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July 12, 2013

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Crown Chevrolet Cadillac Isuzu
P.O. Box 2010
Dublin, CA 94568

Subject: Fuel Leak Case No. RO0003014 and GeoTracker Global ID T00000001616, Crown Chevrolet Cadillac Isuzu, 7544 Dublin Boulevard and 6707 Golden Gate Drive, Dublin, CA 94568

Dear Ms. Costello, Mr. Costello, and Mr. Woolverton:

Alameda County Environmental Health (ACEH) staff has reviewed the case file in conjunction with the proposed corrective actions and proposed site redevelopment plans for the subject site presented in the following documents prepared by AMEC Environment & Infrastructure, Inc. (AMEC) on behalf of the Betty J. Woolverton Trust and Crown Chevrolet Cadillac Isuzu (collectively, Crown):

- *Revised Draft Feasibility Study and Corrective Action Plan* (Draft FS/CAP), dated March 25, 2013. The Draft FS/CAP presents an evaluation and comparison of four remedial alternatives for addressing groundwater, soil, and soil vapor impacts at the site and a proposed corrective action plan for implementation of the selected alternative (Alternative 3) consisting of installation of a permeable reactive barrier (PRB), installation of vapor intrusion (VI) mitigation system, corrective action maintenance and performance monitoring, and long-term site management and institutional controls (IC's).
- *Addendum to Revised Draft Feasibility Study and Corrective Action Plan* (Addendum No. 1), dated May 10, 2013. Addendum No. 1 provides additional information requested by ACEH on the anticipated life span of the PRB proposed in the FS/CAP.
- *Second Addendum to Revised Draft Feasibility Study and Corrective Action Plan* (Addendum No. 2), dated May 31, 2013. Addendum No. 2 summarizes proposed changes to the monitoring program and location of the PRB as presented in the Draft FS/CAP.

ACEH has also reviewed the following documents prepared by ENGEO Incorporated (ENGEO) for the subject property:

- *Phase I Environmental Site Assessment* (Phase I ESA), 6707 Golden Gate Drive APN 941-1500-32-2, dated February 19, 2013. The Phase I was conducted on behalf of The Kingsmill Group, LLC (Kingsmill) for the purpose of environmental due diligence during Property acquisition.

- *Subsurface Investigation Work Plan*, dated January 11, 2013, reportedly prepared "to support due diligence activities underway on behalf of a party's potential acquisition" of the 6707 Golden Gate Drive parcel (APN 941-1500-32-2). ACEH notes that it is not clear on whose behalf this work plan was prepared for.

The above referenced documents present recommendations and proposed corrective actions to remediate site impacts in order to progress to site closure and facilitate site redevelopment as a multi-use residential/commercial project on the "north parcel" (Assessor Parcel Number [APN] 941-1500-15-9) located at 7544 Dublin Boulevard, and a veterans housing project on the "south parcel" (APN 941-1500-32-2) located at 6707 Golden Gate Drive.

Based on our review of these documents and the discussions during the meetings held on May 20, 2013 with representatives from ACEH, Crown Chevrolet, AMEC, Kingsmill, and Fairfield Housing and the June 25, 2013 meeting with representatives from ACEH, Crown Chevrolet, AMEC, Kingsmill, Zone 7 Water Agency (Zone 7), and the City of Dublin's Economic Development Department and Public Works Department, ACEH conditionally concurs with the proposed corrective action plan concept and implementation plan presented in the Draft FS/CAP and as modified by Addendum No. 1 and Addendum No. 2 provided you address the technical comments, perform the requested work, and send us the reports listed below.

Please note that public participation is a requirement for the Corrective Action Plan process. Therefore, you are required to notify potentially affected stakeholders who live or own property in the surrounding area of the proposed corrective actions described in the Draft FS/CAP and associated addendums through the mailing of a Fact Sheet. Public comments on the proposed remediation will be accepted for a period of thirty days. Following the thirty day public comment period, the comments received (if any), must be addressed and incorporated into a Final CAP.

TECHNICAL COMMENTS

1. **Development Plans and Construction Considerations** – ACEH understands that site redevelopment is tentatively planned for the north and south parcels as follows:

    - **North Parcel:** The north parcel is tentatively planned for development by Kingsmill and Fairfield Housing as a multi-use development consisting of 314 apartments (a total of approximately 72,000 square feet in multi-unit structures) and 17,000 square feet of retail space at ground level along Dublin Boulevard; some of the apartments will be located above the retail space. An approximately 40,000-square-foot parking garage is planned for the eastern central portion of the north parcel. In addition to these site structures, elevators, a pool and spa, and landscaped courtyards are proposed for the north parcel. The spa and pool are currently planned to be approximately 3 feet and 6 feet in depth, respectively. Elevator pits are planned be approximately 5 feet in depth.

    - **South Parcel:** The south parcel is tentatively planned for development by Eden Housing as 76 units of affordable veterans' and other affordable housing (a total of approximately 20,000 square feet of residential space, plus approximately 16,000 square feet of parking). Residential structures will have a maximum of five floors and parking garages of a maximum of 5½ levels. In addition to the structures, elevators and a landscaped courtyard are proposed for the south parcel. Although currently part of the site from a legal and regulatory standpoint, ACEH understands that Crown and Kingsmill intend to subdivide the south parcel from the north parcel in the near future and submit a request for regulatory closure for the south parcel.

    - **Utilities:** Storm drains are planned to be approximately 5 feet deep and the sewer line approximately 8 feet in maximum depth, however, these are preliminary estimates and existing pipe depths need to be confirmed with utility agencies.

- **Site Grading:** Based on a Preliminary Geotechnical Report prepared by ENGEO dated May 8, 2012, 3 to 5 feet of fill will be required in various locations at the project site. The preliminary recommendations include removal and re-compaction of the fill from excavations for improvements.

- **Structure Foundations:** The Preliminary Geotechnical Report provides preliminary foundation recommendations for three different foundation types including conventional footings, mat foundations, and deep foundations. Conventional footings were recommended to have a minimum depth of 24 inches, and deep foundations a minimum depth of 40 feet, while mat foundations were recommended to be constructed within the upper 1 to 2 feet of the ground surface. Although the preliminary deep foundation recommendations state that structures may be supported on drilled piers or piles, piles have been recommended due to contaminated groundwater concerns (estimated at depths greater than 8 feet below ground surface [bgs] in the northeastern corner of the site and 11 feet bgs in the middle portion of the site). As excavations are planned to be 8 feet or shallower (including the pool), AMEC and ENGEO anticipate that impacted groundwater will not be encountered during site development activities and therefore will not pose construction challenges during development activities.

ACEH notes that the activities and time frames presented in the Draft FS/CAP have been adjusted to fit the currently proposed site redevelopment plans. Should site redevelopment not occur as planned, portions of the Draft FS/CAP and associated addendums may not be applicable, and an Addendum to the Draft FS/CAP may be required. Additionally, ACEH notes that final development plans and site management plans will be required that include soil management practices for characterization and disposal of impacted soil at a permitted off-site facility and the importation of clean fill in accordance with the California Department of Toxic Substances Controls (DTSC) Clean Imported Fill Material Information Advisory, and measures to prevent cross contamination of water bearing zones during pile driving, and management of impacted groundwater, if encountered.

