Uriah Inc.

An Environmental Services Company

December 20, 1991

Ms. Pamela Evans
Alameda County Health Care Services Agency
Hazardous Materials Program
80 Swan Way, Room 200
Oakland, CA 94621

RE: Final Report of Remedial Activities at 1435 Webster Street, Alameda, CA

Dear Ms. Evans:

This document is being submitted in support of Uriah's interim report of October 31, 1991. It describes the sampling, certified analytical, and backfilling activities that have occurred since the interim report was prepared. It also proposes the installation of three groundwater monitoring wells for the purposes of establishing groundwater flow across the site and permitting the acquisition and certified laboratory analyses of groundwater samples.

After reviewing the results of field monitoring and uncertified analyses of samples acquired from approximately 200 cubic yards of contaminated soil remaining under treatment, samples for certified analysis were acquired on Monday, December 2, 1991. Each of ten discrete samples (one for each 20 cubic yards of soil under treatment) was acquired within a clean brass tube 1.9 inches in diameter by 6.0 inches in length driven into the soil at various depths at randomly selected points as illustrated in Figure 2. The ends of each tube were promptly covered with teflon sheeting, fitted with plastic caps, and sealed with duct tape. Each tube was then marked and placed on blue ice for transportation under chain of custody to a State-certified hazardous waste analytical laboratory for analyses for Total Petroleum Hydrocarbons as Diesel (TPH-D) using EPA Methods 3550/8015, Total Petroleum Hydrocarbons as Gasoline (TPH-G), benzene, toluene, total xylenes and ethylbenzene (BTX&E) using EPA Methods 5030/8015-8020, and Total Recoverable Hydrocarbons as Oil and Grease (TOG) using SM 5520 E&F. All samples were free of detectable concentrations of these analytes. The report

464 Lindbergh Avenue • Livermore, California 94550 • (415) 455-4991

of analyses provided by the laboratory is enclosed as Appendix "A".

During the week of December 2, 1991, the excavation was backfilled and compacted by W.A. Craig Inc., a California licensed contractor. The backfill material was composed of imported baserock, which was placed in the excavation to raise the floor of the pit above the water table, and compacted, bioremediated soil which had been excavated from the former tank pit and the surrounding area.

As with other activities undertaken at the site, the Alameda County Health Care Services Agency Hazardous Materials Program was notified before the referenced tasks were undertaken.

It is proposed that no additional environmental compliance activities be required at this time other than the installation of three groundwater monitoring wells following the grading and paving of the site attendant to its development by the City of Alameda as a municipal parking lot.

Each of the three soil borings would be advanced with a truck-mounted hydraulic drive drill rig equipped with 8" outside-diameter, continuous flight, hollow-stem augers. Each of the borings would be continuously cored and logged in accordance with the Unified Soil Classification System to the total depth drilled (i.e. to a depth approximately 10 feet below the point at which groundwater is first encountered [to a total depth of approximately 28 feet below ground surface]). Discrete soil samples would be collected at five-foot intervals between the ground surface and the top of the capillary fringe employing a California Modified Split Spoon sampler driven 18" into undisturbed soil with a standard 30" drop of a 140-pound hammer. The sampler would be fitted with clean brass sample sleeves 6.0 inches long by 1.9 inches in diameter. Promptly upon retrieval of the sampler, the tubes contained within would be removed. The ends of each tube would then be covered with teflon sheeting, fitted with plastic caps, and wrapped with black electrical or duct tape. Each tube would then be labeled and placed on blue ice for transportation to a State-certified hazardous waste analytical laboratory under chain of custody. The samples would subsequently be analyzed for TPH-D, TPH-G, BTX&E, and TOG using EPA Methods 3550/8015, 5030/8015-8020, and SM 5520 E&F, respectively, and for Organic Lead using ICAP or AA.

Following completion of the soil borings, each would be converted to a groundwater monitoring well. The wells would be constructed of two-inch inside diameter, threaded, Schedule 40 PVC risers attached to 0.020-inch slotted PVC well screen. The well screen will extend a minimum of 5 feet above the water surface to

account for fluctuations in groundwater elevations. Grade #3 Monterey silica sand will be used to pack the screen and at least one foot of bentonite seal (consisting of $\frac{1}{4}$" pellets hydrated with distilled water) will be placed above the screened interval to preclude surface water infiltration. The wells will be finished with a neat cement grout to six inches below grade followed by concrete gravel aggregate to grade. A traffic box would then be mounted over the well head. Well construction details are presented as Figure 3.

