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Fax No. (510) 337-9335 Pages (including cover) 12

Phone No. \_\_\_\_\_ Job No.: 70059-001-01

Comments: Work Plan for Albany School District site -

For your review - thank you

Bob

**SITE WORK PLAN  
SOIL AND GROUNDWATER INVESTIGATION  
FORMER HILL LUMBER COMPANY  
1259 BRIGHTON AVENUE  
ALBANY, CALIFORNIA**

**Prepared For:**

**Albany Unified School District  
Albany, California**

**Prepared By:**

**Science & Engineering Analysis Corporation  
Concord, California**

**Project No. 70059-001-01**

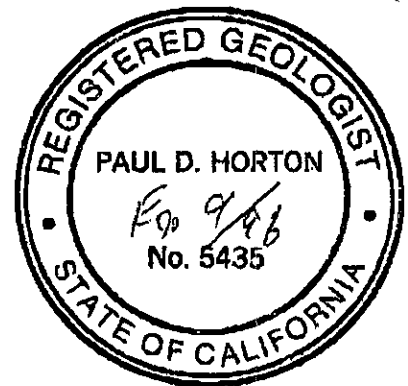
**October 19, 1994**

Prepared by:

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## 1.0 INTRODUCTION

This Work Plan describes the procedures to conduct an investigation of subsurface soil and groundwater at the former Hill Lumber Company (the Site) located at 1259 Brighton Avenue in Albany, California (Figure 1). The objectives of this investigation are to:

- further delineate the lateral extent of petroleum hydrocarbons in the soil and groundwater beneath the Site associated with the former existence of a 500 gallon underground storage tank (UST);
- assess the presence of petroleum hydrocarbons in groundwater at the Site resulting from onsite migration from the City of Albany corporation yard located within the site boundary; and
- collect additional hydrogeologic data which will help direct further subsurface investigation, or remediation at the site, if necessary.

The proposed additional investigation involves the installation of one additional shallow groundwater monitoring well, three exploratory soil borings, the collection and chemical analysis of soil and groundwater water samples, and the preparation of a technical report detailing the findings of the investigation.

## 2.0 BACKGROUND

The Hill Lumber Company has utilized the subject property as a lumber distribution facility and retail lumber yard since approximately 1922. From approximately the 1930's until the 1950's, Hill Lumber Company maintained a 500-gallon gasoline underground storage tank (UST). The 500-gallon UST was located in the loading dock area on the east side of Building 1 (Figure 2). From the 1950's until approximately 1991, Hill Lumber Company maintained one 1,000-gallon gasoline UST used for refueling fleet vehicles. The 1,000-gallon UST was located beneath the sidewalk adjacent to Brighton Avenue.

## 3.0 PREVIOUS SITE ASSESSMENT ACTIVITIES

Both of the tanks were removed in April, 1991. The concentrations of total petroleum hydrocarbons as gasoline (TPHg) below the 1,000-gallon UST ranged from 2 to 3,700 mg/kg. TPHg concentrations below the 500-gallon UST ranged from 210 to 890 mg/kg. There was no record of groundwater in the excavations.

In July, 1991, four soil borings were drilled within about 10 feet of the tank excavations. Soil samples registered less than detection limits; however, a groundwater sample collected from the open borehole contained 2,925 parts per billion (ppb) TPHg and 59 ppb benzene.

Between July and August, 1992, approximately 257 cubic yards of contaminated soils were removed from the area of the former tank locations. The excavation for the 1,000-gallon UST did not extend beyond the southern boundary of Building 1, or west of the site boundary. Soils containing TPHg at concentrations of 700 ppm and 740 ppm, respectively, were left in place south of Building 1 and in the western portion of the property. The analytical data collected from the 500-gallon UST excavation, indicates that all contaminated soil was removed. *No - 460 ppm TPHg west of former tank  
Sample # 430202*

Two groundwater monitor wells and one piezometer were installed at the southwest property boundary (approximately 15 feet from the Office Building) in July 1994. The results of the analytical data indicated no detectable levels of TPHg or BTEX in the groundwater samples collected from the three wells; however, trace levels of total petroleum hydrocarbons as diesel (TPHd) were detected in monitor well MW-1 at 110 ppb.