2. **Site Impacts and Contaminants of Concern (COCs)** – The Draft FS/CAP and Phase 1 ESA present a summary of the site history and documented groundwater, soil, and soil vapor contamination at the site. The site was developed in 1968 as Crown Chevrolet, a car dealership with auto body shops, on land that appears to have been used for agricultural purposes. The site originally consisted of one approximately 6.33-acre parcel, but was divided into a 4.97-acre "north" parcel (APN 941-1500-15-9) located at 7544 Dublin Boulevard and a 1.36-acre "south" parcel (APN 941-1500-32-2) located at 6707 Golden Gate Drive in 2000 when a new street, St. Patrick Way was constructed. Facility operations were reportedly conducted on the northern parcel in the four site buildings (Buildings A, B, C and D). The south parcel has reportedly been used solely as a parking lot for new and used automobile inventory for the retail automotive sales at the Crown Chevrolet dealership. ACEH understands that operations as a car dealership and auto body shop continued from 1968 through the present, although operations have been significantly reduced in the past several years. Buildings A through D remain at the site; however, only Building C is in use at this time as an auto body shop. No other operations are currently being conducted at the site on the north parcel. The south parcel is currently used as a truck storage yard.

   The Draft FS/CAP and Phase 1 ESA identify the following main environmental impacts at the site:

   - **North Parcel Impacts:** The Draft FS/CAP identifies the following two primary site impacts related to the presence of volatile organic compounds (VOCs) in soil, groundwater and soil vapor at the site on the north parcel:

     - VOCs, primarily tetrachloroethene (PCE) and trichloroethene (TCE), have been detected in shallow groundwater and soil vapor throughout the northern portion of the north parcel. Biodegradation byproducts (e.g., cis-1,2-dichloroethene) are also present in groundwater and vapor, but at lower concentrations relative to PCE and TCE and below their respective 2013 Environmental Screening Levels (ESLs), published by the California

Regional Water Quality Control Board, San Francisco Bay Region. An exception is that vinyl chloride has been detected in soil vapor at concentrations above its ESL. Based on the results of the most recent investigation performed by AMEC in 2012, the source of PCE (and hence its degradation products) in groundwater is from an unidentified off-site.

- Chlorobenzenes and related compounds (e.g., 1,2-dichlorobenzene and 1,4-dichlorobenzene) have been detected in soil, groundwater, and soil vapor at a former sump and a former front-end alignment pit (F.E. Pit) within Building B. Remedial activities were performed in October 2011 in these areas however it was not possible to excavate beneath the existing building walls, and therefore some impacted soil remains beneath them.

- **South Parcel Impacts:** A low concentration (relative to the ESL) of PCE has been detected in soil vapor in the northeastern corner of the south parcel. Concentrations collected and reported by AMEC ranged between 48 and 94 micrograms per cubic meter ($\mu g/m^3$), which is below the respective ESL of 410 $\mu g/m^3$ for soil gas assuming an indoor air residential exposure scenario. No PCE has been detected above its reporting limit in groundwater in this area and no facility operations, other than vehicle parking, have reportedly been conducted in the south parcel. Based on these results, AMEC concludes in the Draft FS/CAP that no mitigation appears necessary for the south parcel at this time.

  In the Phase I ESA, ENGEO presents findings of their review of historical record sources including observations that prior to a 1965 historical aerial photograph in which grading operations were observed, the site appears to have been vacant and undeveloped. However, ENGEO notes observations of cultivation of row crops and hay fields on properties in the vicinity of the site. Based on the findings of their assessment, ENGEO states that no Recognized Environmental Conditions (RECs) and no historical RECs were identified for the Property and therefore recommends no further environmental studies are warranted at this time. However, ENGEO also states that the Phase 1 ESA is not intended to represent a complete soil or groundwater characterization, nor define the depth or extent of soil or groundwater contamination on the south parcel, rather is intended to provide an evaluation of potential environmental concerns associated with the use of the Property. ENGEO further states that a more extensive assessment that would include a subsurface exploration with laboratory testing of soil and groundwater samples could provide more definitive information concerning site-specific conditions.

ACEH generally concurs with AMEC's conclusions that the PCE (and related breakdown products) contamination in the northern part of the north parcel is due to an unidentified off-site source. ACEH further concurs that the impacts to the north parcel due to the off-site source and facility operations has been adequately characterized to facilitate development of the appropriate corrective action. However, ACEH notes that ENGEO's recommendation that no further environmental studies are warranted for the south parcel seem to be in contradiction with recommendations provided in the subsequent submittal (and withdrawal) of the *Subsurface Investigation Work Plan*, dated January 11, 2013. This work plan included a scope of work to further assess surface soil, subsurface soil, and soil gas to determine if the south parcel has been "affected by 1) potential historic agricultural activities, and/or 2) activities associated with storage and retail sales of automobiles". Therefore, ACEH requests a memorandum be prepared in accordance with the schedule provided in the Technical Report Section below, providing clarification on the recommendations for the south parcel from Crown, Kingsmill, and Eden Housing prior to ACEH's consideration of a proposal to bifurcate the south parcel and issue a no further action directive to facilitate the proposed development as an affordable veterans housing project.

3. **Corrective Action Objectives (CAOs)** – The Draft FS/CAP proposes both functional and absolute CAOs for the protection of human health and the environment at the site. According to the Interstate Technology Regulatory Council's (ITRC) November 2011 Integrated DNAPL Site Strategy guidance document, absolute objectives are based on broad objectives, such as protection of public health,

while functional objectives establish steps or activities that are taken to demonstrate attainment of the absolute objectives. The proposed absolute and functional objectives (listed as bullets beneath each absolute CAO) for the site include:

a. Mitigate potential vapor intrusion risks to future site occupants.

- Confirm via 1 year of indoor air sampling that concentrations of COCs are below applicable indoor air screening levels (e.g., ESLs).
- Obtain temporal shallow groundwater, soil vapor, and vent riser (equivalent to sub-slab) data for 5 years. ACEH notes that Addendum No. 2 to the FS/CAP proposed the elimination of soil vapor sampling at the site.
- Comply with institutional controls (ICs) regarding property use, mitigation measures, and monitoring.

b. Mitigate potential exposure to future construction and maintenance workers to VOC-impacted soil vapor, and groundwater.

- Comply with a site management plan, which will provide guidance for worker protection and safety measures to be employed during site construction and maintenance.

c. Remediate identified residual source material in the vicinity of the former sump and F.E. Pit.

- Remove residual impacted soil to the extent that COC concentrations in confirmation samples collected from the sidewalls of the excavation are less than ESLs for shallow soil in a residential land use scenario, where groundwater is considered a potential drinking water resource.
- Conduct additional removal of impacted soil that may be encountered during site demolition and development, as necessary.

Additionally, the Draft FS/CAP proposes to compare concentrations of VOCs in groundwater to their respective ESLs for evaluation of potential vapor intrusion, rather than MCLs since exposure to groundwater based on a drinking water scenario is considered an incomplete pathway, as potable water at the site is municipally-supplied at this time and will continue to be in the foreseeable future, and proposes a site-specific screening level for PCE of 94 ug/L in groundwater for the purpose of evaluating the effectiveness of the proposed corrective action.

ACEH is in general agreement with the proposed absolute CAOs as modified by Addendum No. 2 of the Draft FS/CAP, and concurs that the presence of the majority of PCE, TCE, and their breakdown products in groundwater and, as a consequence, in soil vapor at the site, originates from an off-site source, and as such, protection of the environment by way of minimizing the possibility for vertical migration of VOC-impacted groundwater from the off-site source, or by reducing concentrations of COCs in groundwater to less than drinking water screening levels (i.e., maximum contaminant levels [MCLs]), is not an objective of the Draft FS/CAP.

ACEH notes that timeframes involved in remediating chlorinated-solvent sites typically are much longer than the 5-year timeframe proposed as a functional objective for obtaining temporal shallow groundwater and vent riser data to demonstrate attainment of the absolute objective of mitigating potential vapor intrusion risks to future site occupants. Therefore, as discussed in the May 20, 2013 meeting, ACEH considers the proposed functional objective for obtaining temporal shallow groundwater and vent riser data to be an interim objective, and that data collected during this time-frame will be used to develop final functional objectives and timelines for demonstrating attainment of mitigating potential vapor intrusion risks to site occupants with respect to endpoints of the overall site cleanup.

