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August 7, 2013

Mr. Pete Mizera
State Water Resources Control Board
1001 I Street, 16th Floor
Sacramento, CA 95814
(Sent via E-mail to: USTClosuresComments@waterboards.ca.gov)

Subject: **Comment Letter – California Linen Supply Company Case Closure Summary**, Notice of Opportunity for Public Comment; Underground Storage Tank Cleanup Fund Case Closure Recommendation; Claim Number 3000; Fuel Leak Case No. RO0000337 and GeoTracker Global ID T0600100249, California Linen Supply Company, 989 41st Street, Oakland, CA 94609

Dear Mr. Mizera:

Alameda County Environmental Health (ACEH) staff has received the Underground Storage Tank Cleanup Fund's (USTCF's or Fund's) *Notice of Opportunity for Public Comment* dated June 5, 2013, for the subject site. The purpose of the Notice is to inform interested parties of 1) the USTCF's intent to recommend closure of the subject site to the California State Water Resources Control Board's (SWRCBs) Executive Director, and 2) the sixty day public comment period on the Fund's *UST Case Closure Review Summary Report* (Case Closure Summary), dated June 5, 2013. According to the Notice, written comments to the SWRCB on the Fund's Case Closure Summary must be received by 12:00 noon on August 7, 2013. This letter herein transmits ACEH's comments.

Requirements for Investigation and Cleanup of Unauthorized Releases from USTs

ACEH reviewed the USTCF's *UST Case Closure Review Summary Report*, dated June 5, 2013, prepared by Pat Cullen, and signed by Lisa Babcock, including *Attachment 1: Compliance with State Water Board Policies and State Law* (i.e., the SWRCB's Low-Threat UST Case Closure Policy Paper Check List), and *Attachment 2: Summary of Basic Site Information (Conceptual Site Model)* in conjunction with the case files for the above-referenced site. A complete record of the case files (i.e., regulatory directives and correspondence, reports, data submitted in electronic deliverable format, etc.) can be obtained through review of both the SWRCB's Geotracker database, and the ACEH website at <http://www.acgov.org/aceh/index.htm>.

ACEH's review was guided by the requirements for investigation and cleanup of unauthorized releases from underground storage tanks (USTs) contained in the following resolutions, policies, codes, and regulations:

- SWRCB's Low-Threat Underground Storage Tank Case Closure Policy (LTCP), adopted on May 1, 2012; and effective August 17, 2012;
- California Code of Regulations (CCR) Title 23, Article 5 and Article 11, Underground Storage Tank Regulations, as amended and effective July 1, 2011;
- California Health & Safety Code (HS&C) Sections 25280-15299.8, Underground Storage of Hazardous Substances, as amended on January 1, 2011;
- SWRCB Resolution 1992-0049, Policies and Procedures for the Cleanup and Abatement of Discharges under California Water Code Section 13304, as amended on April 21, 1994 and October 2, 1996;

- San Francisco Bay Regional Water Quality Control Board's (RWQCB) San Francisco Bay Basin (Region 2) Water Quality Control Plan (Basin Plan).

Application of Case Review Tools

ACEH's case closure evaluation was also guided by the application of the principles and strategies presented in the *Leaking Underground Fuel Tank Guidance Manual* (CA LUFT Manual), dated September 2012, developed by the SWRCB "...[t]o provide guidance for implementing the requirements established by the Case Closure Policy" and associated reference documents including but not limited to:

- *Technical Justification for Vapor Intrusion Media-Specific Criteria*, SWRCB dated March 21, 2012;
- *Technical Justification for Groundwater Media-Specific Criteria*, SWRCB dated April 24, 2012;
- *Technical Justification for Soil Screening Levels for Direct Contact and Outdoor Air Exposure Pathways*, SWRCB dated March 15, 2012;
- *Guidance for the Evaluation and Mitigation of Subsurface Vapor Intrusion to Indoor Air, Final DTSC*, dated October, 2011;

ACEH also utilized other case review tools developed by the SWRCB to aid in determining compliance of the subject fuel leak site with LTCP criteria, including both the paper *Policy Checklist* (available at www.waterboards.ca.gov/ust/docs/checklist.pdf) and the electronic version of the *Policy Checklist* (available on the SWRCB's GeoTracker website at <http://geotracker.waterboards.ca.gov>). ACEH's evaluation of the subject site is presented below and in previously submitted documents posted to Geotracker and the ACEH ftp website.

