APPENDIX A:

SOIL VAPOR DATA VALIDATION REPORTS

LABORATORY DATA CONSULTANTS, INC.
7750 El Camino Real, Suite 2L Carlsbad, CA 92009 Phone: 760/634-0437 Fax: 760/634-0439

Geofon, Inc.
22632 Golden Springs Drive, Suite 270
Diamond Bar, CA 91765
ATTN: Mr. Tony Ford

March 17, 2004

SUBJECT: NASA JPL, DO #01, Data Validation

Dear Mr. Ford,

Enclosed is the final validation report for the fraction listed below. This SDG was received on March 5, 2004. Attachment 1 is a summary of the samples that were reviewed for each analysis.

LDC Project # 11630:

SDG #	Fraction
GF020204-L6	Volatiles

The data validation was performed under EPA Level III guidelines. The analyses were validated using the following documents, as applicable to each method:

- USEPA, Contract Laboratory Program National Functional Guidelines for Organic Data Review, October 1999
- EPA SW 846, Third Edition, Test Methods for Evaluating Solid Waste, update 1, July 1992; update IIA, August 1993; update II, September 1994; update IIB, January 1995; update III, December 1996

Please feel free to contact us if you have any questions.

Sincerely,

Erlinda T. Rauto
Operations Manager/Senior Chemist

Attachment 1

LDC #11630 (Geofon, Inc.-Diamond Bar / NASA Jet Propulsion Laboratory, DO#001)

LDC	SDG#	DATE REC'D	DATE DUE	VOA (8250B)																																	
Matrix:	Air/Soil			A	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S
A	GF020204-L6	03/05/04	03/26/04	10	0																																
Total	B			10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Shaded cells indicate Level IV validation (all other cells are Level III validation).

NASA JPL
Data Validation Reports
LDC# 11630

Volatiles

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: NASA JPL

Collection Date: February 2, 2004

LDC Report Date: March 16, 2004

Matrix: Soil Vapor

Parameters: Volatiles

Validation Level: EPA Level III

Laboratory: H & P Mobile GeoChemistry

Sample Delivery Group (SDG): GF020204-L6

Sample Identification

SVW36-VPJ-001
SVW36-VPB-002
SVW36-VPC-003
SVW33-VPD-004
SVW33-VPE-005
SVW33-VPF-006
SVW32-VPH-007
SVW4-VPB-008
SVW4-VPD-009
SVW4-VPD-010Dup

Introduction

This data review covers 10 soil vapor samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8260B for Volatiles.

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 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 V.

Field duplicates are summarized in Section XVI.

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. GC/MS Instrument Performance Check

Instrument performance was checked at 12 hour intervals.

All ion abundance requirements were met.

III. Initial Calibration

Initial calibration was performed using required standard concentrations.

Percent relative standard deviations (%RSD) were less than or equal to 15.0% for each individual compound and less than or equal to 30.0% for calibration check compounds (CCCs) .

For the purposes of technical evaluation, all compounds were evaluated against the 30.0% (%RSD) National Functional Guideline criteria. Unless noted above, all compounds were within the validation criteria.

Average relative response factors (RRF) for all volatile target compounds and system performance check compounds (SPCCs) were within method and validation criteria.

IV. Continuing Calibration

Continuing calibration was performed at the required frequencies.

Percent differences (%D) between the initial calibration RRF and the continuing calibration RRF were within the method criteria of less than or equal to 20.0% for calibration check compounds (CCCs) .

For the purposes of technical evaluation, all compounds were evaluated against the 25.0% (%D) National Functional Guideline criteria. Unless noted above, all compounds were within the validation criteria.

All of the continuing calibration RRF values were within method and validation criteria.

V. Blanks

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

VI. Surrogate Spikes

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

VII. Matrix Spike/Matrix Spike Duplicates

The laboratory has indicated that there were no matrix spike (MS) and matrix spike duplicate (MSD) analyses specified for the samples in this SDG, and therefore matrix spike and matrix spike duplicate analyses were not performed for this SDG.

Duplicate (DUP) sample analyses were reviewed for each matrix as applicable. Results were within QC limits.

VIII. Laboratory Control Samples (LCS)

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

IX. Regional Quality Assurance and Quality Control

Not applicable.

X. Internal Standards

Internal standards data were not provided and therefore not reviewed.

XI. Target Compound Identifications

Raw data were not reviewed for this SDG.

XII. Compound Quantitation and CRQLs

Raw data were not reviewed for this SDG.

XIII. Tentatively Identified Compounds (TICs)

Raw data were not reviewed for this SDG.

XIV. System Performance

Raw data were not reviewed for this SDG.

XV. Overall Assessment of Data

Data flags have been summarized at the end of the report.

XVI. Field Duplicates

Samples SVW4-VPD-009 and SVW4-VPD-010Dup were identified as field duplicates. No volatiles were detected in any of the samples with the following exceptions:

Compound	Concentration (ug/L)		RPD
	SVW4-VPD-009	SVW4-VPD-010Dup	
Trichloroethene	14	12	15

XVII. Field Blanks

No field blanks were identified in this SDG.

NASA JPL
Volatiles - Data Qualification Summary - SDG GF020204-L6

No Sample Data Qualified in this SDG

NASA JPL
Volatiles - Laboratory Blank Data Qualification Summary - SDG GF020204-L6

No Sample Data Qualified in this SDG

GEOFON PROJECT # 04-4428.10
JET PROPULSION LABORATORY
4800 OAK GROVE DRIVE
PASADENA, CA

H&P Mobile GeoChemistry Project #GF020204-L6
INSTRUMENT: AGILENT 6850 GC / 5973 MASS SPECTROMETER
VOLATILE HALOGENATED AND AROMATIC HYDROCARBONS (EPA Method 8260) ANALYSES OF SOIL VAPOR
SOIL VAPOR DATA IN UG/L-VAPOR

	AMBIENT BLANK	SVW37-VPJ 001	SVW36-VPB-002	SVW36-VPC-003	SVW33-VPD-004	SVW33-VPE-005	SVW33-VPF-006	SVW32-VPH-007	SVW4-VPB-008	SVW4-VPD-009	SVW4-VPD-010 Dup
DATE	02/02/04	02/02/04	02/02/04	02/02/04	02/02/04	02/02/04	02/02/04	02/02/04	02/02/04	02/02/04	02/02/04
ANALYSIS TIME	7:07	7:58	8:23	8:50	9:17	9:44	10:11	10:38	11:05	11:32	11:59
SAMPLING DEPTH (feet)	--	165	35	65	85	105	120	155	20	55	55
VOLUME WITHDRAWN (cc)	--	800	200	288	400	480	540	680	140	284	344
VOLUME INJECTED	20	20	20	20	20	20	20	20	20	20	20
DILUTION FACTOR	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
CARBON TETRACHLORIDE	nd	nd	nd	nd	nd	2.0	nd	nd	nd	nd	nd
CHLOROETHANE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
CHLOROFORM	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,1-DICHLORO ETHANE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,2-DICHLORO ETHANE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,1-DICHLORO ETHENE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
CIS-1,2-DICHLORO ETHENE	nd	nd	nd	nd	nd	nd	2.8	nd	nd	nd	nd
TRANS-1,2-DICHLORO ETHENE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
DICHLOROMETHANE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
TETRACHLORO ETHENE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,1,1,2-TETRACHLORO ETHANE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,1,2,2-TETRACHLORO ETHANE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,1,1-TRICHLORO ETHANE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,1,2-TRICHLORO ETHANE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
TRICHLORO ETHENE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
VINYL CHLORIDE	nd	nd	nd	nd	nd	nd	nd	nd	21	14	12
TRICHLOROFLUOROMETHANE (FR11)	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
DICHLORODIFLUOROMETHANE (FR12)	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,1,2-TRICHLOROTRIFLUOROETHANE (FR113)	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
BENZENE	nd	nd	nd	nd	nd	1.0	nd	nd	nd	nd	nd
CHLOROBENZENE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
ETHYLBENZENE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
TOLUENE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
m&p-XYLENES	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
o-XYLENE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
SURROGATES (75-125% RECOVERY)											
DIBROMODIFLUOROMETHANE	99%	108%	89%	99%	102%	100%	100%	98%	99%	97%	100%
1,2-DICHLOROETHANE-d4	95%	90%	95%	93%	94%	94%	95%	95%	94%	94%	96%
4 BROMOFLUORO BENZENE	92%	98%	96%	93%	94%	98%	93%	91%	94%	93%	93%

ND INDICATES NOT DETECTED AT A DETECTION LIMIT OF 1.0 UG/L-VAPOR FOR EACH COMPOUND
ANALYSES PERFORMED ON-SITE IN CA DOHS MOBILE LABORATORY #1561
ANALYSES PERFORMED BY: MARK BURKE
DATA REVIEWED BY: TAMARA DAVIS

3/16/04

LDC #: 11630A1

SDG #: GF020204-L6

Laboratory: H & P Mobile GeoChemistry

VALIDATION COMPLETENESS WORKSHEET

Level III

Date: 3/10/04

Page: 1 of 1

Reviewer: 9

2nd Reviewer: 0

METHOD: GC/MS Volatiles (EPA SW 846 Method 8260B)

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: 2/2/04
II.	GC/MS Instrument performance check	A	
III.	Initial calibration	A	
IV.	Continuing calibration	A	
V.	Blanks	A	
VI.	Surrogate spikes	A	
VII.	Matrix spike/Matrix spike duplicates	N	
VIII.	Laboratory control samples	A	LCS
IX.	Regional Quality Assurance and Quality Control	N	
X.	Internal standards	N	Not provided. Not reviewed.
XI.	Target compound identification	N	
XII.	Compound quantitation/CRQLs	N	
XIII.	Tentatively identified compounds (TICs)	N	
XIV.	System performance	N	
XV.	Overall assessment of data	A	
XVI.	Field duplicates	SW	D = 9+10
XVII.	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:

1	SVW36-VPJ-001	11	MB	21		31	
2	SVW36-VPB-002	12		22		32	
3	SVW36-VPC-003	13		23		33	
4	SVW33-VPD-004	14		24		34	
5	SVW33-VPE-005	15		25		35	
6	SVW33-VPF-006	16		26		36	
7	SVW32-VPH-007	17		27		37	
8	SVW4-VPB-008	18		28		38	
9	SVW4-VPD-009	19		29		39	
10	SVW4-VPD-010Dup	20		30		40	

TARGET COMPOUND WORKSHEET

METHOD: VOA (EPA SW 846 Method 8260B)

A. Chloromethane*	S. Trichloroethene	KK. Trichlorofluoromethane	CCC. tert-Butylbenzene	UUU. 1,2-Dichlorotetrafluoroethane
B. Bromomethane	T. Dibromochloromethane	LL. Methyl-tert-butyl ether	DDD. 1,2,4-Trimethylbenzene	VVV. 4-Ethyltoluene
C. Vinyl chloride**	U. 1,1,2-Trichloroethane	MM. 1,2-Dibromo-3-chloropropane	EEE. sec-Butylbenzene	WWW. Ethanol
D. Chloroethane	V. Benzene	NN. Methyl ethyl ketone	FFF. 1,3-Dichlorobenzene	XXX. Di-isopropyl ether
E. Methylene chloride	W. trans-1,3-Dichloropropene	OO. 2,2-Dichloropropane	GGG. p-Isopropyltoluene	YYY. tert-Butanol
F. Acetone	X. Bromoform*	PP. Bromochloromethane	HHH. 1,4-Dichlorobenzene	ZZZ. tert-Butyl alcohol
G. Carbon disulfide	Y. 4-Methyl-2-pentanone	QQ. 1,1-Dichloropropene	III. n-Butylbenzene	AAAA. Ethyl tert-butyl ether
H. 1,1-Dichloroethene**	Z. 2-Hexanone	RR. Dibromomethane	JJJ. 1,2-Dichlorobenzene	BBBB. tert-Amyl methyl ether
I. 1,1-Dichloroethane*	AA. Tetrachloroethene	SS. 1,3-Dichloropropane	KKK. 1,2,4-Trichlorobenzene	CCCC.1-Chlorohexane
J. 1,2-Dichloroethene, total	BB. 1,1,2,2-Tetrachloroethane*	TT. 1,2-Dibromoethane	LLL. Hexachlorobutadiene	DDDD. Isopropyl alcohol
K. Chloroform**	CC. Toluene**	UU. 1,1,1,2-Tetrachloroethane	MMM. Naphthalene	EEEE. Acetonitrile
L. 1,2-Dichloroethane	DD. Chlorobenzene*	VV. Isopropylbenzene	NNN. 1,2,3-Trichlorobenzene	FFFF. Acrolein
M. 2-Butanone	EE. Ethylbenzene**	WW. Bromobenzene	OOO. 1,3,5-Trichlorobenzene	GGGG. Acrylonitrile
N. 1,1,1-Trichloroethane	FF. Styrene	XX. 1,2,3-Trichloropropane	PPP. trans-1,2-Dichloroethene	HHHH. 1,4-Dioxane
O. Carbon tetrachloride	GG. Xylenes, total	YY. n-Propylbenzene	QQQ. cis-1,2-Dichloroethene	IIII. Isobutyl alcohol
P. Bromodichloromethane	HH. Vinyl acetate	ZZ. 2-Chlorotoluene	RRR. m,p-Xylenes	JJJJ. Methacrylonitrile
Q. 1,2-Dichloropropane**	II. 2-Chloroethylvinyl ether	AAA. 1,3,5-Trimethylbenzene	SSS. o-Xylene	KKKK. Propionitrile
R. cis-1,3-Dichloropropene	JJ. Dichlorodifluoromethane	BBB. 4-Chlorotoluene	TTT. 1,1,2-Trichloro-1,2,2-trifluoroethane	LLLL.

