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By Alameda County Environmental Health 3:44 pm, Jan 14, 2016



P.O. Box 10048 (72917-0048)
3801 Old Greenwood Road
Fort Smith, AR 72903
479.785.8700
abf.com

January 16, 2016

Mr. Mark Detterman, RG, CEG
Senior Hazardous Materials Specialist
Alameda County Environmental Health Department
1131 Harbor Bay Parkway, Suite 250
Alameda, CA 94502-6577

Re: **Perjury Statement-**
Indoor Air Sampling Work Plan
ABF Freight System Facility (SLIC Case No. RO#0003134)
4575 Tidewater Avenue
Oakland, California

Dear Mr. Detterman:

I declare under penalty of perjury, that the information and/or recommendations contained in the attached document or report are true and correct to the best of my knowledge.

Sincerely,

A handwritten signature in black ink, appearing to read "Michael K. Rogers".

Michael K. Rogers
Director, Real Estate
ArcBest Corporation



January 14, 2016
Project 154.010.001

Mr. Mark Detterman, RG, CEG
Senior Hazardous Materials Specialist
Alameda County Environmental Health Department
1131 Harbor Bay Parkway, Suite 250
Alameda, CA 94502-6577

Re: *Indoor Air Sampling Work Plan*
ABF Freight System Facility
4575 Tidewater Avenue
Oakland, California
RO#0003033 and RO#0003134

Dear Mr. Detterman:

This letter, prepared by Trinity Source Group, Inc. (Trinity) on behalf of ABF Freight System, Inc. (ABF), presents an *Indoor Air Sampling Work Plan (Work Plan)* for the referenced site (Figures 1 and 2). This *Work Plan* was requested by Alameda County Environmental Health Department (ACEH) in a letter dated November 10, 2015. This *Work Plan* focuses on assessing the indoor air quality of the maintenance building and the current sub-slab vapor concentrations in sub-slab probe SVP-2, to determine the vapor intrusion potential. The ACEH letter is included in Attachment A of this *Work Plan*.

BACKGROUND

The site encompasses approximately 6.7 acres situated between Tidewater Avenue and the water channel extending north from San Leandro Bay, separating the cities of Alameda and Oakland (Figures 1 and 2). Land-use in the area is industrial.

Currently the site is in use as a trucking terminal, with a maintenance building located near the western property boundary. One aboveground storage tank that existed adjacent to the maintenance building, and is labeled with "Diesel Fuel", "Not in Use", and "Permanently Closed Jan. 1995", was removed by ABF on August 13, 2014. An underground clarifier is in use near the maintenance building. The underground storage tanks (USTs) at the site were also located near the maintenance building.

The maintenance building is used for routine maintenance of site vehicles, and is infrequently occupied.

Previous environmental activities have evaluated soil and groundwater conditions, and are described in the *Data Gaps investigation Report*, dated September 24, 2015. The site consists of two separate cases,

a petroleum hydrocarbon and a chlorinated solvent (Tetrachloroethene, PCE) case. The petroleum hydrocarbon case is currently under review and consideration for closure under the low-threat closure for commercial land use scenario. The PCE case is active, as the PCE sub-slab vapor concentrations beneath the maintenance shop in sub-slab probe SVP-2 are above screening levels for a commercial facility.

SCOPE OF WORK

Trinity presents the following scope of work to assess the indoor air quality and to determine the vapor intrusion potential. This scope of work is based upon the Department of Toxic Substances Control California Environmental Protection Agency's Vapor Intrusion Guidance document¹. The following tasks are proposed:

Prefield

Prefield tasks will include obtaining any necessary permits, preparing a site-specific health and safety plan, scheduling sub-contractors, and notifying inspectors as needed. In addition, a building chemical inventory will be conducted prior to the indoor air sampling to identify any potential indoor sources of HVOCs. Trinity field staff will scan the inside of the maintenance building using a photoionization detector (PID) for any significant VOC sources. If possible, HVOC sources identified inside the building will be removed prior to the indoor air sampling event.

Indoor Air Sampling

All indoor and ambient air samples will be collected into certified clean 6-liter Summa canisters with flow regulators set for a 24-hour sampling period. The sampling will be conducted in "closed building" conditions, and the duration will be initiated in the morning and then retrieved the following morning, so the samples represent "closed building" conditions.

One indoor air sample will be collected inside the maintenance building, near sub-slab Probe SVP-2 (Sample: Maintenance Bldg-IA-1). The sample location is shown on Figure 3. The sample will be collected in a container placed in the breathing zone of approximately 3-6 feet above the ground surface.

One ambient air sample (Sample: Outdoor Ambient-1) will be collected concurrently with the indoor air sample, at the estimated upwind corner of the building, at the location shown on Figure 3.

One sub-slab vapor sample will be collected from sub-slab probe SVP-2 immediately following the indoor air sample collection. Field procedures for the indoor air sampling and sub-slab soil vapor sampling are presented in Attachment D.

¹ Guidance for the Evaluation and Mitigation of Subsurface Vapor Intrusion to Indoor Air (Vapor Intrusion Guidance), Department of Toxic Substances Control California Environmental Protection Agency, October 2011

Samples will be transmitted to Torrent Laboratory, Inc. (ELAP #1991) under chain of custody, for analysis for PCE, trichloroethene (TCE), cis-1,2-dichloroethene (cis-1,2-DCE), trans-1,2-dichloroethene (trans-1,2-DCE), 1,1-dichloroethene (1,1-DCE) and vinyl chloride using EPA Method TO-15. The sub-slab sample will also be analyzed for isopropyl alcohol as the leak-check compound.

