Harding ESE
A MACTEC COMPANY

**Harding ESE, Inc.**
1320 Arnold Drive
Suite 263
Martinez, CA 94553-4189
Telephone: 925/313-0840
Fax: 925/313-0844
Home Page: www.mactec.com

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Mr. Don Hwang
Alameda County Health Care Services Agency
Environmental Health Services
Environmental Protection
1131 Harbor Bay Parkway, Suite 250
Alameda, California 94502-6577

**SUBJECT: WORKPLAN FOR SOIL AND GROUNDWATER INVESTIGATION**
**AUTOPRO FACILITY**
**5200 TELEGRAPH AVENUE**
**OAKLAND, CALIFORNIA**
**HARDING ESE PROJECT #651010.6000**

Mr. Hwang:

This Workplan has been prepared by Harding ESE, a MACTEC Company (Harding ESE) on behalf of the Tri Star Partnership (Tri Star) to determine the extent and impact of the suspected hydrocarbon release(s) to soil and groundwater at the Autopro Facility, located at 5200 Telegraph Avenue, Oakland, California (Site). This Work Plan was requested by the Alameda County Health Care Services Agency (ACHCSA) in a letter to Tri Star dated April 11, 2001.

Five underground storage tanks (USTs) were removed from the three separate excavations at the Site in December 1990 prior to Harding ESE's involvement. The USTs previously contained gasoline, diesel, and waste oil. Soil and groundwater samples were collected from the UST excavations during the removal and the subsequent report indicated the presence of detectable concentrations of gasoline, waste oil, gasoline constituents, and lead.

In April 1993, Environmental Science & Engineering, Inc. (ESE, a former name of Harding ESE) performed a limited soil and groundwater investigation at the site. The investigation included drilling one soil boring through the backfill material of each of the former UST excavations at the site into native materials beneath and collecting groundwater samples. Analysis of the samples showed hydrocarbon constituents comparable to motor oil and gasoline.

In April 1994, ESE conducted a site assessment at the site which consisted of drilling four soil borings, converting the borings to groundwater monitoring wells (MW-1 through MW-4), and collecting soil and groundwater samples from these borings and wells. Analysis of the samples indicated the presence of hydrocarbon constituents in the gasoline, oil & grease and kerosene ranges.

ESE performed further site investigation in 1996. During this investigation seven direct push soil borings were completed off site (AP-1 through AP-7). Groundwater samples from borings AP-1, AP-2, AP-3 and

AP-6 showed hydrocarbon constituents comparable to gasoline, diesel, and motor oil. A soil sample from AP-2 at 10 feet below ground surface (bgs) detected low levels of hydrocarbon constituents in the gasoline range.

In March 1998, QST Environmental, Inc. (QST, a former name of Harding ESE) introduced oxygen releasing compounds (ORCs) to wells MW-3 and MW-4 during the first quarter groundwater monitoring event for 1998. Following the forth quarter monitoring event and the removal of the ORCs, analysis showed hydrocarbon constituents comparable to gasoline and diesel.

## SCOPE OF WORK

### Field Investigation

The ACHCSA requested that Tri Star delineate the lateral extent of the groundwater plume and demonstrate that the underground culverts and storm drains do not serve as pathways for the migration of contaminants to sensitive receptors. Proposed boring locations are presented on the attached Site Map. Prior to initiating the field program, Harding ESE will obtain the required boring permit from the ACHCSA.

Borings will be advanced to groundwater using a direct push drill rig equipped with 1-7/8-inch-diameter hollow drive rod. Based on our understanding of the regional geology, groundwater is anticipated to be encountered between 8 and 11 bgs. Soil samples will be collected continuously using a 1-3/4-inch-outside-diameter steel rod lined with stainless steel liners. Soil samples will also be screened for the presence of volatile organic compounds (VOCs) using an organic vapor meter (OVM). OVM readings will be noted on the field boring logs. The sample with the highest OVM reading from each boring will be selected for analysis; if no OVM readings are detected, then the sample at the soil/groundwater interface will be selected for analysis. The liners will be extracted and sealed with Teflon end sheets and plastic caps. The sealed sample tubes will be labeled with a unique sample number and placed into a cooler with ice packs with the appropriate chain of custody documentation.

