KO-2440

- add one more SB w/ planter between FD1 and FD3
- continuous log
- submit revised site plan w/ if necessary proposed MW locations after lab results reviewed.
- 10 feet screen below GW may be adequate if little seasonal change in DTW.
- SG from change in lithology

SITE CONTAMINATION WORK PLAN

BERNARD'S GAS
1051 AIRWAY BOULEVARD
LIVERMORE, CALIFORNIA

Grayland No. 120-010
January 18, 2002

GRAYLAND ENVIRONMENTAL

SITE CONTAMINATION WORK PLAN

BERNARD'S GAS
1051 AIRWAY BOULEVARD
LIVERMORE, CALIFORNIA

Grayland No. 120-010
January 18, 2002

Prepared For:

Mr. Gil Moore
New West Stations, Inc.
1831 16th Street
Sacramento, California 95814

Prepared By:

GRAYLAND ENVIRONMENTAL
2731 Quail Street
Davis, California 95616-5723

This document has been submitted for the sole and exclusive use of our client, and shall not be disclosed or provided to any other entity, corporation, or third party without the prior express written consent of Grayland Environmental. The findings, interpretations and recommendations presented herein are according to generally accepted professional environmental geologic practice at the time of preparation. There is no other warranty either expressed or implied.

January 18, 2002
120-010

FEB 13 2002

Mr. Gil Moore
New West Stations, Inc.
1831 16th Street
Sacramento, California 95814

Subject: Site Contamination Work Plan for a Subsurface Environmental Investigation
Bernard's Gas, 1051 Airway Boulevard, Livermore, California

Dear Mr. Moore:

Grayland Environmental (*Grayland*) has prepared the following Site Contamination Work Plan on your behalf at the request of eva chu of the Alameda County Environmental Health Division (ACEHD). The subject property (site) is occupied by Bernard's Gas and is located at 1051 Airway Boulevard in Livermore, California (Figure 1). The purpose of the proposed environmental investigation is to evaluate the spatial extent of soil contamination beneath the site and the potential that groundwater has been impacted by the unauthorized release of petroleum-based fuel hydrocarbons at the site. The objective of this environmental investigative work is to collect subsurface soil and groundwater samples at the site for laboratory testing. The following work plan presents our understanding of the current status of the site, a brief description of previous environmental work performed at the site and describes the proposed field procedures necessary to complete the subsurface environmental investigation. The technical scope of the proposed work includes:

- Preparing a site-specific health and safety plan (Appendix A herein)
- Procuring the appropriate soil boring/probe permits from Alameda County
- Completing three soil probes to approximately 20 feet below ground surface using a Geoprobe-type rig; collecting soil and groundwater grab samples from each soil probe
- Analyzing selected soil samples and groundwater samples at an environmental laboratory

If it is determined during the field investigation that groundwater beneath the site is impacted, then three soil borings will be completed for the purpose of installing groundwater monitor wells.

- Drilling three soil borings to approximately 30 feet below ground surface; collecting soil samples at selected intervals
- Installing a groundwater monitor well in each of the soil borings
- Developing, purging and sampling each of the groundwater monitor wells
- Analyzing selected soil samples and groundwater samples at an environmental laboratory
- Submitting a written report containing our findings, conclusions and recommendations

The technical scope of the proposed work is subject to change in the event of additional requirements directed by the local regulatory agency or because of unanticipated site conditions. Soil boring/monitor well permits are required for this site and will be obtained from Alameda County Flood Control and Water Conservation District Zone 7 prior to beginning work at the site.

It is our understanding that the owner(s) of the site has read, understands and has agreed to the scope of work as outlined in the following Site Contamination Work Plan. If you have any questions or concerns regarding the contents of the work plan, please do no hesitate to contact our firm. Thank you for the opportunity to provide our environmental consulting services.

Sincerely,
Grayland Environmental

Jeffrey A. Clayton, R.G., REA
Principal Geologist

JAC:jbc

attachment: Appendix A - Health and Safety Plan

cc: eva chu (Alameda County Environmental Health Division)

grayland@prodigy.net

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SITE CONTAMINATION WORK PLAN
BERNARD'S GAS
1051 AIRWAY BOULEVARD,
LIVERMORE, CALIFORNIA

1.0 INTRODUCTION

This work plan addresses the soil contamination detected during the replacement of fuel dispensers and underground product lines at the property (site) located at 1051 Airway Boulevard, in Livermore, California (Figure 1). The plan details the scope of work necessary to investigate the extent of petroleum-based fuel hydrocarbon contamination at the site. The site is owned and operated by New West Stations, Inc., of Sacramento, California. Alameda County Department of Public Health Care Services, Environmental Health Division (ACEHD) is the lead agency for project oversight. The representative for ACEHD is eva chu.