A second indoor air sampling event will be considered based on the results of the initial sampling event results.

Reporting

Following receipt of initial sampling analytical results, Trinity will prepare a summary report of the procedures and findings of this indoor air and sub-slab vapor assessment, along with recommendations. The report will include a map showing sample collection locations, field sampling data, and analytical data, along with certified analytical reports and chain of custody documentation. The indoor air HVOC concentrations will be compared to the sub-slab vapor concentrations and screening levels to determine the potential vapor intrusion threat.

SCHEDULE

Trinity will initiate the proposed scope of work after ACEH approval of this *Work Plan*. Upon approval to proceed and under normal circumstances, the investigation will take approximately 1 to 4 weeks to complete. The final comprehensive report will be submitted within 8 to 12 weeks after receipt of all analytical data.

Should you have any questions regarding this letter, please call Trinity at (831) 426-5600.

Sincerely,

TRINITY SOURCE GROUP, INC.

Information, conclusions, and recommendations made by Trinity in this document regarding this site have been prepared under the supervision of and reviewed by the licensed professional whose signature appears below.

Debra J. Moser, PG, CEG, CHG
Senior Geologist



Eric J. Choi
Project Scientist

Attachments:

Figure 1: Site Location Map
Figure 2: Soil Borings, Soil Vapor Probes, and Utilities Location Map
Figure 2: Proposed Sample Location Map

Attachment A: ACEH Letter Dated November 10, 2015
Attachment B: Indoor Air and Sub-Slab Vapor Sampling Field Procedures

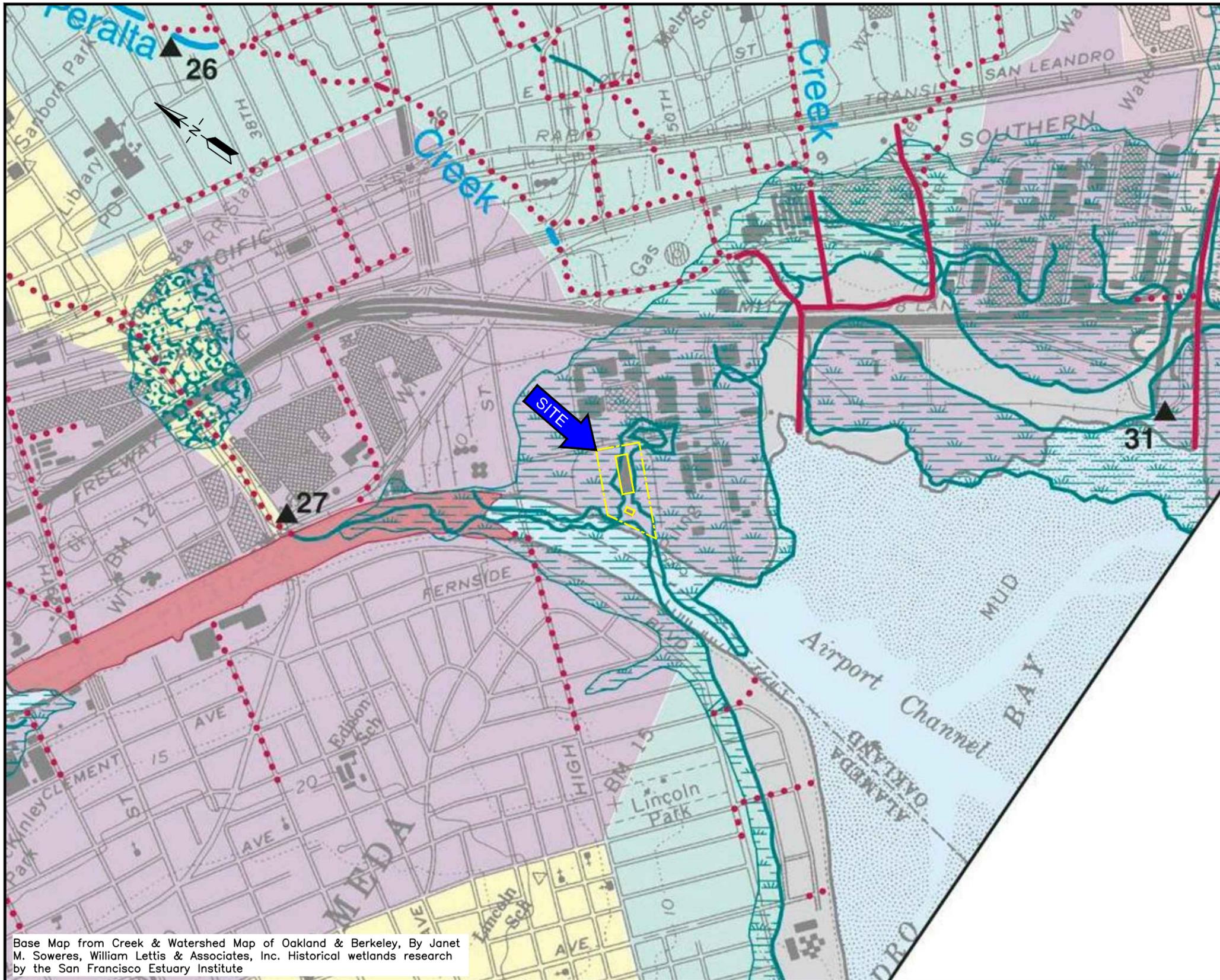
DISTRIBUTION

A copy of this report has been forwarded to:

