BLAINE
TECH SERVICES INC.

1370 TULLY RD., SUITE 505
SAN JOSE, CA 95122
(408) 995-5535

February 10, 1989

Shell Oil Company
P.O. Box 4023
Concord, CA 94524

Attention: Ray Newsome

SITE:
Shell Oil
630 High Street
Oakland, California

PROJECT:
Sampling of product line and
dispenser pump islands

SAMPLED ON:
January 26, 1989

SAMPLING REPORT 89026-C-1

OBJECTIVE SERVICES

Blaine Tech Services, Inc. performs specialized environmental sampling and documentation as an independent third party. In order to avoid compromising the objectivity necessary for the proper and disinterested performance of this work, Blaine Tech Services, Inc. does not participate in the interpretation of analytical results or become involved with the marketing or installation of remedial systems. The interpretation of results should be performed by representatives of interested regulatory agencies and/or those professionals who are engaged as paid consultants in the business of providing opinions and proposals for further investigation or clean-up activities.

This report describes the initial environmental sampling and documentation performed by our firm on this project. In addition to the text of the Sampling Report, supporting documents are provided as attachments. These include the chain of custody and the certified analytical laboratory report. All of these documents should be kept together and preserved as a file of interrelated records which, together, comprise the documentation of the work performed at the site.

Scope of Requested Services

In accordance with your request, field personnel would be dispatched to the site to collect soil samples from beneath a product line trench and three product dispensing pump islands. In addition, we were to arrange for the proper analyses of the samples, and maintain adequate documentation resulting in the issuance of a formal Sampling Report. The collection of environmental samples was to be performed in accordance with the requirements of the State Water Resources Control Board and the specific directions of the Local Implementing Agency (LIA) inspector present at the site at the time of sampling.

Execution of the Work

The subject site is located within the overall jurisdiction of the Regional Water Quality Control Board -- San Francisco Bay Region. Initial inspection and evaluation of the site is customarily conducted by the local implementing agency (LIA), which was the Alameda County Health Department. The local implementing agency was represented by Mr. Ariu Levi, who was present to observe the sampling.

Personnel were dispatched from our office and arrived at the subject site on Thursday, January 26, 1989. Our field personnel found that, prior to our arrival, Armer/Norman and Associates had dismantled and removed all fuel dispensing facilities, and had excavated three locations on the site from which samples were to be taken: Area 1 consisting of the three product dispener pump islands, and the product line connecting these islands to the underground gasoline storage tanks; Area 2, which consisted of two product dispensing pump islands which had been used by a service station that occupied the eastern portion of the property prior to the present Shell Oil facility; and Area 3, which was not directly connected with any known product lines or fuel dispensing facilities, but smelled of gasoline.

In Area 1, three samples (Samples #9, #10, and #11) were obtained from the main product line trench adjacent to the ends of each of the three dispenser pump islands. These samples were obtained from depths ranging between one and a half to two and three quarters feet (1.5'-2.75') below grade level. Two samples (Samples #5 and #6) were obtained from beneath the eastern island at one to one and one-quarter feet (1'-1.25') below grade, beneath the middle pump island (Sample #4) at two feet (2') below grade and beneath the western pump island (Samples #2 and #3) at two feet (2') below grade. One sample (Sample #1) was taken at a depth of two feet (2') below grade from an area to the west of the western pump island that smelled of gasoline.

Area 2 consists of two dispenser pump islands that had previously been associated with another gasoline service station that occupied the eastern portion of the site prior to the present Shell Oil facility. At some time in the past, these islands had been abandoned and paved over. One sample (Sample #7) was obtained from beneath the western island at one and a half feet (1.5') below grade, and one sample (Sample #8) from beneath the eastern island at one foot (1.0') below grade.

Area 3 consisted of a small patch of ground that smelled of gasoline. One sample (Sample #12) from this area was obtained at two and three quarters feet (2.75') below grade.

