SEMCO/HK2, INC.
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GENERAL ENGINEERING & ENVIRONMENTAL CONTRACTORS LICENSE NO. 719103 (A, B, C57, C61-D40, HAZ, ASB

March 26, 1997

Ms. Juliet Shin
Senior Hazardous Materials Specialist
Alameda County Health Care Services Agency (ACHCSA)
1131 Harbor Bay Parkway, Suite 250
Alameda, California 94502-6577

Subject: Work Plan for Site Characterization at 701 San Pablo Avenue, Albany, California (SEMCO Project 97-0247)

Dear Ms. Shin:

This is a work plan to assess the hydrocarbons encountered at 701 San Pablo Avenue in Albany, California. The site location is shown in Figure 1. Figure 2 is a site plan. The scope of work outlined in this work plan is based your letter dated January 14, 1997 (copy attached) and our February 11, 1997 telephone conversation.

BACKGROUND

The site is currently owned by Ms. Ingrid Werner, but was formerly a Chevron service station with four underground gasoline storage tanks (one 2,000-, two 3,000-, and one 6,000-gallon) and one 285-gallon underground waste oil tank (Figure 2). The gasoline storage tanks were removed by Bay Excavators in February 1979.

On June 20, 1996, SEMCO removed the waste oil tank. A soil sample collected approximately 2 feet beneath the former tank (approximately 6.5 feet below grade [fbg]) contained 310 milligrams/ kilogram (mg/kg) total petroleum hydrocarbons (TPH) as gasoline (TPH-G), 1,300 mg/kg TPH as diesel (TPH-D), 620 mg/kg total extractable petroleum hydrocarbons (TEPH), 3.9 mg/kg naphthalene, 6.0 mg/kg 2-methyl-naphthalene, 0.46 mg/kg benzene, and 720 mg/kg of lead. The concentrations of halogenated volatile organic compounds and other EPA 8270 semi-volatile organic compounds were below the laboratory reporting limit (<0.250 and < 7.5 mg/kg, respectively). A soil sample collected at approximately 8 fbg contained 20 mg/kg of lead and 74 mg/kg of chromium. The tank cavity was excavated to a depth of approximately 5 fbg and the excavated soil was stockpiled onsite. Additional details are in the SEMCO report dated July 1996.

Not 8' bgs? No, see page 4

On October 4 and 9, 1996, SEMCO drilled six borings to evaluate soil and groundwater conditions in the vicinity of the former underground gasoline storage tanks (B1 and B2), former waste oil tank (B3 and B4), and dispenser island (B5 and B6; Figure 2). Soil samples contained up to 2.2 mg/kg TPH-G, 9 mg/kg TPH-D, and 0.87 mg/kg benzene, except for a 56 mg/kg TPH-D concentration

measured in B1 at approximately 8.5 fbg and a 3,600 mg/kg TPH-G concentration measured in B6 at approximately 2 fbg. TEPH concentrations were below the laboratory reporting limit (50 mg/kg). Groundwater samples collected from B1 through B3 contained up to 680 micrograms per liter (ug/l) TPH-G (B2) and 0.5 ug/l benzene, except for a 2 ug/l benzene concentration measured in B1 and a 20,000 ug/l TEPH concentration measured in B3. Dissolved-phase TPH-D concentrations were below the laboratory reporting limit (50 ug/l). Depth to groundwater was approximately 10 to 12 fbg. Additional details are in the SEMCO report dated December 29, 1996.

After reviewing the site assessment work, ACHCSA expressed the following concerns in a letter dated January 14, 1997 (copy attached): 1) the 0.87 mg/kg benzene concentration measured in soil in B1 exceeded the ASTM 10^{-5} excess cancer risk Tier 1 Risk Based Screening Level (RBSL) for soil vapor intrusion into a building (0.109 mg/kg) and soil leachate to groundwater (0.578 mg/kg), 2) the 2 ug/l benzene concentration measured in groundwater in B1 exceeded the California Department of Health Services (CDHS) primary maximum contaminant level (MCL) for benzene (1 ug/l), 2) TPH-G in soil needs to be assessed near B6, and 4) TEPH in groundwater near B3 needs to be explained or assessed. ACHCSA requested a well downgradient of B1 and a boring downgradient of B6.