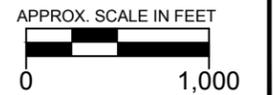
Mr. Mike Rogers (via email to mkrogers@arkbest.com)

Leroy Griffin (via email to lgriffin@oaklandnet.com)

FIGURES



- ### EXPLANATION
- Creeks
 - Former creeks, buried or drained, and Bay shoreline, circa 1850
 - Underground culverts and storm drains
 - Engineered channels
 - Willow groves, circa 1850
 - Beach, circa 1850
 - Tidal marsh, circa 1850
 - now water
 - now fill land
 - Bay
 - Bay, circa 1850, now fill land
 - Artificial bodies of water
 - Present watersheds



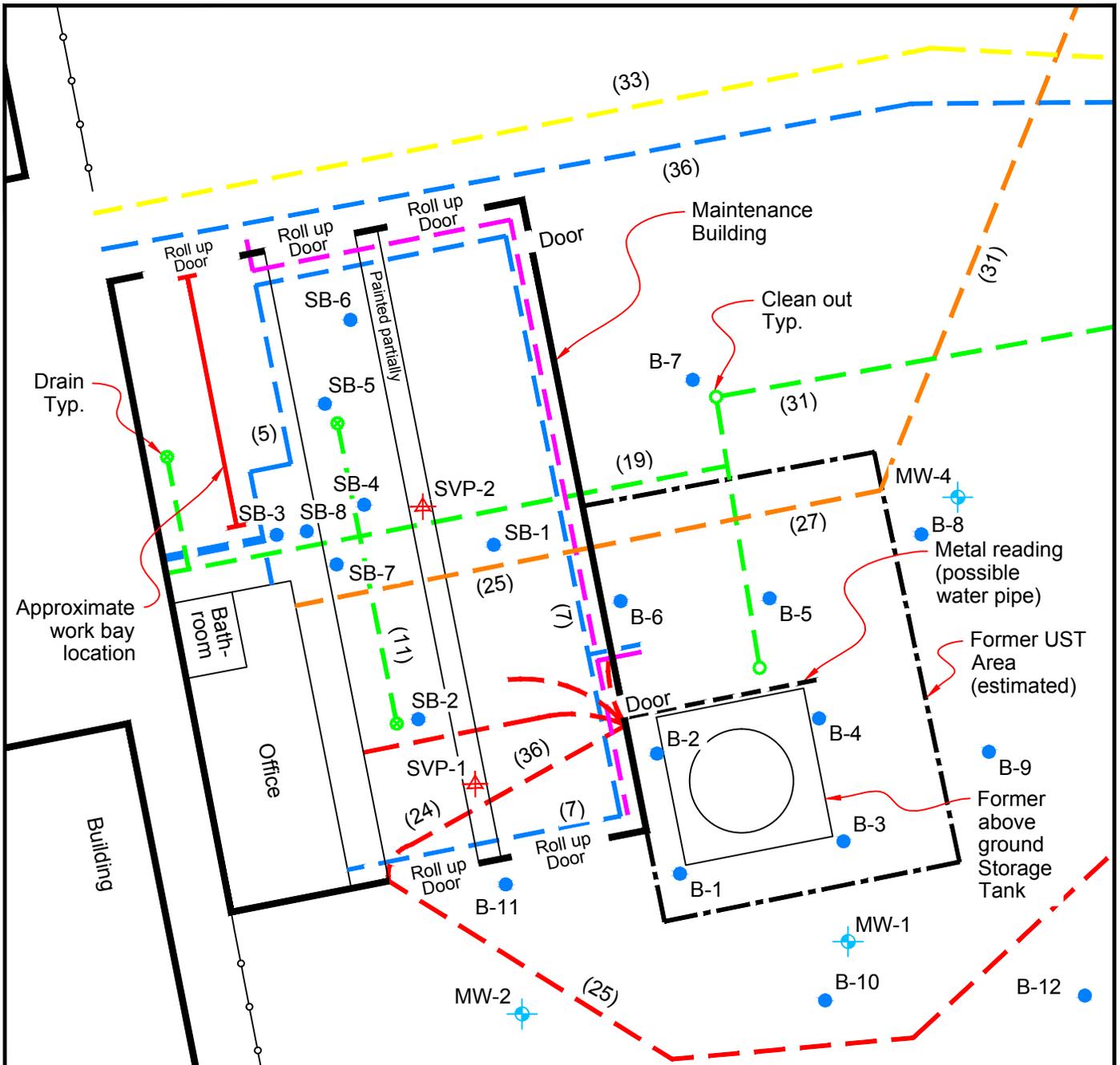
Base Map from Creek & Watershed Map of Oakland & Berkeley, By Janet M. Sowers, William Lettis & Associates, Inc. Historical wetlands research by the San Francisco Estuary Institute

PREPARED BY
TRINITY
source group, inc.
 Environmental Consultants
 119 Encinal Street
 Santa Cruz, California 95060
 v: 831.426.5600
 f: 831.426.5602

SITE LOCATION MAP

ABF Freight System Facility
 4575 Tidewater Ave.
 Oakland, California

PROJECT:
 154.010.001
 FIGURE:
 1



LEGEND:

- High Voltage Electrical
- Phone
- Water
- Gas
- Sewer
- Air
- (number) Depth of line in inches
- SVP-2 Sub-Slab Vapor Probe
- B-12 Soil Boring
- MW-2 Monitoring Well
- SB-6 Soil Borings (new, SB-1 through SB-6)

