Carryl MacLeod
Project Manager
Marketing Business Unit

Chevron Environmental Management Company
6101 Bollinger Canyon Road
San Ramon, CA 94583
Tel (925) 790-6506
cmacleod@chevron.com

RECEIVED
By Alameda County Environmental Health 9:37 am, Jul 29, 2016

July 29, 2016

Alameda County Health Care Services
1131 Harbor Bay Parkway, Suite 250
Alameda, CA 94502-6577

Re: Former Chevron Service Station 95607
5269 Crow Canyon Road
Castro Valley, CA
ACEH Case #RO0350

I have reviewed the attached Soil Vapor Sampling Work Plan.

The information in this work plan is accurate to the best of my knowledge and all local Agency/Regional Board guidelines have been followed. This work plan was prepared by GHD Services Inc., 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,

Carryl MacLeod
Project Manager

Attachment: Soil Vapor Sampling Work Plan

July 29, 2016 Reference No. 311950

Mr. Mark Detterman
Alameda County Environmental Health Services (ACEHS)
1131 Harbor Bay Parkway, Suite 250
Alameda, California 94502-6540

Re: Soil Vapor Sampling Work Plan
Former Chevron Service Station 95607
5269 Crow Canyon Road
Castro Valley, California
ACEH LOP #RO0350

Dear Mr. Detterman:

GHD Services, Inc. (GHD) is submitting this Soil Vapor Sampling Work Plan on behalf of Chevron Environmental Management Company (CEMC) for the site referenced above (Figure 1). In September 2013, Conestoga-Rovers & Associates (CRA) completed a subsurface investigation which included installing ten nested soil vapor probes at on-site (VP-1 through VP-6) and off-site (VP-7 through VP-10) locations (Figure 2). The soil vapor investigation was conducted prior to the installation of the dual phase extraction remediation system which operated at the site from September 2014 to March 2016. The results of soil vapor sampling conducted in 2013 indicated the following:

- Elevated concentrations of petroleum hydrocarbons in soil vapor were detected in samples collected from VP-3 and VP-6. The Low-Threat Underground Storage Tank Case Closure Policy (LTCP) soil gas criterion for ethylbenzene was exceeded at VP-6.
- Due to elevated concentrations of TPHg in samples from VP-3 and VP-6, the method detection limits for the other analytes were in most cases above the commercial and residential LTCP soil gas criteria at these two locations.

Based on the results, CRA recommended post remediation soil vapor sampling from the on-site vapor probes. Following receipt of GHD's April 27, 2016, System Shutdown Report, ACEHS, in their letter dated May 13, 2016 (Attachment A), directed CEMC to submit a work plan to resample existing vapor wells. The scope of work described below includes sampling at both the on - and off-site vapor probe locations, as requested.

GHD Services Inc.
5900 Hollis Street Suite A Emeryville California 94608 USA
T 510 420 0700 **F** 510 420 9170 **W** www.ghd.com

ACEH's letter also requested CEMC to submit a dilution-attenuation analysis of groundwater contaminant trends between C-9 and Crow Creek in order to determine estimated contaminant concentrations at the potential point of discharge to Crow Creek and exposure to ecologic receptors. Current groundwater concentrations in well C-17, located downgradient of C-9 and within 80 feet of Crow Creek (Figure 2), continues to remain below the San Francisco Bay-Regional Water Quality Control Board's Freshwater Ecotox Environmental Screening Levels for the constituents of concern. Therefore, GHD proposes to postpone conducting an attenuation analysis until completion of the quarterly rebound monitoring events (first quarter of 2017) and further evaluation of groundwater concentrations.

Site-Specific Health and Safety Plan

GHD will prepare a site-specific health and safety plan to protect site workers. The plan will be reviewed and signed by site workers and visitors. The plan will be kept onsite during the field work.

Access

GHD will notify the property owners of the planned work and schedule and gain access to the site and off-site properties to sample the vapor probes.

