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KEI-J90-0606.R8 August 31, 1992

Unocal Corporation 2000 Crow Canyon Place, Suite 400 P.O. Box 5155 San Ramon, California 94583

Attention: Ms. Penny Silzer

RE: Stockpiled Soil Sampling Report for

Unocal Service Station #5901

11976 Dublin Boulevard Dublin, California

Dear Ms. Silzer:

This letter report summarizes the analytical results of the composite soil samples that were collected from the stockpiled soil at the referenced site. The soil analyses were conducted to comply with the local regulatory agency requirements for proper disposal of potentially contaminated soil.

On June 17, 1992, soil samples from approximately 450 cubic yards of stockpiled soil that had been excavated during demolition activities were collected to determine proper disposal of the soil. Nine composite soil samples (designated as Comp A, Comp B, Comp C, Comp D, Comp E, Comp F, Comp G, Comp H, and Comp I) were taken. Each composite sample consisted of four individual grab samples taken at various locations and at depths of approximately 2 feet The individual samples were subsequently into the stockpile. composited as one sample by the lab. The samples were collected in two-inch diameter, clean brass tubes, which were then sealed with aluminum foil, plastic caps and tape, and placed in a cooled ice chest for subsequent delivery to a certified laboratory for All samples were analyzed at Sequoia Analytical Laboratory in Concord, California, and were accompanied by properly executed Chain of Custody documentation. Sample point locations are as shown on the attached Site Plan, Figure 1.

On July 9, Kaprealian Engineering, Inc. (KEI) returned to the site to collect soil samples from approximately 50 cubic yards of additional stockpiled soil that had been excavated during demolition activities. One composite sample (designated as Comp J) was collected and stored as described above. Sample point locations are as shown on the attached Site Plan, Figure 1.

Soil samples were analyzed to determine concentrations of total petroleum hydrocarbons (TPH) as gasoline by the use of EPA method 5030 in conjunction with modified 8015, and benzene, toluene, xylenes and ethylbenzene (BTX&E) by the use of EPA method 8020.

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Sample Comp A was also analyzed for organic lead by the use of the DHS LUFT method. Comp J was also analyzed for corrosivity, ignitability, reactivity, STLC lead, and by the use of toxicity characteristic leaching procedure for TPH as gasoline and BTX&E. Analytical results of the soil samples (Comp A through J) indicated levels of TPH as gasoline ranging from non-detectable to 22 ppm. Results of the soil analyses are summarized in Tables 1 & 2. Copies of the laboratory analyses and the Chain of Custody documentation are attached to this report.

Based on the analytical results of the soil samples, approximately 500 cubic yards of stockpiled soil (represented by samples Comp A through Comp J) were disposed of at BFI Waste Systems, Inc. in Livermore, California (an approved Class III disposal site) by Conrad and Sons Trucking of Escalon, California. However, prior to loading and off-hauling of the stockpiled soil, KEI recommended that if obvious isolated areas of contamination were detected within the stockpiled soil, then those portions of the soil should be separately stockpiled for further treatment and sampling.

DISTRIBUTION

A copy of this report should be sent to the Alameda County Health Care Services Agency, and to the Regional Water Quality Control Board, San Francisco Region.

Should you have any questions on this report, please do not hesitate to contact me at (510) 602-5100.

Sincerely,

Kaprealian Engineering, Inc.

Continued Philadians

Corrina M. Mathews Technical Assistant

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Attachments: Tables 1 & 2

Site Plan - Figure 1 Laboratory Analyses

Chain of Custody documentation

KEI-J90-0606.R8 August 31, 1992

TABLE 1
SUMMARY OF LABORATORY ANALYSES

<u>Date</u>	<u>Sample</u>	TPH as <u>Gasoline</u>	<u>Benzene</u>	<u>Toluene</u>	Xylenes	Ethyl- <u>benzene</u>
4/08/92	Comp A* Comp B Comp C Comp D Comp E Comp F Comp G Comp H Comp I	22 1.1 3.6 ND 2.4 2.1 2.1 1.1	O.016 ND	0.015 0.029 0.038 ND 0.012 0.019 0.0056 0.0053	0.19 0.17 0.35 ND 0.077 0.14 0.025 0.033 0.016	0.043 0.020 0.041 ND 0.0059 0.0098 ND ND ND
Detectio Limits	n	1.0	0.0050	0.0050	0.0050	0.0050

^{*} Organic lead was non-detectable.

