HP Labs

GEOFON PROJECT # 04-4304-480
JET PROPULSION LAB
4800 OAK GROVE DRIVE
LA CANADA, CA

HP Labs Project #GF071101W1
GC SHIMADZU 14A RIGHT
VOLATILE HALOGENATED AND AROMATIC HYDROCARBONS (EPA Method 8021) ANALYSES OF SOIL VAPOR

	SVW25-VPB-007	SVW25-VPI-008	SVW25-VPJ-009	SVW27-VPA-010	SVW27-VPB-011	SVW27-VPB-012 DUP
DATE	07/11/01	07/11/01	07/11/01	07/11/01	07/11/01	07/11/01
ANALYSIS TIME	09:25	09:52	10:18	10:47	11:39	12:04
SAMPLING DEPTH (feet)	40	180	190	20	35	35
VOLUME WITHDRAWN (cc)	220	780	820	140	200	260
VOLUME INJECTED	1	1	1	1	1	1
DILUTION FACTOR	1	1	1	1	1	1
CARBON TETRACHLORIDE	nd	nd	nd	nd	nd	nd
CHLOROETHANE	nd	nd	nd	nd	nd	nd
CHLOROFORM	nd	nd	nd	nd	nd	nd
1,1-DICHLORO ETHANE	nd	nd	nd	nd	nd	nd
1,2 DICHLORO ETHANE	nd	nd	nd	nd	nd	nd
1,1-DICHLORO ETHENE	nd	nd	nd	nd	nd	nd
CIS-1,2-DICHLORO ETHENE	nd	nd	nd	nd	nd	nd
TRANS-1,2-DICHLORO ETHENE	nd	nd	nd	nd	nd	nd
DICHLOROMETHANE	nd	nd	nd	nd	nd	nd
TETRACHLORO ETHENE	nd	nd	nd	nd	nd	nd
1,1,1,2-TETRACHLORO ETHANE	nd	nd	nd	nd	nd	nd
1,1,2,2-TETRACHLORO ETHANE	nd	nd	nd	nd	nd	nd
1,1,1-TRICHLORO ETHANE	nd	nd	nd	nd	nd	nd
1,1,2-TRICHLORO ETHANE	nd	nd	nd	nd	nd	nd
TRICHLORO ETHENE	nd	nd	nd	nd	nd	nd
VINYL CHLORIDE	nd	nd	nd	nd	nd	nd
TRICHLOROFLUOROMETHANE (FR11)	nd UJ	nd UJ	nd UJ	nd UJ	nd UJ	nd UJ
DICHLORODIFLUOROMETHANE (FR12)	nd	nd	nd	nd	nd	nd
1,1,2-TRICHLOROTRIFLUOROETHANE (FR113)	nd UJ	nd UJ	nd UJ	nd UJ	nd UJ	nd UJ
BENZENE	nd	nd	nd	nd	nd	nd
CHLOROBENZENE	nd	nd	nd	nd	nd	nd
ETHYLBENZENE	nd	nd	nd	nd	nd	nd
TOLUENE	nd	nd	nd	nd	nd	nd
m&p-XYLENES	nd	nd	nd	nd	nd	nd
o-XYLENE	nd	nd	nd	nd	nd	nd
SURROGATES						
1,4 DIFLUORO BENZENE	99%	96%	94%	97%	99%	97%
4 BROMOFLUORO BENZENE	91%	88%	87%	90%	92%	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 (CERT #1745)
ANALYSES PERFORMED BY: MARK BURKE
DATA REVIEWED BY: JAMES E. PICKER