4. **Risk-Based Screening Levels** – The Draft FS/CAP presents proposed risk-based screening levels (RBSLs) to evaluate potential human health risks associated with exposure to PCE and TCE present

in groundwater at the site. The RBSLs were developed using the methodology presented by the United States Environmental Protection Agency (U.S. EPA) for Regional Screening Levels (RSLs) and the more protective toxicity criteria from either Office of Environmental Health Hazard Assessment (OEHHA) or U.S. EPA, consistent with DTSC guidance on the use of RSLs and conducting screening-level human health risk assessments (HHRAs) in California. The site-specific RBSLs were developed using inputs to advanced groundwater model spreadsheets including chemical properties, site-specific vadose zone soil properties, and conservative default assumptions regarding the structural properties of the hypothetical future buildings at the site. AMECs states that the subsurface for the residential scenario was modeled as a concrete slab with a mixture of crushed rock (or gravel) and sand below the slab (Stratum A), and a layer of engineered fill material used to stabilize the building (Stratum B), consistent with OEHHA guidance for future buildings. The default physical soil parameters for sandy soil were selected to represent Strata A and B. ACEH generally concurs that the methodology used to develop the RBSLs is appropriate, however notes that final approval of the VI Mitigation System and site construction plans will be dependent on verification that the default assumptions regarding the structural properties of the hypothetical future buildings at the site remain conservative with respect to actual future building construction.

5. **Proposed Corrective Action (Alternative 3 Plus Contingency Measures)** – The proposed corrective action (Alternative 3 plus supplemental contingency measures) presented in the Draft FS/CAP consists of a PRB with zero-valent iron (ZVI), vapor barrier and sub-slab depressurization (SSD) system, soil excavation/disposal, groundwater sampling, and long-term site management and institutional controls (IC's). ACEH generally concurs that the proposed corrective actions combine appropriate technology to contain and treat impacted groundwater migrating onto the site from an off-site source (source interruption), and mitigate potential vapor intrusion risks to future site occupants. However, due to the relatively limited groundwater and soil vapor time-series data set, and the fast-track site redevelopment plans, supplemental contingency measures have been developed in order to mitigate the effects of possible changes in site conditions such as 1) shifts in groundwater flow direction, 2) an increase in plume width along Golden Gate Drive, 3) a change in the distribution of the vapor plume and/or 4) an increase in the footprint of the vapor plume. Although implementation of the proposed contingency actions would ideally only take place if changes in site conditions dictated their requirement, AMEC concludes that post-development implementation would be impractical and cost-prohibitive. Therefore, AMEC proposes to implement the supplemental contingency measures in conjunction with the Alternative 3 remedial actions in order to safeguard human health against changes in site conditions, and to minimize the potential for future logistical and financial implementation impacts.

   The proposed corrective action consists of the following elements:

   a. **Soil Excavation and Disposal** – AMEC estimates that approximately 100 in-place cubic yards (cy) of total petroleum hydrocarbons (TPH) as diesel and motor oil and VOC impacted soil remains in place in the vicinity of the former sump and front-end alignment (F.E.) Pit. This soil will be removed during demolition of Building B on the north parcel. The horizontal excavation extents are estimated based on the locations of soil samples where VOCs and TPH concentrations were less than residential ESLs; the actual horizontal extents will be based on the results of confirmation sample analyses. The vertical extent will be the same as that during the prior remedial activities (i.e., 16 feet bgs at the former sump and 12 feet bgs at the former F.E. Pit). Due to the proposed depth of the sump excavation, groundwater will most likely be encountered during the remedial activities. Accumulated groundwater in the proposed sump excavation will be removed to the extent possible and stored in a temporary holding tank. Based on analytical results for groundwater that was accumulated, sampled, and discharged during the previous excavation activities at the sump and F.E. Pit, AMEC expects that groundwater removed from the excavation(s) will meet discharge requirements for disposal to the on-site sanitary sewer.

      In association with the removal of impacted soil around the former sump and F.E. Pit, hydraulic lifts, sumps (if present), and drain lines will be removed. Confirmation sampling will be conducted to verify that soil has not been affected. Due to the unknown extent of potential soil impacts

associated with the hydraulic lifts, sumps, and drain lines, the Draft FS/CAP only includes costs for the confirmation sampling, and not potential remedial activities. If additional characterization or corrective actions are necessary due to unexpected site conditions, a separate work plan(s) will be prepared and submitted to ACEH for review and approval.

b. Vapor Intrusion (VI) Mitigation System – A VI Mitigation System comprised of a vapor barrier and SSD system will be installed during the construction of the building foundations on the north parcel of the site. Under the Alternative 3 scenario, the vapor barrier and SSD system would be installed beneath the two retail/apartment buildings along Dublin Boulevard and partially beneath the apartment building surrounding the recreational courtyard, extending approximately 190 feet beyond the identified edge of the on-site plume. The 190-foot extension is in excess of the 100-foot lateral distance criteria set forth by the DTSC and California Environmental Protection Agency (Cal/EPA) for determining if buildings are candidates for vapor intrusion. However, the supplemental contingency measures extend the vapor barrier and SSD under all proposed buildings (excluding the parking structure) in the north parcel, to an approximately 84,600 square feet of building area. This contingency measure adds an additional 34,500 square feet beyond the footprint proposed in Alternative 3.

The vapor barrier system includes a reinforced concrete slab on the ground floor of each building, with a geomembrane vapor barrier installed beneath the concrete slab. The geomembrane vapor barrier will consist of a cold, spray-applied asphaltic emulsion membrane installed between two protective high-density polyethylene/polypropylene bonded geotextiles constructed beneath the new reinforced concrete building foundation slabs. The vapor barrier will prevent impacted soil vapor from entering the building that might otherwise pass through various pathways, such as expansion joints, utility penetrations, or cracks in the slab. The spray-applied membrane has a thickness of approximately 60 to 80 dry mil (one dry mil is approximately 0.001 inch).

In addition to the vapor barrier, a SSD system will be installed beneath the spray-applied membrane to build negative pressure in the sub-slab zone (i.e., to create a slight vacuum in the area beneath the building) and extract soil vapors for venting to the atmosphere. The passive SSD will consist of perforated pipe or pre-fabricated low-profile (flat), three-dimensional vent cores for sub-slab soil vapor collection laid within the base rock beneath the building's foundation. The collection piping will then connect to a series of risers that direct extracted soil vapor to the outside of the building. The SSD vacuum will be produced using passive wind turbines mounted on exhaust stacks located above the building roof line, away from windows and air supply intakes. The resulting sub-slab negative pressure will inhibit soil vapor from flowing into the building, by creating a preferential pathway toward the outside.

The vent risers will be equipped with sampling ports for obtaining vent riser data to demonstrate attainment of the proposed absolute objective of mitigating potential vapor intrusion risks to future site occupants. The SSD system will be designed and installed with features that will allow for conversion to an active SSD system (i.e., with motor-driven fans), should that be necessary in the future. The determination to convert to an active system, if necessary, will be based on the results of the vent-riser sampling.

Specific operations and maintenance (O&M) activities will be specified in the SMP, in a Vapor Mitigation System Operations and Maintenance (O&M) Plan, and via the ICs, which will all include elements related to the presence, protection, and requirements of the vapor barrier.

The results of sampling in the south parcel (i.e., south of St. Patrick Way) do not indicate a significant impact to soil vapor (PCE concentrations in soil vapor were less than ESLs), and VOCs were not detected in groundwater in this area. Therefore, a vapor barrier/SSD system is not proposed for buildings constructed on the south parcel.

c. Permeable Reactive Barrier – A PRB will be installed along the western and northern property boundaries to intercept and treat contaminated groundwater migrating onto the site from an off-site source. The PRB will be located and designed as described below to provide a permeable treatment zone to facilitate dechlorination of PCE-impacted groundwater that moves though the

wall. Guidance and requirements related to the presence, long-term protection, and other requirements of the PRB will be specified in the SMP and via the ICs.

