Chevron

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Chevron U.S.A. Products Company
2410 Camino Ramon
San Ramon, CA 94583
P.O. Box 5004
San Ramon, CA 94583-0804

Marketing Department
Phone 510 842 9500

September 14, 1993

Mr. Scott Seery
Alameda County Environmental Health Department
80 Swan Way, Room 200
Oakland, CA 94621

Re: Work Plan for Additional Subsurface Environmental Investigation
Former Chevron Service Station No. 9-4930
3369 Castro Valley Blvd., Castro Valley, CA 94546

Dear Mr. Seery :

Enclosed is a work plan from RESNA dated September 7, 1993.

Please review the work plan. If there are no questions, please have your office send a letter approving the work plan so that Chevron can proceed with the additional investigation.

If you have any questions or comments, please feel free to call me at (510) 842-8752.

Sincerely,

Chevron U.S.A. Products Co.

Kenneth Kan
Engineer

LKAN/MacFile 9-4930R5

Enclosure

cc: Mr. Richard Hiett, RWQCB-S.F.Bay Region
2101 Webster Street, Suite 500, Oakland, CA 94612

Anna Counelis & Tula Gallanes
109 Casa Vieja Place, Orinda, CA 94563

Ms. Bette Owen, Chevron U.S.A. Products Co.

RESNA
Working to Restore Nature

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WORK PLAN
for
ADDITIONAL
SUBSURFACE ENVIRONMENTAL INVESTIGATION
at
Former Chevron Service Station No. 9-4930
3369 Castro Valley Boulevard
Castro Valley, California

Prepared for

Mr. Kenneth Kan
Chevron U.S.A. Products Company
2410 Camino Ramon
San Ramon, California 94583

by
RESNA Industries Inc.
73 Digital Drive
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September 7, 1993

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WORK PLAN

for

ADDITIONAL SUBSURFACE ENVIRONMENTAL INVESTIGATION

at
Former Chevron Service Station No. 9-4930
3369 Castro Valley Boulevard
Castro Valley, California
for
Chevron U.S.A. Products Company

INTRODUCTION

This work plan describes the tasks to further evaluate petroleum hydrocarbons detected in soil and groundwater beneath former Chevron Service Station No. 9-4930 in Castro Valley, California. Chevron U.S.A. Products Company (Chevron) requested that RESNA Industries, Inc. (RESNA) prepare this work plan to further evaluate the extent of residual petroleum hydrocarbons in soil and dissolved petroleum hydrocarbons in groundwater after previous environmental investigations detected petroleum hydrocarbons in soil and groundwater beneath the site.

BACKGROUND / PREVIOUS WORK

Former Chevron Station No. 9-4930 is at 3369 Castro Valley Boulevard in Castro Valley, as depicted on the Site Vicinity Map (Plate 1). It is our understanding that Chevron has had two configurations at the site. The approximate locations of former underground storage tanks (USTs), pump islands, and other pertinent site features are shown on the Generalized Site Plan (Plate 2). RESNA conducted a previous environmental investigation at the site in November 1992. During the previous investigation RESNA personnel observed the drilling of 16 soil borings. Four

of the soil borings were drilled into groundwater and temporary wells were constructed in the borings. Soil and groundwater samples were collected from the temporary wells. Six soil borings were drilled to just above groundwater and soil samples were collected from these borings. In addition six soil borings were hand-augered to depths ranging from approximately five to ten feet below grade, and soil samples were collected from the hand-augered borings. Results of the previous investigation indicated that soil beneath the site has been impacted by petroleum hydrocarbons. Also, petroleum hydrocarbons were detected in groundwater "grab" samples collected from each of the temporary groundwater monitoring wells. (RESNA Industries, December 1992).

In February 1993 Chevron demolished the service station building and car wash located at the site. On March 10, 1993 Touchstone Developments, of Santa Rosa, California observed the removal of three 10,000 gallon underground storage tanks (UST's) and associated lines by Gettler-Ryan Inc. (Gettler-Ryan) of Hayward, California. Petroleum hydrocarbons were detected in soil samples collected from the UST pits and product lines. On March 15, 1993 Touchstone observed removal of the underground waste water reclaim vault by Gettler-Ryan, associated with the former car wash. Touchstone observed and managed the overexcavation of additional soil from the UST pits by Gettler-Ryan in late March and April, 1993 (Touchstone, June 1993).

