS SOIL
Date Sampled: Oct. 1, 1991 Date Submitted: Oct. 2, 1991
Date Analyzed: October 4-8, 1991

RESULTS: Sample I.D.: B6-0.5-10191

CHLORINATED PESTICIDE ANALYSIS

Compounds	Concentration (µg/kg)	Detection Limit (µg/kg)	Spike Recovery
ALDRIN	N.D.	10	----
DIELDRIN	N.D.	10	87.4%
ENDRIN ALDEHYDE	N.D.	50	----
ENDRIN	N.D.	10	90.2%
HEPTACHLOR	N.D.	10	----
HEPTACHLOR EPOXIDE	N.D.	10	----
p,p' - DDT	N.D.	50	84.6%
p,p' - DDE	N.D.	10	93.1%
p,p' - DDD	N.D.	50	----
ENDOSULFAN I	N.D.	50	100.8%
ENDOSULFAN II	N.D.	50	----
α - BHC	N.D.	10	----
β - BHC	N.D.	10	----
γ - BHC (LINDANE)	N.D.	10	86.9%
δ - BHC	N.D.	10	----
ENDOSULFAN SULFATE	N.D.	100	----
p,p' - METHOXYCHLOR	N.D.	100	----
TOXAPHENE	N.D.	100	102.2%
PCB'S	400*	100	----
CHLORDANE	N.D.	100	----

*PCB 1260

ChromaLab, Inc.

David Duong
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Eric Tam (by DD)
Eric Tam
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CHROMALAB, INC.

Analytical Laboratory (E694)

5 DAYS TURNAROUND

October 9, 1991 ChromaLab File No.: 1091017 G

JONAS & ASSOCIATES

Attn: R. Jonas

RE: 8080 ANALYSIS

Project Name: PACO PUMPS SOIL
Date Sampled: Oct. 1, 1991 Date Submitted: Oct. 2, 1991
Date Analyzed: October 4-8, 1991

RESULTS: Sample I.D.: B7-0.5-10191

CHLORINATED PESTICIDE ANALYSIS

Compounds	Concentration (µg/kg)	Detection Limit (µg/kg)	Spike Recovery
ALDRIN	N.D.	10	----
DIELDRIN	N.D.	10	87.4%
ENDRIN ALDEHYDE	N.D.	50	----
ENDRIN	N.D.	10	90.2%
HEPTACHLOR	N.D.	10	----
HEPTACHLOR EPOXIDE	N.D.	10	----
p,p' - DDT	N.D.	50	84.6%
p,p' - DDE	N.D.	10	93.1%
p,p' - DDD	N.D.	50	----
ENDOSULFAN I	N.D.	50	100.8%
ENDOSULFAN II	N.D.	50	----
α - BHC	N.D.	10	----
β - BHC	N.D.	10	----
γ - BHC (LINDANE)	N.D.	10	86.9%
δ - BHC	N.D.	10	----
ENDOSULFAN SULFATE	N.D.	100	----
p,p' - METHOXYCHLOR	N.D.	100	----
TOXAPHENE	N.D.	100	102.2%
PCB'S	670*	100	----
CHLORDANE	N.D.	100	----

*PCB 1260

ChromaLab, Inc.

David Duong
Chief Chemist

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Eric Tam
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CHROMALAB, INC.

Environmental Laboratory (1094)

5 DAYS TURNAROUND

April 29, 1992

ChromaLab File No.: 0492137

JONAS & ASSOCIATES

Attn: Romena Jonas

RE: Eighteen composite soil and one water samples for TEPH analysis

Project Name: PACO 9201
Project Number: PCO-220-01-PPII
Date Sampled: Apr. 9-14, 1992 Date Submitted: Apr. 14, 1992
Date Extracted: Apr. 23-24, 1992 Date Analyzed: Apr. 24-28,1992

RESULTS:

Sample I.D.	Kerosene (µg/L)	Diesel (µg/L)	Motor Oil (mg/L)
BFW-WATER	N.D.	310	1.6
BLANK	N.D.	N.D.	N.D.
SPIKE RECOVERY	96%	103%	92%
DETECTION LIMT	50	50	0.5
METHOD OF ANALYSIS	3510/ 8015	3510/ 8015	3510/ 8015

ChromaLab, Inc.

Yiu Tam
Analytical Chemist

Eric Tam
Laboratory Director

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CHROMALAB, INC.

Analytical Laboratory (E694)

5 DAYS TURNAROUND

October 9, 1991 ChromaLab File No.: 1091017

JONAS & ASSOCIATES

Attn: R. Jonas

RE: Seven soil samples for Gasoline/BTEX and Diesel analysis

Project Name: PACO PUMPS SOIL
Date Sampled: Oct. 1, 1991 Date Submitted: Oct. 2, 1991
Date Extracted: Oct. 4-7, 1991 Date Analyzed: Oct. 4-7, 1991

RESULTS:

Sample I.D.	Gasoline (mg/kg)	Diesel (mg/kg)	Benzene (µg/kg)	Toluene (µg/kg)	Ethyl Benzene (µg/kg)	Total Xylenes (µg/kg)
B1-3.5-1019	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
B2-3.5-1019	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
B3-3.5-1019	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
B4-3.5-1019	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
B5-3.5-1019	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
B6-0.5-1019	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
B7-0.5-1019	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
BLANK	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
SPIKE REC.	101.3%	93.0%	95.4%	103.9%	94.6%	103.1%
DUP SPIKE REC	98.0%	100.7%	89.3%	88.3%	89.5%	90.8%
DET. LIMIT	1.0	1.0	5.0	5.0	5.0	5.0
METHOD OF ANALYSIS	5030/ 8015	3550/ 8015	8020	8020	8020	8020

ChromaLab, Inc.

David Duong
Chief Chemist

Eric Tam (by DD)
Eric Tam
Laboratory Director

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510/831-1788 • Facsimile 510/831-8798
Federal ID #68-0140157

CHROMALAB, INC.

Environmental Laboratory (1094)

5 DAYS TURNAROUND

April 29, 1992 ChromaLab File No.: 0492137

JONAS & ASSOCIATES

Attn: Romena Jonas

RE: Eighteen composite soil and one water samples for TEPH analysis

Project Name: PACO 9201
Project Number: PCO-220-01-PPII
Date Sampled: Apr. 9-14, 1992 Date Submitted: Apr. 14, 1992
Date Extracted: Apr. 23-24, 1992 Date Analyzed: Apr. 24-28,1992
RESULTS:

Sample I.D.	Kerosene (mg/Kg)	Diesel (mg/Kg)	Motor Oil (mg/Kg)
B8-0.5 & 1.5	N.D.	22	110
B9-0.5 & 1.5	N.D.	N.D.	660
B10-0.5 & 1.5	N.D.	27	63
B11-0.5 & 1.5	N.D.	120	410
B12-0.5 & 1.5	N.D.	N.D.	N.D.
B13-0.5 & 1.5	N.D.	55	98
B14-0.5 & 1.5	N.D.	N.D.	21
B16-0.5 & 1.5	N.D.	45	190
B17-0.5 & 1.5	290	N.D.	520
B18-0.5 & 1.5	8000	N.D.	7800
B19-0.5 & 1.5	27	N.D.	170
B20-0.5 & 1.5	N.D.	15	120
B21-0.5 & 1.5	N.D.	N.D.	N.D.
B22-0.5 & 1.5	N.D.	N.D.	29
B23-0.5 & 1.5	N.D.	N.D.	430
B24-0.5 & 1.5	N.D.	N.D.	N.D.
B25-0.5 & 1.5	N.D.	49	210
B26-0.5 & 1.5	N.D.	12	57
BLANK	N.D.	N.D.	N.D.
SPIKE RECOVERY	88%	99%	102%
DUP. SPIKE REC.	99%	92%	109%
DETECTION LIMT	1.0	1.0	10
METHOD OF ANALYSIS	3550/ 8015	3550/ 8015	3550/ 8015

(continued on next page)

ChromaLab, Inc.

Yiu Tam
Analytical Chemist

Eric Tam
Laboratory Director

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CHROMALAB, INC.

Environmental Laboratory (1094)

5 DAYS TURNAROUND

July 8, 1992 ChromaLab File No.: 0692278

JONAS & ASSOCIATES

Attn: Mark Jonas

RE: Two soil samples for Gas/BTEX, Diesel and Lead analyses

Project Name: 9201 PACO UST
Project Number: PCO-221
Date Sampled: June 30, 1992 Date Submitted: June 30, 1992
Date Extracted: July 7, 1992 Date Analyzed: July 7, 1992

RESULTS:

Sample I.D.	Gasoline (mg/Kg)	Diesel (mg/Kg)	Benzene (µg/Kg)	Toluene (µg/Kg)	Ethyl Benzene (µg/Kg)	Total Xylenes (µg/Kg)	Lead (mg/Kg)
P1	15	N.D.	9.5	N.D.	170	140	89
B1	9.2	N.D.	43	N.D.	86	67	----
BLANK	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
SPIKE REC.	105%	97%	93%	112%	107%	106%	113%
DUP SPIKE REC	----	93%	94%	113%	108%	106%	119%
DET. LIMIT	1.0	1.0	5.0	5.0	5.0	5.0	2.5
METHOD OF ANALYSIS	5030/ 8015	3550/ 8015	8020	8020	8020	8020	7420

ChromaLab, Inc.

Mary Cappelli
Analytical Chemist

Eric Tam
Laboratory Director

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CHROMALAB, INC.

Environmental Laboratory (1094)

5 DAYS TURNAROUND

July 29, 1992 ChromaLab File No.: 0792240

JONAS & ASSOCIATES INC.

Attn: Mark Jonas

RE: Four soil samples for Gasoline/BTEX analysis

Project Name: 9201 PACO UST
Project Number: PCO-221
Date Sampled: July 27, 1992 Date Submitted: July 27, 1992
Date Analyzed: July 28, 1992

RESULTS:

Sample I.D.	Gasoline (mg/Kg)	Benzene (µg/Kg)	Toluene (µg/Kg)	Ethyl Benzene (µg/Kg)	Total Xylenes (µg/Kg)
B2-72792-6'	6.2	1800	N.D.	180	N.D.
B3-72792-6'	7.3	53	N.D.	200	N.D.
B4-72792-6'	5.3	650	N.D.	160	14
B5-72792-6'	1.9	34	N.D.	12	N.D.
BLANK	N.D.	N.D.	N.D.	N.D.	N.D.
SPIKE RECOVERY	88%	88%	93%	94%	94%
DUP. SPIKE RECOVERY	----	90%	91%	96%	95%
DETECTION LIMIT	1.0	5.0	5.0	5.0	5.0
METHOD OF ANALYSIS	5030/8015	8020	8020	8020	8020

ChromaLab, Inc.

Billy Thach
Analytical Chemist

Eric Tam
Laboratory Director

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CHROMALAB, INC.

Environmental Laboratory (1094)

5 DAYS TURNAROUND

August 6, 1992 ChromaLab File No.: 0892005

JONAS & ASSOCIATES, INC.

Attn: M. Jonas

RE: Four soil samples for Gasoline/BTEX analyses

Project Name: 9201 PACO UST REM
Project Number: PCO-221-01-UST
Date Sampled: August 3, 1992 Date Submitted: August 3, 1992
Date Analyzed: August 4, 1992

RESULTS:

I.D.	Gasoline (mg/Kg)	Benzene (µg/kg)	Toluene (µg/kg)	Ethyl Benzene (µg/kg)	Total ~~Samples~~ Xylenes (µg/kg)
B6-8392-6'	13	2100	18	340	190
B7-8392-6'	11	2100	11	230	67
B8-8392-6'	7.4	750	9.2	180	26
B9-8392-6'	2.3	38	5.6	8.0	9.1
BLANK	N.D.	N.D.	N.D.	N.D.	N.D.
SPIKE RECOVERY	86%	90%	100%	110%	97%
DUP. SPIKE RECOVERY	----	90%	101%	101%	100%
DETECTION LIMIT	1.0	5.0	5.0	5.0	5.0
METHOD OF ANALYSIS	5030/8015	8020	8020	8020	8020

ChromaLab, Inc.

Mary Cappelli
Analytical Chemist

Eric Tam
Laboratory Director

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CHROMALAB, INC.

Environmental Laboratory (1094)

5 DAYS TURNAROUND

August 14, 1992 ChromaLab File No.: 0892087

JONAS & ASSOCIATES

Attn: Mark Jonas

RE: Four rush soil samples for Gas/BTEX analyses

Project Name: 9201 PACO UST REM
Project Number: PCO-221-01-UST
Date Sampled: Aug. 12, 1992 Date Submitted: Aug. 12, 1992
Date Analyzed: Aug. 14, 1992

RESULTS:

Sample I.D.	Gasoline (mg/Kg)	Benzene (µg/kg)	Toluene (µg/kg)	Ethyl Benzene (µg/kg)	Total Xylenes (µg/kg)
B10-81292-6'	4.4	371	4.7	80	28
B11-81292-6'	13	670	7.6	160	100
B12-81292-6'	N.D.	9.7	N.D.	N.D.	N.D.
B13-81292-6'	1.1	13	N.D.	N.D.	7.0
BLANK	N.D.	N.D.	N.D.	N.D.	N.D.
SPIKE RECOVERY	100%	111%	106%	104%	104%
DUP. SPIKE RECOVERY	----	107%	104%	103%	103%
DETECTION LIMIT	1.0	5.0	5.0	5.0	5.0
METHOD OF ANALYSIS	5030/8015	8020	8020	8020	8020

ChromaLab, Inc.

Billy Thach
Analytical Chemist

Eric Tam
Laboratory Director

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Federal ID #68-0140157

Table D1
PACO PUMPS - 9201 San Leandro Street Facility
DETECTED PRIORITY POLLUTANT METALS USED IN THE STATISTICAL ANALYSIS
{milligrams chemical per kilogram soil}

Sample I.D.	Sampling Date	Depth (feet)	Matrix	Lab	As Arsenic	Be Beryllium	Cd Cadmium	Cr Chromium	Cu Copper	Hg Mercury	Ni Nickel	Pb Lead	Sb Antimony	Se Selenium	Zn Zinc
B6-0.5	10/1/91	0-0.5	Soil	CrLab	ND(0.25)	ND(0.05)	0.595	2.63	67.8	ND(0.05)	1.28	85.4	ND(1.00)	ND(0.25)	22.5
B7-0.5	10/1/91	0-0.5	Soil	CrLab	ND(0.25)	ND(0.05)	1.99	57.8	ND(0.25)	ND(0.05)	348	ND(0.50)	ND(1.00)	ND(0.25)	ND(0.25)
B8-0.5/1.5	4/13/92	0-0.5/1-1.5	Soil	CrLab	ND(0.25)	0.07	1.9	2.5	49	0.22	5.9	3.0	ND(1.00)	ND(0.25)	44
B9-0.5/1.5	4/13/92	0-0.5/1-1.5	Soil	CrLab	ND(0.25)	0.07	2.2	5.1	28	0.69	4.9	11	1.3	0.30	50
B10-0.5/1.5	4/13/92	0-0.5/1-1.5	Soil	CrLab	ND(0.25)	ND(0.05)	2.8	2.9	34	0.34	3.3	7.6	1.9	ND(0.25)	57
B11-0.5/1.5	4/9/92	0-0.5/1-1.5	Soil	CrLab	ND(0.25)	ND(0.05)	1.2	6.8	17	0.12	3.4	22	ND(1.00)	ND(0.25)	39
B12-0.5/1.5	4/9/92	0-0.5/1-1.5	Soil	CrLab	ND(0.25)	0.13	1.9	5.1	21	0.26	6.9	11	2.1	ND(0.25)	51
B13-0.5/1.5	4/9/92	0-0.5/1-1.5	Soil	CrLab	ND(0.25)	0.05	0.89	14	19	0.22	15	61	ND(1.00)	ND(0.25)	53
B14-0.5/1.5	4/9/92	0-0.5/1-1.5	Soil	CrLab	ND(0.25)	0.32	1.3	17	20	0.24	21	13	ND(1.00)	ND(0.25)	32
B16-0.5/1.5	4/13/92	0-0.5/1-1.5	Soil	CrLab	ND(0.25)	ND(0.05)	2.8	25	160	0.23	16	100	ND(1.00)	ND(0.25)	420
B17-0.5/1.5	4/13/92	0-0.5/1-1.5	Soil	CrLab	ND(0.25)	0.08	2.4	14	35	0.09	6.2	37	ND(1.00)	ND(0.25)	110
B18-0.5/1.5	4/13/92	0-0.5/1-1.5	Soil	CrLab	ND(0.25)	0.06	2.8	25	180	0.29	19	36	ND(1.00)	0.53	100
B19-0.5/1.5	4/13/92	0-0.5/1-1.5	Soil	CrLab	ND(0.25)	ND(0.05)	2.3	11	38	0.1	17	45	3.0	21	180
B20-0.5/1.5	4/13/92	0-0.5/1-1.5	Soil	CrLab	3.5	0.08	2.5	13	110	0.44	18	52	ND(1.00)	ND(0.25)	250
B21-0.5/1.5	4/13/92	0-0.5/1-1.5	Soil	CrLab	ND(0.25)	0.1	2.2	17	170	0.34	14	43	1.5	ND(0.25)	99
B22-0.5/1.5	4/13/92	0-0.5/1-1.5	Soil	CrLab	3.0	0.09	3.8	20	350	0.14	23	76	8.3	ND(0.25)	160
B23-0.5/1.5	4/13/92	0-0.5/1-1.5	Soil	CrLab	ND(0.25)	0.07	1.3	14	73	0.09	11	10	ND(1.00)	ND(0.25)	35
B24-0.5/1.5	4/13/92	0-0.5/1-1.5	Soil	CrLab	ND(0.25)	0.05	1.6	9.01	160	0.52	7.9	41	1.2	ND(0.25)	100
B25-0.5/1.5	4/13/92	0-0.5/1-1.5	Soil	CrLab	ND(0.25)	0.06	1.3	3.2	30	ND(0.05)	4.9	3.7	ND(1.00)	ND(0.25)	29
B26-0.5/1.5	4/13/92	0-0.5/1-1.5	Soil	CrLab	5.4	0.12	2.4	28	760	0.98	22	170	1.1	ND(0.25)	280

notes: CrLab: Chromalab Inc.
ND(0.25) = Not Detected above the laboratory detection limit in parentheses.
For the statistical analysis the ND value was used.

PACO PUMPS - 9201 San Leandro Street, Oakland, California
Input GEOEAS Statistical Package
Detected Metal Concentrations

```
PCO220A.DAT - PACO PUMPS 9201 San Leandro Street - METALS
11
Arsenic    mg/kg      F4.2
Beryllium  mg/kg      F4.2
Cadmium    mg/kg      F5.3
Chromium   mg/kg      F4.2
Copper     mg/kg      F4.2
Mercury    mg/kg      F4.2
Nickel     mg/kg      F4.2
Lead       mg/kg      F4.2
Antimony   mg/kg      F4.2
Selenium   mg/kg      F4.2
Zinc       mg/kg      F4.2
 0.25  0.05  0.595  2.63   67.8   0.05   1.28  85.4  1.0  0.25  22.5   'B6'
 0.25  0.05  1.99  57.8    0.25  0.05  348     0.50  1.0  0.25   0.25  'B7'
 0.25  0.07  1.9   2.5     49    0.22   5.9    3.0  1.0  0.25  44     'B8'
 0.25  0.07  2.2   5.1     28    0.69   4.9   11    1.3  0.30  50     'B9'
 0.25  0.05  2.8   2.9     34    0.34   3.3    7.6  1.9  0.25  57     'B10'
 0.25  0.05  1.2   6.8     17    0.12   3.4   22    1.0  0.25  39     'B11'
 0.25  0.13  1.9   5.1     21    0.26   6.9   11    2.1  0.25  51     'B12'
 0.25  0.05  0.89  14      19    0.22  15     61    1.0  0.25  53     'B13'
 0.25  0.32  1.3   17      20    0.24  21     13    1.0  0.25  32     'B14'
 0.25  0.05  2.8   25     160    0.23  16    100    1.0  0.25 420     'B16'
 0.25  0.08  2.4   14      35    0.09   6.2   37    1.0  0.25 110     'B17'
 0.25  0.06  2.8   25     180    0.29  19     36    1.0  0.53 100     'B18'
 0.25  0.05  2.3   11      38    0.1   17     45    3.0 21    180     'B19'
 3.5   0.08  2.5   13     110    0.44  18     52    1.0  0.25 250     'B20'
 0.25  0.1   2.2   17     170    0.34  14     43    1.5  0.25  99     'B21'
 3.0   0.09  3.8   20     350    0.14  23     76    8.3  0.25 160     'B22'
 0.25  0.07  1.3   14      73    0.09  11     10    1.0  0.25  35     'B23'
 0.25  0.05  1.6   9.01   160    0.52   7.9   41    1.2  0.25 100     'B24'
 0.25  0.06  1.3   3.2     30    0.05   4.9    3.7  1.0  0.25  29     'B25'
 5.4   0.12  2.4   28     760    0.98  22    170    1.1  0.25 280     'B26'
```

PACO PUMPS - 9201 San Leandro Street, Oakland, California
Input GEOEAS Statistical Package
Detected Metal Concentrations

Data File: \geoeas\data\PCO220A.DAT

	Arsenic	Beryllium	Cadmium	Chromium	Copper
Mean	.808	.082	2.009	14.652	116.103
Variance	2.023	.004	.600	165.709	30233.210
Std. Dev.	1.422	.061	.774	12.873	173.877
Coef. Var.	**176.126**	73.770	38.552	87.857	**149.762**
Skewness	2.327	3.176	.188	1.924	2.792
Kurtosis	7.070	12.916	2.828	7.308	10.651
Minimum	.250	.050	.595	2.500	.250
25th %tile	.250	.050	1.300	5.100	21.000
Median	.250	.065	2.095	13.500	43.500
75th %tile	.250	.080	2.400	17.000	160.000
Maximum	5.400	.320	3.800	57.800	760.000

	Mercury	Nickel	Lead	Antimony	Selenium
Mean	.273	28.434	41.410	1.620	1.304
Variance	.056	5706.081	1757.584	2.737	21.496
Std. Dev.	.237	75.539	41.924	1.655	4.636
Coef. Var.	86.838	**265.663**	**101.240**	**102.132**	355.551
Skewness	1.577	4.071	1.559	3.550	4.128
Kurtosis	5.193	17.751	5.422	14.762	18.046
Minimum	.050	1.280	.500	1.000	.250
25th %tile	.090	4.900	10.000	1.000	.250
Median	.225	12.500	36.500	1.000	.250
75th %tile	.340	18.000	52.000	1.300	.250
Maximum	.980	348.000	170.000	8.300	21.000

	Zinc
Mean	105.588
Variance	11181.000
Std. Dev.	105.740
Coef. Var.	**100.145**
Skewness	1.640
Kurtosis	5.095
Minimum	.250
25th %tile	35.000
Median	55.000
75th %tile	110.000
Maximum	420.000

PACO PUMPS - 9201 San Leandro Street, Oakland, California
Input GEOEAS Statistical Package
Detected Metal Concentrations /w Conc. Resulting in C.V. > 100% Removed

```
PCO220B.DAT - PACO PUMPS 9201 San Leandro Street - METALS
11
Arsenic    mg/kg      F4.2
Beryllium  mg/kg      F4.2
Cadmium    mg/kg      F5.3
Chromium   mg/kg      F4.2
Copper     mg/kg      F4.2
Mercury    mg/kg      F4.2
Nickel     mg/kg      F4.2
Lead       mg/kg      F4.2
Antimony   mg/kg      F4.2
Selenium   mg/kg      F4.2
Zinc       mg/kg      F4.2
 0.25  0.05  0.595  2.63   67.8   0.05   1.28  85.4  1.0  0.25  22.5   'B6'
 0.25  0.05  1.99   57.8    0.25  0.05   1E31   0.50 1.0  0.25   0.25  'B7'
 0.25  0.07  1.9    2.5    49     0.22   5.9    3.0  1.0  0.25  44     'B8'
 0.25  0.07  2.2    5.1    28     0.69   4.9   11    1.3  0.30  50     'B9'
 0.25  0.05  2.8    2.9    34     0.34   3.3    7.6  1.9  0.25  57     'B10'
 0.25  0.05  1.2    6.8    17     0.12   3.4   22    1.0  0.25  39     'B11'
 0.25  0.13  1.9    5.1    21     0.26   6.9   11    2.1  0.25  51     'B12'
 0.25  0.05  0.89   14     19     0.22  15     61    1.0  0.25  53     'B13'
 0.25  0.32  1.3    17     20     0.24  21     13    1.0  0.25  32     'B14'
 0.25  0.05  2.8    25    160     0.23  16    100    1.0  0.25 1E31    'B16'
 0.25  0.08  2.4    14     35     0.09   6.2  37     1.0  0.25 110     'B17'
 0.25  0.06  2.8    25    180     0.29  19     36    1.0  0.53 100     'B18'
 0.25  0.05  2.3    11     38     0.1   17     45    3.0  1E31 180     'B19'
 1E31  0.08  2.5    13    110     0.44  18     52    1.0  0.25 250     'B20'
 0.25  0.1   2.2    17    170     0.34  14     43    1.5  0.25  99     'B21'
 1E31  0.09  3.8    20    1E31    0.14  23     76    1E31 0.25 160     'B22'
 0.25  0.07  1.3    14     73     0.09  11     10    1.0  0.25  35     'B23'
 0.25  0.05  1.6    9.01  160     0.52   7.9  41     1.2  0.25 100     'B24'
 0.25  0.06  1.3    3.2    30     0.05   4.9   3.7   1.0  0.25  29     'B25'
 1E31  0.12  2.4    28    1E31    0.98  22     1E31  1.1  0.25 280     'B26'
```

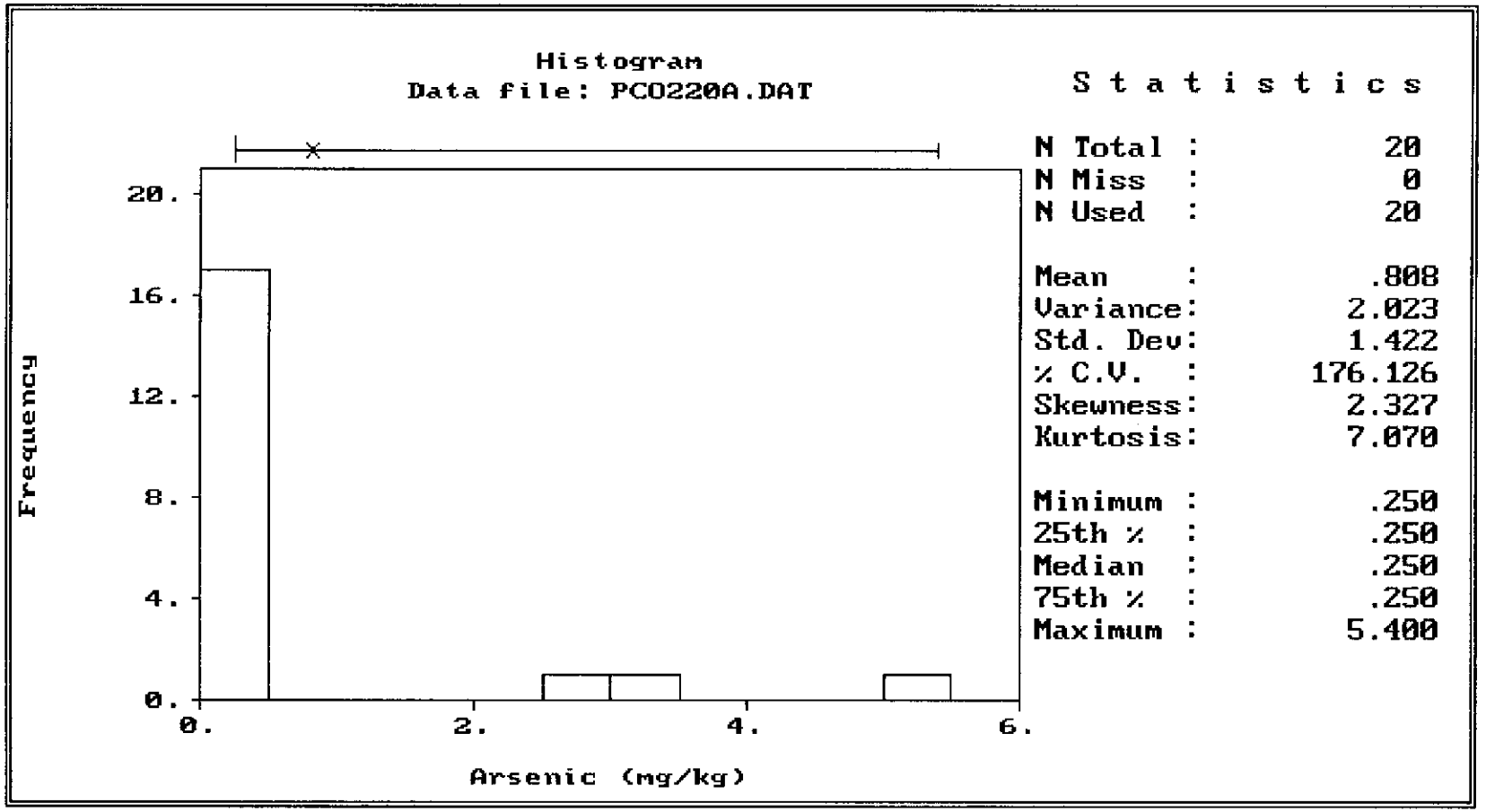
PACO PUMPS - 9201 San Leandro Street, Oakland, California
Input GEOEAS Statistical Package
Detected Metal Concentrations /w Conc. Resulting in C.V. > 100% Removed

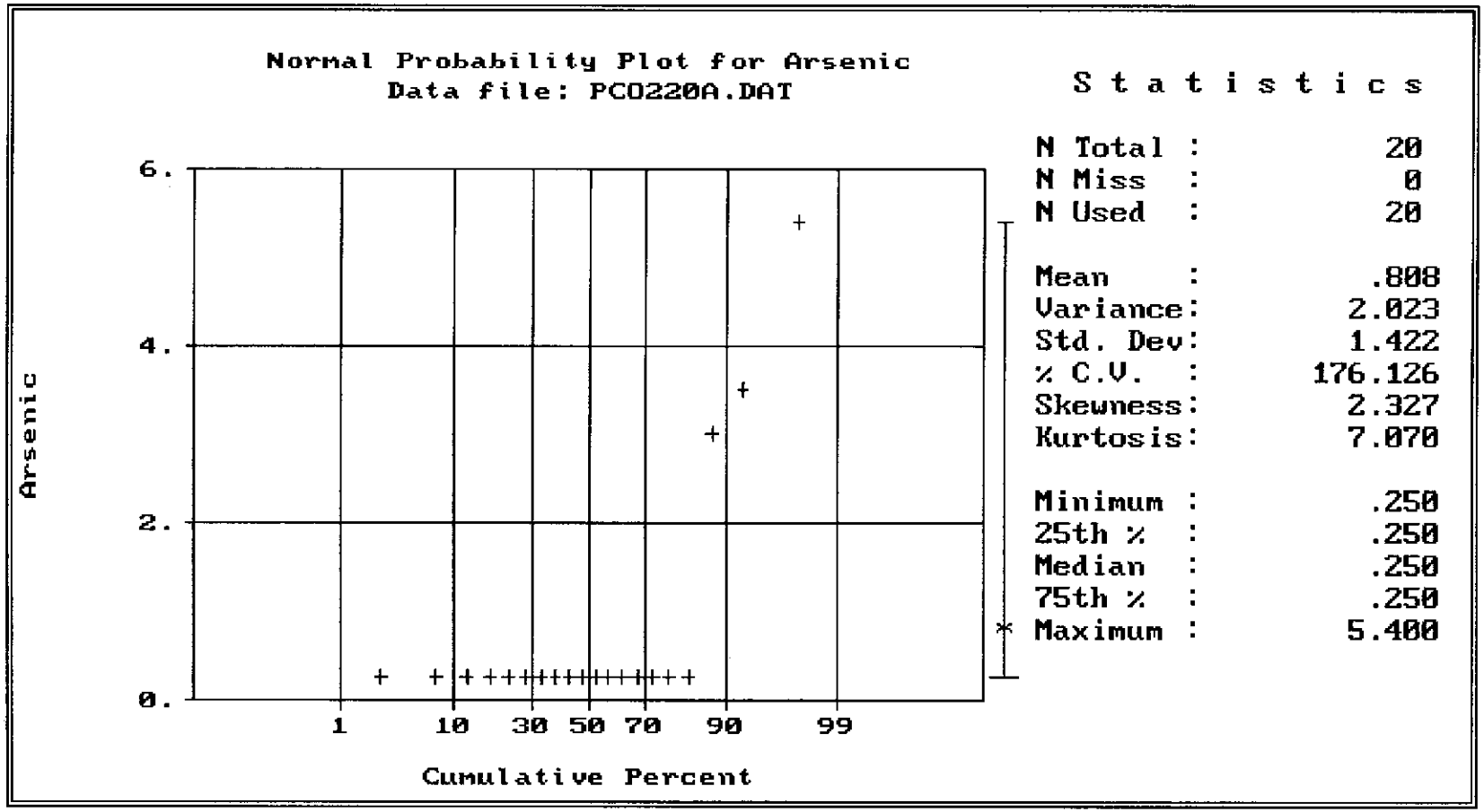
Data File: \geoeas\data\PCO220B.DAT

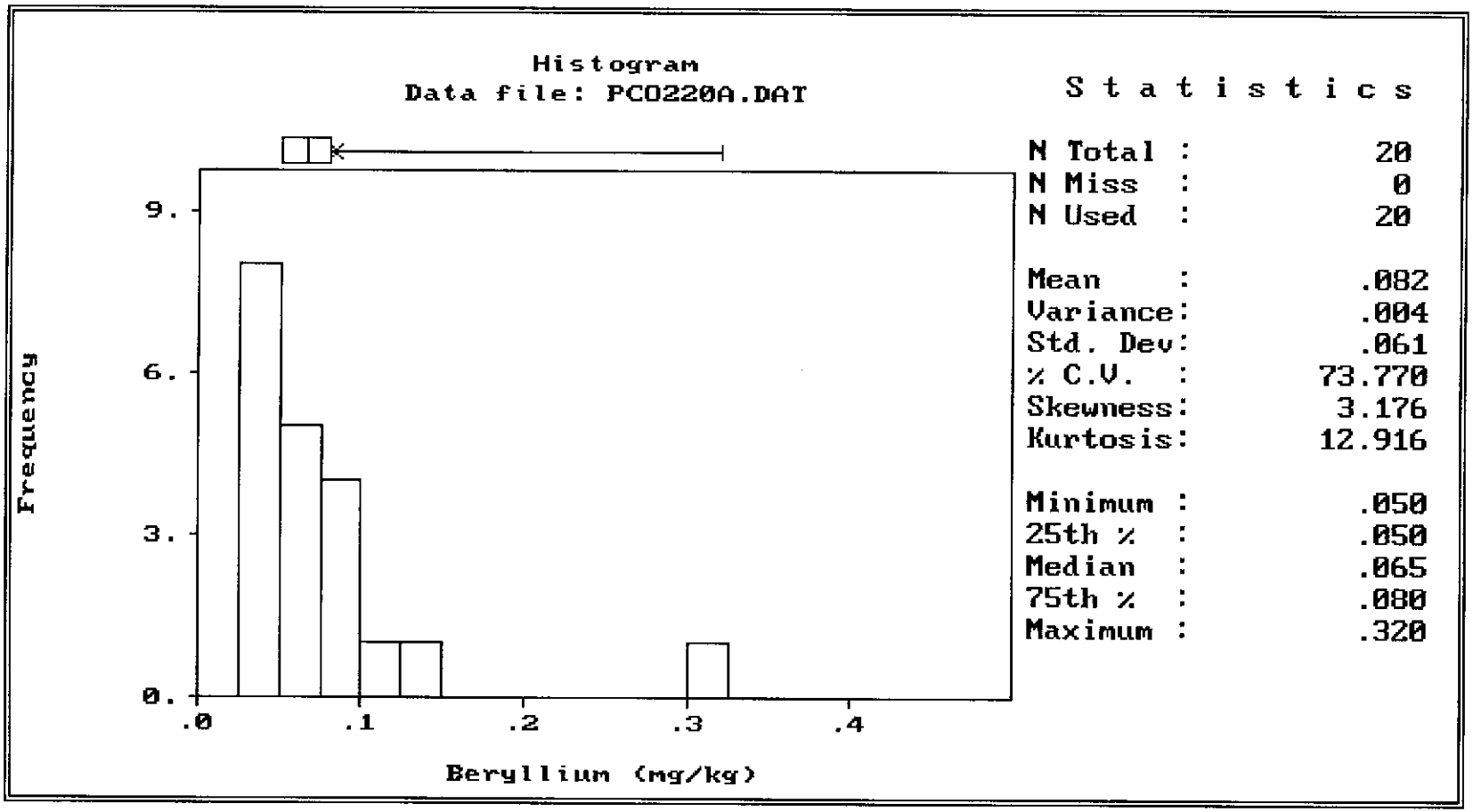
	Arsenic	Beryllium	Cadmium	Chromium	Copper
Mean	.250	.082	2.009	14.652	67.336
Variance	.000	.004	.600	165.709	3665.422
Std. Dev.	.000	.061	.774	12.873	60.543
Coef. Var.	**.000**	73.770	38.552	87.857	**89.911**
Skewness	.000	3.176	.188	1.924	.878
Kurtosis	.000	12.916	2.828	7.308	2.189
Minimum	.250	.050	.595	2.500	.250
25th %tile	.250	.050	1.300	5.100	20.500
Median	.250	.065	2.095	13.500	36.500
75th %tile	.250	.080	2.400	17.000	91.500
Maximum	.250	.320	3.800	57.800	180.000

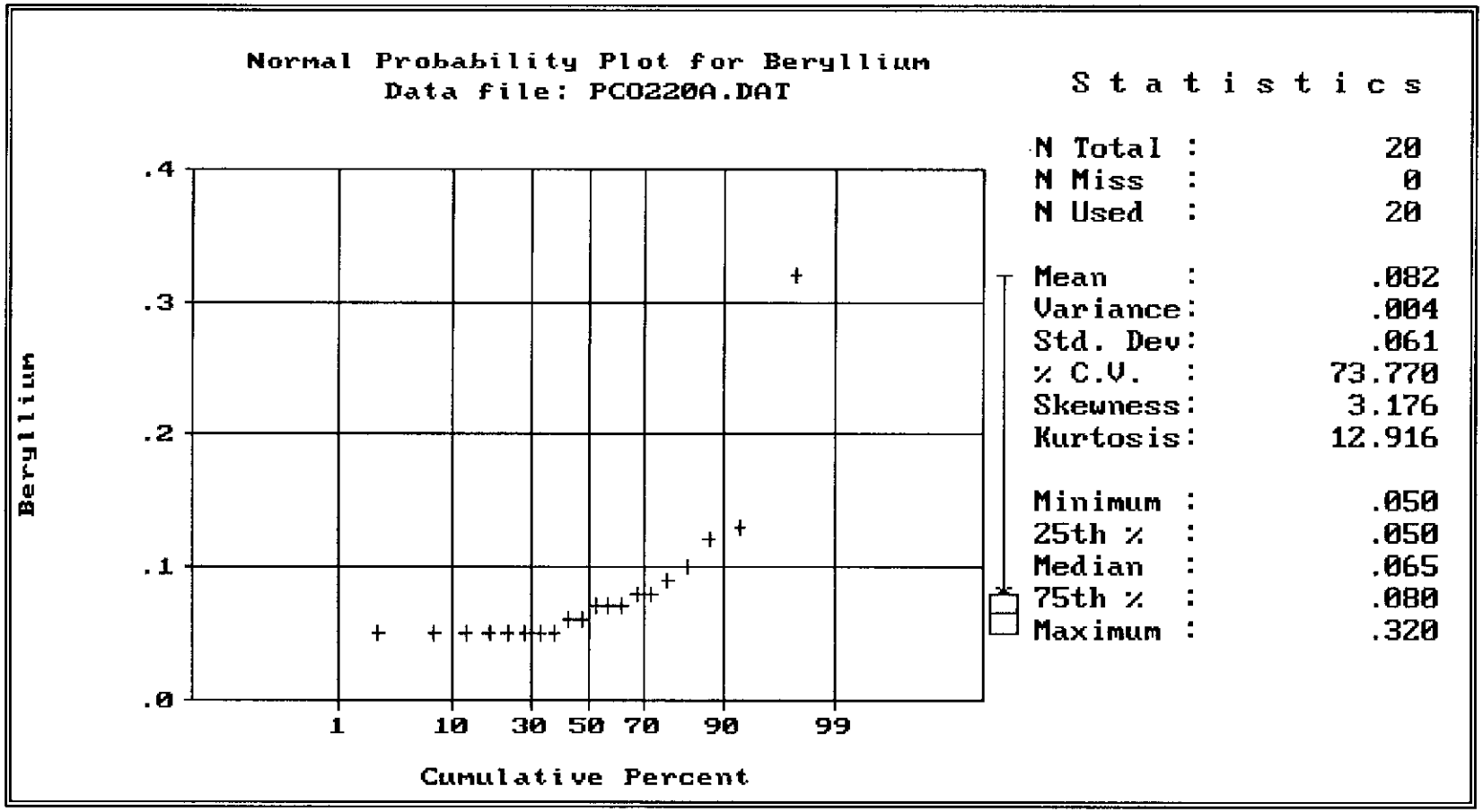
	Mercury	Nickel	Lead	Antimony	Selenium
Mean	.273	11.615	34.642	1.268	.267
Variance	.056	51.013	888.246	.280	.004
Std. Dev.	.237	7.142	29.803	.529	.065
Coef. Var.	86.838	**61.494**	**86.032**	**41.722**	**24.170**
Skewness	1.577	.163	.715	2.231	3.820
Kurtosis	5.193	1.569	2.486	7.248	16.007
Minimum	.050	1.280	.500	1.000	.250
25th %tile	.090	4.900	9.400	1.000	.250
Median	.225	11.000	36.000	1.000	.250
75th %tile	.340	17.250	46.750	1.225	.250
Maximum	.980	23.000	100.000	3.000	.530

