



Ian Robb
Project Manager
Marketing Business Unit

**Chevron Environmental
Management Company**
6111 Bollinger Canyon Road
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Alameda County Health Care Services
1131 Harbor Bay Parkway, Suite 250
Alameda, CA 94502-6577

Re: Former Signal Oil Station No. 20-6145
800 Center Street
Oakland, CA

RECEIVED

9:11 am, Dec 02, 2009

Alameda County
Environmental Health

I have reviewed the attached work plan dated December 1, 2009.

I agree with the recommendations presented in the referenced work plan addendum. This information in this work plan addendum is accurate to the best of my knowledge and all local Agency/Regional Board guidelines have been followed. This work plan addendum was prepared by Conestoga-Rovers & Associates, upon whose assistance and advice I have relied.

This letter is submitted pursuant to the requirements of California Water Code Section 13267(b)(1) and the regulating implementation entitled Appendix A pertaining thereto.

I declare under penalty of perjury that the foregoing is true and correct to the best of my knowledge.

Sincerely,

A handwritten signature in blue ink, appearing to read "I. Robb".

Ian Robb
Project Manager

Attachment: Work Plan Addendum



**CONESTOGA-ROVERS
& ASSOCIATES**

5900 Hollis Street, Suite A
Emeryville, California 94608
Telephone: (510) 420-0700 Fax: (510) 420-9170
<http://www.craworld.com>

December 1, 2009

Reference No. 312002

Mr. Mark Detterman
Alameda County Environmental Health (ACEH)
1131 Harbor Bay Parkway
Alameda, California 94502

Re: Low Flow Air Sparge Work Plan Addendum
Former Signal Oil Station (Chevron Site 20-6145)
800 Center Street
Oakland, California
Fuel Leak Case No. RO0454

Dear Mr. Detterman:

Conestoga-Rovers & Associates (CRA) is submitting this *Low Flow Air Sparge (LFAS) Work Plan Addendum* (Addendum) on behalf of Chevron Environmental Management Company (Chevron) for the site referenced above. In a letter dated October 16, 2009 (Appendix A), Alameda County Environmental Health (ACEH) concurred with the proposed implementation of the LFAS pilot test, but listed three technical comments to be addressed and requested clarification of the construction timing. Summarized below are responses to ACEH's technical comments.

RESPONSES TO TECHNICAL COMMENTS

1. Soil Vapor Sampling

ACEH has requested soil vapor sampling to verify that hydrocarbons in the saturated zone are not volatilizing from groundwater into the overlying soil. Soil vapor sampling will be conducted near the end, but prior to termination, of the pilot test. Samples will be collected from existing vapor points VP-1, VP-3, VP-4, and VP-5 and will be analyzed for total petroleum hydrocarbons as gasoline, benzene, toluene, ethylbenzene, xylenes, fixed gases (O₂, CO₂, CH₄) and a leak tracer. The results and conclusions will be documented in the Report on Pilot Test requested by ACEH.

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December 1, 2009

Reference No. 312002

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2. Confirmation Soil Borings

Soil borings will be advanced to confirm the reduction of residual soil contamination between 10 and 20 feet below grade once the LFAS system is terminated. These will be advanced after the termination of the pilot test or full-scale LFAS system. A work plan with the proposed soil boring locations will be submitted to ACEH for approval prior to implementation.

3. Additional LFAS Points

One additional LFAS point will be installed in the vicinity of soil samples EXB-3 (12), SW-6, and SW-7 to address residual hydrocarbon impacts in this area. Figure 1 presents the revised site plan with proposed LFAS point locations. All LFAS points will be installed and constructed as proposed in CRA's April 27, 2009 *Work Plan for Low Flow Air Sparging Pilot Test and Additional Soil Vapor Sampling*.

4. Construction Timing

Upon approval of this Addendum, CRA will immediately begin the permitting process with the appropriate agencies. Drilling permits will be obtained from the Alameda County Public Works Agency and are estimated to take approximately two weeks for approval. Once approved, the wells will be installed within four weeks based on scheduling considerations. Building and electrical permits will be obtained from the City of Oakland Building Department and are estimated to take up to three months to process. System installation is expected to start within one month of receiving the building permit (depending on contractor availability) and is estimated to take three weeks for completion. A pressure vessel inspection and permit may be required, depending on the compressed air storage tank size, from the California Department of Industrial Relations, Pressure Vessels section of the Division of Occupational Safety and Health (Cal OSHA). Obtaining a pressure vessel inspection and permit from Cal OSHA is estimated to take approximately 2 months upon completion of system installation and is dependent on Cal OSHA response time. Startup of the LFAS system will be conducted within two weeks of receiving final approvals from the City of Oakland and Cal OSHA.

