



ENVIRONMENTAL HEALTH DEPARTMENT  
ENVIRONMENTAL PROTECTION  
1131 Harbor Bay Parkway, Suite 250  
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May 24, 2013

Mr. Brian Waite  
Chevron Environmental Management Co.  
6101 Bollinger Canyon Road  
San Ramon, CA 94583  
(Sent via electronic mail to:  
[BWaite@chevron.com](mailto:BWaite@chevron.com))

Mr. Mark Gomez  
City of Oakland  
250 Frank Ogawa Plaza, Suite 5301  
Oakland, CA 94612  
(Sent via electronic mail to:  
[mmgomez@oaklandnet.com](mailto:mmgomez@oaklandnet.com))

Subject: Closure Request Response; Fuel Leak Case No. RO0000137 and Geotracker Global ID T0600100313, Chevron #9-0019, 210 Grand Avenue, Oakland, CA 94610

Dear Messrs. Waite and Gomez:

Thank you for the recently submitted document entitled *Addendum to Case Closure Request (RFC)*, dated November 14, 2012, which was prepared by Conestoga-Rovers & Associates (CRA) for the subject site. With this submittal, Chevron requests case closure citing that current site conditions warrant case closure in accordance with the State Water Resources Control Board's (SWRCBs) Low Threat Underground Storage Tank Case Closure Policy (LTCP).

Alameda County Environmental Health (ACEH) staff has evaluated the request for case closure in conjunction with the site data and information in the RFC and contained in the case files and the following previously submitted reports prepared by CRA:

- *Site Conceptual Model and Case Closure Request*, dated June 25, 2010, and
- *Second Semi-Annual 2012 Groundwater Monitoring Report*, dated December 12, 2012.

Based on further ACEH staff review, we have determined that the site fails to meet the LTCP General Criteria e, the Media-Specific Criteria for Groundwater, and the Media-Specific Criteria for Petroleum Vapor Intrusion to Indoor Air (see Attachment A for a copy of the LTCP checklist). ACEH's determination is based on an inadequate conceptual site model of the hydrogeology and contaminant transport mechanisms at the site and lack of supporting data and analysis to justify case closure under the LTCP. Specifically, the RFC states the site satisfies the characteristics of Class 5 of the LTCP Media-Specific Criteria for Groundwater. However, ACEH's review of the case files indicates that the site data and analysis fail to support the requisite characteristics of plume stability, maximum plume length, distance to a surface water body, and dissolved phase concentrations of benzene to qualify under this classification. The RFC additionally states that the site satisfies the characteristics of Class 3a of the LTCP Media-Specific Criteria for Petroleum Vapor Intrusion to Indoor Air. However, ACEH's review indicates that the depth to groundwater is shallower than 5 feet below grade surface (bgs) a significant percentage of time the site has been monitored, and that several wells are permanently submerged.

Therefore, at this juncture ACEH requests that you prepare a Data Investigation Work Plan that is supported by a focused Site Conceptual Model (SCM) to address the Technical Comments provided below and support case closure under the media-specific criteria for groundwater and vapor intrusion in accordance with the schedule below.

This decision to deny closure is subject to appeal to the State Water Resources Control Board (SWRCB), pursuant to Section 25299.39.2(b) of the Health and Safety Code (Thompson-Richter Underground Storage Tank Reform Act - Senate Bill 562). Please contact the SWRCB Underground Storage Tank Program at (916) 341-5851 for information regarding the appeals process.

## **TECHNICAL COMMENTS**

- 1. LTCP Media Specific Criteria for Groundwater** – To satisfy the media-specific criteria for groundwater, the contaminant plume that exceeds water quality objectives 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 policy.