REF. 154_001\154.009.004 figures.dwg

Base Map from Google Earth, 2012

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source group, inc.
Environmental Consultants

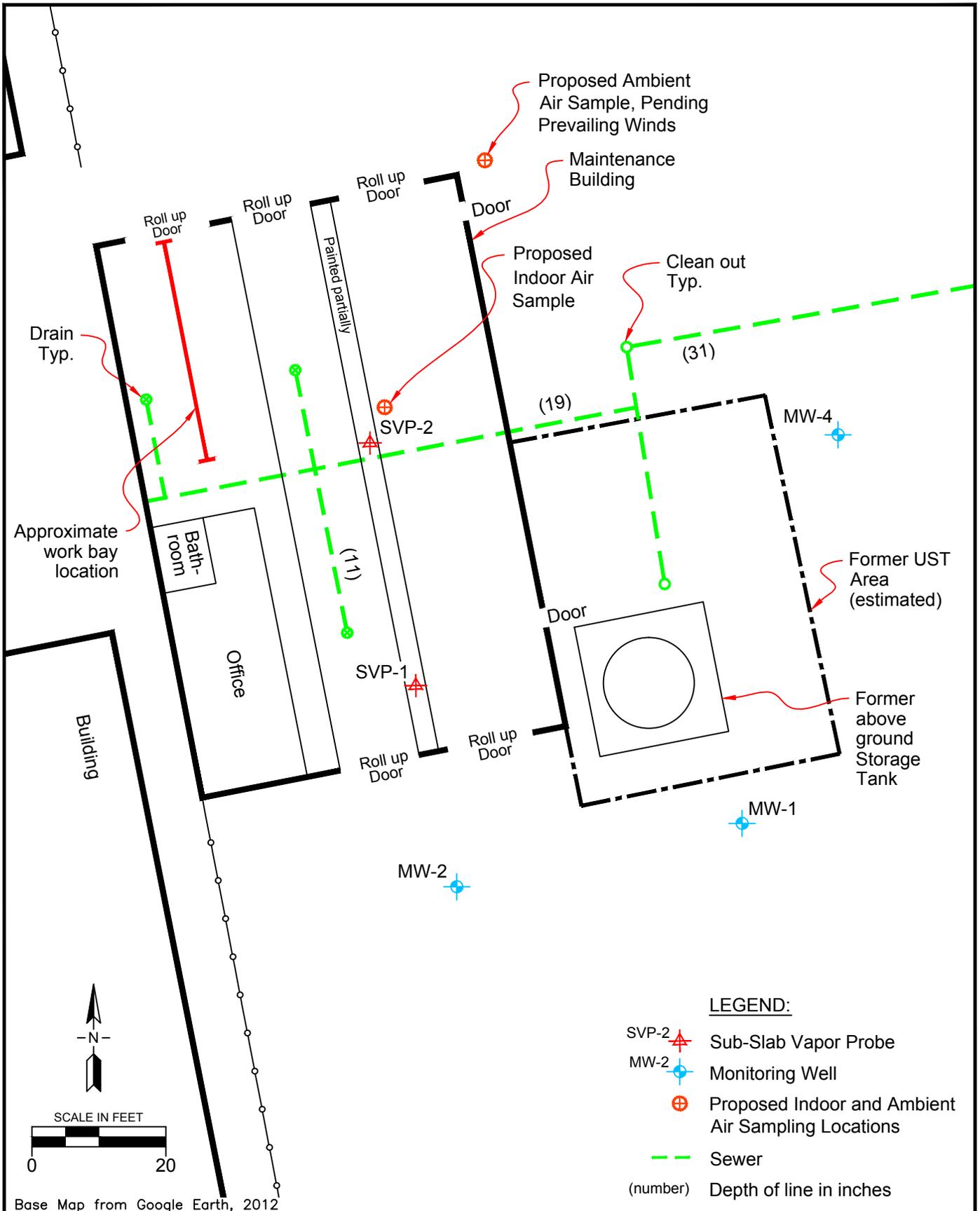
119 Encinal Street
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f: 831.426.5602

SOIL BORINGS, SUB-SLAB VAPOR PROBE, UTILITIES LOCATION MAP

ABF Freight System Facility
4575 Tidewater Ave.
Oakland, California

PROJECT:
154.010.001

FIGURE:
2



LEGEND:

- SVP-2 Sub-Slab Vapor Probe
- MW-2 Monitoring Well
- Proposed Indoor and Ambient Air Sampling Locations
- Sewer
- (number) Depth of line in inches

REF. 154_001\154_009.004_figures.dwg

Base Map from Google Earth, 2012

PREPARED BY

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PROPOSED INDOOR AND AMBIENT AIR SAMPLE LOCATION MAP

ABF Freight System Facility
4575 Tidewater Ave.
Oakland, California

PROJECT:
154.010.001

FIGURE:
3

ATTACHMENT A

ACEH Letter Dated November 10, 2015



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

November 10, 2015

Arkansas Bandag Corporation
PO Box 10048
Fort Smith AR 72917

Mr. Mike Rogers
ABF Freight Systems, Inc.
PO Box 10048
Fort Smith AR 72917
(sent via electronic mail to mrogers@arcb.com)

Subject: Public Participation Notification for Case Closure Consideration and Request for Work Plan; Fuel Leak Case No. RO0003033 and GeoTracker Global ID T0600100018, and Site Cleanup Program Case No. RO0003134 and GeoTracker Global ID T00000005825; ABF Freight Systems and ABF Freight Maintenance Shop, 4575 Tidewater Avenue, Oakland, CA 94601

