



Epigene International
CONSULTING GEOLOGISTS

February 26, 1993

Bernabe and Brinker, Inc.
1281 30th Street
Oakland, CA 94608

Attn: Mr. James Brinker

Subject: Proposed Workplan for Characterization and Initial
Remediation of Groundwater Contamination for Site Located
at 2301 East 12th Street, Oakland

Red
3/2/93 @
meetings

Dear Mr. Brinker:

The site is located at the southwest corner of the intersection of East 12th Street and 23rd Ave. The location is shown on the attached location map. As per our discussions, a review of the file data and a meeting with Mr. Silveira, the following are a list of tasks that should be carried out for the subject site. This letter is intended primarily as an agenda for further discussions. The scope of work may have to be modified based on the results of the initial tasks.

1) It appears that there was not a tank closure report submitted to the county that complied with their guidelines. Although copies of various data are available, these data were not organized in a format consistent ^{with} the requirements. The first task is, therefore, to compile and review available data and provide a site history and tank closure report based on these data.

2) It is not clear from the existing data that all of the contamination reported in the three onsite wells is from the site. MW-1 is located in the assumed up-gradient direction from the former tank sites and shows significant contamination. This may be from "ponding" on top of the groundwater or may represent contamination from an up-gradient source. It is recommended that the potential for offsite sources be researched by the following:

- o Review files for the site area at the Regional Water Quality Control Board;
- o Meet with the County to discuss any additional information they might have for the site and site area;
- o Carry out a field reconnaissance of the area to identify other possible sources such as the abandoned gas station on the east side of 12th Street across from the site.

3) The data from the most recent sampling and analyses of the groundwater indicate that the contamination has migrated offsite. An accurate site area map needs to be prepared that will allow detailed plotting of existing and proposed monitoring and extraction wells, extent of contamination, present landuse and property ownership, etc. The map could be prepared by inspection and taping or by enlargement of an existing aerial photograph.

4) The elevation of the existing well casings need to be surveyed so that an accurate groundwater gradient can be established prior to the installation of any additional monitoring and/or extraction wells. This will help insure that the wells are placed in the most reasonable location.

5) At least two additional monitoring wells will be required in the down-gradient direction of MW-2 to assess the lateral extent of groundwater contamination. The County generally requires that the "non-detect" limit of the plume be documented. The exact location of the wells should be selected after the gradient has been

established and logistical concerns have been reviewed. The monitoring wells should be 2 inch diameter PVC pipe that extends approximately 10 feet into the upper groundwater.

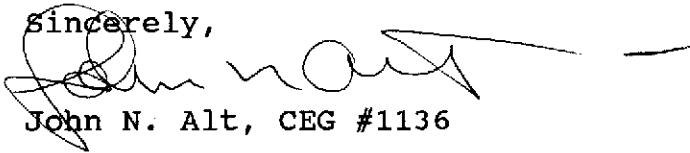
6) Groundwater remediation will be required for the site based on the existing data. The requirement would come as a directive from Alameda County and/or the Regional Water Quality Control Board. At least one and possibly two or three (depending on the lateral extent of the plume) extraction wells should be installed. The first extraction well should be located on the property along the down-gradient edge of the tank excavation. The well should be 4 inches in diameter and extend to a depth of 15 to 20 feet below the present groundwater level to allow for the anticipated drawdown during the pumping. *pump test?*

7) The typical remediation for groundwater with hydrocarbon contamination is to pump and treat with carbon absorption units. The floating product observed in MW-2 would clog an absorption unit very quickly and it would be best to separate the product from the water prior to treatment. This could be done with a skimmer pump in the well and operated prior to the groundwater treatment or an oil/water separator hooked-up in front of the carbon units and operated concurrently with the groundwater treatment. The floating product recovered could either be incinerated on-site or brought to a oil recycling operation.

As we discussed, it would be best to initiate the remediation as soon as possible to control the continued off-site migration of the contamination. I recommend that we complete the first several tasks and at that point define the pros and cons and estimated costs of the various alternatives for continued characterization and site remediation.

- Need a timeframe for all events

Sincerely,


John N. Alt, CEG #1136