The three sampling areas were located in a portion of the property between Oakport Street and the underground storage tanks where approximately one foot (1') of asphalt paving and underlying base rock material had been removed. The sampling depths given in this Sampling Report were measured from the surface of the soil in this exposed area.

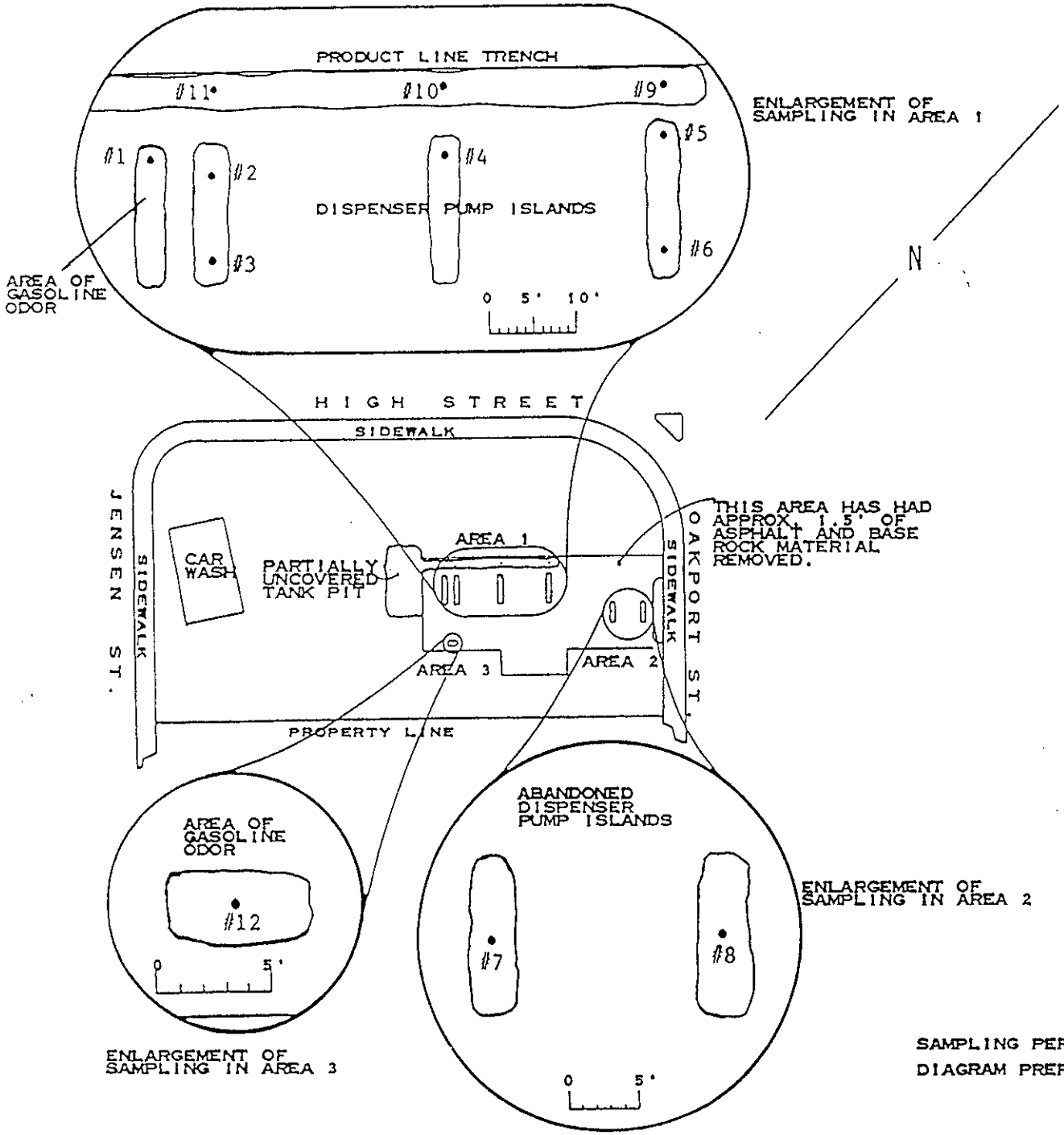
The sample locations were chosen by Mr. Ariu Levi of the Alameda County Health Department. The samples were obtained through the use of a hand driven soil core sampler. The location of individual sampling points is shown on the diagram on page four. Additional information on the exact method of sample collection will be found in the **Sampling Methodology** section of this report.