Dear Mr. Rogers:

Alameda County Environmental Health (ACEH) staff has reviewed the case file for the above-referenced site, including the *Data Gap Investigation Report*, dated September 24, 2015, and prepared by the Trinity Source Group, Inc (Trinity). Thank you for submitting the report. The report documented the installation of soil bores SB-7 and SB-8 and, in conjunction with the *First Semi-Annual 2015 Groundwater Monitoring Report*, dated May 26, 2015, appears to have adequately defined the extent of free phase product on, and dissolved-phase hydrocarbons in, groundwater at the site. Also, the work has sufficiently determined that the extent of chlorinated solvents (specifically tetrachloroethene [PCE]) appears to be limited to a vapor phase at the site. Soil and groundwater is not impacted by the chlorinated solvent. In general, the petroleum free phase product appears to be a *de minimus* historic release, and the most likely release sources have been removed or eliminated from the site. Grab groundwater concentrations, as well as groundwater analytical concentrations generated from permanent monitoring wells sampling locations, have defined onsite downgradient groundwater concentrations to below appropriate Surface Water Screening Levels for Estuary Habitats (Table F-2c) promulgated by the San Francisco Bay Regional Water Quality Control Board (RWQCB) in association with the *User's Guide: Derivation and Application of Environmental Screening Levels (ESLs)*.

ACEH is in general agreement that the petroleum hydrocarbon portion of environmental investigations at the site meets the State Water Resource Control Boards (SWRCBs) Low-Threat Closure Policy (LTCP), and that it is appropriate to initiate the required 60-day public comment period due to the additional investigations and data that has been generated since the previous public comment period.

Please be aware that with closure of the hydrocarbon release, it will once again become necessary to separate the PCE release investigation from the (hydrocarbon) case closure.

At this juncture, ACEH will initiate closure activities for the fuel leak case. ACEH concurrently requests that you address the following technical comments, and address technical comments related to the PCE contamination and send us the documents requested below.

TECHNICAL COMMENTS

1. **List of Landowners Form** - Pursuant to Section 25297.15 (a) of the California Health and Safety Code, Alameda County Environmental Health (ACEH), the local agency, shall not consider cleanup or site closure proposals from the primary or active responsible party, issue a closure letter, or make a

determination that no further action is required with respect to a site upon which there was an unauthorized release of hazardous substances from an underground storage tank subject to this chapter unless all current record owners of fee title to the site of the proposed action have been notified of the proposed action by the primary or active responsible party. ACEH is required to notify the primary or active responsible party of their requirement to certify in writing to the local agency that the notification requirement in the above-mentioned regulation has been satisfied and to provide the local agency with a complete mailing list of all record fee title owners.

ACEH understands this has previously been requested and supplied; however, to ensure that all property owners are notified of the potential closure, ACEH must capture any significant changes to property ownership since the previous request. Therefore, to satisfy this requirement, please complete the enclosed *List of Landowners Form*, and mail it back to ACEH by the date identified below.

- 2. Site Management Requirements** - ACEH staff has evaluated the case file and believes the case may be eligible for closure under a commercial land use scenario with the following site management requirements:

"This fuel leak case has been evaluated for closure consistent with the SWRCB LTCP. The site does not meet any of the closure scenarios within the Petroleum Vapor Intrusion to Indoor Air Media-Specific Criterion; however, very limited volatile compounds (benzene, etc.) are present in soil beneath the site. The site meets requisite bioattenuation zone characteristics, except in a localized area near the former USTs.

Due to residual contamination documented to remain in the soil beneath the site, if a change in land use to any residential, commercial other than as an active trucking facility, other conservative land use, or any redevelopment occurs, ACEH must be notified as required by Government Code Section 65850.2.2.

Excavation or construction activities in areas of residual contamination require planning and implementation of appropriate health and safety procedures by the responsible party prior to and during excavation and construction activities.

This site is to be entered into the City of Oakland Permit Tracking System due to the residual contamination on site."

- 3. Public Participation** - Public participation is a requirement for the Corrective Action Plan and case closure processes. In order to notify potentially affected members of the public of the potential fuel leak case closure, *Notification of Potential Case Closure* will be distributed to addresses in the immediate vicinity. The *Notification of Potential Case Closure* requests that landowners or residents submit any comments or questions to ACEH regarding potential case closure. ACEH will consider all comments from the public prior to potential case closure.

Prior to distribution of the notification, please return the List of Landowner form to ensure that the current landowner is included in this process.

- 4. Monitoring Well Destruction and Waste Removal Activities** - After public comments have been addressed you will be requested to destroy site monitoring wells and document the removal of any remaining investigation, remediation, and well destruction derived waste from the site.

ACEH will request the well destruction in a separate letter following the conclusion of the public notification period.

Mr. Mike Rogers
RO0003033
November 10, 2015, Page 3

5. **Chlorinated Solvent (PCE) Vapor Intrusion Work Plan** – Using default Department of Toxic Substances Control (DTSC) attenuation factors for a concrete slab, sub-slab vapor concentrations of PCE remain present beneath the maintenance shop at concentrations significantly above safe levels for a commercial facility, using RWQCB ESLs for Indoor Air and Soil Gas (Table E) as a guide.

Your consultant, Trinity, has previously stated that because the building is used for maintenance, and the roll-up doors on opposite sides of the building are generally open, that the potential vapor intrusion threat is considered low; however, this assumption is untested and unsupported. Therefore, to ensure worker safety, it appears appropriate to request a work plan to test and support this assumption. Please submit a work plan by the date identified below.

