GERAGHTY
& MILLER, INC.
Environmental Services

1050 Marina Way South
Richmond, California 94804
(415) 233-3200
FAX: (415) 233-3204

March 16, 1990

Mr. Ariu Levi
Senior Hazardous Materials Specialist
Division of Hazardous Materials
Department of Environmental Health
80 Swan Way, Room 200
Oakland, California 94621
(415) 271-4320

Re: Workplan for Initial Soil and Ground-Water Assessment, United Parcel Service, Inc. Facility, 8400 Pardee Drive, Oakland, California.
Project No. RC02701

Dear Mr. Levi:

Geraghty & Miller, Inc. is pleased to submit the attached workplan, dated March 16, 1990 on behalf of United Parcel Service, Inc. (UPS) for environmental services at the above referenced facility. The scope of work presented in the workplan is designed to address the requests for initial soil and ground-water assessment activities contained in a letter from the Alameda County Health Care Services Agency, Department of Environmental Health to UPS dated January 23, 1990.

If you have any questions regarding the attached workplan, please do not hesitate to call.

Sincerely,
GERAGHTY & MILLER, INC.

Jeffrey W. Hawkins, R.G.
Senior Geologist

Gary W. Keyes, P.E.
Principal Engineer

cc: Mr. Gary Mitchell, UPS

GERAGHTY
& MILLER, INC.
Environmental Services

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Richmond, California 94804
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March 16, 1990

Mr. Gary Mitchell
Project Engineer
United Parcel Service, Inc.
6662 Owens Drive
Pleasanton, California 94566
(702) 359-4916

Northside (Trucking Area)

Re: Workplan for Initial Soil and Ground-Water Assessment, United Parcel Service, Inc. Facility, 8400 Pardee Drive, Oakland, California
(Project No. RC02701)

Dear Mr. Mitchell:

Geraghty & Miller, Inc. (Geraghty & Miller) is pleased to submit this workplan for environmental services at the United Parcel Service, Inc. (UPS) facility referenced above. This workplan was prepared at the request of UPS and is designed to address the requests for initial soil and ground-water assessment activities contained in a letter from the Alameda County Health Care Services Agency, Department of Environmental Health, Hazardous Materials Division (ACDEH) to UPS (ACDEH, January 23, 1990). The scope of work presented in this workplan is based on the background information supplied to Geraghty & Miller by UPS, which consists of the results of soil and water samples collected between September 1989 and January 1990 by McLaren (McLaren, February 2, 1990).

BACKGROUND

3 diesel tanks on Southside Northside →

The UPS facility is located on a narrow peninsula south of San Leandro Bay (Figure 1). The facility is a distribution point for UPS and has on-site fueling operations. The underground product storage and piping facilities at the site consist of one 10,000 gallon unleaded gasoline tank, one 10,000-gallon diesel tank, three above-ground product dispensing islands, and associated underground product piping. The approximate locations of the former fuel system components are presented in Figure 2.

During September 1989, UPS initiated activities designed to upgrade the existing product dispensing system. The former fuel dispensing islands and piping were removed and new fuel dispensers were located to the west as shown in Figure 2. During excavation of the backfill near the product dispensing islands, a hydrocarbon odor was reportedly noted emmitting from the backfill. Six soil samples and two water samples were collected from the backfill from within the excavation in the vicinity of the product dispensing islands and product piping. Soil and water samples were collected from the approximate locations shown in Figure 2. The soil samples were collected at depths of approximately 1 to 2 feet below the ground surface. Water reportedly filled the 3-foot deep excavation to a depth of 8 inches. The two water samples were collected from the standing water at the bottom of the excavation. A summary of the analytical results for the soil and water samples are presented in Tables 1 and 2 respectively (McLaren, February 2, 1990).

Total petroleum hydrocarbons (TPH) as gasoline were detected in soil samples SS-5 (3,100 mg/kg) and SS-6 (4,100 mg/kg) collected from the backfill in the vicinity of fuel dispensing island #1 and the associated product piping (see Figure 2). A matrix interference was reported by the laboratory for the analysis of soil samples SS-4, SS-5, and SS-6. The laboratory's interpretation was that the interference may have been caused by the presence of diesel in the soil samples (McLaren, February 2, 1990).

Concentrations of TPH as gasoline were detected in the water samples collected from the excavation at concentrations ranging from 5,000 µg/l (WS-2) to below detection limits (<500 µg/l) (WS-1). Benzene, toluene, xylenes, and ethylbenzene (BTXE) were detected at concentrations ranging from 2,200 µg/l (xylenes, WS-1) to below detection limits (<50 µg/l) (McLaren, February 2, 1990).

REGIONAL HYDROGEOLOGIC SETTING

The UPS facility is located approximately 1 mile southeast of San Leandro Bay and 3 miles east of San Francisco Bay. The site is bordered to the east by San Leandro Creek. The elevation is approximately 5 feet above mean sea level. The regional geology consists of three main types of deposition: tidal marsh, fill material, and fluvial deposition from San Leandro Creek. The area was historically a tidal marsh and has subsequently been filled for development (US Geological Survey, 1977). The alluvial fan formed by San Leandro Creek extends from the foothills east of the site to the mouth of San Leandro Creek. The alluvial fan ranges in thickness from approximately 400 feet at the apex to approximately 1000 feet beneath the bay plain (Department of Water Resources, 1969). In the vicinity of the UPS site, near the west edge of the alluvial fan, the coarse to fine sediment ratios drop to less than 1:10 (Department of Water Resources, 1969). The alluvial fan consists of two aquifers, an upper which occurs at a depth of approximately 50 feet below ground surface, and a lower aquifer which occurs at a depth of approximately 400 feet below the ground surface. The upper aquifer is generally characterized by low permeability soils and is not extensively used for water supply (Department of Water Resources, 1969).

