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March 26, 2007

Mr. Balaji Angle
B&C Gas Mini Mart
2008 1ST Street
Livermore, CA 94550

Mr. John Rutherford
Desert Petroleum
PO Box 1601
Oxnard, CA 93032

Dear Messrs. Angle and Rutherford:

Subject: Fuel Leak Case No. RO0000278, Desert Petroleum, 2008 1ST Street, Livermore, CA

ACEH staff has reviewed the "Field Investigation for Source Zone Remediation" (field investigation), dated June 6, 2006, the "Soil Vapor Intrusion Risk Assessment" (risk assessment), dated May 31, 2006, the "Source Zone Remediation Plan" (remediation plan), dated August 11, 2006, the "Fourth Quarter 2006 Groundwater Monitoring Report," dated January 16, 2007, and previous monitoring reports, all prepared by Golder Associates (Golder).

The above referenced reports provide data for source area characterization and soil gas sampling performed both on the subject site and off-site on the Groth property. Also, a soil vapor risk evaluation was performed for the Groth site. We note however, that a significant portion of additional work also requested in ACEH's letters dated July 5, 2005, and February 24, 2006, to address data gaps in the SCM and complete the evaluation of dissolved contaminant plumes, specifically for MTBE, has not been performed. Further, specific work directives by ACEH pertaining to monitoring of the dissolved plume, evaluation of alternative valid hypotheses for the migration of dissolved contaminants from your site, and evaluation of the risk of the contaminant plumes to the drinking water basin have been largely ignored in your reports.

Compliance with the City of Livermore's Polanco Act related work that pertains specifically to the residential redevelopment of the Groth property is required of you. However, not in lieu of the work required of you to address the contamination you caused to the regional drinking water aquifer and to your site. You are required to complete the work requested in this letter and ACEH's previous letters referenced above. Further failure on your part to perform the work required of you and submit the reports as specified below, will result in initiation of enforcement actions on your case; specifically, ACEH will request the SWRCB remove your site from the USTCF eligibility list.

This letter provides comments on your recently submitted reports and incorporates the items you have failed to address in ACEH's last two directive letters. In general, ACEH does not concur with the groundwater cleanup level proposed in the risk evaluation due to the data gaps present in the risk assessment, elimination of relevant exposure pathways, and failure to address all COCs. However, we are prepared to concur with Golder's recommendation for a pilot test although specific requirements for monitoring and evaluating the pilot test of your system are required.

We request that you address the following technical comments, perform the proposed work, and send us the technical reports requested below.

TECHNICAL COMMENTS (SECTION A)

1. Vertical Extent of Source Area Contamination – Source area sampling, in the field investigation report, included locations on the Desert Petroleum site and off-site on the Groth property to define the lateral and vertical extent of contamination. Golder's field investigation report states that "the zone of contamination is generally confined to the lower coarse grained unit with the majority of the impacted sediment from 36 to 48 feet bgs," and recommends NAPL source mitigation be focused on shallow NAPL near the water table. The water table during this phase of work was 26 feet bgs. As the depth to groundwater has historically varied from 17' bgs in 1997 to 69 feet bgs in 1992, it is unclear why the current depth to water is the target depth for remedial efforts.

We note that soil sampling from this and previous work identified significant residual soil contamination that was left in place on the Desert site during UST removal (TPHG: 8500 ppm, benzene: 61 ppm, and MTBE 96 ppm) and was detected during monitoring well installation, at depths as shallow as 14 feet bgs. Data from the Groth site indicates a deeper source area for which the recommended remediation depth appears to address. Therefore the remedial efforts appear to target the Groth property while potentially leaving significant shallow and deep residual source in place on the Desert site which could be an ongoing source of contamination to groundwater and on-site soil gas.

A source area of significant vertical extent exist on both the B&C and the Groth properties and the remediation approach cannot selectively address cleanup depths (2006 water levels) nor focus on one property (Groth). Please provide a proposal and rationale for specifying target cleanup zones for both properties in the work plan addendum and SCM 2.0 requested below.

2. Multiple Hypotheses for Contaminant Transport

Golder's field investigation, risk assessment, and quarterly reports state that the "Concentrations of MTBE and BTEX have been declining throughout the plume sine 1995. Declining concentrations appear to be due to natural attenuation based on positive chemical indicators of natural attenuation and the shrinking dimensions of the BTEX plume."

We note that Golder has not supported their conclusionary statement regarding MTBE natural attenuation. ACEH has commented on Golder's statements regarding natural attenuation of MTBE; requested that you collect evidence to demonstrate your hypothesis for natural attenuation for MTBE; provided a valid alternative hypothesis for the apparent "declining" concentrations of dissolved phase MTBE i.e., detached plume; and asked for specific data collection to evaluate this hypothesis. ACEH's comments were provided to you as stated in Sections B.1. and C.3 below. To date, you have not performed this work, significant data gaps exist in SCM 1.1, and ACEH's requests have not been addressed in SCM 2.0 as previously requested of you. Golder's conclusions cannot be supported without having addressed these data gaps. As previously stated we do not concur with Golder's conclusions.

ACEH has reviewed the data from this site in detail and maintains there is sufficient evidence at this site to suggest that the MTBE plume may have detached from the source. This is a valid hypothesis for the dissolved phase MTBE contamination at your site and it is required to be

evaluated by your consultant. You are required to perform the work as previously requested of you, and to report your results in SCM 2.0.

3. QMR Report Conclusions - ACEH has been concerned about petroleum hydrocarbon contamination in CMT-4 consistently being detected in the ports below the aquitard. You were requested to explain the reason for these detections utilizing plots of head vs. depth over time for this well.

You presented multiple hypotheses for these detections as 1) carry down of contamination as part of drilling; 2) cross contamination resulting from diffusion of BTEX through CMT chamber walls; 3) cross contamination due to MW-1 penetration of the aquitard; and 4) cross contamination via the well bore for the CMT pipe. You provided a bar graph of depth vs. head over time (SCM 1.1); however it is unclear what this method of plotting demonstrated, and you provided no rationale to support any of your hypotheses.

ACEH has prepared a Head Profile plot for CMT-4 (attached) for your reference. A review of this plot shows the same head levels in ports above 75-feet bgs which are completed in the shallow unconfined aquifer. Below 75-feet bgs an aquitard exists as evidenced by head levels much different than in the ports above the aquitard. Also, a very strong downward gradient below a depth of 75-feet is apparent.