Summary of ACEH's Review of the USTCF's UST Case Closure Summary

ACEH does not agree with the USTCF's Conceptual Site Model (CSM) nor the technical analysis presented in the *UST Case Closure Summary Report*. ACEH disagrees that the site is a petroleum only site, that the downgradient extent has been defined, that light aqueous phase liquid (LNAPL) has been removed to the extent practicable, that the secondary source has been removed, and that nuisance factors as defined by Water Code section 13050 do not exist at the site.

Additionally, ACEH notes SWRCB lists older ACEH objections to case closure. Please note these objections are dated as new data has been generated in the interim period of time. ACEH also notes that the second listed objection (that the presence of paleochannels is of importance) must remain of fundamental importance to the site under the LTCP. Otherwise, the site would be uncharacterized hydrogeologically, and the importance of the natural migration pathway for the contamination would not be recognized in order to determine and characterize water quality. Details of our analysis are provided below.

General Criteria a: The unauthorized release is located within the service area of a public water system.

The site meets this General Criteria.

General Criteria b: The unauthorized release consists only of petroleum.

The site does not meet this General Criteria.

Soil at the site contains elevated arsenic and lead concentrations, related to fill material, rather than a spill. However, recent work has used ProUCL, a United States Environmental Protection Agency (USEPA) recommended program, to determine the 95 percent confidence interval of the mean upper confidence level (UCL) and determined that both metals are below the February 2013 RWQCB Commercial Environmental Screening Levels (ESLs), but exceed the May 2013 RWQCB Commercial and Residential ESLs for the arsenic, and Residential ESLs for lead. However, in accordance with RWQCB procedures associated with regional background arsenic concentrations, the arsenic concentrations for the proposed residential redevelopment appear appropriate. Site proponents have indicated that

residential redevelopment is a preferred redevelopment option; thus it appears appropriate to restrict the site to commercial use unless lead concentrations are reduced below residential ESLs or a site specific risk assessment is conducted that indicates there are no health risks associated with the existing concentrations of lead.

A review of the case files indicates that the site had a former maintenance shop and therefore solvents are a potential chemical of concern. The log of offsite soil bore B95 reports a potential solvent odor at a depth of approximately 11 feet below ground surface (bgs); however, vapor well (VW-7 and VW-8) installed downgradient of the former maintenance shop were not sampled for these analytes. Residual petroleum contamination remains (a strong petroleum odor is reported; however, no samples were collected) beneath and several feet beyond the foundation of the maintenance shop; however, the lateral extent appears to be largely defined. It appears appropriate to resample or sample these offsite vapor wells in order to be protective of the low-income housing located within several feet of these wells.

General Criteria c: The unauthorized (“primary”) release from the UST system has been stopped.

The site meets this General Criteria.

General Criteria d: Free product has been removed to the maximum extent practicable.

The site does not meet this General Criteria.

Based ACEH’s review of the case file, it appears that utility conduits in Linden Street may act as preferential pathways for shallow LNAPL downgradient of bores B5 and B6 and upgradient of bores B10, B31, and B32. LNAPL was observed in soil bore B5, and perhaps B6, and appears to have been encountered at a depth of 6.5 to 9 feet bgs based on details contained on the bore logs. LNAPL was not identified in soil bores B10 and B31 downgradient of soil bores B5 and B6, thus defining the lateral extent of LNAPL, downgradient of the utilities. Additionally, no BTEX (benzene, toluene, ethylbenzene, xylenes) or methyl tertiary butyl ether (MTBE) were detected above standard laboratory reporting limits in a shallow grab groundwater sample in soil bore B32.

While extraction wells E8 and E9 were installed in close proximity to bores B5 and B6 they were screened below 19 to 20 feet bgs and do not appear to address shallow contamination as observed in B5 and B6, thus LNAPL contamination in bore B5 may continue to use the utility preferential pathways. Confirmation of the removal of LNAPL to the extent practicable has not been conducted.

Concentrations detected in a deep grab groundwater sample collected from downgradient soil bore B32 (220 micrograms per liter [$\mu\text{g/l}$]total petroleum hydrocarbons as diesel [TPHd] and 1,700 $\mu\text{g/l}$ total petroleum hydrocarbons as motor oil [TPHmo]) do not indicate that deep groundwater has been impacted by LNAPL. It has been postulated that the TPHmo detection may be a false positive at the site, based on other grab groundwater TPHmo concentrations that could not be confirmed with subsequently installed groundwater monitoring wells (MW-4, MW-5, MW-6, and in particular MW-7).

