



ENVIRONMENTAL HEALTH DEPARTMENT
ENVIRONMENTAL PROTECTION
1131 Harbor Bay Parkway, Suite 250
Alameda, CA 94502-6577
(510) 567-6700
FAX (510) 337-9335

LATE LETTER

June 15, 2015

EMBL LLC &
Edward K. & Roshanne H. Hemmat Trust et al.
2420 San Pablo Ave.
Oakland, CA 94612
(Sent via E-mail to: edhemmat@yahoo.com)

Subject: Overdue Submittal for Fuel Leak Case No. RO0003148 and GeoTracker Global ID T10000006271, EMBL LLC Tank, 1501 Martin Luther King Jr. Way, Oakland, CA 94612

Dear EMBL LLC & Edward K. & Roshanne H. Hemmat Trust:

Thank you for claiming your site in California State Water Resources Control Board (SWRCB) GeoTracker website. As indicated in Alameda County Environmental Health's (ACEH) January 26, 2015 correspondence, ACEH performed a case file review in conjunction with the SWRCB *Low-Threat Underground Storage Tank Case Closure Policy (LTCP)*. ACEH outlined data gaps in meeting the LTCP criteria and requested the preparation of a work plan to address these data gaps. A copy of the ACEH January 26, 2015 correspondence is provided as an attachment.

A recent review of the case file for the above-referenced site indicates that your case is currently has not gained compliance with ACEH's January 26, 2015 correspondence, which required the submittal of a Data Gap Work Plan and Focused Site Conceptual Model and GeoTracker Compliance by April 27, 2015. Seven weeks have lapsed and the work plan has not been received and electronic submittal of information has not been received by GeoTracker, nor have communications been received to inform ACEH of reasons for the delays.

Implementation of initial site characterization and identification of potential risks to sensitive receptors at this site is crucial to be protective of human health and the environment and to move this case towards closure evaluation. Please note that as Responsible Parties, you are required by California Code of Regulations, Title 23, Division 3, Chapter 16, Article 11, §2720 through §2728 to characterize the site and implement corrective action.

Also, a review of GeoTracker website indicates that not all submittals have been electronically uploaded rendering the site to non-compliance status. Please note that in addition to uploads to GeoTracker, all reports, work plans, correspondences, etc. must also be uploaded to ACEH's ftp site (see the enclosed "ACEH Electronic Report Upload (ftp) Instructions"). Otherwise you have not given a copy of these documents, only the State. Both are required.

In order to regain compliance, please submit the requested Data Gap Work Plan and Focused Site Conceptual Model, and electronically upload all outstanding documents to the State GeoTracker and the ACEH's ftp server by the dates specified below.

Please be aware that any investigation or remediation work conducted without prior ACEH regulatory approval is not eligible for reimbursement through the SWRCB's UST Cleanup Fund.

TECHNICAL REPORT REQUEST

Please upload technical reports to the ACEH ftp site (Attention: Keith Nowell), and to the SWRCB Geotracker website, in accordance with the following specified file naming convention by the date specified below:

- **July 3, 2015 – GeoTracker Electronic Submittal of Outstanding Information**
- **August 4, 2015 – Data Gap Work Plan and Focused Site Conceptual Model** (file to be named: RO0003148_WP_R_yyyy-mm-dd)

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

Thank you for your cooperation. Should you have any questions or concerns regarding this correspondence or your case, please call me at (510) 567-6764 or send me an electronic mail message at keith.nowell@acgov.org.

Sincerely,

Keith Nowell, PG, CHG
Hazardous Materials Specialist

Enclosures: Responsible Party(ies) Legal Requirements/Obligations
ACEH Electronic Report Upload (ftp) Instructions

Alameda County Environmental Health Correspondence dated January 26, 2015

cc: Frank Hamedi, Enviro Soil Tech Consultants, 131 Tully Road, San Jose, CA 95111 (Sent via E-mail to: info@envirosoiltech.com)
Dilan Roe, ACEH (Sent via E-mail to: dilan.roe@acgov.org)
Keith Nowell, ACEH (Sent via E-mail to: keith.nowell@acgov.org)
GeoTracker
e-File

Attachment 1

Responsible Party(ies) Legal Requirements / Obligations

REPORT REQUESTS

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

ELECTRONIC SUBMITTAL OF REPORTS

ACEH's Environmental Cleanup Oversight Programs (LOP and SLIC) require submission of reports in electronic form. The electronic copy replaces paper copies and is expected to be used for all public information requests, regulatory review, and compliance/enforcement activities. Instructions for submission of electronic documents to the Alameda County Environmental Cleanup Oversight Program FTP site are provided on the attached "Electronic Report Upload Instructions." Submission of reports to the Alameda County FTP site is an addition to existing requirements for electronic submittal of information to the State Water Resources Control Board (SWRCB) GeoTracker website. In September 2004, the SWRCB adopted regulations that require electronic submittal of information for all groundwater cleanup programs. For several years, responsible parties for cleanup of leaks from underground storage tanks (USTs) have been required to submit groundwater analytical data, surveyed locations of monitoring wells, and other data to the GeoTracker database over the Internet. Beginning July 1, 2005, these same reporting requirements were added to Spills, Leaks, Investigations, and Cleanup (SLIC) sites. Beginning July 1, 2005, electronic submittal of a complete copy of all reports for all sites is required in GeoTracker (in PDF format). Please visit the SWRCB website for more information on these requirements (http://www.waterboards.ca.gov/water_issues/programs/ust/electronic_submittal/).

PERJURY STATEMENT

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

PROFESSIONAL CERTIFICATION & CONCLUSIONS/RECOMMENDATIONS

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

UNDERGROUND STORAGE TANK CLEANUP FUND

Please note that delays in investigation, later reports, or enforcement actions may result in your becoming ineligible to receive grant money from the state's Underground Storage Tank Cleanup Fund (Senate Bill 2004) to reimburse you for the cost of cleanup.

AGENCY OVERSIGHT

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

Alameda County Environmental Cleanup Oversight Programs (LOP and SLIC)	REVISION DATE: May 15, 2014
	ISSUE DATE: July 5, 2005
	PREVIOUS REVISIONS: October 31, 2005; December 16, 2005; March 27, 2009; July 8, 2010, July 25, 2010
SECTION: Miscellaneous Administrative Topics & Procedures	SUBJECT: Electronic Report Upload (ftp) Instructions

The Alameda County Environmental Cleanup Oversight Programs (LOP and SLIC) require submission of all reports in electronic form to the county's ftp site. Paper copies of reports will no longer be accepted. The electronic copy replaces the paper copy and will be used for all public information requests, regulatory review, and compliance/enforcement activities.