The newly installed wells would be allowed to equilibrate for a period exceeding 48 hours. Depth to static groundwater would then be measured with an electrical tape and the wells developed, surveyed, and groundwater flow direction and gradient value calculated.

Following the calculation of casing volume, a vented surge block would be used to surge the wells. Each well would then be purged until conductivity, pH, and temperature readings stabilized and the water was observed to be relatively non-turbid. Development would be with a Waterra brand hand pump, peristaltic pump, or clean disposable polyethylene bailer.

A water sample would be acquired from each well within a clean disposable polyethylene bailer lowered to a point just below the surface of the water. Upon returning the sample to grade, it would be immediately transferred into two (2) one-liter amber-glass sample bottles and four (4) 40-ml Volatile Organic Analysis (VOA) vials. Each container would be promptly fitted with a teflon-lined screw cap, labeled, and placed on blue ice for transport to a State-certified hazardous waste analytical laboratory under chain of custody. The samples would subsequently be analyzed for TPH-D, TPH-G, BTX&E, and TOG using EPA Methods 3510/8015, 5030/8015-8020 (602), and SM 5520 B&F, respectively, and for Organic Lead using ICAP or AA. It is proposed that the frequency of sampling for certified analyses be quarterly for a period of one year. The results of these analyses will be submitted in the form of a quarterly environmental compliance summary document.

All sampling equipment will be steam cleaned or thoroughly scrubbed with Alconox solution and rinsed with distilled wtaer prior to being brought on site and between all samplings.

Drums filled with soil and water generated as a result of drilling, development, and sampling activities will be labeled and stored on site pending development of an appropriate disposal protocol.

Work will be performed by, or under the direction of, a California State Registered Civil Engineer or Registered Geologist.

Should you have any questions, or if we may otherwise be of assistance, please contact the undersigned at (510) 455-4991.

