



KAPREALIAN ENGINEERING, INC.
Consulting Engineers

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(707) 746-6915 • (707) 746-6916 • FAX: (707) 746-5581

TRANSMITTAL PAGE

DATE: 3-19-90

Alameda County Health Care Services

TO: Alia Levin

FROM: R.M. Radwin

Number of Pages
(including cover): 11

SUBJECT: Procal # 5781, 3535 Picover, Oakland

• Pls find attached laboratory analyses & Chain of Custody documentation for add'l tank btm sample, labeled W01016 and four sidewall samples, labeled SWA-SWD, collected 2/22/90 at above referenced site. Also attached is a sketch indicating sample point locations.

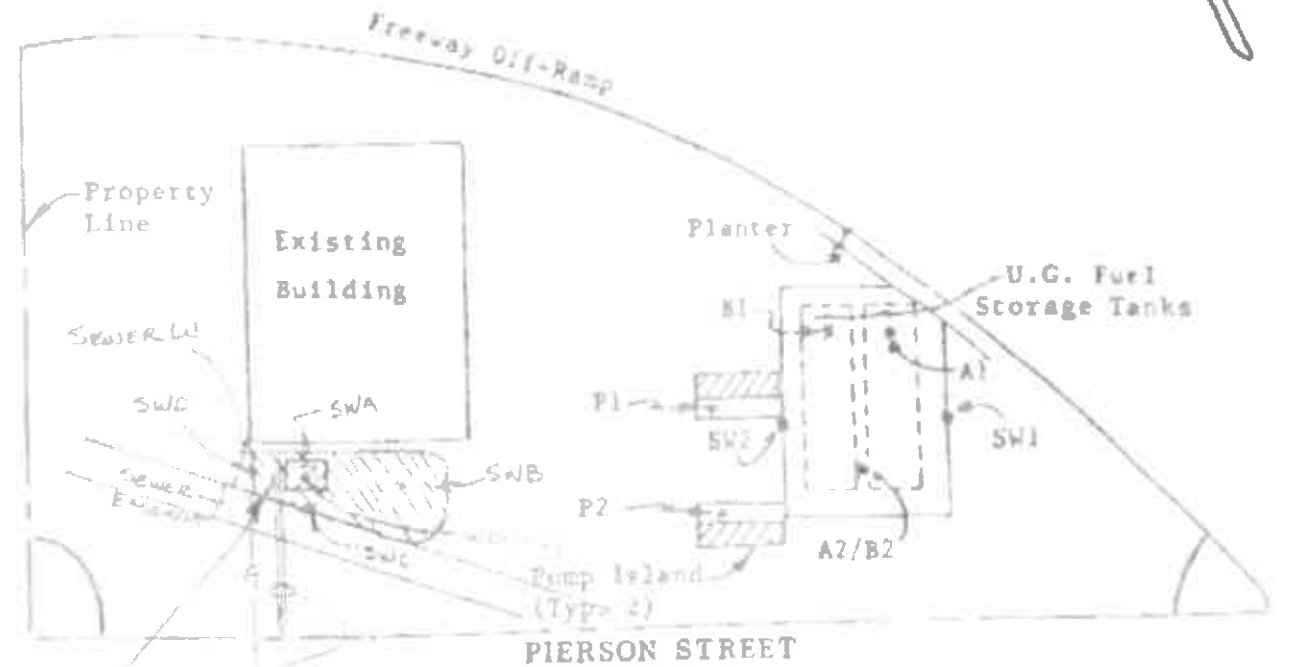
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SITE PLAN
Figure 1



ELECTRICAL & TELEPHONE LINES

AREA RELAYED TO
-16 FT

LEGEND

* Sample Point Location

Unocal Service Station #5781
3535 Pierson Street
Oakland, California



SEQUOIA ANALYTICAL

680 Chesapeake Drive • Redwood City, CA 94063
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Kaprealian Engineering, Inc.
P.O. Box 996
Benicia, CA 94510
Attention: Mardo Kaprealian, P.E.

Client Project ID: Unocal #5781, Oakland, Pierson/McArthur
Matrix Descript: Soil
Analysis Method: EPA 5030/8015/8020
First Sample #: 002-3050

Sampled: Feb 22, 1990
Received: Feb 22, 1990
Analyzed: Feb 22, 1990
Reported: Feb 26, 1990

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)
002-3050	WO1 (18)	15	0.060	N.D.	0.10	2.0
002-3051	SWA	220	2.3	2.1	7.3	23
002-3052	SWB	2.0	N.D.	N.D.	N.D.	N.D.
002-3053	SWC	63	0.31	0.33	1.3	2.2
002-3054	SWD	40	0.32	N.D.	0.49	4.0

Detection Limits:

1.0

0.050

0.10

0.10

0.10

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.

