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January 14, 1992

BSK PROPOSAL PR92001

R.T. Nahas Company/Eden Managements
20630 Patio Drive
Castro Valley, CA 94546

Attention: Mr. Randy T. Nahas

Subject: Proposal/Work Plan
Soil and Groundwater
Lateral Plume Characterization
Unocal 76 Service Station
20405 Redwood Road
Castro Valley, California

Gentlemen:

At your request, BSK & Associates has prepared this Proposal/Work Plan for additional characterization of the lateral extent of soil and groundwater contamination in the vicinity of the Unocal Service Station at 20405 Redwood Road, Castro Valley, California.

PURPOSE AND SCOPE

Purpose

Following their review of quarterly groundwater monitoring reports of existing wells at the site, and the soil hydrocarbon contamination assessment report completed by BSK in April 1991 (P90165), the Alameda County Environmental Health Department (ACEH) has requested that additional work be performed at the site. **ACEH recognizes that the southern limits of shallow soil contamination are not known, as well as the southern, eastern, and western boundaries of shallow groundwater contamination.**

Definition of these boundaries has not been performed to date because further characterization would be needed outside the subject property.

ACEH requests that the shallow soil and groundwater contamination limits be defined, and cites the State Health and Safety Code empowering them to pursue contamination investigation across property boundaries, in their letter of December 10, 1991 to Randall Nahas.

Scope

In order to further define and characterize shallow soil and groundwater contamination in the site vicinity, BSK proposes the following tasks be performed.

TASK 1 - Advancement of Five to Seven Shallow Soil Borings

The soil borings would be advanced to just above the groundwater surface at the locations indicated on the Site Plan, Figure 1. One soil sample minimum would be obtained at the terminus of each boring. The borings are intended to further define the length and breadth of shallow soil contamination, as well as indicate placement of additional groundwater monitoring wells.

Borings not used for the installation of groundwater monitoring wells would be backfilled to surface with either neat cement or an 11-sack cement sand slurry.

TASK 2 - Installation of Three Shallow Groundwater Monitoring Wells

Three monitoring wells would be installed to depths of 30 to 40 feet to intersect the upper surface of the first aquifer encountered. The wells would be placed essentially as indicated on Figure 1; however, the actual siting would be determined by encountered soil and groundwater conditions. The installed wells would be used to help delineate the extent of shallow groundwater contamination.

TASK 3 - Development of the Installed Wells and Sampling of All Groundwater Wells

Following installation of the three proposed wells, the wells would be developed for groundwater sampling. The wells pertaining to plume definition would then be sampled and analyzed for gasoline-related hydrocarbons.

TASK 4 - Well Elevation and Location Control

A licensed surveyor would be retained to provide the elevation and horizontal location of each well point (existing and new) in order to provide accurate well location, and derivation of groundwater flow direction.

TASK 5 - Reporting

Upon completion of the field work described, and receipt of the chemical analyses, a report would be prepared describing the work performed, conditions encountered, and provide analytical results, conclusions, and recommendations for additional work, if necessary.

METHODOLOGY

Borings

Soil and groundwater monitoring well borings, would be advanced utilizing a Mobile Drill B-53 truck-mounted rotary drill rig, using 8-inch O.D. hollow-stem auger.

Well Construction

The groundwater monitoring wells would be constructed according to details given in Figure 2, Typical Monitoring Well Construction Details. The screened portion of the well would intersect 10 to 15 feet of aquifer, and extend above the upper aquifer boundary one to two feet to accommodate water level fluctuation. The well would be placed so as

to center the well pipe in the boring. Surface seal would consist of neat cement or 11-sack cement sand slurry, and be placed by tremie if conditions so dictate. A well tag giving well construction and installation details would be affixed to the locking cap in the well box.

Sampling

SOIL - Soil samples would be obtained by driving a Modified California Split Spoon Sampler housing three 2- by 6-inch stainless steel or brass sampling sleeves into the desired soil strata. Upon sampler retrieval, the selected sample tube would be capped at both ends with teflon sheeting, then pressure-fitted plastic caps secured with duct tape. The sample would then be labeled and refrigerated by dry ice for delivery to our State-certified analytical laboratory.

