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April 5, 2001

Ms. Eva Chu
Alameda County Health Care Services
Division of Environmental Protection
1131 Harbor Bay Parkway, Suite 250
Alameda, CA 94502

APR 10 2001

Subject: *Workplan for Monitoring Well Destruction*
Chevron Station No. 9-1924
4904 Southfront Road, Livermore, CA
Delta Project No. DG91-240

Dear Ms. Chu:

Delta Environmental Consultants, Inc. (Delta) has been authorized by Chevron Products Company. (Chevron) to prepare a work plan for the destruction of groundwater monitoring wells at Chevron Station No. 9-1924 located at 4904 Southfront Road, Alameda County, Livermore California (Figures 1). The proposed monitoring well destruction's are intended to reduce the possibility of impacting the water bearing zone beneath the site from unused monitoring wells. Delta proposes to perform the following:

- 1) Permit and oversee the destruction of four groundwater monitoring wells.
- 2) Collect and submit soil samples for chemical analyses to determine disposal option of soil generated.
- 3) Prepare a report documenting the destruction of wells.
- 4) Submit documentation of soil removal and disposal from well destruction activities.

Project History and Background Information

The site currently underwent remodeling and reopened as a retail gasoline service station with one commercial building, two multi-pump fuel dispenser islands and three 10,000-gallon underground storage tanks (USTs) installed in 1997. The UST contain regular unleaded gasoline, plus unleaded gasoline and supreme unleaded fuel. The locations of the USTs and site features are illustrated in Figure 2.

The site was originally constructed in May 1971 and housed four single wall steel USTs consisting of two 10,000-gallon tanks containing regular and supreme leaded gasoline, one 5,000-gallon tank

containing mid-grade leaded gasoline and one 1,000-gallon used oil tank. Petroleum hydrocarbon contaminants related to the operation of product storage and dispensing systems at the site was first reported in December 1984. A hole was discovered during a petrotite test conducted on the 10,000 gallon regular leaded gasoline UST. It was estimated that approximately 4,400 gallons were released upon reviewing inventory records. The UST was decommissioned in December 1984.

Between December 21, 1984 and January 10, 1985 Emcon and Associates (Emcon) and Gettler Ryan Inc. advanced fourteen soil borings (C-1 through C-14) in the vicinity of the site to depths ranging from 5 to 35 feet below surface grade (bsg). Boring locations C-10, C-11 and C-13 were terminated at approximately 5 feet bsg due to encountering concrete which may have been utility lines or fill material. Borings C-1 through C-9, C-12 and C-14 were completed as ground water monitoring wells. J. H. Kleinfelder and Associates (Kleinfelder) advanced two soil borings (C-16 and C-17) to a depth 35 and 30 feet bsg, respectively. The borings were converted to ground water monitoring wells. Between January 16, 1985 and March 29, 1985 Ground Water Technology, Inc. (GTI) advanced three borings (RW-1, C-18 and C-19) to depths between 25 and 32.5 feet bsg and each was converted to a ground water monitoring well. No soil samples were submitted for chemical analysis. In October 1995, GTI advanced two borings (C-20 and C-21) each to a depth of approximately 26.5 feet bsg and the borings were converted to ground water monitoring wells.

GTI installed a ground water extraction system for the site in February 1985. The ground water extraction system utilized a 12-inch diameter recovery well installed on the neighboring Mobile Service Station property located at 4707 First Street (currently a Unocal service station). The ground water extraction system operated from approximately February 1985 until April 1986 and removed approximately 296 gallons of separate phase hydrocarbons (SPH). The system was reactivated in March 1990 and operated until January 1991 when it was shut off after pumping and treating a total of 476,330 gallons. The ground water extraction system was removed in July 1993.

A ground water monitoring and sampling program has been initiated at the site. Ground water monitoring and sampling has been performed at the site since the installation of the monitoring wells in January 1985.

Currently the sites ground water monitoring well network consist of onsite wells C-1, C-5, C-7 and C-13; offsite wells C-8 through C-12, C-14, C-16 through C-21, and recovery well RW-1. Monitoring well C-4 was destroyed in 1985 during UST removal activities, and monitoring wells C-2, C-3, C-6 and C-15 were destroyed as part of site grading and remodeling. Locations of the wells are illustrated on Figure 2.

