Kennedy/Jenks Consultants

Engineers and Scientists
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714-261-1577
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14 August, 1996

Mr. Mario Stavale
McDonnell Douglas Realty Company
4060 Lakewood Blvd., Fifth Floor
Long Beach, CA 90808

Subject: Supplemental Subsurface Investigation
Douglas Aircraft C-6 Facility
Torrance, California
K/J 954019.01

Dear Mr. Stavale:

Kennedy/Jenks Consultants is pleased to submit this report of the findings of additional subsurface investigation at the Douglas Aircraft Company C-6 Facility. The additional investigation is associated with a former hazardous waste accumulation area east of the northeast corner of Building 29.

BACKGROUND

McDonnell Douglas Realty Company retained Kennedy/Jenks Consultants to perform a Phase II subsurface investigation of the northern section of the Douglas Aircraft Company (DAC) C-6 Facility in Torrance, California (Figure 1). The investigation was confined to the area identified by McDonnell Douglas Realty Company as Parcel A. Specific areas of the investigation were identified in an earlier preliminary site assessment as potential area of environmental interest. The findings and conclusions of Kenny/Jenks' subsurface investigation are detailed in the report entitled *Phase II Subsurface Investigation, Douglas Aircraft Company, C-6 Facility, Parcel A, Torrance, California*, submitted to DAC in May of 1996.

Based on the findings and conclusions of the Phase II Subsurface Investigation, Kennedy/Jenks submitted recommendations for further attention at several areas of environmental interest. Among them was a recommendation for additional soil sampling and analysis in the area around sample location 15, which was installed close to a drain in an area formerly used as a hazardous waste accumulation site. Samples collected from location 15 contained VOCs including 1,1-dichloroethane (1,1-DCA), 1,1-dichloroethene (1,1-DCE), tetrachloroethene (PCE), and trichloroethene (TCE).

SCOPE OF WORK

Kennedy/Jenks mobilized to the site on 15 July 1996. Two soil borings were drilled to depths of 40 feet below ground surface (bgs). The borings are located at the northwest and southeast corners of the hazardous waste accumulation area, and are designated 15A and 15B, respectively. Prior to drilling, a utility clearance was performed on the boring locations using a geophysical survey. Soil samples were collected at 5-foot intervals in pre-cleaned brass sample sleeves using a truck-mounted, hydraulically-driven sample barrel. Samples were handled in accordance with Kennedy/Jenks Consultants' standard operating guidelines.

Each boring was logged onsite by Kennedy/Jenks personnel following the Unified Soil Classification System. Drill cuttings and soil samples were visually evaluated for the presence of chemical staining and were monitored for volatile organic compounds (VOCs) using a portable photoionization detector (PID). Detailed logs of both borings are presented in Appendix A.

All soil samples were transported to a State-certified laboratory for analysis under proper chain-of-custody procedures. From both borings, the soil samples collected at depths of 10, 25, 30, 35, and 40 feet bgs were analyzed for VOCs using EPA Method 8010/8020. The remaining samples were placed on hold pending the results.

FINDINGS OF THE INVESTIGATION

The subsurface conditions in both borings consist generally of fine-grained soils. Mottled dark olive brown and very dark gray brown, firm silty clay underlies the surface to a depth of about 8 to 10 feet bgs. Silty clay is underlain by olive brown, firm, very fine- to fine-grained sandy silt. Sandy silt extends to a depth of about 35 feet bgs, and is interrupted by a silty clay lens at 25 feet bgs in boring 15A. At 35 feet bgs the soil grades to olive brown, very fine- to fine-grained silty sand. Groundwater was not encountered in either boring, but the soil was very moist at a depth of 25 feet bgs in boring 15B.

The analytical results of the soil samples are summarized in Table 1. The complete laboratory report is presented in Appendix B. Figure 2 shows the detections made in the soil samples compared to the results of soil samples from location 15 of the previous investigation. VOCs were not detected in any of the soil samples from boring 15A. Four analytes were detected in samples from boring 15B, including 1,1-DCE, PCE, TCE, and trichlorofluoromethane (TCFM). The concentrations of TCE trended from 10 μg/kg at 10 feet bgs, reached a maximum of 140 μg/kg at 25 feet bgs, decreased to 8 μg/kg at 35 feet bgs, and <5 μg/kg at 40 feet bgs.

CONCLUSIONS

Based upon the results of the Phase II Subsurface Investigation and this additional investigation, Kennedy/Jenks concludes the following:

- The lack of detections in soil samples from boring 15A suggests that the soil contamination does not extend laterally beyond the concrete pad to the northwest.

- The VOCs detected in boring 15B reach maximum concentrations at a depth of 25 feet bgs, and do not extend vertically more than 35 feet bgs.

- The maximum concentrations in boring 15B correspond in depth with the maximum concentrations found in boring 15.

- In general the concentrations of contaminants are lower at the corresponding depths in boring 15B than in boring 15. As an exception, the 1,1-DCE level is higher in 15B at 25 feet bgs than in boring 15. These data suggest that boring 15 is closer to the source of the soil contamination than boring 15B, and that the contamination dissipates over a short distance. A drain located close to boring 15 may represent the source for these compounds in the soil. The soil should be closely monitored when excavating in this vicinity.

Kennedy/Jenks appreciates the opportunity to perform this additional investigation. Should you require additional information, or have any questions, please contact the undersigned.

Very truly yours,

KENNEDY/JENKS CONSULTANTS

for Charles (Rus) Purcell, R.G.
Project Manager

Jay Knight
Geologist

Attachments
95401901.024

TABLE 1
SUMMARY OF SOIL SAMPLE ANALYTICAL RESULTS- DETECTED ORGANIC COMPOUNDS[a]
FOLLOW-UP SUBSURFACE INVESTIGATION

Douglas Aircraft Company C-6 Facility
Torrance, California
July 1996
K/J 954019.01

Boring Location	Sample I.D.	Sample Depth (ft. bgs[b])	1,1-DCE (µg/kg)	PCE (µg/kg)	TCE (µg/kg)	TCFM (µg/kg)
Method Detection Limit			5	5	5	5
Bldg. 29	15A-10	10				
	15A-25	25				
	15A-30	30				
	15A-35	35				
	15A-40	40				
Bldg. 29	15B-10	10			10	
	15B-25	25	30	56	140	6
	15B-30	30		6	78	
	15B-35	35			8	
	15B-40	40				

Table Key:

Result did not exceed Method Detection Limit.

µg/kg - micrograms per kilogram

DCE - Dichloroethene

PCE - Tetrachloroethene

TCE - Trichloroethene

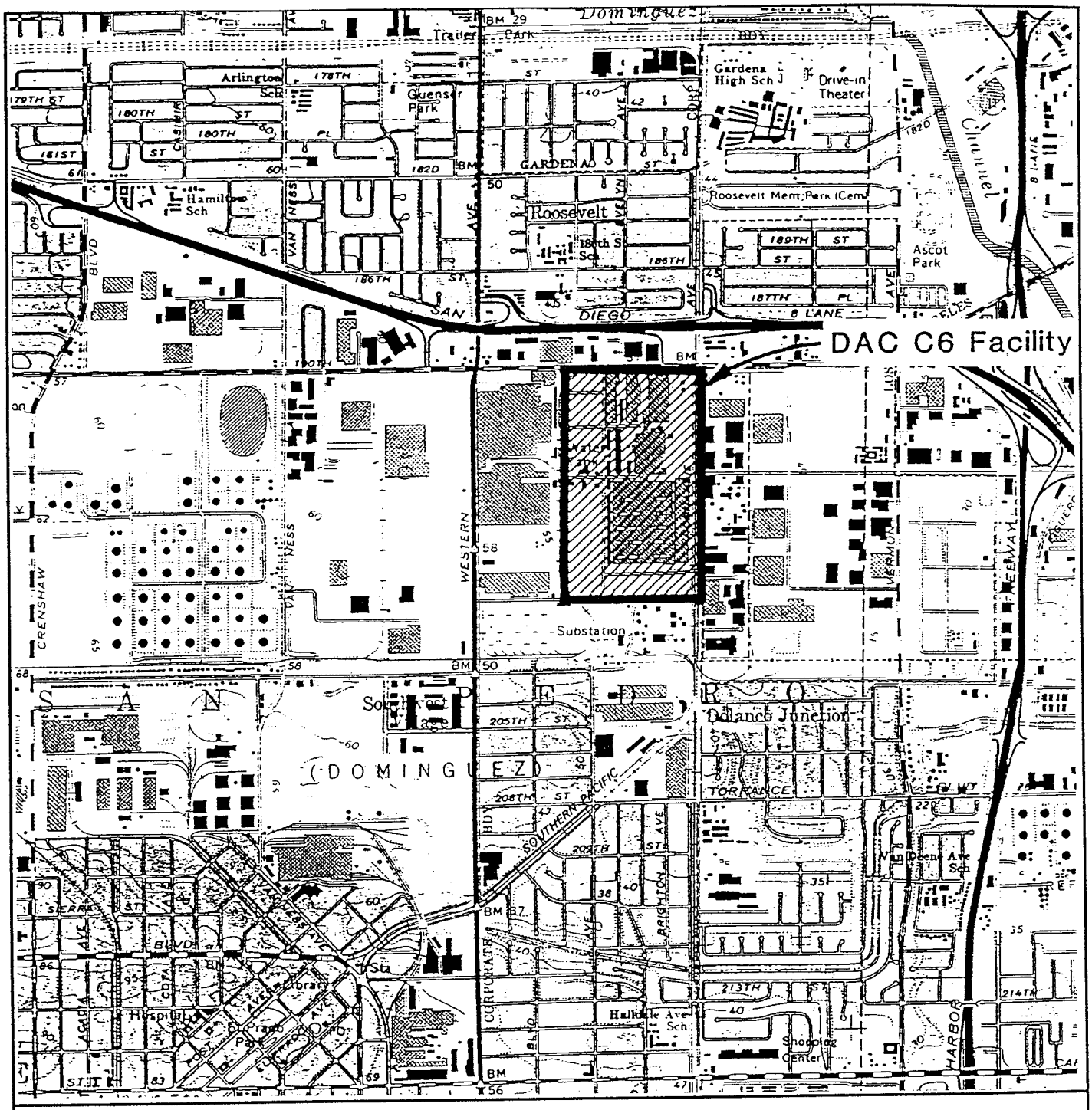
TCFM - Trichlorofluoromethane

Table Notes:

a) Table presents data for compounds detected one or more times and includes all samples analyzed. Samples were collected on 15 July 1996.

b) Below Ground Surface

c) Volatile Organic compounds analyzed per EPA Method 8010/8020.



