



Tait Environmental Management, Inc.  
Engineering • Environmental • Compliance

July 22, 2002

Mr. Scott Seery  
Alameda County Health Care Services  
Environmental Health Services  
1131 Harbor Bay Parkway, Suite 250  
Alameda, California 94502-6577

**SUBJECT: WORKPLAN TO PERFORM AN ADDITIONAL SUBSURFACE SITE ASSESSMENT  
FOR THE MISSION VALLEY ROCK COMPANY FACILITY LOCATED ON 7999  
ATHENOUR WAY, SUNOL, CALIFORNIA**

Dear Mr. Seery:

Tait Environmental Management, Inc. (TEM), on behalf of Mission Valley Rock Company (MVR), is pleased to submit this workplan to perform an Additional Subsurface Site Assessment at the MVR Facility (Site) located at 7999 Athenour Way, Sunol, California (Figure 1). All work described in this workplan will be performed in accordance with the Alameda County Health Care Services Agency (ACHCSA), California Regional Water Quality Control Board (CRWQCB), and EPA guidance documents including SW-846 (1986). This report has been prepared by or under the direct supervision of a California Registered Geologist.

#### **SITE DESCRIPTION**

The Site is a fully operational gravel quarry and production facility located within Coast Range physiographic province of California. The Site sits at an elevation of approximately 260 feet above mean sea level (ft-msl). Depth to groundwater at the site is seasonal and has ranged from approximately 1.3 feet to 8 feet below ground surface (bgs). Surface drainage at the Site has a southeasterly to northwesterly topographic gradient. Located approximately 2000 feet east-northeast of the former UST's is the Alameda Creek (a seasonal creek). Several other silt ponds are located throughout the Site (TPE, 1997).

#### **REGIONAL GEOLOGY**

The Site is located in Alameda County which is located at the northern end of the Diablo Range of Central California. It is bounded on the north by the south flank of Mount Diablo, one of the highest peaks in the Bay Area, reaching an elevation of 1173 meters (3,849 ft). San Francisco Bay forms the western boundary, the San Joaquin Valley borders it on the east and an arbitrary line from the Bay into the Diablo Range forms the southern boundary. Alameda is one of the nine Bay Area counties that tributary to San Francisco Bay. Most of the country is mountainous with steep rugged topography (USGS, 1997).

The Quaternary deposits in Alameda County comprise three distinct depositional environments. One, forming a transgressive sequence of alluvial fan and fan-delta facies, is mapped in the western one-third of the county. The second, forming only alluvial fan facies, is mapped in the Livermore Valley and San Joaquin Valley in the eastern part of the county. The third, forming a combination of Eolian dune and estuarine facies, is restricted to the Alameda Island area in the northwestern corner of the county. (USGS, 1997)



JUL 26 2002

## Letter of Transmittal

<b>TO:</b>	Mr. Scott Seery	<b>COMPANY:</b>	Environmental Health
<b>ADDRESS:</b>	Alameda County Health Care Services	<b>JOB#:</b>	EM-5010
	1131 Harbor Bay Parkway, Suite 250	<b>DATE:</b>	2/19/02
	Alameda, CA 94502-6577		
<b>RE:</b>	Mission Valley Rock Company Additional Site Assessment Workplan		

**WE ARE TRANSMITTING:**

2 Report(s)     Letter(s)     Disk(s)     Table(s)     Other

**VIA:**

U.S. Mail     Fed Ex     Cert. Mail     Messenger     UPS     Other

**FOR YOUR:**

Attention     Approval     Signature     File(s)     Other

**ORIGINAL/PRINTS ARE:**

Draft     Revised     Final     Signed     Stamped

**REMARKS:**

Following are three (3) copies of the workplan to perform additional site assessment at the Mission Valley Rock Company Site in Sunol. This workplan was prepared in response to the letter from you dated June 3, 2002, requesting additional assessment work at the site.

**Cc:**

Mr. Mort Calvert – 1 copy  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Sincerely,  
TAIT Environmental Management, Inc.