In March 1985 the site was remodeled and at this time the four original single wall steel tanks were removed and replaced with double wall fiberglass USTs. The replacement tanks consist of three 10,000-gallon USTs containing unleaded gasoline and one 1,000-gallon used oil tank. In June 1997 the product distribution lines and product dispenser were upgraded and soil samples were collected beneath the lines. Laboratory analytical results indicated petroleum hydrocarbon constituents were detected. In April 2000, the product distribution lines and one 1,000 gallon used oil tank were removed from the site. Soil samples were collected from the former tank basin and beneath the product distribution lines. Laboratory analytical results reported detectable concentrations of petroleum hydrocarbon constituents in each soil sample.

Proposed Scope of Work

Groundwater Monitoring Well Destruction

The proposed work includes destroying groundwater monitoring wells C-1 located on the site, well C-14 located in Southfront Lane, and well C-10 located on the Unocal Station property. Each well is proposed to be destroyed by overdrilling the casing one-foot beyond their original installed depths using 8.25-inch hollow stem augers. Upon reaching the total depth, the boring will be backfilled with neat cement grout from the base of the boring to within six inches of the surface. Each boring will be completed at the surface with concrete to match existing grade. The well box will be removed from each well location during destruction activities. The methods to be used during well destruction procedure are described in Enclosure B.

Groundwater monitoring wells C-1, C-14 and C-10 are not part of the sites cleanup and abatement monitoring program. These wells can act as conduits to the water bearing zone beneath the site. The remaining monitoring wells are adequate to assess the dissolved petroleum hydrocarbon plume at the site.

Groundwater Monitoring Well Locating

During the most recent semi-annual monitoring and sampling event conducted at the site on March 23, 2001, well C-5, C-16, C-18 and C-21 were reported as paved over or inaccessible. Monitoring well C-5 appears to have been damaged, perhaps, from the recent station upgrade activities in April 2000 and was reported to have a cracked casing 10-feet below surface grade (bsg). Monitoring wells C-16, C-18 and C-21 were reported as paved over. Monitoring wells C-16, C-18 and C-21 will be located and uncovered. Monitoring well C-5 is proposed to be destroyed using the method described above. The locations of the wells are illustrated in Figure 2.

Soil Stockpile

Soil generated during well destruction activities will be placed and covered with plastic. A soil sample will be collected and submitted for chemical analyses to evaluate disposal option. Upon receipt of analytical results a waste hauler will be contracted and the stockpile will be removed under waste manifest protocol.

Permits

Prior to field activities, permit applications will be submitted to the Alameda County Flood Control District (Zone7) for destruction of the ground water monitoring wells and a encroachment permit will be submitted to the City of Livermore for encroachment onto the city right of way. Following approval of the work plan by the County and approval of the permits from Zone 7 and City of Livermore, the proposed work will be performed.

Reporting

Following completion of the fieldwork, a report will be generated presenting the destruction activities, tabulated analytical results and laboratory reports. The necessary figures will be generated and submitted to the appropriate agencies.

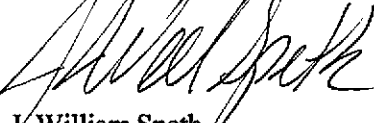
Remarks and Signatures

The interpretations contained in this report represent our professional opinions and are based, in part, on information supplied by the client. These opinions are based on currently available information and are arrived at in accordance with currently accepted hydrogeologic and engineering practices at this time and location. Other than this, no warranty is implied or intended.

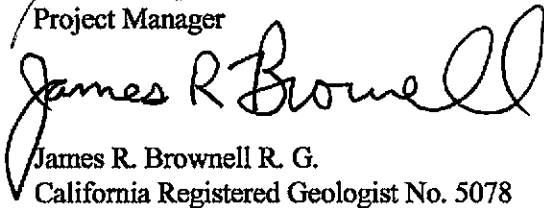
If you have any questions regarding this project, please contact Will Speth at (916) 536-2612.

Sincerely,

DELTA ENVIRONMENTAL CONSULTANTS, INC.