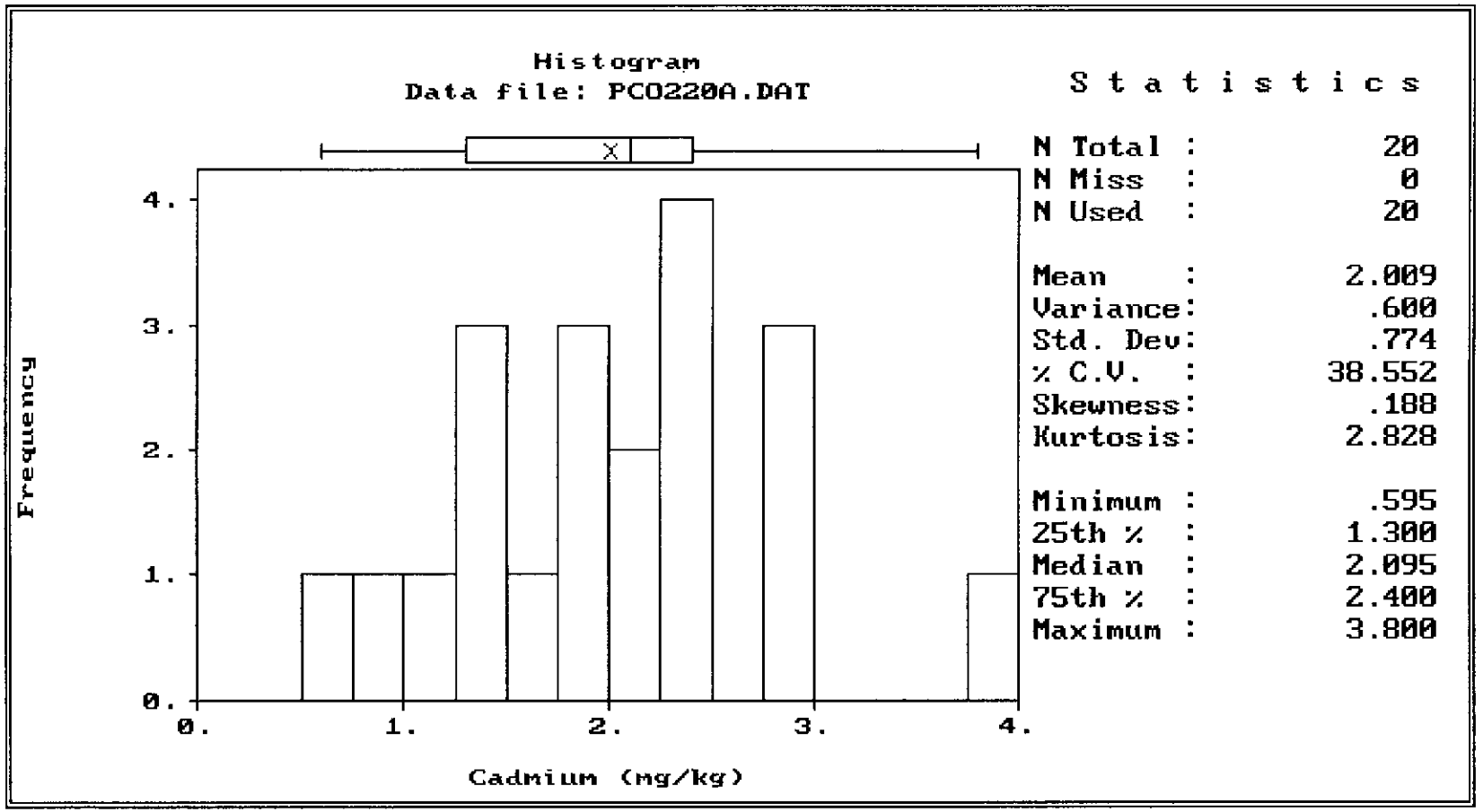
	Zinc
Mean	89.039
Variance	6021.155
Std. Dev.	77.596
Coef. Var.	**87.148**
Skewness	1.257
Kurtosis	3.601
Minimum	.250
25th %tile	34.250
Median	53.000
75th %tile	102.500
Maximum	280.000

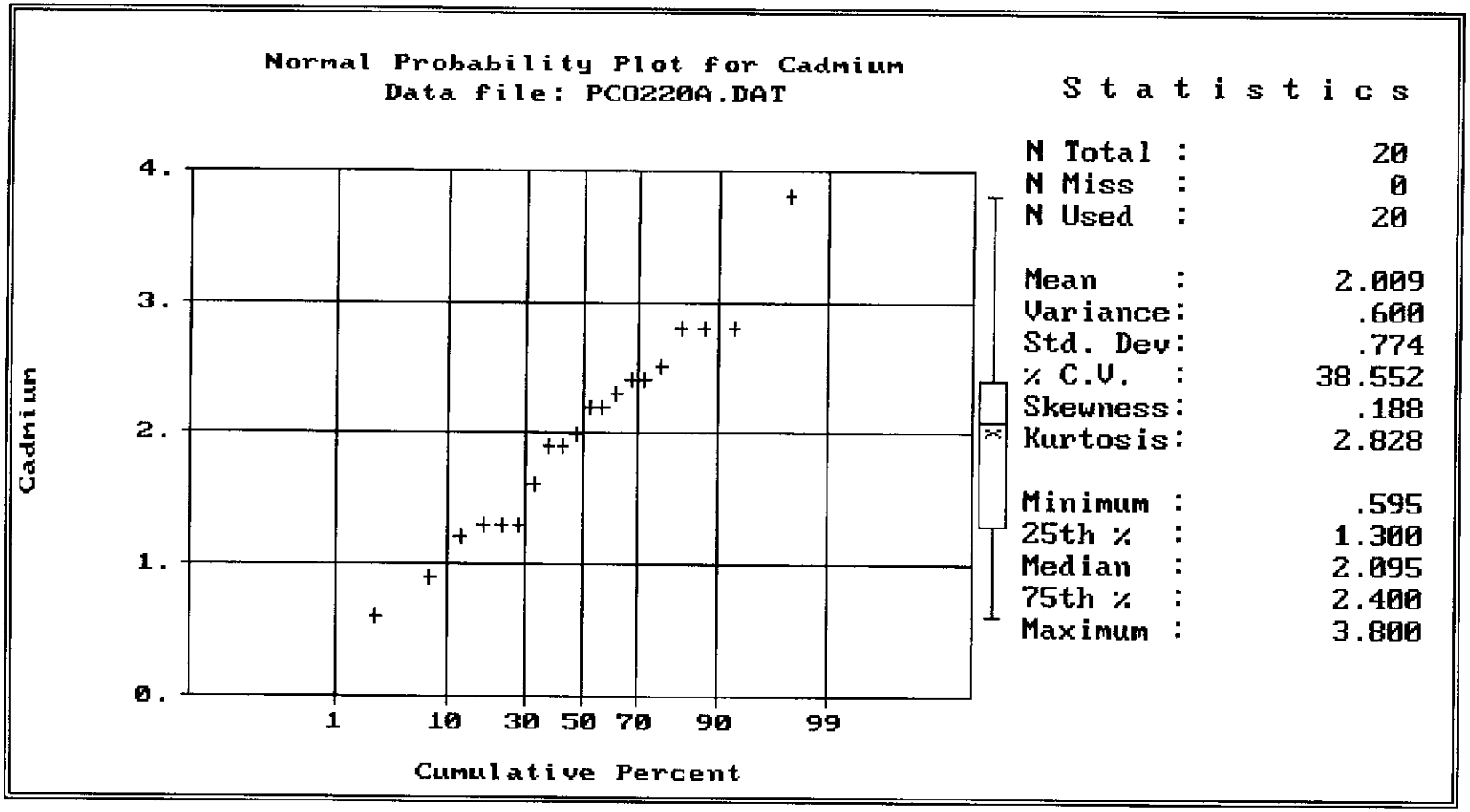

Histogram
Data file: PCO220A.DAT
Frequency
20.
16.
12.
8.
4.
0.
0.
2.
4.
6.
Arsenic (mg/kg)
Statistics
N Total : 20
N Miss : 0
N Used : 20
Mean : .800
Variance: 2.023
Std. Dev: 1.422
% C.V. : 176.126
Skewness: 2.327
Kurtosis: 7.070
Minimum : .250
25th % : .250
Median : .250
75th % : .250
Maximum : 5.400

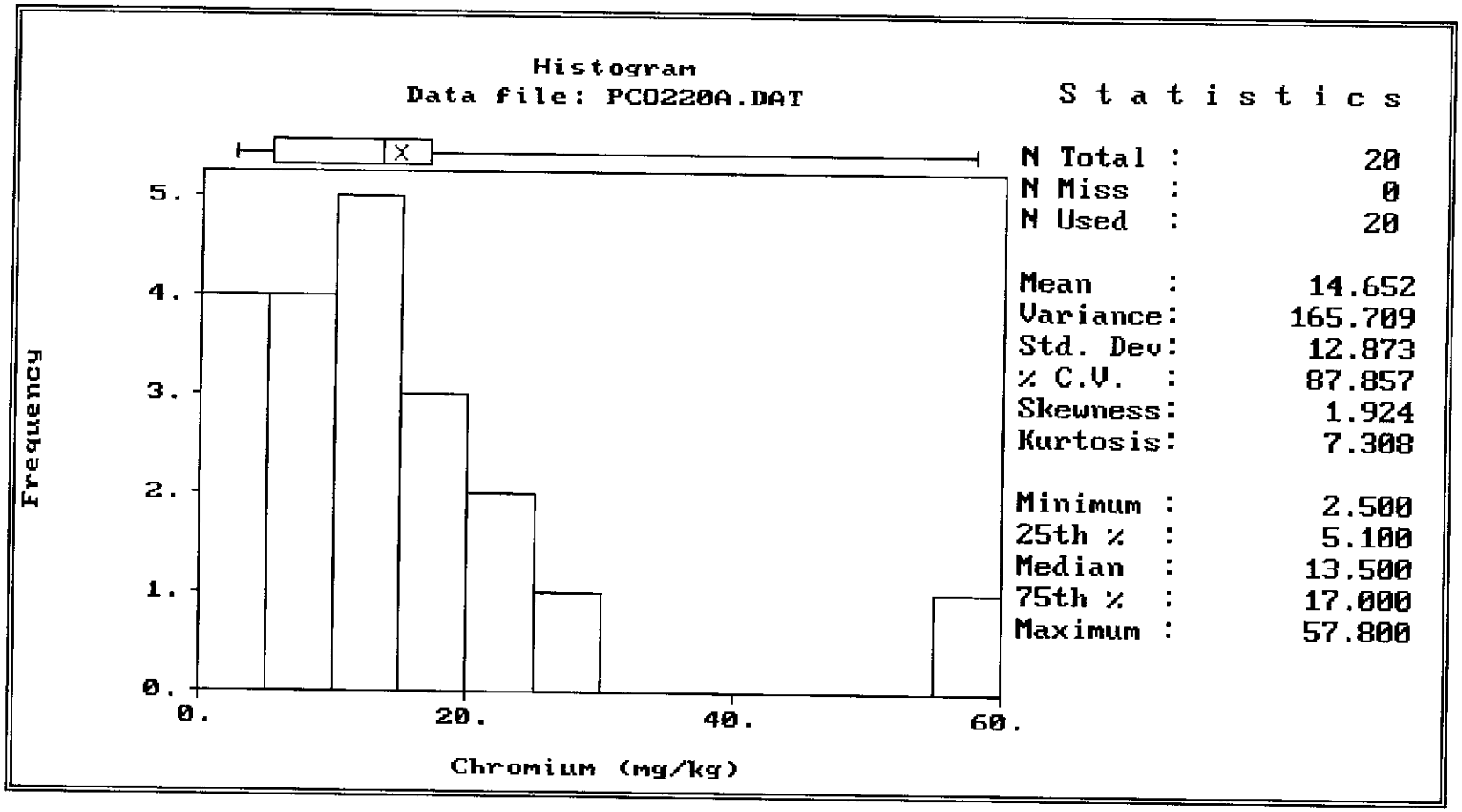

Normal Probability Plot for Arsenic
Data file: PC0220A.DAT
Arsenic
6.
4.
2.
0.
1
10
30
50
70
90
99
Cumulative Percent
Statistics
N Total : 20
N Miss : 0
N Used : 20
Mean : .808
Variance: 2.023
Std. Dev: 1.422
% C.V. : 176.126
Skewness: 2.327
Kurtosis: 7.070
Minimum : .250
25th % : .250
Median : .250
75th % : .250
Maximum : 5.400

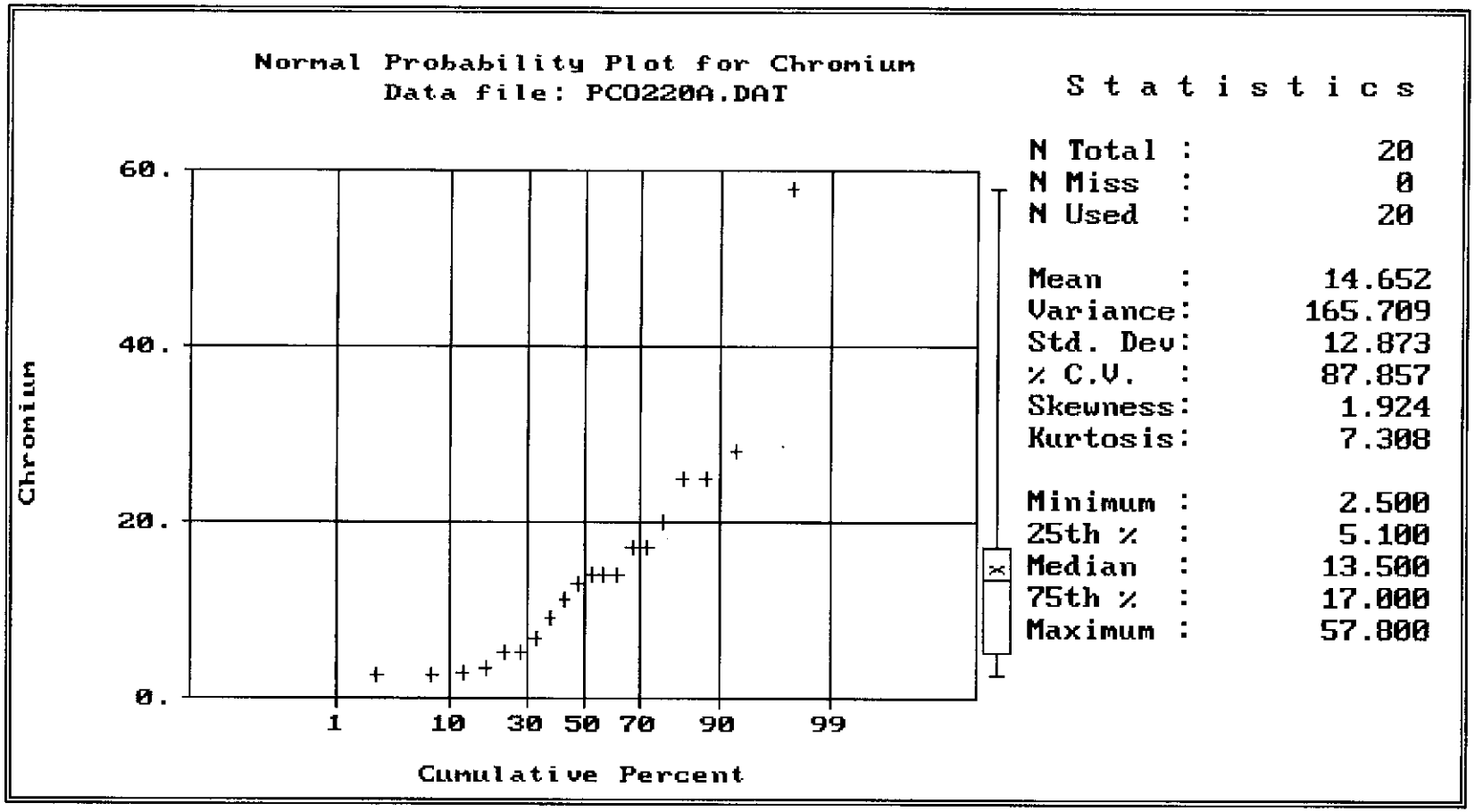

Histogram
Data file: PCO220A.DAT
Frequency
9.
6.
3.
0.
.0
.1
.2
.3
.4
Beryllium (mg/kg)
Statistics
N Total : 20
N Miss : 0
N Used : 20
Mean : .082
Variance: .004
Std. Dev: .061
% C.V. : 73.770
Skewness: 3.176
Kurtosis: 12.916
Minimum : .050
25th % : .050
Median : .065
75th % : .080
Maximum : .320

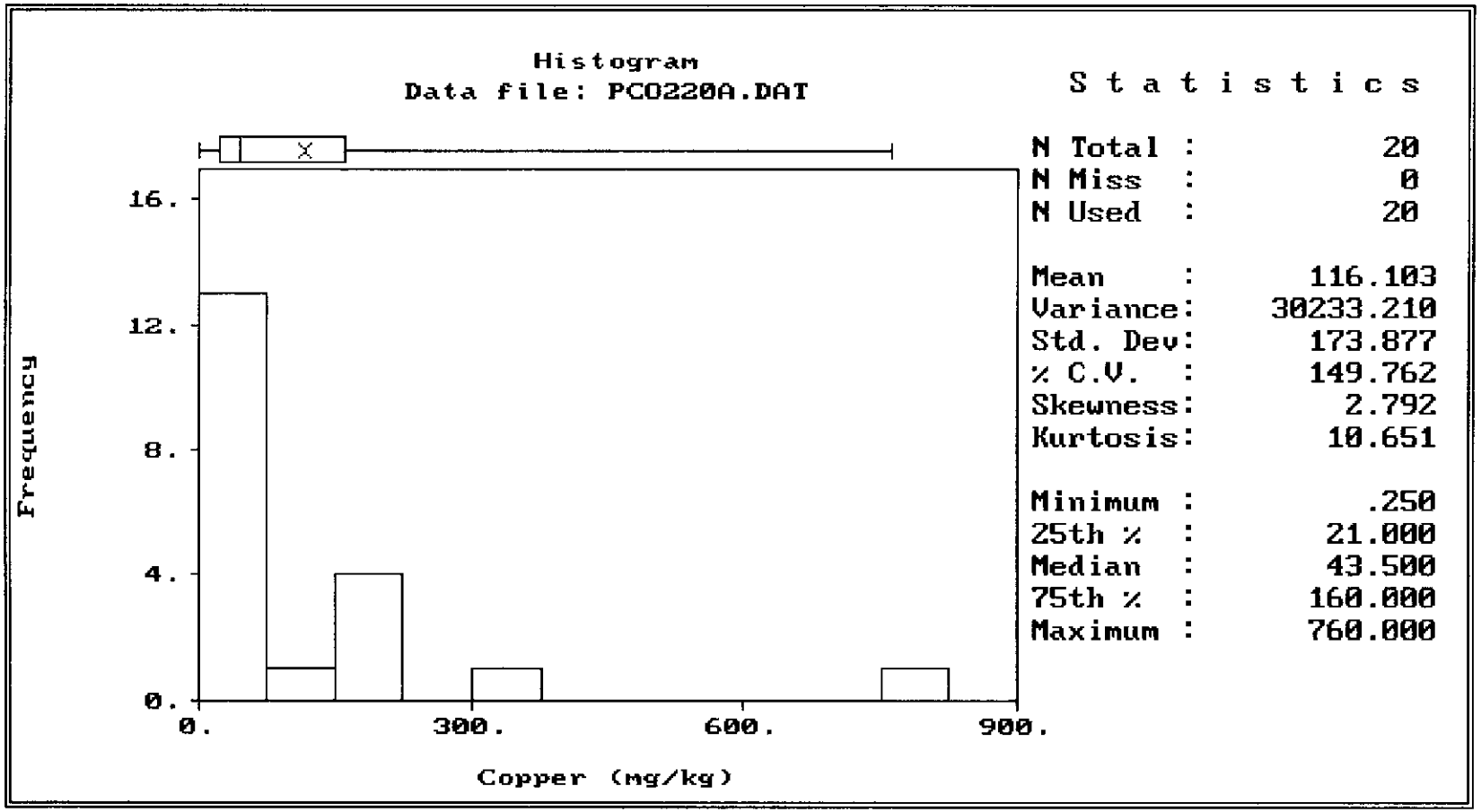

Normal Probability Plot for Beryllium
Data file: PCO220A.DAT
Beryllium
.4
.3
.2
.1
.0
1
10
30
50
70
90
99
Cumulative Percent
S t a t i s t i c s
N Total : 20
N Miss : 0
N Used : 20
Mean : .082
Variance: .004
Std. Dev: .061
% C.V. : 73.770
Skewness: 3.176
Kurtosis: 12.916
Minimum : .050
25th % : .050
Median : .065
75th % : .080
Maximum : .320

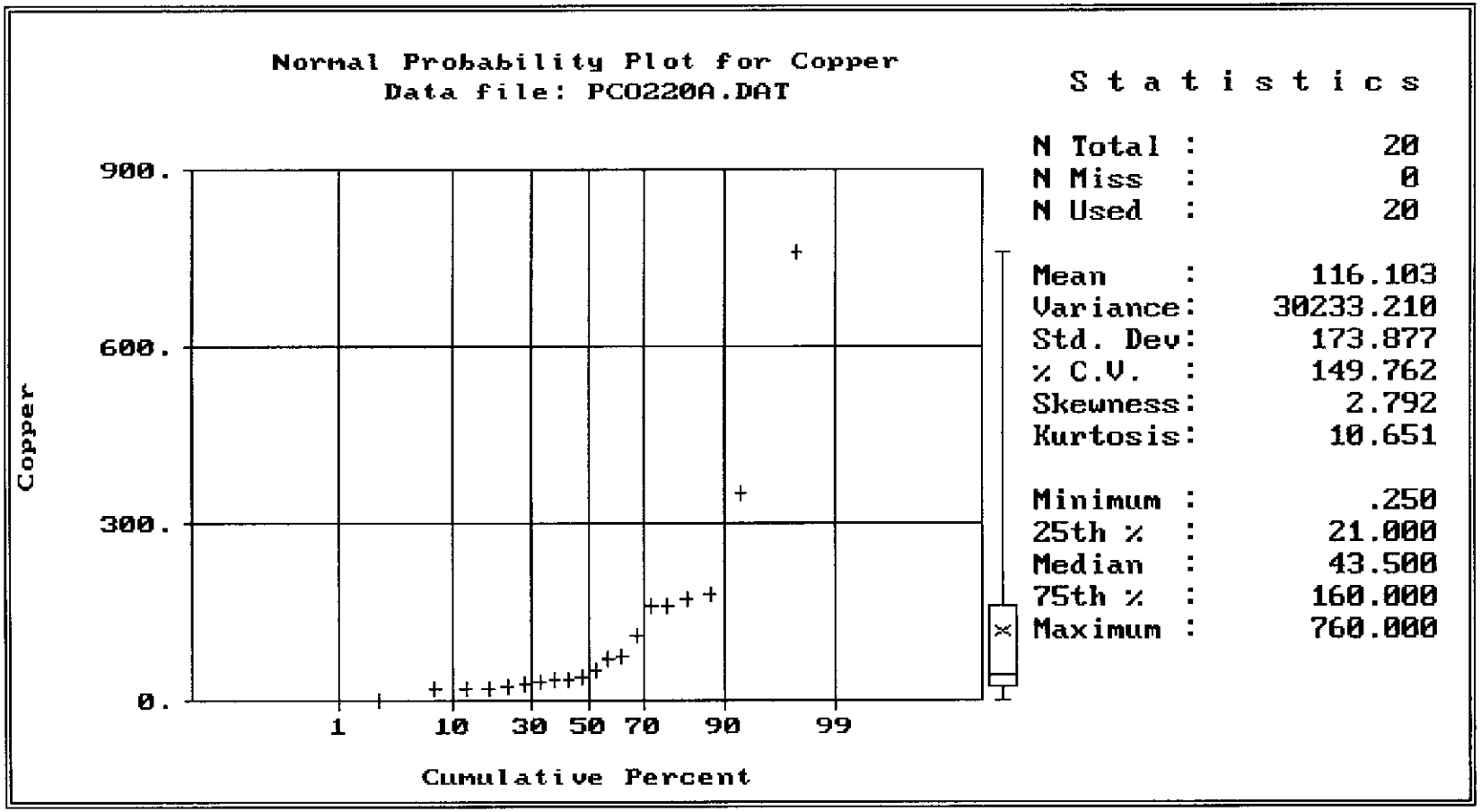

Histogram
Data file: PCO220A.DAT
Frequency
4.
3.
2.
1.
0.
0.
1.
2.
3.
4.
Cadmium (mg/kg)
Statistics
N Total : 20
N Miss : 0
N Used : 20
Mean : 2.009
Variance: .600
Std. Dev: .774
% C.V. : 38.552
Skewness: .188
Kurtosis: 2.828
Minimum : .595
25th % : 1.300
Median : 2.095
75th % : 2.400
Maximum : 3.800

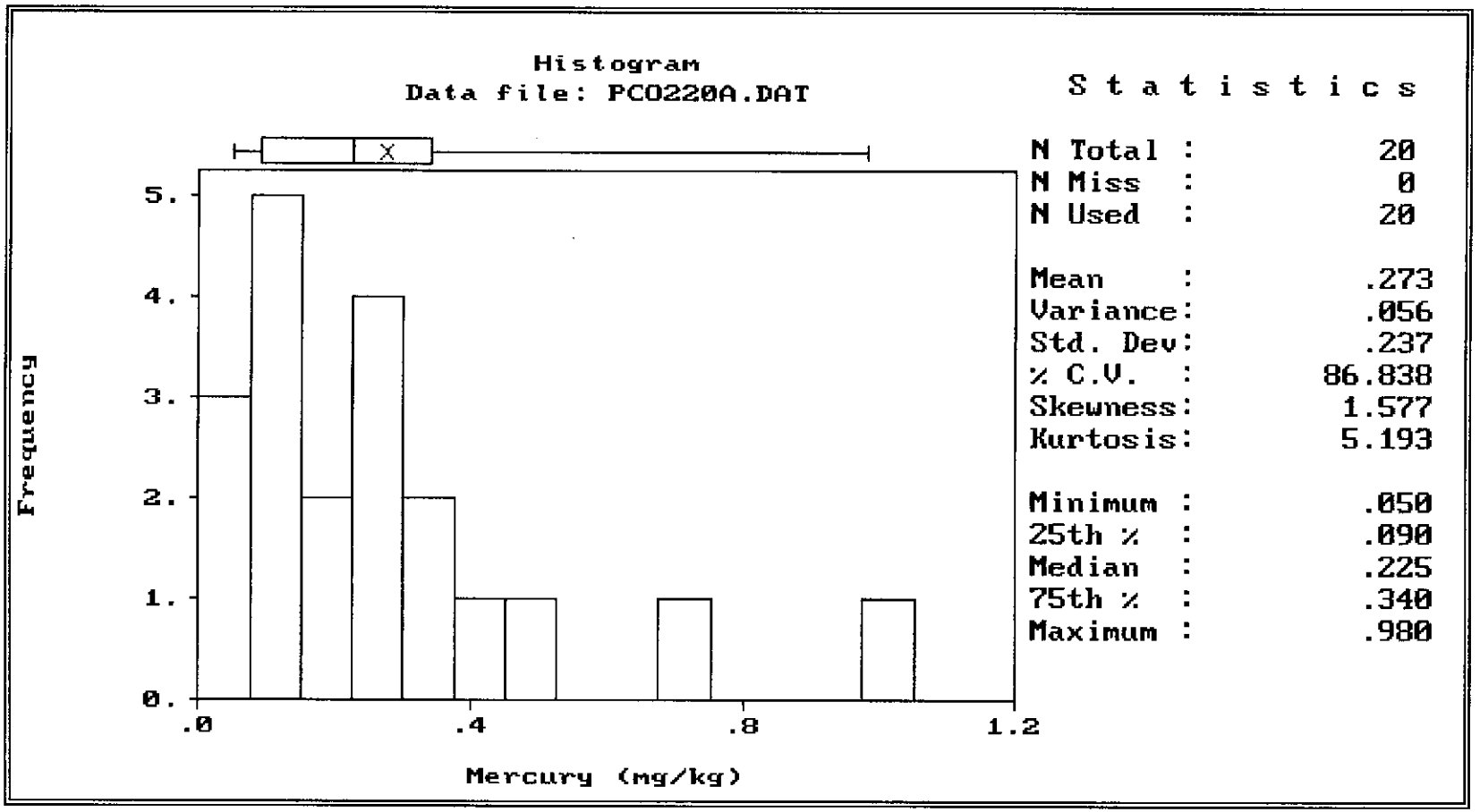

Normal Probability Plot for Cadmium
Data file: PC0220A.DAT
Cadmium
4.
3.
2.
1.
0.
1
10
30
50
70
90
99
Cumulative Percent
S t a t i s t i c s
N Total : 20
N Miss : 0
N Used : 20
Mean : 2.009
Variance: .600
Std. Dev: .774
% C.V. : 38.552
Skewness: .188
Kurtosis: 2.828
Minimum : .595
25th % : 1.300
Median : 2.095
75th % : 2.400
Maximum : 3.800

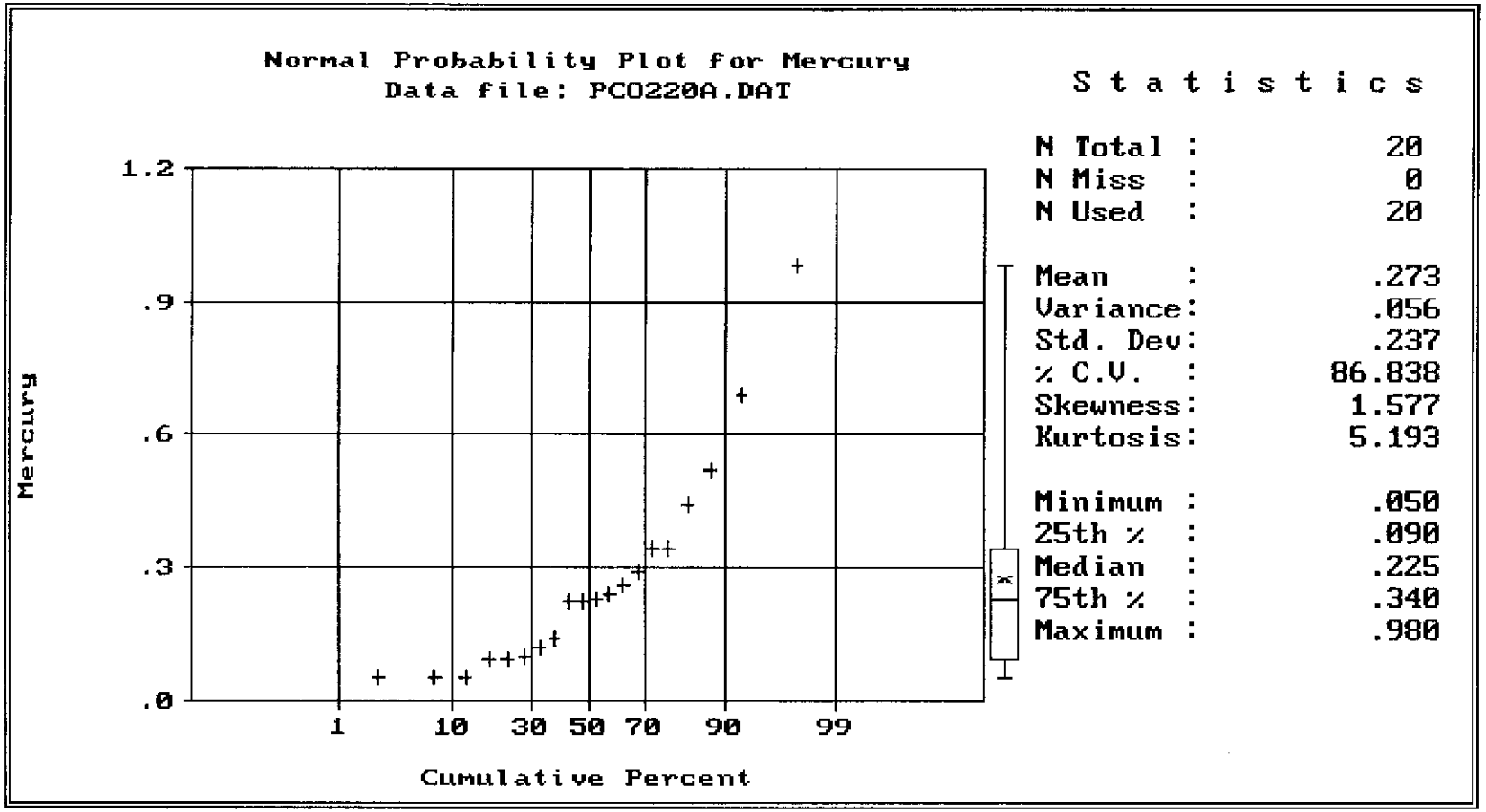

Histogram
Data file: PCO220A.DAT
Statistics
N Total : 20
N Miss : 0
N Used : 20
Mean : 14.652
Variance: 165.709
Std. Dev: 12.873
% C.V. : 87.857
Skewness: 1.924
Kurtosis: 7.308
Minimum : 2.500
25th % : 5.100
Median : 13.500
75th % : 17.000
Maximum : 57.800
Frequency
0.
1.
2.
3.
4.
5.
0.
20.
40.
60.
Chromium (mg/kg)

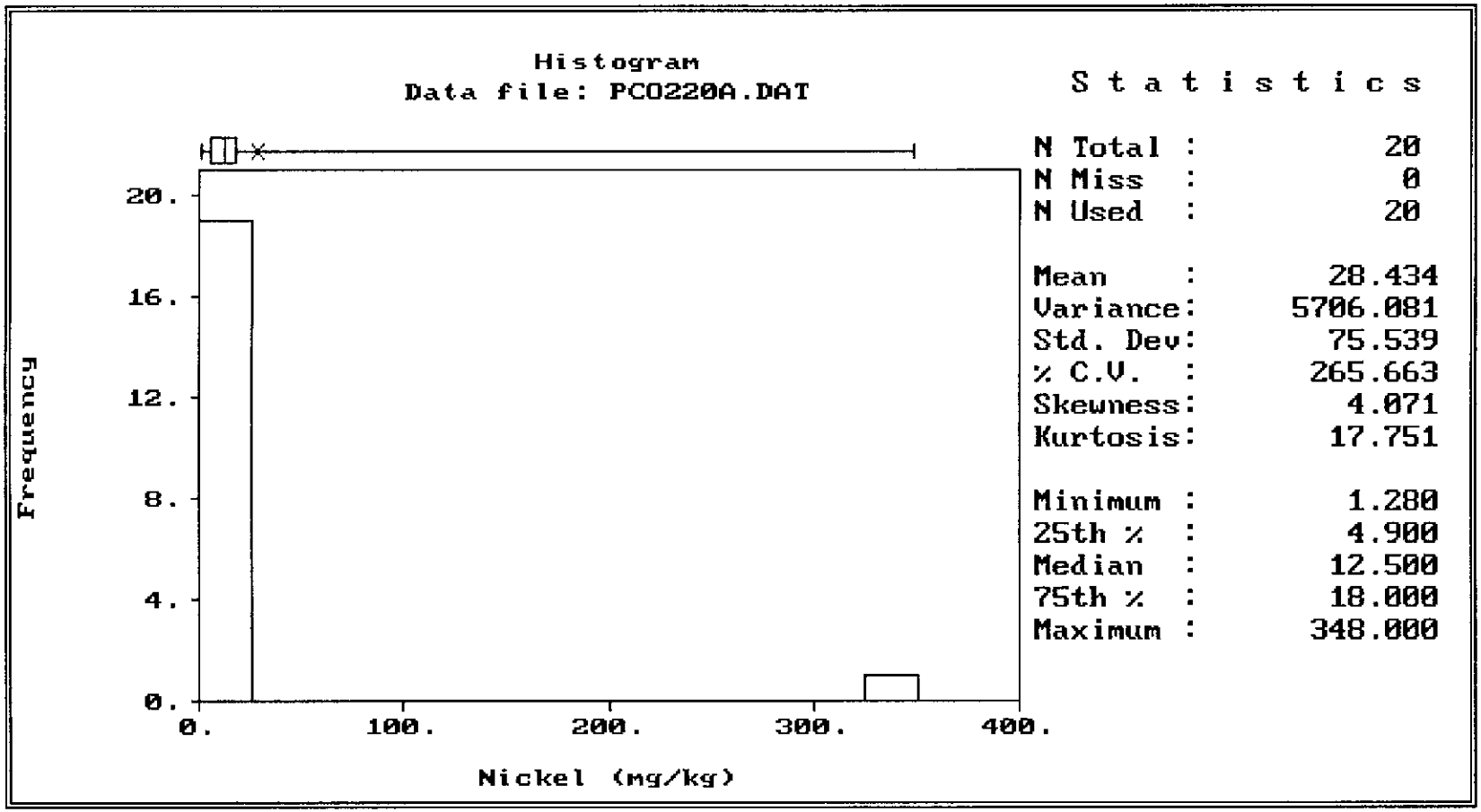

Normal Probability Plot for Chromium
Data file: PC0220A.DAT
Chromium
60.
40.
20.
0.
1
10
30
50
70
90
99
Cumulative Percent
S t a t i s t i c s
N Total : 20
N Miss : 0
N Used : 20
Mean : 14.652
Variance: 165.709
Std. Dev: 12.873
% C.V. : 87.857
Skewness: 1.924
Kurtosis: 7.308
Minimum : 2.500
25th % : 5.100
Median : 13.500
75th % : 17.000
Maximum : 57.800