Upon conclusion of each boring, a grab groundwater sample will be collected from each of the five locations. The sample will be collected using a disposable Teflon bailer or stainless steel bailer and decanted into the appropriate sample containers. Samples will be handled as discussed above for the soil samples.

All samples will be analyzed for Total Petroleum Hydrocarbons (TPH) as gasoline, TPH as diesel, TPH as motor oil, benzene, toluene, ethylbenzene and xylenes (BTEX) and for methyl tertiary butyl ether (MTBE). All samples will be analyzed on a standard turnaround basis at McCampbell Analytical (McCampbell), Pacheco, California. McCampbell is state certified for the analysis requested.

Upon conclusion of the boring program, all borings will be backfilled to surface with a neat cement slurry. Any generated soil cuttings will be stored on visqueen and placed in a 55-gallon drum; decontamination solutions will be stored in a 55-gallon drum pending analysis.

Beginning in the third quarter of 2001, Harding ESE will begin quarterly sampling of the four on-site wells (MW-1 through MW-4) and the one off-site well (MW-5). Quarterly sampling will conclude during the second quarter of 2002. Each well will be sampled for the same constituents as the aforementioned samples. All samples will be handled and analyzed in the same manner as the aforementioned samples.

**Report**

Following completion of the field work and review of the sample analytical results, Harding ESE will prepare a written letter report that summarizes our field observations and sampling procedures and the results of the chemical analyses. The report will also include copies of field boring logs. Our conclusions and recommendations for additional work, if warranted, will also be included in the report.

Following each quarter of monitoring, Harding ESE will prepare a written letter report that summarizes field observations and the results of the chemical analyses. The reports will also include copies of the field sample collection logs.

Please feel free to contact our office if you have any questions.