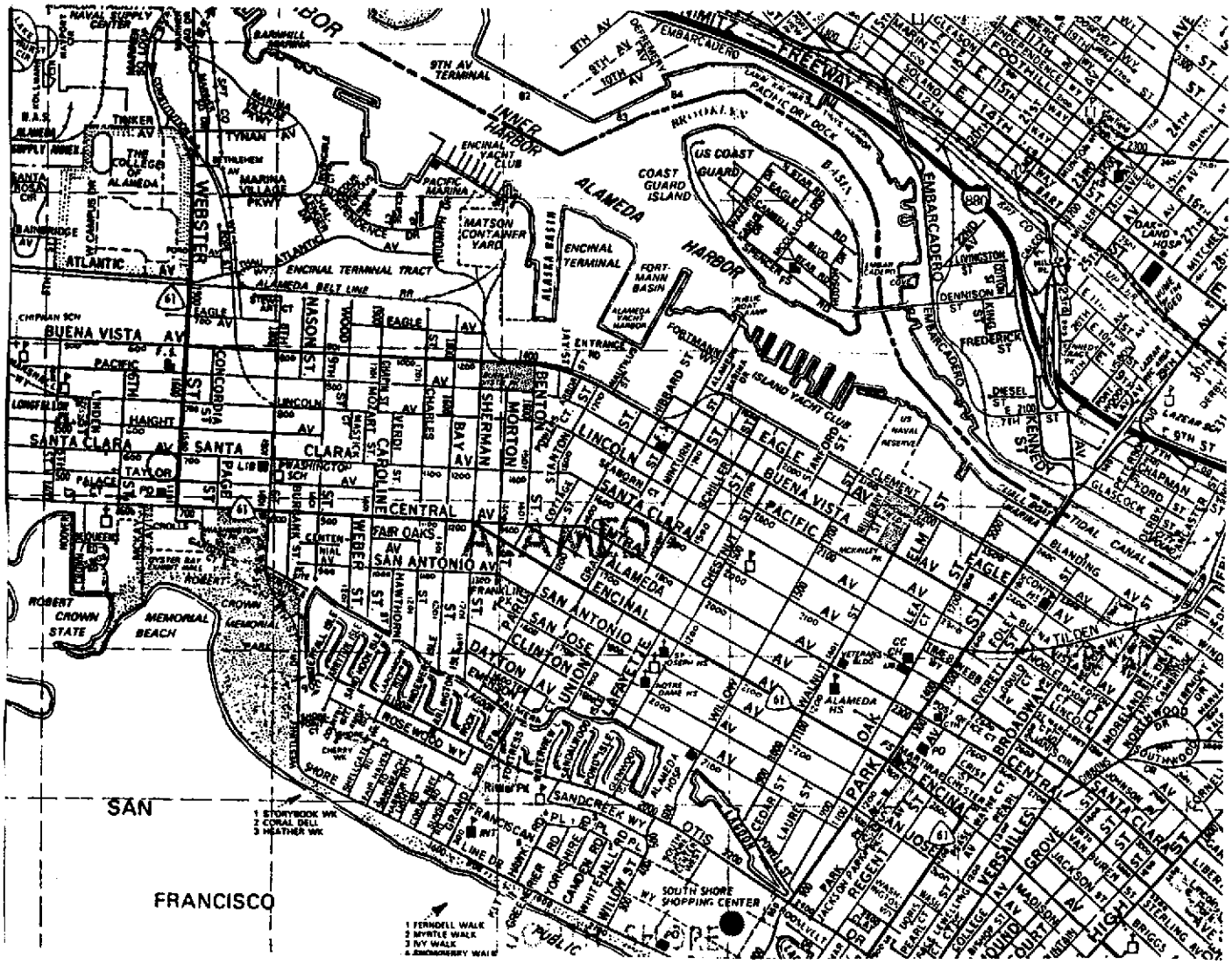
Sincerely,

Robert Oldham

Robert Oldham, P.E.
Registered Civil Engineer

RO:dr
enc. Figure 1...Location Map
Figure 2...Site Map
Figure 3...Well Construction Details (Model Well)
Figure 4...Proposed Locations for Groundwater Monitoring Wells
Appendix "A"...Reports of Laboratory Analyses

cc: Mr. John E. Ferrar
Mr. John Trump- Trump, Alioto & Trump
Mr. Ed Summerauer- City of Alameda



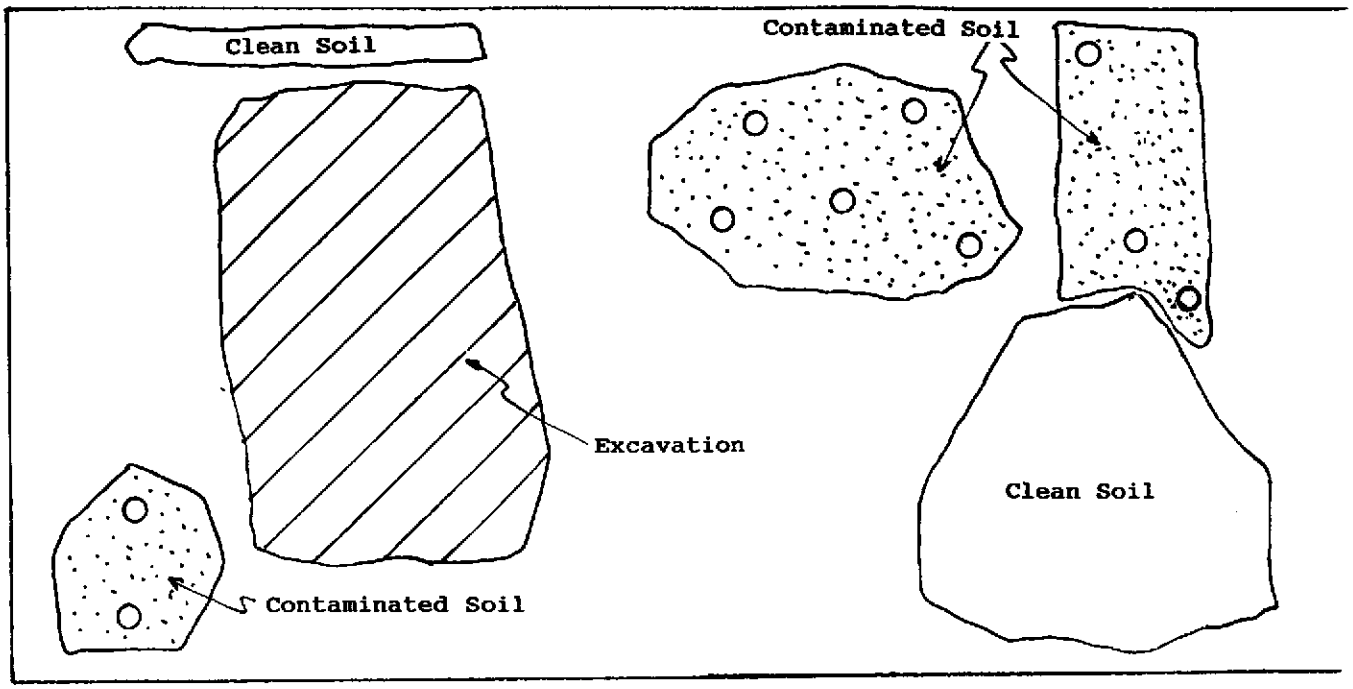
Colored Dot Denotes Site Location
Scale 1": ½ mile

