ALAMEDA COUNTY
HEALTH CARE SERVICES
AGENCY
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ENVIRONMENTAL HEALTH SERVICES
ENVIRONMENTAL PROTECTION
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October 12, 2017

Mr. Matthew Graul
East Bay Regional Park District
2950 Peralta Oaks Court
Oakland, CA 94605
(*Sent via electronic mail to* mgraul@ebparks.org)

Subject: Fuel Leak Case No. RO0000246 and GeoTracker Global ID T0600100489, East Bay Regional Park District, 7867 Redwood Rd, Oakland, CA 94619

Dear Mr. Graul:

Alameda County Department of Environmental Health (ACDEH) staff has reviewed the fuel leak case files for the subject site including the *First Semiannual 2017 Groundwater Monitoring Report* dated Apr 2017. This report includes results from the latest groundwater/surface water sampling events and provides the following summary and conclusions:

- Groundwater sampling has been conducted on an approximately quarterly basis from November 1994 to June 2011 and on a semiannual basis since September 2011 from twelve site wells.
- Site contaminants of concern include gasoline, diesel, Benzene, Toluene, Ethylbenzene, Xylene (BTEX) and Methyl Tertiary Butyl Ether (MTBE).
- The primary environmental risk is discharge of contaminated groundwater to the adjacent Redwood Creek and a trout ladder.
- The vertical limit of groundwater contamination is very likely at the top of the near-surface siltstone bedrock. The saturated interval extends approximately 12 to 15 feet from top of bedrock through the capillary fringe. Groundwater elevations fluctuate seasonally, creating a capillary fringe that varies seasonally in thickness.
- The plume of groundwater contamination above State Regional Water Quality Control Board (SRWQCB) screening levels appears to be approximately 130 feet long and approximately 50 feet wide. The zone of greatest contamination in 2017 was centered on well MW-9 downgradient of the Permeable Reactive Barrier (PRB).
- The contaminant plume has historically appeared neither stable nor reducing and the groundwater contaminant concentrations fluctuate seasonally. Contaminants in up gradient source area well MW-2 installed in the former tank pit have steadily decreased since March 2010 following the in-situ bioremediation compound injection event.
- Historical remedial efforts indicate that residual hydrocarbons entrained in subsurface material and/or stratigraphic traps are continuing to release significant amounts of hydrocarbons into the groundwater. The dissolved fraction that results from this release forms a recalcitrant plume that still daylights at the Redwood Creek interface.
- A September 2003 exploratory borehole program confirmed that sorbed-phase contamination in the seasonally unsaturated zone is a primary source of long-term contaminant contribution to the groundwater plume.

Based on our review of the subject case files, the discussions held during the meeting on August 1, 2017 and the site visit on September 13, 2017 with representatives from East Bay Regional Park District, Stellar Environmental Solutions Inc (SES), and ACDEH, we request you address the following technical comments and submit the requested documents:

TECHNICAL COMMENTS

1. **Characterization of current soil conditions:** A review of the subject case files show that residual contaminants entrained in the subsurface material are continuing to release hydrocarbon into the groundwater. In the *First Semiannual 2017 Groundwater Monitoring Report*, SES recommends injection of remedial products into the upland area beneath the former underground storage tank (UST) excavation where SES hypothesized that residual contamination is entrained in the soil. ACDEH concurs with SES that additional source remediation is necessary at the site in order to ensure permanent reduction in dissolved-phase contamination in groundwater. However, review of the subject case files show that soil characterization has not been conducted since the exploratory borehole program from 2003 which is prior to when several remedial actions have been implemented (i.e. bioventing in 2006, Oxygen Release Compound (ORC) injection in 2010, PRB installation in 2013). In order to effectively evaluate the alternatives for residual source remediation, ACDEH requests a work plan which proposes activities to characterize current soil condition to better identify the residual source area(s). Please include comprehensive tables and figures of historic soil boringsd and data to support the proposed location of post-remediation confirmation sampling.

2. **Treatment of contaminant downgradient of source area**: A PRB was installed at the distal edge of the plume downgradient of the source area and up-gradient of the creek in November 2013 to assist in the biodegradation of hydrocarbon contamination in groundwater before daylighting into the creek. However, the data from two of the three key wells (MW-7 and MW-9) downgradient from the PRB has not shown any noticeable reduction in hydrocarbon compound concentrations in groundwater during the effective timeframe of the PRB's active ingredient: an oxygen release product composed of calcium peroxide. SES hypothesized that this lack of noticeable reduction in hydrocarbon downstream was due to the low groundwater elevation from the past two years which prevented the groundwater from effectively achieving contact with the full height of the PRB to trigger treatment. As discussed in the site walk on September 13 2017, in order to effectively prevent further hydrocarbon contaminants in groundwater from daylighting into the Redwood Creek, ACDEH requests a work plan to modify the PRB so that it can effectively treat contaminated groundwater prior to discharge to the creek. Modifications discussed at the site visit included installation of product introduction wells or borings to inject active product to treat hydrocarbon contaminants in groundwater. ACDEH requests installation of wells rather than borings so that product may be introduced as needed over time until the groundwater contamination plume no longer poses a threat to surface waters. Please include details for the wells including depth and screening intervals, number of wells, and spacing within the PRB to provide overlap of the radius of influence of the product. The depths of the product introduction wells must be sufficient to intersect fluctuating groundwater levels at the site. Additionally please provide specification of the proposed active product and a schedule for PRB replenishment.

TECHNICAL REPORT REQUEST

Please submit the following reports in accordance with the naming convention and schedule listed below. ACDEH requests that you submit draft documents via electronic mail correspondence to ACDEH (Attention: Dilan Roe), prior to final upload to GeoTracker:

1. **December 10, 2017:** Please submit a work plan to install product introduction well to rejuvenate the PRB and treat downgradient contamination daylighting into the Redwood Creek. Please include in this work plan the latest results from the groundwater sampling events. **WP_R_yyyy-mm-dd**

2. **December 10, 2017:** Please submit a work plan to obtain soil data for an updated soil characterization. **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.

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

Sincerely,

Dilan Roe

Dilan Roe, PE, C73703
Chief - Land Water Division

Encl.: Attachment 1 – Responsible Party(ies) Legao Requirements/Obligations and ACDEH Electronic Report Upload (ftp) Instructions

cc: Richard Makdisi, Stellar Environmental Solutions, Inc., 2198 Sixth Street, Suite 201 Berkeley, CA 94710 (Sent via E-mail to: rmakdisi@stellar-environmental.com)

Henry Pietropaoli, Stellar Environmental Solutions, Inc., 2198 Sixth Street, Suite 201 Berkeley, CA 94710 (Sent via E-mail to: hpietropaoli@stellar-environmental.com)

Dilan Roe, ACDEH, Chief Land, Water Division (Sent via E-mail to: dilan.roe@acgov.org)
Paresh Khatri, ACDEH (Sent via E-mail to: paresh.khatri@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.