

ADDENDUM TO
SITE CHARACTERIZATION/
ASSESSMENT PROPOSAL
FOR
PARKING GARAGE
AT
1432 HARRISON STREET
OAKLAND, CALIFORNIA
March 4, 1991

Submitted to:

Alameda County Health Care Services Agency
Hazardous Materials Program
Department of Environmental Health (ACDEH)
80 Swan Way, Room 200
Oakland, California 94621

Submitted by:

SCS Engineers
6761 Sierra Court, Suite D
Dublin, California 94568

March 4, 1991

File No. 0390044.00

SCS ENGINEERS

91 MAR -5 PM 2: 14

March 4, 1991
File No. 0390044.00

Alameda County Health Care Services Agency
Department of Environmental Health (ACDEH)
Hazardous Material Program
80 Swan Way, Room 200
Oakland, California 94621

Attention: Mr. Paul Smith

Subject: Health and Safety Code Section 25299.37 (c) Order:
Addendum to Site Characterization/Assessment Proposal
for the Parking Garage
at 1432 Harrison Street
Oakland, California 94612

Dear Mr. Smith:

SCS Engineers (SCS) is pleased to submit this Addendum to the Site Characterization/Assessment Proposal dated February 15, 1991 at the above mentioned parking garage for your review. The items enumerated in this Addendum correspond to those enumerated in your letter to us dated February 21, 1991.

1) Locations for monitoring Wells and Borings:

SCS fully understands its responsibility to determine the appropriate locations for monitoring wells and soil borings. Their placement and installation will be done in accordance with the County's guidelines. Plate three (3) is an illustration of the placement rationale. The exact locations will be determined in the field by our geologist after incorporating any logistical constraints.

2a) Soil Contamination Beneath Wash Rack Sump:

The wash rack sump is located in the northeast corner of the Harrison Street Garage. A test boring is proposed adjacent to the sump utilizing a four inch solid stem auger. The boring will extend to a depth of approximately 20 ft below Harrison Street grade and samples will be collected at a minimum of every five (5) feet. The samples will be prepared, and shipped to a certified laboratory for analysis.

Mr. Paul Smith
March 4, 1991
Page Two

2b) Collection Drain and Capped Pipe in Alice Street Basement:

A grab sample (approximately one (1) liter) of the material beneath the grate in the collection drain will be collected. The sample will be stored in a glass jar, prepared and shipped out for certified laboratory analysis.

The capped pipe is located adjacent to a column in between space 12/13 in the Alice Street Basement. The pipe appears to extend through the column footing. To collect a soil sample from beneath the capped pipe, a boring would have to penetrate approximately five (5) feet of concrete. To determine whether this will be necessary, SCS proposes to remove the cap, define the direction and extent of the piping, and collect and analyze a grab sample of the pipe contents. SCS proposes not to sample soil beneath the five (5) feet of concrete underlying the capped pipe if the foregoing analysis does not disclose the presence of hazardous material or wastes.

2c) Hydraulic Lift Area:

The hydraulic lift area is located in the northeast corner of the Harrison Street Garage. Four (4) test borings are proposed, utilizing a four inch solid stem auger. The borings will be located adjacent to each of the three lift rams and the suspected hydraulic reservoir. They will extend to a depth of approximately 20 feet below Harrison Street grade and each sample will be collected at a minimum of every five (5) feet. The samples will be prepared and shipped to a certified laboratory for analysis.

2d) Piping Within the Garage Complex:

Attached is a report by J R Associates, dated August 28, 1990, that presents the results of a geophysical investigation performed at the Harrison Street Garage. The report reveals the location of the waste oil tanks and associated piping as well as piping within the hydraulic area. A review of agency records will be done to determine the extent and ultimate destination of water collection drains. If it is determined that a pipe was used as a conduit for hazardous materials and/or hazardous waste, a plan to take soil samples at 20 foot intervals beneath such a pipe will be implemented to investigate for contamination beneath that pipe.