N

LOCATION MAP

1435 WEBSTER STREET ALAMEDA, CALIFORNIA	Uriah, Inc. An Environmental Services Co.

Figure 1



TAYLOR AVENUE

WEBSTER STREET

○ Denotes Locations of Soil Samples Acquired on December 2, 1991

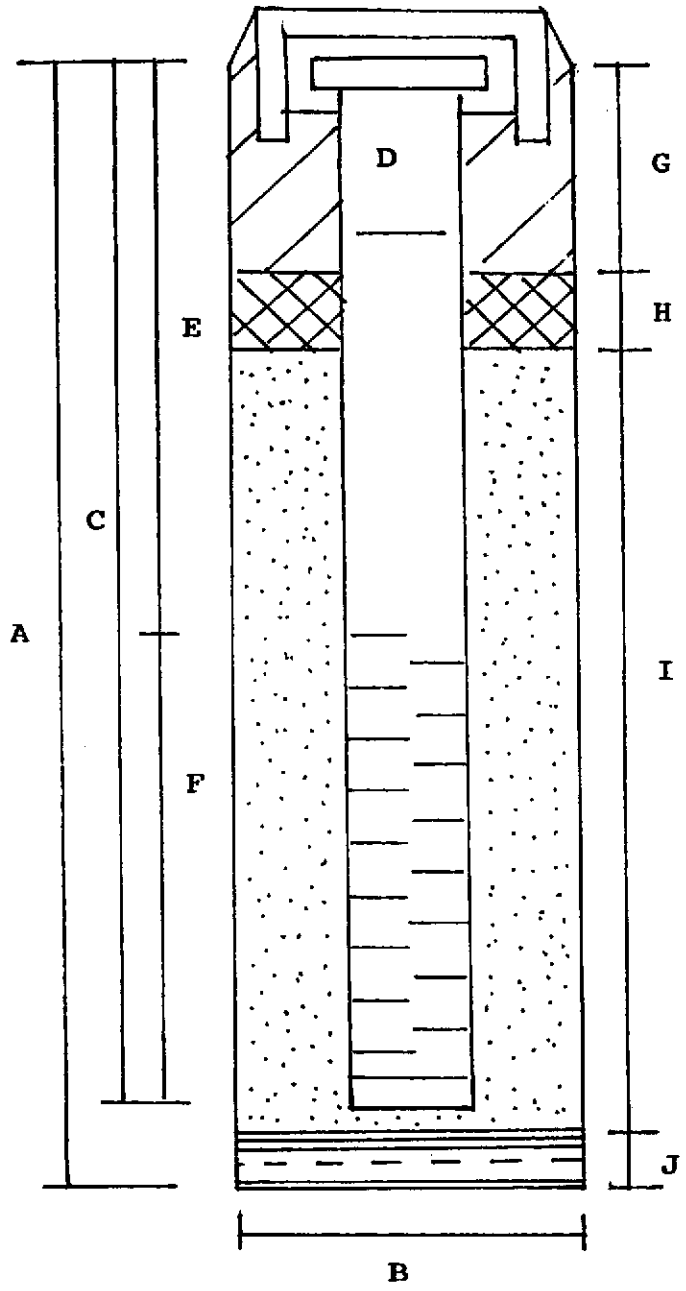
Scale (ft)

