

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: JPL, 00HW019
Collection Date: October 10, 2001
LDC Report Date: November 30, 2001
Matrix: Water
Parameters: Volatiles
Validation Level: EPA Level IV
Laboratory: Applied P & Ch Laboratory
Sample Delivery Group (SDG): 01-6324

Sample Identification

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

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
10/13/01	Bromomethane Dibromomethane Bromoform	35.88 30.20 36.19	All samples in SDG 01-6324	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-18 was identified as an equipment rinsate. No volatile contaminants were found in this blank.

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	10/10/01	Methylene chloride	2.3 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.

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 limit.

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 01-6324**

SDG	Sample	Compound	Flag	A or P	Reason
01-6324	ER-18 MW-18-2 MW-18-3 MW-18-4 MW-18-5 TB-18	Bromomethane Dibromomethane Bromoform	J (all detects) UJ (all non-detects)	P	Continuing calibration (%D)

JPL, 00HW019**Volatiles - Laboratory Blank Data Qualification Summary - SDG 01-6324**

No Sample Data Qualified in this SDG

JPL, 00HW019**Volatiles - Field Blank Data Qualification Summary - SDG 01-6324**

No Sample Data Qualified in this SDG

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: JPL, 00HW019
Collection Date: October 11, 2001
LDC Report Date: November 30, 2001
Matrix: Water
Parameters: Volatiles
Validation Level: EPA Level IV
Laboratory: Applied P & Ch Laboratory
Sample Delivery Group (SDG): 01-6362

Sample Identification

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

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.
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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 with the following exceptions:

Date	Compound	%RSD	Associated Samples	Flag	A or P
10/16/01	n-Butylbenzene	20.35	All samples in SDG 01-6362	J (all detects) UJ (all non-detects)	P

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
10/17/01	2-Butanone	46.73	All samples in SDG 01-6362	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
01G4711MB01	10/17/01	2-Butanone	19 ug/L	All samples in SDG 01-6362

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-19 was identified as an equipment rinsate. No volatile contaminants were found in this blank.

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	10/11/01	Methylene chloride	2.2 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.

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 limit.

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 01-6362**

SDG	Sample	Compound	Flag	A or P	Reason
01-6362	ER-19 MW-19-1 MW-19-2 MW-19-3 MW-19-4 MW-19-5 TB-19	n-Butylbenzene	J (all detects) UJ (all non-detects)	P	Initial calibration (%RSD)
01-6362	ER-19 MW-19-1 MW-19-2 MW-19-3 MW-19-4 MW-19-5 TB-19	2-Butanone	J (all detects) UJ (all non-detects)	P	Continuing calibration (%D)

JPL, 00HW019**Volatiles - Laboratory Blank Data Qualification Summary - SDG 01-6362**

No Sample Data Qualified in this SDG

JPL, 00HW019**Volatiles - Field Blank Data Qualification Summary - SDG 01-6362**

No Sample Data Qualified in this SDG

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

Project/Site Name: JPL, 00HW019
Collection Date: October 12, 2001
LDC Report Date: November 30, 2001
Matrix: Water
Parameters: Volatiles
Validation Level: EPA Level IV
Laboratory: Applied P & Ch Laboratory
Sample Delivery Group (SDG): 01-6386

Sample Identification

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

Introduction

This data review covers 10 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 with the following exceptions:

Date	Compound	%RSD	Associated Samples	Flag	A or P
10/16/01	n-Butylbenzene	20.35	ER-17 MW-17-2 MW-17-3 MW-17-2MS MW-17-2MSD 01G4724MB01	J (all detects) UJ (all non-detects)	P

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
10/16/01	Trichlorofluoromethane	37.44	MW-17-4 MW-17-5 TB-17 ER-17MS ER-17MSD 01G4702MB01	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
01G4724MB01	10/18/01	2-Butanone Toluene	18 ug/L 0.5 ug/L	ER-17 MW-17-2 MW-17-3
01G4702MB01	10/16/01	2-Butanone	3 ug/L	MW-17-4 MW-17-5 TB-17

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-17	2-Butanone	4 ug/L	5U ug/L

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	10/12/01	Methylene chloride	0.9 ug/L	ER-17 MW-17-2 MW-17-3 MW-17-4 MW-17-5

Sample ER-17 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-17	10/12/01	2-Butanone	4 ug/L	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.

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 01-6386

SDG	Sample	Compound	Flag	A or P	Reason
01-6386	ER-17 MW-17-2 MW-17-3	n-Butylbenzene	J (all detects) UJ (all non-detects)	P	Initial calibration (%RSD)
01-6386	MW-17-4 MW-17-5 TB-17	Trichlorofluoromethane	J (all detects) UJ (all non-detects)	P	Continuing calibration (%D)

JPL, 00HW019

Volatiles - Laboratory Blank Data Qualification Summary - SDG 01-6386

SDG	Sample	Compound TIC (RT in minutes)	Modified Final Concentration	A or P
01-6386	ER-17	2-Butanone	5U ug/L	A

JPL, 00HW019

Volatiles - Field Blank Data Qualification Summary - SDG 01-6386

No Sample Data Qualified in this SDG

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: JPL, 00HW019
Collection Date: October 15, 2001
LDC Report Date: November 30, 2001
Matrix: Water
Parameters: Volatiles
Validation Level: EPA Level IV
Laboratory: Applied P & Ch Laboratory
Sample Delivery Group (SDG): 01-6435

Sample Identification

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

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:

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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% .

V. Blanks

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

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	10/15/01	Methylene chloride Methyl-tert-butyl ether	2.2 ug/L 0.9 UG/l	ER-3 MW-3-2 MW-3-3 MW-3-4

Sample ER-3 was identified as an equipment rinsate. No volatile contaminants were found

in this blank.

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-3-2	Methyl-tert-butyl ether	0.7 ug/L	1U ug/L
MW-3-3	Methyl-tert-butyl ether	1.7 ug/L	1.7U 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 01-6435**

No Sample Data Qualified in this SDG

JPL, 00HW019**Volatiles - Laboratory Blank Data Qualification Summary - SDG 01-6435**

No Sample Data Qualified in this SDG

JPL, 00HW019**Volatiles - Field Blank Data Qualification Summary - SDG 01-6435**

SDG	Sample	Compound	Modified Final Concentration	A or P
01-6435	MW-3-2	Methyl-tert-butyl ether	1U ug/L	A
01-6435	MW-3-3	Methyl-tert-butyl ether	1.7U ug/L	A

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: JPL

Collection Date: October 17, 2001

LDC Report Date: November 30, 2001

Matrix: Water

Parameters: Volatiles

Validation Level: EPA Level IV

Laboratory: Applied P & Ch Laboratory

Sample Delivery Group (SDG): 01-6503

Sample Identification

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

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 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%.

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
01G4818MB01	10/24/01	Methylene chloride 2-Butanone	2.6 ug/L 3 ug/L	All samples in SDG 01-6503

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-20	Methylene chloride	2.0 ug/L	2.0U ug/L

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	Sampling Date	Compound	Concentration	Associated Samples
TB-20	10/17/01	Methylene chloride	2.0 ug/L	ER-20 MW-20-1 MW-20-2 MW-20-3 MW-20-4 MW-20-5

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.

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.