1.1 Purpose of the Investigation

The purpose of this investigation as described in this work plan includes:

- Assessing the magnitude and spatial extent of soil contamination beneath the site
- Evaluating the potential that groundwater beneath the site has been impacted by the release of petroleum-based fuel hydrocarbons at the site
- Investigating the hydrogeologic and stratigraphic conditions beneath the site

1.2 Technical Scope of Work

The technical scope of work in support of this work plan includes:

- Preparing a site-specific health and safety plan (Appendix A herein)
- Marking soil probe locations and notifying Underground Service Alert, prior to conducting underground work at the site
- Procuring the required soil boring/probe permits from Alameda County (Zone 7)
- Advancing and logging three soil probes to groundwater using a Geoprobe-type rig
- Collecting subsurface soil samples from each soil probe at approximate 5-foot intervals
- Collecting a groundwater sample at the air-water interface from each of the soil probes
- Analyzing soil and groundwater samples for TPHg, TPHd, BTEX compounds and the fuel oxygenates MtBE, dIPE, EtBE, tAME and tBA (see Section 4.0 for details)

If the laboratory analyses indicate that elevated concentrations of fuel hydrocarbon compounds are present in the groundwater samples, then three groundwater monitor wells will be installed at or near the perimeter of the property to evaluate the lateral extent of groundwater contamination and to measure the slope and direction of groundwater flow beneath the site. This work would include:

- Drilling and logging three soil borings to approximately 30 feet below ground surface
- Collecting soil samples at approximate 5-foot intervals from the soil borings
- Installing a 2-inch diameter groundwater monitor well in each of the soil borings (each well will be installed approximately 15 feet past the first occurrence of groundwater; it is anticipated that groundwater is present at approximately 15 to 20 feet beneath the site)
- Developing each of the groundwater monitor wells with a vented surge block
- Purging and sampling groundwater from each of the three groundwater monitor wells
- Surveying groundwater monitor well casings to an appropriate bench mark for absolute elevation and calculating the groundwater gradient beneath the site
- Analyzing soil and groundwater samples for TPHg, TPHd, BTEX compounds, and the fuel oxygenates MtBE, dIPE, EtBE, tAME and tBA
- Preparing a written Subsurface Environmental Investigation Report for submittal to the lead regulatory agency; the report will summarize field and laboratory data, and present the findings, conclusions and recommendations of the investigative work.

1.3 Time Schedule

The environmental investigative work described in this work plan will be initiated upon the written approval by ACEHD and the pre- approval for cost reimbursement from the State Water Resources Control Board UST Cleanup Fund Program. Field activities will be completed within approximately thirty days of mobilization. A Subsurface Environmental Investigation Report will be completed and submitted to ACEHD within approximately four to six weeks following the completion of the field investigation and the receipt of all laboratory analytical data.

2.0 SITE DESCRIPTION AND BACKGROUND

The site is located along the east side of Airway Boulevard, approximately 600 feet north of California Interstate 580. The site is occupied by Bernard's, a retail fueling station and convenience market and includes four underground gasoline and diesel fuel storage tanks, which are connected by underground lines to six fuel dispenser islands situated beneath the canopy at the site (Figure 2). The site building was used for retail sales and administrative offices and included a lube bay and car wash. The surface of the site surrounding the former fuel dispensers and overlying the underground storage tanks was covered with concrete. The remaining surface at the site was covered mainly with asphaltic-concrete and with a subordinate area of landscaping or bare soil.

2.1 Previous Environmental Work

Six fuel dispensers were dismantled and the associated underground product lines were unearthed and removed by Walton Engineering, Inc., of West Sacramento, California, during June, 2001. Soil material exposed by the trenching consisted of medium brown to grey clayey silt. Some water was present in the trenches as a result of a water line that was broken during the renovation work.

Following the removal of the six fuel dispensers and underground product lines, one soil sample was collected from beneath each former fuel dispenser. Additionally, nine soil samples were collected

from beneath the former underground product lines at the site (Figure 2). Field evidence for soil contamination (i.e., stained soil, odor of fuel hydrocarbons, etc.) was observed mainly beneath the former fuel dispensers FD1, FD2 and FD5 and beneath the former underground product lines at sample locations PL5 and PL7 (Figure 2). The soil samples were listed on a chain of custody record and transported directly to a State-accredited environmental laboratory for chemical testing.

The soil samples collected from beneath the former fuel dispensers and product lines at the site were analyzed by Kiff Analytical, LLC, of Davis, California, for total petroleum hydrocarbons in the range of gasoline (TPHg); the associated volatile organic compounds benzene, toluene, ethylbenzene and total xylenes (BTEX); and the fuel oxygenate methyl t-butyl ether (MtBE). Additionally, the soil samples collected from beneath two of the former fuel dispensers (FD1 and FD2) and from beneath the product lines at sample locations PL1, PL4 and PL5 were analyzed for total petroleum hydrocarbons in the range of diesel fuel (TPHd).

Laboratory results of the soil sample analyses indicated that elevated concentrations of TPHg, TPHd and BTEX compounds were present in the soil samples collected from the site (Table 1). The fuel oxygenate MtBE was detected in all of the soil samples except for one (S-5-PL5), which was reported at a significantly higher minimum reporting limit (0.25 parts per million) than the standard reporting limit of 0.005 parts per million (Table 1). The highest concentrations of TPHg were found in the soil samples collected beneath former fuel dispenser FD5 and the former product line coupling PL7 (Table 1 and Figure 2). The highest concentrations of TPHd were found in the soil samples collected beneath former fuel dispenser FD2 and the former product line coupling PL5 (Table 1 and Figure 2).

3.0 FIELD INVESTIGATION PROCEDURES

The proposed technical scope of work was summarized in Section 1.2 of this work plan. Field investigation activities are further described in this section.