TECHNICAL REPORT REQUEST

Please upload technical reports to the ACEH 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:

- **December 11, 2015** – Return of *List of Landowners Form*
- **January 15, 2016 – Work Plan**
File to be named: RO3033_WP_R_yyyy-mm-dd

These reports are being requested pursuant to California Health and Safety Code Section 25296.10. 23 CCR Sections 2652 through 2654, and 2721 through 2728 outline the responsibilities of a responsible party in response to an unauthorized release from a petroleum UST system, and require your compliance with this request.

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,



Digitally signed by Mark E. Detterman
DN: cn=Mark E. Detterman, o, ou, email,
c=US
Date: 2015.11.10 10:14:34 -08'00'

Mark E. Detterman, PG, CEG
Senior Hazardous Materials Specialist

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

Attachment 2 - *List of Landowners Form*

cc: Debra Moser, Trinity Source Group, Inc, 119 Encinal Street, Santa Cruz, CA 95060
(sent via electronic mail to djm@tsgcorp.net)

Dilan Roe, ACEH, (sent via electronic mail to dilan.roe@acgov.org)
Mark Detterman, ACEH, (sent via electronic mail to mark.detterman@acgov.org)
Electronic File, GeoTracker

Attachment 1

Responsible Party(ies) Legal Requirements / Obligations

REPORT REQUESTS

These reports are being requested pursuant to California Health and Safety Code Section 25296.10. 23 CCR Sections 2652 through 2654, and 2721 through 2728 outline the responsibilities of a responsible party in response to an unauthorized release from a petroleum UST system, and require your compliance with this request.

ELECTRONIC SUBMITTAL OF REPORTS

ACEH's Environmental Cleanup Oversight Programs (LOP and SLIC) require submission of reports in electronic form. The electronic copy replaces paper copies and is expected to be used for all public information requests, regulatory review, and compliance/enforcement activities. Instructions for submission of electronic documents to the Alameda County Environmental Cleanup Oversight Program FTP site are provided on the attached "Electronic Report Upload Instructions." Submission of reports to the Alameda County FTP site is an addition to existing requirements for electronic submittal of information to the State Water Resources Control Board (SWRCB) GeoTracker website. In September 2004, the SWRCB adopted regulations that require electronic submittal of information for all groundwater cleanup programs. For several years, responsible parties for cleanup of leaks from underground storage tanks (USTs) have been required to submit groundwater analytical data, surveyed locations of monitoring wells, and other data to the GeoTracker database over the Internet. Beginning July 1, 2005, these same reporting requirements were added to Spills, Leaks, Investigations, and Cleanup (SLIC) sites. Beginning July 1, 2005, electronic submittal of a complete copy of all reports for all sites is required in GeoTracker (in PDF format). Please visit the SWRCB website for more information on these requirements (http://www.waterboards.ca.gov/water_issues/programs/ust/electronic_submittal/).

PERJURY STATEMENT

All work plans, technical reports, or technical documents submitted to ACEH must be accompanied by a cover letter from the responsible party that states, at a minimum, the following: "I declare, under penalty of perjury, that the information and/or recommendations contained in the attached document or report is true and correct to the best of my knowledge." This letter must be signed by an officer or legally authorized representative of your company. Please include a cover letter satisfying these requirements with all future reports and technical documents submitted for this fuel leak case.

PROFESSIONAL CERTIFICATION & CONCLUSIONS/RECOMMENDATIONS

The California Business and Professions Code (Sections 6735, 6835, and 7835.1) requires that work plans and technical or implementation reports containing geologic or engineering evaluations and/or judgments be performed under the direction of an appropriately registered or certified professional. For your submittal to be considered a valid technical report, you are to present site specific data, data interpretations, and recommendations prepared by an appropriately licensed professional and include the professional registration stamp, signature, and statement of professional certification. Please ensure all that all technical reports submitted for this fuel leak case meet this requirement.

UNDERGROUND STORAGE TANK CLEANUP FUND

Please note that delays in investigation, later reports, or enforcement actions may result in your becoming ineligible to receive grant money from the state's Underground Storage Tank Cleanup Fund (Senate Bill 2004) to reimburse you for the cost of cleanup.

AGENCY OVERSIGHT

If it appears as though significant delays are occurring or reports are not submitted as requested, we will consider referring your case to the Regional Board or other appropriate agency, including the County District Attorney, for possible enforcement actions. California Health and Safety Code, Section 25299.76 authorizes enforcement including administrative action or monetary penalties of up to \$10,000 per day for each day of violation.

Alameda County Environmental Cleanup Oversight Programs (LOP and SLIC)	REVISION DATE: May 15, 2014
	ISSUE DATE: July 5, 2005
	PREVIOUS REVISIONS: October 31, 2005; December 16, 2005; March 27, 2009; July 8, 2010, July 25, 2010
SECTION: Miscellaneous Administrative Topics & Procedures	SUBJECT: Electronic Report Upload (ftp) Instructions

The Alameda County Environmental Cleanup Oversight Programs (LOP and SLIC) require submission of all reports in electronic form to the county's ftp site. Paper copies of reports will no longer be accepted. The electronic copy replaces the paper copy and will be used for all public information requests, regulatory review, and compliance/enforcement activities.