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

LDC #: 11630A1
SDG #: GF020204-26

VALIDATION FINDINGS WORKSHEET
Field Duplicates

Reviewer:
2nd reviewer:

METHOD: GC/MS VOA (EPA SW 846 Method 8260B)

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 (µg/L)		RPD
	9	10	
S	14	12	15

Compound	Concentration ( )		RPD

Compound	Concentration ( )		RPD

Compound	Concentration ( )		RPD

LABORATORY DATA CONSULTANTS, INC.
7750 El Camino Real, Suite 2L Carlsbad, CA 92009 Phone: 760/634-0437 Fax: 760/634-0439

Geofon, Inc.
22632 Golden Springs Drive, Suite 270
Diamond Bar, CA 91765
ATTN: Mr. Scott Brehmer

May 5, 2004

SUBJECT: NASA JPL, DO #01, Data Validation

Dear Mr. Brehmer,

Enclosed is the final validation report for the fraction listed below. This SDG was received on April 27, 2004. Attachment 1 is a summary of the samples that were reviewed for each analysis.

LDC Project # 11876:

SDG #	Fraction
GF040604-L6	Volatiles

The data validation was performed under EPA Level III guidelines. The analyses were validated using the following documents, as applicable to each method:

- USEPA, Contract Laboratory Program National Functional Guidelines for Organic Data Review, October 1999
- EPA SW 846, Third Edition, Test Methods for Evaluating Solid Waste, update 1, July 1992; update IIA, August 1993; update II, September 1994; update IIB, January 1995; update III, December 1996

Please feel free to contact us if you have any questions.

Sincerely,

Erlinda T. Rauto
Operations Manager/Senior Chemist

Attachment 1

LDC #11876 (Geofon, Inc.-Diamond Bar / NASA Jet Propulsion Laboratory, DO#001)

LDC	SDG#	DATE REC'D	DATE DUE	VOA (8260B)																															
Matrix: Air/Water/Soil				A	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S
A	GF040604-L6	04/27/04	05/18/04	41	0																														
Total	B			41	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Shaded cells indicate Level IV validation (all other cells are Level III validation).

NASA JPL
Data Validation Reports
LDC# 11876

Volatiles

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: NASA JPL

Collection Date: April 6 through April 9, 2004

LDC Report Date: May 5, 2004

Matrix: Air

Parameters: Volatiles

Validation Level: EPA Level III

Laboratory: H & P Mobile GeoChemistry

Sample Delivery Group (SDG): GF040604-L6

Sample Identification

SVW33-VPD-001	SVW27-VPI-021
SVW33-VPE-002	SVW27-VPI-022Dup
SVW33-VPF-003	SVW35-VPE-023
SVW17-VPC-004	SVW35-VPI-024
SVW4-VPB-005	SVW38-VPD-025
SVW4-VPD-006	SVW38-VPF-026
SVW37-VPB-007	SVW38-VPJ-027
SVW37-VPD-008	SVW39-VPE-028
SVW37-VPE-009	SVW39-VPF-029
SVW37-VPE-010Dup	SVW39-VPG-030
SVW37-VPH-011	SVW39-VPI-031
SVW37-VPI-012	SVW39-VPI-032Dup
SVW37-VPJ-013	SVW26-VPF-033
SVW27-VPA-014	SVW26-VPG-034
SVW27-VPB-015	SVW26-VPH-035
SVW27-VPC-016	SVW36-VPA-036
SVW27-VPD-017	SVW36-VPB-037
SVW27-VPE-018	SVW36-VPC-038
SVW27-VPF-019	SVW36-VPD-039
SVW27-VPG-020	SVW36-VPE-040
	SVW36-VPE-041Dup

Introduction

This data review covers 41 air samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8260B for Volatiles.

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 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 V.

Field duplicates are summarized in Section XVI.

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. GC/MS Instrument Performance Check

Instrument performance was checked at 12 hour intervals.

All ion abundance requirements were met.

III. Initial Calibration

Initial calibration was performed using required standard concentrations.

Percent relative standard deviations (%RSD) were less than or equal to 15.0% for each individual compound and less than or equal to 30.0% for calibration check compounds (CCCs) .

For the purposes of technical evaluation, all compounds were evaluated against the 30.0% (%RSD) National Functional Guideline criteria. Unless noted above, all compounds were within the validation criteria.

Average relative response factors (RRF) for all volatile target compounds and system performance check compounds (SPCCs) were within method and validation criteria.

IV. Continuing Calibration

Continuing calibration was performed at the required frequencies.

Percent differences (%D) between the initial calibration RRF and the continuing calibration RRF were within the method criteria of less than or equal to 20.0% for calibration check compounds (CCCs) .

For the purposes of technical evaluation, all compounds were evaluated against the 25.0% (%D) National Functional Guideline criteria. Unless noted above, all compounds were within the validation criteria with the following exceptions:

Date	Compound	%D	Associated Samples	Flag	A or P
4/7/04 (CCV2)	Chloroethane	32.6	SVW33-VPD-001 SVW33-VPE-002 SVW33-VPF-003 SVW17-VPC-004 SVW4-VPB-005 SVW4-VPD-006 SVW37-VPB-007 SVW37-VPD-008 SVW37-VPE-009 SVW37-VPE-010Dup MB4/6/04	J (all detects) UJ (all non-detects)	A
4/7/04 (CCV2)	Chloroethane	28.4	SVW37-VPH-011 SVW37-VPI-012 SVW37-VPJ-013 SVW27-VPA-014 SVW27-VPB-015 SVW27-VPC-016 SVW27-VPD-017 SVW27-VPE-018 SVW27-VPF-019 SVW27-VPG-020 MB4/7/04	J (all detects) UJ (all non-detects)	A
4/7/04 (CCVER1)	Chloroethane	38.9	SVW27-VPI-021 SVW27-VPI-022Dup	J (all detects) UJ (all non-detects)	A
4/8/04	Chloroethane	27.4	SVW35-VPE-023 SVW35-VPI-024 SVW38-VPD-025 SVW38-VPF-026 SVW38-VPJ-027 SVW39-VPE-028 SVW39-VPF-029 SVW39-VPG-030 SVW39-VPI-031 SVW39-VPI-032Dup MB4/8/04	J (all detects) UJ (all non-detects)	A

All of the continuing calibration RRF values were within method and validation criteria.

V. Blanks

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

VI. Surrogate Spikes

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

VII. Matrix Spike/Matrix Spike Duplicates

The laboratory has indicated that there were no matrix spike (MS) and matrix spike duplicate (MSD) analyses specified for the samples in this SDG, and therefore matrix spike and matrix spike duplicate analyses were not performed for this SDG.

VIII. Laboratory Control Samples (LCS)

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

IX. Regional Quality Assurance and Quality Control

Not applicable.

X. Internal Standards

Internal standards data were not provided and therefore not reviewed.

XI. Target Compound Identifications

Raw data were not reviewed for this SDG.

XII. Compound Quantitation and CRQLs

Raw data were not reviewed for this SDG.

XIII. Tentatively Identified Compounds (TICs)

Raw data were not reviewed for this SDG.

XIV. System Performance

Raw data were not reviewed for this SDG.

XV. Overall Assessment of Data

Data flags have been summarized at the end of the report.

XVI. Field Duplicates

Samples SVW37-VPE-009 and SVW37-VPE-010Dup, samples SVW27-VPI-021 and SVW27-VPI-022Dup, samples SVW39-VPI-031 and SVW39-VPI-032Dup, and samples SVW36-VPE-040 and SVW36-VPE-040Dup were identified as field duplicates. No volatiles were detected in any of the samples.

XVII. Field Blanks

No field blanks were identified in this SDG.

NASA JPL
Volatiles - Data Qualification Summary - SDG GF040604-L6

SDG	Sample	Compound	Flag	A or P	Reason
GF040604-L6	SVW33-VPD-001 SVW33-VPE-002 SVW33-VPF-003 SVW17-VPC-004 SVW4-VPB-005 SVW4-VPD-006 SVW37-VPB-007 SVW37-VPD-008 SVW37-VPE-009 SVW37-VPE-010Dup SVW37-VPH-011 SVW37-VPI-012 SVW37-VPJ-013 SVW27-VPA-014 SVW27-VPB-015 SVW27-VPC-016 SVW27-VPD-017 SVW27-VPE-018 SVW27-VPF-019 SVW27-VPG-020 SVW27-VPI-021 SVW27-VPI-022Dup SVW35-VPE-023 SVW35-VPI-024 SVW38-VPD-025 SVW38-VPF-026 SVW38-VPJ-027 SVW39-VPE-028 SVW39-VPF-029 SVW39-VPG-030 SVW39-VPI-031 SVW39-VPI-032Dup	Chloroethane	J (all detects) UJ (all non-detects)	A	Continuing calibration (%D)

NASA JPL
Volatiles - Laboratory Blank Data Qualification Summary - SDG GF040604-L6

No Sample Data Qualified in this SDG

GEOFON PROJECT # 04-12612
JET PROPULSION LABORATORY
4800 OAK GROVE DRIVE
PASADENA, CA

HP Labs Project #GF040604-L6
INSTRUMENT: AGILENT 6850 GC / 5973 MASS SPECTROMETER
VOLATILE HALOGENATED AND AROMATIC HYDROCARBONS (EPA Method 8260) ANALYSES OF SOIL VAPOR
SOIL VAPOR DATA IN UG/L-VAPOR

	AMBIENT BLANK	SVW33-VPD-001	SVW33-VPE-002	SVW33-VPF-003	SVW17-VPC-004	SVW4-VPB-005	SVW4-VPD-006	SVW37-VPB-007	SVW37-VPD-008	SVW37-VPE-009	SVW37-VPE-010 Dup
DATE	04/06/04	04/06/04	04/06/04	04/06/04	04/06/04	04/06/04	04/06/04	04/06/04	04/06/04	04/06/04	04/06/04
ANALYSIS TIME	6:47	7:42	8:07	8:34	8:59	9:25	9:52	10:18	10:45	11:14	11:40
SAMPLING DEPTH (feet)	–	85	105	120	36	20	56	40	80	100	100
VOLUME WITHDRAWN (cc)	–	400	480	540	204	140	284	220	380	460	520
VOLUME INJECTED	20	20	20	20	20	20	20	20	20	20	20
DILUTION FACTOR	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
CARBON TETRACHLORIDE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
CHLOROETHANE	nd	nd UJ	nd UJ	nd UJ	nd UJ	nd UJ	nd UJ	nd UJ	nd UJ	nd UJ	nd UJ
CHLOROFORM	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,1-DICHLORO ETHANE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,2-DICHLORO ETHANE	nd	nd	nd	nd	7.8	nd	nd	nd	nd	nd	nd
1,1-DICHLORO ETHENE	nd	nd	1.0	nd	nd	nd	nd	nd	nd	nd	nd
CIS-1,2-DICHLORO ETHENE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
TRANS-1,2-DICHLORO ETHENE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
DICHLOROMETHANE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
TETRACHLORO ETHENE	nd	nd	nd	nd	5.9	nd	nd	nd	nd	nd	nd
1,1,1,2-TETRACHLORO ETHANE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,1,2,2-TETRACHLORO ETHANE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,1,1-TRICHLORO ETHANE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,1,2-TRICHLORO ETHANE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
TRICHLORO ETHENE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
VINYL CHLORIDE	nd	nd	nd	nd	1.9	24	14	nd	nd	nd	nd
TRICHLOROFLUOROMETHANE (FR11)	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
DICHLORODIFLUOROMETHANE (FR12)	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,1,2-TRICHLOROTRIFLUOROETHANE (FR113)	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
BENZENE	nd	nd	nd	nd	76	nd	nd	nd	nd	nd	nd
CHLOROBENZENE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
ETHYLBENZENE	nd	nd	nd	nd	2.9	nd	nd	nd	nd	nd	nd
TOLUENE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
m&p-XYLENES	nd	nd	nd	nd	11	nd	nd	nd	nd	nd	nd
o-XYLENE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
SURROGATES (75-125% RECOVERY)											
DIBROMODIFLUOROMETHANE	112%	114%	113%	117%	91%	110%	112%	117%	117%	118%	121%
1,2-DICHLOROETHANE-d4	104%	105%	108%	108%	86%	101%	105%	107%	106%	107%	111%
4 BROMOFLUORO BENZENE	98%	99%	96%	96%	99%	98%	99%	93%	93%	96%	98%