REQUIREMENTS

- **Please do not submit reports as attachments to electronic mail.**
- Entire report including cover letter must be submitted to the ftp site as **a single portable document format (PDF) with no password protection.**
- It is **preferable** that reports be converted to PDF format from their original format, (e.g., Microsoft Word) rather than scanned.
- **Signature pages and perjury statements must be included and have either original or electronic signature.**
- **Do not password protect the document.** Once indexed and inserted into the correct electronic case file, the document will be secured in compliance with the County's current security standards and a password. **Documents with password protection will not be accepted.**
- Each page in the PDF document should be rotated in the direction that will make it easiest to read on a computer monitor.
- Reports must be named and saved using the following naming convention:

RO#_Report Name_Year-Month-Date (e.g., RO#5555_WorkPlan_2005-06-14)

Submission Instructions

- 1) Obtain User Name and Password
 - a) Contact the Alameda County Environmental Health Department to obtain a User Name and Password to upload files to the ftp site.
 - i) Send an e-mail to deh.loptoxic@acgov.org
 - b) In the subject line of your request, be sure to include "**ftp PASSWORD REQUEST**" and in the body of your request, include the **Contact Information, Site Addresses**, and the **Case Numbers (RO# available in Geotracker) you will be posting for.**
- 2) Upload Files to the ftp Site
 - a) Using Internet Explorer (IE4+), go to <ftp://alcoftp1.acgov.org>
 - (i) Note: Netscape, Safari, and Firefox browsers will not open the FTP site as they are NOT being supported at this time.
 - b) Click on Page located on the Command bar on upper right side of window, and then scroll down to Open FTP Site in Windows Explorer.
 - c) Enter your User Name and Password. (Note: Both are Case Sensitive.)
 - d) Open "My Computer" on your computer and navigate to the file(s) you wish to upload to the ftp site.
 - e) With both "My Computer" and the ftp site open in separate windows, drag and drop the file(s) from "My Computer" to the ftp window.
- 3) Send E-mail Notifications to the Environmental Cleanup Oversight Programs
 - a) Send email to deh.loptoxic@acgov.org notify us that you have placed a report on our ftp site.
 - b) Copy your Caseworker on the e-mail. Your Caseworker's e-mail address is the entire first name then a period and entire last name @acgov.org. (e.g., firstname.lastname@acgov.org)
 - c) The subject line of the e-mail must start with the RO# followed by **Report Upload**. (e.g., Subject: RO1234 Report Upload) If site is a new case without an RO#, use the street address instead.
 - d) If your document meets the above requirements and you follow the submission instructions, you will receive a notification by email indicating that your document was successfully uploaded to the ftp site.

ATTACHMENT 2



ENVIRONMENTAL HEALTH SERVICES
ENVIRONMENTAL PROTECTION
1131 Harbor Bay Parkway, Suite 250
Alameda, CA 94502-6577
(510) 567-6700
FAX (510) 337-933

January 26, 2015

EMBL LLC &
Edward K. & Roshanne H. Hemmat Trust et al.
2420 San Pablo Ave.
Oakland, CA 94612
(Sent via E-mail to: edhemmat@yahoo.com)

Subject: Request for Data Gap Work Plan; Fuel Leak Case No. RO0003148 and GeoTracker Global ID T10000006271, EMBL LLC Tank, 1501 Martin Luther King Jr. Way, Oakland, CA 94612

Dear Ladies and Gentlemen:

Alameda County Environmental Health (ACEH) has reviewed the case file, including the December 26, 2013 report titled "*Soil Sampling Beneath Removed UST at the Property (Located at 1501 Martin Luther King Jr. Way, Oakland CA)*" generated by Enviro Soil Tech Consultants. The report documents the December 2013 removal and disposal of one 1,000 or 2,000-gallon underground storage tank (UST) that is reported to have last stored gasoline, and related dispenser piping. The UST was found to have obvious corrosion. Soil discoloration and hydrocarbon odors were observed in the stockpiled overburden soil and soil underlying the UST. Two soil samples were collected at eight feet below ground surface (bgs) from the east and west ends of the UST and one sample was collected at two feet bgs from the building's interior product piping on December 3, 2013. Maximum concentrations were detected at the east end at concentrations of 906 milligrams per kilogram (mg/kg) Total Petroleum Hydrocarbons as gasoline (TPH-g), <21.0 mg/kg benzene, 15.1 mg/kg toluene, 27.2 mg/kg ethylbenzene, 222 mg/kg total xylenes, and 20.1 mg/kg naphthalene. The other soil samples were non-detectable for TPH-g, benzene, toluene, ethylbenzene, and xylenes (collectively BTEX); methyl-tertiary-butyl-ether (MTBE); and naphthalene; however, the stockpile sample reported a concentration of 0.56 mg/kg methyl-ethyl-ketone (MEK). The Oakland Fire Department authorized the excavated soil stockpile to be used as backfill in the UST excavation. Neither groundwater nor rinsate water were encountered during the excavation.

ACEH has also evaluated the data and recommendations presented in the above-mentioned reports, in conjunction with the case files, to determine if the site is eligible for closure as a low risk site under the *California State Water Resources Control Board's (SWRCBs) Low-Threat Underground Storage Tank Case Closure Policy (LTCP)*. Based on ACEH staff review, we have determined that the site fails to meet the LTCP General Criteria d (Free Product), e (Site Conceptual Model), and the Media-Specific Criteria for Groundwater, the Media-Specific Criteria for Petroleum Vapor Intrusion to Indoor Air, and the Media-Specific Criteria for Direct Contact and Outdoor Air Exposure (see GeoTracker (http://geotracker.waterboards.ca.gov/profile_report.asp?global_id=T10000006271) for a copy of the LTCP and case-specific files).

Additional data may be available that ACEH is not aware of, or may not have been submitted, and therefore has not been incorporated in to ACEH's review. If additional data is made available, the data can be incorporated in future LTCP reviews. The evaluation of the site under the LTCP that is presented below is intended to initiate further discussions, submittal of other available documents, or the collection of additional data in order to determine if or when the site can be closed under the LTCP and to document current LTCP data gaps.