3.1 Soil Probe Work

- Three soil probes will be pushed to depths coinciding with the first occurrence of groundwater or approximately 15 to 20 feet below ground surface (Figure 3).
- The soil probes will be advanced using a Geoprobe rig with steel rods. The rods will be steam-cleaned prior to advancing each soil probe. A field geologist will record the lithology and other pertinent data in a log of soil probes in accordance with the Unified Soil Classification System (USCS)
- Soil cuttings from the probes, if any, will be placed on and covered with plastic sheeting and will be evaluated using the analytical results of the soil samples collected from the probes.

continuous log

All probe work will be conducted by TEG, Inc., of Rancho Cordova, California, a C-57 licensed well driller, and will be directed and supervised by a qualified, State of California registered geologist from Grayland Environmental.

TABLE 1
LABORATORY RESULTS OF SOIL SAMPLE ANALYSES
FUEL DISPENSER AND PRODUCT LINE REMOVAL
1051 AIRWAY BOULEVARD, LIVERMORE, CALIFORNIA

Sample Number	TPHg	B	T	E	X	TPHd	MtBE	Total Lead
Soil Samples								
S-3-FD1	**760**	**0.13**	<0.10	**3.9**	**28**	**830**	**5.6**	na
S-4-FD2	**890**	<0.25	<0.25	**2.9**	**4.0**	**6,800**	**1.8**	na
S-3-FD3	**28**	<0.050	**0.36**	**0.24**	**2.7**	na	**0.97**	na
S-3-FD4	**3.5**	**0.0061**	<0.005	**0.032**	**0.11**	na	**0.81**	na
S-1-FD5	**2,800**	**0.59**	**29**	**32**	**190**	na	**3.6**	na
S-2-FD6	**29**	<0.010	<0.010	**0.11**	**0.021**	na	**0.066**	na
S-4-PL1	<5.0	<0.050	<0.050	<0.050	<0.10	**10**	**7.5**	na
S-3-PL2	**2.9**	<0.050	**0.052**	**0.036**	**0.40**	na	**2.7**	na
S-3-PL3	<1.0	<0.005	**0.016**	**0.014**	**0.10**	na	**0.092**	na
S-5-PL4	<1.0	<0.005	<0.005	<0.005	<0.005	<1.0	**0.0076**	na
S-5-PL5	**270**	<0.25	**0.31**	**0.80**	**4.1**	**9,500**	<0.25	na
S-4-PL6	<1.0	<0.005	<0.005	<0.005	**0.024**	na	**0.14**	na
S-4-PL7	**1,100**	<0.10	<0.10	**7.8**	**44**	na	**1.4**	na
S-3-PL8	<1.0	<0.005	<0.005	<0.005	<0.005	na	**0.017**	na
S-3-PL9	<1.0	<0.005	<0.005	<0.005	**0.0083**	na	**0.39**	na

Laboratory results of soil samples are reported in milligrams/kilogram (parts per million)
TPHg = Total Petroleum Hydrocarbons in the range of gasoline
B = Benzene T = Toluene E = Ethylbenzene X = Total Xylenes
TPHd = Total Petroleum Hydrocarbons in the range of diesel fuel
MtBE = Methyl t-Butyl Ether
< = Less than the laboratory method reporting limit na = not analyzed

3.1.1 Soil Sample Collection

- The soil sampling equipment and sample sleeves will be washed with an alconox or tri-sodium phosphate solution and rinsed with clean water prior to each sampling event. change in Lithology
- Soil samples will be collected at approximate 5-foot intervals from ground surface to first occurrence of groundwater (and possibly from below the groundwater surface).
- Soil material retrieved from the soil probes will be placed in individual sealed plastic bags for approximately five minutes prior to measuring the volatile organic compounds (e.g., gasoline, benzene, etc.) in the soil with a photo-ionization detector (PID) or equivalent field instrument; field screening results will be recorded in the log of soil probes.
- The soil samples will be collected by pushing a split-spoon sampling device through the bottom of the probe hole at the specified sampling depth using a hydraulic ram.
- Steel sleeves containing laboratory samples will be sealed, labeled, listed on a chain of custody record, placed in iced storage and transported to a State of California accredited environmental laboratory for the specified analyses.

3.1.2 Groundwater Grab Sample Collection

If groundwater is encountered in a soil probe, then a groundwater hydropunch® (or well-point) sample will be collected from that soil probe. Probe work will be halted at the depth where groundwater is first encountered. The hydropunch (or well-point) will be pushed hydraulically through the capillary fringe zone and seated in the saturated zone. After retracting the hydropunch®, groundwater will be retrieved through the hollow center of the steel rods using a steam-cleaned stainless steel bailer. The groundwater specimen will be transferred slowly to laboratory-sterilized glass receptacles. The sample containers will be labeled and placed in iced storage for delivery to the environmental laboratory with the proper chain of custody record.

NOTE: If it is determined that the groundwater beneath the site has not been impacted with fuel hydrocarbons, then a report will be prepared for the soil and groundwater grab samples collected during the Geoprobe work, as indicated in Section 5.0 of this Work Plan. If the laboratory analytical work indicates that the groundwater is impacted, then the installation of groundwater monitor wells and groundwater sample collection will be implemented as part of this work plan.

3.2 Soil Boring

10 feet is adequate unless prof there is vast GW fluctuation

- Three soil borings will be drilled to depths of approximately 30 to 35 feet below ground surface or approximately 15 feet into the first occurrence of groundwater (Figure 3).
- The soil borings will be advanced using a truck-mounted drill rig with continuous flight, hollow-stem augers. The augers will be steam-cleaned prior to drilling each soil boring. A geologist will record the lithology and other pertinent data in a log of soil borings in accordance with the Unified Soil Classification System (USCS).
- Soil cuttings generated during the drilling work will be placed on and covered with plastic sheeting and will be evaluated using the analytical results from the soil samples collected from the soil borings.

