

SITE SAFETY PLAN
CONTAMINATED SOIL REMEDIATION
150TH AVENUE AND EAST 14TH STREET
SAN LEANDRO, CALIFORNIA
SCI 209.005

11-20-87

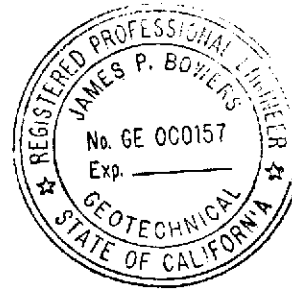
Prepared for:

Mr. Tak Hirahara
C & H Development Company
3744 Mount Diablo Boulevard, #301
Lafayette, California 94549

By:

James P. Bowers

James P. Bowers
Geotechnical Engineer 000157 (expires 3/31/91)



Subsurface Consultants, Inc.
171 12th Street, Suite 201
Oakland, California 94607
(415) 268-0461

November 20, 1987

I INTRODUCTION

This site safety plan pertains to the excavation of contaminated soils at the site located near the northeastern corner of the intersection of East 14th Street and 150th Avenue in San Leandro, California. The site location is shown on Plate 1, Site Plan.

We understand that a PG&E work crew made an excavation into the sidewalk at the site as part of a utility pole relocation. Strong petroleum product odors were noted in the 2-foot-square and 4-foot deep excavation. Subsurface Consultants, Inc. (SCI) investigated subsurface conditions at the site and presented the results in letters dated October 26 and November 16, 1987. In summary, oils, gasoline and/or solvents were encountered near the PG&E excavation.

As part of site mitigation, an excavation about 10 by 20 feet in plan and 9 feet deep is to be made to remove contaminated soils. This Site Safety Plan outlines a personnel and work site safety program to minimize the risk of contractor actions endangering surrounding personnel and/or property.

II HEALTH AND SAFETY CONSIDERATIONS

A. Key Personnel

James P. Bowers: Health and Safety Officer/Project Manager-
Responsible for planning, implementing and auditing the

health and safety program for the project and supervising all field sampling activities. He will be contacted if and when emergency situations develop.

Timothy G. Bodkin: Field Coordinator/Project Geologist/Field Safety Officer -

Responsible for coordinating all field health and safety activities.

B. Hazardous Substance Description

Heavy petroleum hydrocarbons (oils), light petroleum hydrocarbons (gasoline) and chlorinated organic chemicals (solvents) have been detected in soil at the site. Oil, gasoline and solvent concentrations have been measured to range up to 8000, 370, and 15 mg/kg (ppm) at the site, respectively. The higher concentrations were encountered in localized areas.

C. Chemical Distribution

Significant oil concentrations were encountered in an area measuring about 10 by 20 feet in plan. Oil concentrations appear to decrease with depth and were non-detectable at depths of about 8 feet. Gasoline appears to exist in isolated zones down to the groundwater table, which is situated about 11 feet below grade. Solvents were encountered at a depth of about 5 feet near the center of the area to be excavated.

D. Chemical Hazards

Potential chemical hazards include skin and eye contact and inhalation or exposure to potentially toxic concentrations of chemical vapors. The identified toxic compounds that exist at the site are listed below, with descriptions of specific health

effects of each. The list includes the main toxic constituents of gasoline (benzene, toluene, and xylene), and the three solvents identified at the site.

