Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: NASA JPL

Collection Date: December 21, 2000

LDC Report Date: March 1, 2001

Matrix: Air

Parameters: Volatile Halogenated/Aromatic Hydrocarbons

Validation Level: EPA Level III

Laboratory: HP Labs

Sample Delivery Group (SDG): 2K1221W1

Sample Identification

SVW35-VPA-038
SVW35-VPD-039
SVW34-VPA-040
SVW34-VPB-041
SVW34-VPB-042DUP
SVW34-VPD-043
SVW34-VPF-044
SVW34-VPG-045
SVW34-VPH-046
SVW32-VPB-047
SVW32-VPB-048DUP
SVW32-VPC-049

Introduction

This data review covers 12 air samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Methods 8010 and 8020 for Volatile Halogenated/Aromatic Hydrocarbons.

This review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review (October 1999) as there are no current guidelines for the method stated above.

A table summarizing all data qualification flags is provided at the end of this report. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Blank results are summarized in Section III.

Field duplicates are summarized in Section IX.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

N Presumptive evidence of presence of the constituent.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Calibration

a. Initial Calibration

Initial calibration of compounds was performed for the primary (quantitation) column and confirmation column as required by these methods.

The percent relative standard deviations (%RSD) were less than or equal to 20.0% for all compounds.

b. Calibration Verification

Calibration verification was performed at the required frequencies.

The percent differences (%D) of calibration factors in continuing standard mixtures were within the 15.0% QC limits.

III. Blanks

Method blanks were reviewed for each matrix as applicable. No volatile halogenated/aromatic hydrocarbon contaminants were found in the method blanks.

IV. Accuracy and Precision Data

a. Surrogate Recovery

Surrogates were added to all samples and blanks as required by the methods. All surrogate recoveries (%R) were within QC limits.

b. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) analyses were not required by the method.

c. Laboratory Control Samples

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

V. Target Compound Identification

Raw data were not reviewed for this SDG.

VI. Compound Quantitation and CRQLs

Raw data were not reviewed for this SDG.

VII. System Performance

Raw data were not reviewed for this SDG.

VIII. Overall Assessment of Data

Data flags are summarized at the end of this report.

IX. Field Duplicates

Samples SVW34-VPB-041 and SVW34-VPB-042DUP and samples SVW32-VPB-047 and SVW32-VPB-048DUP were identified as field duplicates. No volatile halogenated/aromatic hydrocarbons were detected in any of the samples with the following exceptions:

Compound	Concentration (ug/L)		RPD
	SVW34-VPB-041	SVW34-VPB-042DUP	
Carbon tetrachloride	5.9	5.9	0

X. Field Blanks

No field blanks were identified in this SDG.

NASA JPL
Volatile Halogenated/Aromatic Hydrocarbons - Data Qualification Summary - SDG 2K1221W1

No Sample Data Qualified in this SDG

NASA JPL
Volatile Halogenated/Aromatic Hydrocarbons - Laboratory Blank Data Qualification Summary - SDG 2K1221W1

No Sample Data Qualified in this SDG

HP Labs

6038D

GEOFON PROJECT # 04-4304-480
JPL
4800 OAK GROVE DRIVE
PASADENA, CA

HP Labs Project #2K1221W1
GC SHIMADZU 14A FRONT
VOLATILE HALOGENATED AND AROMATIC HYDROCARBONS (EPA Method 8010/8020) ANALYSES OF SOIL VAPOR
SOIL VAPOR DATA IN UG/L-VAPOR

	BLANK	SVW35-VPA-038	SVW35-VPD-039	SVW34-VPA-040	SVW34-VPB-041	SVW34-VPB-042 DUP	SVW34-VPD-043
DATE	12/21/00	12/21/00	12/21/00	12/21/00	12/21/00	12/21/00	12/21/00
SAMPLING TIME	05:40	06:59	07:25	08:17	08:37	09:05	09:30
ANALYSIS TIME	05:42	07:04	07:28	08:19	08:46	09:10	09:33
SAMPLING DEPTH (feet)	--	20	60	20	35	35	65
VOLUME WITHDRAWN (cc)	200	80	240	80	140	140	260
VOLUME INJECTED	1	1	1	1	1	1	1
DILUTION FACTOR	1	1	1	1	1	1	1
CARBON TETRACHLORIDE	nd	nd	nd	nd	5.9	5.9	nd
CHLOROETHANE/BROMOMETHANE	nd	nd	nd	nd	nd	nd	nd
CHLOROFORM	nd	nd	nd	nd	nd	nd	nd
1,1-DICHLORO ETHANE	nd	nd	nd	nd	nd	nd	nd
1,2-DICHLORO ETHANE	nd	nd	nd	nd	nd	nd	nd
1,1-DICHLORO ETHENE	nd	nd	nd	nd	nd	nd	nd
CIS-1,2-DICHLORO ETHENE	nd	nd	nd	nd	nd	nd	nd
TRANS-1,2-DICHLORO ETHENE	nd	nd	nd	nd	nd	nd	nd
DICHLOROMETHANE	nd	nd	nd	nd	nd	nd	nd
TETRACHLORO ETHENE	nd	nd	nd	nd	nd	nd	nd
1,1,1,2-TETRACHLORO ETHANE	nd	nd	nd	nd	nd	nd	nd
1,1,2,2-TETRACHLORO ETHANE	nd	nd	nd	nd	nd	nd	nd
1,1,1-TRICHLORO ETHANE	nd	nd	nd	nd	nd	nd	nd
1,1,2-TRICHLORO ETHANE	nd	nd	nd	nd	nd	nd	nd
TRICHLORO ETHENE	nd	nd	nd	nd	nd	nd	nd
VINYL CHLORIDE	nd	nd	nd	nd	nd	nd	nd
TRICHLOROFLUOROMETHANE (FR11)	nd	nd	nd	nd	nd	nd	nd
DICHLORODIFLUOROMETHANE (FR12)	nd	nd	nd	nd	nd	nd	nd
1,1,2-TRICHLOROTRIFLUOROETHANE (FR113)	nd	nd	nd	nd	nd	nd	nd
BENZENE	nd	nd	nd	nd	nd	nd	nd
ETHYLBENZENE	nd	nd	nd	nd	nd	nd	nd
TOLUENE	nd	nd	nd	nd	nd	nd	nd
m&p-XYLENES	nd	nd	nd	nd	nd	nd	nd
o-XYLENE	nd	nd	nd	nd	nd	nd	nd
SURROGATES							
1,4 DIFLUORO BENZENE	107%	105%	101%	105%	106%	107%	97%
CHLOROBENZENE	97%	104%	100%	108%	106%	108%	96%
4 BROMOFLUORO BENZENE	99%	106%	103%	109%	108%	112%	100%

ND INDICATES NOT DETECTED AT A DETECTION LIMIT OF 1.0 UG/L-VAPOR FOR EACH COMPOUND

ANALYSES PERFORMED ON-SITE IN DOHS CERTIFIED MOBILE LABORATORY (CERT #1745)
ANALYSES PERFORMED BY: ALLEN GLOVER
DATA REVIEWED BY: JAMES E. PICKER

3/2/01

HP Labs

GEOFON PROJECT # 04-4304-480
JPL
4800 OAK GROVE DRIVE
PASADENA, CA

HP Labs Project #2K1221W1
GC SHIMADZU 14A FRONT
VOLATILE HALOGENATED AND AROMATIC HYDROCARBONS (EPA Method 8010/8020) ANALYSES OF SOIL VAPOR
SOIL VAPOR DATA IN UG/L-VAPOR

