



KAPREALIAN ENGINEERING
INCORPORATED

*Reviewed by
Hans Meert
on April 15, 1994
JAS*

KEI-P88-1110.R3
September 7, 1993

Paradiso Construction Company
2600 Williams Street
San Leandro, California 94577

Attention: Mr. Paul Paradiso

RE: Sampling and Approval for Disposal
of Drill Cutting Soil at
Berkeley Farms
23555 Saklan Road
Hayward, California

Dear Mr. Paradiso:

This report summarizes the analytical results of the composite soil sample that was collected from the drill cutting 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 2, 1993, a soil sample from approximately two cubic yards of soil (including one drum of rinsate) that had been generated during drilling activities was collected to determine proper disposal of the soil. One composite soil sample (designated as Comp S1) was collected. The composite sample consisted of four individual grab samples taken at various locations within the stockpile. The individual 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 delivery to a certified laboratory for analysis. The individual samples were subsequently composited by the lab. The sample was analyzed by Sequoia Analytical Laboratory in Concord, California, and was accompanied by properly executed Chain of Custody documentation.

The composite soil sample was analyzed to determine concentrations of total petroleum hydrocarbons (TPH) as gasoline by EPA method 5030/modified 8015, benzene, toluene, ethylbenzene, and xylenes (BTEX) by EPA method 8020, TPH as diesel by EPA method 3550/modified 8015, STLC lead, Reactivity, Corrosivity, and Ignitability. The results of the soil analyses are summarized in Table 1. Copies of the laboratory analyses and the Chain of Custody documentation are attached to this report.

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Based on the analytical results of the composite soil sample, approximately two cubic yards of soil (including one drum of rinsate), represented by sample Comp S1, were profiled and approved for disposal on June 23, 1993, at the BFI Landfill in Livermore, California, an approved Class III disposal facility (Approval #CAD405/062393/53371).

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

Sincerely,

Kaprealian Engineering, Inc.


Deanna L. Harding
Technical Assistant

/dlh

Attachments: Table 1
Laboratory Analyses
Chain of Custody documentation

KEI-P88-1110.R3
September 7, 1993

TABLE 1

SUMMARY OF LABORATORY ANALYSES

(Collected on June 2, 1993)

<u>Sample</u>	<u>TPH as Diesel</u>	<u>TPH as Gasoline</u>	<u>Benzene</u>	<u>Toluene</u>	<u>Ethyl-benzene</u>	<u>Xylenes</u>	<u>STLC Lead</u>	<u>React-ivity</u>	<u>Corrosivity (pH)</u>	<u>Ignit-ability</u>
Comp S1	2.6	ND	ND	ND	ND	ND	0.23	ND	9.0	>100°C

ND = Non-detectable.

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



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1900 Bates Avenue • Suite LM • Concord, California 94520
(510) 686-9600 • FAX (510) 686-9689

Kapreallan Engineering, Inc.	Client Project ID: Berkeley Farms, 23555 Saklan Rd., Hayward	Sampled: Jun 2, 1993
2401 Stanwell Dr., Ste. 400	Sample Matrix: Soil	Received: Jun 3, 1993
Concord, CA 94520	Analysis Method: EPA 5030/8015/8020	Reported: Jun 16, 1993
Attention: Mardo Kapreallan, P.E.	First Sample #: 306-0113	

TOTAL PURGEABLE PETROLEUM HYDROCARBONS with BTEX DISTINCTION

Analyte	Reporting Limit mg/kg	Sample I.D. 306-0113 Comp. S1	Sample I.D. Matrix Blank
Purgeable Hydrocarbons	1.0	N.D.	
Benzene	0.005	N.D.	
Toluene	0.005	N.D.	
Ethyl Benzene	0.005	N.D.	
Total Xylenes	0.005	N.D.	

Chromatogram Pattern: --

Quality Control Data

Report Limit Multiplication Factor:	1.0	1.0
Date Analyzed:	6/9/93	6/9/93
Instrument Identification:	HP-2	HP-2
Surrogate Recovery, %: (QC Limits = 70-130%)	103	103

Purgeable Hydrocarbons are quantitated against a fresh gasoline standard.
Analytes reported as N.D. were not detected above the stated reporting limit.

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Scott A. Chieffo
Project Manager



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Kaprealian Engineering, Inc.	Client Project ID:	Berkeley Farms, 23555 Saklan Rd., Hayward	Sampled:	Jun 2, 1993
2401 Stanwell Dr., Ste. 400	Sample Matrix:	Soil	Received:	Jun 3, 1993
Concord, CA 94520	Analysis Method:	EPA 3550/8015	Reported:	Jun 16, 1993
Attention: Mardo Kaprealian, P.E.	First Sample #:	306-0113		

TOTAL EXTRACTABLE PETROLEUM HYDROCARBONS

Analyte	Reporting Limit mg/kg	Sample I.D. 306-0113 Comp. S1	Sample I.D. Matrix Blank
Extractable Hydrocarbons	1.0	2.6	

Chromatogram Pattern: Diesel & Non-Diesel Mixture (>C20)

Quality Control Data

Report Limit Multiplication Factor:	1.0	1.0
Date Extracted:	6/10/93	6/10/93
Date Analyzed:	6/11/93	6/11/93
Instrument Identification:	HP-3B	HP-3B

Extractable Hydrocarbons are quantitated against a fresh diesel standard. Analytes reported as N.D. were not detected above the stated reporting limit.