Base Map: U.S.G.S. 7.5 Minute Topographic Map, Torrance, California Quadrangle, 1981.

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C-6 Douglas Aircraft Company Complex
19503 S. Normandie Ave.
Torrance, California

N

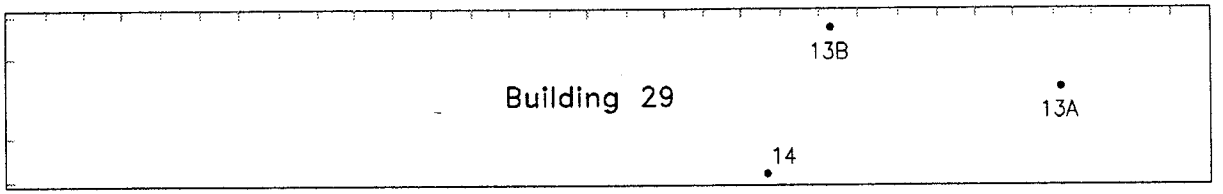
0 2000 4000

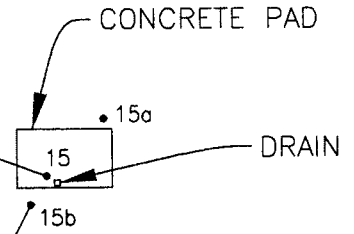
Approximate Scale in Feet

Facility Location Map

August 1996
K/J 954019.01

Figure 1





Sample Site 15

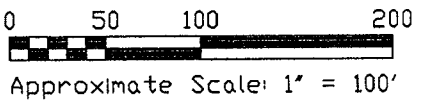
Depth (ft)	TRPH (mg/Kg)	Volatile Organic Compounds (ug/Kg)					
		1,1-DCA	1,1-DCE	PCE	1,1,1-TCA	1,1,2-TCA	TCE
5	< 10	21.0	< 5	69.9	< 5	5.4	21.2
10	< 10	23.7	< 5	56.8	7.4	24.5	17.8
15	NA	< 5	< 5	< 5	< 5	< 5	< 5
20	NA	18.4	< 5	101.8	< 5	14.8	23.7
25	NA	60.0	18.6	202.0	13.5	11.5	200.0

Sample Site 15b

Depth (ft)	Volatile Organic Compounds (ug/Kg)			
	1,1-DCE	PCE	TCE	TCFM
10	< 5	< 5	10	< 5
25	30	56	140	< 5
30	< 5	6	78	6
35	< 5	< 5	8	< 5
40	< 5	< 5	< 5	< 5

Legend:

•	Phase II approximate boring locations.
TRPH	Total Recoverable Petroleum Hydrocarbons
1,1-DCA	1,1- Dichloroethane
1,1-DCE	1,1- Dichloroethene
1,1,1-TCA	1,1,1- Trichloroethane
1,1,2-TCA	1,1,2- Trichloroethane
PCE	Perchloroethene
TCE	Trichloroethene
TCFM	Trichloroflouromethane
<10	Result fell below the given method detection limit
NA	Not Analyzed
mg/Kg	milligrams per Kilogram
ug/Kg	micrograms per Kilogram



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C-6 Douglas Aircraft Company Complex
19503 S. Normandie Ave.
Torrance, California

Boring Locations
and Chemical Distribution Map

August 1996
K/J 954019.01

Figure 2

Appendix A

Boring Logs

Boring Log

Kennedy/Jenks Consultants

BORING LOCATION: Hazardous Waste Accumulation Area		Boring Name: 15A	
DRILLING COMPANY: Maness	DRILLER: Pete	Project Name: Douglas Aircraft	
DRILLING METHOD (S): Geoprobe	DRILL BIT (S) SIZE: 2 inches	Project Number: 954019.01	
DEPTH TO WATER: not encountered		ELEVATION:	TOTAL DEPTH: 41 feet
LOGGED BY: J. Knight		DATE STARTED: 7/15/96	DATE COMPLETED: 7/15/96

SAMPLES: Driven	Recovered	Collected	Head Space Reading (mg/L)	Depth (feet)	Lithology	USCS Log	Munsell Color	SOIL DESCRIPTION AND DRILLING REMARKS
								Asphalt, 3 inches PID background = 6.3 ppm
			6.4	5		CL	2.5Y/4/3 2.5Y/3/2	Silty CLAY: mottled olive brown and very dark grayish brown, slightly moist, firm
			6.5	10		ML	2.5Y/4/3	Sandy SILT: olive brown, very fine to fine, moist, firm
			6.5	15		ML		
			6.6	20		ML		
			7.2	25		CL	2.5Y/4/2	Silty CLAY: dark grayish brown, moist, stiff
			6.6	30		ML	2.5Y/4/3	Sandy SILT: olive brown, very fine to fine, with clay, moist, firm
			6.8	35		SM	2.5Y/4/3	Silty SAND: olive brown, fine, slightly moist, loose
			7.0	40		SM		fine to medium, shell fragments
								Boring Completed at 41 feet.

Boring Log

Kennedy/Jenks Consultants

BORING LOCATION: Hazardous Waste Accumulation Area	Boring Name: 15B
DRILLING COMPANY: Maness / DRILLER: Pete	Project Name: Douglas Aircraft
DRILLING METHOD (S): Geoprobe / DRILL BIT (S) SIZE: 2 inches	Project Number: 954019.01
DEPTH TO WATER: not encountered	ELEVATION: / TOTAL DEPTH: 41 feet
LOGGED BY: J. Knight	DATE STARTED: 7/15/96 / DATE COMPLETED: 7/15/96

SAMPLES: Driven	Recovered	Collected	Head Space Reading (mg/L)	Depth (feet)	Lithology	USCS Log	Munsell Color	SOIL DESCRIPTION AND DRILLING REMARKS
								Concrete 10 inches PID background = 5.8 ppm
			5.8	5		CL	2.5Y/3/3 2.5Y/3/2	Silty CLAY: mottled dark olive brown and very dark grayish brown, slightly moist, medium plasticity firm
			6.6	10		CL	2.5Y/3/3	dark olive brown, some very fine sand, moist, firm
			6.6	15		ML	2.5Y/4/3	Sandy SILT: olive brown, very fine to fine, slightly moist, firm
			6.5	20		ML		increasing sand content
			7.0	25		ML		very moist, stiff
			7.0	30		ML	2.5Y/3/3	dark olive brown, moist, stiff
			7.1	35		SM	2.5Y/4/3	Silty SAND: olive brown, very fine to fine, moist, medium dense
			6.8	40		SM	2.5Y/5/4	light olive brown, fine, decreasing silt content
								Boring Completed at 41 feet.

Appendix B

Laboratory Report

Since 1878
Curtis & Tompkins, Ltd. General Analytical Laboratories
2495 Da Vinci, Irvine CA 92714 Phone 714-252-9700 Fax 714-252-9701

LABORATORY REPORT

Laboratory Number: **214610**

Date Received: **07/15/96**
Date Reported: **07/19/96**

Issued To: **KENNEDY/JENKS CONSULTANTS**
2151 MICHELSON
IRVINE, CA
ATTN: JAY KNIGHT

Project I.D.: **954019.01**

Location: **DOUGLAS AIRCRAFT**

Report On: **SIX SOLID SAMPLES ANALYZED AS SPECIFIED ON ATTACHED CHAIN OF CUSTODY**

This report certifies that the samples were received in good condition (i.e. intact, chilled, and/or preserved appropriately) and that strict chain of custody procedures were adhered to at all times. It further certifies that the methods of analysis used are in fact those listed within this report and that Curtis & Tompkins, Ltd. has current certification for all work performed in the laboratory. Exceptions to this statement are specifically noted in the analytical report or on the attached chain of custody.

