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Work Plan for  
Design and Installation of a  
Ground-Water Extraction and Treatment System  
Yerba Buena/East Baybridge Project Site  
Emeryville and Oakland, California

June 21, 1993  
1649.00-04

Prepared for  
Catellus Development Corporation  
201 Mission Street, Suite 202  
San Francisco, California 94105



**LEVINE·FRICKE**



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ENGINEERS, HYDROGEOLOGISTS & APPLIED SCIENTISTS

June 21, 1993

LF 1649.00-04

Ms. Susan Hugo  
Alameda County Health Care Services Agency  
80 Swan Way, Room 350  
Oakland, California 94621

Subject: Work Plan for Design and Installation of a Ground-  
Water Extraction and Treatment System, Yerba  
Buena/East Baybridge Project Site, Emeryville and  
Oakland, California

Dear Ms. Hugo:

On behalf of Catellus Development Corporation, Levine•Fricke has prepared the enclosed work plan describing design and installation activities for the proposed ground-water extraction and treatment system at the Yerba Buena/East Baybridge Project site in Emeryville and Oakland, California. The work plan presents a description of the proposed system, a scope of work for installation of the system, and an estimated schedule for completion of the tasks proposed.

The proposed scope of work consists of preconstruction activities (system design, preparation of construction plans and specifications, permitting, and issuance of the bid package), construction management, and postconstruction follow-up (system startup and adjustment).

If you have any questions, please call me, Edward Ho, or Alan Leavitt of Levine•Fricke.

Sincerely,

for Bob Roat  
Senior Project Engineer

Enclosures

cc: Richard Hiett, RWQCB  
Kimberly Brandt, Catellus

1649/TreatSys.WP/NAS

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June 21, 1993

LF-1649.04

**WORK PLAN FOR  
DESIGN AND INSTALLATION OF A  
GROUND-WATER EXTRACTION AND TREATMENT SYSTEM  
YERBA BUENA/EAST BAYBRIDGE PROJECT SITE  
EMERYVILLE AND OAKLAND, CALIFORNIA**

**INTRODUCTION**

On behalf of Catellus Development Corporation ("Catellus"), Levine·Fricke has prepared this work plan to describe design and installation activities for the proposed ground-water extraction and treatment system at the Yerba Buena/East Baybridge project site in Emeryville and Oakland, California ("the Site"; Figure 1). The rationale for installation of the ground-water extraction and treatment system was presented in Levine·Fricke's April 28, 1993 work plan entitled "Work Plan for Site Characterization and Remediation Activities to Be Conducted in Conjunction with Proposed Site Development, Yerba Buena/East Baybridge Project Site, Emeryville and Oakland, California." Installation of the ground-water extraction and treatment system is proposed to hydraulically contain and extract shallow ground-water affected by volatile organic compounds (VOCs).

As noted in Task 6 of the April 28 work plan, this work plan has been prepared to present a description of the proposed system, a scope of work for design, installation, and startup of the system, and an estimated schedule for completion of the tasks proposed. These items are described below.

**DESCRIPTION OF PLANNED EXTRACTION AND TREATMENT SYSTEM**

The ground-water extraction system will consist of two shallow ground-water extraction wells (EX-3 and EX-4) and the existing ground-water extraction trench. The proposed extraction and treatment system layout is shown in Figure 2. The anticipated total average flow for the system is estimated to be 2 gallon per minute (gpm). This flow rate is based on results of an hydraulic test conducted for the ground-water collection trench, review of lithologic well logs and general ground-water recharge data obtained during quarterly monitoring at the Site, and results of computer modeling conducted to evaluate the effectiveness of the ground-water remedial plan.

The treatment system has been designed to handle a maximum flow of 5 gpm. System flow rates will be monitored by collection of totalizer readings on a weekly basis.

The treatment system will be located on a concrete pad in the area shown in Figure 2. Connection to the sanitary sewer will be made via a lateral to be installed by Catellus' general contractor. This lateral will join the existing sanitary system at Hollis Street, as shown in Figure 2. Below-grade sewer line installation and connection to the existing sanitary sewer will be accomplished as part of the overall Yerba Buena/East Baybridge Project development.

