ATC ASSOCIATES INC.

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April 22, 2003
File No.: 10-3006-13/13

Ms. Eva Chu
Alameda County Health Care Services Agency
1131 Harbor Bay Parkway, Suite 250
Alameda, California 94502-9335

Subject: **Workplan for Soil Vapor Survey**
Friesman Ranch Property, Livermore, California

Dear Ms. Chu:

Attached is Soil Vapor Survey Workplan for the Friesman Ranch Property, 1600 Friesman Road, Livermore, California (site). You requested this workplan during our meeting in your offices on April 1, 2003.

Should you require any additional information and/or clarification, please contact the undersigned at (925) 460-5300.

Very truly yours,
ATC ASSOCIATES INC.

James A. Lehrman, RG, CHG 925/829-0661
Senior Project Manager

Attachments

cc: Ms. Lorraine del Prado, Children's Hospital and Research Center Foundation
Ms. Leah Goldberg, Hansen, Bridgett, Marcus, Vlahos and Rudy, LLP

RO-2484

ATC ASSOCIATES INC

Environmental & Engineering Consulting Services Nationwide

Rec'd 4/24/03

WORK PLAN FOR SOIL VAPOR SURVEY FRIESMAN RANCH PROPERTY LIVERMORE, CALIFORNIA

April 22, 2003

A Workplan Prepared for:

Children's Hospital and Research Center Foundation
C/o Ms. Leah S. Goldberg, Esq.
Hanson, Bridgett, Marcus, Vlahos and Rudy, LLP
333 Market Street, 23rd Floor
San Francisco, California 94105-2173

WORKPLAN FOR SOIL VAPOR SURVEY
FRIESMAN RANCH PROPERTY
1600 FRIESMAN ROAD
LIVERMORE, CALIFORNIA

ATC Job No. 75.23909.0001

Prepared by:

James A. Lehrman, RG, CHG
Senior Project Manager

Approved by:

John Love, RG

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April 22, 2003

WORKPLAN FOR
SOIL VAPOR SURVEY
FRIESMAN RANCH PROPERTY
1600 FRIESMAN ROAD
LIVERMORE, CALIFORNIA

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SOIL VAPOR SURVEY
FRIESMAN RANCH PROPERTY
1600 FRIESMAN ROAD
LIVERMORE, CALIFORNIA

1. INTRODUCTION

This Workplan describes the purpose, objectives, tasks and methods for soil vapor survey activities proposed for the Friesman Ranch Property located at 1600 Friesman Road, Livermore, California (the Site, Figure 1). The Site is currently known to have eight groundwater monitoring wells that were last sampled on January 17, 2003. Results of that sampling event are documented in the April 22, 2003 *Quarterly Groundwater Monitoring Report, First Quarter 2003*, prepared for the Site by ATC Associates Inc. (ATC).

Ms. Eva Chu of the Alameda County Health Care Services Agency (ACHCSA) recommended preparation of this Workplan during a meeting held at the ACHCSA offices on April 1, 2003. Also attending the meeting were Ms. Lorraine del Prado of Children's Hospital and Research Center Foundation, Ms. Leah S. Goldberg, Esq. of Hanson, Bridgett, Marcus, Vlahos and Rudy, LLP, and Mr. James A. Lehrman of ATC. Soil vapor sampling was recommended to address the possible volatilization to indoor air pathway identified in the exposure assessment section of the Risk-Based Corrective Action (RBCA) Tier 2 Evaluation performed by Kleinfelder in their *Remedial Investigation, RBCA Tier 2 Evaluation and Remedial Action Plan Report,* dated October 1997 (Kleinfelder, 1997). Ms. Chu requested that a Workplan for soil vapor survey activities be prepared and submitted to the ACHCSA for review and approval.

1.1 Purpose, Objectives and Scope of Work

The purpose of the proposed soil vapor survey is to assess whether volatilization to indoor air is an exposure pathway for the site chemicals of concern (COC), as identified in the assessment section of the RBCA Tier 2 Evaluation.

The objectives of the soil vapor survey activities are to:

- Collect representative samples of soil vapor in the area of the site with detected COC concentrations.
- Identify areas with significant soil vapor concentrations.
- Demonstrate whether volatilization to indoor air is, or is not, an exposure pathway for the site COC.
- Obtain regulatory closure of the site.

In order to meet these objectives, the following scopes of work will be implemented:

- Advance soil vapor probes to an approximate depth of 3 feet below ground surface (bgs) at approximately 12 locations. The approximate locations of the proposed boreholes are shown in Figure 2.
- Generate and submit a report on the Soil Vapor Survey activities.