0 25

North →

SITE MAP

Figure 2



A. Total Depth: 28' below ground surface (bgs)
(presumed depth to groundwater: 18'bgs)

B. Boring Diameter: 8"
Drilling Method: Hollow Stem Auger

C. Casing Length: 28'
Material: Schedule 40 PVC

D. Casing Diameter: 2"

E. Depth to Perforations: 13'

F. Perforated Length: 15'
Perforated Interval: 13'-28' bgs
Perforation Type: 0.020" slotted screen

G. Surface Seal: Neat Cement 0'-12' bgs

H. Seal: 1' bentonite 12'-13'
($\frac{1}{4}$" pelletized)

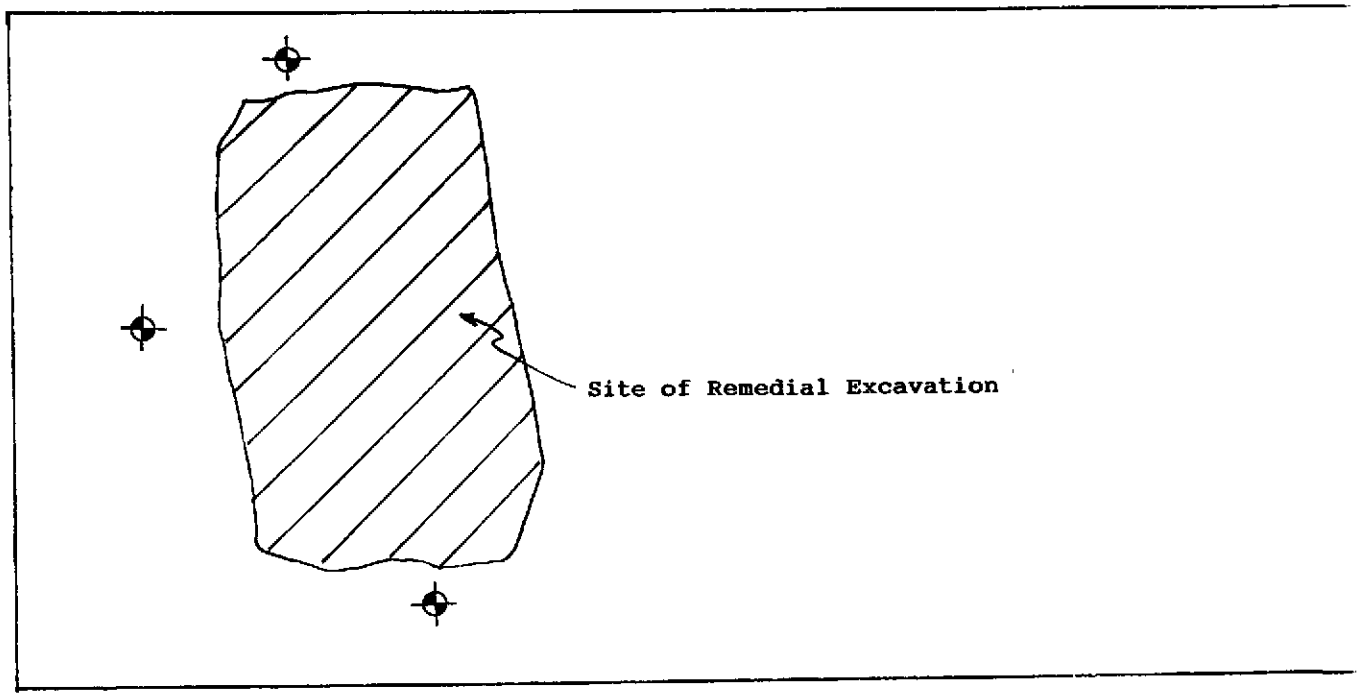
I. Gravel Pack: 13'-28' bgs
Pack Material: #3 Monterey Silica Sand

