



# Clark & Witham, Inc.

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## Consulting Engineering Geologists

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September 28, 1995  
DHO001-A

Ms. Eva Chu  
Alameda County Health Care Services Agency  
Department of Environmental Health  
1131 Harbor Bay Parkway, No. 250  
Alameda, California 94502-6577

ENVIRONMENTAL  
PROTECTION  
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**Subject:** Revised Letter Work Plan for Installing One Ground-water Monitoring Well at Dublin Honda, 7099 Amador Plaza Road, Dublin, California.

Ms. Chu:

Clark & Witham, Inc. submits this revised letter Work Plan to install a ground-water monitoring well at the above-mentioned property. The property is occupied by Dublin Honda, an automobile retail business. We understand that the purpose of the monitoring well is to evaluate the potential impact to the quality of the ground water from a former leaking underground storage tank (UST) that stored waste oil.

The property is located on the east side Amador Plaza Road, just north of its intersection with Dublin Boulevard. Dublin Honda consists of two structures referred to as Building Nos. 1 and 2. The former waste oil UST was located at the northern end of Building No. 2 as shown on the attached site plan. Surface topography slopes gently toward the northeast. Devany Canyon Creek is approximately  $\frac{1}{8}$  mile to the south. Depth to ground water is anticipated to be approximately 20 to 25 feet below grade.

### Site Safety and Permit Acquisition

Clark & Witham, Inc., and its subcontractors will perform the work described in this Work Plan following the guidelines of a Site Hazard Information form prepared for this project. This form will describe the basic safety requirement for the environmental investigation at the site and will address potential hazards that may be encountered during this phase of the project. Personnel and subcontractors of Clark & Witham, Inc., will be briefed on the contents of the form before work begins. A copy of the Site Hazard Information form will be kept at the site and will be available for reference by appropriate parties. A Clark & Witham, Inc. representative at the site will act as the Site Safety Officer.

A permit application will be submitted to the Zone 7 Water Agency, and work will not proceed until the permit is approved. Before drilling, Clark & Witham, Inc. also will

notify Underground Services Alert to locate public underground utility lines in the drilling area.

### **Drilling and Soil Sampling**

A Clark & Witham, Inc. geologist will observe the drilling of the borehole for the well. Exploration Geoservices of San Jose, California (CS7 license number 484288), will drill the borehole using a Mobile B-57 or similar truck-mounted drill rig. Eight-inch-diameter, continuous flight, hollow-stem augers will be used to drill the boring to a maximum depth of 35 feet below the ground surface, which is 10 to 15 feet below the anticipated depth of ground water. The augers will be steam cleaned before use in drilling the borehole.

The boring will be located 10 to 20 feet north-northwest of the former UST location, which is inferred to be dowgradient from the former tank. A review of files of a nearby underground storage tank site was performed. Data for a Chevron Service Station at 7420 Dublin Boulevard presented by Western Geologic Resources, Inc. (1990) indicated the direction of ground-water flow varied from the north-northwest to the southeast. The calculated direction of ground-water flow was most frequently to the north-northwest.

During drilling, soil samples will be collected in the boring at approximately 5-foot intervals from the ground surface to the base of the boring and at depths of significant changes of earth material. Samples will be retrieved with a California-modified, split-spoon sampler containing three, 6-inch-long by 2-inch-diameter brass sleeves. Samples will be collected by advancing the borehole to a point just above the sampling depth and then driving the sampler through the hollow center of the auger and into the soil. The sampler will be driven 18 inches with a standard 140-pound hammer repeatedly dropped a distance of 30 inches. The number of blows need to drive the sampler each successive 6-inch increment will be counted and recorded on a *Log of Boring* to assess the relative consistency of the soil. Sampling at any particular 6-inch-interval will be stopped when the number of blow counts reaches 50, and the inches the sampler is driven in that interval will be recorded.

One sample from each sampling interval will be sealed promptly in its brass sleeve with Teflon sheets, plastic caps, and tape. Each sealed sample will be labeled and placed in ice storage pending transport to a laboratory for chemical analysis. A second sleeve will be examined for the possible presence of hydrocarbons. The earth materials from the second sleeve will be described by the field geologist on the *Log of Boring* using the Unified Soil Classification System.

One unsaturated soil sample will be submitted to the laboratory and this sample will be selected based on field evidence of chemical impact. Before transport of the selected soil sample to the laboratory, the field geologist will initiate a Chain of Custody form for the sample.