J. William Speth
Project Manager

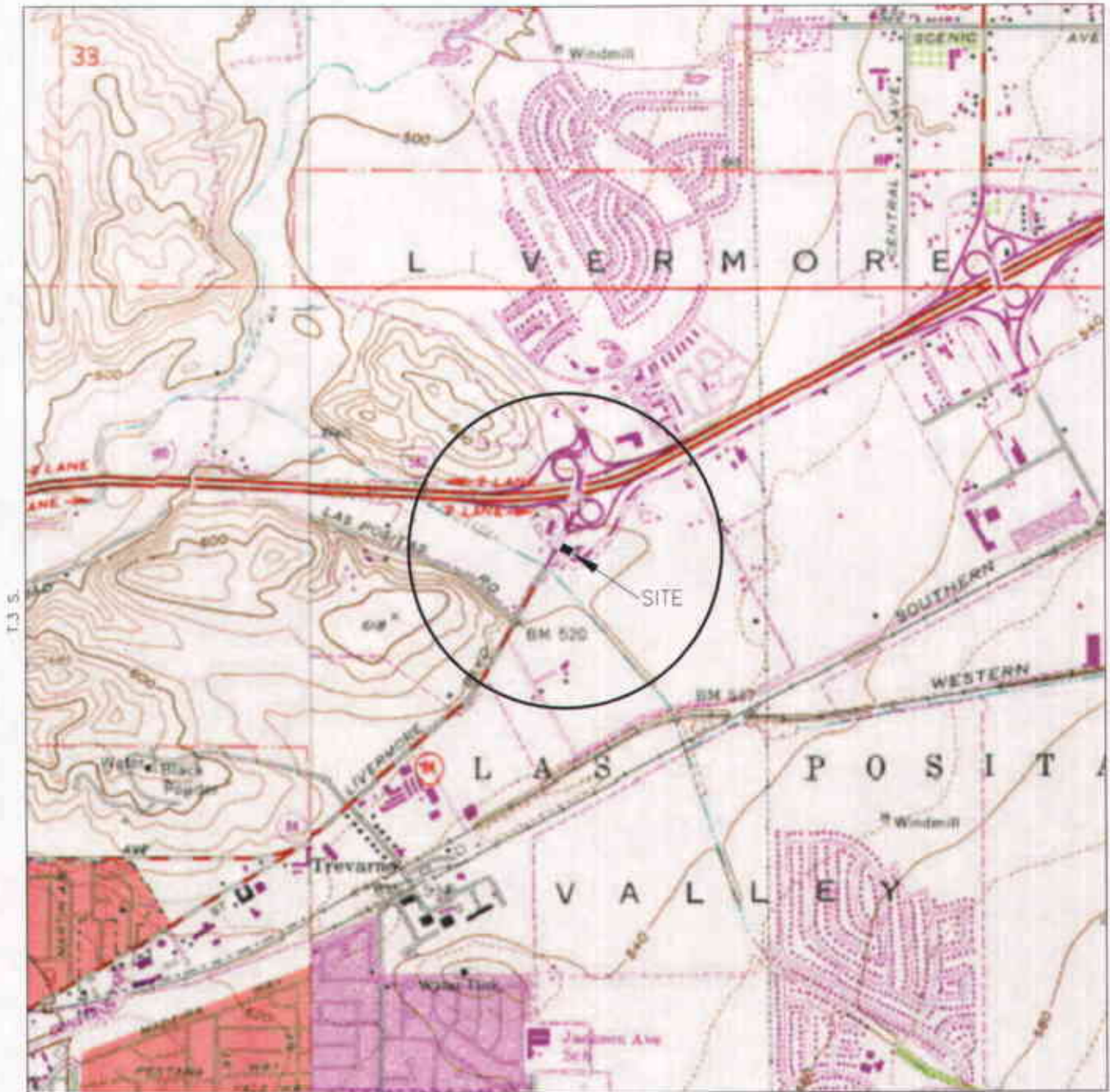


James R. Brownell R. G.
California Registered Geologist No. 5078



JWS (Lrp001-91924.doc)
Enclosure

cc: Mr. Tom Bauhs – Chevron Products Company.
Ms. Danielle Stefani – Livermore Pleasanton Fire Department