A schematic flow diagram for the treatment system is shown in Figure 3. Extraction and treatment system equipment will be provided by Clean Environment Equipment, Inc., of Oakland, California. Water will be pumped into an influent equalization tank, and then through three pairs of carbon vessels (six vessels total). Each vessel will contain approximately 200 pounds of carbon designed for liquid-phase adsorption. The water will then pass through a totalizing flowmeter before it is discharged to the sanitary sewer.

Spent activated carbon will be transported by a licensed hazardous materials courier to Cameron-Yakima, Inc., in Yakima, Washington, for thermal regeneration. The carbon will then be returned to the treatment system.

#### SCOPE OF WORK

The proposed scope of work consists of the following specific tasks:

- Task 1: Design of the Ground-Water Extraction and Treatment System
- Task 2: Preparation of a Bid Package and Review of Bids
- Task 3: Permitting and Regulatory Interface
- Task 4: Construction Management of System Installation
- Task 5: System Start-Up

Tasks 1 through 5 are described below.

#### Task 1: Design of the Ground-Water Extraction and Treatment System

Preliminary construction plans and specifications for the ground-water extraction and treatment system have already been

prepared. These plans should be finalized by the end of June 1993. The design includes sizing of all components, structural calculations for equipment pads and system components, and electrical control design.

**Task 2: Preparation of a Bid Package and Review of Bids**

A bid package containing the plans and specifications for construction of the ground-water extraction and treatment system will be issued to selected contractors. Following issuance of the bids, Levine·Fricke will conduct a bid walk at the Site with the contractors. After the bids have been received and reviewed with Catellus, a contractor will be selected.

**Task 3: Permitting and Regulatory Interface**

Levine·Fricke will prepare and obtain permits for this project. The ground-water treatment system will require various construction permits from the cities of Oakland and Emeryville and a permit from the East Bay Municipal Utilities District (EBMUD). A wastewater discharge permit application was submitted to EBMUD in May, and receipt of that permit is expected in August 1993.

**Task 4: Construction Management of System Installation**

After all permits have been obtained and the contract has been awarded, construction will be scheduled. Installation of the treatment system will need to be coordinated with other development activities occurring at the Site.

Levine·Fricke will conduct the following tasks:

1. Conduct health and safety tailgate meeting with contractor personnel before initiation of excavation activities. Levine·Fricke will observe contractor's adherence to health and safety procedures during field remediation activities.
2. Observe and monitor contractor activities at the Site for compliance with the approved Site Remedial Plan, the contract, the plans, and the specifications.
3. Provide construction inspection services (including compaction testing) during the installation of the system.