The regional ground-water flow direction is inferred to be toward the northwest, in the direction of San Francisco Bay. The direction of ground-water flow in the immediate vicinity of the site may be influenced by San Leandro Bay to the northwest, Airport Channel to the west, and San Leandro Creek to the east of the site. Alameda county has used injection wells to limit salt-water intrusion which may locally affect ground-water flow direction; location of the wells was not provided (California Ground Water, 1975). Several storm drains, which may act as conduits for recharge, are located near the excavation area. The direction of ground-water flow beneath the site has not been determined.

SCOPE OF WORK

The following scope of work is designed to address the requests of the ACDEH for initial soil and ground-water assessment activities in the vicinity of the former locations of the underground storage tanks. As requested, a health and safety plan has also been prepared and is included as Attachment 1.

Task 1 - Pre-Field Activities

Geraghty & Miller will schedule subcontractors, materials, and supplies. Prior to drilling, the required well installation and drilling permits will be obtained. An underground locating company will be scheduled to clear all proposed drilling locations of subsurface obstructions.

Task 2 - Excavation of Backfill

Backfill from within the product piping trench and beneath the location of former dispensing island #1 in the vicinity from which soil samples SS-5 and SS-6 were previously collected will be excavated. Petroleum hydrocarbons were detected in these soil samples which were collected during the removal of the product piping and fuel dispensing islands. Following excavation of the backfill, up to three soil samples will be collected from the native soil and analyzed for TPH as gasoline and diesel (USEPA Method 8015, modified) and BTXE (USEPA Method 8020).

Task 3 - Exploratory Drilling, Soil Sampling, Well Installation, and Ground-Water Sampling

In order to better define the lateral extent of petroleum hydrocarbons in the soil and to assess whether the shallow ground water beneath the site has been impacted by petroleum hydrocarbons, three exploratory borings will be drilled at the approximate locations shown in Figure 2. During drilling, soil samples will be collected at approximately 5-foot depth intervals. Exploratory drilling and soil sampling procedures are described in Attachment 2. The exploratory borings will be extended to a depth approximately 10 feet below first encountered water or terminated in a minimum of 3 feet of low permeability soil. Upon completion, the borings will be converted into ground-water monitoring wells by installing 2-inch diameter PVC casing. The slotted portion of the casing will extend from the bottom of the well to a maximum of 10 feet above first encountered water. A sanitary seal consisting of cement and bentonite will be installed in the annular space around the casing extending from the top of the casing to a minimum depth of 3 feet below the ground surface. The well completion may vary based on the actual hydrogeologic conditions encountered during the exploratory drilling. The top of casing and ground surface elevation for each well, relative to mean sea-level, will be surveyed. The three proposed ground-water monitor wells will be used to evaluate the lateral and vertical extent of hydrocarbon concentrations in the soil and ground-water beneath the site.

One ground-water sample will be collected from each monitoring well installed during the exploratory drilling activities. Ground-water sampling procedures are described in Attachment 2.

Task 4 - Laboratory Analysis

Select soil samples collected from above the depth of first encountered water will be submitted to a state-certified laboratory and analyzed for TPH as gasoline and as diesel (USEPA Method 8015, modified), and for benzene, toluene, xylenes, and ethylbenzene (BTXE) (USEPA Method 8020).

Ground-water samples collected from the monitoring wells will be submitted to a state-certified laboratory and analyzed for TPH as gasoline and as diesel (USEPA Method 8015,

modified) and BTXE (USEPA Method 602). One water sample will be analyzed for total dissolved solids (USEPA Method 160), total hardness (USEPA Method 6010), and chlorides (USEPA Method 300.0). The mineral analysis will provide general water quality data.

Task 5 - Report Preparation

Following receipt of all data, Geraghty & Miller will prepare a report of the results of the assessment activities, including the following:

- Description of the exploratory drilling, soil sampling, well installation, and ground-water sampling activities;
- Exploratory boring logs and well completion details;
- A summary and discussion of the findings and analytical results.

PROJECT SCHEDULE

We estimate that the required subcontractors can be scheduled to begin the drilling activities within 3 weeks following receipt of approval of the workplan, depending on availability of appropriate drilling contractors. We estimate that the drilling and well installation activities will require 1 week to complete. Well development and ground-water sampling activities will require approximately 1 week. Analytical results will be received from the laboratory 2 weeks after ground-water sampling is complete. Analysis of the data and preparation of the report will require approximately 2 weeks to complete.

If you have any questions regarding this workplan, please do not hesitate to call.

Sincerely,
GERAGHTY & MILLER, INC.

