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10:08 am, Jun 09, 2009

Alameda County
Environmental Health

June 8, 2009

Mr. Paresh C. Khatri
Hazardous Materials Specialist
Alameda County Health Care Services Agency
1131 Harbor Bay Parkway, Suite 250
Alameda, California 94502

RE: Work Plan – Soil Vapor Survey
76 Service Station No. 11270
3255 Mecartney Road
Alameda, California
Fuel Leak Case No. RO0000511

DELTA

Dear Mr. Khatri:

On behalf of Atlantic Richfield Company (ARC), Delta Consultants (Delta) has prepared this work plan proposing the collection of soil vapor samples that will be collected for field screening and evaluation of potential vapor intrusion into the on-site station building. The site location is shown on **Figure 1**. This work plan has been prepared as requested by the Alameda County Health Care Services Agency (ACHCSA) in their letter to ARC dated May 8, 2009. A copy of the letter is presented as **Attachment A**.

SUMMARY OF PROPOSED ASSESSMENT ACTIVITIES

Based on historical soil sampling results, total petroleum hydrocarbons as gasoline (TPHg) and benzene have been reported as high as 2,000 milligrams per kilogram (mg/kg) and 18 mg/kg, respectively.

Therefore, Delta is proposing that two (2) soil borings be advanced to a depth of approximately 5 feet bgs in the vicinity of the station building for the purpose of collecting soil vapor samples for field screening and evaluation of potential vapor intrusion. The proposed boring locations are shown on **Figure 2**.

GENERAL SITE DESCRIPTION

The site is an operational service station located within a developed shopping center at the northern corner of the intersection of Island Drive and Mecartney Road in Alameda, California. The site is located in a mixed commercial residential neighborhood.

Site features include three (3) gasoline underground storage tanks (USTs), two pump islands, a station building, and a service

a member of: Inogen Environmental Alliance

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bay with two hoists. The on-site USTs include one 12,000 gallon, one 10,000 gallon, and one 6,000 gallon fiberglass tanks installed in 1981.

SITE BACKGROUND AND ACTIVITY

BP acquired the site from Mobil in 1989 and TOSCO subsequently acquired the site from BP in 1994.

May 1990 - Two soil samples (P1 and P2) were collected from beneath the product dispensers during a routine dispenser modification. The respective samples were collected from material excavated to a depth of approximately 4.5 feet below ground surface (bgs). After additional excavation in the vicinity of sample location P1, one additional soil sample P1(8) was collected at a depth of approximately 8 feet bgs. Two sidewall samples (SW1 and SW2) were collected from the sidewalls of the product line trench in the vicinity of sample point P1 at a depth of approximately 4.5 feet bgs. All soil samples collected were analyzed for TPHg, benzene, toluene, ethylbenzene, and total xylenes (BTEX), and total lead. Based on the petroleum hydrocarbon concentrations reported in sample SW1, additional soil was excavated 8 feet laterally and to a depth of approximately 8 feet bgs in the vicinity of sample location SW1. During over-excavation, water was encountered at approximately 8 feet bgs. Three soil samples (SW3, SW4, and SW5) were subsequently collected at depths of 8, 4.5, and 4.5 feet bgs and analyzed for TPHg, BTEX, and total lead. Based on the petroleum hydrocarbon concentrations reported in samples SW4 and SW5, additional soil was excavated 7 feet laterally and to a depth of approximately 8 feet bgs in the vicinity of samples SW4 and SW5. Four soil samples (SW6 through SW9) were collected from material excavated using a backhoe to a depth of approximately 4.5 feet bgs and analyzed for TPHg, BTEX, and total lead. Soil was not excavated south of sample location SW3 due to its proximity to the UST complex. A total of approximately 195 cubic yards of soil was excavated, aerated on-site and appropriately disposed off-site. Historic soil sample locations are shown on **Figure 3**.

August 1992 - A preliminary site assessment was conducted at the site involving the sampling of two pre-existing Mobil groundwater monitoring wells MW-2 and MW-4. Samples could not be collected from two additional pre-existing monitoring wells MW-1 and MW-3 due to insufficient recharge. Product sheen was observed on the purge water from all the monitoring wells. Records of boring logs and well construction details for wells MW-1 through MW-4 could not be located. Monitoring well locations are shown on **Figure 3**.

October 1994 - As part of a supplemental site assessment, two exploratory soil borings (TB-1 and TB-2) were advanced to a depth of 11.5 feet bgs. Analytical results from the soil samples collected during the advancement of these two borings indicated that petroleum hydrocarbons were not present above the laboratory's indicated reporting limits. Groundwater samples collected from borings, TB-1 and TB-2, contained 1,500 parts per billion (ppb) and 310 ppb TPHg, respectively. Soil boring locations are shown on **Figure 3**.

June 1993 - A 4-inch diameter groundwater monitoring well, MW-5, was installed off-site, near the western comer of the site. Monitoring well locations are shown on **Figure 3**.

January 1995 - One 4-inch diameter monitoring well, MW-6, was installed on-site and one 2-inch diameter monitoring well, MW-7, was installed off-site. Borings MW-5 and MW-6 were advanced to 15 feet bgs and MW-7 was advanced to 16.5 feet bgs. Groundwater was encountered in the monitoring wells at depths ranging from 5 to 7.5 feet bgs. Monitoring wells, MW-1 through MW-4, were subsequently destroyed in January 1995. Monitoring well locations are shown on **Figure 3**.

November 1996 - A Tier 2 risk-based corrective action (RBCA) evaluation was conducted to determine the potential exposure risk to residual benzene concentrations in on-site soils. The results of the evaluation indicated that the levels of benzene in soil 8 feet bgs should not pose a risk to on-site workers. Risks to potential hypothetical future residents reportedly exceeded the lower, more protective end of the Environmental Protection Agency (EPA) acceptable risk range. The evaluation also concluded that ongoing natural attenuation was likely to reduce residual benzene concentrations to below the acceptable risk range prior to the unlikely scenario of the site being converted to residential use.