Soil Vapor Sampling Protocol

Vapor samples collected for TO-15 analysis will be collected using 100 percent laboratory certified 1-liter Summa™ canisters. Prior to collecting a sample, a closed circuit sampling train is created by attaching the sample Summa™ canister in series with the purge Summa™ canister via a steam-cleaned, stainless-steel manifold. A "shut-in" test will be performed prior to connecting the sampling equipment to the vapor probe tubing. This test is performed by sealing all openings to ambient air, opening the purge Summa™ canister to establish a vacuum inside the sampling train and waiting to ensure the vacuum remained stable over time. The shut-in test reduces the potential for ambient air to dilute the soil vapor samples. Once the sampling train passes the "shut in" test, it is connected to the probe tubing. Using the same flow rate as is used during sampling, approximately three purge volumes will be purged from the sampling tubing using the purge Summa™ canister before sampling begins. While sampling, the vacuum of the sample Summa™ canister will be used to draw the soil vapor through the flow controller until a negative pressure of approximately 5 inches of mercury is observed on the vacuum gauge. In accordance with the Department of Toxic Substances Control (DTSC) *Advisory – Active Soil Gas Investigation* guidance document, dated July 2015, leak testing will be performed during sampling using laboratory grade helium. The vapor probe vault, probe tubing, and entire sampling train will be enclosed in a rigid shroud. The helium concentration inside the shroud will be maintained above 10 percent helium and quantified using a helium meter. After sampling, the Summa™ canisters will be packaged and sent to the Air Toxics laboratory under chain-of-custody for analysis. A diagram of the TO-15 soil vapor sampling apparatus is attached as Figure 3.

Vapor samples collected for TO-17 analysis will be collected using 100 percent laboratory certified TO-17 Sorbent Tubes. A leak test will be performed prior to connecting the sampling equipment to the vapor tubing. The test is performed by inserting the sorbent tube into the tube holder on the syringe assembly, turning the valve into the 'off' position, pulling the plunger of the syringe. If the plunger

does not move or immediately returns to the starting position, the system is leak tight and is ready for sampling. To sample, the plunger of the syringe will be pulled to the desired volume. When the desired volume has been collected, the sorbent tube will be removed from the tube holder and the ends re-capped. The sample volume will be recorded and the tubes will be packaged and sent to the Air Toxics laboratory under chain-of-custody for analysis. A diagram of the TO-17 soil vapor sampling apparatus is attached as Figure 4.

GHD's *Standard Field Procedures for Soil Vapor Probe Sampling* is included as Attachment B.

Chemical Analysis

Soil vapor samples will be analyzed using the sample analytical methods and for the same analytes as those collected in September 2013.

- Total Petroleum Hydrocarbons as gasoline (TPHg), Benzene, Toluene, Ethylbenzene and Xylenes (BTEX), Methyl-tert- butyl ether (MTBE) and naphthalene by EPA Method TO-15
- Naphthalene by EPA Method TO-17
- Oxygen (O2), carbon dioxide (CO2), nitrogen (N2), methane (CH4), and helium by ASTM D-1946 (GC/TCD)
- Air phase hydrocarbon (APH) fractions (Sp) aromatics C8-C12 modified TO-15 GC/MS Full Scan
- APH fractions (Sp) aliphatics C5-C12 modified TO-15 GC/MS Full Scan

Data Interpretation

Soil vapor analytical data will be compared to the data for samples collected in 2013 and to the LTCP petroleum vapor intrusion to indoor air criteria.

Reporting

Upon completion of field work and review of the analytical results, GHD will prepare a *Soil Vapor Sampling Report* that at a minimum will contain:

- Tabulated soil vapor analytical results with a comparison to LTCP criteria
- Laboratory analytical reports and chain-of-custody forms
- Conclusions and recommendations

Schedule

The proposed scope of work will proceed upon receipt of approval from ACEHS. The assessment report will be submitted approximately 6 weeks after completion of field activities and receipt of final laboratory analytical reports.

Please contact Judy Gilbert at (510) 420-3314 if you have any questions or require additional information.