All drilling work will be conducted by Woodward Drilling of Rio Vista, California, a C-57 licensed well driller, and will be directed and supervised by a qualified, State of California registered geologist from *Grayland.*

3.2.1 Soil Sample Collection

- The soil sampling equipment and sample sleeves will be washed with an alconox or tri-sodium phosphate solution and rinsed with clean water prior to each sampling event.
- Soil samples will be collected at approximate 5-foot intervals from ground surface to first occurrence of ground water (and possibly from below the groundwater surface).
- Soil material retrieved from the soil borings will be placed in individual sealed plastic bags for approximately five minutes prior to measuring the volatile organic compounds (e.g., gasoline, benzene, etc.) in the soil with a photo-ionization detector (PID) or equivalent field instrument; field screening results will be recorded in the log of soil boring.

- The soil samples will be collected by driving a split-spoon sampling device through the base of the bore hole at the specified sampling depth. The sampler will be driven ahead of the auger by dropping a 140-pound hammer approximately 30-inches per blow.
- Laboratory samples will be sealed, labeled, recorded on a chain of custody record, placed in iced storage and transported to an environmental laboratory for the specified analyses.

3.3 Monitor Well Installation

Each groundwater monitor well will be constructed using flush-jointed, 2-inch inner diameter, Schedule 40 polyvinyl chloride (PVC) well casing. No chemical cements, glues or solvents will be used in well construction. The base of each well will be fitted with a threaded PVC end cap. The screened portion of each well will consist of factory-perforated casing with 0.020-inch-wide slots. The well screen will be set through the augers and will extend from the total depth of the soil boring (approximately 30 to 35 feet) to approximately 5 to 10 feet above the groundwater surface at the time the well is installed. This construction design allows for sample collection near the air/water interface in the formation during seasonal fluctuations of groundwater elevation.

The annular space of each well will be packed with sorted #3 Monterey sand to a point approximately 2 feet above the top of the perforated casing. A 1- to 2-foot-thick plug consisting of hydrated bentonite pellets/chips will be placed above the sand pack in each well to prevent cement from entering the sand. The remaining annulus will be backfilled with a mixture of neat cement and powdered bentonite (<5%) to near grade. Cast-iron utility boxes with sheet metal aprons will be placed over the well heads and set in concrete flush to slightly above the surrounding grade. These utility boxes have a watertight seal to protect against surface-water infiltration; the cover to each box is attached by countersunk bolts. The wells will be fitted with locking caps to protect against vandalism and reduce the possibility of an accidental disturbance of the wells.

3.3.1 Monitor Well Development

Following the well installation work, each groundwater monitor well will be developed using a 2-inch diameter, vented surge block for at least 1.5 to 2 minutes for every 2 feet of submerged well screen. Following the surging procedure, each well will be purged of at least five well-casing volumes of groundwater. During well purging, values of groundwater pH, conductivity and temperature may be measured and recorded. The wells will be allowed to stand for a sufficient period of time (approximately 48 hours) so that the groundwater can reach static equilibrium and the suspended sediment can settle.

3.3.2 Groundwater Sample Collection

After a period of at least 48-hours following well development, depth to groundwater will be measured in each well and a groundwater specimen will be retrieved from each well for subjective examination by lowering a clean plastic bailing device to the groundwater surface and retrieving a groundwater specimen. The groundwater specimens will be examined for evidence of fuel hydrocarbon contamination (i.e., floating product, sheen or odor). If floating product is detected in

a well, that well will not be purged or sampled. If the well does not show floating product, it will be purged by pumping groundwater using a submersible electric pump until a minimum of ten well-casing volumes are purged and stable field readings of groundwater pH, specific conductivity and temperature are attained.

After groundwater returns to greater than 90% of the static groundwater elevation (initial depth to groundwater measurement), each well will be sampled using a clean bailer. Each groundwater sample will be transferred slowly through a clean port to laboratory-sterilized, 40-milliliter glass vials. The sample containers will be labeled and placed immediately in iced storage. In addition to the samples from each monitor well, one field blank may be collected and analyzed for the same chemical constituents for quality control. The groundwater samples will be transported and submitted to the environmental laboratory with the required chain of custody record. Purged groundwater will be stored at the site in labeled, Department of Transportation (DOT)-approved 55-gallon drums. Disposal options for this water depends on the results of the laboratory analyses. Responsibility for the proper disposal of purged groundwater belongs to the site owner.