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23050 KEI <1>



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 Attention: Mardo Kaprealian, P.E.

Client Project ID: Unocal #5781, Oakland, Pierson/McArthur
 Matrix Descript: Soil
 Analysis Method: EPA 3550/8015
 First Sample #: 002-3050

Sampled: Feb 22, 1990
 Received: Feb 22, 1990
 Extracted: Feb 22, 1990
 Analyzed: Feb 23, 1990
 Reported: Feb 26, 1990

TOTAL PETROLEUM FUEL HYDROCARBONS (EPA 8015)

Sample Number	Sample Description	High B.P. Hydrocarbons mg/kg (ppm)
002-3050	WO1 (16)	74
002-3051	SWA	1,400
002-3052	SWB	N.D.
002-3053	SWC	460
002-3054	SWD	360

Detection Limits:

1.0

High Boiling Point Hydrocarbons are quantitated against a diesel fuel standard
 Analytes reported as N.D. were not present above the stated limit of detection.

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 Attention: Mardo Kaprealian, P.E.

Client Project ID: Unocal #5781, Oakland, Penion/McArthur
 Matrix Descript: Soil
 Analysis Method: EPA 418.1 (I.R. with clean-up)
 First Sample #: 002-3050

Sampled: Feb 22, 1990
 Received: Feb 22, 1990
 Extracted: Feb 23, 1990
 Analyzed: Feb 23, 1990
 Reported: Feb 26, 1990

TOTAL RECOVERABLE PETROLEUM HYDROCARBONS

Sample Number	Sample Description	Petroleum Oil mg/kg (ppm)
002-3050	WC1 (16)	910
002-3051	SWA	17,000
002-3052	SWB	N.D.
002-3053	SWC	4,100
002-3054	SWD	6,400

Detection Limits:

50

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

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Attention: Mardo Kaprealian, P.E.

Client Project ID: Unocal #5781, Oakland, Pierson/McArthur
Sample Descript: Soil, WD1 (18)
Analysis Method: EPA 5030/8010
Lab Number: 002-3050

Sampled: Feb 22, 1990
Received: Feb 22, 1990
Analyzed: Feb 23, 1990
Reported: Feb 26, 1990

HALOGENATED VOLATILE ORGANICS (EPA 8010)

Analyte	Detection Limit µg/kg	Sample Results µg/kg
Bromodichloromethane	5.0	N.D.
Bromoform	5.0	N.D.
Bromomethane	5.0	N.D.
Carbon tetrachloride	5.0	N.D.
Chlorobenzene	5.0	N.D.
Chloroethane	25	N.D.
2-Chloroethylvinyl ether	5.0	N.D.
Chloroform	5.0	N.D.
Chloromethane	5.0	N.D.
Dibromochloromethane	5.0	N.D.
1,2-Dichlorobenzene	10	N.D.
1,3-Dichlorobenzene	10	N.D.
1,4-Dichlorobenzene	10	N.D.
1,1-Dichloroethane	5.0	N.D.
1,2-Dichloroethane	5.0	N.D.
1,1-Dichloroethene	5.0	N.D.
Total 1,2-Dichloroethene	5.0	N.D.
1,2-Dichloropropane	5.0	N.D.
cis-1,3-Dichloropropene	5.0	N.D.
trans-1,3-Dichloropropene	5.0	N.D.
Methylene chloride	10	N.D.
1,1,2-Tetrachloroethane	5.0	N.D.
Tetrachloroethene	5.0	N.D.
1,1,1-Trichloroethane	5.0	N.D.
1,1,2-Trichloroethane	5.0	N.D.
Trichloroethene	5.0	N.D.
Trichlorofluoromethane	5.0	N.D.
Vinyl chloride	10	N.D.

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

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Attention: Mardo Kaprealian, P.E.