December 1996 - The oil/water separator located on the floor of the vehicle service bay at the west side of the service station building was cleaned and removed. Two soil samples (OWS-1, 0.5' and OWS-1, 2') were subsequently collected from beneath the former oil/water separator location. Analytical results indicated that total recoverable petroleum hydrocarbons (TRPH) were present in the soil with a maximum concentration of 49 parts per million (ppm). All other constituents tested were below the laboratory's indicated reporting limits. Historic soil sample locations are shown on **Figure 3**.

August 1997 - Samples of pea gravel base material (S-1, through S-4) were collected from the bottom of each dispenser and analyzed for TPHg, BTEX and methyl tertiary butyl ether (MTBE). Historic soil sample locations are shown on **Figure 3**.

July 1998 - One 1,000 gallon single-walled fiberglass used-oil UST was removed from the site. The removed UST was noted to be intact with no visible holes or cracks. One native soil sample (S-6-T1E) was collected from the eastern sidewall of the UST cavity at a depth of approximately 7 feet bgs. Historic soil sample locations are shown on **Figure 3**.

August 2000 – On-site dispensers and product lines were removed and replaced. A total of four pea gravel samples (PD-1-2', PD-2-1.5', PD-3-1.5', and PD-4-1.5') were collected from beneath each of the four product dispensers, and four pea gravel samples (PL-3-1.5', PL-4-1.5', PL-61.5', and PL-7-1.5') were collected from beneath the product lines. Three pea gravel samples were also collected at each of the ends of the fuel USTs (F-1-4', F-2-4', and F-5-3'). Historic soil sample locations are shown on **Figure 3**.

Groundwater Monitoring

October 1992 - Groundwater monitoring was initiated using monitoring wells MW-1 through MW-4 and was continued until September 2001, incorporating wells MW-5 through MW7, and off-site wells XW-I through XW-3 that are not associated with the site. The monitoring program was discontinued in September 2001, while awaiting ACHCSA determination if the site was qualified for case closure. Monitoring well locations are shown on **Figure 3**.

Groundwater monitoring and sampling was re-initiated on an annual basis at the site following a directive letter from Mr. Paresh Khatri of ACHCSA, dated 21 August 2008. The existing wells on-site had not been used for monitoring by BP since 2001. As a result, well development activities took place on September 5, 2008, two weeks prior to sampling. Well development activities for wells MW-5, MW-6, MW-7, XW-1, XW-2, and XW-3 consisted of surging and pumping each well until relatively silt-free water was removed. Each well purged dry before ten casing volumes were removed. Gasoline range organics (GRO) were reported above the laboratory's indicated reporting limits in one of the six wells sampled at a concentration of 83 micrograms per liter (µg/L) in monitoring well MW-6. Toluene, ethylbenzene, and total xylenes were reported in the groundwater sample collected from monitoring well MW-6 at concentrations of 4.1 µg/L, 2.0 µg/L, and 17 µg/L, respectively. MTBE was reported above the laboratory's indicated reporting limits in the groundwater samples collected from four of the six wells sampled at concentrations up to 3.4 µg/L in monitoring well MW-6. The remaining fuel additives and oxygenates were below the laboratory's indicated reporting limits in the six wells sampled this quarter.

In February 2009, Stratus attempted to advance soil boring B-4, but they aborted after encountering pea gravel. According to the manager who has operated the facility for 24 years, during original construction, a large area of the subsurface soil was excavated from the site and backfilled with pea gravel. The approximate extent of the pea gravel is shown on **Figure 2**.

SITE GEOLOGY AND HYDROGEOLOGY

The site is situated approximately 4,500 feet south of San Leandro Bay, and approximately 3,500 to 5,400 feet northeast of the present shoreline of San Francisco Bay. Sediments encountered at the site generally consisted of silty to gravelly sand and sandy gravel to the maximum explored depth of 16.5 feet bgs. Lean clay was encountered in boring MW-5 from 13 to 15 feet bgs, and gravelly clay (possibly fill) from 3.5 to 5 feet bgs in boring MW-7. Groundwater was encountered during drilling at a depths ranging from 5 to 7.5 feet bgs.

SENSITIVE RECEPTOR SURVEY

In November 1992, a sensitive receptor survey and existing well search were conducted. No public water supply wells were identified within approximately 2,500 feet of the site. No private water supply wells were identified within 1,000 feet of the site. Additionally, no subways, basements, and schools were identified within 1,000 feet of the site. The survey identified a surface water body located approximately 500 feet from the site, but did not name it. As observed during a site visit by URS, this surface water body is a channel excavated as part of a residential development. Based on current aerial photo review, there appears to be, more than one mile of channel before connecting to San Francisco Bay from the channel point closest to the site.

PROPOSED SOIL VAPOR SURVEY

To evaluate potential soil vapor in the vicinity of the station building, the advancement of two (2) borings to a depth of 5 feet bgs and the collection of one (1) soil vapor sample from each boring is proposed. The boring will be completed as a temporary soil

vapor sampling point. Please note that the boring depth may change if shallow groundwater is encountered. The proposed locations are shown on **Figure 3**.

Soil vapor samples will be collected at approximately 4.5 to 5 feet bgs from the borings. To evaluate if a potential risk to human health exists, the analytical results will be compared to the commercial San Francisco Bay Regional Water Quality Control Board Environmental Screening Levels (ESLs) for shallow soil gas based on the potential receptors associated with the sample points.

The proposed soil vapor survey investigation described below is in accordance with protocols identified in the *Interim Guidance for Active Soil Gas Investigations* (RWQCB-LA Region, 1997) and the *Advisory-Active Soil Gas Investigations* (Department of Toxic Substances Control, 2003).

Pre-Field Activities

Prior to initiation of field activities, Delta will prepare a health and safety plan (HASP) specific to the site and work being performed in accordance with Title 8, Section 5192 of the California Code of Regulations. The HASP will contain a list of emergency contacts, as well as a hospital route map to the nearest emergency facility, which will be reviewed daily by field personnel.

