Versar INC.

August 2, 1995

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Mr. Scott Seery
Hazardous Materials Specialist
Alameda County Health Care Services Agency
UST Local Oversight Program
80 Swan Way, Room 200
Oakland, California 94621

SUBJECT: WORKPLAN TO CONDUCT A SUBSURFACE INVESTIGATION AT 4TH STREET AND MADIGAN AVENUE ON THE SANTA RITA PROPERTY, ALAMEDA COUNTY, CALIFORNIA
Versar Project Number 2241-014

Dear Mr. Seery:

This workplan has been prepared to present the scope of work for a subsurface investigation to be conducted on the northwest corner of 4th Street and Madigan Avenue (site) on the Santa Rita property in Alameda County, California (Figure 1). The scope of work was prepared on behalf of the County of Alameda General Services Agency (GSA) under the direction of Mr. Rod Freitag to further characterize the extent of soil and/or groundwater impacted by petroleum hydrocarbons released at the site. Information used to develop this workplan was based on a site reconnaissance and reports supplied to Versar by the GSA, as well as, a meeting with you on July 15, 1995.

Background

In May 1992, Environmental Science & Engineering, Inc. coordinated and supervised the removal of three underground storage tanks (Numbers 4, 4a, 4b) from a single excavation on the site. The respective capacities of the underground storage tanks (UST's) were 3,500, 8,000 and 10,000 gallons, all of which were used to store diesel fuel or fuel oil. Perforations or holes were reportedly not observed in the UST's upon removal. However, stained soils were observed during the excavation procedure. Three of the five soil samples collected from native soils below the UST's were reported to contain elevated concentrations of total petroleum hydrocarbons as diesel (TPH/D) and total oil and grease (TOG). The highest concentration of TPH/D (15,000 mg/kg) was reported present in a sample collected from an approximate depth of 15 feet below ground surface (bgs) in the southwestern corner of the excavation (Figure 2). Soils removed during the excavation process were stockpiled on-site adjacent to the former UST locations. The UST excavation was not backfilled following the completion of the tank removals. The 3,500 gallon UST was anchored to a concrete pad that not excavated during the tank removal procedure and remains in the north end of the excavation.

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In response to the results of the initial soil sample analyses, this workplan has been prepared to address the need for an additional subsurface investigation at the site.

Scope of Work

The objectives of the work described in this workplan is to further characterize the extent of petroleum hydrocarbons in the soil and/or groundwater surrounding the former UST locations and evaluate this site for closure based on the results of this investigation. The approach that will be used to meet the objective will consist of 1) Preparation of a Health and Safety Plan; 2) performing a background review; 3) drilling soil borings and collecting soil and groundwater samples; 4) performing laboratory analysis of the samples; and 5) preparation of a report to present the findings.

Task 1. Preparation of a Health and Safety Plan

Prior to initiation of the field investigation, a site specific Health and Safety Plan will be prepared to set forth procedures for safe conduct during completion of the field investigation. The Health and Safety Plan is designed to minimize risks to Versar personnel and their subcontractors by potential exposure to hazardous materials or unsafe work conditions.

Task 2. Background Review and Site Preparation

In order to properly prepare for the field investigation, a review of readily available information concerning previous activities conducted at the site and at properties nearby the site will be performed. This review will also be directed at obtaining information regarding the hydrogeologic conditions within the vicinity of the site with respect to the depth to groundwater and the local groundwater flow direction.