Regarding Golder's hypotheses, the consistent head data above the aquitard and strong downward gradient below the aquitard from these plots immediately discount theory 4) cross contamination via the well bore for the CMT pipe, Golder has no data to substantiate this theory. For hypothesis 1) carry down of contamination as part of drilling; if this were the case it would be expected that these detections would likely have ceased several months after well installation due to the limited mass. Instead you are still detecting the contamination nearly 4-years after well installation. Regarding hypothesis 2) cross contamination resulting from diffusion of BTEX through CMT chamber walls; ACEH does not concur with this as diffusion through the walls would require a significant concentration gradient for diffusion to occur and your analytical data do not support this hypothesis. Hypothesis 3) cross contamination due to MW-1 penetration of the aquitard, does seem likely as MW-1 is cross connecting the aquifers, and both ACEH and Golder have recommended decommissioning this well. We request that your consultant continue to study this plot and evaluate other potential hypotheses and provide rationale to validate or discount each hypothesis. Include the results of this evaluation in SCM 2.0.

Regarding determining whether cross-contamination is occurring in MW-1, ACEH's January 22, 2003, letter is excerpted as follows:

> **7) Velocity Profiling/Depth Discrete Sampling & Destroy Long Screen Monitoring Well(s)**
>
> On-site monitoring well MW-1 is located within the source zone and screened from 27 to 77 feet bgs. This long screen well could potentially act as a conduit for the deeper migration of dissolved contaminants beneath your site. We recommend that you destroy this monitoring well and propose destruction of additional monitoring wells as appropriate.
>
> Prior to destruction we request that you profile ambient groundwater flow in the well (using a heat-pulse flowmeter or similar tool), and perform depth discrete groundwater sampling and analysis. Analyze the groundwater samples for the analytes requested in Technical Comment 8 below. Perform this same testing and analysis in other

conventional monitoring wells in the source area, as needed, to determine if existing on-site monitoring wells may be conveying shallow contaminants to greater depths via ambient flow within the wells. Report the results of your work in the SWI Report requested below.

We specifically note that data is collected in the field to validate a hypothesis such as the one regarding MW-1 above. However, Golder is proposing, and in some cases stating, hypotheses as fact without validation.

ACEH does not concur that the issue of deep contamination in the source area is a result of your CMT well. Your depth discrete monitoring well network (CMT wells) is providing valuable data to evaluate this site. It is giving more reliable data on depth discrete contaminant concentrations and head data that the long screened wells previously installed at the site are incapable of providing. The data has allowed ACEH to consider reducing the perceived severity of your site regarding threat posed to CWS-8 (provided your consultant completes and validates the evaluations previously requested of you as part of SCM 2.0). Therefore, it is unclear to ACEH as to why it appears that your consultant is attempting to discount the data from the CMT wells, and provide alternative hypothesis without any rationale or data to support their hypotheses. This makes ACEH more concerned about the long term threat posed by your site due to the data gaps in your consultant's hypotheses.

We also note that Golder provides conclusionary statements regarding the migration and fate of contamination from this site in each of their quarterly reports. However, there are still significant data gaps and alternative hypothesis that Golder does not have the data to discount nor validate as they have not completed the work required to address these data gaps nor reported their results in SCM 2.0. We therefore do not concur and in some cases disagree with the conclusions provided to date by Golder within their quarterly reports. We request that SCM 2.0 be completed immediately, and include evaluation and testing of both alternative and existing hypotheses.

Additionally, PCE has been detected in your monitoring well network, including the CMT ports below the aquitard, (see attachment) in the split samples collected by Zone 7 Water Agency and in your MIP samples. Please also include a consideration of this data when evaluating hypotheses for contaminant transport in SCM 2.0.

4. Estimated Extent of Groundwater Impact Map – ACEH finds the graphics for the mapped estimated extent of groundwater impact in the field investigation report (Figure 4) curious. The map appears to decrease the previously mapped dissolved contaminant plume area from previous reports by mapping extent of TPH rather than extent of dissolved phase MTBE and benzene contamination. Thus, erroneously depicting the dissolved contaminant plume area. In particular MS-MW1 has had detections of MTBE but is depicted as outside of the dissolved plume area in Figure 4. Please include corrected maps that more accurately reflect monitored conditions in SCM 2.0 requested below and in all future reports for this site.

5. Soil Gas – The evaluation of risk posed by soil gas was performed in reference to the Groth site. The evaluation included a modeling study to evaluate potential indoor vapor concentrations for a future building on the Groth site. Significant risk posed by volatilization from groundwater and NAPL (particularly with a decrease in water table elevation) was identified at the Groth site. ACEH concurs with these conclusions.

An evaluation of the risk posed by the soil gas pathway for the Desert Petroleum site was not performed. This risk evaluation for the Desert site is required. Risk evaluations used to

determine cleanup levels need to consider all locations of contamination. Report the results of your evaluation in the CAP requested below.

Overall soil gas sampling was limited to a one time event at during the rainy season (high water table) and we concur with the recommendation that permanent soil gas sampling probes be installed and monitored. Also, we request that soil gas sampling from permanent monitoring point, port 1 of CMT-4, when it is dry, be incorporated during monitoring events. Include your proposal for locations of permanent soil gas sampling probes in SCM 2.0 below.

6. Benzene Plume Length – The risk assessment erroneously states that the benzene plume has been limited to 600 – 800' feet. The benzene plume has historically extended to at least 1,400 feet d/g.

7. Contaminants of Concern (COCs) and Receptors – The risk assessment back calculated a groundwater cleanup level for benzene of 418 ppb to address indoor air concerns on the Groth property. A risk evaluation for potential vapor intrusion at the Desert site was not performed. Cleanup levels for the drinking water basin were specifically excluded from the risk assessment. Also, cleanup levels were not evaluated for all COCs at the site, including MTBE.

Further, the effect of increasing or decreasing groundwater elevations on the risk posed by residual contamination was not evaluated. Any evaluation of risk must consider the threat posed by the residual pollution under changing conditions (e.g. increasing and decreasing groundwater levels, new supply well installed nearby, etc.) for as long as the residual pollution (adsorbed and dissolved) remains in place in the environment. The threat posed by the residual source must be evaluated under all conditions, and reasonable use or occurrence scenarios cannot be excluded.

ACEH therefore, cannot concur with cleanup levels proposed in Golder's risk assessment which "Recommends that NAPL source mitigation be implemented, focused on shallow NAPL near the water table. … Alternate approach may be to rely on soil vapor measurements for development of remediation goals (i.e., as opposed to groundwater).