1. Benzene

a. Characteristics:

Clear, colorless, highly flammable liquid with characteristic odor

b. High exposure levels may cause:

Acute restlessness, convulsions, depression, respiratory failure, suspected carcinogen

c. Permissible exposure level (PEL) for a time weighted average (TWA) over an eight hour period:

10 ppm

2. Tetrachloroethylene (perchloroethylene, PCE)

a. Characteristics:

Colorless, non-flammable liquid with ethereal odor

b. High exposure levels may cause: Nausea, inebriation

c. PEL for an 8-hour TWA: 50 ppm

3. Toluene

a. Characteristics:

Refractive, flammable liquid with benzene-like odor

b. High exposure levels may cause: mild macrocytic anemia, but not leukopenia (less toxic than benzene)

c. PEL for an 8-hour TWA: 100 ppm

4. Trans 1,2-Dichloroethene (t-1, 2-DCE)

a. Characteristics:

Colorless, volatile, flammable liquid

b. High exposure levels may cause:

Anesthesia, narcosis, liver and kidney damage

c. There is no available information on permissible exposure limits for this compound

5. Trichloroethene (TCE)

a. Characteristics:

Colorless, flammable liquid with the odor of chloroform

b. High exposure levels may cause:

Dermatitis and eye irritation (upon contact), nausea, anesthesia, headaches, drowsiness, liver damage

c. PEL for an 8-hour TWA: 50 ppm

6. Xylene

a. Characteristics: Mobile, flammable liquid

b. High exposure levels may cause: Narcosis

c. PEL for an 8-hour TWA: 100 ppm

E. Physical Hazards

Other on-site hazards may include physical injuries due to the proximity of workers to engine-driven heavy equipment and tools. Heavy equipment used during excavation will include a backhoe and may include other equipment as part of soil removal

and subsequent backfilling operations. Only trained personnel will operate machines, tools, and equipment; all will be kept clean and in good repair. Safety apparel required around heavy equipment will include a hard hat.

The perimeter of the excavation will be shored and/or sloped to create acceptable stable temporary cut slopes. All work will be performed in accordance with OSHA guidelines.

III WORK PLAN INSTRUCTIONS

A. Level of Protection

Regular surveys of the site and knowledge of the anticipated hazards will determine the level of protection and the proper safety procedures to be employed. The workers coming into contact with the excavated materials will wear disposable tyvex coveralls, disposable latex gloves, hard hat, and eye protection.

The level of protection for personnel working in the area will be upgraded if organic vapor levels exceed 0.5 ppm above background levels continuously for more than 5 minutes. In this event, personnel protective equipment will include double cartridge respirators for organic vapors, tyvex coveralls, gloves, and hard hat with safety shield or safety glasses.

B. Combustible Gas and Organic Vapor Monitoring

Site personnel will monitor ambient levels of combustible gas vapors using a Gastech Hydrocarbon Supersurveyor, Model 1314 and a Portable Organic Vapor Analyser (OVA). The Health and

Safety Officer will be notified if organic vapor levels exceed ambient concentrations in the samples. Excavation will cease, equipment will be shut down, and personnel will withdraw from the area if either (1) the organic vapor concentration in the operators' breathing zone exceeds 5 ppm or (2) the organic vapor concentration two feet above the excavation exceeds 5000 ppm or 50 percent of the lower explosive limit. The Health and Safety Officer will determine when personnel may return to the work area.

In the event low levels of organic vapors are detected, personnel will wear appropriate respirators (using NIOSH approved combination cartridges for organic vapors, and dusts).

C. Site Entry Procedures

The general work area is shown on the Site Plan. All personnel entering the work zone will be qualified field personnel wearing the proper level of protection. Eating, drinking, smoking and any other practices which increase the probability of hand-to-mouth transfer will be prohibited in the work zone. All field personnel will be instructed to thoroughly wash their hands and face upon leaving the work area. The Health and Safety Officer will be responsible for designating a wash area at the work site. A first aid kit and a 20-pound ABC fire extinguisher and potable water will be available at the site.

D. Decontamination Procedures and Disposal

Steam cleaning areas will be designated by the Health and Safety Officer at the start of the excavation. To prevent the

transfer of possible contamination from the work zone into clean areas, all tools will be steam cleaned prior to removal from the work zone. All disposable protective clothing will be put into plastic bags and disposed of in a garbage receptacle. Excavated soils will be stockpiled in the area designated on the Remediation Plan, until chemical analyses have been performed on the soil samples. The soils will be covered with plastic sheeting.