Mr. Paul Smith
March 4, 1991
Page Three

2e) Monitoring Well Locations for Waste Oil Tanks:

SCS has revised Plate three (3), which delineates the proposed monitoring well locations, to show the waste oil tanks set back from the wall. The wells will be placed as close as possible to the basement wall which is downgradient from these tanks. Their actual position is not known. However, based on the location of their fill pipes, it is believed the end of the tank is approximately 8 to 10 feet from the basement wall.

3) Chemical Sampling Analysis

The analysis for the soil and water samples collected is summarized in the following table:

TABLE 1

<u>Location</u>	TPH-G ¹	TPH-D ²	BTEX ³	O.L. ⁴	O&G ⁵	CIH ⁶	PCB's ⁷	PPM ⁸
Gasoline Tanks	X	X	X	X	X	X	X	X
Waste Oil Tanks (Basement)	X	X	X		X	X	X	X
Hydraulic Lift		X	X		X			
Wash Rack Sump	X	X	X		X	X		
Collection Drain (Basement)	X	X	X		X			X

1. Total Petroleum Hydrocarbon as FAS (EPA 8015 Mod)
2. Total Petroleum Hydrocarbon as Diesel (EPA 8015 Mod)
3. Benzene, Toluene, Ethylbenzene, Xylene (EPA 8020)
4. Organic Lead (DOHS MIBK Method)
5. Oil & Grease (EPA 413.1)
6. Chlorinated Hydrocarbons (EPA 8120)
7. Polychlorinated Biphenyls (EPA 8080)
8. Priority Pollutant Metals

Mr. Paul Smith
March 4, 1991
Page Five

4) **Human Health Risk Assessment:**

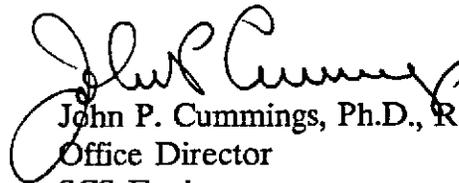
At the completion of the site characterization, a Health Risk Assessment associated with both the underground tank removal and any site remediation activities will be performed.

This completes the Addendum to the Site Characterization/Assessment Proposal for the Parking Garage at 1432 Harrison Street. If you should have any questions, please contact either of the undersigned at (415) 829-0661.

Sincerely,



Nels R. Johnson, P.E.
Sr. Project Engineer
SCS Engineers



John P. Cummings, Ph.D., R.E.A., R.E.P.
Office Director
SCS Engineers

NRJ/JPC/sar/egh

cc: Mr. Lester Feldman, Regional Water Quality Control Board
Mr. Mark Thomson, Alameda County District Attorney's Office

ATTACHMENT

J R ASSOCIATE GEOPHYSICAL INVESTIGATION

J R ASSOCIATES

Engineering Geophysics
1886 Emory Street
San Jose, CA 95126
(408) 293-7390

HARRISON STREET GARAGE GEOPHYSICAL INVESTIGATION
HARRISON STREET GARAGE
1432 HARRISON STREET
OAKLAND, CALIFORNIA

August 27, 1990

for

SCS Engineers
6761 Sierra Court, Suite D
Dublin, CA 94568

by

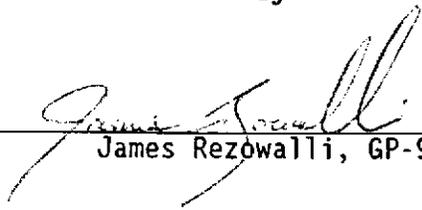

James Rezwalli, GP-921

TABLE OF CONTENTS

LIST OF ILLUSTRATIONS	iii
I INTRODUCTION	1
A. Site Conditions	1
II METHODOLOGY	2
A. GPR Instrumentation	2
B. GPR Field Procedures	2
C. Pipe and Cable Surveying	3
III RESULTS	4
A. Car Lift Area	4
B. Lower Southern Garage Corner	5
C. Limitations	5
D. Conclusions	6
IV DRAWINGS	7

LIST OF ILLUSTRATIONS

- Drawing 1 Site Location
- Drawing 2 Example Radar Anomalies
- Drawing 3 Upper Garage Area
- Drawing 4 Lower Southern Garage Area

I INTRODUCTION

This report presents the results of a geophysical investigation performed at the Harrison Street Garage for SCS Engineers by J R Associates. The purpose of the survey was to determine if there were geophysical indications of buried tanks at two locations in the garage. The Harrison Street Garage is located at 1432 Harrison Street in Oakland, California (Drawing 1). The field work was performed on August 16, 1990, by James Rezowalli, Principal Geophysicist, and Lanbo Liu, Geophysicist, of J R Associates.

