



**groundwater resources inc.**

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General Engineering Contractor  
Class A/Haz License No. 520768

**MALIBU GRAND PRIX  
8000 S. Coliseum Way  
Oakland, California**

**SITE ASSESSMENT WORKPLAN  
February 9, 1990**

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Race Track  
8000 South Coliseum Way  
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## 1.0 INTRODUCTION

This workplan presents the first step, in a phased approach, in determining the extent of a hydrocarbon plume in the soil and groundwater at the Malibu Grand Prix Race Track facility, 8000 South Coliseum Way, Oakland, California. Groundwater Resources, Inc. (GRI) has been retained by Malibu Grand Prix to perform the necessary assessment and site characterization required by the Alameda County Department of Environmental Health and the San Francisco Bay Regional Water Quality Control Board.

## 2.0 BACKGROUND

One 6,000 gallon underground storage tank containing marine mix gasoline was removed from the Malibu Grand Prix facility on February 1, 1990. During the removal, the water table was observed at approximately eight feet below grade. Floating product was observed on the water in the tank excavation. The excavation was lined with plastic and backfilled with pea-gravel. The floating product observed in the tank excavation was removed with adsorbent material prior to backfilling. A soil sample was collected from each end of the tank excavation at the soil/water interface and a water sample was collected from the tank pit (Plate 2). A verbal request was made on February 1, by the Alameda County Health official on site, for Malibu Grand Prix Corp. to prepare an initial site investigation workplan to determine the extent of a soil and groundwater hydrocarbon plume at the facility.

## 3.0 SCOPE OF FIRST PHASE ASSESSMENT

The initial phase of work will include the following:

- Construction of four groundwater monitoring wells
- Drilling of five to seven soil borings
- Collection of soil and water samples from the borings and wells
- Survey of the monitoring wells for location and elevation
- Calculation of shallow water table gradient
- Analysis of the samples for hydrocarbons

## 4.0 OBJECTIVES

The purpose of the proposed investigation will be to:

- Determine the presence or absence of a hydrocarbon plume in the water and/or soil at each boring location
- Determine the hydraulic gradient of the shallow water table

- Assess whether impacted groundwater has migrated downgradient of the tank location
- Assess the lateral extent of hydrocarbons in the vadose zone

## 5.0 PROCEDURES

### 5.1 Monitoring Well and Boring Locations

Two groundwater monitoring wells designated MW-5 and MW-6 will be constructed near the north end of the tank and west of the tank respectively (Plate 2). These wells, in addition to the existing well MW-3, will be used to measure the direction of the groundwater gradient at the site. The elevations of the wells will be determined by a licensed surveyor and the depth to groundwater measured and calculated to mean sea level. The groundwater gradient will be calculated and a groundwater monitoring well (MW-7) will be placed ten to fifteen feet down gradient from the tank excavation pursuant to Regional Board Staff Recommendations, June 2, 1988

Approximately five to seven soil borings will be made around the tank excavation and along the product line to assess the vertical and lateral extent of a vadose plume (Plate 2). A slant boring will be made below the dispenser to obtain a sample at that location. Samples from each boring will be screened in the field with an HNU Photoionization Meter. Groundwater samples will also be collected from borings south and west of the tank location with a Hydropunch groundwater sampling tool. These samples will be collected for screening purposes only, so that the lateral limits of the groundwater plume can be defined. If the presence of hydrocarbons are detected in the soil or groundwater during boring operations, additional borings will be made further from the tank location to determine the limits of the vadose or groundwater plume.

### 5.2 Augering and Soil Sampling Procedures

Drilling of the monitoring wells will be performed using a ten-inch, continuous flight, hollow-stem auger. Core samples will be obtained using a two and one-half inch diameter California splitspoon sampler containing three six-inch brass sleeves. The undisturbed cores selected for laboratory analysis will be immediately sealed in the brass sleeves with teflon lined plastic end-caps and integrity tape.

The soil borings will be made using six-inch solid stem augers. Soil samples will be collected using the California splitspoon sampler. Since groundwater was observed at approximately eight feet, soil samples will be collected at a depth of five feet below grade and one foot above the water table, if groundwater is below seven feet. Other samples may be collected if information obtained during boring operations warrants it. Contaminated soil from the drill cuttings will be contained in DOT 17-H drums and stored on site until proper disposal can be arranged.