In the event of a medical emergency, the injured party will be taken through decontamination procedures, if possible. However, the procedures will be omitted when it may aggravate or cause more harm to the injured party. A member of the work team will accompany the injured party to the medical facility to advise on matters concerning chemical exposure.

IV EMERGENCY MEDICAL CARE

In the event of an injury or suspected chemical exposure, the first responsibility of the Field Safety Officer will be to prevent further injury. This objective will normally require an immediate end to work until the situation is rectified. The Field Safety Officer may order an evacuation of the work party.

The Field Safety Officer's primary responsibility in the event of an accident will be evacuation, first aid, and decontamination of injured team members. The Field Safety Officer will determine safe evacuation areas and begin first aid.

V EMERGENCY PROCEDURES

A. Response to Emergency

In case of an injury, the Field Safety Officer will use the appropriate first aid kit and contact off-site medical help, if appropriate. The Health and Safety Officer/Project Manager will be notified. The telephone number for Health and Safety Officer/Project Manager is (415) 268-0461.

If medical evacuation is required, the primary or alternative route shown on Plate 2 will be followed.

B. Emergency Contacts

Ambulance, Fire, Police: 911

Hospital - Humana Hospital
13855 East 14th Street
San Leandro, California 94578
(415) 357-6500

Chemical Spills: National Response Center (24 hours)
(800) 424-8802

Chemtrec: Chemical Releases(24-hours)
(800) 424-9300

Environmental Protection Agency
Emergency Response Section:
(415) 974-7511

Poison Control Center (24-hours):
(415) 428-3248

Cal-OSHA District Office:
Occupational Injuries
(415) 557-1677

Regional Water Quality Control Board:
(415) 464-1255

C. Acute Exposure Symptoms and First Aid

<u>Exposure Route</u>	<u>Symptoms</u>	<u>First Aid</u>
Skin	Dermatitis	Wash immediately with soap and water, contact ambulance if evacuation is necessary
Eye	Irritated eyes	Flush eyes with water, contact ambulance
Inhalation	Vertigo, tremor	Move person to fresh air, cover source of chemicals
Ingestion	Nausea, vomiting	Call Poison Control Center

D. Contingency Plan

The following procedures will be used in case of an unpredictable event:

Fire:	Use fire extinguisher if localized and call the fire department if uncontrolled
Chemical Exposure:	Follow first aid treatment specified previously
Physical Injury:	Provide first aid treatment and contact ambulance for evacuation, if appropriate

List of Attached Plates:

Plate 1	Site Plan
Plate 2	Escape Routes

Distribution:

1 copy: Ms. Susan Brown
C&H Development Company
3744 Mount Diablo Boulevard, #301
Lafayette, California 94549

1 copy: Mr. Bob Corsun
R. S. Eagan Company
150 K Mason Circle
Concord, California 94520