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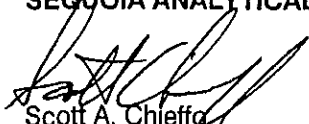
Kaprealian Engineering, Inc. 2401 Stanwell Dr., Ste. 400 Concord, CA 94520 Attention: Mardo Kaprealian, P.E.	Client Project ID: Berkeley Farms, 23555 Saklan Rd., Hayward Sample Descript: STLC Extract of Soil Analysis for: STLC Lead First Sample #: 306-0113	Sampled: Jun 2, 1993 Received: Jun 3, 1993 Extracted: Jun 7, 1993 Analyzed: Jun 10, 1993 Reported: Jun 16, 1993
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LABORATORY ANALYSIS FOR: STLC Lead

Sample Number	Sample Description	Detection Limit mg/L	Sample Result mg/L
306-0113	Comp. S1	0.0050	0.23

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

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Kaprealian Engineering, Inc.	Client Project ID: Berkeley Farms, 23555 Saklan Rd., Hayward	Sampled: Jun 2, 1993
2401 Stanwell Dr., Ste. 400	Sample Descript: Comp. S1	Received: Jun 3, 1993
Concord, CA 94520		Analyzed: 6/4 - 6/10/93
Attention: Mardo Kaprealian, P.E.	Lab Number: 306-0113	Reported: Jun 16, 1993

CORROSIVITY, IGNITABILITY, AND REACTIVITY

Analyte	Detection Limit	Sample Results
Corrosivity:		
pH.....	N.A.	9.0
Ignitability:		
Flashpoint (Pensky-Martens), °C.....	N.A.	> 100 °C
Reactivity:		
Sulfide, mg/kg.....	10	N.D.
Cyanide, mg/kg.....	0.50	N.D.
Reaction with water.....	N.A.	Negative

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

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Concord, CA 94520

Client Project ID: Berkeley Farms, 23555 Sakian Rd., Hayward
Matrix: Soil

Attention: Mardo Kaprealian, P.E. QC Sample Group 306-0113

Reported: Jun 16, 1993

QUALITY CONTROL DATA REPORT

ANALYTE	Benzene	Toluene	Ethyl- Benzene	Xylenes	Diesel	STLC Lead	Sulfide
	Method:	EPA 8020	EPA 8020	EPA 8020	EPA 8020	EPA 8015	EPA 7421
Analyst:	J.F.	J.F.	J.F.	J.F.	K.Wimer	K.V.S.	K. Newberry
Conc. Spiked:	0.40	0.40	0.40	1.2	10	1.0	1300
Units:	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/L	mg/Kg
LCS Batch#:	1LCS060993	1LCS060993	1LCS060993	1LCS060993	BLK061093	BLK060793	LCS061093
Date Prepared:	6/9/93	6/9/93	6/9/93	6/9/93	6/10/93	6/7/93	6/10/93
Date Analyzed:	6/9/93	6/9/93	6/9/93	6/9/93	6/11/93	6/10/93	6/10/93
Instrument I.D.#:	HP-2	HP-2	HP-2	HP-2	HP-3B	SpectrAA-400	N/A
LCS % Recovery:	102	100	104	105	110	78	88
Control Limits:	70-130	70-130	70-130	70-130	80-120	75-125	80-120
MS/MSD Batch #:	3060183	3060183	3060183	3060183	3060129	3060113	9306372-1
Date Prepared:	6/9/93	6/9/93	6/9/93	6/9/93	6/10/93	6/7/93	6/9/93
Date Analyzed:	6/9/93	6/9/93	6/9/93	6/9/93	6/11/93	6/9/93	6/9/93
Instrument I.D.#:	HP-2	HP-2	HP-2	HP-2	HP-3B	SpectrAA-400	N/A
Matrix Spike % Recovery:	88	88	90	92	107	104	96
Matrix Spike Duplicate % Recovery:	88	85	90	92	106	112	96
Relative % Difference:	0.0	3.7	0.0	0.0	0.90	7.4	0.0

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Project Manager

Please Note:

The LCS is a control sample of known, interferent free matrix that is analyzed using the same reagents, preparation and analytical methods employed for the samples. The LCS % recovery data is used for validation of sample batch results. Due to matrix effects, the QC limits for MS/MSD's are advisory only and are not used to accept or reject batch results.