During boring operations, all samples will be logged by a GRI geologist and immediately labeled and chilled at or below 4 degrees Celsius. A Chain of Custody will be maintained for the samples during transport to the laboratory for analysis. All augering equipment will be steam cleaned and the core samplers washed and rinsed after each use to avoid cross contamination, in accordance with the Sampling Protocol presented in Appendix A.

While conducting the borings, the personnel on site will be equipped with a Draeger PA-80 Air Pack, Gastech D-11 Vaportester or an equivalent, a photoionization meter, fire extinguishers and any additional equipment required for health and safety considerations.

### **5.3 Well Construction and Boring Abandonment**

Based on the groundwater elevation observed in adjacent monitoring well MW-3, indicating a depth to groundwater of approximately nine feet, it is planned that the monitoring wells will be drilled to a depth of fifteen feet. The water table in MW-3 will be measured before drilling begins so that the current groundwater level can be estimated at the purposed well locations. Slotted casing will be placed from five feet to fifteen feet and will have five feet of blank casing to the surface. This configuration will give the wells five feet of slotted casing above the water and five feet below to allow for seasonal and tidal fluctuations in the groundwater. The casing will be schedule 40 PVC pipe with flush-threaded joints. All of the wells will use four-inch casing with 0.020" slotted intervals. The filter pack will be placed one foot above the slotted section and will consist of #2/12 sand to restrict silt migration into the well. A two to three foot bentonite sanitary seal will be placed above the filter pack and then the annulus will be cemented to the surface. A locking cap will be placed on the well for security and the entire wellhead will be protected by a traffic box (Plate 3).

Due to the clayey nature of the soil present at the site, mudcaking along the sidewall of the borehole from the augering procedure may restrict water recovery in the well. To lessen this effect, an eighteen inch shaft will be produced at the bottom of the boring by driving the core sampling device into the bottom of the boring. This procedure will result in a relatively clean interface between the native soil and the filter pack. This will advance the total depth of each well to 16.5 feet.

The soil borings will be abandoned by placing a three foot bentonite seal at the bottom of the hole. The borings will be capped with a two foot cement seal at the surface.

### **5.4 Well Purging and Water Sampling**

Prior to sampling, all monitoring wells will be purged a minimum of three well volumes to ensure that the water samples are representative of the groundwater within the formation. Purged water will be collected in DOT-17E steel drums and labeled as Hazardous Waste. The water samples will be collected with a teflon bailer and poured directly into glass VOA bottles with teflon septa and screw-top lids. Duplicate samples will be obtained from each well. They will be labeled, chilled and transported under a Chain of Custody to the laboratory. Travel blanks, prepared by the laboratory, will accompany the water samples during transport.

### **5.5 Laboratory Analysis**

All soil and water samples collected for analysis will be transported to a state certified laboratory and analyzed for Benzene, Toluene, Xylene, Ethylbenzene and Total Petroleum Hydrocarbons (Gasoline) using DHS recommended methods. Additional samples may be collected for physical analysis.

**6.0 SECOND PHASE OBJECTIVES**

Upon review of the data obtained from the first phase of work, a plan will be developed to further define the groundwater contamination plume. Alternatives for remedial action will also be proposed if sufficient data is available. The second phase plan will propose a series of monitoring wells around and/or downgradient of the tank pit to determine the lateral extent of the groundwater contamination plume. The second phase plan, along with the results and findings from the first phase assessment will be submitted to the Alameda County Department of Environmental Health for review.

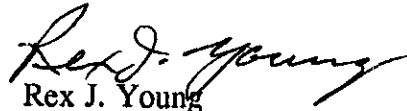
All work will be supervised by Rex Young, State Registered Geologist #720.

Respectfully submitted,

GROUNDWATER RESOURCES, INC.

