

ALAMEDA COUNTY  
**HEALTH CARE SERVICES**  
AGENCY  
ALEX BRISCOE, Director



ENVIRONMENTAL HEALTH DEPARTMENT  
ENVIRONMENTAL PROTECTION  
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April 22, 2013

Mr. Farokh Hosseinyoun  
95 Belvedere Street, Suite 1  
San Rafael, CA 94901

Mr. Mohammad Pazdel  
1770 Pistacia Court  
Fairfield, CA 94533

Mr. Hamid Khatirine  
c/o Mr. Michael D. Liberty  
3713 Century Drive  
Campbell, CA 95008-3832

Subject: Fuel Leak Case No. RO0000473 and GeoTracker Global ID T0600191157, ARCO,  
15101 Freedom Avenue, San Leandro, CA 94578

Dear Messr. Hosseinyoun, Pazdel, and Khatirine:

Alameda County Environmental Health (ACEH) staff has reviewed the case files and the following documents prepared by SOMA Environmental Engineering, Inc. (SOMA) on your behalf for the subject site:

- *Evaluation of Effectiveness of MPE Technology and Proposed Schedule for Conducting MPE Events*, dated April 11, 2013. This document presents an evaluation of the multiphase extraction (MPE) system effectiveness based on data from past events conducted at the site, and recommendations for additional proposed MPE events including duration and extraction well utilization.
- *Fourth Quarter 2012 Groundwater Monitoring and Remediation Progress Report*, dated January 16, 2013. This report presents the results of the fourth quarter 2012 groundwater monitoring event, and a summary of the operation of the groundwater extraction and treatment system (GWETS) and MPE events conducted at the site since 2009.
- *Third Quarter 2012 Groundwater Monitoring and Remediation Progress Report*, dated October 4, 2012. This report presents the results of the third quarter 2012 groundwater monitoring event, and including observation of free product in MPE well MPE-1.
- *Soil and Water Investigation Summary and Site Evaluation Workplan*, dated November 4, 2011. This work plan presents an evaluation of a possible GWETS extension into the vicinity of well MW-6 to target the impacted groundwater zone in the vicinity of off-site monitoring well MW-6.

- *Additional Soil and Groundwater Investigation for Remedial Investigation and Feasibility Study (FS)*, dated March 14, 2008.

SOMA is currently operating a GWETS to execute hydraulic control of the dissolved plume and remediate residual hydrocarbon concentrations in the first water bearing zone, and has conducted MPE events at the site for source remediation in the time period spanning November 2007 through August 2011.

Recent groundwater monitoring events indicate that significantly elevated levels of petroleum hydrocarbons continue to be detected in several of the on-site wells located in the southern portion of the site and in the vicinity of the dispenser islands, with maximum concentrations detected in well MPE-1 located at the downgradient boundary of the site immediately adjacent to a residential neighborhood.

Additionally, during the off-site investigation conducted by SOMA in 2011 groundwater contamination was detected in borings advanced downgradient of well MW-6 with maximum total petroleum hydrocarbons as gasoline (TPD-g), benzene, ethylbenzene, methyl tertiary-butyl ether (MTBE), and tert-butyl alcohol (TBA) concentrations of 84,000 µg/l, 290 µg/l, 4,300 µg/l, 150 µg/l, and 40 µg/l respectively. TBA has also been detected in a downgradient irrigation well at a concentration of 21 µg/l.

Based on these site conditions, SOMA recommends resumption of MPE operation, sub-slab soil gas sampling in adjacent residential buildings to evaluate the possibility of soil vapor intrusion, continued quarterly groundwater monitoring to increase understanding of seasonal variations in groundwater quality conditions, and expansion of the GWETS to increase the radius of influence of the system.

ACEH has evaluated the data and recommendations presented in the above-mentioned reports in conjunction with the case files and the State Water Resources Control Board's (SWRCBs) Low Threat Underground Storage Tank Case Closure Policy (LTCP) criteria. Additionally, ACEH met with representatives from SOMA on March 12, 2013 to discuss the LTCP criteria and develop an efficient strategy for moving the site towards closure. A summary of the items discussed in the meeting is presented in the Technical Comments section below.