The City of Albany Corporation Yard, 507 San Gabriel Avenue had one 250-gallon gasoline UST removed from its property which is located within the property boundary of the Hill Lumber Company property adjacent to San Gabriel Avenue. According to information reviewed in the City of Albany files, a soil sample collected beneath the UST at the time of the removal (August 1991) indicated 0.009 parts per million (ppm) benzene and 0.007 ppm ethylbenzene. A composite soil sample collected from the

excavated soil indicated TPH at 560 ppm and total BTEX ranging from ND < 3 to 30 ppm. In August 1992, HTA drilled three soil borings and one cone penetration hole. Six soil samples and one groundwater sample were collected. The water sample contained 91 ppb TPHg, 0.7 ppb benzene, 0.3 ppb toluene, 9.0 ppb ethylbenzene, and 0.4 ppb total xylenes.

#### 4.0 SCOPE OF WORK

The subsurface investigation program presented herein is designed to further characterize the presence and extent of petroleum hydrocarbons in the soil and groundwater below the Site. The subsurface investigation will consist of the following specific tasks:

- TASK 1: Prepare a Site-Specific Health and Safety Plan
- TASK 2: Conduct an on-site utility clearance in the vicinity of the boring locations
- TASK 3: Drill four soil borings, collect groundwater grab samples, and install one groundwater monitor well
- TASK 4: Survey the elevation of the new monitor well
- TASK 5: Measure groundwater elevations of all onsite wells, and collect a groundwater sample from the new monitor well
- TASK 6: Prepare a Site Investigation Report

#### 4.1 TASK 1: SITE HEALTH AND SAFETY PLAN

Prior to conducting any field work, a site-specific Health and Safety Plan will be prepared which will detail field procedures regarding various potential safety hazards that may be encountered during implementation of the activities associated with the work scopes presented in this Work Plan. The Health and Safety Plan will comply with the requirements of Occupational Safety and Health Administration (OSHA) Standard 29 CFR 1910.120.

#### 4.2 TASK 2: UTILITY CLEARANCE

Prior to initiation of soil boring activities, underground utilities will be cleared in the vicinity of the proposed boring locations. Utilities will be cleared through the use of a professional utilities locator service in conjunction with notification of Underground Service Alert (USA) utilities marking services.

#### 4.3 TASK 3: SOIL BORING AND MONITOR WELL INSTALLATION

One boring will be placed within 10-feet of the former 500-gallon gasoline UST (Figure 2). The boring will be drilled to an approximate depth of 25-feet below surface grade, or 10-feet below the first encountered groundwater. The boring will subsequently be converted to a groundwater monitor well.

Three soil borings will be drilled on the west side of San Gabriel Avenue in the vicinity of the City of Albany corporation yard. The borings will be drilled to an approximate depth of 15-feet and groundwater grab samples will be collected using a Hydropunch sampling device.

All soil borings will be drilled using a truck mounted drill rig equipped with 8.5-inch outside diameter augers. Continuous cores will be collected from each boring using a 3.5-inch diameter by 5-foot long core barrel. The soil cores will be logged and described in the field to produce an accurate lithologic and stratigraphic profile.

The soil cores will be field screened for total organic vapors using a photo-ionization detector (PID) equipped with an 10.2 eV lamp. PID readings will be recorded on the logs at one foot intervals. Soil samples will be collected from the cores in brass tubes and sealed with Teflon squares, and plastic end caps. The soil samples will be labeled with the appropriate borehole information, time and date of collection, and placed on ice for subsequent transport and analysis at a State of California certified analytical laboratory. Chain-of-Custody procedures will be followed at all times. Selected soil samples will be analyzed for TPHg and BTEX compounds using U.S. Environmental Protection Agency (EPA) Methods 5030/8015/8020, and for TPHd by modified EPA Method 3510/8015.

Groundwater samples collected from the Hydropunch sampler will be subsequently decanted into laboratory supplied sample bottles. Samples will be tightly capped with zero headspace, then labeled with the sample number, sample time and date, and immediately placed on ice in an insulated cooler. The samples will be logged onto a Chain-of-Custody manifest for subsequent delivery to a state certified laboratory. Groundwater grab samples will be laboratory analyzed for TPHg, and BTEX compounds using EPA Methods 5030/8015/8020, and TPHd by modified EPA Method 3510/8015.