A. Site Conditions

The geophysical investigation took place inside the Harrison Street Garage. An area around three car lifts near the ground level Harrison Street entrance of the garage was investigated using a ground penetrating radar (GPR) and a pipe and cable locator. An area in the southern corner of the lower level of the garage adjacent to Alice Street was also investigated with the GPR and pipe and cable locator. The first purpose of the geophysical investigation was to aid in determining if there were buried hydraulic tanks associated with the car lifts near the garage entrance. The car lifts and a pneumatic line indicated that tanks may have been buried in this area. The second purpose of the GPR investigation was to aid in determining if waste oil tanks were buried in the lower southern corner of the garage. An apparent fill (or drain) pipe originating on the Alice Street sidewalk and leading into the lower garage floor along with two apparent tank vent pipes indicated that two tanks may have been buried in the lower southern corner of the garage.

II METHODOLOGY

A. GPR Instrumentation

A SIR 3 radar system made by Geophysical Survey Systems, Inc., was used at the site. The SIR 3 consists of a radar control unit, a graphic recorder, and a 500 MHz antenna. The GPR transmits a radio frequency electromagnetic pulse into the ground. The pulse travels through the ground at approximately 3 nanoseconds per foot. The pulse is reflected back to the surface from buried features with dielectric constants that are different than the surrounding or overlying media. GPR pulses are transmitted and the returning reflections are recorded 32 times a second as the antenna is slowly pulled across the ground. The GPR detects the returning reflections and plots them on the graphic recorder. The X axis of a GPR record is distance and the Y axis is time. Drawing 2 shows two GPR records collected at the site. The dark bands seen on the GPR records indicate the returning radar reflections. The GPR antenna must travel directly over a buried tank to detect it.

B. GPR Field Procedures

GPR data were collected along a grid of traverse lines in the vicinity of the car lifts and in the lower southern corner of the garage. The traverse lines were spaced two feet apart. Data collection began by marking the beginning and the end of a radar traverse. A tape measure was then laid on the ground between the beginning and end marks. The antenna, connected to the control unit by a cable, was dragged along the traverse collecting radar records adjacent to the tape measure. The antenna operator manually marked the radar records every time the radar antenna traveled 5 feet. The dashed distance marks (Drawing 2) were created by pressing a momentary switch connected to the antenna. After a traverse was completed, the tape measure was moved to the next traverse line and the above process was repeated.

C. Pipe and Cable Surveying

A pipe and cable survey was performed at the site using a Radiodetection, Inc., RD 400 pipe and cable locator. Buried utilities create GPR anomalies that appear similar to the anomalies created by buried tanks. The utilities were located so their anomalies would not be associated with buried tanks. The approximate locations of most of the buried utilities found by the pipe and cable locator are noted on Drawings 3 and 4.

III RESULTS

A. Car Lift Area

The results of the geophysical investigation around the car lifts near the ground floor entrance of the garage are illustrated in Drawing 3. The GPR and the pipe and cable locator indicated several buried pipes in this area. The most significant buried pipe appeared to connect an abandoned drain near the car lifts to two waste oil tanks buried near the southern corner of the lower level of the garage (Drawings 3 and 4). Another buried pipe, probably a pneumatic line, was traced from the garage wall to a valve adjacent to lift 1 (Drawing 3). There was also a buried line connecting lifts 1 and 2. The GPR anomaly created by the line connecting the two lifts is shown in Drawing 2. There were no other indications of buried lines leading into or away from lift 1 or lift 2. The data indicate that if a tank is buried in the vicinity of lift 1 or lift 2, it is probably located next to the hydraulic rams where surface metal interfered with the GPR. Using the pipe and cable locator, a buried line was traced from near what appeared to be a lift valve on the garage wall to lift 3. This line had been cut into the floor and patched over. There were no other indications of buried lines leading into or away from lift 3. The data indicate the hydraulic tank for lift 3 was either located above ground or is buried next to the hydraulic ram of lift 3.