Therefore, at this juncture ACEH requests that you prepare a Data Gap Work Plan that is supported by a focused Site Conceptual Model (SCM) to address the Technical Comments provided below.

TECHNICAL COMMENTS

- 1. LTCP General Criteria d (Free Product)** – The LTCP requires free product to be removed to the extent practicable at release sites where investigations indicate the presence of free product by removing in a manner that minimizes the spread of the unauthorized release into previously uncontaminated zones by using recovery and disposal techniques appropriate to the hydrogeologic conditions at the site, and that properly treats, discharges, or disposes of recovery byproducts in compliance with applicable laws. Additionally, the LTCP requires that abatement of free product migration be used as a minimum objective for the design of any free product removal system.

ACEH's review of the case files indicates that insufficient data and analysis has been presented to assess free product at the site. Specifically, a TPH-g concentration of 906 mg/kg exceeds concentrations the technical justification papers for the LTCP and the California Leaking Underground Fuel Tank manual indicate to be indirect evidence of potential free-phase petroleum hydrocarbons. Free-phase petroleum hydrocarbons will naturally attenuate at a slower rate and persist for longer periods of time in the subsurface contributing to ongoing indoor air vapor intrusion, direct contact exposure/outdoor air exposure, and soil leaching to groundwater. Potential migration of LNAPL to groundwater was not evaluated as groundwater was not encountered in the UST excavation nor was groundwater sampled.

- 2. LTCP General Criteria e (Site Conceptual Model)** – According to the LTCP, the Site Conceptual Model (SCM) is a fundamental element of a comprehensive site investigation. The SCM establishes the source and attributes of the unauthorized release, describes all affected media (including soil, groundwater, and soil vapor as appropriate), describes local geology, hydrogeology and other physical site characteristics that affect contaminant environmental transport and fate, and identifies all confirmed and potential contaminant receptors (including water supply wells, surface water bodies, structures and their inhabitants). The SCM is relied upon by practitioners as a guide for investigative design and data collection. All relevant site characteristics identified by the SCM shall be assessed and supported by data so that the nature, extent and mobility of the release have been established to determine conformance with applicable criteria in this policy.

Our review of the case files indicates that insufficient data collection and analysis has been presented to assess the: a) nature and extent of potential groundwater impacts (e.g. dissolved concentrations, plume stability, and plume length not evaluated), b) hydrogeology (e.g. depth-to-water, and groundwater flow direction and gradient), c) potential sensitive receptors (e.g. water supply wells, surface waters, sensitive human receptors), d) soil areal extent and depth to support compliance with General Criteria d as discussed in Technical Comment 1 above, and e) Media Specific Criteria for Groundwater, Vapor Intrusion to Indoor Air, and Direct Contact and Outdoor Air Exposure, and f) additional potential constituents of concern as described in Technical Comments 3, 4, 5, 6, 7, and 8 below.

- 3. General Criteria g (Soil and Groundwater Have Been Tested for MTBE)** – *Health and Safety Code section 25296.15* prohibits closing a UST case unless the soil, groundwater, or both, as applicable have been tested for MTBE and the results of that testing are known to the Regional Water Board. The exception to this requirement is where a regulatory agency determines that the UST that leaked has only contained diesel or jet fuel. Before closing a UST case pursuant to this policy, the requirements of *section 25296.15*, if applicable, shall be satisfied.

ACEH's review of the case files indicates that site groundwater has not been analyzed for MTBE. Soil has been tested for MTBE and concentrations are not detected above LRLs ranging from <0.0049 to <21 mg/kg. Although one soil sample has elevated LRLs (sample 1-8-E), soil ESL numerical screening values for MTBE

are not exceeded. However, MTBE does not preferentially adsorb to the soil matrix and will leach to groundwater and migrate further due to high solubility; the LTCP groundwater-specific criteria (including the *San Francisco Bay Basin Water Quality Control Plan's Water Quality Objectives*) for MTBE is based on dissolved-phase concentrations. Please present a strategy in the Data Gap Work Plan (described in Technical Comment 9 below) to address the item discussed above. Alternatively, please provide justification of why the site satisfies this general criterion in the focused SCM described in Technical Comment 9 below.

- 4. LTCP Media-Specific Criteria for Groundwater – State Water Board Resolution 92-49** directs that water affected by an unauthorized release attain either background water quality or the best water quality that is reasonable if background water quality cannot be restored. To satisfy the media-specific criteria for groundwater, the contaminant plume that exceeds water quality objectives (WQOs) must be stable or decreasing in areal extent, and meet all of the additional characteristics of one of the five classes of sites listed in the LTCP groundwater-specific criteria.

Our review of the case files indicates that insufficient data collection has been presented to support the requisite characteristics of plume length and plume classification, dissolved-phase impacts, and potential for free product, as follows:

- a) No groundwater samples were collected in the UST excavation to eight feet bgs. While no groundwater was observed in the tank excavation, evidence from surrounding site investigation locations indicate depth-to-groundwater may lie between 9 to 25 feet bgs. As groundwater was not tested, direct evidence of plume length is unknown and theoretical plume length cannot be calculated with the existing soil concentrations. Additionally, LTCP criteria for dissolved-phase benzene and MTBE cannot be evaluated with the lack of groundwater data.
- b) Soil concentrations (notably TPH-g at 906 mg/kg) are indirectly indicative of free product and San Francisco Bay Regional Water Quality Control Board Environmental Screening Levels (Interim Final 2013) for potential soil leaching to groundwater are exceeded for ethylbenzene, naphthalene, and TPH-g.
- c) A SCM has not been generated that includes a well survey or identification of water supply wells, or surface water bodies within a 2,000 foot radius.
- d) A SCM has not been generated to define down-gradient sensitive receptors (e.g. residences, hospitals, schools, daycare facilities, elder care facilities, churches, and parks) that may be at risk depending on lateral extent of soil impact, groundwater depth and flow direction, and presence of basements.

Please present a strategy in the Data Gap Work Plan (described in Technical Comment 9 below) to address the items discussed above. Alternatively, please provide justification of why the site satisfies the Media-Specific Criteria for Groundwater in the focused SCM described in Technical Comment 9 below.