Underground Utility Location

The proposed boring location will be marked prior to drilling, and Underground Service Alert (USA) will be notified as required and a private utility locator will be contracted to clear the proposed boring locations to further minimize the risk of damaging underground utilities.

Soil Gas Sampling

Soil vapor samples will be collected from the probes in compliance with the California Environmental Protection Agency-Department of Toxic Substances Control (Cal-EPA/DTSC) 2003 *Advisory-Active Soil Gas Investigations*, as detailed in the attached Standard Operating Procedures (SOP) presented as **Attachment B**.

- **Soil Vapor Sampling Point Installation:**

  Soil vapor sampling points will be hand augered to five (5) feet bgs for utility clearance. This borehole will be backfilled as follows: sand from 3.5 to five (5) feet bgs, hydrated bentonite granules from 3.5 to 2.5 feet bgs, thick bentonite mixture from just below existing asphalt to 2.5 feet bgs, and thin layer of cold patch asphalt to grade.

  Prior to backfill, one soil sample will be collected from the bottom (total depth) of each borehole. The soil samples retained for analysis will be analyzed for TPHg by EPA Method 8015M and BTEX, (fuel oxygenates) MTBE, di-isopropyl ether (DIPE), ethyl tert-butyl ether (ETBE), tert-amyl methyl ether (TAME), and tert-butanol (TBA), (lead scavengers) 1,2-dichloroethane (1,2-DCA) and ethylene-dibromide (EDB), and ethanol by EPA Method 8260B.

The borehole (temporary sampling point) will be allowed to stabilize for approximately two weeks in the absence of measurable precipitation.

- **Soil Vapor Sampling:**

  A boring will be advanced, using direct push technology, to place a soil vapor sampling tip into the previously installed sand zone (approximately 3.5 to five feet bgs). A soil vapor sample will be collected from this zone and field analyzed using mobile equipment. Once a valid soil vapor sample has been collected and analysis is completed, the borehole will be backfilled with neat cement to the surface and dyed to match the surrounding concrete/asphalt.

Laboratory Analysis

The soil vapor samples will be analyzed by a California-certified mobile analytical laboratory for TPHg, BTEX, and MTBE by EPA Method 8260B. The samples will additionally be analyzed for oxygen (O_2), carbon dioxide (CO_2), and methane (CH_4) by ASTM Method D-1946, and the tracer compound to evaluate potential ambient air intrusion and for leak check purposes. Delta will ensure that the laboratory reporting limits for these gases are below the concentrations of each gas in the atmosphere.

The laboratory analytical procedures are also described in the attached SOP.

Disposal of Drill Cuttings and Wastewater

Drill cuttings and decontamination water generated during the soil boring advancement and the soil vapor sampling activities will be placed into properly labeled 55-gallon Department of Transportation (DOT) approved steel drums and stored on the property. Samples of the drill cuttings and wastewater will be collected, properly labeled and placed on ice for submittal to a California-certified laboratory and analyzed for TPHg by EPA Method 8015M and BTEX and MTBE by EPA Method 8260B and total lead by EPA Method 6010B. A chain-of-custody will accompany the samples during transportation to the laboratory. Subsequent to receiving the laboratory analytical results, the drummed drill cuttings and wastewater will be profiled, transported, and disposed of at an ARC approved facility.

Reporting

Following completion of the field work and receipt of analytical results, a site investigation report will be prepared and submitted within 60 days. The report will present the details of the boring activities, including copies of boring permits, and details of disposal activities and copies of disposal documents. Required electronic submittals will be uploaded to the State Geotracker database.

REMARKS/SIGNATURES

The recommendations contained in this report represent Delta's professional opinions based upon the currently available information and are arrived at in accordance with currently acceptable professional standards. This report is based upon a specific scope of work requested by the client. The Contract between Delta and its client outlines the scope of work, and only those tasks specifically authorized by that contract or outlined

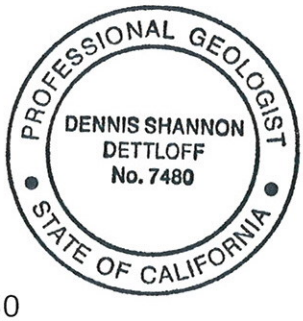
in this report will be performed. This report is intended only for the use of Delta's Client and anyone else specifically listed on this report. Delta will not and cannot be liable for unauthorized reliance by any other third party. Other than as contained in this paragraph, Delta makes no express or implied warranty as to the contents of this report.

If you have any questions regarding this project, please contact Tony Perini at (408) 826-1867.

Sincerely,
DELTA CONSULTANTS

Tony Perini
Senior Project Manager
Remediation Lead

Dennis S. Dettloff
Senior Project Manger
California Registered Professional Geologist No. 7480