After completion of the field work, the sample containers were delivered to Sequoia Analytical Laboratory in Redwood City, California. Sequoia Analytical Laboratory is a California Department of Health Services certified Hazardous Materials Testing Laboratory and is listed as DOHS HMTL #145.

It was requested that the analytical procedures used for these analyses be those specified by the Regional Water Quality Control Board -- San Francisco Bay Region. The methods are defined in attachments to the San Francisco RWQCB (Region 2) publication, Guidelines For Addressing Fuel Leaks and in documents issued to clarify the Board's interpretation of the California LUFT Manual.

BLAINE
TECH SERVICES

SAMPLING REPORT 89026C1, 01-26-89, SHELL OIL, 630 HIGH STREET, OAKLAND, CA



0 40' 80'

SCALE:

MAP REF: THOMAS BROS. ALAMEDA CO. P.12 A-4

#1 SOIL SAMPLE FROM AREA 1 AT 2' ANALYSIS FOR TOTAL PETROLEUM HYDROCARBONS(TPH) AS GASOLINE, AND BENZENE, TOLUENE, XYLENES AND ETHYLBENZENE(BTXE) AT SEQUOIA ANALYTICAL LABORATORY SEQUOIA LAB NO. 901-2762

#2 SOIL SAMPLE FROM AREA 1 AT 2' ANALYSIS FOR TPH AS GASOLINE AND BTXE SEQUOIA LAB NO. 901-2763

#3 SOIL SAMPLE FROM AREA 1 AT 2' ANALYSIS FOR TPH AS GASOLINE AND BTXE SEQUOIA LAB NO. 901-2764

#4 SOIL SAMPLE FROM AREA 1 AT 2' ANALYSIS FOR TPH AS GASOLINE AND BTXE SEQUOIA LAB NO. 901-2765

#5 SOIL SAMPLE FROM AREA 1 AT 1.25' ANALYSIS FOR TPH AS GASOLINE AND BTXE SEQUOIA LAB NO. 901-2766

#6 SOIL SAMPLE FROM AREA 1 AT 1' ANALYSIS FOR TPH AS GASOLINE AND BTXE SEQUOIA LAB NO. 901-2767

#7 SOIL SAMPLE FROM AREA 2 AT 1.5' ANALYSIS FOR TPH AS GASOLINE, BTXE AND ORGANIC LEAD SEQUOIA LAB NO. 901-2768

#8 SOIL SAMPLE FROM AREA 2 AT 1' ANALYSIS FOR TPH AS GASOLINE, BTXE AND ORGANIC LEAD SEQUOIA LAB NO. 901-2769

#9 SOIL SAMPLE FROM AREA 1 AT 1.5' ANALYSIS FOR TPH AS GASOLINE AND BTXE SEQUOIA LAB NO. 901-2770

#10 SOIL SAMPLE FROM AREA 1 AT 2.25' ANALYSIS FOR TPH AS GASOLINE AND BTXE SEQUOIA LAB NO. 901-2771

#11 SOIL SAMPLE FROM AREA 3 AT 2.75' ANALYSIS FOR TPH AS GASOLINE AND BTXE SEQUOIA LAB NO. 901-2772

#12 SOIL SAMPLE FROM AREA 3 AT 2.75' ANALYSIS FOR TPH AS GASOLINE AND BTXE SEQUOIA LAB NO. 901-2773

SAMPLING PERFORMED BY STEPHEN CARTER

DIAGRAM PREPARED BY BRENT ADAMS

SAMPLING METHODOLOGIES USED ON THIS PROJECT

Hand Driven Core Sampling: This is another term for the sampling methodology that is often called undisturbed soil sampling. This is the generally preferred sampling method for both geotechnical and environmental investigations because the method captures a relatively undisturbed cylinder of soil which can be retained in its sealed brass liner during transport to a laboratory for very precise examination. Whether driven by a drill rig or a much smaller hand operated slide hammer, the principle attributes of the methodology remain the same.