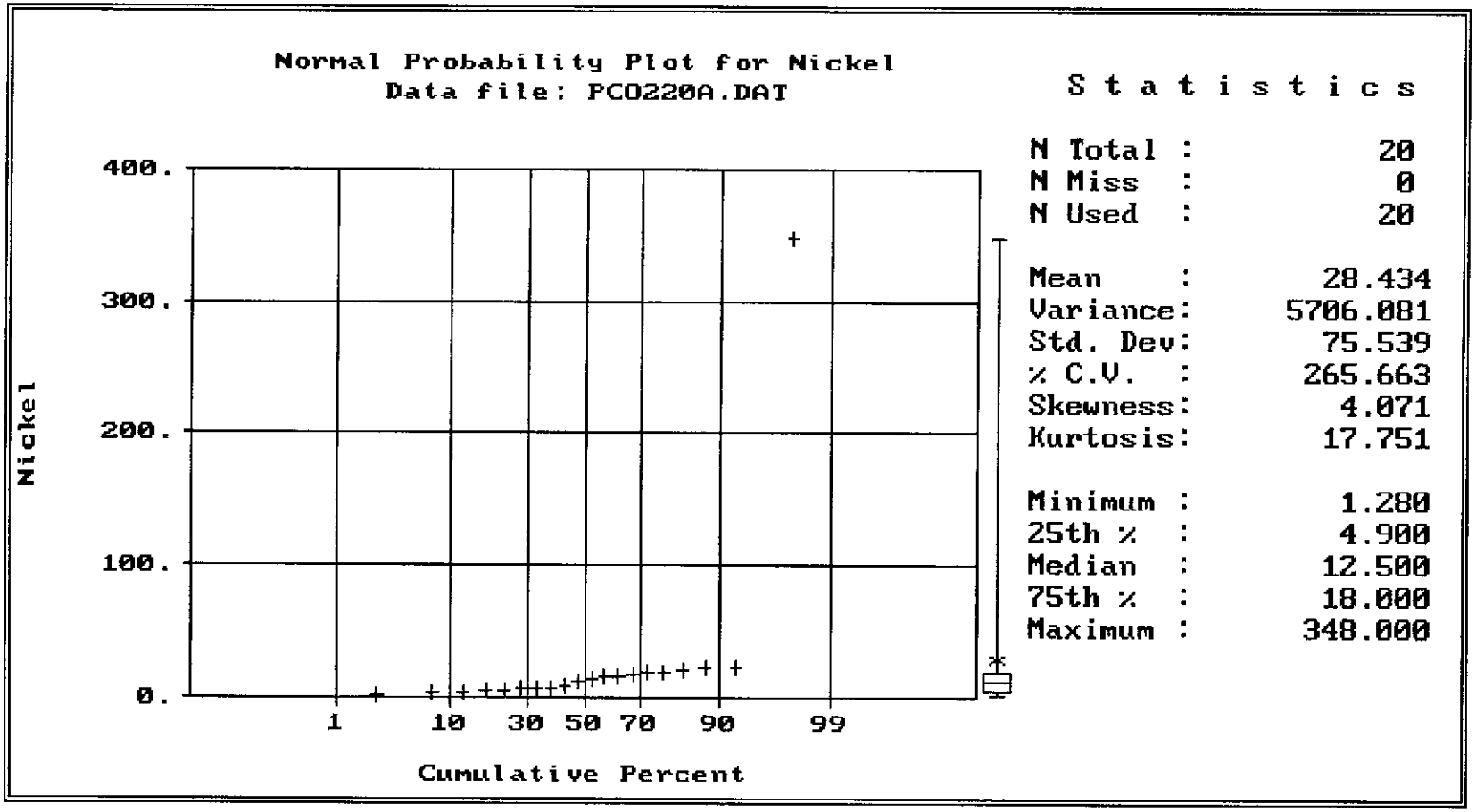

Histogram
Data file: PCO220A.DAT
Frequency
16.
12.
8.
4.
0.
0.
300.
600.
900.
Copper (mg/kg)
Statistics
N Total : 20
N Miss : 0
N Used : 20
Mean : 116.103
Variance: 30233.210
Std. Dev: 173.877
% C.V. : 149.762
Skewness: 2.792
Kurtosis: 10.651
Minimum : .250
25th % : 21.000
Median : 43.500
75th % : 160.000
Maximum : 760.000

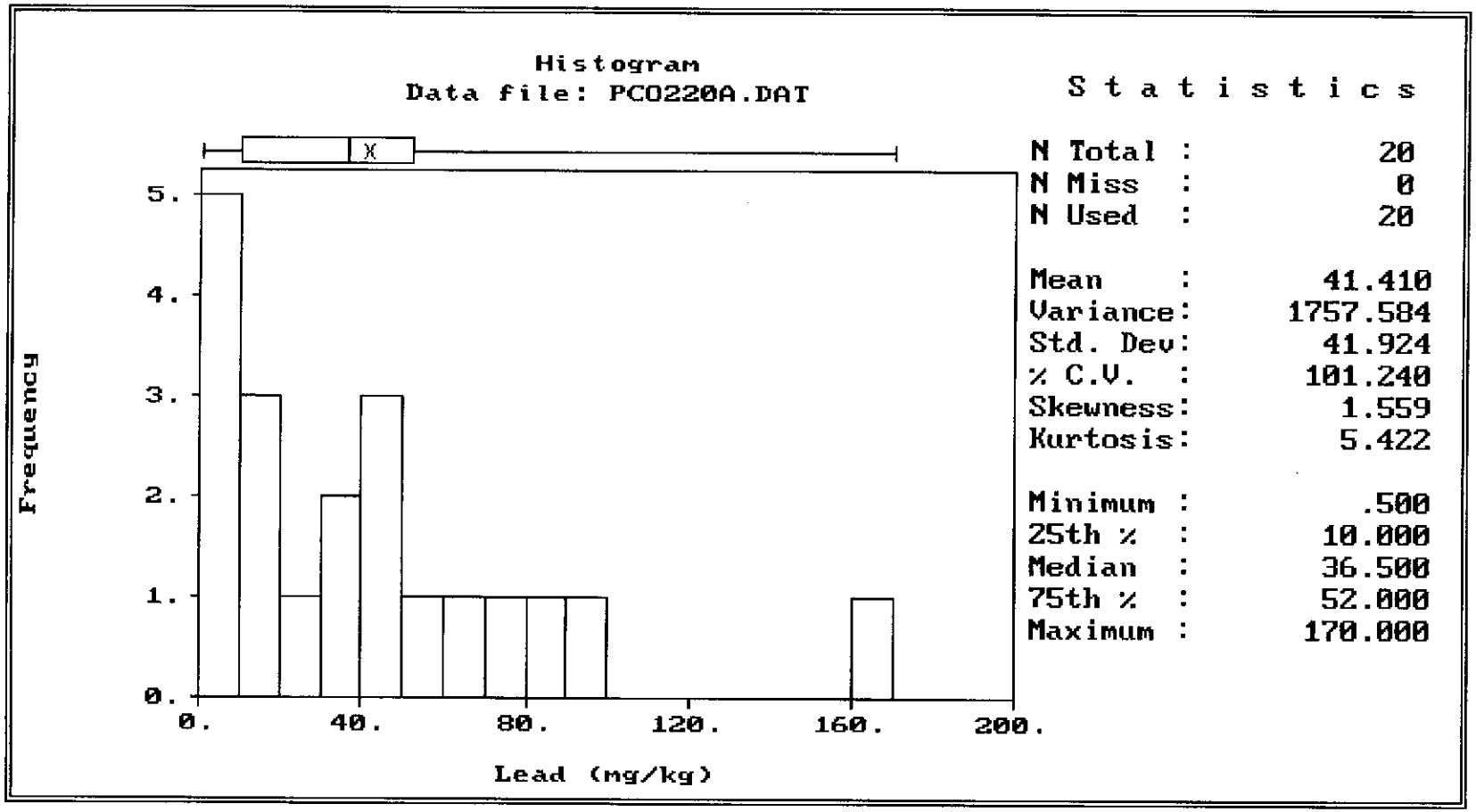

Normal Probability Plot for Copper
Data file: PCO220A.DAT
900.
600.
300.
0.
Copper
1
10
30
50
70
90
99
Cumulative Percent
S t a t i s t i c s
N Total : 20
N Miss : 0
N Used : 20
Mean : 116.103
Variance: 30233.210
Std. Dev: 173.877
% C.V. : 149.762
Skewness: 2.792
Kurtosis: 10.651
Minimum : .250
25th % : 21.000
Median : 43.500
75th % : 160.000
Maximum : 760.000

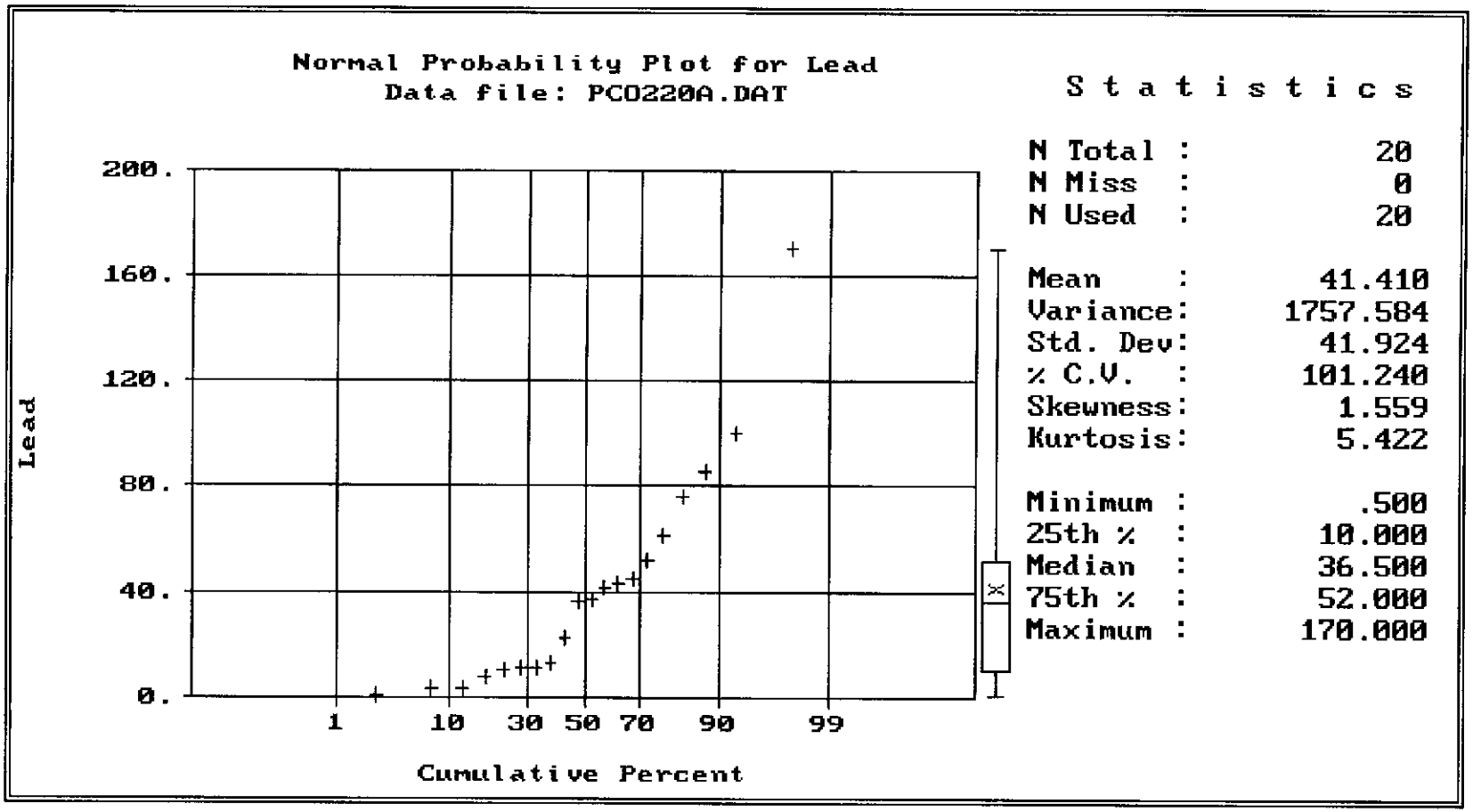

Histogram
Data file: PCO220A.DAT
Statistics
N Total : 20
N Miss : 0
N Used : 20
Mean : .273
Variance: .056
Std. Dev: .237
% C.V. : 86.838
Skewness: 1.577
Kurtosis: 5.193
Minimum : .050
25th % : .090
Median : .225
75th % : .340
Maximum : .980
Frequency
0.
1.
2.
3.
4.
5.
.0
.4
.8
1.2
Mercury (mg/kg)

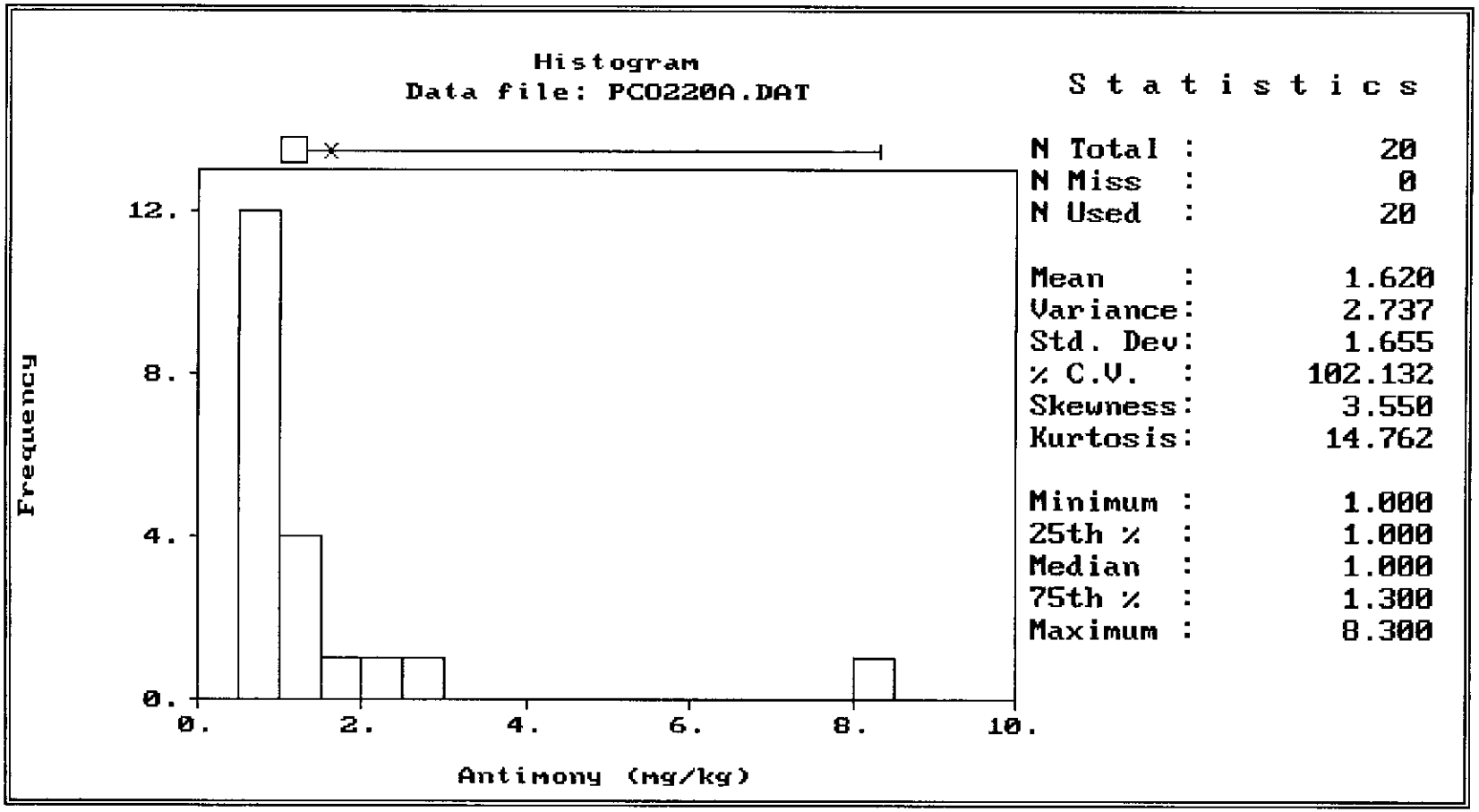

Normal Probability Plot for Mercury
Data file: PCO220A.DAT
Mercury
1.2
.9
.6
.3
.0
1
10
30
50
70
90
99
Cumulative Percent
S t a t i s t i c s
N Total : 20
N Miss : 0
N Used : 20
Mean : .273
Variance: .056
Std. Dev: .237
% C.V. : 86.838
Skewness: 1.577
Kurtosis: 5.193
Minimum : .050
25th % : .090
Median : .225
75th % : .340
Maximum : .980

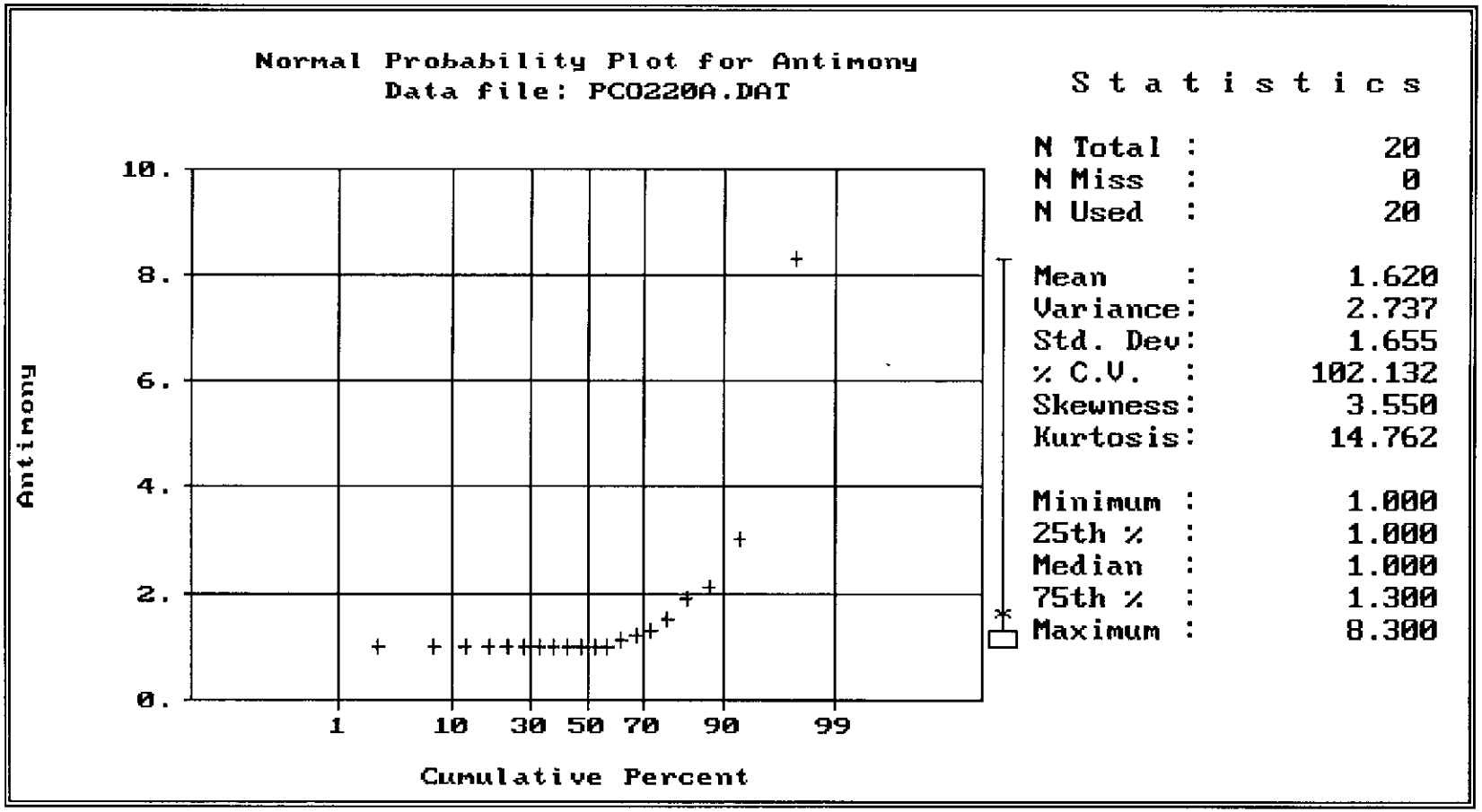

Histogram
Data file: PCO220A.DAT
Frequency
20.
16.
12.
8.
4.
0.
0.
100.
200.
300.
400.
Nickel (mg/kg)
Statistics
N Total : 20
N Miss : 0
N Used : 20
Mean : 28.434
Variance: 5706.081
Std. Dev: 75.539
% C.V. : 265.663
Skewness: 4.071
Kurtosis: 17.751
Minimum : 1.280
25th % : 4.900
Median : 12.500
75th % : 18.000
Maximum : 348.000

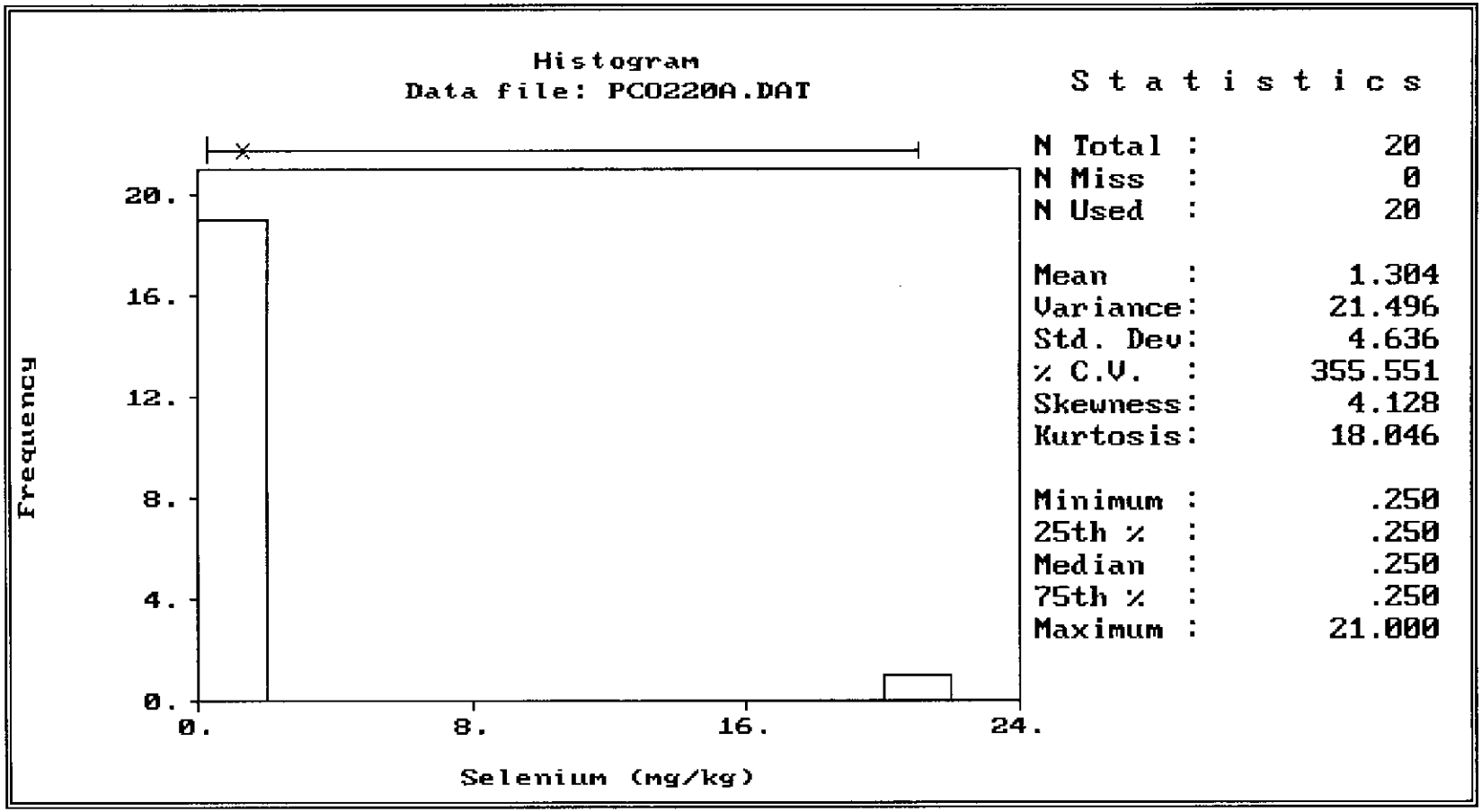

Normal Probability Plot for Nickel
Data file: PCO220A.DAT
Nickel
400.
300.
200.
100.
0.
1
10
30
50
70
90
99
Cumulative Percent
S t a t i s t i c s
N Total : 20
N Miss : 0
N Used : 20
Mean : 28.434
Variance: 5706.081
Std. Dev: 75.539
% C.V. : 265.663
Skewness: 4.071
Kurtosis: 17.751
Minimum : 1.280
25th % : 4.900
Median : 12.500
75th % : 18.000
Maximum : 348.000

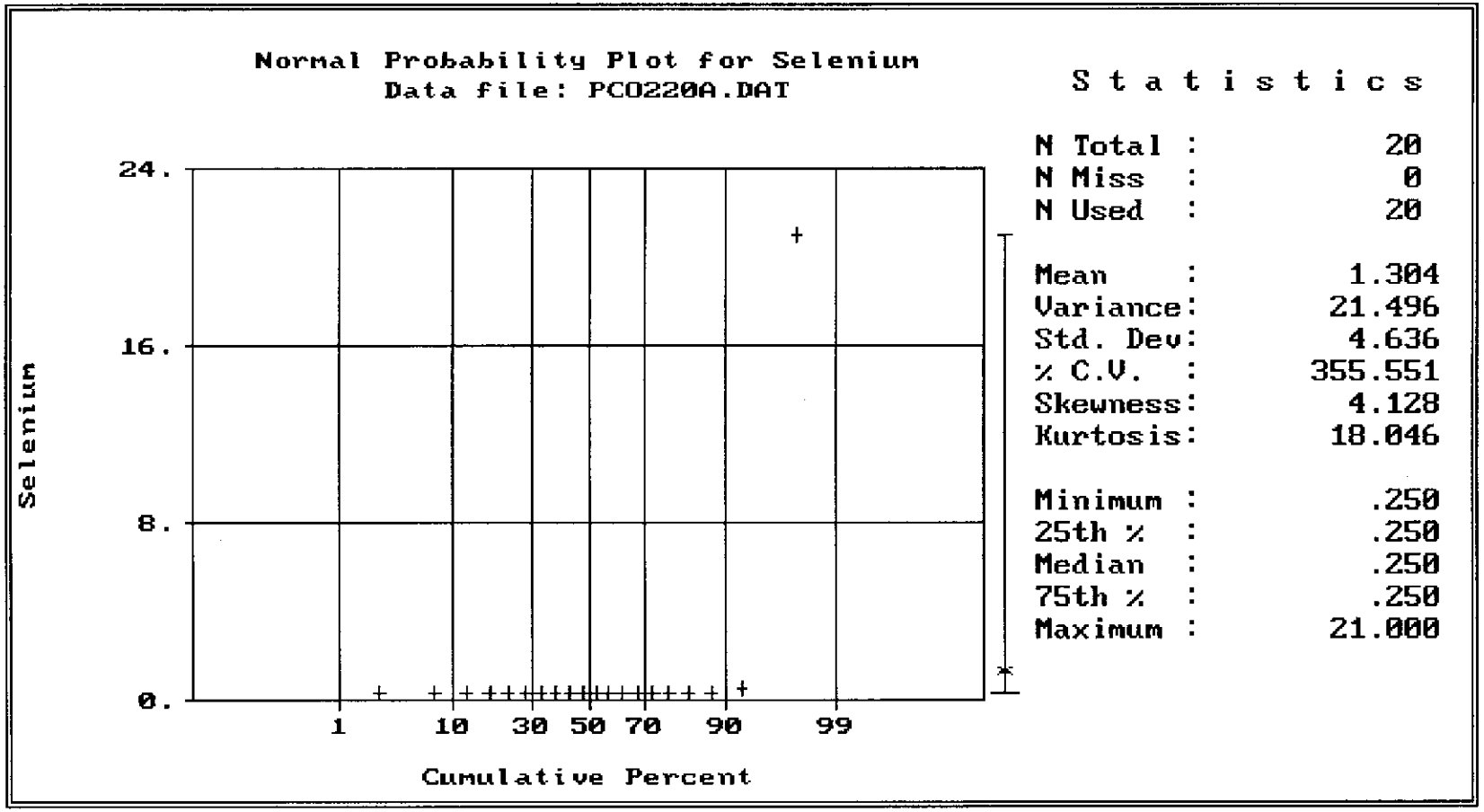

Histogram
Data file: PCO220A.DAT
Frequency
5.
4.
3.
2.
1.
0.
0.
40.
80.
120.
160.
200.
Lead (mg/kg)
Statistics
N Total : 20
N Miss : 0
N Used : 20
Mean : 41.410
Variance: 1757.584
Std. Dev: 41.924
% C.V. : 101.240
Skewness: 1.559
Kurtosis: 5.422
Minimum : .500
25th % : 10.000
Median : 36.500
75th % : 52.000
Maximum : 170.000

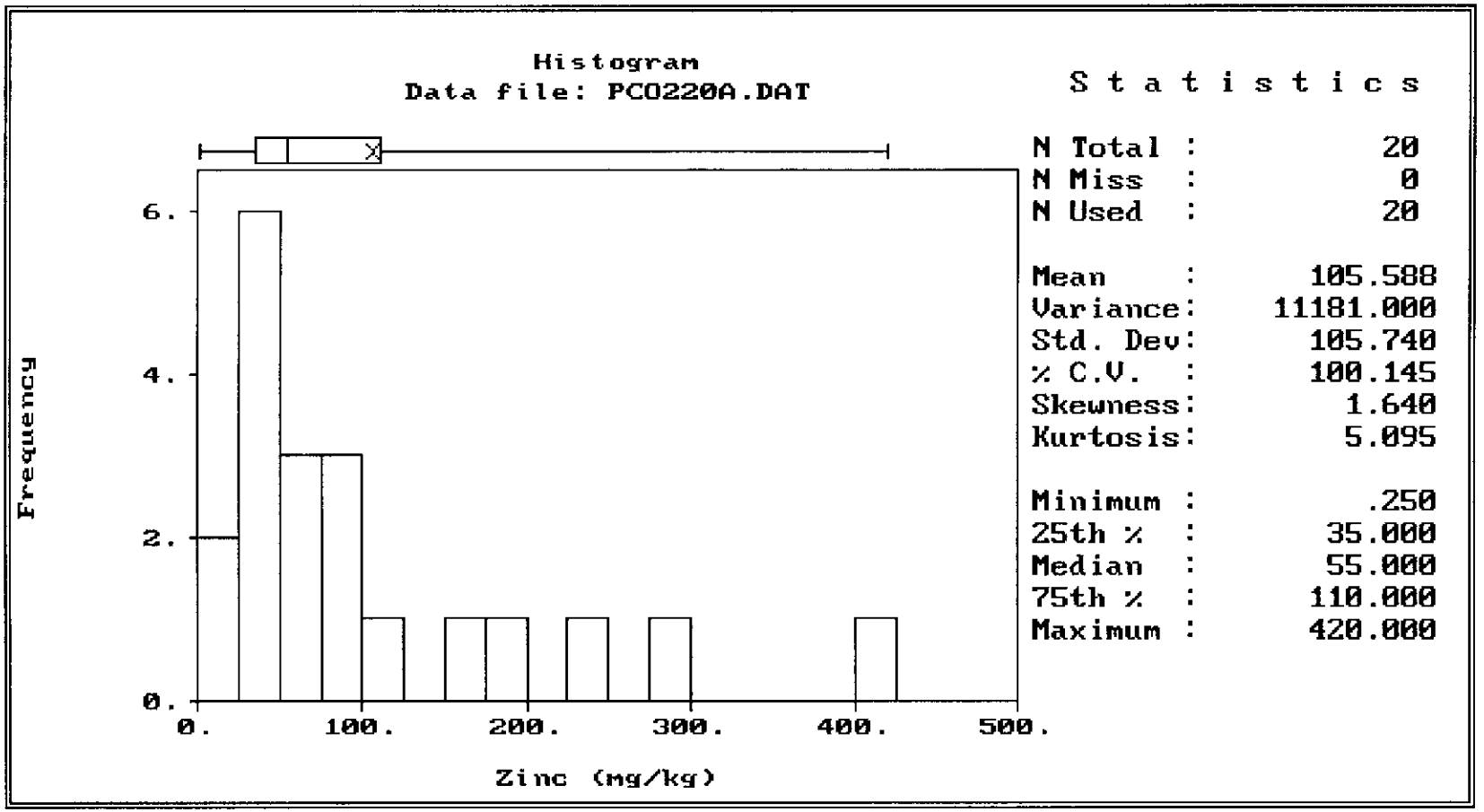

Normal Probability Plot for Lead
Data file: PCO220A.DAT
Lead
200.
160.
120.
80.
40.
0.
1
10
30
50
70
90
99
Cumulative Percent
S t a t i s t i c s
N Total : 20
N Miss : 0
N Used : 20
Mean : 41.410
Variance: 1757.584
Std. Dev: 41.924
% C.V. : 101.240
Skewness: 1.559
Kurtosis: 5.422
Minimum : .500
25th % : 10.000
Median : 36.500
75th % : 52.000
Maximum : 170.000

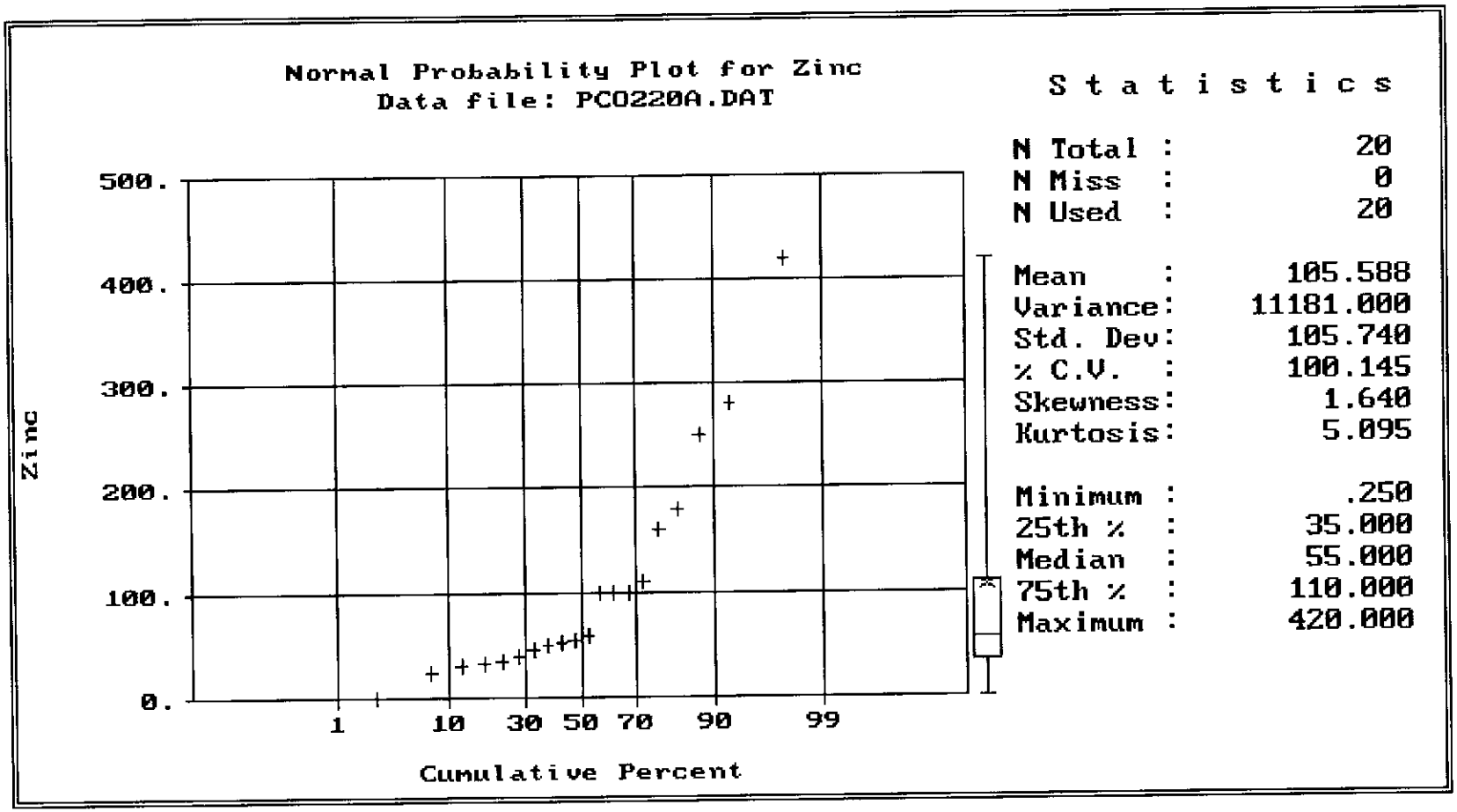

Histogram
Data file: PCO220A.DAT
Frequency
12.
8.
4.
0.
0.
2.
4.
6.
8.
10.
Antimony (mg/kg)
Statistics
N Total : 20
N Miss : 0
N Used : 20
Mean : 1.620
Variance: 2.737
Std. Dev: 1.655
% C.V. : 102.132
Skewness: 3.550
Kurtosis: 14.762
Minimum : 1.000
25th % : 1.000
Median : 1.000
75th % : 1.300
Maximum : 8.300


Normal Probability Plot for Antimony
Data file: PC0220A.DAT
Antimony
10.
8.
6.
4.
2.
0.
1
10
30
50
70
90
99
Cumulative Percent
S t a t i s t i c s
N Total : 20
N Miss : 0
N Used : 20
Mean : 1.620
Variance: 2.737
Std. Dev: 1.655
% C.V. : 102.132
Skewness: 3.550
Kurtosis: 14.762
Minimum : 1.000
25th % : 1.000
Median : 1.000
75th % : 1.300
Maximum : 8.300


Histogram
Data file: PCO220A.DAT
Frequency
20.
16.
12.
8.
4.
0.
0.
8.
16.
24.
Selenium (mg/kg)
Statistics
N Total : 20
N Miss : 0
N Used : 20
Mean : 1.304
Variance: 21.496
Std. Dev: 4.636
% C.V. : 355.551
Skewness: 4.128
Kurtosis: 18.046
Minimum : .250
25th % : .250
Median : .250
75th % : .250
Maximum : 21.000


Normal Probability Plot for Selenium
Data file: PCO220A.DAT
Selenium
24.
16.
8.
0.
1
10
30
50
70
90
99
Cumulative Percent
Statistics
N Total : 20
N Miss : 0
N Used : 20
Mean : 1.304
Variance: 21.496
Std. Dev: 4.636
% C.V. : 355.551
Skewness: 4.128
Kurtosis: 18.046
Minimum : .250
25th % : .250
Median : .250
75th % : .250
Maximum : 21.000


Histogram
Data file: PCO220A.DAT
Frequency
6.
4.
2.
0.
0.
100.
200.
300.
400.
500.
Zinc (mg/kg)
Statistics
N Total : 20
N Miss : 0
N Used : 20
Mean : 105.588
Variance: 11181.000
Std. Dev: 105.740
% C.V. : 100.145
Skewness: 1.640
Kurtosis: 5.095
Minimum : .250
25th % : 35.000
Median : 55.000
75th % : 110.000
Maximum : 420.000


Normal Probability Plot for Zinc
Data file: PC0220A.DAT
Zinc
500.
400.
300.
200.
100.
0.
1
10
30
50
70
90
99
Cumulative Percent
Statistics
N Total : 20
N Miss : 0
N Used : 20
Mean : 105.588
Variance: 11181.000
Std. Dev: 105.740
% C.V. : 100.145
Skewness: 1.640
Kurtosis: 5.095
Minimum : .250
25th % : 35.000
Median : 55.000
75th % : 110.000
Maximum : 420.000

Appendix E

EPA Site Inspection Reassessment

160 Spear Street, Suite 1380
San Francisco, California
94105-1535

415/957-0110

Received from EPA 7/90 NW 8+A

ICF TECHNOLOGY INCORPORATED

SITE INSPECTION REASSESSMENT

SUBMITTED TO: Lisa Nelson, U.S. Environmental Protection Agency (EPA)

PREPARED BY: Joseph Lukas, ICF Technology, Incorporated JL

THROUGH: Melanie Nesterenko, Ecology and Environment, Incorporated

DATE: June 26, 1990

SUBJECT: Reassessment of the Screening Site Inspection of Pacific Pumping Company Manufacturing (PACO Pump).