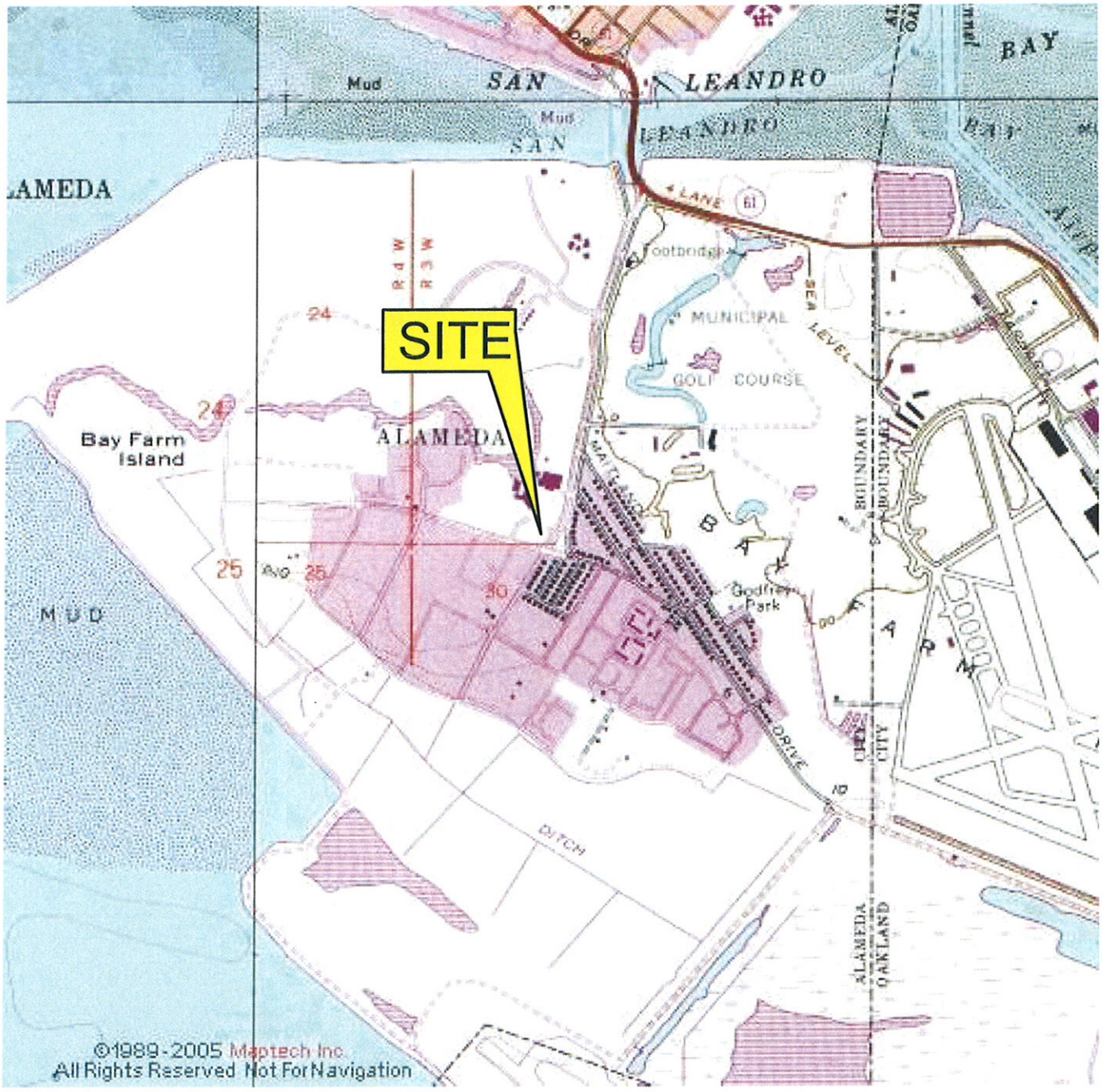


Figures:
- Figure 1 – Site Location Map
- Figure 2 – Site Map with Soil Vapor Sampling Locations
- Figure 3 – Site Map with Historical Sample Locations

Attachments:
- Attachment A – ACHCSA letter dated September 24, 2008
- Attachment B – EPA/DTSC 2003 *Advisory-Active Soil Gas Investigations* SOP

cc: Mr. Paul Supple, ARC

Figures



North

0 900 1800 FT

SCALE

FIGURE 1

SITE LOCATION MAP

76 STATION NO. 11270
3255 MECARTNEY ROAD
ALAMEDA, CALIFORNIA

PROJECT NO. I42611270	DRAWN BY JH 06/02/09
FILE NO. 11270-SiteLocator	PREPARED BY DD
REVISION NO.	REVIEWED BY

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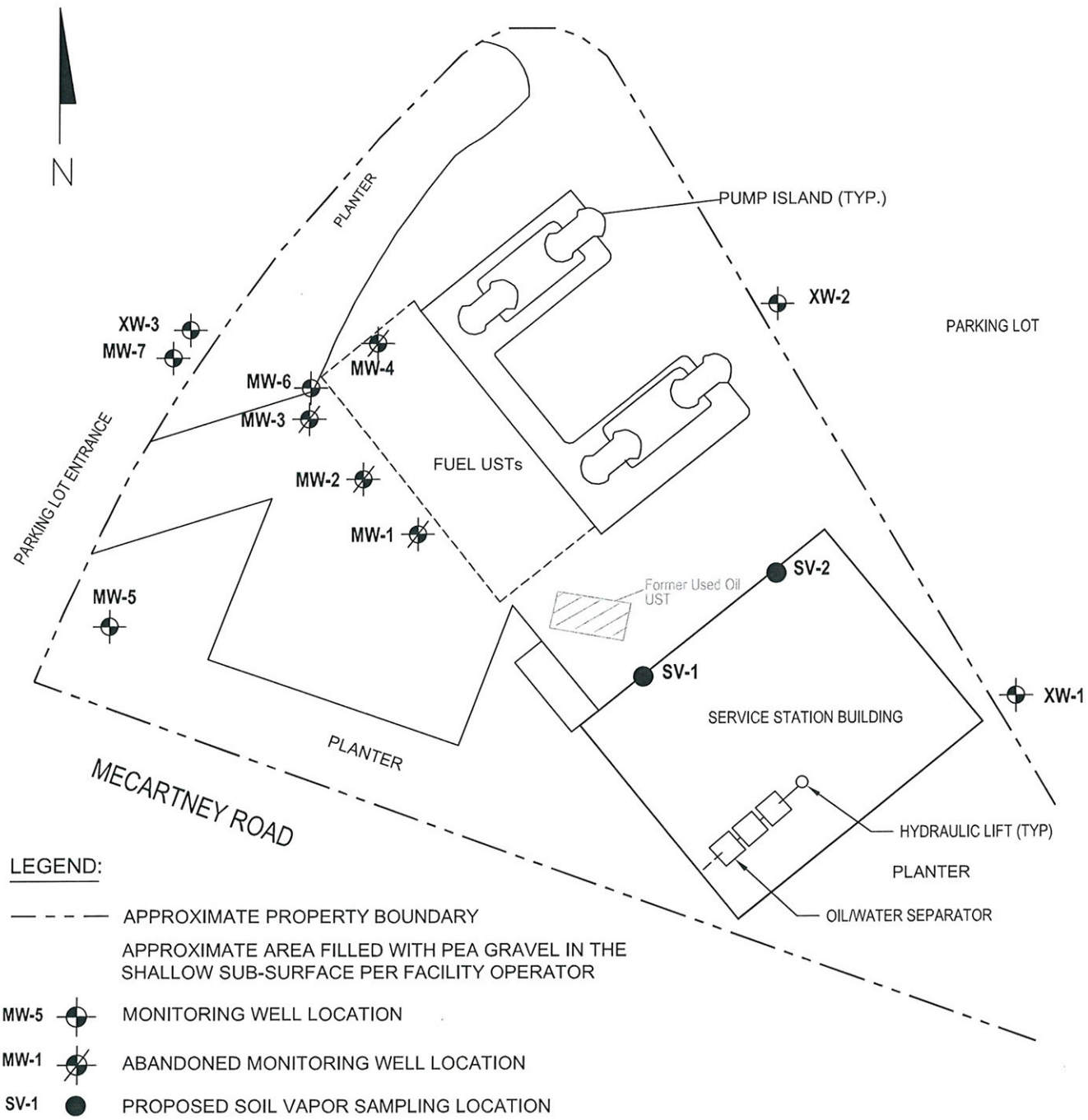
SOURCE: USGS 7.5 MINUTE TOPOGRAPHIC MAP, SAN LEANDRO & HUNTERS POINTE QUADRANGLES (1973



