RO-341

- check soil vapor samples nearest house - see if max. SV conc. could pose risk to health via indoor inhalation
- Ask Todd if vapor samples will be collected pre- and post- granular treatment.

JUN 29 2001

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June 25, 2001

Ms. Eva Chu
Alameda County Health Care Services
Department of Environmental Health
1131 Harbor Bay Parkway, Suite 250
Alameda, California 94502-6577

Subject: **Letter Workplan for Interim Corrective Action at Former Chevron Service Station #9-1153, 3126 Fernside Boulevard, Alameda, California.**

Ms. Chu,

At the request of Chevron Products Company (Chevron), Delta Environmental Consultants, Inc. (Delta), has prepared this letter workplan in response to separate phase hydrocarbons (SPH) observed at the subject site. Currently, groundwater monitoring well C-1 contains measurable SPH ranging in thickness from 0.01 to 2.20 feet.

SITE DESCRIPTION

The subject site is located on the southwest corner of Fernside Boulevard and High Street in Alameda, California (Figure 1). Chevron had operated a service station from approximately mid 1950's to 1986. The former facility consisted of a station building with three service bays and two hydraulic hoists, two dispenser islands, three underground storage tanks (USTs) that shared a common pit northwest of the former dispenser islands, and two waste oil USTs. The site is situated at an approximate elevation of 8-feet above mean sea level (MSL) and is relatively flat. Currently, the site is occupied by a residential building. Pertinent site features are shown on Figure 2.

PREVIOUS ENVIRONMENTAL WORK

In 1986, Chevron had ceased operations at the subject site. Five USTs, dispenser islands, associated product lines, and station building were demolished on June 4, 1986. Petroleum hydrocarbons were detected at low concentrations from soil samples collected beneath the USTs. No soil samples were collected beneath the product lines or dispenser islands. Soil stockpiles were aerated on-site and reused as backfill for the UST pit.

On August 18, 1986, EMCON installed groundwater monitoring wells C-1 through C-3. Soil samples were not analyzed for petroleum hydrocarbons. Petroleum hydrocarbons were detected in groundwater samples collected from wells C-1 through C-3.

In July 1987, EA Engineering (EA) conducted a soil vapor contaminant assessment (SVCA) at the former service station. Soil vapor samples were collected from approximately 3 feet below surface grade (bsg) at eight on-site and 4 off-site locations. Petroleum hydrocarbons were detected in four vapor samples collected from the southeast portion of the site. EA concluded

that no significant risk to human health or the environment was posed due to hydrocarbon impact of soil or groundwater.

In August 1987, Pacific Environmental Group (PEG) conducted a search of domestic, municipal, or irrigation supply wells within a 0.5-mile radius of the site. No domestic or municipal supply wells were identified with the search area.

In May 1989, Chevron witnessed site development. During construction of the building foundation, an unknown quantity of soil was excavated from the site. During this phase of work, groundwater monitoring well C-2 was destroyed.

On May 4 and 10, 1989, EA conducted a second SVCA. Soil vapor samples were collected at depths between 2 and 4.5 feet bsg from 29 on-site and 3 off-site locations. The highest petroleum hydrocarbon concentrations were detected in the southeast portion of the site. No petroleum hydrocarbon vapors greater than 1 part per million were detected in samples collected beneath the residential building.

In July 1989, EA collected soil samples at an approximate depth between 0.5 and 9.5 feet bsg from five on-site and three off-site soil borings. The highest concentrations of petroleum hydrocarbons were detected in the soil samples collected east of the former UST pit and dispenser islands. In addition, low concentrations of petroleum hydrocarbons were detected in the three off-site soil borings. Elevated concentrations of petroleum hydrocarbons were also detected in grab groundwater samples collected during this phase of investigation.

On December 6 and 7, 1990, EA installed recovery well RW-1 and a recovery trench east of the residential building. The groundwater extraction system became operational on October 3, 1991. As of May 31, 1994, the extraction system had treated and discharged approximately 99,850 gallons. The system was shut-off in May 1994 for repairs. However, based on impacted groundwater treated over the operational life span of the system, EA concluded that the groundwater treatment system was not a cost-effective technology for hydrocarbon abatement at this site.

On May 15, 1992, Groundwater Technology, Inc. (GTI) installed groundwater monitoring wells MW-4, MW-5, and MW-6. Soil samples collected did not contain detectable concentrations of petroleum hydrocarbons. Groundwater samples collected from wells C-1, MW-4, MW-5, and MW-6 contained detectable concentrations of petroleum hydrocarbons.

During a file review conducted in March 1993, a former Phillips service station was identified as having removed USTs and associated product lines in June 1987. Soil samples collected indicated detectable concentrations of toluene and xylenes only. No groundwater samples were collected.