At this time, ACEH requests that you prepare an updated Site Conceptual Model and Data Gap Investigation Work Plan to evaluate contaminant transport mechanisms at the site, further delineate the contaminant plume in the adjacent residential neighborhood, assess vapor intrusion potential into adjacent downgradient residential properties, evaluate potential impacts to downgradient irrigation wells, and evaluate the effectiveness of continued operation of the GWETS to execute hydraulic control of the dissolved plume and remediate residual hydrocarbon concentrations in groundwater as well as conducting MPE events at the site for source remediation.

## **TECHNICAL COMMENTS**

- 1) **Multi-Phase Extraction Events** – SOMA performed an MPE pilot test at the site between November 13 and 16, 2007. Current groundwater monitoring wells were used as extraction and observation wells: MW-3 and MW-5 were used as extraction wells, and as observation

wells when not in use as extraction wells; MW-1, MW-2, and MW-4 were also utilized as observation wells. The estimated total mass of volatile organic compounds (VOCs) removed by the MPE pilot test was determined to be 106 lbs. The estimated total VOC mass removal rate was determined to be 35 lbs/day at wells MW-3 and MW-5 over 72 hours, or 3 days.

In the above listed document entitled *Additional Soil and Groundwater Investigation for Remedial Investigation and Feasibility Study* (FS), SOMA estimated 1,338 lbs of contaminants remain in the smear zone. Based on this estimate, and using a 20 pounds per day removal rate achieved by MPE technology, SOMA estimated that 12 monthly events, each 5 days in duration (Monday to Friday), would be required for secondary source removal.

To date an estimated total mass of 806 pounds of VOCs have been extracted during the November 2007 pilot test and ten subsequent MPE events conducted in the time period spanning November 2007 through August 2011.

Subsequent to the March 12, 2013 meeting, ACEH requested that SOMA prepare an evaluation of the MPE technology effectiveness, recommendations for event optimization, a proposed schedule, and details on additional MPE events, if appropriate, including duration and extraction well utilization (i.e., MPE-1, MPE-2, and/or MW-5). This evaluation was submitted to ACEH by SOMA on April 11, 2013 in the above-listed document entitled *Evaluation of Effectiveness of MPE Technology and Proposed Schedule for Conducting MPE Events*. ACEH generally concurs with the evaluation of the system effectiveness and requests that you conduct the two proposed MPE events according to the proposed scope of work and schedule.

- 2) **Groundwater Pump and Treat System** – SOMA installed a GWETS at the site in December 2009 to provide hydraulic containment of the plume and remediation of dissolved phase hydrocarbons. The system includes two extraction wells (EX-1 and EX-2) and the treatment system compound, and operates under discharge permit issued by the Oro Loma Sanitary District. SOMA reports that as of December 27, 2012, the system has discharged approximately 2,090,120 gallons of treated groundwater to the sewer, and has extracted approximately 20.25 pounds of TPH-g, 0.93 pounds of benzene, 0.22 pounds of toluene, 0.42 pounds of ethylbenzene, and 3.01 pounds of xylenes as of October 23, 2012.

In the Workplan, SOMA states that the existing GWETS is effectively controlling the petroleum hydrocarbon plume as well as reducing contaminants of concern (COCs) in groundwater as indicated by the relatively low COC levels in groundwater extraction wells EX-1 and EX-2. However, based on ACEH's review of the data, the decreases in petroleum hydrocarbon concentrations detected in groundwater samples collected from EX-1 and EX-2 do not appear to correlate with the relatively small amounts of contaminant mass removed by the GWETS. Additionally, a comparison of the estimated cumulative mass of petroleum hydrocarbons removed to date by the GWETS to SOMA's contaminant mass calculations presented in the FS (i.e., approximately 2,374 pounds of chemicals in groundwater in dissolved and adsorbed phases) indicates that the GWETS is not performing as expected in the FS/CAP and appears to have reached asymptotic levels and therefore continued operation of the GWETS may no longer be a viable or cost effective remedy.