General Criteria e: A conceptual site model has been developed.

The site does not meet this General Criteria.

The CSM has not been updated in over 5 years and an appreciable amount of data has been collected in that time period, and is highly scattered in site documents. LNAPL documented in soil bore B5 has not been reevaluated. Soil vapor data collected in the original source area after termination of the interim remedial effort exceeds the LTCP Media Specific Criteria for Vapor Intrusion to Indoor Air, Scenario 4a screening levels (no bioattenuation zone for residential reuse). Additionally, concentrations of TPH in the upper 5 feet of soil are documented in the original source area at concentrations that exceed the LTCP Media Specific Criteria for Direct Contact and Outdoor Air Exposure screening levels for residential site. It appears appropriate to update the CSM, identify remaining data gaps, and conduct confirmation sampling of groundwater and selected soil vapor wells to validate remediation efforts and recent soil and sub-slab vapor data.

General Criteria f: Secondary source removal has been addressed. The secondary source is the petroleum-impacted soil, free product, or groundwater that acts as a long-term source releasing contamination to the surrounding area. Unless site conditions prevent secondary source removal (e.g. physical or infrastructural constraints exist whose removal or relocation would be technically or economically infeasible), petroleum-release sites are required to undergo secondary source removal to the extent practicable.

The site does not meet this General Criteria.

LNAPL is a secondary source, and has not been reevaluated since remedial efforts adjacent to offsite soil bore B5 / B6 were conducted.

General Criteria g: Soil or groundwater has been tested for MTBE and results reported in accordance with Health and Safety Code section 25296.15.

Soil and groundwater has been tested for MTBE. The site meets this General Criteria.

General Criteria h: Nuisance as defined by Water Code section 13050 does not exist at the site.

The site does not meet this General Criteria.

Offsite soil bores and soil vapor wells have been installed adjacent to downgradient residential homes, including low-income units. Although site documents include references of basements, or partial basements in older homes in the area, the location, depth, and construction style (dirt floor, finished, furnished, etc.), of the residential basements are unreported. Grab groundwater samples collected at a depth of 7.5 to 8 feet from soil bore B90 (located immediately adjacent to one home) had elevated concentrations of up to 30,000 µg/l TPHg, 420 µg/L ethylbenzene, and 2,200 µg/l total xylenes. Soil contamination in soil bore B90 documented at this same depth has been detected at concentrations of 770 mg/kg TPHg, 4.4 mg/kg ethylbenzene, and 13 mg/kg total xylenes. This is presumed to be in the depth interval of a full basement, and may be a groundwater infiltration or vapor intrusion hazard. These basements cannot be evaluated against the May 2013 revised RWQCB ESLs for soil vapor as the document assumes a separation distance between interior air and groundwater. It appears appropriate to resample the vapor wells, especially those associated with the reported (but undisclosed) presence of basements.

Media-Specific Criteria 1. Groundwater: If groundwater with a designated beneficial use is affected by an unauthorized release, to satisfy the media-specific criteria for groundwater, the contaminant plume that exceeds water quality objectives must be stable or decreasing in areal (sic) extent, and meet all of the additional characteristics of one of the five classes of sites listed in the Policy. A plume that is "stable or decreasing" is a contaminant mass that has expanded to its maximum extent: the distance from the release where attenuation exceeds migration.

The *Case Closure Review Summary Report* indicates that the USTCF has determined the site meets Category 1 of the Groundwater Media-Specific Criteria. This category requires that the groundwater plume is less than 100 feet in length, there is no free product, and that the nearest water supply well and surface water body is over 250 feet in distance.

As noted above, soil and groundwater contamination at soil bore B90 (770 mg/kg TPHg, 4.4 mg/kg ethylbenzene, and 13 mg/kg total xylenes in soil; and 30,000 µg/l TPHg, 420 µg/l ethylbenzene, and 2,200 µg/l total xylenes in groundwater) located between approximately 180 to 230 feet downgradient from one of the three onsite source areas, documents that the downgradient extent of the soil or groundwater plume has not been defined. The location of soil bore B90 is understood to be within feet of a basement or partial basement of a residential home (reported, and not otherwise disclosed).

LNAPL was observed in soil bore B5, and perhaps B6, and appears to have been encountered at a depth of 6.5 to 9 feet bgs. Bore B5 has not been reevaluated for the presence of LNAPL. The LNAPL appears to utilize utility conduits in Linden Street downgradient of these soil bores.