	SVW34-VPF-044	SVW34-VPG-045	SVW34-VPH-046	SVW32-VPB-047	SVW32-VPB-048 DUP	SVW32-VPC-049
DATE	12/21/00	12/21/00	12/21/00	12/21/00	12/21/00	12/21/00
SAMPLING TIME	09:55	10:15	10:43	11:07	11:30	11:55
ANALYSIS TIME	09:57	10:21	10:45	11:10	11:34	11:58
SAMPLING DEPTH (feet)	95	108	118	40	40	55
VOLUME WITHDRAWN (cc)	380	435	475	160	160	220
VOLUME INJECTED	1	1	1	1	1	1
DILUTION FACTOR	1	1	1	1	1	1
CARBON TETRACHLORIDE	nd	nd	26	nd	nd	nd
CHLOROETHANE/BROMOMETHANE	nd	nd	nd	nd	nd	nd
CHLOROFORM	nd	nd	2.4	nd	nd	nd
1,1-DICHLORO ETHANE	nd	nd	nd	nd	nd	nd
1,2-DICHLORO ETHANE	nd	nd	nd	nd	nd	nd
1,1-DICHLORO ETHENE	nd	nd	nd	nd	nd	nd
CIS-1,2-DICHLORO ETHENE	nd	nd	nd	nd	nd	nd
TRANS-1,2-DICHLORO ETHENE	nd	nd	nd	nd	nd	nd
DICHLOROMETHANE	nd	nd	nd	nd	nd	nd
TETRACHLORO ETHENE	nd	nd	nd	nd	nd	nd
1,1,1,2-TETRACHLORO ETHANE	nd	nd	nd	nd	nd	nd
1,1,2,2-TETRACHLORO ETHANE	nd	nd	nd	nd	nd	nd
1,1,1-TRICHLORO ETHANE	nd	nd	nd	nd	nd	nd
1,1,2-TRICHLORO ETHANE	nd	nd	nd	nd	nd	nd
TRICHLORO ETHENE	nd	nd	nd	nd	nd	nd
VINYL CHLORIDE	nd	nd	nd	nd	nd	nd
TRICHLOROFLUOROMETHANE (FR11)	nd	nd	nd	nd	nd	nd
DICHLORODIFLUOROMETHANE (FR12)	nd	nd	nd	nd	nd	nd
1,1,2-TRICHLOROTRIFLUOROETHANE (FR113)	nd	nd	1.4	nd	nd	nd
BENZENE	nd	nd	nd	nd	nd	nd
ETHYLBENZENE	nd	nd	nd	nd	nd	nd
TOLUENE	nd	nd	nd	nd	nd	nd
m&p-XYLENES	nd	nd	nd	nd	nd	nd
o-XYLENE	nd	nd	nd	nd	nd	nd
SURROGATES						
1,4 DIFLUORO BENZENE	95%	95%	98%	102%	94%	93%
CHLOROBENZENE	97%	97%	100%	100%	95%	95%
4 BROMOFLUORO BENZENE	100%	99%	100%	104%	97%	96%

ND INDICATES NOT DETECTED AT A DETECTION LIMIT OF 1.0 UG/L-VAPOR FOR EACH COMPOUND

ANALYSES PERFORMED ON-SITE IN DOHS CERTIFIED MOBILE LABORATORY (CERT #1745)
ANALYSES PERFORMED BY: ALLEN GLOVER
DATA REVIEWED BY: JAMES E. PICKER

1/3/01

LDC #: 6038D23 **VALIDATION COMPLETENESS WORKSHEET**

SDG #: 2K1221W1 X EPA Level III ___NFESC Level C

Laboratory: HP Labs

Date: 2/28/01

Page: 1 of 1

Reviewer: FT

2nd Reviewer: ✓

METHOD: GC Volatile Halogenated/Aromatic Hydrocarbons (EPA SW 846 Method 8010/8020)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 12/21/00
IIa.	Initial calibration	A	%RSD
IIb.	Calibration verification	A	%D
III.	Blanks	A	
IVa.	Surrogate recovery	A	
IVb.	Matrix spike/Matrix spike duplicates	N	
IVc.	Laboratory control samples	FT/A	
V.	Target compound identification	N	
VI.	Compound Quantitation and CRQLs	N	
VII.	System Performance	N	
VIII.	Overall assessment of data	A	
IX.	Field duplicates	SW	D = 4 & 5 *D_1 = 10 & 11 * = ND
X.	Field blanks	N	

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank

Validated Samples: Air

1	SVW35-VPA-038	11	SVW32-VPB-048DUP D_1	21		31	
2	SVW35-VPD-039	12	SVW32-VPC-049	22		32	
3	SVW34-VPA-040	13	BLK	23		33	
4	SVW34-VPB-041 D	14		24		34	
5	SVW34-VPB-042DUP D	15		25		35	
6	SVW34-VPD-043	16		26		36	
7	SVW34-VPF-044	17		27		37	
8	SVW34-VPG-045	18		28		38	
9	SVW34-VPH-046	19		29		39	
10	SVW32-VPB-047 D_1	20		30		40	

Notes: _____

LDC #: 60380 23
SDG #: 2K122W1

TARGET COMPOUND WORKSHEET

Page: 1 of 1
Reviewer: PT
2nd Reviewer:

METHOD: VOA (EPA SW 846 Method 8240/8260/8021))

A. Chloromethane*	P. Bromodichloromethane	EE. Ethylbenzene**	TT. 1,2-Dibromoethane	III. n-Butylbenzene
B. Bromomethane	Q. 1,2-Dichloropropane**	FF. Styrene	UU. 1,1,1,2-Tetrachloroethane	JJJ. 1,2-Dichlorobenzene
C. Vinyl choride**	R. cis-1,3-Dichloropropene	GG. Xylene, total	VV. Isopropylbenzene	KKK. 1,2,4-Trichlorobenzene
D. Chloroethane	S. Trichloroethene	HH. Vinyl acetate	WW. Bromobenzene	LLL. Hexachlorobutadiene
E. Methylene chloride	T. Dibromochloromethane	II. 2-Chloroethylvinyl ether	XX. 1,2,3-Trichloropropane	MMM. Naphthalene
F. Acetone	U. 1,1,2-Trichloroethane	JJ. Dichlorodifluoromethane	YY. n-Propylbenzene	NNN. 1,2,3-Trichlorobenzene
G. Carbon disulfide	V. Benzene	KK. Trichlorofluoromethane	ZZ. 2-Chlorotoluene	OOO. 1,3,5-Trichlorobenzene
H. 1,1-Dichloroethene**	W. trans-1,3-Dichloropropene	LL. Methyl-tert-butyl ether	AAA. 1,3,5-Trimethylbenzene	PPP. trans-1,2-Dichloroethene
I. 1,1-Dichloroethane*	X. Bromoform*	MM. 1,2-Dibromo-3-chloropropane	BBB. 4-Chlorotoluene	QQQ. cis-1,2-Dichloroethene
J. 1,2-Dichloroethene	Y. 4-Methyl-2-pentanone	NN. Diethyl ether	CCC. tert-Butylbenzene	RRR.
K. Chloroform**	Z. 2-Hexanone	OO. 2,2-Dichloropropane	DDD. 1,2,4-Trimethylbenzene	SSS.
L. 1,2-Dichloroethane	AA. Tetrachloroethene	PP. Bromochloromethane	EEE. sec-Butylbenzene	TTT.
M. 2-Butanone	BB. 1,1,2,2-Tetrachloroethane*	QQ. 1,1-Dichloropropene	FFF. 1,3-Dichlorobenzene	UUU.
N. 1,1,1-Trichloroethane	CC. Toluene**	RR. Dibromomethane	GGG. p-Isopropyltoluene	VVV.
O. Carbon tetrachloride	DD. Chlorobenzene*	SS. 1,3-Dichloropropane	HHH. 1,4-Dichlorobenzene	WWW.