Based on this data, SOMA has not adequately justified the benefit of continued groundwater pump and treat operation nor the expansion of the system to include an additional extraction

well in MW-6. Please provide an evaluation of the system effectiveness for hydraulic containment and contaminant removal, and recommendations for optimization if appropriate. Please include operation and maintenance procedures that will be utilized by SOMA field technicians to ensure that the system is operating efficiently and extraction wells pumps are working.

- 3) Groundwater Plume Delineation** – The lateral extent of the contaminant plume in the shallow water bearing zone has not been fully delineated in the downgradient and cross-gradient direction. Please prepare a proposed strategy to delineate the plume. Please update and expand existing cross sections to include utility line trenches discussed in the FS, and create new cross sections to assist in identification of preferential pathways for dissolved phase and separate phase hydrocarbons and to support proposed site characterization activities. ACEH requests installation of soil bore transects with bore spacing of 15 to 30 feet, in order to increase the likelihood that the downgradient dissolved-phase contaminant plume is quickly delineated and to optimize placement of off-site monitoring well locations and screen intervals.

If installation of additional groundwater monitoring wells is proposed to delineate the plume, and/or monitor the plume during evaluation of the existing GWETS, ACEH will expedite review of the Cone Penetrometer Testing (CPT) logs or other data collected during the installation of the soil boring transects, to facilitate monitoring well installation. Well installation proposals should be accompanied with a quarterly monitoring plan for the newly installed wells with a proposed analytical suite based on previous site characterization data.

- 4) Sub-Slab Sampling** – SOMA recommends conducting a sub-slab gas sampling event to evaluate the possibility of soil vapor intrusion at a residential unit located adjacent to well MPE-1. However, in the above referenced document entitled *Additional Soil and Groundwater Investigation for Remedial Investigation and Feasibility Study*, SOMA concluded that potential soil gas intrusion into offsite residential properties is not considered a significant risk to human health, based on a soil gas survey along the southwest perimeter of the site. The survey included advancing four soil gas-sampling probes (SGS-1 through SGS-4) to a depth of approximately 5 feet below ground surface. Soil gas samples were analyzed for TPH-g, benzene, toluene, ethylbenzene, and xylenes (BTEX), MTBE, and fuel oxygenates TBA, diisopropyl ether (DIPE), ethyl tertiary butyl ether (ETBE), and tertiary amyl methyl ether (TAME). Based on concentrations of the COCs in soil gas, SOMA concluded that potential soil gas intrusion into offsite residential properties is not considered a significant risk to human health.

Please evaluate the existing data in the context of the LTCP Media Specific Criteria for Vapor Intrusion to Indoor Air and if appropriate, propose a sampling strategy in the Data Gap Investigation Work Plan to close the LTCP criteria soil vapor data gaps. Please identify the applicable scenario that data collection is based on (i.e., criteria a or b). If the proposed sampling strategy is intended to collect data for criteria a, please additionally specify the applicable scenario (i.e., 1 through 4) so that ACEH can verify the appropriateness of the proposed sampling strategy. If your strategy is intended to assess vapor intrusion in adjacent buildings, then your sample locations should be placed appropriately according to the LTCP criteria (i.e., next to building foundations). Additionally, you will need to collect data on the foundation types (i.e., slab-on-grade, crawl space, basements, etc) and depths of the adjacent residential units in order to design your strategy appropriately. Please show the

foundations and surface coverings (asphalt, landscaped, etc.) at and in the vicinity of the site on the cross sections identified in Item 3 above. Please note ACEH requires permanent vapor well installation to assess temporal and seasonal variations in soil gas concentrations.

Please include the requisite work plan elements (i.e., data quality objectives, quality assurance plans, contingency plans, etc.) and protocols described in the Department of Toxic Substances Control's Final Vapor Intrusion Guidance (October 2011) to ensure the collection of valid data.