Our review of the case files indicates that insufficient data and analysis has been presented to support the requisite characteristics of plume stability, plume length, distance to a surface water body, stable benzene concentrations, or that the property owner may be willing to accept a land use restriction. This analysis considered the following site specific data:

- Groundwater concentrations in well MW-5 are rebounding after the injection of oxygen into the well in June to November 2009. Groundwater concentrations in the well have spiked in groundwater monitoring events conducted early in a year (March of any given year) since at least 2004, and rebound began in September 2010, and continues through to the last groundwater event in September 2012.
- Groundwater well MW-5 is screened between 7.5 and 12 feet bgs, includes a notably contaminated gravel layer between approximately 7 and 9 feet, and contains the markedly increasing concentration trend after the well-head treatment in 2009. Based on Rose Diagrams included in groundwater monitoring reports, groundwater flow (specifically from MW-5 in this instance) predominantly appears to be directed to an unmonitored area between wells MW-6 and MW-7.
- Groundwater wells MW-7, MW-8, and MW-9 are non-detectable for dissolved-phased hydrocarbons, but are installed across Grand Avenue from the site, and are separated from the site by multiple utility conduits that may divert a dissolved-phased plume away from the downgradient direction of groundwater flow. This includes a storm drain that would likely discharge directly to Glen Echo Creek or Lake Merritt at 250 and 220 feet, respectively.
- Groundwater well MW-4 is positioned somewhat downgradient of well MW-5; however, based on the screening interval (9.5 to 12 feet bgs) and depth to groundwater measurements (a historic range between 1.7 to 5.27 feet bgs) appears to be permanently submerged, and is not capable of determining plume length downgradient of well MW-5, or downgradient of the former UST complex or dispensers locations it is located near. However, the well would appear to determine the vertical extent of groundwater contamination at that location.
- Well MW-4 has predominately been non-detectable for dissolved-phased hydrocarbons; however, also contains a notably contaminated gravel layer (5.5 to 8.5 feet bgs at this location) similar to the gravel layer in MW-5, but is not screened across the layer (screen interval is 9.5 to 12 feet bgs). A reasonable interpretation of the well would conclude that the exclusion of apparently a notably impacted gravel layer cannot produce representative groundwater concentrations at the soil-water interface.

Consequently it appears that rebounding groundwater concentrations are present onsite, and that a direct storm drain utility conduit likely exists to surface water bodies within approximately 250 feet of the site. Additionally, it appears that groundwater contamination is not sufficiently characterized downgradient of onsite release areas and of residual contamination. Therefore, please resume groundwater monitoring at the site in accordance with the schedule below to collect sufficient data to demonstrate plume stability. Additionally, please present a strategy in the Data Gap Investigation Work Plan described in Technical Comment 3 below to collect sufficient data to delineate the distance from the release where attenuation exceeds migration and the distal end of the plume.

Alternatively, please provide justification of why the site satisfies the media-specific criteria for groundwater in a focused SCM (described in Technical Comment 3) that assures that threats to existing and anticipated beneficial uses of groundwater and surface water have been mitigated or are de minimis.

- 2. LTCP Media Specific Criteria for Vapor Intrusion to Indoor Air** – The LTCP describes conditions, including bioattenuation 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.

Our review of the case files indicates that the site data and analysis fail to support the requisite characteristics of one of the four scenarios. Specifically, ACEH's review indicates that the site does not meet the criteria of this scenario (depth to groundwater is > 5 feet below building foundations, the dissolved benzene plume is <100 µg/l, that total TPH in soil within 5 feet below the building foundation is <100 mg/kg). This analysis considered the following site specific data:

- The depth to groundwater has been shallower than 5 feet below surface grade (bgs) a significant percentage of time the site has been monitored; thus there is no bioattenuation zone.
- Dissolved-phase benzene concentrations are on an increasing trend and most recently were 1,200 µg/l, and several wells are permanently submerged and likely cannot collect representative groundwater interface concentrations.
- Concentrations of TPH in the 0 to 5 foot depth interval are present at > 100 mg/kg.
- Institutional or engineering controls have not been proposed or implemented to control vapor exposures at the site.

Therefore, please present a strategy in the Data Gap Investigation Work Plan described in Technical Comment 3 below to collect additional data to satisfy the bioattenuation zone characteristics of Scenarios 1, 2 or 3, or to collect gas data to satisfy Scenario 4.