The monitor well will be constructed of 2-inch diameter, 0.020-inch machine slotted, Schedule 40 PVC well screen, installed from the bottom of the borehole to approximately five feet above the first encountered groundwater. Two-inch diameter blank PVC casing will complete the well from the top of the screened interval to within 1-foot of grade. A filter pack consisting of #2/12 Monterey sand will be placed in the annular space from the bottom of the boring to approximately 2 feet above the screened interval. A sanitary seal consisting of two feet of hydrated bentonite slurry will be placed on top of the filter pack, and bentonite cement slurry will fill the remaining annulus to surface grade. The monitor well will be completed at surface grade with a traffic rated street box set in concrete, and a water tight locking well cap (Figure 3).

The new monitor well will be developed using a hand held PVC bailer to alternately surge the screened portion of the well screen and to purge the sediment laden water. Development will continue until five to ten well volumes of groundwater have been removed, and/or measurements of pH, temperature and conductivity have stabilized, and the water is relatively sediment free.

During drilling and hydropunch operations, all augers, sampling tools, and down hole equipment will be decontaminated by steam cleaning prior to each use. Rinsate water will be contained during drilling operations and will be stored in 55-gallon drums. All soil cuttings generated during the drilling operations will be contained in 55-gallon drums on site pending proper disposal. Prior to using any equipment in the monitor wells, the equipment will be decontaminated by double washing with a laboratory grade detergent in clean water, and triple rinsing using deionized water. All purge water generated during well development and groundwater sampling procedures will be contained on site in 55-gallon drums pending arrangement of proper disposal.

#### **4.4 TASK 4: SITE SURVEYING**

The elevation of the new monitor well will be surveyed to within 0.01 feet relative to the existing wells at the Site. The monitor well and the three soil borings will be accurately located on a site map.

#### **4.5 TASK 5: GROUNDWATER MONITORING AND SAMPLING**

After a minimum of 24 hours from the time of well development, the depth to groundwater will be measured at all onsite monitor wells using a water level indicator graduated to 0.01 foot. The depth to groundwater measurements will be converted to groundwater elevations for each well. The groundwater elevation data will be plotted on a map at the corresponding location and contoured to produce a site-specific groundwater gradient map.

A groundwater sample will be collected from the new monitor well on the same day that water levels are collected. Prior to collecting groundwater sample, the well will be purged of at least three well volumes using a clean PVC bailer until measurements of pH, temperature and conductivity have stabilized, or the well is bailed dry. After allowing the water level in the monitor well to recover to at least 80-percent of its static level, a groundwater sample will be collected using a disposable teflon bailer and subsequently decanted in laboratory supplied sample bottles. Samples will be tightly capped with zero headspace, then labeled with the sample number, sample time and date, and immediately placed on ice in an insulated cooler. The samples will be logged onto a Chain-of-Custody manifest for subsequent delivery to a state certified laboratory.