GENERAL NOTES:
 BASE MAP FROM U.S.G.S.
 ALTAMONT, CA.
 7.5 MINUTE TOPOGRAPHIC
 PHOTOREVISED 1980



QUADRANGLE LOCATION

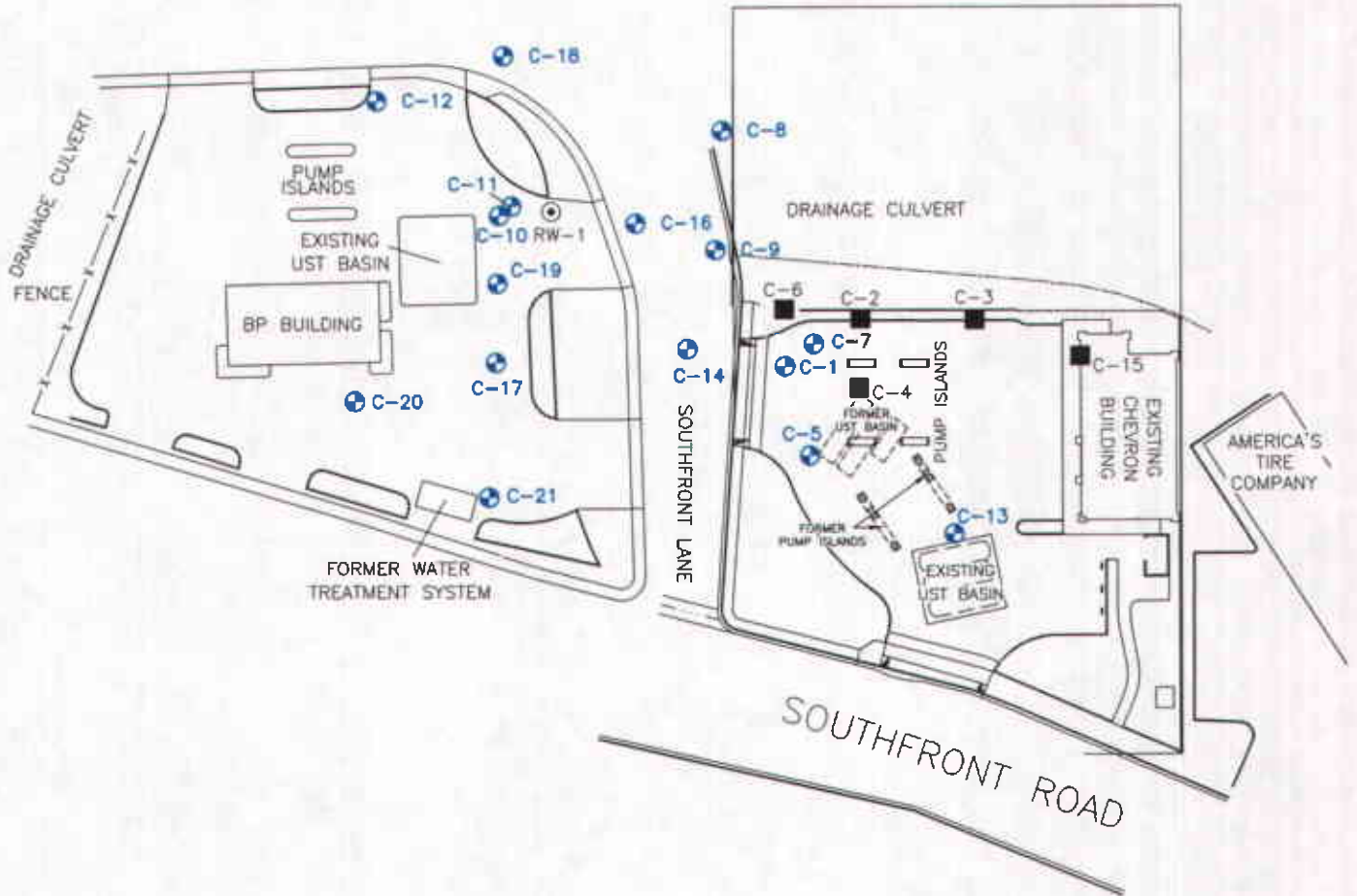


FIGURE 1
 SITE TOPOGRAPHIC MAP
 CHEVRON STATION NO. 9-1924
 4904 SOUTHFRONT ROAD
 LIVERMORE, CA.

