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August 6, 2004

Ms. Terry Brazell
State Water Resources Control Board
PO Box 944212
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Dear Ms. Brazell:

Subject: Petition Responses to Naming of Responsible Parties, RO0000374, Chevron #21-1285 / Cal Gas, 15595 Washington Avenue, San Lorenzo, CA 94580

This letter responds to the January 21, 2004, document of Jeffrey L. Podawiltz, Esq. representing ChevronTexaco regarding ChevronTexaco's response to ACEH's response to petition and to the January 20, 2004, Cambria Environmental Technology, Inc. (Cambria) letter. Alameda County Environmental Health (ACEH) has reviewed the above referenced documents and provides the following response.

ACEH has performed a through review of the technical data at this site. Our technical comments on Cambria's January 20, 2004, letter and the Jeffrey L. Podawiltz, Esq., January 21, 2004 document are presented below. In summary, we are not concluding that the site was or was not a problem in 1986, but that the information presented would have been inadequate to close the site both then and now. Rather, the data presented would have resulted in ACEH requesting additional investigation to characterize the nature and extent of contamination.

A number of significant anomalies and data gaps exist. These include:

- Lack of a site conceptual model (SCM) that summarizes what is known about the site, identifies data gaps, and proposes additional work to fill the data gaps,
- Reliance on soil samples from a "screening level" assessment that were known to be negatively biased,
- Insufficient high quality soil and groundwater samples and analyses,
- Lack of vertical definition of source area contamination,
- Insufficient areal extent and density of monitoring points,
- Failure to investigate the uppermost preferential pathway for contaminant migration resulting in shallow investigative work,
- Failure to investigate the risk to receptors from liquid, residual, dissolved, and vapor phase contamination associated with the site.

Whether or not historic releases at the site contribute to the current need for cleanup requires additional study, including forensic techniques to estimate the contribution of older releases to the current contamination problem at the site. Actual data from a soil and groundwater investigation that is overseen by ACEH is needed to determine the contributions to contamination (or lack thereof) by each of the responsible parties at this site.

COMMENTS TO CAMBRIA LETTER

1) 1986 Data Objectives and Quality and Appropriateness for Regulatory Decision Making

Cambria states in their January 20, 2004 comment letter that the 1986 work was performed as a "baseline assessment in 1986 to determine site conditions and identify potential environmental liabilities prior to selling the property" and "that the investigation objectives were to screen the site for potential liabilities to support a property transaction and not for a regulated environmental investigation." As this work was done for a purpose other than regulatory decision-making, lower standards were apparently applied to the investigation technique resulting in the collection of inferior, poor quality data (reference composite soil samples).

Cambria acknowledges the 1986 work was of a lower standard for a property screening assessment and not for a regulated environmental investigation. Yet all of Cambria's technical arguments are based upon this inferior data that they readily acknowledge was never collected in a manner sufficient for regulatory decision-making. The 1986 data is insufficient to make decisions regarding the nature of contamination, the lateral and vertical extent of contamination from the release, site closure (then or now), or to make any regulatory judgments regarding the need for remediation for the contaminants of concern (COCs) at this site.

2) Groundwater Analytical Data

ACEH maintains that only a limited screening investigation of groundwater was performed at the site in 1986. Monitoring wells were not installed in the area of or immediately downgradient of the location of the highest groundwater contamination. This screening investigation was limited in depth and areal extent, with an insufficient density of monitoring points. Also, analysis for all COCs was not performed. Regulatory decisions cannot be made on limited data from a screening investigation.

3) Lack of Depth-Discrete Soil Analytical Results and Observations of Strong Petroleum Odors

Strong petroleum odors were noted by the geologist during soil sample collection. Three depth-discrete samples were composited into one sample for analysis. Subsequent analyses detected what Cambria describes as only low levels of contamination. The strong odors observed during sample collection and resulting concentrations in composited samples that are inconsistent with field observations of contamination are indicative of the samples becoming negatively biased, i.e., volatilization of the target compounds from the samples. The fact that the geologist collecting the samples noted the negative bias by documenting strong odors supports the fact that there was a significant loss of the volatile components during sample collection. Then the analysis for target compounds was performed after additional volatilization during the compositing process causing further loss of target compounds.

Regulatory agencies look at all the data when evaluating a site. That is why we take into account field observations during drilling in combination with analytical measurements. How much of a loss was caused by negative bias in these samples we do not know, as the data is not consistent with field observations. Also, this initial data from the screening level investigation cannot be exclusively relied upon for regulatory decision-making.