There was one GPR anomaly indicative of a object buried approximately 8 feet from the car lifts (Drawing 3). This GPR anomaly is also shown in Drawing 2. Although this object could be a buried tank, there was no indications of buried lines leading to or from it, and no surface indications of a fill spout or vent lines. It is likely that this anomaly is due to an object other than a buried tank.

B. Lower Southern Garage Corner

The results of the GPR and pipe and cable locating in the southern corner of the lower level of the garage are illustrated in Drawing 4. We were able to trace the suspected tank vent lines to two tanks buried approximately 20 feet from the corner of the garage. Large metal plates covered the fill spouts of the tanks. As mentioned above, a pipe was traced from what appeared to be an abandoned drain near lifts 1 and 2 to the two buried tanks. A pipe leading from the fill spout (or drain) in the sidewalk adjacent to the rear of the garage was also traced to these two tanks. There were no indications of other buried tanks in the area investigated.

C. Limitations

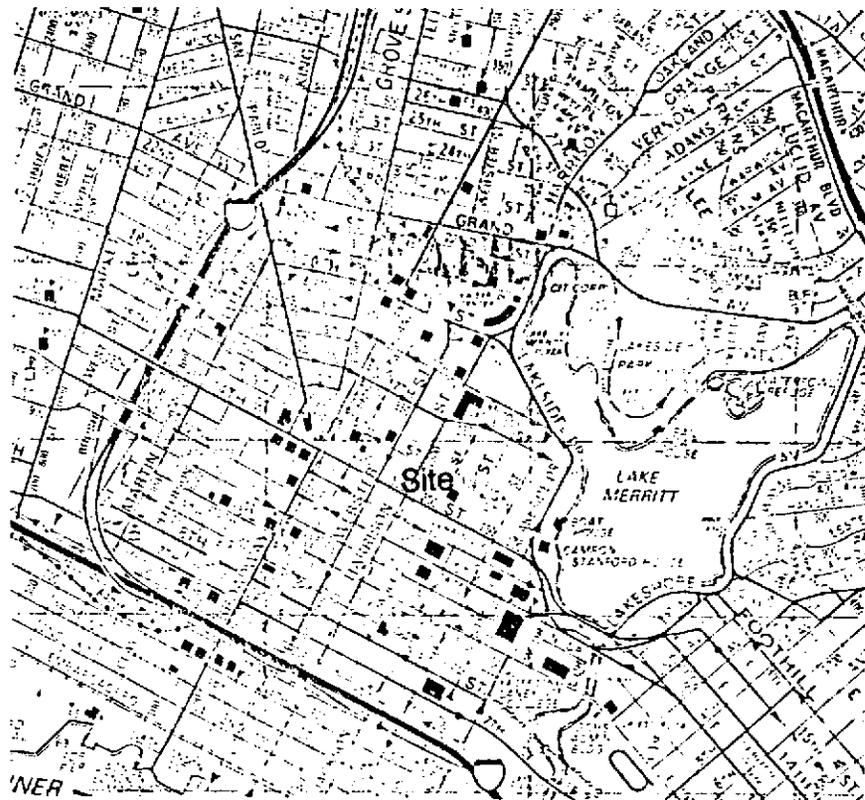
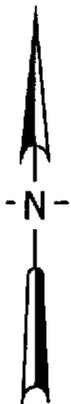
The GPR's depth of penetration is dependent on soil conductivity. The more conductive the soil, the shallower the depth of penetration. In urban areas, particularly in the San Francisco Bay Area, soil conductivities can vary considerably over a short distance. The depth of penetration can be less than one foot in very conductive soils and greater than five feet in resistive soils. Therefore, it is possible there are materials buried at the site that were not detected by the GPR. Also the GPR cannot differentiate a buried tank from another buried object that is roughly the same shape and size.