- **Location** – The PRB will be installed along the northwestern boundary of the north parcel, along the length of the currently identified plume as it enters the site. Addendum No. 2 to the Draft FS/CAP proposes to move the location from an on-site location to an off-site location within Golden Gate Drive and Dublin Boulevard right-of-ways. The final location and depth of the PRB will determined during the design phase of the project.

- **Length** – The length of the PRB proposed in Alternative 3 of the Draft FS/CAP is approximately 200 feet long. The supplemental contingency measures extend the length of the PRB from 200 to 250 feet.

- **Thickness** – A 1.5-foot-thick PRB is proposed with a ZVI-to-sand ratio of 2:1 (equivalent to a 1-foot thick barrier of pure ZVI). A 1-foot-thick pure ZVI barrier represents a design safety factor of 6 for current site PCE concentrations and a design safety factor of 2 for a potential 100-fold PCE concentration increase (i.e., to 20,000 µg/L).

- **Depth** – Based on investigative activities that have been conducted to date along the western property boundary, it is anticipated that the PRB will extend to a depth of 20 feet bgs, which is the approximate depth at which a clay layer has been observed throughout the site. The bottom 12 feet of the trench will be filled with a mixture of granular ZVI and clean quartz sand, followed by clean controlled density fill (CDF) to the ground surface. However, the final depth of the PRB will be determined based on the results of the grab groundwater investigation conducted as part of the pre-design investigation activities.

- **Installation** – Once the final location, thickness, and depth of the PRB and type of ZVI to be used are determined, the PRB installation methods will be evaluated relative to the site conditions at the time. Common continuous PRB installation methodologies include conventional backhoe excavation, clamshell excavation, and continuous trenching. The final installation methodology (or combination of installation methods), will be determined based on several factors, which might installation depth, site access and work space, health and safety constraints, geotechnical constraints, construction schedule constraints, and costs.

- **In-Barrier Performance Monitoring Wells** – In-barrier wells will be installed during the construction of the PRB, as recommended in the ITRC 2005 guidance document entitled Permeable Reactive Barriers: Lessons Learned/New Directions. The wells will be installed in the center (widthwise) of the PRB and will be screened within the first-encountered water-bearing unit, through which the PRB will be installed. Anticipated total depths of in-barrier wells will depend on the depth of the barrier at the installation location. The well bottom will be terminated approximately 1 foot above the bottom of the PRB, anticipated to be at a depth of approximately 20 feet bgs. The annular space between the trench walls and the well casing will be filled with the ZVI/sand mixture from the bottom of the trench to approximately 8 feet bgs, followed by controlled density fill to the surface. The wells will be completed at the surface using flush-mounted, traffic-rated boxes. A locking, watertight plug will be placed in the top of the casing at each well.

- **Sampling and Long-term PRB Requirements** – The PRB is expected to reduce chlorinated VOC concentrations to less than drinking water ESLs. To confirm the expected reduction in groundwater concentrations, nine groundwater monitoring wells are proposed to be installed throughout the site to evaluate concentration trends. Additionally, three monitoring wells are proposed within the PRB to confirm the reduction in VOC concentrations. Proposed groundwater monitoring well locations are presented in the Draft FS/CAP, however final locations will be determined during the corrective action design stage. The CAO's propose to conduct performance monitoring of the effectiveness of the PRB and evaluation of concentration trends in groundwater for a period of 5 years (post–PRB construction) via groundwater sampling within and downgradient of the PRB.

However, as stated in Item 3 above, ACEH considers the proposed 5-year timeframe to be an interim functional objective.

Once the PRB is installed, concentrations of PCE at the downgradient side of the wall are expected to decrease with time. However, although the PRB is expected to immediately reduce PCE concentrations in site groundwater within the PRB, and in the short term downgradient of the barrier, the dominantly fine-grained lithology and a relatively flat gradient at the site, as well as available PRB performance case studies literature and case studies evaluated by AMEC suggest that a reduction in the concentrations of PCE in groundwater in downgradient wells may not be measured in the short term. AMEC has proposed a site-specific risk-based groundwater cleanup goals of 94 µg/L for PCE and 176 µg/L for TCE. Modeling performed by AMEC to estimate the possible time period that may be required for the on-site concentrations of PCE to reach the cleanup goal of 94 µg/L suggest that the concentrations of PCE throughout the site may be reduced to concentrations less than the cleanup goal in 33 to 80 years.

ACEH notes that due to the proposed relocation of the PRB from the on-site location proposed in the Draft FS/CAP to the off-site location within the Golden Gate Drive and Dublin Boulevard as proposed in Addendum No. 2, additional details will need to be vetted out during the design of the PRB with ACEH and the City of Dublin Public Works including measures to protect the PRB, monitoring wells, and other utilities located within the public right-of-ways. Additionally, ACEH notes that due to the estimated length of time to reach the site-specific cleanup goals for groundwater, ACEH considers the functional goal time-frame of 5-years proposed in the Draft FS/CAP for obtaining temporal shallow groundwater to demonstrate attainment of the site specific cleanup goals as an interim goal that will require evaluation of the data collected to develop the final objectives.

d. Additional Vapor Intrusion Mitigation – Additional mitigation measures are proposed for backfill areas for subsurface utilities and elevator installations so as to minimize the possibility of creating preferential pathways for vapor migration and include:

- Protection of new utilities to minimize the possibility of creating preferential pathways for vapor migration using protective measures that could include installation of transverse barriers across utility trenches, or use of low permeability or controlled-density fill material.
- Protection of elevator shafts to minimize the possibility of creating preferential pathways for vapor migration using measures similar to those for utilities or by installing self-enclosed (holeless) elevator systems. The holeless elevator is a single piston design where all equipment is contained within the elevator shaft so that there are no penetrations through the elevator pit. This design is coupled with a water-proof seal to further mitigate any vapor intrusion.

e. Long-Term Site Management and Institutional Controls – Long-term site management and ICs will be implemented as administrative restrictions on the use of the property. Site management and ICs are intended to prevent inappropriate activities and use of the property, with consideration of potential risk from existing soil vapor and groundwater impacts. A SMP will be developed that presents guidelines for health and safety, soil management, and groundwater management if subsurface work is conducted at the site. The site owner will have responsibility for implementation of the SMP. Additionally, a deed restriction will be placed on the property that will include a prohibition on the use of groundwater across the site.

ACEH notes that the proposed corrective actions described above are conceptual in nature and must be fully developed in accordance with the requirements of regulatory agencies with jurisdiction over the cleanup activities and site redevelopment as described in Item 6 below.

6. <u>Pre-Implementation Activities</u> – Prior to implementing the proposed CAP elements, remedial design and construction documents will be required to be submitted to various agencies in order to obtain the necessary construction permits and approvals as described in the Draft FS/CAP and

discussed in the May 20, 2013 and June 25, 2013 meetings. Agency review and approval will include, but not be limited to ACEH's Local Oversight Program (LOP) and Certified Unified Program Agency (CUPA), City of Dublin Building Department and Public Works Department, Zone 7 Water Agency (Zone 7), Bay Area Air Quality Management District (BAAQMD), and Dublin San Ramon Services District (DSDSD). The requisite documents include:

a. Facility Closure and Demolition Plan – ACEH understands that site redevelopment will involve demolition of the existing site buildings and removal of existing subsurface utilities. Prior to decommissioning the existing facility, a Facility Closure and Demolition Plan will be prepared by a qualified contractor. The plan will provide details on specific activities associated with demolition and facility closure and will address possible impacts that have not yet been discovered at the site and procedures to minimize the possibility of causing subsurface contamination during demolition. The Facility Closure and Demolition Plan will be submitted to ACEH LOP and CUPA for review and approval prior to the start of site demolition activities. Results of the excavation activities will be documented in an Excavation Report and submitted to ACEH for review and approval. ACEH's LOP is the agency with jurisdiction over the site environmental cleanup while the CUPA is the agency with jurisdiction over the facility closure and site demolition activities.

