



ENVIRONMENTAL HEALTH SERVICES
ENVIRONMENTAL PROTECTION
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April 30, 2013

Ms. Sara May (Sent via E-mail to: smay@metrovation.com)
Terradev Jefferson LLC
c/o Metrovation
580 Second Street
Oakland, CA 94607

Subject: Case File Review for Fuel Leak Case No. RO0003001 and GeoTracker Global ID T10000001072, Terradev Jefferson LLC Property, 645 Fourth Street, Oakland, CA 94607

Dear Ms. May:

Alameda County Environmental Health (ACEH) staff has reviewed the fuel leak case file for the above referenced site including the recently submitted document entitled, "Confirmation Soil and Groundwater Sampling Report & Low Threat UST Case Closure Policy Evaluation," dated March 11, 2013 and received by ACEH on March 25, 2013 (RFC). The RFC, which was prepared on your behalf by Blue Rock Environmental, Inc. presents results from confirmation soil and groundwater sampling in the area of the closed in place underground storage tank (UST). The RFC presents soil and groundwater sampling results from two soil borings that were advanced immediately adjacent to existing wells DPE-1 and DPE-2. The purpose of the two borings was to provide confirmation sampling to evaluate the effectiveness of dual-phase extraction (DPE) events conducted in October 2010 and July 2012. The RFC also evaluates the site using criteria from the State Water Resources Control Board Low-Threat Closure Policy (LTCP). Based on the LTCP evaluation, the RFC recommends case closure.

The confirmation soil samples indicate that the concentrations of total petroleum hydrocarbons as gasoline (TPHg) and benzene appear to have decreased in the intervals shallower than 9 feet bgs following remediation. Decreases in soil concentrations for TPHg and benzene for the two deeper soil samples collected at 11 and 15 feet bgs on the east side of the UST were also observed following remediation. Unfortunately, the confirmation soil sampling results for the two deeper soil samples collected at 12 and 15 feet bgs on the west side of the UST do not show similar results. Of particular concern is the concentration of benzene detected at 12 feet bgs on the west side of the UST, which increased from 26 milligrams per kilogram (mg/kg) in September 2010 to 100 mg/kg in February 2013 following remediation.

We have reviewed the confirmation sampling results presented in the RFC and evaluated the site using the criteria in the LTCP. Based on this review, we conclude that the site does not meet the general and media-specific criteria for case closure under the LTCP. Further work is needed to characterize the site and to assure that the site does not pose a risk to human health. We request that you submit a Work Plan that addresses the technical comments below **no later than June 28, 2013**.

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). For more information on the closure petition process for UST fuel leak cases, you may visit the SWRCB closure petition website at http://www.swrcb.ca.gov/water_issues/programs/ust/cleanup/petitions.shtml or contact Mr. George Lockwood of the SWRCB at (916) 341-5752

TECHNICAL COMMENTS

1. **Phase I Report.** The Background section of the RFC discusses results from one or more Phase I Environmental Site Assessments. These documents are not in the ACEH case file and we request that the Phase I Environmental Site Assessments be submitted.
2. **General Criteria - Release from the UST System Has Been Stopped.** Since the UST was closed in place by filling with concrete, the release from the known UST system has been stopped. No other UST systems have been reported or suspected. Interviews with site personnel suggest that the UST was last used prior to the 1950s. The presence of lead scavengers ethylene dibromide and 1,2-dichloroethane support that the fuel pre-dates 1982. Soil and groundwater data indicate that volatile gasoline constituents that would be expected to degrade over a 50 year period remain at elevated concentrations. In the Work Plan requested below, please describe whether any efforts have been made to assess whether additional USTs may be present. If no surveys have been conducted, please propose a geophysical survey in the area of the closed-in-place UST.
3. **Confirmation Sampling Results.** The RFC concludes that the confirmation sample results are indicative of secondary source reduction primarily in the upper 11 feet of the soil column. We concur that DPE was likely more effective in the upper 11 feet due to lower moisture content relative to soils deeper in the saturated zone. DPE does not appear to have been effective in secondary source removal below a depth of 11 feet. The concentrations of TPHg and benzene detected in confirmation soil samples below a depth of 11 feet bgs are up to 14,000 and 100 mg/kg, respectively. The concentrations of TPHg and benzene detected in the most recent groundwater samples are up to 130,000 and 9,400 micrograms per liter, respectively. Concentrations of this magnitude are generally indicative of residual non-aqueous phase liquid (NAPL).
4. **Sensitive Land Use.** Due to the use of the building as a health care facility, the building has a more sensitive land use than typically considered for commercial applications. Therefore, comparisons of site data to commercial land use criteria are not appropriate. Comparisons to residential land use criteria may be more appropriate based on the health care activities in the facility.
5. **Comparison of Sub-slab Vapor Data to CHSSLs.** The concentration of benzene in sub-slab vapor exceeded the CHSSLs for shallow soil gas and residential land use (36 micrograms per cubic meter [$\mu\text{g}/\text{m}^3$]) in two of the six sub-slab vapor samples collected. The concentration of benzene was greater than $36 \mu\text{g}/\text{m}^3$ in sub-slab vapor samples collected from VP-1 and VP-2 on 6/16/12. The concentration of benzene was less than the CHSSL in all three sub-slab vapor samples collected on 9/22/12. Two of the three sub-slab vapor samples collected on 6/16/2012 contained greater than 10% of the helium in the shroud indicating a significant leak. Samples containing greater than 5% of the leak compound in the shroud are generally not considered valid. Based on these factors, additional investigation is warranted. We request that you propose collection of additional sub-slab data to further assess the potential for vapor intrusion. The sub-slab data may also provide evidence of plume extent. The feasibility of soil vapor data collection at a depth closer to the contamination to help assess the extent of the plume and the thickness and oxygen content of the potential bioattenuation zone should also be considered. Please present plans to conduct this investigation in the Work Plan requested below.