ND INDICATES NOT DETECTED AT A DETECTION LIMIT OF 1.0 UG/L-VAPOR FOR EACH COMPOUND
ANALYSES PERFORMED ON-SITE IN CA DOHS MOBILE LABORATORY #1561
ANALYSES PERFORMED BY: MARK BURKE
DATA REVIEWED BY: TAMARA DAVIS

5/5/04

GEOFON PROJECT # 04-12812
JET PROPULSION LABORATORY
4800 OAK GROVE DRIVE
PASADENA, CA

HP Labs Project #GF040604-L6
INSTRUMENT: AGILENT 6850 GC / 5973 MASS SPECTROMETER
VOLATILE HALOGENATED AND AROMATIC HYDROCARBONS (EPA Method 8260) ANALYSES OF SOIL VAPOR
SOIL VAPOR DATA IN UG/L-VAPOR

	AMBIENT BLANK	SVW37-VPH-011	SVW37-VPI-012	SVW37-VPJ 013	SVW27-VPA-014	SVW27-VPB-015	SVW27-VPC-016	SVW27-VPD-017	SVW27-VPE-018	SVW27-VPF-019	SVW27-VPG-020	SVW27-VPH-021	SVW27-VPI-022 Dup
DATE	04/07/04	04/07/04	04/07/04	04/07/04	04/07/04	04/07/04	04/07/04	04/07/04	04/07/04	04/07/04	04/07/04	04/07/04	04/07/04
ANALYSIS TIME	6:43	7:24	7:58	8:22	8:49	9:15	9:41	10:07	10:34	11:00	11:27	12:40	13:07
SAMPLING DEPTH (feet)	--	155	170	185	20	35	60	85	100	120	140	160	180
VOLUME WITHDRAWN (cc)	--	660	740	800	140	140	300	400	460	540	620	750	840
VOLUME INJECTED	20	20	20	20	20	20	20	20	20	20	20	20	20
DILUTION FACTOR	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
CARBON TETRACHLORIDE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
CHLOROETHANE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
CHLOROFORM	nd	nd UJ	nd UJ	nd UJ	nd UJ	nd UJ	nd UJ	nd UJ	nd UJ	nd UJ	nd UJ	nd UJ	nd UJ
1,1-DICHLORO ETHANE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
CIS-1,2-DICHLORO ETHENE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
TRANS-1,2-DICHLORO ETHENE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
DICHLOROMETHANE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
TETRACHLORO ETHENE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,1,1,2-TETRACHLORO ETHANE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,1,2,2-TETRACHLORO ETHANE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,1,1-TRICHLORO ETHANE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,1,2-TRICHLORO ETHANE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
TRICHLORO ETHENE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
VINYL CHLORIDE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
TRICHLOROFLUOROMETHANE (FR11)	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
DICHLORODIFLUOROMETHANE (FR12)	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,1,2-TRICHLOROTRIFLUOROETHANE (FR113)	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
BENZENE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
CHLOROBENZENE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
ETHYLBENZENE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
TOLUENE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
m&p-XYLENES	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
o-XYLENE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
SURROGATES (75-125% RECOVERY)													
DIBROMODIFLUOROMETHANE	110%	110%	112%	117%	117%	117%	119%	121%	122%	121%	121%	115%	118%
1,2-DICHLOROETHANE-d4	100%	103%	100%	106%	108%	106%	105%	110%	106%	109%	116%	103%	106%
4 BROMOFLUORO BENZENE	96%	101%	98%	93%	97%	96%	97%	94%	95%	94%	92%	92%	92%

ND INDICATES NOT DETECTED AT A DETECTION LIMIT OF 1.0 UG/L-VAPOR FOR EACH COMPOUND
ANALYSES PERFORMED ON-SITE IN CA DOHS MOBILE LABORATORY #1561
ANALYSES PERFORMED BY: MARK BURKE
DATA REVIEWED BY: TAMARA DAVIS

5/5/04

GEOFON PROJECT # 04-12812
JET PROPULSION LABORATORY
4800 OAK GROVE DRIVE
PASADENA, CA

HP Labs Project #GF040604-L6
INSTRUMENT: AGILENT 6850 GC / 5973 MASS SPECTROMETER
VOLATILE HALOGENATED AND AROMATIC HYDROCARSONS (EPA Method 8260) ANALYSES OF SOIL VAPOR
SOIL VAPOR DATA IN UG/L-VAPOR

	AMBIENT BLANK	SVW35-VPE-023	SVW35-VPI-024	SVW38-VPO-025	SVW38-VPF-026	SVW38-VPJ-027	SVW39-VPE-028	SVW39-VPF-029	SVW39-VPG-030	SVW39-VPI-031	SVW39-VPI-032 Dup
DATE	04/08/04	04/08/04	04/08/04	04/08/04	04/08/04	04/08/04	04/08/04	04/08/04	04/08/04	04/08/04	04/08/04
ANALYSIS TIME	6:40	7:24	7:50	8:16	9:10	9:37	10:05	10:32	11:00	11:27	11:53
SAMPLING DEPTH (feet)	–	80	140	80	110	170	85	100	110	130	130
VOLUME WITHDRAWN (cc)	–	380	620	380	500	740	400	460	500	580	640
VOLUME INJECTED	20	20	20	20	20	20	20	20	20	20	20
DILUTION FACTOR	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
CARBON TETRACHLORIDE	nd	nd	nd	nd	nd	nd	nd	2.3	nd	nd	nd
CHLOROETHANE	nd	nd UJ	nd UJ	nd UJ	nd UJ	nd UJ	nd UJ	nd UJ	nd UJ	nd UJ	nd UJ
CHLOROFORM	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,1-DICHLORO ETHANE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,2-DICHLORO ETHANE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,1-DICHLORO ETHENE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
CIS-1,2-DICHLORO ETHENE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
TRANS-1,2-DICHLORO ETHENE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
DICHLOROMETHANE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
TETRACHLORO ETHENE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,1,1,2-TETRACHLORO ETHANE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,1,2,2-TETRACHLORO ETHANE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,1,1-TRICHLORO ETHANE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,1,2-TRICHLORO ETHANE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
TRICHLORO ETHENE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
VINYL CHLORIDE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
TRICHLOROFLUOROMETHANE (FR11)	nd	nd	nd	nd	nd	nd	1.1	4.4	nd	nd	nd
DICHLORODIFLUOROMETHANE (FR12)	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,1,2-TRICHLOROTRIFLUOROETHANE (FR113)	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
BENZENE	nd	nd	1.2	nd	nd	nd	8.1	9.2	nd	nd	nd
CHLOROBENZENE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
ETHYLBENZENE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
TOLUENE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
m&p-XYLENES	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
o-XYLENE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
SURROGATES (75-125% RECOVERY)											
DIBROMODIFLUOROMETHANE	111%	112%	112%	115%	114%	114%	116%	118%	120%	116%	118%
1,2-DICHLOROETHANE-d4	104%	100%	101%	106%	103%	106%	106%	100%	106%	107%	110%
4 BROMOFLUORO BENZENE	97%	96%	98%	97%	98%	100%	96%	96%	97%	95%	93%

ND INDICATES NOT DETECTED AT A DETECTION LIMIT OF 1.0 UG/L-VAPOR FOR EACH COMPOUND
ANALYSES PERFORMED ON-SITE IN CA DOHS MOBILE LABORATORY #1591
ANALYSES PERFORMED BY: MARK BURKE
DATA REVIEWED BY: TAMARA DAVIS

8/5/04

GEOFON PROJECT # 04-12512
JET PROPULSION LABORATORY
4800 OAK GROVE DRIVE
PASADENA, CA

HP Labs Project #GF040604-L8
INSTRUMENT: AGILENT 6850 GC / 5973 MASS SPECTROMETER
VOLATILE HALOGENATED AND AROMATIC HYDROCARBONS (EPA Method 8260) ANALYSES OF SOIL VAPOR
SOIL VAPOR DATA IN UG/L-VAPOR

	AMBIENT BLANK	SVW26-VPF-033	SVW26-VPG-034	SVW26-VPH-035	SVW36-VPA-036	SVW36-VPB-037	SVW36-VPC-038	SVW36-VPD-039	SVW36-VPE-040	SVW36-VPE-041 Dup
DATE	04/09/04	04/09/04	04/09/04	04/09/04	04/09/04	04/09/04	04/09/04	04/09/04	04/09/04	04/09/04
ANALYSIS TIME	6:30	7:22	7:48	8:14	8:40	9:06	9:33	10:00	10:27	10:54
SAMPLING DEPTH (feet)	–	115	140	160	20	35	55	75	92	92
VOLUME WITHDRAWN (cc)	–	520	620	700	140	200	280	360	428	488
VOLUME INJECTED	20	20	20	20	20	20	20	20	20	20
DILUTION FACTOR	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
CARBON TETRACHLORIDE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
CHLOROETHANE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
CHLOROFORM	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,1-DICHLORO ETHANE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,2-DICHLORO ETHANE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,1-DICHLORO ETHENE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
CIS-1,2-DICHLORO ETHENE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
TRANS-1,2-DICHLORO ETHENE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
DICHLOROMETHANE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
TETRACHLORO ETHENE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,1,1,2-TETRACHLORO ETHANE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,1,2,2-TETRACHLORO ETHANE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,1,1-TRICHLORO ETHANE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,1,2-TRICHLORO ETHANE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
TRICHLORO ETHENE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
VINYL CHLORIDE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
TRICHLOROFLUOROMETHANE (FR11)	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
DICHLORODIFLUOROMETHANE (FR12)	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,1,2-TRICHLOROTRIFLUOROETHANE (FR113)	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
BENZENE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
CHLOROBENZENE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
ETHYLBENZENE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
TOLUENE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
m&p-XYLENES	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
o-XYLENE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
SURROGATES (75-125% RECOVERY)										
DIBROMODIFLUOROMETHANE	108%	111%	112%	114%	116%	116%	115%	119%	121%	120%
1,2-DICHLOROETHANE-d4	100%	102%	104%	106%	107%	107%	100%	110%	111%	113%
4 BROMOFLUORO BENZENE	97%	96%	99%	95%	98%	97%	97%	96%	92%	96%

ND INDICATES NOT DETECTED AT A DETECTION LIMIT OF 1.0 UG/L-VAPOR FOR EACH COMPOUND
ANALYSES PERFORMED ON-SITE IN CA DOHS MOBILE LABORATORY #1561
ANALYSES PERFORMED BY: MARK BURKE
DATA REVIEWED BY: TAMARA DAVIS

4/5/04

LDC #: 11876A1

SDG #: GF040604-L6

Laboratory: H & P Mobile GeoChemistry

VALIDATION COMPLETENESS WORKSHEET

Level III

Date: 5/3/06

Page: 1 of 1

Reviewer: [illegible]

2nd Reviewer: [illegible]

METHOD: GC/MS Volatiles (EPA SW 846 Method 8260B)

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: 4/6 - 9/04
II.	GC/MS Instrument performance check	A	
III.	Initial calibration	A	
IV.	Continuing calibration	SW	
V.	Blanks	A	
VI.	Surrogate spikes	A	
VII.	Matrix spike/Matrix spike duplicates	N	
VIII.	Laboratory control samples	A	LCS
IX.	Regional Quality Assurance and Quality Control	N	
X.	Internal standards	N	Not provided. Not reviewed.
XI.	Target compound identification	N	
XII.	Compound quantitation/CRQLs	N	
XIII.	Tentatively identified compounds (TICs)	N	
XIV.	System performance	N	
XV.	Overall assessment of data	A	
XVI.	Field duplicates	ND	D = 9+10, 21+22, 31+32, 40+41
XVII.	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:

All ~~air~~ soil vapor sols.