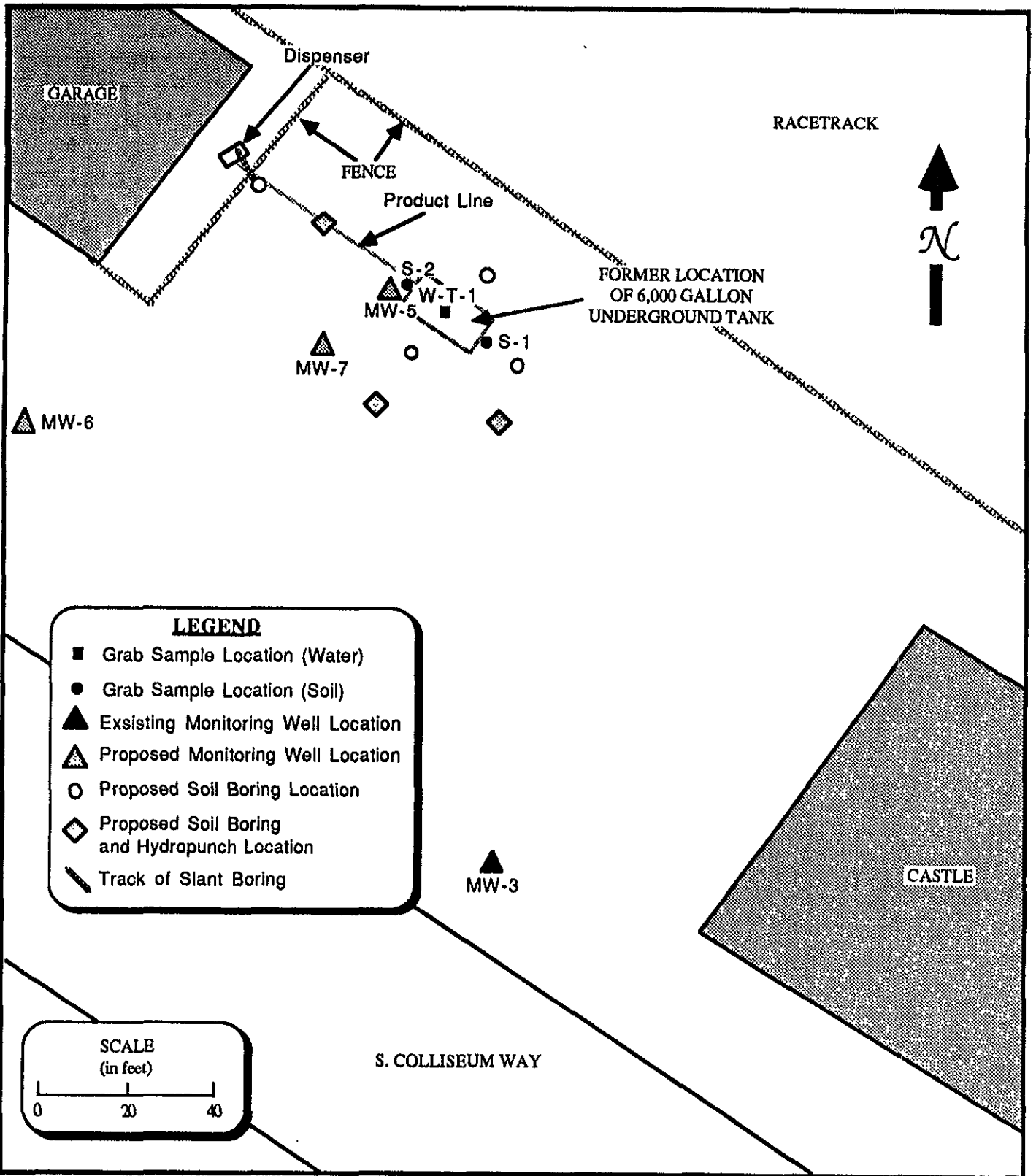


Timothy C. Reed  
Project Geologist



Rex J. Young  
State Registered Geologist #720

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**LEGEND**

- Grab Sample Location (Water)
- Grab Sample Location (Soil)
- ▲ Existing Monitoring Well Location
- △ Proposed Monitoring Well Location
- Proposed Soil Boring Location
- ◇ Proposed Soil Boring and Hydropunch Location
- Track of Slant Boring