* = System performance check compounds (SPCC) for RF ; ** = Calibration check compounds (CCC) for %RSD.

Notes:

LDC #: 6038D23
SDG #: 2K122W1

VALIDATION FINDINGS WORKSHEET
Field Duplicates

Reviewer: FT
2nd reviewer:

METHOD: GC Volatiles (EPA SW 846 Method 8010/8020)

(Y) N N/A Were field duplicate pairs identified in this SDG?
(Y) N N/A Were target compounds detected in the field duplicate pairs?

Compound	Concentration (ug/L)		RPD
	4	5	
0	5.9	5.9	0

Compound	Concentration ( )		RPD

Compound	Concentration ( )		RPD

Compound	Concentration ( )		RPD

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: NASA JPL

Collection Date: December 22, 2000

LDC Report Date: March 1, 2001

Matrix: Air

Parameters: Volatile Halogenated/Aromatic Hydrocarbons

Validation Level: EPA Level III

Laboratory: HP Labs

Sample Delivery Group (SDG): 2K1222W1

Sample Identification

SVW32-VPD-050
SVW32-VPE-051
SVW32-VPH-052
SVW32-VPI-053
SVW32-VPI-054DUP
SVW32-VPJ-055
SVW39-VPA-056
SVW39-VPC-057
SVW39-VPD-058
SVW39-VPE-059
SVW39-VPE-060DUP
SVW39-VPF-061

Introduction

This data review covers 12 air samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Methods 8010 and 8020 for Volatile Halogenated/Aromatic Hydrocarbons.

This review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review (October 1999) as there are no current guidelines for the method stated above.

A table summarizing all data qualification flags is provided at the end of this report. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Blank results are summarized in Section III.

Field duplicates are summarized in Section IX.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

N Presumptive evidence of presence of the constituent.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Calibration

a. Initial Calibration

Initial calibration of compounds was performed for the primary (quantitation) column and confirmation column as required by these methods.

The percent relative standard deviations (%RSD) were less than or equal to 20.0% for all compounds.

b. Calibration Verification

Calibration verification was performed at the required frequencies.

The percent differences (%D) of calibration factors in continuing standard mixtures were within the 15.0% QC limits.

III. Blanks

Method blanks were reviewed for each matrix as applicable. No volatile halogenated/aromatic hydrocarbon contaminants were found in the method blanks.

IV. Accuracy and Precision Data

a. Surrogate Recovery

Surrogates were added to all samples and blanks as required by the methods. All surrogate recoveries (%R) were within QC limits.

b. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) analyses were not required by the method.

c. Laboratory Control Samples

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

V. Target Compound Identification

Raw data were not reviewed for this SDG.

VI. Compound Quantitation and CRQLs

Raw data were not reviewed for this SDG.

VII. System Performance

Raw data were not reviewed for this SDG.

VIII. Overall Assessment of Data

Data flags are summarized at the end of this report.

IX. Field Duplicates

Samples SVW32-VPI-053 and SVW32-VPI-054DUP and samples SVW39-VPE-059 and SVW39-VPE-060DUP were identified as field duplicates. No volatile halogenated/aromatic hydrocarbons were detected in any of the samples with the following exceptions:

Compound	Concentration (ug/L)		RPD
	SVW39-VPE-059	SVW39-VPE-060DUP	
Carbon disulfide	2.4	2.1	13
Trichloroethene	1.3	1.3	0
1,1,2-Trichlorotrifluoroethane	17	16	6

X. Field Blanks

No field blanks were identified in this SDG.

NASA JPL
Volatile Halogenated/Aromatic Hydrocarbons - Data Qualification Summary - SDG 2K1222W1

No Sample Data Qualified in this SDG

NASA JPL
Volatile Halogenated/Aromatic Hydrocarbons - Laboratory Blank Data Qualification Summary - SDG 2K1222W1

No Sample Data Qualified in this SDG

HP Labs

6038E

GEOFON PROJECT # 04-4304-480
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GC SHIMADZU 14A FRONT
VOLATILE HALOGENATED AND AROMATIC HYDROCARBONS (EPA Method 8010/8020) ANALYSES OF SOIL VAPOR
SOIL VAPOR DATA IN UG/L-VAPOR

	BLANK	SVW32-VPD-050	SVW32-VPE-051	SVW32-VPH-052	SVW32-VPI-053	SVW32-VPI-054 DUP	SVW32-VPJ-055
DATE	12/22/00	12/22/00	12/22/00	12/22/00	12/22/00	12/22/00	12/22/00
SAMPLING TIME	05:53	06:54	07:19	07:44	08:08	08:31	08:55
ANALYSIS TIME	05:54	06:58	07:22	07:45	08:09	08:33	08:58
SAMPLING DEPTH (feet)	--	70	90	155	180	180	195
VOLUME WITHDRAWN (cc)	200	280	360	620	720	720	780
VOLUME INJECTED	1	1	1	1	1	1	1
DILUTION FACTOR	1	1	1	1	1	1	1
CARBON TETRACHLORIDE	nd	nd	nd	14	nd	nd	nd
CHLOROETHANE/BROMOMETHANE	nd	nd	nd	nd	nd	nd	nd
CHLOROFORM	nd	nd	nd	nd	nd	nd	nd
1,1-DICHLORO ETHANE	nd	nd	nd	nd	nd	nd	nd
1,2-DICHLORO ETHANE	nd	nd	nd	nd	nd	nd	nd
1,1-DICHLORO ETHENE	nd	nd	nd	nd	nd	nd	nd
CIS-1,2-DICHLORO ETHENE	nd	nd	nd	nd	nd	nd	nd
TRANS-1,2-DICHLORO ETHENE	nd	nd	nd	nd	nd	nd	nd
DICHLOROMETHANE	nd	nd	nd	nd	nd	nd	nd
TETRACHLORO ETHENE	nd	nd	nd	nd	nd	nd	nd
1,1,1,2-TETRACHLORO ETHANE	nd	nd	nd	nd	nd	nd	nd
1,1,2,2-TETRACHLORO ETHANE	nd	nd	nd	nd	nd	nd	nd
1,1,1-TRICHLORO ETHANE	nd	nd	nd	nd	nd	nd	nd
1,1,2-TRICHLORO ETHANE	nd	nd	nd	nd	nd	nd	nd
TRICHLORO ETHENE	nd	nd	nd	nd	nd	nd	nd
VINYL CHLORIDE	nd	nd	nd	nd	nd	nd	nd
TRICHLOROFLUOROMETHANE (FR11)	nd	nd	nd	nd	nd	nd	nd
DICHLORODIFLUOROMETHANE (FR12)	nd	nd	nd	nd	nd	nd	nd
1,1,2-TRICHLOROTRIFLUOROETHANE (FR113)	nd	nd	nd	17	nd	nd	nd
BENZENE	nd	nd	nd	nd	nd	nd	nd
ETHYLBENZENE	nd	nd	nd	nd	nd	nd	nd
TOLUENE	nd	nd	nd	nd	nd	nd	nd
m&p-XYLENES	nd	nd	nd	nd	nd	nd	nd
o-XYLENE	nd	nd	nd	nd	nd	nd	nd
SURROGATES							
1,4 DIFLUORO BENZENE	105%	96%	87%	93%	94%	97%	102%
CHLOROBENZENE	95%	98%	88%	93%	93%	97%	105%
4 BROMOFLUORO BENZENE	97%	102%	88%	95%	95%	100%	107%