To be a complete risk evaluation used to develop a CAP, all COCs and all receptors need to be evaluated; the threat posed by the residual pollution under changing conditions for as long as the residual pollution remains in place in the environment evaluated; cleanup levels (active remediation) and cleanup goals (water quality objectives) determined; and the time it will take to reach cleanup levels and goals calculated.

As such the risk evaluation for source remediation is incomplete and cannot be approved. ACEH notes that the tasks previously required of you as part of your SCM 2.0 need to be completed before your consultant can undertake this risk evaluation. Also, the additional information obtained from the pilot scale test will assist in developing a remediation strategy. Please address these items in your risk evaluation as part of the CAP requested below.

8. Groundwater Ingestion – Golder's risk assessment states that "The ingestion of groundwater used for drinking water is not considered to be of concern based on water use in the area of the site, which is limited to municipal water supply, and absence of known drinking water wells near to the site." The subject site is located above the municipal drinking water aquifer which supplies drinking water to the City of Livermore. Dissolved plumes from your site are in the immediate vicinity of active municipal supply well CWS-8 and appear to be migrating into an area for which you have not yet performed a well survey (as previously required of you in SCM 2.0).

Thus, this pathway cannot be eliminated from your risk assessment. Please address this data gap in SCM 2.0 and this pathway in your risk evaluation as part of the CAP requested below.

9. Preferential Pathways – Golder's risk assessment states that vapor migration along utility corridors was not specifically evaluated. This is a data gap in your SCM that you were requested to evaluate and have not. Free product, reported as fresh gasoline, was detected 900-feet downgradient of your site in MS-MW1. Deep utilities and a potential petroleum pipeline, (associated with previous land use at the Mill Spring Apartments) are reported to be in the vicinity of your site and the Groth site, and could act as a preferential pathway for contamination to move from your site, to the Groth site, and to Mill Springs Apartments, and/or other locations. This is a key data gap that could affect your analysis of risk to the Groth site. Please address this data gap in SCM 2.0 and this pathway in your risk evaluation as part of the CAP requested below.

10. Depth to water – The remediation plan states that depth to water has varied from 18 to 37-feet bgs since 1995. More correctly depth to water has varied from 17' bgs in 1997 to 69 feet bgs in 1992, and the first reported release at the site occurred in 1988. It is unclear why pre-1995 water levels are excluded. Please address this comment in the work plan addendum requested below.

11. Remediation Pilot Test – We concur with your remediation plan's proposal to evaluate the use of in-situ chemical oxidation (ISCO) with ozone as a pilot test. However, we request that you submit an amended plan for this work, by the date specified below, that addresses the following comments:

a. COCs - The remediation plan focuses only on treating benzene and NAPL near the water table (assumed current) and affecting cleanup for the Groth Property (see also Technical Comment A.1. regarding target cleanup zones). No other known COCs were discussed. For example, although MTBE is also a primary contaminant of concern contributing to a long-term groundwater problem, it is not mentioned in the source zone cleanup plan. Additionally, PCE (see attached) has been detected in both the MIP and monitoring wells associated with your site (see attachment) and your treatment approach must consider this contaminant also. Your source zone remediation plan is required to address all known COCs at the site.

b. By-Products – Please include an evaluation of all anticipated reaction by-products for all COCs and those potentially produced by the treatment method.

c. Monitoring Network for Pilot Test – The proposed network of wells to monitor the effectiveness of the pilot test is insufficient. Monitoring in the down-gradient direction is not proposed. A sampling and monitoring program to monitor oxidant dispersion and treatment effectiveness in three dimensions is an essential component for evaluation of your pilot test. We recommend that you install additional monitoring points to meet these criteria. Please include an explanation of your rationale for locating additional monitoring points and your monitoring frequencies. Include your plan for monitoring to differentiate between displacement of contaminated water and actual mass destruction.

d. Pilot Test Frequency – Please specify the time frames for your pilot test, how long before rebound is anticipated, timeframes to evaluate displacement, the basis for estimating these timeframes, proposed frequencies for different monitoring activities, etc.

e. Well Construction – Golder proposes the installation of nested wells for their treatment system. Nested wells are not acceptable at contaminated sites due to the difficulties in ensuring reliable seals between sampling zones. Poor seals can result in leakage between zones and are therefore not allowed. We request that you consider an alternative design for these wells.

f. Utility Survey – The utility survey portion of your conduit study has not been completed, as noted in SCM 1.1 and the risk assessment. The presence of deep utilities and a potential petroleum pipeline are reported to be in the vicinity of your site and the Groth site and could act as a preferential pathway for contamination, oxidant and/or by-products of the reaction. We request that you complete your evaluation of this data gap for your pilot test proposal.

12. Vertical Gradient - Anomalous data regarding vertical gradient in well pairs MW-11, MW-12, D-1, and D-2 has consistently been reported in the quarterly reports. We request that these anomalies be analyzed and the rationale for their occurrence be provided in SCM 2.0. Please include hydrographs and head profiles for these wells, your depth discrete wells (CMT), supply wells, etc., and an analysis of these graphs and other data to support your evaluation.

13. SCM Data Needs - Include all soil & groundwater analytical results and sample location maps, boring logs, and cross-sections in the SCM 2.0 requested below. This request encompasses data and maps from UST removal and/or closure through site investigation activities.

14. Corrective Action Plan – The purpose of the CAP is to use the information obtained during investigation activities to propose cost-effective final cleanup objectives for the entire contaminant plume and remedial alternatives for soil and groundwater that will adequately protect human health and safety, the environment, eliminate nuisance conditions, and protect water resources.

We require that you prepare a CAP for the final cleanup of contamination (MTBE, benzene, other petroleum products, and associated blending compounds and additives) in soil and groundwater caused by the unauthorized releases at your site. The CAP shall detail at least three technically and economically feasible methods, besides the no action, MNA, and natural attenuation alternatives, to restore and protect beneficial uses of water and to meet the cleanup objectives for each contaminant established in the CAP. The evaluation is to include cost estimates for each alternative and the timeframes to reach remediation objectives.

The CAP is to include a risk evaluation that: considers all COCs and all receptors; evaluates the threat posed by the residual pollution under changing conditions (e.g. increasing and decreasing groundwater levels, new supply well installed nearby, etc.) for as long as the residual pollution (adsorbed and dissolved) remains in place in the environment; determines cleanup levels (active remediation) and cleanup goals (water quality objectives); and calculates the likelihood of reaching cleanup objectives and the time it will take to reach cleanup levels and goals.