REQUIREMENTS

- **Please do not submit reports as attachments to electronic mail.**
- Entire report including cover letter must be submitted to the ftp site as a **single portable document format (PDF) with no password protection.**
- It is **preferable** that reports be converted to PDF format from their original format, (e.g., Microsoft Word) rather than scanned.
- **Signature pages and perjury statements must be included and have either original or electronic signature.**
- **Do not password protect the document.** Once indexed and inserted into the correct electronic case file, the document will be secured in compliance with the County's current security standards and a password. **Documents with password protection will not be accepted.**
- Each page in the PDF document should be rotated in the direction that will make it easiest to read on a computer monitor.
- Reports must be named and saved using the following naming convention:

RO#_Report Name_Year-Month-Date (e.g., RO#5555_WorkPlan_2005-06-14)

Submission Instructions

- 1) Obtain User Name and Password
 - a) Contact the Alameda County Environmental Health Department to obtain a User Name and Password to upload files to the ftp site.
 - i) Send an e-mail to deh.loptoxic@acgov.org
 - b) In the subject line of your request, be sure to include "**ftp PASSWORD REQUEST**" and in the body of your request, include the **Contact Information, Site Addresses, and the Case Numbers (RO# available in Geotracker) you will be posting for.**
- 2) Upload Files to the ftp Site
 - a) Using Internet Explorer (IE4+), go to <ftp://alcoftp1.acgov.org>
 - (i) Note: Netscape, Safari, and Firefox browsers will not open the FTP site as they are NOT being supported at this time.
 - b) Click on Page located on the Command bar on upper right side of window, and then scroll down to Open FTP Site in Windows Explorer.
 - c) Enter your User Name and Password. (Note: Both are Case Sensitive.)
 - d) Open "My Computer" on your computer and navigate to the file(s) you wish to upload to the ftp site.
 - e) With both "My Computer" and the ftp site open in separate windows, drag and drop the file(s) from "My Computer" to the ftp window.
- 3) Send E-mail Notifications to the Environmental Cleanup Oversight Programs
 - a) Send email to deh.loptoxic@acgov.org notify us that you have placed a report on our ftp site.
 - b) Copy your Caseworker on the e-mail. Your Caseworker's e-mail address is the entire first name then a period and entire last name @acgov.org. (e.g., firstname.lastname@acgov.org)
 - c) The subject line of the e-mail must start with the RO# followed by **Report Upload**. (e.g., Subject: RO1234 Report Upload) If site is a new case without an RO#, use the street address instead.
 - d) If your document meets the above requirements and you follow the submission instructions, you will receive a notification by email indicating that your document was successfully uploaded to the ftp site.

LIST OF LANDOWNERS FORM

County of Alameda
Environmental Health Services
Environmental Protection
1131 Harbor Bay Parkway, Suite 250
Alameda, CA 94502-6577

CERTIFIED LIST OF RECORD FEE TITLE OWNERS FOR:

Site Name: ABF Freight Systems
Address: 4575 Tidewater Avenue
City, State, Zip: Oakland, CA 94601
Record ID #: RO0003033

Please fill out item 1 if there are multiple site landowners (attach an extra sheet if necessary). If you are the sole site landowner, skip item 1 and fill out item 2.

1. In accordance with Section 25297.15(a) of Chapter 6.7 of the California Health & Safety Code, I, _____ (name of primary responsible party), certify that the following is a complete list of current record fee title owners and their mailing addresses for the above site:

Name: _____
Address: _____
City, State, Zip: _____
E-mail Address: _____

Name: _____
Address: _____
City, State, Zip: _____
E-mail Address: _____

Name: _____
Address: _____
City, State, Zip: _____
E-mail Address: _____

2. In accordance with Section 25297.15(a) of Chapter 6.7 of the California Health & Safety Code, I, _____, certify that I am the sole landowner for the above site.

Sincerely,

Signature of Primary
Responsible Party

Printed Name

Date

E-mail Address

ATTACHMENT B

Indoor Air and Sub-Slab Vapor Sampling Field Procedures

ATTACHMENT B FIELD PROCEDURES

Indoor and Ambient Air Sample Collection

Indoor and ambient air samples are collected into 6-liter Summa canisters which are certified clean by the providing laboratory. Indoor air sample locations are selected approximately three to five feet above the floor.

The vacuum reading on each canister is confirmed and recorded before proceeding. The vacuum reading is expected to be 30 inches mercury ("Hg). Each Summa canister is equipped with a flow regulator that limits the air flow into the canister, such that the sample period is approximately 24 hours. The flow regulator is followed by a laboratory-supplied particulate filter.

The time at which sample collection begins is recorded.

The flow-control orifice is kept open until the sample Summa canister is retrieved. At that point, the sample canister valve is closed and the time and vacuum reading on the canister is recorded.

The sample canister is labeled and chain-of-custody maintained by recording: sample name, sample date, sample time, final vacuum, canister and flow controller serial numbers, initials of sample collector, and the compounds to be analyzed by the certified laboratory. The sample canisters are stored in a container that blocks sunlight to the opaque canister and does not subject the air-tight canister to changes in pressure and temperature. The sample canisters are delivered to the analytical laboratory via ground transportation under chain-of-custody documentation.

Sub-Slab Vapor Sample Collection

Sampling Set-up

Mobilization for sub-slab vapor sampling will not occur if measurable precipitation or site irrigation near the sampling location has occurred in the previous five days.

Prior to sampling, the sampling technician puts on a new pair of clean gloves, and the sub-slab probe uncapped and quickly connected to a Swagelok manifold. A tee fitting is connected to two one-liter Summa canisters with a pressure gauge installed on each of these fittings.