4.0 LABORATORY ANALYSES

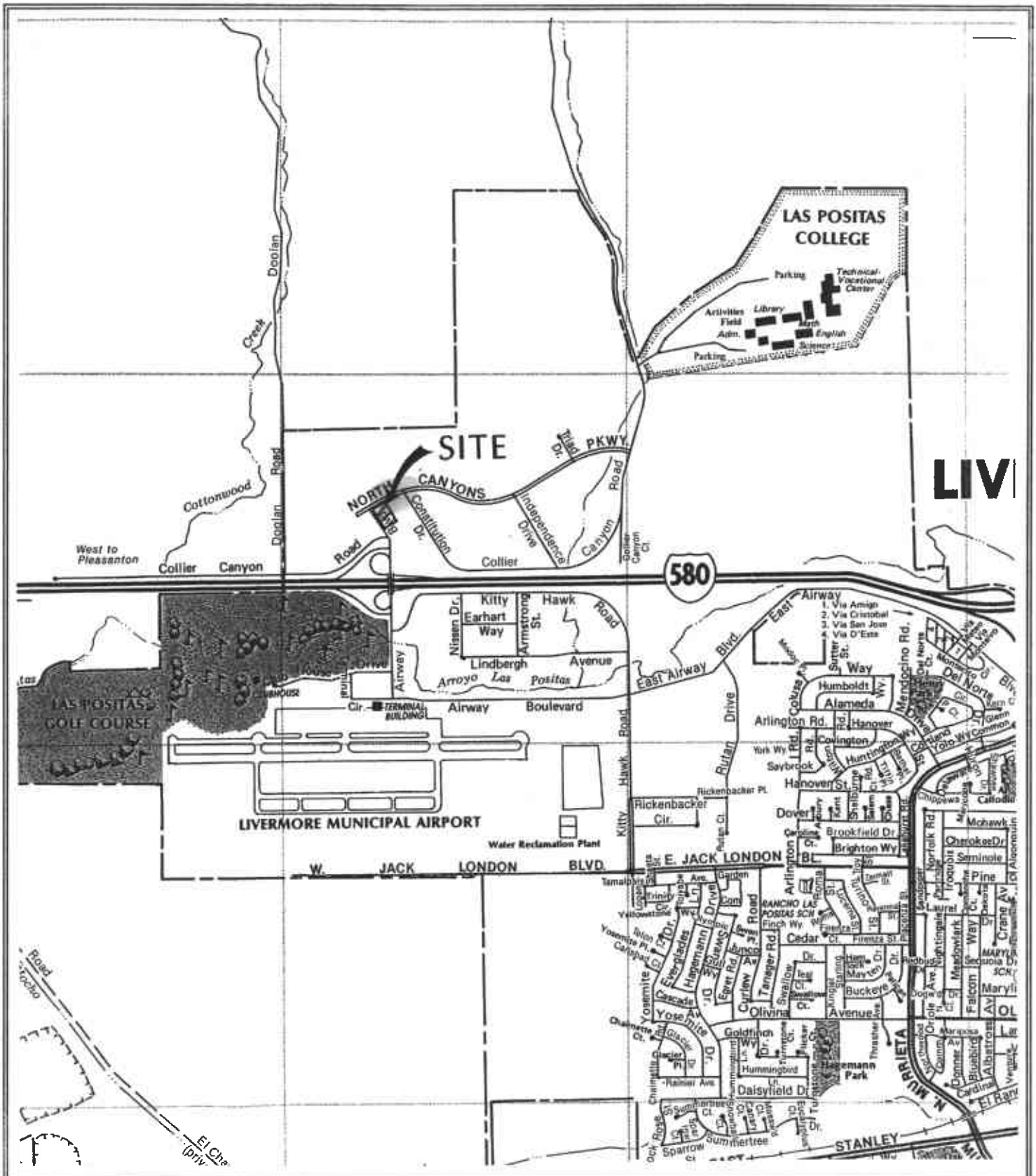
Kiff Analytical, LLC, of Davis, California, a State of California accredited environmental laboratory, will analyze the soil and groundwater samples in accordance with Environmental Protection Agency (EPA) guidelines and protocols. All of the selected soil samples will be analyzed by EPA method 8015 for TPHd and by EPA method 8260B with purge and trap EPA method 5030 for TPHg, BTEX compounds and the fuel oxygenate MtBE. It is anticipated that a total of nine soil samples will be analyzed. Each of the groundwater samples will be analyzed for TPHd using EPA method 8015 modified and for TPHg, BTEX compounds, the fuel oxygenates MtBE, dIPE, EtBE, tAME and tBA, and the lead scavenger 1,2-dichloroethane (DCA) using EPA method 8260B with purge and trap EPA method 5030. It is anticipated that a total of three groundwater samples will be analyzed.