The CAP must propose a monitoring network capable of monitoring the effectiveness of on-going remediation (process monitoring). Note that this will likely require monitoring points in addition to your current network. The CAP must also propose verification sampling and monitoring (soil and groundwater) to confirm completion of corrective actions and evaluate CAP implementation effectiveness. Please submit your CAP by the date below.

TECHNICAL COMMENTS (SECTION B) – ACEH's February 24, 2006, Directive Letter

A majority of the work requested in ACEH's February 24, 2006, letter has not been performed. The technical comments from this letter are included below with comments and incomplete items noted in *italic and underlined*.

February 24, 2006, Directive Letter:

1. Natural Attenuation of Contaminant Plumes – Your consultant hypothesizes that decreasing concentrations of MTBE throughout the plume are due to natural attenuation. Golder appears to base their hypothesis for MTBE degradation on measurements of chemical indicators for natural attenuation and the shrinking dimensions of the BTEX plume. Please note that apparent attenuation could be due to other mechanisms such as source depletion or migration of the plume out of the groundwater monitoring network in addition to biodegradation. Declining concentrations could be due to biodegradation however there is disagreement in the literature as to the ability to convincingly demonstrate biological removal of MTBE. Biodegradation would need to be demonstrated by several lines of evidence such as measurement of by-products, consumption of electron acceptors, isotope analyses, and concentration versus distance plots using appropriately located and constructed monitoring wells. Research in California has indicated the presence of active microbial populations in lab tests of samples from contaminated sites however; other contaminated sites have not exhibited any native aerobic MTBE degrading capability. Also, many MTBE sites may not be aerobic or aerobic in limited areas which would eliminate or limit any potential natural aerobic biodegradation. ACEH maintains there is sufficient evidence at this site to suggest that the MTBE plume may have detached from the source and looks forward to working with your consultant to address this issue.

INCOMPLETE –Technical response remains unaddressed.

2. Off-Site LNAPL – ACEH's July 5, 2005, letter included the following technical comment:

> **c. Off-Site LNAPL** As discussed in SCM Rev. 1.1, LNAPL has been detected in the subsurface as far away as 900 from your site (i.e., in DP borings and in Well MS-MW1 at the Mill Springs Apartment complex. The issue of the source, extent, and significance of the LNAPL (1) as an ongoing source of groundwater contamination and (2) as a potential source of vapors that could pose risks to above-ground receptors has not been adequately addressed. As we discussed in our meetings with your consultants, this is a key data gap in the current SCM for your site. The occurrence, source, mobility, longevity, and risk posed by the LNAPL needs to be evaluated. In particular, please assess whether the LNAPL detected offsite is LNAPL that has migrated from your site or LNAPL that may exist from prior activities at neighboring properties. Please present a concise workplan describing the scope of your evaluation for our approval in SCM Revision 2.0 requested below.
>
> This data gap is not addressed in your work plan. We request that you do address this issue during your next phase of work. Please submit your plan to address this data gap by **March 10, 2006**. Please note this plan can be developed concurrent with implementing the next phase of fieldwork at this site.

INCOMPLETE – Data gap remains unaddressed.

3. **Vapor Pathway –** We request that a vapor sample also be collected from CMT-4 Z1.

NOT PERFORMED - Include soil gas samples from this port in the CMT when it is dry.

4. **Groundwater Monitoring Data –** Please continue to e-mail data tables from Quarterly Reports for this site to ACEH (donna.drogos@acgov.org) at the time the reports are submitted to our agency. ACEH did not receive electronic data from the Fourth Quarter 2005 monitoring event and requests that this data be electronically transmitted to us by March 3, 2006.

Ongoing requirement.

TECHNICAL COMMENTS (SECTION C) – ACEH July 5, 2005, Directive Letter

A majority of the work requested in ACEH's July 5, 2005, letter has not been performed. The technical comments from those letters are included below with comments and incomplete items noted in *italic and underlined*.

July 5, 2005, Directive Letter:

Data from the transect installation indicates that the dissolved MTBE plume is located in a shallow aquifer overlying lower permeability strata. The lower permeability strata, in turn, overlie a coarse-grained sand and gravel aquifer that is pumped by water supply wells, including CWS-8 located less than ½-mile downgradient of your site. A review of breakthrough curve data (i.e., plots of time versus concentration data for samples collected from monitoring wells) plotted over the plume distance suggests that the MTBE plume may have detached from the source; with a MTBE plume flowing downgradient from your site at an approximate average velocity of 0.8 feet/day.

INCOMPLETE – Valid hypothesis for dissolved plume migration disregarded.

Analysis of the breakthrough curves suggests that the dissolved MTBE plume may have already flowed past the sampling transect installed in 2003 and may now be in the vicinity of CWS-8. Your consultant has hypothesized that contamination of CWS-8 with MTBE is unlikely because that well pumps from a deeper aquifer and that the deeper aquifer is protected from shallow contamination by the aquitard that separates the two aquifers. We concur with this part of your SCM but feel that continued monitoring of the multi-level transect, especially ports completed in the deeper aquifer is necessary to ensure that CWS-8 is not at risk. Continued monitoring of data from CWS-8 is needed as well as completing an assessment of potential risks to downgradient water supply sources and resources, as described in more detail below.

INCOMPLETE –Technical response remains unaddressed.

Additionally, the City of Livermore is planning on redeveloping downtown Livermore and has adopted a Downtown Specific Plan (http://www.ci.livermore.ca.us) that outlines the scope of the revitalization efforts. Much of downtown, including the immediate vicinity of your site, has been rezoned to include both commercial and residential uses. Several residential projects are proposed near your site. This has created a new driver to complete the assessment and cleanup of the contamination associated with your site. Moreover, the cleanup strategy and scope needs to consider land use consistent with the planned redevelopment.

1. Regional Groundwater Pumping – We request that you continue monitoring pumping data, flow data, contaminant concentration data, etc., from CWS-8 and update your SCM to include this information on a quarterly basis for at least the next year as a precautionary measure. In addition to evaluating current pumping rates, please update the SCM to include CWS-8 data since the August 2003 CMT transect installation. Please submit as detailed of records as are available (i.e., daily pumping rates) and also summarize the data as necessary (e.g., monthly) to facilitate comparison with water level data for the site. Please present the results of your work as a revision to the e-SCM (i.e., Revision 2.0) and the Quarterly Monitoring Reports as requested below.

INCOMPLETE – Data gap remains unaddressed.

