HARTCROWSER

Earth and Environmental Technologies

WORK PLAN

FOR

SUPPLEMENTAL SITE ASSESSMENT

SHELL SERVICE STATION

4226 FIRST STREET

PLEASANTON, CALIFORNIA 94566

Project 6006

HART CROWSER, INC.

JANUARY 24, 1990

353 Sacramento Street Suite 1140 San Francisco, California 94111 415.391.2216 FAX 415.391.1885

TABLE OF CONTENTS

FIGURES

WORK PLAN
SUPPLEMENTAL SITE ASSESSMENT

SHELL OIL STATION
4226 FIRST STREET
PLEASANTON, CALIFORNIA

Project 6006

I. INTRODUCTION

This Work Plan outlines a Supplemental Site Assessment to be performed by Hart Crowser, Inc. at the Shell Service Station located at 4226 First Street, on the southeast corner of First and Vineyard in Pleasanton, California. A site location map is provided in Figure 1. This assessment will further evaluate the presence of petroleum hydrocarbons in the soil resulting from past leaks and spills associated with operations onsite. If shallow groundwater is encountered, then the scope of work for this assessment will be extended to include an evaluation of petroleum hydrocarbons in the shallow groundwater.

II. BACKGROUND/SITE HISTORY

The site originally had five underground fuel storage tanks (one 1,550 gallon waste oil tank, two 8,000 gallon gasoline tanks and two 5,000 gallon gasoline tanks). On September 27, 1985, EMCON Associates drilled five borings onsite in the proximity of these tanks. Seven soil samples from these borings, which ranged in total depth from 20 to 28 feet, were analyzed for total petroleum hydrocarbons (TPH), with benzene, toluene, ethylbenzene and xylene (BTEX) distinction by EPA Methods 8015.

In a sample from the boring drilled between two of the tanks (at a depth of approximately five feet below the

bottom of the tank) the TPH concentration was found to be 1,300 parts per million (ppm). Detectable levels of toluene, ethylbenzene and xylene were associated with this sample. Benzene was not detected in any of these samples.

One of the borings drilled by EMCON in the assumed downgradient direction from the tanks was converted into a groundwater monitoring well at a depth of 28 feet. According to Mr. J. Killingstad, Alameda County Flood Control District, depth-to-groundwater in this area averages 50 to 100 feet. Hart Crowser personnel confirmed that no water was present in the well on December 26, 1989. There is no mention of the water level or groundwater sampling associated with this well in any of the reports reviewed.

EMCON drilled one additional boring on March 6, 1986. This boring was necessary to evaluate soil conditions adjacent to the underground product lines on site. Three soil samples (collected at depths of 5.5 feet, 10.5 feet and 15.5 feet below ground surface) analyzed from this boring contained no TPH or BTEX compounds above the detection limits.

The five existing tanks were removed on May 27, 1986. During this process, Blaine Technologies collected nine soil samples (one from beneath both ends of each tank, as well as one from beneath the waste oil tank) from the excavation pits. Eight of the samples were analyzed for TPH (EPA Method 8015), while a waste oil analysis (EPA Method 3510) was completed on the remaining sample.

Reported concentrations of TPH ranged from non-detected to 240 ppm for the samples collected from the fuel tank excavation pit. No waste oil was detected in the sample from the waste oil pit. The excavation pit was backfilled once the tanks were removed.

Three ten thousand gallon double-walled fiberglass tanks were installed at a new location on site, directly in front of the station building. A new waste oil tank was installed in the same location as the original waste oil tank.

Approximately 40 gallons of gasoline were spilled onsite on August 12, 1988. This surface spill occurred in the area of the pump islands. The station manager immediately contacted Central Petroleum, who proceeded to clean up the spill. Soil was removed from the spill area to a depth of one to two feet below ground surface. No samples were collected for laboratory analysis from the bottom of this excavation.

III. OBJECTIVE AND SCOPE OF WORK

The subsurface assessments performed to date have only partially evaluated the impact of petroleum hydrocarbons onsite. The objective of the supplemental assessment proposed in this Work Plan is to more completely evaluate the nature and extent of petroleum hydrocarbons in soil onsite. If shallow groundwater is encountered, the scope of work will include evaluation of petroleum hydrocarbons in the groundwater.

IV. METHODS AND PROCEDURES

A. Soil Borings

Three borings will be drilled with a truck-mounted drilling rig using eight-inch hollow stem augers (Figure 2). One boring will be drilled in the area where the original tanks were located, in order to measure present concentrations of hydrocarbons in this vicinity. Total depth of this boring will depend upon the presence of hydrocarbons in the soil. If volatile organic compounds are not detected with a photoionization detector (PID) and no odor is present, the total depth will be 50 feet. If hydrocarbons are detected at fifty feet, drilling will continue until readings from two continuous sampling intervals (approximately ten feet) fail to indicate the presence of petroleum hydrocarbons.

The other two borings will be drilled near the pump island, one on either side of the structure. These borings are designed to evaluate the vertical and lateral extent of the August 1988 gasoline spill. Total depth of these borings will be approximately 20 to 30 feet, or until vertical extent of suspected petroleum hydrocarbons has been defined.