J. Bottom Seal: Sand

WELL CONSTRUCTION DETAILS
(Model Well)

1435 Webster Street
Alameda, CA

Figure 3



TAYLOR AVENUE

WEBSTER STREET

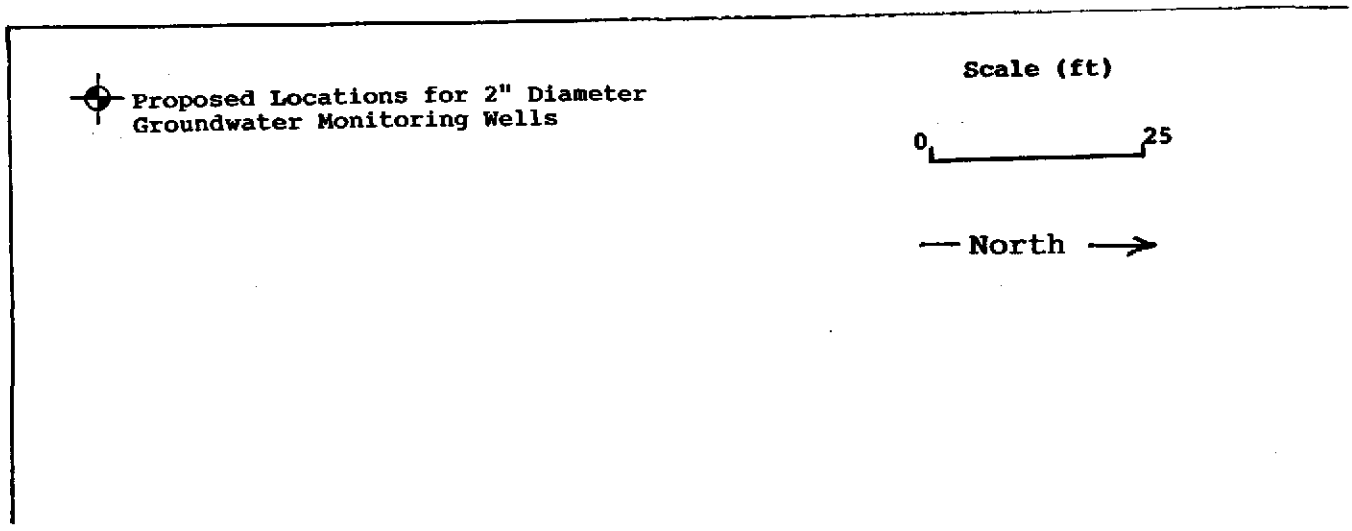


Figure 4

McCAMPBELL ANALYTICAL INC.	110 2nd Avenue South, #D7, Pacheco, CA 94553 Tele: 510-798-1620 Fax: 510-798-1622

Uriah Inc. 2456 Armstrong Street Livermore, CA 94550	Client Project ID: Mike	Date Sampled: 12/02/91
	Client P.O:	Date Received: 12/02/91
	Client Contact: Gene Painter	Date Analyzed: 12/02-12/03/91

Low Boiling Point TPH* (as Gasoline) and BTEX*

DOHS LUFT procedure; EPA method 5030, modified 8020 & 602

Lab ID	Client ID	Matrix	TPH+	Benzene	Toluene	Ethyl Benzene	Xylenes	% Rec. Surrogate
090090	FA-2	S	ND	ND	ND	ND	ND	98
090091	F-F2	S	ND	ND	ND	ND	ND	97
090092	F-F4	S	ND	ND	ND	ND	ND	98
090093	F-I1	S	ND	ND	ND	ND	ND	96
090094	F-I2	S	ND	ND	ND	ND	ND	94
090095	F-I3	S	ND	ND	ND	ND	ND	97
090096	F-I4	S	ND	ND	ND	ND	ND	96
090097	F-I5	S	ND	ND	ND	ND	ND	96
090098	F-J1	S	ND	ND	ND	ND	ND	95
090099	F-J2	S	ND	ND	ND	ND	ND	94
Detection Limit unless otherwise stated; ND means Not Detected		W	50 ug/L	0.3	0.3	0.3	0.6	
		S	1.0 mg/kg	0.005	0.005	0.005	0.010	

*water samples are reported in ug/L and soils in mg/kg

cluttered chromatogram; sample peak co-elutes with surrogate peak

+ The following descriptions of the TPH chromatogram are cursory in nature and McCampbell Analytical is not responsible for their interpretation: a) predominately unmodified or weakly modified gasoline; b) heavier gasoline range compounds predominate (aged gasoline?); c) lighter gasoline range compounds predominate (the most mobile gas compounds); d) heavy and light gasoline range compounds predominate (aged gasoline together with introduced light compounds?); e) one to a few isolated peaks predominate; g) gasoline range compounds together with higher boiling point (diesel range) compounds; f) diesel range compounds only.

