

SAF-RC-148
300 Area D4 Waste Sites –
Soil Full Protocol
FINAL VALIDATION PACKAGE

COMPLETE COPY OF FINAL VALIDATION PACKAGE TO:

Kathy Wendt H4-21

COMMENTS:

SDG J01279 SAF-RC-148

Sample Location/Waste Site: 300-274

Date: 14 January 2013
 To: Washington Closure Hanford Inc. (technical representative)
 From: ELR Consulting
 Project: 300 Area D4 Waste Sites – Soil Full Protocol – Waste Site 300-274
 Subject: Diesel range organics - Data Package No. J01279-TAL

INTRODUCTION

This memo presents the results of data validation on Data Package No. J01279 prepared by TestAmerica Laboratory Inc. (TAL). A list of samples validated along with the analyses reported and the method of analysis is provided in the following table.

Sample ID	Sample Date	Media	Validation	Analyte
J1L8D1	9/19/11	Soil	C	See note 1
J1L8D2	9/19/11	Soil	C	See note 1
J1L8D3	9/19/11	Soil	C	See note 1
J1L8D4	9/19/11	Soil	C	See note 1
J1L8D5	9/19/11	Soil	C	See note 1
J1L8D6	9/19/11	Soil	C	See note 1
J1L8D7	9/19/11	Soil	C	See note 1
J1L8D8	9/19/11	Soil	C	See note 1
J1L8D9	9/19/11	Soil	C	See note 1
J1L8F0	9/19/11	Soil	C	See note 1
J1L8F1	9/19/11	Soil	C	See note 1
J1L8F2	9/19/11	Soil	C	See note 1
J1L8F3	9/19/11	Soil	C	See note 1
J1L8F4	9/19/11	Soil	C	See note 1

1 – NWTPH-Dx.

Data validation was conducted in accordance with the Washington Closure Hanford (WCH) validation statement of work and the 300 Area Remedial Action Sampling and Analysis Plan (DOE/RL-2001-48, Rev. 3). Appendices 1 through 6 provide the following information as indicated below:

- Appendix 1. Glossary of Data Reporting Qualifiers
- Appendix 2. Summary of Data Qualification
- Appendix 3. Annotated Laboratory Reports
- Appendix 4. Laboratory Narrative and Chain-of-Custody Documentation
- Appendix 5. Data Validation Supporting Documentation
- Appendix 6. Additional Data Requested by Client

DATA QUALITY OBJECTIVES

Holding Times

Analytical holding times were assessed to ascertain whether the holding time requirements were met by the laboratory. The holding time requirements are as follows: Samples must be extracted within 14 days of the date of sample collection and analyzed within 40 days from the date of extraction.

If holding times are exceeded, but not by greater than two times the limit, all associated sample results are qualified as estimates and flagged "J" for detects and "UJ" for non-detects. If holding times are exceeded by greater than two times the limit, all associated detectable sample results are qualified as estimates and flagged "J" and all non-detects are rejected and flagged "UR".

All holding times were acceptable.

Method Blanks

Method blank analyses are conducted to determine the extent of laboratory contamination introduced through sampling, sample preparation and analysis. At least one acceptable method blank analysis must be conducted for every 20 samples. No contaminants should be present in the method blank. Analytical results for analytes present in any sample at less than five times the concentration of that analyte found in the associated blank are qualified as non-detects and flagged "U". Common laboratory contaminants present in samples at less than ten times the concentration of that analyte found in the associated blank are qualified as non-detects. If a sample result is less than the CRQL and is less than five times (or less than ten times for lab contaminants) the highest associated blank result, the sample result value is raised to the CRQL level and qualified as undetected "U".

Due to method blank contamination, the C10-C36 results in samples J1L8D1, J1L8D2, J1L8D3, J1L8D4, J1L8D5, J1L8D8, J1L8F2, J1L8F3 and J1L8F4 were qualified as undetected, raised to the RQL and flagged "U".

Due to method blank contamination, the C10-C28 results in samples J1L8D1, J1L8D2, J1L8D3, J1L8D4, J1L8D5, J1L8D7, J1L8D8, J1L8F1, J1L8F2, J1L8F3 and J1L8F4 were qualified as undetected, raised to the RQL and flagged "U".

All other method blank results were acceptable.

Field Blanks

One field blank (J1L8D1) was submitted for analysis. No analytes were detected in the field blank.

Accuracy

Matrix Spike/Matrix Spike Duplicate & Blank Spike Recoveries

Matrix spike/matrix spike duplicate analyses are used to assess the analytical accuracy of the reported data and the effect of the matrix on the ability to accurately quantify sample concentrations. Matrix spike/matrix spike duplicate analyses are performed in duplicate using five compounds for which percent recoveries must be within a range of 50-150% or within laboratory control limits. If spike recoveries are outside control limits, detected sample results less than five times the spike concentration are qualified as estimates and flagged "J". Undetected sample results with spike recoveries below control limits are qualified as estimates and flagged "UJ". Undetected sample results are not qualified if the spike recovery is above control limits. Sample results greater than five times the spike concentration require no qualification.

All accuracy results were acceptable.

Surrogate Recovery

The analyses of surrogate compounds provide a measure of performance for individual samples. Matrix-specific surrogate compound recovery control windows have been established by the EPA CLP program. If two surrogates of the same class of compounds (base/neutral or acid) are out of control limits, all associated sample results greater than the contract required quantitation limit (CRQL) are qualified as estimates and flagged "J". Sample results less than the CRQL and below the lower control limit are qualified as estimates and flagged "UJ". Sample results less than the CRQL with recoveries above the upper control limit require no qualification. If a surrogate recovery is less than 10%, detects are qualified as estimates and flagged "J" and nondetects are

All surrogate results were acceptable.

Precision

Matrix Spike/Matrix Spike Duplicate Samples

Matrix spike (MS)/matrix spike duplicate (MSD) results provide matrix-specific information on the precision of the method for specific target compound classes. Precision is expressed by the relative percent difference (RPD) between the recoveries of duplicate matrix spike analyses performed on a sample. Samples results must be within RPD limits of +/-30%. If RPD values are out of specification and the sample concentration is less than five times the spike concentration, all associated detected sample results are qualified as estimates and flagged "J". If RPD values are out of specification and the sample concentration is greater than five times the spike concentration, no qualification is required.

All laboratory results were acceptable.

Field Duplicate Samples

One set of field duplicates (J1L8D2/J1L8D3) were submitted for analysis. Field duplicates are compared using the same criteria as for laboratory duplicates. All field duplicate results were acceptable.

Analytical Detection Levels

Reported analytical detection levels are compared against the required quantitation limits (RQL's) to ensure that laboratory detection levels meet the required criteria. All analytes met the compound specific RQL.

Completeness

Data package No. J01279 was submitted for validation and verified for completeness. Completeness is based on the percentage of data determined to be valid (i.e., not rejected). The completion percentage was 100%.

MAJOR DEFICIENCIES

None found.

MINOR DEFICIENCIES

The following minor deficiencies were noted:

- Due to method blank contamination, the C10-C36 results in samples J1L8D1, J1L8D2, J1L8D3, J1L8D4, J1L8D5, J1L8D8, J1L8F2, J1L8F3 and J1L8F4 were qualified as undetected, raised to the RQL and flagged "U".
- Due to method blank contamination, the C10-C28 results in samples J1L8D1, J1L8D2, J1L8D3, J1L8D4, J1L8D5, J1L8D7, J1L8D8, J1L8F1, J1L8F2, J1L8F3 and J1L8F4 were qualified as undetected, raised to the RQL and flagged "U".

REFERENCES

Washington Closure Hanford Contract #S00W307A00 (March 2008), *Data Validation Services*, March 2008.

DOE/RL-2001-48, Rev. 3, *300 Area Remedial Action Sampling and Analysis Plan*, U.S. Department of Energy, May 2004.

Appendix 1
Glossary of Data Reporting Qualifiers

Qualifiers which may be applied by data validators in compliance with the WCH validation SOW are as follows:

- U - Indicates the compound or analyte was analyzed for and not detected in the sample. The value reported is the same quantitation limit corrected for sample dilution and moisture content by the laboratory.
- UJ - Indicates the compound or analyte was analyzed for and not detected in the sample. Due to a minor QC deficiency identified during the data validation, the associated quantitation limit is an estimate.
- J - Indicates the compound or analyte was analyzed for and detected. Due to a minor QC deficiency identified during the data validation, the associated quantitation limit is an estimate.
- R - Indicates the compound or analyte was analyzed for, detected, and due to an identified major QC deficiency, the data are unusable.
- UR - Indicates the compound or analyte was analyzed for and not detected in the sample. Additionally, the data is unusable due to an identified major QC deficiency.
- NJ - Indicates presumptive evidence of a compound at an estimated value. The data may not be valid for some specific applications (i.e., usable for decision-making purposes).
- N - Indicates presumptive evidence of a compound. The data may not be valid for some specific applications usable for decision-making purposes).

Appendix 2
Summary of Data Qualification

DIESEL RANGE ORGANICS DATA QUALIFICATION SUMMARY*

SDG: J01279	REVIEWER: ELR	Project: 300-274	PAGE 1 OF 1
COMPOUND	QUALIFIER	SAMPLES AFFECTED	REASON
C10-C36	U at RQL	J1L8D1, J1L8D2 J1L8D3, J1L8D4 J1L8D5, J1L8D8 J1L8F2, J1L8F3 J1L8F4	Method blank contamination
C10-C28	U at RQL	J1L8D1, J1L8D2 J1L8D3, J1L8D4 J1L8D5, J1L8D7 J1L8D8, J1L8F1 J1L8F2, J1L8F3 J1L8F4	Method blank contamination

* - The Qualified Data Summary Table includes laboratory applied "U" qualifiers not specifically identified here. The laboratory applied "U" qualifiers are included to minimize misinterpretation of results contained in the table.