Scott E. Ek, Project Geologist



The site lies within the Mesozoic Franciscan Rock Complex of Alameda County. The Franciscan Complex is primarily composed of Cretaceous and Jurassic sandstone with smaller amounts of sometimes sheared and fragmented shale, chert, limestone, and conglomerate (DMG, 1977).

#### **SITE BACKGROUND**

Two (2) diesel Underground Storage Tanks (UST) and one (1) gasoline UST were removed from the Site between the months of May and June, 1996. Tank removal, excavation, and subsequent soil sampling activities were performed by Tank Protect Engineering of Northern California. The activities are documented in the *Tank Closure Report, Mission Valley Rock, Tank Protect Engineering, August, 1996*.

Tank Protect Engineering installed and sampled three (3) monitoring wells at the Site in June 1998. Commencing in January 1999 through March 2000, Tank Protect Engineering conducted quarterly groundwater monitoring at the Site. Quarterly groundwater monitoring at the Site has indicated levels of petroleum constituents above their respective detection limits. Refer to Figure 2 for locations of former UST's, structures, and groundwater monitoring wells MW-1, MW-2, and MW-3.

Tait Environmental Management, Inc. assumed the lead consultant role at MVR to perform all future technical environmental activities at the Site in June 2000. Quarterly groundwater monitoring performed by TEM has continued through June 2002. Work conducted prior to June 2000 is documented in reports on file at the ACHCSA and the CRWQCB, San Francisco Bay Region.

#### **OBJECTIVE**

The objective of the proposed scope of work is to:

- Further assess the vertical and lateral extent of petroleum fuel hydrocarbons in the subsurface.
- Determine the extent of Liquid Phase Hydrocarbons (LPH) observed in existing groundwater monitoring well MW-2.
- Replace three (3) existing groundwater monitoring wellheads (MW-1 through MW-3) due to poor condition/damages.
- Provide sufficient information to support site closure with no further action by the Alameda County Health Care Services Agency (ACHCSA).

#### **SCOPE OF WORK**

The scope of work that TEM has developed to meet the objectives includes the following tasks:

##### **Task 1: Health and Safety Plan Preparation**

A health and safety plan (HSP) will be prepared for the proposed scope of work. The HSP is designed primarily to minimize exposure of TEM personnel and its subcontractors to potentially hazardous materials. The plan will be prepared under the direction of the Corporate Health and Safety Officer and will be implemented in the field by the Site Safety Officer.



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Mission Valley Rock Company, Sunol, California

**Task 3:        *Permitting, Utility Clearance, and Agency Notification***

A well construction permit for the installation of three (3) groundwater monitoring wells will be filed with the Alameda County Food Control and Water Conservation District, Water Resources Management, Zone 7 prior to the initiation of drilling.

Underground Service Alert will be notified a minimum of 48 hours prior to initiating fieldwork for the demarcation of underground utilities. The ACHCSA and the CRWQCB will also be notified a minimum of 48 hours prior to the start of fieldwork.

**Task 4:        *Drilling and Soil Sampling***

Three (3) borings will each be drilled out using a 10-inch outside diameter hollow stem augers. Hollow stem augers were selected due to the significant amount of gravel and cobbles observed during previous Site investigations. The recommended "rapid site assessment tools" (e.g. Geoprobe®) would have difficulties penetrating the sub-surface at the Site. The three (3) borings will be drilled to a depth of approximately 25 feet bgs. Samples collected from the borings will be used to assess the vertical and lateral impact in the soil. A TEM geologist, trained and supervised by a California Registered Geologist, will describe soil samples using the Unified Soil Classification System (USCS).

Soil samples will be collected at five-foot depth intervals and/or where changes in lithology are observed. Soil samples will be collected in 2-inch diameter by 6-inch long brass or stainless steel cylinders that have been decontaminated. The field geologist will use a Photoionization Detector (PID) to screen the soil samples in the field for the presence of volatile organic compounds (VOC's) and to select soil samples for laboratory analyses. The ends of the selected cylinders will be covered with Teflon lined polyethylene caps. The samples will be labeled and placed into an ice-chilled cooler (4°C). The collected samples will be transported to a State-Certified laboratory for analyses under chain-of-custody protocol.

