Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: JPL, 00HW019

Collection Date: April 9, 2002

LDC Report Date: June 17, 2002

Matrix: Water

Parameters: Volatiles

Validation Level: EPA Level IV

Laboratory: Applied P & Ch Laboratory

Sample Delivery Group (SDG): 02-2349

Sample Identification

ER-21
MW-21-1
MW-21-2
MW-21-3
MW-21-4
MW-21-5
SB-1
TB-21

Introduction

This data review covers 8 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA 524.2 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.

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 selected compounds.

A curve fit, based on the initial calibration, was established for quantitation for selected compounds. The coefficient of determination (r^2) was greater than or equal to 0.990 .

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% with the following exceptions:

Date	Compound	%D	Associated Samples	Flag	A or P
4/11/02	Dichlorodifluoromethane	35.89	All samples in SDG 02-2349	J (all detects) UJ (all non-detects)	P
	1,1,2-Trichlorotrifluoroethane	32.95		J (all detects) UJ (all non-detects)	

V. Blanks

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

Method Blank ID	Analysis Date	Compound TIC (RT in minutes)	Concentration	Associated Samples
02G2064MB01	4/11/02	Methylene chloride	0.9 ug/L	All samples in SDG 02-2349

Sample concentrations were compared to concentrations detected in the method blanks. The sample concentrations were either not detected or were significantly greater (>10X for common contaminants, >5X for other contaminants) than the concentrations found in the associated method blanks with the following exceptions:

Sample	Compound TIC (RT in minutes)	Reported Concentration	Modified Final Concentration
ER-21	Methylene chloride	2.2 ug/L	2.2U ug/L
MW-21-1	Methylene chloride	2.4 ug/L	2.4U ug/L
MW-21-2	Methylene chloride	2.6 ug/L	2.6U ug/L
MW-21-3	Methylene chloride	2.6 ug/L	2.6U ug/L
MW-21-4	Methylene chloride	2.2 ug/L	2.2U ug/L
MW-21-5	Methylene chloride	2.7 ug/L	2.7U ug/L
SB-1	Methylene chloride	2.6 ug/L	2.6U ug/L
TB-21	Methylene chloride	2.5 ug/L	2.5U ug/L

Sample ER-21 was identified as an equipment rinsate. No volatile contaminants were found in this blank with the following exceptions:

Equipment Rinsate ID	Sampling Date	Compound	Concentration	Associated Samples
ER-21	4/9/02	Methylene chloride	2.2 ug/L	MW-21-1 MW-21-2 MW-21-3 MW-21-4 MW-21-5

Sample SB-1 was identified as a source blank. No volatile contaminants were found in this blank with the following exceptions:

Source Blank ID	Sampling Date	Compound	Concentration	Associated Samples
SB-1	4/9/02	Methylene chloride	2.6 ug/L	MW-21-1 MW-21-2 MW-21-3 MW-21-4 MW-21-5

Sample TB-21 was identified as a trip blank. No volatile contaminants were found in this blank with the following exceptions:

Trip Blank ID	Sampling Date	Compound	Concentration	Associated Samples
TB-21	4/9/02	Methylene chloride	2.5 ug/L	ER-21 MW-21-1 MW-21-2 MW-21-3 MW-21-4 MW-21-5 SB-1

Sample concentrations were compared to concentrations detected in the field blanks. The sample concentrations were either not detected or were significantly greater (>10X for common contaminants, >5X for other contaminants) than the concentrations found in the associated field blanks with the following exceptions:

Sample	Compound	Reported Concentration	Modified Final Concentration
ER-21	Methylene chloride	2.2 ug/L	2.2U ug/L
MW-21-1	Methylene chloride	2.4 ug/L	2.4U ug/L
MW-21-2	Methylene chloride	2.6 ug/L	2.6U ug/L
MW-21-3	Methylene chloride	2.6 ug/L	2.6U ug/L
MW-21-4	Methylene chloride	2.2 ug/L	2.2U ug/L
MW-21-5	Methylene chloride	2.7 ug/L	2.7U ug/L
SB-1	Methylene chloride	2.6 ug/L	2.6U ug/L

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

All internal standard areas and retention times were within QC limits with the following exceptions:

Sample	Internal Standards	Area (Limits)	Compound	Flag	A or P
02G2064MB01	Chlorobenzene-d5	301681 (319739-593801)	All TCL compounds	J (all detects) UJ (all non-detects)	P
ER-21	Chlorobenzene-d5	317244 (319739-593801)	Dibromochloromethane 1,1,2-Trichloroethane Bromoform Tetrachloroethene Toluene Chlorobenzene 1,3-Dichloropropane 1,2-Dibromoethane 1,1,1,2-Tetrachloroethane	J (all detects) UJ (all non-detects)	P
MW-21-1	Chlorobenzene-d5	306617 (319739-593801)	Dibromochloromethane 1,1,2-Trichloroethane Bromoform Tetrachloroethene Toluene Chlorobenzene 1,3-Dichloropropane 1,2-Dibromoethane 1,1,1,2-Tetrachloroethane	J (all detects) UJ (all non-detects)	P

Sample	Internal Standards	Area (Limits)	Compound	Flag	A or P
MW-21-2	Chlorobenzene-d5	309420 (319739-593801)	Dibromochloromethane 1,1,2-Trichloroethane Bromoform Tetrachloroethene Toluene Chlorobenzene 1,3-Dichloropropane 1,2-Dibromoethane 1,1,1,2-Tetrachloroethane	J (all detects) UJ (all non-detects)	P
MW-21-3	Chlorobenzene-d5	307445 (319739-593801)	Dibromochloromethane 1,1,2-Trichloroethane Bromoform Tetrachloroethene Toluene Chlorobenzene 1,3-Dichloropropane 1,2-Dibromoethane 1,1,1,2-Tetrachloroethane	J (all detects) UJ (all non-detects)	P
MW-21-4	Chlorobenzene-d5	314581 (319739-593801)	Dibromochloromethane 1,1,2-Trichloroethane Bromoform Tetrachloroethene Toluene Chlorobenzene 1,3-Dichloropropane 1,2-Dibromoethane 1,1,1,2-Tetrachloroethane	J (all detects) UJ (all non-detects)	P
MW-21-5	Chlorobenzene-d5	312528 (319739-593801)	Dibromochloromethane 1,1,2-Trichloroethane Bromoform Tetrachloroethene Toluene Chlorobenzene 1,3-Dichloropropane 1,2-Dibromoethane 1,1,1,2-Tetrachloroethane	J (all detects) UJ (all non-detects)	P
SB-1	Chlorobenzene-d5	302303 (319739-593801)	Dibromochloromethane 1,1,2-Trichloroethane Bromoform Tetrachloroethene Toluene Chlorobenzene 1,3-Dichloropropane 1,2-Dibromoethane 1,1,1,2-Tetrachloroethane	J (all detects) UJ (all non-detects)	P

Sample	Internal Standards	Area (Limits)	Compound	Flag	A or P
TB-21	Chlorobenzene-d5	310685 (319739-593801)	Dibromochloromethane 1,1,2-Trichloroethane Bromoform Tetrachloroethene Toluene Chlorobenzene 1,3-Dichloropropane 1,2-Dibromoethane 1,1,1,2-Tetrachloroethane	J (all detects) UJ (all non-detects)	P

XI. Target Compound Identifications

All target compound identifications were within validation criteria.

XII. Compound Quantitation and CRQLs

All compound quantitation and CRQLs were within validation criteria.

XIII. Tentatively Identified Compounds (TICs)

Tentatively identified compounds were not reported by the laboratory.

XIV. System Performance

The system performance was acceptable.

XV. Overall Assessment of Data

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

XVI. Field Duplicates

No field duplicates were identified in this SDG.

JPL, 00HW019
Volatiles - Data Qualification Summary - SDG 02-2349

SDG	Sample	Compound	Flag	A or P	Reason
02-2349	ER-21 MW-21-1 MW-21-2 MW-21-3 MW-21-4 MW-21-5 SB-1 TB-21	Dichlorodifluoromethane 1,1,2-Trichlorotrifluoroethane	J (all detects) UJ (all non-detects) J (all detects) UJ (all non-detects)	P	Continuing calibration (%D)
02-2349	ER-21 MW-21-1 MW-21-2 MW-21-3 MW-21-4 MW-21-5 SB-1 TB-21	Dibromochloromethane 1,1,2-Trichloroethane Bromoform Tetrachloroethene Toluene Chlorobenzene 1,3-Dichloropropane 1,2-Dibromoethane 1,1,1,2-Tetrachloroethane	J (all detects) UJ (all non-detects)	P	Internal standards (area)

JPL, 00HW019
Volatiles - Laboratory Blank Data Qualification Summary - SDG 02-2349

SDG	Sample	Compound TIC (RT in minutes)	Modified Final Concentration	A or P
02-2349	ER-21	Methylene chloride	2.2U ug/L	A
02-2349	MW-21-1	Methylene chloride	2.4U ug/L	A
02-2349	MW-21-2	Methylene chloride	2.6U ug/L	A
02-2349	MW-21-3	Methylene chloride	2.6U ug/L	A
02-2349	MW-21-4	Methylene chloride	2.2U ug/L	A
02-2349	MW-21-5	Methylene chloride	2.7U ug/L	A
02-2349	SB-1	Methylene chloride	2.6U ug/L	A
02-2349	TB-21	Methylene chloride	2.5U ug/L	A

JPL, 00HW019
Volatiles - Field Blank Data Qualification Summary - SDG 02-2349

SDG	Sample	Compound	Modified Final Concentration	A or P
02-2349	ER-21	Methylene chloride	2.2U ug/L	A
02-2349	MW-21-1	Methylene chloride	2.4U ug/L	A
02-2349	MW-21-2	Methylene chloride	2.6U ug/L	A
02-2349	MW-21-3	Methylene chloride	2.6U ug/L	A
02-2349	MW-21-4	Methylene chloride	2.2U ug/L	A
02-2349	MW-21-5	Methylene chloride	2.7U ug/L	A
02-2349	SB-1	Methylene chloride	2.6U ug/L	A

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: JPL, 00HW019

Collection Date: April 10, 2002

LDC Report Date: June 17, 2002

Matrix: Water

Parameters: Volatiles

Validation Level: EPA Level IV

Laboratory: Applied P & Ch Laboratory

Sample Delivery Group (SDG): 02-2373

Sample Identification

ER-17
MW-17-2
MW-17-3
MW-17-4
MW-17-5
TB-17
MW-17-4MS
MW-17-4MSD

Introduction

This data review covers 8 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA 524.2 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.

The following are definitions of the data qualifiers:

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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 selected compounds.

A curve fit, based on the initial calibration, was established for quantitation for selected compounds. The coefficient of determination (r^2) was greater than or equal to 0.990 .

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% with the following exceptions:

Date	Compound	%D	Associated Samples	Flag	A or P
4/12/02	Dichlorodifluoromethane	38.78	All samples in SDG 02-2373	J (all detects) UJ (all non-detects)	P
	2,2-Dichloropropane	33.49		J (all detects) UJ (all non-detects)	

V. Blanks

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

Sample ER-17 was identified as an equipment rinsate. No volatile contaminants were found in this blank.

Sample TB-17 was identified as a trip blank. No volatile contaminants were found in this blank with the following exceptions:

Trip Blank ID	Sampling Date	Compound	Concentration	Associated Samples
TB-17	4/10/02	Methylene chloride	0.6 ug/L	ER-17 MW-17-2 MW-17-3 MW-17-4 MW-17-5

Sample concentrations were compared to concentrations detected in the field blanks. The sample concentrations were either not detected or were significantly greater (>10X for common contaminants, >5X for other contaminants) than the concentrations found in the associated field blanks with the following exceptions:

Sample	Compound	Reported Concentration	Modified Final Concentration
MW-17-2	Methylene chloride	0.3 ug/L	1U ug/L
MW-17-3	Methylene chloride	0.3 ug/L	1U ug/L
MW-17-5	Methylene chloride	0.4 ug/L	1U ug/L

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

Although matrix spike (MS) and matrix spike duplicate (MSD) samples were not required by the method, MS and MSD samples were reported by the laboratory. Percent recoveries (%R) and relative percent differences (RPD) 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

All internal standard areas and retention times were within QC limits with the following exceptions:

Sample	Internal Standards	Area (Limits)	Compound	Flag	A or P
02G2079MB01	1,4-Difluorobenzene	169605 (172412-320194)	1,1,2,2-Tetrachloroethane Ethylbenzene Styrene 1,2-Dibromo-3-chloropropane Isopropylbenzene Bromobenzene 1,2,3-Trichloropropane n-Propylbenzene 2-Chlorotoluene 1,3,5-Trimethylbenzene 4-Chlorotoluene tert-Butylbenzene 1,2,4-Trimethylbenzene sec-Butylbenzene 1,3-Dichlorobenzene p-Isopropyltoluene 1,4-Dichlorobenzene n-Butylbenzene 1,2-Dichlorobenzene 1,2,4-Trichlorobenzene Hexachlorobutadiene Naphthalene 1,2,3-Trichlorobenzene m,p-Xylenes o-Xylene	J (all detects) UJ (all non-detects)	P
TB-17	Fluorobenzene Chlorobenzene-d5 1,4-Difluorobenzene	529347 (535454-1300388) 299930 (327078-607430) 164898 (172412-320194)	All TCL compounds	J (all detects) UJ (all non-detects)	P
MW-17-4	Fluorobenzene Chlorobenzene-d5 1,4-Difluorobenzene	526939 (535454-1300388) 296560 (327078-607430) 161290 (172412-320194)	All TCL compounds	J (all detects) UJ (all non-detects)	A
ER-17	Fluorobenzene Chlorobenzene-d5 1,4-Difluorobenzene	534890 (535454-1300388) 301180 (327078-607430) 161799 (172412-320194)	All TCL compounds	J (all detects) UJ (all non-detects)	P
MW-17-2	Fluorobenzene Chlorobenzene-d5 1,4-Difluorobenzene	522057 (535454-1300388) 293023 (327078-607430) 155210 (172412-320194)	All TCL compounds	J (all detects) UJ (all non-detects)	P
MW-17-3	Fluorobenzene Chlorobenzene-d5 1,4-Difluorobenzene	510806 (535454-1300388) 286985 (327078-607430) 153631 (172412-320194)	All TCL compounds	J (all detects) UJ (all non-detects)	P
MW-17-5	Fluorobenzene Chlorobenzene-d5 1,4-Difluorobenzene	525808 (535454-1300388) 297264 (327078-607430) 161089 (172412-320194)	All TCL compounds	J (all detects) UJ (all non-detects)	P

XI. Target Compound Identifications

All target compound identifications were within validation criteria.

XII. Compound Quantitation and CRQLs

All compound quantitation and CRQLs were within validation criteria.

XIII. Tentatively Identified Compounds (TICs)

Tentatively identified compounds were not reported by the laboratory.

XIV. System Performance

The system performance was acceptable.

XV. Overall Assessment of Data

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

XVI. Field Duplicates

No field duplicates were identified in this SDG.

JPL, 00HW019
Volatiles - Data Qualification Summary - SDG 02-2373

SDG	Sample	Compound	Flag	A or P	Reason
02-2373	ER-17 MW-17-2 MW-17-3 MW-17-4 MW-17-5 TB-17	Dichlorodifluoromethane 2,2-Dichloropropane	J (all detects) UJ (all non-detects) J (all detects) UJ (all non-detects)	P	Continuing calibration (%D)
02-2373	MW-17-4	All TCL compounds	J (all detects) UJ (all non-detects)	A	Internal standards (area)
02-2373	ER-17 MW-17-2 MW-17-3 MW-17-5 TB-17	All TCL compounds	J (all detects) UJ (all non-detects)	P	Internal standards (area)

JPL, 00HW019
Volatiles - Laboratory Blank Data Qualification Summary - SDG 02-2373

No Sample Data Qualified in this SDG

JPL, 00HW019
Volatiles - Field Blank Data Qualification Summary - SDG 02-2373

SDG	Sample	Compound	Modified Final Concentration	A or P
02-2373	MW-17-2	Methylene chloride	1U ug/L	A
02-2373	MW-17-3	Methylene chloride	1U ug/L	A
02-2373	MW-17-5	Methylene chloride	1U ug/L	A

LDC Report# 8310C1

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: JPL, 00HW019

Collection Date: April 11, 2002

LDC Report Date: June 17, 2002

Matrix: Water

Parameters: Volatiles

Validation Level: EPA Level IV

Laboratory: Applied P & Ch Laboratory

Sample Delivery Group (SDG): 02-2385

Sample Identification

ER-12
MW-12-1
MW-12-2
MW-12-3
MW-12-4
MW-12-5
MW-12-3D
TB-12

Introduction

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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 selected compounds.

A curve fit, based on the initial calibration, was established for quantitation for selected compounds. The coefficient of determination (r^2) was greater than or equal to 0.990 .