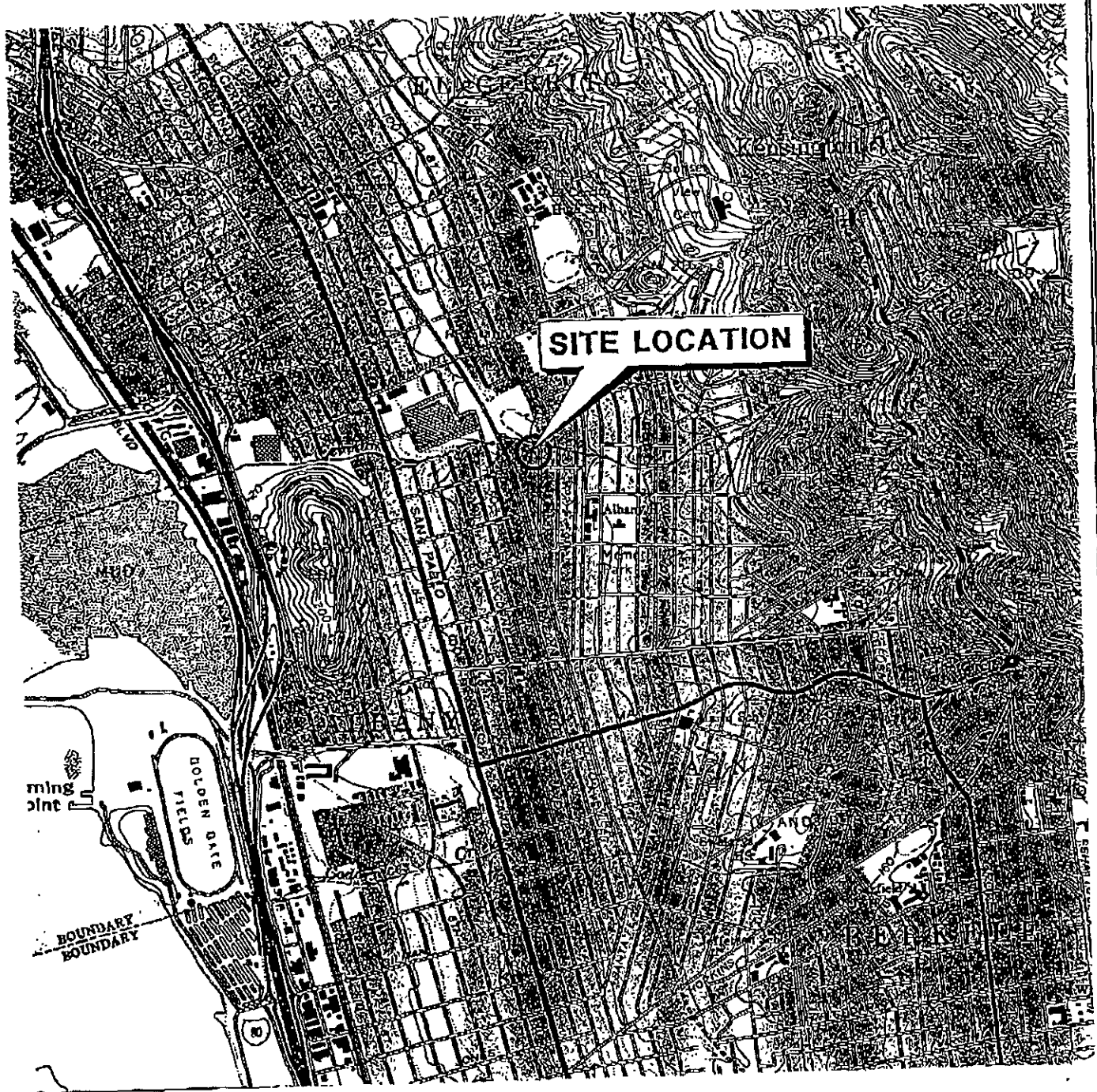
Groundwater samples will be laboratory analyzed for TPHg, and BTEX compounds using EPA Methods 5030/8015/8020, and TPHd by modified EPA Method 3510/8015.

#### 4.6 TASK 6: FINAL REPORTING

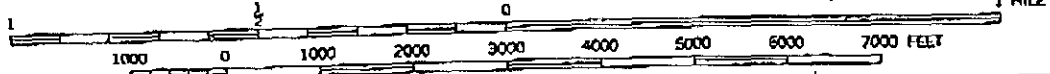
A report will be prepared presenting all data collected from the drilling of the soil borings, the grab groundwater sampling and the installation of the groundwater monitor well. At a minimum, the report will contain the following:

- details of field procedures and operations;
- boring logs with as-built well construction details;
- groundwater gradient map;
- dissolved constituent concentration map(s) (if detected); and,
- recommendations for additional work (if necessary).