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

Volatiles - Data Qualification Summary - SDG 01-6503

No Sample Data Qualified in this SDG

JPL

Volatiles - Laboratory Blank Data Qualification Summary - SDG 01-6503

SDG	Sample	Compound TIC (RT in minutes)	Modified Final Concentration	A or P
01-6503	TB-20	Methylene chloride	2.0U ug/L	A

JPL

Volatiles - Field Blank Data Qualification Summary - SDG 01-6503

No Sample Data Qualified in this SDG

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: JPL

Collection Date: October 19, 2001

LDC Report Date: November 30, 2001

Matrix: Water

Parameters: Volatiles

Validation Level: EPA Level IV

Laboratory: Applied P & Ch Laboratory

Sample Delivery Group (SDG): 01-6546

Sample Identification

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

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%.

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
01G4819MB01	10/25/01	2-Butanone	2 ug/L	All samples in SDG 01-6546

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-22 was identified as an equipment rinsate. 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	Sampling Date	Compound	Concentration	Associated Samples
TB-22	10/19/01	Methylene chloride	2.2 ug/L	MW-22-1 MW-22-2 MW-22-3

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.

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.

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

Volatiles - Data Qualification Summary - SDG 01-6546

No Sample Data Qualified in this SDG

JPL

Volatiles - Laboratory Blank Data Qualification Summary - SDG 01-6546

No Sample Data Qualified in this SDG

JPL

Volatiles - Field Blank Data Qualification Summary - SDG 01-6546

No Sample Data Qualified in this SDG

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: JPL, 00HW019
Collection Date: October 16, 2001
LDC Report Date: November 30, 2001
Matrix: Water
Parameters: Volatiles
Validation Level: EPA Level IV
Laboratory: Applied P & Ch Laboratory
Sample Delivery Group (SDG): 01-6502

Sample Identification

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

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 with the following exceptions:

Date	Compound	%RSD	Associated Samples	Flag	A or P
10/16/01	n-Butylbenzene	20.35	All samples in SDG 01-6502	J (all detects) UJ (all non-detects)	P

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
10/24/01	Bromomethane	32.85	All samples in SDG 01-6502	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
01G4796MB01	10/24/01	2-Butanone	1 ug/L	All samples in SDG 01-6502

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-21 was identified as an equipment rinsate. No volatile contaminants were found in this blank.

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

Trip Blank	Sampling Date	Compound	Concentration	Associated Samples
TB-21	10/16/01	Methylene chloride	1.9 ug/L	ER-21 MW-21-2 MW-21-3 MW-21-4 MW-21-5

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.

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 01-6502**

SDG	Sample	Compound	Flag	A or P	Reason
01-6502	ER-21 MW-21-2 MW-21-3 MW-21-4 MW-21-5 TB-21	n-Butylbenzene	J (all detects) UJ (all non-detects)	P	Initial calibration (%RSD)
01-6502	ER-21 MW-21-2 MW-21-3 MW-21-4 MW-21-5 TB-21	Bromomethane	J (all detects) UJ (all non-detects)	P	Continuing calibration (%D)

JPL, 00HW019**Volatiles - Laboratory Blank Data Qualification Summary - SDG 01-6502**

No Sample Data Qualified in this SDG

JPL, 00HW019**Volatiles - Field Blank Data Qualification Summary - SDG 01-6502**

No Sample Data Qualified in this SDG

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: JPL, 00HW019
Collection Date: October 25, 2001
LDC Report Date: December 19, 2001
Matrix: Water
Parameters: Volatiles
Validation Level: EPA Level IV
Laboratory: Applied P & Ch Laboratory
Sample Delivery Group (SDG): 01-6675

Sample Identification

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

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
11/5/01	Bromomethane	41.17	All samples in SDG 01-6675	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
01G4979MB01	11/6/01	Methylene chloride	0.9 ug/L	All samples in SDG 01-6675

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-11	Methylene chloride	3.8 ug/L	3.8U ug/L

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

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	10/25/01	Methylene chloride	3.8 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.

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 limit.

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 01-6675**

SDG	Sample	Compound	Flag	A or P	Reason
01-6675	ER-11 MW-11-1 MW-11-2 MW-11-3 MW-11-4 TB-11	Bromomethane	J (all detects) UJ (all non-detects)	P	Continuing calibration (%D)

JPL, 00HW019**Volatiles - Laboratory Blank Data Qualification Summary - SDG 01-6675**

SDG	Sample	Compound TIC (RT in minutes)	Modified Final Concentration	A or P
01-6675	TB-11	Methylene chloride	3.8U ug/L	A

JPL, 00HW019**Volatiles - Field Blank Data Qualification Summary - SDG 01-6675**

No Sample Data Qualified in this SDG

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: JPL, 00HW019
Collection Date: October 22, 2001
LDC Report Date: December 19, 2001
Matrix: Water
Parameters: Volatiles
Validation Level: EPA Level IV
Laboratory: Applied P & Ch Laboratory
Sample Delivery Group (SDG): 01-6590

Sample Identification

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

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
10/30/01	Dichlorodifluoromethane	35.61	MW-14-4 MW-14-5 TB-14 01G4907MB01	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
01G4946MB01	11/2/01	Methylene chloride	0.5 ug/L	ER-14 MW-14-1 MW-14-2 MW-14-3
01G4907MB01	10/31/01	Methylene chloride	1 ug/L	MW-14-4 MW-14-5 TB-14

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-14-4	Methylene chloride	0.9 ug/L	0.9U ug/L
MW-14-5	Methylene chloride	1 ug/L	1U ug/L
TB-14	Methylene chloride	3.2 ug/L	3.2U ug/L

Sample ER-14 was identified as an equipment rinsate. 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 with the following exceptions:

Trip Blank ID	Sampling Date	Compound	Concentration	Associated Samples
TB-14	10/22/01	Methylene chloride	3.2 ug/L	ER-14 MW-14-1 MW-14-2 MW-14-3 MW-14-4 MW-14-5

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-14-4	Methylene chloride	0.9 ug/L	1U ug/L
MW-14-5	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 with the following exceptions:

Sample	Surrogate	%R (Limits)	Compound	Flag	A or P
01G4907MB01	1,2-Dichloroethane-d4	69 (70-130)	All TCL compounds	J (all detects) UJ (all non-detects)	P

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.

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 01-6590**

SDG	Sample	Compound	Flag	A or P	Reason
01-6590	MW-14-4 MW-14-5 TB-14	Dichlorodifluoromethane	J (all detects) UJ (all non-detects)	P	Continuing calibration (%D)

JPL, 00HW019**Volatiles - Laboratory Blank Data Qualification Summary - SDG 01-6590**

SDG	Sample	Compound TIC (RT in minutes)	Modified Final Concentration	A or P
01-6590	MW-14-4	Methylene chloride	0.9U ug/L	A
01-6590	MW-14-5	Methylene chloride	1U ug/L	A
01-6590	TB-14	Methylene chloride	3.2U ug/L	A

JPL, 00HW019**Volatiles - Field Blank Data Qualification Summary - SDG 01-6590**

SDG	Sample	Compound	Modified Final Concentration	A or P
01-6590	MW-14-4	Methylene chloride	1U ug/L	A
01-6590	MW-14-5	Methylene chloride	1U ug/L	A

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: JPL, 00HW019
Collection Date: October 23, 2001
LDC Report Date: December 19, 2001
Matrix: Water
Parameters: Volatiles
Validation Level: EPA Level IV
Laboratory: Applied P & Ch Laboratory
Sample Delivery Group (SDG): 01-6615

Sample Identification

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

Introduction

This data review covers 11 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%.