ND = Non-detectable.

Results in parts per million (ppm), unless otherwise indicated.

KEI-J90-0606.R8 August 31, 1992

TABLE 2

SUMMARY OF LABORATORY ANALYSES

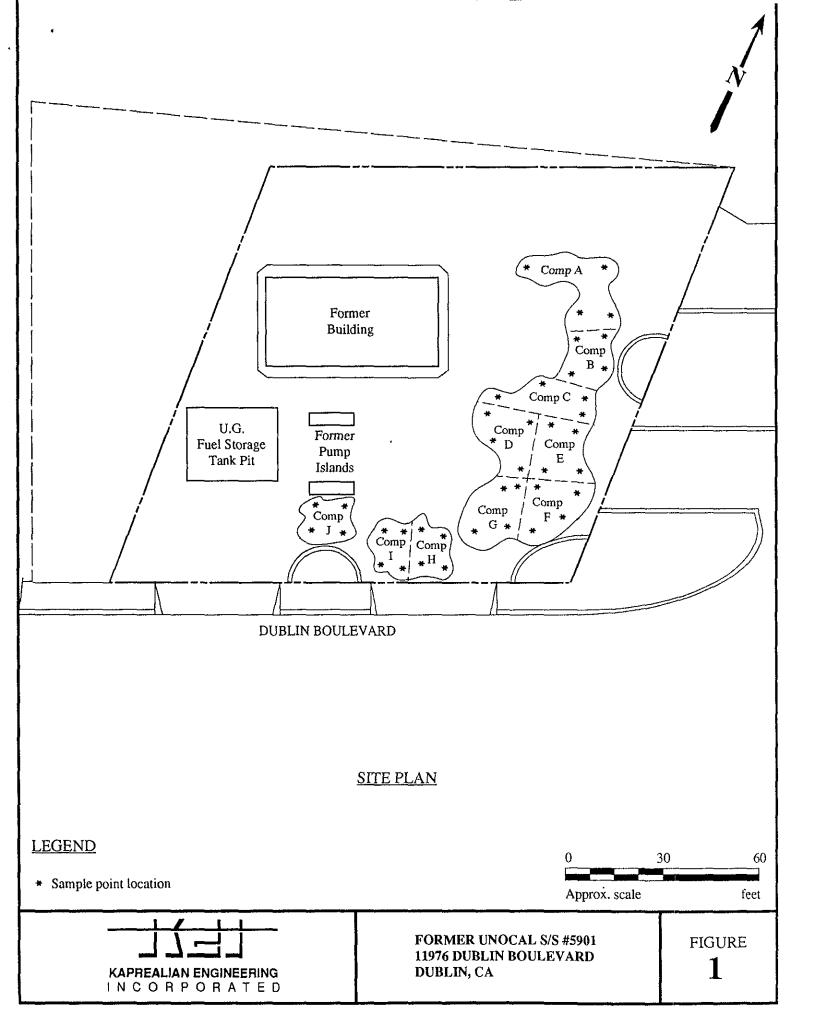
TOXICITY CHARACTERISTIC LEACHING PROCEDURE

<u>Date</u>	Sample	TPH as <u>Gasoline</u>	<u>Benzene</u>	<u>Toluene</u>	Ethyl- <u>benzene</u>	Xylenes
7/09/92	Comp J*	ND	ИД	ND	ND	ND
Detectio Limits	n	1.0	0.010	0.010	0.010	0.010

^{*} STLC lead was 0.14 ppm. For results of the Reactivity, Corrosivity and Ignitability analyses, please refer to the attached laboratory data sheets.

ND = Non-detectable.

Results in parts per million (ppm), unless otherwise indicated.