SE 91801

HP Labs

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JET PROPULSION LAB
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	BLANK	SVW27-VPC-013	SVW27-VPD-014	SVW27-VPE-015	SVW27-VPF-016	SVW27-VPG-017	SVW27-VPG-018 DUP
DATE	07/12/01	07/12/01	07/12/01	07/12/01	07/12/01	07/12/01	07/12/01
ANALYSIS TIME	05:44	06:11	06:37	07:02	07:28	07:55	08:21
SAMPLING DEPTH (feet)	--	60	85	100	120	140	140
VOLUME WITHDRAWN (cc)	--	300	690	460	540	620	620
VOLUME INJECTED	1	1	1	1	1	1	1
DILUTION FACTOR	1	1	1	1	1	1	1
CARBON TETRACHLORIDE	nd	nd	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	nd	nd	nd
1,1-DICHLORO ETHENE	nd	nd	nd	nd	nd	nd	nd
CIS-1,2-DICHLORO ETHENE	nd	nd	nd	nd	nd	nd	nd
TRANS-1,2-DICHLORO ETHENE	nd ~~UJ~~	nd UJ	nd UJ	nd UJ	nd UJ	nd UJ	nd UJ
DICHLOROMETHANE	nd	nd	nd	nd	nd	nd	nd
TETRACHLORO ETHENE	nd	nd	nd	nd	nd	nd	nd
1,1,1,2-TETRACHLORO ETHANE	nd	nd	nd	nd	nd	nd	nd
1,1,2,2-TETRACHLORO ETHANE	nd	nd	nd	nd	nd	nd	nd
1,1,1-TRICHLORO ETHANE	nd	nd	nd	nd	nd	nd	nd
1,1,2-TRICHLORO ETHANE	nd	nd	nd	nd	nd	nd	nd
TRICHLORO ETHENE	nd	nd	nd	nd	nd	nd	nd
VINYL CHLORIDE	nd	nd	nd	nd	nd	nd	nd
TRICHLOROFLUOROMETHANE (FR11)	nd ~~UJ~~	nd UJ	nd UJ	nd UJ	nd UJ	nd UJ	nd UJ
DICHLORODIFLUOROMETHANE (FR12)	nd	nd	nd	nd	nd	nd	nd
1,1,2-TRICHLOROTRIFLUOROETHANE (FR113)	nd ~~UJ~~	nd UJ	nd UJ	nd UJ	nd UJ	nd UJ	nd UJ
BENZENE	nd	nd	nd	nd	nd	nd	nd
CHLOROBENZENE	nd	nd	nd	nd	nd	nd	nd
ETHYLBENZENE	nd	nd	nd	nd	nd	nd	nd
TOLUENE	nd	nd	nd	nd	nd	nd	nd
m&p-XYLENES	nd	nd	nd	nd	nd	nd	nd
o-XYLENE	nd	nd	nd	nd	nd	nd	nd
SURROGATES							
1,4 DIFLUORO BENZENE	93%	101%	90%	96%	98%	96%	99%
4 BROMOFLUORO BENZENE	87%	93%	85%	88%	91%	88%	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 (CERT #1745)
ANALYSES PERFORMED BY: MARK BURKE
DATA REVIEWED BY: JAMES E. PICKER

SR 91801

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JET PROPULSION LAB
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	SVW27-VPI-019	SVW27-VPJ-020	SVW28-VPA-021	SVW28-VPD-022	SVW28-VPE-023	SVW28-VPE-024 DUP
DATE	07/12/01	07/12/01	07/12/01	07/12/01	07/12/01	07/12/01
ANALYSIS TIME	08:47	09:13	09:45	10:11	11:03	11:29
SAMPLING DEPTH (feet)	180	205	20	85	105	105
VOLUME WITHDRAWN (cc)	780	880	140	380	480	480
VOLUME INJECTED	1	1	1	1	1	1
DILUTION FACTOR	1	1	1	1	1	1
CARBON TETRACHLORIDE	nd	nd	nd	nd	nd	nd
CHLOROETHANE	nd	nd	nd	nd	nd	nd
CHLOROFORM	nd	nd	nd	nd	nd	nd
1,1-DICHLORO ETHANE	nd	nd	nd	nd	nd	nd
1,2-DICHLORO ETHANE	nd	nd	nd	nd	nd	nd
1,1-DICHLORO ETHENE	nd	nd	nd	nd	nd	nd
CIS-1,2-DICHLORO ETHENE	nd	nd	nd	nd	nd	nd
TRANS-1,2-DICHLORO ETHENE	nd UJ	nd UJ	nd UJ	nd UJ	nd UJ	nd UJ
DICHLOROMETHANE	nd	nd	nd	nd	nd	nd
TETRACHLORO ETHENE	nd	nd	nd	nd	nd	nd
1,1,1,2-TETRACHLORO ETHANE	nd	nd	nd	nd	nd	nd
1,1,2,2-TETRACHLORO ETHANE	nd	nd	nd	nd	nd	nd
1,1,1-TRICHLORO ETHANE	nd	nd	nd	nd	nd	nd
1,1,2-TRICHLORO ETHANE	nd	nd	nd	nd	nd	nd
TRICHLORO ETHENE	nd	nd	nd	nd	nd	nd
VINYL CHLORIDE	nd	nd	nd	nd	nd	nd
TRICHLOROFLUOROMETHANE (FR11)	nd UJ	nd UJ	nd UJ	nd UJ	nd UJ	nd UJ
DICHLORODIFLUOROMETHANE (FR12)	nd	nd	nd	nd	nd	nd
1,1,2-TRICHLOROTRIFLUOROETHANE (FR113)	nd UJ	nd UJ	nd UJ	nd UJ	nd UJ	nd UJ
BENZENE	nd	nd	nd	nd	nd	nd
CHLOROBENZENE	nd	nd	nd	nd	nd	nd
ETHYLBENZENE	nd	nd	nd	nd	nd	nd
TOLUENE	nd	nd	nd	nd	nd	nd
m&p-XYLENES	nd	nd	nd	nd	nd	nd
o-XYLENE	nd	nd	nd	nd	nd	nd
SURROGATES						
1,4 DIFLUORO BENZENE	97%	95%	97%	98%	98%	96%
4 BROMOFLUORO BENZENE	89%	87%	90%	90%	90%	88%