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% with the following exceptions:

Date	Compound	%D	Associated Samples	Flag	A or P
4/16/02	Dichlorodifluoromethane	40.34	All samples in SDG 02-2385	J (all detects) UJ (all non-detects)	P

V. Blanks

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

Method Blank ID	Analysis Date	Compound TIC (RT in minutes)	Concentration	Associated Samples
02G2107MB01	4/16/02	Methylene chloride	1.9 ug/L	All samples in SDG 02-2385

Sample concentrations were compared to concentrations detected in the method blanks. The sample concentrations were either not detected or were significantly greater (>10X for common contaminants, >5X for other contaminants) than the concentrations found in the associated method blanks with the following exceptions:

Sample	Compound TIC (RT in minutes)	Reported Concentration	Modified Final Concentration
ER-12	Methylene chloride	0.5 ug/L	1U ug/L
MW-12-1	Methylene chloride	0.5 ug/L	1U ug/L
MW-12-2	Methylene chloride	0.5 ug/L	1U ug/L
MW-12-3	Methylene chloride	0.5 ug/L	1U ug/L
MW-12-4	Methylene chloride	0.5 ug/L	1U ug/L
MW-12-5	Methylene chloride	0.4 ug/L	1U ug/L
MW-12-3D	Methylene chloride	0.5 ug/L	1U ug/L
TB-12	Methylene chloride	0.9 ug/L	1U ug/L

Sample ER-12 was identified as an equipment rinsate. No volatile contaminants were found in this blank with the following exceptions:

Equipment Rinsate ID	Sampling Date	Compound	Concentration	Associated Samples
ER-12	4/11/02	Methylene chloride	0.5 ug/L	MW-12-1 MW-12-2 MW-12-3 MW-12-4 MW-12-5 MW-12-3D

Sample TB-12 was identified as a trip blank. No volatile contaminants were found in this blank with the following exceptions:

Trip Blank ID	Sampling Date	Compound	Concentration	Associated Samples
TB-12	4/11/02	Methylene chloride	0.9 ug/L	ER-12 MW-12-1 MW-12-2 MW-12-3 MW-12-4 MW-12-5 MW-12-3D

Sample concentrations were compared to concentrations detected in the field blanks. The sample concentrations were either not detected or were significantly greater (>10X for common contaminants, >5X for other contaminants) than the concentrations found in the associated field blanks with the following exceptions:

Sample	Compound	Reported Concentration	Modified Final Concentration
ER-12	Methylene chloride	0.5 ug/L	1U ug/L
MW-12-1	Methylene chloride	0.5 ug/L	1U ug/L
MW-12-2	Methylene chloride	0.5 ug/L	1U ug/L
MW-12-3	Methylene chloride	0.5 ug/L	1U ug/L
MW-12-4	Methylene chloride	0.5 ug/L	1U ug/L
MW-12-5	Methylene chloride	0.4 ug/L	1U ug/L
MW-12-3D	Methylene chloride	0.5 ug/L	1U ug/L

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

All internal standard areas and retention times were within QC limits with the following exceptions:

Sample	Internal Standards	Area (Limits)	Compound	Flag	A or P
02G2107MB01	Fluorobenzene Chlorobenzene-d5 1,4-Difluorobenzene	458115 (465499-864497) 270484 (291646-708283) 150994 (163150-302994)	All TCL compounds	J (all detects) UJ (all non-detects)	P
TB-12	Chlorobenzene-d5 1,4-Difluorobenzene	289683 (291646-708283) 156320 (163150-302994)	Dibromochloromethane 1,1,2-Trichloroethane Bromoform Tetrachloroethene Toluene Chlorobenzene 1,3-Dichloropropane 1,2-Dibromoethane 1,1,1,2-Tetrachloroethane 1,1,2,2-Tetrachloroethane Ethylbenzene Styrene 1,2-Dibromo-3-chloropropane Isopropylbenzene Bromobenzene 1,2,3-Trichloropropane n-Propylbenzene 2-Chlorotoluene 1,3,5-Trimethylbenzene 4-Chlorotoluene tert-Butylbenzene 1,2,4-Trimethylbenzene sec-Butylbenzene 1,3-Dichlorobenzene p-Isopropyltoluene 1,4-Dichlorobenzene n-Butylbenzene 1,2-Dichlorobenzene 1,2,4-Trichlorobenzene Hexachlorobutadiene Naphthalene 1,2,3-Trichlorobenzene m,p-Xylenes o-Xylene	J (all detects) UJ (all non-detects)	P

Sample	Internal Standards	Area (Limits)	Compound	Flag	A or P
MW-12-1	Chlorobenzene-d5 1,4-Difluorobenzene	279506 (291646-708283) 153083 (163150-302994)	Dibromochloromethane 1,1,2-Trichloroethane Bromoform Tetrachloroethene Toluene Chlorobenzene 1,3-Dichloropropane 1,2-Dibromoethane 1,1,1,2-Tetrachloroethane 1,1,2,2-Tetrachloroethane Ethylbenzene Styrene 1,2-Dibromo-3-chloropropane Isopropylbenzene Bromobenzene 1,2,3-Trichloropropane n-Propylbenzene 2-Chlorotoluene 1,3,5-Trimethylbenzene 4-Chlorotoluene tert-Butylbenzene 1,2,4-Trimethylbenzene sec-Butylbenzene 1,3-Dichlorobenzene p-Isopropyltoluene 1,4-Dichlorobenzene n-Butylbenzene 1,2-Dichlorobenzene 1,2,4-Trichlorobenzene Hexachlorobutadiene Naphthalene 1,2,3-Trichlorobenzene m,p-Xylenes o-Xylene	J (all detects) UJ (all non-detects)	P

Sample	Internal Standards	Area (Limits)	Compound	Flag	A or P
MW-12-2	Chlorobenzene-d5 1,4-Difluorobenzene	283815 (291646-708283) 151743 (163150-302994)	Dibromochloromethane 1,1,2-Trichloroethane Bromoform Tetrachloroethene Toluene Chlorobenzene 1,3-Dichloropropane 1,2-Dibromoethane 1,1,1,2-Tetrachloroethane 1,1,2,2-Tetrachloroethane Ethylbenzene Styrene 1,2-Dibromo-3-chloropropane Isopropylbenzene Bromobenzene 1,2,3-Trichloropropane n-Propylbenzene 2-Chlorotoluene 1,3,5-Trimethylbenzene 4-Chlorotoluene tert-Butylbenzene 1,2,4-Trimethylbenzene sec-Butylbenzene 1,3-Dichlorobenzene p-Isopropyltoluene 1,4-Dichlorobenzene n-Butylbenzene 1,2-Dichlorobenzene 1,2,4-Trichlorobenzene Hexachlorobutadiene Naphthalene 1,2,3-Trichlorobenzene m,p-Xylenes o-Xylene	J (all detects) UJ (all non-detects)	P

Sample	Internal Standards	Area (Limits)	Compound	Flag	A or P
MW-12-3	Chlorobenzene-d5 1,4-Difluorobenzene	277947 (291646-708283) 146211 (163150-302994)	Dibromochloromethane 1,1,2-Trichloroethane Bromoform Tetrachloroethene Toluene Chlorobenzene 1,3-Dichloropropane 1,2-Dibromoethane 1,1,1,2-Tetrachloroethane 1,1,2,2-Tetrachloroethane Ethylbenzene Styrene 1,2-Dibromo-3-chloropropane Isopropylbenzene Bromobenzene 1,2,3-Trichloropropane n-Propylbenzene 2-Chlorotoluene 1,3,5-Trimethylbenzene 4-Chlorotoluene tert-Butylbenzene 1,2,4-Trimethylbenzene sec-Butylbenzene 1,3-Dichlorobenzene p-Isopropyltoluene 1,4-Dichlorobenzene n-Butylbenzene 1,2-Dichlorobenzene 1,2,4-Trichlorobenzene Hexachlorobutadiene Naphthalene 1,2,3-Trichlorobenzene m,p-Xylenes o-Xylene	J (all detects) UJ (all non-detects)	P

Sample	Internal Standards	Area (Limits)	Compound	Flag	A or P
MW-12-4	Chlorobenzene-d5 1,4-Difluorobenzene	277850 (291646-708283) 151120 (163150-302994)	Dibromochloromethane 1,1,2-Trichloroethane Bromoform Tetrachloroethene Toluene Chlorobenzene 1,3-Dichloropropane 1,2-Dibromoethane 1,1,1,2-Tetrachloroethane 1,1,2,2-Tetrachloroethane Ethylbenzene Styrene 1,2-Dibromo-3-chloropropane Isopropylbenzene Bromobenzene 1,2,3-Trichloropropane n-Propylbenzene 2-Chlorotoluene 1,3,5-Trimethylbenzene 4-Chlorotoluene tert-Butylbenzene 1,2,4-Trimethylbenzene sec-Butylbenzene 1,3-Dichlorobenzene p-Isopropyltoluene 1,4-Dichlorobenzene n-Butylbenzene 1,2-Dichlorobenzene 1,2,4-Trichlorobenzene Hexachlorobutadiene Naphthalene 1,2,3-Trichlorobenzene m,p-Xylenes o-Xylene	J (all detects) UJ (all non-detects)	P

Sample	Internal Standards	Area (Limits)	Compound	Flag	A or P
MW-12-5	Chlorobenzene-d5 1,4-Difluorobenzene	280512 (291646-708283) 149650 (163150-302994)	Dibromochloromethane 1,1,2-Trichloroethane Bromoform Tetrachloroethene Toluene Chlorobenzene 1,3-Dichloropropane 1,2-Dibromoethane 1,1,1,2-Tetrachloroethane 1,1,2,2-Tetrachloroethane Ethylbenzene Styrene 1,2-Dibromo-3-chloropropane Isopropylbenzene Bromobenzene 1,2,3-Trichloropropane n-Propylbenzene 2-Chlorotoluene 1,3,5-Trimethylbenzene 4-Chlorotoluene tert-Butylbenzene 1,2,4-Trimethylbenzene sec-Butylbenzene 1,3-Dichlorobenzene p-Isopropyltoluene 1,4-Dichlorobenzene n-Butylbenzene 1,2-Dichlorobenzene 1,2,4-Trichlorobenzene Hexachlorobutadiene Naphthalene 1,2,3-Trichlorobenzene m,p-Xylenes o-Xylene	J (all detects) UJ (all non-detects)	P

Sample	Internal Standards	Area (Limits)	Compound	Flag	A or P
MW-12-3D	Chlorobenzene-d5 1,4-Difluorobenzene	282564 (291646-708283) 150614 (163150-302994)	Dibromochloromethane 1,1,2-Trichloroethane Bromoform Tetrachloroethene Toluene Chlorobenzene 1,3-Dichloropropane 1,2-Dibromoethane 1,1,1,2-Tetrachloroethane 1,1,2,2-Tetrachloroethane Ethylbenzene Styrene 1,2-Dibromo-3-chloropropane Isopropylbenzene Bromobenzene 1,2,3-Trichloropropane n-Propylbenzene 2-Chlorotoluene 1,3,5-Trimethylbenzene 4-Chlorotoluene tert-Butylbenzene 1,2,4-Trimethylbenzene sec-Butylbenzene 1,3-Dichlorobenzene p-Isopropyltoluene 1,4-Dichlorobenzene n-Butylbenzene 1,2-Dichlorobenzene 1,2,4-Trichlorobenzene Hexachlorobutadiene Naphthalene 1,2,3-Trichlorobenzene m,p-Xylenes o-Xylene	J (all detects) UJ (all non-detects)	P

XI. Target Compound Identifications

All target compound identifications were within validation criteria.

XII. Compound Quantitation and CRQLs

All compound quantitation and CRQLs were within validation criteria.

XIII. Tentatively Identified Compounds (TICs)

Tentatively identified compounds were not reported by the laboratory.

XIV. System Performance

The system performance was acceptable.

XV. Overall Assessment of Data

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

XVI. Field Duplicates

Samples MW-12-3 and MW-12-3D were identified as field duplicates. No volatiles were detected in any of the samples with the following exceptions:

Compound	Concentration (ug/L)		RPD
	MW-12-3	MW-12-3D	
Carbon tetrachloride	4.6	2.9	45
Chloroform	2.3	1.9	19
Methylene chloride	0.5	0.5	0
Trichloroethene	0.3	0.5U	200

JPL, 00HW019
Volatiles - Data Qualification Summary - SDG 02-2385

SDG	Sample	Compound	Flag	A or P	Reason
02-2385	ER-12 MW-12-1 MW-12-2 MW-12-3 MW-12-4 MW-12-5 MW-12-3D TB-12	Dichlorodifluoromethane	J (all detects) UJ (all non-detects)	P	Continuing calibration (%D)
02-2385	MW-12-1 MW-12-2 MW-12-3 MW-12-4 MW-12-5 MW-12-3D TB-12	Dibromochloromethane 1,1,2-Trichloroethane Bromoform Tetrachloroethene Toluene Chlorobenzene 1,3-Dichloropropane 1,2-Dibromoethane 1,1,1,2-Tetrachloroethane 1,1,2,2-Tetrachloroethane Ethylbenzene Styrene 1,2-Dibromo-3-chloropropane Isopropylbenzene Bromobenzene 1,2,3-Trichloropropane n-Propylbenzene 2-Chlorotoluene 1,3,5-Trimethylbenzene 4-Chlorotoluene tert-Butylbenzene 1,2,4-Trimethylbenzene sec-Butylbenzene 1,3-Dichlorobenzene p-Isopropyltoluene 1,4-Dichlorobenzene n-Butylbenzene 1,2-Dichlorobenzene 1,2,4-Trichlorobenzene Hexachlorobutadiene Naphthalene 1,2,3-Trichlorobenzene m,p-Xylenes o-Xylene	J (all detects) UJ (all non-detects)	P	Internal standards (area)

JPL, 00HW019
Volatiles - Laboratory Blank Data Qualification Summary - SDG 02-2385

SDG	Sample	Compound TIC (RT in minutes)	Modified Final Concentration	A or P
02-2385	ER-12	Methylene chloride	1U ug/L	A

SDG	Sample	Compound TIC (RT in minutes)	Modified Final Concentration	A or P
02-2385	MW-12-1	Methylene chloride	1U ug/L	A
02-2385	MW-12-2	Methylene chloride	1U ug/L	A
02-2385	MW-12-3	Methylene chloride	1U ug/L	A
02-2385	MW-12-4	Methylene chloride	1U ug/L	A
02-2385	MW-12-5	Methylene chloride	1U ug/L	A
02-2385	MW-12-3D	Methylene chloride	1U ug/L	A
02-2385	TB-12	Methylene chloride	1U ug/L	A

JPL, 00HW019
Volatiles - Field Blank Data Qualification Summary - SDG 02-2385

SDG	Sample	Compound	Modified Final Concentration	A or P
02-2385	ER-12	Methylene chloride	1U ug/L	A
02-2385	MW-12-1	Methylene chloride	1U ug/L	A
02-2385	MW-12-2	Methylene chloride	1U ug/L	A
02-2385	MW-12-3	Methylene chloride	1U ug/L	A
02-2385	MW-12-4	Methylene chloride	1U ug/L	A
02-2385	MW-12-5	Methylene chloride	1U ug/L	A
02-2385	MW-12-3D	Methylene chloride	1U ug/L	A

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: JPL, 00HW019

Collection Date: April 12, 2002

LDC Report Date: June 17, 2002

Matrix: Water

Parameters: Volatiles

Validation Level: EPA Level IV

Laboratory: Applied P & Ch Laboratory

Sample Delivery Group (SDG): 02-2404

Sample Identification

ER-22
FB-22
MW-22-1
MW-22-2
MW-22-3
MW-22-3D
TB-22

Introduction

This data review covers 7 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA 524.2 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.

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 selected compounds.

A curve fit, based on the initial calibration, was established for quantitation for selected compounds. The coefficient of determination (r^2) was greater than or equal to 0.990 .

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% with the following exceptions:

Date	Compound	%D	Associated Samples	Flag	A or P
4/17/02 (G2117Q01)	Dichlorodifluoromethane 2,2-Dichloropropane	45.36 35.33	ER-22 FB-22 MW-22-1 MW-22-2 MW-22-3 MW-22-3D 02G2117MB01	J (all detects) UJ (all non-detects) J (all detects) UJ (all non-detects)	P
4/17/02 (G2133Q01)	Dichlorodifluoromethane	46.32	TB-22 02G2133MB01	J (all detects) UJ (all non-detects)	P

V. Blanks

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

Method Blank ID	Analysis Date	Compound TIC (RT in minutes)	Concentration	Associated Samples
02G2117MB01	4/17/02	Methylene chloride	0.8 ug/L	ER-22 FB-22 MW-22-1 MW-22-2 MW-22-3 MW-22-3D
02G2133MB01	4/17/02	Methylene chloride	2.5 ug/L	TB-22

Sample concentrations were compared to concentrations detected in the method blanks. The sample concentrations were either not detected or were significantly greater (>10X for common contaminants, >5X for other contaminants) than the concentrations found in the associated method blanks with the following exceptions:

Sample	Compound TIC (RT in minutes)	Reported Concentration	Modified Final Concentration
MW-22-2	Methylene chloride	0.3 ug/L	1U ug/L
MW-22-3D	Methylene chloride	0.4 ug/L	1U ug/L
TB-22	Methylene chloride	2.7 ug/L	2.7U ug/L

Sample ER-22 was identified as an equipment rinsate. No volatile contaminants were found in this blank.

Sample FB-22 was identified as a field blank. No volatile contaminants were found in this blank.

Sample TB-22 was identified as a trip blank. No volatile contaminants were found in this blank with the following exceptions:

Trip Blank ID	Sampling Date	Compound	Concentration	Associated Samples
TB-22	4/17/02	Methylene chloride	2.7 ug/L	ER-22 FB-22 MW-22-1 MW-22-2 MW-22-3 MW-22-3D

Sample concentrations were compared to concentrations detected in the field blanks. The sample concentrations were either not detected or were significantly greater (>10X for common contaminants, >5X for other contaminants) than the concentrations found in the associated field blanks with the following exceptions:

Sample	Compound	Reported Concentration	Modified Final Concentration
MW-22-2	Methylene chloride	0.3 ug/L	1U ug/L
MW-22-3D	Methylene chloride	0.4 ug/L	1U ug/L

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

All internal standard areas and retention times were within QC limits with the following exceptions:

Sample	Internal Standards	Area (Limits)	Compound	Flag	A or P
02G2117MB01	Fluorobenzene Chlorobenzene-d5 1,4-Dichlorobenzene-d4	488757 (495457-920134) 289694 (312839-580987) 159130 (175361-325671)	All TCL compounds	J (all detects) UJ (all non-detects)	P
FB-22	Fluorobenzene Chlorobenzene-d5 1,4-Dichlorobenzene-d4	483174 (495457-920134) 282525 (312839-580987) 155361 (175361-325671)	All TCL compounds	J (all detects) UJ (all non-detects)	P
ER-22	Fluorobenzene Chlorobenzene-d5 1,4-Dichlorobenzene-d4	484884 (495457-920134) 282146 (312839-580987) 149667 (175361-325671)	All TCL compounds	J (all detects) UJ (all non-detects)	P
MW-22-1	Fluorobenzene Chlorobenzene-d5 1,4-Dichlorobenzene-d4	475714 (495457-920134) 281317 (312839-580987) 153554 (175361-325671)	All TCL compounds	J (all detects) UJ (all non-detects)	P
MW-22-2	Fluorobenzene Chlorobenzene-d5 1,4-Dichlorobenzene-d4	467894 (495457-920134) 273926 (312839-580987) 151534 (175361-325671)	All TCL compounds	J (all detects) UJ (all non-detects)	P
MW-22-3	Fluorobenzene Chlorobenzene-d5 1,4-Dichlorobenzene-d4	458573 (495457-920134) 265920 (312839-580987) 145264 (175361-325671)	All TCL compounds	J (all detects) UJ (all non-detects)	P
MW-22-3D	Fluorobenzene Chlorobenzene-d5 1,4-Dichlorobenzene-d4	481308 (495457-920134) 282723 (312839-580987) 150039 (175361-325671)	All TCL compounds	J (all detects) UJ (all non-detects)	P
02G2133MB01	Fluorobenzene Chlorobenzene-d5 1,4-Dichlorobenzene-d4	443982 (495457-920134) 265364 (312839-580987) 147220 (175361-325671)	All TCL compounds	J (all detects) UJ (all non-detects)	P
TB-22	Fluorobenzene Chlorobenzene-d5 1,4-Dichlorobenzene-d4	444565 (495457-920134) 265567 (312839-580987) 145269 (175361-325671)	All TCL compounds	J (all detects) UJ (all non-detects)	P

XI. Target Compound Identifications

All target compound identifications were within validation criteria.