Sincerely,
GHD

Judy Gilbert

Brandon S. Wilken, PG 7564

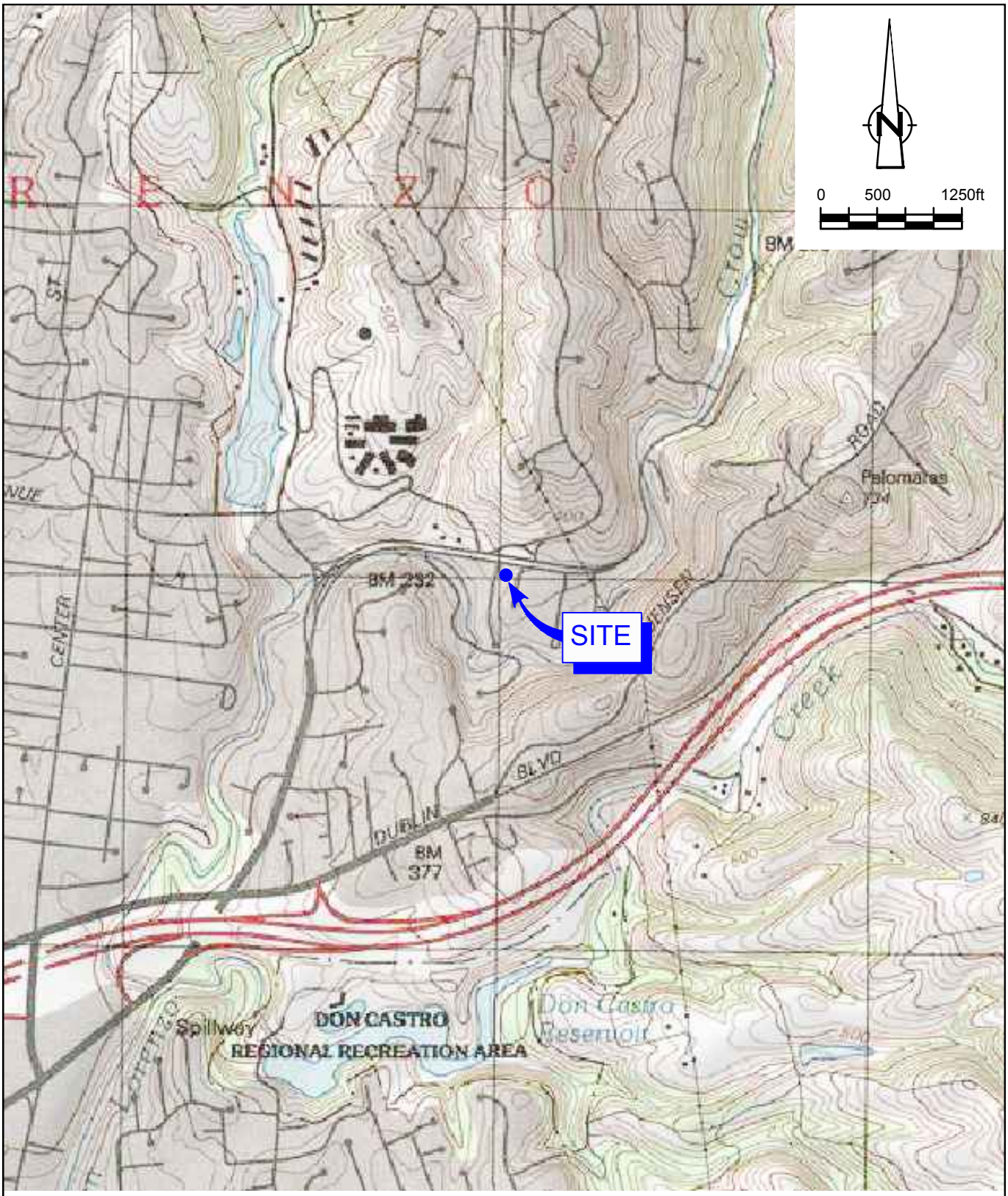
JG/lg/63
Encl.

Figure 1	Vicinity Map
Figure 2	Site Plan
Figure 3	TO-15 Soil Vapor Sampling Apparatus
Figure 4	TO-17 Soil Vapor Sampling Apparatus

Attachment A	Regulatory Correspondence
Attachment B	Standard Field Procedures for Soil Vapor Probe Sampling

cc: Ms. Carryl MacLeod, Chevron *(electronic copy)*
Mr. Kevin Hinkley, Property Owner
Ms. Diane Riggs, Forest Creek Townhomes Association