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
01G4946MB01	11/2/01	Methylene chloride	0.5 ug/L	All samples in SDG 01-6615

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-12	Methylene chloride	1.7 ug/L	1.7U ug/L

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

Sample "FIELD BLANK" was identified as a field blank. No volatile contaminants were found in this blank.

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	10/23/01	Methylene chloride	1.7 ug/L	ER-12 FIELD BLANK MW-12-1 MW-12-2 MW-12-3 MW-12-4 MW-12-5 MW-12-12D

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.

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-12-2 and MW-12-12D were identified as field duplicates. No volatiles were detected in any of the samples.

JPL, 00HW019

Volatiles - Data Qualification Summary - SDG 01-6615

No Sample Data Qualified in this SDG

JPL, 00HW019

Volatiles - Laboratory Blank Data Qualification Summary - SDG 01-6615

SDG	Sample	Compound TIC (RT in minutes)	Modified Final Concentration	A or P
01-6615	TB-12	Methylene chloride	1.7U ug/L	A

JPL, 00HW019

Volatiles - Field Blank Data Qualification Summary - SDG 01-6615

No Sample Data Qualified in this SDG

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: JPL, 00HW019
Collection Date: October 24, 2001
LDC Report Date: December 19, 2001
Matrix: Water
Parameters: Volatiles
Validation Level: EPA Level IV
Laboratory: Applied P & Ch Laboratory
Sample Delivery Group (SDG): 01-6641

Sample Identification

ER-23
MW-23-1
MW-23-2
MW-23-3
MW-23-2D
TB-23
MW-23-3MS
MW-23-3MSD

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
11/3/01	Bromomethane	35.20	All samples in SDG 01-6641	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-23 was identified as an equipment rinsate. No volatile contaminants were found in this blank.

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	10/24/01	Methylene chloride	1.7 ug/L	ER-23 MW-23-1 MW-23-2 MW-23-3 MW-23-2D

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.

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-23-2 and MW-23-2D were identified as field duplicates. No volatiles were detected in any of the samples with the following exceptions:

Compound	Concentration (ug/L)		RPD
	MW-23-2	MW-23-2D	
Chloroform	0.5U	0.4	200
Tetrachloroethene	0.5U	0.5	200

JPL, 00HW019**Volatiles - Data Qualification Summary - SDG 01-6641**

SDG	Sample	Compound	Flag	A or P	Reason
01-6641	ER-23 MW-23-1 MW-23-2 MW-23-3 MW-23-2D TB-23	Bromomethane	J (all detects) UJ (all non-detects)	P	Continuing calibration (%D)

JPL, 00HW019**Volatiles - Laboratory Blank Data Qualification Summary - SDG 01-6641**

No Sample Data Qualified in this SDG

JPL, 00HW019**Volatiles - Field Blank Data Qualification Summary - SDG 01-6641**

No Sample Data Qualified in this SDG

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: JPL, 00HW019
Collection Date: October 26, 2001
LDC Report Date: December 19, 2001
Matrix: Water
Parameters: Volatiles
Validation Level: EPA Level IV
Laboratory: Applied P & Ch Laboratory
Sample Delivery Group (SDG): 01-6684

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.
- 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
11/9/01	Bromomethane 2-Butanone	33.27 38.06	ER-24 MW-24-1 TB-24 01G5067MB01	J (all detects) UJ (all non-detects) J (all detects) UJ (all non-detects)	P
11/7/01	2-Butanone	53.95	MW-24-2 MW-24-3 MW-24-3MS MW-24-3MSD 01G5029MB01	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
01G5067MB01	11/9/01	Methylene chloride 2-Butanone	0.7 ug/L 2 ug/L	ER-24 MW-24-1 TB-24
01G5029MB01	11/7/01	Methylene chloride 2-Butanone	1.6 ug/L 2 ug/L	MW-24-2 MW-24-3

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-24	Methylene chloride	1.8 ug/L	1.8U ug/L

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

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	10/26/01	Methylene chloride	1.8 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.

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.

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 01-6684**

SDG	Sample	Compound	Flag	A or P	Reason
01-6684	ER-24 MW-24-1 TB-24	Bromomethane 2-Butanone	J (all detects) UJ (all non-detects) J (all detects) UJ (all non-detects)	P	Continuing calibration (%D)
01-6684	MW-24-2 MW-24-3	2-Butanone	J (all detects) UJ (all non-detects)	P	Continuing calibration (%D)

JPL, 00HW019**Volatiles - Laboratory Blank Data Qualification Summary - SDG 01-6684**

SDG	Sample	Compound TIC (RT in minutes)	Modified Final Concentration	A or P
01-6684	TB-24	Methylene chloride	1.8U ug/L	A

JPL, 00HW019**Volatiles - Field Blank Data Qualification Summary - SDG 01-6684**

No Sample Data Qualified in this SDG

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: JPL, 00HW019
Collection Date: October 18, 2001
LDC Report Date: December 19, 2001
Matrix: Water
Parameters: Volatiles
Validation Level: EPA Level IV
Laboratory: Applied P & Ch Laboratory
Sample Delivery Group (SDG): 01-6548

Sample Identification

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

Introduction

This data review covers 8 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA 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.
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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
10/26/01	Bromomethane	33.0	ER-4 01G4859MB01	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
01G4859MB01	10/26/01	2-Butanone	2 ug/L	ER-4

Method Blank ID	Analysis Date	Compound TIC (RT in minutes)	Concentration	Associated Samples
01G4831MB01	10/26/01	Methylene chloride 2-Butanone	0.4 ug/L 2 ug/L	MW-4-1 MW-4-2 MW-4-3 MW-4-1D TB-4

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-4 was identified as an equipment rinsate. No volatile contaminants were found in this blank.

Sample TB-4 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) 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.

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-4-1 and MW-4-1D were identified as field duplicates. No volatiles were detected in any of the samples.

JPL, 00HW019

Volatiles - Data Qualification Summary - SDG 01-6548

SDG	Sample	Compound	Flag	A or P	Reason
01-6548	ER-4	Bromomethane	J (all detects) UJ (all non-detects)	P	Continuing calibration (%D)

JPL, 00HW019

Volatiles - Laboratory Blank Data Qualification Summary - SDG 01-6548

No Sample Data Qualified in this SDG

JPL, 00HW019

Volatiles - Field Blank Data Qualification Summary - SDG 01-6548

No Sample Data Qualified in this SDG

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: JPL, 00HW019
Collection Date: October 30, 2001
LDC Report Date: December 19, 2001
Matrix: Water
Parameters: Volatiles
Validation Level: EPA Level IV
Laboratory: Applied P & Ch Laboratory
Sample Delivery Group (SDG): 01-6744

Sample Identification

MW-5
MW-6
MW-8
MW-5-D
MW-6-D
TB-8-5-6
MW-8MS
MW-8MSD

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:

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- J Indicates an estimated value.
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- 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 with the following exceptions:

Date	Compound	%RSD	Associated Samples	Flag	A or P
10/16/01	n-Butylbenzene	20.35	All samples in SDG 01-6744	J (all detects) UJ (all non-detects)	P

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
11/6/01	2-Butanone	31.79	All samples in SDG 01-6733	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
01G5009MB01	11/6/01	Methylene chloride	2.6 ug/L	All samples in SDG 01-6744

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-8-5-6	Methylene chloride	1.7 ug/L	1.7U ug/L

Sample TB-8-5-6 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-8-5-6	10/30/01	Methylene chloride	1.7 ug/L	MW-5 MW-6 MW-8 MW-5-D MW-6-D

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.