LEGEND:

- APPROXIMATE PROPERTY BOUNDARY
- APPROXIMATE AREA FILLED WITH PEA GRAVEL IN THE SHALLOW SUB-SURFACE PER FACILITY OPERATOR
- MW-5 — MONITORING WELL LOCATION
- MW-1 — ABANDONED MONITORING WELL LOCATION
- SV-1 — PROPOSED SOIL VAPOR SAMPLING LOCATION

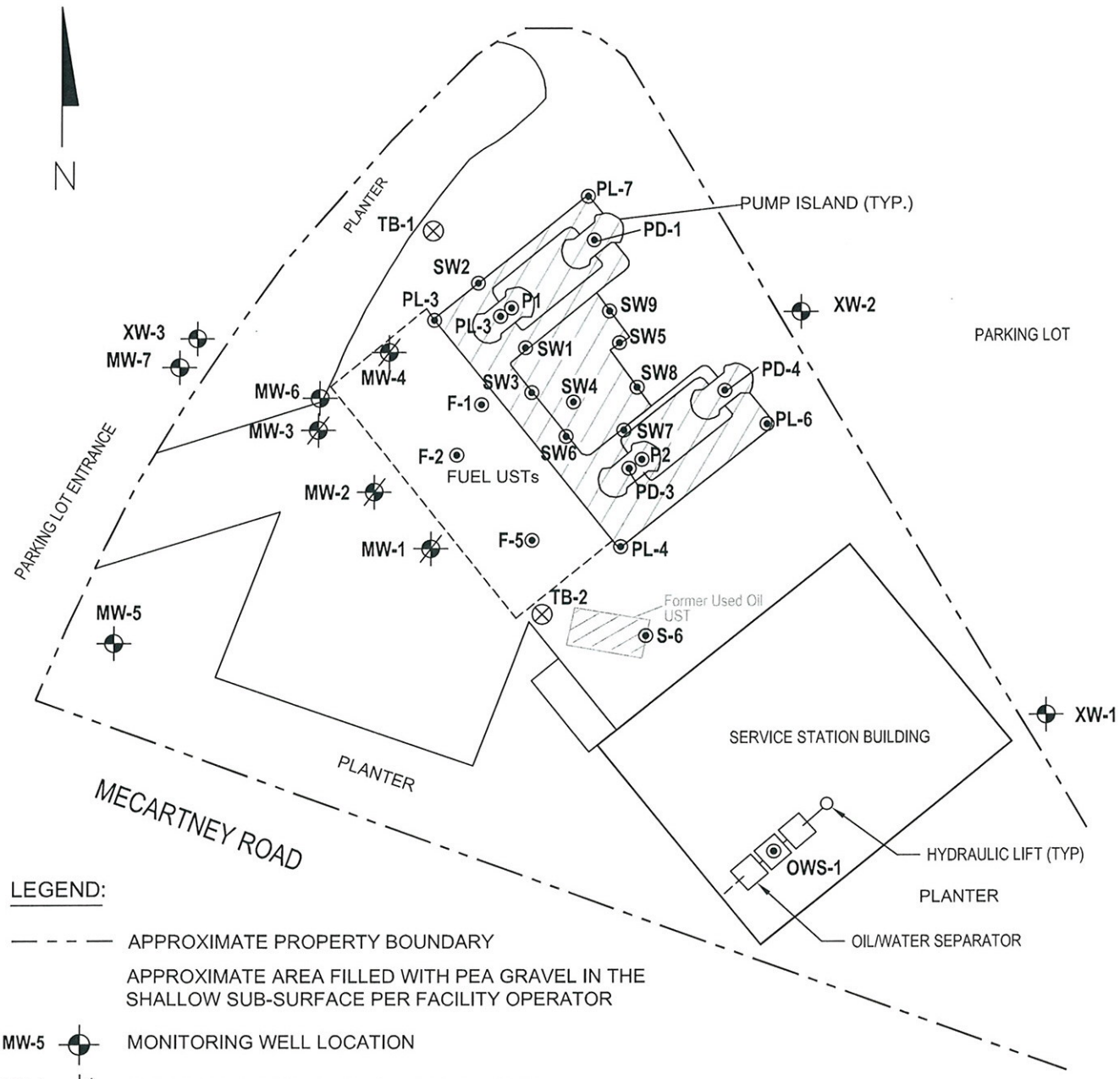
0 20 FT
SCALE

MAP ADAPTED FROM A MAP DATED 10/14/08 BY BROADBENT & ASSOCIATES, INC ENTITLED "SITE MAP".

