

## **APPENDIX A**

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### **SOIL VAPOR DATA VALIDATION REPORT TENTH PERIODIC SAMPLING EVENT**



**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

June 21, 2002

SUBJECT: NASA JPL, DO #48, Data Validation

Dear Mr. Ford,

Enclosed is the final validation report for the fraction listed below. This SDG was received on June 11, 2002. Attachment 1 is a summary of the samples that were reviewed for each analysis.

**LDC Project # 8602:**

<b><u>SDG #</u></b>	<b><u>Fraction</u></b>
GF051402T2	Volatile Halogenated/Aromatic Hydrocarbons

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,  


Richard M. Amano  
President/Principal Chemist



**NASA JPL, DO 048  
Data Validation Reports  
LDC# 8602**

Volatile Halogenated/Aromatic Hydrocarbons

**Laboratory Data Consultants, Inc.  
Data Validation Report**

**Project/Site Name:** NASA JPL, DO 048  
**Collection Date:** May 14, 2002  
**LDC Report Date:** June 19, 2002  
**Matrix:** Air  
**Parameters:** Volatile Halogenated/Aromatic Hydrocarbons  
**Validation Level:** EPA Level III  
**Laboratory:** HP Labs  
**Sample Delivery Group (SDG):** GF051402T2

**Sample Identification**

SVW37-VPJ-01  
SVW36-VPB-02  
SVW36-VPC-03  
SVW33-VPD-04  
SVW33-VPE-05  
SVW33-VPE-06dup  
SVW33-VPF-07  
SVW4-VPB-08  
SVW4-VPD-09  
SVW17-VPC-10  
SVW32-VPH-11  
SVW32-VPH-12dup

## 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 8020B modified 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 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 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 with the following exceptions:

Sample	Compound	Finding	Criteria	Flag	A or P
All samples in SDG GF051402T2	All TCL compounds	A three point calibration was performed.	A five point calibration is specified by the method.	None	P

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

### b. Continuing Calibration

Continuing calibration was performed at the required frequencies.

For all samples continuing calibration was not performed for Chloroethane, Vinyl Chloride, Trichlorofluoromethane and Dichlorodifluoromethane. Per the soil/gas guidelines, continuing calibration verification for these compounds are not required since these compounds were not detected in the site.

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 method. 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 (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent differences (%D) 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 SVW33-VPE-05 and SVW33-VPE-06dup and samples SVW32-VPH-11 and SVW32-VPH-11dup 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-VAPOR)		RPD
	SVW33-VPE-05	SVW33-VPE-06dup	
Carbon tetrachloride	7.4	3.8	64
1,1-Dichloroethene	1.7	1.1	43
1,1,2-Trichlorotrifluoroethane	1.3	ND	200

## X. Field Blanks

No field blanks were identified in this SDG.

**NASA JPL, DO 048**

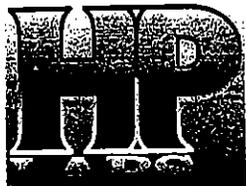
**Volatile Halogenated/Aromatic Hydrocarbons- Data Qualification Summary - SDG GF051402T2**

SDG	Sample	Compound	Flag	A or P	Reason
GF051402T2	SVW37-VPJ-01 SVW36-VPB-02 SVW36-VPC-03 SVW33-VPD-04 SVW33-VPE-05 SVW33-VPE-06dup SVW33-VPF-07 SVW4-VPB-08 SVW4-VPD-09 SVW17-VPC-10 SVW32-VPH-11 SVW32-VPH-12dup	All TCL compounds	None	P	Initial calibration

**NASA JPL, DO 048**

**Volatile Halogenated/Aromatic Hydrocarbons- Laboratory Blank Data Qualification Summary - SDG GF051402T2**

No Sample Data Qualified in this SDG



GEOFON PROJECT # 04-4304-480 JPL 1  
 JET PROPULSION LABORATORY  
 4800 OAK GROVE DRIVE  
 PASADENA, CA

HP Labs Project #GF051402T2  
 GC SHIMADZU 14A  
 VOLATILE HALOGENATED AND AROMATIC HYDROCARBONS (EPA Method 8021) ANALYSES OF SOIL VAPOR  
 SOIL VAPOR DATA IN UG/L-VAPOR