Logging and classification of soil samples would be performed a minimum of every five-feet of boring depth. Classification would be performed using the Unified Soil Classification System, under the direction of a Registered Geologist. Selection of soil samples for chemical analysis would be aided in the field by use of a portable Photo-Ionization Detector (PID).

WATER - Prior to groundwater sampling, development of newly installed wells by surging and pumping would be performed to set the well pack and condition nearby surrounding sediments. Subsequently, each well would be purged of 4 to 10 well volumes prior to sampling in order to acquire a more representative sample of formation water. Sample acquisition would be performed with Teflon bailer or bladder pump. Water samples would be obtained in order of volatility of the target compounds, and retained in the appropriate container with preservative (if necessary) per analysis. The samples would be refrigerated for delivery to the laboratory.

Sampling and drilling equipment would be thoroughly cleansed prior to introduction to the site and between samples, or as necessary, to prevent cross-contamination between samples and from outside sources. Waste water and soil generated during site activities would be drummed and stored on-site until the waste disposition is determined by analysis. Subsequent disposal of soil and water wastes is the responsibility of the client.

ITEMIZED FEE ESTIMATE

Item	Fee Estimate
Work Plan Preparation and Permitting:	$ 570.00
Field Work -	
Borings and Well Installation:	8,200.00
Well Development, Sampling: and Surveying:	2,820.00
Well Materials:	2,170.00
Chemical Testing -	
10 Soil Samples:	1,875.00
6 Water Samples:	1,320.00
Supply and Laboratary Fees:	260.00
Report Preparation:	$ 2,065.00
ESTIMATE TOTAL:	$19,280.00
ESTIMATE RANGE:	$18,000.00 to $20,000.00

Chemical Analyses

Soil and water samples would be analyzed for the following gasoline related hydrocarbon compounds, as specified by the Tri-Regional Water Quality Control Board: Benzene, Toluene, Ethylbenzene and Xylene (BTEX), and Total Petroleum Hydrocarbons as Gas (TVH) and Diesel (TPH). Analysis for Organic Lead would not be performed due to previous findings indicating the absence of this compound.

Health and Safety

BSK & Associates personnel would utilize health and safety measures appropriate for the exploration and handling of gasoline contaminated materials. In addition, the safety of our employees, objects, and persons in the vicinity of the work area would be addressed via traffic control and other barriers, and establishment of controlled exclusion zones. However, BSK cannot accept responsibility for the safety of non-BSK personnel in controlled work areas.

SCHEDULE AND FEES

As related to BSK by Randy Nahas, a date for the commencement of field work cannot be determined prior to negotiation with the owner of the property to be characterized. Once determined, the Tasks described in this proposal could be completed within five to six weeks of approval to proceed.

The estimated fee range for the scope of services described is $18,000 to $20,000. The fee range maximum of $20,000 would not be exceeded without prior authorization by the client. The actual cost would be computed in accordance with our 1992 Fee Schedule. An itemized breakdown of the estimated fee is provided on the following page.

* * * *

BSK would not be held responsible for damage to underground facilities not clearly delineated on a scaled site plan made available to us prior to site entry, or marked on the ground surface.

Enclosed are two copies of our Standard Form Agreement for your review. If you are in agreement with the proposed scope of work and stated fee, please sign and return both copies as our authorization to proceed. We will return an executed copy of the Agreement for your files.

BSK & Associates appreciates this opportunity to be of service to you. If there are questions regarding this Proposal, please contact as.