Edward Hamilton, Lab Director

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Tele: 510-798-1620 Fax: 510-798-1622

Uriah Inc. 2456 Armstrong Street Livermore, CA 94550	Client Project ID: Mike	Date Sampled: 12/02/91
	Client P.O:	Date Received: 12/02/91
	Client Contact: Gene Painter	Date Analyzed: 12/02-12/03/91

Medium Boiling Point TPH (as Diesel) *

DOHS LUFT procedure; modifed EPA method 3550

Lab ID	Client ID	Matrix	TPH+
090090	FA-2	S	ND
090091	F-F2	S	ND
090092	F-F4	S	ND
090093	F-I1	S	ND
090094	F-I2	S	ND
090095	F-I3	S	ND
090096	F-I4	S	ND
090097	F-I5	S	ND
090098	F-J1	S	ND
090099	F-J2	S	ND
Detection Limit unless otherwise stated; ND means Not Detected		W	500 ug/L
		S	10 mg/kg

*water samples are reported in ug/L and soils in mg/kg

+The following descriptions of the TPH chromatogram are cursory in nature and McCampbell Analytical is not responsible for their interpretation: a) predominately diesel compounds; b) diesel range compounds together with gasoline range compounds; c). diesel range compounds together with very low boiling point compounds; d) gasoline range compounds predominate; e) medium boiling point pattern that does not match diesel; f) peaks elute in the diesel range but no pattern is present; g) one to a few isolated peaks predominate.

Edward Hamilton, Lab Director

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110 2nd Avenue South, #D7, Pacheco, CA 94553
Tele: 510-798-1620 Fax: 510-798-1622

Uriah Inc. 2456 Armstrong Street Livermore, CA 94550	Client Project ID: Mike	Date Sampled: 12/02/91
	Client P.O:	Date Received: 12/02/91
	Client Contact: Gene Painter	Date Analyzed: 12/02-12/03/91

Total Recoverable Hydrocarbons as Oil & Grease (with Silica Gel Clean-up) *

Standard Methods 5520 E&F or 503 D&E for solids and 5520 B&F or 503 A&E for liquids

Lab ID	Client ID	Matrix	TRPH
090090	FA-2	S	ND
090091	F-F2	S	ND
090092	F-F4	S	ND
090093	F-I1	S	ND
090094	F-I2	S	ND
090095	F-I3	S	ND
090096	F-I4	S	ND
090097	F-I5	S	ND
090098	F-J1	S	ND
090099	F-J2	S	ND
Detection Limit unless otherwise stated; ND means Not Detected		W	5 mg/L
		S	25 mg/kg

*water samples are reported in mg/L and soils in mg/kg

Edward Hamilton, Lab Director

McCAMPBELL ANALYTICAL INC.
110 2nd Avenue South, #D7, Pacheco, CA 94553
Tele: 510-798-1620 Fax: 510-798-1622

QC REPORT

Date: 12-03-91 Matrix: soil

Analyte	Concentration (mg/kg)			Amount Spiked	% Recovery		RPD
	Sample	MS	MSD		MS	MSD	
TPH (gas)	0.00	1.82	1.84	2.03	89	91	1.2
Benzene	0.00	0.184	0.182	0.2	92	91	1.1
Toluene	0.00	0.186	0.184	0.2	93	92	1.1
Ethyl Benzene	0.00	0.184	0.184	0.2	92	92	0.0
Xylenes	0.00	0.544	0.542	0.6	91	90	0.4
% Rec.Surrogate	104	100	99	--	--	--	--
TPH (diesel)	0	22.3	25.6	30	74	85	14.0
TRPH (oil & gr. se)	0	420	435	500	84	87	3.5

% Rec. = (MS - Sample) / amount spiked x 100

RPD = (MS - MSD) / (MS + MSD) x 2 x 100

Uriah, Inc.