Kaprealian Engineering, Inc. Unocal, 11976 Dublin Blvd., Dublin Sampled: Jul 9, 1992 Client Project ID: Sample Descript.: TCLP Extract of Soil, Comp J Received: 2401 Stanwell Drive, Suite 400 Jul 10, 1992 Analysis Method: Concord, CA 94520 EPA 5030/8015/8020 Analyzed: Jul 14, 1992 Attention: Mardo Kaprealian, P.E. Lab Number: 207-0318 Reported: Jul 16, 1992 🖱 inagnastasa engini pelukaanggyin debunun ing islaggi nyahakasasasasa pengentason pyahakakasasa kasasti balan ba

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

Analyte	Method Detection Li mg/L (ppm)		Sample Results mg/L
Low to Medium Boiling Point Hydrocarbons	1.0		N.D.
Benzene	0.010	***************************************	N.D.
Toluene		**************************	N.D.
Ethyl Benzene		***************************************	N.D.
Xylenes		***************************************	N.D.

Low to Medium Boiling Point Hydrocarbons are quantitated against a gasoline standard.

SEQUOIA ANALYTICAL

Scott A. Chieffo Project Manager

2070318.KEI <1>

Kapreallan Engineering, Inc. 2401 Stanwell Drive, Suite 400

Client Project ID: Unocal, 11976 Dublin Blvd., Dublin Sampled: Jul 9, 1992 Sample Descript: TCLP Extract of Soil, Comp J

Received:

Jul 10, 1992

Concord, CA 94520

Attention: Mardo Kaprealian, P.E. Lab Number:

207-0318

Analyzed: 7/10 - 7/14/92 Jul 16, 1992 Reported: ik girokko, konka akekenen en markadenaki akinarakaki an imakaki an kalikaki kakikaki kalikaki kalikaki makiki

CORROSIVITY, IGNITABILITY, AND REACTIVITY

Detection Limit		Sample Results
N.A.		8.3
N.A.		> 100 °C
10		N.D.
		N.D.
- · - · -		Negative
	N.A.	N.A

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

SEQUOIA ANALYTICAL

Kaprealian Engineering, Inc. Client Project ID: Unocal, 11976 Dublin Blvd., Dublin Sampled: Jul 9, 1992 2401 Stanwell Drive, Suite 400 Sample Descript: STLC Extract of Soil Received: Jul 10, 1992 # Concord, CA 94520 STLC Lead Jul 13, 1992 Analysis for: Extracted: Attention: Mardo Kaprealian, P.E. First Sample #: 207-0318 Analyzed: Jul 15, 1992 Reported: Jul 16, 1992 ing and the contraction of the c

LABORATORY ANALYSIS FOR: STLC Lead

Sample Number	Sample Description	Detection Limit mg/L	Sample Result mg/L
207-0318	Comp J	0.050	0.14

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

SEQUOIA ANALYTICAL

Scott A. Chieffo Project Manager 2070318.KEI <3>

Attention: Mardo Kaprealian, P.E. QC Sample Group: 207-0318 Reported: Jul 16, 1992

QUALITY CONTROL DATA REPORT

ANALYTE			Ethyl-				
<u>. </u>	Benzene	Toluene	Benzene	Xylenes	рН	Flashpoint	Sulfide
	EPA	EPA	EPA	EPA			
Method:	8015/8020	8015/8020	8015/8020	8015/8020	EPA 9045	EPA 1010	EPA 9030
Analyst:	M. Nipp	M. Nipp	M. Nipp	M. Nipp	Yolanda D.	K. Follett	K. Follett
Reporting Units:	μg/L	μg/L	μg/L	μg/L	N/A	N/A	mg/kg
Date Analyzed:	Jul 14, 1992	Jul 14, 1992	Jul 14, 1992	Jul 14, 1992	Jul 10, 1992	Jul 14, 1992	Jul 14, 1992
QC Sample #:	Matrix Blank	Matrix Blank	Matrix Blank	Matrix Blank	207-1205	207-1205	207-1375
Sample Conc.:	N.D.	N.D.	N.D.	N.D.	7.9	>100°C	N.D.
Spike Conc. Added:	10	10	10	30	N/A	N/A	1300
Conc. Matrix Spike:	10	11	11	32	N/A	N/A	1000
Matrix Spike % Recovery:	100	110	110	107	N/A	N/A	77
Conc. Matrix Spike Dup.:	11	11	11	. 33	7.8	>100°C	1000
Matrix Spike Duplicate % Recovery:	110	110	110	110	N/A	N/A	7 7
Relative % Difference:	9.5	0.0	0.0	3.2	1.3	0.0	0.0

Laboratory Blank contained the following analytes: None detected.