Reviewed By: _____ _____

HALOGENATED VOLATILE ORGANICS

Client I.D.: 15A-10'
Laboratory I.D.: 214610-002
Client: KENNEDY/JENKS CONSULTANTS

Matrix: Solid
Method: EPA 8010
Extraction: EPA 5030 Purge & Trap

Compound	Result (ug/Kg)	Detection Limit	Analytical Notes	Method Blank	Detection Limit
Bromodichloromethane	ND	5		ND	5
Bromoform	ND	5		ND	5
Bromomethane	ND	10		ND	10
Carbon tetrachloride	ND	5		ND	5
Chlorobenzene	ND	5		ND	5
Chloroethane	ND	10		ND	10
Chloroform	ND	5		ND	5
Chloromethane	ND	10		ND	10
Dibromochloromethane	ND	5		ND	5
1,2-Dichlorobenzene	ND	5		ND	5
1,3-Dichlorobenzene	ND	5		ND	5
1,4-Dichlorobenzene	ND	5		ND	5
1,1-Dichloroethane	ND	5		ND	5
1,2-Dichloroethane	ND	5		ND	5
1,1-Dichloroethene	ND	5		ND	5
cis-1,2-Dichloroethene	ND	5		ND	5
trans-1,2-Dichloroethene	ND	5		ND	5
1,2-Dichloropropane	ND	5		ND	5
cis-1,3-Dichloropropene	ND	5		ND	5
trans-1,3-Dichloropropene	ND	5		ND	5
Freon 113	ND	5		ND	5
Methylene chloride	ND	5		ND	5
1,1,2,2-Tetrachloroethane	ND	5		ND	5
Tetrachloroethene	ND	5		ND	5
1,1,1-Trichloroethane	ND	5		ND	5
1,1,2-Trichloroethane	ND	5		ND	5
Trichloroethene	ND	5		ND	5
Trichlorofluoromethane	ND	5		ND	5
Vinyl chloride	ND	10		ND	10

Analytical Notes

	Sample	Method Blank
Date Sampled:	07/15/96	N/A
Date Analyzed:	07/16/96	07/16/96

Quality Control Data Summary

Surrogate Recovery Data

Compound	Spike Amount (ug/Kg)	Percent Recovery	QC Limits
p-Bromofluorobenzene	50	92	64-138

Laboratory Control Sample, Matrix Spike/Matrix Spike Duplicate Data
Batch I.D.: 12719g6f Sample I.D.: 214610-002

Compounds	Spike Amt. (ug/Kg)	LCS %Rec.	QC Limits	Spike %Rec.	Spk Dup %Rec.	QC Limits	RPD	QC Limits
1,1-Dichloroethene	10	86	80-120	82	78	59-172	5	22
Trichloroethene	10	103	80-120	105	101	62-137	4	24
Chlorobenzene	10	99	80-120	95	94	60-133	1	21

HALOGENATED VOLATILE ORGANICS

Client I.D.: 15A-25'
Laboratory I.D.: 214610-005
Client: KENNEDY/JENKS CONSULTANTS

Matrix: Solid
Method: EPA 8010
Extraction: EPA 5030 Purge & Trap

Compound	Result (ug/Kg)	Detection Limit	Analytical Notes	Method Blank	Detection Limit
Bromodichloromethane	ND	5		ND	5
Bromoform	ND	5		ND	5
Bromomethane	ND	10		ND	10
Carbon tetrachloride	ND	5		ND	5
Chlorobenzene	ND	5		ND	5
Chloroethane	ND	10		ND	10
Chloroform	ND	5		ND	5
Chloromethane	ND	10		ND	10
Dibromochloromethane	ND	5		ND	5
1,2-Dichlorobenzene	ND	5		ND	5
1,3-Dichlorobenzene	ND	5		ND	5
1,4-Dichlorobenzene	ND	5		ND	5
1,1-Dichloroethane	ND	5		ND	5
1,2-Dichloroethane	ND	5		ND	5
1,1-Dichloroethene	ND	5		ND	5
cis-1,2-Dichloroethene	ND	5		ND	5
trans-1,2-Dichloroethene	ND	5		ND	5
1,2-Dichloropropane	ND	5		ND	5
cis-1,3-Dichloropropene	ND	5		ND	5
trans-1,3-Dichloropropene	ND	5		ND	5
Freon 113	ND	5		ND	5
Methylene chloride	ND	5		ND	5
1,1,2,2-Tetrachloroethane	ND	5		ND	5
Tetrachloroethene	ND	5		ND	5
1,1,1-Trichloroethane	ND	5		ND	5
1,1,2-Trichloroethane	ND	5		ND	5
Trichloroethene	ND	5		ND	5
Trichlorofluoromethane	ND	5		ND	5
Vinyl chloride	ND	10		ND	10

Analytical Notes

	Sample	Method Blank
Date Sampled:	07/15/96	N/A
Date Analyzed:	07/17/96	07/16/96

Quality Control Data Summary

Surrogate Recovery Data

Compound	Spike Amount (ug/Kg)	Percent Recovery	QC Limits
p-Bromofluorobenzene	50	98	64-138

Laboratory Control Sample, Matrix Spike/Matrix Spike Duplicate Data

Batch I.D.: 12719g6f Sample I.D.: 214610-002

Compounds	Spike Amt. (ug/Kg)	LCS %Rec.	QC Limits	Spike %Rec.	Spk Dup %Rec.	QC Limits	RPD	QC Limits
1,1-Dichloroethene	10	86	80-120	82	78	59-172	5	22
Trichloroethene	10	103	80-120	105	101	62-137	4	24
Chlorobenzene	10	99	80-120	95	94	60-133	1	21

HALOGENATED VOLATILE ORGANICS

Client I.D.: 15A-30'
Laboratory I.D.: 214610-006
Client: KENNEDY/JENKS CONSULTANTS

Matrix: Solid
Method: EPA 8010
Extraction: EPA 5030 Purge & Trap

Compound	Result (ug/Kg)	Detection Limit	Analytical Notes	Method Blank	Detection Limit
Bromodichloromethane	ND	5		ND	5
Bromoform	ND	5		ND	5
Bromomethane	ND	10		ND	10
Carbon tetrachloride	ND	5		ND	5
Chlorobenzene	ND	5		ND	5
Chloroethane	ND	10		ND	10
Chloroform	ND	5		ND	5
Chloromethane	ND	10		ND	10
Dibromochloromethane	ND	5		ND	5
1,2-Dichlorobenzene	ND	5		ND	5
1,3-Dichlorobenzene	ND	5		ND	5
1,4-Dichlorobenzene	ND	5		ND	5
1,1-Dichloroethane	ND	5		ND	5
1,2-Dichloroethane	ND	5		ND	5
1,1-Dichloroethene	ND	5		ND	5
cis-1,2-Dichloroethene	ND	5		ND	5
trans-1,2-Dichloroethene	ND	5		ND	5
1,2-Dichloropropane	ND	5		ND	5
cis-1,3-Dichloropropene	ND	5		ND	5
trans-1,3-Dichloropropene	ND	5		ND	5
Freon 113	ND	5		ND	5
Methylene chloride	ND	5		ND	5
1,1,2,2-Tetrachloroethane	ND	5		ND	5
Tetrachloroethene	ND	5		ND	5
1,1,1-Trichloroethane	ND	5		ND	5
1,1,2-Trichloroethane	ND	5		ND	5
Trichloroethene	ND	5		ND	5
Trichlorofluoromethane	ND	5		ND	5
Vinyl chloride	ND	10		ND	10

Analytical Notes

	Sample	Method Blank
Date Sampled:	07/15/96	N/A
Date Analyzed:	07/17/96	07/16/96

Quality Control Data Summary

Surrogate Recovery Data

Compound	Spike Amount (ug/Kg)	Percent Recovery	QC Limits
p-Bromofluorobenzene	50	91	64-138

Laboratory Control Sample, Matrix Spike/Matrix Spike Duplicate Data

Batch I.D.: 12719g6f Sample I.D.: 214610-002

Compounds	Spike Amt. (ug/Kg)	LCS %Rec.	QC Limits	Spike %Rec.	Spk Dup %Rec.	QC Limits	RPD	QC Limits
1,1-Dichloroethene	10	86	80-120	82	78	59-172	5	22
Trichloroethene	10	103	80-120	105	101	62-137	4	24
Chlorobenzene	10	99	80-120	95	94	60-133	1	21

HALOGENATED VOLATILE ORGANICS

Client I.D.: 15A-35'
Laboratory I.D.: 214610-007
Client: KENNEDY/JENKS CONSULTANTS

Matrix: Solid
Method: EPA 8010
Extraction: EPA 5030 Purge & Trap

Compound	Result (ug/Kg)	Detection Limit	Analytical Notes	Method Blank	Detection Limit
Bromodichloromethane	ND	5		ND	5
Bromoform	ND	5		ND	5
Bromomethane	ND	10		ND	10
Carbon tetrachloride	ND	5		ND	5
Chlorobenzene	ND	5		ND	5
Chloroethane	ND	10		ND	10
Chloroform	ND	5		ND	5
Chloromethane	ND	10		ND	10
Dibromochloromethane	ND	5		ND	5
1,2-Dichlorobenzene	ND	5		ND	5
1,3-Dichlorobenzene	ND	5		ND	5
1,4-Dichlorobenzene	ND	5		ND	5
1,1-Dichloroethane	ND	5		ND	5
1,2-Dichloroethane	ND	5		ND	5
1,1-Dichloroethene	ND	5		ND	5
cis-1,2-Dichloroethene	ND	5		ND	5
trans-1,2-Dichloroethene	ND	5		ND	5
1,2-Dichloropropane	ND	5		ND	5
cis-1,3-Dichloropropene	ND	5		ND	5
trans-1,3-Dichloropropene	ND	5		ND	5
Freon 113	ND	5		ND	5
Methylene chloride	ND	5		ND	5
1,1,2,2-Tetrachloroethane	ND	5		ND	5
Tetrachloroethene	ND	5		ND	5
1,1,1-Trichloroethane	ND	5		ND	5
1,1,2-Trichloroethane	ND	5		ND	5
Trichloroethene	ND	5		ND	5
Trichlorofluoromethane	ND	5		ND	5
Vinyl chloride	ND	10		ND	10