TDD#: F9-9002-054

EPA ID#: CAD088772629

PROGRAM ACCOUNT#: FCA0259SAA

FIT REVIEW/ CONCURRENCE: James M. James 6/26/90

COPY: FIT Master File
Steve Ritchie, Regional Water Quality Control Board, San Francisco Bay Region.
Don Plain, California Department of Health Services, Sacramento.

INTRODUCTION

EPA has tasked Ecology and Environment, Inc.'s Field Investigation Team to reassess all sites with completed Screening Site Inspections (SSI) in the Comprehensive Environmental Response, Compensation, and Liability Information System (CERCLIS) database that are still being considered for further action. The strategy for determining whether these SSIs actually merit further action is based primarily on each site's potential to achieve a score high enough on the Proposed Revised Hazard Ranking System (rHRS) for inclusion on the National Priorities List (NPL). This strategy is intended to identify those sites posing the

highest relative risk to human health or the environment. All other sites needing remedial or enforcement follow-up will be referred to the states or an appropriate federal authority. Actions and involvement by authorities other than the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) will also be considered.

SUMMARY

The Pacific Pumping Company (PACO Pump) main manufacturing facility is located at 9201 San Leandro Street in Oakland, Alameda County, California (T.2S,R.3W,S.22, Mt Diablo baseline and meridian) (1,13). A second parcel of the facility is located at 845 92nd Avenue, across the street from the main facility (1). The facility manufactures pumps using processes involving the machining, assembly, painting, and crating of pumps for distribution. The surrounding area is primarily industrial; however, residential and commercial sections of Oakland, and San Leandro Bay are located within one mile of the site (1). The main facility occupies approximately 4.7 acres and was acquired from a tent manufacturing company in 1946 (1). The main facility consists of a machine shop/manufacturing building, offices, a welding shop building, a pump finishing building, shipping and receiving areas, an outdoor storage area for waste oils and solvents, and parking lots (1). These processes all occur at the 9201 San Leandro Street facility which is listed on the 1990 RCRA database as a small quantity generator (2).

A citizen's complaint to the Environmental Protection Agency (EPA) on August 8, 1981 alleged that PACO Pump discharged tool-coolants and spent solvents to the ground outside the manufacturing facility and to a sewer drain located on the north side of the property (3,4). The sewer drain connects to a storm sewer system that eventually discharges to San Leandro Bay (5). Machines on the north side of the machine shop were reportedly connected to an open pipe and used-coolant (petroleum oil) was discharged via this pipe outside to the ground behind the tool room (3). Used coolant from other machines not connected to this discharge pipe was reportedly drained by drawing the coolant out of the machine into a barrel. The machines were also routinely spray-cleaned with unspecified solvents and the spent solvents were placed in the same barrel with the used coolant (3). The barrel of spent coolants and cleaning solvents was then moved outside to an unpaved area near the on-site sewer drain and dumped approximately once a week to the on-site surface soils and sewer (3). Reportedly, this dumping may have occurred for 20 years or longer (3,4).

This dumping was practiced until approximately 1980, at which time PACO began drumming their used solvents and other wastes (1). These drums were then buried in dumpsters with other trash, and unknowingly collected by Oakland Scavenger. This practice may have continued until 1983, at which time Zero Waste Systems (Zero Waste) began making collections of waste coolant and waste paint. Petroleum lubricants currently used as a machine tool-coolant (coolant) during the machining process are routinely replaced and stored as waste in 55-gallon drums before being collected (1). Zero Waste also collects waste lacquer thinner, nitric acid, sodium hydroxide, waste oil, and waste waters from the facility (1).

The current painting process generates two liquid wastes: lacquer thinner and waste paint sludges which contain toluene and xylene (1). The paint used in the painting process contains 20.78% toluene and 15.79% aliphatic hydrocarbon products (1). There is no file information that describes historical disposal practices associated with the painting process wastes. Currently, the approximately 3 barrels of spent lacquer thinner and waste paint sludges generated on-site within a 90 day period are picked up by Zero Waste (1).

The site subsurface soils consist of silty loams that extend to 5 feet or deeper below ground surface, and are moderately permeable (6). The depth to groundwater is estimated to be at 6 feet below ground surface (6). The net annual precipitation in the area is 7.74 inches (7,20). According to the East Bay Municipal Utilities District (EBMUD) there are no local municipal groundwater wells in Oakland and the current city water is supplied via the Mokelumne River and up-gradient catch basins (8). The city of San Leandro, located within 4 miles of the site, is also supplied by EBMUD (9). There is one community water well approximately 2.2 miles southeast of the site that supplies water to approximately 300 users (10). There are several other wells near Thornton Street in San Leandro that are used for irrigation purposes only (10). Based on the reported dumping of waste liquids to the sites surface soils and past unauthorized disposal practices, there appears to be a potential for a release of hazardous substances to the groundwater.

The surface soils have a moderate to high runoff potential, and the site is located in a 100-year flood plain (6,12). The two-year, 24-hour rainfall in the Oakland area is approximately 3 inches (11). There is no historical or current information to indicate that an on-site runoff containment system is maintained. The sewer drain where the alleged dumping occurred connects to a storm drain system that empties into South Slough which is connected to San Leandro Bay, an extension of San Francisco Bay (5,13). The site is located within 1 mile of the San Leandro Bay (1,12). The beneficial uses of the bays include recreation, commercial and sport fishing, and wildlife habitat (14,15,16). The yearly reported sport and commercial fishery catch in the San Francisco Bay is approximately 22,213,000 pounds (15,16). Nearby sensitive environments potentially impacted by the site include marsh and shoreline habitat used by the California least tern (Sterna antillarum browni), California clapper rail (Rallus longirostris obsoletus), and the salt marsh harvest mouse (Reithrodontomys raviventris) (14). Based on the reported past dumping of spent liquid wastes to on-site surface soils and to an on-site sewer drain leading to San Leandro Bay, there appears to be a high potential for a release of hazardous substances to surface waters.

The site is located in an industrial/commercial area in south Oakland and is fenced (1). The population within 1 mile of the site is approximately 21,640 (13,17). The potential for on-site exposure appears to be low at this time.

There is no information indicating that a release to the atmosphere has occurred at the site; however, due to the reported dumping of spent solvent wastes to the on-site surface soils, there appears to be a potential for a release to the air. The population within 4 miles of the site is approximately 235,836 (17).

OTHER AUTHORITY INVOLVEMENT

There has been no known state regulatory involvement with the site (18,19). The site is listed on the May 1990 RCRA database as a small quantity generator.

CONCLUSION

The significant HRS factors associated with the Pacific Pumping Company site include the following:

- potentially high uncontained waste quantity;
- high potential for a release of hazardous substances from the site to surface water; and
- extensive surface water uses.

EPA RECOMMENDATION	Initial	Date
No Further Remedial Action Planned (NFRAP)		
Low-priority LSI (lLSI)		
Medium-priority LSI (mLSI)	LW	7-12-90
High-priority LSI (hLSI)		
Defer to Other Authority (D)		

P.A./S.I. Contact Log

Facility Name: Pacific Pumping Company Manufacturing
Facility ID: CAD088772629

Name	Affiliation	Phone #	Date	Information
Jerry Kwiechen	California Department of Fish and Game. Marine Resources Division	(707) 964-9078	11/13/89	Sport fish caught in San Francisco Bay in 1986 is estimated to be 3,413,000.
Ms. Play	East Bay Municipal Utilities District	(415) 891-0615	12/11/89	Water supply for Oakland is from the Mokelumne and up-gradient catch basins. No local groundwater wells are used.
Vonnie Williams	Regional Water Quality Control Board.	(415) 464-0372	3/1/90	There is no active file information on the site.
Al Wanger	Department of Health. Toxic Substances Control Division.	(415) 540-3826	3/1/90	There is no agency work occurring concerning this site. A site tracking sheet completed in 1987 recommended a pending status with a low priority for sampling.
Joan Curtis	City of Oakland Engineering Information Counter.	(415) 273-3443	4/13/90	The storm sewer drainage west of San Leandro Street is to the northwest into South Slough which connects to San Leandro Bay/San Francisco Bay.
Don Ackinson-Adams	Alameda County Environmental Health	(415) 670-5275	5/15/90	See Contact Report

)

P.A./S.I. Contact Log (cont.)

Facility Name:
Facility ID:

Name	Affiliation	Phone #	Date	Information
Mrs. Johnson	East Bay Municipal Utilities District	(415) 483-3540	5/15/90	The City of San Leandro gets its water from East Bay MUD, which is from the Mokelumne River.

CONTACT REPORT

Agency/Affiliation: Alameda County Environmental Health

Department/Region:

Address/City: 224 West Winton Avenue, Hayward

County/State/Zip: Alameda, CA. 94544

CONTACT	TITLE	PHONE
Don Ackinson-Adams	Environmental Specialist	(415) 670-5275

Person Making Contact: Joseph Lukas Date: 5-15-90

Subject: Local Water Wells within 4 miles of PACO Pump site.

Site Name: Pacific Pumping Company Manufacturing (PACO Pump) EPA ID#: CAD00887726 29

There is only one community well currently being used in San Leandro by Trailer Haven Mobile Park at 3299 East 14th Street. This well services 250 to 300 people and is located approximately 300 feet from the intersection of Thornton Street and Martinez Street in San Leandro. There are no other community wells known to be within 4 miles of the PACO Pump site. There are several irrigation wells also located near Thornton Street.

SAN FRANCISCO BAY AREA RAPID TRANSIT DISTRICT

SOIL INVESTIGATION

A704

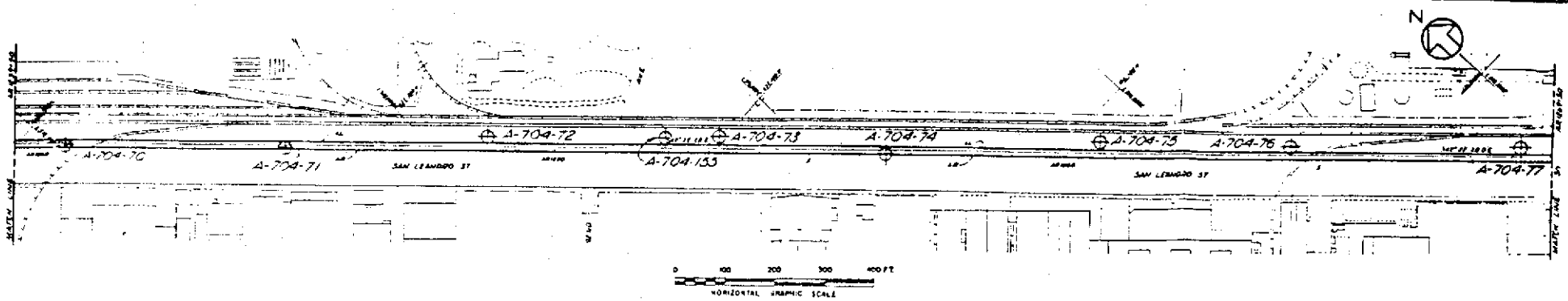
SEGMENT A003

SOUTHERN ALAMEDA COUNTY LINE

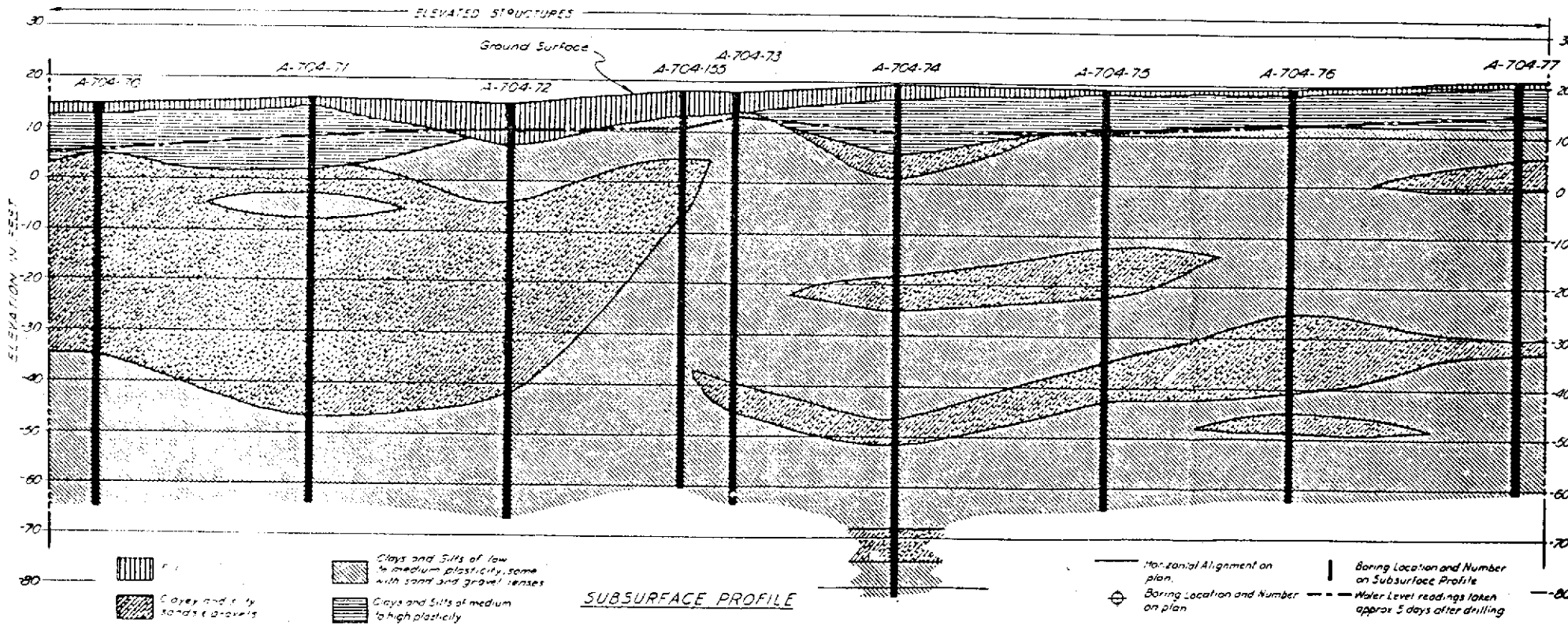
DECEMBER 1965

BECHTEL CORPORATION

San Francisco



PLAN

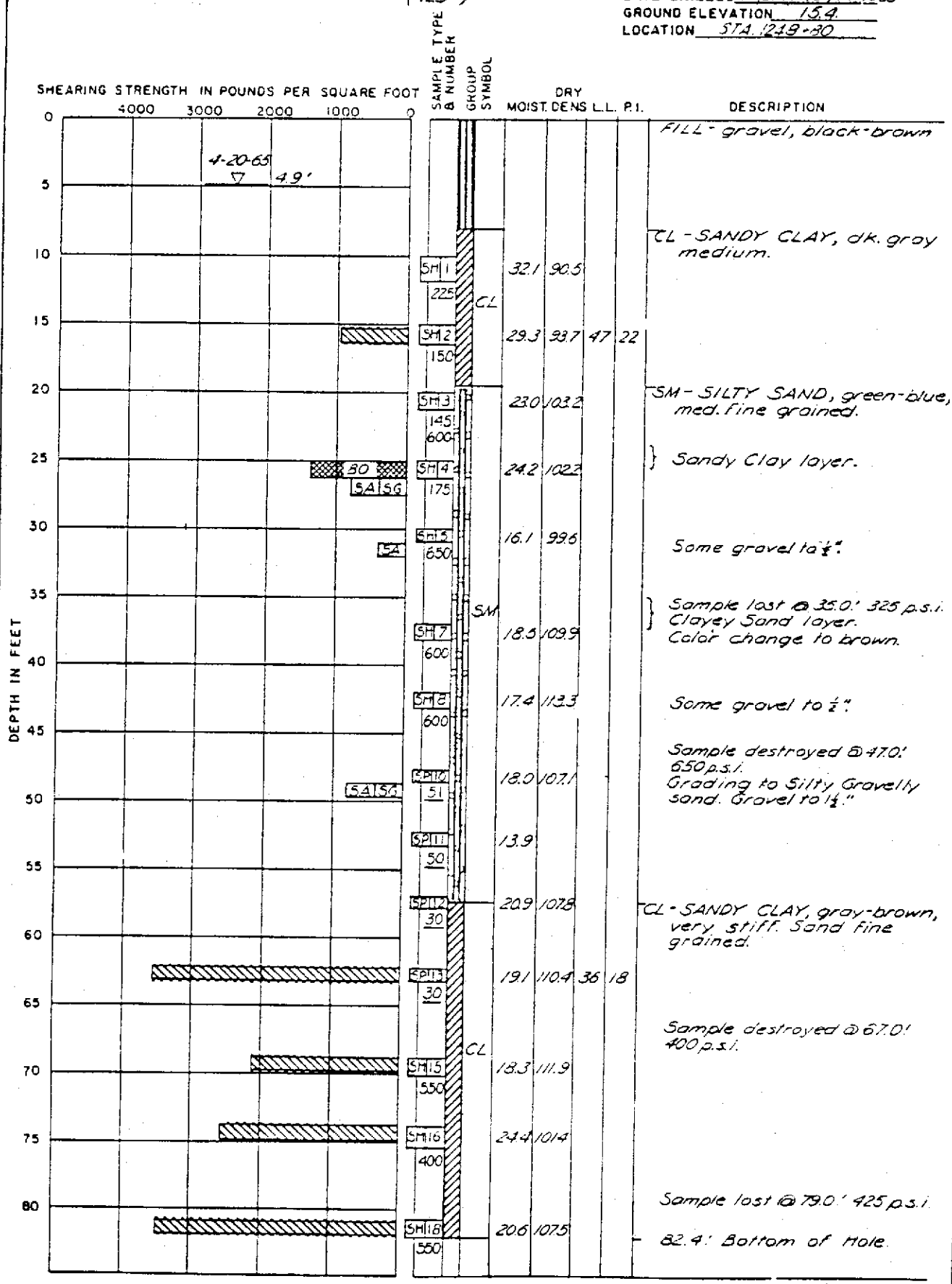


SUBSURFACE PROFILE

Designed by Clayton C Spink	SAN FRANCISCO BAY AREA RAPID TRANSIT DISTRICT	ALAMEDA LINE - PLAN AND SUBSURFACE PROFILE Station 1239+50 - Station 1269+50	As Shown
Checked by [illegible]			A-704-003
Drawn by Phoebe Palmer			Plate # 2
Traced by H Burke			
Date 12-22-69	BECHTEL CORPORATION SAN FRANCISCO	PARSONS BRINCKERHOFF-TUDOR-BECHTEL GENERAL ENGINEERING CONSULTANTS	

BORING NO. A-704-72

DATE DRILLED April 13 & 14, 1965
GROUND ELEVATION 15.4
LOCATION STA. 1219+30



DRAWN BY: IL
CHECKED BY: HHA, WK

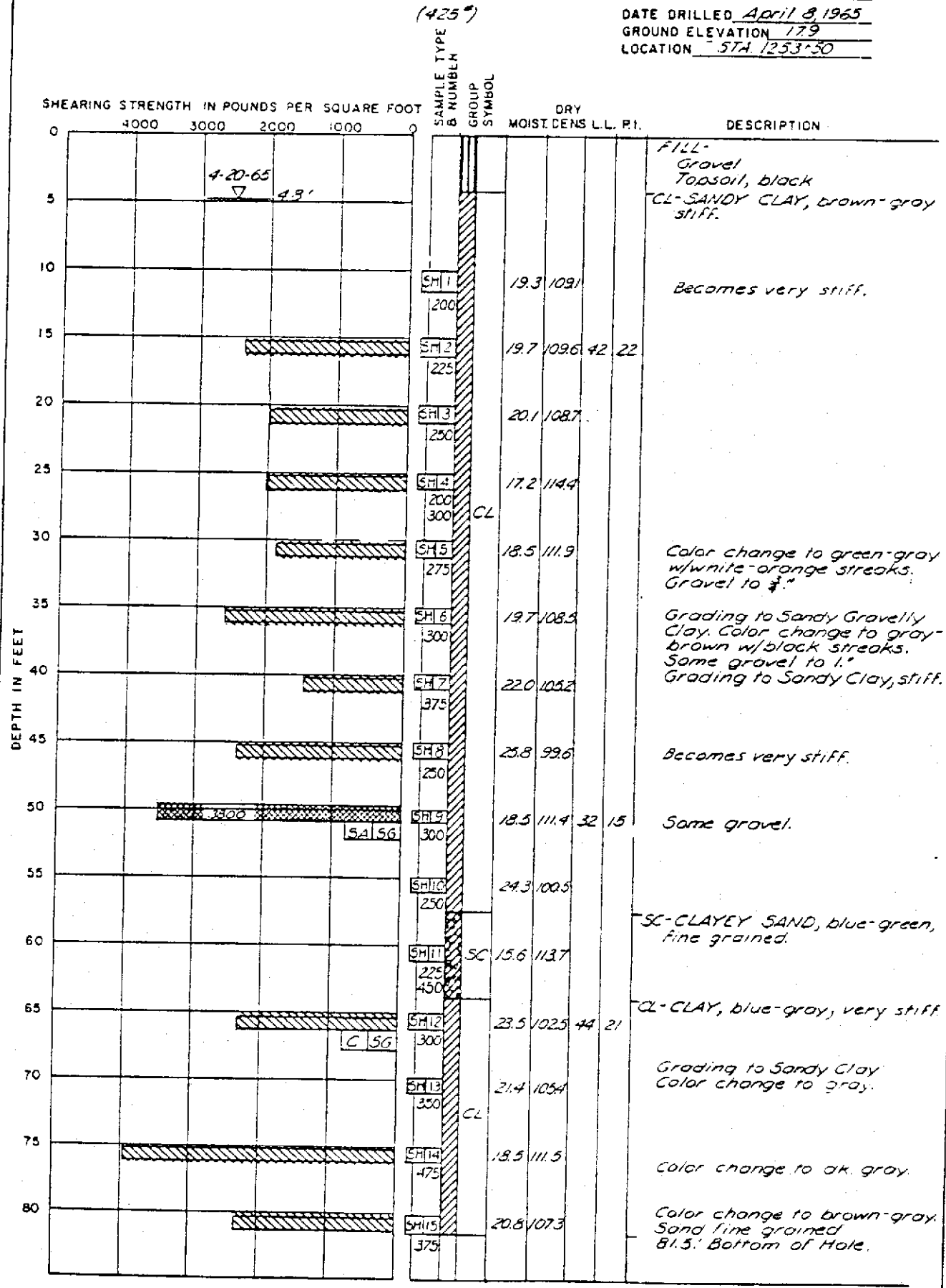
LOG OF SOIL BORING

Plate A-8
A003

BECHTEL CORPORATION

BORING NO. A-704-73

DATE DRILLED April 8, 1965
GROUND ELEVATION 179
LOCATION STA. 1253+50

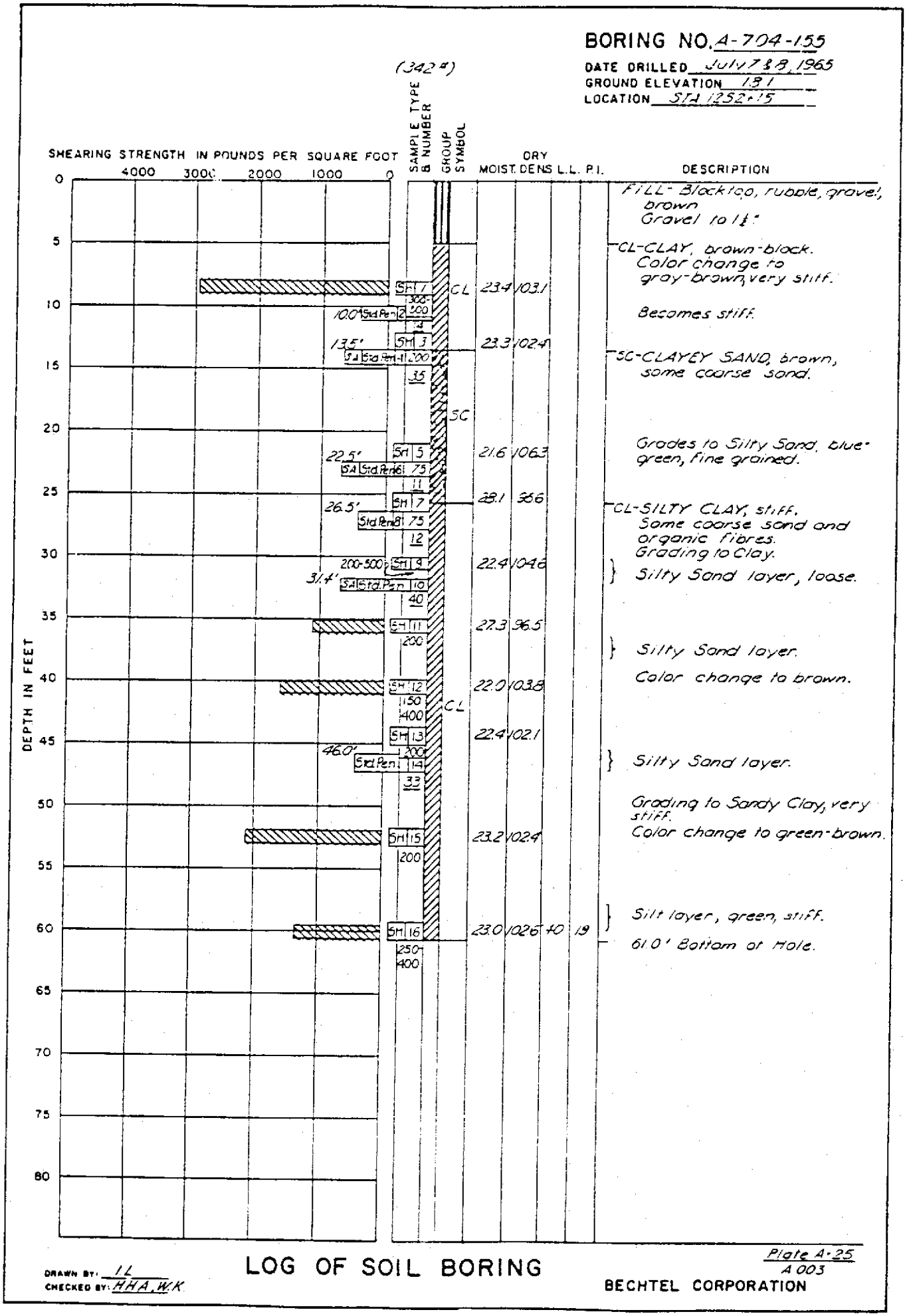


DRAWN BY: LL
CHECKED BY: HHA, WK.

LOG OF SOIL BORING

Plate A-9
A003

BECHTEL CORPORATION



DRAWN BY: IL
CHECKED BY: HHA, WK

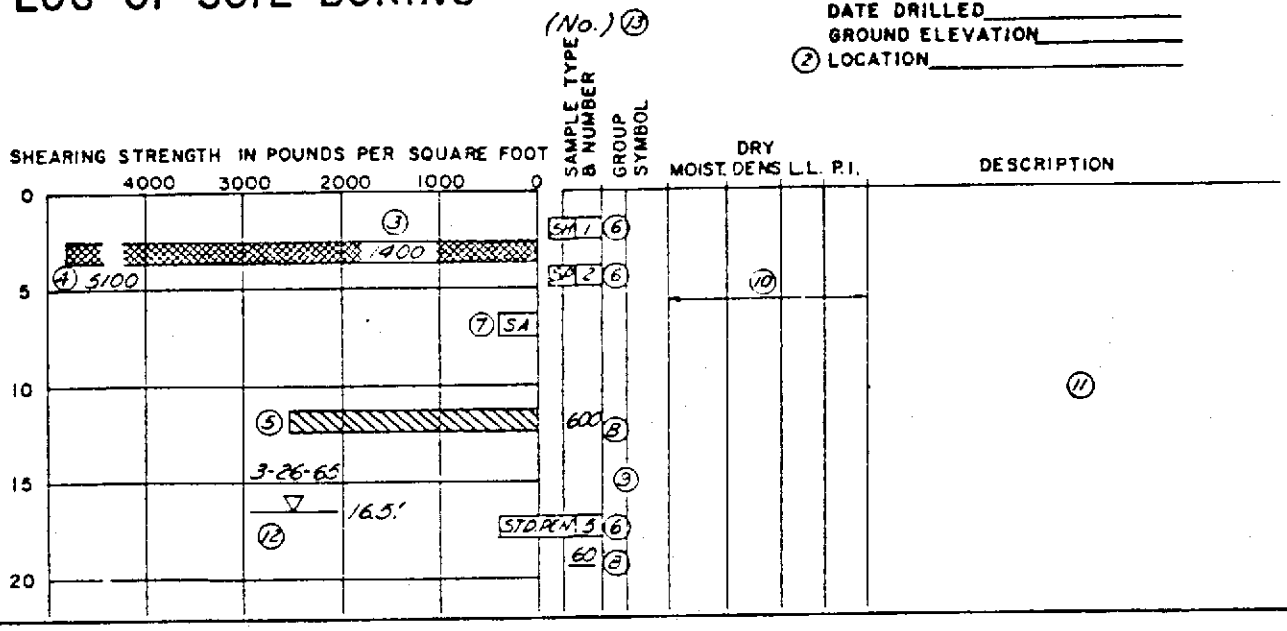
LOG OF SOIL BORING

Plate A-25
A 003

BECHTEL CORPORATION

LOG OF SOIL BORING

① BORING NO._____
DATE DRILLED_____
GROUND ELEVATION_____
② LOCATION_____



① Boring number as shown on plates A-1 thru A-26

② Locations by stations.

③ Lateral pressure for trioxial unconsolidated undrained shear test.

④ Shearing strength for trioxial test. Values indicated when pressures are over 5000p.s.i.

⑤ Shearing strength for unconfined compression test.

⑥ Number in box indicates sample number. Letter designation indicates sampler type : SH = Shelby; SP = Split Spoon; Std. Pen. = Standard Penetration Test.

⑦ Indicates other laboratory tests performed : SA = Sieve Analysis; SG = Specific Gravity; O=Organic Content; C = Consolidation Tests.

⑧ Numbers under sample number box indicate driving force : numbers underlined indicate blows per foot; numbers not underlined indicate hydraulic pressure in p.s.i. Where two numbers are shown, this indicates the pressure range.

⑨ Group symbol and letter designation based on Unified Soil Classification System.

⑩ Results of Laboratory Tests.

⑪ Material description and remarks; Terminology for consistency of of clay is as shown on P.31, Soil Mechanics in Engineering Practice, Terzaghi & Peck

⑫ Water level by depth and date.

⑬ Weight of hammer used with Split Spoon Sampler:
342 pound hammer with a drop of 15 inches
425 pound hammer with a drop of 18 inches

Legend of Symbols :

Fill CL SC GM
CH ML SM

BECHTEL CORPORATION

KEY TO ALAMEDA LINE
SEGMENT A 704-003
BORING LOGS

Plate A-26
A003

Appendix G

Analytical Results for Paint and Paint Sludge

MATERIAL SAFETY DATA SHEET

MANUFACTURER'S NAME:

PRECISION TECH COATINGS CORP.
[illegible] 4TH STREET
EMERYVILLE, CA. 94710

DATE OF PREPARATION: 02-25-1991

EMERGENCY TELEPHONE NO.:

(415) 283-5775

INFORMATION TELEPHONE NO.:

(415) 525-3600

SECTION I - PRODUCT IDENTIFICATION

PRODUCT NUMBER: 355K113
PRODUCT NAME: 355K113 PACO BLUE H.S. EN.
PRODUCT CLASS: ALKYD AIR DRY ENAMEL

PROPOSITION 65 STATEMENT
All Precision products contain detectable amounts of materials on the list published by CA as known to cause cancer or reproductive harm.

SECTION II - HAZARDOUS INGREDIENTS

* Substances on SARA Title III, Section 313 List. Emissions or releases must be reported annually.

INGREDIENT	CAS NUMBER	WEIGHT PERCENT	OCCUPATIONAL EXPOSURE LIMITS	VAPOR PRESSURE mm Hg @ TEMP	
* TOLUENE	108-88-3	5	100PPM TLV TWA ACGIH	24.0	20C
* XYLENE	1330-20-7	5	100PPM TLV TWA ACGIH	31.0	20C
* STYRENE MONOMER, (A)	100-42-5	0.47	50PPM TLV TWA ACGIH	4.5	20C
VM&P NAPTHA	8030-30-6	20	300PPM TLV TWA ACGIH	2.0	20C
MINERAL SPIRITS 75	8052-41-3	< 5.0%	200PPM TLV TWA ACGIH	2.0	20C
* METHYL ETHYL KETONE	78-93-3	< 5.0%	200PPM TLV TWA ACGIH	70.0	20C

SECTION III - PHYSICAL DATA

BOILING RANGE: 226-310oF VAPOR DENSITY: HEAVIER THAN AIR

EVAPORATION RATE: SLOWER THAN ETHER % VOLATILE VOLUME: 53.67 WT/GAL: 8.62

Conforms to BAAQMD Reg 8 Rule 19, Para 3/2.2
Air Dry Coating V.O.C. 420 gms/l (3.5#/gal)

MATERIAL SAFETY DATA SHEET

MANUFACTURER'S NAME:

PRECISION TECH. COATINGS CORP.
1220 4TH. STREET
BERKELEY, CA. 94710

DATE OF PREPARATION: 05-04-1990

EMERGENCY TELEPHONE NO.:

(415) 525-4760

INFORMATION TELEPHONE NO.:

(415) 525-3600

SECTION I - PRODUCT IDENTIFICATION

PRODUCT NUMBER: 385K2
PRODUCT NAME: 385K2 PACO BLUE H.S. EN.
PRODUCT CLASS: ALKYD AIR DRY ENAMEL

PROPOSITION 65 STATEMENT
All Precision products contain detectable amounts of materials on the list published by CA as known to cause cancer or reproductive harm.

SECTION II - HAZARDOUS INGREDIENTS

* Substances on SARA Title III, Section 313 List.
Emissions or releases must be reported annually.

INGREDIENT	CAS NUMBER	WEIGHT PERCENT	OCCUPATIONAL EXPOSURE LIMITS	VAPOR PRESSURE mm Hg @ TEMP	
* TOLUENE	108-88-3	5	100PPM TLV TWA ACGIH	24.0	20C
* XYLENE	1330-20-7	< 5.0%	100PPM TLV TWA ACGIH	31.0	20C
* STYRENE MONOMER, (4)	100-42-5	0.45	50PPM TLV TWA ACGIH	4.5	20C
MINERAL SPIRITS 75	8052-41-3	< 5.0%	200PPM TLV TWA ACGIH	2.0	20C
VM&P NAPTHA	8030-30-6	5	300PPM TLV TWA ACGIH	2.0	20C
* METHYL ETHYL KETONE	78-93-3	10	200PPM TLV TWA ACGIH	70.0	20C
* 1,1,1,TRICHLOROETHANE	71-55-6	15	350PPM TLV TWA ACGIH	125.0	20C

SECTION III - PHYSICAL DATA

BOILING RANGE: 255-343 DF

VAPOR DENSITY: HEAVIER THAN AIR

EVAPORATION RATE: SLOWER THAN ETHER % VOLATILE VOLUME: 49.03 WT/GAL: 9.48

Conforms to BAAQMD Reg 8 Rule 19, Para 302.2
Air Dry Coating V.O.C. 340 gms/l (2.8#/gall)

MATERIAL SAFETY DATA SHEET

52

MANUFACTURER'S NAME:

PRECISION TECH. COATINGS CORP.
1220 4TH. STREET
BERKELEY, CA. 94710

EMERGENCY TELEPHONE NO.:

(415) 525-4780

INFORMATION TELEPHONE NO.:

(415) 525-3600

DATE OF PREPARATION: 06-24-1988

SECTION I - PRODUCT IDENTIFICATION

PRODUCT NUMBER: 385K2
PRODUCT NAME: 385K2 PACO BLUE H.S. EN.
PRODUCT CLASS: ALKYD AIR DRY ENAMEL

SECTION II - HAZARDOUS INGREDIENTS

INGREDIENT	CAS NUMBER	WEIGHT PERCENT	OCCUPATIONAL EXPOSURE LIMITS	VAPOR PRESSURE mm Hg @ TEMP	
COPOLYMER RESIN SOLUTION	UNKNOWN	15	500 PPM PEL	15.0	20C
STD 265	8030-30-6	5	300 PPM TLV TWA	27.0	20C
RESIN SOL	UNKNOWN	< 5.0%	40 PPM TLV	5.0	20C
STD 350	8030-30-4	< 5.0%	200 PPM TLV	0.8	20C
XYLENE	1330-20-7	< 5.0%	100 PPM PEL TWA	31.0	20C
PHTHALOCYANINE BLUE	UNKNOWN	< 5.0%	15 MG/M3 PEL	0.0	20C
P103 RUTILE TITANIUM DIOXIDE	13463-67-7	10	15 MG/M3 PEL	0.0	20C
CALCIUM CARBONATE	1317-65-3	10	30 MPPCF (TLV)	0.0	20C
ISOPROPYL ALCOHOL	67-63-0	< 5.0%	400 PPM TLV	33.0	20C
CARBON BLACK	1333-86-4	< 0.5%	3.5 MG/M3 TLV	0.0	20C
ACETONE	67-64-1	5	1000 PPM TLV TWA	186.0	20C

SECTION III - PHYSICAL DATA

BOILING RANGE: 255-343oF VAPOR DENSITY: HEAVIER THAN AIR

EVAPORATION RATE: SLOWER THAN ETHER % VOLATILE VOLUME: 45.75 WT/GAL: 8.75

Curtis & Tompkins, Ltd.

LABORATORY NUMBER: 101877-4
CLIENT: JONAS AND ASSOCIATES
JOB #: PACO-12-117-02
SAMPLE ID: SG1DM2100990
Paint Booth Sludge

DATE RECEIVED: 10/09/90
DATE ANALYZED: 10/19/90
DATE REPORTED: 10/29/90

EPA METHOD 8240: VOLATILE ORGANICS IN SOILS & WASTES
Extraction Method: EPA 5030 - Purge & Trap

COMPOUND	Result ug/kg	Reporting Limit (ug/kg)
chloromethane	ND	100
bromomethane	ND	100
vinyl chloride	ND	100
chloroethane	ND	100
methylene chloride	ND	50
acetone	2,100	100
carbon disulfide	ND	50
trichlorofluoromethane	ND	50
1,1-dichloroethene	ND	50
1,1-dichloroethane	92	50
1,2-dichloroethene (total)	ND	50
chloroform	ND	50
freon 113	ND	50
1,2-dichloroethane	ND	50
2-butanone	8,200	100
1,1,1-trichloroethane	3,800	50
carbon tetrachloride	ND	50
vinyl acetate	ND	100
bromodichloromethane	ND	50
1,2-dichloropropane	ND	50
cis-1,3-dichloropropene	ND	50
trichloroethylene	ND	50
dibromochloromethane	ND	50
1,1,2-trichloroethane	ND	50
benzene	ND	50
trans-1,3-dichloropropene	ND	50
2-chloroethylvinyl ether	ND	100
bromoform	ND	50
2-hexanone	ND	100
4-methyl-2-pentanone	130	100
1,1,2,2-tetrachloroethane	ND	50
tetrachloroethylene	ND	50
toluene	2,100	50
chlorobenzene	ND	50
ethyl benzene	470	50
styrene	98	50
total xylenes	2,600	50

ND = Not detected at or above reporting limit

QA/QC SUMMARY: SURROGATE RECOVERIES

1,2-Dichloroethane-d4	102 %
Toluene-d8	106 %
Bromofluorobenzene	89 %

Curtis & Tompkins, Ltd.