1 1	SVW33-VPD-001	11 2	SVW37-VPH-011	21 2	SVW27-VPI-021	31 3	SVW39-VPI-031
2 1	SVW33-VPE-002	12 2	SVW37-VPI-012	22 2	SVW27-VPI-022Dup	32 3	SVW39-VPI-032Dup
3 1	SVW33-VPF-003	13 2	SVW37-VPJ-013	23 3	SVW35-VPE-023	33 4	SVW26-VPF-033
4 1	SVW17-VPC-004	14 2	SVW27-VPA-014	24 3	SVW35-VPI-024	34 4	SVW26-VPG-034
5 1	SVW4-VPB-005	15 2	SVW27-VPB-015	25 3	SVW38-VPD-025	35 4	SVW26-VPH-035
6 1	SVW4-VPD-006	16 2	SVW27-VPC-016	26 3	SVW38-VPF-026	36 4	SVW36-VPA-036
7 1	SVW37-VPB-007	17 2	SVW27-VPD-017	27 3	SVW38-VPJ-027	37 4	SVW36-VPB-037
8 1	SVW37-VPD-008	18 2	SVW27-VPE-018	28 3	SVW39-VPE-028	38 4	SVW36-VPC-038
9 1	SVW37-VPE-009	19 2	SVW27-VPF-019	29 3	SVW39-VPF-029	39 4	SVW36-VPD-039
10 1	SVW37-VPE-010Dup	20 2	SVW27-VPG-020	30 3	SVW39-VPG-030	40 4	SVW36-VPE-040
1	MB4/6/04	2	MB4/7/04	3	MB4/8/04	41 4	SVW36-VPE-041Dup

4 MB4/9/04

TARGET COMPOUND WORKSHEET

METHOD: VOA (EPA SW 846 Method 8260B)

A. Chloromethane*	S. Trichloroethene	KK. Trichlorofluoromethane	CCC. tert-Butylbenzene	UUU. 1,2-Dichlorotetrafluoroethane
B. Bromomethane	T. Dibromochloromethane	LL. Methyl-tert-butyl ether	DDD. 1,2,4-Trimethylbenzene	VVV. 4-Ethyltoluene
C. Vinyl chloride**	U. 1,1,2-Trichloroethane	MM. 1,2-Dibromo-3-chloropropane	EEE. sec-Butylbenzene	WWW. Ethanol
D. Chloroethane	V. Benzene	NN. Methyl ethyl ketone	FFF. 1,3-Dichlorobenzene	XXX. Di-isopropyl ether
E. Methylene chloride	W. trans-1,3-Dichloropropene	OO. 2,2-Dichloropropane	GGG. p-Isopropyltoluene	YYY. tert-Butanol
F. Acetone	X. Bromoform*	PP. Bromochloromethane	HHH. 1,4-Dichlorobenzene	ZZZ. tert-Butyl alcohol
G. Carbon disulfide	Y. 4-Methyl-2-pentanone	QQ. 1,1-Dichloropropene	III. n-Butylbenzene	AAAA. Ethyl tert-butyl ether
H. 1,1-Dichloroethene**	Z. 2-Hexanone	RR. Dibromomethane	JJJ. 1,2-Dichlorobenzene	BBBB. tert-Amyl methyl ether
I. 1,1-Dichloroethane*	AA. Tetrachloroethene	SS. 1,3-Dichloropropane	KKK. 1,2,4-Trichlorobenzene	CCCC.1-Chlorohexane
J. 1,2-Dichloroethene, total	BB. 1,1,2,2-Tetrachloroethane*	TT. 1,2-Dibromoethane	LLL. Hexachlorobutadiene	DDDD. Isopropyl alcohol
K. Chloroform**	CC. Toluene**	UU. 1,1,1,2-Tetrachloroethane	MMM. Naphthalene	EEEE. Acetonitrile
L. 1,2-Dichloroethane	DD. Chlorobenzene*	VV. Isopropylbenzene	NNN. 1,2,3-Trichlorobenzene	FFFF. Acrolein
M. 2-Butanone	EE. Ethylbenzene**	WW. Bromobenzene	OOO. 1,3,5-Trichlorobenzene	GGGG. Acrylonitrile
N. 1,1,1-Trichloroethane	FF. Styrene	XX. 1,2,3-Trichloropropane	PPP. trans-1,2-Dichloroethene	HHHH. 1,4-Dioxane
O. Carbon tetrachloride	GG. Xylenes, total	YY. n-Propylbenzene	QQQ. cis-1,2-Dichloroethene	IIII. Isobutyl alcohol
P. Bromodichloromethane	HH. Vinyl acetate	ZZ. 2-Chlorotoluene	RRR. m,p-Xylenes	JJJJ. Methacrylonitrile
Q. 1,2-Dichloropropane**	II. 2-Chloroethylvinyl ether	AAA. 1,3,5-Trimethylbenzene	SSS. o-Xylene	KKKK. Propionitrile
R. cis-1,3-Dichloropropene	JJ. Dichlorodifluoromethane	BBB. 4-Chlorotoluene	TTT. 1,1,2-Trichloro-1,2,2-trifluoroethane	LLLL.

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

LDC #: 118'A1
SDG #: 40604-66

VALIDATION FINDINGS WORKSHEET
Continuing Calibration

Page: 1 of 1
Reviewer: 9
2nd Reviewer: 2

METHOD: GC/MS VOA (EPA SW 846 Method 8260)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

(Y) N N/A Was a continuing calibration standard analyzed at least once every 12 hours for each instrument?
(Y) N N/A Were percent differences (%D) and relative response factors (RRF) within method criteria for all CCC's and SPCC's ?
Y (N) N/A Were all %D and RRFs within the validation criteria of ≤25 %D and ≥0.05 RRF ?

#	Date	Standard ID	Compound	Finding %D (Limit: ≤25.0%)	Finding RRF (Limit: ≥0.05)	Associated Samples	Qualifications
	4/6/04	CCV2	D	32.6		1-10. MB4/6/04	J/UJ/A
	4/7/04	CCV2	D	28.4		11-20 MB4/7/04	J/UJ/A
	4/7/04	CCV2R1	D	38.9		21-22	J/UJ/A
	4/8/04	CCV2	D	27.4		23-32 MB4/8/04	J/UJ/A

CONCAL1S

LABORATORY DATA CONSULTANTS, INC.
7750 El Camino Real, Suite 2L Carlsbad, CA 92009 Phone: 760/634-0437 Fax: 760/634-0439

Geofon, Inc.
22632 Golden Springs Drive, Suite 270
Diamond Bar, CA 91765
ATTN: Mr. Scott Brehmer

September 8, 2004

SUBJECT: NASA JPL, DO #12, Data Validation

Dear Mr. Brehmer,

Enclosed is the final validation report for the fraction listed below. This SDG was received on September 2, 2004. Attachment 1 is a summary of the samples that were reviewed for each analysis.

LDC Project # 12426:

SDG #	Fraction
GF071404-L6	Volatiles

The data validation was performed under EPA Level III guidelines. The analyses were validated using the following documents, as applicable to each method:

- USEPA, Contract Laboratory Program National Functional Guidelines for Organic Data Review, October 1999
- EPA SW 846, Third Edition, Test Methods for Evaluating Solid Waste, update 1, July 1992; update IIA, August 1993; update II, September 1994; update IIB, January 1995; update III, December 1996; update IIIA, April 1998

Please feel free to contact us if you have any questions.

Sincerely,

ERauto

Erlinda T. Rauto
Operations Manager/Senior Chemist

Attachment 1

LDC #12426 (Geofon, Inc.-Diamond Bar / NASA Jet Propulsion Laboratory, DO#012)

LDC	SDG#	DATE REC'D	DATE DUE	VOA (8260B)																																	
Matrix:	Air/Soil			A	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S
A	GF071404-L6	09/02/04	09/23/04	11	0																																
Total	B			11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	11

Shaded cells indicate Level IV validation (all other cells are Level III validation).

NASA JPL
Data Validation Reports
LDC# 12426

Volatiles

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: NASA JPL

Collection Date: July 14, 2004

LDC Report Date: September 7, 2004

Matrix: Air

Parameters: Volatiles

Validation Level: EPA Level III

Laboratory: H & P Mobile Geo Chemistry

Sample Delivery Group (SDG): GF071404-L6

Sample Identification

SVW39-VPI-001
SVW37-VPJ-002
SVW4-VPB-003
SVW4-VPD-004
SVW17-VPC-005
SVW33-VPD-006
SVW33-VPE-007
SVW33-VPF-008
SVW36-VPB-009
SVW36-VPB-010Dup
SVW36-VPC-011

Introduction

This data review covers 11 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8260 for Volatiles.

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 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 V.

Field duplicates are summarized in Section XVI.

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. GC/MS Instrument Performance Check

Instrument performance was checked at 12 hour intervals.

All ion abundance requirements were met.

III. Initial Calibration

Initial calibration was performed using required standard concentrations.

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

IV. Continuing Calibration

Continuing calibration was performed at the required frequencies.

All of the continuing calibration percent differences (%D) between the initial calibration RRF and the continuing calibration RRF were less than or equal to 30.0% .

V. Blanks

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

VI. Surrogate Spikes

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

VII. Matrix Spike/Matrix Spike Duplicates

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

VIII. Laboratory Control Samples (LCS)

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

IX. Regional Quality Assurance and Quality Control

Not applicable.

X. Internal Standards

Internal standards data were not provided and therefore not reviewed.

XI. Target Compound Identifications

Raw data were not reviewed for this SDG.

XII. Compound Quantitation and CRQLs

Raw data were not reviewed for this SDG.

XIII. Tentatively Identified Compounds (TICs)

Raw data were not reviewed for this SDG.

XIV. System Performance

Raw data were not reviewed for this SDG.

XV. Overall Assessment of Data

Data flags have been summarized at the end of the report.

XVI. Field Duplicates

Samples SVW36-VPB-009 and SVW36-VPB-010Dup were identified as field duplicates. No volatiles were detected in any of the samples.

XVII. Field Blanks

No field blanks were identified in this SDG.