ND INDICATES NOT DETECTED AT A DETECTION LIMIT OF 1.0 UG/L-VAPOR FOR EACH COMPOUND

ANALYSES PERFORMED ON-SITE IN DOHS CERTIFIED MOBILE LABORATORY (CERT #1745)
ANALYSES PERFORMED BY: ALLEN GLOVER
DATA REVIEWED BY: JAMES E. PICKER

1/3/01

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SOIL VAPOR DATA IN UG/L-VAPOR

	SVW39-VPA-056	SVW39-VPC-057	SVW39-VPD-058	SVW39-VPE-059	SVW39-VPE-060 DUP	SVW-VPF-061
DATE	12/22/00	12/22/00	12/22/00	12/22/00	12/22/00	12/22/00
SAMPLING TIME	09:20	09:42	10:05	10:30	10:54	11:17
ANALYSIS TIME	09:21	09:45	10:09	10:32	10:56	11:20
SAMPLING DEPTH (feet)	20	50	70	85	85	100
VOLUME WITHDRAWN (cc)	80	200	280	340	340	400
VOLUME INJECTED	1	1	1	1	1	1
DILUTION FACTOR	1	1	1	1	1	1
CARBON TETRACHLORIDE	nd	nd	nd	2.4	2.1	5.0
CHLOROETHANE/BROMOMETHANE	nd	nd	nd	nd	nd	nd
CHLOROFORM	nd	nd	nd	nd	nd	nd
1,1-DICHLORO ETHANE	nd	nd	nd	nd	nd	nd
1,2-DICHLORO ETHANE	nd	nd	nd	nd	nd	nd
1,1-DICHLORO ETHENE	nd	nd	nd	nd	nd	nd
CIS-1,2-DICHLORO ETHENE	nd	nd	nd	nd	nd	nd
TRANS-1,2-DICHLORO ETHENE	nd	nd	nd	nd	nd	nd
DICHLOROMETHANE	nd	nd	nd	nd	nd	nd
TETRACHLORO ETHENE	nd	nd	nd	nd	nd	nd
1,1,1,2-TETRACHLORO ETHANE	nd	nd	nd	nd	nd	nd
1,1,2,2-TETRACHLORO ETHANE	nd	nd	nd	nd	nd	nd
1,1,1-TRICHLORO ETHANE	nd	nd	nd	nd	nd	nd
1,1,2-TRICHLORO ETHANE	nd	nd	nd	nd	nd	nd
TRICHLORO ETHENE	nd	nd	nd	1.3	1.3	2.3
VINYL CHLORIDE	nd	nd	nd	nd	nd	nd
TRICHLOROFLUOROMETHANE (FR11)	nd	nd	nd	nd	nd	nd
DICHLORODIFLUOROMETHANE (FR12)	nd	nd	nd	nd	nd	nd
1,1,2-TRICHLOROTRIFLUOROETHANE (FR113)	nd	nd	nd	17	16	21
BENZENE	nd	nd	nd	nd	nd	nd
ETHYLBENZENE	nd	nd	nd	nd	nd	nd
TOLUENE	nd	nd	nd	nd	nd	nd
m&p-XYLENES	nd	nd	nd	nd	nd	nd
o-XYLENE	nd	nd	nd	nd	nd	nd
SURROGATES						
1,4 DIFLUORO BENZENE	107%	95%	98%	99%	97%	99%
CHLOROBENZENE	109%	97%	98%	102%	94%	98%
4 BROMOFLUORO BENZENE	112%	101%	100%	103%	96%	102%

ND INDICATES NOT DETECTED AT A DETECTION LIMIT OF 1.0 UG/L-VAPOR FOR EACH COMPOUND

ANALYSES PERFORMED ON-SITE IN DOHS CERTIFIED MOBILE LABORATORY (CERT #1745)
ANALYSES PERFORMED BY: ALLEN GLOVER
DATA REVIEWED BY: JAMES E. PICKER

1/3/01

LDC #: 6038E23 **VALIDATION COMPLETENESS WORKSHEET**

SDG #: 2K1222W1 X EPA Level III NFESC Level C

Laboratory: HP Labs

Date: 2/28/01

Page: 1 of 1

Reviewer: A

2nd Reviewer: ~

METHOD: GC Volatile Halogenated/Aromatic Hydrocarbons (EPA SW 846 Method 8010/8020)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 12/22/00
IIa.	Initial calibration	A	%RSD
IIb.	Calibration verification	A	%D
III.	Blanks	A	
IVa.	Surrogate recovery	A	
IVb.	Matrix spike/Matrix spike duplicates	N	
IVc.	Laboratory control samples	~~NA~~ A	
V.	Target compound identification	N	
VI.	Compound Quantitation and CRQLs	N	
VII.	System Performance	N	
VIII.	Overall assessment of data	A	
IX.	Field duplicates	SW	*D = 4 a 5 D1 = 10 a 11 * = ND
X.	Field blanks	N	

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank

Validated Samples:

AIR

1	SVW32-VPD-050	11	SVW39-VPE-060DUP D1	21		31	
2	SVW32-VPE-051	12	SVW39-VPF-061	22		32	
3	SVW32-VPH-052	13	BLK	23		33	
4	SVW32-VPI-053 D	14		24		34	
5	SVW32-VPI-054DUP D	15		25		35	
6	SVW32-VPJ-055	16		26		36	
7	SVW39-VPA-056	17		27		37	
8	SVW39-VPC-057	18		28		38	
9	SVW39-VPD-058	19		29		39	
10	SVW39-VPE-059 D1	20		30		40	

Notes: _____

LDC #: 6038E23
SDG #: 2K1222W1

TARGET COMPOUND WORKSHEET

Reviewer: FT
2nd Reviewer: [illegible]

METHOD: VOA (EPA SW 846 Method 8240/8260/8021))