LABORATORY NUMBER: 101877-4
CLIENT: JONAS AND ASSOCIATES
JOB ID: PACO-12-117-02
SAMPLE ID: SG1DM2100990

DATE RECEIVED: 10/09/90
DATE ANALYZED: 10/13/90
DATE REPORTED: 10/22/90

Paint Booth Sludge

Title 26 Metals in Soils & Wastes
Digestion Method: EPA 3050

METAL	RESULT mg/Kg	REPORTING LIMIT mg/Kg	METHOD
Antimony	ND	2.5	EPA 7041
Arsenic	ND	1.3	EPA 6010
Barium	180	0.25	EPA 6010
Beryllium	ND	0.25	EPA 6010
Cadmium	1.0	0.25	EPA 6010
Chromium (total)	310	2.5	EPA 6010
Cobalt	96	2.5	EPA 6010
Copper	550	5	EPA 6010
Lead	1,600	13	EPA 6010
Mercury	ND	0.1	EPA 7471
Molybdenum	20	0.25	EPA 6010
Nickel	3.5	0.25	EPA 6010
Selenium	ND	1.3	EPA 6010
Silver	ND	0.5	EPA 6010
Thallium	ND	2.5	EPA 7841
Vanadium	0.6	0.5	EPA 6010
Zinc	830	2.5	EPA 6010

ND = Not detected at or above reporting limit.

QA/QC SUMMARY

	RPD,%	RECOVERY,%		RPD,%	RECOVERY,%
Antimony	<1	103	Mercury	10	92
Arsenic	3	103	Molybdenum	2	103
Barium	1	103	Nickel	<1	110
Beryllium	1	109	Selenium	1	108
Cadmium	1	104	Silver	11	98
Chromium	1	108	Thallium	11	104
Cobalt	2	109	Vanadium	<1	107
Copper	<1	107	Zinc	<1	112
Lead	4	98			

U.S. DEPARTMENT OF LABOR
Occupational Safety and Health Administration
OMB No. 44-R1387

MATERIAL SAFETY DATA SHEET

Required under USDL Safety and Health Regulations for Ship Repairing, Shipbuilding, and Shipbreaking (29 CFR 1915, 1916, 1917)

SECTION I

MANUFACTURER'S NAME	EMERGENCY TELEPHONE NO.
Ronic Chemical Corporation	(415) 324-1638

ADDRESS (Number, Street, City, State, and ZIP Code)
2081 Bay Road, East Palo Alto, CA 94303

CHEMICAL NAME AND SYNONYMS	TRADE NAME AND SYNONYMS
Lacquer Wash Thinner	
CHEMICAL FAMILY	FORMULA

SECTION II - HAZARDOUS INGREDIENTS

PAINTS, PRESERVATIVES, & SOLVENTS	%	TLV (Units)	ALLOYS AND METALLIC COATINGS	%	TLV (Units)
PIGMENTS			BASE METAL		
CATALYST			ALLOYS		
VEHICLE			METALLIC COATINGS		
SOLVENTS			FILLER METAL PLUS COATING OR CORE FLUX		
ADDITIVES			OTHERS		
OTHERS					

HAZARDOUS MIXTURES OF OTHER LIQUIDS, SOLIDS, OR GASES	%	TLV (Units)
Oxygenated Hydrocarbons	14	100-400
Aromatics (Not Benzene)	12	100
Esters, Hydrocarbon	7	150-400
Methyl Ethyl Ketone	50	200
Paraffins	12	250
Acetone	5	1000

SECTION III - PHYSICAL DATA

BOILING POINT (°F.)	100-200°	SPECIFIC GRAVITY (H_2O=1)	.80
VAPOR PRESSURE (mm Hg.) 20°C	150 mm	PERCENT, VOLATILE BY VOLUME (%)	100
VAPOR DENSITY (AIR=1)		EVAPORATION RATE (_____=1)	
SOLUBILITY IN WATER		--	

APPEARANCE AND ODOR: Clear colorless liquid with fragrant mint like odor-

SECTION IV - FIRE AND EXPLOSION HAZARD DATA

FLASH POINT (Method used)	FLAMMABLE LIMITS	Lel	Uel
22°F T.O.C.			

EXTINGUISHING MEDIA: Dry Chemical, alcohol foam, carbon dioxide

SPECIAL FIRE FIGHTING PROCEDURES: Water may be ineffective. Cool exposed containers with water spray.

UNUSUAL FIRE AND EXPLOSION HAZARDS: Flashback may occur along vapor trail; explosion may occur if vapor ignited in confined space. Floats on and mixes with water.

Curtis & Tompkins, Ltd.

LABORATORY NUMBER: 101877-1
CLIENT: JONAS AND ASSOCIATES
JOB #: PACO-12-117-02
SAMPLE ID: SC1DM1100990

DATE RECEIVED: 10/09/90
DATE ANALYZED: 10/19/90
DATE REPORTED: 10/29/90

Spent Coolant

EPA METHOD 8240: VOLATILE ORGANICS IN LIQUID
Extraction Method: EPA 5030 - Purge & Trap

COMPOUND	Result ug/L	Reporting Limit (ug/L)
chloromethane	ND	100
bromomethane	ND	100
vinyl chloride	ND	100
chloroethane	ND	100
methylene chloride	ND	50
acetone	ND	100
carbon disulfide	ND	50
trichlorofluoromethane	ND	50
1,1-dichloroethene	ND	50
1,1-dichloroethane	ND	50
1,2-dichloroethene (total)	ND	50
chloroform	ND	50
freon 113	ND	50
1,2-dichloroethane	ND	50
2-butanone	ND	100
1,1,1-trichloroethane	DETECTED(35)	50
carbon tetrachloride	ND	50
vinyl acetate	ND	100
bromodichloromethane	ND	50
1,2-dichloropropane	ND	50
cis-1,3-dichloropropene	ND	50
trichloroethylene	ND	50
dibromochloromethane	ND	50
1,1,2-trichloroethane	ND	50
benzene	ND	50
trans-1,3-dichloropropene	ND	50
2-chloroethylvinyl ether	ND	100
bromoform	ND	50
2-hexanone	ND	100
4-methyl-2-pentanone	ND	100
1,1,2,2-tetrachloroethane	ND	50
tetrachloroethylene	ND	50
toluene	76	50
chlorobenzene	ND	50
ethyl benzene	DETECTED(29)	50
styrene	ND	50
total xylenes	200	50

ND = Not detected at or above reporting limit.

QA/QC SUMMARY: SURROGATE RECOVERIES

1,2-Dichloroethane-d4	105 %
Toluene-d8	102 %
Bromofluorobenzene	99 %

Curtis & Tompkins, Ltd.

LABORATORY NUMBER: 101877-1
CLIENT: JONAS AND ASSOCIATES
JOB #: PACO-12-117-02
SAMPLE ID: SC1DMI100990

DATE RECEIVED: 10/09/90
DATE ANALYZED: 10/13/90
DATE REPORTED: 10/22/90

Spent Coolant

Title 26 Metals in Aqueous Solutions

METAL	RESULT mg/L	REPORTING LIMIT mg/L	METHOD
Antimony	ND	0.5	EPA 6010
Arsenic	ND	0.25	EPA 6010
Barium	3.8	0.05	EPA 6010
Beryllium	ND	0.05	EPA 6010
Cadmium	0.66	0.05	EPA 6010
Chromium (total)	0.36	0.05	EPA 6010
Cobalt	ND	0.05	EPA 6010
Copper	1.5	0.1	EPA 6010
Lead	5.0	0.25	EPA 7420
Mercury	ND	0.01	EPA 7470
Molybdenum	ND	0.05	EPA 6010
Nickel	ND	0.05	EPA 6010
Selenium	ND	0.25	EPA 6010
Silver	ND	0.1	EPA 6010
Thallium	ND	0.5	EPA 7841
Vanadium	ND	0.1	EPA 6010
Zinc	39	0.05	EPA 6010

ND = Not detected at or above reporting limit.

QA/QC SUMMARY

	RPD,%	RECOVERY,%		RPD,%	RECOVERY,%
Antimony	<1	103	Mercury	3	102
Arsenic	3	103	Molybdenum	2	103
Barium	1	103	Nickel	<1	110
Beryllium	1	109	Selenium	1	108
Cadmium	1	104	Silver	11	98
Chromium	1	108	Thallium	11	104
Cobalt	2	109	Vanadium	<1	107
Copper	<1	107	Zinc	<1	112
Lead	4	98			

Appendix H

Excavation Manifests and Permits

Jonas & Associates
Mark Jonas

Subject: Transportation and Disposal Break down for Paco Pumps

Dear Mark,

Enclosed is a list by Truck load for the Paco Pump job dated 10/01/92.

Load #	Gross Weight	Tare Weight	Net Weight
1	79,960	29,580	50,380
2	79,500	29,680	49,820
3	80,240	30,360	49,880
4	80,320	29,660	50,660
5	78,560	29,040	49,520
6	77,960	28,280	49,680
7	79,240	31,860	47,380
8	80,040	30,120	49,920
9	73,440	31,400	42,040
10	79,860	29,740	50,120
11	79,540	29,600	49,940
12	79,420	29,840	49,580
13	60,840	30,140	30,700
		Total Lbs.	619,620
		Total Tons	309.81

BETA ASSOCIATES

FORWARD, INC. NON-HAZARDOUS WASTE DRIVER IDENTIFICATION FORM

00299

Generator: PACO PUMPS INC.

Address: 9201 SAN LEANDRO STREET OAKLAND, CA

Phone: (510) 521-8780 - 510-639-3200 Contact: SCOTT LIDDICOAT

Transporter: MP ENVIRONMENTAL

Address: 3400 MANOR STREET BAKERSFIELD, CA 93308

Phone: (916) 668-9316 - _____ Contact: ED MORRISON

I hereby certify that the above named material was picked up at the generator site listed above.

Driver Signature: Ralph W. Furlong

Shipment Date: ~~9/8~~ 10/01/92

Truck No.: X21-05 Load No.: 1

Vehicle License No./State: BP50278

Consultant/Contractor: ERTHCO ENVIRONMENTAL SERVICES

Address: 32555-MONIER CR SUITE C RANCHO CORDOVA, CA 95742

Phone: (916) 852-8192 - _____ Contact: ROBERT HUSON

I hereby certify that the above named material is consistent with the information presented in the Waste Characterization Form and Contaminated Soil Description Form, and has been properly described, classified and packaged, and is in proper condition for transport according to applicable regulations.

Name: Robert A. Huson Date: 10/01/92

Destination: Forward, Inc.
9999 South Austin Road, Manteca, California 95336
(209) 982-4298
Received by: _____

Date: _____

Acceptance No.: B92 - 211

This load contains soil with:

XX less than 100 ppm _____ greater than 100 ppm

A COPY OF THIS SHEET MUST ACCOMPANY EVERY WASTE LOAD, AND MUST BE SUBMITTED AT THE GATE FOR ENTRY. ALL LOADS MUST BE SCHEDULED AT LEAST 24 HOURS IN ADVANCE: **(209) 982-4298** LANDFILL DELIVERIES MUST BE SCHEDULED ON A **DAILY** BASIS. ANY UNSCHEDULED LOADS MAY BE REFUSED AT THE GATE.

Fee for this Load: _____ _____

GENERATOR COPY

ASSOCIATES

FORWARD, INC. NON-HAZARDOUS WASTE DRIVER IDENTIFICATION FORM

00300

Generator: PACO PUMPS INC.

Address: 9201 SAN LEANDRO STREET OAKLAND, CA

Phone: (510) 521-8780 - 510-639-3200 Contact: SCOTT LIDDICOAT

Transporter: MP ENVIRONMENTAL

Address: 3400 MANOR STREET BAKERSFIELD, CA 93308

Phone: (916) 668-9316 - _____ Contact: ED MORRISON

I hereby certify that the above named material was picked up at the generator site listed above.

Driver Signature: al Walker

Shipment Date: 10/01/92

Truck No.: 472 Load No.: 2

Vehicle License No./State: BP91661 CALIF

Consultant/Contractor: ERTHCO ENVIRONMENTAL SERVICES

Address: 3255 MONIER CR SUITE C RANCHO CORDOVA, CA 95742

Phone: (916) 852-8192 - _____ Contact: ROBERT HUSON

I hereby certify that the above named material is consistent with the information presented in the Waste Characterization Form and Contaminated Soil Description Form, and has been properly described, classified and packaged, and is in proper condition for transport according to applicable regulations.

Name: Robert A. Huson Date: 10/01/92

Destination: Forward, Inc.
9999 South Austin Road, Manteca, California 95336
(209) 982-4298
Received by: _____
Date: _____

Acceptance No.: B92 - 211

This load contains soil with:

XX less than 100 ppm _____ greater than 100 ppm

A COPY OF THIS SHEET MUST ACCOMPANY EVERY WASTE LOAD, AND MUST BE SUBMITTED AT THE GATE FOR ENTRY. ALL LOADS MUST BE SCHEDULED AT LEAST 24 HOURS IN ADVANCE: **(209) 982-4298** LANDFILL DELIVERIES MUST BE SCHEDULED ON A **DAILY** BASIS. ANY UNSCHEDULED LOADS MAY BE REFUSED AT THE GATE.

Yards Per this Load: _____ _____

GENERATOR COPY

BETA ASSOCIATES

FORWARD, INC. NON-HAZARDOUS WASTE DRIVER IDENTIFICATION FORM

00301

Generator: PACO PUMPS INC.

Address: 9201 SAN LEANDRO STREET OAKLAND, CA

Phone: (510) 521-8780 - 510-639-3200 Contact: ~~ED MORRISON~~ SCOTT LIDDICOAT

Transporter: MP ENVIRONMENTAL

Address: 3400 MANOR STREET BAKERSFIELD, CA 93308

Phone: (916) 668-9316 - _____ Contact: ED MORRISON

I hereby certify that the above named material was picked up at the generator site listed above.

Driver Signature: [signature]

Shipment Date: 10/01/92

Truck No.: 496-3092 Load No.: 3

Vehicle License No./State: BP9165

Consultant/Contractor: ERTHCO ENVIRONMENTAL SERVICES

Address: 3255 MONIER CR SUITE C RANCHO CORDOVA, CA 95742

Phone: (916) 852-8192 - _____ Contact: ~~ROBERT HUSON~~

I hereby certify that the above named material is consistent with the information presented in the Waste Characterization Form and Contaminated Soil Description Form, and has been properly described, classified and packaged, and is in proper condition for transport according to applicable regulations.

Name: [signature] Date: 10/01/92

Destination: Forward, Inc.
9999 South Austin Road, Manteca, California 95336
(209) 982-4298
Received by: _____
Date: _____

Acceptance No.: B92 - 211

This load contains soil with:

XX less than 100 ppm _____ greater than 100 ppm

A COPY OF THIS SHEET MUST ACCOMPANY EVERY WASTE LOAD, AND MUST BE SUBMITTED AT THE GATE FOR ENTRY. ALL LOADS MUST BE SCHEDULED AT LEAST 24 HOURS IN ADVANCE: **(209) 982-4298** LANDFILL DELIVERIES MUST BE SCHEDULED ON A **DAILY** BASIS. ANY UNSCHEDULED LOADS MAY BE REFUSED AT THE GATE.

Yards Per this Load: _____ _____

GENERATOR COPY

ASSOCIATES

Recycled Paper

FORWARD, INC. NON-HAZARDOUS WASTE DRIVER IDENTIFICATION FORM

02550

Generator: PACO PUMPS INC.

Address: 9201 SAN LEANDRO STREET OAKLAND, CA

Phone: (510 ~~521-8780~~ - 510-639-3200 Contact: SCOTT LIDDICOAT

Transporter: MP ENVIRONMENTAL

Address: 3400 MANOR STREET BAKERSFIELD, CA 93308

Phone: (916) ~~668-9316~~ - _____ Contact: ED MORRISON

I hereby certify that the above named material was picked up at the generator site listed above.

Driver Signature: [signature]

Shipment Date: 10/01/92

Truck No.: 1 — 1A Load No.: 4

Vehicle License No./State: BP95923

Consultant/Contractor: ERTHCO ENVIRONMENTAL SERVICES

Address: 3255 MONIER CR. SUITE C RANCHO CORDOVA, CA 95742

Phone: (916) ~~8[illegible]~~8192- _____ Contact: ROBERT HUSON

I hereby certify that the above named material is consistent with the information presented in the Waste Characterization Form and Contaminated Soil Description Form, and has been properly described, classified and packaged, and is in proper condition for transport according to applicable regulations.

Name: Robert A. Huson Date: 10/01/92

Destination: Forward, Inc.
9999 South Austin Road, Manteca, California 95336
(209) 982-4298
Received by: _____
Date: _____

Acceptance No.: B92 - 211

This load contains soil with:

XX less than 100 ppm _____ greater than 100 ppm

A COPY OF THIS SHEET MUST ACCOMPANY EVERY WASTE LOAD, AND MUST BE SUBMITTED AT THE GATE FOR ENTRY. ALL LOADS MUST BE SCHEDULED AT LEAST 24 HOURS IN ADVANCE: **(209) 982-4298** LANDFILL DELIVERIES MUST BE SCHEDULED ON A **DAILY** BASIS. ANY UNSCHEDULED LOADS MAY BE REFUSED AT THE GATE.

Yards Per this Load: _____ _____

GENERATOR COPY

ASSOCIATES

Recycled Paper

FORWARD, INC. NON-HAZARDOUS WASTE DRIVER IDENTIFICATION FORM

02552

Generator: PACO PUMPS

Address: 9200 SAN LEANDRO STREET OAKLAND, CA

Phone: (510) 521-8780 - 510 -639-3200 Contact: SCOTT LIDDICOAT

Transporter: MP ENVIRONMENTAL

Address: 3400 MANOR STREET BAKERSFIELD, CA 93308

Phone: (916) 668-0316 - _____ Contact: ED MORRISON

I hereby certify that the above named material was picked up at the generator site listed above.

Driver Signature: _____

Shipment Date: 10/01/92

Truck No.: 105 Load No.: 6

Vehicle License No./State: 2J27392

Consultant/Contractor: PRIMCO ENVIRONMENTAL SERVICES

Address: 3255 MONIER CR. SUITE C RANCHO CORDOVA, CA 95742

Phone: (916) 852-8192 - _____ Contact: ROBERT HUSON

I hereby certify that the above named material is consistent with the information presented in the Waste Characterization Form and Contaminated Soil Description Form, and has been properly described, classified and packaged, and is in proper condition for transport according to applicable regulations.

Name: Robert A. Huson Date: 10/01/92

Destination: Forward, Inc.
9999 South Austin Road, Manteca, California 95336
(209) 982-4298
Received by: _____

Date: _____

Acceptance No.: B92 - 211

This load contains soil with:

XX less than 100 ppm _____ greater than 100 ppm

A COPY OF THIS SHEET MUST ACCOMPANY EVERY WASTE LOAD, AND MUST BE SUBMITTED AT THE GATE FOR ENTRY. ALL LOADS MUST BE SCHEDULED AT LEAST 24 HOURS IN ADVANCE: **(209) 982-4298** LANDFILL DELIVERIES MUST BE SCHEDULED ON A **DAILY** BASIS. ANY UNSCHEDULED LOADS MAY BE REFUSED AT THE GATE.

Yards Per this Load: _____ _____

GENERATOR COPY

...CIATES

Recycled Paper

...ORWARD, INC. NON-HAZARDOUS WASTE DRIVER IDENTIFICATION FORM

02553

Generator: PACO PUMPS INC.

...ddress: 9201 SAN LEANDRO STREET OAKLAND, CA

Phone: (510) 521- 8780 510-639-3200 Contact: SCOTT LIDDICOAT

Transporter: MP ENVIRONMENTAL

...ddress: 3400 MANOR STREET BAKERSFIELD, CA 93308

Phone: (916) 852-8192- Contact: ED MORRISON

...hereby certify that the above named material was picked up at the generator site listed above.

Driver Signature: F. S. Troyer

...hipment Date: 10/01/92

Truck No.: 459 Load No.: 7

...ehicle License No./State: BP 91539 CA

...onsultant/Contractor: ERTHCO ENVIRONMENTAL SERVICES

Address: 3255 MONIER CR. SUITE C RANCHO CORDOVA, CA 95742

...hone: (916) 852-8192- Contact: ROBERT HUSON

I hereby certify that the above named material is consistent with the information presented in the Waste Characterization Form ...nd Contaminated Soil Description Form, and has been properly described, classified and packaged, and is in proper condition ...r transport according to applicable regulations.

Name: Robert C. Huson Date: 10/01/92

...estination: Forward, Inc.
9999 South Austin Road, Manteca, California 95336
(209) 982-4298
Received by:

Date:

...cceptance No.: B92 - 211

This load contains soil with:

XX less than 100 ppm _____ greater than 100 ppm

A COPY OF THIS SHEET MUST ACCOMPANY EVERY WASTE LOAD, AND MUST BE SUBMITTED AT THE GATE FOR ...NTRY. ALL LOADS MUST BE SCHEDULED AT LEAST 24 HOURS IN ADVANCE: **(209) 982-4298** LANDFILL DELIVERIES ...UST BE SCHEDULED ON A **DAILY** BASIS. ANY UNSCHEDULED LOADS MAY BE REFUSED AT THE GATE.

...ards Per this Load:

GENERATOR COPY

BETA ASSOCIATES

FORWARD, INC. NON-HAZARDOUS WASTE DRIVER IDENTIFICATION FORM

00299

Generator: PACO PUMPS INC.

Address: 9201 SAN LEANDRO STREET OAKLAND, CA

Phone: (510) 521-8780 - 510-639-3200 Contact: SCOTT LIDDICOAT

Transporter: MP ENVIRONMENTAL

Address: 3400 MANOR STREET BAKERSFIELD, CA 93308

Phone: (916) 668-9316 - _____ Contact: ED MORRISON

I hereby certify that the above named material was picked up at the generator site listed above.

Driver Signature: Quince Horn

Shipment Date: --- 10/01/92

Truck No.: 179 Load No.: 9

Vehicle License No./State: Calif 2527587

Consultant/Contractor: ERTHCO ENVIRONMENTAL SERVICES

Address: 32555 MONIER CR SUITE C RANCHO CORDOVA, CA 95742

Phone: (916) 852-8192 - _____ Contact: ROBERT HUSON

I hereby certify that the above named material is consistent with the information presented in the Waste Characterization Form and Contaminated Soil Description Form, and has been properly described, classified and packaged, and is in proper condition for transport according to applicable regulations.

Name: Robert G. Huson Date: 10/01/92

Destination: Forward, Inc.
9999 South Austin Road, Manteca, California 95336
(209) 982-4298
Received by: _____
Date: _____

Acceptance No.: B92 - 211

This load contains soil with:

XX less than 100 ppm _____ greater than 100 ppm

A COPY OF THIS SHEET MUST ACCOMPANY EVERY WASTE LOAD, AND MUST BE SUBMITTED AT THE GATE FOR ENTRY. ALL LOADS MUST BE SCHEDULED AT LEAST 24 HOURS IN ADVANCE: **(209) 982-4298** LANDFILL DELIVERIES MUST BE SCHEDULED ON A **DAILY** BASIS. ANY UNSCHEDULED LOADS MAY BE REFUSED AT THE GATE.

Yards Per this Load: _____

FACILITY COPY

TA ASSOCIATES

D, INC. NON-HAZARDOUS WASTE DRIVER IDENTIFICATION FORM

00299

O PUMPS INC.
SAN LEANDRO STREET OAKLAND, CA
521-8780 - 510-639-3200 Contact: SCOTT LIDDICOAT

MP ENVIRONMENTAL
00 MANOR STREET BAKERSFIELD, CA 93308
) 668-9316 - _____ Contact: ED MORRISON

ify that the above named material was picked up at the generator site listed above.

Driver Signature: Danny Lee

Shipment Date: --- 10/01/92

Truck No.: 471 Load No.: 10

Vehicle License No./State: B91660 CA

Consultant/Contractor: ERTHCO ENVIRONMENTAL SERVICES

Address: 3255 MONIER CR SUITE C RANCHO CORDOVA, CA 95742

Phone: (916) 852-8192 - _____ Contact: ROBERT HUSON

I hereby certify that the above named material is consistent with the information presented in the Waste Characterization Form and Contaminated Soil Description Form, and has been properly described, classified and packaged, and is in proper condition for transport according to applicable regulations.

Name: Robert G. Huson Date: 10/01/92

Destination: Forward, Inc.
9999 South Austin Road, Manteca, California 95336
(209) 982-4298
Received by: _____
Date: _____

Acceptance No.: B92 - 211

This load contains soil with:

XX less than 100 ppm _____ greater than 100 ppm

A COPY OF THIS SHEET MUST ACCOMPANY EVERY WASTE LOAD, AND MUST BE SUBMITTED AT THE GATE FOR ENTRY. ALL LOADS MUST BE SCHEDULED AT LEAST 24 HOURS IN ADVANCE: **(209) 982-4298** LANDFILL DELIVERIES MUST BE SCHEDULED ON A **DAILY** BASIS. ANY UNSCHEDULED LOADS MAY BE REFUSED AT THE GATE.

Yards Per this Load: _____ _____

FACILITY COPY

BETA ASSOCIATES

FORWARD, INC. NON-HAZARDOUS WASTE DRIVER IDENTIFICATION FORM

00299

Generator: PACO PUMPS INC.

Address: 9201 SAN LEANDRO STREET OAKLAND, CA

Phone: (510) 521-8780 - 510-639-3200 Contact: SCOTT LIDDICOAT

Transporter: MP ENVIRONMENTAL

Address: 3400 MANOR STREET BAKERSFIELD, CA 93308

Phone: (916) 668-9316 - _____ Contact: ED MORRISON

I hereby certify that the above named material was picked up at the generator site listed above.

Driver Signature: Dalphh Tinlocy

Shipment Date: --- 10/01/92

Truck No.: X21-05 Load No.: 11

Vehicle License No./State: BP50278

Consultant/Contractor: ERTHCO ENVIRONMENTAL SERVICES

Address: 3255 MONIER CR SUITE C RANCHO CORDOVA, CA 95742

Phone: (916) 852-8192 - _____ Contact: ROBERT HUSON

I hereby certify that the above named material is consistent with the information presented in the Waste Characterization Form and Contaminated Soil Description Form, and has been properly described, classified and packaged, and is in proper condition for transport according to applicable regulations.

Name: Robert A. Huson Date: 10/01/92

Destination: Forward, Inc.
9999 South Austin Road, Manteca, California 95336
(209) 982-4298
Received by: _____

Date: _____

Acceptance No.: B92 - 211

This load contains soil with:

XX less than 100 ppm _____ greater than 100 ppm

A COPY OF THIS SHEET MUST ACCOMPANY EVERY WASTE LOAD, AND MUST BE SUBMITTED AT THE GATE FOR ENTRY. ALL LOADS MUST BE SCHEDULED AT LEAST 24 HOURS IN ADVANCE: **(209) 982-4298** LANDFILL DELIVERIES MUST BE SCHEDULED ON A **DAILY** BASIS. ANY UNSCHEDULED LOADS MAY BE REFUSED AT THE GATE.

Yards Per this Load: _____ _____

FACILITY COPY

BETA ASSOCIATES

FORWARD, INC. NON-HAZARDOUS WASTE DRIVER IDENTIFICATION FORM

00299

Generator: PACO PUMPS INC.

Address: 9201 SAN LEANDRO STREET OAKLAND, CA

Phone: (510) 521-8780 - 510-639-3200 Contact: SCOTT LIDDICOAT

Transporter: MP ENVIRONMENTAL

Address: 3400 MANOR STREET BAKERSFIELD, CA 93308

Phone: (916) 668-9316 - _____ Contact: ED MORRISON

I hereby certify that the above named material was picked up at the generator site listed above.

Driver Signature: al walker

Shipment Date: 10/01/92

Truck No.: 472 - Load No.: 12

Vehicle License No./State: BP91661 CALIF

Consultant/Contractor: ERTHCO ENVIRONMENTAL SERVICES

Address: 3255 MONIER CR SUITE C RANCHO CORDOVA, CA 95742

Phone: (916) 852-8192 - _____ Contact: ROBERT HUSON

I hereby certify that the above named material is consistent with the information presented in the Waste Characterization Form and Contaminated Soil Description Form, and has been properly described, classified and packaged, and is in proper condition for transport according to applicable regulations.

Name: Robert C Huson Date: 10/01/92

Destination: Forward, Inc.
9999 South Austin Road, Manteca, California 95336
(209) 982-4298
Received by: _____
Date: _____

Acceptance No.: B92 - 211

This load contains soil with:

XX less than 100 ppm _____ greater than 100 ppm

A COPY OF THIS SHEET MUST ACCOMPANY EVERY WASTE LOAD, AND MUST BE SUBMITTED AT THE GATE FOR ENTRY. ALL LOADS MUST BE SCHEDULED AT LEAST 24 HOURS IN ADVANCE: **(209) 982-4298** LANDFILL DELIVERIES MUST BE SCHEDULED ON A **DAILY** BASIS. ANY UNSCHEDULED LOADS MAY BE REFUSED AT THE GATE.

Yards Per this Load: _____ _____

FACILITY COPY

BETA ASSOCIATES

FORWARD, INC. NON-HAZARDOUS WASTE DRIVER IDENTIFICATION FORM

00299

Generator: PACO PUMPS INC.
Address: 9201 SAN LEANDRO STREET OAKLAND, CA
Phone: (510) 521-8780 - 510-639-3200 Contact: SCOTT LIDDICOAT

Transporter: MP ENVIRONMENTAL
Address: 3400 MANOR STREET BAKERSFIELD, CA 93308
Phone: (916) 668-9316 - _____ Contact: ED MORRISON

I hereby certify that the above named material was picked up at the generator site listed above.

Driver Signature: [signature]
Shipment Date: 10/01/92
Truck No.: 496 - 3092 Load No.: 13
Vehicle License No./State: BP91615

Consultant/Contractor: ERTHCO ENVIRONMENTAL SERVICES
Address: 3255 MONIER CR SUITE C RANCHO CORDOVA, CA 95742
Phone: (916) 852-8192 - _____ Contact: ROBERT HUSON

I hereby certify that the above named material is consistent with the information presented in the Waste Characterization Form and Contaminated Soil Description Form, and has been properly described, classified and packaged, and is in proper condition for transport according to applicable regulations.

Name: [signature] Date: 10/01/92

Destination: Forward, Inc.
9999 South Austin Road, Manteca, California 95336
(209) 982-4298
Received by: _____
Date: _____

Acceptance No.: B92 - 211

This load contains soil with:

XX less than 100 ppm _____ greater than 100 ppm

A COPY OF THIS SHEET MUST ACCOMPANY EVERY WASTE LOAD, AND MUST BE SUBMITTED AT THE GATE FOR ENTRY. ALL LOADS MUST BE SCHEDULED AT LEAST 24 HOURS IN ADVANCE: **(209) 982-4298** LANDFILL DELIVERIES MUST BE SCHEDULED ON A **DAILY** BASIS. ANY UNSCHEDULED LOADS MAY BE REFUSED AT THE GATE.

Yards Per this Load: _____

FACILITY COPY

BETA ASSOCIATES

Recycled Paper

FORWARD, INC. NON-HAZARDOUS WASTE DRIVER IDENTIFICATION FORM

02554

Generator: PACO PUMPS INC.

Address: 9201 SAN LEANDRO STREET OAKLAND, CA

Phone: (916) 631-8780 - 510-639-3200 Contact: SCOTT LIUDDICOAT

Transporter: MP ENVIRONMENTAL

Address: 3400 MANOR STREET BAKERSFIELD, CA 93308

Phone: (916) 668 -9316 Contact: ED MORRISON

I hereby certify that the above named material was picked up at the generator site listed above.

Driver Signature: Ed Wiseman

Shipment Date: 10/01/92

Truck No.: 461 / 3081 Load No.: 8

Vehicle License No./State: BP 91609 / DT 93524 CA

Consultant/Contractor: ERTHCO ENVIRONMENTAL SERVICES

Address: 3255 MEINER CR. SUITE C RANCHO CORDOVA, CA 95742

Phone: (916) 852-8192 - Contact: ROBERT HUSON

I hereby certify that the above named material is consistent with the information presented in the Waste Characterization Form and Contaminated Soil Description Form, and has been properly described, classified and packaged, and is in proper condition for transport according to applicable regulations.

Name: Robert G. Huson Date: 10/01/92

Destination: Forward, Inc.
9999 South Austin Road, Manteca, California 95336
(209) 982-4298
Received by: _____
Date: _____

Acceptance No.: B92 - 211

This load contains soil with:

XX less than 100 ppm _____ greater than 100 ppm

A COPY OF THIS SHEET MUST ACCOMPANY EVERY WASTE LOAD, AND MUST BE SUBMITTED AT THE GATE FOR ENTRY. ALL LOADS MUST BE SCHEDULED AT LEAST 24 HOURS IN ADVANCE: **(209) 982-4298** LANDFILL DELIVERIES MUST BE SCHEDULED ON A **DAILY** BASIS. ANY UNSCHEDULED LOADS MAY BE REFUSED AT THE GATE.

Yards Per this Load: _____ _____

GENERATOR COPY

BETA ASSOCIATES

Recycled Paper

FORWARD, INC. NON-HAZARDOUS WASTE DRIVER IDENTIFICATION FORM

02551

Generator: PACO PUMPS

Address: 9201 SAN LEANDRO STREET OAKLAND, CA

Phone: (916) 521-8780- 510-639-3200 Contact: SCOTT LIDDICOAT

Transporter: MP ENVIRONMENTAL

Address: 3400 MANOR STREET BAKERSFIELD, CA 93308

Phone: (916) 668-9316- Contact: ED MORRISON

I hereby certify that the above named material was picked up at the generator site listed above.

Driver Signature: Tony Barfield

Shipment Date: 10/01/92

Truck No.: 65-101 Load No.: #5

Vehicle License No./State: 6P96285

Consultant/Contractor: ERTHCO ENVIRONMENTAL SERVICES

Address: 3255 MONIER CR. SUITE C SACRAMENTO CORDOVA, CA 95742

Phone: (916-) 852-8192 - Contact: ROBERT HUSON

I hereby certify that the above named material is consistent with the information presented in the Waste Characterization Form and Contaminated Soil Description Form, and has been properly described, classified and packaged, and is in proper condition for transport according to applicable regulations.

Name: Robert G. Huson Date: 10/01/92

Destination: Forward, Inc.
9999 South Austin Road, Manteca, California 95336
(209) 982-4298
Received by: _____

Date: _____

Acceptance No.: B92 - 211

This load contains soil with:

XX less than 100 ppm _____ greater than 100 ppm

COPY OF THIS SHEET MUST ACCOMPANY EVERY WASTE LOAD, AND MUST BE SUBMITTED AT THE GATE FOR [illegible] ALL LOADS MUST BE SCHEDULED AT LEAST 24 HOURS IN ADVANCE: **(209) 982-4298** LANDFILL DELIVERIES [illegible] SCHEDULED ON A **DAILY** BASIS. ANY UNSCHEDULED LOADS MAY BE REFUSED AT THE GATE.

[illegible] Load: _____ _____

GENERATOR COPY

State Water Resources Control Board
Division of Clean Water Programs
UST Local Oversight Program

9201 San Leandro St
PAco Pumps Inc.

Certified Mail # P 062 127 814

07/13/92
STID# 4245

Notice of Requirement to Reimburse

Mr. Scott Liddicoat
Paco Pump Inc.
P.o. Box 12924
Oakland Ca 94604

Responsible Party
Property Owner

Paco Pumps, Inc.
9201 San Leandro St.
Oakland , CA 94603

SITE

Date First Reported 07/10/92
Substance: Gasoline
Petroleum: (X)Yes

The federal Petroleum Leaking Underground Storage Tank Trust Fund (Federal Trust Fund) provides funding to pay the local and state agency administrative and oversight costs associated with the cleanup of releases from underground storage tanks. The legislature has authorized funds to pay the local and state agency administrative and oversight costs associated with the cleanup of releases from underground storage tanks. The direct and indirect costs of overseeing removal or remedial action at the above site are funded, in whole or in part, from the Federal Trust Fund. The above individual(s) or entity(ies) have been indentified as the party or parties responsible for investigation and cleanup of the above site. **YOU ARE HEREBY NOTIFIED** that pursuant to Title 42 of the United States Code, Section 6991b(h)(6) and Sections 25297.1 and 25360 of the California Health and Safety Code, the above Responsible Party or Parties must reimburse the State Water Resources Control Board not more than 150 percent of the total amount of site specific oversight costs actually incurred while overseeing the cleanup of the above underground storage tank site, and the above Responsible Party or Parties must make full payment of such costs within 30 days of receipt of a detailed invoice from the State Water Resources Control Board.

Please contact Barney CHAN, Hazardous Materials Specialist at this office if you have any questions concerning this matter.

Edgar B. Howell, III, Chief
Contract Project Director

cc: Sandra Malos, SWRCB

SWRCB Use: Add: X Reason: New Case

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

State Water Resources Control Board
Division of Clean Water Programs
UST Local Oversight Program
RAFAT A. SHAHID, Assistant Agency Director

DEPARTMENT OF ENVIRONMENTAL HEALTH
Hazardous Materials Division
80 Swan Way, Rm. 200
Oakland, CA 94621
(510) 271-4320

March 23, 1992

Dear Sir:

The attached "Notice of Reimbursement" is not a bill. It is required by our contract with the State Water Resouces Control Board that we send this letter to all responsible parties involved in a leaking petroleum underground tank site. You fall into the following category:

> You (or your contractor/consultant) deposited funds for us to use to oversee the tank removal followed by the cleanup. Your case has been transfered to the Alameda County Local Oversight Program. This will involve your being billed after after the work has been accomplished. It is directed to all responsible parties as the law requires all operators and owners to be notified.

We will continue to work with you to resolve the site remediation in progress.

If you still have any question please call this office at 271-4530 and ask for the specialist noted in the attached notice.

Sincerely,

Thomas F. Peacock, Supervising HMS
Hazardous Material Division

Bay Area Air Quality Management District Permit for Excavation

N - Lew

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
939 ELLIS STREET
SAN FRANCISCO, CALIFORNIA 94109
(415) 771-6000

REGULATION 8, RULE 40
Aeration of Contaminated Soil and Removal of Underground Storage Tanks

NOTIFICATION FORM

Refer to letter dated 8/12/92 from Jonas & Associates

____ Removal or Replacement of Tanks
X Excavation of Contaminated Soil

SITE INFORMATION

SITE ADDRESS 9201 San Leandro Street
CITY, STATE Oakland, California ZIP 94603-1237
OWNER NAME PACO Pumps Inc.
SPECIFIC LOCATION OF PROJECT South east of former quality control department.

TANK REMOVAL No Tank
SCHEDULED STARTUP DATE _____
VAPORS REMOVED BY:
[ ] WATER WASH
[ ] VAPOR FREEING (CO^2)
[ ] VENTILATION

CONTAMINATED SOIL EXCAVATION
SCHEDULED STARTUP DATE 6/29/92
STOCKPILES WILL BE COVERED? YES X NO ____
ALTERNATIVE METHOD OF AERATION (DESCRIBE BELOW):
None
(MAY REQUIRE PERMIT)

CONTRACTOR INFORMATION

NAME AFA Construction Inc. CONTACT Mr. Ralph Hodge
ADDRESS 120 Somerset Drive PHONE (415) 898-8592
CITY, STATE, ZIP Novato, California 94945

CONSULTANT INFORMATION
(IF APPLICABLE)

NAME Jonas & Associates Inc. CONTACT Romena Jonas
ADDRESS 1056 Dale Place PHONE (510) 676-8554
CITY, STATE, ZIP Concord, California 94518

FOR OFFICE USE ONLY

DATE RECEIVED FAX _____ BY _____
DATE POSTMARKED 8/14/92 BY BLy (init.)
CC: INSPECTOR NO. 553 DATE 8/18/92 BY BLy (init.)
UPDATE: CONTACT NAME _____ DATE _____ BY _____ (init.)
BAAQMD # _____ DATA ENTRY 8/18/92

91

* See reverse for instructions

Permit Application - Underground Storage Tank Removal

» not required because no tank was found

Jonas & Associates Inc.