Soil samples will be collected with a California modified sampler at five-foot intervals using two-inch brass liners. In order to reduce the potential for cross-contamination, all downhole equipment will be steam-cleaned between borings.

During the drilling of each of the boreholes, an onsite geologist will log the soil encountered using the Unified Soil Classification System. These logs will provide a record of the subsurface materials, hydrogeologic information and field screening of soil samples for volatile organic compounds.

Soil collected in the bottom tube of the sampler will be sealed with teflon tape, covered with tight fitting plastic caps and placed in refrigerated storage for possible lab analysis. Material from the middle tube will be screened for volatile hydrocarbons using the PID. Between samples, the sampler will be thoroughly cleaned using an Alconox detergent, rinsed in distilled water, and equipped with three clean sampling tubes. Strict chain-of-custody procedures will be maintained for all samples collected for lab analysis throughout sample acquisition, storage and transport.

Soil cuttings from drilling operations will be temporarily stored on plastic sheeting pending laboratory results. The drums containing contaminated soil from the August 1988 spill will also be removed from the site when disposing of these cuttings. Hart Crowser will provide assistance with this task.

If no groundwater is encountered during drilling, the borings will be filled with neat cement. The onsite monitoring well will also be abandoned. This process includes drilling out the boring, pulling the casing

and backfilling the hole with neat cement. Because groundwater is expected to occur at least 20 feet below the bottom of this monitoring well, the well is unlikely to provide any useful data in the future. It may provide a potential conduit for hydrocarbons in the event of any future spills onsite.

B. Groundwater Monitoring Wells

If groundwater is encountered in any of these borings, the boring will be completed as a groundwater monitoring well. Four-inch diameter Schedule 40 PVC flush-threaded casing will be used for completion of these wells. Approximately 20 feet of factory slotted screen with 0.010 inch openings will be placed at the bottom of each well, with the top of the screened interval extending at least five feet above the water level. Blank casing will be installed from the top of this screened interval to ground surface.

A gravel pack of Number 12/20 Monterey sand will be placed in the annulus, the space between the casing and borehole, from the bottom of the boring to two feet above the top of the slotted casing. A three-foot plug of hydrated bentonite will be emplaced above the gravel pack. Cement grout will fill the remaining annular space. The top of the well will be protected with a traffic box installed slightly above the ground surface.

Surging and bailing techniques will be used to develop the wells. The wells will be developed until they are

reasonably free of fine sediment, depending on the recovery of the well. All equipment used during this process will be steam-cleaned between wells to reduce the potential of cross-contamination. Water produced during development will be temporarily stored onsite in labeled DOT 17H drums. Hart Crowser will provide assistance with offsite disposal. Water will be returned to the Shell refinery in Martinez by Crosby & Overton.

C. Groundwater Sampling

Prior to sampling, the wells will be bailed a minimum of three well volumes and/or until conductivity and pH stabilize. All water removed during this process will be added to the development water temporarily stored onsite. If subsurface conditions cause slow recovery, the well will be bailed dry and allowed to recover 80% of the static level before collecting a groundwater sample. Groundwater samples will be collected with a two-inch Teflon bailer. Water conductivity, pH and temperature will be measured and recorded. All downhole equipment will be thoroughly decontaminated between wells to reduce the potential for cross-contamination.

A California-licensed surveyor will survey the wells for horizontal and vertical control. This information, along with water level measurements taken after the wells have stabilized, will be used to determine the local groundwater gradient.

V. LABORATORY ANALYSES

Two or three soil samples from each boring (a maximum total of nine) will be analyzed by a local Shell-approved, State-certified laboratory. The samples will be analyzed for TPH with BTEX distinction by EPA Methods 8015/8020.

A water sample from each well installed will be sent to the same lab as the soil samples. These samples will also be analyzed for TPH with BTXE distinction by EPA Methods 8015/8020.

VI. REPORT OF ASSESSMENT

Once the laboratory analytical results are received, a report will be prepared integrating our findings with the previously mentioned studies. Included with this report will be a discussion of field methodology and subsurface conditions encountered, boring logs, laboratory results, conclusions, and recommendations for further assessment and/or remediation, as appropriate.

HARTCROWSER

90 FEB -5 AM 11:00

Hart Crowser, Inc.
353 Sacramento Street Suite 1140
San Francisco, California 94111
FAX 415.391.2216
415.391.1885

Earth and Environmental Technologies

Letter of Transmittal

To: Alameda County Environmental Health Date: 2-2-90
Hazardous Materials Division
80 Swan Way, Room 200 Job No.: 6006
Oakland, CA 94621
Attn: Mr. Gil Wistar
Re: Shell Service Station, 4226 First St., Pleasanton

We are sending the following items:

Date	Copies	Description
2-2-90	1	Work Plan for Supplemental Site Assessment

2/6/90 Indicated to receptionist that this report needs to be sent to Pleasanton FD; said she would put a copy in mail today.

These are transmitted:

☒ For your information ☐ Fo spi ☐ our ☐ As requested

Remarks

If you have any que to this Work Plan, please [illegible] at earliest convenience.

By: Eric Schniewind

Copies to: Tom Callaghan, RWQCB

Title: Sr. Staff Hydrogeologist