2. Preferential Pathway Study –

a. Detailed Well Survey - In SCM Rev. 1.1 your consultant has identified one of 17 abandoned wells as a potential vertical conduit. However, supporting documentation for why this well is considered a potential conduit and other wells are not (i.e., location, construction, description, etc.) is not clear. We request that you provide further information to support your detailed well survey. Please include well completion logs and tables summarizing well information (e.g., date installed, diameter, depth, screen interval, decommissioning details, etc) for all known supply wells (whether active, inactive, decommissioned, or abandoned) and the rationale to support the vertical conduit analysis in your updated SCM. Additionally, our January 22, 2003 letter requested a 1-mile radius well survey. The well survey in SCM Rev. 1.1 was completed to a ½-mile radius. Please increase your radius an additional ½-mile in the downgradient direction, to evaluate all wells within 1-mile downgradient of the subject site. Include your results in SCM Rev. 2.0.

INCOMPLETE – Data gap remains unaddressed.

b. Utility Survey - The SCM Rev. 1.1 identifies data gaps regarding potential deep horizontal utility locations and we request that you complete your evaluation of this pathway. Specifically, please evaluate whether or not past and/or present utility lines may be responsible for conveying LNAPL from your site to the Mill Springs Apartment area where LNAPL has been detected (e.g., in Well MS-MW1). Include your results in SCM Rev. 2.0.

INCOMPLETE – Data gap remains unaddressed.

3. Evaluation of Potential Risks Posed by Off-Site Dissolved Contaminants -

a. **Off-Site MTBE Plume**. In SCM Rev. 1.1, a detached plume of MTBE from your site is thought to be currently in the vicinity of Well CWS-8. While this plume does not appear to pose a threat to Well CWS-8 for the reasons described above, an evaluation of the potential risk of the detached plume to other downgradient supply wells needs to be performed. We therefore request that you specifically assess the likelihood of downgradient water wells potentially being impacted by the shallow plume of MTBE that is presumed to have detached from your site and continues to flow downgradient of the sampling transect installed by your consultant in 2003. Moreover, your evaluation should consider whether the plume could pose a risk to supply wells that could potentially be installed in the path of the off-site plume *in the future*. We expect that this evaluation will

require that your consultant (1) estimate the trajectory and attenuation of the detached plume and (2) confer with local planners and water managers to assess the planned utilization of groundwater downgradient of the current location of the detached plume. Note that this evaluation is critical for us to determine the level of work that may be necessary to protect water resources in the area. If, for example, your consultant's analysis cannot show that downgradient water supplies are not at risk, it may be necessary for you to track and extract your detached MTBE plume. We recognize that this could be a very expensive undertaking which is why the risk evaluation performed by your consultant should be as accurate as possible. Please present the results of your assessment in SCM Revision 2.0 requested below.

INCOMPLETE – Data gap remains unaddressed.

b. Off-Site Petroleum Hydrocarbon Plume. As described in SCM Rev. 1.1, high concentrations of dissolved BTEX and other petroleum hydrocarbons have been detected as far as 1,300 feet downgradient from your site. The fact that these compounds have not been detected in the sentry transect of multi-level wells installed by your consultant in 2003 may show that dissolved BTEX biodegrades in the aquifer before reaching the transect. Please evaluate this hypothesis and present the scope, results, and conclusions of your evaluation in SCM Revision 2.0 requested below.

INCOMPLETE – Data gap remains unaddressed. Please note this comment is exclusive to BTEX. It does not refer to nor infer MTBE.

As discussed above, the City of Livermore is planning to redevelop portions of downtown Livermore. These plans include areas that overlie subsurface contaminants that have been released from your site. Therefore, please evaluate whether dissolved BTEX or other petroleum hydrocarbons may present an unacceptable risk of exposure via any pathway, including vapor migration, to receptors. Please be sure to consider the redevelopment plans in your evaluation. Please present the scope and findings of your evaluation in SCM Revision 2.0 requested below.

INCOMPLETE – Data gap is incomplete.

c. Off-Site LNAPL – As discussed in SCM Rev. 1.1, LNAPL has been detected in the subsurface as far away as 900 from your site (i.e., in DP borings and in Well MS-MW1 at the Mill Springs Apartment complex. The issue of the source, extent, and significance of the LNAPL (1) as an ongoing source of groundwater contamination and (2) as a potential source of vapors that could pose risks to above-ground receptors has not been adequately addressed. As we discussed in our meetings with your consultants, this is a key data gap in the current SCM for your site. The occurrence, source, mobility, longevity, and risk posed by the LNAPL needs to be evaluated. In particular, please assess whether the LNAPL detected offsite is LNAPL that has migrated from your site or LNAPL that may exist from prior activities at neighboring properties. Please present a concise workplan describing the scope of your evaluation for our approval in SCM Revision 2.0 requested below.

INCOMPLETE – Data gap remains unaddressed.

3. Additional Downgradient Monitoring Wells – We do not concur with your proposal to install two additional monitoring wells downgradient of the transect. This is because the purpose of these additional wells has not been described in the SCM (i.e., what specific hypotheses would those wells test?). Please re-evaluate your proposal for additional monitoring wells considering the results after performing your detailed well survey (Technical Comment 2a) and evaluation of the risks posed by the offsite MTBE and BTEX plumes (Technical Comments 3a and 3b) and report your results in the SCM Revision 2.0 requested below.

INCOMPLETE – Data gap remains unaddressed.

4. Groundwater Monitoring Schedule – We concur with your groundwater monitoring schedule proposed in the "First Quarter 2005" report with the following modifications. We request that you collect and analyze groundwater samples from the following wells on a quarterly basis for the next 3 quarters: all ports of the CMT wells, 8K2, and MS-MW1. Include updated groundwater monitoring tables in the SCM Revision 2.0 requested below. Report your groundwater monitoring results in the Quarterly Reports requested below. Please continue to submit data tables from Quarterly Reports for this site by e-mail to ACEH (donna.drogos@acgov.org) at the time the reports are submitted to our agency.

INCOMPLETE – Request for work ignored. Groundwater monitoring schedule as approved not implemented. You have failed to collect data in the specified timeframe to meet your data analysis and interpretation requirement. You will need to propose an alternative to satisfy this requirement.