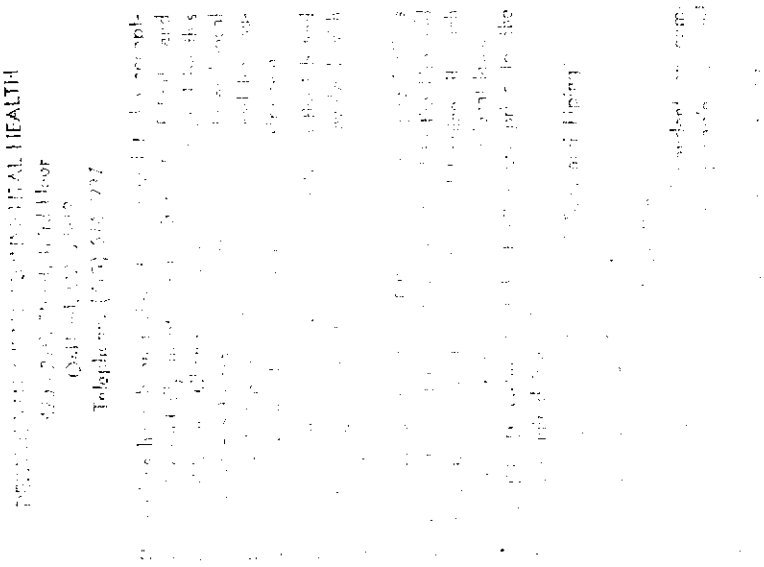
-- PERMIT APPLICATION --
UNDERGROUND STORAGE TANK REMOVAL

PACO PUMPS INC.
9201 SAN LEANDRO STREET
OAKLAND, CALIFORNIA
June 8, 1992

TABLE OF CONTENTS

ALAMEDA COUNTY HEALTH CARE SERVICES AGENCY
DEPARTMENT OF ENVIRONMENTAL HEALTH
HAZARDOUS MATERIALS DIVISION
80 SWAN WAY, ROOM 200
OAKLAND, CA 94621
PHONE NO. 415/271-4320

Project Specialist (print) Barney Chan



UNDERGROUND TANK CLOSURE PLAN
* * * Complete according to attached instructions * * *

1. Business Name PACO Pumps Inc.

   Business Owner PACO Pumps, Inc.

2. Site Address 9201 San Leandro Street

   City Oakland, California Zip 94603-1237 Phone (510) 639-3323

3. Mailing Address 9201 San Landro Street

   City Oakland, CA Zip 94603-1237 Phone (510) 639-3323

4. Land Owner PACO PUMPS Inc.

   Address 9201 San Leandro Street City, State Oakland, CA Zip 94604

5. Generator name under which tank will be manifested PACO Pumps Inc.

   EPA I.D. No. under which tank will be manifested CAD088772629

rev 12/90

6. Contractor AFA Construction Inc.

Address 120 Somerset Drive

City Novato, CA 94945 Phone (415) 898-8592

License Type A&A Hazardous Substance Removal & Remedial Actions Certifications ID# 632136

7. Consultant Jonas & Associates Inc.

Address 1056 Dale Place

City Concrod, CA 94518 Phone (510) 676-8554

8. Contact Person for Investigation

Name Mark Jonas Title Hydrogeologist

Phone (510) 676-8554

9. Number of tanks being closed under this plan one

Length of piping being removed under this plan unknown

Total number of tanks at facility one

10. State Registered Hazardous Waste Transporters/Facilities (see instructions).

** Underground tanks are hazardous waste and must be handled ** as hazardous waste

a) Product/Residual Sludge/Rinsate Transporter

Name H&H Ship Service Co. EPA I.D. No. CAD004771168

Hauler License No. 0334 License Exp. Date 1-31-93

Address 220 China Basin

City San Francisco State CA Zip 94107

b) Product/Residual Sludge/Rinsate Disposal Site

Name Same as 10a EPA I.D. No. Same as 10a

Address Same as above

City _____ State _____ Zip _____

rev 12/90

c) Tank and Piping Transporter

Name H&H Ship Service Co. EPA I.D. No. CAD004771168

Hauler License No. 0334 License Exp. Date 1-31-93

Address 220 China Basin

City San Francisco State CA Zip 94107

d) Tank and Piping Disposal Site

Name Same AS 10c EPA I.D. No. Same As 10c

Address Same AS 10c

City _____ State _____ Zip _____

11. Experienced Sample Collector

Name Mark Jonas

Company Jonas & Associates Inc.

Address 1056 Dale Place

City Concord State CA Zip 94518 Phone (510) 676-8554

12. Laboratory

Name Chromalab, Inc.

Address 2239 Omega Road #1

City San Ramon State CA Zip 94583

State Certification No. 1094

13. Have tanks or pipes leaked in the past? Yes [ ] No [X]

If yes, describe. Not Applicable

14. Describe methods to be used for rendering tank inert

Inert tank with 1.5 pounds of solid carbon dioxide (dry ice) for each 100 gallons of tank volume.

Before tanks are pumped out and inerted, all associated piping must be flushed out into the tanks. All accessible associated piping must then be removed. Inaccessible piping must be plugged.

The Bay Area Air Quality Management District (771-6000), along with local Fire and Building Departments, must also be contacted for tank removal permits. Fire departments typically require the use of explosion proof combustible gas meters to verify tank inertness. It is the contractor's responsibility to bring a working combustible gas meter on site to verify tank inertness.

15. Tank History and Sampling Information

Tank		Material to be sampled (tank contents, soil, ground-water, etc.)	Location and Depth of Samples
Capacity	Use History (see instructions)		
550 gallons	Unknown	Soil groundwater if encountered	beneath the tank at a maximum of two feet below the native soil/backfill interface.

One soil sample must be collected for every 20 feet of piping that is removed. A ground water sample must be collected should any ground water be present in the excavation.

Excavated/Stockpiled Soil	
Stockpiled Soil Volume (Estimated)	Sampling Plan Stockpile to be analyzed appropriately depending on disposal method

Stockpiled soil must be placed on bermed plastic and must be completely covered by plastic sheeting.

16. Chemical methods and associated detection limits to be used for analyzing samples

The Tri-Regional Board recommended minimum verification analyses and practical quantitation reporting limits should be followed. See attached Table 2.

Contaminant Sought	EPA, DHS, or Other Sample Preparation Method Number	EPA, DHS, or Other Analysis Method Number	Method Detection Limit
TPH G	GCFID 5030	8015	1.0 ppm
TPH D	GCFID 3550	8015	1.0 ppm
BTX&E	5030	8020	5.0 ppb
Oil & Grease	5520	5520	10.0 ppm

Note: analysis parameters may change depending on former contents of tank i.e. if waste oil, addnl parameters will be required

17. Submit Site Health and Safety Plan (See Instructions)

18. Submit Worker's Compensation Certificate copy

Name of Insurer **State Fund Compensation Insurance**

19. Submit Plot Plan (See Instructions)

20. Enclose Deposit (See Instructions)

21. **Report any leaks or contamination to this office within 5 days of discovery.** The report shall be made on an Underground Storage Tank Unauthorized Leak/Contamination Site Report form. (see Instructions)

22. Submit a closure report to this office within 60 days of the tank removal. This report must contain all the information listed in item 22 of the instructions.

I declare that to the best of my knowledge and belief the statements and information provided above are correct and true.

I understand that information in addition to that provided above may be needed in order to obtain an approval from the Department of Environmental Health and that no work is to begin on this project until this plan is approved.

I understand that any changes in design, materials or equipment will void this plan if prior approval is not obtained.

I understand that all work performed during this project will be done in compliance with all applicable OSHA (Occupational Safety and Health Administration) requirements concerning personnel health and safety. I understand that site and worker safety are solely the responsibility of the property owner or his agent and that this responsibility is not shared nor assumed by the County of Alameda.

Once I have received my stamped, accepted closure plan, I will contact the project Hazardous Materials Specialist at least three working days in advance of site work to schedule the required inspections.

Signature of Contractor

Name (please type) Mark Jonas, Jonas & Associates Inc.

Signature Mark Jonas

Date 6/8/92

Signature of Site Owner or Operator

Name (please type) Scott Liddicoat

Signature

Date 6/8/92

rev 12/90

ALAMEDA COUNTY HAZARDOUS MATERIALS DIVISION
Declaration of Site Account Refund Recipient
SITE OWNER FILLS OUT PER SITE
-- OPTIONAL --

The property owner will use this form to designate someone other than him- or her- self to receive any refund due at the completion of all deposit/refund projects at the site listed below. In the absence of this form, the property owner will receive any refund. Only one person at any one time may be designated to receive any refund.

SITE NUMBER/ADDRESS:

5675
Site Number

PACO PUMPS INC.
Company Name

9201 San Leandro Street
Street Address

Oakland, CA 94603-1237
City Zip Code

PROPERTY OWNER

PACO PUMPS INC./NEWPAC Industries
Owner's Name

845 92nd Avenue
Owner's Address

Oakland, CA 94604
Owner's City State Zip

I designate the following person to receive any refund due at the completion of all deposit/refund projects:

Jonas & Associates Inc.
Name

1056 Dale Place
Street Address

Concord, CA 94518
City / Zip

Property Owner Signature

6/5/92
Date

APCO Pumps Inc./NEWPAC Industriea
Property Owner Name

RETURN FORM TO: Alameda County, Hazardous Materials Div.
80 Swan Way, Rm 200
Oakland, CA 94621-1439
Phone: (510) 271-4320

DR-DECL; mfk; 8/14/91

JONAS & ASSOCIATES INC.

SITE HEALTH AND SAFETY PLAN

1.0 GENERAL INFORMATION

Site Name: PACO Pumps Inc.
9201 San Leandro Street
Oakland, California 94603-1237

Project Number: PCO-221-01-UST

Proposed Onsite Activity (describe as tasks if applicable):

Activities to be preformed will include removal of one (1) tank, sampling of soil and, if necessary, groundwater. Subcontractors will be preforming the actual removal of the tank. During these activities, the staff from Jonas & Associates will collect samples and provide general field supervision of on-site work.

Proposed On Site Work Staff (Roles and Responsibilities):

Mark Jonas representing Jonas & Associates will act as general field supervisor and perform work necessary to collect samples for analysis.

Proposed Work Dates (by task if applicable):

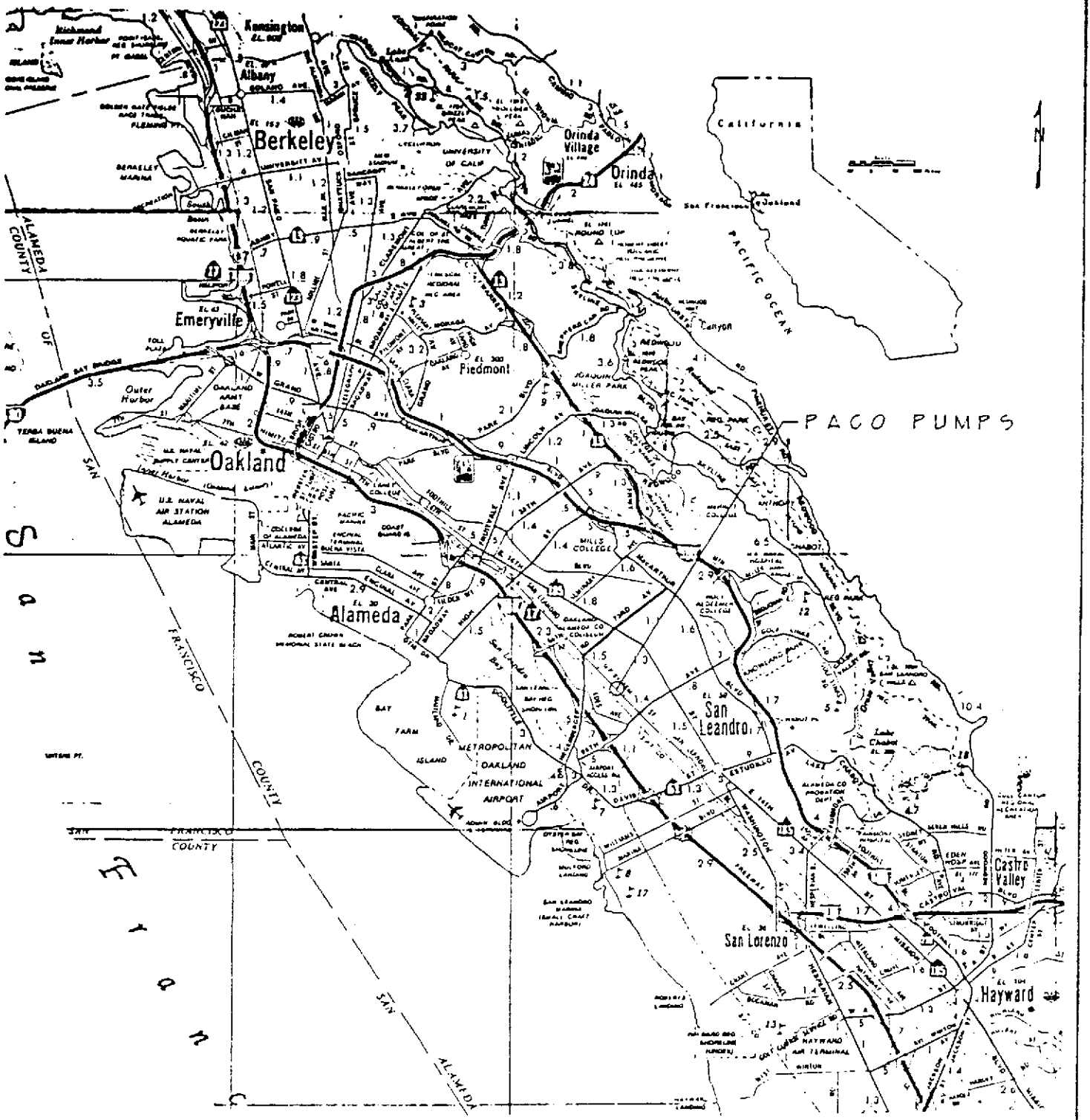
It is currently anticipated that work will start around June 15, 1992 and continue work through to completion, possibly for one consecutive week of work.

Site Location (attach a map):

9201 San Leandro Street, Oakland, CA 94603-1237
(See Figures 1 and 2)

Directions to Site:

The PACO Pumps facility can be reached by taking the Hegenberger Road heading toward the Oakland Airport, exiting on San Leandro Street and Left onto San Leandro Street. PACO Pumps is on the right hand side of the San Leandro Street near 92nd Avenue.



Regional Location

PACO PUMPS

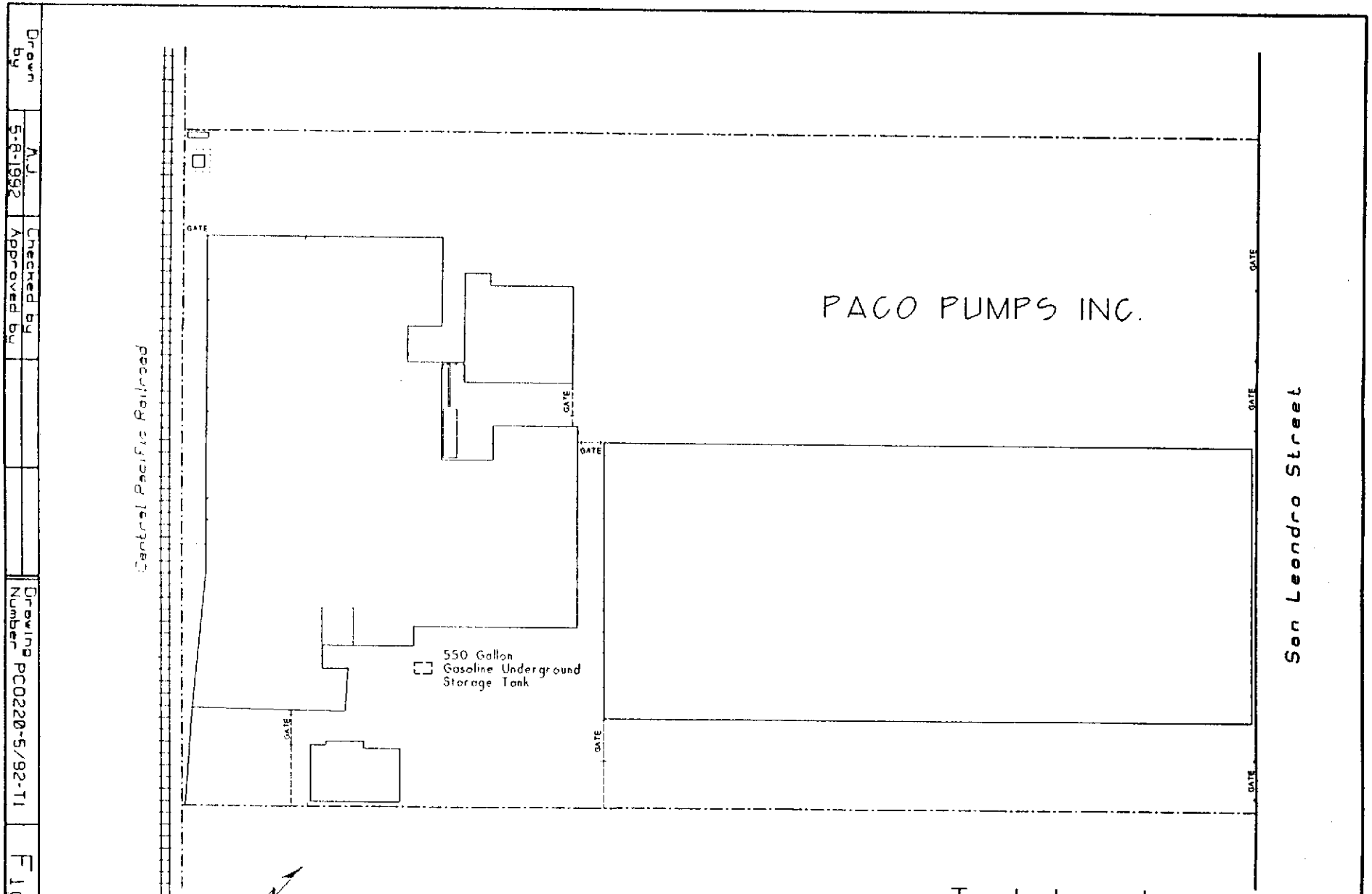
Oakland, California

Prepared by

JONAS AND ASSOCIATES INC.

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

Figure 1 - Drawing Number PC0217-10/91-1-1 Checked by Approved by 10-11-1991 By



notes:

Location of 550 gallon tank from 1954 Factory Insurance Association Map - File No. P.629.

Tank location is approximate.

Scale

Tank Location

PACO Pumps
9201 San Leandro Street
Oakland, California

Prepared by

JONAS & ASSOCIATES INC.

Drawn by	A.J. 5-8-1992
Checked by	
Approved by	

Drawing Number PC0220-5/92-T1

Figure 2

Date: 5-8-1992
Locations Approx.

Figure 2

Drawing Number PC0220-5/92-T1

Site Contact:	Phone:
Mr. Scott Liddicoat Manufacturing Supervisor PACO Pumps Inc.	(510) 639-3323

Other Contacts:	Phone:
None	

Original Plan or Modification?: Original Plan

2.0 SITE BACKGROUND

PACO Pumps, Inc. is located at 9201 San Leandro Street, in the City of Oakland, Alameda County, California. This parcel is approximately 4.8 acres in size with approximately 92,240 square feet of office and manufacturing space. It is bounded to the north by Q.A. Products Inc., to the west by the Central Pacific Railroad, to the south by St. Vincent de Paul Resale Shop, and to the east by San Leandro Street, the Bay Area Transit (BART) and Western Pacific Railroad (WPRP).

PACO Pumps has been operating at this facility since 1945. Currently the facility is on sale; therefore, has been vacated. Previously, PACO Pumps manufactured pumps at this facility.

A recent site characterization of the facility identified an underground storage tank adjacent to the drill shop. The exact location of the tank is yet unknown. Prior to the initiation of the tank removal activities, Jonas & Associates and its subcontractors will perform a detailed site investigation for the purpose of locating the tank. Apparently this tank must have been installed by the prior owners of the property.

Past Hazardous Materials Activity: Storage and usage of waste paint, lacquer thinner, solvent, spent coolant, rags, pump testing wastewater, grinding fluid, empty product drums, grinding paper, and metal scraps.

Current Hazardous Materials Activity: None

Waste Disposal Methods: When the facility was active, waste was stored onsite. Once per quarter waste is transported offsite by a licensed hauler to licensed treatment/storage/disposal facility.

Regulatory History: Not Applicable.

Physical Features: Site topography is level.

Surrounding Land Use/Population: Urban, industrial area. Rail Road tracks west of site.

Nearby Receiving Waters: San Leandro Creek is located approximately 1.74 miles west and south of the site, and San Francisco Bay is located approximately 3.77 miles west of the site.

3.0 SITE RESOURCES

Water: Available

Phone: Available

Safety Equipment: Fire extinguisher.

Other:

4.0 POTENTIAL HAZARDOUS MATERIALS PRESENT ONSITE WITHIN THE VICINITY OF UNDERGROUND STORAGE TANK

Type: None

Solid ( ) Liquid ( ) Gas ( ) Other ( ) Describe:

Characteristics:

Corrosive ( ) Flammable ( ) Reactive ( ) Toxic ( )

Radioactive ( ) Volatile ( ) Infectious ( )

Unknown ( )

5.0 HAZARD EVALUATION

Hazard Level: High ( ) Moderate ( ) Low (X)

Unknown ( )

Hazards of Concern: Heat () Cold ( ) Noise (x)

Oxygen Deficient ( ) Explosion (x) Fire ( )

Confined Space ( ) Heavy Equipment (x) Utilities ( )

Other (Define) ( )

Exposure Routes: Dermal (x) Inhale (x) Ingest (x)

6.0 TOXICITY DATA

Chemical	TLV	IDLH	Exposure Effects
Benzene	10 ppm	2,000 ppm	Acute: Mucous membrane irritant, CNS effects, headache, dermatitis. Chronic: blood and bone marrow damage, carcinogen.
Toluene	100 ppm	2,000 ppm	Acute: Dermatitis, irritation to eyes and respiratory system, CNS depression. Chronic: Enlarged liver, anemia.
Xylene	100 ppm	10,000 ppm	Acute: Dermatitis, eye and respiratory system irritant, narcotic, nausea. Chronic: Effects liver, kidney and blood.
Ethylbenzene	100 ppm	2,000 ppm	Acute: Irritant to mucous membrane, cause headache, dermatitis, narcotic. Chronic: CNS damage.
Oil & Grease, Petroleum Hydrocarbons	None specified	None specified	Acute: Dermatitis.

7.0 PERSONAL PROTECTION (specify by task if applicable)

Level of Protection: Modified Level D

Respiratory Protection: The following Health & Safety equipment will be available on site for potential usage: Ultra Twin respirator, full-face, with organic vapor cartridges and particulate filters.

Protective Clothing: The following Health & Safety equipment will be available on site for potential usage: Polylaminated Tyvek coveralls, nitrile gloves, steel-toed boots, hard hat, eye protection, ear protection.

Field Monitoring Equipment:

Instrument	Proposed Use	Action Guidelines
Gas Tech	Monitor combustible gases in work space. Determine whether tanks have been inerted.	At equal to or greater than 10%LEL: ventilate work area, tank cannot be moved.

Site Control: All work areas will be posted with warning signs regarding prohibition of welding, smoking, and sources of ignition in areas of tanks. The public will be restricted from the area, with specific concern for any open excavations that are not immediately backfilled.

Site Entry Procedures: Decontamination area will be established. Prior to leaving site all equipment and personnel will undergo decontamination.

Work Limitations: Four hours work/fifteen minute break.

Decontamination (Equipment/Personnel):

Equipment: manual scrub, steam cleaning, deionized water rinse.

Personnel: wash hands, dispose of tyvek, gloves.

Disposal of Contaminated Equipment/Refuse: All contaminated equipment or refuse will be held onsite and covered with a plastic sheet until laboratory analyses are completed, at which time they will be disposed of properly according to analytical findings.

8.0 EMERGENCY INFORMATION

Emergency Contacts:

Police - 911

Fire - 911

Ambulance - 911

Hospital - (510) 357-6500, Humana Hospital - 13855 East 14 Street San Leandro, California.

National Response Center - 1-800-424-8802

Chemtrec - 1-800-424-9300

J & A Health & Safety Officer - 510-676-8554

Other - Scott Liddicoat, PACO PUMPS INC. (510) 639-3323

Route to Hospital (Describe below and attach map): 880 East, exit on Marina Blvd East Turnoff, Right of San Leandro Blvd., Cross Washington, and Right on Rose Drive to Humana Hospital (see Figure 1-3).

Procedures for Evacuation and Protection of Public:

Public will be restricted from area of tank removal/closure. Decontamination rinse water, disposed decontamination equipment (e.g., tyveks), and any material generated during project will be stored onsite pending laboratory analytical results.

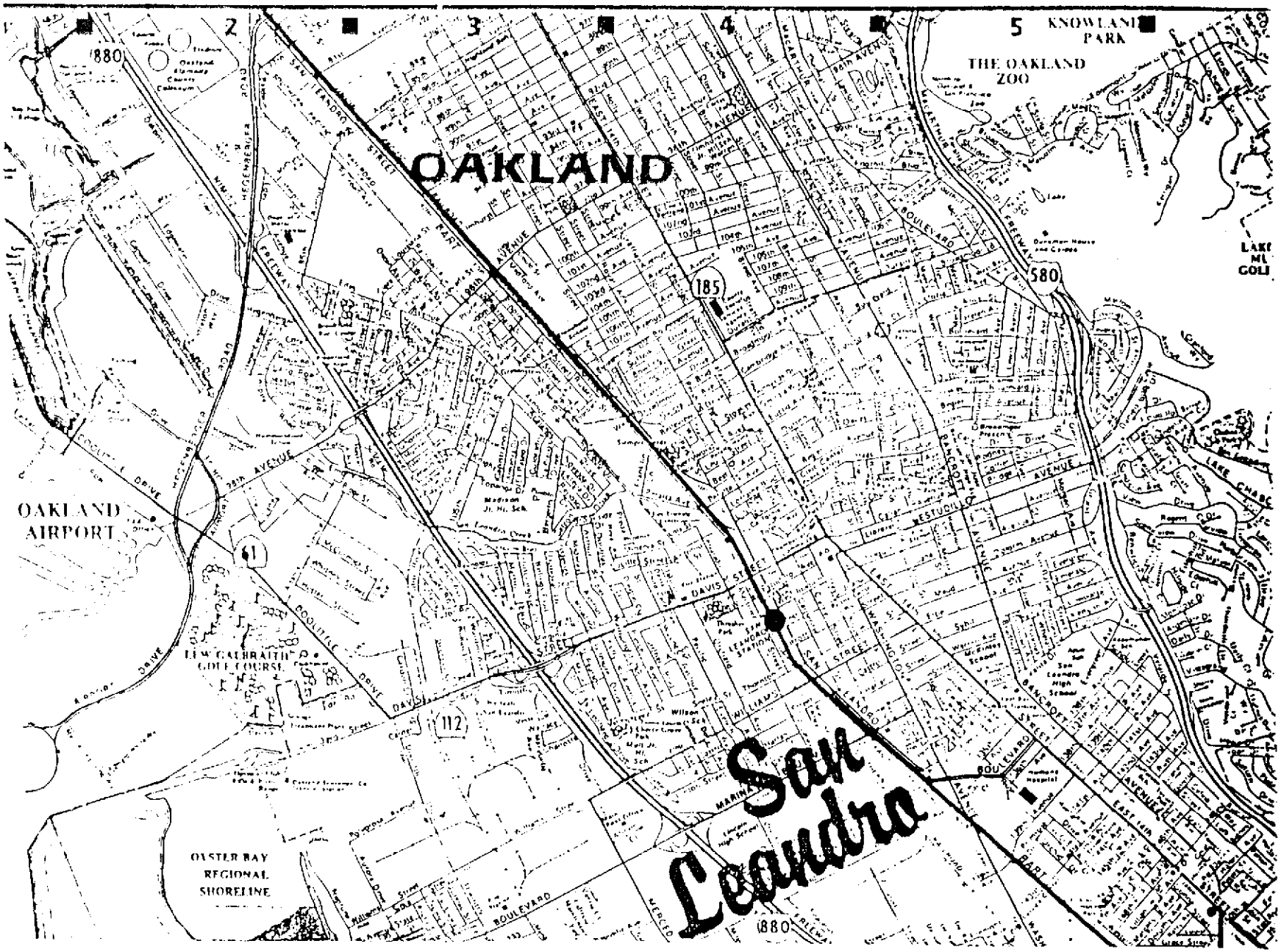
Evacuation will be directed by the PACO Pumps Inc. emergency Coordinator, who will be immediately contacted in the event of an emergency.

9.0 PLAN APPROVAL

This site health and safety plan has been written for the exclusive use of Jonas & Associates Inc., its employees and subcontractors. Jonas & Associates claims no responsibility for others, use of the plan. The plan is written for the site conditions, dates, and personnel specified and must be amended if conditions change.

Plan Prepared By: _____
Romena Jonas, Project Manager — Date: March 30, 1992

Approved By: _____
Mark Jonas
Health and Safety Officer — Date: March 30, 1992



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

HOSPITAL ROUTE

Prepared by
JONAS & ASSOCIATES INC.

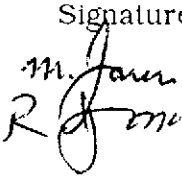
Date: 6-2-1992	Figure 3	Drawing Number PC0218-6/92-HR1

Figure 3

Drawing Number PC0218-6/92-hr1

10.0 EMPLOYEE CERTIFICATION

By my signature, I certify that I have read, understand, and will abide by, the health and safety plan for the PACO Pumps facility.

Name (print)	Signature	Company	Date
Mark Jonas		Jonas & Associates	3/30/92
Romena Jonas		Jonas & Associates	3/30/92

STATE OF CALIFORNIA
STATE AND CONSUMER SERVICES AGENCY CONTRACTORS STATE LICENSE BOARD

Consumer Affairs

Building Quality

HAZARDOUS SUBSTANCES REMOVAL AND REMEDIAL ACTIONS CERTIFICATION

Pursuant to the provisions of Section 7058.7 of the Business and Professions Code, the Registrar of Contractors does hereby certify that the following qualifying person has successfully completed the hazardous substances removal and remedial actions examination.

Qualifier HOMER JOHNSTONE

License No.: 632136

Business Name: AFA CONSTRUCTION INC.

WITNESS my hand and official seal this
6th *day of* MAY, 1992

Registrar of Contractors

This certification is the property of the Registrar of Contractors, is not transferable, and shall be returned to the Registrar upon demand when suspended, revoked, or invalidated for any reason.

A 4959

CONTRACTORS STATE LICENSE BOARD

License Number

632136

Entity

CORP

Name/Namestyle

A F A CONSTRUCTION INC

Classification(s)

A B

Expiration Date

11/30/93

If found, please drop in any mail box.
Postage guaranteed by:
Contractors State License Board
P.O. Box 26000
Sacramento, CA 95826

This license is the property of the Registrar of Contractors, is not transferrable, and shall be returned to the Registrar upon demand when suspended, revoked or invalidated for any reason. It becomes void if not renewed.

Any change of business address must be reported to the Registrar within 90 days.

Licensee Signature

STATE COMPENSATION INSURANCE FUND

P.O. BOX 807, SAN FRANCISCO,CA 94101-0807

CERTIFICATE OF WORKERS' COMPENSATION INSURANCE

ISSUE DATE: **05-30-92**

POLICY NUMBER: **1193350 - 92**
CERTIFICATE EXPIRES: **05-30-93**

JONAS & ASSOCIATES INC.
1056 DALE PLACE
CONCORD CA 94518

This is to certify that we have issued a valid Workers' Compensation insurance policy in a form approved by the California Insurance Commissioner to the employer named below for the policy period indicated.

This policy is not subject to cancellation by the Fund except upon **10** days' advance written notice to the employer.

We will also give you **10** days' advance notice should this policy be cancelled prior to its normal expiration.

This certificate of insurance is not an insurance policy and does not amend, extend or alter the coverage afforded by the policies listed herein. Notwithstanding any requirement, term, or condition of any contract or other document with respect to which this certificate of insurance may be issued or may pertain, the insurance afforded by the policies described herein is subject to all the terms, exclusions and conditions of such policies.

John A. Webb
PRESIDENT

EMPLOYER'S LIABILITY LIMIT: $3,000,000.00 PER OCCURRENCE.

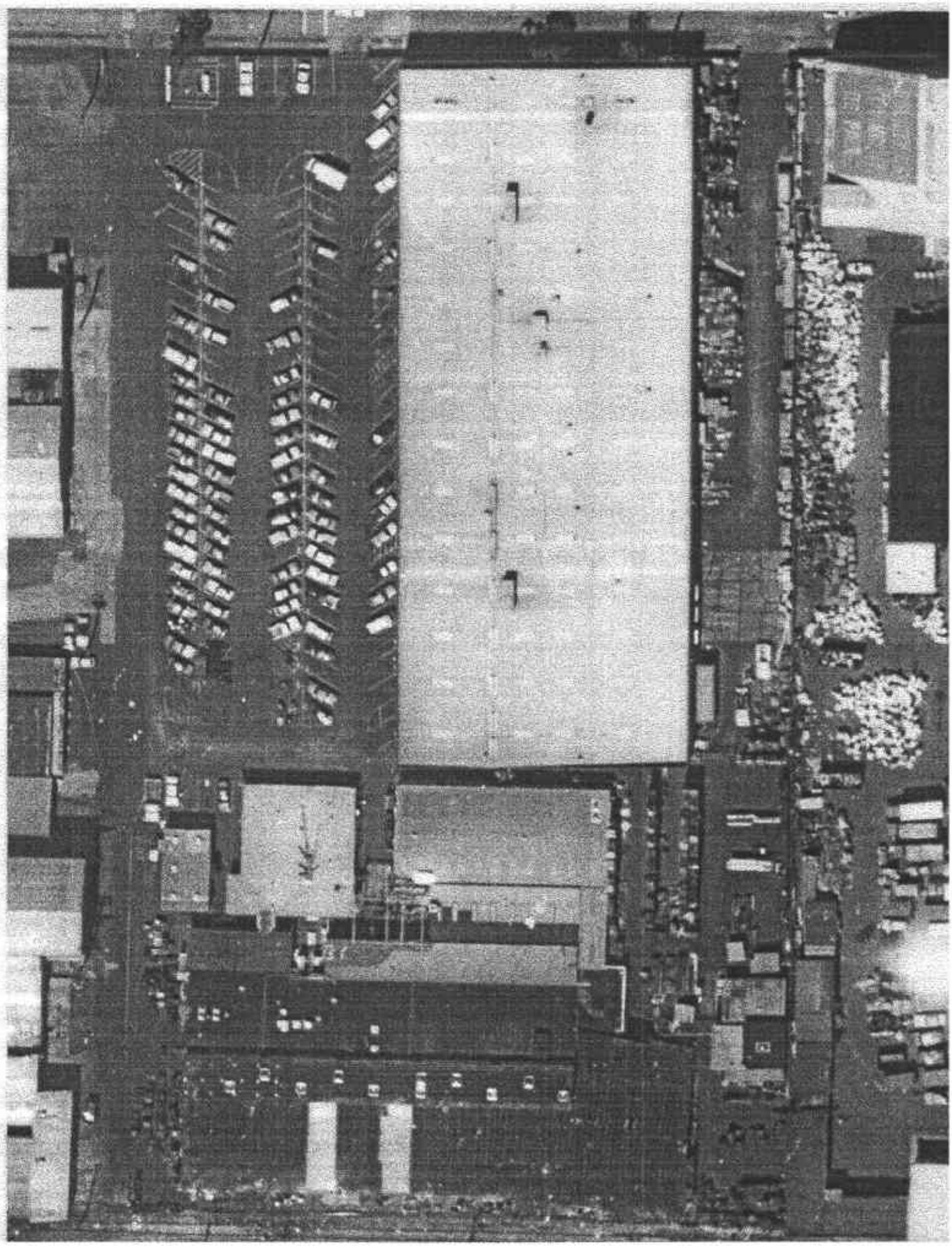
EMPLOYER

JONAS AND ASSOCIATES INC
1056 DALE PL
CONCORD CA 94518

LEGAL NAME

JONAS AND ASSOCIATES INC

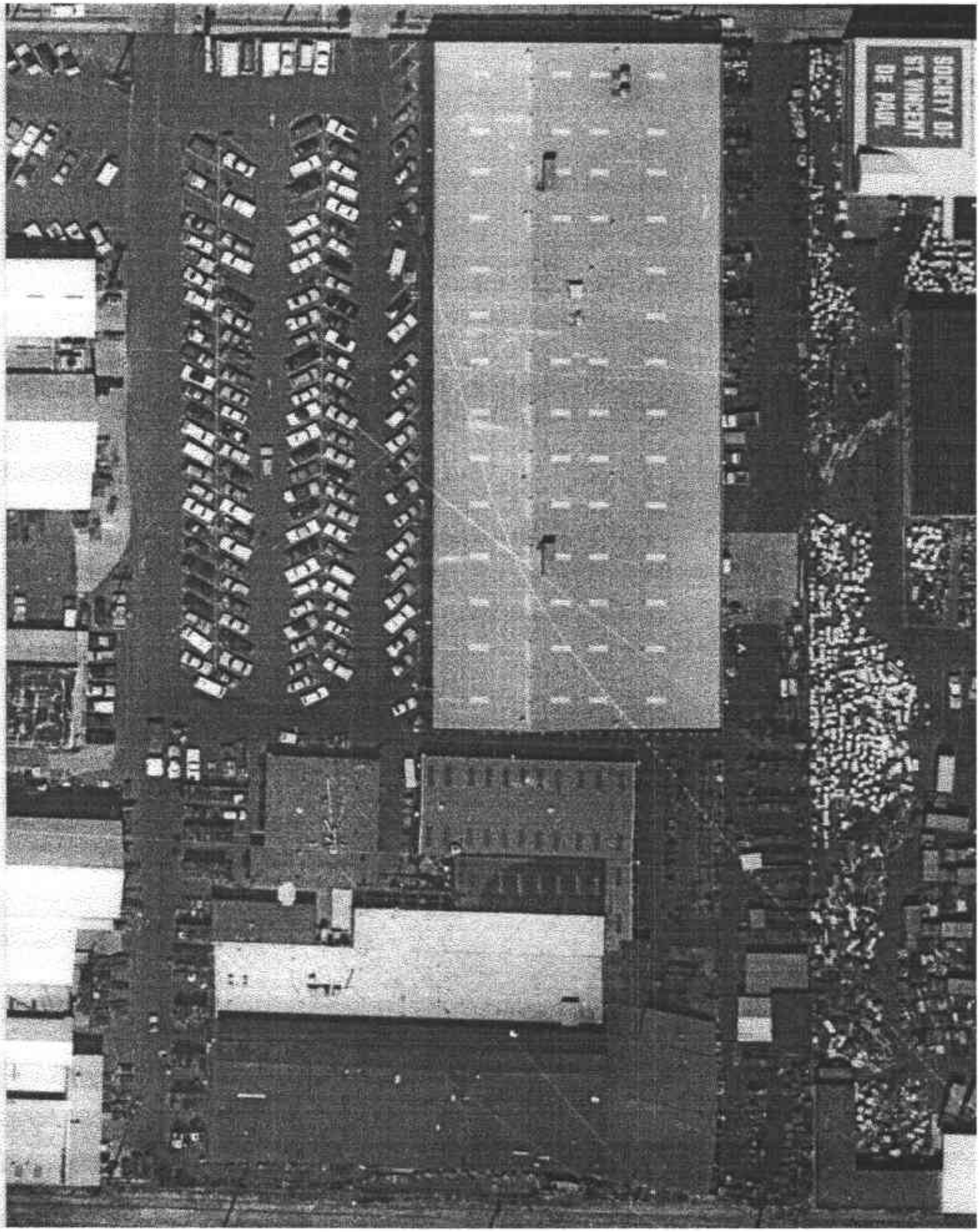
PRINTED: **04-26-92** P0409



Scale 1"=~55'
Pacific Aerial Surveys Photograph # AV-3845-12-37

Jonas & Associates Inc.