FIGURE 2
SITE PLAN WITH PROPOSED SOIL VAPOR LOCATIONS
76 STATION NO. 11270
3255 MECARTNEY ROAD
ALAMEDA, CALIFORNIA

PROJECT NO.	PREPARED BY	DRAWN BY
142611270	DD	JH
DATE	REVIEWED BY	FILE NAME
06/02/09		11270-Site

DELTA®



LEGEND:

- APPROXIMATE PROPERTY BOUNDARY
- APPROXIMATE AREA FILLED WITH PEA GRAVEL IN THE SHALLOW SUB-SURFACE PER FACILITY OPERATOR
- MW-5 — MONITORING WELL LOCATION
- MW-1 — ABANDONED MONITORING WELL LOCATION
- FORMER EXCAVATION AREA
- TB-2 — TOSCO BORING LOCATION
- S-6 — SOIL SAMPLE LOCATION

0 20 FT
SCALE

MAP ADAPTED FROM A MAP DATED 10/14/08 BY BROADBENT & ASSOCIATES, INC ENTITLED "SITE MAP".

FIGURE 3
SITE PLAN WITH HISTORICAL SAMPLE LOCATIONS
76 STATION NO. 11270
3255 MECARTNEY ROAD
ALAMEDA, CALIFORNIA

PROJECT NO.	PREPARED BY	DRAWN BY
142611270	DD	JH
DATE	REVIEWED BY	FILE NAME
06/02/09		11270-Site

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Attachment A

ACHCSA Letter
Dated
May 8, 2009

ALAMEDA COUNTY
HEALTH CARE SERVICES
AGENCY
DAVID J. KEARS, Agency Director

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

May 8, 2009

Paul Supple
Atlantic Richfield Company
(A BP Affiliated Company)
P.O. Box 1257
San Ramon, CA 94583

Ping Liu Chien
Harbor Bay Landing, LLC.
P.O. Box 117610
Burlingame, CA 94011

Terry Grayson
ConocoPhillips
76 Broadway
Sacramento, CA 95818

Subject: Fuel Leak Case No. RO0000511 and GeoTracker Global ID T0600101198, BP #11270, 3255 Mecartney Road, Alameda, CA 94501

Dear Messrs. Supple, Grayson, and Chien:

Alameda County Environmental Health (ACEH) staff has reviewed the case file for the above-referenced site including the recently submitted document entitled, "On-Site Soil Investigation with Preferential Pathway Evaluation Report," dated April 30, 2009, which was prepared by Broadbent & Associates, Inc. (BAI) for the subject site. BAI states that according to the long-time service station manager that "during original construction, a large area of the subsurface soil was excavated from the site and backfilled with pea gravel." BAI also states that "[s]ince the boring locations were proposed to be within this extensive area of pea gravel, and the presence of pea gravel was confirmed by Stratus and RSI Drilling Inc. personnel, the proposed scope of work could not be completed due to BP's safety policy prohibiting ground disturbance within pea gravel." Please note that based on a comparison of the site figure monitoring wells MW-6 and MW-4 appear to be installed within this pea gravel area. Also, ACEH is interested in BP's safety protocol. Please send a copy of the BP's safety policy for our records.

ACEH requested evaluation of residual hydrocarbons in soil since concentrations of TPH-g and benzene at the site were detected as high as 2,000 mg/kg and 18 mg/kg, respectively. Since confirmation soil samples were not collected during the most recent field mobilization, the potential contaminant volatilization to indoor air exposure pathway remains unaddressed. Furthermore, if a large portion of the site is backfilled with pea gravel, the potential contaminant volatilization to indoor air exposure pathway may be exacerbated since porous backfill media (i.e. pea gravel) may readily allow for vapor migration. It does not appear appropriate for BAI to recommended closure evaluation for the site without addressing or proposing a scope of work to address the data gap. It seems that if soil sample collection is not feasible due to the presence of pea gravel in the subsurface, it seems very feasible to collect several sub-slab vapor samples or install shallow vapor wells, etc. to evaluate the data gap.

At this time, please justify that all data gaps are addressed or submit a work plan to address the above-mentioned concerns by the date specified below.

TECHNICAL REPORT REQUEST

Please submit technical reports to ACEH (Attention: Paresh Khatri), according to the following schedule:

- **May 18, 2009** – BP's Safety Policy
- **June 8, 2009** – Soil and Water Investigation Work Plan
- **Due within 30 Days of Sampling** – Annual Monitoring Report (3rd Quarter 2009)

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.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.

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) 777-2478 or send me an electronic mail message at paresh.khatri@acgov.org.

Sincerely,

Paresh C. Khatri
Hazardous Materials Specialist

Donna L. Drogos, PE
Supervising Hazardous Materials Specialist

Enclosure: ACEH Electronic Report Upload (ftp) Instructions

cc: Tom Venus, Broadbent & Associates, Inc., 1324 Mangrove Ave., Ste 212, Chico, CA 95926
Donna Drogos, ACEH
Paresh Khatri, ACEH
GeoTracker
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.

Attachment B

EPA/DTSC 2003 Advisory
Active Soil Gas Investigations SOP

MOBILE GEOCHEMISTRY

H&P

Soil Vapor Standard Operating Procedures Fulfilling CA-EPA (DTSC) Soil Gas Advisory

Revision 4

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Soil Gas Sampling Procedures

Probe Construction and Insertion

Manually-Driven Probes

H&P's manually driven soil vapor probes are constructed of 0.625 inch outside diameter steel and equipped with a hardened steel tip. The probes can reach a depth of 5 feet below ground surface. An inert 1/8 inch nylaflow tube is threaded down the center of the probe and connected to a sampling port just above the tip. This internal sample tubing design eliminates any contact between the sample port and the gas sample.