Because of the tons of force which can be exerted by a drill rig, the samplers, drill rod and hammers are, necessarily, quite massive. Apparatus used in hand augered borings is usually much lighter and more subject to wear and breakage. Specialized hand tools that enable a person to drive samples consist of a sampling shoe (which contains the brass liners), light weight drill rod, and a small slide hammer. These hand operated drive samplers collect samples in the same two inch diameter brass liners used in many drill rig samplers, but collect only a four or six inch long core rather than twelve to twenty four inches of soil commonly obtained by drilling apparatus.

Common uses for hand operated drive samplers include all those applications where an undisturbed soil sample is desired. Typical applications include the collection of soil samples from the bottom of a hand augered boring, capillary zone sampling where a drill rod is used to extend the sampler across an open pit to a selected location on the wall of the excavation, and when sampling soil from the backhoe bucket that is too hard to allow a brass sample liner to be pushed into the soil by hand.

In practice, the sampler is usually overdriven and then retracted. Then the sampler is removed from the drill rods and hammer, opened, and the sample contained in the brass sample liners removed. Samples to be analyzed for environmental hazards are treated according to the same sample handling protocol as all other environmental samples.

SAMPLE CONTAINERS

Our firm uses new sample containers of the type specified by either EPA or the RWQCB for the collection of samples at sites where underground storage tanks are involved. Soil samples for volatile, semivolatile and nonvolatile analyses are all collected in properly prepared new brass liners which are 2 inches in diameter by 4 inches in length. Closure is accomplished with press fit plastic end caps which are fitted to the open ends of brass tube liners after a sheet of aluminum foil is wrapped over the exposed sample material. A non-contributing/nonsubtractive tape is wrapped completely around the joint areas where the plastic caps meet the outer wall of the brass tube. No preservative other than cold storage is used on samples captured in sample containers of this type.

SAMPLE HANDLING PROCEDURES

Solid sample material is captured by advancing the liner into the soil. This may be done by pushing the liner into soft soils or by containing the liner in a drive shoe which can be advanced and then retracted by means of a slide hammer. The open ends of the sample

liner are covered with aluminum foil and plastic end caps. Excess aluminum foil is removed and the edge of the plastic end caps is tightly sealed against the outer surface of the brass liner with an unbroken wrap made with a tape which has been tested to confirm that it does not contribute compounds that would be detected in the type of analyses intended for the sample contained inside of the brass liner. The brass liner is then labeled with the appropriate identification numbers which specify the sampling activity designation number, sample collection area, depth etc. that apply to that particular sample. The sample liner is then placed in an ice chest which contains pre-frozen blocks of an inert ice substitute such a Blue Ice or Super Ice.

SAMPLE DESIGNATIONS

All sample containers are identified with both an activity number and a discrete sample identification number. Please note that the activity number is the number that appears on our chain of custody. It is roughly equivalent to a job number, but applies only to work done on a particular day of the year rather than spanning several days as an actual activity often does. This is followed by the sample I.D. number which is usually a simple number such as #1, #2, #3.

CHAIN OF CUSTODY

Samples are continuously maintained in either a chilled ice chest, refrigerator, or freezer from the time of collection until acceptance by the State certified Hazardous Materials Testing Laboratory selected to perform the analytical procedures. If the samples are taken charge of by a different party (such as another person from our office, a courier, etc.) prior to being delivered to the laboratory, appropriate release and acceptance records are made on the chain of custody (time, date, and signature of person releasing the samples followed by the time, date and signature of the person accepting custody of the samples).