6. **LTCP Vapor Intrusion-Specific Criteria.** Site conditions do not meet the scenarios for the vapor intrusion specific criteria in the LTCP. As noted in the RFC, the site may be closed if a site-specific risk assessment for the vapor intrusion pathway demonstrates that human health is protected to the satisfaction of the regulatory agency. In evaluating potential human health concerns, multiple lines of evidence should be used (*Final Guidance for the Evaluation and Mitigation of Subsurface Vapor Intrusion to Indoor Air, California Department of Toxic Substances Control, October 2011*). The other lines of evidence include the following:

- As discussed in technical comment 3 above, the magnitude of the concentrations of petroleum hydrocarbons in soil and groundwater samples collected recently at the site are generally indicative of residual non-aqueous phase liquid (NAPL). The LTCP indicates that vapor intrusion is not likely to pose a risk if there is a bioattenuation zone that provides 30 feet of separation between the NAPL and building foundation. The vertical separation between the NAPL and the building foundation appears to be approximately 6 to 8 feet. Due to limited data within this interval, it is also not clear that this vertical interval meets the criteria for a bioattenuation zone. Elevated concentrations of petroleum hydrocarbons have been detected in soil as shallow as 7 feet bgs. Elevated PID readings were detected in soil within the upper 5 feet in boring B-1 advanced by Ninyo & Moore in 2009. .
- Shallow soils in the upper 10 feet consist predominantly of sands, sandy clay, and clayey sand. These soils are likely to have moderate to high air permeability for soil vapor migration from the source to the building.
- No preferential pathways were reported from the closed-in-place UST to the building. However, since excavation of the UST was limited, the potential is not well known.
- The building is within a closely-packed city block that is approximately 200 feet wide by 300 feet in length. Extensive impermeable surface cover and/or large buildings may reduce atmospheric oxygen flux to the subsurface and limit biodegradation. Areas covered by large buildings can also have low soil moisture, which would make the soil inhospitable to microorganisms and reduce the potential for biodegradation.

These additional lines of evidence should be considered in designing an additional site assessment to make risk decisions as requested in technical comment 5.

7. **LTCP Groundwater-Specific Criteria.** We concur that site conditions do not meet Scenario 2 of the LTCP, which is the most appropriate scenario for comparison to the site. The maximum concentration of benzene in groundwater at the site is 9,400 micrograms per liter ($\mu\text{g/L}$), which exceeds the Scenario 2 criteria of 3,000 $\mu\text{g/L}$. As noted in the RFC, the site could still be closed if the regulatory agency determines, based on site specific conditions, that under current and reasonable anticipated near-term future scenarios, the contaminant plume poses a low threat to human health and safety and to the environment and water quality objectives will be achieved within a reasonable time frame. The extent of the plume is currently unknown and is assumed to be no greater than 75 feet based on a comparison to a nearby UST site. Because plume extent is related to numerous factors that vary greatly from one release site to another, this comparison may or may not be valid. In order to make a determination that the plume does not pose a risk, additional data needs to be collected. Since the existing buildings limit the use of traditional boring methods, the collection of additional sub-slab and/or deeper vapor samples as requested in technical comment 5 may provide evidence of plume extent. Please present plans for this additional investigation in the Work Plan requested below.

TECHNICAL REPORT REQUEST

Please upload technical reports to the ACEH ftp site (Attention: Jerry Wickham), and to the State Water Resources Control Board's GeoTracker website according to the following schedule and file-naming convention:

- **June 28, 2013** – Work Plan
File to be named: WP_R_yyyy-mm-dd RO3001

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.

If you have any questions, please call me at (510) 567-6791 or send me an electronic mail message at jerry.wickham@acgov.org. Online case files are available for review at the following website: <http://www.acgov.org/aceh/index.htm>. As your email address does not appear on the cover page of this notification ACEH is requesting you provide your email address so that we can correspond with you quickly and efficiently regarding your case.

Sincerely,

Jerry Wickham, California PG 3766, CEG 1177, and CHG 297
Senior Hazardous Materials Specialist

Attachment: Responsible Party(ies) Legal Requirements/Obligations

Enclosure: ACEH Electronic Report Upload (ftp) Instructions

cc: Leroy Griffin, Oakland Fire Department, 250 Frank H. Ogawa Plaza, Ste. 3341, Oakland, CA 94612-2032 (Sent via E-mail to: lgriffin@oaklandnet.com)

Markus Niebanck, Amicus, 580 Second Street, Suite 260, Oakland CA 94607 (Sent via E-mail to: markus@amicusenv.com)

Brian Gwinn, Blue Rock Environmental, Inc., 1169 Chess Drive, Suite C, Foster City, CA 94404 (Sent via E-mail to: brian@bluerockenv.com)

Donna Drogos, ACEH (Sent via E-mail to: donna.drogos@acgov.org)
Jerry Wickham, ACEH (Sent via E-mail to: jerry.wickham@acgov.org)

GeoTracker, eFile

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/)

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.

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