Task 3. Field Investigation

It is presently anticipated that four (4) soil borings will be drilled at preselected locations surrounding the existing excavation (Figure 3). If the observed subsurface conditions indicate that hydrocarbons have migrated beyond the initial area of investigation, additional borings may be drilled, at the discretion of GSA personnel, to further delineate the extent of impacted material at the site. Drilling of the soil borings will be accomplished using a truck-mounted drill rig equipped with hollow stem augers. Soil samples will be collected at five-foot intervals, and at any observed changes in lithology, using a California-modified split-spoon sampler lined with stainless steel or brass sample tubes. Soil sample collection will be accomplished by driving the

sampler approximately 18 inches into undisturbed soils below the lead auger. Upon retrieval of the sampler at each sample interval, the lowest sample tube will be removed, the ends of the sample tube will be covered with aluminum foil or teflon wrap, capped with plastic end-caps, labeled for identification purposes and immediately placed in an insulated chest with ice, pending shipment to the laboratory for analysis. Chain-of-custody procedures will be used, including the use of chain-of-custody forms, to document sample collection, handling and transport to the laboratory. A second sample tube from the sampler will be retained for head-space screening of organic vapors using an organic vapor analyzer (OVA). The soil borings will be logged by a Versar geologist working under the direction of a California State-registered geologist. A log will be generated for each soil boring recording descriptions of the soil types, sample depths and designations, and any observed significant features related to the presence of petroleum hydrocarbons or other hazardous materials. As an assessment of the groundwater conditions beneath the site, two hydropunch groundwater samples will also be collected from locations down-gradient of the excavation.

In order to reduce the likelihood for cross-contamination, all downhole sampling equipment will be washed between sampling events in a laboratory-grade detergent solution, rinsed in a two-tapwater bath, and final rinsed with deionized water. Additionally, the augers and associated drilling equipment will be pressure-washed with a hot pressure washer between boreholes. All borings will be backfilled to surface grade with a cement-bentonite grout. As necessary, placement of the grout material will be accomplished by pumping the grout through tremmie pipe to the bottom of the borehole. Soil cuttings will be stockpiled on visqueen plastic on-site. All purgewater and equipment rinsate generated during this investigation will be deposited and sealed in 55-gallon DOT-approved drums, labeled and stored on-site pending laboratory analytical results and evaluation of disposal alternatives.

Task 4. Analytical Program

All samples collected during the course of the field investigation will be submitted to a California-certified hazardous waste laboratory. It is anticipated that 2 soil samples from each boring will be selected for chemical analysis. Criteria used to select soil samples for analysis will be based on the results of the field screening of the soil samples with the OVA, physical observations made during the course of the field investigation and the observed depth to groundwater. The selected soil samples and groundwater sample(s) will be analyzed for TPH/D, benzene, toluene, ethylbenzene, and xylenes in accordance with Environmental Protection Agency (EPA) Method No. 8015 (modified) and No. ~~8010.~~ 8020 or 8240 In addition, one sample from each boring may also be analyzed for semivolatile organic compounds (SVOCs) and TOG in accordance with EPA Method No. 8270 and Department of Health Services Test Method 5520, respectively.

Task 5. Data Evaluation and Report Preparation

Upon completion of Tasks 1 through 4, the data collected will be evaluated and a report will be prepared, which will present the results of this investigation. As part of this investigation, a comparison of the ratio of SVOC and TPH/D will be preformed. This ratio will be used to estimate human-health preliminary remedial goals (PRGs) for the existing TPH/D contamination and evaluate the need for site clean up activities. If no SVOC are detected within samples collected during this investigation, Versar will use the existing data to estimate the possible threat to groundwater. The report will include a discussion of the background review and field investigation activities, logs of borings, figures of the site with sample locations, laboratory analytical reports and, based on appropriate regulatory guidelines, conclusions and recommendations for either additional investigation, as necessary, or site closure.

If you have any questions or concerns regarding this workplan, or would like to arrange a meeting to discuss this project, please contact me at (510) 814-5929.

Sincerely,
Versar, Inc.