- 5) **Free Product Observations** – During the Third Quarter 2012 Monitoring event, SOMA reported that free product was observed in monitoring well MW-6. However, this record of free product observation is not presented in Table 1 – Historical Groundwater Elevation Data and Analytical Results in the *Third Quarter 2012 Groundwater Monitoring and Remediation Progress Report*. Although SOMA quantifies the free product measurement (0.04 feet) observed during the Third Quarter 2012 monitoring event, there is a lack of discussion regarding how the free product measurement was obtained. SOMA presents standard operating procedures for conducting groundwater monitoring activities; however the SOPs do not include a discussion of the field procedure used to measure free product.

Additionally, a review of field notes contained in historic quarterly groundwater monitoring reports indicates free product (described as sheen and/or product globules) has been observed in several of the site's monitoring and MPE wells including MW-3, MW-6, and MPE-1 since 2009.

Please evaluate free product data for the site and develop a conceptual model to evaluate whether free product removal is practicable, or if not practicable, an assessment of the conditions that prevent free product removal from being conducted. Additionally, please revise Table 1 in future groundwater monitoring reports to indicate free product observations and provide SOMA's method for measuring product thickness in the field.

- 6) **Area Well Survey** – Two active backyard irrigation water wells located at 1573 and 1575 153<sup>rd</sup> Street have been previously identified in an area well survey conducted for the site that could potentially be affected by the off-site dissolved petroleum hydrocarbon plume. A groundwater sample collected from a backyard irrigation well located at 1573 153<sup>rd</sup> Street had detected concentration of 21 µg/L TBA, however no sample was collected from the well located at 1575 153<sup>rd</sup> Street. Please re-attempt groundwater sampling from these wells and report your findings in the updated SCM and work plan due by the date specified below.
- 7) **Updated Site Conceptual Model and Data Gap Investigation Work Plan** – Please address the technical comments described in items 1 through 6 above in an Updated Site Conceptual Model (SCM) and Data Gap Investigation Work Plan. Please utilize a tabular format to highlight the major SCM elements and their associated data gaps, which need to be addressed to progress the site to case closure. Additionally, please utilize ACEH's Data Gap Identification Tool (DGIT) in developing a strategy that focuses data collection efforts on the LTCP criteria and an efficient path to site closure. Please sequence activities in the proposed scope of work to enable efficient data collection in the fewest mobilizations possible (i.e., use of CPT for bore transects, shallow soil borings, etc.).

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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.

ACEH will provide an example of a tabular SCM and an electronic DGIT upon request.

### **TECHNICAL REPORT REQUEST**

Please perform the work and submit technical reports to ACEH (Attention: Dilan Roe), according to the following schedule:

- **May 1 through May 31, 2013** – Multi-phase Extraction Event No. 1
- **July 22, 2013** – Updated Site Conceptual Model and Data Gap Work Plan
- **August 1 through August 30, 2013** – Multi-phase Extraction Event No. 2
- **September 30, 2013** – Quarterly Monitoring and Remediation Report (3<sup>rd</sup> Quarter 2013)

Thank you for your cooperation. Should you have any questions or concerns regarding this correspondence or your case, please call me at (510) 567-6767 or send me an electronic mail message at [dilan.roe@acgov.org](mailto:dilan.roe@acgov.org).

Sincerely,

Dilan Roe  
Supervising Hazardous Materials Specialist

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

cc: Mansour Sepehr, SOMA Environmental Engineering, 6620 Owens Dr., Ste A,  
Pleasanton, CA 94588 (Sent via E-mail to: [msepehr@somaenv.com](mailto:msepehr@somaenv.com))  
Donna Drogos, ACEH (Sent via E-mail to: [donna.drogos@acgov.org](mailto:donna.drogos@acgov.org))  
Dilan Roe, ACEH (Sent via E-mail to: [dilan.roe@acgov.org](mailto:dilan.roe@acgov.org))  
GeoTracker  
File

## **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 [.loptoxic@acgov.org](mailto:.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](mailto:.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.