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 #1745)
ANALYSES PERFORMED BY: MARK BURKE
DATA REVIEWED BY: JAMES E. PICKER

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VOLATILE HALOGENATED AND AROMATIC HYDROCARBONS (EPA Method 8021) ANALYSES OF SOIL VAPOR

	BLANK	SVW35-VPD-025	SVW35-VPE-026	SVW35-VPI-027	SVW36-VPB-028	SVW36-VPC-029	SVW36-VPC-030 DUP	SVW37-VPE-031
DATE	07/13/01	07/13/01	07/13/01	07/13/01	07/13/01	07/13/01	07/13/01	07/13/01
ANALYSIS TIME	05:59	06:25	06:51	07:17	07:46	08:12	08:37	09:03
SAMPLING DEPTH (feet)	--	60	80	140	35	55	55	92
VOLUME WITHDRAWN (cc)	--	300	380	620	200	280	400	430
VOLUME INJECTED	1	1	1	1	1	1	1	1
DILUTION FACTOR	1	1	1	1	1	1	1	1
CARBON TETRACHLORIDE	nd	nd	nd	nd	18	36	28	nd
CHLOROETHANE	nd	nd	nd	nd	nd	nd	nd	nd
CHLOROFORM	nd	nd	nd	nd	nd	1.0	nd	nd
1,1-DICHLORO ETHANE	nd	nd	nd	nd	nd	nd	nd	nd
1,2-DICHLORO ETHANE	nd	nd	nd	nd	nd	nd	nd	nd
1,1-DICHLORO ETHENE	nd	nd	nd	nd	1.0	3	2.5	nd
CIS-1,2-DICHLORO ETHENE	nd	nd	nd	nd	nd	nd	nd	nd
TRANS-1,2-DICHLORO ETHENE	nd	nd	nd	nd	nd	nd	nd	nd
DICHLOROMETHANE	nd	nd	nd	nd	nd	nd	nd	nd
TETRACHLORO ETHENE	nd	nd	nd	nd	nd	nd	nd	nd
1,1,1,2-TETRACHLORO ETHANE	nd	nd	nd	nd	nd	nd	nd	nd
1,1,2,2-TETRACHLORO ETHANE	nd UJ	nd UJ	nd UJ	nd UJ	nd UJ	nd UJ	nd UJ	nd UJ
1,1,1-TRICHLORO ETHANE	nd	nd	nd	nd	12	27	26	nd
1,1,2-TRICHLORO ETHANE	nd	nd	nd	nd	nd	nd	nd	nd
TRICHLORO ETHENE	nd	nd	nd	nd	12	26	22	nd
VINYL CHLORIDE	nd	nd	nd	nd	nd	nd	nd	nd
TRICHLOROFLUOROMETHANE (FR11)	nd UJ	nd UJ	nd UJ	nd UJ	nd UJ	nd UJ	nd UJ	nd UJ
DICHLORODIFLUOROMETHANE (FR12)	nd	nd	nd	nd	nd	nd	nd	nd
1,1,2-TRICHLOROTRIFLUOROETHANE (FR113)	nd UJ	nd UJ	nd UJ	5.4 J	nd UJ	nd UJ	nd UJ	nd UJ
BENZENE	nd	nd	nd	nd	nd	nd	nd	nd
CHLOROBENZENE	nd	nd	nd	nd	nd	nd	nd	nd
ETHYLBENZENE	nd	nd	nd	nd	nd	nd	nd	nd
TOLUENE	nd	nd	nd	nd	nd	nd	nd	nd
m&p-XYLENES	nd	nd	nd	nd	nd	nd	nd	nd
o-XYLENE	nd	nd	nd	nd	nd	nd	nd	nd
SURROGATES								
1,4 DIFLUORO BENZENE	92%	95%	93%	99%	96%	93%	101%	102%
4 BROMOFLUORO BENZENE	85%	89%	86%	91%	88%	85%	94%	94%