The Facility Closure and Demolition Plan will include but not be limited to the following:

- A Hazardous Materials Mitigation Report documenting results of a site reconnaissance and building materials survey performed by appropriate licensed personnel to assess and document hazardous materials and petroleum products that may be present at the site. An inventory will be made of sumps, pits, or other underground structures that may remain at the site. The building materials survey will focus on inventory, sampling, and analysis of suspect building materials, including, but not limited to, lead-based paint, asbestos-containing building materials, fluorescent light ballasts, and thermostats. Subsurface conduits or portions thereof that exist above the ground surface or finished floor will be sampled as accessible and as appropriate depending on material type (e.g., transite pipe).
- Requisite permits, monitoring, and reporting performed in association with the abatement of suspected hazardous materials and transportation and disposal at appropriate off-site permitted facilities based on the specific type of material.
- Requirements for an environmental professional to be onsite on a full-time basis during demolition activities that result in ground disturbance or the removal of hardscape, slabs, subsurface piping, or other similar features.
- Confirmation sampling procedures that will be conducted beneath the slabs of Buildings B and C immediately following slab removal, beneath process and drain line piping (e.g., sewer drain line, UST piping), at joints or locations where impacts appear to have occurred, in areas where field observations indicate potential impacted soil, and at other locations identified in the field.
- Contingency plans for characterization, containment, and/or removal of petroleum products or hazardous materials in the event that unanticipated features are encountered (e.g., sumps, product lines), and ACEH notification protocols.
- A cost estimate for the proposed scope of work including a line item for estimated regulatory oversight costs.

ACEH notes that in addition to the items listed in the Draft FS/CAP, the Facility Closure and Demolition Plan should provide details on how known sumps, hydraulic lifts, drains, drain lines, piping (from UST area and elsewhere), areas of soil staining, etc. will be marked prior to demolition of the slab to facilitate confirmation sampling in these areas following removal of the slab. Additionally, ACEH notes that if confirmation sample results exceed their respective ESLs, separate work plans for the characterization and, if needed, remediation action will required to be submitted to ACEH for review and approval prior to continuing with site development activities.

b. F.E. Pit and Sump Excavation Work Plan – Prior to proceeding with the former F.E. pit and sump excavation activities, an Excavation Work Plan will be submitted to ACEH for review and approval. The Excavation Work Plan will provide details on the excavation methodology and extents, soil and groundwater handling and disposal procedures, confirmation sampling, and analytical methods related to the additional soil removal in the areas of the former sump and F.E. Pit. The work plan will also outline permit requirements (i.e., a Soil Excavation Notice to the BAAQMD, Soil Excavation Permit from the City of Dublin Building Department, and Industrial Wastewater Discharge Permit from the DSRSD), and provide a cost estimate for the proposed scope of work including a line item for estimated regulatory oversight costs. Results of the excavation activities will be documented in an Excavation Report and submitted to ACEH for review and approval.

c. Well Destruction and Well Installation Work Plan – Although proposed replacement groundwater monitoring well and PRB performance monitoring well locations are presented conceptually in the Draft FS/CAP, final well locations will be determined based on final site development plans and in coordination with ACEH and the City of Dublin. Prior to proceeding with well destruction and installation activities, a work plan will be submitted to ACEH and the City of Dublin for review and approval. The work plan will present existing and proposed well locations and provide details on the proposed well installation/development and destruction methodologies, screen intervals, surveying, material handling and disposal procedures, and proposed timing of installation of new wells. The work plan will also outline permit requirements (i.e., well destruction and well construction permits from Zone 7, and encroachment permits required from the City of Dublin if the wells are located in the public right-of-way) and provide a cost estimate for the scope of work including a line item for estimated regulatory oversight costs. Results of the well destruction and installation activities will be documented in a Well Installation/Destruction Report and submitted to ACEH and the City of Dublin for review and approval and well survey coordinates uploaded to the SWRCB's GeoTracker database.

d. PRB Pre-Design Field Investigation Work Plan – Prior to designing the PRB, a field investigation work plan will be submitted to ACEH, Zone 7, and the City of Dublin for review and approval. The work plan will outline the proposed scope of work for data collection and handling of investigation-derived waste. The work plan will also outline permit requirements (i.e., encroachment permits from the City of Dublin if field investigation activities are conducted in the public right-of-way, and boring permits from Zone 7) and a cost estimate for the proposed scope of work including a line item for estimated regulatory oversight costs.

e. PRB Basis of Design Report – Prior to construction of the PRB, a Basis of Design (BOD) Report will be submitted to ACEH, Zone 7, and the City of Dublin for review and approval. The BOD report will include a narrative presenting results of pre-design investigation activities including field investigation and ZVI bench scale testing results, design and construction methodology, material selection, extents of excavation, soil and groundwater handling procedures engineering calculations, detailed construction drawings and specifications, permit requirements (i.e., City of Dublin construction permit, BAAQMD soil excavation notice), and an engineering cost estimate including a line item for estimated regulatory oversight costs.

f. PRB Operation and Maintenance (O&M) Plan – Prior to construction of the PRB, an O&M Plan for the VI Mitigation System will be submitted to ACEH and the City of Dublin Building Department for review and approval. The O&M Plan will include as-built drawings, specifications, and photo documentation of the vapor barrier and the sub-slab depressurization system installation, responsible party information, details of required O&M activities, emergency contacts and protocols in case of system failure, an O&M and reporting schedule, and a cost estimate for O&M activities including a line item for estimated regulatory oversight costs.

g. PRB Construction Quality Assurance (CQA) Plan – Prior to construction of the PRB, a CQA plan will be submitted to ACEH and the City of Dublin for review and approval. The CQA plans will specify the appropriate qualifications and experience necessary for contractors and inspectors involved in the construction of a PRB, and will provide procedures for construction

monitoring and documentation, including responsibility and authority, construction inspections, and as-built documentation. The CQA Plan will include a cost estimate associated with implementation of CQA activities including a line item for estimated regulatory oversight costs.

h. PRB Record Report of Construction – Following construction of the PRB, a completion report will be submitted that includes as-built drawings, disposal of soil that is removed during construction of the PRB, copies of permits, and other information relevant to the installation of the PRB.

i. VI Mitigation System Basis of Design Report – Prior to construction of the VI Mitigation System, a BOD Report will be submitted to ACEH and the City of Dublin for review and approval. The BOD Report will include a narrative outlining the vapor barrier and the sub-slab depressurization system design methodology, material selection justification (i.e., Liquid Boot versus Geo-Seal vapor barrier, etc.), engineering calculations, detailed construction drawings and specifications, permit requirements (i.e., City of Dublin building construction permit, BAAQMD permit or permit exemption for the SSD), and an engineering cost estimate including a line item for regulatory oversight costs.

ACEH notes that the VI Mitigation System BOD Report must include verification that the default assumptions used in developing the RBSLs regarding the structural properties of the hypothetical future buildings at the site remain conservative with respect to actual future building construction.

j. VI Mitigation System O&M Plan – Prior to construction, an O&M Plan for the VI Mitigation System will be submitted to ACEH and the City of Dublin Building Department for review and approval. The O&M Plan will include as-built drawings, specifications, and photo documentation of the vapor barrier and the sub-slab depressurization system, responsible party information, details of required O&M activities, emergency contacts and protocols in case of system failure, and O&M and reporting schedule.