The pipe and cable survey was performed to augment the GPR data. Buried utilities can be missed if they are buried too deep, buried in groups of two or more, or if they are relatively short. Also, the RD 400 can not detect pipes that are not metal. The utility locations shown on the drawings in this report are only approximate and some utilities may have been missed.

D. Conclusions

Two tanks were located during the geophysical investigation at the Harrison Street Garage. These tanks were located near the southern corner of the lower level of the garage. There appeared to be a pipe connecting these two tanks to an abandoned drain in the vicinity of the car lifts located on the ground level near the garage entrance. These tanks were also connected to two vent pipes and to an opening on the sidewalk adjacent to the rear of the building.

There was one GPR anomaly indicative of a buried object near the car lifts. Although this object could be a buried tank, there were no indications of buried lines leading into or away from it, and there was no surface indications of a fill spout or vent lines. We suspect that this GPR anomaly is due to an object other than a buried tank. If there are buried tanks associated with lifts 1 and 2, they are probably located next to the hydraulic rams where surface metal interfered with the GPR data. If there is a buried tank associated with lift 3, it could have been located above ground or it could be buried next to the hydraulic ram where surface metal interfered with the GPR data. However, there were no geophysical indications of buried tanks associated with any of the three car lifts.



Site Location- Harrison Street Garage
SCS Engineers
Dublin, California

SCALE: N.T.S.

DRAWN BY J.J.R.