XII. Compound Quantitation and CRQLs

All compound quantitation and CRQLs were within validation criteria.

XIII. Tentatively Identified Compounds (TICs)

Tentatively identified compounds were not reported by the laboratory.

XIV. System Performance

The system performance was acceptable.

XV. Overall Assessment of Data

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

XVI. Field Duplicates

Samples MW-22-3 and MW-22-3D were identified as field duplicates. No volatiles were detected in any of the samples with the following exceptions:

Compound	Concentration (ug/L)		RPD
	MW-22-3	MW-22-3D	
Methylene chloride	1U	0.4	200

JPL, 00HW019
Volatiles - Data Qualification Summary - SDG 02-2404

SDG	Sample	Compound	Flag	A or P	Reason
02-2404	ER-22 FB-22 MW-22-1 MW-22-2 MW-22-3 MW-22-3D	Dichlorodifluoromethane 2,2-Dichloropropane	J (all detects) UJ (all non-detects) J (all detects) UJ (all non-detects)	P	Continuing calibration (%D)
02-2404	TB-22	Dichlorodifluoromethane	J (all detects) UJ (all non-detects)	P	Continuing calibration (%D)
02-2404	FB-22 ER-22 MW-22-1 MW-22-2 MW-22-3 MW-22-3D TB-22	All TCL compounds	J (all detects) UJ (all non-detects)	P	Internal standards (area)

JPL, 00HW019
Volatiles - Laboratory Blank Data Qualification Summary - SDG 02-2404

SDG	Sample	Compound TIC (RT in minutes)	Modified Final Concentration	A or P
02-2404	MW-22-2	Methylene chloride	1U ug/L	A
02-2404	MW-22-3D	Methylene chloride	1U ug/L	A
02-2404	TB-22	Methylene chloride	2.7U ug/L	A

JPL, 00HW019
Volatiles - Field Blank Data Qualification Summary - SDG 02-2404

SDG	Sample	Compound	Modified Final Concentration	A or P
02-2404	MW-22-2	Methylene chloride	1U ug/L	A
02-2404	MW-22-3D	Methylene chloride	1U ug/L	A

LDC Report# 8329B1

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: JPL, 00HW019

Collection Date: April 15, 2002

LDC Report Date: June 17, 2002

Matrix: Water

Parameters: Volatiles

Validation Level: EPA Level IV

Laboratory: Applied P & Ch Laboratory

Sample Delivery Group (SDG): 02-2427

Sample Identification

ER-18
MW-18-2
MW-18-3
MW-18-4
MW-18-5
TB-18
MW-18-5MS
MW-18-5MSD

Introduction

This data review covers 8 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA 524.2 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.

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 selected compounds.

A curve fit, based on the initial calibration, was established for quantitation for selected compounds. The coefficient of determination (r^2) was greater than or equal to 0.990 .

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% with the following exceptions:

Date	Compound	%D	Associated Samples	Flag	A or P
4/17/02	Dichlorodifluoromethane	46.32	ER-18 MW-18-2 MW-18-3 TB-18 02G2133MB01	J (all detects) UJ (all non-detects)	P
4/18/02	Dichlorodifluoromethane	52.54	MW-18-4 MW-18-5 MW-18-5MS MW-18-5MSD 02G2144MB01	J (all detects) UJ (all non-detects)	P

V. Blanks

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

Method Blank ID	Analysis Date	Compound TIC (RT in minutes)	Concentration	Associated Samples
02G2133MB01	4/18/02	Methylene chloride	2.5 ug/L	ER-18 MW-18-2 MW-18-3 TB-18
02G2144MB01	4/18/02	Methylene chloride	0.8 ug/L	MW-18-4 MW-18-5

Sample concentrations were compared to concentrations detected in the method blanks. The sample concentrations were either not detected or were significantly greater (>10X for common contaminants, >5X for other contaminants) than the concentrations found in the associated method blanks with the following exceptions:

Sample	Compound TIC (RT in minutes)	Reported Concentration	Modified Final Concentration
ER-18	Methylene chloride	0.3 ug/L	1U ug/L
MW-18-3	Methylene chloride	0.4 ug/L	1U ug/L
TB-18	Methylene chloride	0.7 ug/L	1U ug/L
MW-18-4	Methylene chloride	0.4 ug/L	1U ug/L

Sample ER-18 was identified as an equipment rinsate. No volatile contaminants were found in this blank with the following exceptions:

Equipment Rinsate ID	Sampling Date	Compound	Concentration	Associated Samples
ER-18	4/15/02	Methylene chloride	0.3 ug/L	MW-18-2 MW-18-3 MW-18-4 MW-18-5

Sample TB-18 was identified as a trip blank. No volatile contaminants were found in this blank with the following exceptions:

Trip Blank ID	Sampling Date	Compound	Concentration	Associated Samples
TB-18	4/15/02	Methylene chloride	0.7 ug/L	ER-18 MW-18-2 MW-18-3 MW-18-4 MW-18-5

Sample concentrations were compared to concentrations detected in the field blanks. The sample concentrations were either not detected or were significantly greater (>10X for common contaminants, >5X for other contaminants) than the concentrations found in the associated field blanks with the following exceptions:

Sample	Compound	Reported Concentration	Modified Final Concentration
ER-18	Methylene chloride	0.3 ug/L	1U ug/L
MW-18-3	Methylene chloride	0.4 ug/L	1U ug/L
MW-18-4	Methylene chloride	0.4 ug/L	1U ug/L

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) samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) 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

All internal standard areas and retention times were within QC limits with the following exceptions:

Sample	Internal Standards	Area (Limits)	Compound	Flag	A or P
02G2133MB01	Fluorobenzene Chlorobenzene-d5 1,4-Dichlorobenzene-d4	443982 (474047-880373) 265364 (301414-559770) 147220 (170832-317260)	All TCL compounds	J (all detects) UJ (all non-detects)	P
TB-18	Fluorobenzene Chlorobenzene-d5 1,4-Dichlorobenzene-d4	464001 (474047-880373) 274160 (301414-559770) 148381 (170832-317260)	All TCL compounds	J (all detects) UJ (all non-detects)	P
ER-18	Fluorobenzene Chlorobenzene-d5 1,4-Dichlorobenzene-d4	457460 (474047-880373) 268501 (301414-559770) 145024 (170832-317260)	All TCL compounds	J (all detects) UJ (all non-detects)	P
MW-18-2	Fluorobenzene Chlorobenzene-d5 1,4-Dichlorobenzene-d4	448474 (474047-880373) 265426 (301414-559770) 142920 (170832-317260)	All TCL compounds	J (all detects) UJ (all non-detects)	P
MW-18-3	Fluorobenzene Chlorobenzene-d5 1,4-Dichlorobenzene-d4	446673 (474047-880373) 261444 (301414-559770) 138618 (170832-317260)	All TCL compounds	J (all detects) UJ (all non-detects)	P
02G2144MB01	Fluorobenzene Chlorobenzene-d5 1,4-Dichlorobenzene-d4	417416 (479347-890383) 251897 (307509-571087) 138680 (173273-420806)	All TCL compounds	J (all detects) UJ (all non-detects)	P
MW-18-4	Fluorobenzene Chlorobenzene-d5 1,4-Dichlorobenzene-d4	439088 (479347-890383) 266003 (307509-571087) 143086 (173273-420806)	All TCL compounds	J (all detects) UJ (all non-detects)	P
MW-18-5	Fluorobenzene Chlorobenzene-d5 1,4-Dichlorobenzene-d4	444746 (479347-890383) 264876 (307509-571087) 143841 (173273-420806)	All TCL compounds	J (all detects) UJ (all non-detects)	A

XI. Target Compound Identifications

All target compound identifications were within validation criteria.

XII. Compound Quantitation and CRQLs

All compound quantitation and CRQLs were within validation criteria.

XIII. Tentatively Identified Compounds (TICs)

Tentatively identified compounds were not reported by the laboratory.

XIV. System Performance

The system performance was acceptable.

XV. Overall Assessment of Data

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

XVI. Field Duplicates

No field duplicates were identified in this SDG.

JPL, 00HW019
Volatiles - Data Qualification Summary - SDG 02-2427

SDG	Sample	Compound	Flag	A or P	Reason
02-2427	ER-18 MW-18-2 MW-18-3 TB-18 MW-18-4 MW-18-5	Dichlorodifluoromethane	J (all detects) UJ (all non-detects)	P	Continuing calibration (%D)
02-2427	TB-18 ER-18 MW-18-2 MW-18-3 MW-18-4	All TCL compounds	J (all detects) UJ (all non-detects)	P	Internal standards (area)
02-2427	MW-18-5	All TCL compounds	J (all detects) UJ (all non-detects)	A	Internal standards (area)

JPL, 00HW019
Volatiles - Laboratory Blank Data Qualification Summary - SDG 02-2427

SDG	Sample	Compound TIC (RT in minutes)	Modified Final Concentration	A or P
02-2427	ER-18	Methylene chloride	1U ug/L	A
02-2427	MW-18-3	Methylene chloride	1U ug/L	A
02-2427	TB-18	Methylene chloride	1U ug/L	A
02-2427	MW-18-4	Methylene chloride	1U ug/L	A

JPL, 00HW019
Volatiles - Field Blank Data Qualification Summary - SDG 02-2427

SDG	Sample	Compound	Modified Final Concentration	A or P
02-2427	ER-18	Methylene chloride	1U ug/L	A
02-2427	MW-18-3	Methylene chloride	1U ug/L	A
02-2427	MW-18-4	Methylene chloride	1U ug/L	A

LDC Report# 8329C1

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: JPL, 00HW019

Collection Date: April 16, 2002

LDC Report Date: June 17, 2002

Matrix: Water

Parameters: Volatiles

Validation Level: EPA Level IV

Laboratory: Applied P & Ch Laboratory

Sample Delivery Group (SDG): 02-2442

Sample Identification

ER-20
MW-20-1
MW-20-2
MW-20-3
MW-20-4
MW-20-5
MW-20-4D
TB-20
ER-20MS
ER-20MSD

Introduction

This data review covers 10 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA 524.2 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.

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 selected compounds.

A curve fit, based on the initial calibration, was established for quantitation for selected compounds. The coefficient of determination (r^2) was greater than or equal to 0.990 .

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% with the following exceptions:

Date	Compound	%D	Associated Samples	Flag	A or P
4/18/02	Methyl-tert-butyl ether	34.51	All samples in SDG 02-2442	J (all detects) UJ (all non-detects)	P
	Dibromomethane	30.48		J (all detects) UJ (all non-detects)	

V. Blanks

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

Sample ER-20 was identified as an equipment rinsate. No volatile contaminants were found in this blank.

Sample TB-20 was identified as a trip blank. No volatile contaminants were found in this blank with the following exceptions:

Trip Blank ID	Sampling Date	Compound	Concentration	Associated Samples
TB-20	4/16/02	Methylene chloride	0.6 ug/L	ER-20 MW-20-1 MW-20-2 MW-20-3 MW-20-4 MW-20-5 MW-20-4D

Sample concentrations were compared to concentrations detected in the field blanks. The sample concentrations were either not detected or were significantly greater (>10X for common contaminants, >5X for other contaminants) than the concentrations found in the associated field 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) samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) 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

All internal standard areas and retention times were within QC limits with the following exceptions:

Sample	Internal Standards	Area (Limits)	Compound	Flag	A or P
02G2137MB01	Fluorobenzene Chlorobenzene-d5 1,4-Dichlorobenzene-d4	971798 (493721-916910) 359610 (162088-301020) 293571 (130417-242203)	All TCL compounds	J (all detects) UJ (all non-detects)	P
MW-20-3	Chlorobenzene-d5 1,4-Dichlorobenzene-d4	302668 (162088-301020) 244053 (130417-242203)	Dibromochloromethane 1,1,2-Trichloroethane Bromoform Tetrachloroethene 1,1,2,2-Tetrachloroethane Toluene Chlorobenzene Ethylbenzene Styrene 1,3-Dichloropropane 1,2-Dibromoethane 1,1,1,2-Tetrachloroethane Isopropylbenzene Bromobenzene 1,2,3-Trichloropropane n-Propylbenzene 2-Chlorotoluene 1,3,5-Trimethylbenzene 4-Chlorotoluene tert-Butylbenzene 1,2,4-Trimethylbenzene sec-Butylbenzene 1,3-Dichlorobenzene p-Isopropyltoluene 1,4-Dichlorobenzene n-Butylbenzene 1,2-Dichlorobenzene 1,2,4-Trichlorobenzene Hexachlorobutadiene Naphthalene 1,2,3-Trichlorobenzene 1,3,5-Trichlorobenzene m,p-Xylenes o-Xylene	J (all detects) J (all detects)	P

XI. Target Compound Identifications

All target compound identifications were within validation criteria.

XII. Compound Quantitation and CRQLs

All compound quantitation and CRQLs were within validation criteria.

XIII. Tentatively Identified Compounds (TICs)

Tentatively identified compounds were not reported by the laboratory.

XIV. System Performance

The system performance was acceptable.

XV. Overall Assessment of Data

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

XVI. Field Duplicates

Samples MW-20-4 and MW-20-4D were identified as field duplicates. No volatiles were detected in any of the samples.

JPL, 00HW019
Volatiles - Data Qualification Summary - SDG 02-2442

SDG	Sample	Compound	Flag	A or P	Reason
02-2442	ER-20 MW-20-1 MW-20-2 MW-20-3 MW-20-4 MW-20-5 MW-20-4D TB-20	Methyl-tert-butyl ether Dibromomethane	J (all detects) UJ (all non-detects) J (all detects) UJ (all non-detects)	P	Continuing calibration (%D)
02-2442	MW-20-3	Dibromochloromethane 1,1,2-Trichloroethane Bromoform Tetrachloroethene 1,1,2,2-Tetrachloroethane Toluene Chlorobenzene Ethylbenzene Styrene 1,3-Dichloropropane 1,2-Dibromoethane 1,1,1,2-Tetrachloroethane Isopropylbenzene Bromobenzene 1,2,3-Trichloropropane n-Propylbenzene 2-Chlorotoluene 1,3,5-Trimethylbenzene 4-Chlorotoluene tert-Butylbenzene 1,2,4-Trimethylbenzene sec-Butylbenzene 1,3-Dichlorobenzene p-Isopropyltoluene 1,4-Dichlorobenzene n-Butylbenzene 1,2-Dichlorobenzene 1,2,4-Trichlorobenzene Hexachlorobutadiene Naphthalene 1,2,3-Trichlorobenzene 1,3,5-Trichlorobenzene m,p-Xylenes o-Xylene	J (all detects) J (all detects)	P	Internal standards (area)

JPL, 00HW019
Volatiles - Laboratory Blank Data Qualification Summary - SDG 02-2442

No Sample Data Qualified in this SDG

JPL, 00HW019
Volatiles - Field Blank Data Qualification Summary - SDG 02-2442

No Sample Data Qualified in this SDG

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: JPL, 00HW019

Collection Date: April 17, 2002

LDC Report Date: June 17, 2002

Matrix: Water

Parameters: Volatiles

Validation Level: EPA Level IV

Laboratory: Applied P & Ch Laboratory

Sample Delivery Group (SDG): 02-2462

Sample Identification

ER-19
MW-19-1
MW-19-2
MW-19-3
MW-19-4
MW-19-5
TB-19
MW-19-4MS
MW-19-4MSD

Introduction

This data review covers 9 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA 524.2 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.

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 selected compounds.

A curve fit, based on the initial calibration, was established for quantitation for selected compounds. The coefficient of determination (r^2) was greater than or equal to 0.990 .

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% with the following exceptions:

Date	Compound	%D	Associated Samples	Flag	A or P
4/19/02	Dichlorodifluoromethane	49.46	All samples in SDG 02-2462	J (all detects) UJ (all non-detects)	P

V. Blanks

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

Method Blank ID	Analysis Date	Compound TIC (RT in minutes)	Concentration	Associated Samples
02G2146MB01	4/17/02	Methylene chloride	1.2 ug/L	All samples in SDG 02-2462

Sample concentrations were compared to concentrations detected in the method blanks. The sample concentrations were either not detected or were significantly greater (>10X for common contaminants, >5X for other contaminants) than the concentrations found in the associated method blanks with the following exceptions:

Sample	Compound TIC (RT in minutes)	Reported Concentration	Modified Final Concentration
ER-19	Methylene chloride	0.5 ug/L	1U ug/L
MW-19-1	Methylene chloride	0.5 ug/L	1U ug/L
MW-19-2	Methylene chloride	0.5 ug/L	1U ug/L
MW-19-4	Methylene chloride	0.4 ug/L	1U ug/L
MW-19-5	Methylene chloride	0.5 ug/L	1U ug/L
TB-19	Methylene chloride	2.0 ug/L	2.0U ug/L

Sample ER-19 was identified as an equipment rinsate. No volatile contaminants were found in this blank with the following exceptions:

Equipment Rinsate ID	Sampling Date	Compound	Concentration	Associated Samples
ER-19	4/17/02	Methylene chloride	0.5 ug/L	MW-19-1 MW-19-2 MW-19-3 MW-19-4 MW-19-5

Sample TB-19 was identified as a trip blank. No volatile contaminants were found in this blank with the following exceptions:

Trip Blank ID	Sampling Date	Compound	Concentration	Associated Samples
TB-19	4/17/02	Methylene chloride	2.0 ug/L	ER-19 MW-19-1 MW-19-2 MW-19-3 MW-19-4 MW-19-5

Sample concentrations were compared to concentrations detected in the field blanks. The sample concentrations were either not detected or were significantly greater (>10X for common contaminants, >5X for other contaminants) than the concentrations found in the associated field blanks with the following exceptions:

Sample	Compound	Reported Concentration	Modified Final Concentration
ER-19	Methylene chloride	0.5 ug/L	1U ug/L
MW-19-1	Methylene chloride	0.5 ug/L	1U ug/L
MW-19-2	Methylene chloride	0.5 ug/L	1U ug/L
MW-19-4	Methylene chloride	0.4 ug/L	1U ug/L
MW-19-5	Methylene chloride	0.5 ug/L	1U ug/L

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) samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) 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

All internal standard areas and retention times were within QC limits with the following exceptions:

Sample	Internal Standards	Area (Limits)	Compound	Flag	A or P
02G2146MB01	Fluorobenzene Chlorobenzene-d5 1,4-Dichlorobenzene-d4	425778 (460419-855065) 257329 (294823-547528) 141987 (166654-309500)	All TCL compounds	J (all detects) UJ (all non-detects)	P
MW-19-4	Fluorobenzene Chlorobenzene-d5 1,4-Dichlorobenzene-d4	432397 (460419-855065) 261509 (294823-547528) 143362 (166654-309500)	All TCL compounds	J (all detects) UJ (all non-detects)	A
ER-19	Fluorobenzene Chlorobenzene-d5 1,4-Dichlorobenzene-d4	440626 (460419-855065) 264958 (294823-547528) 143748 (166654-309500)	All TCL compounds	J (all detects) UJ (all non-detects)	P
MW-19-1	Fluorobenzene Chlorobenzene-d5 1,4-Dichlorobenzene-d4	419092 (460419-855065) 255734 (294823-547528) 139275 (166654-309500)	All TCL compounds	J (all detects) UJ (all non-detects)	P
MW-19-2	Fluorobenzene Chlorobenzene-d5 1,4-Dichlorobenzene-d4	423028 (460419-855065) 258898 (294823-547528) 137467 (166654-309500)	All TCL compounds	J (all detects) UJ (all non-detects)	P
MW-19-3	Fluorobenzene Chlorobenzene-d5 1,4-Dichlorobenzene-d4	435835 (460419-855065) 264952 (294823-547528) 141475 (166654-309500)	All TCL compounds	J (all detects) UJ (all non-detects)	P
MW-19-5	Fluorobenzene Chlorobenzene-d5 1,4-Dichlorobenzene-d4	425650 (460419-855065) 259620 (294823-547528) 137840 (166654-309500)	All TCL compounds	J (all detects) UJ (all non-detects)	P
TB-19	Fluorobenzene Chlorobenzene-d5 1,4-Dichlorobenzene-d4	419973 (460419-855065) 254607 (294823-547528) 136606 (166654-309500)	All TCL compounds	J (all detects) UJ (all non-detects)	P

XI. Target Compound Identifications

All target compound identifications were within validation criteria.