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-5 and MW-5-D and samples MW-6 and MW-6-D were identified as field duplicates. No volatiles were detected in any of the samples with the following exceptions:

Compound	Concentration (ug/L)		RPD
	MW-6	MW-6-D	
1,1-Dichloroethane	0.7	0.8	13
Tetrachloroethene	1.6	1.4	13

JPL, 00HW019**Volatiles - Data Qualification Summary - SDG 01-6744**

SDG	Sample	Compound	Flag	A or P	Reason
01-6744	MW-5 MW-6 MW-8 MW-5-D MW-6-D TB-8-5-6	n-Butylbenzene	J (all detects) UJ (all non-detects)	P	Initial calibration (%RSD)
01-6744	MW-5 MW-6 MW-8 MW-5-D MW-6-D TB-8-5-6	2-Butanone	J (all detects) UJ (all non-detects)	P	Continuing calibration (%D)

JPL, 00HW019**Volatiles - Laboratory Blank Data Qualification Summary - SDG 01-6744**

SDG	Sample	Compound TIC (RT in minutes)	Modified Final Concentration	A or P
01-6744	TB-8-5-6	Methylene chloride	1.7U ug/L	A

JPL, 00HW019**Volatiles - Field Blank Data Qualification Summary - SDG 01-6744**

No Sample Data Qualified in this SDG

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: JPL, 00HW019
Collection Date: October 29, 2001
LDC Report Date: December 19, 2001
Matrix: Water
Parameters: Volatiles
Validation Level: EPA Level IV
Laboratory: Applied P & Ch Laboratory
Sample Delivery Group (SDG): 01-6733

Sample Identification

MW-10
MW-13
MW-16
MW-10-D
TB-10-13-16
MW-13MS
MW-13MSD
MW-16MS
MW-16MSD

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 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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- J Indicates an estimated value.
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- 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 with the following exceptions:

Date	Compound	%RSD	Associated Samples	Flag	A or P
10/16/01	n-Butylbenzene	20.35	All samples in SDG 01-6733	J (all detects) UJ (all non-detects)	P

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
11/6/01	2-Butanone	31.79	All samples in SDG 01-6733	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
01G5009MB01	11/6/01	Methylene chloride	2.6 ug/L	All samples in SDG 01-6733

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-10-13-16	Methylene chloride	3.6 ug/L	3.6U ug/L

Sample TB-10-13-16 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-10-13-16	10/29/01	Methylene chloride	3.6 ug/L	MW-10 MW-13 MW-16 MW-10-D

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.

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-10 and MW-10-D were identified as field duplicates. No volatiles were detected in any of the samples with the following exceptions:

Compound	Concentration (ug/L)		RPD
	MW-10	MW-10-D	
Chloroform	0.6	0.7	15
Tetrachloroethene	0.5	0.5	0
Trichloroethene	5.8	5.7	18
1,1-Dichloroethane	0.5U	0.5	200

JPL, 00HW019**Volatiles - Data Qualification Summary - SDG 01-6733**

SDG	Sample	Compound	Flag	A or P	Reason
01-6733	MW-10 MW-13 MW-16 MW-10-D TB-10-13-16	n-Butylbenzene	J (all detects) UJ (all non-detects)	P	Initial calibration (%RSD)
01-6733	MW-10 MW-13 MW-16 MW-10-D TB-10-13-16	2-Butanone	J (all detects) UJ (all non-detects)	P	Continuing calibration (%D)

JPL, 00HW019**Volatiles - Laboratory Blank Data Qualification Summary - SDG 01-6733**

SDG	Sample	Compound TIC (RT in minutes)	Modified Final Concentration	A or P
01-6733	TB-10-13-16	Methylene chloride	3.6U ug/L	A

JPL, 00HW019**Volatiles - Field Blank Data Qualification Summary - SDG 01-6733**

No Sample Data Qualified in this SDG

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: JPL

Collection Date: October 17, 2001

LDC Report Date: November 30, 2001

Matrix: Water

Parameters: Perchlorate

Validation Level: EPA Level IV

Laboratory: Applied P & Ch Laboratory

Sample Delivery Group (SDG): 01-6503

Sample Identification

ER-20
MW-20-1
MW-20-2
MW-20-3
MW-20-4
MW-20-5

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 314 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 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 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 with the following exceptions:

Sample	Analyte	Finding	Criteria	Flag	A or P
All samples in SDG 01-6503	Perchlorate	A blank was not used to establish the calibration curve.	A blank must be used to establish the calibration curve.	None	P

b. Calibration verification

Calibration verification frequency and analysis criteria were met.

III. Blanks

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

Sample ER-20 was identified as an equipment rinsate. No perchlorate contaminants 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

Perchlorate - Data Qualification Summary - SDG 01-6503

SDG	Sample	Analyte	Flag	A or P	Reason
01-6503	ER-20 MW-20-1 MW-20-2 MW-20-3 MW-20-4 MW-20-5	Perchlorate	None	P	Initial calibration

JPL

Perchlorate - Laboratory Blank Data Qualification Summary - SDG 01-6503

No Sample Data Qualified in this SDG

JPL

Perchlorate - Field Blank Data Qualification Summary - SDG 01-6503

No Sample Data Qualified in this SDG

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

Project/Site Name: JPL
Collection Date: October 19, 2001
LDC Report Date: November 30, 2001
Matrix: Water
Parameters: Perchlorate
Validation Level: EPA Level IV
Laboratory: Applied P & Ch Laboratory
Sample Delivery Group (SDG): 01-6546

Sample Identification

ER-22
MW-22-1
MW-22-2
MW-22-3
MW-22-4

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 314 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 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 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 with the following exceptions:

Sample	Analyte	Finding	Criteria	Flag	A or P
All samples in SDG 01-6546	Perchlorate	A blank was not used to establish the calibration curve.	A blank must be used to establish the calibration curve.	None	P

b. Calibration verification

Calibration verification frequency and analysis criteria were met.

III. Blanks

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

Sample ER-22 was identified as an equipment rinsate. No perchlorate contaminants 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

Perchlorate - Data Qualification Summary - SDG 01-6546

SDG	Sample	Analyte	Flag	A or P	Reason
01-6546	ER-22 MW-22-1 MW-22-2 MW-22-3 MW-22-4	Perchlorate	None	P	Initial calibration

JPL

Perchlorate - Laboratory Blank Data Qualification Summary - SDG 01-6546

No Sample Data Qualified in this SDG

JPL

Perchlorate - Field Blank Data Qualification Summary - SDG 01-6546

No Sample Data Qualified in this SDG

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

Project/Site Name: JPL, 00HW019
Collection Date: October 10, 2001
LDC Report Date: November 30, 2001
Matrix: Water
Parameters: Wet Chemistry
Validation Level: EPA Level IV
Laboratory: Applied P & Ch Laboratory
Sample Delivery Group (SDG): 01-6324

Sample Identification

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

Introduction

This data review covers 7 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per Method E314 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 with the following exceptions:

Sample	Analyte	Finding	Criteria	Flag	A or P
All samples in SDG 01-6324	Perchlorate	A blank was not used to establish the calibration curve.	A blank must be used to establish the calibration curve.	None	P