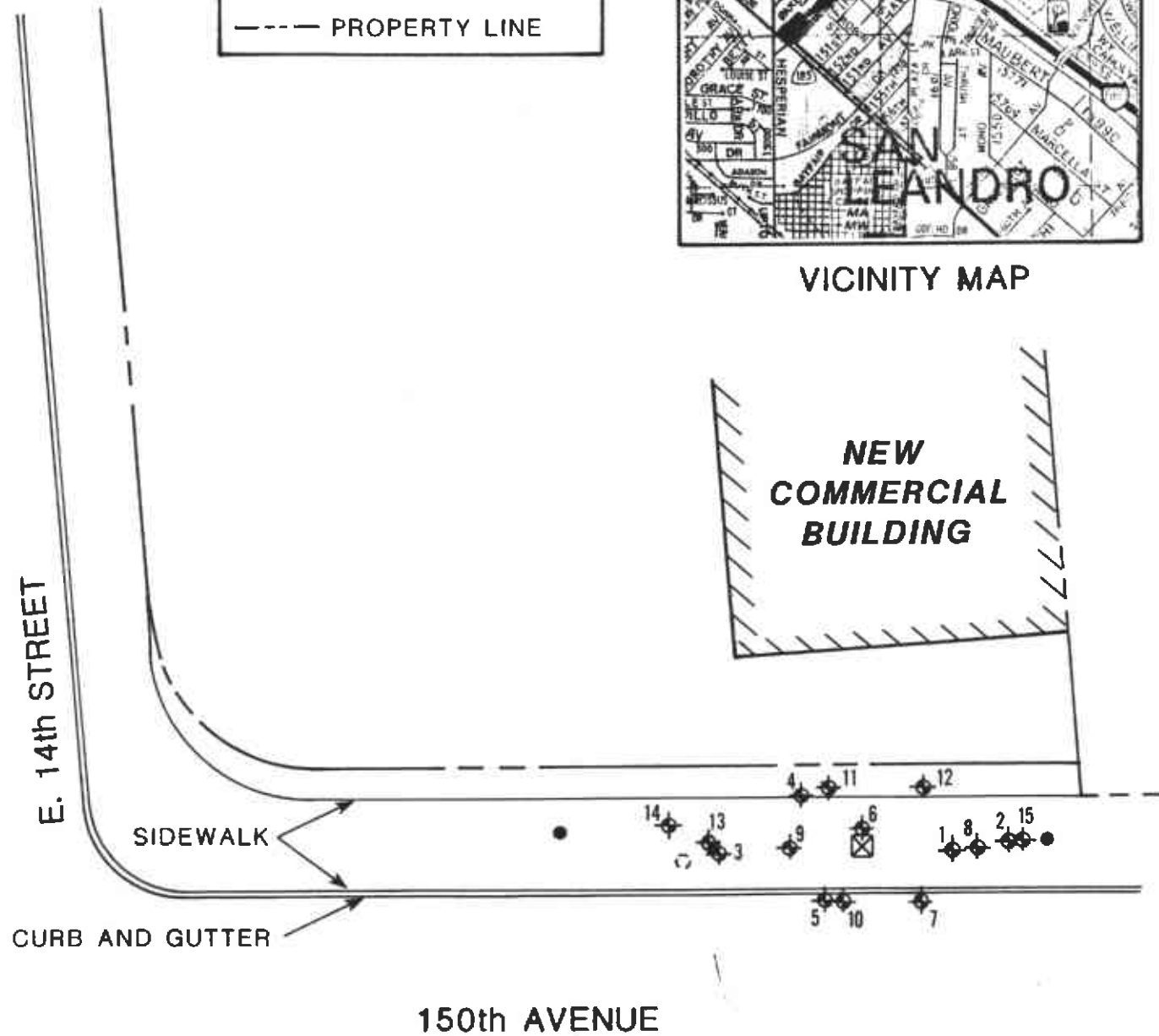
1 copy: Mr. Larry Seto
Alameda County Health Agency
Division of Hazardous Materials
Department of Environmental Health
470 27th Street, Room 322
Oakland, California 94612