A. Chloromethane*	P. Bromodichloromethane	EE. Ethylbenzene**	TT. 1,2-Dibromoethane	III. n-Butylbenzene
B. Bromomethane	Q. 1,2-Dichloropropane**	FF. Styrene	UU. 1,1,1,2-Tetrachloroethane	JJJ. 1,2-Dichlorobenzene
C. Vinyl choride**	R. cis-1,3-Dichloropropene	GG. Xylene, total	VV. Isopropylbenzene	KKK. 1,2,4-Trichlorobenzene
D. Chloroethane	S. Trichloroethene	HH. Vinyl acetate	WW. Bromobenzene	LLL. Hexachlorobutadiene
E. Methylene chloride	T. Dibromochloromethane	II. 2-Chloroethylvinyl ether	XX. 1,2,3-Trichloropropane	MMM. Naphthalene
F. Acetone	U. 1,1,2-Trichloroethane	JJ. Dichlorodifluoromethane	YY. n-Propylbenzene	NNN. 1,2,3-Trichlorobenzene
G. Carbon disulfide	V. Benzene	KK. Trichlorofluoromethane	ZZ. 2-Chlorotoluene	OOO. 1,3,5-Trichlorobenzene
H. 1,1-Dichloroethene**	W. trans-1,3-Dichloropropene	LL. Methyl-tert-butyl ether	AAA. 1,3,5-Trimethylbenzene	PPP. trans-1,2-Dichloroethene
I. 1,1-Dichloroethane*	X. Bromoform*	MM. 1,2-Dibromo-3-chloropropane	BBB. 4-Chlorotoluene	QQQ. cis-1,2-Dichloroethene
J. 1,2-Dichloroethene	Y. 4-Methyl-2-pentanone	NN. Diethyl ether	CCC. tert-Butylbenzene	RRR.
K. Chloroform**	Z. 2-Hexanone	OO. 2,2-Dichloropropane	DDD. 1,2,4-Trimethylbenzene	SSS.
L. 1,2-Dichloroethane	AA. Tetrachloroethene	PP. Bromochloromethane	EEE. sec-Butylbenzene	TTT.
M. 2-Butanone	BB. 1,1,2,2-Tetrachloroethane*	QQ. 1,1-Dichloropropene	FFF. 1,3-Dichlorobenzene	UUU.
N. 1,1,1-Trichloroethane	CC. Toluene**	RR. Dibromomethane	GGG. p-Isopropyltoluene	VVV.
O. Carbon tetrachloride	DD. Chlorobenzene*	SS. 1,3-Dichloropropane	HHH. 1,4-Dichlorobenzene	WWW.

* = System performance check compounds (SPCC) for RF ; ** = Calibration check compounds (CCC) for %RSD.

ZZZ- 1,1,2-Trichlorotrifluoroethane (FR113)

Notes: _____

LDC #: 6038E23
SDG #: 2K1222W1

VALIDATION FINDINGS WORKSHEET
Field Duplicates

Reviewer: FT
2nd reviewer:

METHOD: GC Volatiles (EPA SW 846 Method 8010/8020)

(Y) N N/A Were field duplicate pairs identified in this SDG?
(Y) N N/A Were target compounds detected in the field duplicate pairs?

Compound	Concentration (ug/L)		RPD
	10	11	
G	2.4	2.1	13
S	1.3	1.3	0
ZZZ	17	16	FI 6

Compound	Concentration ( )		RPD

Compound	Concentration ( )		RPD

Compound	Concentration ( )		RPD

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: NASA JPL

Collection Date: December 27, 2000

LDC Report Date: March 1, 2001

Matrix: Air

Parameters: Volatile Halogenated/Aromatic Hydrocarbons

Validation Level: EPA Level III

Laboratory: HP Labs

Sample Delivery Group (SDG): 2K1227W1

Sample Identification

SVW39-VPI-062
SVW38-VPA-063
SVW38-VPB-064
SVW38-VPC-065
SVW38-VPC-066DUP
SVW38-VPD-067
SVW38-VPF-068
SVW38-VPG-069
SVW38-VPJ-070

Introduction

This data review covers 9 air samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Methods 8010 and 8020 for Volatile Halogenated/Aromatic Hydrocarbons.

This review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review (October 1999) as there are no current guidelines for the method stated above.

A table summarizing all data qualification flags is provided at the end of this report. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Blank results are summarized in Section III.

Field duplicates are summarized in Section IX.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

N Presumptive evidence of presence of the constituent.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Calibration

a. Initial Calibration

Initial calibration of compounds was performed for the primary (quantitation) column and confirmation column as required by these methods.

The percent relative standard deviations (%RSD) were less than or equal to 20.0% for all compounds.

b. Calibration Verification

Calibration verification was performed at the required frequencies.

The percent differences (%D) of calibration factors in continuing standard mixtures were within the 15.0% QC limits.

III. Blanks

Method blanks were reviewed for each matrix as applicable. No volatile halogenated/aromatic hydrocarbon contaminants were found in the method blanks.

IV. Accuracy and Precision Data

a. Surrogate Recovery

Surrogates were added to all samples and blanks as required by the methods. All surrogate recoveries (%R) were within QC limits.

b. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) analyses were not required by the method.

c. Laboratory Control Samples

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

V. Target Compound Identification

Raw data were not reviewed for this SDG.

VI. Compound Quantitation and CRQLs

Raw data were not reviewed for this SDG.

VII. System Performance

Raw data were not reviewed for this SDG.

VIII. Overall Assessment of Data

Data flags are summarized at the end of this report.

IX. Field Duplicates

Samples SVW38-VPC-065 and SVW38-VPC-066DUP were identified as field duplicates. No volatile halogenated/aromatic hydrocarbons were detected in any of the samples.

X. Field Blanks

No field blanks were identified in this SDG.

NASA JPL
Volatile Halogenated/Aromatic Hydrocarbons - Data Qualification Summary - SDG 2K1227W1

No Sample Data Qualified in this SDG

NASA JPL
Volatile Halogenated/Aromatic Hydrocarbons - Laboratory Blank Data Qualification Summary - SDG 2K1227W1

No Sample Data Qualified in this SDG

HP Labs

6038F

GEOFON PROJECT # 04-4304-480
JPL
4800 OAK GROVE DRIVE
PASADENA, CA

HP Labs Project #2K1227W1
GC SHIMADZU 14A FRONT
VOLATILE HALOGENATED AND AROMATIC HYDROCARBONS (EPA Method 8010/8020) ANALYSES OF SOIL VAPOR
SOIL VAPOR DATA IN UG/L-VAPOR

	BLANK	SVW39-VPI-062	SVW38-VPA-063	SVW38-VPB-064	SVW38-VPC-065
DATE	12/27/00	12/27/00	12/27/00	12/27/00	12/27/00
SAMPLING TIME	06:05	07:00	07:22	07:45	08:10
ANALYSIS TIME	06:05	07:03	07:26	07:50	08:13
SAMPLING DEPTH (feet)	--	130	25	45	65
VOLUME WITHDRAWN (cc)	200	520	100	180	260
VOLUME INJECTED	1	1	1	1	1
DILUTION FACTOR	1	1	1	1	1
CARBON TETRACHLORIDE	nd	2.4	nd	nd	nd
CHLOROETHANE/BROMOMETHANE	nd	nd	nd	nd	nd
CHLOROFORM	nd	nd	nd	nd	nd
1,1-DICHLORO ETHANE	nd	nd	nd	nd	nd
1,2-DICHLORO ETHANE	nd	nd	nd	nd	nd
1,1-DICHLORO ETHENE	nd	nd	nd	nd	nd
CIS-1,2-DICHLORO ETHENE	nd	nd	nd	nd	nd
TRANS-1,2-DICHLORO ETHENE	nd	nd	nd	nd	nd
DICHLOROMETHANE	nd	nd	nd	nd	nd
TETRACHLORO ETHENE	nd	nd	nd	nd	nd
1,1,1,2-TETRACHLORO ETHANE	nd	nd	nd	nd	nd
1,1,2,2-TETRACHLORO ETHANE	nd	nd	nd	nd	nd
1,1,1-TRICHLORO ETHANE	nd	nd	nd	nd	nd
1,1,2-TRICHLORO ETHANE	nd	nd	nd	nd	nd
TRICHLORO ETHENE	nd	5.2	nd	nd	nd
VINYL CHLORIDE	nd	nd	nd	nd	nd
TRICHLOROFLUOROMETHANE (FR11)	nd	nd	nd	nd	nd
DICHLORODIFLUOROMETHANE (FR12)	nd	nd	nd	nd	nd
1,1,2-TRICHLOROTRIFLUOROETHANE (FR113)	nd	2.1	nd	nd	nd
BENZENE	nd	nd	nd	nd	nd
ETHYLBENZENE	nd	nd	nd	nd	nd
TOLUENE	nd	nd	nd	nd	nd
m&p-XYLENES	nd	nd	nd	nd	nd
o-XYLENE	nd	nd	nd	nd	nd
SURROGATES					
1,4 DIFLUORO BENZENE	96%	97%	94%	94%	96%
CHLOROBENZENE	90%	97%	95%	95%	95%
4 BROMOFLUORO BENZENE	91%	100%	98%	97%	98%