The probe is driven into the ground by an electric rotary hammer. Once inserted to the desired depth, the probe is rotated approximately 3 turns to open the tip and exposes the vapor sampling ports. This design prevents clogging of the sampling ports and cross-contamination from soils during insertion.

Hydraulically-Driven Probes

H&P's hydraulically-driven soil vapor probes are constructed of either 1.25 or 1.5 inch outside diameter steel and equipped with a hardened drop-off steel tip. The probes are nominally 4 feet long and threaded together to reach multiple depths. The probe is driven into the subsurface with H&P's *STRATAPROBE*™ direct-push system. Once inserted to the desired depth, the probe is retracted slightly to expose the vapor sampling port. A small diameter inert tubing is then inserted through the center of the rod and threaded into a gas tight fitting just above the tip. After a sample is obtained the tubing is removed and the probe rod advanced to the next sampling depth or removed. This design prevents clogging of the sampling port and cross-contamination from soils during insertion.

Surface Seals

The probe rod is sealed at the surface with granular and hydrated bentonite for a minimum of 20 minutes before sampling.

Soil Gas Sampling

Soil vapor is withdrawn from the end of the inert nylaflow tubing that runs from the sampling tip to the surface using a 20 to 60 cubic centimeter (cc) syringe or gas tight canister (Summa) connected via an on-off valve (see diagram). The probe tip and sampling tubing is nominally purged of three to five internal dead volumes, or based upon a pre-determined purge volume established by a purge volume test described below. A sample of in-situ soil vapor is then withdrawn and immediately transferred to the mobile lab for analysis within minutes of collection. The use of small calibrated syringes allowed for careful monitoring of purge and sample volumes. This procedure ensures adequate sample flow is obtained without excessive pumping of air or introduction of surface air into the sample.

For off-site analysis, samples are collected in canisters or in tedlar bags when allowed. Samples collected in tedlar bags for VOC analysis are either analyzed on the same day or transferred to a canister.

Purge Volume Test

If required, a site specific purge volume test is conducted at the beginning of the soil gas survey to purge ambient air from the sampling system. Three different volumes are sampled (nominally 1, 3, 7 purge volumes) and analyzed immediately to determine the volume amount with the highest concentration. Therefore, the optimum purge volume is achieved and used during the entire site investigation.

Use of Tracer Compound to Ensure Probe Seal Integrity

A tracer compound, typically difluoroethane, iso-propanol, or butane, is used to test for leaks around the probe barrel at the ground surface and in the sampling system. The tracer is placed around the base of the probe barrel and at the top of the probe barrel during sample collection. If the tracer is detected per CA-EPA advisory specifications, another sample is collected.

Sample Flow Rate

Sample collection is timed so that the flow rate does not exceed 200 ml/per minute. This is accomplished by withdrawing the plunger on the 60 cc syringe at a constant rate for 20 seconds. The collector notes the collection time on a logsheet, and also records any resistance to sample flow that is felt on the syringe during collection.

Summa Canister

Summa canisters are connected to the end of the nylaflow tubing to the same three way valve used with the syringe. A choke is placed on the canister to ensure that the flow rate is no more than 200 ml/ per minute into the summa canister.

Field Records

The field technician maintains a logsheet summarizing:

- Sample identification
- Probe location
- Date and time of sample collection
- Sampling depth
- Identity of samplers
- Weather conditions
- Sampling methods and devices
- Soil gas purge volumes
- Volume of soil gas extracted
- Observation of soil or subsurface characteristics (any condition that affects sample integrity)
- Apparent moisture content (dry, moist or saturated etc.) of the sampling zone
- Chain of custody protocols and records used to track samples from sampling point to analysis.

Analytical Methodology

The following analytical protocols fulfills the both the CA-EPA advisory (2003) and LA-RWQCB soil gas analytical guidelines (1997).

Operating Conditions and Instrumentation

Volatile Organic Compounds (VOCs) by EPA 8260

Instrument: Hewlett-Packard 6890(6850)/5973 or 5890/5972 GCMS
Column: 25 meter HP-624, 0.20mm x 1.0u. capillary.
Carrier flow: Helium at 1.0 ml/min.
Detectors: Quadrupole MS, full scan mode
Concentrator: Tekmar 3000/Solatek 72

Volatile Organic Compounds (VOCs) by EPA TO-14 or TO-15

Instrument: Hewlett-Packard 6850/5973
Column: 60 meter HP-624, 0.32mm x 1.8u. capillary.
Carrier flow: Helium at 3.0 ml/min.
Detectors: Quadrupole MS, full scan mode
TO-14 Instrumentation: Entech 7100 Air Concentrator/Entech 7300 Autosampler

Fixed and Biogenic Gases (O2, CO2, & Methane)

Instrument: SRI 8610 or Carle AGC 311 Gas Chromatograph
Column: 6 foot CTR
Carrier flow: Helium at 15 ml/min.
Detectors: Thermoconductivity (TCD) for O2 & CO2.

Detectors: Flame ionization detector (FID) for methane.

Hydrogen Sulfide

Instrument: Jerome 631x
Detectors: Gold-film

Standard Preparation

Primary (stock) standards: Made from certified neat components or from traceable standards purchased from certified suppliers.

Secondary (working) Standards: Made by diluting primary standard. Typical concentrations are 1ug/ml, 10 ug/ml, and 50 ug/ml.

Laboratory Check Samples are prepared at the midpoint concentration from a standard purchased from a source different than the primary standards.

Lot numbers and preparations of all standards are recorded on a log sheet and kept in the mobile laboratory.