Appendix 3
Annotated Laboratory Reports

Analytical Data

Client: Washington Closure Hanford

Job Number: 280-20530-1
Sdg Number: J01279

Client Sample ID: J1L8D1

Lab Sample ID: 280-20530-1

Date Sampled: 09/19/2011 0734

Client Matrix: Solid

% Moisture: 1.0

Date Received: 09/21/2011 0930

NWTPH-Dx Northwest - Semi-Volatile Petroleum Products (GC)

Analysis Method:	NWTPH-Dx	Analysis Batch:	280-89688	Instrument ID:	GCS_U2
Prep Method:	3550C	Prep Batch:	280-87627	Lab File ID:	055B0801.D
Dilution:	1.0			Initial Weight/Volume:	31.5 g
Analysis Date:	09/30/2011 2018			Final Weight/Volume:	1000 uL
Prep Date:	09/23/2011 2045			Injection Volume:	1 uL

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
C10-C36		5000 4100	JB 0	960	3800
C10-C28		5000 980	JB 0	650	3800

Surrogate	%Rec	Qualifier	Acceptance Limits
o-Terphenyl	87		49 - 115

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Analytical Data

Client: Washington Closure Hanford

Job Number: 280-20530-1

Sdg Number: J01279

Client Sample ID: J1L8D2

Lab Sample ID: 280-20530-2

Date Sampled: 09/19/2011 0755

Client Matrix: Solid

% Moisture: 0.5

Date Received: 09/21/2011 0930

NWTPH-Dx Northwest - Semi-Volatile Petroleum Products (GC)

Analysis Method:	NWTPH-Dx	Analysis Batch:	280-89688	Instrument ID:	GCS_U2
Prep Method:	3550C	Prep Batch:	280-87627	Lab File ID:	056B0901.D
Dilution:	1.0			Initial Weight/Volume:	32.2 g
Analysis Date:	09/30/2011 2051			Final Weight/Volume:	1000 uL
Prep Date:	09/23/2011 2045			Injection Volume:	1 uL

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
C10-C36		⁵⁰⁰⁰ 1400	JB U	930	3700
C10-C28		⁵⁰⁰⁰ 649	JB U	640	3700
Surrogate		%Rec	Qualifier	Acceptance Limits	
o-Terphenyl		93		49 - 115	

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11/14/13

Analytical Data

Client: Washington Closure Hanford

Job Number: 280-20530-1
Sdg Number: J01279

Client Sample ID: J1L8D3

Lab Sample ID: 280-20530-3

Date Sampled: 09/19/2011 0755

Client Matrix: Solid

% Moisture: 0.6

Date Received: 09/21/2011 0930

NWTPH-Dx Northwest - Semi-Volatile Petroleum Products (GC)

Analysis Method:	NWTPH-Dx	Analysis Batch:	280-89688	Instrument ID:	GCS_U2
Prep Method:	3550C	Prep Batch:	280-87627	Lab File ID:	057B1001.D
Dilution:	1.0			Initial Weight/Volume:	31.7 g
Analysis Date:	09/30/2011 2124			Final Weight/Volume:	1000 uL
Prep Date:	09/23/2011 2045			Injection Volume:	1 uL

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
C10-C36		500 2500	JB U	950	3800
C10-C28		500 600	JB U	650	3800

Surrogate	%Rec	Qualifier	Acceptance Limits
o-Terphenyl	93		49 - 115

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Analytical Data

Client: Washington Closure Hanford

Job Number: 280-20530-1
Sdg Number: J01279

Client Sample ID: J1L8D4

Lab Sample ID: 280-20530-4

Date Sampled: 09/19/2011 0758

Client Matrix: Solid

% Moisture: 0.6

Date Received: 09/21/2011 0930

NWTPH-Dx Northwest - Semi-Volatile Petroleum Products (GC)

Analysis Method:	NWTPH-Dx	Analysis Batch:	280-89688	Instrument ID:	GCS_U2
Prep Method:	3550C	Prep Batch:	280-87627	Lab File ID:	060B1301.D
Dilution:	1.0			Initial Weight/Volume:	31.6 g
Analysis Date:	09/30/2011 2301			Final Weight/Volume:	1000 uL
Prep Date:	09/23/2011 2045			Injection Volume:	1 uL

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
C10-C36		5000 1100	JB U	950	3800
C10-C28		5000 260	JB U	650	3800
Surrogate		%Rec	Qualifier	Acceptance Limits	
o-Terphenyl		87		49 - 115	

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Analytical Data

Client: Washington Closure Hanford

Job Number: 280-20530-1
Sdg Number: J01279

Client Sample ID: J1L8D5

Lab Sample ID: 280-20530-5

Date Sampled: 09/19/2011 0801

Client Matrix: Solid

% Moisture: 0.6

Date Received: 09/21/2011 0930

NWTPH-Dx Northwest - Semi-Volatile Petroleum Products (GC)

Analysis Method:	NWTPH-Dx	Analysis Batch:	280-89688	Instrument ID:	GCS_U2
Prep Method:	3550C	Prep Batch:	280-87827	Lab File ID:	061B1401.D
Dilution:	1.0			Initial Weight/Volume:	31.1 g
Analysis Date:	09/30/2011 2334			Final Weight/Volume:	1000 uL
Prep Date:	09/23/2011 2045			Injection Volume:	1 uL

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
C10-C36		500 ^o 500 ^o 150 ^o	JB U	970	3900
C10-C28		500 ^o 60	JB U	660	3900
Surrogate		%Rec	Qualifier	Acceptance Limits	
o-Terphenyl		106		49 - 115	

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Analytical Data

Client: Washington Closure Hanford

Job Number: 280-20530-1
Sdg Number: J01279

Client Sample ID: J1L8D6

Lab Sample ID: 280-20530-6

Date Sampled: 09/19/2011 0807

Client Matrix: Solid

% Moisture: 1.1

Date Received: 09/21/2011 0930

NWTPH-Dx Northwest - Semi-Volatile Petroleum Products (GC)

Analysis Method:	NWTPH-Dx	Analysis Batch:	280-89688	Instrument ID:	GCS_U2
Prep Method:	3550C	Prep Batch:	280-87627	Lab File ID:	062B1501.D
Dilution:	1.0			Initial Weight/Volume:	30.9 g
Analysis Date:	10/01/2011 0007			Final Weight/Volume:	1000 uL
Prep Date:	09/23/2011 2045			Injection Volume:	1 uL

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
C10-C38		38000	B	980	3900
C10-C28		36000	B	670	3900

Surrogate	%Rec	Qualifier	Acceptance Limits
o-Terphenyl	81		49 - 115

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Analytical Data

Client: Washington Closure Hanford

Job Number: 280-20530-1
Sdg Number: J01279

Client Sample ID: J1L8D7

Lab Sample ID: 280-20530-7

Date Sampled: 09/19/2011 0810

Client Matrix: Solid

% Moisture: 0.8

Date Received: 09/21/2011 0930

NWTPH-Dx Northwest - Semi-Volatile Petroleum Products (GC)

Analysis Method:	NWTPH-Dx	Analysis Batch:	280-89688	Instrument ID:	GCS_U2
Prep Method:	3550C	Prep Batch:	280-87627	Lab File ID:	063B1601.D
Dilution:	1.0			Initial Weight/Volume:	31.4 g
Analysis Date:	10/01/2011 0040			Final Weight/Volume:	1000 uL
Prep Date:	09/23/2011 2045			Injection Volume:	1 uL

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
C10-C36		9000	B	960	3900
C10-C28		3400 5000	J B U	650	3900

Surrogate	%Rec	Qualifier	Acceptance Limits
o-Terphenyl	92		49 - 115

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Analytical Data

Client: Washington Closure Hanford

Job Number: 280-20530-1
Sdg Number: J01279

Client Sample ID: J1L8D8

Lab Sample ID: 280-20530-8

Date Sampled: 09/19/2011 0814

Client Matrix: Solid

% Moisture: 0.4

Date Received: 09/21/2011 0930

NWTPH-Dx Northwest - Semi-Volatile Petroleum Products (GC)

Analysis Method:	NWTPH-Dx	Analysis Batch:	280-89688	Instrument ID:	GCS_U2
Prep Method:	3550C	Prep Batch:	280-87627	Lab File ID:	064B1701.D
Dilution:	1.0			Initial Weight/Volume:	31.3 g
Analysis Date:	10/01/2011 0113			Final Weight/Volume:	1000 uL
Prep Date:	09/23/2011 2045			Injection Volume:	1 uL

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
C10-C36		5000 1100	JB U	960	3900
C10-C28		600 1100	JB U	650	3900
Surrogate		%Rec	Qualifier	Acceptance Limits	
o-Terphenyl		90		49 - 115	

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1/14/13

Analytical Data

Client: Washington Closure Hanford

Job Number: 280-20530-1

Sdg Number: J01279

Client Sample ID: J1L8D9

Lab Sample ID: 280-20530-9

Date Sampled: 09/19/2011 0820

Client Matrix: Solid

% Moisture: 0.9

Date Received: 09/21/2011 0930

NWTPH-Dx Northwest - Semi-Volatile Petroleum Products (GC)

Analysis Method:	NWTPH-Dx	Analysis Batch:	280-89688	Instrument ID:	GCS_U2
Prep Method:	3550C	Prep Batch:	280-87627	Lab File ID:	065B1801.D
Dilution:	1.0			Initial Weight/Volume:	33.0 g
Analysis Date:	10/01/2011 0145			Final Weight/Volume:	1000 uL
Prep Date:	09/23/2011 2045			Injection Volume:	1 uL

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
C10-C36		54000	B	910	3700
C10-C28		53000	B	620	3700

Surrogate	%Rec	Qualifier	Acceptance Limits
o-Terphenyl	81		49 - 115

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1/10/13

Analytical Data

Client: Washington Closure Hanford

Job Number: 280-20530-1

Sdg Number: J01279

Client Sample ID: J1L8F0

Lab Sample ID: 280-20530-10

Date Sampled: 09/19/2011 0825

Client Matrix: Solid

% Moisture: 0.7

Date Received: 09/21/2011 0930

NWTPH-Dx Northwest - Semi-Volatile Petroleum Products (GC)

Analysis Method:	NWTPH-Dx	Analysis Batch:	280-89688	Instrument ID:	GCS_U2
Prep Method:	3550C	Prep Batch:	280-87627	Lab File ID:	068B1901.D
Dilution:	1.0			Initial Weight/Volume:	30.5 g
Analysis Date:	10/01/2011 0218			Final Weight/Volume:	1000 uL
Prep Date:	09/23/2011 2045			Injection Volume:	1 uL