Analytical Notes

	Sample	Method Blank
Date Sampled:	07/15/96	N/A
Date Analyzed:	07/17/96	07/16/96

Quality Control Data Summary

Surrogate Recovery Data

Compound	Spike Amount (ug/Kg)	Percent Recovery	QC Limits
p-Bromofluorobenzene	50	80	64-138

Laboratory Control Sample, Matrix Spike/Matrix Spike Duplicate Data

Batch I.D.: 12719g6f Sample I.D.: 214610-002

Compounds	Spike Amt. (ug/Kg)	LCS %Rec.	QC Limits	Spike %Rec.	Spk Dup %Rec.	QC Limits	RPD	QC Limits
1,1-Dichloroethene	10	86	80-120	82	78	59-172	5	22
Trichloroethene	10	103	80-120	105	101	62-137	4	24
Chlorobenzene	10	99	80-120	95	94	60-133	1	21

HALOGENATED VOLATILE ORGANICS

Client I.D.: 15A-40'
Laboratory I.D.: 214610-008
Client: KENNEDY/JENKS CONSULTANTS

Matrix: Solid
Method: EPA 8010
Extraction: EPA 5030 Purge & Trap

Compound	Result (ug/Kg)	Detection Limit	Analytical Notes	Method Blank	Detection Limit
Bromodichloromethane	ND	5		ND	5
Bromoform	ND	5		ND	5
Bromomethane	ND	10		ND	10
Carbon tetrachloride	ND	5		ND	5
Chlorobenzene	ND	5		ND	5
Chloroethane	ND	10		ND	10
Chloroform	ND	5		ND	5
Chloromethane	ND	10		ND	10
Dibromochloromethane	ND	5		ND	5
1,2-Dichlorobenzene	ND	5		ND	5
1,3-Dichlorobenzene	ND	5		ND	5
1,4-Dichlorobenzene	ND	5		ND	5
1,1-Dichloroethane	ND	5		ND	5
1,2-Dichloroethane	ND	5		ND	5
1,1-Dichloroethene	ND	5		ND	5
cis-1,2-Dichloroethene	ND	5		ND	5
trans-1,2-Dichloroethene	ND	5		ND	5
1,2-Dichloropropane	ND	5		ND	5
cis-1,3-Dichloropropene	ND	5		ND	5
trans-1,3-Dichloropropene	ND	5		ND	5
Freon 113	ND	5		ND	5
Methylene chloride	ND	5		ND	5
1,1,2,2-Tetrachloroethane	ND	5		ND	5
Tetrachloroethene	ND	5		ND	5
1,1,1-Trichloroethane	ND	5		ND	5
1,1,2-Trichloroethane	ND	5		ND	5
Trichloroethene	ND	5		ND	5
Trichlorofluoromethane	ND	5		ND	5
Vinyl chloride	ND	10		ND	10

Analytical Notes

	Sample	Method Blank
Date Sampled:	07/15/96	N/A
Date Analyzed:	07/17/96	07/16/96

Quality Control Data Summary

Surrogate Recovery Data

Compound	Spike Amount (ug/Kg)	Percent Recovery	QC Limits
p-Bromofluorobenzene	50	86	64-138

Laboratory Control Sample, Matrix Spike/Matrix Spike Duplicate Data
Batch I.D.: 12719g6f Sample I.D.: 214610-002

Compounds	Spike Amt. (ug/Kg)	LCS %Rec.	QC Limits	Spike %Rec.	Spk Dup %Rec.	QC Limits	RPD	QC Limits
1,1-Dichloroethene	10	86	80-120	82	78	59-172	5	22
Trichloroethene	10	103	80-120	105	101	62-137	4	24
Chlorobenzene	10	99	80-120	95	94	60-133	1	21

HALOGENATED VOLATILE ORGANICS

Client I.D.: DUP1-071596
Laboratory I.D.: 214610-009
Client: KENNEDY/JENKS CONSULTANTS

Matrix: Solid
Method: EPA 8010
Extraction: EPA 5030 Purge & Trap

Compound	Result (ug/Kg)	Detection Limit	Analytical Notes	Method Blank	Detection Limit
Bromodichloromethane	ND	5		ND	5
Bromoform	ND	5		ND	5
Bromomethane	ND	10		ND	10
Carbon tetrachloride	ND	5		ND	5
Chlorobenzene	ND	5		ND	5
Chloroethane	ND	10		ND	10
Chloroform	ND	5		ND	5
Chloromethane	ND	10		ND	10
Dibromochloromethane	ND	5		ND	5
1,2-Dichlorobenzene	ND	5		ND	5
1,3-Dichlorobenzene	ND	5		ND	5
1,4-Dichlorobenzene	ND	5		ND	5
1,1-Dichloroethane	ND	5		ND	5
1,2-Dichloroethane	ND	5		ND	5
1,1-Dichloroethene	ND	5		ND	5
cis-1,2-Dichloroethene	ND	5		ND	5
trans-1,2-Dichloroethene	ND	5		ND	5
1,2-Dichloropropane	ND	5		ND	5
cis-1,3-Dichloropropene	ND	5		ND	5
trans-1,3-Dichloropropene	ND	5		ND	5
Freon 113	ND	5		ND	5
Methylene chloride	ND	5		ND	5
1,1,2,2-Tetrachloroethane	ND	5		ND	5
Tetrachloroethene	ND	5		ND	5
1,1,1-Trichloroethane	ND	5		ND	5
1,1,2-Trichloroethane	ND	5		ND	5
Trichloroethene	ND	5		ND	5
Trichlorofluoromethane	ND	5		ND	5
Vinyl chloride	ND	10		ND	10

Analytical Notes

	Sample	Method Blank
Date Sampled:	07/15/96	N/A
Date Analyzed:	07/17/96	07/16/96

Quality Control Data Summary

Surrogate Recovery Data

Compound	Spike Amount (ug/Kg)	Percent Recovery	QC Limits
p-Bromofluorobenzene	50	82	64-138

Laboratory Control Sample, Matrix Spike/Matrix Spike Duplicate Data

Batch I.D.: 12719g6f Sample I.D.: 214610-002

Compounds	Spike Amt. (ug/Kg)	LCS %Rec.	QC Limits	Spike %Rec.	Spk Dup %Rec.	QC Limits	RPD	QC Limits
1,1-Dichloroethene	10	86	80-120	82	78	59-172	5	22
Trichloroethene	10	103	80-120	105	101	62-137	4	24
Chlorobenzene	10	99	80-120	95	94	60-133	1	21

AROMATIC VOLATILE ORGANICS

Client I.D.: 15A-10'
Laboratory I.D.: 214610-002
Client: KENNEDY/JENKS CONSULTANTS

Matrix: Solid
Method: EPA 8020
Extraction: EPA 5030 Purge & Trap

Compound	Result (ug/Kg)	Detection Limit	Analytical Notes	Method Blank	Detection Limit
Benzene	ND	5		ND	5
Chlorobenzene	ND	5		ND	5
1,2-Dichlorobenzene	ND	5		ND	5
1,3-Dichlorobenzene	ND	5		ND	5
1,4-Dichlorobenzene	ND	5		ND	5
Ethylbenzene	ND	5		ND	5
Toluene	ND	5		ND	5
m,p-Xylenes	ND	5		ND	5
o-Xylene	ND	5		ND	5

Analytical Notes

	Sample	Method Blank
Date Sampled:	07/15/96	N/A
Date Analyzed:	07/16/96	07/16/96

Quality Control Data Summary

Surrogate Recovery Data

Compound	Spike Amount (ug/Kg)	Percent Recovery	QC Limits
1,4-Difluorobenzene	50	98	34-162

Laboratory Control Sample, Matrix Spike/Matrix Spike Duplicate Data
Batch I.D.: 12719g6f Sample I.D.: 214610-002

Compounds	Spike Amt. (ug/Kg)	LCS %Rec.	QC Limits	Spike %Rec.	Spk Dup %Rec.	QC Limits	RPD	QC Limits
Benzene	10	95	80-120	94	94	66-142	<1	21
Toluene	10	92	80-120	89	88	59-139	1	21
Chlorobenzene	10	96	80-120	92	91	60-133	1	21

AROMATIC VOLATILE ORGANICS

Client I.D.: 15A-25'
Laboratory I.D.: 214610-005
Client: KENNEDY/JENKS CONSULTANTS

Matrix: Solid
Method: EPA 8020
Extraction: EPA 5030 Purge & Trap

Compound	Result (ug/Kg)	Detection Limit	Analytical Notes	Method Blank	Detection Limit
Benzene	ND	5		ND	5
Chlorobenzene	ND	5		ND	5
1,2-Dichlorobenzene	ND	5		ND	5
1,3-Dichlorobenzene	ND	5		ND	5
1,4-Dichlorobenzene	ND	5		ND	5
Ethylbenzene	ND	5		ND	5
Toluene	ND	5		ND	5
m,p-Xylenes	ND	5		ND	5
o-Xylene	ND	5		ND	5

Analytical Notes

	Sample	Method Blank
Date Sampled:	07/15/96	N/A
Date Analyzed:	07/17/96	07/16/96

Quality Control Data Summary

Surrogate Recovery Data

Compound	Spike Amount (ug/Kg)	Percent Recovery	QC Limits
1,4-Difluorobenzene	50	102	34-162

Laboratory Control Sample, Matrix Spike/Matrix Spike Duplicate Data
Batch I.D.: 12719g6f Sample I.D.: 214610-002

Compounds	Spike Amt. (ug/Kg)	LCS %Rec.	QC Limits	Spike %Rec.	Spk Dup %Rec.	QC Limits	RPD	QC Limits
Benzene	10	95	80-120	94	94	66-142	<1	21
Toluene	10	92	80-120	89	88	59-139	1	21
Chlorobenzene	10	96	80-120	92	91	60-133	1	21