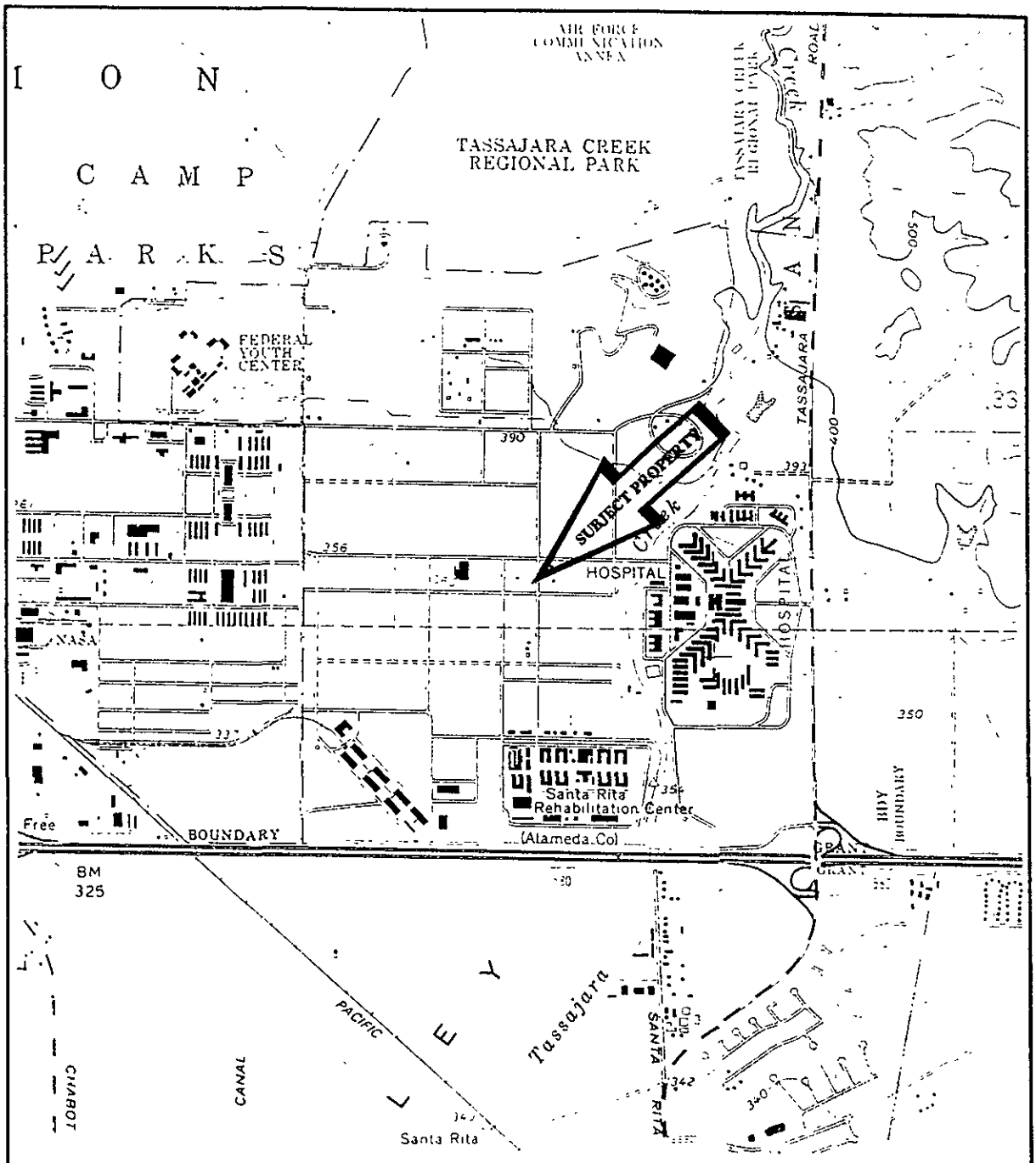
John C. Bird, R.E.A.
Senior Hydrogeologist
Project Manager

cc: Rod Freitag
Alameda County General Services Agency

JCB/jb

Versar INC.