ACEH's January 22, 2003 letter requested specific modifications to your groundwater monitoring data tables to facilitate review and interpretation of the data by our agency. Some of the requested modifications were performed, however most were not. Please revise your data reporting format to meet the requirements of our January 22, 2003 letter, the text of which is included below for your reference:

> **"b) Groundwater Monitoring Data Tables**
>
> The cumulative groundwater data tables in technical reports submitted for your site appear to be incomplete. Examples include but are not limited to: early sampling data for MW-1 is missing, analytical results for some monitoring events in 1995 are missing, dates for sampling and gauging do not corroborate and in some instances are weeks off, analytical data appears to be missing for several monitoring events, some events have gauging data but no analytical results or analytical results are included but gauging data is not, the current quarterly monitoring report does not include cumulative monitoring data, some monitoring wells are not sampled and no explanation of why sampling was not performed is given, etc.
>
> Quarterly Reports submitted for this site are required to include cumulative data tables containing all analytical results, groundwater measurements, groundwater elevations, free product thickness, presence of sheen, explanation for not sampling well(s), etc., from all previous and current groundwater monitoring events for all wells monitored in relation to this site. We request that your gauging and analytical data tables be combined into one table to facilitate presentation of this data and identify missing data, and that dates are tabulated in a month/day/year format. Additionally, please include depth discrete groundwater monitoring data in your tables. Please update your cumulative groundwater

data tables to include this information and include in all future Quarterly Reports submitted for this site."

INCOMPLETE – Data tables missing analytical data, contain incorrect data, etc. Including but not limited to, analytes not reported for Fourth Quarter 2006, amended z-elevation data for monitoring wells not updated, and CMT-4 Z1 events with depth to water measurements translated as dry for MSL.

5. Deep Contamination in CMT-4 – Data from installation of CMT-4 indicates subsurface geologic conditions similar to those encountered in the borings for the transect of multilevel wells installed 1,600-feet downgradient from the release site in March 2003. As described in the SCM, a shallow aquifer overlies lower permeability strata which in turn overlies a coarse-grained sand and gravel aquifer pumped by water supply wells in the area. The hypothesis in your SCM is that the deeper aquifer is protected from shallow contamination by the aquitard that separates the two aquifers. However, petroleum hydrocarbon contamination in CMT-4 has been consistently detected in the ports below the aquitard. Please evaluate the data from CMT-4 and provide an explanation for the detections of deeper contamination and evaluate whether contaminants detected in the deeper aquifer presents a potential threat to downgradient supply wells. We recommend that your data analysis also include plots of head vs. depth over time for this well. Please report your results in the SCM Revision 2.0 requested below.

INCOMPLETE – Data gap remains unaddressed. Statements of alternative hypotheses provided without technical justification and validation. See technical comment A.3. above.

6. Source Area Sampling of Vapor Pathway – We concur with your proposal to investigate the vapor pathway in the source area of the subject site and on the property immediately downgradient. We request that you re-evaluate the sampling locations proposed in SCM Rev. 1.1 as it appears additional sampling points are needed to evaluate the vapor pathway. We recommend that you also collect vapor samples from CMT-4 Z1. Additionally, please note it appears that residential use is being proposed by the City of Livermore for the Groth Bros. site, immediately downgradient of the subject site. Include your proposal for this work in the SCM Revision 2.0 requested below.

INCOMPLETE – Vapor samples from CMT-4 Z1 not collected. Include soil gas samples from this port in the CMT as part of your quarterly monitoring.

7. Definition of Lateral Extent of Source Area – We concur with your proposal to investigate the extent of NAPL immediately downgradient of your site. Please provide a more detailed map (larger scale, with data of soil concentrations with depth) of your sampling locations. We recommend that you consider additional sampling location(s) in the vicinity of H-2 to H-3. Include your proposal for this work in the SCM Revision 2.0 requested below.

Additionally, the City of Livermore is scheduled to perform street and utility upgrade activities at First and L Streets this summer. We encourage you to coordinate your field activities with theirs in the event they uncover potential source areas and/or utilities that would provide data for your site.

COMPLETED

8. Interim Remediation – We previously approved a workplan, dated March 27, 2003, for interim remediation at this site, however, it does not appear that any of the work proposed in that

plan was implemented. Remediation of soil and groundwater contamination at the subject site is required. Please provide an update on your progress on implementing the interim remediation workplan and/or your recommended adjusted plan based upon the results of your SCM Rev. 1.1. Include your proposal and schedule in the Revised Interim Remediation Plan requested below.

PENDING - To be addressed in CAP

9. Corrective Action Plan – The purpose of the CAP is to use the information obtained during investigation activities to propose cost-effective final cleanup objectives for the entire contaminant plume and remedial alternatives for soil and groundwater that will adequately protect human health and safety, the environment, eliminate nuisance conditions, and protect water resources. We require that you prepare a CAP for the final cleanup of contamination (MTBE, petroleum products, and associated blending compounds and additives) in soil and groundwater caused by an unauthorized release at your site. The CAP shall detail at least three technically and economically feasible methods to restore and protect beneficial uses of water and to meet the cleanup objectives for each contaminant established in the CAP. The CAP must propose verification sampling and monitoring to confirm completion of corrective actions and evaluate CAP implementation effectiveness. Please submit your CAP by the date below.

PENDING – Requirements as specified in technical comment A.14. above.

TECHNICAL REPORT REQUEST

Please submit technical reports electronically to ACEH (Attention: Ms. Donna L. Drogos), according to the schedule below and as established for the project under the Polanco Act.

- **April 27, 2007** – Pilot Test Work Plan Addendum
- **June 1, 2007 -** SCM Revision 2.0
- **July 1, 2007 –** 1st report pilot test
- **July 30, 2007 –** Quarterly Report for the Second Quarter 2007
- **August 1, 2007 –** 2nd report pilot test
- **September 1, 2007 –** CAP and Public Participation Plan
- **October 30, 2007 –** Quarterly Report for the Third Quarter 2007
- **January 30, 2008 –** Quarterly Report for the Third Quarter 2007
- **April 30, 2008 –** Quarterly Report for the First Quarter 2007

These reports are being requested pursuant to Section 25296.10 of the California Health and Safety Code. 23 CCR Sections 2652 through 2654, and 2721 through 2728 outline the responsibilities of a responsible party in response to an unauthorized release from a petroleum UST system, and require your compliance with this request.

ELECTRONIC SUBMITTAL OF REPORTS

The Alameda County Environmental Cleanup Oversight Programs (LOP and SLIC) require submission of all reports in electronic form to the county's ftp site. Paper copies of reports will no longer be accepted. The electronic copy replaces the paper copy and will be used for all public information requests, regulatory review, and compliance/enforcement activities. Instructions for submission of electronic documents to the Alameda County Environmental Cleanup Oversight Program ftp site are provided on the attached "Electronic Report Upload (ftp) Instructions." Please do not submit reports as attachments to electronic mail.