Figures

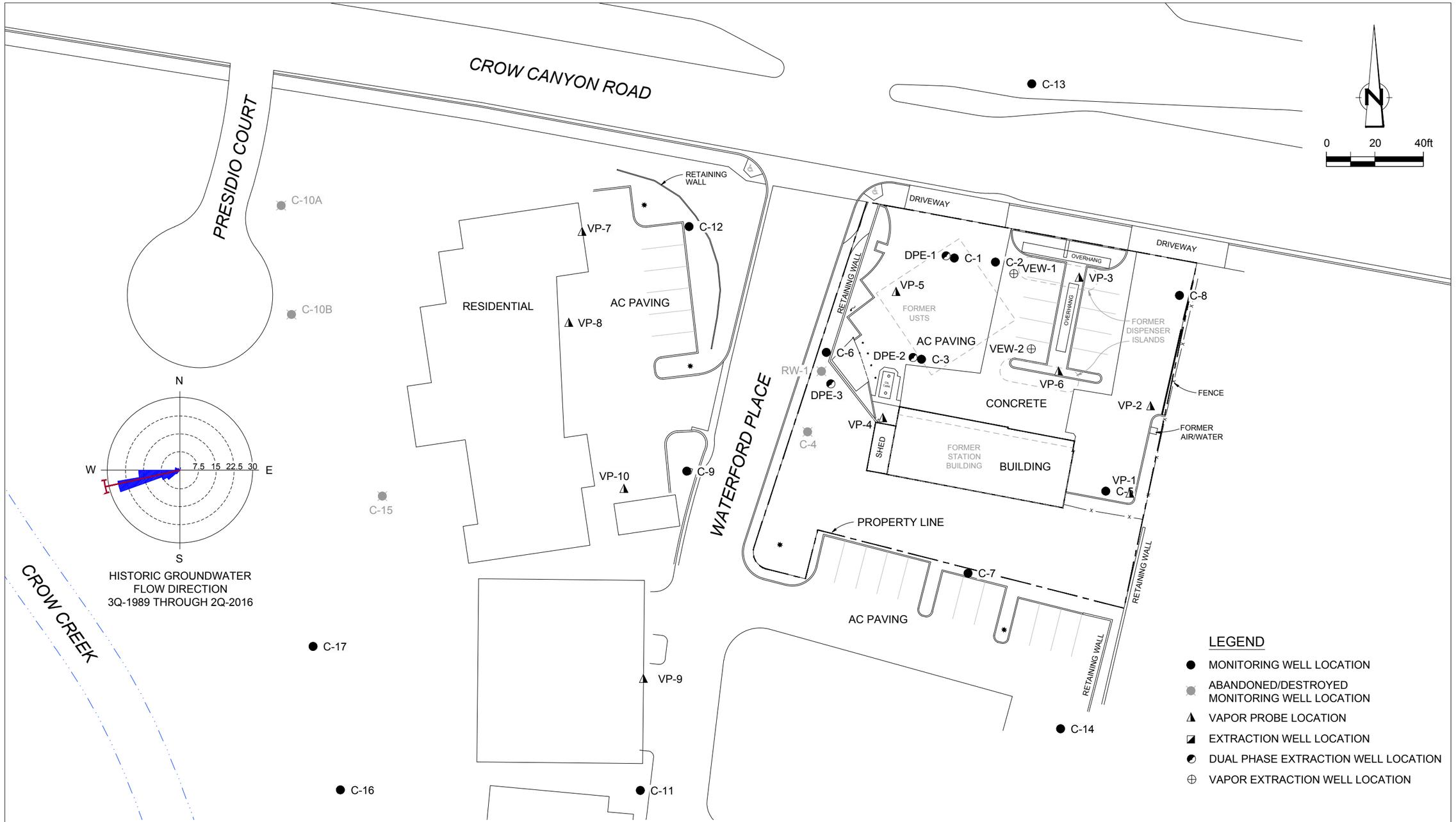


SOURCE: TOPO! MAPS.

Figure 1

VICINITY MAP
FORMER CHEVRON STATION 95607
5269 CROW CANYON ROAD
Castro Valley, California

311950-2016.3(063)GN-WA001 JUN 24, 2016



BASEMAP MODIFIED FROM DRAWING PROVIDED BY MORROW SURVEYING, JANUARY 15, 2014

FIGURE 2

SITE PLAN
CHEVRON SERVICE STATION 95607
5269 CROW CANYON ROAD
Castro Valley, California