Gas Standards for TO-14A/15 analysis purchased from Spectra Gases, Branchburg, N.J. diluted from 1.0 ppmv to 10ppbv (for targets) and 1.0ppmv to 100ppbv (internal standards and surrogates

Initial Multi-Point Calibration Curve

An initial calibration curve of a minimum of 3 points is performed either:

- At the start of the project.
- When the GC column or operating conditions have changed
- When the daily mid-point calibration check cannot meet the requirements as specified below.
- For TO-15 a five point calibration is used.

Calibration curves for each target component are prepared by analyzing low, mid, and high calibration standards covering the expected concentration range. The lowest standard concentration will not exceed 5 times the reporting limit for each compound.

A linearity check of the calibration curve for each compound is performed by computing a correlation coefficient and an average response factor. If a correlation coefficient of 0.990 or a percent relative standard deviation (%RSD) of $\pm$ 15% is obtained, an average response factor is used over the entire calibration range. If the linearity criteria are not obtained, quantitation for that analyte is performed using a calibration curve.

After each initial multi-point calibration, the validity of the curve is further verified with a laboratory control standards (LCS) prepared at the mid-point of the calibration range. The LCS includes all target compounds and the response factor (RF) must fall within $\pm$ 20% of the factor from the initial calibration curve.

Continuing Calibration (Daily Mid-point Calibration Check)

Continuing calibration standards prepared from a traceable source are analyzed at the beginning of each day. Acceptable continuing calibration agreement is set at $\pm$ 20% to the average response factor from the calibration curve, except for freon, chloroethane, and vinyl chloride when a 25% agreement is required. When calibration checks fall outside this acceptable range for analytes detected on the site, corrective action, consisting of verification of the standard and/or a new calibration curve for the analytes out of specifications is performed by the on-site chemist.

The continuing calibration includes all compounds expected or detected at the site in addition to any specific compounds designated in the project workplan.

Detection Limits

Reporting limits for this program are defined as 5 times lower than the lowest concentration standard of the calibration curve, as follows:

Compound	Detector	Report Limit
VOCs by TO-14A/15	Mass Spec	1.0 to 5 ppbv
VOCs	Mass Spec	0.1 to 1 ug/l-vapor
Methane	FID	10 ppmv
Fixed Gases	TCD	0.1% by vol
H2S	Gold Film	0.10 ppmv

Injection of Soil Gas Samples

Vapor samples are withdrawn from the probe sampling syringe with a 5 cc syringe and injected with surrogates into a purge & trap instrument for VOC analysis. Separate aliquots are directly injected into gas chromatographs for fixed gases and methane analysis. The injection syringe is flushed 2 times with the sample prior to injection. Injection syringes are flushed several times with clean air or discarded between injections.

TO-14A/15 samples are taken into Summa or similar passivated canisters. Holding time for these canisters is 30 days.

Laboratory Data Logs

The field chemist maintains injection and sample analysis records including date and time of analysis, sampler's name, chemist's name, sample ID number, concentrations of compounds detected, calibration data, and any unusual conditions.

Quality Control Procedures

Compliance With Standards

Sampling and analytical procedures complied with the American Society for Testing and Materials' *Standard Guide for Soil Gas Monitoring in the Vadose Zone* (ASTM D5314-93), the LA-RWQCB Soil Gas Guidelines (Feb 1997 version), and the San Diego County SAM Soil Gas Guidelines (October, 2001).

Sampling Quality Control

Method Blanks

Prior to sampling each day, all components of the sampling system are checked for contamination by drawing ambient air from above ground through the sampling equipment, and injecting a sample into a gas chromatograph. The analysis results are compared to that of the ambient air and recorded in the data tables as blanks.

Sample Quality Control

Each sample is given a unique identification number specifying location and depth. Purge and sample volumes are monitored closely using small calibrated syringes to assure a proper flow of soil gas. This ensures a representative sample is obtained from the sample zone without excessive pumping, which could result in sampling of surface air.

Decontamination Procedures

To minimize the potential for cross-contamination between sites, all external soil vapor probe parts are wiped or washed cleaned of excess dirt and moisture with solvents or de-ionized water as appropriate. The probe's internal nylaflow tubing is purged with clean air between sampling locations or replaced as necessary. Sampling syringes are flushed with clean air after each use or replaced.

Corrective Action

Corrective action is taken when unexpected contaminant levels are detected. First duplicate samples are taken to verify the initial detection of petroleum hydrocarbons. If contamination is suspected, then the sample probes are disassembled, wiped cleaned of excess dirt and moisture, rinsed with deionized water, washed with Alconox and water, and rinsed again with

deionized water. The sample tubing in the probe is replaced. Contaminated sampling syringes are discarded.

Analytical Quality Control

Method Blanks

Method blanks are performed at the start of each day by drawing clean air through the sampling equipment and analyzing. These blanks verify all components of the sampling and analytical system are free of contamination. Additional blanks are performed more often as appropriate depending upon the measured concentrations, at a minimum 1 every 20 samples. The results of all blank analyses are recorded in the data tables. If a blank shows a measurable amount of any target compound, the on-site chemist will investigate and determine the source, and resolve the contamination problem prior to analyzing any samples.

Duplicate Samples

Duplicate (repetitive) analysis of a sample is performed when inconsistent data are observed, but at least one every 20 samples. Because soil vapor duplicates can vary widely, nominal relative percent difference (RPD) acceptance criteria is $\pm$ a factor of 2.

Continuing Calibration (Daily Mid-point Calibration Check)

As described on page 5 of this document, continuing calibration standards prepared from a traceable source are analyzed at the beginning of each day.

The continuing calibration includes all compounds expected or detected at the site and any specific compounds designated in the project workplan.

Laboratory Check Samples (LCS)

Laboratory check samples, prepared at the lowpoint concentration from a standard purchased from a source different than the calibration standards, are analyzed at the end of each day if all samples are below detection. Acceptance criteria is $\pm$ 20% from the true value. If the LCS falls outside this acceptance range for analytes detected on site, corrective action, consisting of verification of the standard and/or a new calibration curve for the analytes out of specifications, is performed.