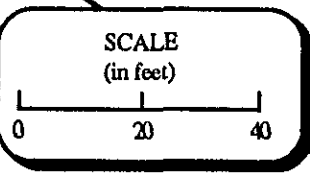

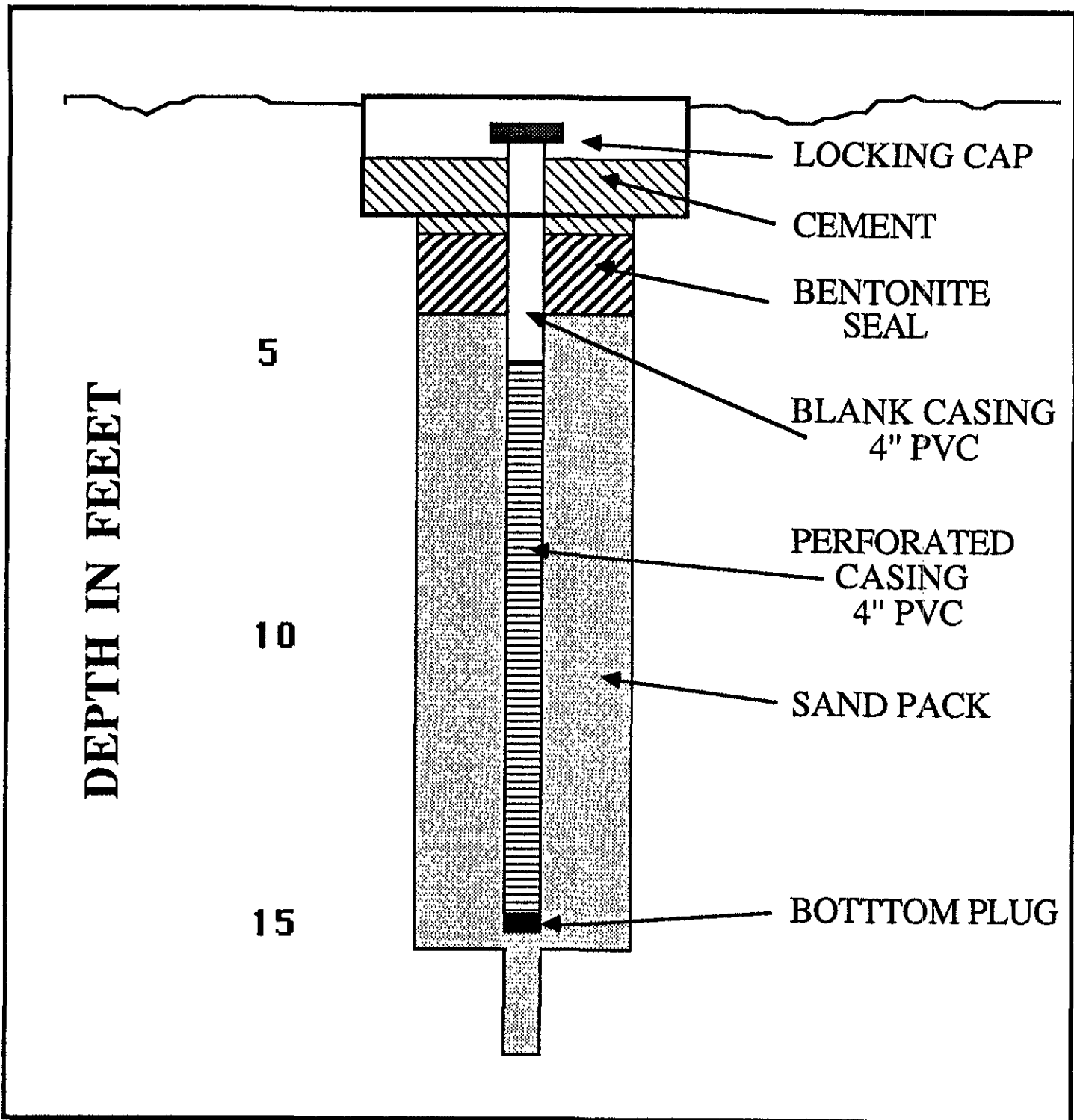


PLATE  <h1 style="font-size: 2em; margin: 0;">2</h1>	<h2 style="margin: 0;">MALIBU GRAND PRIX</h2> <p style="margin: 0;">8000 S. COLLISEUM WAY OAKLAND, CALIFORNIA</p> <h1 style="margin: 0;">PLOT PLAN</h1>	 <p style="margin: 0;"><b>groundwater resources, inc.</b></p> <p style="margin: 0;">environmental/geotechnical services</p> <p style="margin: 0;">Project Number: 28119</p>
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SHALLOW GROUNDWATER  
MONITORING WELL



groundwater resources, inc.

environmental/geotechnical services

Project Number: 28119

PLATE

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