LABORATORY IDENTIFICATION NUMBERS

Following receipt of the samples and completion of the Chain of Custody form, the laboratory then assigns their own identification numbers to the samples. Different laboratories use different numbering systems and, according to their own internal conventions, may or may not assign sequential numbers to samples which are placed on temporary "hold", pending the results of other analyses. Laboratory identification numbers (if assigned and available) are included on the DIAGRAM, and will be found on the certified analytical report by the analytical laboratory.

CERTIFIED ANALYTICAL REPORT

The certified analytical report (CAR) generated by the laboratory is the official document in which they issue their findings. The Results of Analyses section of the TABLE OF SAMPLING LOCATIONS AND ANALYTICAL RESULTS should correspond exactly with the laboratory's CAR. Any discrepancy between analytical values should be decided in favor of the CAR, for while it may, itself, be in error with regard to a particular number, the CAR remains the recognized document until such time as it is amended with a corrected report.

The certified analytical report should also be reviewed when samples are taken from below waste oil tanks as any detection of the EPA halogenated and purgeable aromatic compounds may be grounds for requiring further action. Also the TABLE OF SAMPLING LOCATIONS AND ANALYTICAL RESULTS is insufficiently spacious to allow anything more that a simple listing of the detected compounds. The TABLE does not include such information as the detection limits at which other compounds were not detected. The full text of the laboratory report will be found in Section Four of this report.

REPORTAGE

Submission to the Regional Water Quality Control Board and the local implementing agency should include copies of the sampling report, the chain of custody, and the certified analytical report issued by the Hazardous Materials Testing Laboratory. The property owner should attach a cover letter and submit all documents together in a package.

The following addresses have been listed here for your convenience:

Water Quality Control Board
San Francisco Bay Region
1111 Jackson Street
Room 6040
Oakland, CA 94607
ATTN: Greg Zentner

Alameda County Health
Hazardous Materials Management
420 27th Street
Oakland, CA 94612
ATTN: Ariu Levi

Please call if we can be of any further assistance.

Richard C. Blaine

RCB/dmp

attachments: supporting documents

BLAINE
TECH SERVICES INC.

1370 TULLY ROAD, SUITE 505
SAN JOSE, CA 95122
(408) 995-5535

CHAIN OF CUSTODY # 890264

SITE SPECIFICATION Shell 0.1
630 High Street
Oakland, CA

[X] Bill BLAINE TECH SERVICES, Inc.
[ ] Bill _____

SPECIAL INSTRUCTIONS
organolead = organic lead

SAMPLE I.D.	QUANTITY	TYPE	OK	ANALYSIS TO DETECT	STATUS	RESULTS	LAB NUMBER
1	1	Soil		TPH(gas), BTXE	48 hr.		
2	1	"		" "			
3	1	"		" "			
4	1	"		" "			
5	1	"		" "			
6	1	"		" "			
7	1	"		TPH(gas), BTXE, organolead			
8	1	"		" " "			
9	1	"		TPH(gas), BTXE			
10	1	"		" "			
11	1	"		" "			
12	1	"		" "			

Field sampling was performed by Stephen J. Carter

Sampling was completed at 16:30 AM/PM / 1-26-1988

RELEASE OF SAMPLES FROM (name,time,date) --->>>>> INTO THE CUSTODY OF (name,time,date)

from J. Carter @ ~~8:23~~ 12:20 AM/PM 1/27-88 -> to [illegible] @ 2:30 PM 1/27-88

from _____ @ : AM/PM -88 -> to _____ @ : AM/PM -88

from _____ @ : AM/PM -88 -> to _____ @ : AM/PM -88

The laboratory designated to perform these analyses is: Sequoia DHS #ML # 145
NOTE: Procedures and detection limits must confrom to RWQCB/Region 2 specifications.
Please include chain of custody number and site specification on reports and invoices.