AROMATIC VOLATILE ORGANICS

Client I.D.: 15A-30'
Laboratory I.D.: 214610-006
Client: KENNEDY/JENKS CONSULTANTS

Matrix: Solid
Method: EPA 8020
Extraction: EPA 5030 Purge & Trap

Compound	Result (ug/Kg)	Detection Limit	Analytical Notes	Method Blank	Detection Limit
Benzene	ND	5		ND	5
Chlorobenzene	ND	5		ND	5
1,2-Dichlorobenzene	ND	5		ND	5
1,3-Dichlorobenzene	ND	5		ND	5
1,4-Dichlorobenzene	ND	5		ND	5
Ethylbenzene	ND	5		ND	5
Toluene	ND	5		ND	5
m,p-Xylenes	ND	5		ND	5
o-Xylene	ND	5		ND	5

Analytical Notes

	Sample	Method Blank
Date Sampled:	07/15/96	N/A
Date Analyzed:	07/17/96	07/16/96

Quality Control Data Summary

Surrogate Recovery Data

Compound	Spike Amount (ug/Kg)	Percent Recovery	QC Limits
1,4-Difluorobenzene	50	100	34-162

Laboratory Control Sample, Matrix Spike/Matrix Spike Duplicate Data
Batch I.D.: 12719g6f Sample I.D.: 214610-002

Compounds	Spike Amt. (ug/Kg)	LCS %Rec.	QC Limits	Spike %Rec.	Spk Dup %Rec.	QC Limits	RPD	QC Limits
Benzene	10	95	80-120	94	94	66-142	<1	21
Toluene	10	92	80-120	89	88	59-139	1	21
Chlorobenzene	10	96	80-120	92	91	60-133	1	21

AROMATIC VOLATILE ORGANICS

Client I.D.: 15A-35'
Laboratory I.D.: 214610-007
Client: KENNEDY/JENKS CONSULTANTS

Matrix: Solid
Method: EPA 8020
Extraction: EPA 5030 Purge & Trap

Compound	Result (ug/Kg)	Detection Limit	Analytical Notes	Method Blank	Detection Limit
Benzene	ND	5		ND	5
Chlorobenzene	ND	5		ND	5
1,2-Dichlorobenzene	ND	5		ND	5
1,3-Dichlorobenzene	ND	5		ND	5
1,4-Dichlorobenzene	ND	5		ND	5
Ethylbenzene	ND	5		ND	5
Toluene	ND	5		ND	5
m,p-Xylenes	ND	5		ND	5
o-Xylene	ND	5		ND	5

Analytical Notes

	Sample	Method Blank
Date Sampled:	07/15/96	N/A
Date Analyzed:	07/17/96	07/16/96

Quality Control Data Summary

Surrogate Recovery Data

Compound	Spike Amount (ug/Kg)	Percent Recovery	QC Limits
1,4-Difluorobenzene	50	100	34-162

Laboratory Control Sample, Matrix Spike/Matrix Spike Duplicate Data

Batch I.D.: 12719g6f Sample I.D.: 214610-002

Compounds	Spike Amt. (ug/Kg)	LCS %Rec.	QC Limits	Spike %Rec.	Spk Dup %Rec.	QC Limits	RPD	QC Limits
Benzene	10	95	80-120	94	94	66-142	<1	21
Toluene	10	92	80-120	89	88	59-139	1	21
Chlorobenzene	10	96	80-120	92	91	60-133	1	21

AROMATIC VOLATILE ORGANICS

Client I.D.: 15A-40'
Laboratory I.D.: 214610-008
Client: KENNEDY/JENKS CONSULTANTS

Matrix: Solid
Method: EPA 8020
Extraction: EPA 5030 Purge & Trap

Compound	Result (ug/Kg)	Detection Limit	Analytical Notes	Method Blank	Detection Limit
Benzene	ND	5		ND	5
Chlorobenzene	ND	5		ND	5
1,2-Dichlorobenzene	ND	5		ND	5
1,3-Dichlorobenzene	ND	5		ND	5
1,4-Dichlorobenzene	ND	5		ND	5
Ethylbenzene	ND	5		ND	5
Toluene	ND	5		ND	5
m,p-Xylenes	ND	5		ND	5
o-Xylene	ND	5		ND	5

Analytical Notes

	Sample	Method Blank
Date Sampled:	07/15/96	N/A
Date Analyzed:	07/17/96	07/16/96

Quality Control Data Summary

Surrogate Recovery Data

Compound	Spike Amount (ug/Kg)	Percent Recovery	QC Limits
1,4-Difluorobenzene	50	100	34-162

Laboratory Control Sample, Matrix Spike/Matrix Spike Duplicate Data

Batch I.D.: 12719g6f Sample I.D.: 214610-002

Compounds	Spike Amt. (ug/Kg)	LCS %Rec.	QC Limits	Spike %Rec.	Spk Dup %Rec.	QC Limits	RPD	QC Limits
Benzene	10	95	80-120	94	94	66-142	<1	21
Toluene	10	92	80-120	89	88	59-139	1	21
Chlorobenzene	10	96	80-120	92	91	60-133	1	21

AROMATIC VOLATILE ORGANICS

Client I.D.: DUP1-071596
Laboratory I.D.: 214610-009
Client: KENNEDY/JENKS CONSULTANTS

Matrix: Solid
Method: EPA 8020
Extraction: EPA 5030 Purge & Trap

Compound	Result (ug/Kg)	Detection Limit	Analytical Notes	Method Blank	Detection Limit
Benzene	ND	5		ND	5
Chlorobenzene	ND	5		ND	5
1,2-Dichlorobenzene	ND	5		ND	5
1,3-Dichlorobenzene	ND	5		ND	5
1,4-Dichlorobenzene	ND	5		ND	5
Ethylbenzene	ND	5		ND	5
Toluene	ND	5		ND	5
m,p-Xylenes	ND	5		ND	5
o-Xylene	ND	5		ND	5

Analytical Notes

	Sample	Method Blank
Date Sampled:	07/15/96	N/A
Date Analyzed:	07/17/96	07/16/96

Quality Control Data Summary

Surrogate Recovery Data

Compound	Spike Amount (ug/Kg)	Percent Recovery	QC Limits
1,4-Difluorobenzene	50	100	34-162

Laboratory Control Sample, Matrix Spike/Matrix Spike Duplicate Data
Batch I.D.: 12719g6f Sample I.D.: 214610-002

Compounds	Spike Amt. (ug/Kg)	LCS %Rec.	QC Limits	Spike %Rec.	Spk Dup %Rec.	QC Limits	RPD	QC Limits
Benzene	10	95	80-120	94	94	66-142	<1	21
Toluene	10	92	80-120	89	88	59-139	1	21
Chlorobenzene	10	96	80-120	92	91	60-133	1	21

ABBREVIATIONS

BS/BSD - Blank Spike / Blank Spike Duplicate

BTEX - Benzene, Toluene, Ethyl Benzene, and Total Xylenes.

CCR - California Code of Regulations.

DHS - California Department of Health Services.

EPA - United States Environmental Protection Agency.

LCS - Laboratory Control Spike

LUFT - Leaking Underground Fuel Tank.

MDL - Method Detection Limit

NA - Not Applicable.

NC - Not Calculable

ND - Not Detected at or above the defined detection limit.

PQL - Practical Quantitation Limit

RPD - Relative percent difference.

STLC - Soluble Threshold Limit Concentration.

Surr. - Surrogates.

TCLP - Toxicity Characteristic Leaching Procedure.

TEH - Total Extractable Petroleum Hydrocarbons.

Title 26 - Title 26 of the California Code of Regulations (CCR).

TR~ - Trace, estimated value .

TTLC - Total Threshold Limit Concentration.

TVH - Total Volatile Hydrocarbons.

WET - Waste Extraction Test.

UNITS

cm3 - Cubic centimeter
Kg - kilogram.
L - Liter.
mg - Milligrams.
M3 - Cubic meter.

1umhos/cm - uS/cm - Micro Siemens/centimeter
ppb - Parts per billion.
ppm - Parts per million.
ug - Micrograms.
ppbv - Parts per billion per unit volume

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KENNEDY/JENKS CONSULTANTS

SAMPLE CHAIN-OF-CUSTODY ANALYSIS REQUEST

- ☐ 200 New Stine Rd., #115, Bakersfield, CA 93309
- ☐ 530 South 336th St., Federal Way, WA 98003
- ☐ 17310 Red Hill Ave., #220, Irvine, CA 92714
- ☐ 2191 East Bayshore Rd., #200, Palo Alto, CA 94303
- ☐ 5190 Neil Road, #300, Reno, NV 89502
- ☐ 3336 Bradshaw Rd., #140, Sacramento, CA 95827
- ☐ 303 Second St., San Francisco, CA 94107
- ☐ 1000 Hill Rd., #200, Ventura, CA 93003

POSSIBLE HAZARDS:

Date: 7-15-96
Report To: Jay Knight
Source of Samples: Douglas Aircraft
Company: Kennedy/Jenks
Sampler Name: Jay Knight
Address: 2151 Michelson Dr., 101, Irvine, CA 92715
Phone: 714/261-1577
Project No.: 954019.01
Phone: 714-261-1577

Lab Destination: Core Lab
Address:
Phone:
Carrier/Way Bill No.:

(1) Lab ID No.	(1) Client ID No.	COLLECTION Date	COLLECTION Time	(2) Type	Depth	(3) Comp.	(4) Pres.	Turn-around	(5) ANALYSES REQUESTED: 8010/8020	Hold							Comment/Conditions (Container type, container number, etc.)
	15A-5'	7/15	1110	S	5			JK	X	X							
	15A-10'		1128	S	10				X								
	15A-15'		1137	S	15			JK	X	X							
	15A-20'		1150	S	20			JK	X	X							
	15A-25'		1205	S	25				X								
	15A-30'		1224	S	30				X								
	15A-35'		1245	S	35				X								
	15A-40'		1312	S	40				X								
	DUP1-071596	↓		S					X								

(1) Write only one sample number in each space.
(2) Specify type of sample(s): Water (W), Solid (S), or indicate type.
(3) Mark each sample which should be composited in Laboratory as follows: Place an "A" in box for each sample that should be composited into one sample; use sequential letter for additional groups.
(4) Preservation of sample.
(5) Write each analyses requested across top. Place an "X" in appropriate column to indicate type of analysis needed for each sample.

