desert petroleum inc.

John Rutherford
Director
Environmental Affairs

STID ~~2075~~ 1248

November 19, 1997

Mr. Thomas Peacock
Alameda County Health Care Services
Environmental Protection Division
1131 Harbor Bay Parkway, Suite 250
Alameda, California 94502-6577

Re: Former Desert Petroleum Property,
4035 Park Blvd., Oakland, California

Dear Mr. Peacock:

Enclosed please find a workplan prepared by our consultant, Western Geo-Engineers to perform a RBCA Tier Two assessment at the above referenced site.

We had previously submitted to the State Cleanup Fund a plan for pre-approval which was a Tier Three assessment. This plan was not approved due to the costs involved. The Fund has however approved expenditure for a reduced Tier Two assessment.

Our original submittal to the Fund was based on our understanding of your staff's suggested request for a Risk Based assessment made during a meeting at your agency in May 1997 and by letter correspondence dated May 6, 1997.

We are requesting review and approval of the enclosed workplan for the assessment. Upon your agency approval we will request bids for the work and submit to the Fund for pre-approval of the work as required.

Your review and response to the workplan is appreciated.

Very truly yours,

JR

John Rutherford

cc: George Converse, WEGE

enclosure

WESTERN GEO-ENGINEERS
CALIF CONTRACTOR # 513857 A CORPORATION
REGISTERED GEOLOGISTS

386 EAST BEAMER STREET
WOODLAND, CA 95776-6003
FAX (916) 662-0273
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November 5, 1997

Mr. John Rutherford
Environmental Compliance
Desert Petroleum, Inc.
P.O. Box 1601
Oxnard, CA 93032
(805) 654-8084 ext. 202
FAX (805) 654-0720

RE: Workplan to perform Risk Base Corrective Action (RBCA) Tier two for petroleum release sites at former Desert Petroleum Station DP 793, 4035 Park Blvd. Oakland, CA 94602.

Dear Mr. Rutherford:

The following workplan has been generated to perform a RBCA Tier Two assessment for your site located at 4035 Park Blvd., Oakland, CA. To further assess the need for additional remedial efforts at this site and the surrounding areas that have been effected by the release from this site, a RBCA Tier Two for petroleum release sites needs to be performed.

Owing to topography and land use (residential) the area effected by the dissolved and free phase gasoline plume the RBCA Tier Two assessments will be divided into three subgroups.

- The station proper.
- The area of the sewer lateral as it leaves the station northwest into the neighboring properties backyards, before exiting at Brighten Avenue.
- And the Brighton Avenue area.

1 COMPONENTS OF WORKPLAN FOR TIER TWO RBCA

The following are the components needed to provide a workplan for performing a Risk Base Corrective Action (RBCA) Tier Two study on Desert Petroleum Service Station 793.

Because of the complex nature of this site and the resulting product and contaminated ground water movement, the site will be divided into three zones and Tier Two screening studies will be performed on each of them.

The Zones are as follows:

A. Station proper, over excavated area.
B. Sewer lateral and effected homes.
C. Street and floating product plume.

The following data are needed to perform and effective Tier Two RBCA assessment:

1. The Constituents of Concern (COC). In this case the BTEX hydrocarbons.

2. Concentration and distribution of the COC in soil and water.

3. Soil.
   - Moisture content
   - Total organic carbon content
   - Soil type
   - Depth and thickness of capillary fringe
   - Depth to contamination
   - Effective permeability

4. Depths to water.

5. Aquifer parameters, ie. Hydraulic Conductivity, (K) and Gradient.

6. Electron Acceptors,
   - Dissolved Oxygen, O2
   - Nitrate, NO3-
   - Sulfate, SO42-
   - Ferrous iron, Fe2+. The actual electron acceptor is ferric iron Fe3+ but it is insoluble, so the reaction product Fe2+ is measured.

7. Additionally because of the overly conservative nature of the vapor transport models, vapor samples are needed.
   - CO2
   - Methane
   - Total petroleum hydrocarbons as gasoline
   - BTEX/MTBE

Most of the above information has already been obtained through various investigations conducted at or near the site. Only items 6 (the electron acceptors) and 7 (vapor samples), still have to be collected prior to performing the Tier two screening at this site. Additionally, it would be beneficial to have sample points along the sewer lateral and along the free product plume in Brighton Avenue (5 wells) and to conduct a groundwater sampling round when the new wells have been installed, to obtain the latest groundwater hydrocarbon concentrations. The installation of the new wells is shown as an option and would greatly enhance the Tier 2 assessment

In order to collect this information five additional shallow two-inch PVC monitor wells should be placed along the sewer lateral and near Brighton Avenue, see Figure 3. A groundwater monitoring round will be performed prior to the Tier Two Screening, see Appendix A for sampling methods. In addition to the TPHg/MBTEX samples normally collected during a monitor round, electron acceptor samples will be collected in order to determine a base line concentration of these compounds and to determine the site potential for natural attenuation. Owing to the more unstable

nature of these compounds the concentrations of following electron acceptors will be determined in the field using the HACH DR 2000 Spectophotometer:

1. Dissolved Oxygen, O2
2. Nitrate, NO3-
3. Sulfate, SO42-
4. Ferrous iron, Fe2+. The actual electron acceptor is ferric iron Fe3+ but it is insoluble, so the reaction product Fe2+ will be tested for.

Once the electron acceptors and the current groundwater concentrations of the constituents of concern are determined, the tier two studies will be preformed.

Results of the RBCA Tier Two assessments will be used to provide cost benefit remedial action plans and/or suggest that no further action is needed for the different segments studied.

The following enclosed table itemizes the not to exceed costs to fulfill this phase of the ongoing investigation of this site. The information needed to complete the RBCA Tier 2 assessment of the site will be performed concurrent with the next scheduled ¼ groundwater sampling event, which is included in the cost estimate table. Total estimated cost for this next phase, which includes the natural attenuation analysis with RBCA Tier 2 assessment is $7,500.00, which breaks down as follows:

A. ¼ly Groundwater monitoring	$2,500.00
B. Natural attenuation study monitoring	$2,200.00
C. RBCA Tier 2 assessment	$2,800.00

We feel the additional five monitoring wells are a necessity in achieving a complete Tier 2 assessment and will also access the area of free product for interim free product removal. If the five monitor wells are installed prior to the ¼ly monitoring the sampling and testing of these wells can be performed during the ¼ly monitoring and would only add an additional $7,850.00 to the investigation.

If you should have any questions regarding this quote and the items necessary to complete the workplan with RBCA Tier II assessment please give me a call at (530) 668-5300.

Sincerely yours,

George L. Converse
Project Geologist