Alternatively, please provide justification of why the site satisfies the Media-Specific Criteria for Vapor Intrusion to Indoor Air in a focused SCM that assures that exposure to petroleum vapors in indoor air will not pose unacceptable health risks to occupants of future 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 Vapor Intrusion Guidance (October 2011). Consistent with the guidance, ACEH requires installation of permanent vapor wells to assess temporal and seasonal variations in soil gas concentrations.

- 3. Data Gap Investigation Work Plan and Focused Site Conceptual Model** – Please prepare Data Gap Investigation Work Plan to address the technical comments listed above. Please support the scope of work in the Data Gap Investigation Work Plan with a focused SCM and Data Quality Objectives (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. If the sampling strategy includes data collection to support the proposed site redevelopment, a description of that redevelopment should be included in the Data Gap Investigation Work Plan to support your sampling strategy so that ACEH can verify the appropriateness of the proposed sample locations.

In order to expedite review, ACEH requests the 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 B "Site Conceptual Model Requisite Elements". Please sequence activities in the proposed Data Gap Investigation scope of work to enable efficient data collection in the fewest mobilizations possible.

- 4. Path to Closure Project Schedule** - The State Water Resources Control Board passed Resolution No. 2012-0062 on November 6, 2012 which requires development of a "Path to Closure Plan" by December 31, 2013 that addresses the impediments to closure for the site. The Path to Closure must have milestone dates tied to calendar quarters which will achieve site cleanup and case closure in a timely and efficient manner and minimizes the cost of corrective action. Therefore, by the date listed below please prepare a Path to Closure Schedule for your site that incorporates the items identified by ACEH in the Technical Comments above as impediments to closure (further detailed in Attachment C). Additionally, please evaluate the site against the LTCP criteria and incorporate additional data collection activities in the Path to Closure Schedule and Data Gap Investigation Work Plan to address other impediments to closure under the policy not identified by ACEH. ACEH staff utilizes a Data Gap Identification Tool (DGIT) while reviewing cases for compliance with the LTCP criteria and identification of impediments to closure. We encourage you to also utilize the DGIT to (1) evaluate your site and develop an efficient path to site closure by focusing data collection efforts, if necessary, on the LTCP criteria, and (2) assist and expedite ACEH staff review of work plans and request for closures. ACEH will provide the DGIT as a PDF form via e-mail upon request. ACEH will review the schedule to ensure that all key elements are included.

### TECHNICAL REPORT REQUEST

Please upload technical reports to the ACEH ftp site (Attention: Mark Detterman), and to the State Water Resources Control Board's Geotracker website, in accordance with the specified file naming convention below, according to the following schedule:

- **August 2, 2013** – Semi-Annual Groundwater Monitoring Report  
File to be named: RO137\_GWM\_R\_yyyy-mm-dd
- **August 19, 2013** – Data Gap Work Plan and Focused Site Conceptual Model  
File to be named: RO137\_WP\_R\_yyyy-mm-dd
- **September 2, 2013** – Path to Closure Schedule  
File to be named: RO137\_WP\_R\_yyyy-mm-dd
- **November 15, 2013** – Semi-Annual Groundwater Monitoring Report  
File to be named: RO137\_GWM\_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.

Online case files are available for review at the following website: <http://www.acgov.org/aceh/index.htm>. If your email address is not listed on the first page of this letter, or in the list of cc's listed below, ACEH is requesting your email address to help expedite communications and to help lower overall costs.

Should you have any questions, please contact me at (510) 567-6876 or send me an electronic mail message at [mark.detterman@acgov.org](mailto:mark.detterman@acgov.org).