Groundwater beneath the site has not been sampled in over five years. The collection of groundwater

samples will determine either plume stability or if contaminant concentrations have decreased, and will determine the effectiveness of the remediation system in removing LNAPL and of residual soil contamination in the original source area.

ACEH does note that there are no water supply wells or surface water bodies within 1,000 feet of the site.

Media-Specific Criteria 2. Petroleum Vapor Intrusion to Indoor Air: The low-threat vapor-intrusion criteria in the Policy apply to release sites and impacted or potentially impacted adjacent parcels when: (1) existing buildings are occupied or may be reasonably expected to be occupied in the future, or (2) buildings for human occupancy are reasonably expected to be constructed in the near future.

The *Case Closure Review Summary Report* indicates that the USTCF has determined the site meets Scenario 3c of the LTCP Vapor Intrusion to Indoor Air Media-Specific Criteria. This category requires that the maximum concentration of benzene in groundwater is less than 1,000 µg/l, the minimum depth of groundwater is greater than five feet, and the soil above groundwater contains less than 100 mg/kg TPH and greater than 4 percent oxygen.

The USTCF also notes that a 2012 risk and hazard evaluation (*Subsurface Investigation Report; Geophysical Profile 4, Groundwater Samples B89 Through B96, Soil Gas SG61 to SG72, and Vapor Wells VW-1SS Through VW-3-SS, VW-5 Through VW7-5*, dated October 23, 2012) which used a DTSC modified, California-specific, spreadsheet to calculate risk and hazards at all downgradient offsite vapor wells installed at residential properties, found that cumulative hazards associated with detected vapor concentrations were less than 1.0 and cumulative risk to be less than 1 per million. The risk and hazard evaluation did not evaluate onsite source area risks.

The site has three Areas of Concern relative to soil vapor. Area 1 is the western third of the site that includes the original source area. Area 2 is the eastern two-thirds of the site where elevated TPHg and benzene concentrations have been detected and onsite migration of one or more groundwater plumes has been investigated and recently documented (*Subsurface Investigation Report; Geophysical Profile 4, Groundwater Samples B89 Through B96, Soil Gas SG61 to SG72, and Vapor Wells VW-1SS Through VW-3-SS, VW-5 Through VW7-5*, dated October 23, 2012). Area 3 is the area around residential homes downgradient of the site, some of which are reported to contain basements of uncertain construction or completion as noted above.

In regards to Area 1, soil vapor was collected in the original source area after termination of the interim remedial effort; the data exceed the LTCP Vapor Intrusion to Indoor Air Scenario 4a criteria (no bioattenuation zone for residential reuse). Concentrations up to 140 mg/kg TPHg, 5.3 mg/kg benzene, and 2.9 mg/kg ethylbenzene were reported at a depth of 4 feet at well MW-1. A concentration of 4.3 mg/kg benzene and 33 mg/kg ethylbenzene is reported at injection well I-2 at a depth of 10 feet. Site redevelopment has been stated to be most likely residential. Both exceed the Direct Contact and Outdoor Air Exposure Media-Specific Criteria for residential sites. ACEH notes that extraction wells were screened at either 5 or 10 feet bgs. ACEH also notes that the extraction well radius of influence or effectiveness in contaminant removal has not been confirmed by post remedial soil confirmation sampling. Soil vapor associated with the original source area has not been reassessed since. It appears appropriate to undertake confirmation sampling to verify these concentrations have been reduced due to the most likely redevelopment scenario.

In regards to Area 2, onsite vapor wells and slab vapor points recently have generated data that appears to meet the Media Specific Criteria for Vapor Intrusion to Indoor Air. The only available subsurface oxygen data for this site was collected from Area 2 and the use of this oxygen data in Area 1 is technically questionable due to a potential for residual shallow TPH contamination.

In regards to Area 3, soil vapor wells have recently been installed adjacent to downgradient residential homes. Based on the Hazard and Risk analysis it appears that vapor at these locations may meet the Vapor Intrusion to Indoor Air criteria; however, the vapor wells are reported to be installed in the vicinity of partial or full residential basements. Groundwater collected at soil bore B90 at one of the residential homes was encountered at a depth of approximately 7.5 to 8 feet bgs. Soil collected from B90 at 7 feet bgs contained 770 mg/kg TPHg, 4.4 mg/kg ethylbenzene, and 13 mg/kg total xylenes, while the grab groundwater sample contained 30,000 µg/l TPHg, less than 50 µg/l benzene, 420 µg/l ethylbenzene, and 2,200 µg/l total xylenes. This depth is presumed to be in the depth interval of a basement, and may be a groundwater infiltration or vapor intrusion hazard. These basements cannot be evaluated against the May 2013 revised RWQCB ESLs for soil vapor as the document assumes a separation distance between interior air and groundwater. It appears appropriate to resample the vapor wells, especially those

associated with the reported (but undisclosed) presence of basements.