James Wilmesher

James Wilmesher
Staff Geologist

Jeffrey W. Hawkins

Jeffrey W. Hawkins
Senior Geologist
R.G.# 4361

Gary W. Keyes, P.E.
Principal Engineer

REGISTERED GEOLOGIST
JEFFREY W. HAWKINS
No. 4361
Exp. 6/30/90
STATE OF CALIFORNIA

Attachments: References

Table 1 - Summary of Soil Sample Analytical Results
Table 2 - Summary of Water Analytical Results

Figure 1 - Site Location Map
Figure 2 - Site Plan

Attachment 1 - Health and Safety Plan
Attachment 2 - Exploratory Drilling, Soil Sampling, and Ground-Water Sampling Procedures

REFERENCES

California Department of Water Resources, 1975, Bulletin Number 118, California Ground Water.

California Department of Water Resources, 1967, Bulletin Number 118-1 Appendix A, Evaluation of Ground Water Resources, South Bay, Geology.

McLaren, March 5, 1990, Letter Report Summarizing Soil and Groundwater Data Collected During the Retrofitting of a Gasoline Dispenser System at the United Parcel Service Property Located at 8400 Pardee Drive, Oakland, California.

McLaren, February 2, 1990, Letter Report Summarizing Soil and Groundwater Data Collected During the Retrofitting of a Gasoline Dispenser System at the United Parcel Service Property Located at 8400 Pardee Drive, Oakland, California.

US Geological Survey, 1979, Professional Paper 943, Flatland Deposits-Their Geology and Engineering Properties and Their Importance to Comprehensive Planning, E.J. Helley and K.R. Lajoie (USGS), and W.E. Spangler and M.L. Blair (William Spangler & Associates), US Government Printing Office.

US Geological Survey, 1977, Professional Paper 1014, Late Quaternary Depositional History, Holocene Sea Level Changes, and Vertical Crustal Movement, Southern San Francisco Bay, California, B.F. Atwater, C.W. Hedel, and E.J. Helley, US Government Printing Office.

US Geological Survey, 1959, Photorevised 1980, Topgraphic Map, San Leandro Quadrangle, 7.5 Minute Series, US Geological Survey Publication.

Table 1 - Summary of Soil Sample Analytical Results
United Parcel Service, Inc. Facility, 8400 Pardee Drive, Oakland, California.

Sample	Date	Depth (1) (feet)	TPH (2) (mg/kg)	Benzene (3) (mg/kg)	Toluene (3) (mg/kg)	Ethylbenzene (3) (mg/kg)	Total Xylenes (3) (mg/kg)
SS-1	25-Sep-89	1.0 - 1.5	<10	NA	NA	NA	NA
SS-2	4-Dec-89	1.0 - 1.5	<1.0	<0.02	<0.02	<0.02	<0.02
SS-3	4-Jan-90	1.0 - 1.5	<1.0	<0.02	<0.02	<0.02	<0.02
SS-4	12-Jan-90	1.5 - 2.0	<5000	<100	<100	<100	<100
SS-5	12-Jan-90	1.5 - 2.0	9,300	<100	60	<100	209
SS-6	12-Jan-90	1.5 - 2.0	4100	200	200	<100	700

these detection limits are wrong!
* due to presence of diesel?
should also run TPH g, d & BTEX

Notes:

(1) Depth reported as feet below ground surface.
(2) Total petroleum hydrocarbons as gasoline. Analyzed by USEPA Method 8015, modified.
(3) Analyzed by USEPA Method 8020.

NA = Not analyzed
For certified laboratory reports see McLaren, February 2, 1990.

Project No. RC02701

Table 2 - Summary of Ground-Water Analytical Results
United Parcel Service, Inc., Facility, 8400 Pardee Drive, Oakland, California

Sample	Date	TPH (A) (ug/l)	Benzene (B) (ug/l)	Toluene (B) (ug/l)	Ethylbenzene (B) (ug/l)	Xylenes (B) (ug/l)
WS-1	19-Sep-89	ND (<500)	890	60	ND (<50)	2,200
WS-2	4-Jan-90	5,000	380	230	ND (<50)	90

Notes:

(A) Total petroleum hydrocarbons as gasoline. Analyzed by USEPA Method 8015, modified.
(B) Analyzed by USEPA Method 8020.

ND (<) = Not detected (detection limit).

For certified laboratory reports see McLaren, February 2, 1990.