Sincerely,

Mark Detterman, PG, CEG  
Senior Hazardous Materials Specialist

Enclosures: Attachment 1 – Responsible Party (ies) Legal Requirements / Obligations  
Electronic Report Upload (ftp) Instructions

Attachment A – Geotracker LTCP Checklist  
Attachment B – Site Conceptual Model Requisite Elements  
Attachment C – Path to Closure Project Schedule Requisite Elements

cc: James Kiernan, 10969 Trade Center Drive, Suite 106, Rancho Cordova, CA 95670  
(sent via electronic mail to [jkiernan@craworld.com](mailto:jkiernan@craworld.com))

Leroy Griffin, Oakland Fire Department, 250 Frank H. Ogawa Plaza, Suite 3341, Oakland, CA 94612-2032  
(sent via electronic mail to [lgriffin@oaklandnet.com](mailto:lgriffin@oaklandnet.com))

Donna Drogos, (sent via electronic mail to [donna.drogos@acgov.org](mailto:donna.drogos@acgov.org))  
Dilan Roe (sent via electronic mail to [dilan.roe@acgov.org](mailto:dilan.roe@acgov.org))  
Mark Detterman (sent via electronic mail to [mark.detterman@acgov.org](mailto:mark.detterman@acgov.org))  
Geotracker, Electronic Files

## Attachment 1

### Responsible Party(ies) Legal Requirements/Obligations

#### REPORT/DATA REQUESTS

These reports/data are being requested pursuant to Division 7 of the California Water Code (Water Quality), Chapter 6.7 of Division 20 of the California Health and Safety Code (Underground Storage of Hazardous Substances), and Chapter 16 of Division 3 of Title 23 of the California Code of Regulations (Underground Storage Tank Regulations).

#### ELECTRONIC SUBMITTAL OF REPORTS

ACEH's Environmental Cleanup Oversight Programs (Local Oversight Program [LOP] for unauthorized releases from petroleum Underground Storage Tanks [USTs], and Site Cleanup Program [SCP] for unauthorized releases of non-petroleum hazardous substances) require submission of reports in electronic format pursuant to Chapter 3 of Division 7, Sections 13195 and 13197.5 of the California Water Code, and Chapter 30, Articles 1 and 2, Sections 3890 to 3895 of Division 3 of Title 23 of the California Code of Regulations (23 CCR). Instructions for submission of electronic documents to the ACEH FTP site are provided on the attached "Electronic Report Upload Instructions."

Submission of reports to the ACEH FTP site is in addition to requirements for electronic submittal of information (ESI) to the State Water Resources Control Board's (SWRCB) Geotracker website. In April 2001, the SWRCB adopted 23 CCR, Division 3, Chapter 16, Article 12, Sections 2729 and 2729.1 (Electronic Submission of Laboratory Data for UST Reports). Article 12 required electronic submittal of analytical laboratory data submitted in a report to a regulatory agency (effective September 1, 2001), and surveyed locations (latitude, longitude and elevation) of groundwater monitoring wells (effective January 1, 2002) in Electronic Deliverable Format (EDF) to Geotracker. Article 12 was subsequently repealed in 2004 and replaced with Article 30 (Electronic Submittal of Information) which expanded the ESI requirements to include electronic submittal of any report or data required by a regulatory agency from a cleanup site. The expanded ESI submittal requirements for petroleum UST sites subject to the requirements of 23 CCR, Division, 3, Chapter 16, Article 11, became effective December 16, 2004. All other electronic submittals required pursuant to Chapter 30 became effective January 1, 2005. Please visit the SWRCB website for more information on these requirements. ([http://www.waterboards.ca.gov/water\\_issues/programs/ust/electronic\\_submittal/](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, 7835, 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, late 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.

<b>Alameda County Environmental Cleanup Oversight Programs (LOP and SCP)</b>	<b>REVISION DATE:</b> July 25, 2012
	<b>ISSUE DATE:</b> July 5, 2005
	<b>PREVIOUS REVISIONS:</b> October 31, 2005; December 16, 2005; March 27, 2009; July 8, 2010
<b>SECTION:</b> Miscellaneous Administrative Topics & Procedures	<b>SUBJECT:</b> Electronic Report Upload (ftp) Instructions

The Alameda County Environmental Cleanup Oversight Programs (petroleum UST and SCP) 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](mailto: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](mailto: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**

**Geotracker LTCP Checklist**

LTCP Checklist

[GEOTRACKER HOME](#) | [MANAGE PROJECTS](#) | [REPORTS](#) | [SEARCH](#) | [LOGOUT](#)