- 5. LTCP Media-Specific Criteria for Petroleum Vapor Intrusion to Indoor Air –** The LTCP describes conditions, including bio-attenuation zones, which if met will assure that exposure to petroleum vapors in indoor air will not pose unacceptable health risks to human occupants of existing or future site buildings, and adjacent parcels. Appendices 1 through 4 of the LTCP criteria illustrate four potential exposure scenarios and describe characteristics and criteria associated with each scenario. Alternatively, the policy allows for a site-specific risk assessment that demonstrates that human health is protected to the satisfaction of the regulatory agency; or, controlling exposure through the use of mitigation measures, or institutional or engineering controls, the regulatory agency determines that petroleum vapors migrating from soil or groundwater will have no significant risk of adversely affecting human health.

Our review of the case files indicates that the site data collection and analysis fail to support the requisite characteristics of one of the four scenarios. Specifically, it appears that petroleum contamination migrated in shallow and deep soil beneath the site, as evidenced by residual soil concentrations. Listed below are additional data gaps and exposure risks to be addressed:

- a) Depth-to-groundwater is an integral part of establishing the bio-attenuation zone. Currently, depth-to-groundwater is estimated from adjacent sites to average between 9 to 25 feet bgs. Site-specific data is unknown.
- b) Due to elevated soil concentrations of naphthalene (20.1 mg/kg), this constituent may be a potential risk for vapor intrusion to indoor air.
- c) Concentrations of TPH-g (906 mg/kg) exceed the LTCP Total TPH bio-attenuation zone concentration (100 mg/kg) at eight feet bgs. Lack of oxygen concentration (scenario-specific), dissolved-phase benzene concentration, presence (or lack) of LNAPL, and depth-to-water create further data gaps to establishing an adequate bio-attenuation zone.
- d) Current use of the property is zoned as commercial (currently a vacant warehouse). The Responsible Party has indicated future redevelopment will include fourteen units of residential (live/work space) use. Residential use receptor change creates a more conservative risk profile.

Therefore, please present a strategy in the Data Gap Work Plan (described in Technical Comment 9 below) to collect additional data to satisfy the bio-attenuation zone characteristics of Scenarios 1, 2 or 3, or to collect soil gas data to satisfy Scenario 4.

Alternatively, please provide justification of why the site satisfies the Media-Specific Criteria for Petroleum Vapor Intrusion to Indoor Air in a SCM that assures that exposure to petroleum vapors in indoor air will not pose unacceptable health risks to occupants of adjacent and future onsite buildings.

Please note that if direct measurement of soil gas is proposed, ensure that your strategy is consistent with the field sampling protocols described in the Department of Toxic Substances Control's *"Final Guidance for the Evaluation & Mitigation of Subsurface Vapor Intrusion to Indoor Air (October 2011)"*. Consistent with the guidance, ACEH requires installation of permanent vapor wells to assess temporal and seasonal variations in soil gas concentrations.

- 6. LTCP Media-Specific Criteria for Direct Contact and Outdoor Air Exposure** – The LTCP describes conditions where direct contact with contaminated soil or inhalation of contaminants volatilized to outdoor air poses a low threat to human health. According to the policy, 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 the maximum concentrations of petroleum constituents in soil are less than or equal to those listed in Table 1 for the specified depth bgs. Alternatively, the policy allows for a site-specific risk assessment that demonstrates that maximum concentrations of petroleum constituents in soil will have no significant risk of adversely affecting human health; or, controlling exposure through the use of mitigation measures, or institutional or engineering controls, the regulatory agency determines concentrations of petroleum constituents in soil will have no significant risk of adversely affecting human health.

Our review of the case files indicates that the site is commercial use. Potential future redevelopment to residential use is more restrictive and triggers more conservative screening criteria. There are no soil samples within the shallow 0 to 5 foot bgs zone adjacent to the former UST excavation (source area) and impacted-soil area. Soil naphthalene concentrations (20.1 mg/kg) exceed Table 1 criteria for residential exposure in the 5 to 10 foot interval for direct contact and volatilization to outdoor air. Benzene soil LRLs are elevated above Table 1 criteria and therefore a risk assessment cannot be determined.

Therefore, please present a strategy in the Data Gap Work Plan described in Technical Comment 9 below to collect sufficient data to satisfy the direct contact and outdoor air exposure criteria that delineate the areas of impact in relation to sensitive receptors and that meet Data Quality Objectives (DQOs). Sample and analyze soil in the 0 to 5 and the 5 to 10 foot intervals, at the groundwater interface, lithologic changes, and at areas of obvious impact. Also, collect a groundwater sample from each boring and propose the requisite analysis including naphthalene.

Alternatively, please provide justification of why the site satisfies the Media-Specific Criteria for Direct Contact and Outdoor Air Exposure in the focused SCM described in Technical Comment 9 below that assures that exposure to petroleum constituents in soil will have no significant risk of adversely affecting human health.

- 7. Request for Missing Certified Analytical Results and Additional Analytical Suites** – Laboratory certified analytical results (CARs) appear to be missing from the Accutest Laboratories report. Comparing the Chain of Custody (COC) to the CARs shows that TPH-g results are missing for sample 1-8-W; this data may be related to omitted CAR pages 8 and 9 of 44 pages.

Elevated laboratory reporting limits indicate the potential presence of additional compounds of potential concern (COPCs) not otherwise identified with the US EPA Method SW-846 8015B TPH-GRO (C6-C10 carbon range) analysis, and US EPA SW-846 Method 8260B volatile organic compounds (VOCs) analytical results.

Therefore, ACEH requests representative soil and groundwater samples be analyzed via SW-846 Method 8260 full-scan VOCs to include chlorinated hydrocarbons (solvents) and SW-846 Method 8270 for semi-VOCs. Additionally, to identify and target the specific hydrocarbon present at the site ACEH requests that petroleum hydrocarbon fingerprinting be used to identify the full TPH range (e.g. gasoline, diesel, oil) of COPCs present in the subsurface. Include the appropriate analytical methods and sampling locations in Technical Comment 9 below.

- 8. Request for a Data Gap Work Plan, and Focused Site Conceptual Model** – In order to determine the magnitude of residual contamination in soil and groundwater beneath the excavation, ACEH requests the submittal of a data gap work plan, and focused SCM by a consultant qualified to undertake the work by the date identified below. Please prepare the Work Plan to address the technical comments listed above. Please support the scope of work in the Work Plan with a focused SCM and DQOs that relate the data collection to each LTCP criteria. For example please clarify which scenario within each Media-Specific Criteria a sampling strategy is intended to apply to. Include in the Work Plan the appropriate soil and groundwater sampling and analysis based on US EPA SW-846 methods.