Client Project ID: Unocal #5781, Oakland, Pierson/McArthur
Sample Descript: Soil, SWA
Analysis Method: EPA 5030/8010
Lab Number: 002-3051

Sampled: Feb 22, 1990
Received: Feb 22, 1990
Analyzed: Feb 23, 1990
Reported: Feb 26, 1990

HALOGENATED VOLATILE ORGANICS (EPA 8010)

Analyte	Detection Limit µg/kg	Sample Results µg/kg
Bromodichloromethane	50	N.D.
Bromoform	50	N.D.
Bromomethane	50	N.D.
Carbon tetrachloride	50	N.D.
Chlorobenzene	50	N.D.
Chloroethane	250	N.D.
2-Chloroethylvinyl ether	50	N.D.
Chloroform	50	N.D.
Chloromethane	50	N.D.
Dibromochloromethane	50	N.D.
1,2-Dichlorobenzene	100	N.D.
1,3-Dichlorobenzene	100	N.D.
1,4-Dichlorobenzene	100	N.D.
1,1-Dichloroethane	50	N.D.
1,2-Dichloroethane	50	N.D.
1,1-Dichloroethene	50	N.D.
Total 1,2-Dichloroethene	50	N.D.
1,2-Dichloropropane	50	N.D.
cis-1,3-Dichloropropene	50	N.D.
trans-1,3-Dichloropropene	50	N.D.
Methylene chloride	100	N.D.
1,1,1,2-Tetrachloroethane	50	N.D.
Tetrachloroethene	50	160
1,1,1-Trichloroethane	50	N.D.
1,1,2-Trichloroethane	50	N.D.
Toluene	50	N.D.
Trichlorofluoromethane	50	N.D.
Vinyl chloride	100	N.D.

Analytes reported as N.D. were not present above the stated limit of detection. Because matrix effects and/or other factors required additional sample dilution, detection limits for this sample have been raised.

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Attention: Mardo Kaprealian, P.E.

Client Project ID: Unocal #5781, Oakland, Pierson/McArthur
Sample Descript: Soil, SWB
Analysis Method: EPA 5030/8010
Lab Number: 002-3052

Sampled: Feb 22, 1990
Received: Feb 22, 1990
Analyzed: Feb 23, 1990
Reported: Feb 26, 1990

HALOGENATED VOLATILE ORGANICS (EPA 8010)

Analyte	Detection Limit µg/kg	Sample Results µg/kg
Bromodichloromethane	5.0	N.D.
Bromoform	5.0	N.D.
Bromomethane	5.0	N.D.
Carbon tetrachloride	5.0	N.D.
Chlorobenzene	5.0	N.D.
Chloroethane	25	N.D.
2-Chloroethylvinyl ether	5.0	N.D.
Chloroform	5.0	N.D.
Chloromethane	5.0	N.D.
Dibromochloromethane	5.0	N.D.
1,2-Dichlorobenzene	10	N.D.
1,3-Dichlorobenzene	10	N.D.
1,4-Dichlorobenzene	10	N.D.
1,1-Dichloroethane	5.0	N.D.
1,2-Dichloroethane	5.0	N.D.
1,1-Dichloroethene	5.0	N.D.
Total 1,2-Dichloroethene	5.0	N.D.
1,2-Dichloropropane	5.0	N.D.
cis-1,3-Dichloropropene	5.0	N.D.
trans-1,3-Dichloropropene	5.0	N.D.
Methylene chloride	10	N.D.
1,1,2,2-Tetrachloroethane	5.0	N.D.
Tetrachloroethene	5.0	N.D.
1,1,1-Trichloroethane	5.0	N.D.
1,1,2-Trichloroethane	5.0	N.D.
Trichloroethene	5.0	N.D.
Trichlorofluoromethane	5.0	N.D.
Vinyl chloride	10	N.D.

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

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Client Project ID: Unocal #5781, Oakland, Pierson/McArthur
 Sample Descript: Soil, SWC
 Analysis Method: EPA 5030/8010
 Lab Number: 002-3053

Sampled: Feb 22, 1990
 Received: Feb 22, 1990
 Analyzed: Feb 23, 1990
 Reported: Feb 26, 1990

HALOGENATED VOLATILE ORGANICS (EPA 8010)