2. PROPOSED WORK

2.1 Introduction

The proposed work to be performed at the Site consists of the following tasks:

- Collect soil vapor samples in Tedlar bags from select locations.
- Analyze vapor samples for total petroleum hydrocarbons (described in more detail in Section 4.0); and
- Document the soil vapor survey activities in a report according to the schedule provided in this Workplan.

The project activities will be conducted under the supervision of a California Certified Hydrogeologist (CHG).

2.2 Soil Vapor Survey

2.2.1 Field Preparation Activities

Prior to the performance of any intrusive field procedures, the following tasks will be performed:

- Clearance of the proposed boreholes by a private underground utility locating service; and
- Procurement of all applicable permits will be obtained by ATC before the beginning of the soil vapor survey activities.

2.2.2 Soil Vapor Survey Program

Soil vapor samples will be collected from depths of approximately 3 feet bgs from the locations shown on the Figure 2. Figure 2 shows the location of targeted soil vapor points in the area of observed, highest dissolved hydrocarbon concentrations in groundwater. ATC will supervise a drilling contractor with a valid C-57 license to advance the soil vapor probes using a direct push sampling rig. The sampling rig will be equipped with a vacuum/volume system pump and direct read flow meter. The Geoprobe Post Run Tubing (PRT) System will be utilized with ¼-inch polyethylene tubing and expendable or retractable drive points.

Prior to advancement of any soil borings, ATC will procure permits from the Alameda County Flood Control and Water Conservation District, Zone 7. ATC will contact Underground Service Alert (USA) to notify relevant utility companies of the proposed work at the Site. In addition, prior to the advancement of any borings, ATC will contract with an underground utility location company to check the locations using geophysical methods for potential hazards that could be posed by underground impediments.

Soil vapor samples will be collected at discrete depths using an expendable point, an expendable point holder, a PRT adaptor and tubing. The expendable point will be placed in the expendable point holder, which in turn is attached to the drive rod, and driven to a depth of approximately 3 feet bgs. The drive point and expendable point holder will be retraced, separating the expendable point from the holder, and creating the desired void in the soil. A PRT adapter and tubing will be advanced down the inner rods and secured to the expendable point holder. The tubing at the surface will be attached to the vacuum/volume system on the Geoprobe rig to purge the line and draw each sample. Polyethylene tubing will be used to

draw the samples, and the used tubing will be discarded after each sample is collected. A regulator will be placed in-line to maintain a 200 cc (ml) per minute flow rate while purging or collecting soil vapor samples. Once the line has been purged, samples will be extracted from the line and captured and stored in Tedlar bags with the use of a vacuum box. The samples will be delivered to a California certified analytical laboratory and analyzed within three days of collection. If a sample can't be drawn from the probe at a particular location due to low permeability of the soil, no sample will be collected or analyzed for that location.

3. FIELD QUALITY ASSURANCE/QUALITY CONTROL

Field quality assurance/quality control (QA/QC) will be documented by two indirect means: field documentation and QA/QC sample collection and analysis.

3.1 Field Documentation

Four formats will be used to document the implementation of field activities:

- Field data sheets;
- Photodocumentation Record;
- Sample Labels; and
- Chain-of-custody record.

3.1.1 Field Data Sheets

Field data sheets will be completed in the field to document field activities. The data sheets will include all sample-collection information including sample date and time, location and client, analytical methods, samplers' initials, and the name and address of the laboratory and information collected in the field.

3.1.2 Photodocumentation Record

Photographs will be used to document relevant phases of the field activities. These photographs will be logged and placed into the Report, as appropriate.

3.1.3 Sample Labels

Samples labels will be completed in waterproof ink at the time of sample collection and before the sample is placed in the cooler. The following information will be included on the sample label: sample number, date and time, sample location and client, analysis and laboratory, preservative, samplers' initials, and project number.

3.1.4 Chain-of-Custody Records

A chain-of-custody record will be completed as soil vapor samples are collected, so that samples do not have to be removed from the cooler. The record will be checked for completeness at the end of each day that samples are collected and signed. The chain-of-custody will then be hand-delivered with the samples to the laboratory, or placed in a sealable plastic freezer bag and taped to the inside lid of a cooler for shipment. Information on the chain-of-custody record will include: sample date and time, sample ID and location, matrix, number of containers, required analyses, preservative, turnaround time, project

manager's name, project number, project name and location, client and laboratory names, and sampler signatures.