In the FS/CAP, AMEC states that the vapor barrier, once properly installed beneath the building slab, will not require maintenance, unless re-construction in some areas of the structures encroaches or inadvertently damages the barrier. This possibility will be addressed in the Site Management Plan (SMP), which will be distributed to all contractors involved in subsurface work.

The SSD system is expected to operate continuously and will require minimal maintenance. Expected maintenance of the SSD will include inspection of the risers and wind-driven turbine fans, lubrication (as necessary) of the turbine fans, and replacement of any potential worn/damaged equipment. System O&M will be conducted in accordance with the elements in the O&M Plan. The O&M Plan will include measures to evaluate the efficacy and performance of the system on an ongoing basis. The goal of the O&M Plan is to confirm that the vapor mitigation system is operating on a continuous basis as designed and in accordance with the manufacturer's specifications. The O&M plan will contain information on the O&M of the system, including the following regular inspection and maintenance procedures, compliance sampling procedures, assessment procedures for site conditions/uses to confirm vapor mitigation system will not be compromised, equipment specifications and manuals, contact information, monitoring and sampling procedure forms, and permits. The O&M Plan will include a cost estimate associated for the VI Mitigation System O&M activities including a line item for estimated regulatory oversight costs.

ACEH notes, that pending results of the long-term monitoring, elements of the O&M Plan may be modified, as appropriate and with regulatory concurrence.

k. VI Mitigation System CQA Plan – Prior to construction of the vapor barrier/SSD system, a CQA plan will be submitted to ACEH and the City of Dublin for review and approval. The CQA plan will specify the appropriate qualifications and experience necessary for contractors and inspectors involved in the construction of the vapor barrier/SSD system, and will provide procedures for construction monitoring and documentation, including responsibility and authority, construction inspections (i.e., smoke-testing, etc.), and as-built documentation. The CQA Plan will include a

cost estimate associated with implementation of the CQA activities including a line item for estimated regulatory oversight costs.

l. **VI Mitigation System Record Report of Construction** – Following construction of the VI Mitigation System, a completion report will be submitted that includes as-built drawings, copies of permits, and other information relevant to the installation of the vapor barrier and SSD system.

m. **Construction Sequencing Plan** – Prior to the start of construction, a Construction Sequencing Plan (CSP) will be submitted to ACEH and the City of Dublin for review and approval. The CSP will provide details on construction measures and sequencing events designed to protect the groundwater monitoring wells, PRB, and vapor barrier/SSD system during site redevelopment activities.

7. **Institutional Controls (ICs)** – Prior to building occupancy, institutional controls will be implemented for the north parcel to supplement engineering controls, however, based on investigative findings to date, it is not contemplated at this time that ICs are necessary for the south parcel. If additional sampling occurs on this parcel associated with potential future property transactions, it may be necessary to develop ICs that are specifically applicable to this area of the site.

ICs will provide legal and administrative controls and methods for dissemination of information to minimize risk during property development, future below-ground construction and maintenance, and long-term site use. Prior to site development, an IC Plan will be prepared to set forth the general requirements and necessary controls dictated by property restrictions or contractual agreements (e.g., leases). The IC Plan will include activities to maintain the integrity of the remedy, ongoing O&M, and record compliance with the ICs. The IC PIan will be developed in consultation with and approval by ACEH and the City of Dublin. ACEH notes that use of commercial spaces as daycare facilities or other sensitive receptor facilities will be prohibited, as will be commercial facilities that use or generate hazardous materials.

It is anticipated that documents implementing ICs will include, but not be limited to the following:

a. **Land Use Covenants (LUCs) and Activity Use Limitations (AULs), and Codes, Covenants, and Restrictions (CCRs)** – These documents will document legal and regulatory requirements for the site. As currently planned, the site development will consist of mixed use multi-unit structures housing commercial and residential spaces. To minimize contact with impacted media, the recorded LUC/AULs, and CCRs for the site will prohibit daycare facilities or other sensitive receptor facilities, use of groundwater and alteration, disturbance, or removal of any component of the vapor barrier/SSD system and its associated components, or removal of any component of the PRB and its associated components. Additional components of both the LUCs/AULs and the CCRs likely will include but not be limited to:

- Notification to the City of Dublin Building Department of the vapor mitigation system and the potential flagging of the property such that ACEH would be notified if building permits were issued (to prevent impacting the vapor mitigation system);
- Notification to the City of Dublin Public Works Department of the PRB, and the potential flagging of the property such that ACEH would be notified if utility work is done in the right of way where the PRB is located (to prevent impacting the PRB);
- Prohibition of construction activities that could encounter/breach the vapor mitigation system or PRB without the express knowledge of ACEH and the City of Dublin Building Department and Public Works Department, including utility repair or installation;
- Right of access to the property for ACEH or other regulatory agency to inspect, sample, and perform other related activities pertaining to the vapor mitigation system, and the PRB;

- Right of access to the property for the person responsible for implementing the O&M activities relative to the vapor mitigation system and the PRB;
- Lease documents that include CCRs that will serve as the primary communication tool for site residents and businesses including Fact Sheets located in the Leasing/Sales Office; and
- The provision to maintain inspection and monitoring records associated with the vapor mitigation system.

b. Site Management Plan (SMP) – Prior to construction, a SMP will be submitted to ACEH and the City of Dublin for review and approval. The purpose of the SMP is to provide for communication primarily with contractors who will be constructing and maintaining the site. The SMP will provide details regarding the location and construction of the remedies (i.e., PRB, monitoring wells, vapor barrier, etc.), precautions should subsurface work be required in the area of installed remedies, precautions for handling potentially impacted groundwater, and notification procedures should the PRB, vapor barrier, or associated systems be damaged. The SMP that will be prepared as an element of the long-term site management and will include a discussion of environmental conditions within the north parcel and the mitigation elements, including the vapor barrier/SSD system and monitoring wells that must be maintained and protected during site maintenance. Additionally, the SMP will include general procedures for health and safety, soil and groundwater management, and notification and documentation requirements for subsurface work or activities that have the potential to breach the vapor barrier. The SMP will be maintained at the site address by the property manager or designated representative and will be recorded at the Alameda County Clerk-Recorder's Office.

8. <u>Corrective Action Performance Evaluation</u> – The following corrective action performance monitoring activities have been proposed to confirm that the mitigation measures are functioning as designed, and that concentrations of VOCs in groundwater and soil vapor are acceptably stable or decreasing:

- **Vapor Barrier and SSD Sampling** – Performance monitoring of the VI Mitigation System is proposed to be conducted via indoor air sampling, sampling of the SSD system vent risers, and soil gas sampling as follows:
  - **Indoor Air Sampling** – Indoor air sampling is proposed to be conducted semiannually for a proposed period of 1 year during late summer/early autumn (as allowed by the construction schedule) and late winter/early spring. Air samples will be collected from typical vapor intrusion pathways, such as bathrooms, kitchens, and other identifiable potential points of entry. Air samplers will be situated in the breathing zone (3 to 5 feet off the floor) and will be collected over a 24-hour period using laboratory-provided SUMMA™ canisters, or over a similar or longer period of time using sorbent tubes, which can be viewed as less intrusive to building tenants. Addendum No. 2 to the Draft FS/CAP proposes to conduct both of the sampling events pre-occupancy. ACEH generally concurs that this recommendation is reasonable, however notes that the sampling should still be conducted post-building construction and system commissioning. Additionally, ACEH notes that if results of performance monitoring through vent riser sampling indicates soil vapor concentrations pose a threat to human health, the requirement for indoor air sampling may be instituted.
  - **Vent Riser Sampling** – Vent riser sampling is proposed for a period of 5 years at a monthly frequency for the first year, and then quarterly for years 2 through 5. Samples of the extracted soil vapor will be collected from sampling ports installed at each of the vent risers (equivalent to sub-slab sampling and analyzed for VOCs using U.S. EPA Method TO-15 (or the currently approved method at the time of sampling). Additional operational parameters may be collected from the riser, such as flow rate, temperature, and riser vent vacuum to determine a vapor extraction rate. ACEH generally concurs with the

proposed vent riser sampling plan, however notes, as previously discussed that the proposed 5-year performance monitoring period is considered an appropriate timeframe for an interim functional objective, however final objectives and associated timeframes will be determined based on an evaluation of the initial 5-year sampling data.