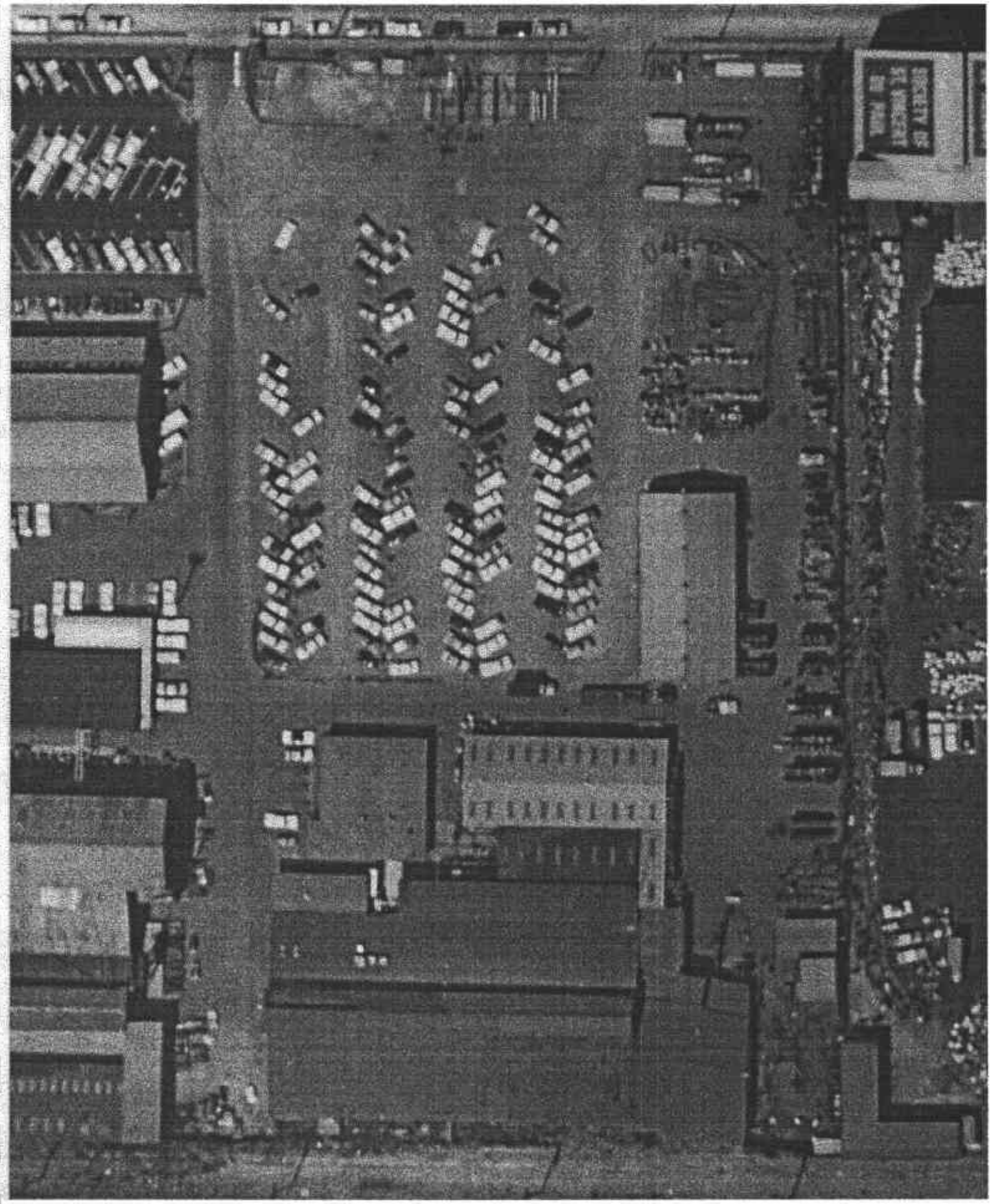
Figure AP-1
Date of Aerial Photograph: June 12, 1990



Scale 1"=~53'
Pacific Aerial Surveys Photograph # AV-1377-6-31

Jonas & Associates Inc.

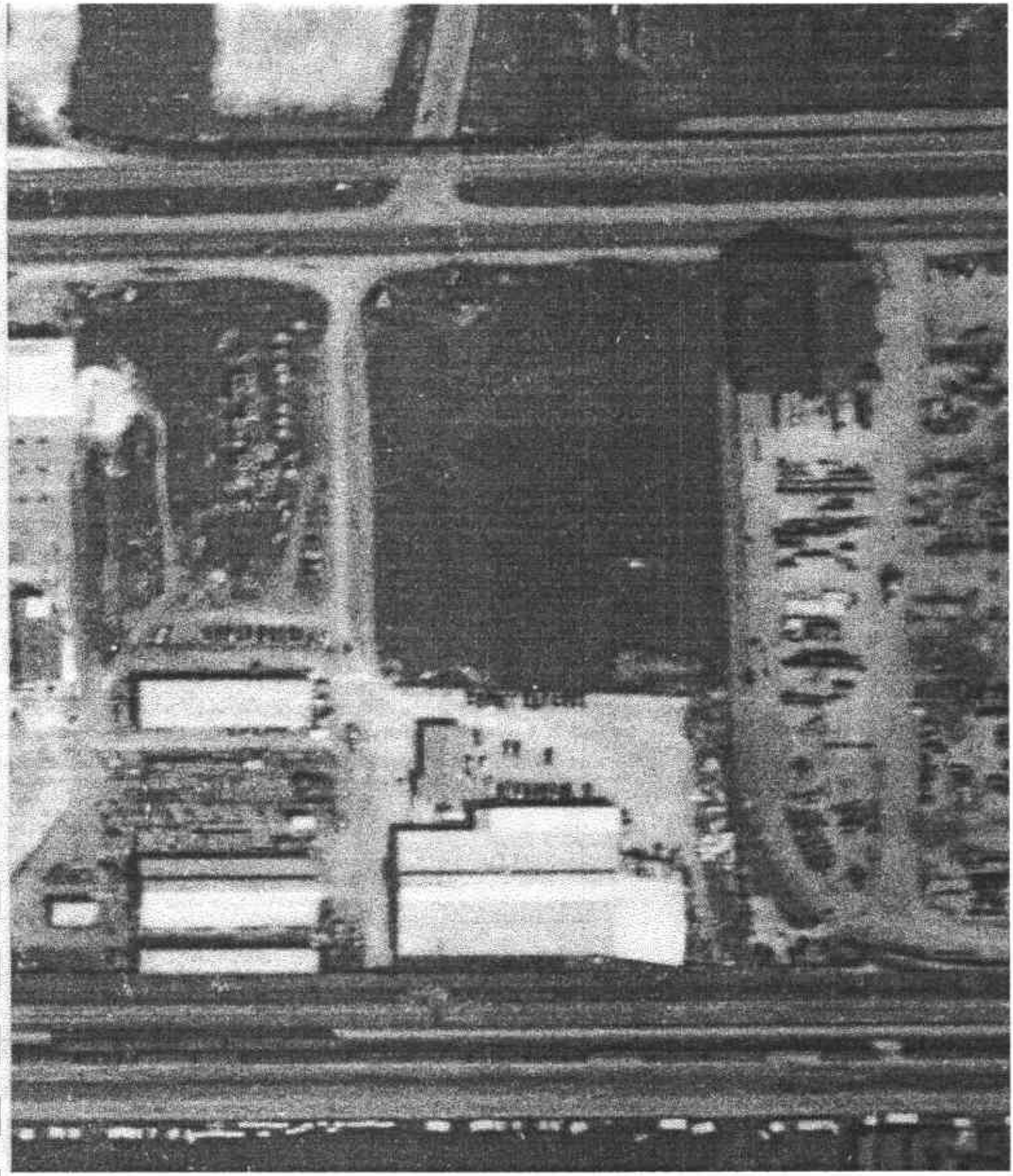
Figure AP-2
Date of Aerial Photograph: July 7, 1977



Scale 1"=~53'
Pacific Aerial Surveys Photograph # AV-858-4-31

Jonas & Associates Inc.

Figure AP-3
Date of Aerial Photograph: July 2, 1968



Scale 1"=~100'
Pacific Aerial Surveys Photograph # AV-11-5-21

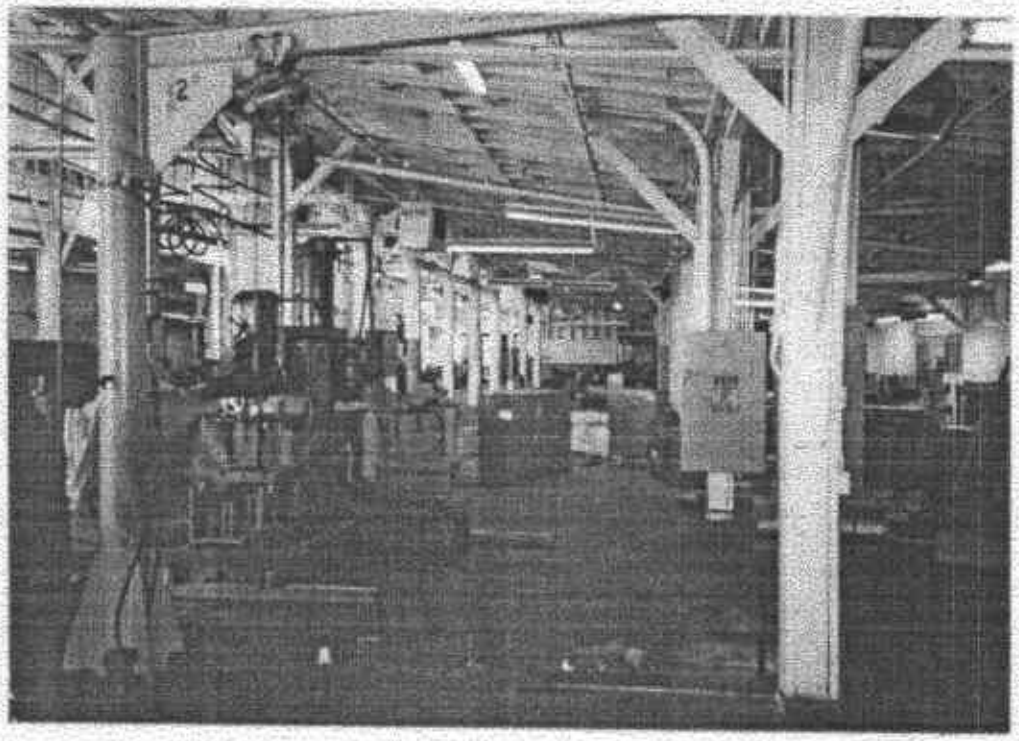
Jonas & Associates Inc.

Figure AP-4
Date of Aerial Photograph: March 24, 1947

Appendix J

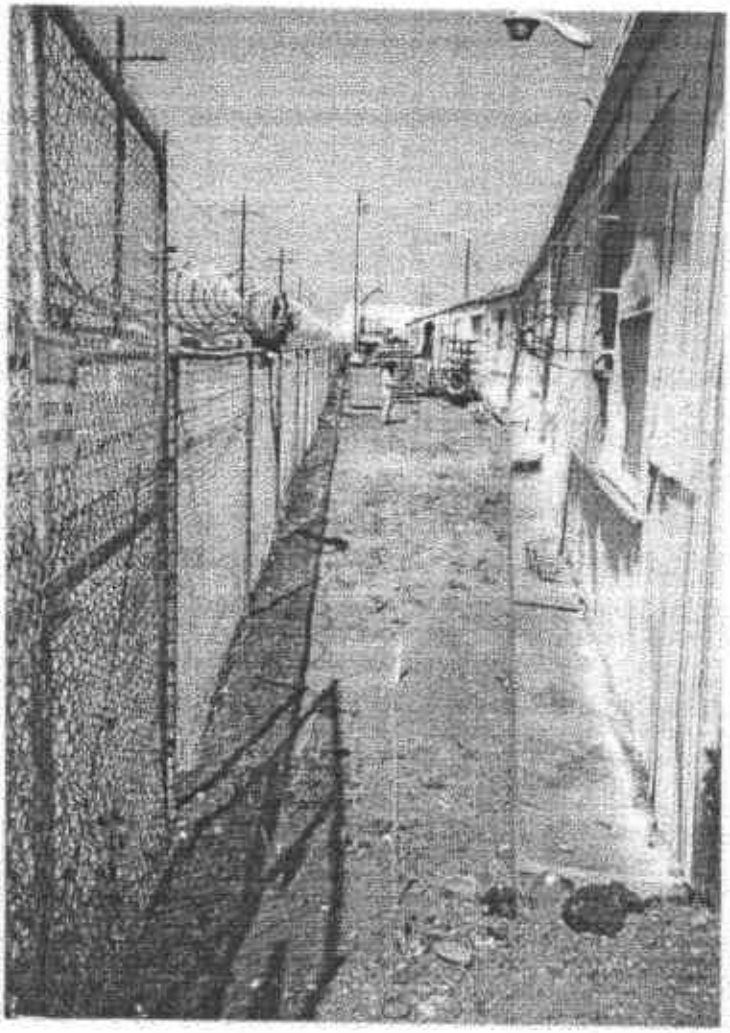
Pictures of Site Characterization Sampling

SITE CHARACTERIZATION SAMPLING
October 1, 1991 & April 9,13,14, 1992
PACO PUMPS INC.
9201 San Leandro Street
Oakland, California

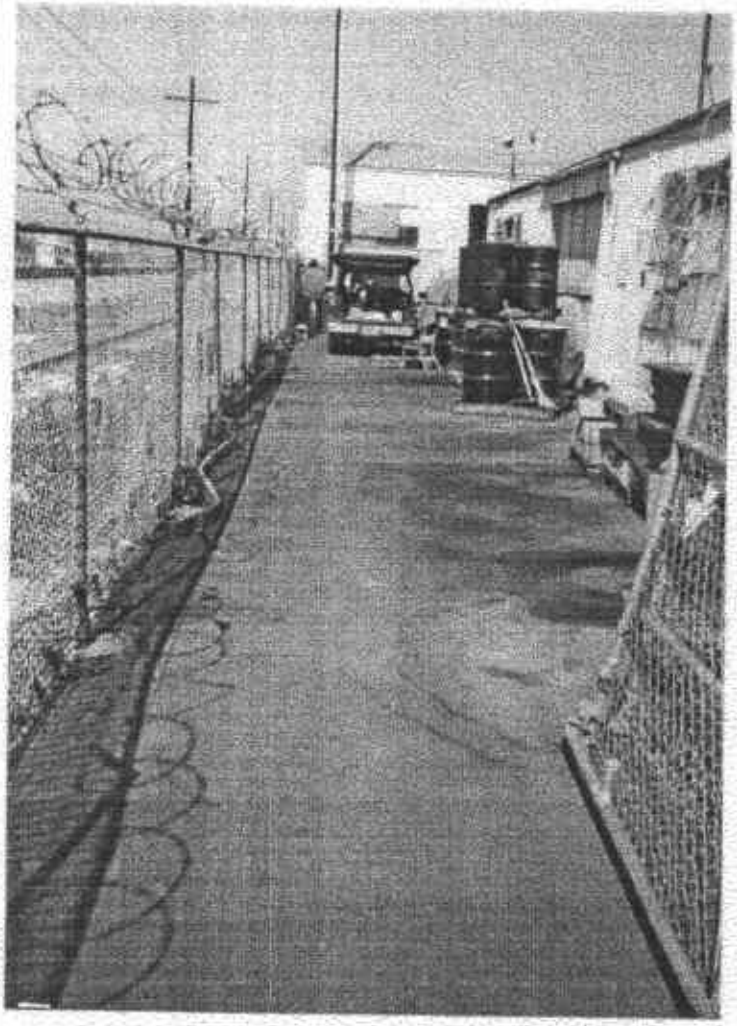


Picture 1: October 1, 1991
Manufacturing area in PACO Pumps' 9201 San Leandro Street facility in Oakland, California.

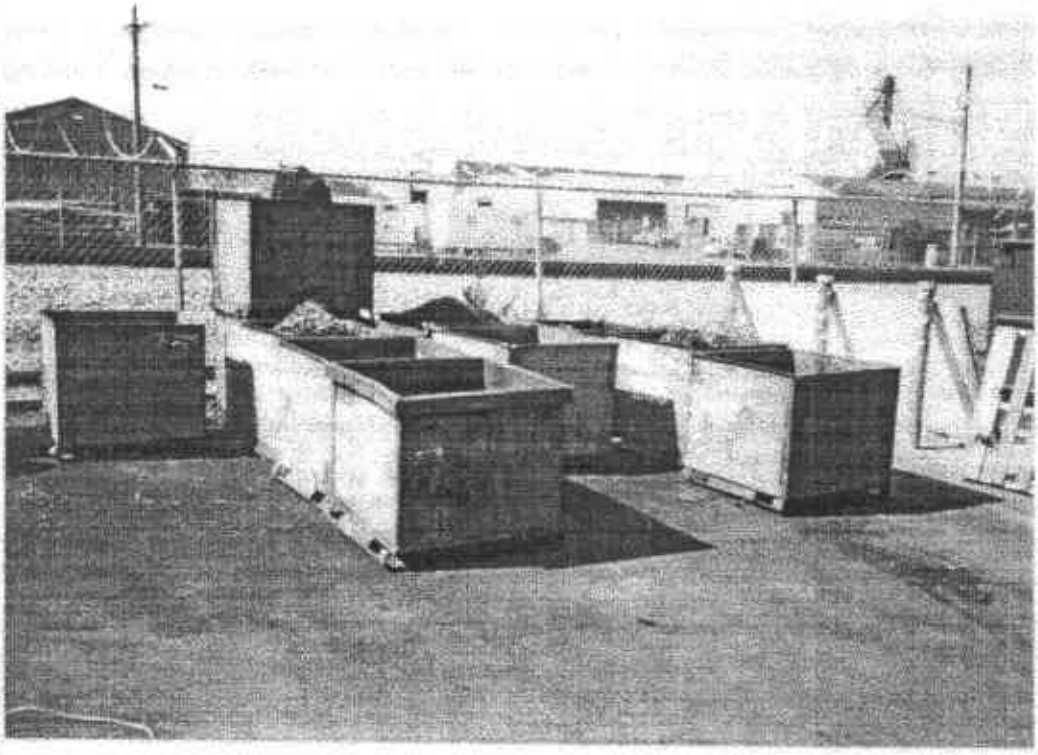
Picture 2: April 13, 1992
Manufacturing area during the moving of PACO Pumps' production capacity from the facility.



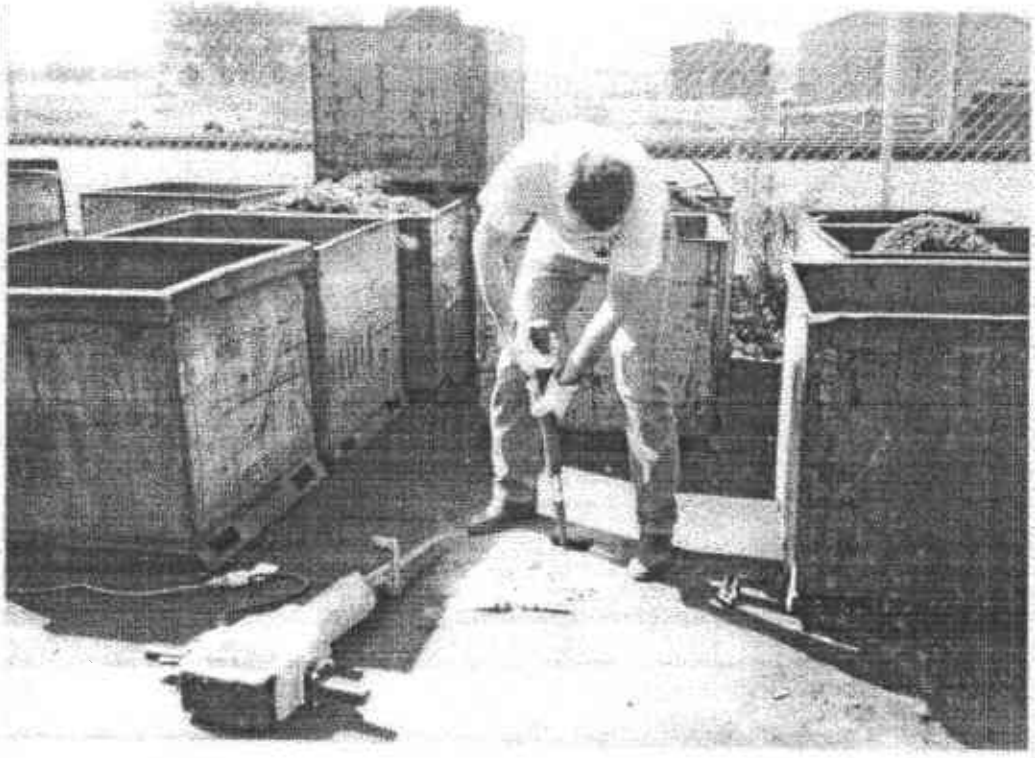
Picture 3: October 1, 1991
Sampling locations at stakes, for soil samples B1-3.5, B2-3.5, B3-3.5, B4-3.5, B5-3.5. Northwest view. Manufacturing support in building to the right. Property line at cyclone fence. Beyond fence are railroad tracks.



Picture 4: April 13, 1992
Northwest view of sampling location B10-0.5&1.5. Manufacturing area in building on the right. Cyclone fence at property line. Railroad tracks beyond fence.

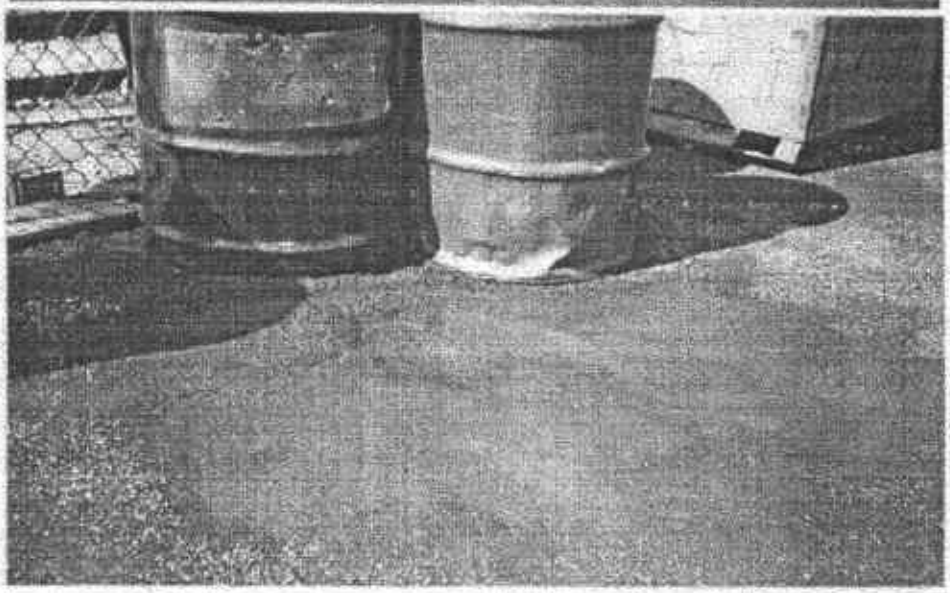


Picture 5: October 1, 1991
Bins holding metal shavings. Location of soil sample B7-0.5. Southwest view.

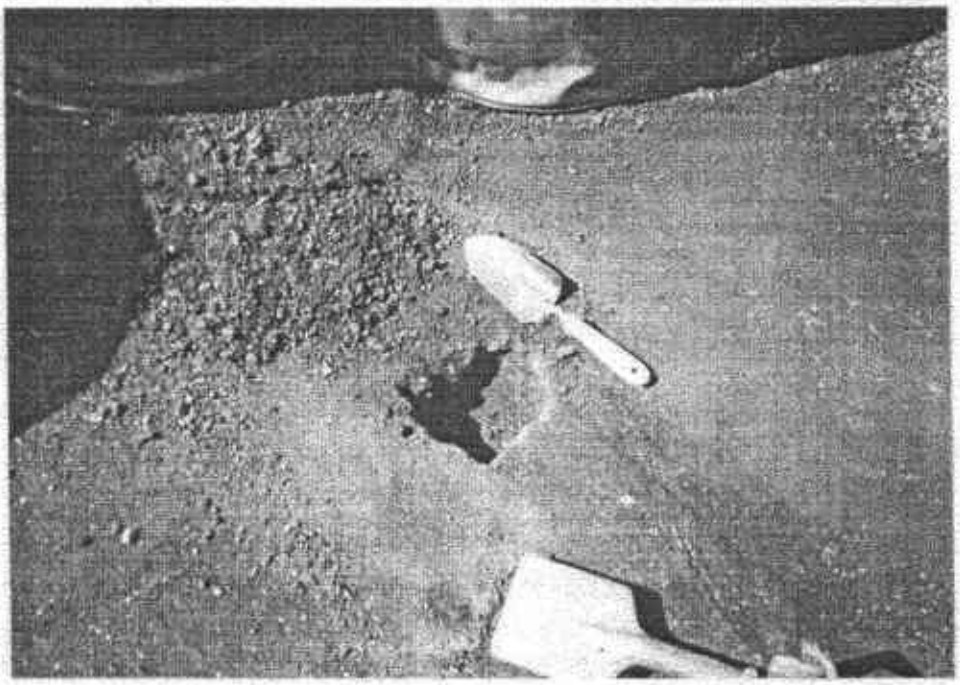


Picture 6: October 1, 1991
Collecting soil sample B7-0.5, with driver. Sample collected in a brass sleeve, capped, and chilled for transport. Sample collected from just under the concrete down 0.5 feet.

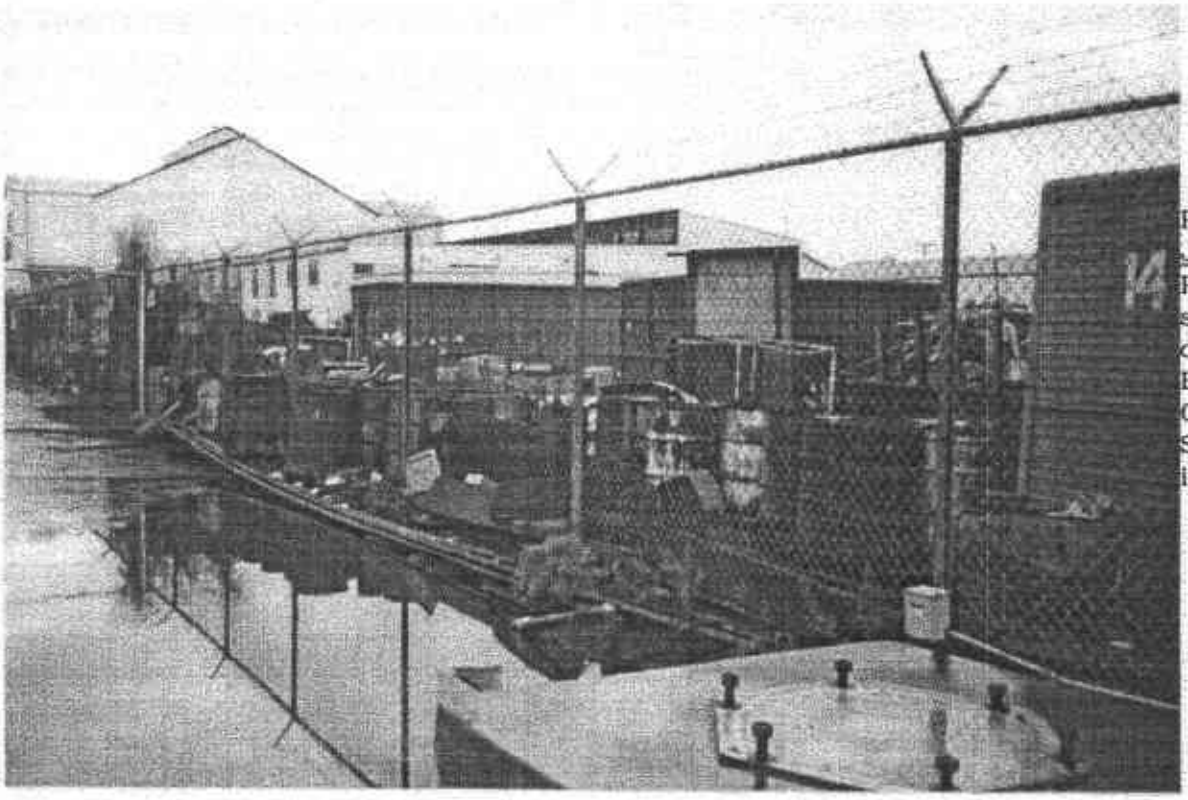
Picture 7: October 1, 1991
PACO Pumps' waste metal storage in bins and drums in the background, to the left. Samples B6-0.5 and B7-0.5 were collected in this area. PACO Pumps' facility is on the left. Neighboring facility is on the right. Southwest view.



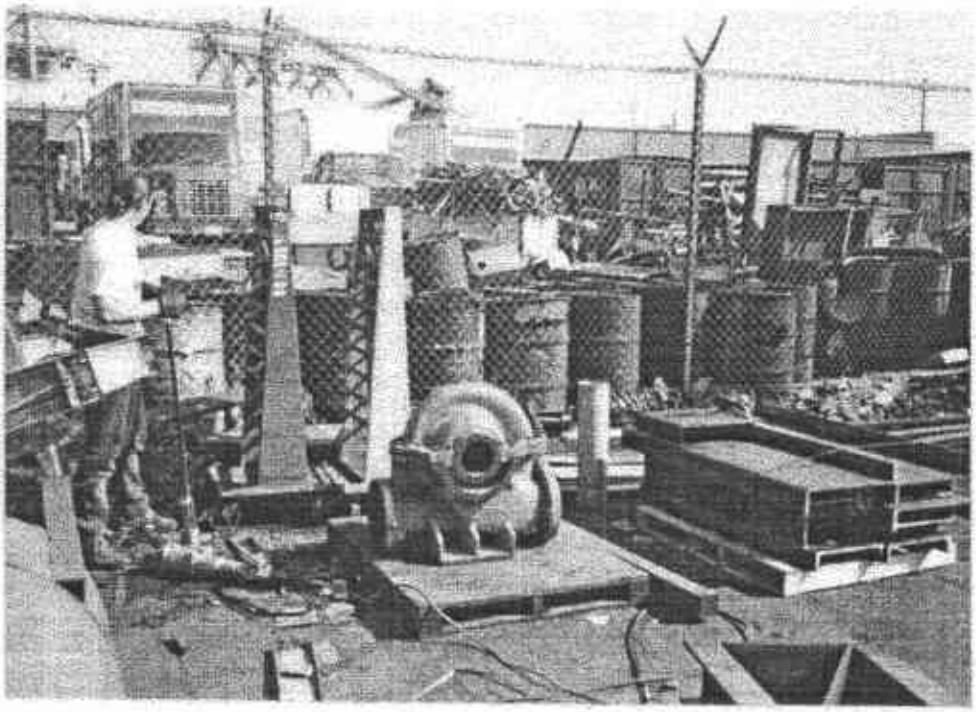
Picture 8: October 1, 1991
Soil sample B6-0.5, collected adjacent to drums containing metal shavings.



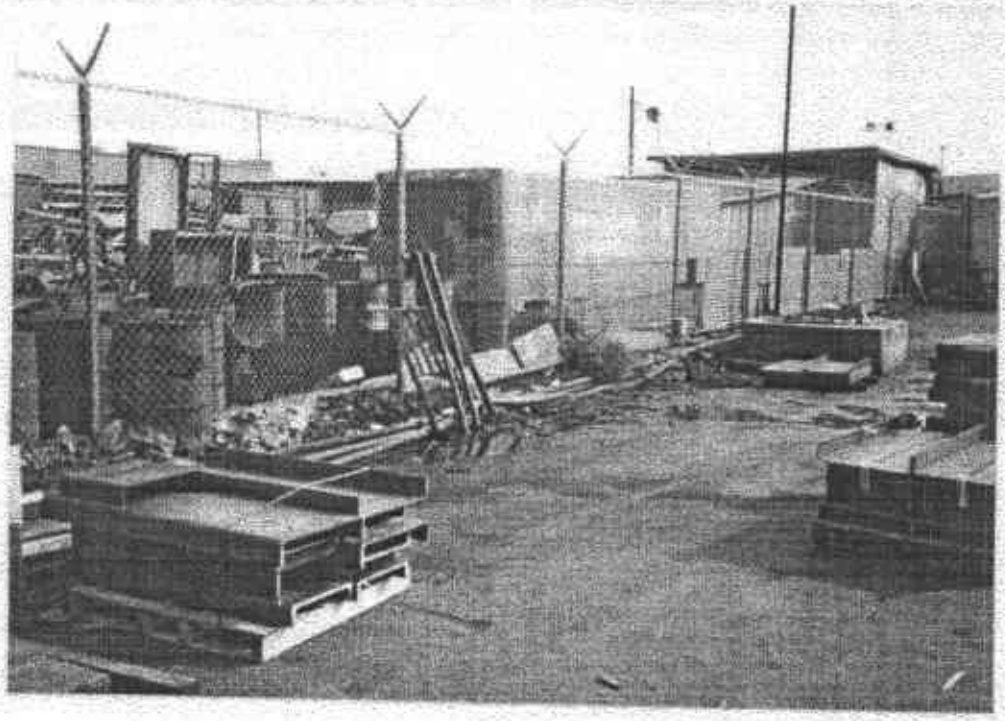
Picture 9: October 1, 1991
Soil sample B6-0.5 collected 0 to 0.5 feet below the asphalt. Sample collected in a brass sleeve with a driver.



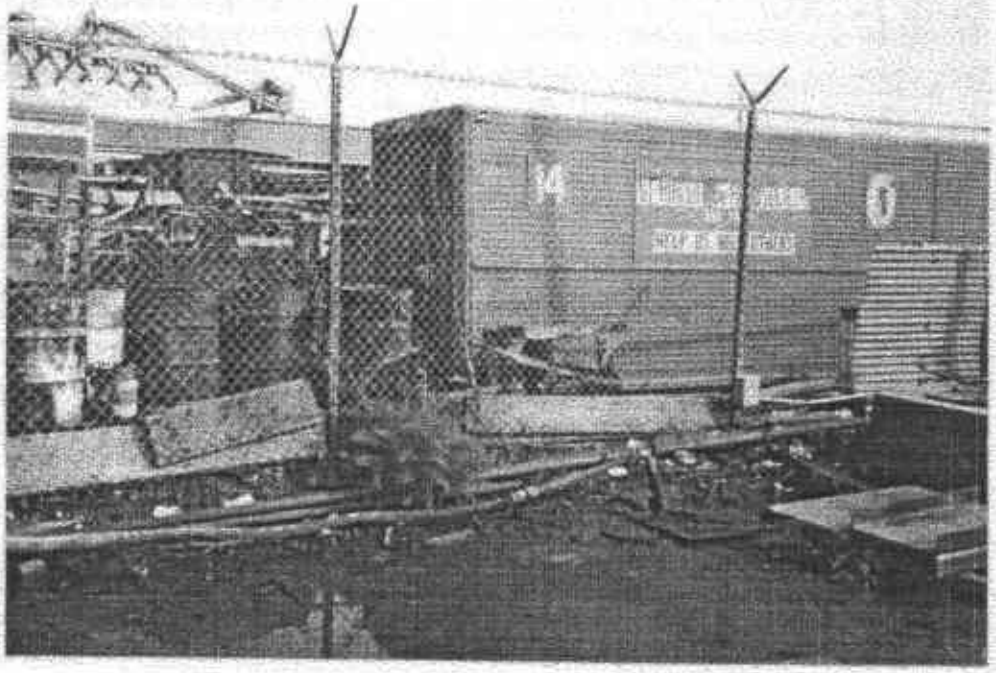
Picture 10:
June 29, 1992
Ponded water after rain showers. Previously, collected soil samples B20-0.5&1.5 and B21-0.5&1.5 near the fence. Saint Vincent DePaul is in the background.



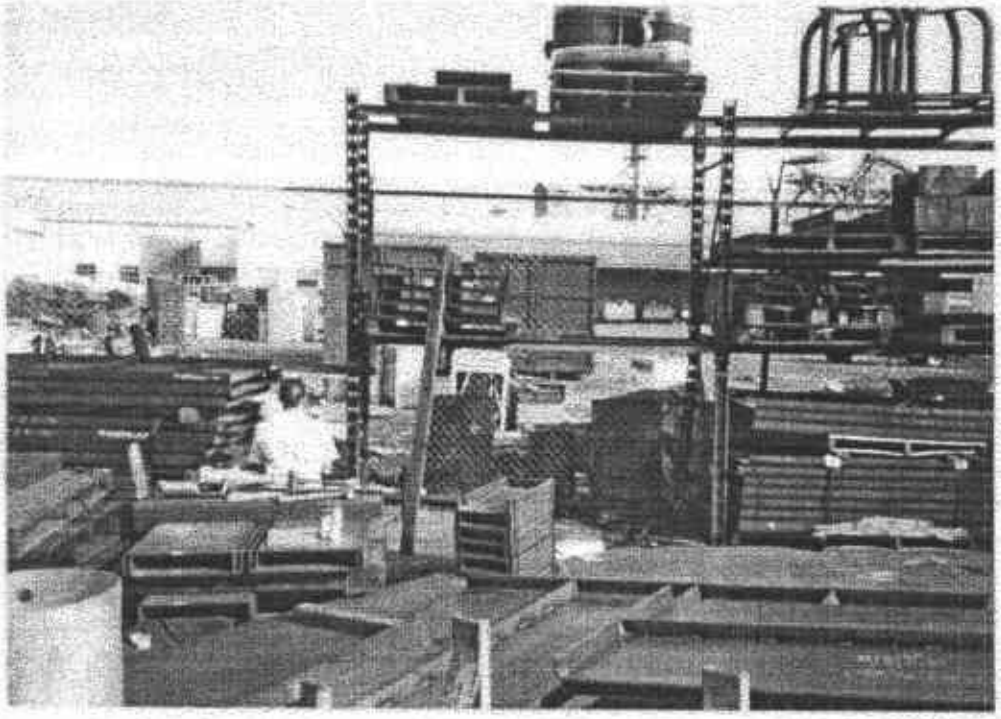
Picture 11: April 13, 1992
Collecting soil sample B21-0.5&1.5. Using a stainless steel auger to reach the sampling horizon. Saint Vincent DePaul in the background, beyond cyclone fence.