XII. Compound Quantitation and CRQLs

All compound quantitation and CRQLs were within validation criteria.

XIII. Tentatively Identified Compounds (TICs)

Tentatively identified compounds were not reported by the laboratory.

XIV. System Performance

The system performance was acceptable.

XV. Overall Assessment of Data

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

XVI. Field Duplicates

No field duplicates were identified in this SDG.

JPL, 00HW019
Volatiles - Data Qualification Summary - SDG 02-2462

SDG	Sample	Compound	Flag	A or P	Reason
02-2462	ER-19 MW-19-1 MW-19-2 MW-19-3 MW-19-4 MW-19-5 TB-19	Dichlorodifluoromethane	J (all detects) UJ (all non-detects)	P	Continuing calibration (%D)
02-2462	MW-19-4	All TCL compounds	J (all detects) UJ (all non-detects)	A	Internal standards (area)
02-2462	ER-19 MW-19-1 MW-19-2 MW-19-3 MW-19-5 TB-19	All TCL compounds	J (all detects) UJ (all non-detects)	P	Internal standards (area)

JPL, 00HW019
Volatiles - Laboratory Blank Data Qualification Summary - SDG 02-2462

SDG	Sample	Compound TIC (RT in minutes)	Modified Final Concentration	A or P
02-2462	ER-19	Methylene chloride	1U ug/L	A
02-2462	MW-19-1	Methylene chloride	1U ug/L	A
02-2462	MW-19-2	Methylene chloride	1U ug/L	A
02-2462	MW-19-4	Methylene chloride	1U ug/L	A
02-2462	MW-19-5	Methylene chloride	1U ug/L	A
02-2462	TB-19	Methylene chloride	2.0U ug/L	A

JPL, 00HW019
Volatiles - Field Blank Data Qualification Summary - SDG 02-2462

SDG	Sample	Compound	Modified Final Concentration	A or P
02-2462	ER-19	Methylene chloride	1U ug/L	A
02-2462	MW-19-1	Methylene chloride	1U ug/L	A
02-2462	MW-19-2	Methylene chloride	1U ug/L	A
02-2462	MW-19-4	Methylene chloride	1U ug/L	A
02-2462	MW-19-5	Methylene chloride	1U ug/L	A

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: JPL, 00HW019

Collection Date: April 18, 2002

LDC Report Date: June 17, 2002

Matrix: Water

Parameters: Volatiles

Validation Level: EPA Level IV

Laboratory: Applied P & Ch Laboratory

Sample Delivery Group (SDG): 02-2483

Sample Identification

ER-14
MW-14-1
MW-14-2
MW-14-3
MW-14-4
MW-14-5
MW-14-4D
TB-14

Introduction

This data review covers 8 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA Method 524.2 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.

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 selected compounds.

A curve fit, based on the initial calibration, was established for quantitation for selected compounds. The coefficient of determination (r^2) was greater than or equal to 0.990 with the following exceptions:

Date	Compound	r^2	Associated Samples	Flag	A or P
1/23/02	Acetone	0.9831	All samples in SDG 02-2483	J (all detects) UJ (all non-detects)	P

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 with the following exceptions:

Method Blank ID	Analysis Date	Compound TIC (RT in minutes)	Concentration	Associated Samples
02G2165MB01	4/22/02	Methylene chloride	0.5 ug/L	All samples in SDG 02-2483

Sample concentrations were compared to concentrations detected in the method blanks. The sample concentrations were either not detected or were significantly greater (>10X for common contaminants, >5X for other contaminants) than the concentrations found in the associated method blanks.

Sample ER-14 was identified as an equipment blank. No volatile contaminants were found in this blank.

Sample TB-14 was identified as a trip blank. No volatile contaminants were found in this blank.

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

All internal standard areas and retention times were within QC limits.

XI. Target Compound Identifications

All target compound identifications were within validation criteria.

XII. Compound Quantitation and CRQLs

All compound quantitation and CRQLs were within validation criteria.

XIII. Tentatively Identified Compounds (TICs)

Tentatively identified compounds were not reported by the laboratory.

XIV. System Performance

The system performance was acceptable.

XV. Overall Assessment of Data

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

XVI. Field Duplicates

Samples MW-14-4 and MW-14-4D were identified as field duplicates. No volatiles were detected in any of the samples.

JPL, 00HW019
Volatiles - Data Qualification Summary - SDG 02-2483

SDG	Sample	Compound	Flag	A or P	Reason
02-2483	ER-14 MW-14-1 MW-14-2 MW-14-3 MW-14-4 MW-14-5 MW-14-4D TB-14	Acetone	J (all detects) UJ (all non-detects)	P	Initial calibration (r^2)

JPL, 00HW019
Volatiles - Laboratory Blank Data Qualification Summary - SDG 02-2483

No Sample Data Qualified in this SDG

JPL, 00HW019
Volatiles - Field Blank Data Qualification Summary - SDG 02-2483

No Sample Data Qualified in this SDG

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: JPL, 00HW019

Collection Date: April 19, 2002

LDC Report Date: June 17, 2002

Matrix: Water

Parameters: Volatiles

Validation Level: EPA Level IV

Laboratory: Applied P & Ch Laboratory

Sample Delivery Group (SDG): 02-2506

Sample Identification

ER-11
MW-11-1
MW-11-2
MW-11-3
MW-11-4
TB-11
MW-11-3MS
MW-11-3MSD

Introduction

This data review covers 8 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA Method 524.2 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.

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 selected compounds.

A curve fit, based on the initial calibration, was established for quantitation for selected compounds. The coefficient of determination (r^2) was greater than or equal to 0.990 .

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% with the following exceptions:

Date	Compound	%D	Associated Samples	Flag	A or P
4/22/02	Dichlorodifluoromethane	43.48	All samples in SDG 02-2506	J (all detects) UJ (all non-detects)	P

V. Blanks

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

Sample ER-11 was identified as an equipment rinsate. No volatile contaminants were found in this blank with the following exceptions:

Equipment Rinsate ID	Sampling Date	Compound	Concentration	Associated Samples
ER-11	4/19/02	Methylene chloride	0.3 ug/L	MW-11-1 MW-11-2 MW-11-3 MW-11-4

Sample TB-11 was identified as a trip blank. No volatile contaminants were found in this blank with the following exceptions:

Trip Blank ID	Sampling Date	Compound	Concentration	Associated Samples
TB-11	4/19/02	Methylene chloride	0.7 ug/L	ER-11 MW-11-1 MW-11-2 MW-11-3 MW-11-4

Sample concentrations were compared to concentrations detected in the field blanks. The sample concentrations were either not detected or were significantly greater (>10X for common contaminants, >5X for other contaminants) than the concentrations found in the associated field blanks with the following exceptions:

Sample	Compound	Reported Concentration	Modified Final Concentration
ER-11	Methylene chloride	0.3 ug/L	1U ug/L
MW-11-1	Methylene chloride	0.3 ug/L	1U ug/L
MW-11-2	Methylene chloride	0.3 ug/L	1U ug/L
MW-11-3	Methylene chloride	0.3 ug/L	1U ug/L
MW-11-4	Methylene chloride	0.3 ug/L	1U ug/L

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

Although matrix spike (MS) and matrix spike duplicate (MSD) samples were not required by the method, MS and MSD samples were reported by the laboratory. Percent recoveries (%R)

and relative percent differences (RPD) 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

All internal standard areas and retention times were within QC limits.

XI. Target Compound Identifications

All target compound identifications were within validation criteria.

XII. Compound Quantitation and CRQLs

All compound quantitation and CRQLs were within validation criteria.

XIII. Tentatively Identified Compounds (TICs)

Tentatively identified compounds were not reported by the laboratory.

XIV. System Performance

The system performance was acceptable.

XV. Overall Assessment of Data

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

XVI. Field Duplicates

No field duplicates were identified in this SDG.

JPL, 00HW019
Volatiles - Data Qualification Summary - SDG 02-2506

SDG	Sample	Compound	Flag	A or P	Reason
02-2506	ER-11 MW-11-1 MW-11-2 MW-11-3 MW-11-4 TB-11	Dichlorodifluoromethane	J (all detects) UJ (all non-detects)	P	Continuing calibration (%D)

JPL, 00HW019
Volatiles - Laboratory Blank Data Qualification Summary - SDG 02-2506

No Sample Data Qualified in this SDG

JPL, 00HW019
Volatiles - Field Blank Data Qualification Summary - SDG 02-2506

SDG	Sample	Compound	Modified Final Concentration	A or P
02-2506	ER-11	Methylene chloride	1U ug/L	A
02-2506	MW-11-1	Methylene chloride	1U ug/L	A
02-2506	MW-11-2	Methylene chloride	1U ug/L	A
02-2506	MW-11-3	Methylene chloride	1U ug/L	A
02-2506	MW-11-4	Methylene chloride	1U ug/L	A

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: JPL, 00HW019

Collection Date: April 22, 2002

LDC Report Date: June 17, 2002

Matrix: Water

Parameters: Volatiles

Validation Level: EPA Level IV

Laboratory: Applied P & Ch Laboratory

Sample Delivery Group (SDG): 02-2534

Sample Identification

ER-24
MW-24-1
MW-24-2
MW-24-3
TB-24
MW-24-3MS
MW-24-3MSD

Introduction

This data review covers 7 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA Method 524.2 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.

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.

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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 selected compounds.

A curve fit, based on the initial calibration, was established for quantitation for selected compounds. The coefficient of determination (r^2) was greater than or equal to 0.990 with the following exceptions:

Date	Compound	r^2	Associated Samples	Flag	A or P
1/23/02	Acetone	0.9831	All samples in SDG 02-2534	J (all detects) UJ (all non-detects)	P

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 with the following exceptions:

Method Blank ID	Analysis Date	Compound TIC (RT in minutes)	Concentration	Associated Samples
02G2193MB01	4/23/02	Methylene chloride	0.7 ug/L	All samples in SDG 02-2534

Sample concentrations were compared to concentrations detected in the method blanks. The sample concentrations were either not detected or were significantly greater (>10X for common contaminants, >5X for other contaminants) than the concentrations found in the associated method blanks with the following exceptions:

Sample	Compound TIC (RT in minutes)	Reported Concentration	Modified Final Concentration
ER-24	Methylene chloride	0.7 ug/L	1U ug/L
MW-24-1	Methylene chloride	0.5 ug/L	1U ug/L
MW-24-2	Methylene chloride	0.6 ug/L	1U ug/L
MW-24-3	Methylene chloride	0.4 ug/L	1U ug/L
TB-24	Methylene chloride	0.8 ug/L	1U ug/L

Sample ER-24 was identified as an equipment rinsate. No volatile contaminants were found in this blank with the following exceptions:

Equipment Rinsate ID	Sampling Date	Compound	Concentration	Associated Samples
ER-24	4/22/02	Methylene chloride	0.7 ug/L	MW-24-1 MW-24-2 MW-24-3

Sample TB-24 was identified as a trip blank. No volatile contaminants were found in this blank with the following exceptions:

Trip Blank ID	Sampling Date	Compound	Concentration	Associated Samples
TB-24	4/22/02	Methylene chloride	0.8 ug/L	ER-24 MW-24-1 MW-24-2 MW-24-3

Sample concentrations were compared to concentrations detected in the field blanks. The sample concentrations were either not detected or were significantly greater (>10X for common contaminants, >5X for other contaminants) than the concentrations found in the associated field blanks with the following exceptions:

Sample	Compound	Reported Concentration	Modified Final Concentration
ER-24	Methylene chloride	0.7 ug/L	1U ug/L
MW-24-1	Methylene chloride	0.5 ug/L	1U ug/L
MW-24-2	Methylene chloride	0.6 ug/L	1U ug/L
MW-24-3	Methylene chloride	0.4 ug/L	1U ug/L

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

Although matrix spike (MS) and matrix spike duplicate (MSD) samples were not required by the method, MS and MSD samples were reported by the laboratory. Percent recoveries (%R) and relative percent differences (RPD) 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

All internal standard areas and retention times were within QC limits.

XI. Target Compound Identifications

All target compound identifications were within validation criteria.

XII. Compound Quantitation and CRQLs

All compound quantitation and CRQLs were within validation criteria.

XIII. Tentatively Identified Compounds (TICs)

Tentatively identified compounds were not reported by the laboratory.

XIV. System Performance

The system performance was acceptable.

XV. Overall Assessment of Data

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

XVI. Field Duplicates

No field duplicates were identified in this SDG.

JPL, 00HW019
Volatiles - Data Qualification Summary - SDG 02-2534

SDG	Sample	Compound	Flag	A or P	Reason
02-2534	ER-24 MW-24-1 MW-24-2 MW-24-3 TB-24	Acetone	J (all detects) UJ (all non-detects)	P	Initial calibration (r^2)

JPL, 00HW019
Volatiles - Laboratory Blank Data Qualification Summary - SDG 02-2534

SDG	Sample	Compound TIC (RT in minutes)	Modified Final Concentration	A or P
02-2534	ER-24	Methylene chloride	1U ug/L	A
02-2534	MW-24-1	Methylene chloride	1U ug/L	A
02-2534	MW-24-2	Methylene chloride	1U ug/L	A
02-2534	MW-24-3	Methylene chloride	1U ug/L	A
02-2534	TB-24	Methylene chloride	1U ug/L	A

JPL, 00HW019
Volatiles - Field Blank Data Qualification Summary - SDG 02-2534

SDG	Sample	Compound	Modified Final Concentration	A or P
02-2534	ER-24	Methylene chloride	1U ug/L	A
02-2534	MW-24-1	Methylene chloride	1U ug/L	A
02-2534	MW-24-2	Methylene chloride	1U ug/L	A
02-2534	MW-24-3	Methylene chloride	1U ug/L	A

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: JPL, 00HW019

Collection Date: April 23, 2002

LDC Report Date: June 17, 2002

Matrix: Water

Parameters: Volatiles

Validation Level: EPA Level IV

Laboratory: Applied P & Ch Laboratory

Sample Delivery Group (SDG): 02-2567

Sample Identification

ER-23
MW-23-1
MW-23-2
MW-23-3
TB-23

Introduction

This data review covers 5 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA Method 524.2 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.

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 selected compounds.

A curve fit, based on the initial calibration, was established for quantitation for selected compounds. The coefficient of determination (r^2) was greater than or equal to 0.990 .

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% with the following exceptions:

Date	Compound	%D	Associated Samples	Flag	A or P
4/24/02	Dichlorodifluoromethane	45.22	All samples in SDG 02-2567	J (all detects) UJ (all non-detects)	P

V. Blanks

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

Method Blank ID	Analysis Date	Compound TIC (RT in minutes)	Concentration	Associated Samples
02G2209MB01	4/24/02	Methylene chloride	0.3 ug/L	All samples in SDG 02-2567

Sample concentrations were compared to concentrations detected in the method blanks. The sample concentrations were either not detected or were significantly greater (>10X for common contaminants, >5X for other contaminants) than the concentrations found in the associated method blanks with the following exceptions:

Sample	Compound TIC (RT in minutes)	Reported Concentration	Modified Final Concentration
ER-23	Methylene chloride	0.3 ug/L	1U ug/L
MW-23-1	Methylene chloride	0.4 ug/L	1U ug/L
MW-23-2	Methylene chloride	0.4 ug/L	1U ug/L
MW-23-3	Methylene chloride	0.4 ug/L	1U ug/L
TB-23	Methylene chloride	1 ug/L	1U ug/L

Sample ER-23 was identified as an equipment rinsate. No volatile contaminants were found in this blank with the following exceptions:

Equipment Rinsate ID	Sampling Date	Compound	Concentration	Associated Samples
ER-23	4/23/02	Methylene chloride	0.3 ug/L	MW-23-1 MW-23-2 MW-23-3

Sample TB-23 was identified as a trip blank. No volatile contaminants were found in this blank with the following exceptions:

Trip Blank ID	Sampling Date	Compound	Concentration	Associated Samples
TB-23	4/23/02	Methylene chloride	1.0 ug/L	ER-23 MW-23-1 MW-23-2 MW-23-3

Sample concentrations were compared to concentrations detected in the field blanks. The sample concentrations were either not detected or were significantly greater (>10X for common contaminants, >5X for other contaminants) than the concentrations found in the associated field blanks with the following exceptions:

Sample	Compound	Reported Concentration	Modified Final Concentration
ER-23	Methylene chloride	0.3	1U ug/L
MW-23-1	Methylene chloride	0.4	1U ug/L
MW-23-2	Methylene chloride	0.4	1U ug/L
MW-23-3	Methylene chloride	0.4	1U ug/L

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

All internal standard areas and retention times were within QC limits with the following exceptions:

Sample	Internal Standards	Area (Limits)	Compound	Flag	A or P
MW-23-1	Chlorobenzene-d5 1,4-Dichlorobenzene-d4	370855 (375256-696904) 188148 (200642-372622)	Dibromochloromethane 1,1,2-Trichloroethane Bromoform Tetrachloroethene Toluene Chlorobenzene 1,3-Dichloropropane 1,2-Dibromoethane 1,1,1,2-Tetrachloroethane 1,1,2,2-Tetrachloroethane Ethylbenzene Isopropylbenzene Bromobenzene 1,2,3-Trichloropropane n-Propylbenzene 2-Chlorotoluene 1,3,5-Trimethylbenzene 4-Chlorotoluene tert-Butylbenzene 1,2,4-Trimethylbenzene sec-Butylbenzene 1,3-Dichlorobenzene p-Isopropyltoluene 1,4-Dichlorobenzene n-Butylbenzene 1,2-Dichlorobenzene 1,2,4-Trichlorobenzene Hexachlorobutadiene Naphthalene 1,2,3-Trichlorobenzene m,p-Xylenes o-Xylene	J (all detects) UJ (all non-detects)	P
TB-23	1,4-Dichlorobenzene-d4	199604 (200642-372622)	1,1,2,2-Tetrachloroethane Ethylbenzene Isopropylbenzene Bromobenzene 1,2,3-Trichloropropane n-Propylbenzene 2-Chlorotoluene 1,3,5-Trimethylbenzene 4-Chlorotoluene tert-Butylbenzene 1,2,4-Trimethylbenzene sec-Butylbenzene 1,3-Dichlorobenzene p-Isopropyltoluene 1,4-Dichlorobenzene n-Butylbenzene 1,2-Dichlorobenzene 1,2,4-Trichlorobenzene Hexachlorobutadiene Naphthalene 1,2,3-Trichlorobenzene m,p-Xylenes o-Xylene	J (all detects) UJ (all non-detects)	P

Sample	Internal Standards	Area (Limits)	Compound	Flag	A or P
ER-23	1,4-Dichlorobenzene-d4	196405 (200642-372622)	1,1,2,2-Tetrachloroethane Ethylbenzene Isopropylbenzene Bromobenzene 1,2,3-Trichloropropane n-Propylbenzene 2-Chlorotoluene 1,3,5-Trimethylbenzene 4-Chlorotoluene tert-Butylbenzene 1,2,4-Trimethylbenzene sec-Butylbenzene 1,3-Dichlorobenzene p-Isopropyltoluene 1,4-Dichlorobenzene n-Butylbenzene 1,2-Dichlorobenzene 1,2,4-Trichlorobenzene Hexachlorobutadiene Naphthalene 1,2,3-Trichlorobenzene m,p-Xylenes o-Xylene	J (all detects) UJ (all non-detects)	P

XI. Target Compound Identifications

All target compound identifications were within validation criteria.