4. Review construction schedules, submittals, and progress payment requests.

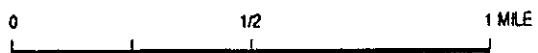
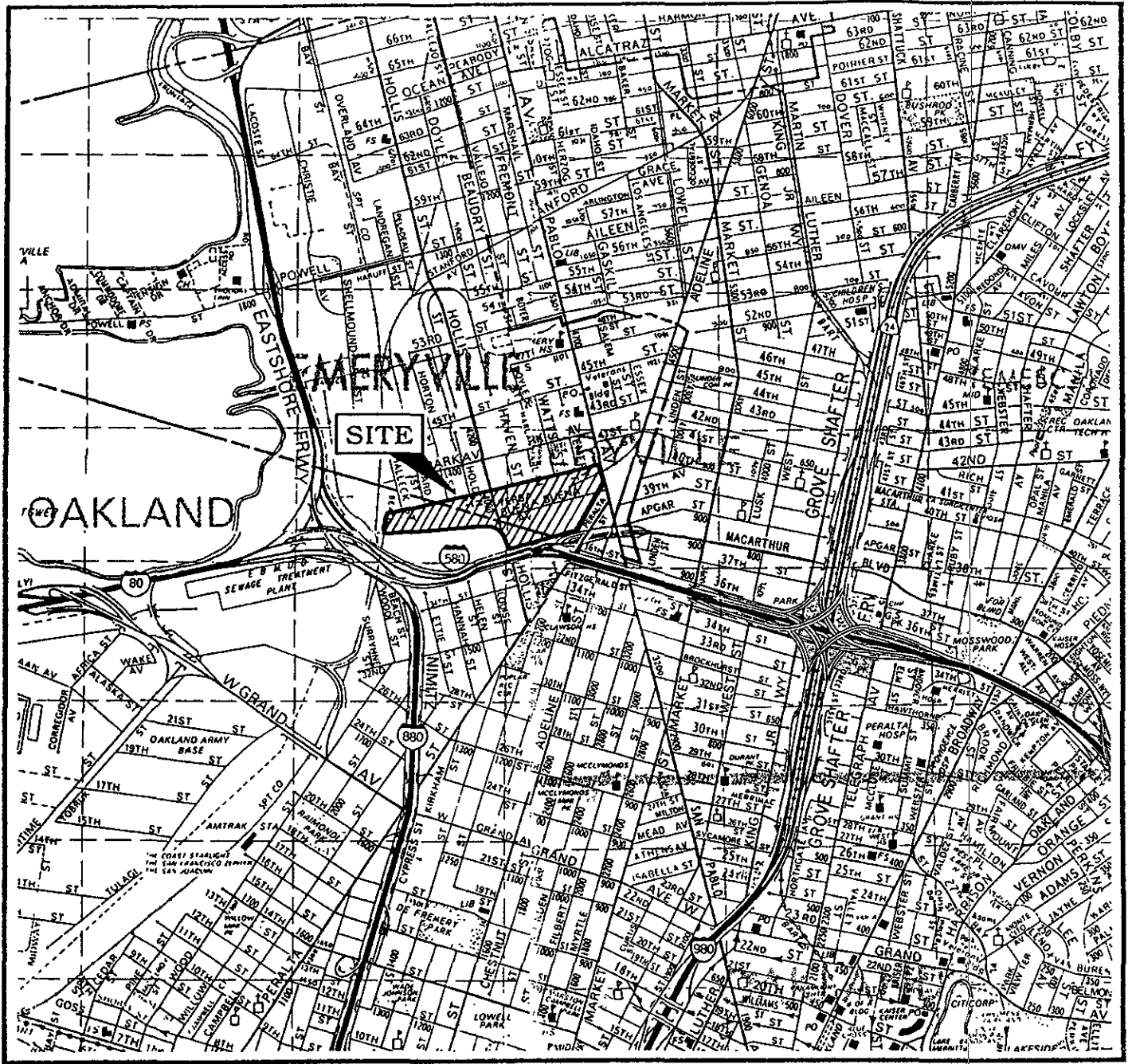
**Task 5: System Start-Up**

Following installation of the system, start-up procedures will be conducted to confirm that the system is properly operating and to make adjustments necessary for smooth system operation. Additionally, influent and effluent water samples will be collected weekly during the first month of operation to determine VOC extraction and carbon usage rates and to monitor compliance with the discharge permit issued by the EBMUD.

**SCHEDULE**

Figure 4 shows the proposed schedule for this project. We estimate that, barring site access difficulties, permitting delays, subcontractor unavailability, adverse weather conditions, or other conditions beyond Levine·Fricke's control, the system installation and start-up can be completed during the fall of 1993.





MAP SOURCE:  
Alameda & Contra Costa Counties,  
Thomas Bros. map, 1990 Edition

Figure 1: SITE LOCATION MAP  
YERBA BUENA PROJECT SITE

**Figure 4**  
**Proposed Schedule for Ground-Water Extraction and Treatment System Installation**  
**Yerba Buena/East Baybridge Project Site**

TASK	June				July				August					September				October					
	7	14	21	28	5	12	19	26	2	9	16	23	30	6	13	20	27	4	11	18	25		
1. Design of Ground-Water Extraction and Treatment System																							
2. Preparation of Bid Package and Review of Bids																							
3. Permitting and Regulatory Interface																							
4. Construction Management of System Installation																							
5. System Start-Up																							

This schedule is subject to change based on overall Yerba Buena/East Baybridge Development plans, contractor availability, adverse weather conditions, or other circumstances beyond Levine-Fricke's control