5.0 REPORT PREPARATION

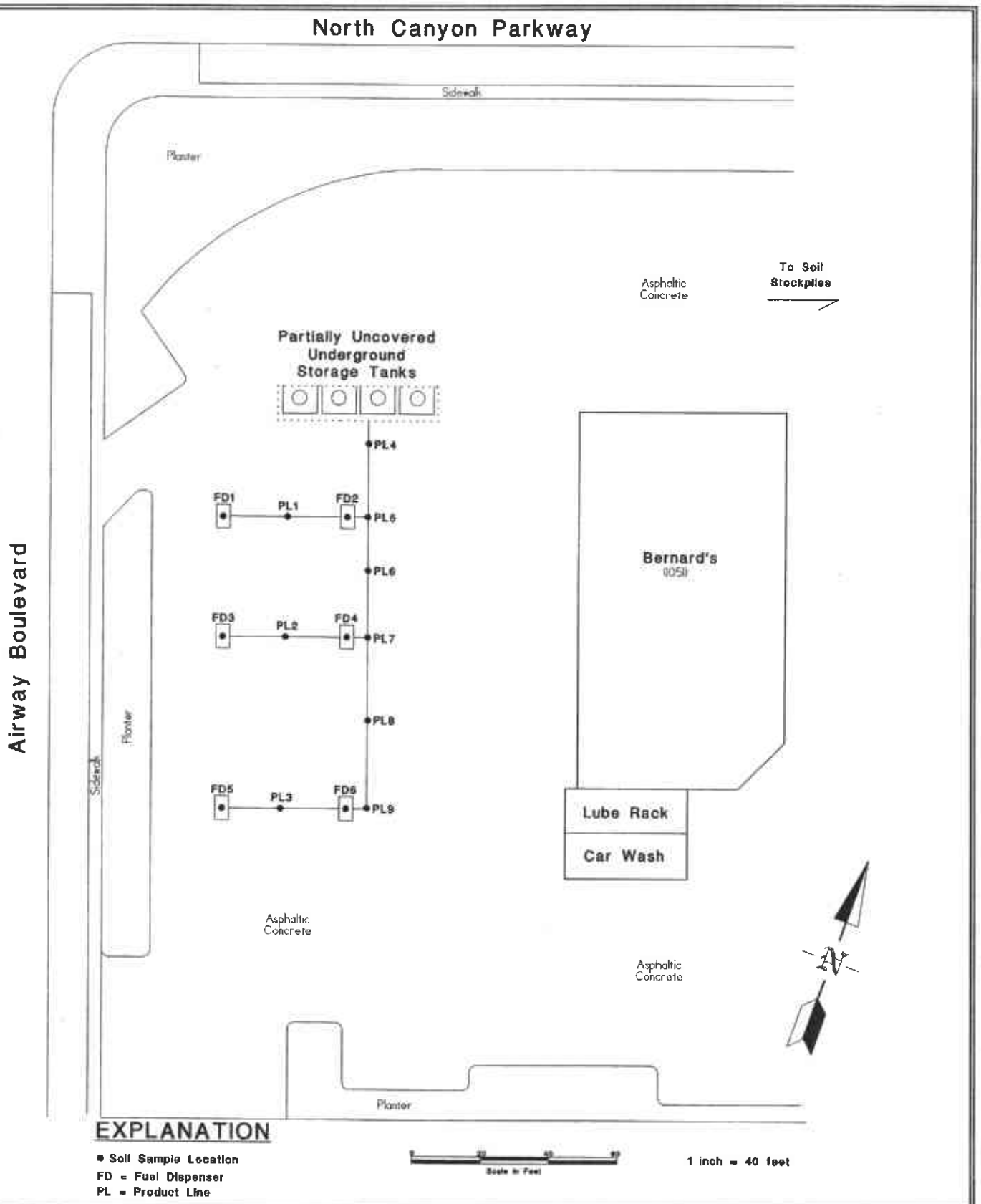
A written report will be prepared for submittal to ACEHD. The report will include a summary and description of all field operations and sampling methodologies employed at the site, the results of all laboratory analyses preformed on soil and groundwater samples, and the results, conclusions and recommendations of the site investigation work. Final soil probe/boring locations will be depicted on an illustration of the site plan. A log of the soil probes/borings and any groundwater monitoring data collected at the site will be included in the report.

6.0 QUALITY ASSURANCE

The proposed investigation will follow protocols approved by ACEHD and the San Francisco Bay Regional Water Quality Control Board (SFBRWQCB) as set forth in Appendix A of the Tri-Regional Board Staff Recommendations for Preliminary Investigation and Evaluation of Underground Storage Tank Sites. All work will be preformed according to current generally accepted practice in the fields of environmental engineering and hydrogeology.



DRAFTED BY: JAC	CHECKED BY: JAC	PROJECT NO. 022-280	SCALE: 1:24,000	***GRAYLAND ENVIRONMENTAL***
DWG DATE: 1982	REV DATE: 1993	**BERNARD'S GAS**	**FIGURE 1**	
MAP SOURCE: Compass Maps, Inc. Livermore Pleasanton		**1051 AIRWAY BOULEVARD LIVERMORE, CALIFORNIA**	**SITE LOCATION MAP**	2731 Quail Street Davis, CA 95616