In March 1993, Weiss Associates (WA) installed three temporary off-site borings north, east, and south of the groundwater extraction trench. Benzene concentrations were detected in the groundwater samples analyzed from these borings.

On November 1, 1993, GTI installed groundwater monitoring well MW-7(downgradient) and temporary well TMW-1 (upgradient). Soil samples collected from well MW-7 contained low concentrations of petroleum hydrocarbons. Groundwater samples collected from well MW-7

contained detectable benzene. Soil or groundwater samples collected from temporary well TMW-1 did not contain detectable concentrations of petroleum hydrocarbons.

On October 13, 1995, GTI installed groundwater monitoring wells MW-8 through MW-10. Soil samples analyzed did not contain concentrations of petroleum hydrocarbons. Groundwater samples were not collected following development of the newly installed wells.

Groundwater Monitoring

Groundwater monitoring of wells C-1 through C-3 began in 1986. Wells MW-4 through MW-6 have been monitored and sampled since June 1992, and well MW-7 since November 1993. Groundwater monitoring wells MW-8 through MW-10 have been monitored and sampled since October 1995. Currently, wells MW-4, MW-8, and MW-9 are monitored and sampled annually. Historically, depth-to-groundwater beneath the site has ranged between 0.00 and 6.32 feet bsg. Groundwater flow beneath the site is toward the east-northeast at an approximate gradient of 0.01 feet/foot (ft/ft).

Based on the second quarter groundwater monitoring event, depth to groundwater beneath the site ranged between 1.01 and 3.63 bsg. Groundwater flows toward the east-northeast at an approximate gradient of 0.01 to 0.02 ft/ft.

Groundwater monitoring well C-1 has been measured for separate phase hydrocarbons (SPH) since January 1993. SPH thickness has been measured between 0.01 and 2.20 feet. Currently, SPH is measured on a monthly basis. Based on the April 9, 2001, monitoring event, SPH in well C-1 was measured at 0.26 ft. Approximately 17.19 gallons of product and water have been removed by hand bailing from well C-1.

SCOPE OF WORK

To help mitigate SPH measured in well C-1, Delta is proposing to conduct interim corrective action (ICA) at the subject site. Prior to the proposed ICA, Delta will notify Alameda County Health Care Services (ACHCS) and the property owner a minimum of 48 hours prior to scheduled activities. Delta will also secure permits, if required, prior to scheduled activities.

Task 1. Field Activities

Delta will contract a Chevron approved vendor with the capability to extract both liquid phase and vapor phase hydrocarbons from well C-1 using a vacuum truck. During the extraction process, liquid phase hydrocarbons will be stored within the tank portion of the vacuum truck. Vapor phase hydrocarbons will be treated through a granulated activated carbon (GAC) canister and discharged to the atmosphere. The liquid phase waste stream will be profiled by the approved vendor and disposed at an approved treatment, storage, and disposal facility (TSD)

During the extraction process, Delta will gauge depth to groundwater in the existing well field to monitor changes to the potentiometric surface. This activity is being proposed to monitor well influence on the surrounding lithology. Based on bail tests performed on well C-1 and C-3 by EA Engineering, it is estimated the water-bearing zone beneath the site will yield 0.7 gallons per minute (gpm) and have a well radius of influence of 21 feet. Delta estimates a maximum of 4 hours will be utilized for the extraction process. At 0.7 gpm, Delta expects to extract

Will vapor samples be collected pre + post carbon unit?

approximately 168 gallons per event. A minimum of five extraction events is being proposed through the end of 2001. If the extraction process proves effective in removing liquid and vapor phase hydrocarbons, then additional events will be scheduled.

Task 2. Letter Report Preparation

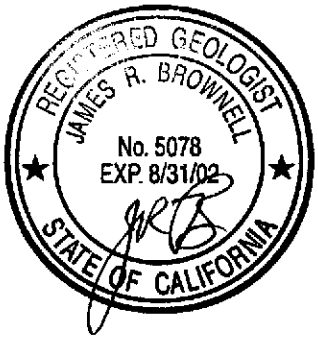
Following each event, Delta will prepare a letter report discussing the extraction process. This report will include gallons of groundwater extracted, change in depth-to-groundwater, depth-to-groundwater measurements (tabilized), conclusions based on effectiveness, and recommendations of future events.

SCHEDULE

The proposed ICA will take place once Delta receives work plan approval from ACHCS and the current property owner. If you have any questions please call our Rancho Cordova office at (916) 638-2085 or my direct line (916) 536-2612.

Sincerely
Delta Environmental Consultants, Inc.

Todd A. Del Frate
Project Manager



Jim Brownell
Project Manger
California Registered Geologist No. 5078

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

Cc: Mr. Tom Bauhs, Chevron Products Company
Mr. and Mrs. Thompson, 3126 Fernside Boulevard, Alameda, California