PROPOSED WORK

This investigation is designed to evaluate the existing soil and groundwater conditions beneath the site. The specific tasks are summarized below and discussed in the sections that follow. RESNA will perform the following tasks:

- Prepare a site safety plan and obtain appropriate monitoring well permits.
- Drill four onsite soil borings (B-11 through B-14) to approximately 20 feet below grade. We expect to encounter groundwater at approximately 10 feet below grade. The locations of the proposed soil borings are shown on Plate 2.
- Collect and classify relatively undisturbed soil samples at 5-foot intervals, at obvious changes in soil type, where there is subjective evidence of petroleum hydrocarbons, and just above first encountered groundwater.

- Construct 2-inch inner diameter monitoring wells (MW-1 through MW-4) in borings B-11 through B-14, respectively.
- Develop, purge and sample the newly installed wells.
- Submit selected soil samples to a laboratory certified by the state of California for analyses for TPHg using U.S. Environmental Protection Agency (EPA) Method 8015 (modified), and for benzene, toluene, ethylbenzene, and total xylene isomers (BTEX) using EPA Method 8020. Groundwater samples will be submitted to a laboratory for analyses for TPHg using EPA Method 8015 (modified), and for BTEX using EPA Method 8020.
- Contracting a licensed land surveyor to survey the locations and top of casing elevations of the newly installed wells relative to mean sea level.
- Prepare a report summarizing our field and laboratory procedures, findings and presenting our conclusions.

Site Safety Plan and Permits

A Site-Specific Health and Safety Plan will be prepared by RESNA as required by the Occupational Health and Safety Administration (OSHA) Standard "Hazardous Waste Operations and Emergency Response" guidelines (29 CFR 1910.120). The Site-Specific Health and Safety Plan will be prepared by RESNA personnel, following a complete review of site conditions and any existing Site-Specific Health and Safety Plans for the site with the Project Manager. The document will be reviewed by RESNA personnel and subcontractors performing work at the site. A copy of the Site-Specific Health and Safety Plan will be kept at the work site and will be available for reference by appropriate parties during the work. The RESNA geologist will act as the Site Safety Officer.

Applicable state and local permits related to the work to be performed at the site will be obtained.

Soil Borings and Sampling

RESNA will contact Underground Services Alert before drilling to help locate public utility lines at the site. RESNA will hand auger boring locations to a depth of approximately 3 feet to 5 feet

before drilling to reduce the risk of damaging underground structures. Locations of the proposed monitoring wells are shown on Plate 2. The soil boring locations were chosen to evaluate if gasoline hydrocarbons are present in soil and whether dissolved hydrocarbons are present in groundwater.

Soil borings will be drilled with a CME-55 (or similar) drill rig equipped with nominal 8-inch-diameter, hollow-stem augers. Augers and sampling equipment will be steam cleaned before use and between borings to minimize the possibility of crosshole contamination. The reinstate will be stored in a DOT approved purge water trailer and transported to the Chevron refinery in Richmond, California, for disposal. Drilling will be performed under the observation of a RESNA geologist, and the earth materials in the borings will be classified while drilling using the visual and manual methods according to the Unified Soil Classification System.

Based on previously encountered depths of groundwater we expect to drill soil borings B-11 through B-14 to approximately 20 feet below grade. Soil borings will be drilled to approximately 10 feet below the first-encountered groundwater or 5 feet into any confining layer encountered beneath the uppermost water-bearing zone. If a confining layer is encountered, the boring will be terminated and backfilled with bentonite to the top of the confining layer before installing a groundwater monitoring well. During drilling soil samples will be collected every 5 feet, obvious changes in soil stratigraphy, obvious signs of petroleum hydrocarbons, and just above first encountered groundwater. Samples will be collected with a California-modified, split-spoon sampler equipped with laboratory-cleaned brass sleeves. Samples will be collected by advancing the auger to a point just above the sampling depth and driving the sampler into the soil. The sampler will be driven 18 inches with a standard 140-pound hammer repeatedly dropped 30 inches. The number of blows required to drive the sampler each successive 6-inch interval will be counted and recorded to give an indication of soil consistency.

Soil samples will be monitored with a photoionization detector (PID), which measures hydrocarbon concentrations in the ambient air or headspace above the soil sample. Field instruments such as the PID are useful for indicating relative levels of volatile hydrocarbons, but do not detect concentrations of hydrocarbons with the same precision as laboratory analyses. Soil samples selected for possible chemical analysis will be sealed promptly with aluminum foil, plastic

caps, and duct tape. The samples will be labeled and placed in iced storage for transport to the laboratory. Chain of Custody Records will be initiated by the geologist in the field, updated throughout handling of the samples, and sent with the samples to the laboratory. Copies of these records will be included in the final report. Cuttings generated during drilling will be stockpiled on plastic sheeting pending characterization and disposal.