XII. Compound Quantitation and CRQLs

All compound quantitation and CRQLs were within validation criteria.

XIII. Tentatively Identified Compounds (TICs)

Tentatively identified compounds were not reported by the laboratory.

XIV. System Performance

The system performance was acceptable.

XV. Overall Assessment of Data

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

XVI. Field Duplicates

No field duplicates were identified in this SDG.

JPL, 00HW019
Volatiles - Data Qualification Summary - SDG 02-2567

SDG	Sample	Compound	Flag	A or P	Reason
02-2567	ER-23 MW-23-1 MW-23-2 MW-23-3 TB-23	Dichlorodifluoromethane	J (all detects) UJ (all non-detects)	P	Continuing calibration (%D)
02-2567	TB-23 ER-23	1,1,2,2-Tetrachloroethane Ethylbenzene Isopropylbenzene Bromobenzene 1,2,3-Trichloropropane n-Propylbenzene 2-Chlorotoluene 1,3,5-Trimethylbenzene 4-Chlorotoluene tert-Butylbenzene 1,2,4-Trimethylbenzene sec-Butylbenzene 1,3-Dichlorobenzene p-Isopropyltoluene 1,4-Dichlorobenzene n-Butylbenzene 1,2-Dichlorobenzene 1,2,4-Trichlorobenzene Hexachlorobutadiene Naphthalene 1,2,3-Trichlorobenzene m,p-Xylenes o-Xylene	J (all detects) UJ (all non-detects)	P	Internal standards (area)

SDG	Sample	Compound	Flag	A or P	Reason
02-2567	MW-23-1	Dibromochloromethane 1,1,2-Trichloroethane Bromoform Tetrachloroethene Toluene Chlorobenzene 1,3-Dichloropropane 1,2-Dibromoethane 1,1,1,2-Tetrachloroethane 1,1,2,2-Tetrachloroethane Ethylbenzene Isopropylbenzene Bromobenzene 1,2,3-Trichloropropane n-Propylbenzene 2-Chlorotoluene 1,3,5-Trimethylbenzene 4-Chlorotoluene tert-Butylbenzene 1,2,4-Trimethylbenzene sec-Butylbenzene 1,3-Dichlorobenzene p-Isopropyltoluene 1,4-Dichlorobenzene n-Butylbenzene 1,2-Dichlorobenzene 1,2,4-Trichlorobenzene Hexachlorobutadiene Naphthalene 1,2,3-Trichlorobenzene m,p-Xylenes o-Xylene	J (all detects) UJ (all non-detects)	P	Internal standards (area)

JPL, 00HW019
Volatiles - Laboratory Blank Data Qualification Summary - SDG 02-2567

SDG	Sample	Compound TIC (RT in minutes)	Modified Final Concentration	A or P
02-2567	ER-23	Methylene chloride	1U ug/L	A
02-2567	MW-23-1	Methylene chloride	1U ug/L	A
02-2567	MW-23-2	Methylene chloride	1U ug/L	A
02-2567	MW-23-3	Methylene chloride	1U ug/L	A
02-2567	TB-23	Methylene chloride	1U ug/L	A

JPL, 00HW019
Volatiles - Field Blank Data Qualification Summary - SDG 02-2567

SDG	Sample	Compound	Modified Final Concentration	A or P
02-2567	ER-23	Methylene chloride	1U ug/L	A
02-2567	MW-23-1	Methylene chloride	1U ug/L	A
02-2567	MW-23-2	Methylene chloride	1U ug/L	A
02-2567	MW-23-3	Methylene chloride	1U ug/L	A

LDC Report# 8375A1

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: JPL, 00HW019

Collection Date: April 24, 2002

LDC Report Date: June 17, 2002

Matrix: Water

Parameters: Volatiles

Validation Level: EPA Level IV

Laboratory: Applied P & Ch Laboratory

Sample Delivery Group (SDG): 02-2601

Sample Identification

ER-3
MW-3-2
MW-3-3
MW-3-4
MW-3-4D
TB-3

Introduction

This data review covers 6 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA Method 524.2 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.

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 selected compounds.

A curve fit, based on the initial calibration, was established for quantitation for selected compounds. The coefficient of determination (r^2) was greater than or equal to 0.990 .

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% with the following exceptions:

Date	Compound	%D	Associated Samples	Flag	A or P
4/26/02	Dichlorodifluoromethane	40.72	All samples in SDG 02-2601	J (all detects) UJ (all non-detects)	P

V. Blanks

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

Method Blank ID	Analysis Date	Compound TIC (RT in minutes)	Concentration	Associated Samples
02G2243MB01	4/26/02	Methylene chloride	0.6 ug/L	All samples in SDG 02-2601

Sample concentrations were compared to concentrations detected in the method blanks. The sample concentrations were either not detected or were significantly greater (>10X for common contaminants, >5X for other contaminants) than the concentrations found in the associated method blanks with the following exceptions:

Sample	Compound TIC (RT in minutes)	Reported Concentration	Modified Final Concentration
ER-3	Methylene chloride	0.4 ug/L	1U ug/L
MW-3-2	Methylene chloride	0.4 ug/L	1U ug/L
MW-3-3	Methylene chloride	0.5 ug/L	1U ug/L
MW-3-4	Methylene chloride	0.4 ug/L	1U ug/L
MW-3-4D	Methylene chloride	0.4 ug/L	1U ug/L
TB-3	Methylene chloride	0.8 ug/L	1U ug/L

Sample ER-3 was identified as an equipment rinsate. No volatile contaminants were found in this blank with the following exceptions:

Equipment Rinsate ID	Sampling Date	Compound	Concentration	Associated Samples
ER-3	4/24/02	Methylene chloride	0.4 ug/L	MW-3-2 MW-3-3 MW-3-4 MW-3-4D

Sample TB-3 was identified as a trip blank. No volatile contaminants were found in this blank with the following exceptions:

Trip Blank ID	Sampling Date	Compound	Concentration	Associated Samples
TB-3	4/24/02	Methylene chloride	0.8 ug/L	ER-3 MW-3-2 MW-3-3 MW-3-4 MW-3-4D

Sample concentrations were compared to concentrations detected in the field blanks. The sample concentrations were either not detected or were significantly greater (>10X for common contaminants, >5X for other contaminants) than the concentrations found in the

associated field blanks with the following exceptions:

Sample	Compound	Reported Concentration	Modified Final Concentration
ER-3	Methylene chloride	0.4 ug/L	1U ug/L
MW-3-2	Methylene chloride	0.4 ug/L	1U ug/L
MW-3-3	Methylene chloride	0.5 ug/L	1U ug/L
MW-3-4	Methylene chloride	0.4 ug/L	1U ug/L
MW-3-4D	Methylene chloride	0.4 ug/L	1U ug/L

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

Although matrix spike (MS) and matrix spike duplicate (MSD) samples were not required by the method, MS and MSD samples were reported by the laboratory. Percent recoveries (%R) and relative percent differences (RPD) 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

All internal standard areas and retention times were within QC limits with the following exceptions:

Sample	Internal Standards	Area (Limits)	Compound	Flag	A or P
02G2243MB01	1,4-Dichlorobenzene-d4	189662 (190850-354436)	1,1,2,2-Tetrachloroethane Ethylbenzene Isopropylbenzene Bromobenzene 1,2,3-Trichloropropane n-Propylbenzene 2-Chlorotoluene 1,3,5-Trimethylbenzene 4-Chlorotoluene tert-Butylbenzene 1,2,4-Trimethylbenzene sec-Butylbenzene 1,3-Dichlorobenzene p-Isopropyltoluene 1,4-Dichlorobenzene n-Butylbenzene 1,2-Dichlorobenzene 1,2,4-Trichlorobenzene Hexachlorobutadiene Naphthalene 1,2,3-Trichlorobenzene m,p-Xylenes o-Xylene	J (all detects) UJ (all non-detects)	P
TB-3	1,4-Dichlorobenzene-d4	184257 (190850-354436)	1,1,2,2-Tetrachloroethane Ethylbenzene Isopropylbenzene Bromobenzene 1,2,3-Trichloropropane n-Propylbenzene 2-Chlorotoluene 1,3,5-Trimethylbenzene 4-Chlorotoluene tert-Butylbenzene 1,2,4-Trimethylbenzene sec-Butylbenzene 1,3-Dichlorobenzene p-Isopropyltoluene 1,4-Dichlorobenzene n-Butylbenzene 1,2-Dichlorobenzene 1,2,4-Trichlorobenzene Hexachlorobutadiene Naphthalene 1,2,3-Trichlorobenzene m,p-Xylenes o-Xylene	J (all detects) UJ (all non-detects)	P

Sample	Internal Standards	Area (Limits)	Compound	Flag	A or P
MW-3-4	1,4-Dichlorobenzene-d4	182267 (190850-354436)	1,1,2,2-Tetrachloroethane Ethylbenzene Isopropylbenzene Bromobenzene 1,2,3-Trichloropropane n-Propylbenzene 2-Chlorotoluene 1,3,5-Trimethylbenzene 4-Chlorotoluene tert-Butylbenzene 1,2,4-Trimethylbenzene sec-Butylbenzene 1,3-Dichlorobenzene p-Isopropyltoluene 1,4-Dichlorobenzene n-Butylbenzene 1,2-Dichlorobenzene 1,2,4-Trichlorobenzene Hexachlorobutadiene Naphthalene 1,2,3-Trichlorobenzene m,p-Xylenes o-Xylene	J (all detects) UJ (all non-detects)	P
MW-3-4D	1,4-Dichlorobenzene-d4	185251 (190850-354436)	1,1,2,2-Tetrachloroethane Ethylbenzene Isopropylbenzene Bromobenzene 1,2,3-Trichloropropane n-Propylbenzene 2-Chlorotoluene 1,3,5-Trimethylbenzene 4-Chlorotoluene tert-Butylbenzene 1,2,4-Trimethylbenzene sec-Butylbenzene 1,3-Dichlorobenzene p-Isopropyltoluene 1,4-Dichlorobenzene n-Butylbenzene 1,2-Dichlorobenzene 1,2,4-Trichlorobenzene Hexachlorobutadiene Naphthalene 1,2,3-Trichlorobenzene m,p-Xylenes o-Xylene	J (all detects) UJ (all non-detects)	P

XI. Target Compound Identifications

All target compound identifications were within validation criteria.

XII. Compound Quantitation and CRQLs

All compound quantitation and CRQLs were within validation criteria.

XIII. Tentatively Identified Compounds (TICs)

Tentatively identified compounds were not reported by the laboratory.

XIV. System Performance

The system performance was acceptable.

XV. Overall Assessment of Data

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

XVI. Field Duplicates

Samples MW-3-4 and MW-3-4D were identified as field duplicates. No volatiles were detected in any of the samples with the following exceptions:

Compound	Concentration (ug/L)		RPD
	MW-3-4	MW-3-4D	
Methylene chloride	0.4	0.4	0

JPL, 00HW019
Volatiles - Data Qualification Summary - SDG 02-2601

SDG	Sample	Compound	Flag	A or P	Reason
02-2601	ER-3 MW-3-2 MW-3-3 MW-3-4 MW-3-4D TB-3	Dichlorodifluoromethane	J (all detects) UJ (all non-detects)	P	Continuing calibration (%D)
02-2601	MW-3-4 MW-3-4D TB-3	1,1,2,2-Tetrachloroethane Ethylbenzene Isopropylbenzene Bromobenzene 1,2,3-Trichloropropane n-Propylbenzene 2-Chlorotoluene 1,3,5-Trimethylbenzene 4-Chlorotoluene tert-Butylbenzene 1,2,4-Trimethylbenzene sec-Butylbenzene 1,3-Dichlorobenzene p-Isopropyltoluene 1,4-Dichlorobenzene n-Butylbenzene 1,2-Dichlorobenzene 1,2,4-Trichlorobenzene Hexachlorobutadiene Naphthalene 1,2,3-Trichlorobenzene m,p-Xylenes o-Xylene	J (all detects) UJ (all non-detects)	P	Internal standards (area)

JPL, 00HW019
Volatiles - Laboratory Blank Data Qualification Summary - SDG 02-2601

SDG	Sample	Compound TIC (RT in minutes)	Modified Final Concentration	A or P
02-2601	ER-3	Methylene chloride	1U ug/L	A
02-2601	MW-3-2	Methylene chloride	1U ug/L	A
02-2601	MW-3-3	Methylene chloride	1U ug/L	A
02-2601	MW-3-4	Methylene chloride	1U ug/L	A
02-2601	MW-3-4D	Methylene chloride	1U ug/L	A

SDG	Sample	Compound TIC (RT in minutes)	Modified Final Concentration	A or P
02-2601	TB-3	Methylene chloride	1U ug/L	A

JPL, 00HW019
Volatiles - Field Blank Data Qualification Summary - SDG 02-2601

SDG	Sample	Compound	Modified Final Concentration	A or P
02-2601	ER-3	Methylene chloride	1U ug/L	A
02-2601	MW-3-2	Methylene chloride	1U ug/L	A
02-2601	MW-3-3	Methylene chloride	1U ug/L	A
02-2601	MW-3-4	Methylene chloride	1U ug/L	A
02-2601	MW-3-4D	Methylene chloride	1U ug/L	A

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: JPL, 00HW019

Collection Date: April 25, 2002

LDC Report Date: June 17, 2002

Matrix: Water

Parameters: Volatiles

Validation Level: EPA Level IV

Laboratory: Applied P & Ch Laboratory

Sample Delivery Group (SDG): 02-2625

Sample Identification

ER-4
MW-4-1
MW-4-2
MW-4-3
TB-4
MW-4-1MS
MW-4-1MSD

Introduction

This data review covers 7 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA Method 524.2 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.

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 selected compounds.

A curve fit, based on the initial calibration, was established for quantitation for selected compounds. The coefficient of determination (r^2) was greater than or equal to 0.990 .

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% with the following exceptions:

Date	Compound	%D	Associated Samples	Flag	A or P
4/26/02	Dichlorodifluoromethane	40.8	All samples in SDG 02-2625	J (all detects) UJ (all non-detects)	P

V. Blanks

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

Method Blank ID	Analysis Date	Compound TIC (RT in minutes)	Concentration	Associated Samples
02G2243MB01	4/26/02	Methylene chloride	0.6 ug/L	All samples in SDG 02-2625

Sample concentrations were compared to concentrations detected in the method blanks. The sample concentrations were either not detected or were significantly greater (>10X for common contaminants, >5X for other contaminants) than the concentrations found in the associated method blanks with the following exceptions:

Sample	Compound TIC (RT in minutes)	Reported Concentration	Modified Final Concentration
ER-4	Methylene chloride	0.3 ug/L	1U ug/L
MW-4-1	Methylene chloride	0.4 ug/L	1U ug/L
MW-4-2	Methylene chloride	0.3 ug/L	1U ug/L
MW-4-3	Methylene chloride	0.4 ug/L	1U ug/L
TB-4	Methylene chloride	0.9 ug/L	1U ug/L

Sample ER-4 was identified as an equipment rinsate. No volatile contaminants were found in this blank with the following exceptions:

Equipment Rinsate ID	Sampling Date	Compound	Concentration	Associated Samples
ER-4	4/25/02	Methylene chloride	0.3 ug/L	MW-4-1 MW-4-2 MW-4-3

Sample TB-4 was identified as a trip blank. No volatile contaminants were found in this blank with the following exceptions:

Trip Blank ID	Sampling Date	Compound	Concentration	Associated Samples
TB-4	4/25/02	Methylene chloride	0.9 ug/L	ER-4 MW-4-1 MW-4-2 MW-4-3

Sample concentrations were compared to concentrations detected in the field blanks. The sample concentrations were either not detected or were significantly greater (>10X for common contaminants, >5X for other contaminants) than the concentrations found in the associated field blanks with the following exceptions:

Sample	Compound	Reported Concentration	Modified Final Concentration
ER-4	Methylene chloride	0.3 ug/L	1U ug/L
MW-4-1	Methylene chloride	0.4 ug/L	1U ug/L
MW-4-2	Methylene chloride	0.3 ug/L	1U ug/L
MW-4-3	Methylene chloride	0.4 ug/L	1U ug/L

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

Although matrix spike (MS) and matrix spike duplicate (MSD) samples were not required by the method, MS and MSD samples were reported by the laboratory. Percent recoveries (%R) and relative percent differences (RPD) 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

All internal standard areas and retention times were within QC limits.