Submission of reports to the Alameda County ftp site is an addition to existing requirements for electronic submittal of information to the State Water Resources Control Board (SWRCB) Geotracker website. Submission of reports to the Geotracker website does not fulfill the requirement to submit documents to the Alameda County ftp site. In September 2004, the SWRCB adopted regulations that require electronic submittal of information for groundwater cleanup programs. For several years, responsible parties for cleanup of leaks from underground storage tanks (USTs) have been required to submit groundwater analytical data, surveyed locations of monitoring wells, and other data to the Geotracker database over the Internet. Beginning July 1, 2005, electronic submittal of a complete copy of all necessary reports was required in Geotracker (in PDF format). Please visit the SWRCB website for more information on these requirements (http://www.swrcb.ca.gov/ust/cleanup/electronic_reporting).

PERJURY STATEMENT

All work plans, technical reports, or technical documents submitted to ACEH must be accompanied by a cover letter from the responsible party that states, at a minimum, the following: "I declare, under penalty of perjury, that the information and/or recommendations contained in the attached document or report is true and correct to the best of my knowledge." This letter must be signed by an officer or legally authorized representative of your company. Please include a cover letter satisfying these requirements with all future reports and technical documents submitted for this fuel leak case.

PROFESSIONAL CERTIFICATION & CONCLUSIONS/RECOMMENDATIONS

The California Business and Professions Code (Sections 6735, 6835, and 7835.1) requires that work plans and technical or implementation reports containing geologic or engineering evaluations and/or judgments be performed under the direction of an appropriately registered or certified professional. For your submittal to be considered a valid technical report, you are to present site specific data, data interpretations, and recommendations prepared by an appropriately licensed professional and include the professional registration stamp, signature, and statement of professional certification. Please ensure all that all technical reports submitted for this fuel leak case meet this requirement.

UNDERGROUND STORAGE TANK CLEANUP FUND

Please note that further delays in investigation and reporting, late reports, or enforcement actions will result in ACEH recommending to the State that you be made ineligible to receive grant money from the state's Underground Storage Tank Cleanup Fund (Senate Bill 2004) to reimburse you for the cost of cleanup.

AGENCY OVERSIGHT

If it appears as though significant delays are occurring or reports are not submitted as requested, we will consider referring your case to the Regional Board or other appropriate agency, including the County District Attorney, for possible enforcement actions. California Health and Safety Code, Section 25299.76 authorizes enforcement including administrative action or monetary penalties of up to $10,000 per day for each day of violation.

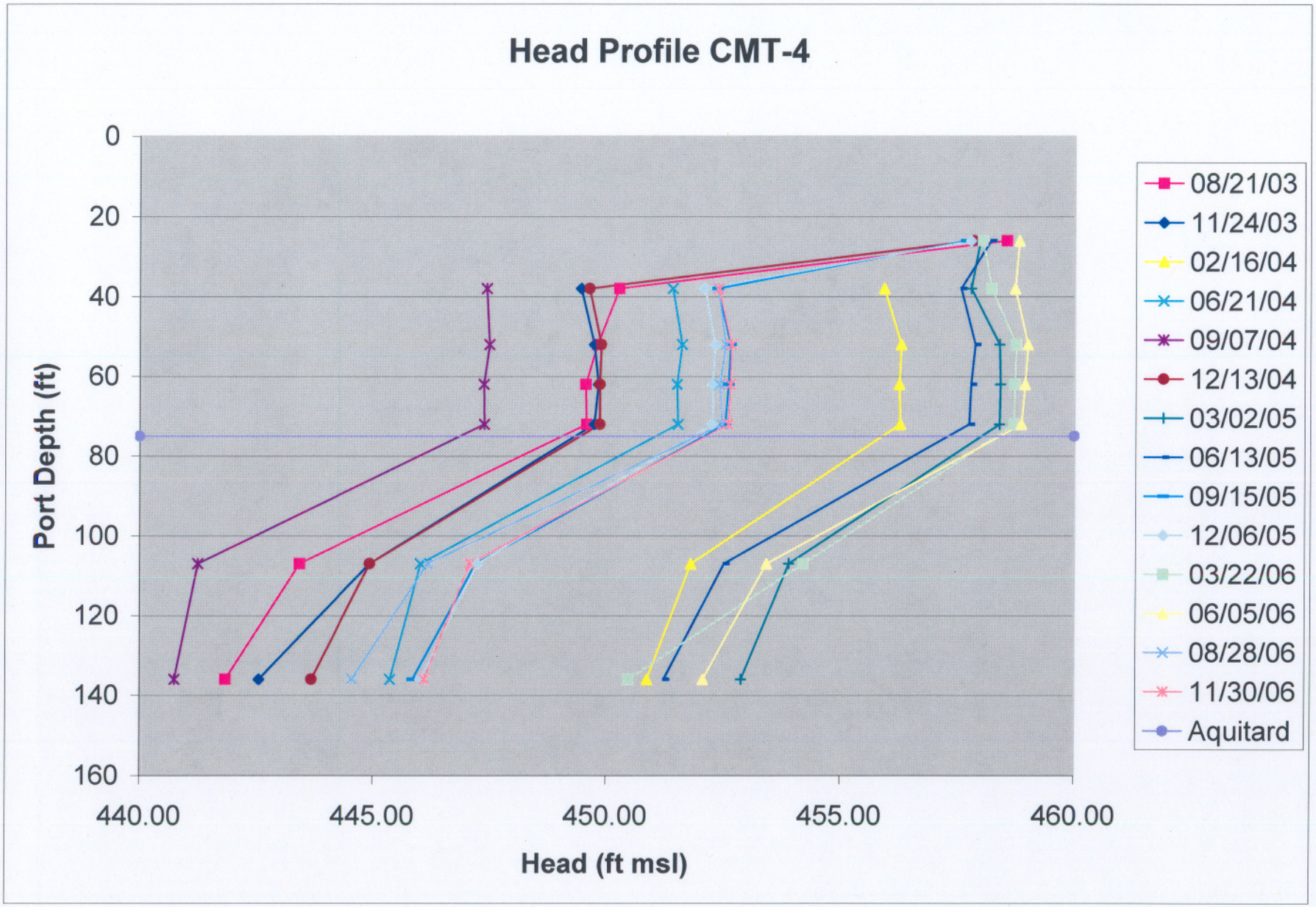
If you have any questions, please call me at (510) 567-6721.