	AMBIENT BLANK	SVW37- VPJ-01	SVW36- VPB-02	SVW36- VPC-03	SVW33- VPD-04	SVW33- VPE-05	SVW33-VPE- 06 DUP	SVW33- VPF-07	SVW4- VPB-08	SVW4- VPD-09	SVW17- VPC-10	SVW32- VPH-11	SVW32-VPH- 12 DUP
DATE	05/14/02	05/14/02	05/14/02	05/14/02	05/14/02	05/14/02	05/14/02	05/14/02	05/14/02	05/14/02	05/14/02	05/14/02	05/14/02
ANALYSIS TIME	08:54	07:23	07:46	08:09	08:32	08:54	09:18	09:42	10:04	10:27	10:51	11:42	12:06
SAMPLING DEPTH (feet)	-	185	35	55	85	105	105	120	20	56	36	155	155
VOLUME WITHDRAWN (cc)	-	800	200	280	400	480	540	540	140	284	204	660	740
VOLUME INJECTED	1	1	1	1	1	1	1	1	1	1	1	1	1
DILUTION FACTOR	1	1	1	1	1	1	1	1	1	1	1	1	1
CARBON TETRACHLORIDE	nd	nd	1.5	nd	1.5	7.4	3.8	2.9	nd	nd	nd	nd	nd
CHLOROETHANE	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	2.0	nd	nd						
1,1-DICHLORO ETHENE	nd	nd	nd	nd	nd	1.7	1.1	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	2.4	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	1.5	2.2	nd	nd	nd	nd	nd	11	nd	1.1	nd	nd
VINYL CHLORIDE	nd	nd	nd	nd	nd	nd	nd						
TRICHLOROFUOROMETHANE (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	1.3	nd	nd	nd	nd	nd	nd	nd
BENZENE	nd	nd	nd	nd	57	nd	nd						
CHLOROBENZENE	nd	nd	nd	nd	nd	1.5	nd						
ETHYLBENZENE	nd	nd	nd	nd	nd	3.1	nd						
TOLUENE	nd	nd	nd	nd	4.6	nd	nd						
m&p-XYLENES	nd	nd	nd	nd	1.9	nd	nd						
o-XYLENE	nd	nd	nd	nd	nd	nd	nd						
SURROGATES													
1,4 DIFLUORO BENZENE	96%	101%	101%	99%	101%	101%	101%	100%	101%	103%	105%	96%	102%
4 BROMOFLUORO BENZENE	99%	102%	103%	101%	103%	103%	104%	103%	104%	106%	100%	101%	103%

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 (CERT #1667)

ANALYSES PERFORMED BY: MARK BURKE

DATA REVIEWED BY: TAMARA DAVIS

5/6/20/02

LDC #: 8602A23 **VALIDATION COMPLETENESS WORKSHEET**  
 SDG #: GF051402T2 X EPA Level III      NFESC Level III  
 Laboratory: HP Labs

Date: 6-14-02

Page: 1 of 1

Reviewer: Z-Pan

2nd Reviewer: F

METHOD: Aromatic Hydrocarbons & Volatile Organics & Volatile Halogenated Hydrocarbons (EPA SW 846 Method 8020B) & 8010). *Modified*

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: <u>5-14-02</u>
IIa.	Initial calibration	SW	%RSD
IIb.	Calibration verification	SW <del>A</del>	%D
III.	Blanks	A	
IVa.	Surrogate recovery	A	
IVb.	Matrix spike/Matrix spike duplicates	N	Not required
IVc.	Laboratory control samples	A	LCS
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 <sub>1</sub> = 5, 6 ; D <sub>2</sub> = 11, 12
X.	Field blanks	N	

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

Validated Samples:

All Air

1	SWW37-VPJ-01	11 D <sub>2</sub>	SWW32-VPH-11	21		31	
2	SWW36-VPB-02	12 D <sub>2</sub>	SWW32-VPH-12dup	22		32	
3	SWW36-VPC-03	13	Blank (5/14)	23		33	
4	SWW33-VPD-04	14		24		34	
5 D <sub>1</sub>	SWW33-VPE-05	15		25		35	
6 D <sub>1</sub>	SWW33-VPE-06dup	16		26		36	
7	SWW33-VPF-07	17		27		37	
8	SWW4-VPB-08	18		28		38	
9	SWW4-VPD-09	19		29		39	
10	SWW17-VPC-10	20		30		40	

Notes:





LDC #: 8602A23  
 SDG #: GF051402T2

VALIDATION FINDINGS WORKSHEET  
Field Duplicates

Page: 1 of 1  
 Reviewer: Z. Pac  
 2nd reviewer: [Signature]

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

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

Compound	Concentration (ug/L - VAPOR)		RPD
	# 5	6	
Carbon Tetrachloride	7.4	3.8	64
1,1-Dichloroethene	1.7	1.1	43
1,1,2-Trichlorotrifluoroethane	1.3	ND	200

Compound	Concentration ( )		RPD

Compound	Concentration ( )		RPD

Compound	Concentration ( )		RPD