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
C10-C36		8200	B	990	4000
C10-C28		4700	B	670	4000

Surrogate	%Rec	Qualifier	Acceptance Limits
o-Terphenyl	100		49 - 115

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Analytical Data

Client: Washington Closure Hanford

Job Number: 280-20530-1
Sdg Number: J01279

Client Sample ID: J1L8F1

Lab Sample ID: 280-20530-11

Date Sampled: 09/19/2011 0831

Client Matrix: Solid

% Moisture: 0.7

Date Received: 09/21/2011 0930

NWTPH-Dx Northwest - Semi-Volatile Petroleum Products (GC)

Analysis Method:	NWTPH-Dx	Analysis Batch:	280-89688	Instrument ID:	GCS_U2
Prep Method:	3550C	Prep Batch:	280-87627	Lab File ID:	067B2001.D
Dilution:	1.0			Initial Weight/Volume:	30.5 g
Analysis Date:	10/01/2011 0252			Final Weight/Volume:	1000 uL
Prep Date:	09/23/2011 2045			Injection Volume:	1 uL

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
C10-C36		7300	B	990	4000
C10-C28		5000 3800 <i>for 1/24h</i>	J B U	670	4000
Surrogate		%Rec	Qualifier	Acceptance Limits	
o-Terphenyl		99		49 - 115	

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Analytical Data

Client: Washington Closure Hanford

Job Number: 280-20530-1
Sdg Number: J01279

Client Sample ID: J1L8F2

Lab Sample ID: 280-20530-12

Date Sampled: 09/19/2011 0833

Client Matrix: Solid

% Moisture: 0.4

Date Received: 09/21/2011 0930

NWTPH-Dx Northwest - Semi-Volatile Petroleum Products (GC)

Analysis Method:	NWTPH-Dx	Analysis Batch:	280-89688	Instrument ID:	GCS_U2
Prep Method:	3550C	Prep Batch:	280-87627	Lab File ID:	068B2101.D
Dilution:	1.0			Initial Weight/Volume:	30.6 g
Analysis Date:	10/01/2011 0328			Final Weight/Volume:	1000 uL
Prep Date:	09/23/2011 2045			Injection Volume:	1 uL

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
C10-C36		1500 5000	JB 8	980	3900
C10-C28		1500 5000	JB 8	670	3900
Surrogate		%Rec	Qualifier	Acceptance Limits	
o-Terphenyl		89		49 - 115	

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Analytical Data

Client: Washington Closure Hanford

Job Number: 280-20530-1
Sdg Number: J01279

Client Sample ID: J1L8F3

Lab Sample ID: 280-20530-13

Date Sampled: 09/19/2011 0838

Client Matrix: Solid

% Moisture: 0.4

Date Received: 09/21/2011 0930

NWTPH-Dx Northwest - Semi-Volatile Petroleum Products (GC)

Analysis Method:	NWTPH-Dx	Analysis Batch:	280-89688	Instrument ID:	GCS_U2
Prep Method:	3550C	Prep Batch:	280-87627	Lab File ID:	069B2201.D
Dilution:	1.0			Initial Weight/Volume:	31.0 g
Analysis Date:	10/01/2011 0400			Final Weight/Volume:	1000 uL
Prep Date:	09/23/2011 2045			Injection Volume:	1 uL

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
C10-C36		1200 5000	JB U	970	3900
C10-C28		1100 5000	JB U	660	3900
Surrogate		%Rec	Qualifier	Acceptance Limits	
o-Terphenyl		88		49 - 115	

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Analytical Data

Client: Washington Closure Hanford

Job Number: 280-20530-1
Sdg Number: J01279

Client Sample ID: J1L8F4

Lab Sample ID: 280-20530-14

Date Sampled: 09/19/2011 0841

Client Matrix: Solid

% Moisture: 0.7

Date Received: 09/21/2011 0930

NWTPH-Dx Northwest - Semi-Volatile Petroleum Products (GC)

Analysis Method:	NWTPH-Dx	Analysis Batch:	280-89688	Instrument ID:	GCS_U2
Prep Method:	3550C	Prep Batch:	280-87627	Lab File ID:	070B2301.D
Dilution:	1.0			Initial Weight/Volume:	31.5 g
Analysis Date:	10/01/2011 0434			Final Weight/Volume:	1000 uL
Prep Date:	09/23/2011 2045			Injection Volume:	1 uL

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
C10-C36		5000 1000	JB U	960	3800
C10-C28		5000 1000	JB U	650	3800
Surrogate		%Rec	Qualifier	Acceptance Limits	
o-Terphenyl		94		49 - 115	

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Appendix 4

Laboratory Narrative and Chain-of-Custody Documentation

CASE NARRATIVE

Client: Washington Closure Hanford

Project: WASHINGTON CLOSURE HANFORD

Report Number: 280-20530-1

SDG #: J01279

SAF#: RC-148

Date SDG Closed: September 21, 2011

Data Deliverable: 21 Day / Summary

<u>CLIENT ID</u>	<u>LAB ID</u>	<u>ANALYSES REQUESTED</u>	<u>ANALYSES PERFORMED</u>
J1L8D1	280-20530-1	WTPH-D+/8082	NWTPH-Dx/8082
J1L8D2	280-20530-2	WTPH-D+/8082	NWTPH-Dx/8082
J1L8D3	280-20530-3	WTPH-D+/8082	NWTPH-Dx/8082
J1L8D4	280-20530-4	WTPH-D+/8082	NWTPH-Dx/8082
J1L8D5	280-20530-5	WTPH-D+/8082	NWTPH-Dx/8082
J1L8D6	280-20530-6	WTPH-D+/8082	NWTPH-Dx/8082
J1L8D7	280-20530-7	WTPH-D+/8082	NWTPH-Dx/8082
J1L8D8	280-20530-8	WTPH-D+/8082	NWTPH-Dx/8082
J1L8D9	280-20530-9	WTPH-D+/8082	NWTPH-Dx/8082
J1L8F0	280-20530-10	WTPH-D+/8082	NWTPH-Dx/8082
J1L8F1	280-20530-11	WTPH-D+/8082	NWTPH-Dx/8082
J1L8F2	280-20530-12	WTPH-D+/8082	NWTPH-Dx/8082
J1L8F3	280-20530-13	WTPH-D+/8082	NWTPH-Dx/8082
J1L8F4	280-20530-14	WTPH-D+/8082	NWTPH-Dx/8082

I certify that this data package is in compliance with the SOW, both technically and for completeness, for other than the conditions detailed in this Case Narrative. Release of the data contained in this hard copy data package has been authorized by the Laboratory Manager or a designee, as verified by the signature on the Report Cover.

With exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. All laboratory quality control samples analyzed in conjunction with the samples in this project were within established control limits, with any exceptions noted. Calculations are performed before rounding to avoid round-off errors in calculated results.

This report includes reporting limits (RLs) less than TestAmerica Denver's practical quantitation limits. These reporting limits are being used specifically at the client's request to meet the needs of this project. Please note that data are not normally reported to these levels without qualification, since they are inherently less reliable and potentially less defensible than required by the current NELAC standards.

The results, RLs and MDLs included in this report have been adjusted for dry weight, as appropriate.

All holding times were met and proper preservation noted for the methods performed on these samples, unless otherwise detailed in the individual sections below.

RECEIPT

The samples were received on 9/21/2011; the samples arrived in good condition, properly preserved and on ice. The temperature of the cooler at receipt was 3.1 C.

GC SEMIVOLATILES - SW848 8082 - PCBs

The laboratory noted that a Sulfuric Acid clean-up was performed on the samples presented in this report to reduce matrix interferences.

Each sample is analyzed to achieve the lowest possible reporting limits within the constraints of the method. In some cases, due to high constituent concentration, samples had to be analyzed at dilutions, and the associated results have been flagged with a "D". The reporting limits have been adjusted relative to the dilutions required.

In some cases, sample surrogate recoveries have been "D" flagged, as the recoveries obtained are calculated from diluted samples and are not considered reliable.

Spike compound recoveries, RPD data and surrogate recoveries have been "D" flagged in the MS/MSD performed on sample J1L8D7, because the samples were diluted beyond the ability to reliably quantitate recoveries. The acceptable LCS analysis data indicated that the analytical system was operating within control.

No other anomalies were encountered.

GC SEMIVOLATILES - NWTPH-Dx - DRO

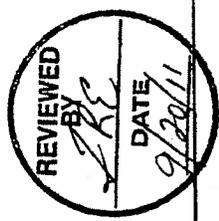
Low levels of C10-C36 and C10-C28 are present in the method blank associated with batch 280-87627. Because the concentrations in the method blank are not present at levels greater than half the reporting limit, corrective action is deemed unnecessary. Associated sample results present above the MDL and/or RL have been flagged with a "B".

No other anomalies were encountered.