NASA JPL
Volatiles - Data Qualification Summary - SDG GF071404-L6

No Sample Data Qualified in this SDG

NASA JPL
Volatiles - Laboratory Blank Data Qualification Summary - SDG GF071404-L6

No Sample Data Qualified in this SDG

GEOFON PROJECT # 4-12812
JET PROPULSION LABORATORY
4800 OAK GROVE DRIVE
PASADENA, CA

HP Labs Project #GF071404-L6
PRELIMINARY DATA
INSTRUMENT: AGILENT 6850 GC / 5973 MASS SPECTROMETER
VOLATILE HALOGENATED AND AROMATIC HYDROCARBONS (EPA Method 8260) ANALYSES OF SOIL VAPOR
SOIL VAPOR DATA IN UG/L-VAPOR

	AMBIENT BLANK	SVW39-VPI-001	SVW37-VPJ-002	SVW4-VPB-003	SVW4-VPD-004	SVW17-VPC-005	SVW33-VPD-006	SVW33-VPE-007	SVW33-VPF-008	SVW36-VPB-009	SVW36-VPB-010 Dup	SVW36-VPC-011
DATE	07/14/04	07/14/04	07/14/04	07/14/04	07/14/04	07/14/04	07/14/04	07/14/04	07/14/04	07/14/04	07/14/04	07/14/04
ANALYSIS TIME	6:23	7:40	8:03	8:25	8:55	9:18	9:41	10:03	10:26	10:49	11:11	12:38
SAMPLING DEPTH (feet)	–	150	185	20	56	36	85	185	120	35	35	55
VOLUME WITHDRAWN (cc)	–	580	800	140	284	204	400	480	540	200	260	280
VOLUME INJECTED	20	20	20	20	20	20	20	20	20	20	20	20
DILUTION FACTOR	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
CARBON TETRACHLORIDE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
CHLOROETHANE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
CHLOROFORM	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,1-DICHLORO ETHANE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,2-DICHLORO ETHANE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,1-DICHLORO ETHENE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
CIS-1,2-DICHLORO ETHENE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
TRANS-1,2-DICHLORO ETHENE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
DICHLOROMETHANE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
TETRACHLORO ETHENE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,1,1,2-TETRACHLORO ETHANE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,1,2,2-TETRACHLORO ETHANE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,1,1-TRICHLORO ETHANE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,1,2-TRICHLORO ETHANE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
TRICHLORO ETHENE	nd	nd	nd	33	6.9	nd	nd	nd	nd	nd	nd	nd
VINYL CHLORIDE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
TRICHLOROFLUOROMETHANE (FR11)	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
DICHLORODIFLUOROMETHANE (FR12)	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,1,2-TRICHLOROTRIFLUOROETHANE (FR113)	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
BENZENE	nd	nd	nd	nd	nd	1.2	nd	nd	nd	nd	nd	nd
CHLOROBENZENE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
ETHYLBENZENE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
TOLUENE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
m&p-XYLENES	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
o-XYLENE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
SURROGATES (75-125% RECOVERY)												
DIBROMODIFLUOROMETHANE	121%	116%	119%	123%	122%	121%	118%	119%	114%	114%	109%	125%
1,2-DICHLOROETHANE-d4	114%	116%	117%	120%	121%	117%	116%	124%	111%	113%	108%	123%
4 BROMOFLUORO BENZENE	109%	111%	113%	113%	116%	119%	111%	111%	108%	109%	105%	110%

ND INDICATES NOT DETECTED AT A DETECTION LIMIT OF 1.0 UG/L-VAPOR FOR EACH COMPOUND
ANALYSES PERFORMED ON-SITE IN CA DOHS MOBILE LABORATORY #2579
ANALYSES PERFORMED BY: MARK BURKE
DATA REVIEWED BY: TAMARA DAVIS

9/8/04

LDC #: 12426A1 **VALIDATION COMPLETENESS WORKSHEET** Date: 9/13/04
SDG #: GF071404-L6 Level III Page: 1 of 1
Laboratory: H & P Mobile Geo Chemistry Reviewer: 9
2nd Reviewer: [illegible]

METHOD: GC/MS Volatiles (EPA SW 846 Method 8260B)

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: 7/14/04
II.	GC/MS Instrument performance check	A	
III.	Initial calibration	A	
IV.	Continuing calibration	A	
V.	Blanks	A	
VI.	Surrogate spikes	A	
VII.	Matrix spike/Matrix spike duplicates	N	
VIII.	Laboratory control samples	A	LCS
IX.	Regional Quality Assurance and Quality Control	N	
X.	Internal standards	N	Not provided. not required.
XI.	Target compound identification	N	
XII.	Compound quantitation/CRQLs	N	
XIII.	Tentatively identified compounds (TICs)	N	
XIV.	System performance	N	
XV.	Overall assessment of data	A	
XVI.	Field duplicates	ND	D= 9+10
XVII.	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:
All Air Sols.

1	SVW39-VPI-001	11	SVW36-VPC-011	21		31	
2	SVW37-VPJ-002	12	UB	22		32	
3	SVW4-VPB-003	13		23		33	
4	SVW4-VPD-004	14		24		34	
5	SVW17-VPC-005	15		25		35	
6	SVW33-VPD-006	16		26		36	
7	SVW33-VPE-007	17		27		37	
8	SVW33-VPF-008	18		28		38	
9	SVW36-VPB-009	19		29		39	
10	SVW36-VPB-010Dup	20		30		40	

LABORATORY DATA CONSULTANTS, INC.
7750 El Camino Real, Suite 2L Carlsbad, CA 92009 Phone: 760/634-0437 Fax: 760/634-0439

Geofon, Inc.
22632 Golden Springs Drive, Suite 270
Diamond Bar, CA 91765
ATTN: Mr. Scott Brehmer

December 22, 2004

SUBJECT: NASA JPL, DO #12, Data Validation

Dear Mr. Brehmer,

Enclosed is the final validation report for the fraction listed below. This SDG was received on December 9, 2004. Attachment 1 is a summary of the samples that were reviewed for each analysis.

LDC Project # 12885:

SDG #	Fraction
GF102504-L6	Volatiles

The data validation was performed under EPA Level III guidelines. The analyses were validated using the following documents, as applicable to each method:

- USEPA, Contract Laboratory Program National Functional Guidelines for Organic Data Review, October 1999
- EPA SW 846, Third Edition, Test Methods for Evaluating Solid Waste, update 1, July 1992; update IIA, August 1993; update II, September 1994; update IIB, January 1995; update III, December 1996; update IIIA, April 1998

Please feel free to contact us if you have any questions.

Sincerely,

Erlinda T. Rauto
Operations Manager/Senior Chemist

Attachment 1

LDC #12885 (Geofon, Inc.-Diamond Bar / NASA Jet Propulsion Laboratory, DO#012)

LDC	SDG#	DATE REC'D	DATE DUE	VOA (8260B)																																	
Matrix: Air/Water/Soil				A	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S
A	GF102504-L6	12/09/04	01/04/05	103	0																																
Total	B			103	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	103

Shaded cells indicate Level IV validation (all other cells are Level III validation).

NASA JPL
Data Validation Reports
LDC# 12885

Volatiles

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: NASA JPL

Collection Date: October 25 through November 3, 2004

LDC Report Date: December 20, 2004

Matrix: Soil Vapor

Parameters: Volatiles

Validation Level: EPA Level III

Laboratory: H & P Mobile GeoChemistry

Sample Delivery Group (SDG): GF102504-L6

Sample Identification

SVW31-VPA-001
SVW31-VPB-002
SVW31-VPC-003
SVW31-VPD-004
SVW31-VPE-005
SVW30-VPA-006
SVW30-VPB-007
SVW30-VPC-008
SVW30-VPD-009
SVW30-VPD-010Dup
SVW30-VPE-011
SVW12-VPA-012
SVW12-VPB-013
SVW12-VPC-014
SVW5-VPB-015
SVW1-VPA-016
SVW1-VPB-017
SVW1-VPC-018
SVW2-VPA-019
SVW3-VPB-020
SVW3-VPB-021Dup
SVW3-VPC-022
SVW7-VPA-023
SVW7-VPB-024
SVW4-VPB-025
SVW8-VPC-026
SVW8-VPD-027
SVW8-VPE-028
SVW11-VPA-029
SVW11-VPB-030
SVW9-VPA-031
SVW9-VPA-032Dup
SVW9-VPB-033
SVW9-VPC-034
SVW9-VPD-035
SVW9-VPE-036
SVW10-VPB-037
SVW10-VPD-038
SVW14-VPA-039
SVW14-VPB-040
SVW33-VPA-041
SVW33-VPB-042
SVW33-VPB-043Dup
SVW33-VPC-044
SVW33-VPD-045
SVW33-VPE-046
SVW33-VPF-047
SVW33-VPG-048
SVW33-VPJ-049
SVW36-VPA-050
SVW33-VPB-051
SVW33-VPC-052
SVW36-VPD-053
SVW36-VPD-054Dup
SVW36-VPE-055
SVW32-VPB-056
SVW32-VPI-057
SVW32-VPJ-058
SVW27-VPA-059
SVW27-VPB-060
SVW27-VPC-061
SVW27-VPD-062
SVW27-VPE-063
SVW27-VPF-064
SVW27-VPF-065Dup
SVW27-VPG-066
SVW27-VPI-067
SVW35-VPB-068
SVW35-VPE-069
SVW28-VPA-070
SVW28-VPD-071
SVW28-VPE-072
SVW26-VPF-073
SVW26-VPG-074
SVW26-VPH-075
SVW26-VPH-076Dup
SVW25-VPA-077
SVW25-VPB-078
SVW25-VPI-079
SVW25-VPJ-080
SVW19A-VPC-081
SVW37-VPB-082
SVW37-VPD-083
SVW37-VPE-084
SVW37-VPH-085
SVW37-VPI-086
SVW37-VPI-087Dup
SVW37-VPJ-088
SVW34-VPE-089
SVW34-VPF-090
SVW38-VPD-091
SVW38-VPF-092
SVW38-VPJ-093
SVW6-VPB-094
SVW6-VPD-095
SVW6-VPE-096
SVW15-VPB-097
SVW15-VPC-098
SVW15-VPC-099Dup
SVW15-VPD-100
SVW15-VPE-101
SVW39-VPF-102
SVW39-VPI-103

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: NASA JPL

Collection Date: October 25 through November 3, 2004

LDC Report Date: December 20, 2004

Matrix: Soil Vapor

Parameters: Volatiles

Validation Level: EPA Level III

Laboratory: H & P Mobile GeoChemistry

Sample Delivery Group (SDG): GF102504-L6

Sample Identification

SVW31-VPA-001
SVW31-VPB-002
SVW31-VPC-003
SVW31-VPD-004
SVW31-VPE-005
SVW30-VPA-006
SVW30-VPB-007
SVW30-VPC-008
SVW30-VPD-009
SVW30-VPD-010Dup
SVW30-VPE-011
SVW12-VPA-012
SVW12-VPB-013
SVW12-VPC-014
SVW5-VPB-015
SVW1-VPA-016
SVW1-VPB-017
SVW1-VPC-018
SVW2-VPA-019
SVW3-VPB-020
SVW3-VPB-021Dup
SVW3-VPC-022
SVW7-VPA-023
SVW7-VPB-024
SVW4-VPB-025
SVW8-VPC-026
SVW8-VPD-027
SVW8-VPE-028
SVW11-VPA-029
SVW11-VPB-030
SVW9-VPA-031
SVW9-VPA-032Dup
SVW9-VPB-033
SVW9-VPC-034
SVW9-VPD-035
SVW9-VPE-036
SVW10-VPB-037
SVW10-VPD-038
SVW14-VPA-039
SVW14-VPB-040
SVW33-VPA-041
SVW33-VPB-042
SVW33-VPB-043Dup
SVW33-VPC-044
SVW33-VPD-045
SVW33-VPE-046
SVW33-VPF-047
SVW33-VPG-048
SVW33-VPJ-049
SVW36-VPA-050
SVW33-VPB-051
SVW33-VPC-052
SVW36-VPD-053
SVW36-VPD-054Dup
SVW36-VPE-055
SVW32-VPB-056
SVW32-VPI-057
SVW32-VPJ-058
SVW27-VPA-059
SVW27-VPB-060
SVW27-VPC-061
SVW27-VPD-062
SVW27-VPE-063
SVW27-VPF-064
SVW27-VPF-065Dup
SVW27-VPG-066
SVW27-VPI-067
SVW35-VPB-068
SVW35-VPE-069
SVW28-VPA-070
SVW28-VPD-071
SVW28-VPE-072
SVW26-VPF-073
SVW26-VPG-074
SVW26-VPH-075
SVW26-VPH-076Dup
SVW25-VPA-077
SVW25-VPB-078
SVW25-VPI-079
SVW25-VPJ-080
SVW19A-VPC-081
SVW37-VPB-082
SVW37-VPD-083
SVW37-VPE-084
SVW37-VPH-085
SVW37-VPI-086
SVW37-VPI-087Dup
SVW37-VPJ-088
SVW34-VPE-089
SVW34-VPF-090
SVW38-VPD-091
SVW38-VPF-092
SVW38-VPJ-093
SVW6-VPB-094
SVW6-VPD-095
SVW6-VPE-096
SVW15-VPB-097
SVW15-VPC-098
SVW15-VPC-099Dup
SVW15-VPD-100
SVW15-VPE-101
SVW39-VPF-102
SVW39-VPI-103

Introduction

This data review covers 103 soil vapor samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8260B for Volatiles.

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 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 V.

Field duplicates are summarized in Section XVI.

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. GC/MS Instrument Performance Check

Instrument performance was checked at 12 hour intervals.

All ion abundance requirements were met.

III. Initial Calibration

Initial calibration was performed using required standard concentrations.

Percent relative standard deviations (%RSD) were less than or equal to 15.0% for each individual compound and less than or equal to 30.0% for calibration check compounds (CCCs) .

For the purposes of technical evaluation, all compounds were evaluated against the 30.0% (%RSD) National Functional Guideline criteria. Unless noted above, all compounds were within the validation criteria.