Analyte	Detection Limit µg/kg	Sample Results µg/kg
Bromodichloromethane	50	N.D.
Bromoform	50	N.D.
Bromomethane	50	N.D.
Carbon tetrachloride	50	N.D.
Chlorobenzene	50	N.D.
Chloroethane	250	N.D.
2-Chloroethylvinyl ether	50	N.D.
Chloroform	50	N.D.
Chloromethane	50	N.D.
Dibromochloromethane	50	N.D.
1,2-Dichlorobenzene	100	N.D.
1,3-Dichlorobenzene	100	N.D.
1,4-Dichlorobenzene	100	N.D.
1,1-Dichloroethane	50	N.D.
1,2-Dichloroethane	50	N.D.
1,1-Dichloroethene	50	N.D.
Total 1,2-Dichloroethene	50	N.D.
1,2-Dichloropropane	50	N.D.
cis-1,3-Dichloropropene	50	N.D.
trans-1,3-Dichloropropene	50	N.D.
Methylene chloride	100	N.D.
1,1,2,2-Tetrachloroethane	50	N.D.
Tetrachloroethene	50	56
1,1,1-Trichloroethane	50	N.D.
1,1,2-Trichloroethane	50	N.D.
Trichloroethene	50	N.D.
Trichlorofluoromethane	50	N.D.
Vinyl chloride	100	N.D.

Analyses reported as N.D. were not present above the stated limit of detection. Because matrix effects and/or other factors required additional sample dilution, detection limits for this sample have been raised.

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Attention: Mardo Kaprealian, P.E.

Client Project ID: Unocal #5781, Oakland, Pierson/McArthur
Sample Descript: Soil, SWD
Analysis Method: EPA 5030/8010
Lab Number: 002-3054

Sampled: Feb 22, 1990
Received: Feb 22, 1990
Analyzed: Feb 23, 1990
Reported: Feb 26, 1990

HALOGENATED VOLATILE ORGANICS (EPA 8010)

Analyte	Detection Limit $\mu\text{g}/\text{kg}$	Sample Results $\mu\text{g}/\text{kg}$
Bromodichloromethane	5.0	N.D.
Bromoform	5.0	N.D.
Bromomethane	5.0	N.D.
Carbon tetrachloride	5.0	N.D.
Chlorobenzene	5.0	N.D.
Chloroethane	25	N.D.
2-Chloroethylvinyl ether	5.0	N.D.
Chloroform	5.0	N.D.
Chloromethane	5.0	N.D.
Dibromochloromethane	5.0	N.D.
1,2-Dichlorobenzene	10	N.D.
1,3-Dichlorobenzene	10	N.D.
1,4-Dichlorobenzene	10	N.D.
1,1-Dichloroethane	5.0	N.D.
1,2-Dichloroethane	5.0	N.D.
1,1-Dichloroethene	5.0	N.D.
Total 1,2-Dichloroethene	5.0	N.D.
1,2-Dichloropropene	5.0	N.D.
cis-1,3-Dichloropropene	5.0	N.D.
trans-1,3-Dichloropropene	5.0	N.D.
Methylene chloride	10	N.D.
1,1,2,2-Tetrachloroethane	5.0	N.D.
Tetrachloroethene	5.0	40
1,1,1-Trichloroethane	5.0	5.8
1,1,2-Trichloroethane	5.0	N.D.
Trichloroethene	5.0	N.D.
Trichlorofluoromethane	5.0	N.D.
Vinyl chloride	10	N.D.

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

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Project Manager



KAPREALIAN ENGINEERING, INC.
CHAIN OF CUSTODY

SAMPLER		SITE NAME & ADDRESS					ANALYSES REQUESTED				TURN AROUND TIME:	
E.M. Bradash		Unocal SS# 5781 3535 Pison St. (Kaiser)					TPH-G	TPH-D	TOG	BCLO		24HR
WITNESSING AGENCY		Oakland										REMARKS
SAMPLE ID NO.	DATE	TIME	SOIL	WATER	GRAB	NO. OF CONT.	SAMPLING LOCATION	TPH-G	TPH-D	TOG	BCLO	REMARKS
W01(16)	2-22-90		✓	✓	✓	1	W.O. Pit - Bottom	✓	✓	✓	✓	0023050
SWA	2-23-90		✓	✓	✓	1	W.O. Pit - Sidewalk	✓	✓	✓	✓	0023051
SWB	"		✓	✓	✓	1	" " "	✓	✓	✓	✓	0023052
SWC	"		✓	✓	✓	1	" " "	✓	✓	✓	✓	0023053
SWD	"		✓	✓	✓	1	" " "	✓	✓	✓	✓	0023054
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? 2. Will samples remain refrigerated until analyzed? 3. Did any samples received for analysis have head space? 4. Were samples in appropriate containers and properly packaged?						
E.M. Bradash		5:15/2/23/90		[Signature]								
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		Date		Date		
		2/22/90		[Signature]		[Signature]		[Signature]		2/22/90		