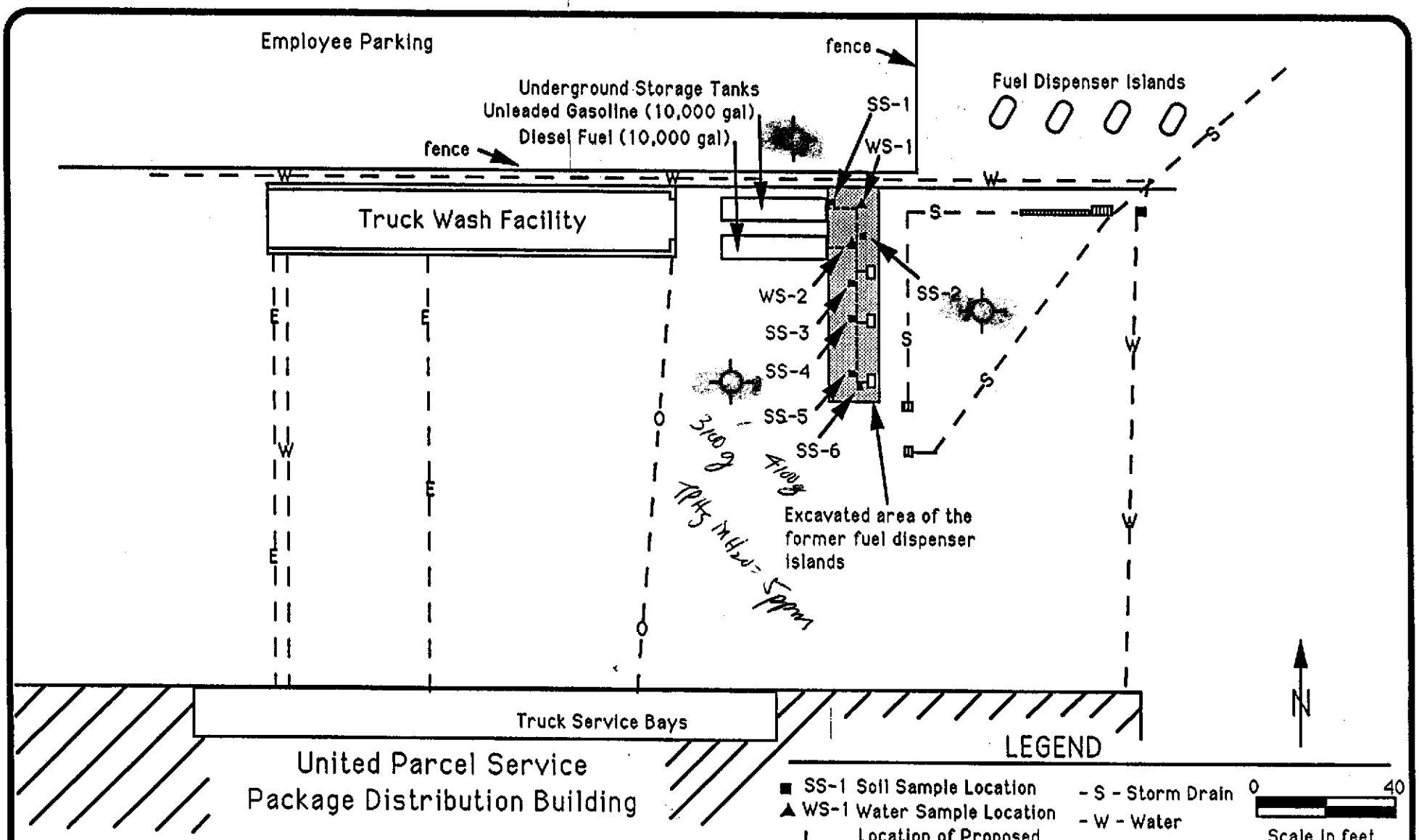
Project No. RC02701

GERAGHTY & MILLER, INC.
Environmental Services

SITE LOCATION MAP

United Parcel Service
Package Distribution Facility
Oakland, California

FIGURE
1



Note: Location of soil and water samples and former product dispenser islands taken from McLaren, March 5, 1990

GERAGHTY & MILLER, INC.
Environmental Services

SITE PLAN
UNITED PARCEL SERVICE, Inc.
8400 Parde Drive
Oakland, California

FIGURE
2

ATTACHMENT 1

SITE HEALTH AND SAFETY PLAN
UNITED PARCEL SERVICE, INC.
8400 PARDEE DRIVE
OAKLAND, CALIFORNIA

ATTACHMENT 1

SITE HEALTH AND SAFETY PLAN
UNITED PARCEL SERVICE, INC.
8400 PARDEE DRIVE
OAKLAND, CALIFORNIA

1. INTRODUCTION

The purpose of this Site Safety Plan (SSP) is to reduce the risk of death, injury, or illness to site personnel or to the general public during the WorkPlan activities proposed at the United Parcel Service Facility, 8400 Pardee Drive, Oakland, California. This SSP applies specifically to the Geraghty & Miller, Inc.(G&M), hydrocarbon investigation at the above referenced site. Based on data supplied to G&M by United Parcel Service, Inc. (UPS), there is a likelihood of drilling through hydrocarbons during the performance of the WorkPlan.

2. FACILITY DESCRIPTION / WORKPLAN

The United Parcel Service complex in Oakland, California, is a Package Distribution Facility. It consists of a main terminal , loading area, repair facility, and offices in a single building covering about 5 acres, a truck washing building, a fueling area, tractor and trailer parking, and other small operations areas. During fuel dispenser upgrading activities, hydrocarbon odors were noted emitting from the tank backfill. Soil and water samples collected from the backfill were analyzed and the results indicated that petroleum hydrocarbons were detected in the soil samples. In order to define the extent of hydrocarbon migration beneath the site, three exploratory borings will be drilled. Monitor wells will be constructed in the borings as described in the WorkPlan.