3.1st A 9/19/11

Washington Closure Hanford		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST				RC-148-036	Page 1 of 3																																									
Collector Q. Stow	Project Designation 300 Area Field Remediation - Soil Full Protocol	Company Contact Joan Kessner	Telephone No. 509-375-4688	Protect Coordinator KESSNER, JH	Price Code 8L	Data Turnaround 21 Days																																										
Ice Chest No. AFS-04-123	Field Logbook No. EL-1395-18	Sampling Location 300-274 Phase 2-Verification	COA R302742000	Method of Shipment Hand Deliver/Government Vehicle FedEx	SAF No. RC-148																																											
Shipped To TestAmerica Incorporated	Offsite Property No. A100881	Field Logbook No. EL-1395-18	COA R302742000	Method of Shipment Hand Deliver/Government Vehicle FedEx	Bill of Lading/Air Bill No. See OSPC																																											
<p>POSSIBLE SAMPLE HAZARDS/REMARKS Retention Radioactive < DOT Limit A4 9-19-11 Special Handling and/or Storage Cool 4 degrees C</p>																																																
Sample No.	Matrix *	Sample Date	Sample Time	Preservation	Cool AC	None																																										
J1L8D1	SOIL	9/19/11	0734	None	AG	GP																																										
J1L8D2	SOIL	9/19/11	0755	None	AG	GP																																										
J1L8D3	SOIL	9/19/11	0755	None	AG	GP																																										
J1L8D4	SOIL	9/19/11	0758	None	AG	GP																																										
J1L8D5	SOIL	9/19/11	0801	None	AG	GP																																										
<p>SAMPLE ANALYSIS</p> <table border="1"> <thead> <tr> <th>Sample No.</th> <th>Matrix *</th> <th>Sample Date</th> <th>Sample Time</th> <th>Preservation</th> <th>Cool AC</th> <th>None</th> </tr> </thead> <tbody> <tr> <td>J1L8D1</td> <td>SOIL</td> <td>9/19/11</td> <td>0734</td> <td>None</td> <td>AG</td> <td>GP</td> </tr> <tr> <td>J1L8D2</td> <td>SOIL</td> <td>9/19/11</td> <td>0755</td> <td>None</td> <td>AG</td> <td>GP</td> </tr> <tr> <td>J1L8D3</td> <td>SOIL</td> <td>9/19/11</td> <td>0755</td> <td>None</td> <td>AG</td> <td>GP</td> </tr> <tr> <td>J1L8D4</td> <td>SOIL</td> <td>9/19/11</td> <td>0758</td> <td>None</td> <td>AG</td> <td>GP</td> </tr> <tr> <td>J1L8D5</td> <td>SOIL</td> <td>9/19/11</td> <td>0801</td> <td>None</td> <td>AG</td> <td>GP</td> </tr> </tbody> </table>							Sample No.	Matrix *	Sample Date	Sample Time	Preservation	Cool AC	None	J1L8D1	SOIL	9/19/11	0734	None	AG	GP	J1L8D2	SOIL	9/19/11	0755	None	AG	GP	J1L8D3	SOIL	9/19/11	0755	None	AG	GP	J1L8D4	SOIL	9/19/11	0758	None	AG	GP	J1L8D5	SOIL	9/19/11	0801	None	AG	GP
Sample No.	Matrix *	Sample Date	Sample Time	Preservation	Cool AC	None																																										
J1L8D1	SOIL	9/19/11	0734	None	AG	GP																																										
J1L8D2	SOIL	9/19/11	0755	None	AG	GP																																										
J1L8D3	SOIL	9/19/11	0755	None	AG	GP																																										
J1L8D4	SOIL	9/19/11	0758	None	AG	GP																																										
J1L8D5	SOIL	9/19/11	0801	None	AG	GP																																										
<p>SPECIAL INSTRUCTIONS</p> <p>PCBs - 882 TPH-Diesel Range - WTR/D+ RCF OEA Shipping Source 11/1/11 RCF</p>																																																
<p>CHAIN OF POSSESSION</p> <table border="1"> <thead> <tr> <th>Received By/Removed From</th> <th>Date/Time</th> <th>Received By/Stored In</th> <th>Date/Time</th> </tr> </thead> <tbody> <tr> <td>DAVID BECKER</td> <td>9/19/11 0930</td> <td>DAVID BECKER</td> <td>9/19/11 0930</td> </tr> <tr> <td>DAVID BECKER</td> <td>9/19/11 1405</td> <td>DAVID BECKER</td> <td>9/19/11 1405</td> </tr> <tr> <td>DAVID BECKER</td> <td>9/20/11 1010</td> <td>DAVID BECKER</td> <td>9/20/11 1010</td> </tr> </tbody> </table>							Received By/Removed From	Date/Time	Received By/Stored In	Date/Time	DAVID BECKER	9/19/11 0930	DAVID BECKER	9/19/11 0930	DAVID BECKER	9/19/11 1405	DAVID BECKER	9/19/11 1405	DAVID BECKER	9/20/11 1010	DAVID BECKER	9/20/11 1010																										
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DAVID BECKER	9/19/11 1405	DAVID BECKER	9/19/11 1405																																													
DAVID BECKER	9/20/11 1010	DAVID BECKER	9/20/11 1010																																													
<p>LABORATORY SECTION</p> <p>Received By Disposal Method</p>																																																
<p>FINAL SAMPLE DISPOSITION</p> <p>Disposed By Date/Time</p>																																																

506
J618779



Washington Closure Hanford
 Collector: Q. Stowe
 Project Designation: 300 Area Field Remediation - Soil Fill Protocol
 Ice Chest No. **AFS-04-123**
 Shipped To: TestAmerica Incorporated, Richards Building
 POSSIBLE SAMPLE HAZARDS/REMARKS: Potential-Radioactive < DOT Limit A3 9-19-11
 Special Handling and/or Storage: Cool 4 degrees C

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST
 Company Contact: Joan Kessner
 Telephone No.: 509-375-4688
 Sampling Location: 300-274 Phase 2-Verification
 Field Logbook No.: EL-1395-18
 Offsite Property No.: **A100881**

Project Coordinator: KESSNER, JH
 Price Code: 8L
 Data Turnaround: **21 Days**
 SAF No.: RC-148
 Method of Shipment: Hand Deliver/Government Vehicle/ FedEx
 Bill of Lading/Air Bill No.: **see OSPC**

Sample No.	Matrix *	Sample Date	Sample Time	Preservation	Cool AC	Cool AC	None
JTL8D6	SOIL	9/19/11	0807		AG	AG	
JTL8D7	SOIL	9/19/11	0810		1		
JTL8D8	SOIL	9/19/11	0814		120mL		
JTL8D9	SOIL	9/19/11	0820				
JTL8F0	SOIL	9/19/11	0825				

SAMPLE ANALYSIS

CHAIN OF POSSESSION

Relinquished By/Removed From: Davey Stowe	Date/Time: 9/19/11 0930	Received By/Stored In: Davey Stowe	Date/Time: 9/19/11 0930
Relinquished By/Removed From: Davey Stowe	Date/Time: 9/19/11 1405	Received By/Stored In: Davey Stowe	Date/Time: 9/19/11 1405
Relinquished By/Removed From: Davey Stowe	Date/Time: 9/20/11 1010	Received By/Stored In: Davey Stowe	Date/Time: 9/20/11 1010

SPECIAL INSTRUCTIONS

RCF
 30415

RCF GEA Shipping Jerron 11/6/10

FCB-802

TPH-Diesel Range - WTPH-D+

LABORATORY SECTION

Received By: [Signature]

Disposal Method: [Blank]

Disposed By: [Blank]

Date/Time: [Blank]



SD6
 50279

Washington Closure Hanford
 Collector: Q. Stowe
 Project Designation: 300 Area Field Remediation - Soil Pull Protocol
 Ice Chest No. **AFS-04-123**
 Shipped To: TestAmerica Incorporated, 9101 W. Hampden, DENVER, CO 80231
 POSSIBLE SAMPLE HAZARD/REMARKS: Potential Radioactive < DOT Limit A7 9-19-11
 Special Handling and/or Storage: Cool 4 degrees C

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST
 Company Contact: Joan Kessner, Telephone No. 509-375-4688
 Project Coordinator: KESSNER, JH
 Project No.: RC-148-036
 Price Code: 8L
 Data Turnaround: 21 Days
 Sampling Location: 300-274 Phase 2-Verification
 Field Notebook No.: EL-1395-18
 COA: R302742000
 Offsite Property No.: **A100 881**
 Method of Shipment: Hand Deliver/Government Vehicle/FedEx
 Bill of Lading/Air Bill No.: **See OSCP**

Sample No.	Matrix *	Sample Date	Sample Time	Cool 4C	Cool 4C	None	Preservation	
							Type of Container	No. of Container(s)
J1L8F1	SOIL	9/19/11	0831	8G	120mL	60g	1	1
J1L8F2	SOIL	9/19/11	0833	8G	120mL	60g	1	1
J1L8F3	SOIL	9/19/11	0838	8G	120mL	60g	1	1
J1L8F4	SOIL	9/19/11	0841	8G	120mL	60g	1	1

SAMPLE ANALYSIS
 30
 SPECIAL INSTRUCTIONS: RCF
 30415

CHAIN OF POSSESSION
 Received By/Removed From: [Signature] Date/Time: 9/19/11 0930
 Returned By/Removed From: [Signature] Date/Time: 9/19/11 1405
 Received By/Stored In: [Signature] Date/Time: 9/19/11 1405
 Returned By/Stored In: [Signature] Date/Time: 9/19/11 0930

REVIEWED BY
 [Signature] DATE: 9/20/11
 506 / 50079

LABORATORY SECTION
 Received By: [Signature] Date/Time: [Blank]
FINAL SAMPLE DISPOSITION
 Disposal Method: [Blank] Disposed By: [Blank] Date/Time: [Blank]

Appendix 5
Data Validation Supporting Documentation

GENERAL ORGANIC DATA VALIDATION CHECKLIST

VALIDATION LEVEL:	A	B	C	D	E
PROJECT:	300-274		DATA PACKAGE: J01279		
VALIDATOR:	ELR	LAB:	TAL	DATE: 1/13/13	
			SDG: J01279		
ANALYSES PERFORMED					
8015	8021	8141	8151	8315	
		WTPH-HCID	WTPH-G	WTPH-D	
SAMPLES/MATRIX:					
J1L8D1 J1L8D2 J1L8D3 J1L8D4 J1L8D5					
J1L8D6 J1L8D7 J1L8D9 J1L8F0 J1L8F1					
J1L8F2 J1L8F3 J1L8F4					
					Soil

1. DATA PACKAGE COMPLETENESS AND CASE NARRATIVE

Technical verification documentation present? Yes **No** N/A

Comments: _____

2. INSTRUMENT TUNING AND CALIBRATION (Levels D and E)

Initial calibrations acceptable? Yes **No** N/A
 Continuing calibrations acceptable? Yes **No** N/A
 Standards traceable? Yes **No** N/A
 Standards expired? Yes **No** N/A
 Calculation check acceptable? Yes **No** N/A