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. 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 01-6324

SDG	Sample	Analyte	Flag	A or P	Reason
01-6324	ER-18 MW-18-2 MW-18-3 MW-18-4 MW-18-5	Perchlorate	None	P	Initial calibration

JPL, 00HW019

Wet Chemistry - Laboratory Blank Data Qualification Summary - SDG 01-6324

No Sample Data Qualified in this SDG

JPL, 00HW019

Wet Chemistry - Field Blank Data Qualification Summary - SDG 01-6324

No Sample Data Qualified in this SDG

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

Project/Site Name: JPL, 00HW019
Collection Date: October 11, 2001
LDC Report Date: November 30, 2001
Matrix: Water
Parameters: Wet Chemistry
Validation Level: EPA Level IV
Laboratory: Applied P & Ch Laboratory
Sample Delivery Group (SDG): 01-6362

Sample Identification

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

Introduction

This data review covers 6 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per Method E314 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 with the following exceptions:

Sample	Analyte	Finding	Criteria	Flag	A or P
All samples in SDG 01-6362	Perchlorate	A blank was not used to establish the calibration curve.	A blank must be used to establish the calibration curve.	None	P

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) 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) 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 01-6362

SDG	Sample	Analyte	Flag	A or P	Reason
01-6362	ER-19 MW-19-1 MW-19-2 MW-19-3 MW-19-4 MW-19-5	Perchlorate	None	P	Initial calibration

JPL, 00HW019

Wet Chemistry - Laboratory Blank Data Qualification Summary - SDG 01-6362

No Sample Data Qualified in this SDG

JPL, 00HW019

Wet Chemistry - Field Blank Data Qualification Summary - SDG 01-6362

No Sample Data Qualified in this SDG

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

Project/Site Name: JPL, 00HW019
Collection Date: October 12, 2001
LDC Report Date: November 30, 2001
Matrix: Water
Parameters: Wet Chemistry
Validation Level: EPA Level IV
Laboratory: Applied P & Ch Laboratory
Sample Delivery Group (SDG): 01-6386

Sample Identification

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

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 with the following exceptions:

Sample	Analyte	Finding	Criteria	Flag	A or P
ER-17 MW-17-2 MW-17-3 MW-17-4 MW-17-5	Perchlorate	A blank was not used to establish the calibration curve.	A blank must be used to establish the calibration curve.	None	P

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-17 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.

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: JPL, 00HW019
Collection Date: October 25, 2001
LDC Report Date: December 19, 2001
Matrix: Water
Parameters: Wet Chemistry
Validation Level: EPA Level IV
Laboratory: Applied P & Ch Laboratory
Sample Delivery Group (SDG): 01-6675

Sample Identification

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

Introduction

This data review covers 7 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per Method E314 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 with the following exceptions:

Sample	Analyte	Finding	Criteria	Flag	A or P
ER-11 MW-11-1 MW-11-2 MW-11-3 MW-11-4	Perchlorate	A blank was not used to establish the calibration curve.	A blank must be used to establish the calibration curve.	None	P

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
10/30/01 (10:38:58)	CCV	Perchlorate	114 (90-110)	ER-11 MW-11-1 MW-11-2 MW-11-3	J (all detects)	P
10/30/01 (1:53:01)	CCV	Perchlorate	114 (90-110)	MW-11-4	J (all detects)	P

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. 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 01-6675**

SDG	Sample	Analyte	Flag	A or P	Reason
01-6675	ER-11 MW-11-1 MW-11-2 MW-11-3 MW-11-4	Perchlorate	None	P	Initial calibration
01-6675	ER-11 MW-11-1 MW-11-2 MW-11-3 MW-11-4	Perchlorate	J (all detects)	P	Calibration (%R)

JPL, 00HW019**Wet Chemistry - Laboratory Blank Data Qualification Summary - SDG 01-6675**

No Sample Data Qualified in this SDG

JPL, 00HW019**Wet Chemistry - Field Blank Data Qualification Summary - SDG 01-6675**

No Sample Data Qualified in this SDG

JPL, 00HW019**Wet Chemistry - Data Qualification Summary - SDG 01-6386**

SDG	Sample	Analyte	Flag	A or P	Reason
01-6386	ER-17 MW-17-2 MW-17-3 MW-17-4 MW-17-5	Perchlorate	None	P	Initial calibration

JPL, 00HW019**Wet Chemistry - Laboratory Blank Data Qualification Summary - SDG 01-6386**

No Sample Data Qualified in this SDG

JPL, 00HW019**Wet Chemistry - Field Blank Data Qualification Summary - SDG 01-6386**

No Sample Data Qualified in this SDG

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: JPL, 00HW019
Collection Date: October 15, 2001
LDC Report Date: November 30, 2001
Matrix: Water
Parameters: Wet Chemistry
Validation Level: EPA Level IV
Laboratory: Applied P & Ch Laboratory
Sample Delivery Group (SDG): 01-6435

Sample Identification

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

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 with the following exceptions:

Sample	Analyte	Finding	Criteria	Flag	A or P
ER-3 MW-3-2 MW-3-3 MW-3-4 MW-3-5 MW-3-3MS MW-3-3MSD	Perchlorate	A blank was not used to establish the calibration curve.	A blank must be used to establish the calibration curve.	None	P

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. 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 01-6435**

SDG	Sample	Analyte	Flag	A or P	Reason
01-6435	ER-3 MW-3-2 MW-3-3 MW-3-4 MW-3-5	Perchlorate	None	P	Initial calibration

JPL, 00HW019**Wet Chemistry - Laboratory Blank Data Qualification Summary - SDG 01-6435**

No Sample Data Qualified in this SDG

JPL, 00HW019**Wet Chemistry - Field Blank Data Qualification Summary - SDG 01-6435**

No Sample Data Qualified in this SDG

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: JPL

Collection Date: October 17, 2001

LDC Report Date: November 30, 2001

Matrix: Water

Parameters: Hexavalent Chromium

Validation Level: EPA Level IV

Laboratory: Applied P & Ch Laboratory

Sample Delivery Group (SDG): 01-6503

Sample Identification

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

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.

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 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 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 were met.

b. Calibration verification

Calibration verification frequency and analysis criteria were met.

III. Blanks

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

Sample ER-20 was identified as an equipment rinsate. No hexavalent chromium contaminants 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

Hexavalent Chromium - Data Qualification Summary - SDG 01-6503

No Sample Data Qualified in this SDG

JPL

Hexavalent Chromium - Laboratory Blank Data Qualification Summary - SDG 01-6503

No Sample Data Qualified in this SDG

JPL

Hexavalent Chromium - Field Blank Data Qualification Summary - SDG 01-6503

No Sample Data Qualified in this SDG

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

Project/Site Name: JPL
Collection Date: October 19, 2001
LDC Report Date: November 30, 2001
Matrix: Water
Parameters: Hexavalent Chromium
Validation Level: EPA Level IV
Laboratory: Applied P & Ch Laboratory
Sample Delivery Group (SDG): 01-6546

Sample Identification

ER-22
MW-22-1
MW-22-2
MW-22-2MS
MW-22-2MSD

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 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 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 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 were met.

b. Calibration verification

Calibration verification frequency and analysis criteria were met.