An Environmental Services Company
(510) 455-4991 OFFICE (510) 455-4995 FAX

CHAIN OF CUSTODY

DATE: 12/3/91 PAGE: ___ OF ___

PROJ. MGR. Mike
COMPANY Uriah, Inc.
ADDRESS 2456 Armstrong Street
Livermore, CA 94550
SAMPLER'S SIGNATURE Gene Painter
PHONE NO. (510) 455-4991

ANALYSIS REQUEST

SAMPLE I.D.	DATE	TIME	MATRIX	TPHG	TPHG&BTEX	TPHD	BTEX	O&G	METALS Cd,Cr,Pb,Zn,Ni	HALOCARBONS PURGEABLE	ORGANICS VOLATILE	ORGANIC LEAD	TOTAL LEAD	SOLUBLE LEAD					NUMBER OF CONTAINERS
FA-2	12/3/91	1:15	SOIL/WATER		X	X		X											
F-F2	"	"	SOIL/WATER		X	X		X											
F-F4	"	"	SOIL/WATER		X	X		X											
F-I1	"	"	SOIL/WATER		X	X		X											
F-I2	"	"	SOIL/WATER		X	X		X											
F-I3	"	"	SOIL/WATER		X	X		X											
F-I4	"	"	Soil		X	X		X											
F-I5	"	"	Soil		X	X		X											
F-J1	"	"	Soil		X	X		X											

PROJECT INFORMATION:

LABORATORY INSTRUCTIONS/COMMENTS:
Turn Around Time (Circle One)
Same Day 24 Hrs 48 Hrs
72 Hrs Normal
→ Run 3 if they are clean run 2 more. If they are dirty run the last 4.

ANALYTICAL LABORATORY McCampbell
CITY Pacheco

RELINQUISHED BY:
Gene Painter
Signature
Gene Painter
Printed Name
Uriah
Company
Time 3:16 Date 12/3/91

RECEIVED BY:
T. Hagio
Signature
T. Hagio
Printed Name
CCX
Company
Time 3:17 Date 12/3/91

RELINQUISHED BY:
Signature
Printed Name
Company
Time ___ Date ___

RECEIVED BY:
Signature
Printed Name
Company
Time ___ Date ___

RELINQUISHED BY:
Signature
Printed Name
Company
Time ___ Date ___

RECEIVED BY:
Signature
Printed Name
Company
Time ___ Date ___

Uriah, Inc.

An Environmental Services Company
(510) 456-4991 OFFICE (510) 455-4995 FAX

CHAIN OF CUSTODY

DATE: 12/2/91 PAGE: ___ OF ___

PROJ. MGR. Mike
COMPANY Uriah, Inc.
ADDRESS 2456 Armstrong Street
Livermore, CA 94550
SAMPLER'S SIGNATURE Steve Pointer
PHONE NO. (510) 455-4991

ANALYSIS REQUEST

SAMPLE I.D.	DATE	TIME	MATRIX	TPHG	TPHG&BTEX	TPHD	BTEX	O&G	METALS Cd,Cr Pb,Zn Ni	HALOCARBONS PURGEABLE	ORGANICS VOLATILE	ORGANIC LEAD	TOTAL LEAD	SOLUBLE LEAD					NUMBER OF CONTAINERS
F-52	12/2/91	"	SOIL / WATER		X	X		X											
			SOIL / WATER																
			SOIL / WATER																
			SOIL / WATER																
			SOIL / WATER																
			SOIL / WATER																

PROJECT INFORMATION:

LABORATORY INSTRUCTIONS/COMMENTS:
Turn Around Time (Circle One)
Same Day 24 Hrs 48 Hrs
72 Hrs Normal

ANALYTICAL LABORATORY McCampbell
CITY Pacheco

RELINQUISHED BY:
Signature
Printed Name
Company
Time ___ Date ___

RELINQUISHED BY:
Signature
Printed Name
Company
Time ___ Date ___

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Printed Name
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Printed Name
Company
Time ___ Date ___