**CHEVRON #9-0019 (T0600100313) - [MAP THIS SITE](#)**

**OPEN - ASSESSMENT & INTERIM REMEDIAL ACTION**

210 GRAND AVENUE  
OAKLAND, CA 94610  
ALAMEDA COUNTY

[ACTIVITIES REPORT](#)  
[PUBLIC WEBPAGE](#)

**CLEANUP OVERSIGHT AGENCIES**

ALAMEDA COUNTY LOP ([LEAD](#)) - CASE #: RO0000137  
CASEWORKER: [MARK DETTERMAN](#) - SUPERVISOR: DONNA DROGOS  
SAN FRANCISCO BAY RWQCB (REGION 2) - CASE #: 01-0341  
CASEWORKER: [Cherie McCaulou](#) - SUPERVISOR: MARY ROSE CASSA  
CUF Claim #: 5994 CUF Priority Assigned: D CUF Amount Paid: [\\$412,808](#)

THIS PROJECT WAS LAST MODIFIED BY [MARK DETTERMAN](#) ON 5/23/2013 4:47:15 PM - [HISTORY](#)

THIS SITE HAS UNAPPROVED SUBMITTALS. CLICK [HERE](#) TO OPEN A NEW WINDOW WITH THE SUBMITTAL APPROVAL PAGE FOR THIS SITE.

**CLOSURE POLICY**      **THIS VERSION IS IN PROGRESS AS OF 5/23/2013**      *CHECKLIST INITIATED ON 12/10/2012*      [CLOSURE POLICY HISTORY](#)

**General Criteria - The site satisfies the policy general criteria - [CLEAR SECTION ANSWERS](#)**

- a. Is the unauthorized release located within the service area of a public water system?  
Name of Water System :   YES  NO
- b. The unauthorized release consists only of petroleum ([info](#)).  YES  NO
- c. The unauthorized ("primary") release from the UST system has been stopped.  YES  NO
- d. Free product has been removed to the maximum extent practicable ([info](#)).  FP Not Encountered  YES  NO
- e. A conceptual site model that assesses the nature, extent, and mobility of the release has been developed ([info](#)).  
Description (Check all that Apply):  
 GW Not Evaluated  
 Groundwater Assessment Incomplete - Areal Extent of Contamination Not Defined  
 Groundwater Assessment Incomplete - Depth of Contamination Not Defined  
 Hydrogeology Not Adequately Defined  YES  NO  
 Potential Receptors Not Identified  
 Soil Assessment Incomplete - Areal Extent Not Defined  
 Soil Assessment Incomplete - Depth Unknown  
 Soil Vapor Not Evaluated  
 Other -
- f. Secondary source has been removed to the extent practicable ([info](#)).  YES  NO
- g. Soil or groundwater has been tested for MTBE and results reported in accordance with Health and Safety Code Section 25296.15.  Not Required  YES  NO
- h. Does a nuisance exist, as defined by [Water Code section 13050](#).  YES  NO

**1. Media-Specific Criteria: Groundwater - The contaminant plume that exceeds water quality objectives is stable or decreasing in areal extent, and meets all of the additional characteristics of one of the five classes of sites listed below. - [CLEAR SECTION ANSWERS](#)**