SEQUOJA ANALYTICAL

% Recovery:	Conc. of M.S Conc. of Sample	x 100	
_	Spike Conc. Added		
Relative % Difference:	Conc. of M.S Conc. of M.S.D.	x 100	
	(Conc. of M.S. + Conc. of M.S.D.) / 2		2070318.KEI <4>

Kaprealian Engineering, Inc.

Client Project ID: Unocal, 11976 Dublin Blvd., Dublin

2401 Stanwell Drive, Suite 400

Concord, CA 94520

Attention: Mardo Kaprealian, P.E. QC Sample Group: 207-0318 Reported: Jul 16, 1992

Reported: Jul 16, 1992

QUALITY CONTROL DATA REPORT

ANALYTE		STLC
	Cyanide	Lead
. ئىر ما مداد ق	571.0010	5D4 7400
Method: Analyst:	EPA 9010 A. Savva	EPA 7420 K. Anderson
Reporting Units:	mg/kg	mg/L
Date Analyzed:	Jul 15, 1992	Jul 15, 1992
QC Sample #:	207-1276	207-0318
Sample Conc.:	N.D.	0.14
Spike Conc.		
Added:	8.0	5.0
Conc. Matrix		
Spike:	6.1	4.6
Matrix Spike		
% Recovery:	76	89
Conc. Matrix		
Spike Dup.:	6.6	4.6
Matrix Spike		
Duplicate % Recovery:	83	89
o moore,		•
Relative		
% Difference:	7.9	0.0

Laboratory Blank contained the following analytes: None detected.

SEQUOIA ANALYTICAL

Project Manager

% Recovery:	Conc. of M.S Conc. of Sample	x 100
	Spike Conc. Added	
Relative % Difference:	Conc. of M.S Conc. of M.S.D.	x 100
	(Conc. of M.S. + Conc. of M.S.D.) / 2	

2070318.KEI <5>

KAPREALIAN ENGINEERING INCORPORATED

CHAIN OF CUSTODY

SAMPLER	(ai)	?		۸		s	ITE NA	HE & ADDRESS			AHALYS	ES REQL	JESTED			TURN AROUND TIME:
WITHESSING A	GENCY			lu ()C	œl S	Du	Dullen Blud	9-1	W W	 	5				3 Days
SAMPLE ID NO.	DATE	TINE	SOIL	WATER	GRAB	COMP	NO. OF CONT.	SAMPLING LOCATION	10	100 X	元 ご	57 LO				REMARKS
Comp J	7/9/92		V			~	4	STOCKPILE	V	v	V		20	70.	838	ADTCLP
						 										
										•						
		· ·														
					_											
Relinquished	YX/IM		7/10	ate/Tin	 e }\$5%	R	eceive	d by: (Signature)	<u> </u>	i Vi ai	1917515					he laboratory accepting samples
Relinquished	by: (\$ig	nature) >		ste/Tin			eceive	d by: (Signature)								alysis been stored in ice?
Relinquished	by: (Sig	nature)	Da	ste/Tim	e	R	eceive	d by: (Signature)		3. Di	d any	samples	rece	ived f	or /ana	lysis have head space?
Relinquished	by: (Sig	nature)	Da	ote/Tim	e	R	eceive	d by: (Signature)		4. We	re sam Signa	7	аррг	opriat	<u> </u>	ainers and properly packaged?

2401 Stanwell Drive, Suite 400 Concord, California 94520 Tel: 510.602.5100 | Fax: 510.687.0602 2401 Stanwell Drive, Suite 400

§Concord, CA 94520 Attention: Mardo Kaprealian, P.E. Matrix Descript:

Analysis Method:

First Sample #:

Kaprealian Engineering, Inc. Client Project ID: Unocal s/s #5901, 11976 Dublin Blvd., Dublin Sampled: Jun 17, 1992

EPA 5030/8015/8020

Jun 18, 1992 2

Received: Reported:

Analyzed: 6/19 & 6/25/92 & Jun 30, 1992

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

206-0781

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Sample Number	Sample Description	Low/Medium B.P. Hydrocarbons mg/kg (ppm)	Benzene mg/kg (ppm)	Toluene mg/kg (ppm)	Ethy! Benzene mg/kg (ppm)	Xylenes mg/kg (ppm)
206-0781	Comp A	22	0.016	0.015	0.043	0.19
206-0782	Comp B	1.1	N.D.	0.029	0.020	0.17
206-0783	Comp C	3.6	N.D.	0.038	0.041	0.35
206-0784	Comp D	N.D.	N.D.	N.D.	N.D.	N.D.
206-0785	Comp E	2.4	N.D.	0.012	0.0059	0.077
206-0786	Comp F	2.1	N.D.	0.019	0.0098	0.14
206-0787	Comp G	2.1	N.D.	0.0056	N.D.	0.025
206-0788	Comp H	1.1	N.D.	0.0053	N.D.	0.033
206-0789	Comp I	N.D.	N.D.	N.D.	N.D.	0.016

Detection Limits: 1.0 0.0050 0.0050 0.0050 0.0050

Low to Medium Boiling Point Hydrocarbons are quantitated against a gasoline standard.

SEQUOIA ANALYTICAL

Kaprealian Engineering, Inc. Client Project ID: Unocal \$/s #5901, 11976 Dublin Blvd., Dublin Jun 17, 1992 Sampled: Sample Descript: Soil Received: Jun 18, 1992 2401 Stanwell Drive, Suite 400 Concord, CA 94520 Analysis Method: California LUFT Manual, 12/87 Extracted: Jun 25, 1992 3 First Sample #: Analyzed: Jun 25, 1992 8 Attention: Mardo Kaprealian, P.E. 206-0781 Reported: Jun 30, 1992

ORGANIC LEAD

Sample Number	Sample Description	Sample Results mg/kg (ppm)
206-0781	Comp A	N.D.

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

SEQUOIA ANALYTICAL

Scott A. Chieffo Project Manager

Kaprealian Engineering, Inc. Client Project ID: Unocal s/s #5901, 11976 Dublin Blvd., Dublin

Attention: Mardo Kaprealían, P.E. QC Sample Group: 2060781-789 Reported: Jun 30, 1992

ANALYTE	·		Ethyl-			
	Benzene	Toluene	Benzene	Xylenes	Organic Lead	
	EPA	EPA	EPA	EPA		
Method:	8015/8020	8015/8020	8015/8020	8015/8020	LUFT	
Analyst:	A.T.	A.T.	A.T.	A.T.	K.Anderson	
Reporting Units:	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	
Date Analyzed:	Jun 19, 1992	Jun 19, 1992	Jun 19, 1992	Jun 19, 1992	Jun 25, 1992	
QC Sample #:	Matrix Blank					
Sample Conc.:	N.D.	N.D.	N.D.	N.D.	N.D.	
Spike Conc.						
Added:	0.40	0.40	0.40	1.2	20	
Conc. Matrix						
Spike:	0.42	0.42	0.43	1.4	14	
Matrix Spike						
% Recovery:	105	105	107	116	70	
Conc. Matrix						
Spike Dup.:	0.42	0.43	0.41	1.0	14	
Matrix Spike						
Duplicate % Recovery:	105	107	102	83	70	
o necovery.	103	101	102	00	. 0	
Relative						
% Difference:	0.0	2.3	2.4	33	0.0	

SEQUOIA ANALYTICAL

% Recovery:	Conc. of M.S Conc. of Sample Spike Conc. Added	x 100	
Relative % Difference:	Conc. of M.S Conc. of M.S.D.	x 100	
	(Conc. of M.S. + Conc. of M.S.D.) / 2		2060781.KEL <3>

Kaprealian Engineering, Inc.

P.O. Box 996

Benicia, CA 94510

SURROGATE

Attention: Mardo Kaprealian, P.E. QC Sample Group: 2060781-789 13.50 2 Sulfa # 12 1 2 2 2 1

in the production of the contract of the contr Client Project ID: Unocal s/s #5901, 11976 Dublin Blvd., Dublin

in ang manimikan gerang dalaman kan makan terpit kanasan terpitan kalingan kanasan an ini ini ini ini ini ini i

Reported: Jun 30, 1992

QUALITY CONTROL DATA REPORT

			<u>. </u>		,, <u>, ,</u>		
Method:	EPA	EPA	EPA	EPA	EPA	EPA	EPA
	8015/8020	8015/8020	8015/8020	8015/8020	8015/8020	8015/8020	8015/8020