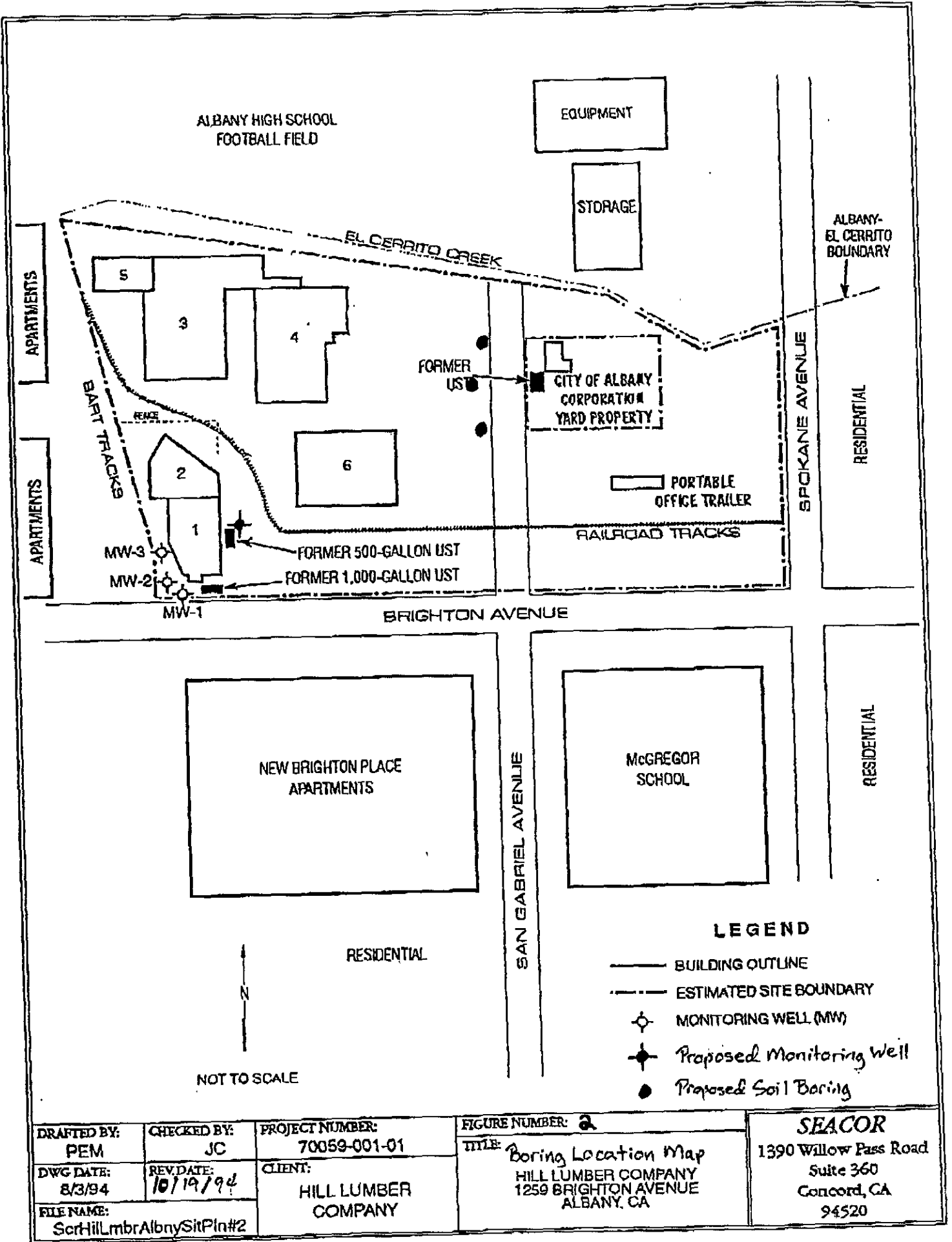
# CHMOND QUADRANGLE California



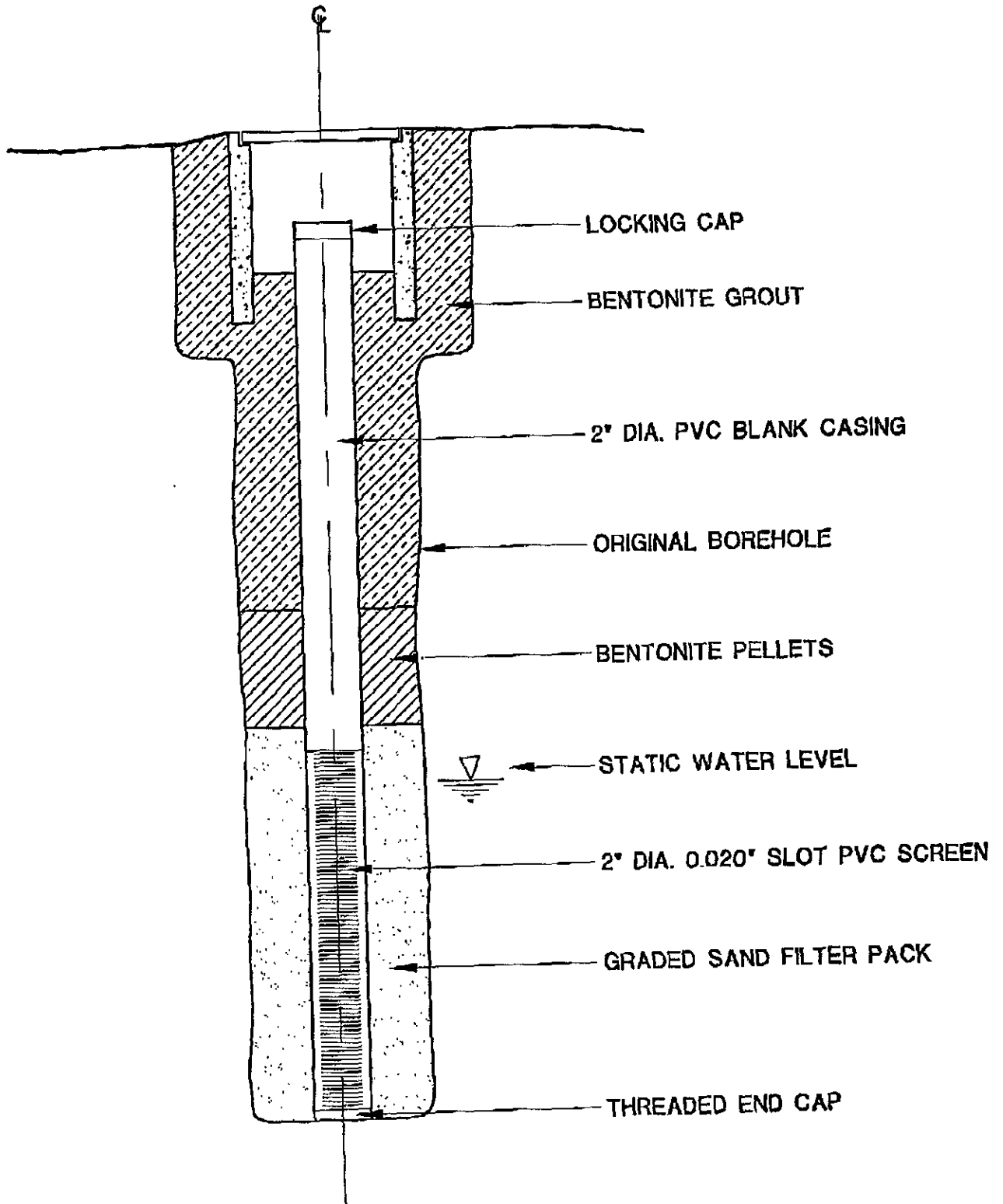
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DRAFTED BY: <b>TS</b>	CHECKED BY: <b>JMC</b>	<b>PROJECT NO. 70059-001-01</b>	<b>FIGURE 1</b>	<b>SEACOR</b> 1390 Willow Pass Road Suite 360 Concord, CA 94520
DWG. DATE: <b>08/31/94</b>	REV. DATE: <b>08/31/94</b>			
FILE NAME: <b>landplan.f01</b>		<b>Hill Lumber Company</b> 1259 Brighton Avenue Albany, California	<b>Site Location Map</b>	



DRAFTED BY: PEM	CHECKED BY: JC	PROJECT NUMBER: 70059-001-01	FIGURE NUMBER: <b>2</b>	<b>SEACOR</b> 1390 Willow Pass Road Suite 360 Concord, CA 94520
DWG DATE: 8/3/94	REV. DATE: 10/19/94	CLIENT: HILL LUMBER COMPANY	TITLE: Boring Location Map HILL LUMBER COMPANY 1259 BRIGHTON AVENUE ALBANY, CA	
FILE NAME: ScrHillLmbrAlbnySitPln#2				



NOT TO SCALE

G. J. JUNKERMAN  
28 JUN 93 REV. A

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FIGURE 3  
TYPICAL  
MONITOR WELL COMPLETION