DATE: August 27, 1990

Job No: 013119-90

REVISED

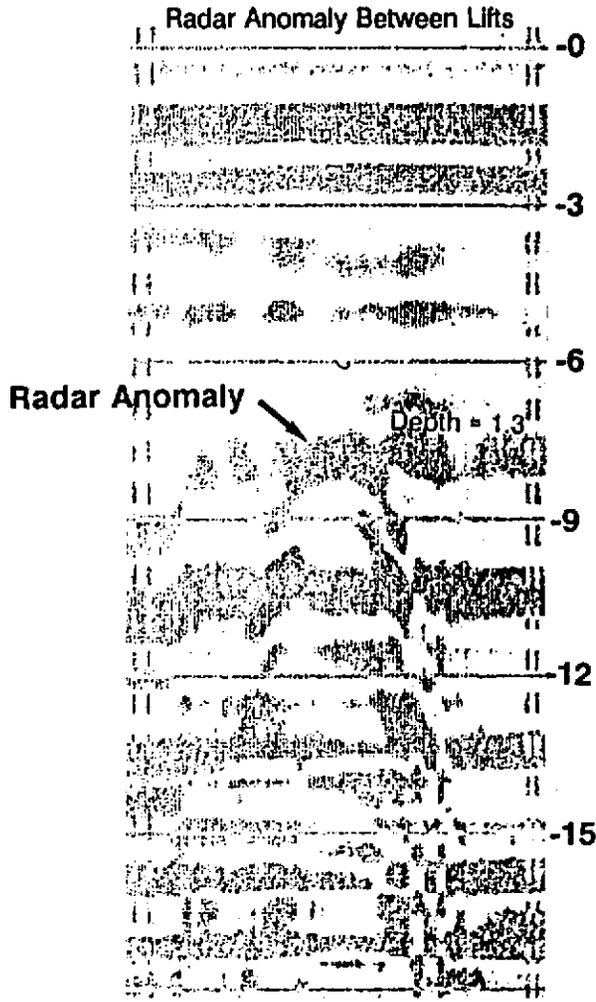
J R ASSOCIATES Engineering Geophysics

1886 Emory Street, San Jose, CA 95126 (408) 293-7390

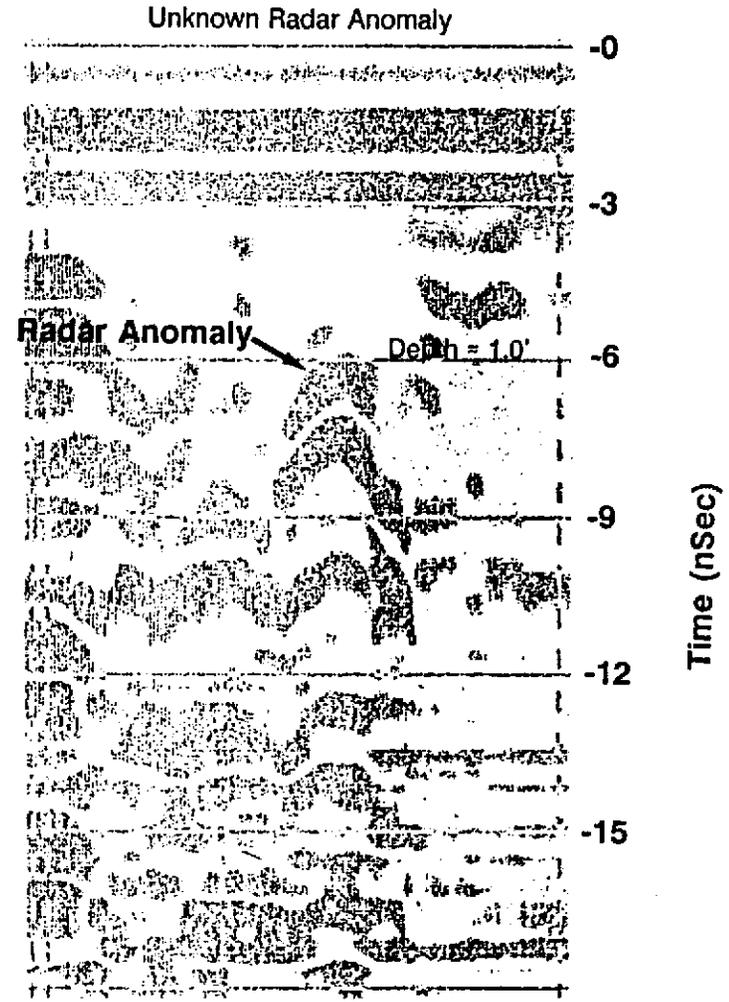
DRAWING NUMBER

1

Radar Anomaly Between Lifts



Unknown Radar Anomaly



Example Radar Anomalies- Harrison Street Garage
 SCS Engineers
 Dublin, California

SCALE: N.T.S

DATE: August 27, 1990

Job No: 013119-90

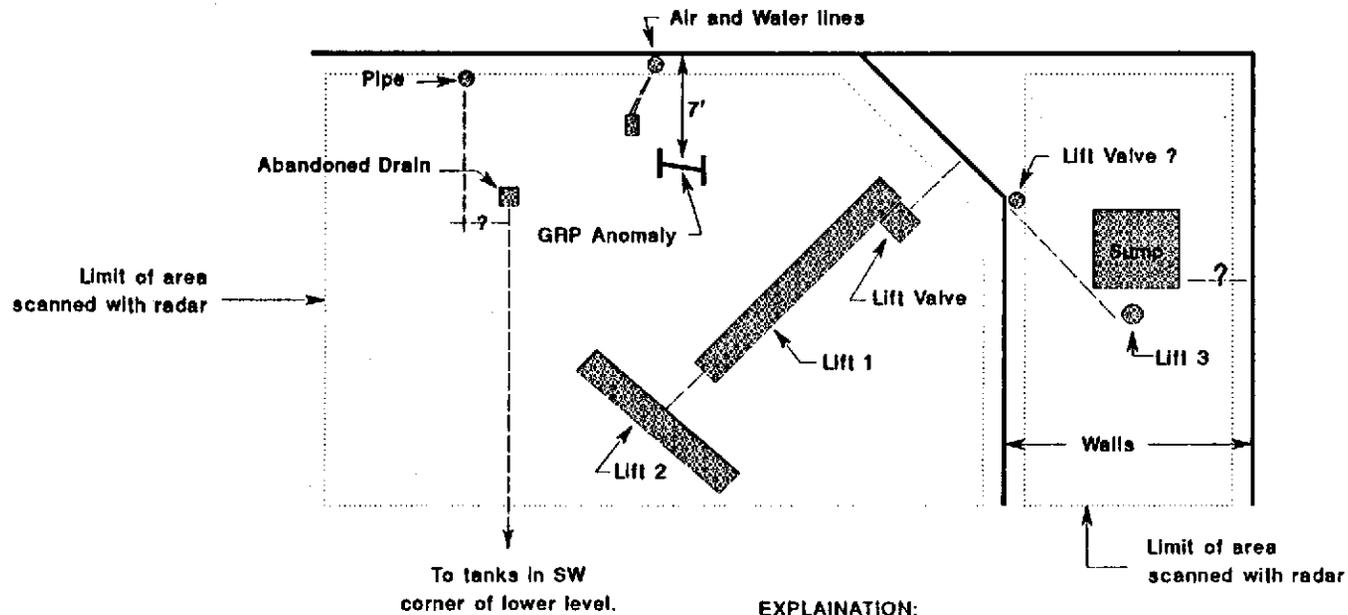
DRAWN BY J.J.R.