**EXEMPTION - Soil Only Case (Release has not Affected Groundwater - [Info](#))**  YES  NO

Does the site meet any of the Groundwater specific criteria scenarios?  YES  NO

**ADDITIONAL QUESTIONS - Please indicate only those conditions that do not meet the policy criteria:**

- Plume Length (That Exceeds Water Quality Objectives) :  
 ≥ 100 Feet and < 250 Feet     ≥ 250 Feet and < 1,000 Feet     ≥ 1,000 Feet     Unknown
- Plume is Stable or Decreasing in **AREAL** Extent :  
 No     Unknown
- Free Product in Groundwater :  
 Yes     No     Unknown
- Free Product Has Been Removed to the Maximum Extent Practicable :  
 No     Unknown
- For sites with free product, the Plume Has Been Stable or Decreasing for 5-Years ([info](#)) :  
 No     Unknown
- For sites with free product, owner Willing to Accept a Land Use Restriction (if required) :  
 No     Unknown
- Free Product Extends Offsite :  
 Yes     Unknown
- Benzene Concentration :  
 ≥ 1,000 µg/l and < 3,000 µg/l     ≥ 3,000 µg/l     Unknown
- MTBE Concentration :  
 ≥ 1,000 µg/l     Unknown
- Nearest Supply Well (From Plume Boundary) :  
 ≤ 250 Feet     > 250 Feet and ≤ 1,000 Feet     Unknown
- Nearest Surface Water Body (From Plume Boundary) :  
 ≤ 250 Feet     > 250 Feet and ≤ 1,000 Feet     Unknown

**2. Media Specific Criteria: Petroleum Vapor Intrusion to Indoor Air - The site is considered low-threat for the vapor-intrusion-to-air pathway if site-specific conditions satisfy items 2a, 2b, or 2c - [CLEAR SECTION ANSWERS](#)**

**EXEMPTION - Active Commercial Petroleum Fueling Facility**  YES  NO

Does the site meet any of the Petroleum Vapor Intrusion to Indoor Air specific criteria scenarios?  YES  NO

**ADDITIONAL QUESTIONS - Please indicate only those conditions that do not meet the policy criteria:**

- Soil Gas Samples :  
 No Soil Gas Samples     Taken Incorrectly
- Exposure Type :  
 Residential     Commercial
- Free Product :  
 In Groundwater     In Soil     Unknown
- TPH in the Bioattenuation Zone :  
 ≥ 100 mg/kg     Unknown     Soil samples not taken at two depths within 5 ft. zone (only for Scenario 4 with BioZone)



<b>Bioattenuation Zone Thickness :</b> <input type="radio"/> < 5 Feet (No BioZone) <input type="radio"/> ≥ 5 Feet and < 10 Feet <input type="radio"/> ≥ 10 Feet and < 30 Feet <input type="radio"/> ≥ 30 Feet <input type="radio"/> 30ft BioZone Compromised TPH > 100mg/kg <input type="radio"/> Unknown	
<b>O2 Data in Bioattenuation Zone :</b> <input type="radio"/> No O2 Data <input type="radio"/> O2 < 4% <input type="radio"/> O2 ≥ 4%	
<b>Benzene in Groundwater :</b> <input type="radio"/> ≥ 100 µg/l and < 1,000 µg/l <input type="radio"/> ≥ 1,000 µg/l <input type="radio"/> Unknown	
<b>Soil Gas Benzene :</b> <input type="radio"/> ≥ 85 µg/m <sup>3</sup> and < 280 µg/m <sup>3</sup> <input type="radio"/> ≥ 280 µg/m <sup>3</sup> and < 85,000 µg/m <sup>3</sup> <input type="radio"/> ≥ 85,000 µg/m <sup>3</sup> and < 280,000 µg/m <sup>3</sup> <input type="radio"/> ≥ 280,000 µg/m <sup>3</sup> <input type="radio"/> Unknown	
<b>Soil Gas EthylBenzene :</b> <input type="radio"/> ≥ 1,100 µg/m <sup>3</sup> and < 3,600 µg/m <sup>3</sup> <input type="radio"/> ≥ 3,600 µg/m <sup>3</sup> and < 1,100,000 µg/m <sup>3</sup> <input type="radio"/> ≥ 1,100,000 µg/m <sup>3</sup> and < 3,600,000 µg/m <sup>3</sup> <input type="radio"/> ≥ 3,600,000 µg/m <sup>3</sup> <input type="radio"/> Unknown	
<b>Soil Gas Naphthalene :</b> <input type="radio"/> ≥ 93 µg/m <sup>3</sup> and < 310 µg/m <sup>3</sup> <input type="radio"/> ≥ 310 µg/m <sup>3</sup> and < 93,000 µg/m <sup>3</sup> <input type="radio"/> ≥ 93,000 µg/m <sup>3</sup> and < 310,000 µg/m <sup>3</sup> <input type="radio"/> ≥ 310,000 µg/m <sup>3</sup> <input type="radio"/> Unknown	
<b>3. Media Specific Criteria: Direct Contact and Outdoor Air Exposure</b> - <i>The site is considered low-threat for direct contact and outdoor air exposure if it meets 1, 2, or 3 below.</i> - <a href="#">CLEAR SECTION ANSWERS</a>	
<input type="button" value="YES"/>	
<b>EXEMPTION - The upper 10 feet of soil is free of petroleum contamination</b>	
<input type="radio"/> YES <input checked="" type="radio"/> NO	
Does the site meet any of the Direct Contact and Outdoor Air Exposure criteria scenarios?	
<input checked="" type="radio"/> YES <input type="radio"/> NO	
3.1 - Maximum concentrations of petroleum constituents in soil are less than or equal to those listed in the following table ( <a href="#">LINK</a> ) for the specified depth below ground surface.	
<input checked="" type="radio"/> YES <input type="radio"/> NO	
<b>Additional Information</b>	
Should this case be closed in spite of NOT meeting policy criteria?	
<input type="radio"/> YES <input checked="" type="radio"/> NO	
<a href="#">SPELL CHECK</a>	
<input type="button" value="Save in Progress"/> <input type="button" value="Save as Final"/>	

