URS

Alameda County
NOV 06 2002
Environmental Health

November 1, 2002

Mr. Amir Gholami, REHS
Hazardous Materials Specialist
Alameda County Health Care Services Agency
1131 Harbor Bay Parkway, Suite 250
Alameda, California 94502-6577

WORK PLAN FOR DUAL-PHASE EXTRACTION PILOT TEST, ARCO SERVICE STATION #5387, 20200 HESPERIAN BOULEVARD, HAYWARD, CALIFORNIA, FOR ATLANTIC RICHFIELD COMPANY

Dear Mr. Gholami,

URS Corporation (URS) has prepared this work plan on behalf of Atlantic Richfield Company (Atlantic Richfield) for ARCO Service Station #5387, located at 20200 Hesperian Boulevard in Hayward, California (the Site) (Figure 1). This work plan was prepared to perform a dual-phase extraction (DPE) pilot test in the area of the northwestern dispenser. Soil samples collected beneath the northwestern dispenser during the tank, product piping and dispenser removal in February 2002 contained hydrocarbons and methyl tertiary butyl ether (MTBE). URS will perform a DPE pilot test to mitigate residual hydrocarbons and MTBE in soil and groundwater in the area of the northwestern dispenser. Presented below is a description of the proposed DPE test and our proposed sampling scheme.

PROPOSED DUAL-PHASE EXTRACTION PILOT TEST WORK PLAN

URS will perform a 5-day DPE pilot test to remove residual hydrocarbons from soil and groundwater in the area adjacent to the northwestern dispenser. The DPE system is designed to extract soil vapor and groundwater simultaneously from the subsurface. URS anticipates that this remedial measure will mitigate dissolved hydrocarbons in soil and groundwater beneath the Site by performing mass hydrocarbon removal in the anticipated source area.

A trailer mounted Solleco 400 ACFM Liquid Ring Thermal Oxidizer will be used to perform the DPE pilot test. This unit is capable of generating flow rates up to 200 cubic feet per minute (cfm) and vacuums up to 27 inches of mercury (inHg). This unit will be used to extract soil vapor and liquid simultaneously from wells MW-2, AR-2 and an extraction pipe (EP-1, not shown on map) that was installed during the tank, piping and dispenser removal. A thermal oxidizer is used to treat extracted soil vapors in accordance with permit conditions established by the Bay Area Air Quality Management District (BAAQMD). The period of extraction from a given well is governed by a decrease in the influent hydrocarbon concentrations as measured in the field using a Photo Ionization Detector (PID). Extracted vapors are treated using a thermal oxidizer included as part of the system. Extracted groundwater will be temporarily stored onsite in a water holding tank pending characterization and disposal at an Atlantic Richfield approved facility.

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Wells MW-2, AR-2 and EP-1 in the suspected source area will be targeted for extraction. EP-1 was installed in the overexcavation area of the northwestern dispenser during overexcavation activities. The depth of this well will be field checked. The current average depth to groundwater is approximately 11 ft-bgs.

During the test, URS personnel will record field parameters such as extraction flow rates, vacuums and radius of influence. Periodic readings using a PID will be collected throughout the 5-day test on all three extraction wells to optimize extraction rates during the test.

URS proposes to perform an initial DPE test for 5 days. An additional 5-day test may be performed if soil vapor concentrations do not decline significantly.

SAMPLE ANALYSIS

During DPE system operation, URS personnel will collect six vapor samples for submittal to a California state certified laboratory from wells MW-2 and AR-2, only. These samples will be collected upon initial startup of the system, at the mid-point of the test and at the end of the test. Samples collected from for laboratory analysis will be submitted for total petroleum hydrocarbons as gasoline by modified EPA Method 8015 and benzene, ethylbenzene, toluene, xylenes and MTBE by EPA Method 8021B.

Samples from extraction point EP-1 will not be submitted to the laboratory but only sampled using a PID, as described above.

Groundwater samples collected during the next quarterly groundwater monitoring and sampling event will be compared to the results of previous sampling events to evaluate the effectiveness of the DPE unit in remediating dissolved petroleum hydrocarbons in groundwater beneath the Site.

SUMMARY REPORT PREPARATION

Upon completion of the DPE test and receipt of all laboratory analytical data, URS will finalize and submit the summary report to the Alameda County Health Care Services Agency discussing the operation and results of the DPE pilot test, including hydrocarbon removal rates, and presenting conclusions and recommendations.

PROPOSED SCHEDULE

URS will begin the proposed work on November 4, 2002. URS anticipates submitting the summary report to the ACHCSA within 60 days of receipt of all laboratory analytical results from the short-term DPE event.

If you have any questions or concerns, feel free to contact us at (510) 893-3600.