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 #1745)
ANALYSES PERFORMED BY: MARK BURKE
DATA REVIEWED BY: JAMES E. PICKER

SC 9801

HP Labs

GEOFON PROJECT # 04-4304-480
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LA CANADA, CA

HP Labs Project #GF071101W1
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VOLATILE HALOGENATED AND AROMATIC HYDROCARBONS (EPA Method 8021) ANALYSES OF SOIL VAPOR

	SVW33-VPA-032	SVW33-VPD-033	SVW33-VPE-034	SVW33-VPF-035	SVW33-VPF-036 DUP	SVW33-VPG-037	SVW33-VPJ-038
DATE	07/13/01	07/13/01	07/13/01	07/13/01	07/13/01	07/13/01	07/13/01
ANALYSIS TIME	00:00	09:55	10:22	11:12	11:38	12:03	12:28
SAMPLING DEPTH (feet)	20	85	105	120	120	140	200
VOLUME WITHDRAWN (cc)	140	400	480	540	620	620	860
VOLUME INJECTED	1	1	1	1	1	1	1
DILUTION FACTOR	1	1	1	1	1	1	1
CARBON TETRACHLORIDE	nd	5.1	13	6.2	6.3	3.2	nd
CHLOROETHANE	nd	nd	nd	nd	nd	nd	nd
CHLOROFORM	nd	nd	nd	nd	nd	1.0	nd
1,1-DICHLORO ETHANE	nd	nd	nd	nd	nd	nd	nd
1,2-DICHLORO ETHANE	nd	nd	nd	nd	nd	nd	nd
1,1-DICHLORO ETHENE	nd	nd	1.2	nd	nd	nd	nd
CIS-1,2-DICHLORO ETHENE	nd	nd	nd	nd	nd	nd	nd
TRANS-1,2-DICHLORO ETHENE	nd	nd	nd	nd	nd	nd	nd
DICHLOROMETHANE	nd	nd	nd	nd	nd	nd	nd
TETRACHLORO ETHENE	nd	nd	nd	nd	nd	nd	nd
1,1,1,2-TETRACHLORO ETHANE	nd	nd	nd	nd	nd	nd	nd
1,1,2,2-TETRACHLORO ETHANE	nd UJ	nd UJ	nd UJ	nd UJ	nd UJ	nd UJ	nd UJ
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	nd	nd	1.3	nd	nd
VINYL CHLORIDE	nd	nd	nd	nd	nd	nd	nd
TRICHLOROFLUOROMETHANE (FR11)	nd UJ	nd UJ	nd UJ	nd UJ	nd UJ	nd UJ	nd UJ
DICHLORODIFLUOROMETHANE (FR12)	nd	nd	nd	nd	nd	nd	nd
1,1,2-TRICHLOROTRIFLUOROETHANE (FR113)	2.9 J	1.6 J	1.9 J	1.1 J	nd UJ	nd UJ	nd UJ
BENZENE	nd	nd	nd	nd	nd	nd	nd
CHLOROBENZENE	nd	nd	nd	nd	nd	nd	nd
ETHYLBENZENE	nd	nd	nd	nd	nd	nd	nd
TOLUENE	nd	nd	nd	nd	nd	nd	nd
m&p-XYLENES	nd	nd	nd	nd	nd	nd	nd
o-XYLENE	nd	nd	nd	nd	nd	nd	nd
SURROGATES							
1,4 DIFLUORO BENZENE	103%	100%	97%	99%	97%	95%	98%
4 BROMOFLUORO BENZENE	95%	93%	91%	91%	94%	88%	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 (CERT #1745)
ANALYSES PERFORMED BY: MARK BURKE
DATA REVIEWED BY: JAMES E. PICKER

