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LETTER REPORT
Environmental Services

BROWN AND CALDWELL

October 13, 2006

Mr. Rene Boisvert
800 Center LLC
484 Lake Park Avenue #246
Oakland, CA 94610

011/071000-002

Subject: Evaluation of Site Conceptual Model and Corrective Action Plan
Vacant Parcel, 800 Center Street, Oakland, California

Dear Mr. Boisvert:

As you requested, Brown and Caldwell (BC) reviewed environmental documents related to the remediation of residual petroleum hydrocarbon contamination present at 800 Center Street, Oakland, California (the Site);. These documents included:

- The "Site Conceptual Model and Corrective Action Plan", prepared by Cambria Environmental Technology, Inc. (Cambria) on May 23, 2005, (the Cambria Report),
- The Work plan for Site Excavation dated November 17, 2005 (the Workplan),
- The Alameda County Environmental Health Services Department (ACEHS) comment letter on the Work plan dated December 19, 2005,
- the ACEHS approval letter dated May 25, 2006 (referencing the excavation Workplan and an additional Workplan for Soil Disposal Profiling prepared by Cambria dated May 23, 2006)
- An email communication from Chevron to Mr. Rene Boisvert dated October 5, 2006

The purpose of BC's review was to provide our opinion regarding which of the three remediation options presented in the Cambria report will provide the highest probability of receiving regulatory closure and provide the least diminution of the Site property value.

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BACKGROUND

According to the Cambria Report, the Site is a former Signal Oil service station that was developed in 1932 with four 1,000-gallon underground fuel storage tanks and one waste oil tank. The number of subsequent underground storage tanks that may have been installed and operated prior to the 1973 demolition of the station is unknown. Chevron has accepted cleanup responsibility for the Site and Cambria is their designated environmental consultant for this effort. The primary risk of concern at the 6,563 square foot subject Site is benzene vapor migration to future occupants of the proposed residential redevelopment..

The highest benzene concentrations are located in a 5-8 foot thick zone located in the interval between 7 and 17 feet below ground surface (bgs). The affected soil and groundwater are predominantly situated in the northwest, southwest and southeast quadrants of the corner parcel.

The three remedial options presented in the Cambria report include:

- excavation and dewatering,
- dual phase extraction, and
- installation of a Liquid Boot® vapor barrier beneath the floor slabs of the proposed residences.

The Cambria Report concluded that both excavation and dual phase extraction could achieve significant removal of hydrocarbon constituents in the subsurface, and noted that dual phase extraction would be the most expensive and time-consuming of the three options. The Cambria Report also asserted that not all detected benzene could be removed by either duel phase extraction or excavation, and therefore a vapor barrier would be likely be required under any Site remedial alternative. The Cambria Report therefore suggested installation of Liquid Boot® membranes beneath the future foundation slabs as the sole mitigation measure for the site.

Subsequently, Cambria prepared a Workplan for Site Excavation, and submitted it to the ACEHS on November 17, 2005. On December 19, 2005, ACEHS issued a letter approving the proposed excavation and dewatering remedial measure for the Site, and requested several procedural amendments to the Plan.

Mr. Rene Boisvert purchased the subject Site in June 2005, and the two adjacent parcels in June 2006, with the understanding that the approved excavation and dewatering remedial measure would be initiated by the first week of June 2006. However, subsequent communications from Chevron to Mr. Boisvert indicate that the vapor barrier option is now the only remedial measure proposed for the Site.

PROFESSIONAL OPINION

BC feels that the previously proposed excavation and dewatering remedial option, will provide the best protection of human health and the environment the therefore has the highest probability of achieving case closure in a timely fashion. This opinion is based on following assumptions:

1) The Site redevelopment will be residential;
2) Removal and disposal of the contaminant is feasible because it is relatively shallow and the site is currently undeveloped, and minimal shoring would be required.
3) Removal of a subsurface contaminant, whenever feasible, is superior to leaving it in place;
4) The majority of the benzene would be permanently removed from the site

A major benefit of implementing the excavation/dewatering remedial option is that a work plan for this method has been submitted and approved by the lead regulatory agency with a few additional procedural requirements. Any other remedial or mitigation method will require the additional expense of a new work plan and would extend the time before redevelopment could commence.