Comments: _____

GENERAL ORGANIC DATA VALIDATION CHECKLIST

3. BLANKS (Levels B, C, D, and E)

Calibration blanks analyzed? (Levels D, E) Yes No N/A
 Calibration blank results acceptable? (Levels D, E) Yes No N/A
 Laboratory blanks analyzed? Yes No N/A
 Laboratory blank results acceptable? Yes No N/A
 Field/trip blanks analyzed? (Levels C, D, E) Yes No N/A
 Field/trip blank results acceptable? (Levels C, D, E) Yes No N/A
 Transcription/calculation errors? (Levels D, E) Yes No N/A

Comments:

WB-36-U - all (except D6 D7 D9 F1)^{F0}
25-U - all (except D6 D9 F0)

FB - or

4. ACCURACY (Levels C, D, and E)

Surrogates/system monitoring compounds analyzed? Yes No N/A
 Surrogate/system monitoring compound recoveries acceptable? Yes No N/A
 Surrogates traceable? (Levels D, E) Yes No N/A
 Surrogates expired? (Levels D, E) Yes No N/A
 MS/MSD samples analyzed? Yes No N/A
 MS/MSD results acceptable? Yes No N/A
 MS/MSD standards NIST traceable? (Levels D, E) Yes No N/A
 MS/MSD standards expired? (Levels D, E) Yes No N/A
 LCS/BSS samples analyzed? Yes No N/A
 LCS/BSS results acceptable? Yes No N/A
 Standards traceable? (Levels D, E) Yes No N/A
 Standards expired? (Levels D, E) Yes No N/A
 Transcription/calculation errors? (Levels D, E) Yes No N/A
 Performance audit sample(s) analyzed? Yes No N/A
 Performance audit sample results acceptable? Yes No N/A

Comments:

NO PAS

GENERAL ORGANIC DATA VALIDATION CHECKLIST

5. PRECISION (Levels C, D, and E)

- Duplicate RPD values acceptable? Yes No N/A
- Duplicate results acceptable? Yes No N/A
- MS/MSD standards NIST traceable? (Levels D, E) Yes No N/A
- MS/MSD standards expired? (Levels D, E) Yes No N/A
- Field duplicate RPD values acceptable? Yes No N/A
- Field split RPD values acceptable? Yes No N/A
- Transcription/calculation errors? (Levels D, E) Yes No N/A

Comments: _____

_____ P2/P3 _____

6. HOLDING TIMES (all levels)

- Samples properly preserved? Yes No N/A
- Sample holding times acceptable? Yes No N/A

Comments: _____

GENERAL ORGANIC DATA VALIDATION CHECKLIST

8. COMPOUND IDENTIFICATION, QUANTITATION, AND DETECTION LIMITS (all levels)

Results reported for all requested analyses? Yes No N/A
Results supported in the raw data? (Levels D, E)..... Yes No N/A
Samples properly prepared? (Levels D, E)..... Yes No N/A
Detection limits meet RDL? Yes No N/A
Transcription/calculation errors? (Levels D, E)..... Yes No N/A

Comments: _____

9. SAMPLE CLEANUP (Levels D and E)

Fluoridil ® (or other absorbant) cleanup performed? Yes No N/A
Lot check performed? Yes No N/A
Check recoveries acceptable? Yes No N/A
Check materials traceable? Yes No N/A
Check materials Expired? Yes No N/A
Analytical batch QC given similar cleanup? Yes No N/A
Transcription/Calculation Errors? Yes No N/A

Comments: _____

Appendix 6

Additional Documentation Requested by Client

Quality Control Results

Client: Washington Closure Hanford

Job Number: 280-20530-1
Sdg Number: J01279

Method Blank - Batch: 280-87627

**Method: NWTPH-Dx
Preparation: 3550C**

Lab Sample ID: MB 280-87627/1-A
Client Matrix: Solid
Dilution: 1.0
Analysis Date: 09/30/2011 1912
Prep Date: 09/23/2011 2045
Leach Date: N/A

Analysis Batch: 280-89688
Prep Batch: 280-87627
Leach Batch: N/A
Units: ug/Kg

Instrument ID: GCS_U2
Lab File ID: 053B0601.D
Initial Weight/Volume: 32.3 g
Final Weight/Volume: 1000 uL
Injection Volume: 1 uL

Analyte	Result	Qual	MDL	RL
C10-C36	1120	J	930	3700
C10-C28	855	J	630	3700

Surrogate	% Rec	Acceptance Limits
o-Terphenyl	108	49 - 115

Lab Control Sample/

Lab Control Sample Duplicate Recovery Report - Batch: 280-87627

**Method: NWTPH-Dx
Preparation: 3550C**

LCS Lab Sample ID: LCS 280-87627/2-A
Client Matrix: Solid
Dilution: 1.0
Analysis Date: 09/30/2011 1945
Prep Date: 09/23/2011 2045
Leach Date: N/A

Analysis Batch: 280-89688
Prep Batch: 280-87627
Leach Batch: N/A
Units: ug/Kg

Instrument ID: GCS_U2
Lab File ID: 054B0701.D
Initial Weight/Volume: 31.8 g
Final Weight/Volume: 1000 uL
Injection Volume: 1 uL

LCSD Lab Sample ID: LCSD 280-87627/19-A
Client Matrix: Solid
Dilution: 1.0
Analysis Date: 10/01/2011 0508
Prep Date: 09/23/2011 2045
Leach Date: N/A

Analysis Batch: 280-89688
Prep Batch: 280-87627
Leach Batch: N/A
Units: ug/Kg

Instrument ID: GCS_U2
Lab File ID: 071B2401.D
Initial Weight/Volume: 31.6 g
Final Weight/Volume: 1000 uL
Injection Volume: 1 uL

Analyte	% Rec.		Limit	RPD	RPD Limit	LCS Qual	LCSD Qual
	LCS	LCSD					
C10-C36	94	92	57 - 115	2	23		
C10-C28	94	92	53 - 115	2	23		

Surrogate	LCS % Rec	LCSD % Rec	Acceptance Limits
o-Terphenyl	83	84	49 - 115

Quality Control Results

Client: Washington Closure Hanford

Job Number: 280-20530-1
Sdg Number: J01279

**Matrix Spike/
Matrix Spike Duplicate Recovery Report - Batch: 280-87627**

**Method: NWTPH-Dx
Preparation: 3550C**

MS Lab Sample ID: 280-20530-3
Client Matrix: Solid
Dilution: 1.0
Analysis Date: 09/30/2011 2156
Prep Date: 09/23/2011 2045
Leach Date: N/A

Analysis Batch: 280-89688
Prep Batch: 280-87627
Leach Batch: N/A

Instrument ID: GCS_U2
Lab File ID: 058B1101.D
Initial Weight/Volume: 30.1 g
Final Weight/Volume: 1000 uL
Injection Volume: 1 uL

MSD Lab Sample ID: 280-20530-3
Client Matrix: Solid
Dilution: 1.0
Analysis Date: 09/30/2011 2229
Prep Date: 09/23/2011 2045
Leach Date: N/A

Analysis Batch: 280-89688
Prep Batch: 280-87627
Leach Batch: N/A

Instrument ID: GCS_U2
Lab File ID: 059B1201.D
Initial Weight/Volume: 30.6 g
Final Weight/Volume: 1000 uL
Injection Volume: 1 uL

Analyte	% Rec.		Limit	RPD	RPD Limit	MS Qual	MSD Qual
	MS	MSD					
C10-C36	92	90	57 - 115	4	23		
C10-C28	92	90	56 - 115	4	23		
Surrogate	MS % Rec		MSD % Rec	Acceptance Limits			
o-Terphenyl	93		93	49 - 115			

Date: 14 January 2013
 To: Washington Closure Hanford Inc. (technical representative)
 From: ELR Consulting
 Project: 300 Area D4 Waste Sites – Soil Full Protocol – Waste Site 300-274
 Subject: PCB - Data Package No. J01279-TAL

INTRODUCTION

This memo presents the results of data validation on Data Package No. J01279 prepared by TestAmerica Laboratory Inc. (TAL). A list of samples validated along with the analyses reported and the method of analysis is provided in the following table.

Sample ID	Sample Date	Media	Validation	Analyte
J1L8D1	9/19/11	Soil	C	See note 1
J1L8D2	9/19/11	Soil	C	See note 1
J1L8D3	9/19/11	Soil	C	See note 1
J1L8D4	9/19/11	Soil	C	See note 1
J1L8D5	9/19/11	Soil	C	See note 1
J1L8D6	9/19/11	Soil	C	See note 1
J1L8D7	9/19/11	Soil	C	See note 1
J1L8D8	9/19/11	Soil	C	See note 1
J1L8D9	9/19/11	Soil	C	See note 1
J1L8F0	9/19/11	Soil	C	See note 1
J1L8F1	9/19/11	Soil	C	See note 1
J1L8F2	9/19/11	Soil	C	See note 1
J1L8F3	9/19/11	Soil	C	See note 1
J1L8F4	9/19/11	Soil	C	See note 1

1 – PCBs by 8082.

Data validation was conducted in accordance with the Washington Closure Hanford (WCH) validation statement of work and the 300 Area Remedial Action Sampling and Analysis Plan (DOE/RL-2001-48, Rev. 3). Appendices 1 through 6 provide the following information as indicated below:

- Appendix 1. Glossary of Data Reporting Qualifiers
- Appendix 2. Summary of Data Qualification
- Appendix 3. Annotated Laboratory Reports
- Appendix 4. Laboratory Narrative and Chain-of-Custody Documentation
- Appendix 5. Data Validation Supporting Documentation
- Appendix 6. Additional Data Requested by Client

DATA QUALITY OBJECTIVES

· **Holding Times**

Holding times are not applicable for PCB analysis.

· **Method Blank**

Method blank analyses are performed to determine the extent of laboratory contamination introduced through sampling, sample preparation or analysis. At least one method blank analysis must be conducted for every 20 samples. Method blanks should not contain target compounds at a concentration greater than required quantitation limit (RQL). If target compounds are present, sample results less than five times the blank concentration are qualified as undetected and flagged "U". If the sample result is less than five times the blank concentration and less than RQL, the result is qualified as undetected and elevated to the RQL.

All method blank results were acceptable.