### **Well Construction, Development, and Sampling**

The ground-water monitoring well will be constructed in the borehole. Two-inch-diameter, Schedule 40, polyvinyl chloride (PVC) casing will be inserted down the hollow stem of the auger. The bottom end of the casing will have a threaded PVC cap. The lower portion of the well casing will be perforated with 0.010-inch-wide slots to an elevation of approximately 5-feet above the static water level in the borehole. The remaining section of the casing will not be perforated. The casing joints will be flush threaded; no glue, chemical cement, or solvent will be used in well construction.

As the auger is pulled from the borehole, No. 2/12 (or equivalent) sorted sand will be poured into the annular space between the borehole wall and well casing from the base of the borehole to 2 feet above the perforated casing. A bentonite-pellet seal, approximately 2 feet thick, will be placed on top of the sand pack. A neat cement or sand cement slurry will be placed from the top of the bentonite-pellet seal to within 1 foot of the ground surface. The top of the well casing will be sealed with an expandable plug and a well-head cover with a 10 inch or longer skirt will be placed over the casing and set in concrete. The well-head cover will be fixed approximately ½ inch above the surrounding ground surface. Soil cuttings generated during drilling will be placed on plastic sheeting on the property. These cuttings will be left at the site and will remain the responsibility of the property owner.

The well will be developed a minimum of 72 hours after construction by a combination of swabbing and pumping to remove accumulated sediment and sort the annular sand pack. The temperature, pH, and conductivity of the discharged water will be measured and recorded three or more times during well development, and these parameter will be observed to be relatively stable before development is stopped. Purge water will be placed in Department of Transportation, 17E, 55-gallon drums, which will be left at the site for proper disposal by the property owner after laboratory results are obtained.

### **Collection of Water Sample**

Before well development, purging, and water sampling, the depth to static water level will be measured to the nearest 0.01 foot with an electronic water-level indicator. A ground-water sample for subjective analysis will be collected from the well by gently lowering about half the length of a clean plastic disposable bailer past the air-water interface. The sample will be retrieved and examined for evidence of floating hydrocarbon product and sheen.

If free petroleum is encountered, the thickness of product collected in the bailer will be recorded, and the well will not be sampled. A minimum of ten casing volumes will be pumped from the well during development, and purge water will be placed in 55-gallon drums, as described previously. After the well recharges more than 80 percent of the amount of drawdown, water samples will be collected. A bailer will be lowered gently

past the air-water interface and the sample will be retrieved and promptly transferred, with a minimum of mixing or exposure to air, to appropriate sample containers. Samples for analyses for gasoline hydrocarbons and volatile organic compounds will be poured into 40 milliliter, volatile organic analysis (VOA) glass vials. Hydrochloric acid will be added to these samples as a preservative. Samples collected for diesel and oil and grease hydrocarbons will be placed in 1-liter amber jars. The glass containers will be capped with Teflon-lined lids, labeled, and placed in ice storage for transport to the laboratory for analysis. A Chain of Custody form will be initiated by the sampler in the field, and chain-of-custody protocol will be followed throughout the handling of samples.

#### **Laboratory Analyses of Soil and Water Samples**

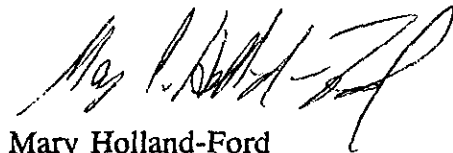
The soil sample will be analyzed for oil and grease, using SM 5520 EF, total petroleum hydrocarbons as diesel (TPHd) and as gasoline (TPHg) using Environmental Protection Agency (EPA) modified Method 8015, and for benzene, toluene, ethylbenzene, and total xylenes (BTEX) using EPA Method 8020. If these analytes are detected, the soil sample will also be analyzed for volatile organic compounds (VOCs) using EPA Method 8010 and semi-volatile organic compounds using EPA Method 8270. The ground-water sample will be analyzed for oil and grease, TPHd, TPHg, BTEX, VOCs and semi-volatile organic compounds using the above-described EPA methods. Analyses of the soil and water samples will be performed by Trace Analysis Laboratory, Inc, (Hazardous Waste Testing Laboratory Certification No. 1199), of Hayward, California. The analyses will be performed using the appropriate quality assurance/quality control procedures including method detection limits and a normal turn around time.

## Report

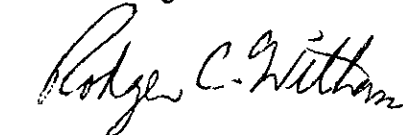
Clark & Witham, Inc. will prepare a technical report that will include field and laboratory procedures and results, data interpretation, and conclusions and recommendations. The report will be signed by a California Certified Engineering Geologist. Information gathered during this investigation will be considered confidential and will be released only with the authorization of the property owner.

Please call if you have any questions.

Sincerely,  
Clark & Witham, Inc.