PROJECT NO. DG91-924	DRAWN BY M.L. 8/11/00
FILE NO. DG91924C	PREPARED BY JWS
REVISION NO. 1	REVIEWED BY



FIRST STREET
(HIGHWAY 84)






NOTE: SITE MAP ADAPTED FROM GROUNDWATER TECHNOLOGY FIGURES. SITE DIMENSIONS AND FACILITY LOCATIONS NOT VERIFIED.

FIGURE 2

SITE MAP

CHEVRON STATION NO. 9-1924
4904 SOUTHFRONT ROAD
LIVERMORE, CALIFORNIA

LEGEND:

-  C-1 CHEVRON MONITORING WELL
-  C-2 DESTROYED MONITORING WELL LOCATION
-  RW-1 RECOVERY WELL LOCATION

PROJECT NO. DG91-924	DRAWN BY TLA 8/11/00
FILE NO. DG 9-1924-A	PREPARED BY JWS
REVISION NO. 1	REVIEWED BY



FIELD METHODS AND PROCEDURES

Health and Safety Plan

Fieldwork performed by Delta and Delta's subcontractors at the site is conducted according to guidelines established in a Site Health and Safety Plan (SHSP). The SHSP is a document which describes the hazards that may be encountered in the field and specifies protective equipment, work procedures and emergency information. A copy of the SHSP is at the site and available for reference by appropriate parties during work at the site.

Locating Underground Utilities

Prior to commencement of any work that is to be below surface grade, the location of the excavation, boring, etc., is marked with white paint as required by law. An underground locating service such as Underground Service Alert (USA) is contacted. The locating company contacts the owners of the various utilities in the vicinity of the site to have the utility owners mark the locations of their underground utilities. Any invasive work is preceded by manual hand augering to a minimum depth of five feet below surface grade to avoid contact with underground utilities.

QUALITY ASSURANCE PLAN

General Sample Collection and Handling Procedures

Proper collection and handling are essential to ensure the quality of a sample. Each sample is collected in a suitable container, preserved correctly for the intended analysis, and stored prior to analysis for no longer than the maximum allowable holding time. Details on the procedures for collection and handling of samples used on this project can be found in this section.

Water Sample Collection for Volatile Organic Analyses

For volatile organic analyses, the water sample is decanted into each VOA vial in such a manner that there is no meniscus at the top of the vial. A cap is quickly secured to the top of the vial. The vial is inverted and gently tapped to see if air bubbles are present. If none are present, the vial is labeled and refrigerated according to soil and water sample labeling and preservation.

Soil and Water Sample Labeling and Preservation

Label information includes a unique sample identification number, job identification number, date, and time. After labeling all soil and water samples are placed in a Ziploc® type bag and placed in an ice chest cooled to 4° Celsius. Upon arriving at Delta's office the samples are transferred to a locked refrigerator

cooled to 4° Celsius. Chemical preservation is controlled by the required analysis and is noted on the chain of custody form.

Upon recovery, the sample container is sealed to minimize the potential of volatilization and cross-contamination prior to chemical analysis. Soil sampling tubes are typically closed at each end with a Teflon® sheet and plastic caps. The sample is then placed in a Ziploc® type bag and sealed. The sample is labeled and refrigerated at approximately 4° Celsius for delivery, under strict chain-of-custody, to the analytical laboratory.

Sample Identification and Chain-of-Custody Procedures

Sample identification and chain-of-custody procedures document sample possession from the time of collection to ultimate disposal. Each sample container submitted for analysis has a label affixed to identify the job number, sampler, date and time of sample collection and a sample number unique to that sample. This information, in addition to a description of the sample, field measurements made, sampling methodology, names of on-site personnel, and any other pertinent field observations is recorded on the borehole log or in the field records. A California-certified laboratory analyzes the samples.

A chain-of-custody form is used to record possession of the sample from time of collection to its arrival at the laboratory. When the samples are shipped, the person in custody of them relinquishes the samples by signing the chain-of-custody form and noting the time. The sample-control officer at the laboratory verifies sample integrity and confirms that the samples are collected in the proper containers, preserved correctly and contain adequate volumes for analysis.

If these conditions are met, each sample is assigned a unique log number for identification throughout analysis and reporting. The log number is recorded on the chain-of-custody form and in the legally-required logbook maintained by the laboratory in the laboratory. The sample description, date received, client's name and other relevant information is also recorded.