XI. Target Compound Identifications

All target compound identifications were within validation criteria.

XII. Compound Quantitation and CRQLs

All compound quantitation and CRQLs were within validation criteria.

XIII. Tentatively Identified Compounds (TICs)

Tentatively identified compounds were not reported by the laboratory.

XIV. System Performance

The system performance was acceptable.

XV. Overall Assessment of Data

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

XVI. Field Duplicates

No field duplicates were identified in this SDG.

JPL, 00HW019
Volatiles - Data Qualification Summary - SDG 02-2625

SDG	Sample	Compound	Flag	A or P	Reason
02-2625	ER-4 MW-4-1 MW-4-2 MW-4-3 TB-4	Dichlorodifluoromethane	J (all detects) UJ (all non-detects)	P	Continuing calibration (%D)

JPL, 00HW019
Volatiles - Laboratory Blank Data Qualification Summary - SDG 02-2625

SDG	Sample	Compound TIC (RT in minutes)	Modified Final Concentration	A or P
02-2625	ER-4	Methylene chloride	1U ug/L	A
02-2625	MW-4-1	Methylene chloride	1U ug/L	A
02-2625	MW-4-2	Methylene chloride	1U ug/L	A
02-2625	MW-4-3	Methylene chloride	1U ug/L	A
02-2625	TB-4	Methylene chloride	1U ug/L	A

JPL, 00HW019
Volatiles - Field Blank Data Qualification Summary - SDG 02-2625

SDG	Sample	Compound	Modified Final Concentration	A or P
02-2625	ER-4	Methylene chloride	1U ug/L	A
02-2625	MW-4-1	Methylene chloride	1U ug/L	A
02-2625	MW-4-2	Methylene chloride	1U ug/L	A
02-2625	MW-4-3	Methylene chloride	1U ug/L	A

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: JPL, 00HW019

Collection Date: April 29, 2002

LDC Report Date: June 17, 2002

Matrix: Water

Parameters: Volatiles

Validation Level: EPA Level IV

Laboratory: Applied P & Ch Laboratory

Sample Delivery Group (SDG): 02-2711

Sample Identification

MW-5
MW-10
TB-5/10
MW-10MS
MW-10MSD

Introduction

This data review covers 5 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA Method 524.2 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.

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 selected compounds.

A curve fit, based on the initial calibration, was established for quantitation for selected compounds. The coefficient of determination (r^2) was greater than or equal to 0.990 .

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% with the following exceptions:

Date	Compound	%D	Associated Samples	Flag	A or P
4/30/02	1,1,2-Trichloro-1,2,2-trifluoroethane	39.02	All samples in SDG 02-2711	J (all detects) UJ (all non-detects)	P

V. Blanks

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

Method Blank ID	Analysis Date	Compound TIC (RT in minutes)	Concentration	Associated Samples
02G2267MB01	4/30/02	Methylene chloride	0.5 ug/L	All samples in SDG 02-2711

Sample concentrations were compared to concentrations detected in the method blanks. The sample concentrations were either not detected or were significantly greater (>10X for common contaminants, >5X for other contaminants) than the concentrations found in the associated method blanks with the following exceptions:

Sample	Compound TIC (RT in minutes)	Reported Concentration	Modified Final Concentration
TB-5/10	Methylene chloride	0.5 ug/L	1U ug/L

Sample TB-5/10 was identified as a trip blank. No volatile contaminants were found in this blank with the following exceptions:

Trip Blank ID	Sampling Date	Compound	Concentration	Associated Samples
TB-5/10	4/29/02	Methylene chloride	0.5 ug/L	MW-5 MW-10

Sample concentrations were compared to concentrations detected in the field blanks. The sample concentrations were either not detected or were significantly greater (>10X for common contaminants, >5X for other contaminants) than the concentrations found in the associated field 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

Although matrix spike (MS) and matrix spike duplicate (MSD) samples were not required by the method, MS and MSD samples were reported by the laboratory. Percent recoveries (%R) and relative percent differences (RPD) 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

All internal standard areas and retention times were within QC limits.

XI. Target Compound Identifications

All target compound identifications were within validation criteria.

XII. Compound Quantitation and CRQLs

All compound quantitation and CRQLs were within validation criteria.

XIII. Tentatively Identified Compounds (TICs)

Tentatively identified compounds were not reported by the laboratory.

XIV. System Performance

The system performance was acceptable.

XV. Overall Assessment of Data

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

XVI. Field Duplicates

No field duplicates were identified in this SDG.

JPL, 00HW019
Volatiles - Data Qualification Summary - SDG 02-2711

SDG	Sample	Compound	Flag	A or P	Reason
02-2711	MW-5 MW-10 TB-5/10	1,1,2-Trichloro-1,2,2-trifluoroethane	J (all detects) UJ (all non-detects)	P	Continuing calibration (%D)

JPL, 00HW019
Volatiles - Laboratory Blank Data Qualification Summary - SDG 02-2711

SDG	Sample	Compound TIC (RT in minutes)	Modified Final Concentration	A or P
02-2711	TB-5/10	Methylene chloride	1U ug/L	A

JPL, 00HW019
Volatiles - Field Blank Data Qualification Summary - SDG 02-2711

No Sample Data Qualified in this SDG

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: JPL, 00HW019

Collection Date: May 1, 2002

LDC Report Date: June 17, 2002

Matrix: Water

Parameters: Volatiles

Validation Level: EPA Level IV

Laboratory: Applied P & Ch Laboratory

Sample Delivery Group (SDG): 02-2755

Sample Identification

MW-7
TB-7

Introduction

This data review covers 2 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA Method 524.2 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.

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 selected compounds.

A curve fit, based on the initial calibration, was established for quantitation for selected compounds. The coefficient of determination (r^2) was greater than or equal to 0.990 .

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% with the following exceptions:

Date	Compound	%D	Associated Samples	Flag	A or P
5/6/02	Dichlorodifluoromethane	47.14	All samples in SDG 02-2755	J (all detects) UJ (all non-detects)	P

V. Blanks

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

Method Blank ID	Analysis Date	Compound TIC (RT in minutes)	Concentration	Associated Samples
02G2340MB01	5/6/02	Methylene chloride	2.6 ug/L	All samples in SDG 02-2755

Sample concentrations were compared to concentrations detected in the method blanks. The sample concentrations were either not detected or were significantly greater (>10X for common contaminants, >5X for other contaminants) than the concentrations found in the associated method blanks with the following exceptions:

Sample	Compound TIC (RT in minutes)	Reported Concentration	Modified Final Concentration
MW-7	Methylene chloride	1 ug/L	1U ug/L
TB-7	Methylene chloride	2 ug/L	2U ug/L

Sample TB-7 was identified as a trip blank. No volatile contaminants were found in this blank with the following exceptions:

Trip Blank ID	Sampling Date	Compound	Concentration	Associated Samples
TB-7	5/1/02	Methylene chloride	2 ug/L	MW-7

Sample concentrations were compared to concentrations detected in the field blanks. The sample concentrations were either not detected or were significantly greater (>10X for common contaminants, >5X for other contaminants) than the concentrations found in the associated field blanks with the following exceptions:

Sample	Compound	Reported Concentration	Modified Final Concentration
MW-7	Methylene chloride	1 ug/L	1U ug/L

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

All internal standard areas and retention times were within QC limits with the following exceptions:

Sample	Internal Standards	Area (Limits)	Compound	Flag	A or P
TB-7	Fluorobenzene Chlorobenzene-d5 1,4-Dichlorobenzene-d4	580219 (591365-1098249) 330636 (367693-682859) 181060 (202912-376836)	All TCL compounds	J (all detects) UJ (all non-detects)	P
MW-7	Fluorobenzene Chlorobenzene-d5 1,4-Dichlorobenzene-d4	527292 (591365-1098249) 301468 (367693-682859) 163694 (202912-376836)	All TCL compounds	J (all detects) UJ (all non-detects)	P
02G2340MB01	Chlorobenzene-d5 1,4-Dichlorobenzene-d4	353624 (367693-682859) 191540 (202912-376836)	Dibromochloromethane 1,1,2-Trichloroethane Bromoform Tetrachloroethene Toluene Chlorobenzene 1,3-Dichloropropane 1,2-Dibromoethane 1,1,1,2-Tetrachloroethane 1,1,2,2-Tetrachloroethane Ethylbenzene Styrene Isopropylbenzene Bromobenzene 1,2,3-Trichloropropane n-Propylbenzene 2-Chlorotoluene 1,3,5-Trimethylbenzene 4-Chlorotoluene tert-Butylbenzene 1,2,4-Trimethylbenzene sec-Butylbenzene 1,3-Dichlorobenzene p-Isopropyltoluene 1,4-Dichlorobenzene n-Butylbenzene 1,2-Dichlorobenzene 1,2,4-Trichlorobenzene Hexachlorobutadiene Naphthalene 1,2,3-Trichlorobenzene m,p-Xylenes o-Xylene	J (all detects) UJ (all non-detects)	P

XI. Target Compound Identifications

All target compound identifications were within validation criteria.

XII. Compound Quantitation and CRQLs

All compound quantitation and CRQLs were within validation criteria.

XIII. Tentatively Identified Compounds (TICs)

Tentatively identified compounds were not reported by the laboratory.

XIV. System Performance

The system performance was acceptable.

XV. Overall Assessment of Data

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

XVI. Field Duplicates

No field duplicates were identified in this SDG.

JPL, 00HW019
Volatiles - Data Qualification Summary - SDG 02-2755

SDG	Sample	Compound	Flag	A or P	Reason
02-2755	MW-7 TB-7	Dichlorodifluoromethane	J (all detects) UJ (all non-detects)	P	Continuing calibration (%D)
02-2755	TB-7 MW-7	All TCL compounds	J (all detects) UJ (all non-detects)	P	Internal standards (area)

JPL, 00HW019
Volatiles - Laboratory Blank Data Qualification Summary - SDG 02-2755

SDG	Sample	Compound TIC (RT in minutes)	Modified Final Concentration	A or P
02-2755	MW-7	Methylene chloride	1U ug/L	A
02-2755	TB-7	Methylene chloride	2U ug/L	A

JPL, 00HW019
Volatiles - Field Blank Data Qualification Summary - SDG 02-2755

SDG	Sample	Compound	Modified Final Concentration	A or P
02-2755	MW-7	Methylene chloride	1U ug/L	A

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: JPL, 00HW019

Collection Date: April 30, 2002

LDC Report Date: June 17, 2002

Matrix: Water

Parameters: Volatiles

Validation Level: EPA Level IV

Laboratory: Applied P & Ch Laboratory

Sample Delivery Group (SDG): 02-2750

Sample Identification

MW-6
MW-8
TB-6/8

Introduction

This data review covers 3 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA Method 524.2 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.

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 selected compounds.

A curve fit, based on the initial calibration, was established for quantitation for selected compounds. The coefficient of determination (r^2) was greater than or equal to 0.990 .

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% with the following exceptions:

Date	Compound	%D	Associated Samples	Flag	A or P
5/3/02	Dichlorodifluoromethane	47.78	All samples in SDG 02-2750	J (all detects) UJ (all non-detects)	P

V. Blanks

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

Method Blank ID	Analysis Date	Compound TIC (RT in minutes)	Concentration	Associated Samples
02G2309MB01	5/3/02	Methylene chloride	1.6 ug/L	All samples in SDG 02-2750

Sample concentrations were compared to concentrations detected in the method blanks. The sample concentrations were either not detected or were significantly greater (>10X for common contaminants, >5X for other contaminants) than the concentrations found in the associated method blanks with the following exceptions:

Sample	Compound TIC (RT in minutes)	Reported Concentration	Modified Final Concentration
MW-6	Methylene chloride	0.8 ug/L	1U ug/L
MW-8	Methylene chloride	1 ug/L	1U ug/L
TB-6/8	Methylene chloride	1.1 ug/L	1.1U ug/L

Sample TB-6/8 was identified as a trip blank. No volatile contaminants were found in this blank with the following exceptions:

Trip Blank ID	Sampling Date	Compound	Concentration	Associated Samples
TB-6/8	4/30/02	Methylene chloride	1.1 ug/L	MW-6 MW-8

Sample concentrations were compared to concentrations detected in the field blanks. The sample concentrations were either not detected or were significantly greater (>10X for common contaminants, >5X for other contaminants) than the concentrations found in the associated field blanks with the following exceptions:

Sample	Compound	Reported Concentration	Modified Final Concentration
MW-6	Methylene chloride	0.8 ug/L	1U ug/L
MW-8	Methylene chloride	1 ug/L	1U ug/L

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

All internal standard areas and retention times were within QC limits.

XI. Target Compound Identifications

All target compound identifications were within validation criteria.

XII. Compound Quantitation and CRQLs

All compound quantitation and CRQLs were within validation criteria.

XIII. Tentatively Identified Compounds (TICs)

Tentatively identified compounds were not reported by the laboratory.

XIV. System Performance

The system performance was acceptable.

XV. Overall Assessment of Data

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

XVI. Field Duplicates

No field duplicates were identified in this SDG.

JPL, 00HW019
Volatiles - Data Qualification Summary - SDG 02-2750

SDG	Sample	Compound	Flag	A or P	Reason
02-2750	MW-6 MW-8 TB-6/8	Dichlorodifluoromethane	J (all detects) UJ (all non-detects)	P	Continuing calibration (%D)

JPL, 00HW019
Volatiles - Laboratory Blank Data Qualification Summary - SDG 02-2750

SDG	Sample	Compound TIC (RT in minutes)	Modified Final Concentration	A or P
02-2750	MW-6	Methylene chloride	1U ug/L	A
02-2750	MW-8	Methylene chloride	1U ug/L	A
02-2750	TB-6/8	Methylene chloride	1.1U ug/L	A

JPL, 00HW019
Volatiles - Field Blank Data Qualification Summary - SDG 02-2750

SDG	Sample	Compound	Modified Final Concentration	A or P
02-2750	MW-6	Methylene chloride	1U ug/L	A
02-2750	MW-8	Methylene chloride	1U ug/L	A

LDC Report# 8448C1

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: JPL, 00HW019

Collection Date: April 26, 2002

LDC Report Date: June 17, 2002

Matrix: Water

Parameters: Volatiles

Validation Level: EPA Level IV

Laboratory: Applied P & Ch Laboratory

Sample Delivery Group (SDG): 02-2647

Sample Identification

MW-13
MW-16
MW-16D
TB-13/16

Introduction

This data review covers 4 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA Method 524.2 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.

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 selected compounds.

A curve fit, based on the initial calibration, was established for quantitation for selected compounds. The coefficient of determination (r^2) was greater than or equal to 0.990 .

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% with the following exceptions:

Date	Compound	%D	Associated Samples	Flag	A or P
4/29/02	Dichlorodifluoromethane	43.90	All samples in SDG 02-2647	J (all detects) UJ (all non-detects)	P

V. Blanks

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

Method Blank ID	Analysis Date	Compound TIC (RT in minutes)	Concentration	Associated Samples
02G2255MB01	4/29/02	Methylene chloride	0.6 ug/L	All samples in SDG 02-2647

Sample concentrations were compared to concentrations detected in the method blanks. The sample concentrations were either not detected or were significantly greater (>10X for common contaminants, >5X for other contaminants) than the concentrations found in the associated method blanks with the following exceptions:

Sample	Compound TIC (RT in minutes)	Reported Concentration	Modified Final Concentration
TB-13/16	Methylene chloride	0.7 ug/L	1U ug/L

Sample TB-13/16 was identified as a trip blank. No volatile contaminants were found in this blank with the following exceptions:

Trip Blank ID	Sampling Date	Compound	Concentration	Associated Samples
TB-13/16	4/26/02	Methylene chloride	0.7 ug/L	MW-13 MW-16 MW-16D

Sample concentrations were compared to concentrations detected in the field blanks. The sample concentrations were either not detected or were significantly greater (>10X for common contaminants, >5X for other contaminants) than the concentrations found in the associated field 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

All internal standard areas and retention times were within QC limits with the following exceptions:

Sample	Internal Standards	Area (Limits)	Compound	Flag	A or P
MW-13	Fluorobenzene Chlorobenzene-d5 1,4-Dichlorobenzene-d4	646839 (650776-1208584) 384152 (407798-757340) 200668 (225413-418623)	All TCL compounds	J (all detects) UJ (all non-detects)	P
MW-16	Fluorobenzene Chlorobenzene-d5 1,4-Dichlorobenzene-d4	633245 (650776-1208584) 371775 (407798-757340) 194917 (225413-418623)	All TCL compounds	J (all detects) UJ (all non-detects)	P
MW-16D	Fluorobenzene Chlorobenzene-d5 1,4-Dichlorobenzene-d4	632192 (650776-1208584) 374906 (407798-757340) 198101 (225413-418623)	All TCL compounds	J (all detects) UJ (all non-detects)	P

XI. Target Compound Identifications

All target compound identifications were within validation criteria.

XII. Compound Quantitation and CRQLs

All compound quantitation and CRQLs were within validation criteria.

XIII. Tentatively Identified Compounds (TICs)

Tentatively identified compounds were not reported by the laboratory.

XIV. System Performance

The system performance was acceptable.

XV. Overall Assessment of Data

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

XVI. Field Duplicates

Samples MW-16 and MW-16D were identified as field duplicates. No volatiles were detected in any of the samples with the following exceptions:

Compound	Concentration (ug/L)		RPD
	MW-16	MW-16D	
Carbon tetrachloride	8.9	9.9	11
Chloroform	10.7	11.7	9
1,1-Dichloroethene	1.2	1.3	8
Tetrachloroethene	0.4	0.5	22
Trichloroethene	1.5	1.8	18
Trichlorofluoromethane	0.3	0.3	0

JPL, 00HW019
Volatiles - Data Qualification Summary - SDG 02-2647

SDG	Sample	Compound	Flag	A or P	Reason
02-2647	MW-13 MW-16 MW-16D TB-13/16	Dichlorodifluoromethane	J (all detects) UJ (all non-detects)	P	Continuing calibration (%D)
02-2647	MW-13 MW-16 MW-16D	All TCL compounds	J (all detects) UJ (all non-detects)	P	Internal standards (area)

JPL, 00HW019
Volatiles - Laboratory Blank Data Qualification Summary - SDG 02-2647

SDG	Sample	Compound TIC (RT in minutes)	Modified Final Concentration	A or P
02-2647	TB-13/16	Methylene chloride	1U ug/L	A

JPL, 00HW019
Volatiles - Field Blank Data Qualification Summary - SDG 02-2647

No Sample Data Qualified in this SDG

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: JPL, 00HW019

Collection Date: April 9, 2002

LDC Report Date: June 17, 2002

Matrix: Water

Parameters: Wet Chemistry

Validation Level: EPA Level IV

Laboratory: Applied P & Ch Laboratory

Sample Delivery Group (SDG): 02-2349

Sample Identification

ER-21
MW-21-1
MW-21-2
MW-21-3
MW-21-4
MW-21-5

Introduction

This data review covers 6 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analysis was per EPA Method 314.0 for Perchlorate.