- **Soil Gas Sampling** – The Draft FS/CAP proposed soil gas sampling via three vapor monitoring wells located in open space areas of the proposed development on the north parcel. Addendum No. 2 to the Draft FS/CAP proposes to eliminate the soil vapor monitoring wells contending that performance monitoring via indoor air sampling and sampling of vapor in vent risers is sufficient. ACEH generally concurs with the proposed elimination of the soil vapor monitoring wells at this time, however notes that if the results of the monitoring program at the site indicate increasing trends in soil vapor concentrations, soil gas monitoring wells may be required in the future.

- **PRB Performance Monitoring** – Performance monitoring of the PRB and effectiveness of the soil excavation in the vicinity of the former F.E. Pit and sump is proposed to be conducted via groundwater sampling from PRB performance monitoring wells and replacement groundwater wells for a period of approximately 5 years after installation of the PRB and soil excavation at a frequency of quarterly for the first 2 years, and annually for the years 3 through 5. AMEC concludes that is expected that the proposed groundwater monitoring time frame will be sufficient to demonstrate effective PRB performance, plume stability, and assess VOC concentration trends at the site. Groundwater samples will be analyzed for the VOCs using U.S. EPA Method 8260B (or the currently approved method at the time of sampling) and PRB performance related analytes (e.g., alkalinity, sulfate, and ethane/ethene). ACEH notes that Zone 7 may request additional parameters be added to the list of analytes to monitor potential changes in groundwater chemistry. Additionally, as previously discussed, although ACEH concurs that the proposed 5-year performance monitoring period should be adequate to provide plume stability and concentration trend data, this is considered an appropriate timeframe for an interim functional objective, and final objectives and associated timeframes will be determined based on an evaluation of the initial 5-year sampling data.

- **Site Inspections and Reporting** – Site inspections are proposed to be arranged by the site owner and will be conducted to observe and document the integrity and maintenance of the corrective action, including observation of roof turbines, auditing of on-site maintenance and monitoring records, and confirming that required on-site documentation is available (e.g., copy of the SMP). The site inspections will be conducted until such time that all ICs are terminated with approval of ACEH. Following each site inspection, the site owner (or designated inspection entity) will provide ACEH with a site inspection report and IC compliance certificate indicating that all IC objectives have been maintained. Should any action inconsistent with IC restrictions be discovered during the site inspection, the owner and/or designated inspection entity will notify ACEH. A written explanation will be submitted to the ACEH that describes the nature of the specific, inconsistent action, and the efforts or measures that have been or will be taken to correct the action. The associated time frame to correct the inconsistent action also will be provided.

  For the purpose of the Draft FS/CAP, a period of 20 years has been proposed for the implementation of the site inspections and reporting with the following frequency: semiannually for years 1 and 2, annually for years 3 and 4, and every 5 years for years 5 through 20.

  ACEH generally concurs with the proposed site inspection and reporting plan, however notes that after year 20, the requirement for continued site inspections and reporting will be determined based on performance monitoring data.

ACEH is amenable to the conversion of performance monitoring to an O&M phase as described above if after the first year, monitoring results confirm that the mitigation measures are functioning as designed, and concentrations of VOCs in groundwater and soil vapor exhibit stable or decreasing concentrations. However, as previously discussed, ACEH anticipates that a Long Term O&M Agreement will be required until site cleanup goals are achieved.

A Corrective Action Performance Monitoring and Reporting Plan will be required to be submitted providing details of the proposed monitoring and reporting activities described above. The plan will include requirements for Annual and Five Year Reviews of performance monitoring data, an evaluation of the effectiveness of the corrective action measures, and recommendations for continued monitoring and reporting requirements and additional corrective actions if appropriate.

9. **Certification of Completion** – The Draft FS/CAP states that following implementation of each of the elements of the proposed corrective action, and the proposed 5-year period of performance monitoring to confirm that the mitigation measures are functioning as designed, and that concentrations of VOCs in groundwater and soil vapor are acceptably stable or decreasing, individual certifications of completion will be requested from ACEH for each of the items outlined below:

   - **Soil Excavation:** Completion of excavation of impacted soil in the vicinity of the former sump and F.E. Pit and completion of confirmation sampling and any remediation potentially needed at the hydraulic lifts, sump(s), and drain lines at the site. Completion of the corrective action at the sump, F.E. Pit, hydraulic lifts, sumps, and drain lines within Building B and other locations as identified during redevelopment will be demonstrated via soil confirmation sampling conducted during the excavation activities. Confirmation sample results will be compared to residential ESLs. If the confirmation sample results are below the residential ESLs, the excavation(s) will be backfilled and excavated soil will be appropriately disposed of off-site and, at that time, the corrective action will be deemed complete.

   - **VI Mitigation System:** Confirmation of effective soil vapor mitigation via the vapor barrier and SSD after 1 year of sampling. Completion of the soil vapor intrusion corrective action will be demonstrated via indoor air sampling during the initial year of operation. Indoor air sampling results will be compared to ambient/indoor air ESLs or Cal/EPA California Human Health Screening Levels (CHHSLs) for evaluation of indoor air. The vapor intrusion corrective action (vapor barrier and SSD) will be deemed effective if concentrations of constituents of concern in indoor air are below their respective screening levels and are due to vapor intrusion, versus indoor sources (i.e., based on comparison to the vent riser [sub-slab equivalent] samples). Should implementation of an active SSD system be required, due to vapor intrusion and not indoor sources, the performance period to demonstrate effectiveness of the active SSD system will be another year from the date of system commissioning.

   - **PRB:** Confirmation of effective treatment of migrating impacted groundwater by the PRB (concentrations of PCE and breakdown products at wells within the PRB are below drinking water ESLs) after 1 year of monitoring. Confirmation of the effective treatment of impacted groundwater migrating onto the site by the PRB will be demonstrated by the performance monitoring wells located upstream, in-barrier, and immediately downgradient of the PRB. Groundwater sample results from samples collected within the PRB will be compared against drinking water ESLs. The corrective action will be deemed effective if concentrations of constituents of concern in groundwater within the PRB are below their respective ESLs.

   ACEH is amenable to certifying completion for individual components of the corrective action stating that the component has been installed and is functioning properly. However, ACEH notes that should the vapor barrier and SSD system and/or PRB not function as designed, additional corrective actions will be required, and may include converting the passive SSD to an active system, additional sealing of floors and utility stub-ups, and correction of any identified defects in the PRB.

10. **No Further Action Status (NFA)** – The Draft FS/CAP states that subsequent to the issuance of the certifications of completion for the individual components of the corrective action and a 5-year performance monitoring period confirming the effectiveness of the corrective and that concentration trends in groundwater and soil vapor are stable or decreasing, the site owner will request that ACEH grant NFA status for the site. Concentration trends in groundwater and soil vapor will be evaluated using the Mann-Kendall methodology (or other analysis methodology, as agreed upon with ACEH).