2.1 CURRENT PROJECT OVERVIEW

The scope of work addressed in this Site Safety Plan is the installation of ground-water monitoring wells at the UPS site. The borings will be installed to a depth of approximately 10 feet below the first-encountered water. The ground-water elevation was reported as 8 inches of water in the bottom of a 3 foot deep excavation (McLaren, 1990), or 28 inches below the ground surface. The field personnel involved, one Geraghty & Miller geologist and two drillers, are experienced with the procedures involved in drilling with hollow stem augers. Therefore, no description of standard drilling methods and practices is presented here.

2.2 SITE LOCATION AND HISTORY

The facility operated by United Parcel Service (UPS) is located at 8400 Pardee Drive in Oakland, California, one half mile east of Oakland International Airport. Several other businesses within the surrounding area are involved in the storage and distribution of parcel

packages. UPS has not been involved in any other industry at this site. Less than one mile north of the site, at the tip of Arrowhead peninsula, is the San Leandro Bay Park a walking park with limited access. Between the park and the UPS facility is an open grass field. The field extends around the north end of Pardee Drive and ends west of the site, at the intersection of Pardee Drive and Swan Way. The site is bordered to the east by a channelized section of San Leandro Creek. To the south is City of Oakland Fire Station #27, at 8501 Pardee Drive, located near the intersection of Hegenberger Road and Pardee. To the southeast is a closed warehouse building that fronts on Hegenberger Road.

3. KEY PERSONNEL AND RESPONSIBILITIES

3.1 GERAGHTY & MILLER PERSONNEL

A) Project Officer: Gary Keyes, Geraghty & Miller
Office Telephone Number: (415) 233-3200

B) Project Manager : Jeff Hawkins, Geraghty & Miller
Office Telephone Number : (415) 233-3200

C) Site Safety Officer : James Wilmesher

The site safety officer (SSO) will supervise the drilling subcontractor's personnel, technicians, and other workers on site. The SSO is trained in Cardio-Pulmonary Resuscitation (CPR) and first aid. The SSO will conduct daily safety meetings to review health and safety procedures. The SSO will contact emergency response authorities should an emergency situation arise. A list of emergency response numbers is included in Section 7.

3.2 SUBCONTRACTORS

The drilling subcontractor is H.E.W. Drilling. The contact is Mr. Henry Wong, who can be reached at (415) 322-2851. All drilling personnel have received a 40-hour health and safety training course.

3.3 CLIENT CONTACT

The UPS representatives for this project are Mr. Gary Mitchell, Project Engineer, and Mr. Don Code, Facility Maintenance Manager. Mr. Code is the on-site representative. Mr. Code's office telephone number is (415) 633-3974.

4. RESULTS OF PREVIOUS ASSESSMENT WORK

4.1 GROUND-WATER

Between September 20, 1989 and January 5, 1990, two water samples were collected at the site and analyzed by McLaren. The first water sample was collected September 20, 1989, and was analyzed for volatile organic compounds (EPA Method 624, modified).

The second sample was collected January 4, 1990 and was analyzed for benzene, toluene, ethylbenzene, and xylenes and total volatile hydrocarbons (gasoline) using EPA method 8020. The concentrations of the compounds detected are summarized below with the associated ACGIH Threshold Limit Values - Time Weighted Average (TLV-TWA) levels:

Compound	Lowest Concentration (ppb)	Highest Concentration (ppb)	TLV-TWA (ppb)
Benzene	(<50)	890	10,000
Toluene	(<50)	230	100,000
Ethylbenzene	(<50)	(<50)	100,000
Xylenes	(<50)	2,200	100,000

Why are these thresholds being quoted?

4.2 SOIL

Between September 25, 1989 and January 12, 1990, six soil samples were collected from the excavation by McLaren. The soil samples were analyzed for benzene, toluene, ethylbenzene, and xylenes and total volatile hydrocarbons (gasoline) by McLaren using EPA method 8020 The following is a summary of the range of concentrations detected in the soil samples for each compound and the associated ACGIH Threshold Limit Values - Time Weighted Average (TLV-TWA) levels:

Compound	Lowest Concentration (ppm)	Highest Concentration (ppm)	TLV-TWA (ppm)
Benzene	(<0.02)	200	10
Toluene	(<0.02)	200	100
Ethylbenzene	(<0.02)	<100	100
Xylenes	(<0.02)	700	100

These compounds are known to be present in the soil, adsorbed onto soil, and dissolved in the ground-water. These compounds are common constituents of hydrocarbon products. Phase-separated hydrocarbons have not been detected on-site. Air monitoring for volatile organics has not previously been performed at or around the excavated area.

5. JOB HAZARDS AND PROTECTIVE MEASURES

The drilling and well installation activities are designed to better define the extent of petroleum hydrocarbons in the soils and ground-water in the area. A variety of organic

constituents may be detected in the subsurface. Benzene, toluene, ethylbenzene, xylene, and other related additives used in gasoline may be found when exploratory soil borings are drilled.

Respiratory hazards related to the above-listed chemicals might arise if vapors and gases are released into the breathing zone during drilling and/or monitoring. Respiratory hazards are unlikely; previous air monitoring experience indicates that dilution occurs in the immediate vicinity of the boreholes, and thus it is not anticipated that there will be any exposure in excess of 5 ppm of organic compounds (vapors) in the breathing zone. If vapors in excess of 5 ppm are observed 2 feet above the open borehole for any prolonged period of time (5 minutes or more), the SSO will require all personnel to move away from the borehole until the breathing zone is deemed safe, or until all personnel are properly protected. In order to confirm airborne levels of organic vapors, a direct-reading air monitoring device (Gas Tech Model 1314) will be utilized.