Sincerely,

Donna L. Drogos, P.E.
LOP Program Manager

Attachments: Head Profile CMT-4; Map: PCE Concentrations; and Map: Dry Cleaner Locations

cc:	Mr. Bill Fowler (w/Enc) Golder Associates 2580 Wyandotte Street, Suite G Mountain View, CA 94043 bfowler@golder.com	Ms. Mary Rose Cassa Regional Water Quality Control Board San Francisco Bay Region 1515 Clay Street, Suite 1400 Oakland, CA 94612 MCassa@waterboards.ca.gov	Ms. Colleen Winey Zone 7 Water Agency 100 North Canyons Parkway Livermore, CA 94551 cwiney@zone7water.com
	Ms. Danielle Stefani Livermore – Pleasanton Fire Department 3560 Nevada Street Pleasanton, CA 94566 dstefani@lpfire.org	Mr. Sunil Ramdass State Water Resources Control Board UST Cleanup Fund P.O. Box 944212 Sacramento, CA 94244-2120 sramdas@waterboards.ca.gov	Ms, Chris Davidson City of Livermore 1052 S Livermore Ave Livermore, CA 94550 cedavidson@ci.livermore.ca.us
	Mr. John Freeman, Jr. California Water Service 195 South N Street Livermore, CA 94550 jfreeman@calwater.com	Michael J. Veiluva Esq Alborg, Veiluva & Epstein LLP 200 Pringle Avenue, Suite 410 Walnut Creek, CA 94596 mveiluva@avelaw.com	Mr. Glenn Young Fugro West, Inc 1000 Broadway, Suite 200 Oakland, CA, 94607 GYoung@Fugro.com
	Mr. Balaji Angle gasman6020@yahoo.com		
	D. Drogos (w/Enc), files (w/Enc)		


Head Profile CMT-4
Port Depth (ft)
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20
40
60
80
100
120
140
160
440.00
445.00
450.00
455.00
460.00
Head (ft msl)
08/21/03
11/24/03
02/16/04
06/21/04
09/07/04
12/13/04
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06/13/05
09/15/05
12/06/05
03/22/06
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11/30/06
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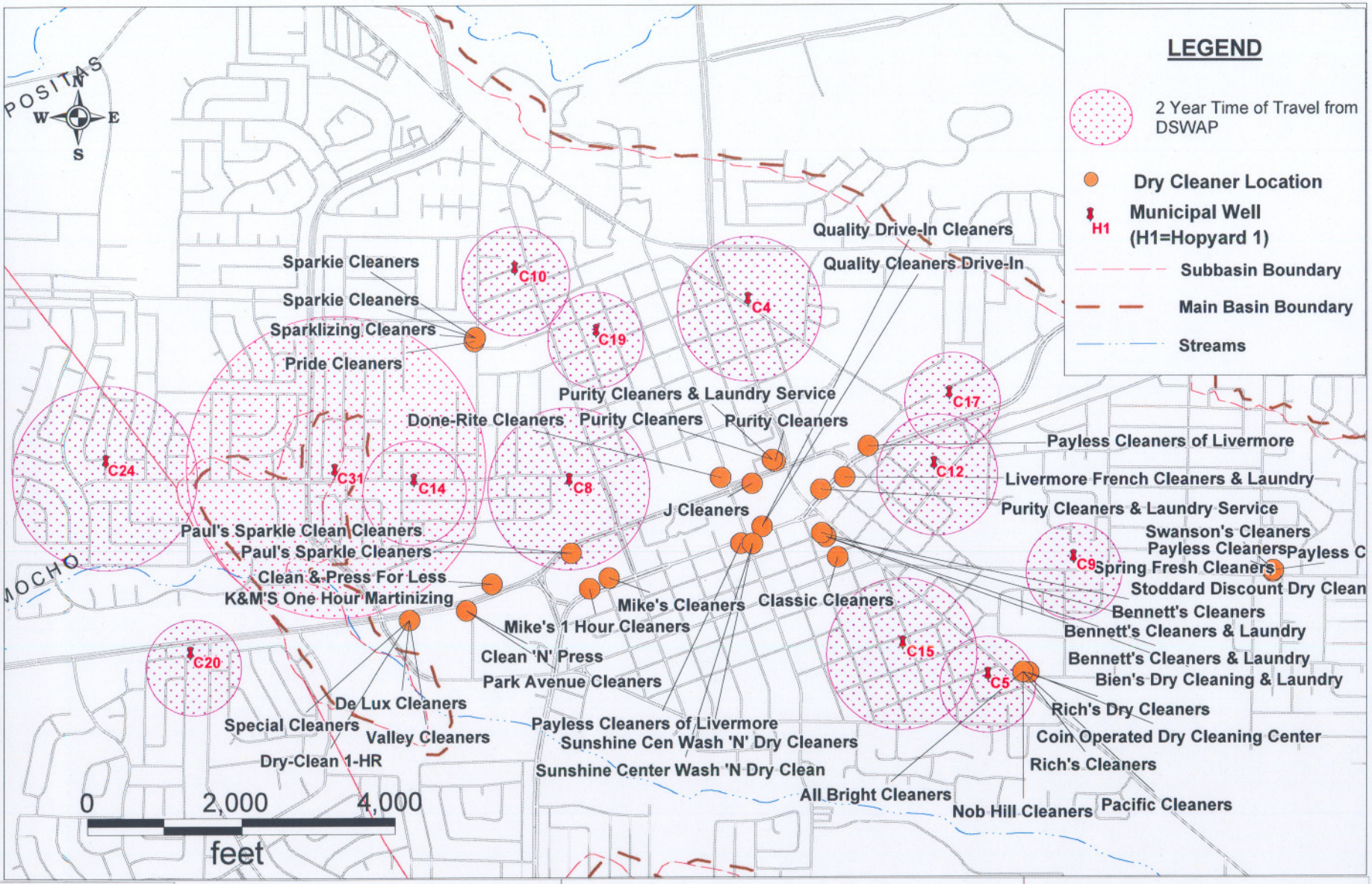
	ZONE 7 WATER AGENCY 100 NORTH CANYONS PARKWAY LIVERMORE, CA 94551	PCE CONCENTRATIONS SPLIT SAMPLING FROM TS#62	Drawn By: C. WINEY Revised By: Date Updated: 4/5/2005 File: E:\TOXIC\drycleaners\pce_concen.pdf



ZONE 7 WATER AGENCY
5997 PARKSIDE DRIVE
PLEASANTON, CA 94588

FIGURE 1
DRY CLEANER LOCATIONS
LIVERMORE AREA

Drawn By:	CWiney
Revised By:	CWiney
Date Updated:	12/8/04
File: \zone7-file\mapinfo\Toxic\ToxReport2003.wor	