311950-2016.3(063)GN-WA002 JUL 4, 2016

DRAWING NOT TO SCALE

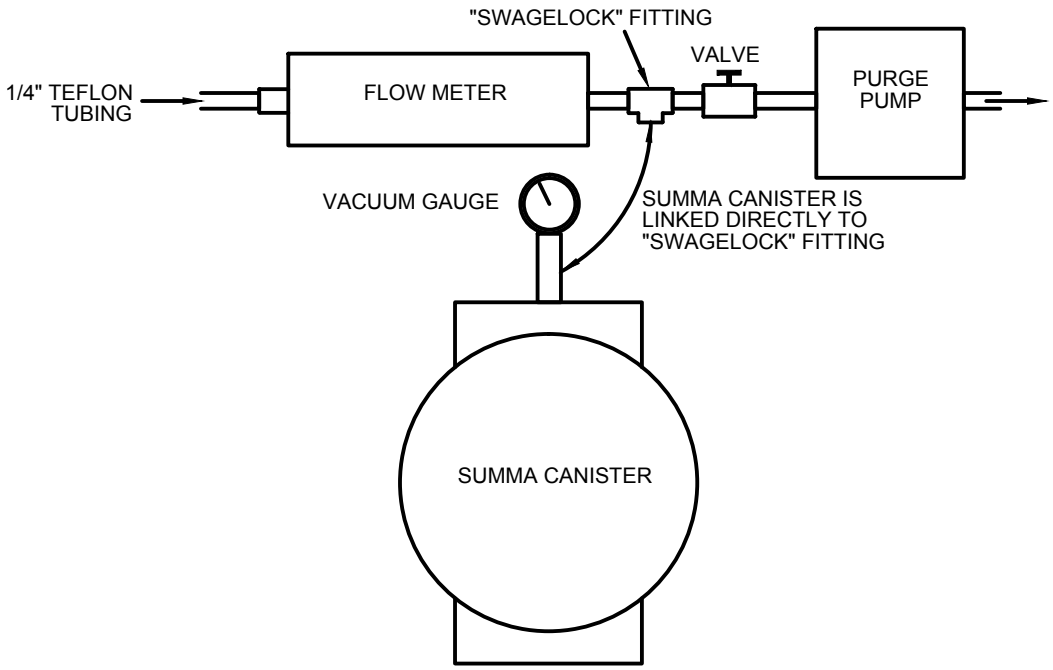


Figure 3

TO-15 SOIL VAPOR SAMPLING APPARATUS DIAGRAM
CHEVRON SERVICE STATION 95607
5269 CROW CANYON ROAD
Castro Valley, California

DRAWING NOT TO SCALE

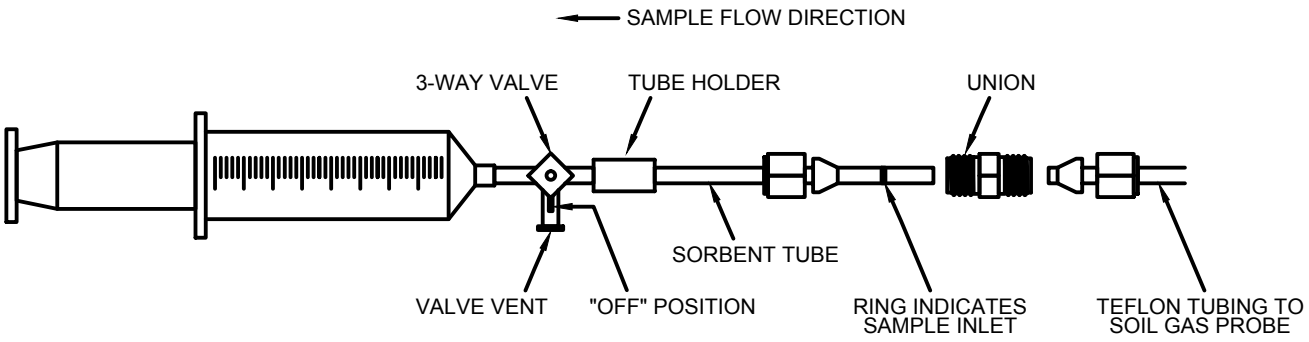


Figure 4

TO-17 SOIL VAPOR SAMPLING APPARATUS DIAGRAM
CHEVRON SERVICE STATION 95607
5269 CROW CANYON ROAD
Castro Valley, California