9/18/01

LDC #: 7014A23 **VALIDATION COMPLETENESS WORKSHEET**

SDG #: GF071101W1 X EPA Level III ___NFESC Level C

Laboratory: HP Labs

Date: 9-12-01

Page: 1 of 4

Reviewer: SC

2nd Reviewer: JA

METHOD: GC ~~Chlorinated Hydrocarbons~~ Volatiles (EPA SW 846 Method ~~8010/8020~~ 8021)

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: 7-11-01 → 7-24-01
IIa.	Initial calibration	SW	%RSD
IIb.	Calibration verification	SW	%D
III.	Blanks	A	
IVa.	Surrogate recovery	A	
IVb.	Matrix spike/Matrix spike duplicates	N	
IVc.	Laboratory control samples	SW	LCS (2D)
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 = 5+6, 11+12, 29+30, 35+36, 41+42, 17+18, 23+24 cont'd →
X.	Field blanks	N	

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

Validated Samples:

Aqueous

1 [1]	SVW26-VPF-001	11 [1]	SVW27-VPB-011	21 [2]	SVW28-VPA-021	31 [3]	SVW37-VPE-031
2 [1]	SVW26-VPG~~002~~-002	12 [1]	SVW27-VPB-012DUP	22 [2]	SVW28-VPD-022	32 [3]	SVW33-VPA-032
3 [1]	SVW26-VPH-003	13 [2]	SVW27-VCP-013	23 [2]	SVW28-VPE-023	33 [3]	SVW33-VPD-033
4 [1]	SVW26-VPI-004	14 [2]	SVW27-VPD-014	24 [2]	SVW28-VPE-024DUP	34 [3]	SVW33-VPE-034
5 [1]	SVW25-VPA-005	15 [2]	SVW27-VPE-015	25 [3]	SVW35-VPD-025	35 [3]	SVW33-VPF-035
6 [1]	SVW25-VPA-006DUP	16 [2]	SVW27-VPF-016	26 [3]	SVW35-VPE-026	36 [3]	SVW33-VPF-036DUP
7 [1]	SVW25-VPB-007	17 [2]	SVW27-VPG-017	27 [3]	SVW35-VPI-027	37 [3]	SVW33-VPG-037
8 [1]	SVW25-VPI-008	18 [2]	SVW27-VPG-018DUP	28 [3]	SVW36-VPB-028	38 [3]	SVW33-VPJ-038
9 [1]	SVW25-VPJ-009	19 [2]	SVW27-VPI-019	29 [3]	SVW36-VPC-029	39 [4]	SVW34-VPD-039
10 [1]	SVW27-VPA-010	20 [2]	SVW27-VPJ-020	30 [3]	SVW36-VPC-030DUP	40 [4]	SVW34-VPF-040

Notes: [1] BLK 7/11/01 [2] BLK 7/12/01 [3] BLK 7/13/01 [4] BLK 7/16/01

LDC #: 7014A23 **VALIDATION COMPLETENESS WORKSHEET**
SDG #: GF071101W1 X EPA Level III ___NFESC Level C
Laboratory: HP Labs

Date: 9-12-01
Page: 2 of 4
Reviewer: SC
2nd Reviewer: [illegible]