ND INDICATES NOT DETECTED AT A DETECTION LIMIT OF 1.0 UG/L-VAPOR FOR EACH COMPOUND

ANALYSES PERFORMED ON-SITE IN DOHS CERTIFIED MOBILE LABORATORY (CERT #1745)
ANALYSES PERFORMED BY: ALLEN GLOVER
DATA REVIEWED BY: JAMES E. PICKER

1/31/01

HP Labs

GEOFON PROJECT # 04-4304-480
JPL
4800 OAK GROVE DRIVE
PASADENA, CA

HP Labs Project #2K1227W1
GC SHIMADZU 14A FRONT
VOLATILE HALOGENATED AND AROMATIC HYDROCARBONS (EPA Method 8010/8020) ANALYSES OF SOIL VAPOR
SOIL VAPOR DATA IN UG/L-VAPOR

	SVW38-VPC-066 DUP	SVW38-VPD-067	SVW38-VPF-068	SVW38-VPG-069	SVW38-VPJ-070
DATE	12/27/00	12/27/00	12/27/00	12/27/00	12/27/00
SAMPLING TIME	08:35	08:57	09:20	09:45	10:14
ANALYSIS TIME	08:37	09:00	09:24	09:48	10:15
SAMPLING DEPTH (feet)	65	80	110	125	170
VOLUME WITHDRAWN (cc)	260	320	440	500	680
VOLUME INJECTED	1	1	1	1	1
DILUTION FACTOR	1	1	1	1	1
CARBON TETRACHLORIDE	nd	nd	3.0	2.3	4.6
CHLOROETHANE/BROMOMETHANE	nd	nd	nd	nd	nd
CHLOROFORM	nd	nd	nd	nd	nd
1,1-DICHLORO ETHANE	nd	nd	nd	nd	nd
1,2-DICHLORO ETHANE	nd	nd	nd	nd	nd
1,1-DICHLORO ETHENE	nd	nd	nd	nd	nd
CIS-1,2-DICHLORO ETHENE	nd	nd	nd	nd	nd
TRANS-1,2-DICHLORO ETHENE	nd	nd	nd	nd	nd
DICHLOROMETHANE	nd	nd	nd	nd	nd
TETRACHLORO ETHENE	nd	nd	nd	nd	nd
1,1,1,2-TETRACHLORO ETHANE	nd	nd	nd	nd	nd
1,1,2,2-TETRACHLORO ETHANE	nd	nd	nd	nd	nd
1,1,1-TRICHLORO ETHANE	nd	nd	nd	nd	nd
1,1,2-TRICHLORO ETHANE	nd	nd	nd	nd	nd
TRICHLORO ETHENE	nd	nd	1.2	1.0	2.2
VINYL CHLORIDE	nd	nd	nd	nd	nd
TRICHLOROFLUOROMETHANE (FR11)	nd	nd	nd	nd	nd
DICHLORODIFLUOROMETHANE (FR12)	nd	nd	nd	nd	nd
1,1,2-TRICHLOROTRIFLUOROETHANE (FR113)	nd	nd	1.5	1.4	5.9
BENZENE	nd	nd	nd	nd	nd
ETHYLBENZENE	nd	nd	nd	nd	nd
TOLUENE	nd	nd	nd	nd	nd
m&p-XYLENES	nd	nd	nd	nd	nd
o-XYLENE	nd	nd	nd	nd	nd
SURROGATES					
1,4 DIFLUORO BENZENE	98%	99%	95%	99%	104%
CHLOROBENZENE	98%	99%	96%	101%	103%
4 BROMOFLUORO BENZENE	100%	102%	98%	102%	107%

ND INDICATES NOT DETECTED AT A DETECTION LIMIT OF 1.0 UG/L-VAPOR FOR EACH COMPOUND

ANALYSES PERFORMED ON-SITE IN DOHS CERTIFIED MOBILE LABORATORY (CERT #1745)
ANALYSES PERFORMED BY: ALLEN GLOVER
DATA REVIEWED BY: JAMES E. PICKER

1/3/01

LDC #: 6038F23 **VALIDATION COMPLETENESS WORKSHEET**

SDG #: 2K1227W1 X EPA Level III NFESC Level C

Laboratory: HP Labs

Date: 2/28/01

Page: 1 of 1

Reviewer: ET

2nd Reviewer: A

METHOD: GC Volatile Halogenated/Aromatic Hydrocarbons (EPA SW 846 Method 8010/8020)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 12/27/00
IIa.	Initial calibration	A	% RSD
IIb.	Calibration verification	A	% D
III.	Blanks	A	
IVa.	Surrogate recovery	A	
IVb.	Matrix spike/Matrix spike duplicates	N	
IVc.	Laboratory control samples	FN/A	
V.	Target compound identification	N	
VI.	Compound Quantitation and CRQLs	N	
VII.	System Performance	N	
VIII.	Overall assessment of data		
IX.	Field duplicates	ND	D = 4 & 5
X.	Field blanks	N	

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank

Validated Samples:

AIR

1	SVW39-VPI-062	11		21		31	
2	SVW38-VPA-063	12		22		32	
3	SVW38-VPB-064	13		23		33	
4	SVW38-VPC-065	14		24		34	
5	SVW38-VPC-066DUP D	15		25		35	
6	SVW38-VPD-067	16		26		36	
7	SVW38-VPF-068	17		27		37	
8	SVW38-VPG-069	18		28		38	
9	SVW38-VPJ-070	19		29		39	
10	BIK	20		30		40	

Notes:

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: NASA JPL

Collection Date: December 28, 2000

LDC Report Date: March 1, 2001

Matrix: Air

Parameters: Volatile Halogenated/Aromatic Hydrocarbons

Validation Level: EPA Level III

Laboratory: HP Labs

Sample Delivery Group (SDG): 2K1228W1

Sample Identification

SVW37-VPA-071
SVW37-VPA-072DUP
SVW37-VPB-073
SVW37-VPC-074
SVW37-VPD-075
SVW37-VPE-076
SVW37-VPH-077
SVW37-VPH-078DUP
SVW37-VPI-079
SVW37-VPJ-080

Introduction

This data review covers 10 air samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Methods 8010 and 8020 for Volatile Halogenated/Aromatic Hydrocarbons.

This review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review (October 1999) as there are no current guidelines for the method stated above.

A table summarizing all data qualification flags is provided at the end of this report. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Blank results are summarized in Section III.