Respectfully submitted,
BSK & Associates

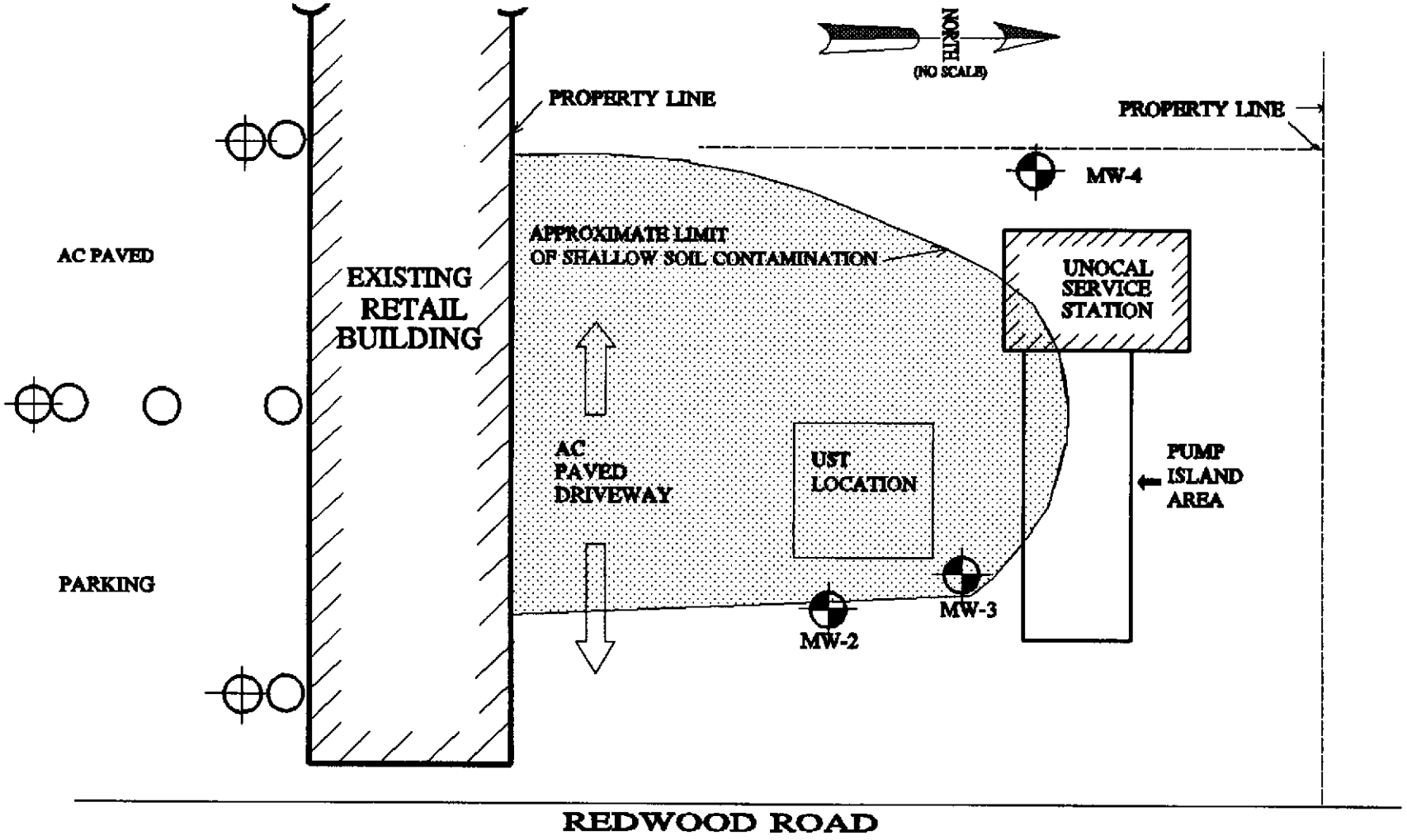
Alex Y. Eskandari, P.E.
Project Manager

Tim W. Berger, R.G.
Project Geologist

AYE:TWB/hhc
(PRO/GEO.D19)

Enclosures: Site Plan
Typical Monitoring Well Construction Details
Standard Form Agreement (2 originals)