4. LABORATORY ANALYSIS

The soil vapor samples collected in Tedlar bags will be analyzed within three days of collection by a California certified analytical laboratory. The analyses will include: total petroleum hydrocarbons as gasoline (TPH-g) using Modified United States Environmental Protection Agency (EPA) Method 8015; benzene, toluene, ethylbenzene and total xylenes (BTEX) using EPA Method 8021B; and methyl tertiary-butyl ether (MTBE) using EPA Method 8021B. Any detections of MTBE could be confirmed using EPA Method 8260B. The laboratory analytical results will be provided on standard (10 working day) turn-around-time.

5. LABORATORY QUALITY ASSURANCE/QUALITY CONTROL

A Cal/EPA Environmental Laboratory Accreditation Program (ELAP) -accredited hazardous-waste fixed-base laboratory will perform all analytical testing. The laboratory will be responsible for maintaining custody of the samples, and for maintaining all associated records documenting that custody. Upon receipt of the samples, the laboratory will check the original chain-of-custody documents and compare them with the labeled contents of each sample container for accuracy and traceability. The laboratory will check all sample containers for integrity, and will record any observations on the original chain-of-custody record; the chain-of-custody form will be signed and dated by representative(s) of the laboratory.

Each sample will be logged into the laboratory by assigning it a unique sample number. All samples received as part of the same shipment will receive the same work order. Appending sequential letters to the end of the sample number identifies each container of the sample. The laboratory number and the sample ID number will be recorded on the laboratory report.

6. PROPOSED SCHEDULE

Fieldwork for the Soil Vapor Survey program is estimated to take approximately one day to complete. Implementation of the work will be contingent on the availability of subcontractors, procurement of required materials and timely issuance of agency authorizations and required permits. It is assumed client and agency approval to proceed with the proposed investigation will be provided by May 6, 2003 and that agency permits, if any are required, can be obtained by May 13, 2003. In that event, it is anticipated fieldwork for the soil vapor survey program can commence in early June 2003, prior to the mid-June 2003 quarterly groundwater monitoring and sampling activities. A report documenting the Soil Vapor Survey program can then be provided by July 15, 2003.

Proposed/tentative completion dates for the above activities are included below:

TASK	SCHEDULED COMPLETION DATE
Agency Work Plan Approval	May 6, 2003
Issuance of Zone 7 Permits	May 13, 2003
Soil Vapor Survey Program – Fieldwork	June 2, 2003
Quarterly Monitoring/Sampling Event	June 11, 2003
Soil Vapor Survey Report	July 15, 2003

7. SITE SPECIFIC HEALTH AND SAFETY PLAN

The Federal OSHA and California Department of Safety and Health (DOSH) requires that a site-specific Health and Safety Plan (HASP) be prepared prior to field activities (29 CFR Part 1910.120[j]; Title 8, CCR). In addition, ATC safety policy dictates that a HASP be generated for use by the ATC field team because the potential for exposure to hazardous materials exists. All ATC field personnel and subcontractors working directly in the field will be required to adhere to the HASP developed for the Site.

The site-specific HASP provides general guidelines for decision points in site safety planning, and will establish personnel protection standards and mandatory safety practices and procedures. In general, the HASP covers the following subjects:

- Emergency contacts to be used in the event of an accident or exposure;
- Description of site hazards, both physical and chemical;
- On-site monitoring (as needed) and personnel protection;
- Project team organization and responsibilities;
- Site control measures;
- Decontamination procedures;
- Training requirements for personnel; and
- Emergency procedures including information on the location to the nearest hospital providing emergency care services.