III. Blanks

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

Sample ER-22 was identified as an equipment rinsate. No hexavalent chromium contaminants 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

Hexavalent Chromium - Data Qualification Summary - SDG 01-6546

No Sample Data Qualified in this SDG

JPL

Hexavalent Chromium - Laboratory Blank Data Qualification Summary - SDG 01-6546

No Sample Data Qualified in this SDG

JPL

Hexavalent Chromium - Field Blank Data Qualification Summary - SDG 01-6546

No Sample Data Qualified in this SDG

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: JPL, 00HW019
Collection Date: October 16, 2001
LDC Report Date: November 30, 2001
Matrix: Water
Parameters: Wet Chemistry
Validation Level: EPA Level IV
Laboratory: Applied P & Ch Laboratory
Sample Delivery Group (SDG): 01-6502

Sample Identification

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

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 314 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 with the following exceptions:

Sample	Analyte	Finding	Criteria	Flag	A or P
All samples in SDG 01-6502	Perchlorate	A blank was not used to establish the calibration curve.	A blank must be used to establish the calibration curve.	None	P

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-21 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) 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 01-6502

SDG	Sample	Analyte	Flag	A or P	Reason
01-6502	ER-21 MW-21-2 MW-21-3 MW-21-4 MW-21-5	Perchlorate	None	P	Initial calibration

JPL, 00HW019

Wet Chemistry - Laboratory Blank Data Qualification Summary - SDG 01-6502

No Sample Data Qualified in this SDG

JPL, 00HW019

Wet Chemistry - Field Blank Data Qualification Summary - SDG 01-6502

No Sample Data Qualified in this SDG

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: JPL, 00HW019
Collection Date: October 22, 2001
LDC Report Date: December 19, 2001
Matrix: Water
Parameters: Hexavalent Chromium & Perchlorate
Validation Level: EPA Level IV
Laboratory: Applied P & Ch Laboratory
Sample Delivery Group (SDG): 01-6590

Sample Identification

ER-14
MW-14-1
MW-14-2
MW-14-3
MW-14-4
MW-14-5
ER-14MS
ER-14MSD

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 Method E314 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 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 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 with the following exceptions:

Sample	Analyte	Finding	Criteria	Flag	A or P
ER-14 MW-14-1 MW-14-2 MW-14-3 MW-14-4 MW-14-5	Perchlorate	A blank was not used to establish the calibration curve.	A blank must be used to establish the calibration curve.	None	P

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
10/29/01	CCV 6:42	Perchlorate	115 (90-110)	ER-14 MW-14-1 MW-14-2 MW-14-3 MW-14-4	J (all detects)	P
10/29/01	CCV 9:53	Perchlorate	112 (90-110)	MW-14-5	J (all detects)	P

III. Blanks

Method blanks were reviewed for each matrix as applicable. No hexavalent chromium or perchlorate contaminants were found in the method blanks.

Sample ER-14 was identified as an equipment rinsate. No hexavalent chromium or perchlorate contaminants 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**Hexavalent Chromium & Perchlorate - Data Qualification Summary - SDG 01-6590**

SDG	Sample	Analyte	Flag	A or P	Reason
01-6590	ER-14 MW-14-1 MW-14-2 MW-14-3 MW-14-4 MW-14-5	Perchlorate	None	P	Initial calibration
01-6590	ER-14 MW-14-1 MW-14-2 MW-14-3 MW-14-4 MW-14-5	Perchlorate	J (all detects)	P	Continuing calibration (%R)

JPL, 00HW019**Hexavalent Chromium & Perchlorate - Laboratory Blank Data Qualification Summary - SDG 01-6590**

No Sample Data Qualified in this SDG

JPL, 00HW019**Hexavalent Chromium & Perchlorate - Field Blank Data Qualification Summary - SDG 01-6590**

No Sample Data Qualified in this SDG

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: JPL, 00HW019
Collection Date: October 23, 2001
LDC Report Date: December 19, 2001
Matrix: Water
Parameters: Hexavalent Chromium & Perchlorate
Validation Level: EPA Level IV
Laboratory: Applied P & Ch Laboratory
Sample Delivery Group (SDG): 01-6615

Sample Identification

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

Introduction

This data review covers 9 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 Method E314 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 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 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 with the following exceptions:

Sample	Analyte	Finding	Criteria	Flag	A or P
All samples in SDG 01-6615	Perchlorate	A blank was not used to establish the calibration curve.	A blank must be used to establish the calibration curve.	None	P

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 hexavalent chromium or perchlorate contaminants were found in the method blanks.

Sample ER-12 was identified as an equipment rinsate. No hexavalent chromium or perchlorate contaminants 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-12-2 and MW-12-2D were identified as field duplicates. No hexavalent chromium or perchlorate was detected in any of the samples.

JPL, 00HW019**Hexavalent Chromium & Perchlorate - Data Qualification Summary - SDG 01-6615**

SDG	Sample	Analyte	Flag	A or P	Reason
01-6615	ER-12 MW-12-1 MW-12-2 MW-12-3 MW-12-4 MW-12-5 MW-12-2D	Perchlorate	None	P	Initial calibration

JPL, 00HW019**Hexavalent Chromium & Perchlorate - Laboratory Blank Data Qualification Summary - SDG 01-6615**

No Sample Data Qualified in this SDG

JPL, 00HW019**Hexavalent Chromium & Perchlorate - Field Blank Data Qualification Summary - SDG 01-6615**

No Sample Data Qualified in this SDG

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: JPL, 00HW019
Collection Date: October 24, 2001
LDC Report Date: December 19, 2001
Matrix: Water
Parameters: Hexavalent Chromium & Perchlorate
Validation Level: EPA Level IV
Laboratory: Applied P & Ch Laboratory
Sample Delivery Group (SDG): 01-6641

Sample Identification

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

Introduction

This data review covers 9 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 Method E314 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 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 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 with the following exceptions:

Sample	Analyte	Finding	Criteria	Flag	A or P
All samples in SDG 01-6641	Perchlorate	A blank was not used to establish the calibration curve.	A blank must be used to establish the calibration curve.	None	P

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
10/30/01	CCV 1:53	Perchlorate	114 (90-110)	ER-23 MW-23-1 MW-23-2 MW-23-3 MW-23-4 MW-23-3MS MW-23-3MSD	J (all detects)	P
10/30/01	CCV 5:05	Perchlorate	87 (90-110)	MW-23-5 MW-23-2D	J (all detects) UJ (all non-detects)	P

III. Blanks

Method blanks were reviewed for each matrix as applicable. No hexavalent chromium or perchlorate contaminants were found in the method blanks.

Sample ER-23 was identified as an equipment rinsate. No hexavalent chromium or perchlorate contaminants 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-23-2 and MW-23-2D were identified as field duplicates. No hexavalent chromium or perchlorate was detected in any of the samples.