In order to expedite review, ACEH requests the focused SCM be presented in a tabular format that highlights the major SCM elements and associated data gaps, which need to be addressed to progress the site to case closure under the LTCP. Please see **Attachment A “Site Conceptual Model Requisite Elements”**. Please sequence activities in the proposed data gap work plan investigation scope of work to enable efficient data collection in the fewest mobilizations possible.

- 9. Request for Residential Redevelopment Building Plans** – As noted above, ACEH understands that the site is proposed to be redeveloped to residential use. Therefore, please include residential building plans with the Data Gap Work Plan. Building structures that affect the subsurface environment may affect potential direct contact and vapor intrusion to indoor air. Notably, building structures that extend below the ground surface (e.g. basements, parking structures) and elevator shafts may reduce the vertical separation distance between contaminant source and receptors and decrease bio-attenuation zone thickness. Additionally, subsurface structures may create preferential pathways for vapor migration to indoor air. A

more accurate evaluation of complete or potentially pathways to exposure and mitigation methods (if necessary) can be determined by evaluation of the building plans.

- 10. GeoTracker Compliance** – A review of the *State Water Resources Control Board's (SWRCB) GeoTracker website* indicates the site has not yet been claimed. Because this is a state requirement, ACEH requests that the site be claimed in GeoTracker by the date identified below.

Pursuant to *California Code of Regulations (CCR), Title 23, Division 3, Chapter 16, Article 12, Sections 2729 and 2729.1*, beginning September 1, 2001, all analytical data, including monitoring well samples, submitted in a report to a regulatory agency as part of the UST or LUST program, must be transmitted electronically to the SWRCB GeoTracker system via the internet. Also, beginning January 1, 2002, all permanent monitoring points utilized to collect groundwater samples (i.e. monitoring wells) and submitted in a report to a regulatory agency, must be surveyed (top of casing) to mean sea level and latitude and longitude to sub-meter accuracy using NAD 83. A California licensed surveyor may be required to perform this work. Additionally, pursuant to *California Code of Regulations, Title 23, Division 3, Chapter 30, Articles 1 and 2, Sections 3893, 3894, and 3895*, beginning July 1, 2005, the successful submittal of electronic information (i.e. report in PDF format) shall replace the requirement for the submittal of a paper copy. Please claim your site and upload all future submittals to GeoTracker and ACEH's ftp server by the date specified below. Electronic reporting is described below on the attachments.

Additional information regarding the SWRCB's GeoTracker website may be obtained online at http://www.waterboards.ca.gov/water_issues/programs/ust/electronic_submittal/ and http://www.swrcb.ca.gov/ust/electronic_submittal/report_rqmts.shtml) or by contacting the GeoTracker Help Desk at geotracker@waterboards.ca.gov or (866) 480-1028.

UNDERGROUND STORAGE TANK CLEANUP FUND

Please be aware that site investigation/site cleanup costs may be reimbursable from the California Underground Storage Tank Cleanup Fund. The application and additional information is available at the State Water Resources Control Board's website at http://www.waterboards.ca.gov/water_issues/programs/ustcf. Please be aware that reimbursement monies are contingent upon maintaining compliance with directives from ACEH.

TECHNICAL REPORT REQUEST

Please upload technical reports to the ACEH ftp site (Attention: Matthew Soby), and to the State Water Resources Control Board's GeoTracker website, in accordance with the following schedule and file naming convention:

- **April 27, 2015** – GeoTracker Compliance, Data Gap Work Plan, and Focused Site Conceptual Model (file name: RO0003148_WP_R_yyyy-mm-dd)
- **60 Days After Work Plan Approval** – Soil and Groundwater Investigation Report (file name: RO0003148_SWI_R_yyyy-mm-dd)

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

Should you have any questions, please contact me at (510) 567-6725 or send me an electronic mail message at matthew.soby@acgov.org.

Ladies & Gentlemen
EMBL LLC Tank
RO0003148
January 26, 2015, Page 7

Sincerely,

Matthew Soby
Hazardous Materials Technician

Enclosures: Attachment 1 – Responsible Party(ies) Legal Requirements / Obligations
Electronic Report Upload (ftp) Instructions
Attachment A “Site Conceptual Model Requisite Elements”

cc:

Frank Hamedi, Enviro Soil Tech Consultants, 131 Tully Road, San Jose, CA 95111 (Sent via E-mail to: info@envirosoiltech.com)
Dilan Roe, ACEH, (Sent via E-mail to dilan.roe@acgov.org)
Matthew Soby, ACEH, (Sent via E-mail to matthew.soby@acgov.org)
Electronic File, GeoTracker

Attachment 1

Responsible Party(ies) Legal Requirements / Obligations

REPORT REQUESTS

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

ELECTRONIC SUBMITTAL OF REPORTS

ACEH's Environmental Cleanup Oversight Programs (LOP and SLIC) require submission of reports in electronic form. The electronic copy replaces paper copies and is expected to be used for all public information requests, regulatory review, and compliance/enforcement activities. Instructions for submission of electronic documents to the Alameda County Environmental Cleanup Oversight Program FTP site are provided on the attached "Electronic Report Upload Instructions." Submission of reports to the Alameda County FTP site is an addition to existing requirements for electronic submittal of information to the State Water Resources Control Board (SWRCB) GeoTracker website. In September 2004, the SWRCB adopted regulations that require electronic submittal of information for all groundwater cleanup programs. For several years, responsible parties for cleanup of leaks from underground storage tanks (USTs) have been required to submit groundwater analytical data, surveyed locations of monitoring wells, and other data to the GeoTracker database over the Internet. Beginning July 1, 2005, these same reporting requirements were added to Spills, Leaks, Investigations, and Cleanup (SLIC) sites. Beginning July 1, 2005, electronic submittal of a complete copy of all reports for all sites is required in GeoTracker (in PDF format). Please visit the SWRCB website for more information on these requirements (http://www.waterboards.ca.gov/water_issues/programs/ust/electronic_submittal/).

PERJURY STATEMENT

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

PROFESSIONAL CERTIFICATION & CONCLUSIONS/RECOMMENDATIONS

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

UNDERGROUND STORAGE TANK CLEANUP FUND

Please note that delays in investigation, later reports, or enforcement actions may result in your becoming ineligible to receive grant money from the state's Underground Storage Tank Cleanup Fund (Senate Bill 2004) to reimburse you for the cost of cleanup.