5. Redevelopment Timing

The timing of the proposed redevelopment is uncertain at this time due to market conditions. We will be working closely with the property owner in 2010 and as soon as a redevelopment schedule becomes clear, ACEH will be provided with an update.



**CONESTOGA-ROVERS
& ASSOCIATES**

December 1, 2009

Reference No. 312002

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We appreciate the opportunity to work with you on this project. If you have questions or comments regarding this Addendum, please contact Ms. Charlotte Evans at (510) 420-3351 or Mr. Ian Robb at (925) 543-2375 so that we may discuss the proposed work.

Sincerely,

CONESTOGA-ROVERS & ASSOCIATES

Charlotte Evans

CE/doh/7



Brandon S. Wilken, P.G. # 7564

Enc.

Figure 1 Site Plan with Proposed Low Flow Air Sparge Points

Attachment A ACEH October 16, 2009 Letter

cc: Mr. Ian Robb, Chevron Environmental Management Company
 Mr. Rene Boisvert, 800 Center LLC

FIGURES



NOTES:

EQUIPMENT CONSISTS OF:

1. 7 SPARGE WELLS DRILLED TO APPROXIMATELY 13 FEET BELOW GRADE
2. OILESS AIR COMPRESSOR, 30 CFM @ 15 PSI, INSIDE EQUIPMENT SKID
3. 1" SPARGE PIPING
4. EQUIPMENT SKID. 4 FEET WIDE BY 6 FEET LONG BY 4 FEET HIGH
5. DIESEL POWERED GENERATOR. 4 FEET WIDE BY 8 FEET LONG BY 6 FEET HIGH (IF NEEDED)

EXPLANATION

MW-9		Deep monitoring well location		Proposed remediation piping
MW-2		Shallow monitoring well location		Proposed air sparge well locations
		Destroyed well location		Air sparge radius of influence
VP-1		Vapor probe location		
SW-6		Gettler-Ryan soil sample location		

FIGURE 1
SITE PLAN WITH PROPOSED LOW FLOW AIR SPARGE POINTS
FORMER CHEVRON SERVICE STATION 20-6145
800 CENTER STREET
Oakland, California



ATTACHMENT A

ACEH OCTOBER 16, 2009 LETTER



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

October 16, 2009

Mr. Ian Robb
6001 Bollinger Canyon Road K2256 B
PO Box 6012
San Ramon, CA 94583-2324
(sent via electronic mail to irobb@chevron.com)

Mr. Rene Boisvert
Boulevard Equity Group
484 Lake Park Ave #246
Oakland, CA 94610-2730

Terrilla Sadler
618 Brooklyn Avenue
Oakland, CA 94606-1004

Subject: Incomplete Human Health Risk Assessment, Rejection of Revised CAP, and Approval of LFAS Workplan – Fuel Leak Case No. RO0000454 (Global ID # T0600102230), Chevron #20-6145/Signal SS, 800 Center Street, Oakland CA 94607

Dear Mr. Robb, Mr. Boisvert, and Ms. Sadler:

I wanted to let you know that I have recently been assigned to your case. In the future, please send all correspondence or inquiries to my attention. Alameda County Environmental Health (ACEH) staff has reviewed the case file for the above referenced site and the documents entitled *Work Plan for Low Flow Air Sparging Pilot Test and Additional Soil Vapor Sampling*, dated April 27, 2009, and *Revised Draft Corrective Action Plan*, dated May 14, 2009, prepared by Conestoga-Rovers & Associates (CRA) and Arcadis, respectively. Thank you for submitting them. Although the Arcadis document is entitled *Revised Draft Corrective Action Plan* the document is a Human Health Risk Assessment (HHRA); it does not propose alternative corrective actions as requested in Technical Comment 1 of the ACEH letter dated March 16, 2009. It does however evaluate risk associated with residual contamination, as also requested in Technical Comment 1. Both of these recent document submittals were generated in response to Technical Comment 1 contained in the March 2009 ACEH letter.

Based on ACEH staff review of the case file, we request that you address the following technical comments and send us the reports described below.

TECHNICAL COMMENTS

- 1) **Human Health Risk Assessment.** ACEH has several concerns to note:
 - a) Of potential concern is the timing of the LFAS pilot testing, a future full scale system, and construction and occupation of the residential units. While no human health risk currently appear to exist at the site, completed exposure pathways were found (for a construction worker through soil ingestion and vapor inhalation, and for a resident child or adult through vapor inhalation) associated with existing soil and soil vapor concentrations; however, the pending redevelopment of the site will also change site conditions. According to the January 2005 DTSC *Guidance for the Evaluation and Mitigation of Subsurface Vapor Intrusion to Indoor Air* document these can include:
 - i) Vapor concentrations in the subsurface may increase, accumulating directly under the foundation of a future building,
 - ii) Moisture content of the vadose zone directly under a building may decrease due to the inability of rainwater to infiltrate under the building,

- iii) Air permeability and moisture content of the subsurface may be altered due to construction activities associated with building construction, thereby altering the subsurface air permeability and significantly increasing the potential for vapor intrusion to indoor air.