Field Blanks

One field blank (J1L8D1) was submitted for analysis. No analytes were detected in the field blank.

· **Accuracy**

Matrix Spike & Laboratory Control Sample

Matrix spike (MS) and laboratory control sample (LCS) analyses are used to assess the analytical accuracy of the reported data. The matrix spike is used to assess the effect of the matrix on the ability to accurately quantify sample concentrations. Recoveries must fall within the range of 50% to 150%. If spike recoveries are outside control limits, detected sample results less than five times the spike concentration are qualified as estimates and flagged "J". Non-detected sample results with spike recoveries outside control limits are qualified as estimates and flagged "UJ". Sample results greater than five times the spike concentration require no qualification.

Due to matrix spike (1092% & 1116%) and matrix spike duplicate (762% & 802%) recoveries outside QC limits, all detected PCB results were qualified as estimates and flagged "J".

All other accuracy results were acceptable.

Surrogate Recovery

The analysis of surrogate compounds provides a measure of performance for individual samples. Matrix-specific surrogate compound recovery control windows have been established by the laboratory. When a surrogate compound recovery is outside the control window, all positively identified target compounds associated with the unacceptable surrogate recoveries are qualified as estimates and flagged "J". Non-detected compounds with surrogate recoveries less than the lower control limit are qualified as having an estimated detection limit and flagged "UJ". Non-detected compounds with surrogate recoveries above the upper control limit require no qualification.

Due to surrogate recoveries outside QC limits, all PCB results in samples J1L8D6, J1L8D9, J1L8F0 and J1L8F1 were qualified as estimates and flagged "J".

All other surrogate results were acceptable.

Precision

Matrix Spike/Matrix Spike Duplicate Samples

Matrix spike/matrix spike duplicate results provide matrix-specific information on the precision of the method for specific target compound classes. Precision is expressed as the relative percent difference (RPD) between the recoveries of duplicate matrix spike analyses performed on a sample. For soil samples, results must be within RPD limits of plus/minus 30%. If RPD values are out of specification and the sample concentration is less than five times the spike concentration, all associated detected sample results are qualified as estimates and flagged "J". If RPD values are out of specification and the sample concentration is greater than five times the spike concentration, no qualification is required.

All duplicate results were acceptable.

Field Duplicate Samples

One set of field duplicates (J1L8D2/J1L8D3) were submitted for analysis. Field duplicates are compared using the same criteria as for laboratory duplicates. All field duplicate results were acceptable.

Analytical Detection Levels

Reported analytical detection levels are compared against the 300 Area RQLs to ensure that laboratory detection levels meet the required criteria. All results met the RQL.

Completeness

Data Package No. J01279 was submitted for validation and verified for completeness. Completeness is based on the percentage of data determined to be valid (i.e., not rejected). The completion percentage was 100%.

MAJOR DEFICIENCIES

None found.

MINOR DEFICIENCIES

The following minor deficiencies were noted:

- Due to matrix spike (1092% & 1116%) and matrix spike duplicate (762% & 802%) recoveries outside QC limits, all detected PCB results were qualified as estimates and flagged "J".
- Due to surrogate recoveries outside QC limits, all PCB results in samples J1L8D6, J1L8D9, J1L8F0 and J1L8F1 were qualified as estimates and flagged "J".

Data flagged "J" indicates that the associated concentration is an estimate, but under the WCH statement of work, the data may be usable for decision-making purposes. All other validated results are considered accurate within the standard error associated with the methods.

REFERENCES

Washington Closure Hanford Contract #S00W307A00 (March 2008), *Data Validation Services*, March 2008.

DOE/RL-2001-48, Rev. 3, *300 Area Remedial Action Sampling and Analysis Plan*, U.S. Department of Energy, May 2004.

Appendix 1
Glossary of Data Reporting Qualifiers

Qualifiers which may be applied by data validators in compliance with the procedures herein are as follows:

- U - Indicates the compound or analyte was analyzed for and not detected in the sample. The value reported is the sample quantitation limit corrected for sample dilution and moisture content by the laboratory.
- UJ - Indicates the compound or analyte was analyzed for and not detected in the sample. Due to a minor QC deficiency identified during the data validation, the associated quantitation limit is an estimate.
- J - Indicates the compound or analyte was analyzed for and detected. Due to a minor QC deficiency identified during the data validation, the associated quantitation limit is an estimate.
- R - Indicates the compound or analyte was analyzed for, detected, and due to an identified major QC deficiency, the data are unusable.
- UR - Indicates the compound or analyte was analyzed for and not detected in the sample. Additionally, the data is unusable due to an identified major QC deficiency.
- NJ - Indicates presumptive evidence of a compound at an estimated value. The data may not be valid for some specific applications (i.e., usable for decision-making purposes).
- N - Indicates presumptive evidence of a compound. The data may not be valid for some specific applications (i.e., usable for decision-making purposes).

Appendix 2
Summary of Data Qualification

PCB DATA QUALIFICATION SUMMARY*

SDG: J01279	REVIEWER: ELR	Project: 300-274	PAGE <u>1</u> OF <u>1</u>
COMPOUND	QUALIFIER	SAMPLES AFFECTED	REASON
All detected analytes	J	All	MS & MSD recovery
All	J	J1L8D6, J1L8D9 J1L8F0, J1L8F1	Surrogate recovery

* - The Qualified Data Summary Table includes laboratory applied "U" qualifiers not specifically identified here. The laboratory applied "U" qualifiers are included to minimize misinterpretation of results contained in the table.

Appendix 3
Annotated Laboratory Reports

Analytical Data

Client: Washington Closure Hanford

Job Number: 280-20530-1
Sdg Number: J01279

Client Sample ID: J1L8D1

Lab Sample ID: 280-20530-1

Date Sampled: 09/19/2011 0734

Client Matrix: Solid

% Moisture: 1.0

Date Received: 09/21/2011 0930

8082 Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analysis Method: 8082	Analysis Batch: 280-89350	Instrument ID: GCS_W
Prep Method: 3550C	Prep Batch: 280-87218	Initial Weight/Volume: 32.0 g
Dilution: 1.0		Final Weight/Volume: 5000 uL
Analysis Date: 10/04/2011 1609		Injection Volume: 1 uL
Prep Date: 09/21/2011 2037		Result Type: PRIMARY

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
Aroclor 1016		2.6	U	2.6	9.5
Aroclor 1221		7.6	U	7.6	16
Aroclor 1232		1.9	U	1.9	9.5
Aroclor 1242		4.4	U	4.4	9.5
Aroclor 1248		4.4	U	4.4	9.5
Aroclor 1254		2.5	U	2.5	9.5
Aroclor 1260		2.5	U	2.5	9.5

Surrogate	%Rec	Qualifier	Acceptance Limits
Decachlorobiphenyl	115		59 - 130
Tetrachloro-m-xylene	108		53 - 128

Handwritten signature and date: 10/4/11

Analytical Data

Client: Washington Closure Hanford

Job Number: 280-20530-1
Sdg Number: J01279

Client Sample ID: J1L8D2

Lab Sample ID: 280-20530-2

Date Sampled: 09/19/2011 0755

Client Matrix: Solid

% Moisture: 0.5

Date Received: 09/21/2011 0930

8082 Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analysis Method:	8082	Analysis Batch:	280-89350	Instrument ID:	GCS_W
Prep Method:	3550C	Prep Batch:	280-87218	Initial Weight/Volume:	30.1 g
Dilution:	1.0			Final Weight/Volume:	5000 uL
Analysis Date:	10/04/2011 1641			Injection Volume:	1 uL
Prep Date:	09/21/2011 2037			Result Type:	PRIMARY

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
Aroclor 1016		2.8	U	2.8	10
Aroclor 1221		8.0	U	8.0	17
Aroclor 1232		2.0	U	2.0	10
Aroclor 1242		4.7	U	4.7	10
Aroclor 1248		4.7	U	4.7	10
Aroclor 1254		2.6	U	2.6	10
Aroclor 1260		2.6	U	2.6	10

Surrogate	%Rec	Qualifier	Acceptance Limits
Decachlorobiphenyl	113		59 - 130
Tetrachloro-m-xylene	101		53 - 128

✓
L/14/113

Analytical Data

Client: Washington Closure Hanford

Job Number: 280-20530-1

Sdg Number: J01279

Client Sample ID: J1L8D3

Lab Sample ID: 280-20530-3

Date Sampled: 09/19/2011 0755

Client Matrix: Solid

% Moisture: 0.6

Date Received: 09/21/2011 0930

8082 Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analysis Method:	8082	Analysis Batch:	280-89350	Instrument ID:	GCS_W
Prep Method:	3550C	Prep Batch:	280-87218	Initial Weight/Volume:	32.4 g
Dilution:	1.0			Final Weight/Volume:	5000 uL
Analysis Date:	10/04/2011 1713			Injection Volume:	1 uL
Prep Date:	09/21/2011 2037			Result Type:	PRIMARY

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
Aroclor 1016		2.6	U	2.6	9.3
Aroclor 1221		7.5	U	7.5	15
Aroclor 1232		1.9	U	1.9	9.3
Aroclor 1242		4.3	U	4.3	9.3
Aroclor 1248		4.3	U	4.3	9.3
Aroclor 1254		2.4	U	2.4	9.3
Aroclor 1260		2.4	U	2.4	9.3

Surrogate	%Rec	Qualifier	Acceptance Limits
Decachlorobiphenyl	107		59 - 130
Tetrachloro-m-xylene	95		53 - 128

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Analytical Data

Client: Washington Closure Hanford

Job Number: 280-20530-1
Sdg Number: J01279

Client Sample ID: J1L8D4

Lab Sample ID: 280-20530-4

Date Sampled: 09/19/2011 0758

Client Matrix: Solid

% Moisture: 0.6

Date Received: 09/21/2011 0930

8082 Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analysis Method:	8082	Analysis Batch:	280-89350	Instrument ID:	GCS_W
Prep Method:	3550C	Prep Batch:	280-87218	Initial Weight/Volume:	31.6 g
Dilution:	1.0			Final Weight/Volume:	5000 uL
Analysis Date:	10/04/2011 1744			Injection Volume:	1 uL
Prep Date:	09/21/2011 2037			Result Type:	PRIMARY