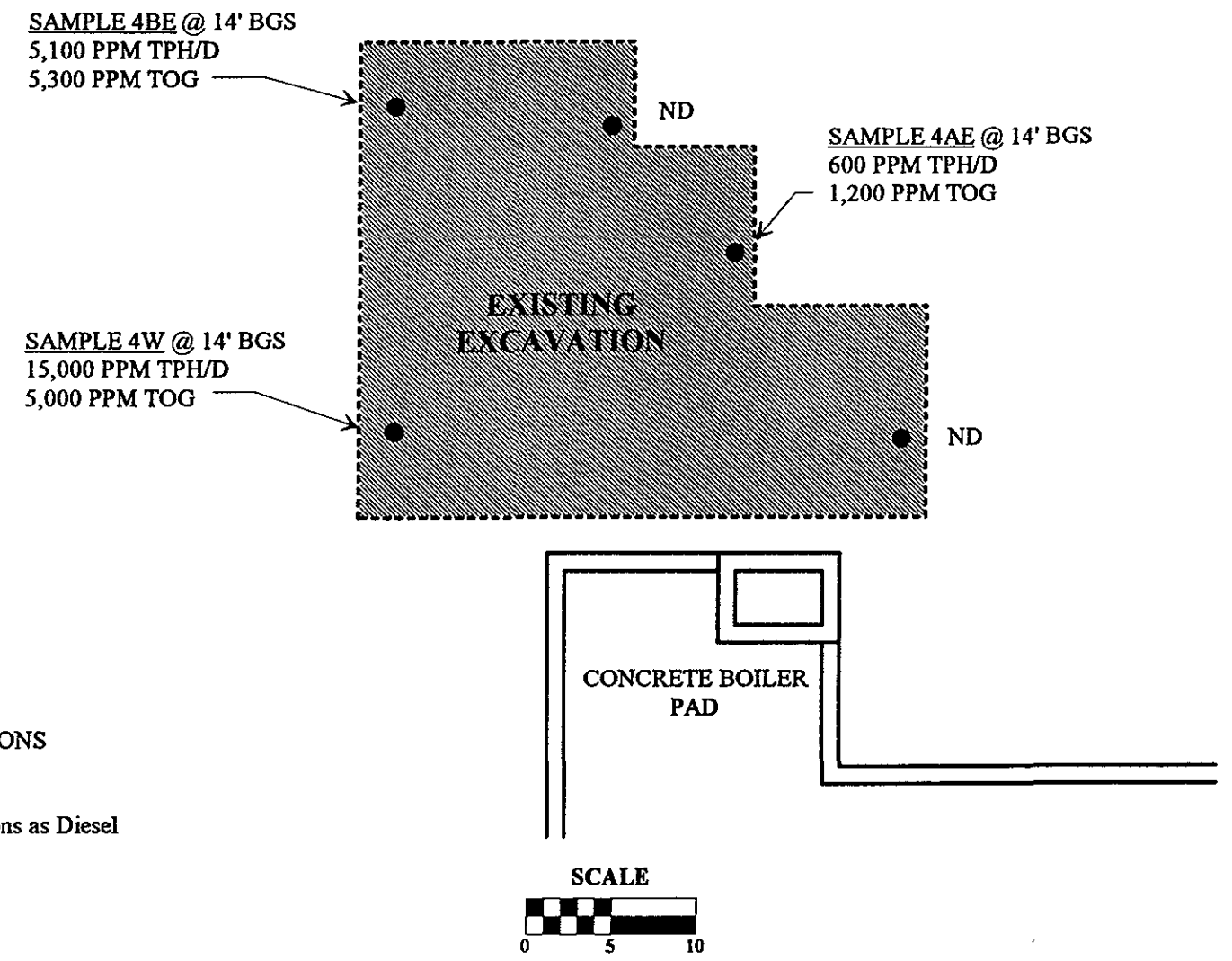
FIGURES



NOTE: Base map from USGS Dublin, California and Livermore, California Quadrangles, 7.5 minute series (Topographic) 1961. Photorevised 1980.

Versar INC. ENVIRONMENTAL RISK MANAGEMENT

SITE LOCATION MAP	County of Alameda - G.S.A. Santa Rita Site 4th & Madigan Dublin, California	January 1994 Versar Project: 2241-014 F:\GRAPHIC\2241-14F	**FIGURE 1** Not To Scale



LEGEND

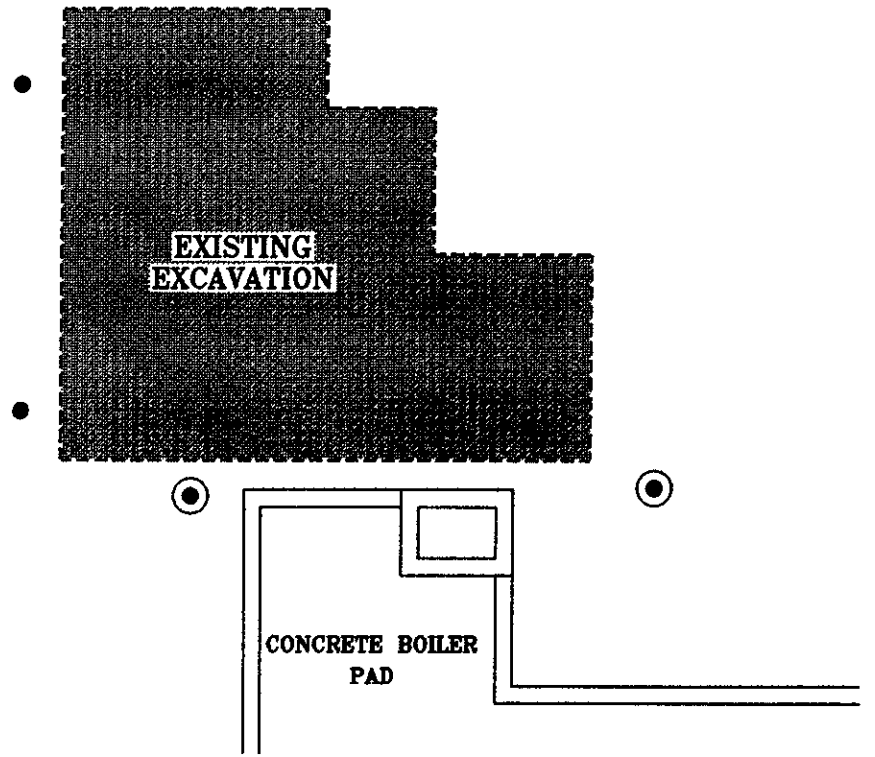
---Approximate Limits of Excavation

● Previous Soil Sample Locations

NOTES:

1. ALL DIMENSIONS AND LOCATIONS ARE APPROXIMATE
2. BGS - Below Ground Surface
   TPH/D - Total Petroleum Hydrocarbons as Diesel
   TOG - Total Oil and Grease
   ND - None Detected
   PPM - Parts Per Million

Versar INC. ENVIRONMENTAL RISK MANAGEMENT	**PREVIOUS SOIL SAMPLE LOCATION MAP** Ref: Map Adopted from ESE Site Map	County of Alameda - G.S.A. Santa Rita Site 4th & Madigan Dublin, California	January 1994 Versar Project: 2241-014	N	**FIGURE 2** F:\GRAPHICS\2241-14S.DRW



LEGEND

--Approximate Limits of Excavation

● Proposed Soil Boring Locations

◉ Proposed Hydropunch Borings

NOTE:

ALL DIMENSIONS AND LOCATIONS ARE APPROXIMATE

SCALE

0 5 10

Versar INC. ENVIRONMENTAL RISK MANAGEMENT	PROPOSED SOIL BORING LOCATION MAP Ref. Map Adopted from ESE Site Map	County of Alameda – G.S.A. Santa Rita Site 4th & Madigan Dublin, California	August 1995 Versar Project: 2241-014	N	FIGURE 3