It is understood that, with the exclusion of the highest data point due to data quality concerns, maximum soil vapor concentrations were used to model risk to future residents, and that a standard attenuation factor for slab-on-grade construction of 0.001 was used. However, it is not apparent that soil vapor changes due to future site changes (construction modifications) were evaluated, as these were not discussed in the report. The lack of detailed site specific development plans (including among other, foundation type, utility locations, and etc.) complicates this evaluation. Consequently, while the HHRA appears to have approached the site with available information the HHRA must be considered incomplete for the future residential development. Should detailed site specific development plans exist, please provide a copy to ACEH with the documents requested below. Additionally, ACEH requires a clarification of the timing of the completion of corrective actions in relationship to site development events. This information can be included in the documents requested below.

- b) The HHRA did not model groundwater hydrocarbon concentrations, due to either lack of direct exposure at the site specifically, or due to pending groundwater concentration changes, as a result of LFAS pilot testing, or a future full scale system. However, in Figure 3-1 the HHRA stated that the exclusion of domestic / industrial use of groundwater in the risk assessment was because it was an incomplete pathway, and that this was based on a the lack of plans by the City of Oakland to develop local groundwater resources for use as drinking water due to existing or potential salt water intrusion, contamination, or poor / limited quality (*East Bay Plain Groundwater Basin Beneficial Use Evaluation Report*, San Francisco RWQCB Groundwater Committee, June 1999).

Unfortunately this does not account for significant historical usage of groundwater in older parts of Oakland as is documented by the high density of historic wells in west Oakland (Figure B-3, Appendix B of this reference) which can lead to exposure of residents to residual groundwater contamination if used for irrigation or other consumptive purposes. Because of the likely presence of groundwater wells (either existing or improperly destroyed) in the vicinity, the likelihood of exposure to residual contamination could reasonably be presumed to be higher than is typical for most of the East Bay Plain. At present groundwater in this area of the basin remains classified as 'MUN' (potentially suitable for municipal or domestic water supply). Reflective of this, Figure 19 (op. cite.) includes this region of Oakland in Zone A, a "significant drinking water resource." Until otherwise classified, groundwater beneath the subject site must be considered beneficial for these uses unless shown to be non-beneficial using criteria presented in the Basin Plan. Please adjust your evaluation to reflect this in future reports. However, please also be aware that case closure does not necessarily require cleanup to MUN cleanup goals, only that those goals can be met within a reasonable timeframe. However, ACEH is requesting that a vicinity well survey be conducted that includes at a minimum Alameda County sources to determine if these old wells remain in the vicinity and report the results in the documents requested below.

- c) To protect construction workers from risks associated with lead in soil, the HHRA utilized data from twelve soil samples analyzed for lead from six locations, each collected at 5 and 10 feet bgs, and excluded resident contact with subsurface soil. However, should there be a concern with lead concentrations at the site future residents would most likely be exposed to surficial lead concentrations. From a review of the comprehensive soil data tables contained in the June 3, 2008, *Site Conceptual Model and Corrective Action Plan* generated by CRA, it appears that surficial lead concentrations in soil have not been evaluated at the site. From a development perspective it would be warranted to preclude future residential exposure to this potentiality in an area of older development. We request that you submit a work plan to conduct the work required to collect, analyze, and evaluate surface soil for lead content, and report the results with conclusions in the report requested below.

- 2) **Revised CAP / HHRA.** As you are likely aware, public participation is a requirement for the Corrective Action Plan (CAP) process. Remediation goals for all media, including soil, groundwater classified as MUN, and vapor phase, must be identified in a CAP. Within a CAP, each viable alternative requires evaluation not only for cost-effectiveness, but also the timeframe to reach the identified cleanup levels and cleanup goals, includes a discussion of the feasibility and limitations for each remedial alternative, a detailed description of the proposed remediation including confirmation sampling and monitoring during implementation, and post-remedial monitoring. Consequently the submitted revised CAP is useful as a HHRA representative of this site; however, is inadequate as a revised CAP. We request that you update the draft CAP in order to address remediation goals in all media including soil, vapor, and groundwater, and submit a revised draft CAP according to the schedule below. Again, please note that soil cleanup levels should ultimately (within a reasonable timeframe) achieve water quality objectives (cleanup goals) for groundwater in accordance with the SFRWQCB Basin Plan. Please specify appropriate cleanup levels and cleanup goals in accordance with 23 CCR Section 2725, 2726, and 2727 in the revised draft CAP.