- ◆ TEST BORING
- ⊠ PG&E EXCAVATION
- TELEPHONE POLE
- TRAFFIC SIGN
- PROPERTY LINE



VICINITY MAP



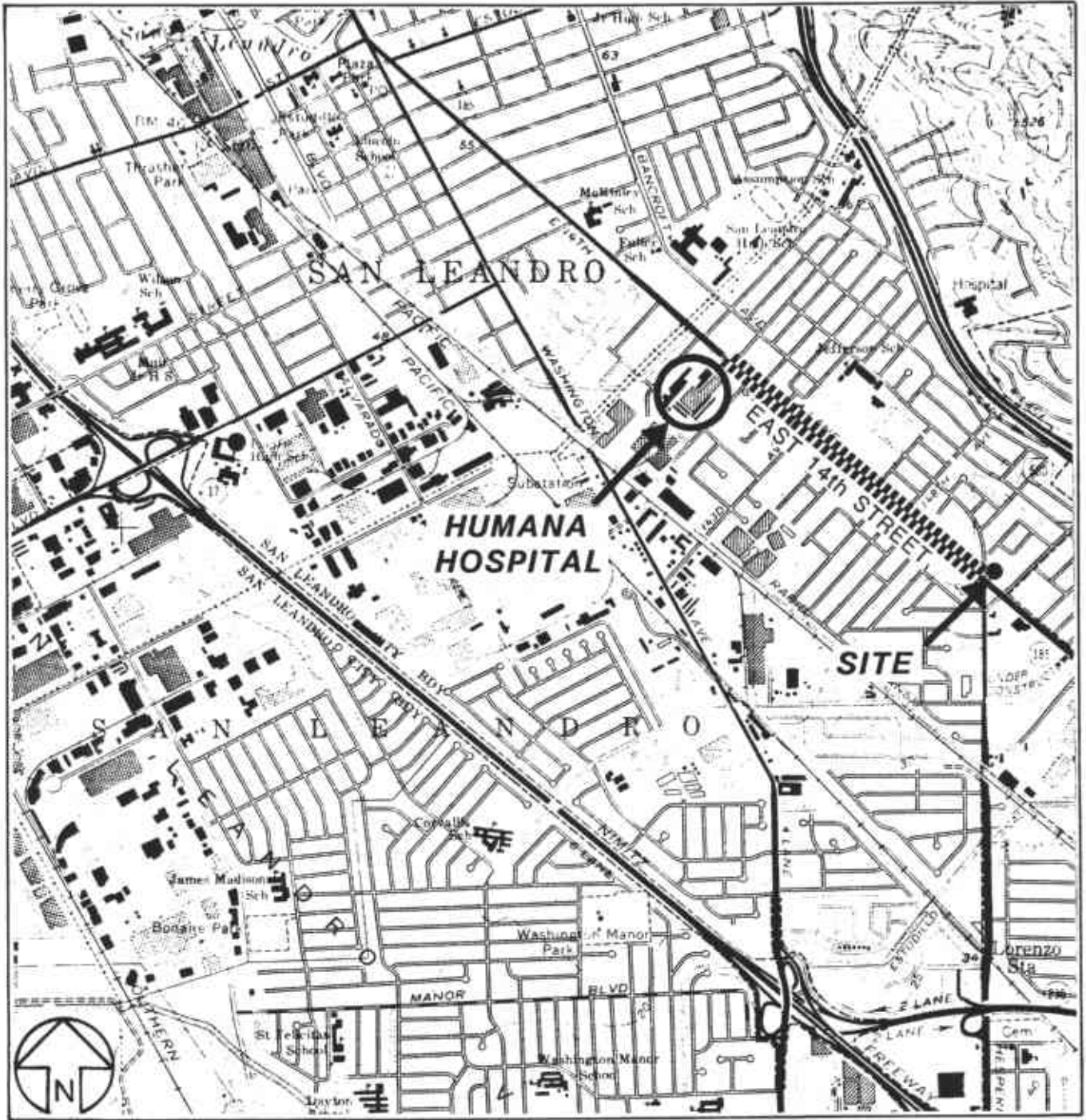
APPROXIMATE SCALE (feet)



SITE PLAN

Subsurface Consultants

150th Ave. & E.14th St.-SAN LEANDRO, CA			PLATE
JOB NUMBER	DATE	APPROVED	1
209.005	10/13/87	<i>[Signature]</i>	



<u>KEY</u>	
	ESCAPE ROUTE

APPROXIMATE SCALE (feet)



ESCAPE ROUTE

Subsurface Consultants

150th Ave. & E.14th St.- SAN LEANDRO, CA			PLATE
JOB NUMBER	DATE	APPROVED	2
209.005	11/18/87	<i>tc</i>	