Chevron

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2410 Camino Ramon
San Ramon, CA 94583
P.O. Box 5004
San Ramon, CA 94583-0804

Marketing Department
Phone 510 842 9500

July 29, 1993

Ms. Eva Chu
Alameda County Environmental Health
80 Swan Way, Room 200
Oakland, CA 94621

Re : Former Chevron Service Station No. 9-2621
7667 Amador Valley Blvd., Dublin, CA 94568

Dear Ms. Chu :

Enclosed is RESNA July 28, 1993 work plan for additional investigation.

This work plan describes the placement of several permanent wells.

Please review the enclosed work plan. If you concur with the proposed work, please send your written approval.

For additional information on the soil and groundwater investigation, please refer to the report. 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 9-2621R3

Enclosure

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

Mr. Jerry Lemm, J. L. Lemm & Associates
5506 Sunol Blvd., Suite 203, Pleasanton, CA 94566-7779

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

RESNA
Working To Restore Nature

WORK PLAN:
ADDITIONAL ENVIRONMENTAL ASSESSMENT
at
Former Chevron Service Station No. 9-2621
7667 Amador Valley Boulevard
Dublin, California

Prepared for

Mr. Ken Kan
Chevron U.S.A. Products Company
P.O. Box 5004
San Ramon, California 94583

by
RESNA Industries Inc.

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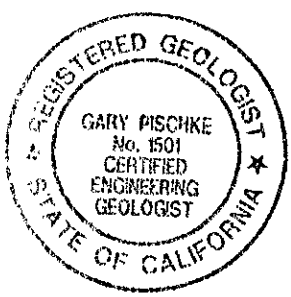


July 28, 1993

RESNA
Working To Restore Nature

WORK PLAN:
ADDITIONAL ENVIRONMENTAL ASSESSMENT
at
Former Chevron Service Station No. 9-2621
7667 Amador Valley Boulevard
Dublin, California
for
Chevron U.S.A. Products Company

INTRODUCTION

Chevron U.S.A. Products Company (Chevron) requested that RESNA Industries, Inc. (RESNA) prepare this work plan to further evaluate the extent of residual hydrocarbons in soil and the lateral extent of dissolved hydrocarbons in groundwater beneath and adjacent to Former Chevron Service Station No. 9-2621 in Dublin, California after previous environmental investigations detected hydrocarbons in soil and groundwater at the site.

Work for the investigation will include drilling two onsite and two offsite soil borings, constructing 2-inch-diameter monitoring wells in the borings, collecting and analyzing soil samples at 5-foot intervals and at changes in lithology from the borings and groundwater samples from the wells, and preparing a report summarizing our field and laboratory procedures and findings.

BACKGROUND

Former Chevron Station No. 9-2621 is located at 7667 Amador Valley Boulevard in Dublin, as depicted on the Site Vicinity Map (Plate 1). From approximately 1960 to 1976, Chevron operated a service station at the site. In 1976 Chevron removed the service station building, underground storage tanks (USTs), dispenser islands, and associated piping. The approximate locations of the former station facilities, USTs, and other pertinent site features are shown on the Generalized Site Plan (Plate 2). In 1992 RESNA Industries drilled four soil borings at the site (RESNA, November 1992. Project No. F1036.01). Residual hydrocarbons were detected in the soil beneath the site. In March 1993, Pacific Environmental Group (PEG) collected soil and groundwater samples at six locations onsite. Hydrocarbons were not detected in soil samples collected from the borings. Hydrocarbons were detected in groundwater samples collected from each temporary well location, except from the temporary well located adjacent to the former waste oil underground storage tank. (PEG, April 26, 1993. Project 325-35.01).

PROPOSED WORK

This investigation is designed to evaluate soil conditions and groundwater for the presence of hydrocarbons. The specific tasks are summarized below and discussed in the sections that follow. We will perform the following tasks:

- Prepare a site safety plan and obtain appropriate monitoring well permits.
- Drill two onsite and two offsite soil borings (B-5 through B-8) to approximately 15 feet below ground surface. We expect to encounter groundwater at approximately 5 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, and at the capillary fringe.
- Construct 2-inch-inner-diameter monitoring wells (MW-1 through MW-4) in borings B-5 through B-8, respectively.
- Develop, purge and sample the newly installed wells MW-1 through MW-4.
- 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), for benzene, toluene, ethylbenzene, and total xylene isomers (BTEX) using EPA Method 8020, and for total organic carbon (TOC) by the California Fertilizer Association Method S 18.0. Groundwater samples will be submitted to a laboratory for analyses for TPHg using EPA Method 8015 (modified), and for BTEX using EPA Method 8020.

- Contract a licensed land surveyor to survey the locations and elevations of the tops of the well casings relative to mean sea level.
- Prepare a report summarizing our field and laboratory procedures and findings.

Site Safety Plan and Permits

Field work will be performed by RESNA personnel in accordance with a site safety plan prepared for the site. This plan will describe the basic safety requirements for the subsurface investigation and the drilling of soil borings at the work site. The site safety plan is applicable to personnel and subcontractors of RESNA. Personnel at the site will be informed of the contents of the site safety plan before work begins. A copy of the site 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. This will include monitoring well permits, encroachment permits, and access agreements.

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 soil borings and monitoring wells are shown on Plate 2. Chevron chose the soil boring locations to evaluate if gasoline hydrocarbons are present in soil and whether dissolved hydrocarbons are present in groundwater off-site immediately northwest, south east, and west of the former service station property boundaries.

Soil borings will be drilled with a CME-55 (or similar) drill rig equipped with 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 rinseate will be containerized and stored onsite. Drilling will be performed under the observation of a 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.

RESNA expects to drill soil borings B-4 through B-8 to approximately 15 feet below grade. Soil borings will be drilled to approximately 10 feet below the first-encountered groundwater or at least 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, at obvious changes in soil stratigraphy, or at obvious signs of hydrocarbons. 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 segregated on the basis of field evidence of hydrocarbons and sampled. The drill cuttings will be removed to an appropriate disposal facility by a contractor selected by Chevron upon receipt of analytic results.

Well Construction

Monitoring wells MW-1 through MW-3 will be constructed of thread-jointed, 2-inch-inner-diameter, Schedule 40 polyvinyl chloride (PVC) casing in borings B-1 through B-3, 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 10 feet below grade. The well screen for each well will be installed approximately five feet above (or in such a way as to allow for a proper surface seal) 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 #3 sand to approximately 1 foot above the slotted interval. A bentonite plug will be constructed above the sand pack 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 an allen head 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 72 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 new Teflon bailer. The wells will be developed with a surge block and pump. Well development will continue until the discharge water is clear of silt and sand. Clay-size sediments derived from the screened portion of the formation cannot be eliminated by well development. 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.

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 new Teflon bailer. The water will be transferred slowly from the bailer to laboratory-cleaned, 1-liter amber bottles and 40-milliliter glass vials for analyses by the laboratory. The glass vials will contain hydrochloric acid as a preservative. Our geologist will check to see if headspace is present. If headspace is present, we will collect more samples until none is present. 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 reading on the PID, any sample with visual evidence of hydrocarbons, and the sample 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. In addition, one soil sample selected from one of the onsite soil borings will be analyzed for TOC by the California Fertilizer Association Method S 18.0. 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

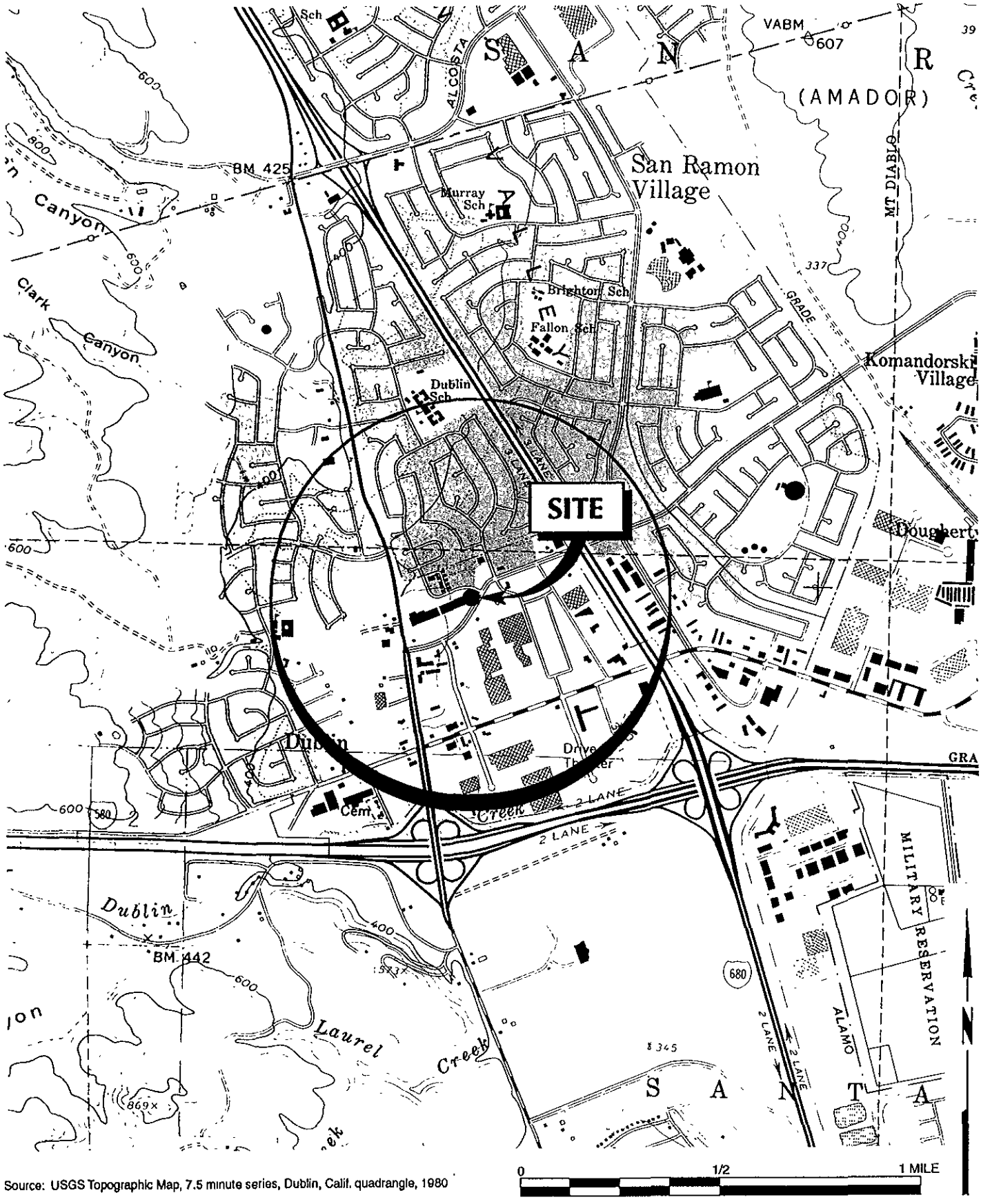
A report summarizing our field and laboratory procedures and findings will be prepared.

REFERENCES

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

RESNA Industries. November 1992. Phase II Investigation at Amador Valley Medical Center (Former Chevron Service Station 9-2621), 7667 Amador Valley Boulevard, Dublin, California. Project No. F1036.01.

Pacific Environmental Group, Inc. April 26, 1993. Report: Soil and Groundwater Investigation at Former Chevron Service Station 9-2621, 7667 Amador Valley Boulevard at Starward Drive, Dublin, California. Project 325-35.01.



Source: USGS Topographic Map, 7.5 minute series, Dublin, Calif. quadrangle, 1980

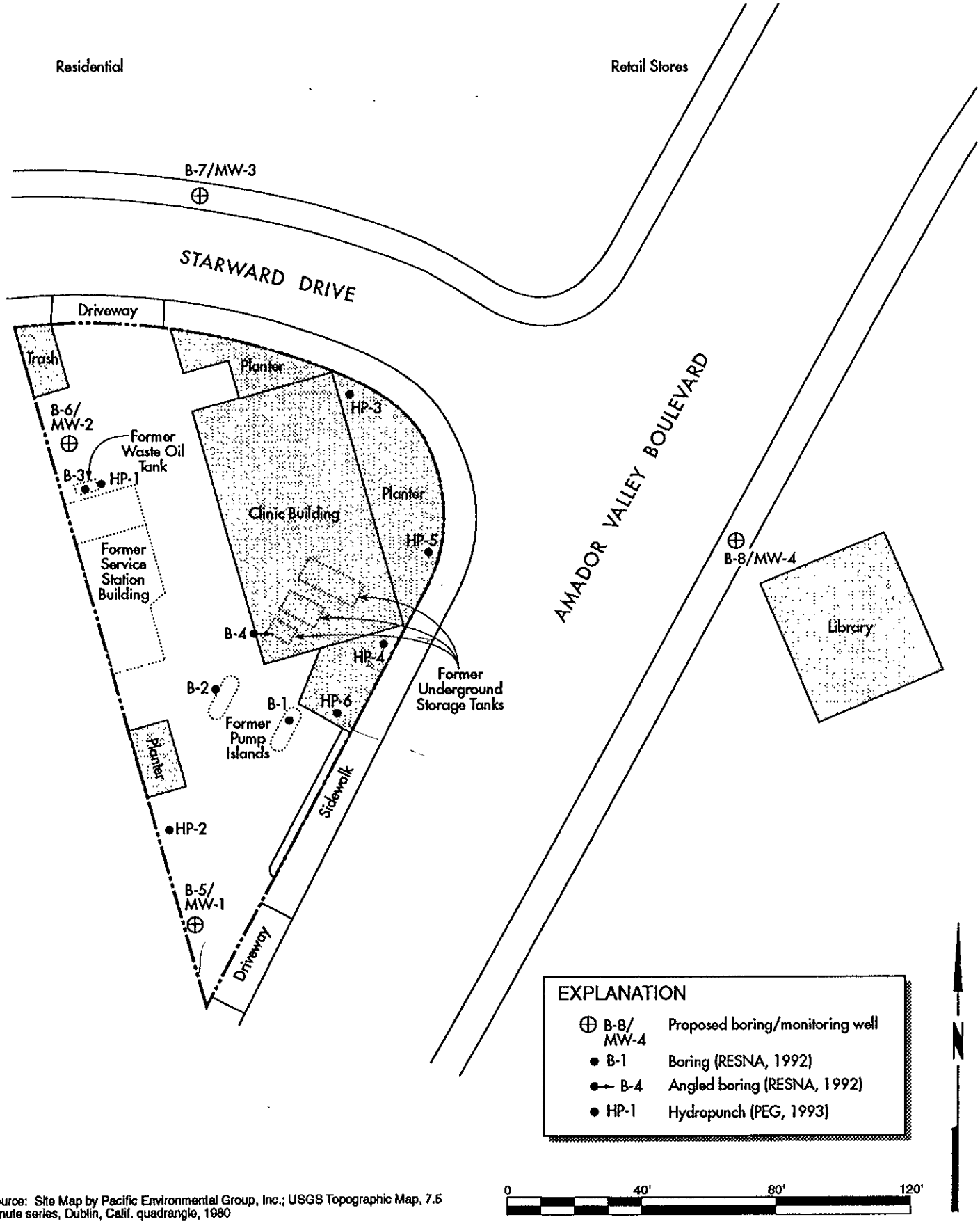
RESNA

PROJECT NO. 170111.01 | 6/93

SITE VICINITY MAP

Amador Valley Medical Center
7667 Amador Valley Boulevard
Dublin, California

PLATE
1



Source: Site Map by Pacific Environmental Group, Inc.; USGS Topographic Map, 7.5 minute series, Dublin, Calif. quadrangle, 1980

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GENERALIZED SITE PLAN

Amador Valley Medical Center
7667 Amador Valley Boulevard
Dublin, California

PLATE
2