DISCUSSION OF ACHCSA LETTER

ACHCSA Concern No.1

The benzene concentration measured in the soil sample collected from B1 exceeds the ASTM 10^{-5} excess cancer risk Tier 1 RBSL for soil vapor intrusion into a building by 0.761 mg/kg. However, further action to address this concern does not appear to be warranted at this time because: 1) the depth the soil sample was collected at is 2.5 times greater than the 3.28 foot default depth value used to calculate the Tier 1 RBSL, 2) the site is underlain by clay, but the default soil parameter values used to calculate the RBSL are based on sandy soil, 3) the RBSL does not take into account biodegredation, and 4) no building is within 30 feet of B1.

The benzene concentration measured in the soil sample collected from B1 exceeds the ASTM 10^{-5} excess cancer risk Tier 1 RBSL for soil leachate to groundwater by 0.292 mg/kg. However, further action to address this concern also does not appear to be warranted at this time because: 1) the soil infiltration rate and groundwater velocity is probably less than the default values used to calculate the RBSL because the site is underlain by clay and the default values are based on sandy soil, 2) the site is paved, further reducing infiltration rate, and 3) the RBSL does not take into account biodegredation.

In summary, the additional cost to perform a Tier 2 assessment does not appear justified at this time because it is reasonable to assume the site specific factors cited above will reduce or eliminate the existing risk. In addition, the existing risk is small because the benzene concentration (0.87 mg/kg) does not exceed the ASTM 10^{-4} excess cancer risk Tier 1 RBSL for vapor intrusion into buildings and soil leachate into groundwater.

ACHCSA Concern No. 2

The dissolved-phase benzene concentration measured in B1 (2 ug/l) does exceed the 1 ug/l primary MCL established by the CDHS, but not by an amount that would justify installing a monitoring well downgradient of B1. We believe it would be more prudent to drill a boring approximately 30 feet northeast of B1 to assess soil and groundwater north of the former gasoline tank cavity.

ACHCSA Concern No.3

We concur additional assessment of gasoline range hydrocarbons is necessary near the southern end of the dispenser island. We recommend drilling one boring approximately 2 feet west of B6 to assess soil and groundwater.

ACHCSA Concern No. 4

The 20,000 ug/l TEPH concentration measured in the groundwater sample collected from B3 is unusual considering the TPH-G (carbon range C5 to C11) and TPH-D (carbon range C12 to C24) concentration of this sample was below the laboratory reporting limit (0.05 and 50 ug/l, respectively). Based on the TEPH result, ACHCSA requested that future groundwater samples be analyzed for TEPH. However, we do not consider TEPH analysis useful because TEPH does not identify the compounds present. Therefore, we recommend drilling one boring adjacent to B3 solely to collect a groundwater sample for analysis of TPH as motor oil (TPH-MO; carbon range C18 to C40). TPH-MO should quantify any release of waste oil from the former waste oil tank or remote fill pipe. We are concerned TEPH results above the laboratory reporting limit may lead to a regulatory request for further action when in fact the compound causing the result (if known) may not be of regulatory concern.

PLANNED WORK

Assessment

SEMCO plans to drill three borings (PB7 through PB9) up to approximately 14 fbg to assess soil and groundwater north of the former gasoline tank cavity and near the southern end of the dispenser island and B3. The location of these borings is shown in Figure 2. The borings will be drilled with a SIMCO Earthprobe 200 (a percussion drilling rig). Soil samples will be collected from PB7 and PB8 at 4 fbg and continuously from approximately 8 to 14 fbg by driving a split-spoon sampler (no soil samples will be collected from PB9). The samples will be described using the Unified Soil Classification System and submitted to a state-certified laboratory. Up to three soil samples from PB7 and PB8 will be analyzed for TPH-G (Modified EPA Method 8015) and BTEX (EPA Method 8020).