The review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review (February 1994) as there are no current guidelines for the methods 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 III.

Field duplicates are summarized in Section IX.

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

All criteria for the initial calibration of each method were met.

b. Calibration Verification

Calibration verification frequency and analysis criteria were met for each method when applicable with the following exceptions:

Date	Lab. Reference/ID	Analyte	%R (Limits)	Associated Samples	Flag	A or P
4/15/02	CCV	Perchlorate	85 (90-110)	ER-21 MW-21-1 MW-21-2 MW-21-3	J (all detects) UJ (all non-detects)	P

III. Blanks

Method blanks were reviewed for each matrix as applicable. No contaminant concentrations were found in the method blanks.

Sample ER-21 was identified as an equipment rinsate. No contaminant concentrations were found in this blank.

IV. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) analyses were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

V. Duplicates

Duplicate (DUP) sample analyses were reviewed for each matrix as applicable.

VI. Laboratory Control Samples

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries

(%R) were within QC limits.

VII. Sample Result Verification

All sample result verifications were within validation criteria.

VIII. Overall Assessment of Data

Data flags are summarized at the end of this report.

IX. Field Duplicates

No field duplicates were identified in this SDG.

JPL, 00HW019
Wet Chemistry - Data Qualification Summary - SDG 02-2349

SDG	Sample	Analyte	Flag	A or P	Reason
02-2349	ER-21 MW-21-1 MW-21-2 MW-21-3	Perchlorate	J (all detects) UJ (all non-detects)	P	Calibration verification (%R)

JPL, 00HW019
Wet Chemistry - Laboratory Blank Data Qualification Summary - SDG 02-2349

No Sample Data Qualified in this SDG

JPL, 00HW019
Wet Chemistry - Field Blank Data Qualification Summary - SDG 02-2349

No Sample Data Qualified in this SDG

LDC Report# 8310B6

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: JPL, 00HW019

Collection Date: April 10, 2002

LDC Report Date: June 17, 2002

Matrix: Water

Parameters: Wet Chemistry

Validation Level: EPA Level IV

Laboratory: Applied P & Ch Laboratory

Sample Delivery Group (SDG): 02-2373

Sample Identification

ER-17
MW-17-2
MW-17-3
MW-17-4
MW-17-5
MW-17-4MS
MW-17-4MSD

Introduction

This data review covers 7 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA Method 314.0 for Perchlorate and EPA SW 846 Method 7196 for Hexavalent Chromium.

The review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review (February 1994) as there are no current guidelines for the methods 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 III.

Field duplicates are summarized in Section IX.

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

All criteria for the initial calibration of each method were met.

b. Calibration Verification

Calibration verification frequency and analysis criteria were met for each method when applicable with the following exceptions:

Date	Lab. Reference/ID	Analyte	%R (Limits)	Associated Samples	Flag	A or P
4/15/02	CCV	Perchlorate	85 (90-110)	ER-17 MW-17-2 MW-17-3 MW-17-4 MW-17-5 MW-17-4MSD	J (all detects) UJ (all non-detects)	P

III. Blanks

Method blanks were reviewed for each matrix as applicable. No contaminant concentrations were found in the method blanks.

Sample ER-17 was identified as an equipment rinsate. No contaminant concentrations were found in this blank.

IV. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) analyses were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

V. Duplicates

Duplicate (DUP) sample analyses were reviewed for each matrix as applicable.

VI. Laboratory Control Samples

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

VII. Sample Result Verification

All sample result verifications were within validation criteria.

VIII. Overall Assessment of Data

Data flags are summarized at the end of this report.

IX. Field Duplicates

No field duplicates were identified in this SDG.

JPL, 00HW019
Wet Chemistry - Data Qualification Summary - SDG 02-2373

SDG	Sample	Analyte	Flag	A or P	Reason
02-2373	ER-17 MW-17-2 MW-17-3 MW-17-4 MW-17-5	Perchlorate	J (all detects) UJ (all non-detects)	P	Calibration verification (%R)

JPL, 00HW019
Wet Chemistry - Laboratory Blank Data Qualification Summary - SDG 02-2373

No Sample Data Qualified in this SDG

JPL, 00HW019
Wet Chemistry - Field Blank Data Qualification Summary - SDG 02-2373

No Sample Data Qualified in this SDG

LDC Report# 8310C6

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: JPL, 00HW019

Collection Date: April 11, 2002

LDC Report Date: June 17, 2002

Matrix: Water

Parameters: Wet Chemistry

Validation Level: EPA Level IV

Laboratory: Applied P & Ch Laboratory

Sample Delivery Group (SDG): 02-2385

Sample Identification

ER-12
MW-12-1
MW-12-2
MW-12-3
MW-12-4
MW-12-5
MW-12-3D
ER-12MS
ER-12MSD

Introduction

This data review covers 9 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA Method 314.0 for Perchlorate and EPA SW 846 Method 7196 for Hexavalent Chromium.

The review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review (February 1994) as there are no current guidelines for the methods 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 III.

Field duplicates are summarized in Section IX.

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

All criteria for the initial calibration of each method were met.

b. Calibration Verification

Calibration verification frequency and analysis criteria were met for each method when applicable.

III. Blanks

Method blanks were reviewed for each matrix as applicable. No contaminant concentrations were found in the method blanks.

Sample ER-12 was identified as an equipment rinsate. No contaminant concentrations were found in this blank.

IV. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) analyses were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

V. Duplicates

Duplicate (DUP) sample analyses were reviewed for each matrix as applicable.

VI. Laboratory Control Samples

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

VII. Sample Result Verification

All sample result verifications were within validation criteria.

VIII. Overall Assessment of Data

Data flags are summarized at the end of this report.

IX. Field Duplicates

Samples MW-12-3 and MW-12-3D were identified as field duplicates. No contaminant concentrations were detected in any of the samples.

JPL, 00HW019
Wet Chemistry - Data Qualification Summary - SDG 02-2385

No Sample Data Qualified in this SDG

JPL, 00HW019
Wet Chemistry - Laboratory Blank Data Qualification Summary - SDG 02-2385

No Sample Data Qualified in this SDG

JPL, 00HW019
Wet Chemistry - Field Blank Data Qualification Summary - SDG 02-2385

No Sample Data Qualified in this SDG

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: JPL, 00HW019

Collection Date: April 12, 2002

LDC Report Date: June 17, 2002

Matrix: Water

Parameters: Wet Chemistry

Validation Level: EPA Level IV

Laboratory: Applied P & Ch Laboratory

Sample Delivery Group (SDG): 02-2404

Sample Identification

ER-22
MW-22-3D
MW-22-1
MW-22-2
MW-22-3
MW-22-4
ER-22MS
ER-22MSD

Introduction

This data review covers 8 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA Method 314.0 for Perchlorate and EPA SW 846 Method 7196 for Hexavalent Chromium.

The review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review (February 1994) as there are no current guidelines for the methods 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 III.

Field duplicates are summarized in Section VII.

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

All criteria for the initial calibration of each method were met.

b. Calibration Verification

Calibration verification frequency and analysis criteria were met for each method when applicable.

III. Blanks

Method blanks were reviewed for each matrix as applicable. No contaminant concentrations were found in the method blanks.

Sample ER-22 was identified as an equipment rinsate. No contaminant concentrations were found in this blank.

IV. Accuracy and Precision Data

a. Matrix Spike/(Matrix Spike) Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

b. Laboratory Control Samples

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

V. Sample Result Verification

All sample result verifications were within validation criteria.

VI. Overall Assessment of Data

Data flags are summarized at the end of this report.

VII. Field Duplicates

Samples MW-22-3D and MW-22-3 were identified as field duplicates. No contaminant concentrations were detected in any of the samples.

JPL, 00HW019
Wet Chemistry - Data Qualification Summary - SDG 02-2404

No Sample Data Qualified in this SDG

JPL, 00HW019
Wet Chemistry - Laboratory Blank Data Qualification Summary - SDG 02-2404

No Sample Data Qualified in this SDG

JPL, 00HW019
Wet Chemistry - Field Blank Data Qualification Summary - SDG 02-2404

No Sample Data Qualified in this SDG

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: JPL, 00HW019

Collection Date: April 15, 2002

LDC Report Date: June 17, 2002

Matrix: Water

Parameters: Wet Chemistry

Validation Level: EPA Level IV

Laboratory: Applied P & Ch Laboratory

Sample Delivery Group (SDG): 02-2427

Sample Identification

ER-18
MW-18-2
MW-18-3
MW-18-4
MW-18-5
MW-18-5MS
MW-18-5MSD

Introduction

This data review covers 7 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA Method 314.0 for Perchlorate and EPA SW 846 Method 7196 for Hexavalent Chromium.

The review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review (February 1994) as there are no current guidelines for the methods 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 III.

Field duplicates are summarized in Section VII.

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

All criteria for the initial calibration of each method were met.

b. Calibration Verification

Calibration verification frequency and analysis criteria were met for each method when applicable.

III. Blanks

Method blanks were reviewed for each matrix as applicable. No contaminant concentrations were found in the method blanks.

Sample ER-18 was identified as an equipment rinsate. No contaminant concentrations were found in this blank.

IV. Accuracy and Precision Data

a. Matrix Spike/(Matrix Spike) Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) analyses were reviewed for each matrix as applicable with the following exceptions:

Sample	Analyte	Finding	Criteria	Flag	A or P
ER-18 MW-18-2 MW-18-3 MW-18-4	Hexavalent chromium	No MS/MSD associated with these samples.	MS/MSD required.	None	P

Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

b. Laboratory Control Samples

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

V. Sample Result Verification

All sample result verifications were within validation criteria.

VI. Overall Assessment of Data

Data flags are summarized at the end of this report.

VII. Field Duplicates

No field duplicates were identified in this SDG.

JPL, 00HW019
Wet Chemistry - Data Qualification Summary - SDG 02-2427

SDG	Sample	Analyte	Flag	A or P	Reason
02-2427	ER-18 MW-18-2 MW-18-3 MW-18-4	Hexavalent chromium	None	P	Matrix spike/Matrix spike duplicates

JPL, 00HW019
Wet Chemistry - Laboratory Blank Data Qualification Summary - SDG 02-2427

No Sample Data Qualified in this SDG

JPL, 00HW019
Wet Chemistry - Field Blank Data Qualification Summary - SDG 02-2427

No Sample Data Qualified in this SDG

LDC Report# 8329C6

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: JPL, 00HW019

Collection Date: April 16, 2002

LDC Report Date: June 17, 2002

Matrix: Water

Parameters: Wet Chemistry

Validation Level: EPA Level IV

Laboratory: Applied P & Ch Laboratory

Sample Delivery Group (SDG): 02-2442

Sample Identification

ER-20
MW-20-1
MW-20-2
MW-20-3
MW-20-4
MW-20-5
MW-20-4D
MW-20-4DMS
MW-20-4DMSD

Introduction

This data review covers 9 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA Method 314.0 for Perchlorate and EPA SW 846 Method 7196 for Hexavalent Chromium.

The review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review (February 1994) as there are no current guidelines for the methods 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 III.

Field duplicates are summarized in Section VII.

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

All criteria for the initial calibration of each method were met.

b. Calibration Verification

Calibration verification frequency and analysis criteria were met for each method when applicable.

III. Blanks

Method blanks were reviewed for each matrix as applicable. No contaminant concentrations were found in the method blanks.

Sample ER-20 was identified as an equipment rinsate. No contaminant concentrations were found in this blank.

IV. Accuracy and Precision Data

a. Matrix Spike/(Matrix Spike) Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) analyses were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

b. Laboratory Control Samples

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

V. Sample Result Verification

All sample result verifications were within validation criteria.

VI. Overall Assessment of Data

Data flags are summarized at the end of this report.

VII. Field Duplicates

Samples MW-20-4 and MW-20-4D were identified as field duplicates. No contaminant concentrations were detected in any of the samples with the following exceptions:

Analyte	Concentration (ug/L)		RPD
	MW-20-4	MW-20-4D	
Perchlorate	30.0	13.3	77

JPL, 00HW019
Wet Chemistry - Data Qualification Summary - SDG 02-2442

No Sample Data Qualified in this SDG

JPL, 00HW019
Wet Chemistry - Laboratory Blank Data Qualification Summary - SDG 02-2442

No Sample Data Qualified in this SDG

JPL, 00HW019
Wet Chemistry - Field Blank Data Qualification Summary - SDG 02-2442

No Sample Data Qualified in this SDG

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: JPL, 00HW019

Collection Date: April 17, 2002

LDC Report Date: June 17, 2002

Matrix: Water

Parameters: Perchlorate

Validation Level: EPA Level IV

Laboratory: Applied P & Ch Laboratory

Sample Delivery Group (SDG): 02-2462

Sample Identification

ER-19
MW-19-1
MW-19-2
MW-19-3
MW-19-4
MW-19-5
MW-19-4MS
MW-19-4MSD

Introduction

This data review covers 8 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA Method 314.0 for Perchlorate.

The review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review (February 1994) as there are no current guidelines for the methods 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 III.

Field duplicates are summarized in Section VII.

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

All criteria for the initial calibration of each method were met.

b. Calibration Verification

Calibration verification frequency and analysis criteria were met for each method when applicable.

III. Blanks

Method blanks were reviewed for each matrix as applicable. No contaminant concentrations were found in the method blanks.

Sample ER-19 was identified as an equipment rinsate. No contaminant concentrations were found in this blank.

IV. Accuracy and Precision Data

a. Matrix Spike/(Matrix Spike) Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

b. Laboratory Control Samples

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

V. Sample Result Verification

All sample result verifications were within validation criteria.

VI. Overall Assessment of Data

Data flags are summarized at the end of this report.

VII. Field Duplicates

No field duplicates were identified in this SDG.

JPL, 00HW019
Perchlorate - Data Qualification Summary - SDG 02-2462

No Sample Data Qualified in this SDG

JPL, 00HW019
Perchlorate - Laboratory Blank Data Qualification Summary - SDG 02-2462

No Sample Data Qualified in this SDG

JPL, 00HW019
Perchlorate - Field Blank Data Qualification Summary - SDG 02-2462

No Sample Data Qualified in this SDG

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: JPL, 00HW019

Collection Date: April 18, 2002

LDC Report Date: June 17, 2002

Matrix: Water

Parameters: Wet Chemistry

Validation Level: EPA Level IV

Laboratory: Applied P & Ch Laboratory

Sample Delivery Group (SDG): 02-2483

Sample Identification

ER-14
MW-14-1
MW-14-2
MW-14-3
MW-14-4
MW-14-5
MW-14-4D

Introduction

This data review covers 7 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 7196 for Hexavalent Chromium and EPA Method 314.0 for Perchlorate.

The review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review (February 1994) as there are no current guidelines for the methods 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 III.

Field duplicates are summarized in Section IX.

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

All criteria for the initial calibration of each method were met.

b. Calibration Verification

Calibration verification frequency and analysis criteria were met for each method when applicable.

III. Blanks

Method blanks were reviewed for each matrix as applicable. No contaminant concentrations were found in the method blanks.

Sample ER-14 was identified as an equipment rinsate. No contaminant concentrations were found in this blank.

IV. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) analyses were reviewed for each matrix as applicable with the following exceptions:

Sample	Compound	Finding	Criteria	Flag	A or P
ER-14 MW-14-1 MW-14-2 MW-14-3 MW-14-4 MW-14-4D	Hexavalent chromium	No MS/MSD associated with these samples.	MS/MSD required.	None	P

Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

V. Duplicates

Duplicate (DUP) sample analyses were reviewed for each matrix as applicable.

VI. Laboratory Control Samples

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

VII. Sample Result Verification

All sample result verifications were within validation criteria.

VIII. Overall Assessment of Data

Data flags are summarized at the end of this report.

IX. Field Duplicates

Samples MW-14-4 and MW-14-4D were identified as field duplicates. No contaminant concentrations were detected in any of the samples.

JPL, 00HW019
Wet Chemistry - Data Qualification Summary - SDG 02-2483

SDG	Sample	Analyte	Flag	A or P	Reason
02-2483	ER-14 MW-14-1 MW-14-2 MW-14-3 MW-14-4 MW-14-4D	Hexavalent chromium	None	P	Matrix spike/Matrix spike duplicates

JPL, 00HW019
Wet Chemistry - Laboratory Blank Data Qualification Summary - SDG 02-2483

No Sample Data Qualified in this SDG

JPL, 00HW019
Wet Chemistry - Field Blank Data Qualification Summary - SDG 02-2483

No Sample Data Qualified in this SDG

LDC Report# 8352B6

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: JPL, 00HW019

Collection Date: April 19, 2002

LDC Report Date: June 17, 2002

Matrix: Water

Parameters: Wet Chemistry

Validation Level: EPA Level IV

Laboratory: Applied P & Ch Laboratory

Sample Delivery Group (SDG): 02-2506

Sample Identification

ER-11
MW-11-1
MW-11-2
MW-11-3
MW-11-4
MW-11-3MS
MW-11-3MSD

Introduction

This data review covers 7 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 7196 for Hexavalent Chromium and EPA Method 314.0 for Perchlorate.

The review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review (February 1994) as there are no current guidelines for the methods 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 III.

Field duplicates are summarized in Section IX.

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

All criteria for the initial calibration of each method were met.

b. Calibration Verification

Calibration verification frequency and analysis criteria were met for each method when applicable.

III. Blanks

Method blanks were reviewed for each matrix as applicable. No contaminant concentrations were found in the method blanks.

Sample ER-11 was identified as an equipment rinsate. No contaminant concentrations were found in this blank.

IV. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) analyses were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

V. Duplicates

Duplicate (DUP) sample analyses were reviewed for each matrix as applicable.

VI. Laboratory Control Samples

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

VII. Sample Result Verification

All sample result verifications were within validation criteria.

VIII. Overall Assessment of Data

Data flags are summarized at the end of this report.

IX. Field Duplicates

No field duplicates were identified in this SDG.

JPL, 00HW019
Wet Chemistry - Data Qualification Summary - SDG 02-2506

No Sample Data Qualified in this SDG

JPL, 00HW019
Wet Chemistry - Laboratory Blank Data Qualification Summary - SDG 02-2506

No Sample Data Qualified in this SDG

JPL, 00HW019
Wet Chemistry - Field Blank Data Qualification Summary - SDG 02-2506

No Sample Data Qualified in this SDG

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: JPL, 00HW019

Collection Date: April 22, 2002

LDC Report Date: June 17, 2002

Matrix: Water

Parameters: Wet Chemistry

Validation Level: EPA Level IV

Laboratory: Applied P & Ch Laboratory

Sample Delivery Group (SDG): 02-2534

Sample Identification

ER-24
MW-24-1
MW-24-2
MW-24-3
MW-24-4
MW-24-3MS
MW-24-3MSD

Introduction

This data review covers 7 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA Method 314.0 for Perchlorate and EPA SW 846 Method 7196 for Hexavalent Chromium.