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Matrix: Soil

Attention: Mardo Kaprealian, P.E. QC Sample Group: 306-0113

Reported: Jun 16, 1993

QUALITY CONTROL DATA REPORT

ANALYTE

Cyanide

Method: EPA 9010

Analyst: A. Savva

Conc. Spiked: 3.4

Units: mg/Kg

LCS Batch#: LCS060993

Date Prepared: 6/9/93

Date Analyzed: 6/9/93

Instrument I.D.#: N/A

LCS %

Recovery: 100

Control Limits: 80-120

MS/MSD

Batch #: 93061801A

Date Prepared: 6/9/93

Date Analyzed: 6/9/93

Instrument I.D.#: N/A

Matrix Spike

% Recovery: 100

Matrix Spike

Duplicate %

Recovery: 100

Relative %

Difference: 0.0

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Project Manager

Please Note:

The LCS is a control sample of known, interferent free matrix that is analyzed using the same reagents, preparation and analytical methods employed for the samples. The LCS % recovery data is used for validation of sample batch results. Due to matrix effects, the QC limits for MS/MSD's are advisory only and are not used to accept or reject batch results.



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Attention: Mardo Kapreallan, P.E. QC Sample Group: 306-0113

Reported: Jun 16, 1993

QUALITY CONTROL DATA REPORT

ANALYTE		
	Corrosivity-pH	Ignitability

Method:	EPA 9045	EPA 1010
Analyst:	M.Nguyen	S. Phillips
Reporting Units:	N/A	°C
Date Analyzed:	Jun 4, 1993	Jun 4, 1993
QC Sample #:	306-0113	Xylene; Flashpoint =29°

Sample Conc.: 9.0 26

Spike Conc. Added: N/A N/A

Conc. Matrix Spike: N/A N/A

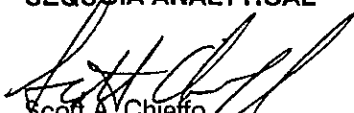
Matrix Spike % Recovery: N/A N/A

Conc. Matrix Spike Dup.: 8.7 25

Matrix Spike Duplicate % Recovery: N/A N/A

Relative % Difference: 3.4 3.9

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Project Manager

% Recovery:	$\frac{\text{Conc. of M.S.} - \text{Conc. of Sample}}{\text{Spike Conc. Added}} \times 100$
Relative % Difference:	$\frac{\text{Conc. of M.S.} - \text{Conc. of M.S.D.}}{(\text{Conc. of M.S.} + \text{Conc. of M.S.D.}) / 2} \times 100$



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Attention: Mardo Kapreallan, P.E. QC Sample Group: 306-0113

Reported: Jun 16, 1993

QUALITY CONTROL DATA REPORT

SURROGATE

Method:	EPA 8015	EPA 8015
Analyst:	K. Wimer	K. Wimer
Reporting Units:	mg/Kg	mg/Kg
Date Analyzed:	Jun 11, 1993	Jun 11, 1993
Sample #:	306-0113	Blank

Surrogate		
% Recovery:	118	107

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% Recovery:	$\frac{\text{Conc. of M.S.} - \text{Conc. of Sample}}{\text{Spike Conc. Added}} \times 100$
Relative % Difference:	$\frac{\text{Conc. of M.S.} - \text{Conc. of M.S.D.}}{(\text{Conc. of M.S.} + \text{Conc. of M.S.D.}) / 2} \times 100$

CHAIN OF CUSTODY

SAMPLER		SITE NAME & ADDRESS							ANALYSES REQUESTED						TURN AROUND TIME:		
WITNESSING AGENCY		BERKELEY FARMS/HAYWARD 23555 SAKLAN RD.							TRACE	BIOM	PH-D	STC	LEAD	PCU			REGULAR
SAMPLE ID NO.	DATE	TIME	SOIL	WATER	GRAB	COMP	NO. OF CONT.	SAMPLING LOCATION									REMARKS
COMP.S1	6-2-93		X			X	4	STOCKPILED DRILL CUTTINGS	X	X	X	X	X				3060 (BAD)
Relinquished by: (Signature)		Date/Time		Received by: (Signature)		The following MUST BE completed by the laboratory accepting samples for analysis: 1. Have all samples received for analysis been stored in ice? <input checked="" type="checkbox"/> 2. Will samples remain refrigerated until analyzed? <input checked="" type="checkbox"/> 3. Did any samples received for analysis have head space? <input checked="" type="checkbox"/> 4. Were samples in appropriate containers and properly packaged? <input checked="" type="checkbox"/>											
Relinquished by: (Signature)		Date/Time		Received by: (Signature)													
Relinquished by: (Signature)		Date/Time		Received by: (Signature)													
Relinquished by: (Signature)		Date/Time		Received by: (Signature)													
						Signature		Title		Date							