**Task 5:        *Groundwater Well Installation***

The three (3) soil borings will each be converted into 4-inch diameter groundwater monitoring wells (MW-4, MW-5, and MW-6). The monitoring wells will each be constructed of flush-jointed, threaded, 4-inch, Schedule 40 polyvinyl chloride (PVC) slotted screen (0.020-inch) and blank casing. Due to the seasonal variations in static water levels across the Site (1.29 feet bgs to 7.89 feet bgs), the wells will be screened from 3 to 25 feet bgs. Blank casing will be used to construct the remainder of the well to ground surface.

A filter pack consisting of No. 3 Monterey sand will be placed from 1 foot above the top of the screened interval (2 feet bgs) to the bottom of the well. The annular seal shall consist of a Portland Type I II cement to surface. The completion of each well shall consist of a traffic-rated well box installed to grade.

**Task 6:        *Groundwater Well Development***

The newly-installed groundwater monitoring wells will be surged and developed using a development rig. Well development will continue until turbidity readings reach a value of 10 NTU or less, or a minimum of five (5) well volumes of water have been removed from each well, as per ACHCSA regulatory guidelines. Development water will be contained in DOT-approved 55-gallon drums.

**Task 7:        *Existing Well Maintenance***

Existing wells MW-1 through MW-3 will each be repaired. The damaged well boxes on each well will be removed and replaced with new 12-inch diameter traffic-rated well covers and locking caps.



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**Task 8: Well Survey**

Following the installation of the groundwater monitoring wells, the ground surface, casing tops, and x-y coordinates for all new and existing wells will be surveyed to a common datum at each location. Differential leveling of the locations (0.01-foot accuracy) to mean sea level shall be included in the survey. If no benchmark has been identified within two (2) blocks of the Site, a temporary benchmark will be used. Surveying services may be provided by Tait and Associates, a State-licensed surveyor.

**Task 9: Disposal of Solid/Liquid Waste**

Soil cuttings and decontamination and development water generated during the well installation, development and sampling activities will be contained in DOT-approved 55-gallon drums. Following receipt of the analytical results, TEM, on behalf of MVR, will arrange for the disposal of all solid and liquid waste generated during the well installation activities.

**Task 10: Groundwater Monitoring & Sampling**

The new and existing groundwater monitoring wells will be gauged for LPH thickness (if present), depth to water, and total depth. Should LPH become significant a LPH recovery program will be initiated and tabulated quarterly, per an ACHCSA letter dated February 18, 1999.

Three (3) well volumes will be pumped from each well, or until the well goes dry. The wells will be purged using a 2-inch diameter submersible pump using new vinyl tubing for each well. All downhole equipment will be decontaminated prior to purging each well using a non-phosphate wash followed by two (2) de-ionized water rinses, and dried with new towels. This is to prevent the possibility of cross-contamination between monitoring wells.

The groundwater level in each well will be allowed to recover to at least 80 percent of the initial level or two hours from initial purge, prior to sampling. Groundwater samples will be collected from discharge end of the pump at low flow levels (one gallon per minute or less) into laboratory-supplied containers. Care will be taken to insure no headspace is allowed in the containers. The samples will be labeled and placed into an ice-chilled cooler (4°C). The collected samples will be transported to a State-Certified laboratory for analyses under chain-of-custody protocol.

**Task 11: Laboratory Analyses**

A total of five (5) soil samples will be collected from each of the three (3) borings and submitted to a laboratory for analyses. The soil samples will be analyzed for the diesel and gasoline fraction of total petroleum hydrocarbons (TPHd and TPHg, respectively) EPA Method No. 8015M. In addition, all soil samples will be analyzed for VOC's including benzene, toluene, ethylbenzene, and total xylenes (BTEX), methyl tertiary-butyl ether (MTBE), and other oxygenates using EPA Method No. 8260B.

The six (6) groundwater samples collected will be analyzed for TPHd, TPHg, VOC's (BTEX, MTBE, and oxygenates). All analytical data will be reported by a California State-Certified laboratory.