Attachment A
Regulatory Correspondence

ALAMEDA COUNTY
HEALTH CARE SERVICES
AGENCY
REBBECA GEBHART, Acting Director

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

May 13, 2016

Ms. Carryl MacLeod
Chevron Environmental Management Company
6101 Bollinger Canyon Road
San Ramon, CA 94583
(sent via electronic mail to:
cmacleod@chevron.com)

Kevin & Julia Hinkley
Kevin Hinkley Service
5269 Crow Canyon Road
Castro Valley, CA 94552

Subject: Quarterly Rebound Groundwater Monitoring and Work Plan Request; Fuel Leak Case No. RO0000350 and GeoTracker Global ID T0600100344, Chevron #9-5607, 5269 Crow Canyon Road, Castro Valley, CA 94552

Dear Ms. MacLeod, and Mr. and Ms. Hinkley:

Alameda County Department of Environmental Health (ACDEH) staff has reviewed the case file including the *First Quarter 2016 Groundwater Monitoring and Sampling Report,* dated April 7, 2016, and the *Monthly Remedial Progress and System Shut-Down Report – February and March 2016,* dated April 27, 2016. The reports were prepared and submitted on your behalf by GHD Services, Inc (GHD). Thank you for submitting the reports.

The Soil Vapor Extraction System (SVE) and Groundwater Extraction and Treatment System (GWET) were shut down on March 15, 2016 due to low vapor mass removal rates between January and March 2016, and because the system was operational for slightly over one year as stated in the State Water Board's Low Threat Closure Policy (LTCP). ACDEH acknowledges the operational period; however, observes a direct correlation between high groundwater levels and low rates of extraction, and elevated rates of extraction and low groundwater levels. It thus appears that the system is substantially more effective during selected periods of the year, than during the January to March 2016 time period when water levels were high. ACDEH accepts that the GWET and SVE systems will affect depth to water measurements; however, with all extraction rates being equal, the apparent lower rates of groundwater inflow during dryer seasons appear to allow a higher rate of capture, removal, and lowering of groundwater. ACDEH also notes that vapor mass removal rates during low groundwater periods do not show a significant rate of decline and are as high as immediately after system startup (see for example mass removal rates between September and October 27, 2014 and between December 2, 2015 and January 5, 2016, immediately before the cited time period). It appears substantial hydrocarbon contamination remains beneath the site. Conversely, ACDEH recognizes that rebound testing has the potential to indicate that sufficient hydrocarbon mass removal has occurred, and that the LTCP would potentially indicate closure of the site may be appropriate. However, please note that this does not consider ecologic receptors in Crow Creek as discussed below.

ACDEH has previously evaluated site data to determine if the site is eligible for closure as a low risk site under the State Water Resources Control Board's (SWRCBs) Low Threat Underground Storage Tank Case Closure Policy (LTCP). Based on ACDEH staff review, we have determined that the site fails to meet the LTCP Media-Specific Criteria for Groundwater and the Media-Specific Criteria for Vapor Intrusion to Indoor Air.

Based on the review of the case file ACDEH requests that you address the following technical comments and send us the documents requested below.

TECHNICAL COMMENTS

1. **Quarterly Rebound Groundwater Monitoring** – Based on the March 15, 2016, system shut down, ACDEH is in agreement that it appears appropriate to conduct quarterly groundwater monitoring events to monitor potential groundwater concentration rebound. Two quarters of groundwater monitoring were proposed;

however, it may be appropriate to determine groundwater contaminant trends at the site for a slightly longer period due to potentially substantial changes in groundwater elevation, and due to fresh water ecologic receptors in Crow Creek. Please recall that once groundwater leaves the groundwater system and enters surface waters, ecologic cleanup goals are appropriate (Environmental Screening Levels [ESLs] or other). Please submit quarterly reports by the dates identified below.

2. **Dilution – Attenuation Analysis** – It appears appropriate to request a dilution – attenuation analysis of groundwater contaminant trends between well C-9 and Crow Creek in order to determine estimated contaminant concentrations at the potential point of discharge to Crow Creek and exposure to ecologic receptors. Please ensure that groundwater concentration spikes such as observed in well C-9 in July 2014 are captured in the analysis. Please submit the analysis, including worksheets, with the work plan requested below.
3. **Soil Vapor Work Plan** – In order to determine the effect of the SVE and GWET systems on the elevated soil vapor at the site, it appears appropriate to conduct another round of soil vapor sampling at the site. Please submit a work plan, using standard protocols, to resample existing vapor wells by the date identified below.