AGENCY OVERSIGHT

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

Alameda County Environmental Cleanup Oversight Programs (LOP and SLIC)	REVISION DATE: May 15, 2014
	ISSUE DATE: July 5, 2005
	PREVIOUS REVISIONS: October 31, 2005; December 16, 2005; March 27, 2009; July 8, 2010, July 25, 2010
SECTION: Miscellaneous Administrative Topics & Procedures	SUBJECT: Electronic Report Upload (ftp) Instructions

The Alameda County Environmental Cleanup Oversight Programs (LOP and SLIC) require submission of all reports in electronic form to the county's ftp site. Paper copies of reports will no longer be accepted. The electronic copy replaces the paper copy and will be used for all public information requests, regulatory review, and compliance/enforcement activities.

REQUIREMENTS

- **Please do not submit reports as attachments to electronic mail.**
- Entire report including cover letter must be submitted to the ftp site as **a single portable document format (PDF) with no password protection.**
- It is **preferable** that reports be converted to PDF format from their original format, (e.g., Microsoft Word) rather than scanned.
- **Signature pages and perjury statements must be included and have either original or electronic signature.**
- **Do not password protect the document.** Once indexed and inserted into the correct electronic case file, the document will be secured in compliance with the County's current security standards and a password. **Documents with password protection will not be accepted.**
- Each page in the PDF document should be rotated in the direction that will make it easiest to read on a computer monitor.
- Reports must be named and saved using the following naming convention:

RO#_Report Name_Year-Month-Date (e.g., RO#5555_WorkPlan_2005-06-14)

Submission Instructions

- 1) Obtain User Name and Password
 - a) Contact the Alameda County Environmental Health Department to obtain a User Name and Password to upload files to the ftp site.
 - i) Send an e-mail to deh.loptoxic@acgov.org
 - b) In the subject line of your request, be sure to include "**ftp PASSWORD REQUEST**" and in the body of your request, include the **Contact Information, Site Addresses**, and the **Case Numbers (RO# available in Geotracker) you will be posting for.**
- 2) Upload Files to the ftp Site
 - a) Using Internet Explorer (IE4+), go to <ftp://alcoftp1.acgov.org>
 - (i) Note: Netscape, Safari, and Firefox browsers will not open the FTP site as they are NOT being supported at this time.
 - b) Click on Page located on the Command bar on upper right side of window, and then scroll down to Open FTP Site in Windows Explorer.
 - c) Enter your User Name and Password. (Note: Both are Case Sensitive.)
 - d) Open "My Computer" on your computer and navigate to the file(s) you wish to upload to the ftp site.
 - e) With both "My Computer" and the ftp site open in separate windows, drag and drop the file(s) from "My Computer" to the ftp window.
- 3) Send E-mail Notifications to the Environmental Cleanup Oversight Programs
 - a) Send email to deh.loptoxic@acgov.org notify us that you have placed a report on our ftp site.
 - b) Copy your Caseworker on the e-mail. Your Caseworker's e-mail address is the entire first name then a period and entire last name @acgov.org. (e.g., firstname.lastname@acgov.org)
 - c) The subject line of the e-mail must start with the RO# followed by **Report Upload**. (e.g., Subject: RO1234 Report Upload) If site is a new case without an RO#, use the street address instead.
 - d) If your document meets the above requirements and you follow the submission instructions, you will receive a notification by email indicating that your document was successfully uploaded to the ftp site.

ATTACHMENT A

Site Conceptual Model Requisite Elements

ATTACHMENT A

Site Conceptual Model

The site conceptual model (SCM) is an essential decision-making and communication tool for all interested parties during the site characterization, remediation planning and implementation, and closure process. A SCM is a set of working hypotheses pertaining to all aspects of the contaminant release, including site geology, hydrogeology, release history, residual and dissolved contamination, attenuation mechanisms, pathways to nearby receptors, and likely magnitude of potential impacts to receptors.

The SCM is initially used to characterize the site and identify data gaps. As the investigation proceeds and the data gaps are filled, the working hypotheses are modified, and the overall SCM is refined and strengthened until it is said to be "validated". At this point, the focus of the SCM shifts from site characterization towards remedial technology evaluation and selection, and later remedy optimization, and forms the foundation for developing the most cost-effective corrective action plan to protect existing and potential receptors.

For ease of review, Alameda County Environmental Health (ACEH) requests utilization of tabular formats to (1) highlight the major SCM elements and their associated data gaps which need to be addressed to progress the site to case closure (see Table 1 of attached example), and (2) highlight the identified data gaps and proposed investigation activities (see Table 2 of the attached example). ACEH requests that the tables presenting the SCM elements, data gaps, and proposed investigation activities be updated as appropriate at each stage of the project and submitted with work plans, feasibility studies, corrective action plans, and requests for closures to support proposed work, conclusions, and/or recommendations.

The SCM should incorporate, but is not limited to, the topics listed below. Please support the SCM with the use of large-scaled maps and graphics, tables, and conceptual diagrams to illustrate key points. Please include an extended site map(s) utilizing an aerial photographic base map with sufficient resolution to show the facility, delineation of streets and property boundaries within the adjacent neighborhood, downgradient irrigation wells, and proposed locations of transects, monitoring wells, and soil vapor probes.

- a. Regional and local (on-site and off-site) geology and hydrogeology. Include a discussion of the surface geology (e.g., soil types, soil parameters, outcrops, faulting), subsurface geology (e.g., stratigraphy, continuity, and connectivity), and hydrogeology (e.g., water-bearing zones, hydrologic parameters, impermeable strata). Please include a structural contour map (top of unit) and isopach map for the aquitard that is presumed to separate your release from the deeper aquifer(s), cross sections, soil boring and monitoring well logs and locations, and copies of regional geologic maps.
- b. Analysis of the hydraulic flow system in the vicinity of the site. Include rose diagrams for depicting groundwater gradients. The rose diagram shall be plotted on groundwater elevation contour maps and updated in all future reports submitted for your site. Please address changes due to seasonal precipitation and groundwater pumping, and evaluate the potential interconnection between shallow and deep aquifers. Please include an analysis of vertical hydraulic gradients, and effects of pumping rates on hydraulic head from nearby water supply wells, if appropriate. Include hydraulic head in the different water bearing zones and hydrographs of all monitoring wells.
- c. Release history, including potential source(s) of releases, potential contaminants of concern (COC) associated with each potential release, confirmed source locations, confirmed release locations, and existing delineation of release areas. Address primary leak source(s) (e.g., a tank, sump, pipeline, etc.) and secondary sources (e.g., high-

ATTACHMENT A

Site Conceptual Model (continued)

concentration contaminants in low-permeability lithologic soil units that sustain groundwater or vapor plumes). Include local and regional plan view maps that illustrate the location of sources (former facilities, piping, tanks, etc.).