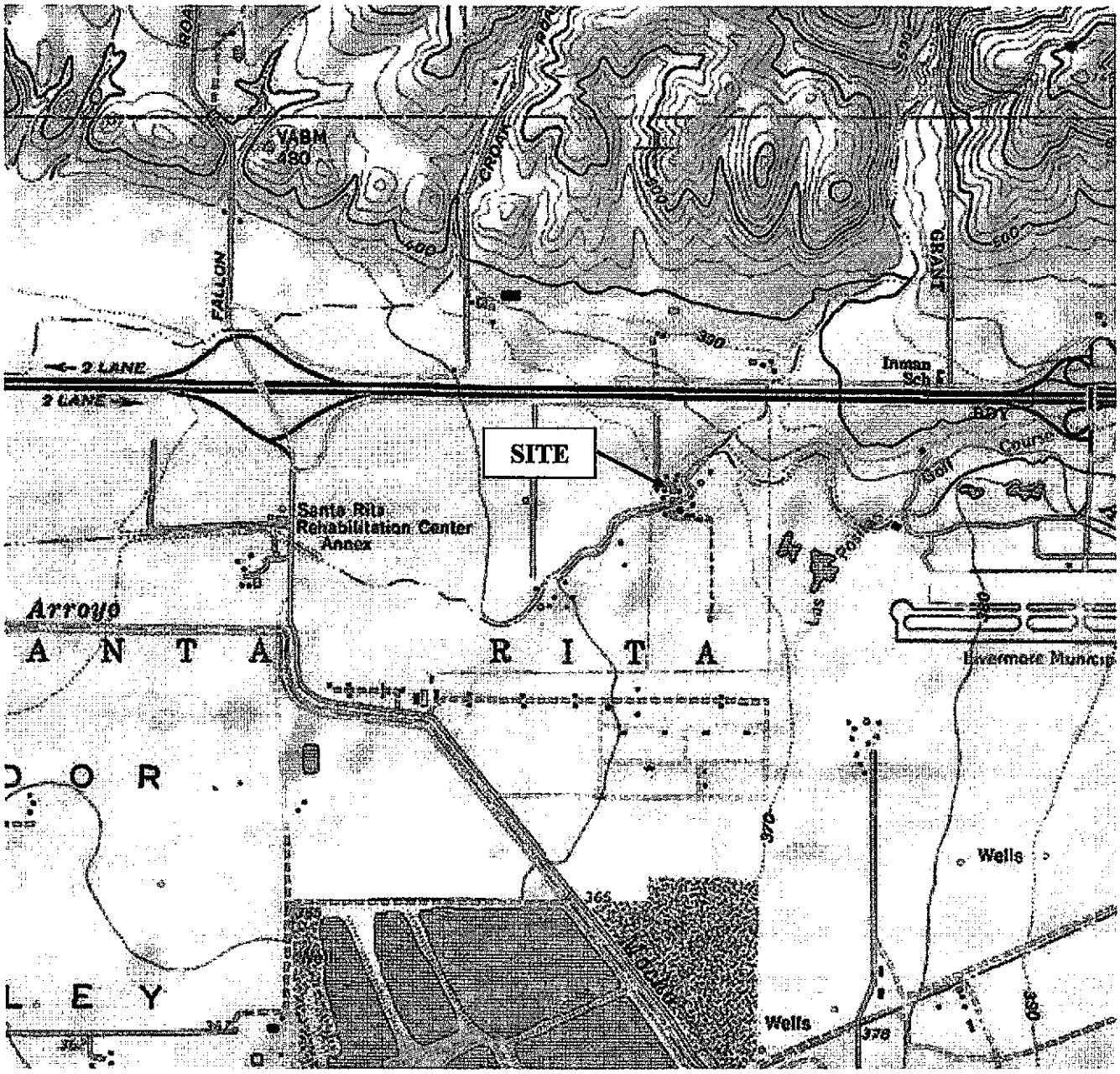
The provisions of the HASP will be mandatory for all on-site personnel; all ATC subcontractors shall, at a minimum, conform to this plan. The site plan will be updated, discussed and signed by appropriate field personnel, prior to each field event.

8. REFERENCES

ATC Associates Inc., 2003, Draft Quarterly Groundwater Monitoring Report, First Quarter 2003. April.

Kleinfelder, 1997, Remedial Investigation, RBCA Tier 2 Evaluation and Remedial Action Plan, October 17.

Norris, R.M., and Webb, R.W., 1990. Geology of California, 2nd Edition. John Wiley and Sons, Inc. New York, 541 pp.



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SOURCE: UNITED STATES GEOLOGICAL SURVEY *LIVERMORE QUADRANGLE, CALIFORNIA 7.5 MINUTE SERIES (TOPOGRAPHIC)* MAP. OBTAINED FROM THE 2000 NATIONAL GEOGRAPHIC TOPO SOFTWARE..