A.T. A.T A.T. A.T. A.T. A.T. Analyst: A.T. mg/Kg mg/Kg mg/Kg mg/Kg mg/Kg Reporting Units: mg/Kg mg/Kg 6/19,6/25/92 6/19,6/25/92 6/19,6/25/92 6/19,6/25/92 6/19,6/25/92 Date Analyzed: 6/19,6/25/92 6/19,6/25/92 206-0787 206-0785 206-0786 Sample #: 206-0783 206-0784 206-0782 206-0781

Surrogate 100 100 110 103 105 105 % Recovery: 110

SEQUOIA ANALYTICAL

Project Manager

x 100 Conc. of M.S. - Conc. of Sample % Recovery: Spike Conc. Added

x 100 Conc. of M.S. - Conc. of M.S.D. Relative % Difference:

(Conc. of M.S. + Conc. of M.S.D.) / 2

2060781 KEI <4>

Kapreallan Engineering, Inc.

Inc. Client Project ID: Unocal s/s #5901, 11976 Dublin Blvd., Dublin

P.O. Box 996

Benicia, CA 94510

QC Sample Group: 2060781-789 Attention: Mardo Kaprealian, P.E.

Reported: Jun 30, 1992

QUALITY CONTROL DATA REPORT

SURROGATE

EPA Method: 8015/8020 8015/8020 Analyst: A.T. Reporting Units: mg/Kg Date Analyzed: 6/19 & 6/25/92

206-0788

A.T. mg/Kg 6/19 & 6/25/92

EPA

EPA 8015/8020 A.T. mg/Kg Jun 19, 1992

Blank 206-0789

Surrogate

Sample #:

% Recovery:

100

100

103

SEQUOIA ANALYTICAL

Project Manager

Conc. of M.S. - Conc. of Sample x 100 % Recovery: Spike Conc. Added

Cone, of M.S. - Cone, of M.S.D. x 100 Relative % Difference:

(Conc. of M.S. + Conc. of M.S.D.) / 2

2060781.KEL < 5>



CHAIN OF CUSTODY

SAMPLER	STE	√ <i>E</i>	ι	INOC.	A ()		. –	HE & ADDRESS OF DUBLIN			ANALYSES REQUESTED TURN AROUND					ND TIME: CEGULAR
WITHESSING A	GENCY				BLIN Blud.			7-7	X.	5.2						
SAMPLE 10 NO.	DATE	TIME	SOIL	WATER	GRAB	COMP	NO. OF CONT.	SAMPLING LOCATION	477	BTX	OREANIC CEAD					REHARKS
Comp A	6/17/92		V			\(\)	4	STOCKPILE	/	/					206	078/AD
Comp B	6/17/92		/			V	4		/	1					- 1	782AD
Comp (6/17/92		~			1	4									783 AD
Comp D	6/17/92		V			1	4			1						784 AD
Comp E	6/17/91		V			0	4		V	/						785-AD
Consp F	6/17/92		V			V	4		/	1						786 AD
Gmys G			V			V	4	,	1	/						787 AD
Comp H	6/17/92		/			V	4		V	L'		\ <u></u>				788AD
Comp I	6/17/92					<i>\rightarrow</i>	4		1	w					V	789 AD
Retinquished by: (Signature) 57809 (1870 950)				-	The following MUST BE completed by the laboratory accepting sa for analysis:											
Relinquished	lby: (Sig	gnature)	44 /	ate/li		1	Receiv	ed by: (Signature)	Nave all samples received for analysis been stored in ice? 2. Will samples remain refrigerated until analyzed?							
Relinquished	l by: (Sig	mature)	D	ate/Ti	ne	1	Receiv	ed by: (Signature)		3. Did any samples received for analysis have head space?						
Relinquished	by: (Sig	nature)	Di	ate/Ti	me		Receiv	ed by: (Signature)	4. Were samples in appropriate containers and properly packaged? F.S. 6/18/70 Signature Title Date					properly packaged?		

2401 Stanwell Drive, Suite 400 Concord, California 94520 Tel: \$10.602.\$100 | Fax: \$10.687.0602