JPL, 00HW019**Hexavalent Chromium & Perchlorate - Data Qualification Summary - SDG 01-6641**

SDG	Sample	Analyte	Flag	A or P	Reason
01-6641	ER-23 MW-23-1 MW-23-2 MW-23-3 MW-23-4 MW-23-5 MW-23-2D	Perchlorate	None	P	Initial calibration
01-6641	ER-23 MW-23-1 MW-23-2 MW-23-3 MW-23-4	Perchlorate	J (all detects)	P	Continuing calibration (%R)
01-6641	MW-23-5 MW-23-2D	Perchlorate	J (all detects) UJ (all non-detects)	P	Continuing calibration (%R)

JPL, 00HW019**Hexavalent Chromium & Perchlorate - Laboratory Blank Data Qualification Summary - SDG 01-6641**

No Sample Data Qualified in this SDG

JPL, 00HW019**Hexavalent Chromium & Perchlorate - Field Blank Data Qualification Summary - SDG 01-6641**

No Sample Data Qualified in this SDG

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

Project/Site Name: JPL, 00HW019
Collection Date: October 26, 2001
LDC Report Date: December 19, 2001
Matrix: Water
Parameters: Hexavalent Chromium & Perchlorate
Validation Level: EPA Level IV
Laboratory: Applied P & Ch Laboratory
Sample Delivery Group (SDG): 01-6684

Sample Identification

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

Introduction

This data review covers 7 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 7196 for Hexavalent Chromium and Method E314 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 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 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 with the following exceptions:

Sample	Analyte	Finding	Criteria	Flag	A or P
ER-24 MW-24-1 MW-24-2 MW-24-3	Perchlorate	A blank was not used to establish the calibration curve.	A blank must be used to establish the calibration curve.	None	P

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
10/30/01	CCV	Perchlorate	114 (90-110)	ER-24 MW-24-1 MW-24-2 MW-24-3	J (all detects)	P

III. Blanks

Method blanks were reviewed for each matrix as applicable. No hexavalent chromium or perchlorate contaminants were found in the method blanks.

Sample ER-24 was identified as an equipment rinsate. No hexavalent chromium or perchlorate contaminants 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**Hexavalent Chromium & Perchlorate - Data Qualification Summary - SDG 01-6684**

SDG	Sample	Analyte	Flag	A or P	Reason
01-6684	ER-24 MW-24-1 MW-24-2 MW-24-3	Perchlorate	None	P	Initial calibration
01-6684	ER-24 MW-24-1 MW-24-2 MW-24-3	Perchlorate	J (all detects)	P	Continuing calibration (%R)

JPL, 00HW019**Hexavalent Chromium & Perchlorate - Laboratory Blank Data Qualification Summary - SDG 01-6684**

No Sample Data Qualified in this SDG

JPL, 00HW019**Hexavalent Chromium & Perchlorate - Field Blank Data Qualification Summary - SDG 01-6684**

No Sample Data Qualified in this SDG

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

Project/Site Name: JPL, 00HW019
Collection Date: October 18, 2001
LDC Report Date: December 19, 2001
Matrix: Water
Parameters: Hexavalent Chromium & Perchlorate
Validation Level: EPA Level IV
Laboratory: Applied P & Ch Laboratory
Sample Delivery Group (SDG): 01-6548

Sample Identification

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

Introduction

This data review covers 9 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 Method E314 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 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 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 with the following exceptions:

Sample	Analyte	Finding	Criteria	Flag	A or P
ER-4 MW-4-3 MW-4-4 MW-4-5 MW-4-1D MW-4-2MS MW-4-2MSD	Perchlorate	A blank was not used to establish the calibration curve.	A blank must be used to establish the calibration curve.	None	P

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
10/29/01	CCV 3:28	Perchlorate	114 (90-110)	ER-4 MW-4-1 MW-4-2	J (all detects)	P
10/29/01	CCV 6:42	Perchlorate	115 (90-110)	MW-4-3 MW-4-1D MW-4-2MS MW-4-2MSD	J (all detects)	P

III. Blanks

Method blanks were reviewed for each matrix as applicable. No hexavalent chromium or perchlorate contaminants were found in the method blanks.

Sample ER-4 was identified as an equipment rinsate. No hexavalent chromium or perchlorate contaminants 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-4-1 and MW-4-1D were identified as field duplicates. No hexavalent chromium or perchlorate was detected in any of the samples.

JPL, 00HW019**Hexavalent Chromium & Perchlorate - Data Qualification Summary - SDG 01-6548**

SDG	Sample	Analyte	Flag	A or P	Reason
01-6548	ER-4 MW-4-3 MW-4-4 MW-4-5 MW-4-1D	Perchlorate	None	P	Initial calibration
01-6548	ER-4 MW-4-1 MW-4-2 MW-4-3 MW-4-1D	Perchlorate	J (all detects)	P	Continuing calibration (%R)

JPL, 00HW019**Hexavalent Chromium & Perchlorate - Laboratory Blank Data Qualification Summary - SDG 01-6548**

No Sample Data Qualified in this SDG

JPL, 00HW019**Hexavalent Chromium & Perchlorate - Field Blank Data Qualification Summary - SDG 01-6548**

No Sample Data Qualified in this SDG

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

Project/Site Name: JPL, 00HW019
Collection Date: October 30, 2001
LDC Report Date: December 19, 2001
Matrix: Water
Parameters: Wet Chemistry
Validation Level: EPA Level IV
Laboratory: Applied P & Ch Laboratory
Sample Delivery Group (SDG): 01-6744

Sample Identification

MW-5
MW-6
MW-8
MW-5-D
MW-6-D
MW-8MS
MW-8MSD

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 with the following exceptions:

Sample	Analyte	Finding	Criteria	Flag	A or P
All samples in SDG 01-6744	Perchlorate	A blank was not used to establish the calibration curve.	A blank must be used to establish the calibration curve.	None	P

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
10/31/01	CCV1	Perchlorate	86 (90-110)	MB	J (all detects) UJ (all non-detects)	P
10/31/01	CCV2	Perchlorate	113 (90-110)	MW-5 MW-6 MW-8 MW-5-D MW-6-D MW-8MS MW-8MSD	J (all detects)	P

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. 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-5 and MW-5-D and samples MW-6 and MW-6-D were identified as field duplicates. No contaminant concentrations were detected in any of the samples.

JPL, 00HW019

Wet Chemistry - Data Qualification Summary - SDG 01-6744

SDG	Sample	Analyte	Flag	A or P	Reason
01-6744	MW-5 MW-6 MW-8 MW-5-D MW-6-D	Perchlorate	None	P	Initial calibration
01-6744	MW-5 MW-6 MW-8 MW-5-D MW-6-D	Perchlorate	J (all detects)	P	Calibration verification (%R)

JPL, 00HW019

Wet Chemistry - Laboratory Blank Data Qualification Summary - SDG 01-6744

No Sample Data Qualified in this SDG

JPL, 00HW019

Wet Chemistry - Field Blank Data Qualification Summary - SDG 01-6744

No Sample Data Qualified in this SDG

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: JPL, 00HW019
Collection Date: October 29, 2001
LDC Report Date: December 19, 2001
Matrix: Water
Parameters: Wet Chemistry
Validation Level: EPA Level IV
Laboratory: Applied P & Ch Laboratory
Sample Delivery Group (SDG): 01-6733

Sample Identification

MW-10
MW-13
MW-16
MW-10-D
MW-13MS
MW-13MSD
MW-16MS
MW-16MSD

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 with the following exceptions:

Sample	Analyte	Finding	Criteria	Flag	A or P
All samples in SDG 01-6733	Perchlorate	A blank was not used to establish the calibration curve.	A blank must be used to establish the calibration curve.	None	P

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
10/31/01	CCV1	Perchlorate	86 (90-110)	MW-10 MW-13 MW-16 MW-10-D MW-13MS MW-13MSD MB	J (all detects) UJ (all non-detects)	P
10/31/01	CCV2	Perchlorate	113 (90-110)	MW-16MS MW-16MSD	J (all detects)	P