Screen length? → Slotted casing will be temporarily installed in each boring to facilitate the collection of fluid level monitoring data and groundwater samples. Depth to groundwater will be measured with an electronic probe. A bailer or peristaltic pump connected to polyethylene tubing will be used to collect

a groundwater sample from each boring and the groundwater samples will be submitted to a state-certified laboratory. The samples collected from PB7 and PB8 will be analyzed for TPH-G (Modified EPA Method 9015) and BTEX (EPA Method 8020). The sample collected from PB8 will also be analyzed for total dissolved solids. The sample from PB-9 will be analyzed for TPH-MO (Modified EPA Method 8015). The samples from PB-7 and PB-8 will also be analyzed for TPH-MO if the TPH-MO concentration in PB-9 exceeds the laboratory reporting limit.

Remediation

The former waste oil tank cavity will be excavated from 5 fbg (current depth) to approximately 8 fbg and the excavated soil will be placed on the existing soil stockpile. The total volume of the soil stockpile will be approximately 25 cubic yards. A soil sample will be collected from the bottom of the excavation (approximately 8 fbg) and analyzed for soluble chromium (waste extraction test) at a state-certified laboratory. Four discrete soil samples will be randomly collected from the soil stockpile and submitted to a state-certified laboratory. The laboratory will composite the samples into one sample and analyze it for reactivity, corrosivity, ignitability, and soluble lead. The former cavity will be backfilled with imported fill soil and covered with asphalt pavement.

Permitting, Decontamination, Waste Disposal, and Reporting

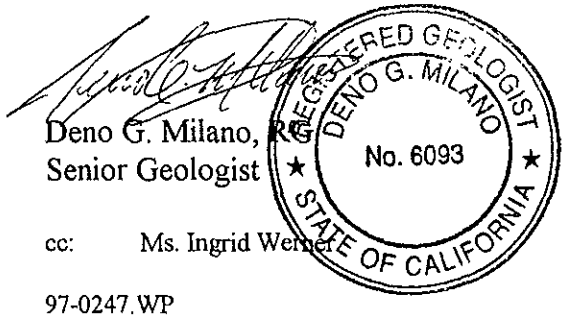
Boring locations will be permitted and cleared by utility markout before they are drilled. Drilling rods and samplers will be cleaned with a phosphate free TSP solution and rinsed with water before each boring is drilled or sample collected. New factory sealed casing will be used for the temporary casing installed in each boring. After groundwater samples are collected the temporary casing will be removed and each boring will be backfilled with neat cement.

No soil waste will be generated by the drilling process. Stockpiled soil will be transported to an appropriate disposal facility following receipt of the soil stockpile sample laboratory results. All borings will be drilled within 30 days of ACHCSA approval of the work plan. A report summarizing these activities will be submitted to ACHCSA within 45 days of the date the borings are drilled.

Please call if you have any questions.

Sincerely,

HK2, Inc./SEMCO



Deno G. Milano, RG
Senior Geologist

cc: Ms. Ingrid Werner

97-0247.WP

ALAMEDA COUNTY
HEALTH CARE SERVICES
AGENCY
DAVID J. KEARS, Agency Director

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ENVIRONMENTAL PROTECTION (LOP)
1131 Harbor Bay Parkway, Suite 250
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(510) 567-6700
FAX (510) 337-9335

January 14, 1997

Ingrid & Frank Werner
22 Kensington Court
Kensington, CA 94707

STID 5347

Re: Required investigations at 701 San Pablo Avenue, Albany, California

Dear Ingrid & Frank Werner,

This office has reviewed HK2, Inc./SEMCO's (HK2) Phase II Site Investigations Report, dated December 29, 1996, for the above site. The following is an outline of the various concerns this office has in response to our review of the investigation results:

1) The benzene concentration identified in the soil sample collected from Sample #5, located at the northwest corner of the site, exceeds the threshold value for the "Soil Vapor Intrusion Into Buildings" and "Soil Leachate into Groundwater" exposure pathways for a 10^{-5} excess cancer risk at a commercial site, per the Tier 1 table of the American Society for Testing and Materials' Standard Guide for Risk-Based Corrective Action Applied at Petroleum Release Sites (E 1739-95). Additionally, the groundwater sample collected from this location identified 2 parts per billion (ppb) benzene, which exceeds the California Drinking Water Standard.

2) Elevated levels of Total Petroleum Hydrocarbons as gasoline (TPHg), at 3,600 parts per million (ppm), were identified in the shallow soil sample collected from beneath the former pump islands. The extent of this soil contamination and the degree to which this soil contamination may have impacted groundwater is still unknown.

3) Elevated levels of Total Extractable Petroleum Hydrocarbons (TEPH), at 20,000 ppb, was identified in the groundwater sample collected from Boring B3, located near the former waste oil tank. Page 10 of HK2's report implies that the detected TEPH concentrations are from a biogenic source, however, this office has insufficient evidence to indicate that this is the case.

Considering the above concerns, this office is recommending that one permanent monitoring well be placed downgradient of Sample #5 and be sampled continuously for two to four quarters to determine whether the observed groundwater contaminant plume is stable. Groundwater samples collected from this location should be analyzed for TPHg and BTEX. Additionally, the initial groundwater sample collected from this well location should also be analyzed for Total

Dissolved Solids (TDS) to determine whether the groundwater beneath the site is potable. According to groundwater information obtained from other sites in the vicinity (namely 431 San Pablo Ave., 500 San Pablo Ave., and 718 San Pablo Ave.), the local groundwater gradient appears to fluctuate between northwest to southwest.

Due to the uncertainties associated with the extent and severity of the shallow soil contamination near the former pump islands, this office is requesting that an additional boring be placed immediately downgradient of Sample PI-S to characterize the vertical and lateral extent of the observed soil contamination, and to determine whether groundwater has been impacted from these soil concentrations. Both soil and groundwater samples collected from this location should be analyzed for TPHg and BTEX.

For the initial groundwater samples collected from the monitoring well and boring, a TEPH analysis should be included to determine whether the TEPH groundwater contaminant plume observed near the former waste oil tank has significantly migrated. As part of the TEPH analysis, a silica gel cleanup should be applied in order to eliminate any interference from potential biogenic materials. Additionally, some fuel fingerprinting interpretations should be attempted of the chromatogram in order to identify the exact contaminant (s).

A work plan addressing the above work should be submitted to this office within 60 days of the date of this letter (i.e., by March 11, 1997). (If you have applied to the State Trust Fund, please be reminded to check with the State to see whether it requires three bids for this phase.)

Lastly, this office is requesting that you submit information indicating when Chevron vacated the site and/or when you purchased the site. If Chevron vacated the site after 1983, then the analysis for Methyl Tertiary Butyl Ether (MTBE), an oxygenate additive to gasoline whose use was widespread after 1983, should be included for any groundwater samples.