Well Construction

Monitoring wells MW-1 through MW-4 will be constructed of thread-jointed, 2-inch-inner-diameter, schedule 40 polyvinyl chloride (PVC) casing in borings B-11 through B-14, respectively. No chemical cements, glues, or solvents will be used in well construction. The screened portion of each well will consist of factory-perforated casing with 0.020-inch-wide slots. We expect that the well screen will be installed from the total depth of each well to approximately 5 feet below grade. The well screen for each well will be installed approximately five feet above and ten feet below the current water table to permit entry of separate-phase hydrocarbons, if present, and to allow for fluctuations in the groundwater elevation. Unperforated casing will be installed from the top of each screen to the ground surface. The annular space in the well will be packed with sand to approximately 1 foot above the slotted interval. A bentonite plug will be constructed above the sand pack and hydrated with water to prevent cement from entering the filter pack. The remaining annulus will be backfilled to grade with a slurry of cement and bentonite powder.

The monitoring wells will be protected with traffic-rated, cast-aluminum utility boxes equipped with PVC skirts. Each box has a seal to minimize surface-water infiltration and must be opened with a special wrench. The design of this box reduces the possibility of accidental disturbance of the well.

Monitoring Well Development and Sampling

RESNA will wait a minimum of 24 hours before development of the monitoring wells to allow the grout to harden. Initially, a water sample will be collected for subjective analysis before development of the monitoring wells. This sample will be collected from near the water surface in the well with a Teflon bailer cleaned with a laboratory-grade detergent and deionized water. The

wells will be developed with a surge block and pump. Well development will continue until the discharge water is relatively clear of silt and sand. After the water level has been allowed to stabilize, the well will be checked for separate-phase hydrocarbons using an interface probe. The thickness of any product detected in the well will be recorded. If separate-phase hydrocarbons are encountered in the well, the well will not be purged, and the water will not be sampled for chemical analysis. Separate-phase hydrocarbons will be bailed from the well and stored in labeled drums onsite. RESNA will apprise Chevron of appropriate disposal options for separate-phase hydrocarbons bailed from the well.

RESNA will wait a minimum of 24 hours after development of the wells prior to purging and sampling. If separate-phase hydrocarbons greater than 0.02-inches thick are not detected after development, the well will be purged of approximately 4 to 5 casing volumes of water with a submersible pump, or until pH, conductivity, and temperature of the purged water have stabilized. Water purged from the wells will be directed to a tank trailer and transported to Chevron's Richmond Refinery for disposal.

The wells will be allowed to recover to at least 80 percent of static conditions, and a sample of the groundwater will be collected with a bailer cleaned with a laboratory-grade detergent and deionized water. The water will be transferred slowly from the bailer to laboratory-cleaned, 40-milliliter glass vials for analyses by the laboratory. The glass vials will contain hydrochloric acid as a preservative. Our field personnel will check to see that no headspace is present in the sample. Chain of Custody Records will be initiated in the field by the geologist, updated throughout handling of the samples, and sent along with the samples to the laboratory. Copies of Chain of Custody Records will be included in our final report.

Evaluation of Potentiometric Surface

The groundwater gradient and direction of groundwater flow at the site will be evaluated. The elevation of the top of each well casing will be measured relative to mean sea level by a licensed land surveyor. Water-depth measurements will be made from the top of the casing in the well to the nearest 0.01 foot with an electronic water-level indicator. The well will be vented to the atmosphere for a minimum of 1 hour before obtaining depth-to-water measurements. Venting is

conducted to allow the ground water to equilibrate with barometric pressure. These data will be combined to evaluate the relative elevation of the groundwater surface in each well and the slope of the groundwater surface across the site.

Laboratory Analyses

Soil samples selected for analyses from each boring will generally include the sample with the highest PID reading, samples with visual evidence of hydrocarbons, and samples collected from just above the first encountered water. Analysis of soil and groundwater samples will be performed for TPHg using modified EPA Method 8015 and for BTEX using EPA Methods 8020. Detection limits for the tests requested and concentrations present will be stated on the laboratory reports. Analytical methods and detection limits will conform to guidelines specified in the latest edition of the Tri-Regional Recommendations. Laboratory analyses will be performed by a laboratory certified by the State of California.