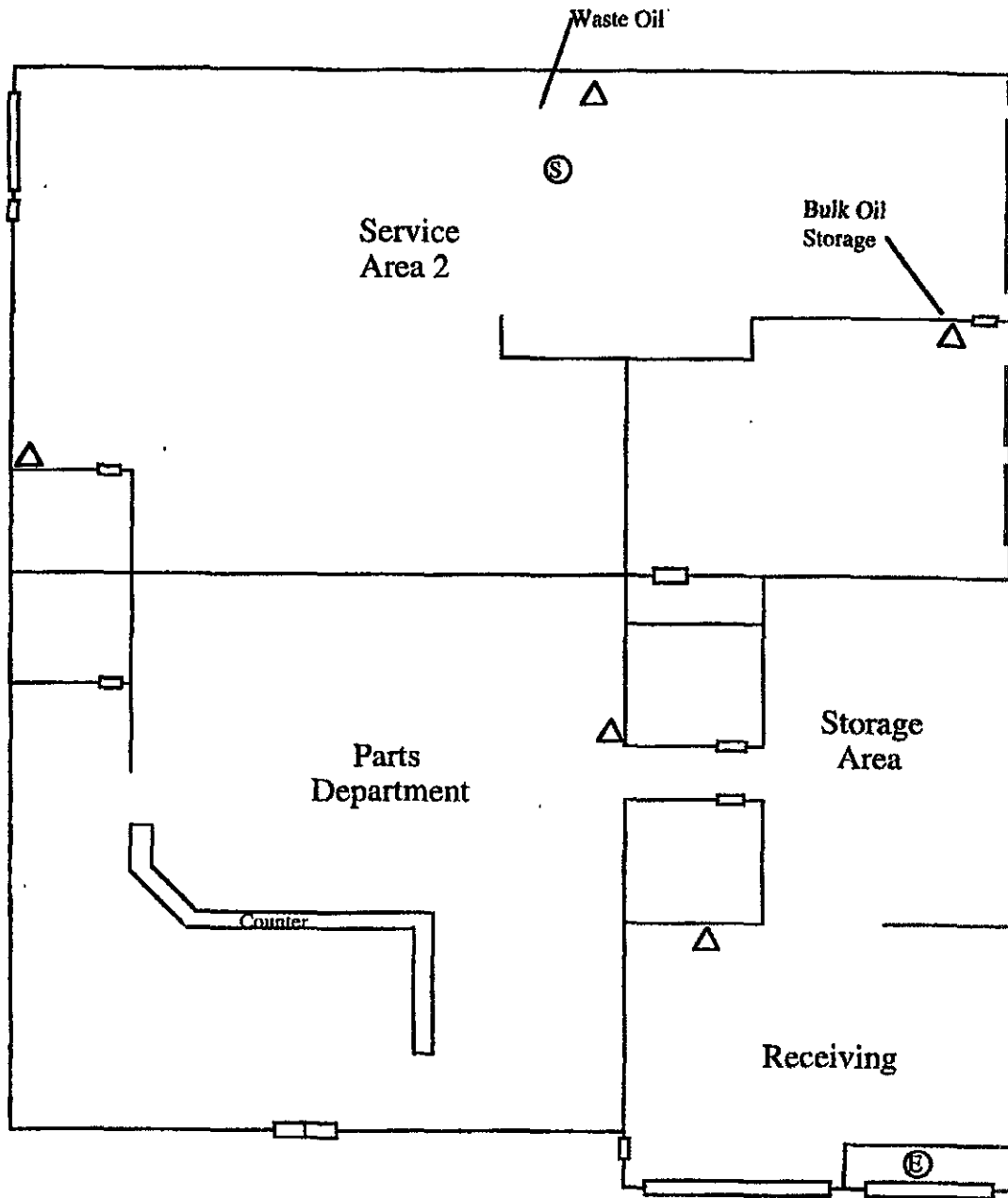
Mary Holland-Ford  
Staff Geologist



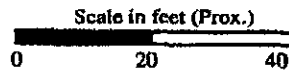
Rodger C. Witham, R.G.  
Project Manager

Attachment: Map of Building No. 2

Reference: Western Geologic Resources, Inc. July 17, 1990, *Letter Report Vadose Zone Characterization: Vadose Well Installation and Vacuum Extraction Testing, Chevron Service Station No. 92582, 7420 Dublin Boulevard, Dublin, California.* Report No. 1-124.04.



**Dublin Honda**  
 7099 Amador Plaza Rd  
 Dublin, CA 94568  
 Site Map Building 2  
*Confidential*



- Ⓜ Gas Main
- Ⓦ Water Main
- ⓔ Electric Shutoff
- Fire Hydrant
- △ Fire Extinguisher
- ▨ Storm Drain
- Ⓢ Solvent Tank