- d. Plume (soil gas and groundwater) development and dynamics including aging of source(s), phase distribution (NAPL, dissolved, vapor, residual), diving plumes, attenuation mechanisms, migration routes, preferential pathways (geologic and anthropogenic), magnitude of chemicals of concern and spatial and temporal changes in concentrations, and contaminant fate and transport. Please include three-dimensional plume maps for groundwater and two-dimensional soil vapor plume plan view maps to provide an accurate depiction of the contaminant distribution of each COC.
- e. Summary tables of chemical concentrations in different media (i.e., soil, groundwater, and soil vapor). Please include applicable environmental screening levels on all tables. Include graphs of contaminant concentrations versus time.
- f. Current and historic facility structures (e.g., buildings, drain systems, sewer systems, underground utilities, etc.) and physical features including topographical features (e.g., hills, gradients, surface vegetation, or pavement) and surface water features (e.g. routes of drainage ditches, links to water bodies). Please include current and historic site maps.
- g. Current and historic site operations/processes (e.g., parts cleaning, chemical storage areas, manufacturing, etc.).
- h. Other contaminant release sites in the vicinity of the site. Hydrogeologic and contaminant data from those sites may prove helpful in testing certain hypotheses for the SCM. Include a summary of work and technical findings from nearby release sites, including the two adjacent closed LUFT sites, (i.e., Montgomery Ward site and the Quest Laboratory site).
- i. Land uses and exposure scenarios on the facility and adjacent properties. Include beneficial resources (e.g., groundwater classification, wetlands, natural resources, etc.), resource use locations (e.g., water supply wells, surface water intakes), subpopulation types and locations (e.g., schools, hospitals, day care centers, etc.), exposure scenarios (e.g. residential, industrial, recreational, farming), and exposure pathways, and potential threat to sensitive receptors. Include an analysis of the contaminant volatilization from the subsurface to indoor/outdoor air exposure route (i.e., vapor pathway). Please include copies of Sanborn maps and aerial photographs, as appropriate.
- j. Identification and listing of specific data gaps that require further investigation during subsequent phases of work. Proposed activities to investigate and fill data gaps identified.

**TABLE 1
INITIAL SITE CONCEPTUAL MODEL**

CSM Element	CSM Sub-Element	Description	Data Gap	How to Address
Geology and Hydrogeology	Regional	<p>The site is in the northwest portion of the Livermore Valley, which consists of a structural trough within the Diablo Range and contains the Livermore Valley Groundwater Basin (referred to as "the Basin") (DWR, 2006). Several faults traverse the Basin, which act as barriers to groundwater flow, as evidenced by large differences in water levels between the upgradient and downgradient sides of these faults (DWR, 2006). The Basin is divided into 12 groundwater basins, which are defined by faults and non-water-bearing geologic units (DWR, 1974).</p> <p>The hydrogeology of the Basin consists of a thick sequence of fresh-water-bearing continental deposits from alluvial fans, outwash plains, and lacustrine environments to up to approximately 5,000 feet bgs (DWR, 2006). Three defined fresh-water bearing geologic units exist within the Basin: Holocene Valley Fill (up to approximately 400 feet bgs in the central portion of the Basin), the Plio-Pleistocene Livermore Formation (generally between approximately 400 and 4,000 feet bgs in the central portion of the Basin), and the Pliocene Tassajara Formation (generally between approximately 250 and 5,000 or more feet bgs) (DWR, 1974). The Valley Fill units in the western portion of the Basin are capped by up to 40 feet of clay (DWR, 2006).</p>	None	NA
	Site	<p>Geology: Borings advanced at the site indicate that subsurface materials consist primarily of finer-grained deposits (clay, sandy clay, silt and sandy silt) with interbedded sand lenses to 20 feet below ground surface (bgs), the approximate depth to which these borings were advanced. The documented lithology for one on-site boring that was logged to approximately 45 feet bgs indicates that beyond approximately 20 feet bgs, fine-grained soils are present to approximately 45 feet bgs. A cone penetrometer technology test indicated the presence of sandier lenses from approximately 45 to 58 feet bgs and even coarser materials (interbedded with finer-grained materials) from approximately 58 feet to 75 feet bgs, the total depth drilled. The lithology documented at the site is similar to that reported at other nearby sites, specifically the Montgomery Ward site (7575 Dublin Boulevard), the Quest laboratory site (6511 Golden Gate Drive), the Shell-branded Service Station site (11989 Dublin Boulevard), and the Chevron site (7007 San Ramon Road).</p> <p>Hydrogeology: Shallow groundwater has been encountered at depths of approximately 9 to 15 feet bgs. The hydraulic gradient and groundwater flow direction have not been specifically evaluated at the site.</p>	<p>As noted, most borings at the site have been advanced to approximately 20 feet bgs, and one boring has been advanced and logged to 45 feet bgs; CPT data was collected to 75 feet bgs at one location. Lithologic data will be obtained from additional borings that will be advanced on site to further the understanding of the subsurface, especially with respect to deeper lithology.</p> <p>The on-site shallow groundwater horizontal gradient has not been confirmed. Additionally, it is not known if there may be a vertical component to the hydraulic gradient.</p>	<p>Two direct push borings and four multi-port wells will be advanced to depth (up to approximately 75 feet bgs) and soil lithology will be logged. See items 4 and 5 on Table 2.</p> <p>Shallow and deeper groundwater monitoring wells will be installed to provide information on lateral and vertical gradients. See Items 2 and 5 on Table 2.</p>
Surface Water Bodies		The closest surface water bodies are culverted creeks. Martin Canyon Creek flows from a gully west of the site, enters a culvert north of the site, and then bends to the south, passing approximately 1,000 feet east of the site before flowing into the Alamo Canal. Dublin Creek flows from a gully west of the site, enters a culvert approximately 750 feet south of the site, and then joins Martin Canyon Creek approximately 750 feet southeast of the site.	None	NA
Nearby Wells		The State Water Resources Control Board's GeoTracker GAMA website includes information regarding the approximate locations of water supply wells in California. In the vicinity of the site, the closest water supply wells presented on this website are depicted approximately 2 miles southeast of the site; the locations shown are approximate (within 1 mile of actual location for California Department of Public Health supply wells and 0.5 mile for other supply wells). No water-producing wells were identified within 1/4 mile of the site in the well survey conducted for the Quest Laboratory site (6511 Golden Gate Drive; documented in 2009); information documented in a 2005 report for the Chevron site at 7007 San Ramon Road indicates that a water-producing well may exist within 1/2 mile of the site.	A formal well survey is needed to identify water-producing, monitoring, cathodic protection, and dewatering wells.	Obtain data regarding nearby, permitted wells from the California Department of Water Resources and Zone 7 Water Agency (Item 11 on Table 2).