4) Soil and Groundwater Investigations Have Been Limited in Depth

Cambria states that it is unclear as to the role that permeable zones, at depths the consultants failed to anticipate and subsequently investigate, play in migration of hydrocarbon contamination. ACEH's December 1, 2003, letter provided a detailed but basic explanation (Technical Comment 3) of geologic and hydrogeologic considerations for contaminant transport at this site along with an appropriate technical reference.

The presence of permeable zones provide pathways for migration of contaminants from a site. Factors such as water level fluctuations (particularly during times of drought in California such as experienced in the 1980s), gradient changes, local hydrogeology, groundwater extraction, groundwater recharge activities (natural and artificial), and the presence of conduits, can significantly alter groundwater flow conditions and allow migration of contamination to permeable zones. The shallow investigations performed to date at the site have failed to investigate the uppermost preferential pathway (regionally documented as a permeable zone) for contaminant migration. The failure to investigate to adequate depths has left the vertical definition of source area(s) contamination and the possibility of off-site migration of dissolved contaminants in coarse-grained permeable strata undefined.

5) Vapor Migration Pathway Not Adequately Assessed

Cambria uses data from the initial screening assessment to evaluate the vapor migration pathway. They also use only the groundwater data for their evaluation and for an assumed depth to water of 10' bgs.

Any comparison to ESLs would need to be performed using reliable data collected appropriately from an investigation designed to define the extent of contamination at the site. The data used in Cambria's assessment is not appropriate for regulatory decision-making since there is no assurance that monitoring wells were installed within the contaminant plume; the screening investigation was limited in depth and areal extent, with an insufficient density of monitoring points; analysis for all COCs was not performed, and the investigation was merely a screening level assessment.

Additionally, there is a higher risk when depth to water is shallower than 10' bgs. Depth to water has been as shallow as 4.5' bgs site leaving this risk unevaluated at the site.

Further, to be a complete evaluation of the vapor pathway, appropriately collected soil data from an investigation that defines the lateral and vertical extent of contamination would need to be used. But soil data from this site is suspect as discussed previously (screening level assessment, with samples composited and negatively biased due to volatilization in samples).

6) Potential Impacts to Water Supply Wells Not Adequately Assessed

A water supply well is present 330' downgradient of the site. Cambria states "this well is not at risk from the low hydrocarbon concentration in groundwater in 1986 prior to Texaco's tenure at the site." ACEH

notes that this well has not been sampled for the COCs at the site and that Cambria has no data to substantiate their conclusion.

Water supply wells of this size are especially vulnerable to impacts from nearby contamination sites due to the low volume of water they pump and the subsequent limited dilution of contamination in the pumped water (as opposed to a municipal supply well pumping 1000s of gpm). There are numerous documented cases of petroleum hydrocarbon contamination, including benzene, in small water supply wells. This well's very close proximity to the gas station makes it vulnerable to contamination from the subject site.

The 1986 screening level investigation consisted of an insufficient density of monitoring points, which were limited in depth and areal extent, and produced low quality data unsuitable for regulatory decision-making. The insufficiencies of this investigation along with the lack of analytical testing results from the water supply well have left the assessment of the potential risk to the downgradient receptor unknown.

7) Cambria's Attenuation Assessment is Unpersuasive

ACEH had significant technical concerns regarding the approach Cambria used in their attenuation assessment and ACEH does not consider Cambria's approach to be conservative at all. Cambria deems their approach conservative by assuming attenuation rates for BTX would be no faster than for current TPHG and MTBE concentrations because BTX attenuation rates "far higher" than MTBE attenuation rates.

However, the attenuation rate for BTX could have been slower. Biodegradation rates at a site can vary and early releases can be slow to biodegrade because the community of hydrocarbon-degrading bacteria is small and not yet acclimated to degrading the contamination. Older sites with a history of releases could have microbial populations sufficient to allow biodegradation to occur more rapidly. Therefore, Cambria cannot assume that the reaction rates from the initial release would be as fast as the reaction rates that they calculated based on recent monitoring data. Further, recent releases of MTBE could exhibit a fast apparent "rate" due to preferential dissolution from the source.

ACEH's December 1, 2003, letter also discussed the difficulties of calculating an MTBE attenuation rate, referencing studies published in the literature that show very little agreement regarding said rates under aerobic and anaerobic conditions at research sites in California. Rates for MTBE biodegradation would be site specific and need to be measured using field tests and measured data. Cambria ignores the technical literature on this subject and uses inappropriately based assumptions and gross oversimplifications in their attenuation assessment.