Report Preparation

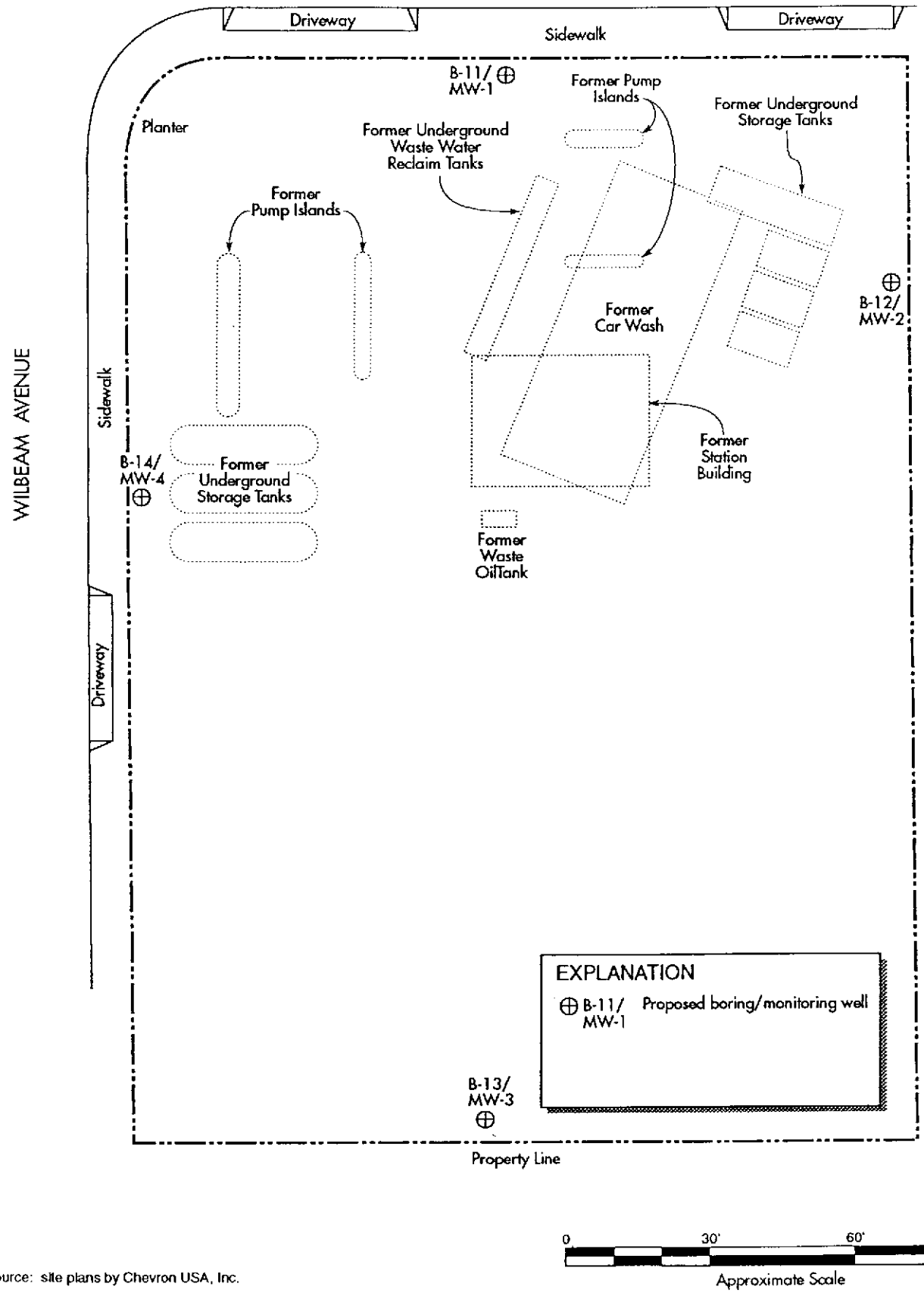
A report summarizing our findings and presenting our conclusions will be prepared.

REFERENCES

United States Geological Survey, 1980. Hayward, California, 7.5-Minute Topographic Quadrangle Map.

RESNA Industries, December 16, 1992. Report: Subsurface Environmental Investigation, Chevron Station 9-4930, 3369 Castro Valley Boulevard, Castro Valley, California. 17068.02.

Touchstone Developments, June 5, 1993. Tank/Line Removal and Over-Excavation Report, Former Chevron Service Station No. 9-4930, 3369 Castro Valley Boulevard, Castro Valley, California.



Source: site plans by Chevron USA, Inc.

RESNA

PROJECT NO. 17068.02 | 8/93

GENERALIZED SITE PLAN

Former Chevron Service Station No. 9-4930
3369 Castro Valley Boulevard
Castro Valley, California

FIGURE
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