TABLE 2
DATA GAPS AND PROPOSED INVESTIGATION

Item	Data Gap	Proposed Investigation	Rationale	Analysis
5	Evaluate the possible presence of impacts to deeper groundwater. Evaluate deeper groundwater concentration trends over time. Obtain data regarding the vertical groundwater gradient. Obtain more lithological data below 20 feet bgs.	Install four continuous multichannel tubing (CMT) groundwater monitoring wells (aka multi-port wells) to approximately 65 feet bgs in the northern parking lot with ports at three depths (monitoring well locations may be adjusted pending results of shallow grab groundwater samples; we will discuss any potential changes with ACEH before proceeding). Groundwater monitoring frequency to be determined. Soil samples will be collected only if there are field indications of impacts. Soil lithology will be logged. However, information regarding the moisture content of soil may not be reliable using sonic drilling technology (two borings will be logged using direct push technology; see Item 4, above).	One well is proposed at the western (upgradient) property boundary to confirm that there are no deeper groundwater impacts from upgradient. Two wells are proposed near the center of the northern parking lot to evaluate potential impacts in an area where deeper impacts, if any, would most likely to be found. One well is proposed at the eastern (downgradient) property boundary to confirm that there are no impacts extending off-site. Port depths will be chosen based on the locations of saturated soils (as logged in direct push borings; see Item 4, above), but are expected at approximately 15, 45, and 60 feet bgs.	<i>Groundwater:</i> VOCs by EPA Method 8260, dissolved oxygen, oxidation/reduction potential, temperature, pH, and specific conductance.
6	Evaluate possible off-site migration of impacted soil vapor in the downgradient direction (east). Evaluate concentration trends over time.	Install 4 temporary nested soil vapor probes at approximately 4 and 8 feet bgs along the eastern property boundary. Based on the results of the sampling, two sets of nested probes will be converted to vapor monitoring wells to allow for evaluation of VOC concentration trends over time.	Available data indicate that PCE and TCE are present in soil vapor in the eastern portion of the northern parking lot. Samples are proposed on approximately 50-foot intervals along the eastern property boundary to provide a transect of concentrations through the vapor plume. The depths of 4 and 8 feet bgs are chosen to provide data closest to the source (i.e., groundwater) while avoiding saturated soil, and also provide shallower data to help evaluate potential attenuation within the soil column. Two sets of nested vapor probes will be converted into vapor monitoring wells (by installing well boxes at ground surface); the locations of the permanent wells will be chosen based on the results of samples from the temporary probes.	<i>Soil vapor:</i> VOCs by EPA Method TO-15.
7	Evaluate potential for off-site migration of impacted groundwater in the downgradient direction (east).	Advance two borings to approximately 20 feet bgs in the parking lot of the property east of the Crown site for collection of grab groundwater samples.	Two borings are proposed off-site, on the property east of the Crown site, just east of the building in the expected area of highest potential VOC concentrations.	<i>Groundwater:</i> VOCs by EPA Method 8260, dissolved oxygen, oxidation/reduction potential, temperature, pH, and specific conductance.
8	Evaluate VOC concentrations just north of the highest concentration area.	Advance two borings to approximately 20 feet bgs north of Building A for collection of soil and grab groundwater samples. Soil samples will be collected at two depths in the vadose zone. Soil samples will be collected based on field indications of impacts (PID readings, odor, staining) or, in the absence of field indications of impacts, at 5 and 10 feet bgs.	The highest concentrations of PCE in groundwater were detected at boring NM-B-32, just north of Building A. The nearest available data to the north are approximately 75 feet away. One of the borings will be advanced approximately 20 feet north of NM-B-32 to provide data close to the highest concentration area. A second boring will be advanced approximately halfway between the first boring and former boring NM-B-33 to provide additional spatial data for contouring purposes. These borings will be part of a transect in the highest concentration area.	<i>Groundwater:</i> VOCs by EPA Method 8260, dissolved oxygen, oxidation/reduction potential, temperature, pH, and specific conductance. <i>Soil:</i> VOCs by EPA Method 8260 (soil samples to be collected using field preservation in accordance with EPA Method 5035).
9	Evaluate VOC concentrations in soil vapor in the south parcel of the site.	Install four temporary soil vapor probes at approximately 5 feet bgs around boring SV-25, where PCE was detected in soil vapor at a low concentration.	PCE was detected in soil vapor sample SV-25 in the southern parcel, although was not detected in groundwater in that area. Three probes will be installed approximately 30 feet from of boring SV-25 to attempt to delineate the extent of impacts. A fourth probe is proposed west of the original sample, close to the property boundary and the location of mapped utility lines, which may be a potential conduit, to evaluate potential impacts from the west.	<i>Soil vapor:</i> VOCs by EPA Method TO-15.
10	Obtain additional information regarding subsurface structures and utilities to further evaluate migration pathways and sources.	Ground penetrating radar (GPR) and other utility locating methodologies will be used, as appropriate, to further evaluate the presence of unknown utilities and structures at the site.	Utilities have been identified at the site that include an on-site sewer lateral and drain line, and shallow water, electric, and gas lines. Given the current understanding of the distribution of PCE in groundwater at the site, it is possible that other subsurface utilities, and specifically sewer laterals, exist that may act as a source or migration pathway for distribution of VOCs in the subsurface.	NA