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

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

	Validation Area		Comments
I.	Technical holding times		Sampling dates:
IIa.	Initial calibration		
IIb.	Calibration verification		
III.	Blanks		
IVa.	Surrogate recovery		
IVb.	Matrix spike/Matrix spike duplicates		
IVc.	Laboratory control samples		See pg 1
V.	Target compound identification	N	
VI.	Compound Quantitation and CRQLs	N	
VII.	System Performance	N	
VIII.	Overall assessment of data		
IX.	Field duplicates	SW	D = 47+48, 53+54, 59+60, 65+66, 71+72, 77+78
X.	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 4	SVW34-VPH-041	51 5	SVW39-VPD-051	61 5	SVW32-VPH-061	71 4	SVW31-VPA-071
42 4	SVW34-VPH-042DUP	52 5	SVW39-VPE-052	62 5	SVW32-VPI-062	72 4	SVW31-VPA-072DUP
43 4	SVW38-VPA-043	53 5	SVW39-VPF-053	63 5	SVW32-VPJ-063	73 4	SVW31-VPB-073
44 4	SVW38-VPB-044	54 5	SVW39-VPF-054DUP	64 6	SVW37-VPA-064	74 6	SVW31-VPC-074
45 4	SVW38-VPD-045	55 5	SVW39-VPI-055	65 6	SVW37-VPD-065	75 6	SVW31-VPD-075
46 4	SVW38-VPF-046	56 5	SVW32-VPB-056	66 6	SVW37-VPD-066DUP	76 6	SVW31-VPE-076
47 4	SVW38-VPJ-047	57 5	SVW32-VPC-057	67 6	SVW37-VPE-067	77 7	SVW30-VPA-077
48 4	SVW38-VPJ-048DUP	58 5	SVW32-VPE-058	68 6	SVW37-VPH-068	78 7	SVW30-VPA-078DUP
49 4	SVW39-VPA-049	59 5	SVW32-VPE-059	69 6	SVW37-VPI-069	79 7	SVW30-VPB-079
50 4	SVW39-VPC-050	60 5	SVW32-VPE-060DUP	70 6	SVW37-VPJ-070	80 7	SVW30-VPC-080

Notes: 5 BLK 7/17/01 6 BLK 7/18/01 7 BLK 7/19/01

LDC #: 7014A23 **VALIDATION COMPLETENESS WORKSHEET**
SDG #: GF071101W1 X EPA Level III ___NFESC Level C
Laboratory: HP Labs

Date: 9-12-01
Page: 3 of 4
Reviewer: [illegible]
2nd Reviewer: [illegible]

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

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

	Validation Area		Comments
I.	Technical holding times		Sampling dates:
IIa.	Initial calibration		
IIb.	Calibration verification		
III.	Blanks		
IVa.	Surrogate recovery		
IVb.	Matrix spike/Matrix spike duplicates		see pg 1
IVc.	Laboratory control samples		
V.	Target compound identification	N	
VI.	Compound Quantitation and CRQLs	N	
VII.	System Performance	N	
VIII.	Overall assessment of data		
IX.	Field duplicates	SW	D = 83+84, 89+90, 95+96, 101+102,
X.	Field blanks		108+109, 113+114, 119+120

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 7	SVW30-VPD-081	91 8	SVW5-VPB-091	101 9	SVW10-VPB-101	111 9	SVW8-VPD-111
82 7	SVW30-VPE-082	92 8	SVW3-VPC-092	102 9	SVW10-VPB-102DUP	112 9	SVW8-VPE-112
83 7	SVW12-VPC-083	93 8	SVW3-VPD-093	103 9	SVW10-VPD-103	113 10	SVW15-VPB-113
84 7	SVW12-VPC-084DUP	94 8	SVW4-VPB-094	104 9	SVW9-VPA-104	114 10	SVW15-VPB-114DUP
85 7	SVW12-VPD-085	95 8	SVW4-VPD-095	105 9	SVW9-VPB-105	115 10	SVW15-VPC-115
86 7	SVW7-VPA-086	96 8	SVW4-VPD-096DUP	106 9	SVW9-VPC-106	116 10	SVW15-VPD-116
87 7	SVW7-VPB-087	97 8	SVW2-VPA-097	107 9	SVW9-VPD-107	117 10	SVW15-VPE-117
88 7	SVW1-VPB-088	98 8	SVW2-VPC-098	108 9	SVW9-VPD-108DUP	118 10	SVW6-VPB-118
89 7	SVW1-VPC-089	99 8	SVW14-VPB-099	109 9	SVW9-VPE-109	119 10	SVW6-VPC-119
90 7	SVW1-VPC-090DUP	100 8	SVW17-VPC-100	110 9	SVW8-VPC-110	120 10	SVW6-VPC-120DUP

Notes: 8 BLK 7/20/01 9 BLK 7/23/01 10 BLK 7/24/01

LDC #: 7014A23 **VALIDATION COMPLETENESS WORKSHEET**

SDG #: GF071101W1 X EPA Level III ___NFESC Level C

Laboratory: HP Labs

Date: 9-12-01
Page: 4 of 4
Reviewer: SK
2nd Reviewer: [illegible]