**Task 12: Report Preparation**

Upon completion of the field work and receipt of the analytical results, a report will be prepared by TEM. The report will include descriptions and observations during field activities, lithological boring logs, groundwater monitoring well construction details, analytical results of soil and groundwater samples, a groundwater contour map depicting the hydraulic gradient and direction of groundwater flow across the Site, and isoconcentration maps for TPHg, TPHd, benzene, and MTBE.



**PROJECT SCHEDULE**

The proposed work can be initiated upon written approval of the work plan by ACHCSA. A final report can be submitted to the ACHCSA within 60 days of completion of the field work and receipt of all laboratory reports.

**REFERENCES**

Division of Mines and Geology (DMG, 1977), Charles Jennings, *Geological Map of California, 1977* (5<sup>th</sup> Printing 2000).

Tank Protect Engineers (TGE, 1997), *Stockpile and Soil Remediation and Exploratory Trenching Report*, Mission Valley Rock Company, Sunol, CA, October 20, 1997.

Tank Protect Engineers (TGE, 1996), *Tank Closure Report*, Mission Valley Rock Company, Sunol, CA, August, 1997.

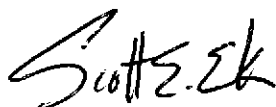
United States Geological Survey (USGS, 1997), Helley & Graymer, *Quaternary Geology of Alameda County, and Parts of Contra Costa, Santa Clara, San Mateo, San Francisco, Stanislaus, and San Joaquin Counties, California*. Publication OF97-97, 1997.


**CLOSURE**

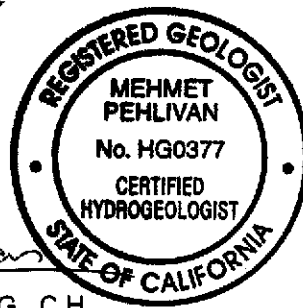
If you should have any questions regarding this proposal, please contact the undersigned at (714) 560-8200, at your convenience.

Very truly yours,

**TAIT ENVIRONMENTAL MANAGEMENT, INC.**

  
Scott E. Ek  
Project Geologist

  
Mehmet Pehlivan, R.G., C.H.  
Senior Project Hydrogeologist



Attached:

- Figure 1 – Site Vicinity Map
- Figure 2 – Site Plan with Proposed Boring/Well Locations
- Figure 3 – Well Construction Detail (Typical)

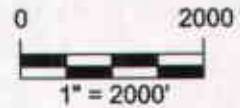
Cc: Mort Calvert, Mission Valley Rock Company

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NORTH

SOURCE:  
 U.S.G.S. 7.5 Minute Series Topographic Maps  
 Freemont Quadrangle  
 California - Alameda County, July 1, 1998