BSK & Associates



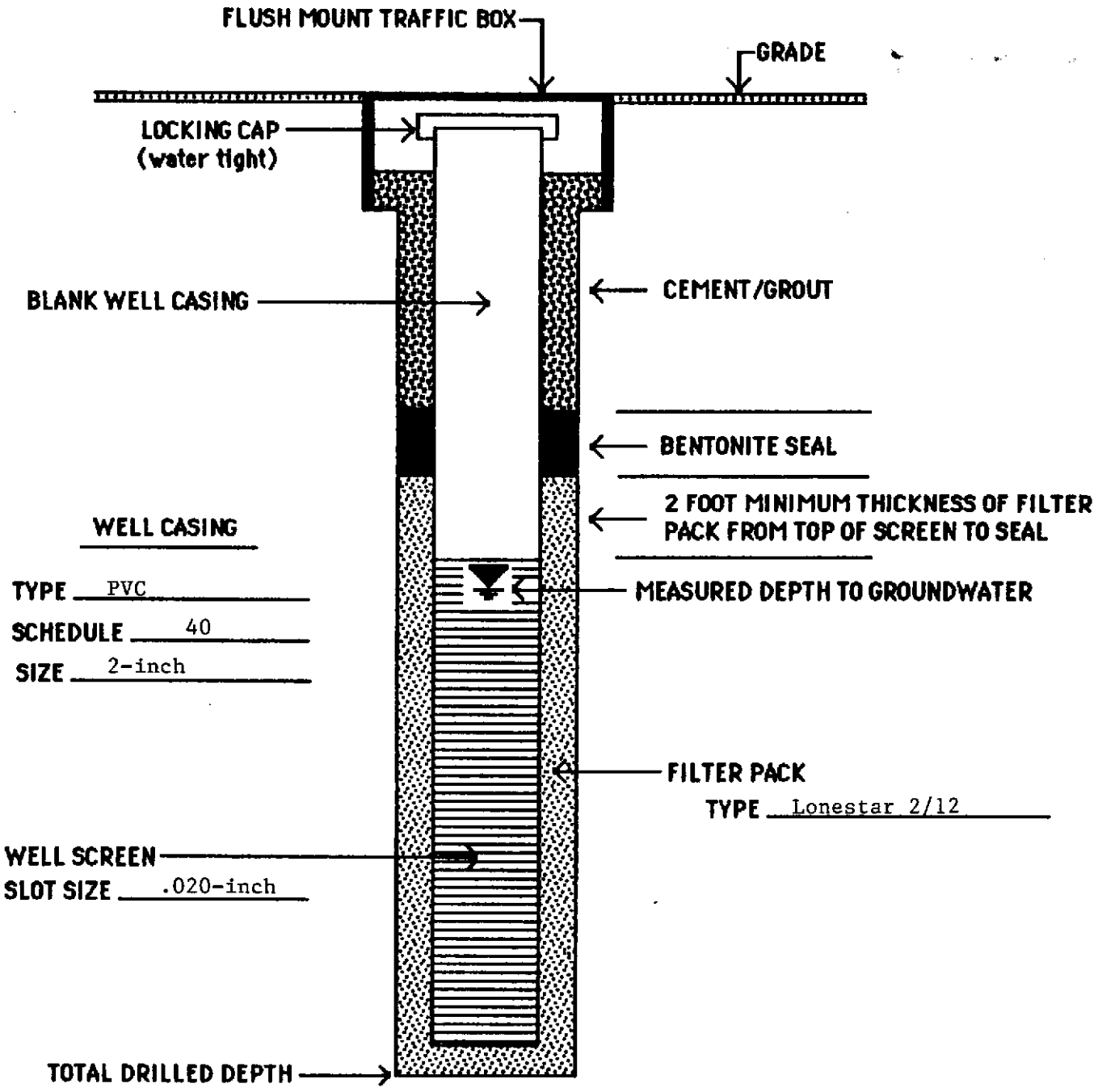
LEGEND:

- LOCATION AND DESIGNATION OF EXISTING GROUNDWATER MONITORING WELL
- APPROXIMATE LOCATION OF PROPOSED MONITORING WELL
- PROPOSED SHALLOW SOIL BORING LOCATION

SITE PLAN

Proposal No. PR92001
January 1992
FIGURE 1

BSK & ASSOCIATES



TYPICAL MONITORING WELL CONSTRUCTION DETAILS

BSK
& Associates
PROPOSAL PR92001
JANUARY 1992