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

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

	Validation Area		Comments
I.	Technical holding times		Sampling dates:
IIa.	Initial calibration		
IIb.	Calibration verification		
III.	Blanks		
IVa.	Surrogate recovery		
IVb.	Matrix spike/Matrix spike duplicates	SW FB	
IVc.	Laboratory control samples		
V.	Target compound identification	N	
VI.	Compound Quantitation and CRQLs	N	
VII.	System Performance	N	
VIII.	Overall assessment of data		
IX.	Field duplicates		
X.	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:

10 121	SVW6-VPD-121						
10 122	SVW6-VPE-122						
10 123	SVW11-VPA-123						
10 124	SVW11-VPE-124						
125							
126							
127							
128							
129							
130							

Notes: _____

TARGET COMPOUND WORKSHEET

METHOD: VOA (EPA SW 846 Method ~~8260B~~ 8021)

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

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

Notes:_____

LDC #: 7014A23
SDG #: GF07101W1

VALIDATION FINDINGS WORKSHEET
Initial Calibration

Page: 1 of 1
Reviewer: RE
2nd Reviewer:

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

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

Y (N) N/A Was a 5 point calibration curve performed?

(Y) N N/A Was a linear fit used for evaluation? If yes, the acceptance criteria used for each compound in %RSD less than or equal to 20.0%

Y N (N/A) Was a curve fit used for evaluation? If yes, what was the acceptance criteria used for evaluation?_____

Y (N) N/A Did the initial calibration meet the acceptance criteria?

Level IV/D Only

Y N N/A Were the retention time window sizes properly established for all compounds?

Y N N/A Were compounds run at the required concentrations in the initial calibration?

Y N N/A Were the linearity or curve results recalculated? (Please see Initial Calibration calculation verification worksheet.)

Y N N/A Were the linearity or curve reported results within 10.0% of the recalculated results?

#	Date	Standard ID	~~Data dtr~~ Column	Compound	%RSD (Limit ≤ 20.0%)	Associated Samples	Qualifications
	4-24-01	ICAL	Hall	KK	25.4	All, blk	J/UJ/A
	4-3-01	ICAL	↓	TTT	20.1	↓	↓
		All ICALs	Hall	All	3 pt calib	All, blk	none/P
		↓	PID	↓	performed		↓
		↓	FID	↓	(criteria: 5 pt calib)		↓

LDC #: 7014A23
SDG #: GF07110IW1

VALIDATION FINDINGS WORKSHEET
Continuing Calibration

Page: 1 of 2
Reviewer: JC
2nd Reviewer: JC

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

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".
What type of continuing calibration calculation was performed? ✓ %D or ___ RPD

(Y) N N/A Was at least one continuing standard run daily to verify the working curve?
Y (N) N/A Did the continuing calibration standards meet the percent difference (%D) and relative percent differences (RPD) criteria of ≤15.0%?

Level IV/D Only

Y N (N/A) Were the percent difference (%D) results recalculated? (Please see Calibration Verification results verification worksheet.)
Y N (N/A) Were the (%D) reported results within 10.0% of the recalculated results?

#	Date	Standard ID	~~detector~~ Column	Compound	%D / RPD (Limit ≤ 15.0)	Associated Samples	Qualifications
	7-12-01	CCO	PID	PPP	36.0	13-24	J/UJ/A
			HALL	TTT	17.5	BLK 7/12/01	
	7-13-01	CCO	HALL	BB	15.3	25-38	
			↓	TTT	17.3	BLK 7/13/01	
	7-18-01	CCO	HALL	BB	15.3	64-76	
				TTT	19.6	BLK 7/18/01	
	7-18-01	CCV	HALL	TTT	24.8	↓	
	7-20-01	CCO	HALL	O	15.4	91-100	
						BLK 7/20/01	
	7-23-01	CCO	HALL	BB	18.6	101-112	
						BLK 7/23/01	
	7-23-01	CCV		K	15.8		
				L	15.5		
				ZZZ	16.1		
				MM	17.2		
				BB	18.3		
			↓	M	20.5	↓	↓

LDC #: 7014A23
SDG #: GF07101W1

VALIDATION FINDINGS WORKSHEET
Continuing Calibration

Reviewer: SC
2nd Reviewer: [signature]

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

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".
What type of continuing calibration calculation was performed? ✓ %D or ___ RPD

(Y) N N/A Was at least one continuing standard run daily to verify the working curve?
Y (N) N/A Did the continuing calibration standards meet the percent difference (%D) and relative percent differences (RPD) criteria of ≤15.0%?

Level IV/D Only

Y N (N/A) Were the percent difference (%D) results recalculated? (Please see Calibration Verification results verification worksheet.)
Y N (N/A) Were the (%D) reported results within 10.0% of the recalculated results?

#	Date	Standard ID	~~detector~~ Column	Compound	%D / RPD (Limit ≤ 15.0)	Associated Samples	Qualifications
	7-24-01	CCO	HALL/PID	K	18.7	113 - 124	J/UJ/A
			↓	1	16.0	BLK7/24/01	↓
			↓	ZZZ	17.0		
		x All CCALs	D	no CCAL performed		All blk	~~J/UJ/A~~ text
			C	ND in all samples			↓
			KK				
			JJ				↓

LDC #: 7014A23
SDG #: GF071101W1

VALIDATION FINDINGS WORKSHEET
Laboratory Control Samples (LCS)

Page: 1 of 1
Reviewer: SC
2nd Reviewer:

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

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

(Y) N N/A Was a LCS required?
(Y) N N/A Were a laboratory control samples (LCS) and laboratory control sample duplicate (LCSD) analyzed for each matrix in this SDG? _____
(Y) N N/A Was a LCS analyzed with each analytical batch (every 24 hours; not to exceed 20 samples)?
Y N (N/A) If a methanol extraction was performed, was a LCS analyzed with each extraction batch?
Y (N) N/A Were the LCS percent recoveries (%R) and relative percent differences (RPD) within the QC limits stated below?

#	Date	LCS/LCSD ID	Compound	LCS %R (Limits)	LCSD %R (Limits)	RPD (Limits)	Associated Samples	Qualifications
		LCS 7/11/01	BB	21.6 (<20)	( )	( )	1-12, Blk 7/11/01	J (all) / P
			U	20.3 ( )	( )	( )		
				( )	( )	( )		
		LCS 7/16/01	UU	99.2 ( )	( )	( )	39-50, Blk 7/16/01	J/UJ/P
				( )	( )	( )		
				( )	( )	( )		
		LCS 7/24/01	ZZZ	20.1 ( )	( )	( )	113-124	J (all) / P
				( )	( )	( )	Blk 7/24/01	
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		

Letter Designation	Compound	Soil QC Limits % Recovery	Soil QC Limits ~~RPD~~ 20	Water QC Limits % Recovery	Water QC Limits RPD
A	~~All~~ except TTT		±20 ~~50-120~~		
B	TTT		±25 ~~75-125~~ °C		
C					
D					
E					
F					
G					
H					
I					
J					

LDC #: 7014A23
SDG #: GF07181W1

VALIDATION FINDINGS WORKSHEET
Field Duplicates

Page: 1 of 1
Reviewer: PR
2nd reviewer:

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

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

Compound	Concentration (ug/L-V) 29	30	RPD
O	36	28	25
K	1.0	ND	200
II	3	2.5	18
N	27	26	4
S	26	22	17

Compound	Concentration (ug/L-V) 35	36	RPD
O	6.2	6.3	2
S	ND	1.3	200
TTT	1.1	ND	↓

Compound	Concentration (ug/L-V) 41	42	RPD
O	1.9	1.5	23

Compound	Concentration (ug/L-V) 53	54	RPD
S	2.0	1.0	67
TTT	11	11	0

LDC #: 7014A23
SDG #: GF07101W1

VALIDATION FINDINGS WORKSHEET
Field Duplicates

Reviewer: x
2nd reviewer: [signature]

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

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

Compound	Concentration (ug/L-V)		RPD
	95	96	
S	1.5	1.7	12

Compound	Concentration (ug/L-V)		RPD
	101	102	
TTT	1.6	1.6	0

Compound	Concentration (ug/L-V)		RPD
	107	108	
TTT	7.6	8.1	6

Compound	Concentration ( )		RPD