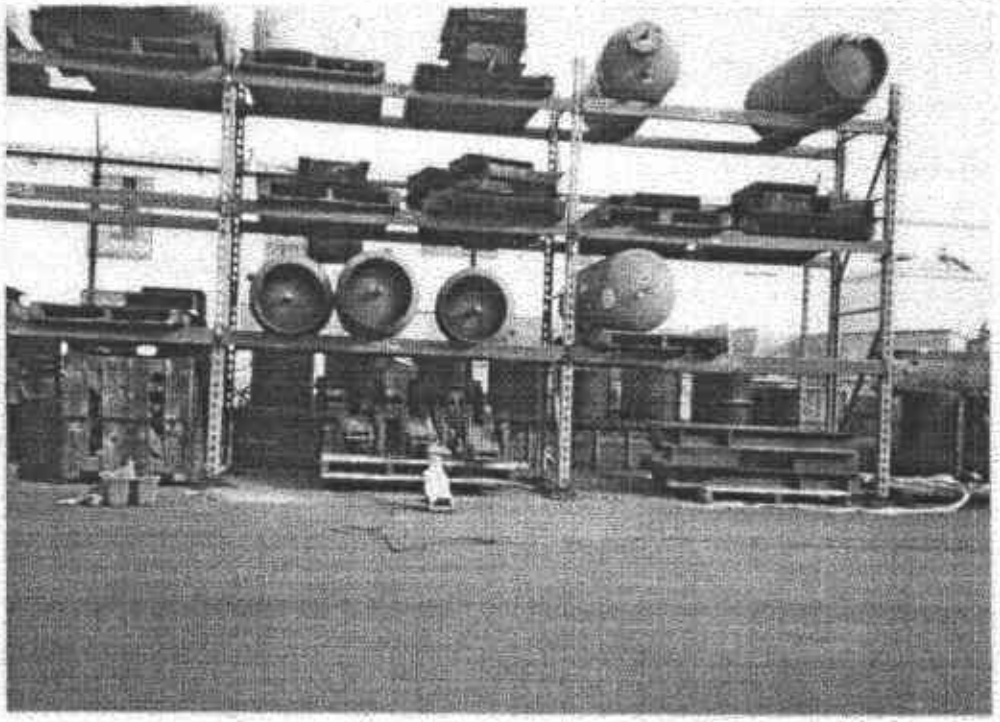
Picture 12: April 13, 1992
Soil sampling location B20-0.5&1.5 in background, adjacent to sump and concrete block. Saint Vincent DePaul beyond cyclone fence.



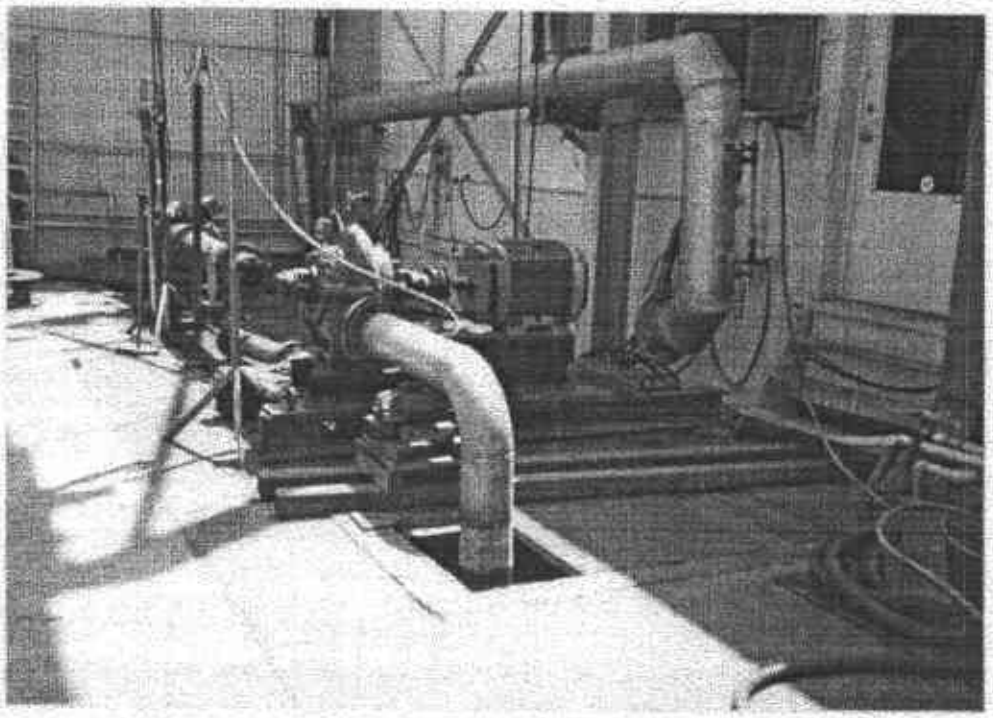
Picture 13: April 13, 1992
Soil sample B20-0.5&1.5, adjacent to sump used to collect and transfer ponded water to the sewer. Saint Vincent DePaul in background.



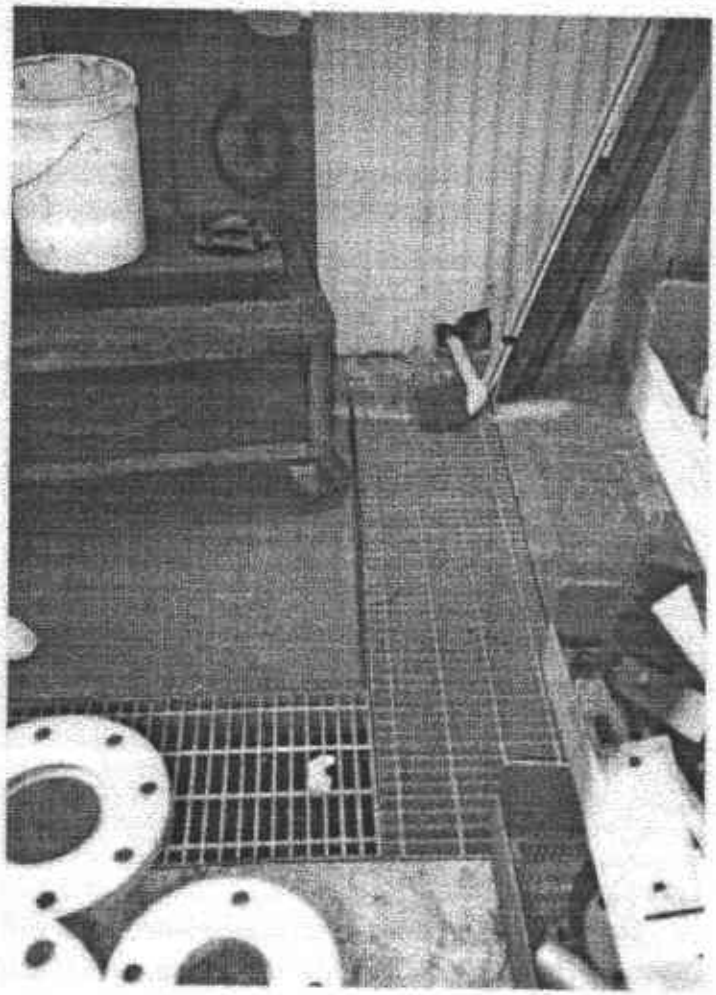
Picture 14: April 13, 1992
Soil sampling location B24-0.5&1.5, located in an area of PACO Pumps' metal storage. Saint Vincent DePaul beyond fence.



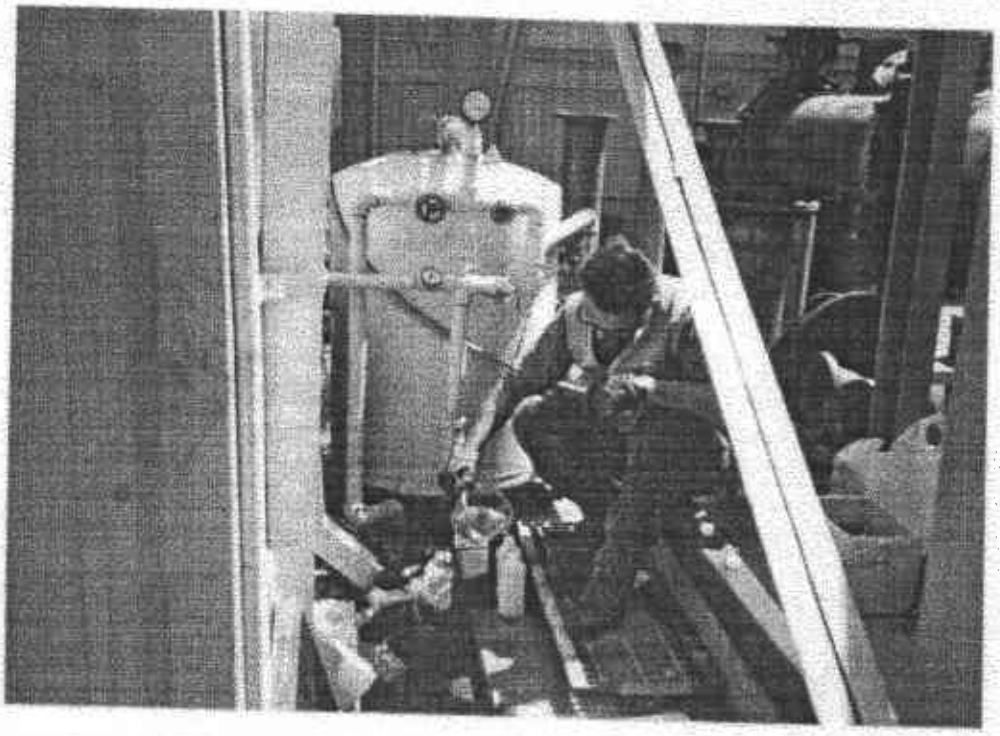
Picture 15: April 13, 1992
Collecting soil sample B25-0.5&1.5, located in PACO Pumps' tank storage area. Saint Vincent DePaul in background, beyond cyclone fence.



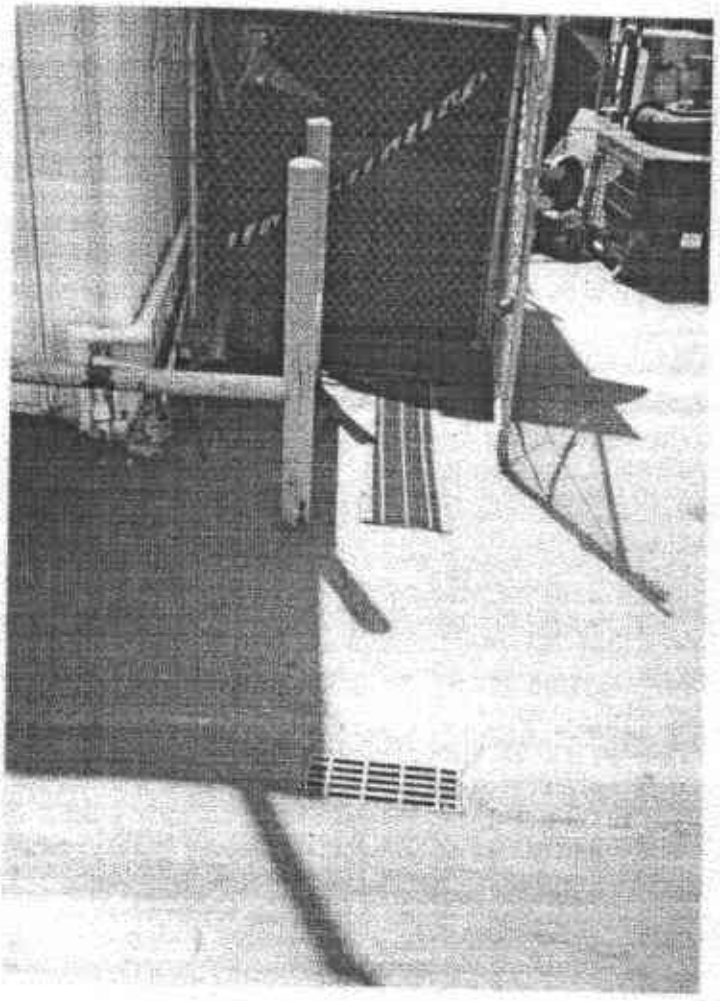
Picture 16: April 14, 1992
Hydraulic testing tank used to analyze the performance of various pumps. It did not contain a sufficient amount of bottom sludge for a sample. This system was sampled by collecting backwash from the filtering unit for the hydraulic testing tank.



Picture 17: April 14, 1992
Grated drainage trench, located northwest of the hydraulic testing tank.

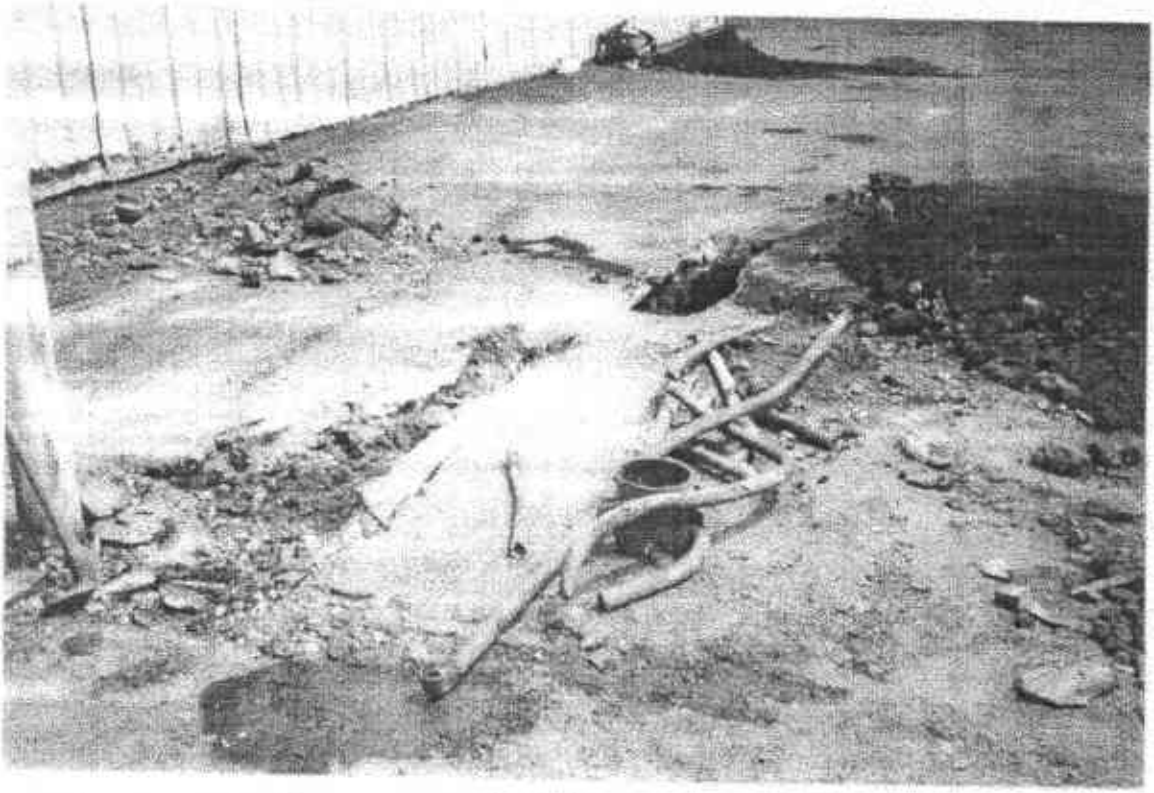


Picture 18: April 14, 1992
Collecting water sample BFW of effluent backwash from filter tank used for the hydraulic testing tank. The sample was unfiltered to determine the total soluble and particulate concentration.

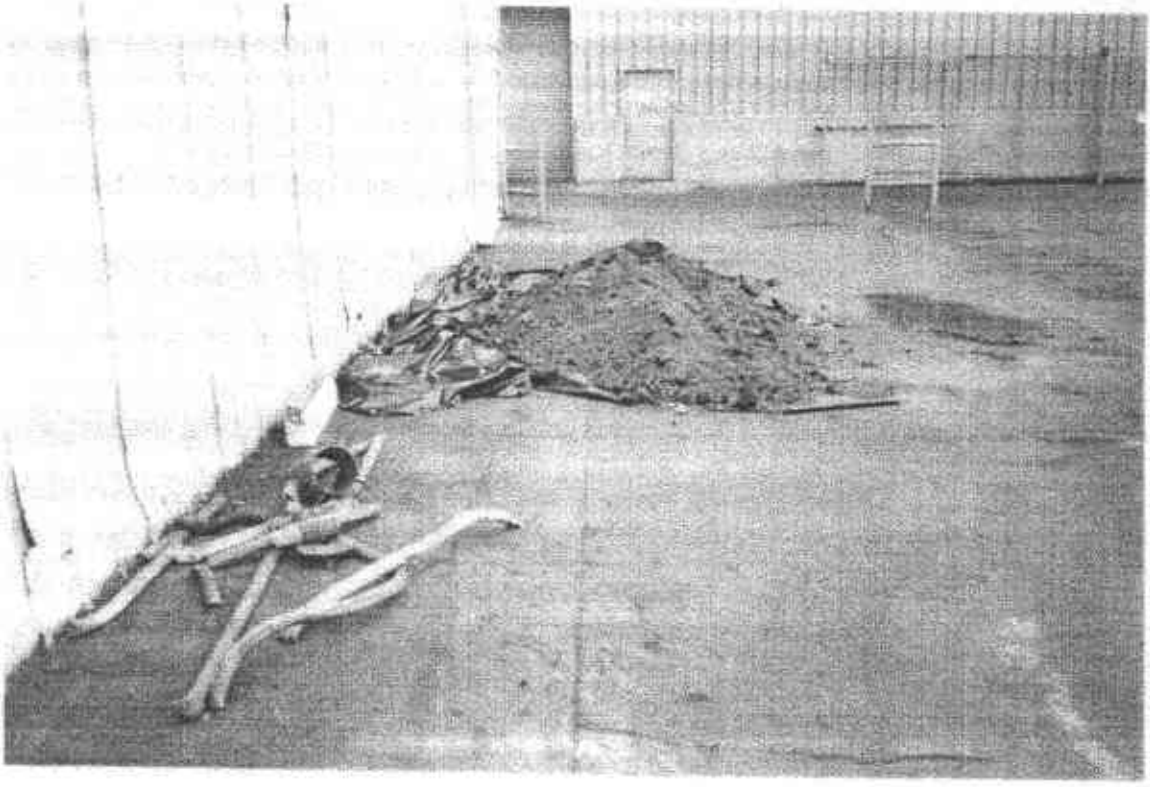


Picture 19: April 14, 1992
Grated drainage trench and sewer inlet, located in the general area of the hydraulic testing tank.

SOIL EXCAVATION
June 29, 1992 to August 11, 1992
PACO PUMPS INC.
9201 San Leandro Street
Oakland, California



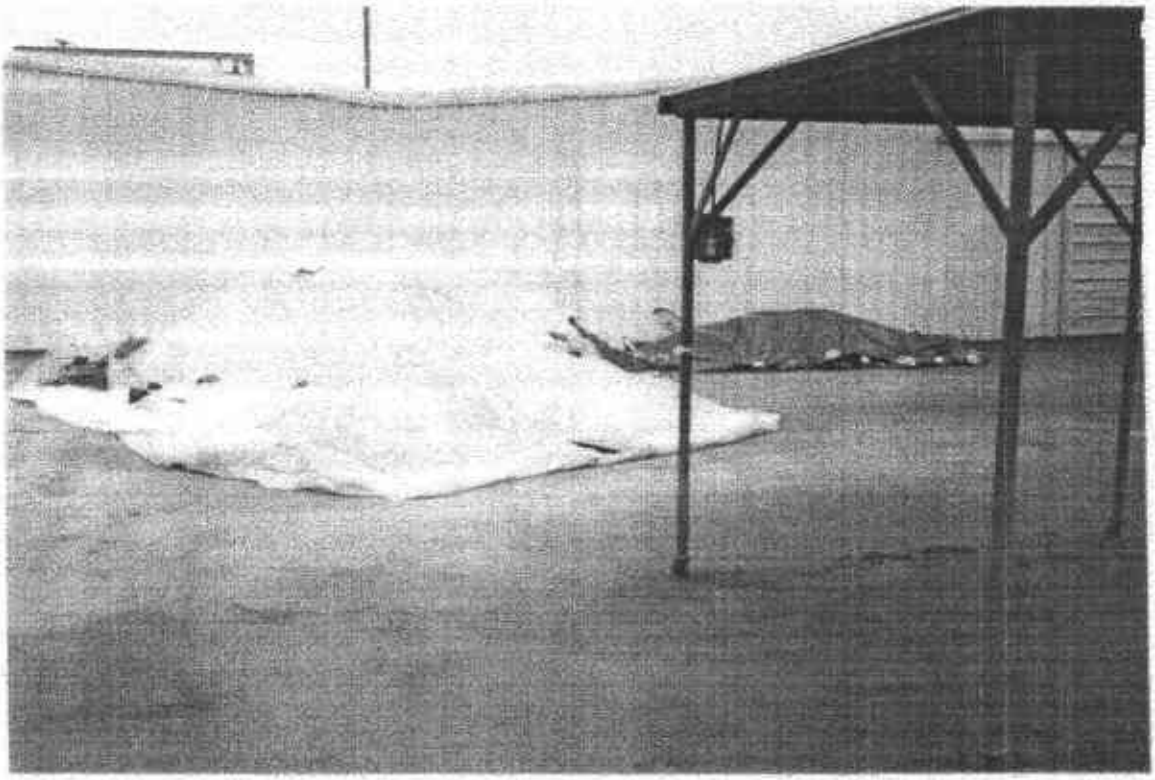
Picture 1:
Exploratory digging for "UST". Removed piping adjacent to trench. Water in pipe, presumably from recent rainstorm.
No tank was found.
June 29, 1992



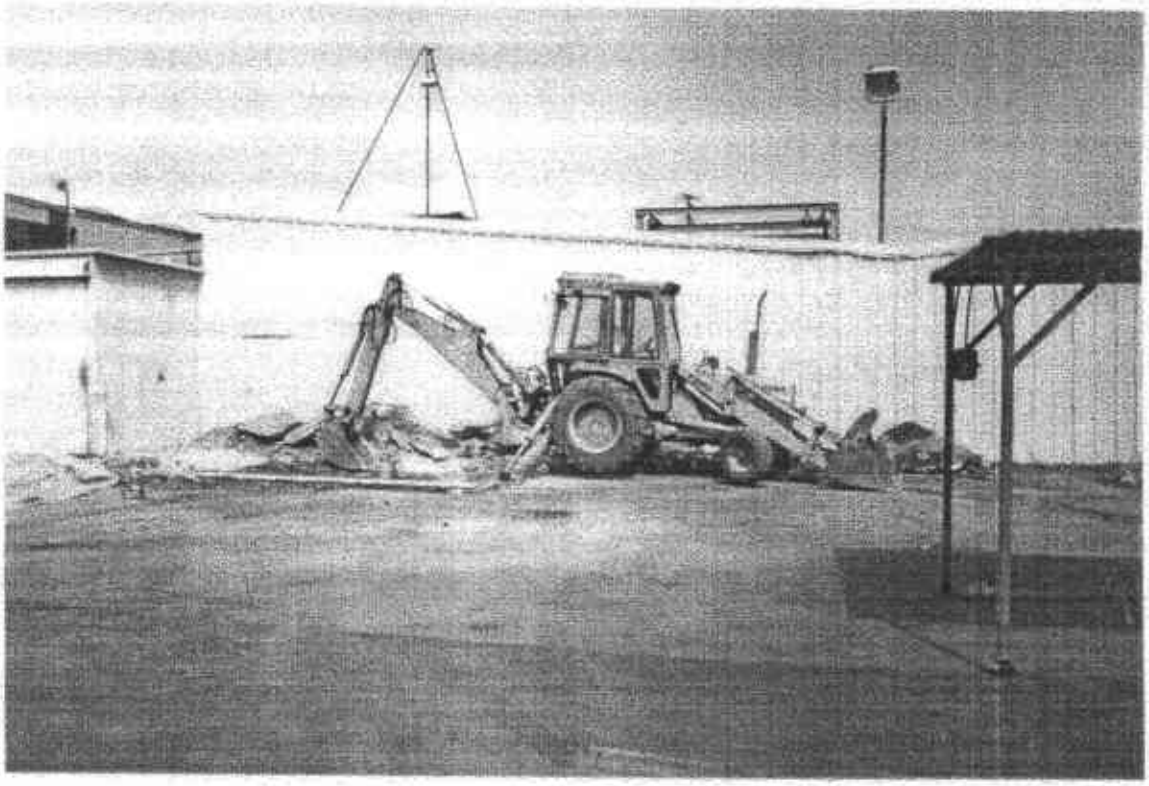
Picture 2:
Removed piping in foreground. Excavated soil on plastic.
June 29, 1992

Picture 3:
Backhoe removing debris found in excavation.
June 29, 1992

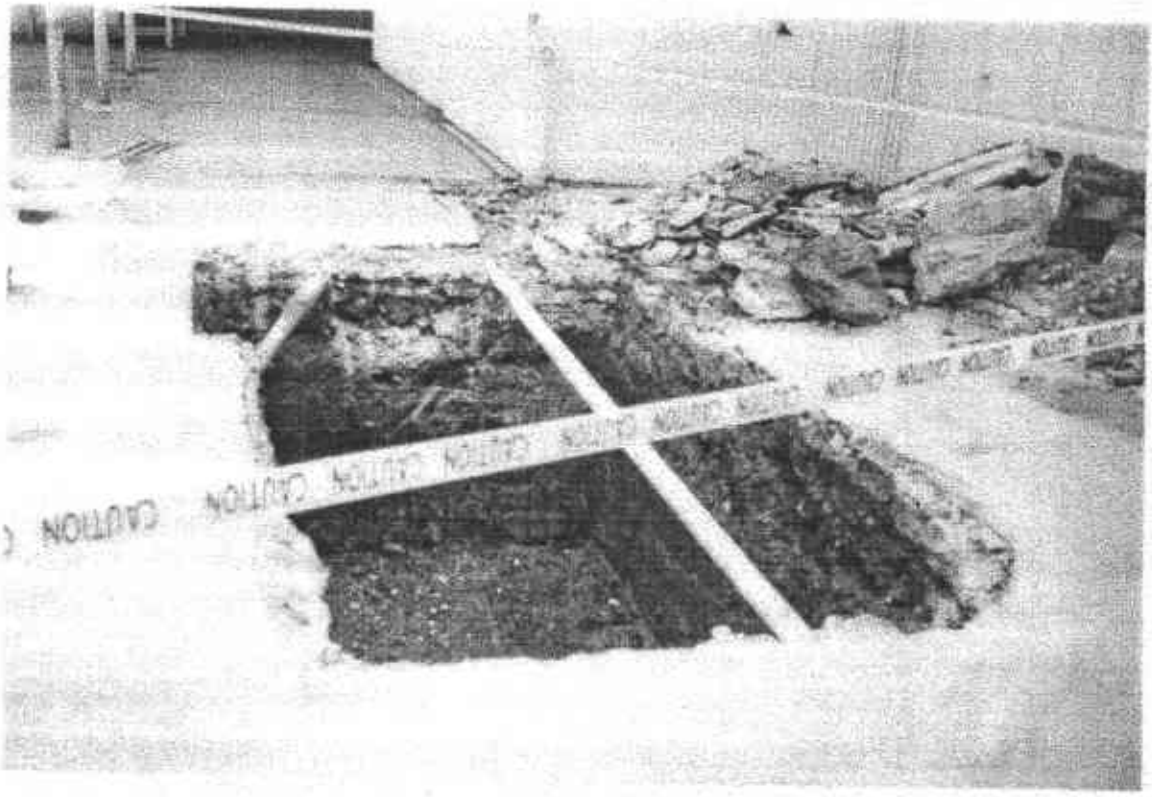
Picture 4:
Cleaned the area and placed a barrier around the excavation.
June 29, 1992



Picture 5:
Excavated soil, covered and placed on plastic. July 27, 1992 pile in foreground. June 29, 1992 pipe to the right. July 27, 1992

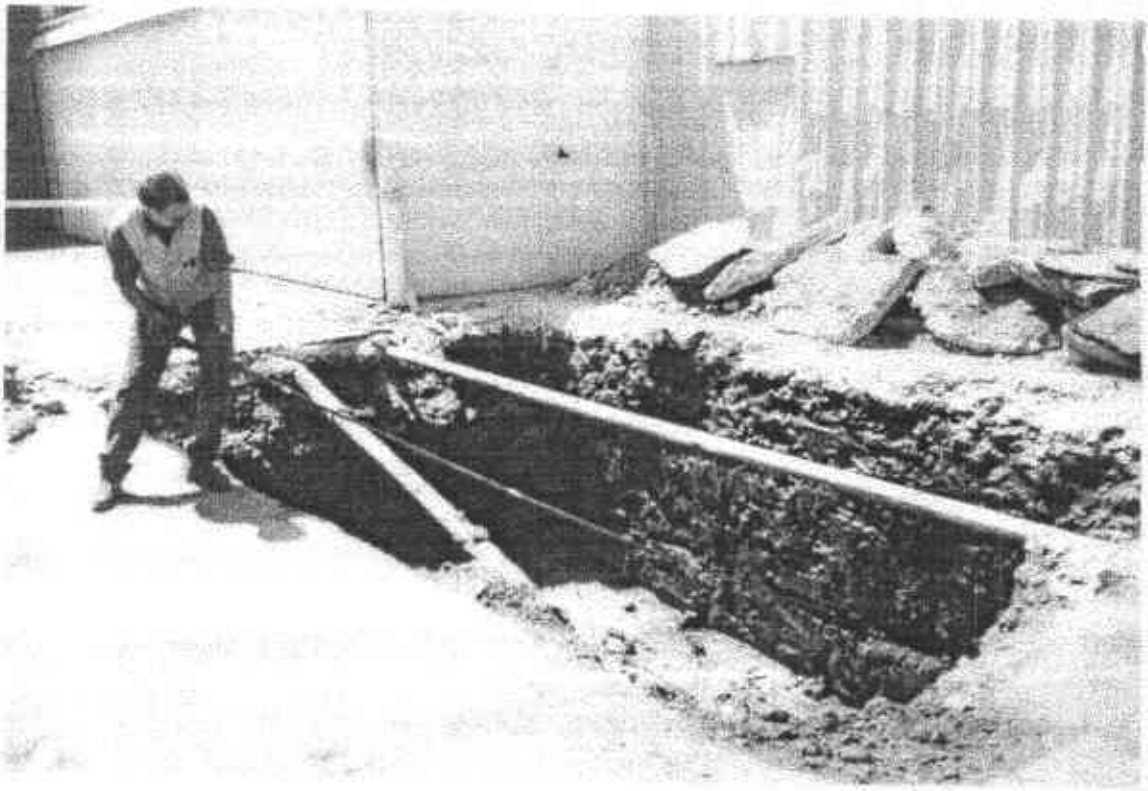


Picture 6:
Backhoe removing asphalt and concrete surfacing prior to enlarging excavation. July 27, 1992

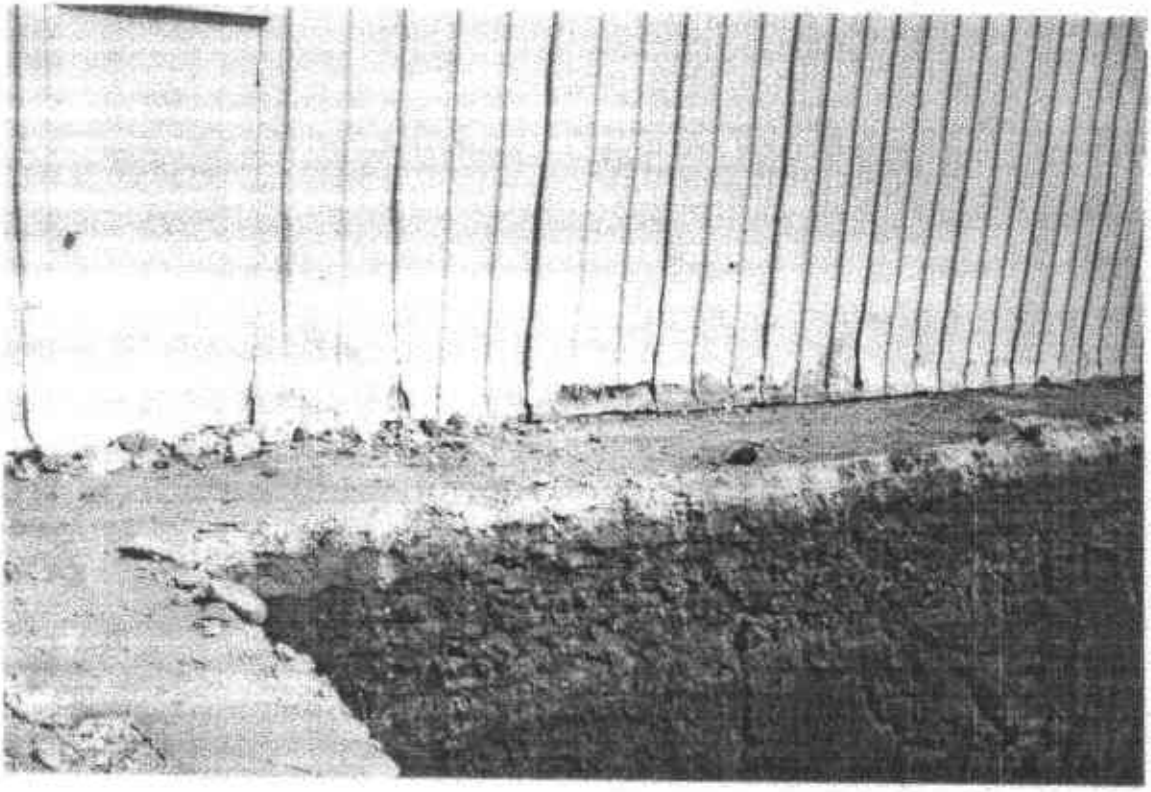


Picture 7:
Expansion of excavation. Asphalt and concrete in background. Barriers up.
July 27, 1992

Picture 8:
Excavated soil, underlain and covered with plastic. Excavation in background.
July 27, 1992



Picture 9:
Soil sampling B7 using a drive sampler with an extension. Sample was collected in a brass sleeve, then capped and chilled for transport.
August 3, 1992

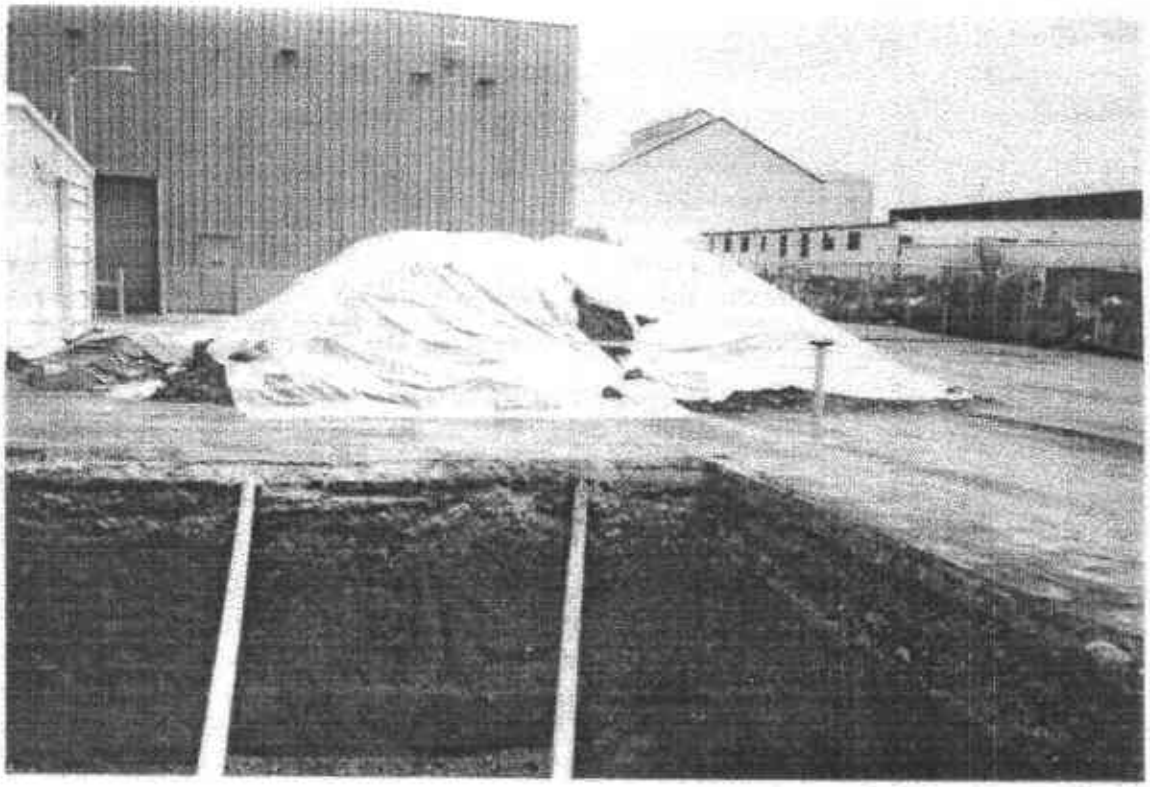


Picture 10:
Corner of excavation next to building. No failure cracks noted in concrete. Layering present in excavation. Soil predominantly clay and silt.
August 3, 1992

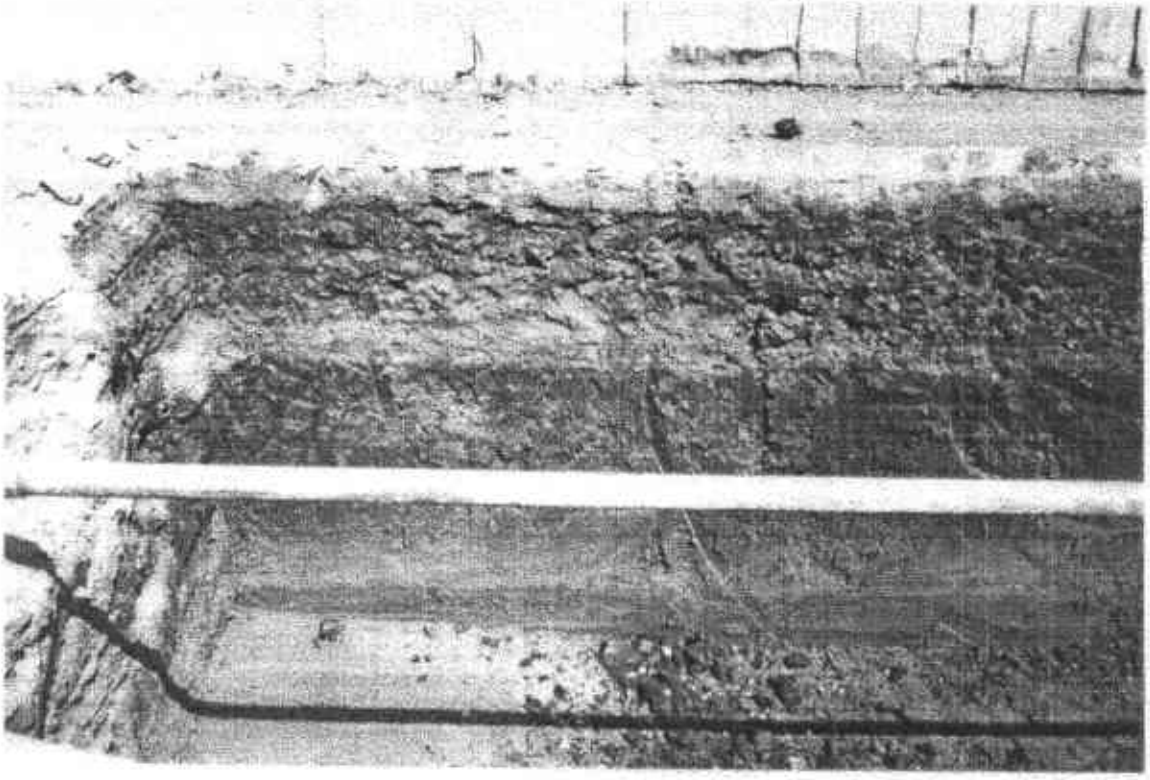
Picture 11:
Pile of concrete and asphalt. Previously used as a surfacing material above the excavation.
August 3, 1992

Picture 12:
Moving of soil to increase the area required for additional soil.
August 3, 1992

Picture 13
Placing excavated soil onto plastic lining.
August 3, 1992



Picture 14:
Total pile of excavated soil, covered with plastic. Excavation in foreground.
August 11, 1992



Picture 15:
Sidewall of excavation.
Note layering.
August 3, 1992

Picture 16:
Sidewalls and floor of
excavation.
August 3, 1992