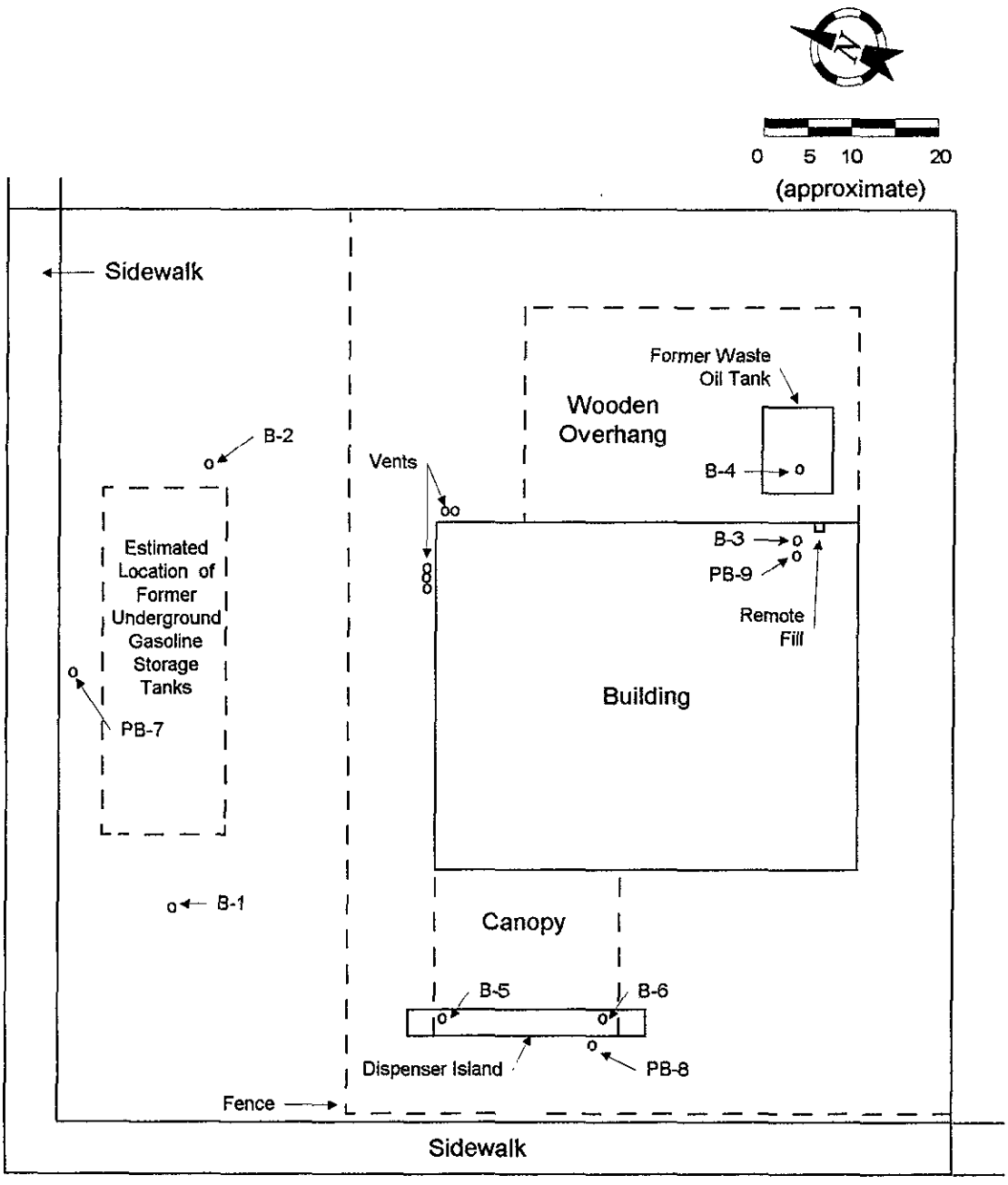
If you have any questions or comments, please contact me at (510) 567-6763.

Sincerely,

Juliet Shin
Senior Hazardous Materials Specialist

cc: Stanley L. Klemetson, HK2, Inc./SEMCO, 1751 Leslie St., San Mateo, CA 94402
Acting Chief

Figure 1. Site Location



HK2, Inc./SEMCO 1751 Leslie Street San Mateo, CA 94402 Project No. 97-0247	Legend B-1 = Previous Boring PB-7 = Proposed Boring	SITE PLAN 701 San Pablo Avenue Albany, California **Figure 2.**

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