SAMPLE RELINQUISHED BY:

Print Name	Signature	Company	Date	Time
Jay Knight	Jay Knight	K/J	7/15	1525

SAMPLE RECEIVED BY:

Print Name	Signature	Company	Date	Time
Craig Wilkerson	Craig Wilkerson	C&T	7/15/96	1525

BOE-C6-0078046

\MISC\CUSTODY2.FRM

000065.06

Since 1878
Curtis & Tompkins, Ltd. General Analytical Laboratories
2495 Da Vinci, Irvine CA 92714 Phone 714-252-9700 Fax 714-252-9701

LABORATORY REPORT

Laboratory Number: **214611**

Date Received: **07/15/96**
Date Reported: **07/19/96**

Issued To: **KENNEDY/JENKS CONSULTANTS**
2151 MICHELSON
IRVINE, CA
ATTN: JAY KNIGHT

Project I.D.: **954019.01**

Location: **DOUGLAS AIRCRAFT**

Report On: **FIVE SOLID SAMPLES ANALYZED AS SPECIFIED ON ATTACHED CHAIN OF CUSTODY**

This report certifies that the samples were received in good condition (i.e. intact, chilled, and/or preserved appropriately) and that strict chain of custody procedures were adhered to at all times. It further certifies that the methods of analysis used are in fact those listed within this report and that Curtis & Tompkins, Ltd. has current certification for all work performed in the laboratory. Exceptions to this statement are specifically noted in the analytical report or on the attached chain of custody.

Reviewed By: Roger Cole Jan Marin

Berkeley *Irvine*

HALOGENATED VOLATILE ORGANICS

Client I.D.: 15B-10'
Laboratory I.D.: 214611-002
Client: KENNEDY/JENKS CONSULTANTS

Matrix: Solid
Method: EPA 8010
Extraction: EPA 5030 Purge & Trap

Compound	Result (ug/Kg)	Detection Limit	Analytical Notes	Method Blank	Detection Limit
Bromodichloromethane	ND	5		ND	5
Bromoform	ND	5		ND	5
Bromomethane	ND	10		ND	10
Carbon tetrachloride	ND	5		ND	5
Chlorobenzene	ND	5		ND	5
Chloroethane	ND	10		ND	10
Chloroform	ND	5		ND	5
Chloromethane	ND	10		ND	10
Dibromochloromethane	ND	5		ND	5
1,2-Dichlorobenzene	ND	5		ND	5
1,3-Dichlorobenzene	ND	5		ND	5
1,4-Dichlorobenzene	ND	5		ND	5
1,1-Dichloroethane	ND	5		ND	5
1,2-Dichloroethane	ND	5		ND	5
1,1-Dichloroethene	ND	5		ND	5
cis-1,2-Dichloroethene	ND	5		ND	5
trans-1,2-Dichloroethene	ND	5		ND	5
1,2-Dichloropropane	ND	5		ND	5
cis-1,3-Dichloropropene	ND	5		ND	5
trans-1,3-Dichloropropene	ND	5		ND	5
Freon 113	ND	5		ND	5
Methylene chloride	ND	5		ND	5
1,1,2,2-Tetrachloroethane	ND	5		ND	5
Tetrachloroethene	ND	5		ND	5
1,1,1-Trichloroethane	ND	5		ND	5
1,1,2-Trichloroethane	ND	5		ND	5
Trichloroethene	10	5		ND	5
Trichlorofluoromethane	ND	5		ND	5
Vinyl chloride	ND	10		ND	10

Analytical Notes

	Sample	Method Blank
Date Sampled:	07/15/96	N/A
Date Analyzed:	07/17/96	07/16/96

Quality Control Data Summary

Surrogate Recovery Data

Compound	Spike Amount (ug/Kg)	Percent Recovery	QC Limits
p-Bromofluorobenzene	50	93	64-138

Laboratory Control Sample, Matrix Spike/Matrix Spike Duplicate Data

Batch I.D.: 12723g6f Sample I.D.: 214611-008

Compounds	Spike Amt. (ug/Kg)	LCS %Rec.	QC Limits	Spike %Rec.	Spk Dup %Rec.	QC Limits	RPD	QC Limits
1,1-Dichloroethene	10	86	80-120	75	79	59-172	5	22
Trichloroethene	10	103	80-120	108	115	62-137	6	24
Chlorobenzene	10	99	80-120	84	93	60-133	10	21

HALOGENATED VOLATILE ORGANICS

Client I.D.: 15B-25'
Laboratory I.D.: 214611-005
Client: KENNEDY/JENKS CONSULTANTS

Matrix: Solid
Method: EPA 8010
Extraction: EPA 5030 Purge & Trap

Compound	Result (ug/Kg)	Detection Limit	Analytical Notes	Method Blank	Detection Limit
Bromodichloromethane	ND	5		ND	5
Bromoform	ND	5		ND	5
Bromomethane	ND	10		ND	10
Carbon tetrachloride	ND	5		ND	5
Chlorobenzene	ND	5		ND	5
Chloroethane	ND	10		ND	10
Chloroform	ND	5		ND	5
Chloromethane	ND	10		ND	10
Dibromochloromethane	ND	5		ND	5
1,2-Dichlorobenzene	ND	5		ND	5
1,3-Dichlorobenzene	ND	5		ND	5
1,4-Dichlorobenzene	ND	5		ND	5
1,1-Dichloroethane	ND	5		ND	5
1,2-Dichloroethane	ND	5		ND	5
1,1-Dichloroethene	30	5		ND	5
cis-1,2-Dichloroethene	ND	5		ND	5
trans-1,2-Dichloroethene	ND	5		ND	5
1,2-Dichloropropane	ND	5		ND	5
cis-1,3-Dichloropropene	ND	5		ND	5
trans-1,3-Dichloropropene	ND	5		ND	5
Freon 113	ND	5		ND	5
Methylene chloride	ND	5		ND	5
1,1,2,2-Tetrachloroethane	ND	5		ND	5
Tetrachloroethene	56	5		ND	5
1,1,1-Trichloroethane	ND	5		ND	5
1,1,2-Trichloroethane	ND	5		ND	5
Trichloroethene	140	50	a	ND	5
Trichlorofluoromethane	6	5		ND	5
Vinyl chloride	ND	10		ND	10

Analytical Notes

a-Result from a 1:10 dilution analyzed on 7/17/96.

	Sample	Method Blank
Date Sampled:	07/15/96	N/A
Date Analyzed:	07/17/96	07/16/96

Quality Control Data Summary

Surrogate Recovery Data

Compound	Spike Amount (ug/Kg)	Percent Recovery	QC Limits
p-Bromofluorobenzene	50	90	64-138

Laboratory Control Sample, Matrix Spike/Matrix Spike Duplicate Data

Batch I.D.: 12723g6f Sample I.D.: 214611-008

Compounds	Spike Amt. (ug/Kg)	LCS %Rec.	QC Limits	Spike %Rec.	Spk Dup %Rec.	QC Limits	RPD	QC Limits
1,1-Dichloroethene	10	86	80-120	75	79	59-172	5	22
Trichloroethene	10	103	80-120	108	115	62-137	6	24
Chlorobenzene	10	99	80-120	84	93	60-133	10	21

HALOGENATED VOLATILE ORGANICS

Client I.D.: 15B-30'
Laboratory I.D.: 214611-006
Client: KENNEDY/JENKS CONSULTANTS

Matrix: Solid
Method: EPA 8010
Extraction: EPA 5030 Purge & Trap

Compound	Result (ug/Kg)	Detection Limit	Analytical Notes	Method Blank	Detection Limit
Bromodichloromethane	ND	5		ND	5
Bromoform	ND	5		ND	5
Bromomethane	ND	10		ND	10
Carbon tetrachloride	ND	5		ND	5
Chlorobenzene	ND	5		ND	5
Chloroethane	ND	10		ND	10
Chloroform	ND	5		ND	5
Chloromethane	ND	10		ND	10
Dibromochloromethane	ND	5		ND	5
1,2-Dichlorobenzene	ND	5		ND	5
1,3-Dichlorobenzene	ND	5		ND	5
1,4-Dichlorobenzene	ND	5		ND	5
1,1-Dichloroethane	ND	5		ND	5
1,2-Dichloroethane	ND	5		ND	5
1,1-Dichloroethene	ND	5		ND	5
cis-1,2-Dichloroethene	ND	5		ND	5
trans-1,2-Dichloroethene	ND	5		ND	5
1,2-Dichloropropane	ND	5		ND	5
cis-1,3-Dichloropropene	ND	5		ND	5
trans-1,3-Dichloropropene	ND	5		ND	5
Freon 113	ND	5		ND	5
Methylene chloride	ND	5		ND	5
1,1,2,2-Tetrachloroethane	ND	5		ND	5
Tetrachloroethene	6	5		ND	5
1,1,1-Trichloroethane	ND	5		ND	5
1,1,2-Trichloroethane	ND	5		ND	5
Trichloroethene	78	5		ND	5
Trichlorofluoromethane	ND	5		ND	5
Vinyl chloride	ND	10		ND	10