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
Aroclor 1016		2.6	U	2.6	9.5
Aroclor 1221		7.7	U	7.7	16
Aroclor 1232		1.9	U	1.9	9.5
Aroclor 1242		4.4	U	4.4	9.5
Aroclor 1248		4.4	U	4.4	9.5
Aroclor 1254		2.5	U	2.5	9.5
Aroclor 1260		2.5	U	2.5	9.5

Surrogate	%Rec	Qualifier	Acceptance Limits
Decachlorobiphenyl	109		59 - 130
Tetrachloro-m-xylene	93		53 - 128

✓
11/14/13

Analytical Data

Client: Washington Closure Hanford

Job Number: 280-20530-1
Sdg Number: J01279

Client Sample ID: J1L8D6

Lab Sample ID: 280-20530-5

Date Sampled: 09/19/2011 0801

Client Matrix: Solid

% Moisture: 0.6

Date Received: 09/21/2011 0930

8082 Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analysis Method:	8082	Analysis Batch:	280-89350	Instrument ID:	GCS_W
Prep Method:	3550C	Prep Batch:	280-87218	Initial Weight/Volume:	32.7 g
Dilution:	1.0			Final Weight/Volume:	5000 uL
Analysis Date:	10/04/2011 1816			Injection Volume:	1 uL
Prep Date:	09/21/2011 2037			Result Type:	PRIMARY

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
Aroclor 1016		2.6	U	2.6	9.2
Aroclor 1221		7.4	U	7.4	15
Aroclor 1232		1.8	U	1.8	9.2
Aroclor 1242		4.3	U	4.3	9.2
Aroclor 1248		4.3	U	4.3	9.2
Aroclor 1254		2.4	U	2.4	9.2
Aroclor 1260		25	J	2.4	9.2

Surrogate	%Rec	Qualifier	Acceptance Limits
Decachlorobiphenyl	108		59 - 130
Tetrachloro-m-xylene	105		53 - 128

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Analytical Data

Client: Washington Closure Hanford

Job Number: 280-20530-1

Sdg Number: J01279

Client Sample ID: J1L8D6

Lab Sample ID: 280-20530-8

Date Sampled: 09/19/2011 0807

Client Matrix: Solid

% Moisture: 1.1

Date Received: 09/21/2011 0930

8082 Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analysis Method:	8082	Analysis Batch:	280-89350	Instrument ID:	GCS_W
Prep Method:	3550C	Prep Batch:	280-87218	Initial Weight/Volume:	30.9 g
Dilution:	500			Final Weight/Volume:	5000 uL
Analysis Date:	10/05/2011 1145			Injection Volume:	1 uL
Prep Date:	09/21/2011 2037			Result Type:	PRIMARY

Analyte	DryWT Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
Aroclor 1016		1400	UD J	1400	4900
Aroclor 1221		3900	UD	3900	8100
Aroclor 1232		980	UD	980	4900
Aroclor 1242		2300	UD	2300	4900
Aroclor 1248		2300	UD	2300	4900
Aroclor 1254		1300	UD	1300	4900
Aroclor 1260		59000	D	1300	4900

Surrogate	%Rec	Qualifier	Acceptance Limits
Decachlorobiphenyl	0	D	59 - 130
Tetrachloro-m-xylene	0	D	53 - 128

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Analytical Data

Client: Washington Closure Hanford

Job Number: 280-20530-1

Sdg Number: J01279

Client Sample ID: J1L8D7

Lab Sample ID: 280-20530-7

Date Sampled: 09/19/2011 0810

Client Matrix: Solid

% Moisture: 0.8

Date Received: 09/21/2011 0930

8082 Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analysis Method:	8082	Analysis Batch:	280-89350	Instrument ID:	GCS_W
Prep Method:	3550C	Prep Batch:	280-87218	Initial Weight/Volume:	30.3 g
Dilution:	8.0			Final Weight/Volume:	5000 uL
Analysis Date:	10/05/2011 1216			Injection Volume:	1 uL
Prep Date:	09/21/2011 2037			Result Type:	PRIMARY

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
Aroclor 1016		22	UD	22	80
Aroclor 1221		64	UD	64	130
Aroclor 1232		16	UD	16	80
Aroclor 1242		37	UD	37	80
Aroclor 1248		37	UD	37	80
Aroclor 1254		21	UD	21	80
Aroclor 1260		600	D J	21	80
Surrogate		%Rec	Qualifier	Acceptance Limits	
Decachlorobiphenyl		67	D	59 - 130	
Tetrachloro-m-xylene		63	D	53 - 128	

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Analytical Data

Client: Washington Closure Hanford

Job Number: 280-20530-1
Sdg Number: J01279

Client Sample ID: J1L8D8

Lab Sample ID: 280-20530-8
Client Matrix: Solid

% Moisture: 0.4

Date Sampled: 09/19/2011 0814
Date Received: 09/21/2011 0930

8082 Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analysis Method: 8082	Analysis Batch: 280-89350	Instrument ID: GCS_W
Prep Method: 3550C	Prep Batch: 280-87218	Initial Weight/Volume: 31.0 g
Dilution: 4.0		Final Weight/Volume: 5000 uL
Analysis Date: 10/05/2011 1352		Injection Volume: 1 uL
Prep Date: 09/21/2011 2037		Result Type: PRIMARY

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
Aroclor 1016		11	UD	11	39
Aroclor 1221		31	UD	31	64
Aroclor 1232		7.8	UD	7.8	39
Aroclor 1242		18	UD	18	39
Aroclor 1248		18	UD	18	39
Aroclor 1254		10	UD	10	39
Aroclor 1260		150	D J	10	39
Surrogate		%Rec	Qualifier	Acceptance Limits	
Decachlorobiphenyl		102	D	59 - 130	
Tetrachloro-m-xylene		85	D	53 - 128	

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Analytical Data

Client: Washington Closure Hanford

Job Number: 280-20530-1

Sdg Number: J01279

Client Sample ID: J1L8D9

Lab Sample ID: 280-20530-9

Date Sampled: 09/19/2011 0820

Client Matrix: Solid

% Moisture: 0.9

Date Received: 09/21/2011 0930

8082 Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analysis Method: 8082	Analysis Batch: 280-89350	Instrument ID: GCS_W
Prep Method: 3550C	Prep Batch: 280-87218	Initial Weight/Volume: 31.1 g
Dilution: 5000		Final Weight/Volume: 5000 uL
Analysis Date: 10/05/2011 1424		Injection Volume: 1 uL
Prep Date: 09/21/2011 2037		Result Type: PRIMARY

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
Aroclor 1016		13000	UD	13000	49000
Aroclor 1221		39000	UD	39000	80000
Aroclor 1232		9700	UD	9700	49000
Aroclor 1242		23000	UD	23000	49000
Aroclor 1248		23000	UD	23000	49000
Aroclor 1254		13000	UD	13000	49000
Aroclor 1260		150000	D	13000	49000

Surrogate	%Rec	Qualifier	Acceptance Limits
Decachlorobiphenyl	0	D	59 - 130
Tetrachloro-m-xylene	0	D	53 - 128

W/notes

Analytical Data

Client: Washington Closure Hanford

Job Number: 280-20530-1
Sdg Number: J01279

Client Sample ID: J1L8F0

Lab Sample ID: 280-20530-10

Date Sampled: 09/19/2011 0825

Client Matrix: Solid

% Moisture: 0.7

Date Received: 09/21/2011 0930

8082 Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analysis Method: 8082	Analysis Batch: 280-89350	Instrument ID: GCS_W
Prep Method: 3550C	Prep Batch: 280-87218	Initial Weight/Volume: 32.0 g
Dilution: 40		Final Weight/Volume: 5000 uL
Analysis Date: 10/05/2011 1456		Injection Volume: 1 uL
Prep Date: 09/21/2011 2037		Result Type: PRIMARY

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
Aroclor 1016		100	UD	100	380
Aroclor 1221		300	UD	300	620
Aroclor 1232		76	UD	76	380
Aroclor 1242		180	UD	180	380
Aroclor 1248		180	UD	180	380
Aroclor 1254		98	UD	98	380
Aroclor 1260		2700	D	98	380

Surrogate	%Rec	Qualifier	Acceptance Limits
Decachlorobiphenyl	0	D	59 - 130
Tetrachloro-m-xylene	0	D	53 - 128

W 1/14/13

Analytical Data

Client: Washington Closure Hanford

Job Number: 280-20530-1
Sdg Number: J01279

Client Sample ID: J1L8F1

Lab Sample ID: 280-20530-11

Date Sampled: 09/19/2011 0831

Client Matrix: Solid

% Moisture: 0.7

Date Received: 09/21/2011 0930

8082 Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analysis Method:	8082	Analysis Batch:	280-89350	Instrument ID:	GCS_W
Prep Method:	3550C	Prep Batch:	280-87218	Initial Weight/Volume:	30.7 g
Dilution:	40			Final Weight/Volume:	5000 uL
Analysis Date:	10/05/2011 1528			Injection Volume:	1 uL
Prep Date:	09/21/2011 2037			Result Type:	PRIMARY

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
Aroclor 1016		110	UD	110	390
Aroclor 1221		320	UD	320	650
Aroclor 1232		79	UD	79	390
Aroclor 1242		180	UD	180	390
Aroclor 1248		180	UD	180	390
Aroclor 1254		100	UD	100	390
Aroclor 1260		3700	D	100	390

Surrogate	%Rec	Qualifier	Acceptance Limits
Decachlorobiphenyl	0	D	59 - 130
Tetrachloro-m-xylene	0	D	53 - 128

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Analytical Data

Client: Washington Closure Hanford

Job Number: 280-20530-1
Sdg Number: J01279

Client Sample ID: J1L8F2

Lab Sample ID: 280-20530-12

Date Sampled: 09/19/2011 0833

Client Matrix: Solid

% Moisture: 0.4

Date Received: 09/21/2011 0930

8082 Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analysis Method:	8082	Analysis Batch:	280-89350	Instrument ID:	GCS_W
Prep Method:	3550C	Prep Batch:	280-87218	Initial Weight/Volume:	30.5 g
Dilution:	1.0			Final Weight/Volume:	5000 uL
Analysis Date:	10/04/2011 2334			Injection Volume:	1 uL
Prep Date:	09/21/2011 2037			Result Type:	PRIMARY