The Mann-Kendall trend analysis is a non-parametric statistical evaluation that uses the relative magnitudes of the data to evaluate the probability that a concentration trend (positive or negative) exists. Additional indoor air sampling and site inspections may continue, if needed, following the planned sampling period. If the continued monitoring is deemed necessary, the continuation of the indoor air sampling program will be evaluated every year (after issuance of the NFA) and in coordination with ACEH or the regulatory agency at the time. Should ACEH (or other regulatory agency) concur that indoor air monitoring and/or site inspections are no longer necessary, the post-NFA monitoring activities will cease.

Again, ACEH notes that annual and five year reviews of performance monitoring data will be used to determine when cleanup goals have been achieved and a NFA status issued for the site.

11. **Financial Assurance** – An appropriate financial instrument will be required to be obtained to assure ACEH and the City of Dublin of implementation and maintenance of the proposed corrective action. The details of this financial assurance will be worked out by the project proponent, ACEH, and the City of Dublin as design, construction and monitoring plans are finalized and approved. The financial assurance instrument must provide for sufficient funds to construct, monitor, and provide regulatory oversight costs until a NFA status has been issued for the corrective actions. Estimates of these costs will be obtained in part from the cost estimates provided in the plans described above.

12. **Project Schedule** – Prior to proceeding with the CAP pre-implementation activities, please submit a revised Baseline Environmental Project Schedule (Project Schedule) to ACEH and the City of Dublin that provides details of the environmental work that will be required to commence site demolition, corrective action measures, and site redevelopment activities. Please include each of the requisite pre-implementation elements discussed above and include site development activities that are impacted by the environmental schedule (i.e., planning review/approval process, architectural design/approval process, issuance of building permit, site demolition, grading, construction activities, issuance of occupancy permits, etc.).

13. **Underground Storage Tank Removal** – A 1,000-gallon gasoline underground storage tank (UST) and a 1,000-gallon waste oil UST were removed in November 2012 by ENGEO under the regulatory oversight of ACEH LOP and CUPA. ACEH notes that waste manifests for the USTs have not been received by ACEH and therefore the site is currently out of compliance with CUPA directives. Please submit the requisite documentation in accordance with the schedule provided in the Technical Report/Work Request section below.

14. **Public Participation** – Public participation is a requirement for the Corrective Action Plan process. The purpose of public participation is to facilitate communication and coordination with stakeholders potentially affected by or concerned with soil and groundwater contamination and potential vapor intrusion risk associated with chlorinated solvents and other volatile organic chemicals in soil, groundwater, and soil vapor at the site at concentrations that exceed applicable regulatory screening levels.

    Therefore, you are required to notify potentially affected stakeholders who live or own property in the surrounding area of the proposed corrective actions described in the Draft FS/CAP and associated addendums through the mailing of a Fact Sheet. Please establish an initial mailing list of property owners and tenants who are located within 200 feet of the parcel boundaries for the property located at 7544 Dublin Boulevard and 6707 Golden Gate Drive in Dublin, California. The mailing list should also include other stakeholders who have expressed interest in the site redevelopment project, have political jurisdiction within or adjacent to the potential vapor intrusion area, represent community leadership or advocacy, or need to be aware of planned activities.

    Please submit a draft distribution list and draft informational Fact Sheet about the proposed corrective actions and site redevelopment activities (MS Word format) to ACEH for review by the date specified

in the Technical Report/Work section below (please see DTSC Vapor Intrusion Public Participation Advisory, dated March 2012 for examples).

ACEH will review the draft Fact Sheet and provide a final Fact Sheet for your distribution to the List of Recipients. Following distribution of the Fact Sheet, please provide your personal certification by e-mail or letter, that the Fact Sheet was distributed by U.S. Mail to the attached mailing by the date identified in the Technical Report/Work section below.

Public comments on the proposed remediation will be accepted for a period of thirty days. Following the thirty day public comment period, the comments received, and ACEH's technical comments described in our letter dated June 14, 2013, must be addressed and incorporated into a Final CAP.

TECHNICAL REPORT/WORK REQUEST

Please perform the requested work and submit technical reports to Alameda County Environmental Health Environmental Health (Attention: Dilan Roe) in accordance with the schedule below. The submittal compliance date for reports with a "Date to be Determined" notation will be finalized in a subsequent Directive Letter and will be based on the date(s) proposed in the Revised Baseline Project Schedule.

- **August 16, 2013** – Underground Storage Tank(s) Waste Manifests
- **August 17, 2012** – South Parcel Assessment Recommendations Memorandum
- **Date to be Determined** – Revised Environmental Project Schedule
- **Date to be Determined** – Draft Fact Sheet (in MS Word format) with List of Fact Sheet Recipients
- **Date to be Determined** – Certification of Public Participation Notification/Fact Sheet Distribution
- **Date to be Determined** – Facility Closure and Demolition Plan
- **Date to be Determined** – Site Management Plan
- **Date to be Determined** – F.E. Pit and Sump Excavation Work Plan
- **Date to be Determined** – Well Destruction and Well Installation Work Plan
- **Date to be Determined** – Well Installation and Destruction Report
- **Date to be Determined** – Well Survey Coordinates – ESI Compliance
- **Date to be Determined** – PRB Pre-Design Field Investigation Work Plan
- **Date to be Determined** – PRB Basis of Design Report
- **Date to be Determined** – PRB Operations and Maintenance Plan
- **Date to be Determined** – PRB Construction Quality Assurance Plan
- **Date to be Determined** – PRB Record Report of Construction

- **Date to be Determined** – VI Mitigation System Basis of Design Report
- **Date to be Determined** – VI Mitigation System Operations and Maintenance Plan
- **Date to be Determined** – VI Mitigation System Construction Quality Assurance Plan
- **Date to be Determined** – VI Mitigation System Record Report of Construction
- **Date to be Determined** – Corrective Action Performance Monitoring and Reporting Plan
- **Date to be Determined** – Construction Sequencing Plan
- **Date to be Determined** – Financial Assurance Mechanism Plan
- **Date to be Determined** – Institutional Controls Plan

If you have any questions, please call me at (510) 567-6767 or send me an electronic mail message at dilan.roe@acgov.org.

Sincerely,

Digitally signed by Donna L. Drogos
DN: cn=Donna L. Drogos, o=Alameda County Environmental Health, ou, email=donna.drogos@acgov.org, c=US
Date: 2013.07.12 12:33:54 -07'00'

Dilan Roe, PE
LOP Program Manager

cc:

Jim Neighbor, Prudential (*Sent via electronic mail to jim.neighbor@pruca.com*)
Keith Fichtner, Kingsmill Group (*Sent via electronic mail to keithfichtner@thekingsmillgroup.com*)
Woodie Karp, Eden Housing (*Sent via electronic mail to WKarp@edenhousing.org*)
Avery Patton, AMEC (*Sent via electronic mail to avery.patton@amec.com*)
Susan Gallardo, AMEC (*Sent via electronic mail to susan.gallardo@amec.com*)
Jeff Adams, ENGEO (*Sent via electronic mail to jadams@engeo.com*)
Colleen Winey, Zone 7 Water Agency (*Sent via e-mail to: cwiney@zone7water.com*)
Gary Huisingh, City of Dublin (*Sent via electronic mail to gary.huisingh@dublin.ca.gov*)
Andrew Russell, City of Dublin (*Sent via electronic mail to andrew.russell@dublin.ca.gov*)
Linda Smith, City of Dublin (*Sent via electronic mail to linda.smith@dublin.ca.gov*)
Karen Toth, DTSC (*Sent via electronic mail to Karen.Toth@dtsc.ca.gov*)
Ariu Levi, ACEH (*Sent via electronic mail to ariu.levi@acgov.org*)
Donna Drogos, ACEH (*Sent via electronic mail to donna.drogos@acgov.org*)
Dilan Roe, ACEH (*Sent via electronic mail to dilan.roe@acgov.org*)
Electronic File, GeoTracker