Lastly, Cambria states that current hydrocarbon concentrations are attenuating but have no data to demonstrate whether the plume is shrinking or not. Stabilization or reduction in plume length, rather than mere attenuation by dilution and continued plume migration, has not been demonstrated for this site.

8) NAPL

Cambria states that there was no evidence of NAPL in the 1986 screening investigation and appears to suggest that NAPL from a 1986 or earlier release at the site was not and is not present at the site. ACEH again notes that the 1986 screening investigation was performed to limited depths and areal extent, with an insufficient density of monitoring points. Data from this investigation was not sufficient to identify source areas, determine the extent of contamination, nor identify the presence or absence of NAPL. The

1986 investigation failed to gather this data because its objectives were for screening the site for a property transaction, not for a regulated environmental investigation, thus lower standards were applied to the investigation technique resulting in the collection of inferior, poor quality screening data.

COMMENTS TO JEFFERY L. PODAWILTZ ESQ. LETTER

The conclusions of the Podawiltz document are that there is overwhelming evidence from a 1986 screening investigation to 1) close the 1986 fuel leak case; and 2) determine how much of a contribution releases from the 2nd generation USTs make to the site in terms of corrective action and costs.

ACEH maintains that there is insufficient data from the 1986 work to make regulatory decisions regarding immediate case closure or amounts of corrective actions including cleanup. ACEH notes that the 1986 work was performed as a "baseline assessment in 1986 to determine site conditions and identify potential environmental liabilities prior to selling the property" and "that the investigation objectives were to screen the site for potential liabilities to support a property transaction and not for a regulated environmental investigation" (reference Cambria January 20, 2004 letter).

Podawiltz identifies the following issues as overwhelming evidence:

- No hydrocarbon contamination was detected in soil samples taken in 1986

ACEH notes that the "screening level assessment" resulted in the collection of low quality, inferior screening level data with soil samples composited along the entire length of boreholes. Also soil samples exhibited a negative bias with volatilization of target compounds. The analytical results for soil samples biased in multiple ways yielded results inconsistent with field observations. Basing regulatory decision-making on incomplete and suspect data is not appropriate at contamination sites.

- Two groundwater samples showed low level contamination, and that level of contamination, almost 18 years later, would not contribute to the need to remediate the site.

ACEH notes that other grab groundwater samples (SB-1) showed higher concentrations of contamination, suggesting that either the permanent wells were installed in the wrong location to detect groundwater contamination, or samples from the wells were negatively biased by dilution in long screen wells. Groundwater samples were not collected downgradient of the areas noted to be contaminated. Also, the investigation performed was too shallow to adequately investigate the uppermost preferential pathway for contaminant migration identified in ACEH's review of the regional geologic and hydrogeologic data. The shallow investigations left a primary pathway of potential contaminant migration unassessed.

- The low level of hydrocarbon concentrations from the pre-1986 release would not have posed a danger in 1986 and using a conservative approach to attenuation levels, would be virtually undetectable today.

ACEH notes that the screening level assessment performed in 1986 did in no way determine the concentration and lateral and vertical extent of contamination at the site nor generate data sufficient to evaluate the risk posed by the site. Further, "a conservative approach to attenuation levels" was, in our opinion, not performed. As discussed in our December 1, 2003 letter, the attenuation assessment

performed by Cambria could have easily over estimated the attenuation rate of compounds released prior to 1986.

- The sole cause of remediation work at the site is the post-1986 release of MTBE and other contaminants.

ACEH notes that sufficient investigation to determine the nature and extent of contamination from source areas at this site was not performed. Residual pollution including NAPL from earlier releases could be present at the site particularly if historic water levels were lower at the site during its use as a gasoline station (such as in periods of drought during the 1980s) resulting in submerged source areas. Investigations performed to date have not considered nor determined the vertical extent of contamination in the source areas.

Data sufficient to evaluate potential vapor phase risks posed by the releases at the site were not collected during the 1986 screening investigation therefore this risk remains unevaluated.

Lastly, MTBE was used in U.S. gasoline supplies as early as 1973. Therefore, broad assumptions regarding the release date of MTBE at this site by ChevronTexaco's attorney should not be made.

If you have any questions please contact Mr. Barney Chan at (510) 567-6765.

Sincerely,

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