Average relative response factors (RRF) for all volatile target compounds and system performance check compounds (SPCCs) were within method and validation criteria.

IV. Continuing Calibration

Continuing calibration was performed at the required frequencies.

Percent differences (%D) between the initial calibration RRF and the continuing calibration RRF were within the method criteria of less than or equal to 20.0% for calibration check compounds (CCCs).

For the purposes of technical evaluation, all compounds were evaluated against the 25.0% (%D) National Functional Guideline criteria. Unless noted above, all compounds were within the validation criteria.

All of the continuing calibration RRF values were within method and validation criteria.

V. Blanks

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

VI. Surrogate Spikes

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

VII. Matrix Spike/Matrix Spike Duplicates

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

VIII. Laboratory Control Samples (LCS)

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

IX. Regional Quality Assurance and Quality Control

Not applicable.

X. Internal Standards

Internal standards data were not reviewed for this SDG.

XI. Target Compound Identifications

Raw data were not reviewed for this SDG.

XII. Compound Quantitation and CRQLs

Raw data were not reviewed for this SDG.

XIII. Tentatively Identified Compounds (TICs)

Raw data were not reviewed for this SDG.

XIV. System Performance

Raw data were not reviewed for this SDG.

XV. Overall Assessment of Data

Data flags have been summarized at the end of the report.

XVI. Field Duplicates

Samples SVW30-VPD-009 and SVW30-VPD-010Dup, samples SVW3-VPB-020 and SVW30-VPE-021Dup, samples SVW9-VPA-031 and SVW9-VPA-032Dup, samples SVW33-VPB-042 and SVW33-VPB-043Dup, samples SVW36-VPD-053 and SVW36-VPD-054Dup, samples SVW26-VPH-075 and SVW26-VPH-076Dup, samples SVW37-VPI-086 and SVW37-VPI-087Dup, and samples SVW15-VPC-098 and SVW15-VPC-099Dup were identified as field duplicates. No volatiles were detected in any of the samples.

XVII. Field Blanks

No field blanks were identified in this SDG.

NASA JPL
Volatiles - Data Qualification Summary - SDG GF102504-L6

No Sample Data Qualified in this SDG

NASA JPL
Volatiles - Laboratory Blank Data Qualification Summary - SDG GF102504-L6

No Sample Data Qualified in this SDG

MOBILE GEOCHEMISTRY

H&P

GEOFON PROJECT # 04-12512-JPL
JET PROPULSION LABORATORY
4800 OAK GROVE DRIVE
PASADENA, CA

HP Labs Project #GF102504-L6
INSTRUMENT: AGILENT 6850 GC / 5973 MASS SPECTROMETER
VOLATILE HALOGENATED AND AROMATIC HYDROCARBONS (EPA Method 8260) ANALYSES OF SOIL VAPOR
SOIL VAPOR DATA IN UG/L-VAPOR

	AMBIENT BLANK	SVW31-VPA-001	SVW31-VPB-002	SVW31-VPC-003	SVW31-VPD-004	SVW31-VPE-005	SVW30-VPA-006	SVW30-VPB-007	SVW30-VPC-008	SVW30-VPD-009	SVW30-VPD-010 Dup	SVW30-VPE-011	SVW12-VPA-012	SVW12-VPB-013	SVW12-VPC-014
DATE	10/25/04	10/25/04	10/25/04	10/25/04	10/25/04	10/25/04	10/25/04	10/25/04	10/25/04	10/25/04	10/25/04	10/25/04	10/25/04	10/25/04	10/25/04
ANALYSIS TIME	7:15	8:04	8:29	8:53	9:16	9:39	10:04	10:23	10:47	11:10	11:33	13:01	13:26	13:50	14:13
SAMPLING DEPTH (feet)	--	20	35	45	55	65	17	30	40	50	50	65	20	40	60
VOLUME WITHDRAWN (cc)	--	140	200	240	280	320	128	180	220	260	320	320	140	220	300
VOLUME INJECTED	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20
DILUTION FACTOR	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
CARBON TETRACHLORIDE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
CHLOROETHANE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
CHLOROFORM	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,1-DICHLORO ETHANE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,2-DICHLORO ETHANE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,1-DICHLORO ETHENE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
CIS-1,2-DICHLORO ETHENE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
TRANS-1,2-DICHLORO ETHENE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
DICHLOROMETHANE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
TETRACHLORO ETHENE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,1,1,2-TETRACHLORO ETHANE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,1,2,2-TETRACHLORO ETHANE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,1,1-TRICHLORO ETHANE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,1,2-TRICHLORO ETHANE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
TRICHLORO ETHENE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
VINYL CHLORIDE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
TRICHLOROFLUOROMETHANE (FR11)	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
DICHLORODIFLUOROMETHANE (FR12)	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,1,2-TRICHLOROTRIFLUOROETHANE (FR113)	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
BENZENE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
CHLOROBENZENE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
ETHYLBENZENE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
TOLUENE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
m&p-XYLENES	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
o-XYLENE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
SURROGATES (75-125% RECOVERY)															
DIBROMODIFLUOROMETHANE	95%	94%	94%	93%	96%	96%	95%	94%	92%	99%	97%	93%	93%	96%	96%
1,2-DICHLOROETHANE-d4	95%	89%	89%	89%	96%	90%	92%	94%	90%	94%	94%	91%	92%	96%	91%
4 BROMOFLUORO BENZENE	94%	94%	94%	94%	93%	92%	90%	96%	92%	91%	96%	88%	92%	94%	92%

ND INDICATES NOT DETECTED AT A DETECTION LIMIT OF 1.0 UG/L-VAPOR FOR EACH COMPOUND
ANALYSES PERFORMED ON-SITE IN CA DOHS MOBILE LABORATORY #2579
ANALYSES PERFORMED BY: MARK BURKE
DATA REVIEWED BY: TAMARA DAVIS

12/30/04

MOBILE GEOCHEMISTRY

H&P

GEOFON PROJECT # 04-12812-JPL
JET PROPULSION LABORATORY
4800 OAK GROVE DRIVE
PASADENA, CA

HP Labs Project #GF102504-L6
INSTRUMENT: AGILENT 6850 GC / 5973 MASS SPECTROMETER
VOLATILE HALOGENATED AND AROMATIC HYDROCARBONS (EPA Method 8260) ANALYSES OF SOIL VAPOR
SOIL VAPOR DATA IN UG/L-VAPOR

	AMBIENT BLANK	SVW3-VPB-015	SVW1-VPA-016	SVW1-VPB-017	SVW1-VPC-018	SVW2-VPA-019	SVW3-VPB-020	SVW3-VPB-021 Dup	SVW3-VPC-022	SVW7-VPA-023	SVW7-VPB-024	SVW4-VPB-025	SVW8-VPC-026	SVW8-VPD-027	SVW8-VPE-028
DATE	10/26/04	10/26/04	10/26/04	10/26/04	10/26/04	10/26/04	10/26/04	10/26/04	10/26/04	10/26/04	10/26/04	10/26/04	10/26/04	10/26/04	10/26/04
ANALYSIS TIME	7:19	8:04	8:27	8:51	10:54	11:17	11:41	12:04	12:26	12:50	13:14	15:12	15:35	15:58	16:31
SAMPLING DEPTH (feet)	--	9	10	21	33	10	29	29	40	20	35	20	50	70	90
VOLUME WITHDRAWN (cc)	--	96	100	144	192	100	176	236	220	140	200	140	260	340	420
VOLUME INJECTED	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20
DILUTION FACTOR	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
CARBON TETRACHLORIDE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
CHLOROETHANE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
CHLOROFORM	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,1-DICHLORO ETHANE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,2-DICHLORO ETHANE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,1-DICHLORO ETHENE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
CIS-1,2-DICHLORO ETHENE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
TRANS-1,2-DICHLORO ETHENE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
DICHLOROMETHANE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
TETRACHLORO ETHENE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,1,1,2-TETRACHLORO ETHANE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,1,2,2-TETRACHLORO ETHANE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,1,1-TRICHLORO ETHANE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,1,2-TRICHLORO ETHANE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
TRICHLORO ETHENE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	35	nd	nd	nd
VINYL CHLORIDE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
TRICHLOROFLUOROMETHANE (FR11)	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
DICHLORODIFLUOROMETHANE (FR12)	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,1,2-TRICHLOROTRIFLUOROETHANE (FR113)	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
BENZENE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
CHLOROBENZENE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
ETHYLBENZENE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
TOLUENE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
m&p-XYLENES	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
o-XYLENE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
SURROGATES (75-125% RECOVERY)															
DIBROMODIFLUOROMETHANE	98%	95%	98%	77%	94%	97%	93%	93%	94%	91%	91%	93%	92%	90%	92%
1,2-DICHLOROETHANE-d4	95%	91%	91%	95%	93%	94%	87%	90%	87%	89%	90%	88%	91%	88%	87%
4 BROMOFLUORO BENZENE	95%	95%	92%	94%	89%	94%	89%	90%	93%	92%	91%	90%	94%	90%	93%

ND INDICATES NOT DETECTED AT A DETECTION LIMIT OF 1.0 UG/L-VAPOR FOR EACH COMPOUND
ANALYSES PERFORMED ON-SITE IN CA DOHS MOBILE LABORATORY #2579
ANALYSES PERFORMED BY: MARK BURKE
DATA REVIEWED BY: TAMARA DAVIS

HH12/20/04

MOBILE GEOCHEMISTRY

H&P

GEOFON PROJECT # 04-12812-JPL
JET PROPULSION LABORATORY
4800 OAK GROVE DRIVE
PASADENA, CA

HP Labs Project #GF102504-L6
INSTRUMENT: AGILENT 6850 GC / 5973 MASS SPECTROMETER
VOLATILE HALOGENATED AND AROMATIC HYDROCARBONS (EPA Method 8260) ANALYSES OF SOIL VAPOR
SOIL VAPOR DATA IN UG/L-VAPOR

	AMBIENT BLANK	SVW11-VPA-029	SVW11-VPB-030	SVW9-VPA-031	SVW9-VPA-032 Dup	SVW9-VPB-033	SVW9-VPC-034	SVW9-VPD-035	SVW9-VPE-036	SVW10-VPB-037	SVW10-VPD-038	SVW14-VPA-039	SVW14-VPB-040
DATE	10/27/04	10/27/04	10/27/04	10/27/04	10/27/04	10/27/04	10/27/04	10/27/04	10/27/04	10/27/04	10/27/04	10/27/04	10/27/04
ANALYSIS TIME	7:29	8:14	8:38	9:06	9:29	9:53	10:17	10:40	11:04	11:26	11:50	13:30	13:53
SAMPLING DEPTH (feet)	–	20	40	20	20	35	50	70	87	35	65	5	10
VOLUME WITHDRAWN (cc)	–	140	220	140	200	200	260	340	408	200	336	80	100
VOLUME INJECTED	20	20	20	20	20	20	20	20	20	20	20	20	20
DILUTION FACTOR	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
CARBON TETRACHLORIDE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
CHLOROETHANE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
CHLOROFORM	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,1-DICHLORO ETHANE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,2-DICHLORO ETHANE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,1-DICHLORO ETHENE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
CIS-1,2-DICHLORO ETHENE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
TRANS-1,2-DICHLORO ETHENE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
DICHLOROMETHANE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
TETRACHLORO ETHENE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,1,1,2-TETRACHLORO ETHANE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,1,2,2-TETRACHLORO ETHANE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,1,1-TRICHLORO ETHANE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,1,2-TRICHLORO ETHANE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
TRICHLORO ETHENE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
VINYL CHLORIDE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
TRICHLOROFLUOROMETHANE (FR11)	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
DICHLORODIFLUOROMETHANE (FR12)	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,1,2-TRICHLOROTRIFLUOROETHANE (FR113)	nd	nd	nd	nd	nd	nd	nd	nd	nd	3.9	3.9	nd	nd
BENZENE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
CHLOROBENZENE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
ETHYLBENZENE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
TOLUENE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
m&p-XYLENES	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
o-XYLENE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
SURROGATES (75-125% RECOVERY)													
DIBROMODIFLUOROMETHANE	94%	95%	94%	94%	93%	95%	94%	92%	95%	94%	92%	91%	94%
1,2-DICHLOROETHANE-d4	92%	88%	91%	93%	92%	90%	94%	89%	90%	94%	91%	86%	90%
4 BROMOFLUORO BENZENE	94%	92%	90%	93%	94%	91%	91%	91%	92%	90%	92%	93%	91%