Dermal hazards could arise if product (gasoline liquid or vapor) observed in the borehole or well comes into contact with a person's hand or body (skin) during the field investigation. A low hazard level exists where there is no contact, and when proper dermal protection is worn. The use of protective clothing and chemical resistant gloves is required if gasoline is present or chemicals are observed on the soils.

Absolutely no smoking is allowed in any of the work zones during the performance of the WorkPlan. If product is found beneath the site, all borings/wells will be properly secured to prevent any accidental ignition of product.

5.1 PHYSICAL HAZARDS

A) Utility Clearance---Drilling clearance from utility companies will be obtained from USA Alert personnel. If any questions arise, on site workers shall call USA Alert at 1-800-642-2444.

B) Drill rig operation---The most important mechanical hazards relate to operation of the drill rig and motor vehicle traffic. During drilling, there is a risk of overhead objects falling and of injuries from contact with moving equipment. All personnel will wear hard hats, steel-toed shoes, and safety glasses or goggles. Only the driller and driller's helper will operate the drill rig, although they will instruct the geologists how to turn off the rig in an emergency and point out the location(s) of "kill switch(es)" for that purpose.

C) Excessive noise---The noise generated by drilling can be loud enough to impede communications and cause short- or long-term hearing loss. Hearing protection will be used if normal conversation is not possible at a distance of 3 feet.

D) Vehicle traffic---The work area will be barricaded to prevent vehicular traffic from passing near drilling operations. If tasks are performed in traffic areas, workers will wear high visibility vests. If a worker must stop in a traffic area or kneel to the ground (to examine a well, for example), additional barricades will be erected.

E) Heat excess/loss---High temperatures increase the risk of heat exposure conditions such as heat exhaustion and heat stroke, and cool temperatures increase the likelihood of hypothermia. Each worker should make certain that he/she has a full compliment of fair and foul weather clothing to ensure comfortable and safe working conditions. The following is a list of common temperature-related hazards.

Universal **symptoms** of exposure to high concentrations of the compounds known at the UPS site **include but are not limited to dizziness, headache, drowsiness, and nausea.** If a worker should experience these effects, he/she should be immediately removed from the work area to receive medical attention.

A) Monitoring of Airborne Vapors and Gasses---An assessment of concentrations of volatile organic compounds in the pore space of the undisturbed soil at the UPS site has not been performed. The primary route of exposure to these compounds during normal drilling activities is inhalation. Air that the workers will breathe will probably contain concentrations of airborne organic vapors much lower than TLV-TWA values because of dilution with the air.

The background concentration of vapors in the vicinity of the work area will be obtained by collecting randomly sampled air readings at locations outside the work area using a Gas Tech Model 1314. During the drilling and well installation activities, air in the breathing zone will be monitored using the Gas Tech instrument. Since the lowest TLV-TWA value for compounds previously detected in the soil and ground-water at the site is 10 parts per million (ppm), if sustained concentrations of 10 ppm (vapor) or greater above the background concentration is detected, workers will be advised to vacate the work zone and upgrade the protection level before resuming work. A sustained concentration will be considered to be a concentration exceeding the above referenced threshold criteria for at least 5 minutes.

B) Contaminated Soil and Water---Workers should be aware that aside from inhalation, other routes of exposure include ingestion, or contact with the skin or eyes. The ground-water at the UPS site is not used for drinking water, and the ground-water will not be ingested during the field activities. The other route of exposure is absorption through the skin. Personnel must avoid soil and ground-water contact with the skin. Workers must also refrain from putting their hands in their mouths, rubbing their eyes, or eating before they have washed with soap and water. These precautions for on-site workers will be emphasized by the SSO at the on-site safety meeting.

C) Decontamination Procedures---Decontamination is required prior to leaving the drilling area. Workers must remove any soil from boots, clothing, and equipment. Workers must wash hands and face as well as any exposed areas of skin with soap and water. If disposable coveralls are used, they will be removed and stored in a designated container on site, and properly disposed of upon completion of the drilling activities.

5.3 LEVELS OF PROTECTION

Level D protection is required at the commencement of the field activities. **The drilling subcontractor is responsible for providing the appropriate protective equipment for their employees** and will receive a copy of this Health and Safety plan. Protective equipment for Levels C and Level D includes:

Level D - Mandatory

Steel-toed boots
Approved hard hat
Approved safety glasses with side shields
Long-sleeved work shirt
Long pants

Chemical resistant gloves (Solvex)

Level D - at the discretion of the G&M Site Safety Officer

Disposable coveralls

Level C

All required Level D equipment
Air purifying respirator equipped with organic vapor cartridge (half or full-face respirators)

5.4 JOB HAZARD SUMMARY

A) On-site workers---The potential hazards associated with the field activities to be performed at the site are physical and chemical. While much of this safety plan address the chemical hazards, the physical hazards should not be underestimated. Workers must wear the protective equipment required in keeping with the level of protection specified by the Geraghty & Miller SSO. No one other than the driller or his helper is to operate the drill rig. Workers will be made aware of the location(s) of the drill rig "kill switch(es)". The SSO is responsible for conducting daily safety meetings to inform all workers of site specific hazards and of the emergency plan should it be necessary.