Analytical Notes

	Sample	Method Blank
Date Sampled:	07/15/96	N/A
Date Analyzed:	07/17/96	07/16/96

Quality Control Data Summary

Surrogate Recovery Data

Compound	Spike Amount (ug/Kg)	Percent Recovery	QC Limits
p-Bromofluorobenzene	50	85	64-138

Laboratory Control Sample, Matrix Spike/Matrix Spike Duplicate Data

Batch I.D.: 12723g6f Sample I.D.: 214611-008

Compounds	Spike Amt. (ug/Kg)	LCS %Rec.	QC Limits	Spike %Rec.	Spk Dup %Rec.	QC Limits	RPD	QC Limits
1,1-Dichloroethene	10	86	80-120	75	79	59-172	5	22
Trichloroethene	10	103	80-120	108	115	62-137	6	24
Chlorobenzene	10	99	80-120	84	93	60-133	10	21

HALOGENATED VOLATILE ORGANICS

Client I.D.: 15B-35'
Laboratory I.D.: 214611-007
Client: KENNEDY/JENKS CONSULTANTS

Matrix: Solid
Method: EPA 8010
Extraction: EPA 5030 Purge & Trap

Compound	Result (ug/Kg)	Detection Limit	Analytical Notes	Method Blank	Detection Limit
Bromodichloromethane	ND	5		ND	5
Bromoform	ND	5		ND	5
Bromomethane	ND	10		ND	10
Carbon tetrachloride	ND	5		ND	5
Chlorobenzene	ND	5		ND	5
Chloroethane	ND	10		ND	10
Chloroform	ND	5		ND	5
Chloromethane	ND	10		ND	10
Dibromochloromethane	ND	5		ND	5
1,2-Dichlorobenzene	ND	5		ND	5
1,3-Dichlorobenzene	ND	5		ND	5
1,4-Dichlorobenzene	ND	5		ND	5
1,1-Dichloroethane	ND	5		ND	5
1,2-Dichloroethane	ND	5		ND	5
1,1-Dichloroethene	ND	5		ND	5
cis-1,2-Dichloroethene	ND	5		ND	5
trans-1,2-Dichloroethene	ND	5		ND	5
1,2-Dichloropropane	ND	5		ND	5
cis-1,3-Dichloropropene	ND	5		ND	5
trans-1,3-Dichloropropene	ND	5		ND	5
Freon 113	ND	5		ND	5
Methylene chloride	ND	5		ND	5
1,1,2,2-Tetrachloroethane	ND	5		ND	5
Tetrachloroethene	ND	5		ND	5
1,1,1-Trichloroethane	ND	5		ND	5
1,1,2-Trichloroethane	ND	5		ND	5
Trichloroethene	8	5		ND	5
Trichlorofluoromethane	ND	5		ND	5
Vinyl chloride	ND	10		ND	10

Analytical Notes

	Sample	Method Blank
Date Sampled:	07/15/96	N/A
Date Analyzed:	07/17/96	07/16/96

Quality Control Data Summary

Surrogate Recovery Data

Compound	Spike Amount (ug/Kg)	Percent Recovery	QC Limits
p-Bromofluorobenzene	50	85	64-138

Laboratory Control Sample, Matrix Spike/Matrix Spike Duplicate Data

Batch I.D.: 12723g6f Sample I.D.: 214611-008

Compounds	Spike Amt. (ug/Kg)	LCS %Rec.	QC Limits	Spike %Rec.	Spk Dup %Rec.	QC Limits	RPD	QC Limits
1,1-Dichloroethene	10	86	80-120	75	79	59-172	5	22
Trichloroethene	10	103	80-120	108	115	62-137	6	24
Chlorobenzene	10	99	80-120	84	93	60-133	10	21

HALOGENATED VOLATILE ORGANICS

Client I.D.: 15B-40'
Laboratory I.D.: 214611-008
Client: KENNEDY/JENKS CONSULTANTS

Matrix: Solid
Method: EPA 8010
Extraction: EPA 5030 Purge & Trap

Compound	Result (ug/Kg)	Detection Limit	Analytical Notes	Method Blank	Detection Limit
Bromodichloromethane	ND	5		ND	5
Bromoform	ND	5		ND	5
Bromomethane	ND	10		ND	10
Carbon tetrachloride	ND	5		ND	5
Chlorobenzene	ND	5		ND	5
Chloroethane	ND	10		ND	10
Chloroform	ND	5		ND	5
Chloromethane	ND	10		ND	10
Dibromochloromethane	ND	5		ND	5
1,2-Dichlorobenzene	ND	5		ND	5
1,3-Dichlorobenzene	ND	5		ND	5
1,4-Dichlorobenzene	ND	5		ND	5
1,1-Dichloroethane	ND	5		ND	5
1,2-Dichloroethane	ND	5		ND	5
1,1-Dichloroethene	ND	5		ND	5
cis-1,2-Dichloroethene	ND	5		ND	5
trans-1,2-Dichloroethene	ND	5		ND	5
1,2-Dichloropropane	ND	5		ND	5
cis-1,3-Dichloropropene	ND	5		ND	5
trans-1,3-Dichloropropene	ND	5		ND	5
Freon 113	ND	5		ND	5
Methylene chloride	ND	5		ND	5
1,1,2,2-Tetrachloroethane	ND	5		ND	5
Tetrachloroethene	ND	5		ND	5
1,1,1-Trichloroethane	ND	5		ND	5
1,1,2-Trichloroethane	ND	5		ND	5
Trichloroethene	ND	5		ND	5
Trichlorofluoromethane	ND	5		ND	5
Vinyl chloride	ND	10		ND	10

Analytical Notes

	Sample	Method Blank
Date Sampled:	07/15/96	N/A
Date Analyzed:	07/17/96	07/16/96

Quality Control Data Summary

Surrogate Recovery Data

Compound	Spike Amount (ug/Kg)	Percent Recovery	QC Limits
p-Bromofluorobenzene	50	89	64-138

Laboratory Control Sample, Matrix Spike/Matrix Spike Duplicate Data

Batch I.D.: 12723g6f Sample I.D.: 214611-008

Compounds	Spike Amt. (ug/Kg)	LCS %Rec.	QC Limits	Spike %Rec.	Spk Dup %Rec.	QC Limits	RPD	QC Limits
1,1-Dichloroethene	10	86	80-120	75	79	59-172	5	22
Trichloroethene	10	103	80-120	108	115	62-137	6	24
Chlorobenzene	10	99	80-120	84	93	60-133	10	21

AROMATIC VOLATILE ORGANICS

Client I.D.: 15B-10'
Laboratory I.D.: 214611-002
Client: KENNEDY/JENKS CONSULTANTS

Matrix: Solid
Method: EPA 8020
Extraction: EPA 5030 Purge & Trap

Compound	Result (ug/Kg)	Detection Limit	Analytical Notes	Method Blank	Detection Limit
Benzene	ND	5		ND	5
Chlorobenzene	ND	5		ND	5
1,2-Dichlorobenzene	ND	5		ND	5
1,3-Dichlorobenzene	ND	5		ND	5
1,4-Dichlorobenzene	ND	5		ND	5
Ethylbenzene	ND	5		ND	5
Toluene	ND	5		ND	5
m,p-Xylenes	ND	5		ND	5
o-Xylene	ND	5		ND	5

Analytical Notes

	Sample	Method Blank
Date Sampled:	07/15/96	N/A
Date Analyzed:	07/17/96	07/16/96

Quality Control Data Summary

Surrogate Recovery Data

Compound	Spike Amount (ug/Kg)	Percent Recovery	QC Limits
1,4-Difluorobenzene	50	100	34-162

Laboratory Control Sample, Matrix Spike/Matrix Spike Duplicate Data

Batch I.D.: 12723g6f Sample I.D.: 214611-008

Compounds	Spike Amt. (ug/Kg)	LCS %Rec.	QC Limits	Spike %Rec.	Spk Dup %Rec.	QC Limits	RPD	QC Limits
Benzene	10	95	80-120	90	96	66-142	6	21
Toluene	10	92	80-120	85	92	59-139	8	21
Chlorobenzene	10	96	80-120	85	93	60-133	9	21

AROMATIC VOLATILE ORGANICS

Client I.D.: 15B-25'
Laboratory I.D.: 214611-005
Client: KENNEDY/JENKS CONSULTANTS

Matrix: Solid
Method: EPA 8020
Extraction: EPA 5030 Purge & Trap

Compound	Result (ug/Kg)	Detection Limit	Analytical Notes	Method Blank	Detection Limit
Benzene	ND	5		ND	5
Chlorobenzene	ND	5		ND	5
1,2-Dichlorobenzene	ND	5		ND	5
1,3-Dichlorobenzene	ND	5		ND	5
1,4-Dichlorobenzene	ND	5		ND	5
Ethylbenzene	ND	5		ND	5
Toluene	ND	5		ND	5
m,p-Xylenes	ND	5		ND	5
o-Xylene	ND	5		ND	5

Analytical Notes

	Sample	Method Blank
Date Sampled:	07/15/96	N/A
Date Analyzed:	07/17/96	07/16/96

Quality Control Data Summary

Surrogate Recovery Data

Compound	Spike Amount (ug/Kg)	Percent Recovery	QC Limits
1,4-Difluorobenzene	50	101	34-162