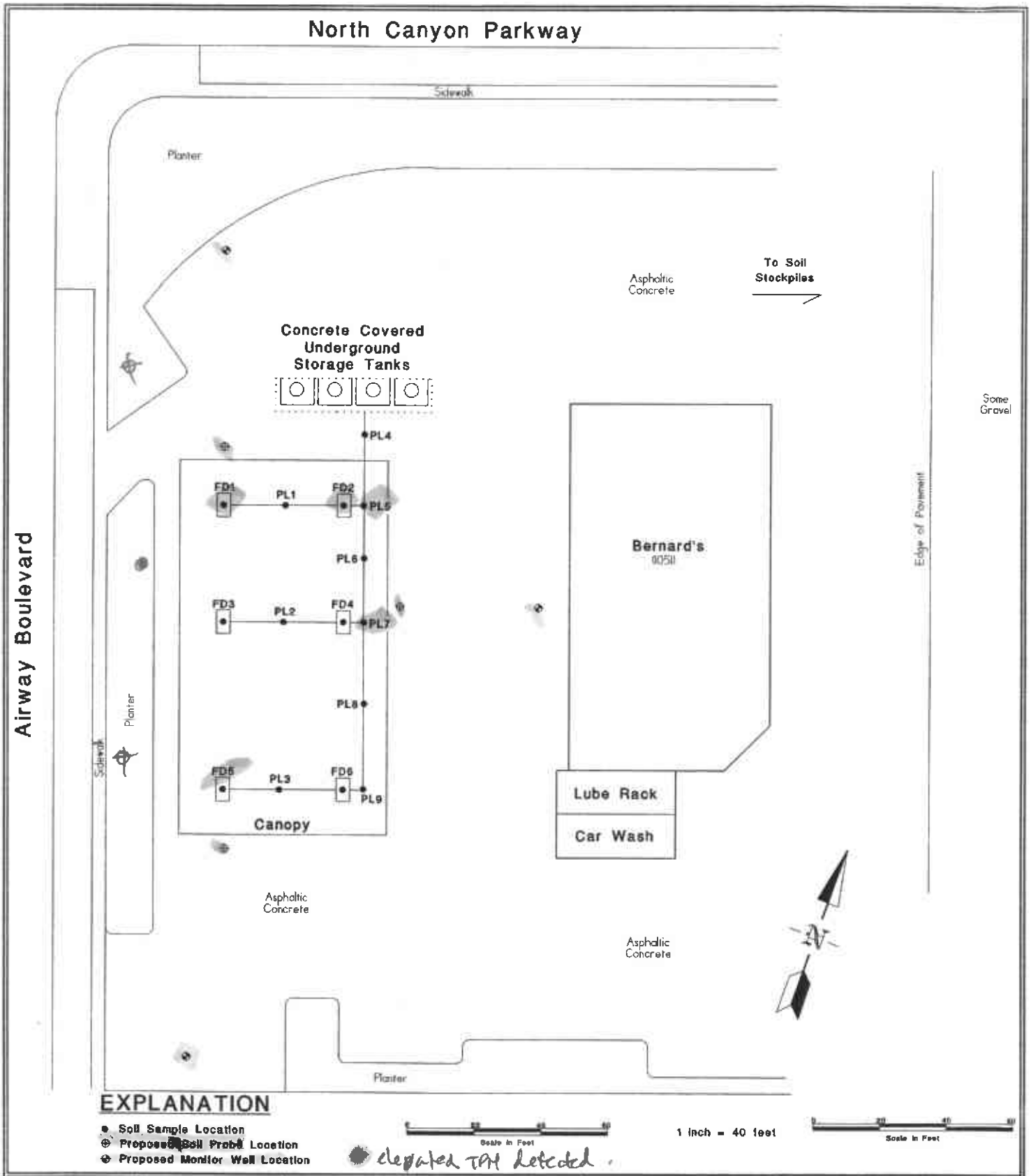


DRAFTED BY: JAC	CHECKED BY: JAC	PROJECT NO. 022-280	SCALE: 1:480	***GRAYLAND ENVIRONMENTAL***
DWG. DATE: 06-20-01	REV. DATE:	**BERNARD'S GAS**	**FIGURE 2**	
MAP SOURCE: Site Visit Sketch		**1051 AIRWAY BOULEVARD LIVERMORE, CALIFORNIA**	**GENERALIZED SITE PLAN**	2731 Quail Street Davis, CA 95616

Water contours provided by Zone 7 suggest GW may flow SSW. Therefore, would like proposed well SSW of dispensers and possible one that is NW and closer ~ 20' from release

See recommended locations in red ✱
However locations can be determined based on results from soil borings + grab GW samples.

Also recommend another soil boring ~~West~~ WSW to distance FD1



DRAFTED BY:	CHECKED BY:	PROJECT NO. 120-010	SCALE: 1:480	*GRAYLAND ENVIRONMENTAL*
JAC	JAC			
DWG DATE: 06-20-01	REV DATE: 01-14-02	**BERNARD'S GAS**	**FIGURE 3**	
MAP SOURCE: Site Visit Sketch		**1051 AIRWAY BOULEVARD LIVERMORE, CALIFORNIA**	**PROPOSED SITE INVESTIGATION**	2731 Quail Street Davis, CA 95616

APPENDIX A
HEALTH AND SAFETY PLAN

January 18, 2002
120-010

HEALTH AND SAFETY PLAN
SUBSURFACE INVESTIGATION WORK
1051 AIRWAY BOULEVARD
LIVERMORE, CALIFORNIA

INTRODUCTION

This Health and Safety Plan (HSP) delineates the basic safety requirements for subsurface investigative work at the property located at 1051 Airway Boulevard in Livermore, California. The investigative work includes the operation of heavy equipment such as excavators, backhoes and drill rigs. Work at the site consists of removing soil and groundwater from the subsurface using a truck-mounted Stratoprobe or drilling rig and may include handling and stockpiling soil, which has the potential for being contaminated with gasoline, diesel fuel, benzene and the fuel oxygenate methyl t-butyl ether (MtBE).

The provisions set forth in this HSP will apply to the employees of Grayland Environmental (*Grayland*) and other contractors and/or subcontractors working on this project. The contractors/subcontractors may elect to modify these provisions, but only to upgrade or increase the safety requirements, and only with the concurrence of *Grayland*, as designated and accepted in writing.

This HSP addresses the expected potential hazards that may be encountered for this project. Field activities are planned to begin during March, 2002, with the duration estimated at approximately 1 to 2 days. If changes in site or working conditions occur as the activities progress, addenda to this HSP will be provided by *Grayland*.

AUTHORITY FOR SITE SAFETY

Grayland personnel responsible for the project safety are the Project Manager and the field geologist. The Health and Safety Coordinator is responsible for the overall Health and Safety Program of *Grayland* and may choose to audit any site for compliance and take appropriate action to correct deficiencies. The Project Manager is responsible for implementing the provisions of this HSP, providing a copy of this HSP to the field personnel, and advising personnel involved in site activities on health and safety matters. The Project Manager and field geologist have the authority to audit site activities for compliance with the provisions of this HSP and may suspend or modify work practices or dismiss subcontractors whose conduct does not meet the requirements specified in this HSP.