Field duplicates are summarized in Section IX.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

N Presumptive evidence of presence of the constituent.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Calibration

a. Initial Calibration

Initial calibration of compounds was performed for the primary (quantitation) column and confirmation column as required by these methods.

The percent relative standard deviations (%RSD) were less than or equal to 20.0% for all compounds.

b. Calibration Verification

Calibration verification was performed at the required frequencies.

The percent differences (%D) of calibration factors in continuing standard mixtures were within the 15.0% QC limits.

III. Blanks

Method blanks were reviewed for each matrix as applicable. No volatile halogenated/aromatic hydrocarbon contaminants were found in the method blanks.

IV. Accuracy and Precision Data

a. Surrogate Recovery

Surrogates were added to all samples and blanks as required by the methods. All surrogate recoveries (%R) were within QC limits.

b. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) analyses were not required by the method.

c. Laboratory Control Samples

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

V. Target Compound Identification

Raw data were not reviewed for this SDG.

VI. Compound Quantitation and CRQLs

Raw data were not reviewed for this SDG.

VII. System Performance

Raw data were not reviewed for this SDG.

VIII. Overall Assessment of Data

Data flags are summarized at the end of this report.

IX. Field Duplicates

Samples SVW37-VPA-071 and SVW37-VPA-072DUP and samples SVW37-VPH-077 and SVW37-VPH-078DUP were identified as field duplicates. No volatile halogenated/aromatic hydrocarbons were detected in any of the samples with the following exceptions:

Compound	Concentration (ug/L)		RPD
	SVW37-VPH-077	SVW37-VPH-078DUP	
Carbon tetrachloride	3.5	3.2	9
1,1,2-Trichlorotrifluoroethane	1.5	1.2	22

X. Field Blanks

No field blanks were identified in this SDG.

NASA JPL
Volatile Halogenated/Aromatic Hydrocarbons - Data Qualification Summary - SDG 2K1228W1

No Sample Data Qualified in this SDG

NASA JPL
Volatile Halogenated/Aromatic Hydrocarbons - Laboratory Blank Data Qualification Summary - SDG 2K1228W1

No Sample Data Qualified in this SDG

HP Labs

6038G

GEOFON PROJECT # 04-4304-480
JPL
4800 OAK GROVE DRIVE
PASADENA, CA

HP Labs Project #2K1228W1
GC SHIMADZU 14A FRONT
VOLATILE HALOGENATED AND AROMATIC HYDROCARBONS (EPA Method 8010/8020) ANALYSES OF SOIL VAPOR
SOIL VAPOR DATA IN UG/L-VAPOR

	BLANK	SVW37-VPA-071	SVW37-VPA-072 DUP	SVW37-VPB-073	SVW37-VPC-074	SVW37-VPD-075
DATE	12/28/00	12/28/00	12/28/00	12/28/00	12/28/00	12/28/00
SAMPLING TIME	06:04	06:52	07:11	07:36	08:01	08:24
ANALYSIS TIME	06:04	06:52	07:16	07:39	08:03	08:27
SAMPLING DEPTH (feet)	--	25	25	40	60	80
VOLUME WITHDRAWN (cc)	200	100	100	160	240	320
VOLUME INJECTED	1	1	1	1	1	1
DILUTION FACTOR	1	1	1	1	1	1
CARBON TETRACHLORIDE	nd	nd	nd	1.4	nd	nd
CHLOROETHANE/BROMOMETHANE	nd	nd	nd	nd	nd	nd
CHLOROFORM	nd	nd	nd	nd	nd	nd
1,1-DICHLORO ETHANE	nd	nd	nd	nd	nd	nd
1,2-DICHLORO ETHANE	nd	nd	nd	nd	nd	nd
1,1-DICHLORO ETHENE	nd	nd	nd	nd	nd	nd
CIS-1,2-DICHLORO ETHENE	nd	nd	nd	nd	nd	nd
TRANS-1,2-DICHLORO ETHENE	nd	nd	nd	nd	nd	nd
DICHLOROMETHANE	nd	nd	nd	nd	nd	nd
TETRACHLORO ETHENE	nd	nd	nd	nd	nd	nd
1,1,1,2-TETRACHLORO ETHANE	nd	nd	nd	nd	nd	nd
1,1,2,2-TETRACHLORO ETHANE	nd	nd	nd	nd	nd	nd
1,1,1-TRICHLORO ETHANE	nd	nd	nd	nd	nd	nd
1,1,2-TRICHLORO ETHANE	nd	nd	nd	nd	nd	nd
TRICHLORO ETHENE	nd	nd	nd	nd	nd	nd
VINYL CHLORIDE	nd	nd	nd	nd	nd	nd
TRICHLOROFLUOROMETHANE (FR11)	nd	nd	nd	nd	nd	nd
DICHLORODIFLUOROMETHANE (FR12)	nd	nd	nd	nd	nd	nd
1,1,2-TRICHLOROTRIFLUOROETHANE (FR113)	nd	nd	nd	nd	nd	nd
BENZENE	nd	nd	nd	nd	nd	nd
ETHYLBENZENE	nd	nd	nd	nd	nd	nd
TOLUENE	nd	nd	nd	nd	nd	nd
m&p-XYLENES	nd	nd	nd	nd	nd	nd
o-XYLENE	nd	nd	nd	nd	nd	nd
SURROGATES						
1,4 DIFLUORO BENZENE	98%	96%	93%	98%	94%	99%
CHLOROBENZENE	92%	95%	93%	97%	94%	99%
4 BROMOFLUORO BENZENE	94%	97%	96%	100%	96%	102%

ND INDICATES NOT DETECTED AT A DETECTION LIMIT OF 1.0 UG/L-VAPOR FOR EACH COMPOUND

ANALYSES PERFORMED ON-SITE IN DOHS CERTIFIED MOBILE LABORATORY (CERT #1745)
ANALYSES PERFORMED BY: ALLEN GLOVER
DATA REVIEWED BY: JAMES E. PICKER

1/3/01

HP Labs

GEOFON PROJECT # 04-4304-480
JPL
4800 OAK GROVE DRIVE
PASADENA, CA

HP Labs Project #2K1228W1
GC SHIMADZU 14A FRONT
VOLATILE HALOGENATED AND AROMATIC HYDROCARBONS (EPA Method 8010/8020) ANALYSES OF SOIL VAPOR
SOIL VAPOR DATA IN UG/L-VAPOR