SEQUOIA ANALYTICAL

680 Chesapeake Drive • Redwood City, CA 94063
(415) 364-9600 • FAX (415) 364-9233

Blaine Tech Services	Client Project ID:	BTS #89026C1, Shell, Oakland	Sampled:	Jan 26, 1989
1370 Tully Rd., Suite 505	Matrix Descript:	Soil	Received:	Jan 27, 1989
San Jose, CA 95122	Analysis Method:	EPA 5030 or 3810/8015/8020	Analyzed:	Jan 31, 1989
Attention: Richard Blaine	First Sample #:	901-2762	Reported:	Feb 2, 1989

TOTAL PETROLEUM FUEL HYDROCARBONS with BTEX DISTINCTION (EPA 8015/8020)

Sample Number	Sample Description	Low/Medium B.P. Hydrocarbons mg/kg (ppm)	Benzene mg/kg (ppm)	Toluene mg/kg (ppm)	Ethyl Benzene mg/kg (ppm)	Xylenes mg/kg (ppm)
901-2762	1	70	2.5	0.2	0.25	0.33
901-2763	2	690	N.D.	0.34	16	31
901-2764	3	2,400	2.8	4.4	17	140
901-2765	4	2.9	N.D.	N.D.	N.D.	0.18
901-2766	5	620	7.0	22	9.4	38
901-2767	6	5.8	N.D.	N.D.	0.17	0.11
901-2768	7	24	0.21	0.17	0.37	1.1
901-2769	8	3.3	0.2	N.D.	N.D.	0.17
901-2770	9	38	0.088	N.D.	0.74	1.2
901-2771	10	1.7	N.D.	N.D.	N.D.	0.1
Detection Limits:		**1.0**	**0.05**	**0.1**	**0.1**	**0.1**

Low to Medium Boiling Point Hydrocarbons are quantitated against a gasoline standard.
Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL

Arthur G. Burton
Laboratory Director

SEQUOIA ANALYTICAL
680 Chesapeake Drive • Redwood City, CA 94063
(415) 364-9600 • FAX (415) 364-9233

Blaine Tech Services	Client Project ID:	BTS #89026C1, Shell, Oakland	Sampled:	Jan 26, 1989
1370 Tully Rd., Suite 505	Matrix Descript:	Soil	Received:	Jan 27, 1989
San Jose, CA 95122	Analysis Method:	EPA 5030 or 3810/8015/8020	Analyzed:	Jan 31, 1989
Attention: Richard Blaine	First Sample #:	901-2772	Reported:	Feb 2, 1989

TOTAL PETROLEUM FUEL HYDROCARBONS with BTEX DISTINCTION (EPA 8015/8020)

Sample Number	Sample Description	Low/Medium B.P. Hydrocarbons mg/kg (ppm)	Benzene mg/kg (ppm)	Toluene mg/kg (ppm)	Ethyl Benzene mg/kg (ppm)	Xylenes mg/kg (ppm)
901-2772	11	1.2	N.D.	N.D.	N.D.	0.11
901-2773	12	460	N.D.	0.63	0.69	2.5
Detection Limits:		**1.0**	**0.05**	**0.1**	**0.1**	**0.1**

Low to Medium Boiling Point Hydrocarbons are quantitated against a gasoline standard.
Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL

Arthur G. Burton
Laboratory Director

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680 Chesapeake Drive • Redwood City, CA 94063
(415) 364-9600 • FAX (415) 364-9233

Blaine Tech Services	Client Project ID:	BTS #89026C1, Shell, Oakland	Sampled:	Jan 26, 1989
1370 Tully Rd., Suite 505	Sample Descript:	Soil	Received:	Jan 27, 1989
San Jose, CA 95122	Analysis Method:	California LUFT Manual, 12/87	Analyzed:	Jan 31, 1989
Attention: Richard Blaine	First Sample #:	901-2768	Reported:	Feb 2, 1989

ORGANIC LEAD

Sample Number	Sample Description	Sample Results mg/kg (ppm)
901-2768	7	0.3
901-2769	8	0.4

Detection Limits:	**0.05**

Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL

Arthur G. Burton
Laboratory Director