TECHNICAL REPORT REQUEST

Please upload technical reports to the ACDEH 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:

- **July 15, 2016** – Second Quarter 2016 Groundwater Monitoring Report
  File to be named: RO350_GWM_R_yyyy-mm-dd
- **July 29, 2016** – Work Plan
  File to be named: RO350_WP_R_yyyy-mm-dd
- **October 21, 2016** – Third Quarter 2016 Groundwater Monitoring Report
  File to be named: RO350_GWM_R_yyyy-mm-dd
- **January 27, 2017** – Fourth Quarter 2016 Groundwater Monitoring Report
  File to be named: RO350_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, ACDEH 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.

Sincerely,

Digitally signed by Mark Detterman
DN: cn=Mark Detterman, o=ACEH, ou=ACEH, email=mark.detterman@acgov.org, c=US
Date: 2016.05.13 15:30:14 -07'00'

Mark Detterman, PG, CEG
Senior Hazardous Materials Specialist

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

cc: Brandon Wilken, 5900 Hollis Street, Suite A, Emeryville, CA 94608
(Sent via electronic mail to bwilken@craworld.com)

Judy Gilbert, Conestoga-Rovers & Assoc., 5900 Hollis Street, Suite A, Emeryville, CA 94608
(Sent via electronic mail to: jgilbert@CRAworld.com)

Dilan Roe, ACDEH, (Sent via E-mail to: dilan.roe@acgov.org)
Mark Detterman, ACDEH, (Sent via electronic mail to mark.detterman@acgov.org)
Geotracker, Electronic Files

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.

Attachment B
Standard Field Procedures for Soil Vapor Probe Sampling

Standard Field Procedures for Soil Vapor Probe Sampling

This document describes GHD's standard field procedures for soil vapor probe sampling. These procedures are designed to comply with Federal, State and local regulatory guidelines. Specific field procedures are summarized below.

Objectives

Soil vapor samples are collected and analyzed to assess whether vapor-phase subsurface contaminants pose a threat to human health or the environment.

Purging

At least three purge volumes of vapor are removed from the soil vapor probe prior to sampling. The purge volume is defined as the amount of air within the probe and tubing. Purging is performed using the vacuum of a dedicated Summa canister, a flow regulator set to the same flow rate used for sampling, and vacuum gauges. Immediately after purging, soil vapor samples will be collected using the appropriate size Summa canister with attached flow regulator and sediment filter.

Sampling Soil Vapor Probes

Samples collected using a SUMMA™ canister will have the SUMMA™ canister connected to the sampling tube of each vapor probe. Prior to collecting soil vapor samples, the initial vacuum of the canisters is measured and recorded on the chain-of-custody. The vacuum of the SUMMA™ canister is used to draw the soil vapor through the flow controller until a negative pressure of approximately 5 inches of mercury is observed on the vacuum gauge and recorded on the chain-of-custody. The flow controllers should be set to 100-200 milliliters per minute. Field duplicates should be collected for every day of sampling and/or for every 10 samples collected.

In accordance with the DTSC guidance document titled *Advisory-Active Soil Gas Investigations*, dated July 2015, leak testing is necessary during sampling. Helium is recommended, although shaving cream is acceptable. Helium is pumped into a shroud that contains the entire sampling apparatus and the soil vapor probe well vault. A helium meter is used to quantify the percentage helium in the shroud during sampling.

Samples collected for TO-17 analysis will be collected using a TO-17 Sorbent Tubes connected to the sampling tube of each vapor probe. A 60 cc syringe will be used to draw the sample into the sorbent tubes. Field duplicates should be collected for each day of sampling and/or for every 10 samples collected.

A leak test will be performed prior to connecting the sampling equipment to the vapor tubing. The test is performed by inserting the sorbent tube into the tube holder on the syringe assembly, turning the valve into the 'off' position, pulling the plunger of the syringe. If the plunger does not move or immediately returns to the starting position, the system is leak tight and is ready for sampling.

Vapor Sample Storage, Handling and Transport

Samples are stored and transported under chain-of-custody to a state-certified analytic laboratory. Samples should never be cooled due to the possibility of condensation within the canister.