The review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review (February 1994) as there are no current guidelines for the methods 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 III.

Field duplicates are summarized in Section VII.

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

All criteria for the initial calibration of each method were met.

b. Calibration Verification

Calibration verification frequency and analysis criteria were met for each method when applicable.

III. Blanks

Method blanks were reviewed for each matrix as applicable. No contaminant concentrations were found in the method blanks.

Sample ER-24 was identified as an equipment rinsate. No contaminant concentrations were found in this blank.

IV. Accuracy and Precision Data

a. Matrix Spike/(Matrix Spike) Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) analyses were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

b. Laboratory Control Samples

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

V. Sample Result Verification

All sample result verifications were within validation criteria.

VI. Overall Assessment of Data

Data flags are summarized at the end of this report.

VII. Field Duplicates

No field duplicates were identified in this SDG.

JPL, 00HW019
Wet Chemistry - Data Qualification Summary - SDG 02-2534

No Sample Data Qualified in this SDG

JPL, 00HW019
Wet Chemistry - Laboratory Blank Data Qualification Summary - SDG 02-2534

No Sample Data Qualified in this SDG

JPL, 00HW019
Wet Chemistry - Field Blank Data Qualification Summary - SDG 02-2534

No Sample Data Qualified in this SDG

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: JPL, 00HW019

Collection Date: April 23, 2002

LDC Report Date: June 17, 2002

Matrix: Water

Parameters: Wet Chemistry

Validation Level: EPA Level IV

Laboratory: Applied P & Ch Laboratory

Sample Delivery Group (SDG): 02-2567

Sample Identification

ER-23
MW-23-1
MW-23-2
MW-23-3
MW-23-4
MW-23-5
MW-23-4MS
MW-23-4MSD

Introduction

This data review covers 8 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA Method 314.0 for Perchlorate and EPA SW 846 Method 7196 for Hexavalent Chromium.

The review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review (February 1994) as there are no current guidelines for the methods 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 III.

Field duplicates are summarized in Section VII.

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

All criteria for the initial calibration of each method were met.

b. Calibration Verification

Calibration verification frequency and analysis criteria were met for each method when applicable.

III. Blanks

Method blanks were reviewed for each matrix as applicable. No contaminant concentrations were found in the method blanks.

Sample ER-23 was identified as an equipment rinsate. No contaminant concentrations were found in this blank.

IV. Accuracy and Precision Data

a. Matrix Spike/(Matrix Spike) Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) analyses were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

b. Laboratory Control Samples

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

V. Sample Result Verification

All sample result verifications were within validation criteria.

VI. Overall Assessment of Data

Data flags are summarized at the end of this report.

VII. Field Duplicates

No field duplicates were identified in this SDG.

JPL, 00HW019
Wet Chemistry - Data Qualification Summary - SDG 02-2567

No Sample Data Qualified in this SDG

JPL, 00HW019
Wet Chemistry - Laboratory Blank Data Qualification Summary - SDG 02-2567

No Sample Data Qualified in this SDG

JPL, 00HW019
Wet Chemistry - Field Blank Data Qualification Summary - SDG 02-2567

No Sample Data Qualified in this SDG

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: JPL, 00HW019

Collection Date: April 25, 2002

LDC Report Date: June 17, 2002

Matrix: Water

Parameters: Wet Chemistry

Validation Level: EPA Level IV

Laboratory: Applied P & Ch Laboratory

Sample Delivery Group (SDG): 02-2625

Sample Identification

ER-4
MW-4-1
MW-4-2
MW-4-3
MW-4-4
MW-4-5
ER-4MS
ER-4MSD

Introduction

This data review covers 8 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 7196A for Hexavalent Chromium and EPA Method 314.0 for Perchlorate.

The review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review (February 1994) as there are no current guidelines for the methods 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 III.

Field duplicates are summarized in Section IX.

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

All criteria for the initial calibration of each method were met.

b. Calibration Verification

Calibration verification frequency and analysis criteria were met for each method when applicable.

III. Blanks

Method blanks were reviewed for each matrix as applicable. No contaminant concentrations were found in the method blanks.

Sample ER-4 was identified as an equipment rinsate. No contaminant concentrations were found in this blank.

IV. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) analyses were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

V. Duplicates

Duplicate (DUP) sample analyses were reviewed for each matrix as applicable.

VI. Laboratory Control Samples

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

VII. Sample Result Verification

All sample result verifications were within validation criteria.

VIII. Overall Assessment of Data

Data flags are summarized at the end of this report.

IX. Field Duplicates

No field duplicates were identified in this SDG.

JPL, 00HW019
Wet Chemistry - Data Qualification Summary - SDG 02-2625

No Sample Data Qualified in this SDG

JPL, 00HW019
Wet Chemistry - Laboratory Blank Data Qualification Summary - SDG 02-2625

No Sample Data Qualified in this SDG

JPL, 00HW019
Wet Chemistry - Field Blank Data Qualification Summary - SDG 02-2625

No Sample Data Qualified in this SDG

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: JPL, 00HW019

Collection Date: April 24, 2002

LDC Report Date: June 17, 2002

Matrix: Water

Parameters: Wet Chemistry

Validation Level: EPA Level IV

Laboratory: Applied P & Ch Laboratory

Sample Delivery Group (SDG): 02-2601

Sample Identification

ER-3
MW-3-2
MW-3-3
MW-3-4
MW-3-5
MW-3-4D
MW-3-2MS
MW-3-2MSD

Introduction

This data review covers 8 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 7196 for Hexavalent Chromium and EPA Method 314.0 for Perchlorate.

The review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review (February 1994) as there are no current guidelines for the methods 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 III.

Field duplicates are summarized in Section IX.

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

All criteria for the initial calibration of each method were met.

b. Calibration Verification

Calibration verification frequency and analysis criteria were met for each method when applicable.

III. Blanks

Method blanks were reviewed for each matrix as applicable. No contaminant concentrations were found in the method blanks.

Sample ER-3 was identified as an equipment rinsate. No contaminant concentrations were found in this blank.

IV. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) analyses were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

V. Duplicates

Duplicate (DUP) sample analyses were reviewed for each matrix as applicable.

VI. Laboratory Control Samples

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

VII. Sample Result Verification

All sample result verifications were within validation criteria.

VIII. Overall Assessment of Data

Data flags are summarized at the end of this report.

IX. Field Duplicates

Samples MW-3-4 and MW-3-4D were identified as field duplicates. No contaminant concentrations were detected in any of the samples.

JPL, 00HW019
Wet Chemistry - Data Qualification Summary - SDG 02-2601

No Sample Data Qualified in this SDG

JPL, 00HW019
Wet Chemistry - Laboratory Blank Data Qualification Summary - SDG 02-2601

No Sample Data Qualified in this SDG

JPL, 00HW019
Wet Chemistry - Field Blank Data Qualification Summary - SDG 02-2601

No Sample Data Qualified in this SDG

LDC Report# 8409B6

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: JPL, 00HW019

Collection Date: April 29, 2002

LDC Report Date: June 17, 2002

Matrix: Water

Parameters: Wet Chemistry

Validation Level: EPA Level IV

Laboratory: Applied P & Ch Laboratory

Sample Delivery Group (SDG): 02-2711

Sample Identification

MW-5
MW-10
MW-10MS
MW-10MSD

Introduction

This data review covers 4 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 7196A for Hexavalent Chromium and EPA Method 314.0 for Perchlorate.

The review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review (February 1994) as there are no current guidelines for the methods 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 III.

Field duplicates are summarized in Section IX.

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

All criteria for the initial calibration of each method were met.

b. Calibration Verification

Calibration verification frequency and analysis criteria were met for each method when applicable.

III. Blanks

Method blanks were reviewed for each matrix as applicable. No contaminant concentrations were found in the method blanks.

No field blanks were identified in this SDG.

IV. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) analyses were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

V. Duplicates

Duplicate (DUP) sample analyses were reviewed for each matrix as applicable.

VI. Laboratory Control Samples

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

VII. Sample Result Verification

All sample result verifications were within validation criteria.

VIII. Overall Assessment of Data

Data flags are summarized at the end of this report.

IX. Field Duplicates

No field duplicates were identified in this SDG.

JPL, 00HW019
Wet Chemistry - Data Qualification Summary - SDG 02-2711

No Sample Data Qualified in this SDG

JPL, 00HW019
Wet Chemistry - Laboratory Blank Data Qualification Summary - SDG 02-2711

No Sample Data Qualified in this SDG

JPL, 00HW019
Wet Chemistry - Field Blank Data Qualification Summary - SDG 02-2711

No Sample Data Qualified in this SDG

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: JPL, 00HW019

Collection Date: May 1, 2002

LDC Report Date: June 17, 2002

Matrix: Water

Parameters: Wet Chemistry

Validation Level: EPA Level IV

Laboratory: Applied P & Ch Laboratory

Sample Delivery Group (SDG): 02-2755

Sample Identification

MW-7
MW-7MS
MW-7MSD

Introduction

This data review covers 3 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 7196A for Hexavalent Chromium and EPA Method 314.0 for Perchlorate.

The review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review (February 1994) as there are no current guidelines for the methods 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 III.

Field duplicates are summarized in Section IX.

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

All criteria for the initial calibration of each method were met.

b. Calibration Verification

Calibration verification frequency and analysis criteria were met for each method when applicable.

III. Blanks

Method blanks were reviewed for each matrix as applicable. No contaminant concentrations were found in the method blanks.

No field blanks were identified in this SDG.

IV. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) analyses were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

V. Duplicates

Duplicate (DUP) sample analyses were reviewed for each matrix as applicable.

VI. Laboratory Control Samples

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

VII. Sample Result Verification

All sample result verifications were within validation criteria.

VIII. Overall Assessment of Data

Data flags are summarized at the end of this report.

IX. Field Duplicates

No field duplicates were identified in this SDG.

JPL, 00HW019
Wet Chemistry - Data Qualification Summary - SDG 02-2755

No Sample Data Qualified in this SDG

JPL, 00HW019
Wet Chemistry - Laboratory Blank Data Qualification Summary - SDG 02-2755

No Sample Data Qualified in this SDG

JPL, 00HW019
Wet Chemistry - Field Blank Data Qualification Summary - SDG 02-2755

No Sample Data Qualified in this SDG

LDC Report# 8448B6

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: JPL, 00HW019

Collection Date: April 30, 2002

LDC Report Date: June 17, 2002

Matrix: Water

Parameters: Wet Chemistry

Validation Level: EPA Level IV

Laboratory: Applied P & Ch Laboratory

Sample Delivery Group (SDG): 02-2750

Sample Identification

MW-6
MW-8
MW-6MS
MW-6MSD

Introduction

This data review covers 4 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 7196A for Hexavalent Chromium and EPA Method 314.0 for Perchlorate.

The review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review (February 1994) as there are no current guidelines for the methods 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 III.

Field duplicates are summarized in Section IX.

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

All criteria for the initial calibration of each method were met.

b. Calibration Verification

Calibration verification frequency and analysis criteria were met for each method when applicable.

III. Blanks

Method blanks were reviewed for each matrix as applicable. No contaminant concentrations were found in the method blanks.

No field blanks were identified in this SDG.

IV. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) analyses were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

V. Duplicates

Duplicate (DUP) sample analyses were reviewed for each matrix as applicable.

VI. Laboratory Control Samples

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

VII. Sample Result Verification

All sample result verifications were within validation criteria.

VIII. Overall Assessment of Data

Data flags are summarized at the end of this report.

IX. Field Duplicates

No field duplicates were identified in this SDG.

JPL, 00HW019
Wet Chemistry - Data Qualification Summary - SDG 02-2750

No Sample Data Qualified in this SDG

JPL, 00HW019
Wet Chemistry - Laboratory Blank Data Qualification Summary - SDG 02-2750

No Sample Data Qualified in this SDG

JPL, 00HW019
Wet Chemistry - Field Blank Data Qualification Summary - SDG 02-2750

No Sample Data Qualified in this SDG

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: JPL, 00HW019

Collection Date: April 26, 2002

LDC Report Date: June 17, 2002

Matrix: Water

Parameters: Wet Chemistry

Validation Level: EPA Level IV

Laboratory: Applied P & Ch Laboratory

Sample Delivery Group (SDG): 02-2647

Sample Identification

MW-13
MW-16
MW-16D
MW-13MS
MW-13MSD

Introduction

This data review covers 5 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 7196A for Hexavalent Chromium and EPA Method 314.0 for Perchlorate.

The review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review (February 1994) as there are no current guidelines for the methods 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 III.

Field duplicates are summarized in Section IX.

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

All criteria for the initial calibration of each method were met.

b. Calibration Verification

Calibration verification frequency and analysis criteria were met for each method when applicable.

III. Blanks

Method blanks were reviewed for each matrix as applicable. No contaminant concentrations were found in the method blanks.

No field blanks were identified in this SDG.

IV. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) analyses were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

V. Duplicates

Duplicate (DUP) sample analyses were reviewed for each matrix as applicable.

VI. Laboratory Control Samples

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

VII. Sample Result Verification

All sample result verifications were within validation criteria.

VIII. Overall Assessment of Data

Data flags are summarized at the end of this report.

IX. Field Duplicates

Samples MW-16 and MW-16D were identified as field duplicates. No contaminant concentrations were detected in any of the samples with the following exceptions:

Analyte	Concentration (mg/L)		RPD
	MW-16	MW-16D	
Perchlorate	2880	2910	1

JPL, 00HW019
Wet Chemistry - Data Qualification Summary - SDG 02-2647

No Sample Data Qualified in this SDG

JPL, 00HW019
Wet Chemistry - Laboratory Blank Data Qualification Summary - SDG 02-2647

No Sample Data Qualified in this SDG

JPL, 00HW019
Wet Chemistry - Field Blank Data Qualification Summary - SDG 02-2647

No Sample Data Qualified in this SDG

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: JPL, 00HW019

Collection Date: April 10 through May 1, 2002

LDC Report Date: June 21, 2002

Matrix: Water

Parameters: Chromium

Validation Level: EPA Level IV

Laboratory: BSK Analytical Laboratories

Sample Delivery Group (SDG): 2002050193

Sample Identification

MW-17-4	MW-20-2	MW-23-2	MW-8
MW-17-3	MW-20-1	MW-23-1	MW-7
MW-17-2	ER-20	ER-23	MW-12-3DMS
ER-17	MW-14-4	MW-3-4	MW-12-3DMSD
MW-12-3	MW-14-4D	MW-3-4D	ER-22MS
ER-12	MW-14-3	MW-3-3	ER-22MSD
MW-12-3D	MW-14-2	MW-3-2	MW-11-3MS
MW-12-2	MW-14-1	ER-3	MW-11-3MSD
MW-12-1	ER-14	MW-4-5	MW-24-3MS
ER-22	MW-11-3	MW-4-4	MW-24-3MSD
MW-22-2	MW-11-2	MW-4-3	MW-23-4MS
MW-22-1	MW-11-1	MW-4-2	MW-23-4MSD
MW-18-4	ER-11	MW-4-1	MW-4-2MS
MW-18-3	MW-24-4	ER-4	MW-4-2MSD
MW-18-2	MW-24-3	MW-13	
ER-18	MW-24-2	MW-16	
MW-20-5	MW-24-1	MW-16D	
MW-20-4	ER-24	MW-5	
MW-20-4D	MW-23-4	MW-10	
MW-20-3	MW-23-3	MW-6	

Introduction

This data review covers 74 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA Method 200.8 for Chromium.

The review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review (February 1994) as there are no current guidelines for the methods stated above.

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

Blanks are summarized in Section III.

Field duplicates are summarized in Section XIII.

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

An initial calibration was performed.

The frequency and analysis criteria of the initial calibration verification (ICV) and continuing calibration verification (CCV) were met.

III. Blanks

Method blanks were reviewed for each matrix as applicable.

Data qualification by the initial, continuing and preparation blanks (ICB/CCB/PBs) was based on the maximum contaminant concentration in the ICB/CCB/PBs in the analysis of each analyte. No contaminant concentrations were found in the initial, continuing and preparation blanks.

Samples ER-17, ER-12, ER-22, ER-18, ER-20, ER-14, ER-11, ER-24, ER-23, ER-3 and ER-4 were identified as equipment rinsates. No chromium contaminants were found in these blanks.

IV. ICP Interference Check Sample (ICS) Analysis

ICP interference check sample analysis was not required by the method.

V. Matrix Spike Analysis

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

VI. Duplicate Sample Analysis

Duplicate (DUP) sample analyses were reviewed for each matrix as applicable.

VII. Laboratory Control Samples (LCS)

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

VIII. Internal Standard (ICP-MS)

All internal standard percent recoveries (%R) were within QC limits.

IX. Furnace Atomic Absorption QC

Graphite furnace atomic absorption was not utilized in this SDG.

X. ICP Serial Dilution

ICP serial dilution was not required by the method.

XI. Sample Result Verification

All sample result verifications met validation criteria.

XII. Overall Assessment of Data

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

XIII. Field Duplicates

Samples MW-12-3 and MW-12-3D, samples MW-20-4 and MW-20-4D, samples MW-14-4 and MW-14-4D, samples MW-3-4 and MW-3-4D and samples MW-16 and MW-16D were identified as field duplicates. No chromium contaminants were detected in any of the samples with the following exceptions:

Analyte	Concentration (ug/L)		RPD
	MW-12-3	MW-12-3D	
Chromium	4.0	5.0	22

Analyte	Concentration (ug/L)		RPD
	MW-20-4	MW-20-4D	
Chromium	4.0	4.0	0

Analyte	Concentration (ug/L)		RPD
	MW-14-4	MW-14-4D	
Chromium	8.0	8.0	0

Analyte	Concentration (ug/L)		RPD
	MW-3-4	MW-3-4D	
Chromium	5.0	4.0	22

Analyte	Concentration (ug/L)		RPD
	MW-16	MW-16D	
Chromium	9.0	11	20

JPL, 00HW019
Chromium - Data Qualification Summary - SDG 2002050193

No Sample Data Qualified in this SDG

JPL, 00HW019
Chromium - Laboratory Blank Data Qualification Summary - SDG 2002050193

No Sample Data Qualified in this SDG

JPL, 00HW019
Chromium - Field Blank Data Qualification Summary - SDG 2002050193

No Sample Data Qualified in this SDG