	SVW37-VPE-076	SVW37-VPH-077	SVW37-VPH-078 DUP	SVW37-VPI-079	SVW37-VPJ-080
DATE	12/28/00	12/28/00	12/28/00	12/28/00	12/28/00
SAMPLING TIME	08:47	09:10	09:35	10:01	10:25
ANALYSIS TIME	08:50	09:15	09:40	10:04	10:28
SAMPLING DEPTH (feet)	100	155	155	170	180
VOLUME WITHDRAWN (cc)	400	620	620	680	720
VOLUME INJECTED	1	1	1	1	1
DILUTION FACTOR	1	1	1	1	1
CARBON TETRACHLORIDE	5.9	3.5	3.2	4.1	3.7
CHLOROETHANE/BROMOMETHANE	nd	nd	nd	nd	nd
CHLOROFORM	nd	nd	nd	nd	nd
1,1-DICHLORO ETHANE	nd	nd	nd	nd	nd
1,2-DICHLORO ETHANE	nd	nd	nd	nd	nd
1,1-DICHLORO ETHENE	nd	nd	nd	nd	nd
CIS-1,2-DICHLORO ETHENE	nd	nd	nd	nd	nd
TRANS-1,2-DICHLORO ETHENE	nd	nd	nd	nd	nd
DICHLOROMETHANE	nd	nd	nd	nd	nd
TETRACHLORO ETHENE	nd	nd	nd	nd	nd
1,1,1,2-TETRACHLORO ETHANE	nd	nd	nd	nd	nd
1,1,2,2-TETRACHLORO ETHANE	nd	nd	nd	nd	nd
1,1,1-TRICHLORO ETHANE	nd	nd	nd	nd	nd
1,1,2-TRICHLORO ETHANE	nd	nd	nd	nd	nd
TRICHLORO ETHENE	1.7	nd	nd	1.4	2.2
VINYL CHLORIDE	nd	nd	nd	nd	nd
TRICHLOROFLUOROMETHANE (FR11)	nd	nd	nd	nd	nd
DICHLORODIFLUOROMETHANE (FR12)	nd	nd	nd	nd	nd
1,1,2-TRICHLOROTRIFLUOROETHANE (FR113)	1.1	1.5	1.2	2.0	3.9
BENZENE	nd	nd	nd	nd	nd
ETHYLBENZENE	nd	nd	nd	nd	nd
TOLUENE	nd	nd	nd	nd	nd
m&p-XYLENES	nd	nd	nd	nd	nd
o-XYLENE	nd	nd	nd	nd	nd
SURROGATES					
1,4 DIFLUORO BENZENE	96%	94%	101%	99%	94%
CHLOROBENZENE	96%	95%	99%	99%	95%
4 BROMOFLUORO BENZENE	99%	96%	102%	101%	99%

ND INDICATES NOT DETECTED AT A DETECTION LIMIT OF 1.0 UG/L-VAPOR FOR EACH COMPOUND
ANALYSES PERFORMED ON-SITE IN DOHS CERTIFIED MOBILE LABORATORY (CERT #1745)
ANALYSES PERFORMED BY: ALLEN GLOVER
DATA REVIEWED BY: JAMES E. PICKER

1/3/01

LDC #: 6038G23 **VALIDATION COMPLETENESS WORKSHEET** Date: 2/28/01
SDG #: 2K1228W1 X EPA Level III ___NFESC Level C Page: 1 of 1
Laboratory: HP Labs Reviewer: FT
2nd Reviewer: [illegible]

METHOD: GC Volatile Halogenated/Aromatic Hydrocarbons (EPA SW 846 Method 8010/8020)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 12/28/00
IIa.	Initial calibration	A	% RSD
IIb.	Calibration verification	A	% D
III.	Blanks	A	
IVa.	Surrogate recovery	A	
IVb.	Matrix spike/Matrix spike duplicates	N	
IVc.	Laboratory control samples	FT/A	
V.	Target compound identification	N	
VI.	Compound Quantitation and CRQLs	N	
VII.	System Performance	N	
VIII.	Overall assessment of data	N	
IX.	Field duplicates	SW	*D = 1 + 2 D1 = 7 + 8
X.	Field blanks	N	* = ND

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank

Validated Samples:

AIR

1	SVW37-VPA-071 D	11	BLK	21		31	
2	SVW37-VPA-072DUP D	12		22		32	
3	SVW37-VPB-073	13		23		33	
4	SVW37-VPC-074	14		24		34	
5	SVW37-VPD-075	15		25		35	
6	SVW37-VPE-076	16		26		36	
7	SVW37-VPH-077 D1	17		27		37	
8	SVW37-VPH-078DUP D1	18		28		38	
9	SVW37-VPI-079	19		29		39	
10	SVW37-VPJ-080	20		30		40	

Notes: _____

LDC #: 60385G23
SDG #: 2K1228W1

TARGET COMPOUND WORKSHEET

Reviewer: FT
2nd Reviewer:

METHOD: VOA (EPA SW 846 Method 8240/8260/8021))

A. Chloromethane*	P. Bromodichloromethane	EE. Ethylbenzene**	TT. 1,2-Dibromoethane	III. n-Butylbenzene
B. Bromomethane	Q. 1,2-Dichloropropane**	FF. Styrene	UU. 1,1,1,2-Tetrachloroethane	JJJ. 1,2-Dichlorobenzene
C. Vinyl choride**	R. cis-1,3-Dichloropropene	GG. Xylene, total	VV. Isopropylbenzene	KKK. 1,2,4-Trichlorobenzene
D. Chloroethane	S. Trichloroethene	HH. Vinyl acetate	WW. Bromobenzene	LLL. Hexachlorobutadiene
E. Methylene chloride	T. Dibromochloromethane	II. 2-Chloroethylvinyl ether	XX. 1,2,3-Trichloropropane	MMM. Naphthalene
F. Acetone	U. 1,1,2-Trichloroethane	JJ. Dichlorodifluoromethane	YY. n-Propylbenzene	NNN. 1,2,3-Trichlorobenzene
G. Carbon disulfide	V. Benzene	KK. Trichlorofluoromethane	ZZ. 2-Chlorotoluene	OOO. 1,3,5-Trichlorobenzene
H. 1,1-Dichloroethene**	W. trans-1,3-Dichloropropene	LL. Methyl-tert-butyl ether	AAA. 1,3,5-Trimethylbenzene	PPP. trans-1,2-Dichloroethene
I. 1,1-Dichloroethane*	X. Bromoform*	MM. 1,2-Dibromo-3-chloropropane	BBB. 4-Chlorotoluene	QQQ. cis-1,2-Dichloroethene
J. 1,2-Dichloroethene	Y. 4-Methyl-2-pentanone	NN. Diethyl ether	CCC. tert-Butylbenzene	RRR.
K. Chloroform**	Z. 2-Hexanone	OO. 2,2-Dichloropropane	DDD. 1,2,4-Trimethylbenzene	SSS.
L. 1,2-Dichloroethane	AA. Tetrachloroethene	PP. Bromochloromethane	EEE. sec-Butylbenzene	TTT.
M. 2-Butanone	BB. 1,1,2,2-Tetrachloroethane*	QQ. 1,1-Dichloropropene	FFF. 1,3-Dichlorobenzene	UUU.
N. 1,1,1-Trichloroethane	CC. Toluene**	RR. Dibromomethane	GGG. p-Isopropyltoluene	VVV.
O. Carbon tetrachloride	DD. Chlorobenzene*	SS. 1,3-Dichloropropane	HHH. 1,4-Dichlorobenzene	WWW.

* = System performance check compounds (SPCC) for RF ; ** = Calibration check compounds (CCC) for %RSD. ZZZ — 1,1,2-Trichlorotrifluoroethane (FR113)

Notes:

LDC #: 60385Z3
SDG #: 2K1228W1

VALIDATION FINDINGS WORKSHEET
Field Duplicates

Page: 1 of 1
Reviewer: FT
2nd reviewer: [illegible]

METHOD: GC Volatiles (EPA SW 846 Method 8010/8020)

(Y) N N/A Were field duplicate pairs identified in this SDG?
(N) N N/A Were target compounds detected in the field duplicate pairs?

Compound	Concentration (ug/L)		RPD
	7	8	
O	3.5	3.2	9
ZZZ	1.5	1.2	22

Compound	Concentration ( )		RPD

Compound	Concentration ( )		RPD

Compound	Concentration ( )		RPD