The Project Manager and field geologist are responsible for the dissemination of the information contained in this HSP to *Grayland*, personnel assigned to the project, and to the responsible representative of each contractor/subcontractor firm working with *Grayland* on the project. The field geologist will act as the Site Safety Officer. As such, the field geologist is responsible for adequately addressing the following items:

- Safety supplies and equipment inventory onsite
- Training programs and hazard communication
- Procedures for reporting accidents or incidents
- Decontamination and contamination-reduction procedures

The field geologist has the authority to suspend work any time he or she finds that the provisions of the HSP are inadequate for worker safety. The field geologist will promptly inform the Project Manager and the Health and Safety coordinator of any deficiency within the HSP or individuals or subcontractors whose conduct is not consistent with the requirements of this HSP.

SAFETY AND ORIENTATION MEETINGS

Field personnel from *Grayland* and other contractors/subcontractors will attend a project specific training meeting for safety issues and review the project tasks before beginning work. The meeting will be led by the field geologist.

HAZARDOUS MATERIALS PRESENT

Previous work at the site has shown that a portion of the site's subsurface soil may be contaminated with benzene, MtBE, gasoline and diesel fuel.

TABLE 1: HAZARDOUS COMPOUNDS
1051 AIRWAY BOULEVARD
LIVERMORE, CALIFORNIA

Contaminant	Hazardous Property	Route of Entry	Exposure Limits
Benzene	Carcinogen	Inhalation/Ingestion	0.01 ppm
MtBE	Toxic	Inhalation/Ingestion	0.10 ppm
Gasoline	Toxic	Inhalation/Ingestion	10.0 ppm
Diesel fuel	Toxic	Inhalation/Ingestion	10.0 ppm

GENERAL PROJECT SAFETY REQUIREMENTS

Project activities will be conducted in accordance with the following minimum safety requirements: Eating, drinking, and smoking will be restricted to a designated area. The field geologist will be responsible for taking necessary steps to protect employees from physical hazards, including:

- Falling objects, such as tools or equipment
- Falls from elevations
- Tripping over hoses, pipes, tools, or equipment
- Slipping on wet or oily surfaces
- Insufficient or faulty protective equipment
- Insufficient or faulty equipment or tools

PROTECTIVE EQUIPMENT REQUIREMENTS

Field personnel and visitors are required to wear the following clothing and equipment, as a minimum, while in the work area of the project site:

- Hard hat
- Safety glasses
- Steel-toed boots
- Long pants and shirt

Laboratory samples will be handled while wearing nitrile rubber gloves.

WORK ZONES AND SECURITY MEASURES

The prime contractor will contact Underground Services Alert (USA) and the utilities will be marked before any excavation or drilling is conducted onsite. Drilling or excavation work will be performed at a safe distance from utilities. The areas of excavation will be designated as Exclusion Zones. Only essential personnel will be allowed into an Exclusion Zone.

Cones, wooden barricades, or a suitable alternative will be used to deny the public assess to these Exclusion Zones. The public will not be allowed close to the work area under any conditions. If for any reason the safety of a member of the public (e.g., motorist, pedestrian, etc.) may be endangered, work will cease until the situation is remedied. Cones and warning signs will be used when necessary to redirect motorists or pedestrians. All combustion equipment will be clean and in good working order. All state and local safety requirements, including traffic control, are to be observed during excavation.

Respirators equipped with particulate and organic vapor filters will be worn by field personnel if ambient organic vapor reading taken on a photo-ionizing organic vapor meter exceeds 10 parts per million or if visible dust is apparent. Drilling or excavation work will proceed in a manner designed to reduce creation of airborne dust to the extent reasonably achievable.

EMERGENCY RESPONSE PROCEDURES

In the event of an accident resulting in physical injury, first aid will be administered and the injured worker will be transported to the nearest hospital or emergency medical clinic for emergency medical clinic for emergency treatment. A physician's attention is required regardless of the severity of the injury.

In the event of a fire, explosion, or property damage, the nearest *Grayland* office (Davis) will be immediately notified. If necessary, local fire or response agencies will be called.

EMERGENCY TELEPHONE NUMBERS

Fire and Police 911

Valley Care Medical Center
5555 Las Positas Boulevard
Pleasanton, CA . . . . . (925) 847-3000

Directions to the Hospital: Return to Interstate-580 via Airway Boulevard and proceed west approximately 2.9 miles and exit the Interstate at Santa Rita Road (left turn). Proceed south approximately 0.7 miles and turn right on to Las Positas Boulevard. Hospital entrance is on the right.

ADDITIONAL CONTINGENCY TELEPHONE NUMBERS

Livermore Pleasanton Fire Department . . . . . (925) 454-2361
Grayland Environmental (Davis) . . . . . (916) 756-1441

This Site Safety Plan has been reviewed by the following persons:
Project Manager: Jeffrey Clayton
Field Geologist: Jeffrey Clayton
Health and Safety Coordinator: Jeffrey Clayton

By:_____

By:_____

Amendments or modifications to this HSP may be written on a separate page and attached to this HSP. Any amendments or modifications must be reviewed and approved by the personnel named above.