Laboratory Control Sample, Matrix Spike/Matrix Spike Duplicate Data
Batch I.D.: 12723g6f Sample I.D.: 214611-008

Compounds	Spike Amt. (ug/Kg)	LCS %Rec.	QC Limits	Spike %Rec.	Spk Dup %Rec.	QC Limits	RPD	QC Limits
Benzene	10	95	80-120	90	96	66-142	6	21
Toluene	10	92	80-120	85	92	59-139	8	21
Chlorobenzene	10	96	80-120	85	93	60-133	9	21

AROMATIC VOLATILE ORGANICS

Client I.D.: 15B-30'
Laboratory I.D.: 214611-006
Client: KENNEDY/JENKS CONSULTANTS

Matrix: Solid
Method: EPA 8020
Extraction: EPA 5030 Purge & Trap

Compound	Result (ug/Kg)	Detection Limit	Analytical Notes	Method Blank	Detection Limit
Benzene	ND	5		ND	5
Chlorobenzene	ND	5		ND	5
1,2-Dichlorobenzene	ND	5		ND	5
1,3-Dichlorobenzene	ND	5		ND	5
1,4-Dichlorobenzene	ND	5		ND	5
Ethylbenzene	ND	5		ND	5
Toluene	ND	5		ND	5
m,p-Xylenes	ND	5		ND	5
o-Xylene	ND	5		ND	5

Analytical Notes

	Sample	Method Blank
Date Sampled:	07/15/96	N/A
Date Analyzed:	07/17/96	07/16/96

Quality Control Data Summary

Surrogate Recovery Data

Compound	Spike Amount (ug/Kg)	Percent Recovery	QC Limits
1,4-Difluorobenzene	50	102	34-162

Laboratory Control Sample, Matrix Spike/Matrix Spike Duplicate Data
Batch I.D.: 12723g6f Sample I.D.: 214611-008

Compounds	Spike Amt. (ug/Kg)	LCS %Rec.	QC Limits	Spike %Rec.	Spk Dup %Rec.	QC Limits	RPD	QC Limits
Benzene	10	95	80-120	90	96	66-142	6	21
Toluene	10	92	80-120	85	92	59-139	8	21
Chlorobenzene	10	96	80-120	85	93	60-133	9	21

AROMATIC VOLATILE ORGANICS

Client I.D.: 15B-35'
Laboratory I.D.: 214611-007
Client: KENNEDY/JENKS CONSULTANTS

Matrix: Solid
Method: EPA 8020
Extraction: EPA 5030 Purge & Trap

Compound	Result (ug/Kg)	Detection Limit	Analytical Notes	Method Blank	Detection Limit
Benzene	ND	5		ND	5
Chlorobenzene	ND	5		ND	5
1,2-Dichlorobenzene	ND	5		ND	5
1,3-Dichlorobenzene	ND	5		ND	5
1,4-Dichlorobenzene	ND	5		ND	5
Ethylbenzene	ND	5		ND	5
Toluene	ND	5		ND	5
m,p-Xylenes	ND	5		ND	5
o-Xylene	ND	5		ND	5

Analytical Notes

	Sample	Method Blank
Date Sampled:	07/15/96	N/A
Date Analyzed:	07/17/96	07/16/96

Quality Control Data Summary

Surrogate Recovery Data

Compound	Spike Amount (ug/Kg)	Percent Recovery	QC Limits
1,4-Difluorobenzene	50	102	34-162

Laboratory Control Sample, Matrix Spike/Matrix Spike Duplicate Data
Batch I.D.: 12723g6f Sample I.D.: 214611-008

Compounds	Spike Amt. (ug/Kg)	LCS %Rec.	QC Limits	Spike %Rec.	Spk Dup %Rec.	QC Limits	RPD	QC Limits
Benzene	10	95	80-120	90	96	66-142	6	21
Toluene	10	92	80-120	85	92	59-139	8	21
Chlorobenzene	10	96	80-120	85	93	60-133	9	21

AROMATIC VOLATILE ORGANICS

Client I.D.: 15B-40'
Laboratory I.D.: 214611-008
Client: KENNEDY/JENKS CONSULTANTS

Matrix: Solid
Method: EPA 8020
Extraction: EPA 5030 Purge & Trap

Compound	Result (ug/Kg)	Detection Limit	Analytical Notes	Method Blank	Detection Limit
Benzene	ND	5		ND	5
Chlorobenzene	ND	5		ND	5
1,2-Dichlorobenzene	ND	5		ND	5
1,3-Dichlorobenzene	ND	5		ND	5
1,4-Dichlorobenzene	ND	5		ND	5
Ethylbenzene	ND	5		ND	5
Toluene	ND	5		ND	5
m,p-Xylenes	ND	5		ND	5
o-Xylene	ND	5		ND	5

Analytical Notes

	Sample	Method Blank
Date Sampled:	07/15/96	N/A
Date Analyzed:	07/17/96	07/16/96

Quality Control Data Summary

Surrogate Recovery Data

Compound	Spike Amount (ug/Kg)	Percent Recovery	QC Limits
1,4-Difluorobenzene	50	101	34-162

Laboratory Control Sample, Matrix Spike/Matrix Spike Duplicate Data
Batch I.D.: 12723g6f Sample I.D.: 214611-008

Compounds	Spike Amt. (ug/Kg)	LCS %Rec.	QC Limits	Spike %Rec.	Spk Dup %Rec.	QC Limits	RPD	QC Limits
Benzene	10	95	80-120	90	96	66-142	6	21
Toluene	10	92	80-120	85	92	59-139	8	21
Chlorobenzene	10	96	80-120	85	93	60-133	9	21

ABBREVIATIONS

BS/BSD - Blank Spike / Blank Spike Duplicate

BTEX - Benzene, Toluene, Ethyl Benzene, and Total Xylenes.

CCR - California Code of Regulations.

DHS - California Department of Health Services.

EPA - United States Environmental Protection Agency.

LCS - Laboratory Control Spike

LUFT - Leaking Underground Fuel Tank.

MDL - Method Detection Limit

NA - Not Applicable.

NC - Not Calculable

ND - Not Detected at or above the defined detection limit.

PQL - Practical Quantitation Limit

RPD - Relative percent difference.

STLC - Soluble Threshold Limit Concentration.

Surr. - Surrogates.

TCLP - Toxicity Characteristic Leaching Procedure.

TEH - Total Extractable Petroleum Hydrocarbons.

Title 26 - Title 26 of the California Code of Regulations (CCR).

TR~ - Trace, estimated value .

TTLC - Total Threshold Limit Concentration.

TVH - Total Volatile Hydrocarbons.

WET - Waste Extraction Test.

UNITS

cm3 - Cubic centimeter
Kg - kilogram.
L - Liter.
mg - Milligrams.
M3 - Cubic meter.

1umhos/cm - uS/cm - Micro Siemens/centimeter
ppb - Parts per billion.
ppm - Parts per million.
ug - Micrograms.
ppbv - Parts per billion per unit volume

KENNEDY/JENKS CONSULTANTS

SAMPLE CHAIN-OF-CUSTODY ANALYSIS REQUEST

☐ 200 New Stine Rd., #115, Bakersfield, CA 93309
☐ 530 South 336th St., Federal Way, WA 98003
☐ 17310 Red Hill Ave., #220, Irvine, CA 92714
☐ 2191 East Bayshore Rd., #200, Palo Alto, CA 94303
☐ 5190 Neil Road, #300, Reno, NV 89502
☐ 3336 Bradshaw Rd., #140, Sacramento, CA 95827
☐ 303 Second St., San Francisco, CA 94107
☐ 1000 Hill Rd., #200, Ventura, CA 93003

POSSIBLE HAZARDS:

Date 7-15-96
Source of Samples Douglas Aircraft
Sampler Name Jay Knight
Phone 714-261-1577
Project No. 954019.01

Report To Jay Knight
Company Kennedy/Jenks Consultants
Address 2151 Michelson Dr., Ste. 100
Irvine, CA 92715
Phone

Lab Destination Core Lab
Address
Phone
Carrier/Way Bill No.

(1) Lab ID No.	(1) Client ID No.	COLLECTION Date	COLLECTION Time	(2) Type	Depth	(3) Comp.	(4) Pres.	Turn-around	(5) ANALYSES REQUESTED: 8010/8020	Hold							Comment/Conditions (Container type, container number, etc.)
	15B-5'	7/15	0905	S	5			JK		X							
	15B-10'		0907	S	10				X								
	15B-15'		0916	S	15			JK		X							
	15B-20'		0933	S	20			JK		X							
	15B-25'		0945	S	25				X								
	15B-30'		1007	S	30				X								
	15B-35'		1031	S	35				X								
	15B-40'		1052	S	40				X								

(1) Write only one sample number in each space.
(2) Specify type of sample(s): Water (W), Solid (S), or indicate type.
(3) Mark each sample which should be composited in Laboratory as follows: Place an "A" in box for each sample that should be composited into one sample; use sequential letter for additional groups.
(4) Preservation of sample.
(5) Write each analyses requested across top. Place an "X" in appropriate column to indicate type of analysis needed for each sample.

SAMPLE RELINQUISHED BY:

Print Name	Signature	Company	Date	Time
Jay Knight	Jay Knight	K/J	7/15	1525

SAMPLE RECEIVED BY:

Print Name	Signature	Company	Date	Time
Craig Wilkerson	Craig Wilkerson	C&T	7/15/96	1505

BOE-C6-0078059

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