LOGGED IN AS MARKDETT

[CONTACT GEOTRACKER HELP](#)

**ATTACHMENT B**

**Site Conceptual Model Requisite Elements**

## ATTACHMENT B

### 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 B

### 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**

<b>CSM Element</b>	<b>CSM Sub-Element</b>	<b>Description</b>	<b>Data Gap</b>	<b>How to Address</b>
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><b>Geology:</b> 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><b>Hydrogeology:</b> 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**

<b>Item</b>	<b>Data Gap</b>	<b>Proposed Investigation</b>	<b>Rationale</b>	<b>Analysis</b>
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

**ATTACHMENT C**

**Path to Closure Project Schedule Requisite Elements**

## ATTACHMENT C

### Path to Closure Project Schedule Requisite Elements

The State Water Resources Control Board passed Resolution No. 2012-0062 on November 6, 2012 which requires development of a "Path to Closure Plan" by December 31, 2013 that addresses the impediments to closure for the site. Please prepare a Path to Closure Schedule that has milestone dates tied to calendar quarters which will achieve site cleanup and case closure in a timely and efficient manner and minimizes the cost of corrective action. The complexity of the Path to Closure Schedule should be commensurate with the complexity of the site and tasks required to achieve case closure. ACEH will review the schedule to ensure appropriate key elements are included.

The Path to Closure Schedule should include the following key environmental elements and milestones as appropriate:

- Preferential Pathway Study
- Soil, Groundwater, and Soil Vapor Investigations
- Initial, Updated, and Final/Validated SCMs
- Interim Remedial Actions
- Feasibility Study/Corrective Action Plan
- Pilot Tests
- Remedial Actions
- Soil Vapor and Groundwater Monitoring Well Installation and Monitoring
- Public Participation Program (Fact Sheet Preparation/Distribution/Public Comment Period, Community Meetings, etc.)
- Case Closure Tasks (Request for closure documents, ACEH Case Closure Summary Preparation and Review, Site Management Plan, Institutional Controls, Public Participation, Landowner Notification, Well Decommissioning, Waste Removal, and Reporting.)

Please include time for regulatory and RP in house review, permitting, off-site access agreements, and utility connections, etc.

For complex projects (i.e., redevelopment projects, etc.), please use a critical path methodology/tool to construct a schedule with sufficient detail to support a realistic and achievable Path to Closure Schedule. The schedule is to include at a minimum:

- Defined work breakdown structure including summary tasks required to accomplish the project objectives and required deliverables
- Summary task decomposition into smaller more manageable components that can be scheduled, monitored, and controlled
- Sequencing of activities to identify and document relationships among the project activities using logical relationships
- Identification of critical paths, linkages, predecessor and successor activities, leads and lags, and key milestones
- Identification of entity responsible for executing work
- Estimated activity durations (60-day ACEH review times are based on calendar days)