ND INDICATES NOT DETECTED AT A DETECTION LIMIT OF 1.0 UG/L-VAPOR FOR EACH COMPOUND
ANALYSES PERFORMED ON-SITE IN CA DOHS MOBILE LABORATORY #2579
ANALYSES PERFORMED BY: MARK BURKE
DATA REVIEWED BY: TAMARA DAVIS

11/2/2004

MOBILE GEOCHEMISTRY

H&P

GEOFON PROJECT # 04-12812-JPL
JET PROPULSION LABORATORY
4800 OAK GROVE DRIVE
PASADENA, CA

HP Labs Project #GF102504-L6
INSTRUMENT: AGILENT 6850 GC / 5973 MASS SPECTROMETER
VOLATILE HALOGENATED AND AROMATIC HYDROCARBONS (EPA Method 8260) ANALYSES OF SOIL VAPOR
SOIL VAPOR DATA IN UGL-VAPOR

	AMBIENT BLANK	SVW33-VPA-041	SVW33-VPB-042	SVW33-VPB-043 Dup	SVW33-VPC-044	SVW33-VPD-045	SVW33-VPE-046	SVW33-VPF-047	SVW33-VPG-048	SVW33-VPJ-049	SVW36-VPA-050	SVW36-VPB-051	SVW35-VPC-052	SVW35-VPD-053	SVW36-VPD-054 Dup	SVW36-VPE-055	SVW32-VPB-056	SVW32-VPI-057
DATE	10/28/04	10/28/04	10/28/04	10/28/04	10/28/04	10/28/04	10/28/04	10/28/04	10/28/04	10/28/04	10/28/04	10/28/04	10/28/04	10/28/04	10/28/04	10/28/04	10/28/04	10/28/04
ANALYSIS TIME	7:02	7:34	7:56	8:19	8:41	9:04	9:26	10:34	10:11	10:56	11:19	12:35	12:58	13:22	13:45	14:11	14:34	14:57
SAMPLING DEPTH (feet)	–	20	40	40	60	65	185	120	140	200	20	35	55	75	75	92	40	180
VOLUME WITHDRAWN (cc)	–	140	220	280	300	400	480	540	620	860	140	200	280	360	420	428	220	780
VOLUME INJECTED	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20
DILUTION FACTOR	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
CARBON TETRACHLORIDE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
CHLOROETHANE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
CHLOROFORM	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,1-DICHLORO ETHANE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,2-DICHLORO ETHANE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,1-DICHLORO ETHENE	nd	nd	nd	nd	nd	nd	nd	1.8	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
CIS-1,2-DICHLORO ETHENE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
TRANS-1,2-DICHLORO ETHENE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
DICHLOROMETHANE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
TETRACHLORO ETHENE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,1,1,2-TETRACHLORO ETHANE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,1,2,2-TETRACHLORO ETHANE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,1,1-TRICHLORO ETHANE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,1,2-TRICHLORO ETHANE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
TRICHLORO ETHENE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
VINYL CHLORIDE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
TRICHLOROFLUOROMETHANE (FR11)	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
DICHLORODIFLUOROMETHANE (FR12)	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,1,2-TRICHLOROTRIFLUOROETHANE (FR113)	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
BENZENE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
CHLOROBENZENE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
ETHYLBENZENE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
TOLUENE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
m&p-XYLENES	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
o-XYLENE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
SURROGATES (75-125% RECOVERY)																		
DIBROMODIFLUOROMETHANE	94%	92%	94%	96%	96%	94%	95%	92%	95%	97%	93%	96%	91%	94%	96%	93%	93%	98%
1,2-DICHLOROETHANE-d4	92%	89%	91%	92%	88%	92%	91%	88%	94%	91%	89%	90%	88%	89%	90%	91%	97%	93%
4 BROMOFLUORO BENZENE	88%	94%	91%	88%	93%	88%	91%	91%	93%	92%	91%	91%	93%	92%	88%	90%	88%	90%

ND INDICATES NOT DETECTED AT A DETECTION LIMIT OF 1.0 UGL-VAPOR FOR EACH COMPOUND
ANALYSES PERFORMED ON-SITE IN CA DOHS MOBILE LABORATORY #2379
ANALYSES PERFORMED BY: MARK BURKE
DATA REVIEWED BY: TAMARA DAVIS

11/2/04

MOBILE GEOCHEMISTRY

H&P

GEOFON PROJECT # 04-12812-JPL
JET PROPULSION LABORATORY
4800 OAK GROVE DRIVE
PASADENA, CA

HP Labs Project #GF102504-L6
INSTRUMENT: AGILENT 6850 GC / 5973 MASS SPECTROMETER
VOLATILE HALOGENATED AND AROMATIC HYDROCARBONS (EPA Method 8260) ANALYSES OF SOIL VAPOR
SOIL VAPOR DATA IN UG/L-VAPOR

	AMBIENT BLANK	SVW32-VPJ-058	SVW27-VPA-059	SVW27-VPB-060	SVW27-VPC-061	SVW27-VPD-062	SVW27-VPE-063	SVW27-VPF-064	SVW27-VPF-065 Dup	SVW27-VPG-066	SVW27-VPI-067
DATE	10/29/04	10/29/04	10/29/04	10/29/04	10/29/04	10/29/04	10/29/04	10/29/04	10/29/04	10/29/04	10/29/04
ANALYSIS TIME	7:19	8:06	8:30	8:53	9:17	9:39	10:02	10:24	10:46	11:21	11:44
SAMPLING DEPTH (feet)	--	195	20	35	60	85	100	120	120	140	160
VOLUME WITHDRAWN (cc)	--	840	140	200	300	400	460	540	600	620	700
VOLUME INJECTED	20	20	20	20	20	20	20	20	20	20	20
DILUTION FACTOR	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
CARBON TETRACHLORIDE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
CHLOROETHANE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
CHLOROFORM	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,1-DICHLORO ETHANE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,2-DICHLORO ETHANE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,1-DICHLORO ETHENE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
CIS-1,2-DICHLORO ETHENE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
TRANS-1,2-DICHLORO ETHENE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
DICHLOROMETHANE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
TETRACHLORO ETHENE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,1,1,2-TETRACHLORO ETHANE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,1,2,2-TETRACHLORO ETHANE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,1,1-TRICHLORO ETHANE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,1,2-TRICHLORO ETHANE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
TRICHLORO ETHENE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
VINYL CHLORIDE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
TRICHLOROFLUOROMETHANE (FR11)	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
DICHLORODIFLUOROMETHANE (FR12)	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,1,2-TRICHLOROTRIFLUOROETHANE (FR113)	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
BENZENE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
CHLOROBENZENE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
ETHYLBENZENE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
TOLUENE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
m&p-XYLENES	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
o-XYLENE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
SURROGATES (75-125% RECOVERY)											
DIBROMODIFLUOROMETHANE	94%	94%	92%	96%	95%	99%	95%	97%	97%	95%	94%
1,2-DICHLOROETHANE-d4	89%	88%	91%	91%	87%	92%	91%	94%	91%	90%	95%
4 BROMOFLUORO BENZENE	90%	90%	90%	94%	94%	93%	90%	94%	89%	91%	89%

ND INDICATES NOT DETECTED AT A DETECTION LIMIT OF 1.0 UG/L-VAPOR FOR EACH COMPOUND
ANALYSES PERFORMED ON-SITE IN CA DOHS MOBILE LABORATORY #2579
ANALYSES PERFORMED BY: MARK BURKE
DATA REVIEWED BY: TAMARA DAVIS

11/12/04

MOBILE GEOCHEMISTRY

H&P

GEOFON PROJECT # 04-12612-JPL
JET PROPULSION LABORATORY
4800 OAK GROVE DRIVE
PASADENA, CA

HP Labs Project #GF102504-L6
INSTRUMENT: AGILENT 6850 GC / 5973 MASS SPECTROMETER
VOLATILE HALOGENATED AND AROMATIC HYDROCARBONS (EPA Method 8260) ANALYSES OF SOIL VAPOR
SOIL VAPOR DATA IN UG/L-VAPOR

	AMBIENT BLANK	SVW35-VPB-068	SVW35-VPE-069	SVW28-VPA-070	SVW28-VPD-071	SVW28-VPE-072	SVW26-VPF-073	SVW26-VPG-074	SVW26-VPH-075	SVW26-VPH-076 Dup	SVW25-VPA-077
DATE	11/01/04	11/01/04	11/01/04	11/01/04	11/01/04	11/01/04	11/01/04	11/01/04	11/01/04	11/01/04	11/01/04
ANALYSIS TIME	8:38	9:14	9:39	10:12	10:37	11:00	11:34	11:57	12:21	12:44	13:15
SAMPLING DEPTH (feet)	–	35	80	20	80	105	105	140	160	160	20
VOLUME WITHDRAWN (cc)	–	200	380	140	380	480	520	620	720	780	140
VOLUME INJECTED	20	20	20	20	20	20	20	20	20	20	20
DILUTION FACTOR	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
CARBON TETRACHLORIDE	nd	nd	nd	nd	nd	nd	3.4	nd	nd	nd	nd
CHLOROETHANE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
CHLOROFORM	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,1-DICHLORO ETHANE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,2-DICHLORO ETHANE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,1-DICHLORO ETHENE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
CIS-1,2-DICHLORO ETHENE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
TRANS-1,2-DICHLORO ETHENE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
DICHLOROMETHANE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
TETRACHLORO ETHENE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,1,1,2-TETRACHLORO ETHANE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,1,2,2-TETRACHLORO ETHANE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,1,1-TRICHLORO ETHANE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,1,2-TRICHLORO ETHANE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
TRICHLORO ETHENE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
VINYL CHLORIDE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
TRICHLOROFLUOROMETHANE (FR11)	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
DICHLORODIFLUOROMETHANE (FR12)	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,1,2-TRICHLOROTRIFLUOROETHANE (FR113)	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
BENZENE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
CHLOROBENZENE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
ETHYLBENZENE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
TOLUENE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
m&p-XYLENES	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
o-XYLENE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
SURROGATES (75-125% RECOVERY)											
DIBROMODIFLUOROMETHANE	98%	96%	96%	91%	96%	95%	93%	95%	97%	94%	92%
1,2-DICHLOROETHANE-d4	93%	87%	93%	88%	91%	92%	89%	91%	96%	89%	89%
4 BROMOFLUORO BENZENE	90%	94%	92%	93%	92%	94%	93%	94%	93%	92%	90%

ND INDICATES NOT DETECTED AT A DETECTION LIMIT OF 1.0 UG/L-VAPOR FOR EACH COMPOUND
ANALYSES PERFORMED ON-SITE IN CA DOHS MOBILE LABORATORY #2579
ANALYSES PERFORMED BY: MARK BURKE
DATA REVIEWED BY: TAMARA DAVIS

11/2/2004

MOBILE GEOCHEMISTRY

H&P

GEOFON PROJECT # 04-12612-JPL
JET PROPULSION LABORATORY
4800 OAK GROVE DRIVE
PASADENA, CA

HP Labs Project #GF102504-LB
INSTRUMENT: AGILENT 6850 GC / 5973 MASS SPECTROMETER
VOLATILE HALOGENATED AND AROMATIC HYDROCARBONS (EPA Method 8260) ANALYSES OF SOIL VAPOR
SOIL VAPOR DATA IN UGA/-VAPOR