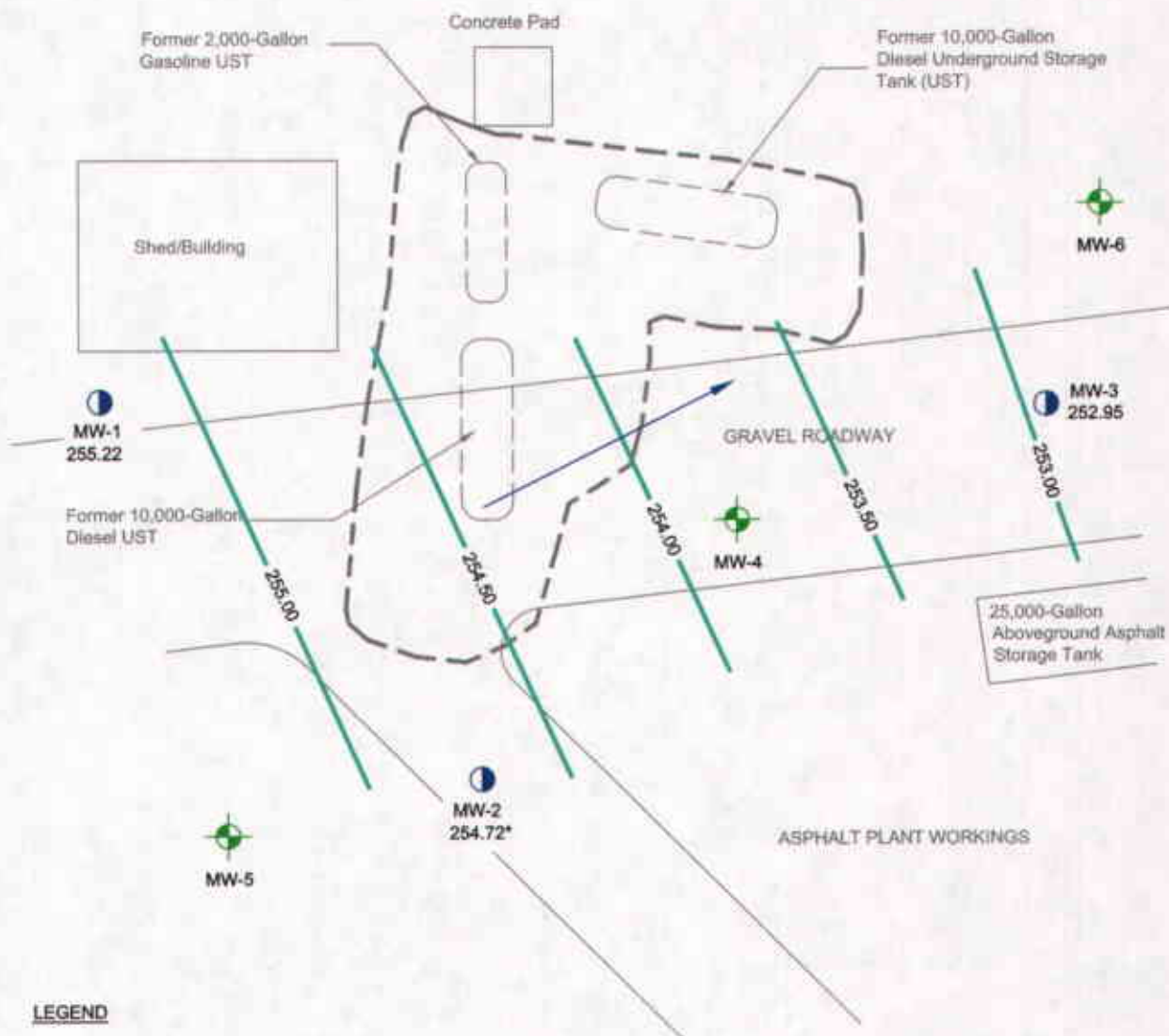
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**SITE VICINITY MAP**  
**ADDITIONAL SITE ASSESSMENT WORKPLAN**  
 Mission Valley Rock Company  
 7999 Athenour Way  
 Sunol, California

PROJECT NO. EM-5010






FIGURE 1

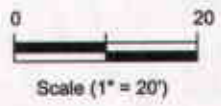




**LEGEND**

Base map referenced from Tank Protect Engineers  
 All locations and dimensions are approximate

-  **MW-5** Proposed location of soil boring/groundwater monitoring well
-  **MW-1** Existing groundwater monitoring well location with groundwater elevation in feet above mean sea level (ft-msl) (Fourth Quarter 2001)
-  **255.00** Groundwater elevation contour in feet-msl (Fourth Quarter 2001)
-  General direction of groundwater flow (Fourth Quarter 2001)
-  Approximate limits of former UST excavation
- 254.72\*** Corrected groundwater elevation (Liquid-Phase Hydrocarbons detected in well) (Fourth Quarter 2001)



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**SITE PLAN WITH PROPOSED SOIL BORING LOCATIONS**  
 MISSION VALLEY ROCK CO.  
 7999 ATHENOUR WAY  
 SUNOL, CALIFORNIA