Sincerely,

URS CORPORATION

Amy Breckenridge for.
Scott Robinson
Project Manager

Barbara J. Jakub
Barbara J. Jakub, R.G.
Senior Geologist

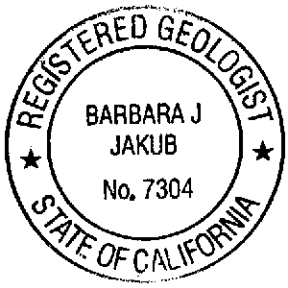

Figure 1 - Site Plan

Cc: Mr. Paul Supple, Atlantic Richfield Company

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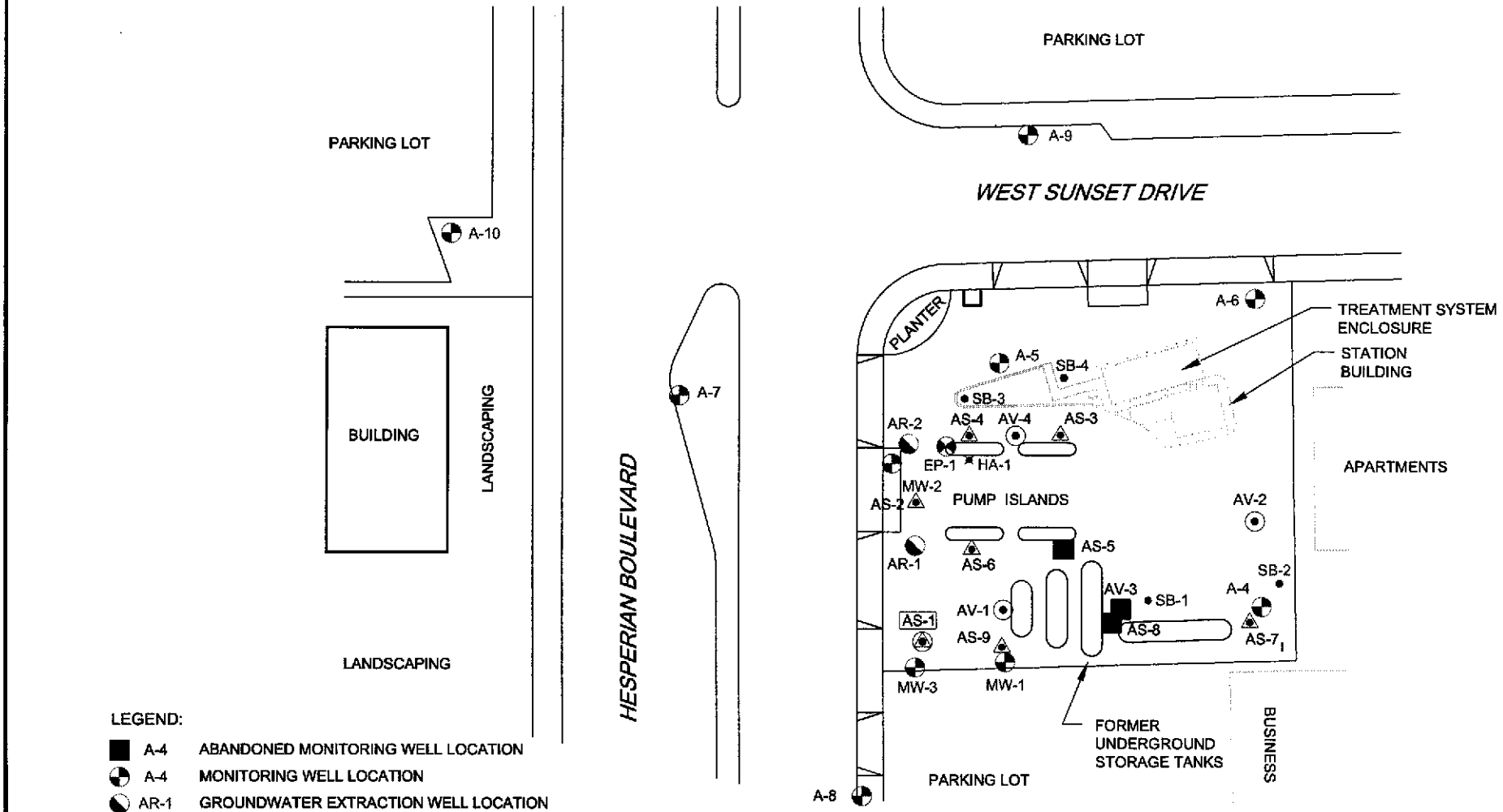

LEGEND:

■	A-4	ABANDONED MONITORING WELL LOCATION
◔	A-4	MONITORING WELL LOCATION
◔	AR-1	GROUNDWATER EXTRACTION WELL LOCATION
⊙	AV-1	SOIL VAPOR EXTRACTION WELL LOCATION
△	AS-2	AIR SPARGE WELL LOCATION
◎	AS-1	DUAL AIR SPARGE/SOIL VAPOR EXTRACTION WELL LOCATION
✱	HA-1	AIR SPARGE WELL LOCATION
•	SB-3	DUAL AIR SPARGE/SOIL VAPOR EXTRACTION WELL LOCATION
◓	EP-1	EXTRACTION POINT

NOTE: SITE MAP ADAPTED FROM IT CORPORATION FIGURES.
SITE DIMENSIONS AND FACILITY LOCATIONS NOT VERIFIED.

NORTH

0 50 100

SCALE IN FEET

URS

Project No. 38486033

Arco Service Station 5387
20200 Hesperian Boulevard
Hayward, California

SITE PLAN

FIGURE
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