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. 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-10 and MW-10-D 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-10	MW-10-D	
Perchlorate	13.0	12.8	2

JPL, 00HW019**Wet Chemistry - Data Qualification Summary - SDG 01-6733**

SDG	Sample	Analyte	Flag	A or P	Reason
01-6733	MW-10 MW-13 MW-16 MW-10-D	Perchlorate	None	P	Initial calibration
01-6733	MW-10 MW-13 MW-16 MW-10-D	Perchlorate	J (all detects) UJ (all non-detects)	P	Calibration verification (%R)

JPL, 00HW019**Wet Chemistry - Laboratory Blank Data Qualification Summary - SDG 01-6733**

No Sample Data Qualified in this SDG

JPL, 00HW019**Wet Chemistry - Field Blank Data Qualification Summary - SDG 01-6733**

No Sample Data Qualified in this SDG

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: JPL, 00HW019

Collection Date: October 23 through October 30, 2001

LDC Report Date: December 19, 2001

Matrix: Water

Parameters: Chromium

Validation Level: EPA Level IV

Laboratory: Advanced Technology Laboratories

Sample Delivery Group (SDG): 01-6734

Sample Identification

MW-12-3	MW-13
MW-12-2	MW-10
MW-12-2D	MW-10-D
MW-12-1	MW-16
ER-12	MW-8
MW-23-4	MW-5
MW-23-3	MW-5-D
MW-23-2	MW-6
MW-23-2D	MW-6-D
MW-23-1	MW-12-3MS
ER-23	MW-12-3MSD
MW-11-3	MW-12-3DUP
MW-11-2	ER-24MS
MW-11-1	ER-24MSD
ER-11	ER-24DUP
MW-24-4	MW-13DUP
MW-24-3	MW-8DUP
MW-24-2	MW-8MS
MW-24-1	MW-8MSD
ER-24	

Introduction

This data review covers 39 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 and continuing blanks (ICB/CCBs) was based on the maximum contaminant concentration in the ICB/CCBs in the analysis of each analyte. No contaminant concentrations were found in the initial and continuing blanks with the following exceptions:

Method Blank ID	Analyte	Maximum Concentration	Associated Samples
ICB/CCB	Chromium	0.727 ug/L	All samples in SDG 01-6734

Sample concentrations were compared to the maximum contaminant concentrations detected in the ICB/CCBs. The sample concentrations were either not detected or were significantly greater (>5X blank contaminants) than the concentrations found in the associated method blanks with the following exceptions:

Sample	Analyte	Reported Concentration	Modified Final Concentration
MW-11-2	Chromium	3.5 ug/L	3.5U ug/L
MW-11-1	Chromium	3.5 ug/L	3.5U ug/L

Samples ER-12, ER-23, ER-11 and ER-24 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. Results were within QC limits.

VII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) 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-12-2 and MW-12-2D, samples MW-23-2 and MW-23-2D, MW-10 and MW-10-D, samples MW-5 and MW-5-D and samples MW-6 and MW-6-D were identified as field duplicates. No chromium was detected in any of the samples with the following exceptions:

Analyte	Concentration (ug/L)		RPD
	MW-12-2	MW-12-2D	
Chromium	7.4	6.6	11

Analyte	Concentration (ug/L)		RPD
	MW-23-2	MW-23-2D	
Chromium	7.4	6.3	16

Analyte	Concentration (ug/L)		RPD
	MW-10	MW-10-D	
Chromium	13	10	26

Analyte	Concentration (ug/L)		RPD
	MW-5	MW-5-D	
Chromium	7.4	6.5	13

Analyte	Concentration (ug/L)		RPD
	MW-6	MW-6-D	
Chromium	34	32	6

JPL, 00HW019

Chromium - Data Qualification Summary - SDG 01-6734

No Sample Data Qualified in this SDG

JPL, 00HW019

Chromium - Laboratory Blank Data Qualification Summary - SDG 01-6734

SDG	Sample	Analyte	Modified Final Concentration	A or P
01-6734	MW-11-2	Chromium	3.5U ug/L	A
01-6734	MW-11-1	Chromium	3.5U ug/L	A

JPL, 00HW019

Chromium - Field Blank Data Qualification Summary - SDG 01-6734

No Sample Data Qualified in this SDG

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: JPL, 00HW019

Collection Date: October 10 through October 22, 2001

LDC Report Date: December 19, 2001

Matrix: Water

Parameters: Chromium

Validation Level: EPA Level IV

Laboratory: Advanced Technology Laboratories

Sample Delivery Group (SDG): 01-6611

Sample Identification

MW-18-4	MW-4-3
MW-18-3	MW-4-2
MW-18-2	MW-4-1
ER-18	MW-4-1D
MW-17-4	ER-4
MW-17-3	MW-22-2
MW-17-2	MW-22-1
ER-17	ER-22
MW-3-4	MW-14-4
MW-3-3	MW-14-3
MW-3-2	MW-14-2
ER-3	MW-14-1
MW-20-5	ER-14
MW-20-4	MW-3-3DUP
MW-20-3	MW-4-2MS
MW-20-2	MW-4-2MSD
MW-20-1	MW-4-2DUP
ER-20	MW-14-3DUP
MW-4-5	
MW-4-4	

Introduction

This data review covers 38 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 and continuing blanks (ICB/CCBs) was based on the maximum contaminant concentration in the ICB/CCBs in the analysis of each analyte. No contaminant concentrations were found in the initial and continuing blanks with the following exceptions:

Method Blank ID	Analyte	Maximum Concentration	Associated Samples
ICB/CCB	Chromium	0.727 ug/L	All samples in SDG 01-6611

Sample concentrations were compared to the maximum contaminant concentrations detected in the ICB/CCBs. The sample concentrations were either not detected or were significantly greater (>5X blank contaminants) than the concentrations found in the associated method blanks with the following exceptions:

Sample	Analyte	Reported Concentration	Modified Final Concentration
MW-3-3	Chromium	3.3 ug/L	3.3U ug/L
MW-20-5	Chromium	3.4 ug/L	3.4U ug/L
MW-20-4	Chromium	3.1 ug/L	3.1U ug/L
MW-20-1	Chromium	3.6 ug/L	3.6U ug/L
MW-4-1	Chromium	3.3 ug/L	3.3U ug/L

Samples ER-18, ER-17, ER-3, ER-20, ER-4, ER-22 and ER-14 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. Results were within QC limits.

VII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) 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-4-1 and MW-4-1D were identified as field duplicates. No chromium was detected in any of the samples with the following exceptions:

Analyte	Concentration (ug/L)		RPD
	MW-4-1	MW-4-1D	
Chromium	3.3	3.8	14

JPL, 00HW019**Chromium - Data Qualification Summary - SDG 01-6611**

No Sample Data Qualified in this SDG

JPL, 00HW019**Chromium - Laboratory Blank Data Qualification Summary - SDG 01-6611**

SDG	Sample	Analyte	Modified Final Concentration	A or P
01-6611	MW-3-3	Chromium	3.3U ug/L	A
01-6611	MW-20-5	Chromium	3.4U ug/L	A
01-6611	MW-20-4	Chromium	3.1U ug/L	A
01-6611	MW-20-1	Chromium	3.6U ug/L	A
01-6611	MW-4-1	Chromium	3.3U ug/L	A

JPL, 00HW019**Chromium - Field Blank Data Qualification Summary - SDG 01-6611**

No Sample Data Qualified in this SDG