REVISED

J R ASSOCIATES Engineering Geophysics
 1886 Emory Street, San Jose, CA 95126 (408) 293-7390

DRAWING NUMBER

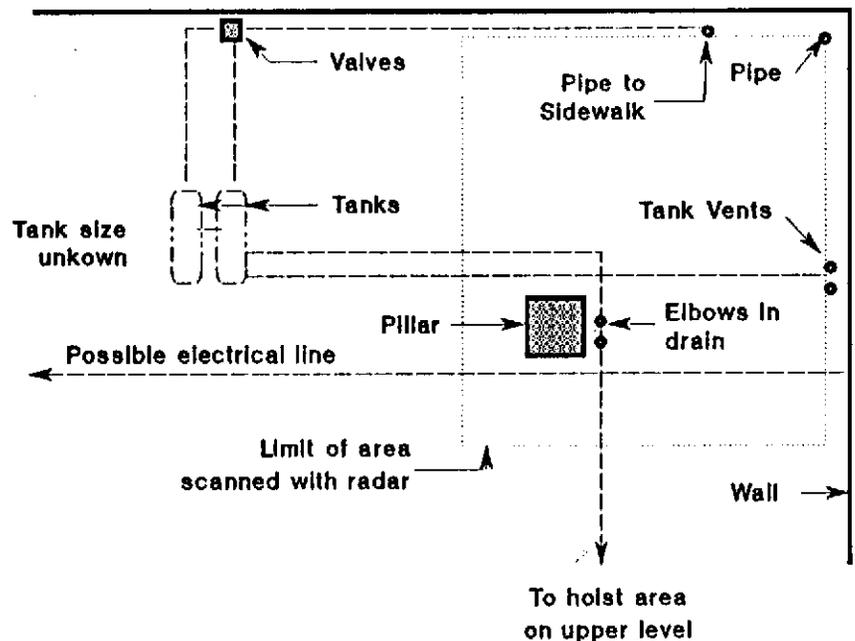
2



EXPLANATION:

- Buried Line
- ?--- Possible Buried Line

Upper Garage Area- Harrison Street Garage SCS Engineers Dublin, California		
SCALE: N.T.S	Job No: 013119-90	DRAWN BY J.J.R.
DATE: August 27, 1990		REVISED
J R ASSOCIATES Engineering Geophysics 1886 Emory Street, San Jose, CA 95126 (408) 293-7390		
		DRAWING NUMBER 3



EXPLANATION:

----- Buried Line

<p>Lower Southern Garage Area- Harrison Street Garage SCS Engineers Dublin, California</p>		
<p>SCALE: N.T.S.</p>	<p>Job No: 013119-90</p>	<p>DRAWN BY J.J.R.</p>
<p>DATE: August 27, 1990</p>		<p>REVISED</p>
<p>J R ASSOCIATES Engineering Geophysics 1886 Emory Street, San Jose, CA 95126 (408) 293-7390</p>		
		<p>DRAWING NUMBER 4</p>