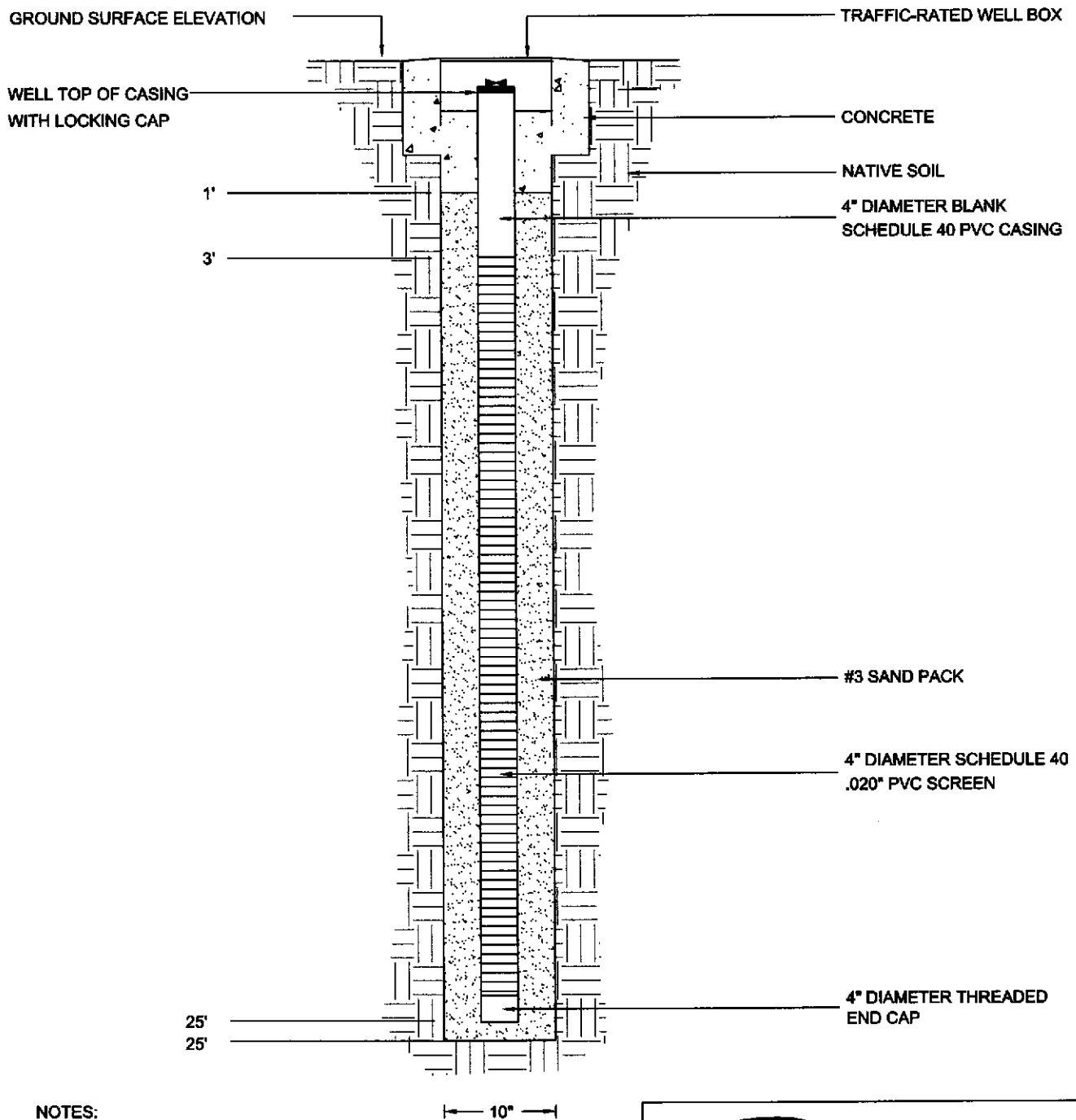
PROJECT NO. EM-5010

FIGURE 2



### FIGURE 3 GROUNDWATER MONITORING WELL CONSTRUCTION DETAIL (TYPICAL)

Mission Valley Rock Company  
7999 Athenour Way  
Sunol, California



**NOTES:**  
NOT TO SCALE  
MSL = MEAN SEA LEVEL