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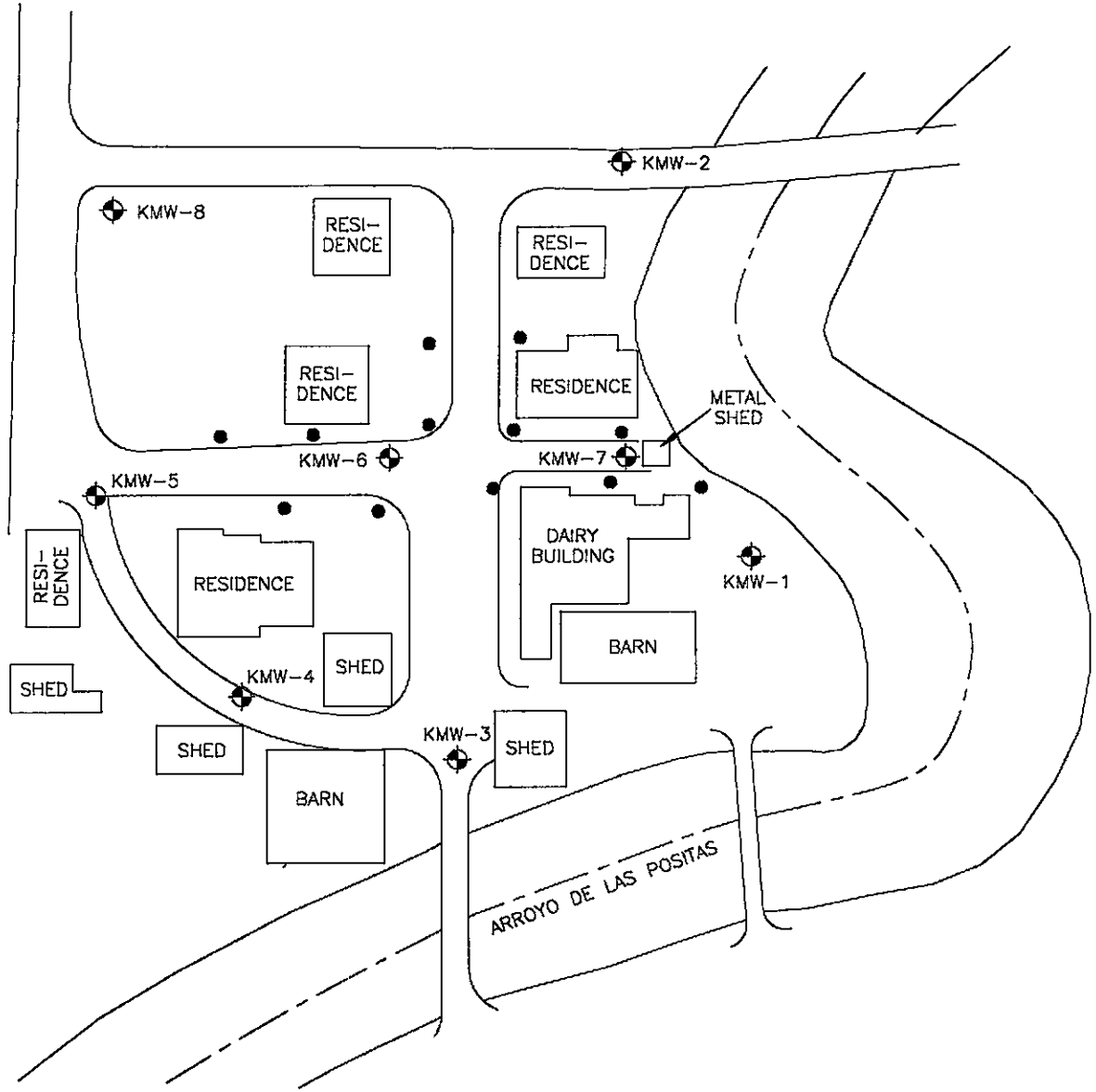
PROJECT NO: 75.23909.0001		
DESIGNED BY: EC	SCALE: SHOWN	REVIEWED BY: JAL
DRAWN BY: EC	DATE: 02/03	FILE:0001-TOPO

FIGURE 1

SITE LOCATION MAP

FRIESMAN RANCH PROPERTY
1600 FRIESMAN ROAD
LIVERMORE, CALIFORNIA



LEGEND

- GROUNDWATER MONITORING WELL
- PROPOSED SOIL VAPOR PROBE LOCATION

N

APPROXIMATE SCALE

0 80 160

VATC ASSOCIATES INC.	REVISED EC 03/10/03 8X11 0001-PV	REVIEWED BY REVIEW DATE	PROPOSED SOIL VAPOR PROBE LOCATIONS Friesman Ranch Property 1600 Friesman Road Livermore, California	FIGURE 2 PROJECT 75.23909.0001