Upon ACEH approval of a revised CAP, ACEH will notify potentially affected members of the public who live or own property in the surrounding area of the proposed remediation described in the revised CAP. Public comments on the proposed remediation will be accepted for a 30-day period.

- 3) **Work Plan for Low Flow Air Sparging.** The ACEH generally concurs with the implementation of the pilot test for LFAS. LFAS is believed by CRA to be effective at enhancing biodegradation of groundwater and in soils in the saturated zone, and may be effective with residual contamination in the vadose zone as indicated by CRA (smear zone). Residual soil contamination is predominately documented at two discrete sampling depths of 10 and 15 feet below grade surface (bgs), while samples at 5 feet and 20 feet bgs are significantly cleaner. Consequently it appears that the bulk of residual soil contamination is within or below the zone of groundwater fluctuation, which has generally ranged between approximately 5 and 10 feet bgs. ACEH has three potential concerns relative to the proposed remediation methodology:
- a) While LFAS is not anticipated to volatilize hydrocarbons from the saturated zone, it appears warranted to verify this hypothesis by monitoring soil vapor at multiple existing vapor points a minimum of one time during the pilot test period, closely associated but prior to termination of the pilot test when soil vapor conditions have stabilized or are likely close to a maximum. We request that you collect soil vapor at existing vapor points VP-1, VP-3, VP-4, and VP-5 to confirm the working hypothesis, and report the results with conclusions in the report of pilot test results requested below.
 - b) Confirmation of the reduction of residual soil contamination between 10 and 20 feet bgs is warranted to verify the effectiveness of LFAS on the residual soil mass. Presumably this would be in close proximity to previously documented elevated soil concentrations, but at an appropriate time associated with termination of a LFAS system (pilot or full scale) in the future.
 - c) Additional benefit may be derived by the installation of an additional LFAS point in the vicinity of soil samples EXB-3 (12), SW-6, and SW-7 due to elevated residual soil concentrations and a position upgradient of well MW-1A. Residual soil concentrations in this vicinity are likely contributory to the groundwater plume located further downgradient at the site as indicated by groundwater samples collected from wells MW-1A, MW-13, and MW-14, but which do not appear to contribute to soil vapor concentrations detected at VP-4.

TECHNICAL REPORT REQUEST

Please submit technical reports to Alameda County Environmental Health (Attention: Mr. Mark Detterman), according to the following schedule:

- **December 1, 2009 – LFAS Work Plan Addenda.** Including clarifications relative to construction timing.
- **December 15, 2009 – Surficial Soil Sampling Work Plan.**
- **February 15, 2010 – Report on Surficial Soil Sampling & Well Survey.**

- **Seven Months After LFAS Work Plan Approval – Report on Pilot Test.** Report summarizing pilot test results, field procedures, laboratory results, boring logs, confirmation vapor point sampling, analysis of surficial lead to future residents, and recommendations.
- **Three Months After Pilot Test Report – Revised Draft CAP.**

These reports are 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.swrcb.ca.gov/ust/electronic_submittal/report_rqmts.shtml).

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.

Ian Robb, Rene Boisvert and Terrella Sadler
October 16, 2009
RO0000454, Page 5

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.

If you have any questions, please call me at (510) 567-6876 or send me an electronic mail message at mark.detterman@acgov.org.

Sincerely,

Mark E. Detterman, PG, CEG
Hazardous Materials Specialist

cc: Charlotte Evans, Conestoga-Rovers & Associates, 5900 Hollis Street, Suite A, Emeryville, CA 94608
(sent via electronic mail to cevens@croworld.com)
Leroy Griffin, Oakland Fire Department 250 Frank H. Ogawa Plaza, Ste. 3341, Oakland, CA 94612-2032
(sent via electronic mail to lgriffin@oaklandnet.com)
Donna Drogos (sent via electronic mail to donna.drogos@acgov.org)
Mark Detterman (sent via electronic mail to mark.detterman@acgov.org)
File

Alameda County Environmental Cleanup Oversight Programs (LOP and SLIC)	ISSUE DATE: July 5, 2005
	REVISION DATE: March 27, 2009
	PREVIOUS REVISIONS: December 16, 2005, October 31, 2005
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

- Entire report including cover letter must be submitted to the ftp site as a **single portable document format (PDF) with no password protection**. (Please do not submit reports as attachments to electronic mail.)
- 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)

Additional Recommendations

- A separate copy of the tables in the document should be submitted by e-mail to your Caseworker in **Excel** format. These are for use by assigned Caseworker only.

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 dehloptoxic@acgov.org
Or
 - ii) Send a fax on company letterhead to (510) 337-9335, to the attention of My Le Huynh.
 - 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 and Firefox browsers will not open the FTP site.
 - b) Click on File, then on Login As.
 - 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 dehloptoxic@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.