The log of offsite soil bore B95 (western portion of offsite Area 3) installed directly downgradient of the former maintenance facility at California Linen reports a potential solvent odor at a depth of approximately 11 feet bgs; however, as described above, vapor wells VW-7 and VW-8 were not sampled for these analytes. It appears appropriate to resample or sample these offsite vapor wells in order to be protective of the low-income housing located within several feet of these structures.

Media-Specific Criteria 3. Direct Contact and Outdoor Air Exposure. Release sites where human exposure may occur satisfy the media-specific criteria for direct contact and outdoor air exposure and shall be considered low-threat if they meet any of the following:

- a. Maximum concentrations of petroleum constituents in soil are less than or equal to those listed in Table 1 for the specified depth below ground surface (bgs). The concentration limits for 0 to 5 feet bgs protect from ingestion of soil, dermal contact with soil, inhalation of volatile soil emissions and inhalation of particulate emissions, and the 5 to 10 feet bgs concentration limits protect from inhalation of volatile soil emissions. Both the 0 to 5 feet bgs concentration limits and the 5 to 10 feet bgs concentration limits for the appropriate site classification (Residential or Commercial/Industrial) shall be satisfied. In addition, if exposure to construction workers or utility trench workers are reasonably anticipated, the concentration limits for Utility Worker shall also be satisfied; or
- b. Maximum concentrations of petroleum constituents in soil are less than levels that a site specific risk assessment demonstrates will have no significant risk of adversely affecting human health; or
- c. As a result of controlling exposure through the use of mitigation measures or through the use of institutional or engineering controls, the regulatory agency determines that the concentrations of petroleum constituents in soil will have no significant risk of adversely affecting human health.

The *Case Closure Review Summary Report* indicates that a the site meets Class 3a of the Direct Contact and Outdoor Air Exposure Media-Specific Criteria and states that maximum concentrations in soil are less than those in Table 1 for Commercial / Industrial and Utility Worker exposures.

ACEH has compared the site to a residential exposure standard due to previous statements that site redevelopment is most likely to be residential. A concentration of to 140 mg/kg TPHg, 5.3 mg/kg benzene, and 2.9 mg/kg ethylbenzene are reported at a depth of 4 feet at MW-1 in Area 1. Extraction wells were screened at either 5 or 10 feet bgs, and the extraction well radius of influence or effectiveness in contaminant removal has not been confirmed by post remedial soil confirmation sampling. A concentration of 4.3 mg/kg benzene and 33 mg/kg ethylbenzene is reported at injection well I-2 at a depth of 10 feet. The detected concentrations of benzene and Ethylbenzene fail the residential Direct Contact and Outdoor Air Exposure Criteria. Confirmation sampling appears to be appropriate to confirm these concentrations have been reduced. In general very limited data has been generated within the upper 10 feet at the site and in the original source area (Area 1).

Conclusions

ACEH is not in agreement that the site can currently be closed under the LTCP. The site appears to fail General Criterias b, d, e, f, and h and each of the Media-Specific Criteria for Groundwater, Vapor Intrusion to Indoor Air, and Direct Contact and Outdoor Air Exposure. To address these issues ACEH recommends additional groundwater sampling to verify continued contaminant trends in groundwater in the original source area, additional soil sampling to confirm the effectiveness of remedial actions in reducing residual soil contamination concentrations in the original source area, additional soil and groundwater sampling in the vicinity of offsite soil bore B5 to confirm effective removal of LNAPL at that location, an additional soil vapor sampling event of offsite residential vapor wells to confirm the residents are protected from vapor intrusion, and investigation of the location, depth, and construction style (dirt floor, finished, furnished, etc.), of the reported residential basements at those locations.

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Thank you for providing ACEH with the opportunity to comment on the subject site. Should you have any questions regarding the responses above, please contact Mark Detterman at (510) 567-6876 or send him an electronic mail message at mark.detterman@acgov.org.

Sincerely,

Dilan Roe, P.E.
LOP Program Manager

Mark E. Detterman, PG, CEG
Senior Hazardous Materials Specialist

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Electronic File, GeoTracker