We concur with Cambria that a dual phase extraction system would be expensive, require a relatively long period of operation, is unlikely to mitigate all of the benzene known to be present in the 10-17 foot bgs interval and would require installation of a supplemental engineered vapor barrier system.

Although the initial installation cost of an engineered vapor barrier would be significantly less than the excavation/dewatering option, there are several compelling reasons why a vapor barrier would not be the best approach to achieve case closure or prevent diminution of Site property value:

- **The vapor barrier option is not a remedial method and therefore the environmental liability attached to the Site would remain**. This would likely necessitate the creation of deed restrictions for any future use or development, and would result in a fiscal devaluation of the property.
- **The known presence of relatively high concentrations of benzene, (a carcinogenic substance) is likely to adversely affect sales of the proposed residences.** The excavation/dewatering option, on the other hand, would remove the vast majority of benzene contamination from beneath the area proposed for residential development.

- **The "life span" of the Liquid Boot® or other vapor barrier systems is unknown.** Since the vapor barrier mitigation system for blocking hazardous soil vapor intrusion into buildings has only been utilized for the past 20 to 25 years, it is not known whether the system will remain effective for the typical operational life of a residential structure, which may be 50 to 75 years or more. Reinstallation of a vapor barrier beneath an existing structure, if required, would be financially and logistically impractical. If the vapor barrier fails while the residences are occupied, liability may be assessed against the property owner.
- **A vapor barrier system will require ongoing monitoring.** In order to evaluate the effectiveness of a vapor barrier or subslab venting system, periodic inspection, maintenance, and possibly indoor air sampling would be required over the life of the residential development. These activities would be intrusive to occupants, further devalue the property and would require negotiation to establish responsibility for the monitoring and analysis costs for the duration, which is likely to extend for several decades.

On October 10, 2006, BC was provided a copy of an email communication from Chevron to Mr. Rene Boisvert dated October 5, 2006. The text summarized a recent meeting between Chevron and ACEHS and included the following major points: 1) An assessment to evaluate potential vapor intrusion into future Site structures would be conducted. If a potential vapor intrusion potential is found to exist, a vapor barrier system would be installed upon approval from the lead regulatory agency; 2) The deep subsurface petroleum hydrocarbon impacts thought to have been discovered during the 2004 investigation are accepted as anomalous by the agency; 3) After the vapor intrusion assessment, groundwater monitoring will continue on a quarterly basis. If it is established that groundwater quality will not adversely affect human health or the environment, case closure will be recommended; and 4) Chevron comments that there is no existing commitment to excavation as a remedial method, and that it was not approved as a corrective action by the UST Fund. Further, the proposed excavation would not be sufficient to achieve Site case closure.

Most of the points included in this email communication are addressed by our foregoing evaluation of the excavation and vapor barrier options. We conclude that the newly proposed approach is inferior to the excavation/dewatering method for the following reasons:

- Additional assessment (the vapor intrusion study) would be required, which may take several years to complete, and therefore significantly delay the redevelopment of the Site
- The constraints of a vapor barrier system, including an unknown effective life-span, the likely need for post-installation indoor air monitoring and the uncertainty of the effects of barrier failure, all remain applicable.

- The existing contamination would remain on Site, which would devalue the property compared to removal and disposal.
- Mr. Boisvert contends that a commitment to excavation was made, and that excavation operations were initially scheduled to have begun during the first week of June 2006. The question of whether the excavation option was approved by the UST Fund cannot be verified by BC, however there are alternative governmental funding sources available for Site cleanup. The statement that excavation/dewatering would be insufficient to effect case closure appears to be unfounded, based on the known distribution of contaminants at the Site. In any case, as we previously stated as an assumption, removal and disposal of a subsurface contaminant, whenever feasible, is superior to leaving it in place.

Based on the foregoing arguments, BC reiterates that the proposed excavation and dewatering remedial option for the subject property would best achieve the project goals of timeliness to achieve case closure, removal of environmental cleanup liability, simplicity of implementation, minimization of potential financial devaluation and protection of human health and the environment.

Thank you for this opportunity to provide our environmental consulting services. Please call either Andy Lojo at 925-210-2278 or Cabe Silverhame at 925-210-2205 if you have any questions regarding this report or if you require additional services.

Very truly yours,

BROWN AND CALDWELL

Cabe Silverhame
Project Manager

CS:dt

Enclosure

cc: