

**California Department of Transportation, District 4****Office of Environmental Engineering**

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Date: 2/3/00

Time: _____

To: Name: Don Huang
Agency: Alameda County Health
Attention: _____
Telephone: (510) 337-1335 (FAX)

From: Name: Sheila Yardy
Telephone: (510) 286-5256 (Phone)

Number of pages being sent (including this page): 8**Message:**

Don, Please review and approve this
workplan as soon as possible, so that we
can start the field work.

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Project No. E8000-06-21
February 1, 2000

Ms. Sheila Yazdy
California Department of Transportation-District 4
111 Grand Avenue
Post Office Box 23660
Oakland, California 94623-0660

Subject: SITE INVESTIGATION WORKPLAN
OAKLAND MAINTENANCE STATION
3456 ETTIE STREET, OAKLAND, CALIFORNIA
CONTRACT NO. 43A0012
TASK ORDER NO. 04-987901-WC

Dear Ms. Yazdy:

In accordance with Caltrans Contract No. 43A0012 and Task Order (TO) No. 04-987901-WC, Geocon Environmental Consultants, Inc. is submitting this Workplan for a site investigation to be conducted at the subject site. The site consists of the Caltrans Oakland Maintenance Station located at 3456 Ettie Street, Oakland, California. The approximate site location is depicted on the attached Vicinity Map, Figure 1. This Workplan describes the scope of work requested by Caltrans and outlines the procedures and methods to be employed by Geocon to complete the project.

BACKGROUND

Information provided by Caltrans indicates that two underground storage tanks (USTs) were removed from the site on October 19 and 20, 1995. Laboratory analyses of soil and groundwater samples collected from the excavation indicated the presence of diesel and waste oil hydrocarbons.

On February 8, 1996, soil and groundwater samples were collected from two borings advanced downgradient from the former USTs and dispensers. The results of the soil analyses indicated that detectable concentrations of total petroleum hydrocarbons as oil (TPH-oil) were as high as 1,200 milligrams per kilogram (mg/kg), while groundwater samples contained detectable concentrations of TPH-oil and total petroleum hydrocarbons as diesel (TPHd) as high as 2,300 milligrams per liter (mg/l) and 62.5 mg/l, respectively.

An additional site investigation conducted by PSI in July 1997 included the drilling of five soil borings, four of which were converted to monitoring wells. All soils samples were non-detect for all constituents except for Total Oil and Grease (TOG), with concentrations ranging from 10 mg/kg to 5,200 mg/kg. However, only two soil samples (B4 and B6 at 5 feet bgs) had reported concentrations over 100 mg/kg.

All water samples were non-detect for all constituents except for benzene, toluene, ethylbenzene, and xylenes (BTEX) at 1.1, 0.5, 1.2 and 1.4 micrograms per kilogram (ug/l), respectively, in monitoring well B4/MW-1. Of the BTEX compounds detected, only benzene at 1.1 ppb had a concentration

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above State of California Primary Drinking Water Standard (PDWS). The PDWS for benzene is 1 ug/l.

The Regional Water Quality Control Board (RWQCB) requested three groundwater monitoring and sampling events. Sampling events took place in the fourth quarter of 1997 and in the first quarter of 1998; all constituents were non-detect. It was discovered during the last attempt to sample groundwater that the wells had been destroyed, and groundwater sampling could not take place.

Currently the Alameda County Department of Health Services (ACDHS) has requested that the direction of groundwater flow and gradient be determined and that groundwater analyses be performed. The approximate site layout is presented on the attached Site Plan, Figure 2.

PURPOSE

The purpose of TO No. 04-987901-WC is to determine the groundwater gradient and extent of groundwater contamination, if any, at this site. The scope of work presented herein was requested by the ACDHS. The soil and groundwater sampling results will be used to satisfy RWQCB requirements for conducting site investigations where known or suspected releases of contaminants have occurred.

PROJECT SCOPE

Outlined below is a summary of the scope of services to be performed by Geocon under TO No. 04-987901-WC.

Pre-field Activities

- A pre-work site meeting will be conducted prior to scheduling the field activities. The pre-work meeting will be attended by the Caltrans' contract manager, Ms. Sheila Yazdy and Geocon's field representative, Mr. Richard Day to locate and inspect the work areas. At the pre-work site meeting the proposed boring/well locations will be marked with white paint for subsequent Underground Service Alert utility clearance.
- A Health and Safety Plan is being prepared concurrently with this workplan for the proposed field activities. The health and safety plan provides guidelines on the use of personal protective equipment and the health and safety procedures to be implemented during the proposed field activities.
- Geocon has obtained Permit No. W00-042, dated January 27, 2000, from the Alameda County Department of Public Works to perform the field activities.
- Contact the local public utilities via Underground Service Alert, to attempt to delineate subsurface public utilities and conduits in proximity to the proposed boring/well locations.
- Retain the services of V&W Drilling, Inc., a Caltrans approved and licensed drilling company to perform the temporary monitoring well installation.

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Field Activities

- Advance four soil borings to depth of 6.1 meters (m) (20 feet) below ground surface (bgs) using a truck mounted direct-push rig at the approximate locations depicted on Figure 2.
- Each soil boring will be logged in the field utilizing the Unified Soil Classification System. A California certified engineering geologist will provide office and field supervision for the drilling and logging operations.
- Provide quality assurance/quality control (QA/QC) procedures during the field activities. These procedures include decontaminating the sampling equipment prior to, and following each use. Decontamination will consist of washing the equipment in an Alconox® solution, followed by a fresh water rinse, and subsequent distilled or purified water rinse. Direct-push rods used during the advancement of the borings will be cleaned prior to use on each subsequent boring.
- Temporary groundwater monitoring wells will be constructed within the four borings shown on Figure 2. The groundwater monitoring wells will be constructed using 1-inch diameter schedule 40 polyvinyl chloride (PVC) 0.020-inch slotted screen casing to the depth of 6.1 m (20 feet) bgs. The top of casing relative elevations of the temporary wells will be surveyed using an onsite reference elevation. The soil cuttings and decontamination fluids from drilling operations will be retained in 55-gallon drums stored at the site pending the results of the laboratory analyses and subsequent disposal following regulatory protocol.
- No sooner than 24 hours upon completing the temporary well installation, each monitoring well will be developed to remove sediment that may have infiltrated the wells during construction. Prior to the well development, the depth to groundwater will be measured using an electric water level indicator and noted on a field log and a grab groundwater sample will be collected in the event that the wells do not recharge during development activities. The well development will be performed by bailing to remove sediment and purging. Measurements of pH, conductivity, temperature, and turbidity will be periodically recorded during the development activities and noted on a field log.
- Following development, groundwater samples will be collected from the wells with a disposable bailer. If the wells do not recharge after development, the grab groundwater samples collected prior to development will be submitted to the laboratory for analyses. The collected water will be decanted into appropriate sampling containers supplied by the analytical laboratory. Each sample will be labeled, chilled, and transported to the analytical laboratory utilizing standard chain-of-custody procedures. The development and purge water will be retained in 55-gallon drums stored at the site pending the results of the laboratory analyses and subsequent disposal following regulatory protocol.
- The field work will be performed under the direct supervision of Geocon's field supervisor.

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Laboratory Analyses

Groundwater samples will be submitted under normal 10-day turn around time for the following laboratory tests.

- Total petroleum hydrocarbons as gasoline (TPHg) and TPHd following EPA Test Method 8015 Modified and BTEX following EPA Test Method 8020.
- The groundwater samples will be further analyzed for fuel oxygenate compounds (FOCs) following EPA Test Method 8260. The FOCs include tert-butyl alcohol (TBA), methyl tert-butyl ether (MTBE), di-isopropyl ether (DIPE), ethyl tert-butyl ether (ETBE), tert-amyl methyl ether (TAME).
- QA/QC will be performed for each method of analysis with specificity for each analyte listed in the test method's QA/QC. QA/QC will include the following:
 - One method blank for every ten samples, batch of samples or type of matrix, whichever is more frequent.
 - One sample analyzed in duplicate for every ten samples, batch of samples or type of matrix, whichever is more frequent.
 - One spiked sample for every ten samples, batch of samples or type of matrix, whichever is more frequent, with spike made at ten times the detection limit or at the analyte level.
 - One travel blank submitted with each batch of groundwater samples.

Report Preparation

A Site Investigation Report will be prepared to present the findings and conclusions of the investigation. The report will include but not be limited to the following:

- Investigative Summary
- Project Description
- Introduction
- Investigative Methods
- Investigative Results and Field Observations
- Data Evaluation and Discussion
- Conclusions and Recommendations
- Appendices including laboratory reports and chains-of-custody
- Vicinity Map and Site Plans indicating boring locations

Caltrans will be provided with a draft report, and upon receipt and incorporation of Caltrans comments, Geocon will provide five copies of the finalized Site Investigation Report

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If you have any questions concerning the contents of this Workplan, or if we may be of further service, please contact the undersigned at your convenience.

Sincerely,

GEOCON ENVIRONMENTAL CONSULTANTS, INC.

Sean M. Dixon
Staff Geologist

Richard W. Day, CEG, CHG
Regional Manager

SMD:RWD:sd

(5) Addressee

Attachments: Figure 1, Vicinity Map
Figure 2, Site Plan