The work zone is the area within a 10 foot radius immediately surrounding the drill rig. The work zone will be isolated by caution tape, barricades, and cones. No personnel other than those involved in the drilling and sampling activities will be allowed in the work zone.

B) The general public---The job hazards will not affect the general public because the work zone will be contained within the confines of the UPS property. The dispersive effects of ambient air mixing with any vapors will lower the concentrations before vapors, if any, leave the UPS site. The general public will not be exposed to significant health risks because of the work as described in the WorkPlan.

C) Environmental concerns---All soils generated during drilling will be placed in sealed 55 gallon drums or in a covered and locked dumpster until samples can be collected and analyzed to determine the appropriate method of disposal.

6. GENERAL SAFE WORK PRACTICES

A) Eating, drinking, chewing gum or tobacco, smoking, or any practice that increases the probability of hand-to-mouth transfer and ingestion of material is prohibited in the work zone.

B) Hands, face, and other exposed skin must be thoroughly washed upon leaving the work area.

C) Contact with surfaces that contain or may contain chemical residues will be avoided whenever possible.

D) Medicine and alcohol can exacerbate the effects of exposure to toxic chemicals. Prescribed drugs should not be taken where there is a possibility of exposure to toxic compounds unless approved by a qualified physician. The use of alcohol or non-approved drugs is prohibited.

7. EMERGENCY RESPONSE

In the event of fire, explosion, injury, or other accident, the SSO or his designee will contact an appropriate emergency response group. A telephone will be available for emergency use on site at the UPS entrance gate desk. Site emergency telephone numbers are below:

Paramedics	**911**
Fire Department	**911**
Humana Hospital (Emergency)	**(415) 667-4545**
Poison Control Center	**(800) 662-9886 or 299-5112**
UPS	**(415) 633-3974**
Geraghty & Miller Inc.	**(415) 233-3200**

The nearest hospital to the UPS site is **Humana Hospital** located at 13855 East 14th Street, San Leandro (Figure 1). To get to the hospital from the UPS site, head south on Pardee Drive and then immediately turn right on Swan Way (west). Travel 0.25 mile on Swan Way then turn left on Doolittle Drive. Travel approximately 1.5 miles south, passing Hegenberger Road and Adams Avenue, and then make a left turn onto Davis Street (east). Travel about 2 miles on Davis Street until it intersects East 14th Street in San Leandro. Davis Street will cross over Interstate 880, and under the BART tracks before reaching East 14th Street. Turn right (south) on East 14th Street and travel about 1 mile to the intersection of 136th Avenue. Turn right on 136th Avenue and left into the entrance of **Humana Hospital**, the hospital is at the south corner of the intersection of East 14th Street and 136th Avenue in San Leandro (Figure 1).

8. SANITATION FACILITY

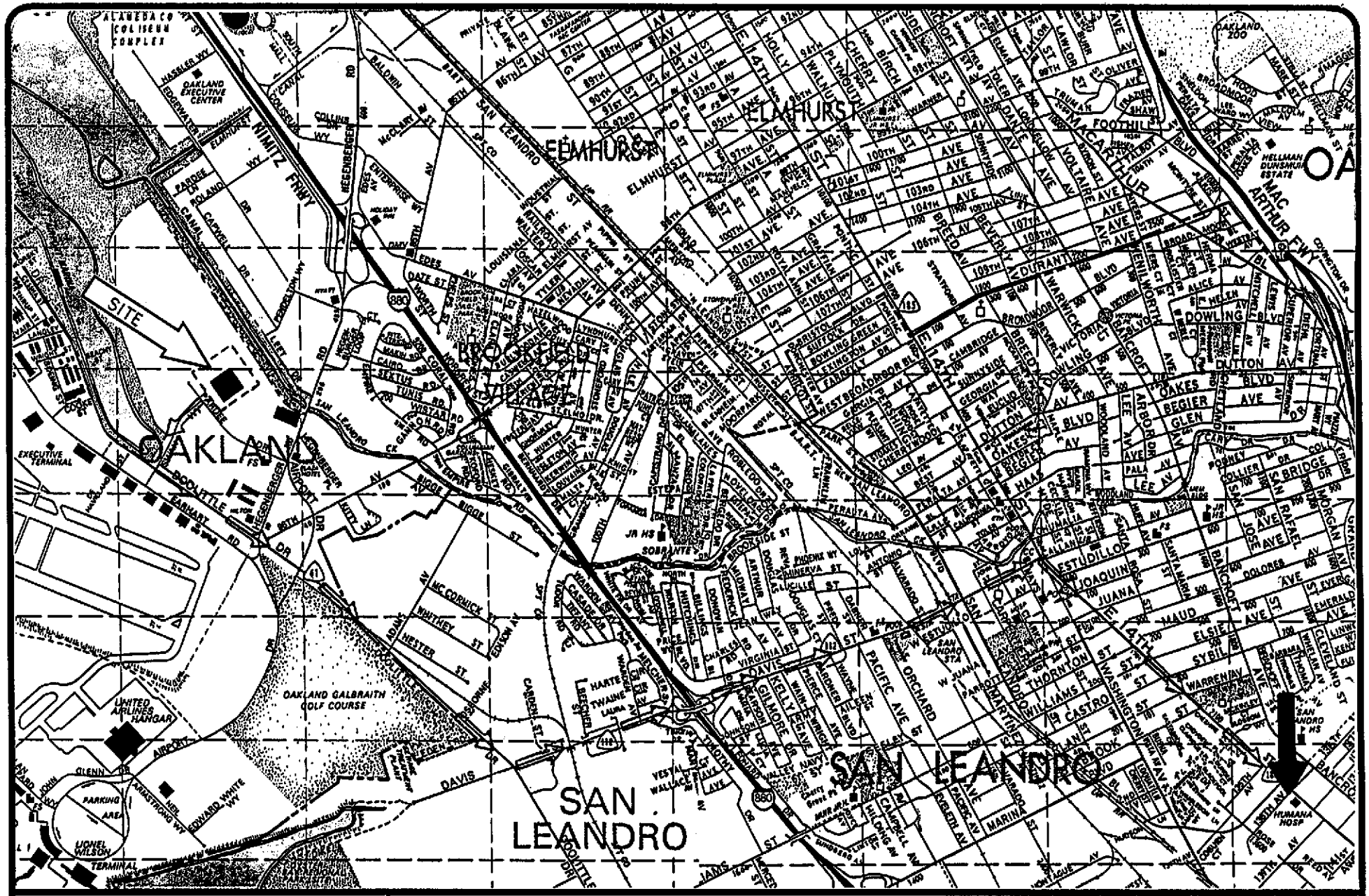
Restrooms and drinking fountain will be available on site.