Sincerely,
**HARDING ESE, A MACTEC COMPANY**

Jason T. House
Staff Environmental Scientist

Attachments: Site Plan

cc: Mr. Ondrej Kojnok, Tri Star Partnership

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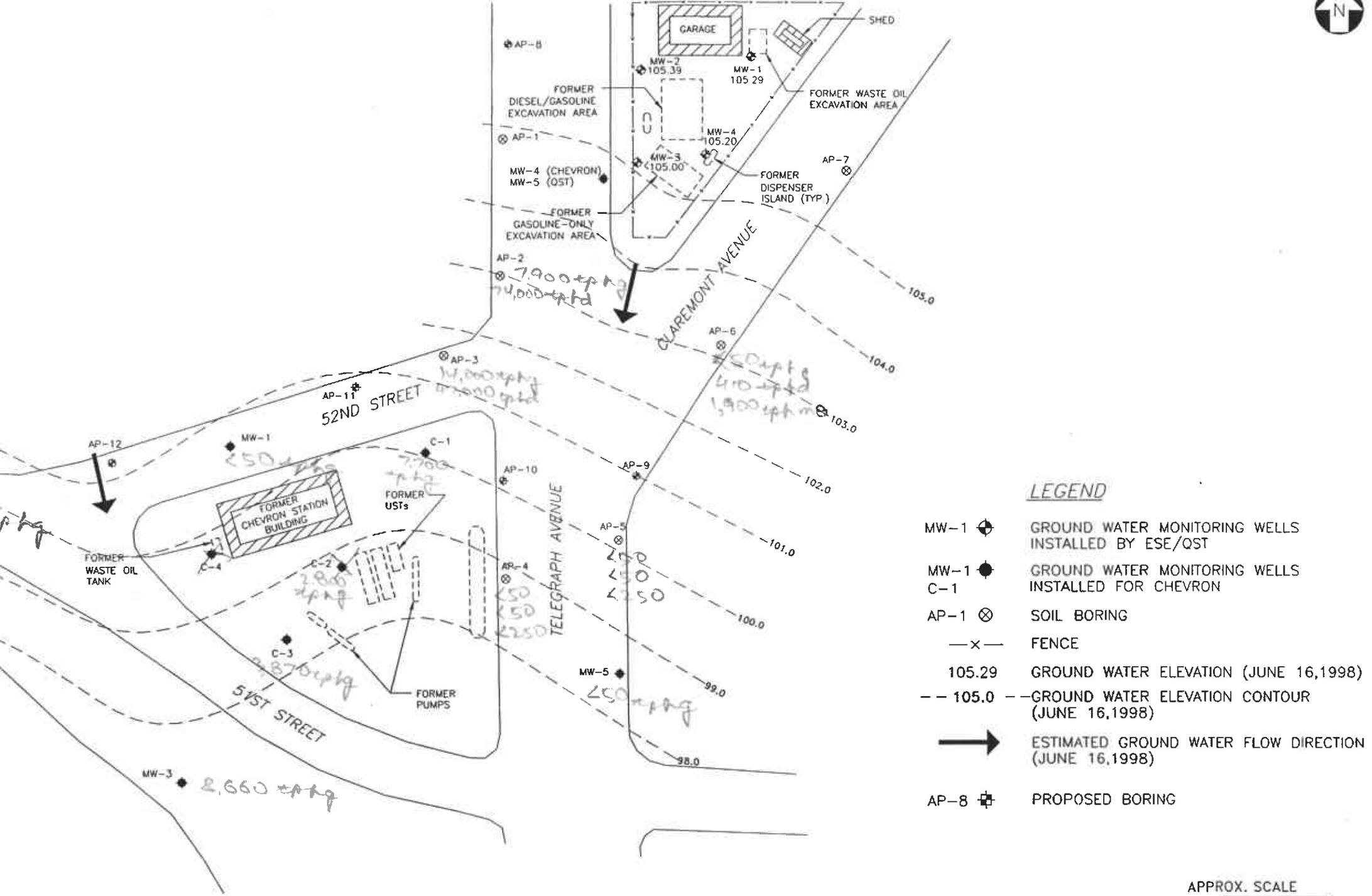
*Jason T. House*
*Staff Environmental Scientist*

1320 Arnold Drive
Suite 263
Martinez, CA 94553-6537

Phone: 925/313-0840
Fax: 925/313-0844
Cell: 925/260-8878
jthouse@mactec.com

www.mactec.com


GARAGE
SHED
AP-8
MW-2
105.39
MW-1
105 29
FORMER
DIESEL/GASOLINE
EXCAVATION AREA
FORMER WASTE OIL
EXCAVATION AREA
AP-1
MW-4
105.20
MW-3
(105.00)
AP-7
MW-4 (CHEVRON)
MW-5 (QST)
FORMER
DISPENSER
ISLAND (TYP.)
FORMER
GASOLINE-ONLY
EXCAVATION AREA
AP-2
7,900 ppb
74,000 ppb
CLAREMONT AVENUE
105.0
AP-6
104.0
AP-3
14,000 ppb
AP-11
52ND STREET
103.0
AP-12
MW-1
C-1
AP-10
AP-9
102.0
FORMER
CHEVRON STATION
BUILDING
FORMER
USTs
AP-5
101.0
FORMER
WASTE OIL
TANK
C-4
C-2
2,800 ppb
AP-4
TELEGRAPH AVENUE
100.0
C-3
2,870 ppb
MW-5
99.0
FORMER
PUMPS
51ST STREET
98.0
MW-3
2,660 ppb
N
LEGEND
MW-1
GROUND WATER MONITORING WELLS INSTALLED BY ESE/QST
MW-1
C-1
GROUND WATER MONITORING WELLS INSTALLED FOR CHEVRON
AP-1
SOIL BORING
FENCE
105.29
GROUND WATER ELEVATION (JUNE 16,1998)
105.0
GROUND WATER ELEVATION CONTOUR (JUNE 16,1998)
ESTIMATED GROUND WATER FLOW DIRECTION (JUNE 16,1998)
AP-8
PROPOSED BORING
APPROX. SCALE
0
60 FEET