The two Summa canisters are connected by approximately 1 to 2 feet of tubing and a third tee fitting. The vacuum reading on each canister is confirmed and recorded before proceeding. The vacuum reading is expected to be 30 "Hg. On the downhole side of the third tee fitting, a 100 to 200-milliliter per minute (ml/min) flow regulator followed by a laboratory-supplied particulate filter is installed. On the downhole side of the particulate filter, a vapor-tight valve is installed to connect the sampling equipment with the probe. A schematic drawing of the sub-slab vapor probe sampling set-up is shown on Figure B-1.

Leak Testing

A vacuum test is conducted on the connections between the Summa canisters and the valve on the downhole side of the regulator for 10 minutes by opening and closing the purge canister valve to place a test vacuum on the assembly. Further work is terminated if gauge vacuum cannot be maintained for 10 minutes.

Additional leak testing is performed during the sub-slab vapor sampling by placing a cloth saturated with isopropyl alcohol (isopropanol) at the joints of the sampling assembly. Isopropyl alcohol is analyzed in the sub-slab vapor samples by the laboratory to determine if the sample stream was compromised.

Purging

If the vacuum test is successful, purging is conducted. The purge canister valve and the valve on the downhole side of the particulate filter are opened and the time is recorded. The purge canister valve is closed after three volumes of air have been purged from the sample apparatus and borehole. The purge volume is calculated based on the internal volume of the tubing and probe apparatus. The amount of air purged is measured based on the time that the flow-control orifice is opened, with a flow rate of 100 to 200-ml/min, and based on a discernible vacuum drop on the purge canister pressure gauge. The time at which purging is terminated is recorded. Because of the small volume of the sub-slab probe, the purge time is minimal.

Sampling

Following purging, the sample Summa canister valve is opened to begin sample collection. The time at which sample collection begins is recorded.

The flow-control orifice is maintained at 100 to 200-ml/min, and is kept open until the sample Summa canister pressure gauge indicates approximately 5"Hg. At that point, the sample canister valve is closed and the time recorded. The tee fitting on the sample canister is replaced with a laboratory-supplied brass plug.

The sample canister is labeled and chain-of-custody maintained by recording: sample name, sample date, sample time, final vacuum, canister and flow controller serial numbers, initials of sample collector, and the compounds to be analyzed by the certified laboratory. The sample canisters are stored in a container that blocks sunlight to the opaque canister and does not subject the air-tight canister to changes in pressure and temperature. The sample canisters are delivered to the analytical laboratory via ground transportation under chain-of-custody documentation.

V = VALVE

I = ISOPROPANOL WRAP (LEAK CHECK COMPOUND)

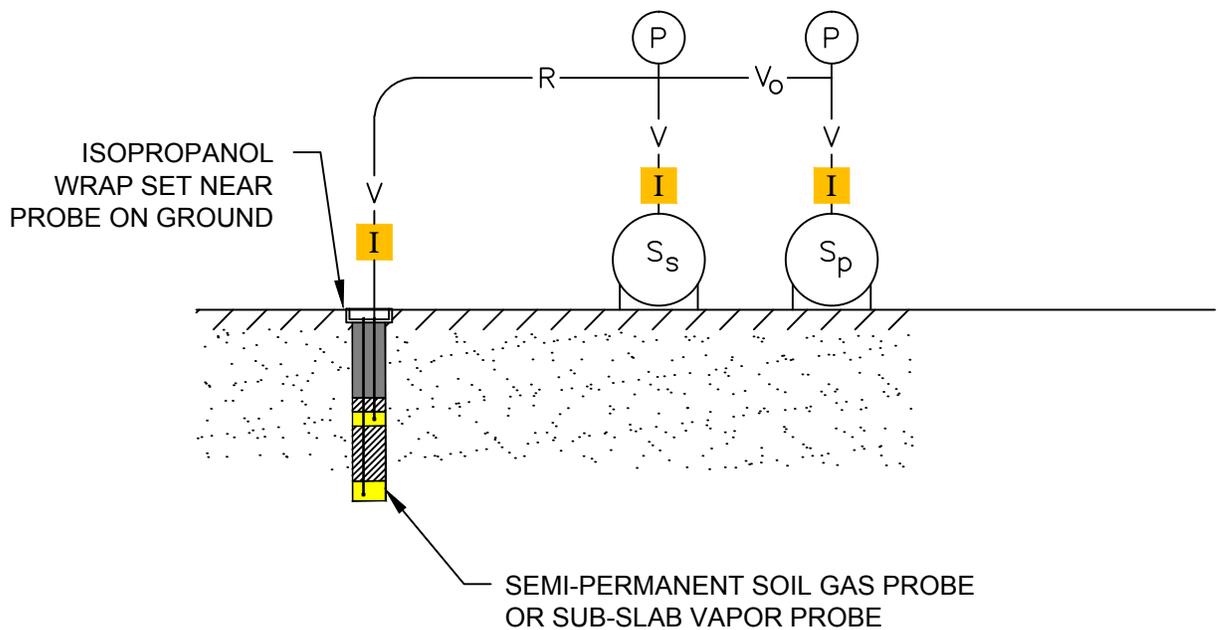
Vo = OPTIONAL VALVE

P = PRESSURE GAUGE

Ss = SAMPLE SUMMA CANISTER

Sp = PURGE SUMMA CANISTER

R = FLOW REGULATOR



* USE SWAGELOK FITTINGS ON ALL CONNECTIONS

** ASSEMBLE SAMPLE APPARATUS AND LEAK TEST PRIOR TO MOBILIZING TO FIELD

REF. 169_001\169.004.004 figC1.dwg

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PROJECT:
111.0F.001

FIGURE:
0-1