9. TRAINING REQUIREMENTS

A) All Geraghty & Miller personnel have completed a 40 hour, OSHA approved health and safety training course complete with CPR certification.
B) A site safety meeting will be conducted by the SSO at the beginning of each working day to discuss any safety concerns with all site workers.

10. MEDICAL SURVEILLANCE

Geraghty & Miller has an occupational health monitoring program in accordance with 29 CFR 1910.120. This program involves an annual physical examination. The subcontractor is responsible for medical monitoring of its employees. HEW Drilling has an occupational health monitoring program in accordance with 29 CFR 1910.120 and all of HEW Drilling employees have attended a 40-hour health and safety training class according to Mr. Henry Wong, President, HEW Drilling.



HOSPITAL LOCATION MAP

UNITED PARCEL SERVICE
8400 Pardee Drive
Oakland, California

FIGURE
1

GERAGHTY & MILLER, INC.
Environmental Services

ATTACHMENT 2

EXPLORATORY DRILLING, SOIL SAMPLING, AND GROUND-WATER SAMPLING PROCEDURES

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EXPLORATORY DRILLING, SOIL SAMPLING, AND GROUND-WATER SAMPLING PROCEDURES

Exploratory Drilling and Soil Sampling Procedures

The exploratory borings will be drilled using 8-inch diameter hollow-stem auger drilling equipment. All drilling and soil sampling equipment which will enter the borehole will be steam cleaned prior to drilling each boring. Soil samples will be collected at approximately five-foot depth intervals using a modified California split-spoon sampler equipped with brass liners, which is advanced into the undisturbed soil beyond the tip of the augers. The soil samples will be logged by a Geraghty & Miller geologist.

During drilling, a combustible gas detector (Gas Tech Model 1314) will be used to screen soil samples for the presence of combustible vapors. The detector will be calibrated to hexane. A sample of the soil from each sampling interval will be placed into a glass jar and sealed with aluminum foil. After any volatile vapors which may be present in the soil sample are allowed time to equilibrate with the headspace in the jar (approximately 10 minutes), a measurement of the concentration of combustable vapors in the headspace will be made by inserting the tip of the detector through the aluminum foil. The concentration of combustible vapors measured as hexane will be recorded.

All soil and water generated during the exploratory drilling activities will be containerized in a dumpster and stored on-site for proper disposal by UPS. Following receipt of all laboratory analytical data, Geraghty & Miller will supply recommendations for proper disposal, if so requested by UPS.

Soil samples for laboratory analysis will be retained in the brass liners, sealed with non-adhesive Teflon tape and plastic end caps, stored in plastic zip-lock bags, placed on ice and transported to a state-certified laboratory along with chain-of-custody documentation.

Ground-Water Sampling Procedures

Prior to purging, depth to water and total depth measurements will be obtained, and each well will be checked for the presence of phase separated hydrocarbons, using an acrylic bailer. A ground-water sample will be collected from each well which does not contain floating product. A minimum of four casing volumes of water will be purged from each well prior to sampling, so that a ground-water sample representative of the formation is obtained. Purged water will be monitored for temperature, pH, and specific conductance. All equipment which enters the well will be washed in a solution of tri-sodium phosphate and triple rinsed in deionized water.

Ground-water samples for laboratory analysis will be collected with a polyethylene bailer and transported in appropriate USEPA approved containers on ice to a state-certified laboratory along with appropriate chain-of-custody documentation. All water generated during the ground-water sampling activities will be containerized in 55-gallon drums and stored on-site for proper disposal by UPS.