	AMBIENT BLANK	SVW25-VPB-78	SVW25-VPI-079	SVW25-VPJ-080	SVW19A-VPC-081	SVW37-VPB-082	SVW37-VPD-083	SVW37-VPE-084	SVW37-VPH-085	SVW37-VPI-086	SVW37-VPI-087 Dup	SVW37-VPJ-088	SVW34-VPE-089	SVW34-VPF-090	SVW38-VPD-091	SVW38-VPF-092	SVW38-VPJ-093
DATE	11/02/04	11/02/04	11/02/04	11/02/04	11/02/04	11/02/04	11/02/04	11/02/04	11/02/04	11/02/04	11/02/04	11/02/04	11/02/04	11/02/04	11/02/04	11/02/04	11/02/04
ANALYSIS TIME	7:10	7:42	8:08	8:30	8:56	9:20	9:43	10:09	10:36	11:03	11:22	12:17	12:43	13:10	13:34	13:58	14:21
SAMPLING DEPTH (feet)	–	40	180	190	60	40	80	100	155	170	170	185	60	95	80	110	170
VOLUME WITHDRAWN (cc)	–	220	780	820	300	220	360	460	680	740	680	800	360	440	360	500	740
VOLUME INJECTED	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20
DILUTION FACTOR	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
CARBON TETRACHLORIDE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
CHLOROETHANE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
CHLOROFORM	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,1-DICHLORO ETHANE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,2-DICHLORO ETHANE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,1-DICHLORO ETHENE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
CIS-1,2-DICHLORO ETHENE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
TRANS-1,2-DICHLORO ETHENE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
DICHLOROMETHANE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
TETRACHLORO ETHENE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,1,1,2-TETRACHLORO ETHANE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,1,2,2-TETRACHLORO ETHANE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,1,1-TRICHLORO ETHANE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,1,2-TRICHLORO ETHANE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
TRICHLORO ETHENE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
VINYL CHLORIDE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	1.4
TRICHLOROFLUOROMETHANE (FR11)	nd	nd	3.4	2.2	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
DICHLORODIFLUOROMETHANE (FR12)	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,1,2-TRICHLOROTRIFLUOROETHANE (FR113)	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	1.5
BENZENE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
CHLOROBENZENE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
ETHYLBENZENE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
TOLUENE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	1.9
m&p-XYLENES	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
o-XYLENE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
SURROGATES (75-125% RECOVERY)																	
DIBROMODIFLUOROMETHANE	95%	97%	95%	97%	93%	98%	94%	96%	96%	95%	96%	93%	97%	94%	97%	95%	102%
1,2-DICHLOROETHANE-d4	94%	95%	97%	94%	95%	97%	94%	96%	95%	96%	100%	90%	98%	94%	95%	94%	100%
4 BROMOFLUORO BENZENE	95%	94%	92%	96%	97%	93%	94%	95%	99%	94%	93%	94%	98%	96%	94%	94%	100%

ND INDICATES NOT DETECTED AT A DETECTION LIMIT OF 1.0 UGA/-VAPOR FOR EACH COMPOUND
ANALYSES PERFORMED ON-SITE IN CA DOHS MOBILE LABORATORY #2579
ANALYSES PERFORMED BY: MARK BURKE
DATA REVIEWED BY: TAMARA DAVIS

MOBILE GEOCHEMISTRY

H&P

GEOFON PROJECT # 04-12812-JPL
JET PROPULSION LABORATORY
4800 OAK GROVE DRIVE
PASADENA, CA

HP Labs Project #GF102504-L6
INSTRUMENT: AGILENT 6850 GC / 5973 MASS SPECTROMETER
VOLATILE HALOGENATED AND AROMATIC HYDROCARBONS (EPA Method 8260) ANALYSES OF SOIL VAPOR
SOIL VAPOR DATA IN UG/L-VAPOR

	AMBIENT BLANK	SVW6-VPB-094	SVW6-VPD-095	SVW6-VPE-096	SVW15-VPB-097	SVW15-VPC-098	SVW15-VPC-099 Dup	SVW15-VPD-100	SVW15-VPE-101	SVW39-VPF-102	SVW39-VPF-103
DATE	11/03/04	11/03/04	11/03/04	11/03/04	11/03/04	11/03/04	11/03/04	11/03/04	11/03/04	11/03/04	11/03/04
ANALYSIS TIME	7:53	8:17	8:40	9:03	9:31	10:01	10:20	10:49	11:21	12:03	12:32
SAMPLING DEPTH (feet)	–	40	77	96	40	60	60	75	95	100	130
VOLUME WITHDRAWN (cc)	–	220	368	444	220	300	300	360	440	460	580
VOLUME INJECTED	20	20	20	20	20	20	20	20	20	20	20
DILUTION FACTOR	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
CARBON TETRACHLORIDE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
CHLOROETHANE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
CHLOROFORM	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,1-DICHLORO ETHANE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,2-DICHLORO ETHANE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,1-DICHLORO ETHENE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
CIS-1,2-DICHLORO ETHENE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
TRANS-1,2-DICHLORO ETHENE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
DICHLOROMETHANE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
TETRACHLORO ETHENE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,1,1,2-TETRACHLORO ETHANE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,1,2,2-TETRACHLORO ETHANE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,1,1-TRICHLORO ETHANE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,1,2-TRICHLORO ETHANE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
TRICHLORO ETHENE	nd	nd	nd	nd	nd	nd	nd	nd	nd	4.4	1.4
VINYL CHLORIDE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
TRICHLOROFLUOROMETHANE (FR11)	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
DICHLORODIFLUOROMETHANE (FR12)	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,1,2-TRICHLOROTRIFLUOROETHANE (FR113)	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
BENZENE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
CHLOROBENZENE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
ETHYLBENZENE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
TOLUENE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
m&p-XYLENES	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
o-XYLENE	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
SURROGATES (75-125% RECOVERY)											
DIBROMODIFLUOROMETHANE	96%	99%	94%	95%	98%	96%	97%	97%	99%	96%	92%
1,2-DICHLOROETHANE-d4	95%	101%	97%	96%	95%	96%	96%	99%	99%	96%	92%
4 BROMOFLUORO BENZENE	96%	97%	99%	93%	92%	94%	96%	96%	95%	98%	96%

ND INDICATES NOT DETECTED AT A DETECTION LIMIT OF 1.0 UG/L-VAPOR FOR EACH COMPOUND
ANALYSES PERFORMED ON-SITE IN CA DOHS MOBILE LABORATORY #2579
ANALYSES PERFORMED BY: MARK BURKE
DATA REVIEWED BY: TAMARA DAVIS

11/12/2004

LDC #: 12885A1 **VALIDATION COMPLETENESS WORKSHEET** Date: 12/17/04
SDG #: GF102504-L6 Level III Page: 1 of 3
Laboratory: H & P Mobile Geochemistry Reviewer: 9
2nd Reviewer: K

METHOD: GC/MS Volatiles (EPA SW 846 Method 8260B)

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: 10/25 - 11/3/04
II.	GC/MS Instrument performance check	A	
III.	Initial calibration	A	
IV.	Continuing calibration	A	
V.	Blanks	A	
VI.	Surrogate spikes	A	
VII.	Matrix spike/Matrix spike duplicates	N	not required for vapor
VIII.	Laboratory control samples	A	LCS
IX.	Regional Quality Assurance and Quality Control	N	
X.	Internal standards	N	Not reviewed.
XI.	Target compound identification	N	
XII.	Compound quantitation/CRQLs	N	
XIII.	Tentatively identified compounds (TICs)	N	
XIV.	System performance	N	
XV.	Overall assessment of data	A	
XVI.	Field duplicates	ND	D=9+10 . 20+21 . 31+32 . 42+43 . 53+54 . 75+76 .
XVII.	Field blanks	N	86+87 . 98+99 .

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:
All Soil Vapor

1	SVW31-VPA-001	11	SVW30-VPE-011	21	SVW3-VPB-021Dup	31	SVW9-VPA-031
2	SVW31-VPB-002	12	SVW12-VPA-012	22	SVW3-VPC-022	32	SVW9-VPA-032Dup
3	SVW31-VPC-003	13	SVW12-VPB-013	23	SVW7-VPA-023	33	SVW9-VPB-033
4	SVW31-VPD-004	14	SVW12-VPC-014	24	SVW7-VPB-024	34	SVW9-VPC-034
5	SVW31-VPE-005	15	SVW5-VPB-015	25	SVW4-VPB-025	35	SVW9-VPD-035
6	SVW30-VPA-006	16	SVW1-VPA-016	26	SVW8-VPC-026	36	SVW9-VPE-036
7	SVW30-VPB-007	17	SVW1-VPB-017	27	SVW8-VPD-027	37	SVW10-VPB-037
8	SVW30-VPC-008	18	SVW1-VPC-018	28	SVW8-VPE-028	38	SVW10-VPD-038
9	SVW30-VPD-009	19	SVW2-VPA-019	29	SVW11-VPA-029	39	SVW14-VPA-039
10	SVW30-VPD-010Dup	20	SVW3-VPB-020	30	SVW11-VPB-030	40	SVW14-VPB-040

LDC #: 12885A1

SDG #: GF102504-L6

Laboratory: H & P Mobile Geo Chemistry

VALIDATION COMPLETENESS WORKSHEET

Level III

Date: 12/17/04

Page: 1 of 3

Reviewer: 9

2nd Reviewer: 2

METHOD: GC/MS Volatiles (EPA SW 846 Method 8260B)

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		Sampling dates:
II.	GC/MS Instrument performance check		
III.	Initial calibration		
IV.	Continuing calibration		
V.	Blanks		
VI.	Surrogate spikes		
VII.	Matrix spike/Matrix spike duplicates		
VIII.	Laboratory control samples		
IX.	Regional Quality Assurance and Quality Control	N	
X.	Internal standards		
XI.	Target compound identification	N	
XII.	Compound quantitation/CRQLs	N	
XIII.	Tentatively identified compounds (TICs)	N	
XIV.	System performance	N	
XV.	Overall assessment of data		
XVI.	Field duplicates		
XVII.	Field blanks		

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:

41	SVW33-VPA-041	51	SVW33-VPB-051	61	SVW27-VPC-061	71	SVW28-VPD-071
42	SVW33-VPB-042	52	SVW33-VPC-052	62	SVW27-VPD-062	72	SVW28-VPE-072
43	SVW33-VPB-043Dup	53	SVW36-VPD-053	63	SVW27-VPE-063	73	SVW26-VPF-073
44	SVW33-VPC-044	54	SVW36-VPD-054Dup	64	SVW27-VPF-064	74	SVW26-VPG-074
45	SVW33-VPD-045	55	SVW36-VPE-055	65	SVW27-VPF-065Dup	75	SVW26-VPH-075
46	SVW33-VPE-046	56	SVW32-VPB-056	66	SVW27-VPG-066	76	SVW26-VPH-076Dup
47	SVW33-VPF-047	57	SVW32-VPI-057	67	SVW27-VPI-067	77	SVW25-VPA-077
48	SVW33-VPG-048	58	SVW32-VPJ-058	68	SVW35-VPB-068	78	SVW25-VPB-078
49	SVW33-VPJ-049	59	SVW27-VPA-059	69	SVW35-VPE-069	79	SVW25-VPI-079
50	SVW36-VPA-050	60	SVW27-VPB-060	70	SVW28-VPA-070	80	SVW25-VPJ-080

LDC #: 12885A1

SDG #: GF102504-L6

Laboratory: H & P Mobile Geo Chemistry

VALIDATION COMPLETENESS WORKSHEET

Level III

Date: 12/7/04

Page: 2 of 3

Reviewer: 4

2nd Reviewer: [illegible]

METHOD: GC/MS Volatiles (EPA SW 846 Method 8260B)

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		Sampling dates:
II.	GC/MS Instrument performance check		
III.	Initial calibration		
IV.	Continuing calibration		
V.	Blanks		
VI.	Surrogate spikes		
VII.	Matrix spike/Matrix spike duplicates		
VIII.	Laboratory control samples		
IX.	Regional Quality Assurance and Quality Control	N	
X.	Internal standards		
XI.	Target compound identification	N	
XII.	Compound quantitation/CRQLs	N	
XIII.	Tentatively identified compounds (TICs)	N	
XIV.	System performance	N	
XV.	Overall assessment of data		
XVI.	Field duplicates		
XVII.	Field blanks		

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:

81	SVW19A-VPC-081	91	SVW38-VPD-091	101	SVW15-VPE-101	111	MB10/25/04
82	SVW37-VPB-082	92	SVW38-VPF-092	102	SVW39-VPB-102	112	MB10/26/04
83	SVW37-VPD-083	93	SVW38-VPJ-093	103	SVW39-VPI-103	113	MB10/27/04
84	SVW37-VPE-084	94	SVW6-VPB-094	104		114	MB10/28/04
85	SVW37-VPH-085	95	SVW6-VPD-095	105		115	MB10/29/04
86	SVW37-VPI-086	96	SVW6-VPE-096	106		116	MB11/1/04
87	SVW37-VPI-087Dup	97	SVW15-VPB-097	107		117	MB11/2/04
88	SVW37-VPJ-088	98	SVW15-VPC-098	108		118	MB11/3/04
89	SVW34-VPE-089	99	SVW15-VPC-099Dup	109		119	
90	SVW34-VPF-090	100	SVW15-VPD-100	110		120	