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
Aroclor 1016		2.7	U	2.7	9.9
Aroclor 1221		7.9	U	7.9	16
Aroclor 1232		2.0	U	2.0	9.9
Aroclor 1242		4.6	U	4.6	9.9
Aroclor 1248		4.6	U	4.6	9.9
Aroclor 1254		2.6	U	2.6	9.9
Aroclor 1260		72	J	2.6	9.9

Surrogate	%Rec	Qualifier	Acceptance Limits
Decachlorobiphenyl	112		59 - 130
Tetrachloro-m-xylene	104		53 - 128

✓
11/04/13

Analytical Data

Client: Washington Closure Hanford

Job Number: 280-20530-1
Sdg Number: J01279

Client Sample ID: J1L8F3

Lab Sample ID: 280-20530-13
Client Matrix: Solid

% Moisture: 0.4

Date Sampled: 09/19/2011 0838
Date Received: 09/21/2011 0930

8082 Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analysis Method:	8082	Analysis Batch:	280-89350	Instrument ID:	GCS_W
Prep Method:	3550C	Prep Batch:	280-87218	Initial Weight/Volume:	31.3 g
Dilution:	8.0			Final Weight/Volume:	5000 uL
Analysis Date:	10/05/2011 1600			Injection Volume:	1 uL
Prep Date:	09/21/2011 2037			Result Type:	PRIMARY

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
Aroclor 1016		21	UD	21	77
Aroclor 1221		62	UD	62	130
Aroclor 1232		15	UD	15	77
Aroclor 1242		36	UD	36	77
Aroclor 1248		36	UD	36	77
Aroclor 1254		20	UD	20	77
Aroclor 1260		580	D J	20	77
Surrogate					
		%Rec	Qualifier	Acceptance Limits	
Decachlorobiphenyl		73	D	59 - 130	
Tetrachloro-m-xylene		82	D	53 - 128	

*W
11/14/13*

Analytical Data

Client: Washington Closure Hanford

Job Number: 280-20530-1
Sdg Number: J01279

Client Sample ID: J1L8F4

Lab Sample ID: 280-20530-14

Date Sampled: 09/19/2011 0841

Client Matrix: Solid

% Moisture: 0.7

Date Received: 09/21/2011 0930

8082 Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analysis Method: 8082	Analysis Batch: 280-89350	Instrument ID: GCS_W
Prep Method: 3550C	Prep Batch: 280-87218	Initial Weight/Volume: 30.8 g
Dilution: 8.0		Final Weight/Volume: 5000 uL
Analysis Date: 10/05/2011 1632		Injection Volume: 1 uL
Prep Date: 09/21/2011 2037		Result Type: PRIMARY

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
Aroclor 1016		22	UD	22	78
Aroclor 1221		63	UD	63	130
Aroclor 1232		16	UD	16	78
Aroclor 1242		37	UD	37	78
Aroclor 1248		37	UD	37	78
Aroclor 1254		20	UD	20	78
Aroclor 1260		920	D J	20	78
<hr/>					
Surrogate		%Rec	Qualifier	Acceptance Limits	
Decachlorobiphenyl		79	D	59 - 130	
Tetrachloro-m-xylene		64	D	53 - 128	

M/10/11

Appendix 4

Laboratory Narrative and Chain-of-Custody Documentation

CASE NARRATIVE

Client: Washington Closure Hanford

Project: WASHINGTON CLOSURE HANFORD

Report Number: 280-20530-1

SDG #: J01279

SAF#: RC-148

Date SDG Closed: September 21, 2011

Data Deliverable: 21 Day / Summary

<u>CLIENT ID</u>	<u>LAB ID</u>	<u>ANALYSES REQUESTED</u>	<u>ANALYSES PERFORMED</u>
J1L8D1	280-20530-1	WTPH-D+/8082	NWTPH-Dx/8082
J1L8D2	280-20530-2	WTPH-D+/8082	NWTPH-Dx/8082
J1L8D3	280-20530-3	WTPH-D+/8082	NWTPH-Dx/8082
J1L8D4	280-20530-4	WTPH-D+/8082	NWTPH-Dx/8082
J1L8D5	280-20530-5	WTPH-D+/8082	NWTPH-Dx/8082
J1L8D6	280-20530-6	WTPH-D+/8082	NWTPH-Dx/8082
J1L8D7	280-20530-7	WTPH-D+/8082	NWTPH-Dx/8082
J1L8D8	280-20530-8	WTPH-D+/8082	NWTPH-Dx/8082
J1L8D9	280-20530-9	WTPH-D+/8082	NWTPH-Dx/8082
J1L8F0	280-20530-10	WTPH-D+/8082	NWTPH-Dx/8082
J1L8F1	280-20530-11	WTPH-D+/8082	NWTPH-Dx/8082
J1L8F2	280-20530-12	WTPH-D+/8082	NWTPH-Dx/8082
J1L8F3	280-20530-13	WTPH-D+/8082	NWTPH-Dx/8082
J1L8F4	280-20530-14	WTPH-D+/8082	NWTPH-Dx/8082

I certify that this data package is in compliance with the SOW, both technically and for completeness, for other than the conditions detailed in this Case Narrative. Release of the data contained in this hard copy data package has been authorized by the Laboratory Manager or a designee, as verified by the signature on the Report Cover.

With exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. All laboratory quality control samples analyzed in conjunction with the samples in this project were within established control limits, with any exceptions noted. Calculations are performed before rounding to avoid round-off errors in calculated results.

This report includes reporting limits (RLs) less than TestAmerica Denver's practical quantitation limits. These reporting limits are being used specifically at the client's request to meet the needs of this project. Please note that data are not normally reported to these levels without qualification, since they are inherently less reliable and potentially less defensible than required by the current NELAC standards.

The results, RLs and MDLs included in this report have been adjusted for dry weight, as appropriate.

All holding times were met and proper preservation noted for the methods performed on these samples, unless otherwise detailed in the individual sections below.

RECEIPT

The samples were received on 9/21/2011; the samples arrived in good condition, properly preserved and on ice. The temperature of the cooler at receipt was 3.1 C.

GC SEMIVOLATILES - SW846 8082 - PCBs

The laboratory noted that a Sulfuric Acid clean-up was performed on the samples presented in this report to reduce matrix interferences.

Each sample is analyzed to achieve the lowest possible reporting limits within the constraints of the method. In some cases, due to high constituent concentration, samples had to be analyzed at dilutions, and the associated results have been flagged with a "D". The reporting limits have been adjusted relative to the dilutions required.

In some cases, sample surrogate recoveries have been "D" flagged, as the recoveries obtained are calculated from diluted samples and are not considered reliable.

Spike compound recoveries, RPD data and surrogate recoveries have been "D" flagged in the MS/MSD performed on sample J1L8D7, because the samples were diluted beyond the ability to reliably quantitate recoveries. The acceptable LCS analysis data indicated that the analytical system was operating within control.

No other anomalies were encountered.

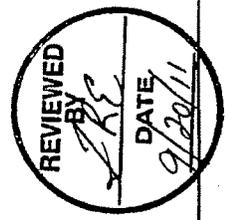
GC SEMIVOLATILES - NWTPH-Dx - DRO

Low levels of C10-C36 and C10-C28 are present in the method blank associated with batch 280-87627. Because the concentrations in the method blank are not present at levels greater than half the reporting limit, corrective action is deemed unnecessary. Associated sample results present above the MDL and/or RL have been flagged with a "B".

No other anomalies were encountered.

3104 A qm pr

Washington Closure Hanford		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST		RC-148-036	Page 1 of 3	
Collector Q. Stove	Company Contact Jean Kessner	Telephone No. 509-375-4688	Project Coordinator KESSNER, JH	Price Code 8L	Data Turnaround 21 Days	
Project Designation 300 Area Field Remediation - Soil Full Protocol	Sampling Location 300-274 Phase 2-Verification	COA R302742000	SAF No. RC-148	Method of Shipment Hand Deliver/Government Vehicle FedEx		
Ice Chest No. AFS-04-123	Field Logbook No. EL-1395-18	Offsite Property No. A100881	Bill of Lading/Air Bill No. See OSC			
Shipped To TestAmerica Incorporated	9-19-11 GAB					
POSSIBLE SAMPLE HAZARDS/REMARKS Radioactive & DOT Limited A4 9-19-11						
Special Handling and/or Storage Cool 4 degrees C						
SAMPLE ANALYSIS						
Sample No.	Matrix *	Sample Date	Sample Time	TPH-Diesel Range - WTPH-D+	PCB - 802 Shipping Carton	Notes
J1L8D1	SOIL	9/19/11	0734	✓		
J1L8D2	SOIL	9/19/11	0755	✓		
J1L8D3	SOIL	9/19/11	0755	✓		
J1L8D4	SOIL	9/19/11	0758	✓		
J1L8D5	SOIL	9/19/11	0801	✓		
CHAIN OF POSSESSION						
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time	Sign/Print Names		
Quincy Stone	9/19/11 0930	PAVING & SURFACE PREPARATION	9/19/11 0930	Date/Time		
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time	Sign/Print Names		
BECKER	9/19/11 1405	Quincy Stone	9/19/11 1405	Date/Time		
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time	Sign/Print Names		
Quincy Stone	9/20/11 1010	Quincy Stone	9/20/11 1010	Date/Time		
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time	Sign/Print Names		
Quincy Stone	9/20/11 1010	Quincy Stone	9/20/11 1010	Date/Time		
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time	Sign/Print Names		
Quincy Stone	9/20/11 1010	Quincy Stone	9/20/11 1010	Date/Time		
LABORATORY SECTION	Received By	Title				
FINAL SAMPLE DISPOSITION	Disposal Method	Date/Time				



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J01279

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Collector: Q. Stowe
 Project Coordinator: KESSNER, JH
 Project No.: RC-148
 Method of Shipment: Hand Deliver/Government Vehicle/FedEx
 Bill of Lading/Air Bill No.: **see OSPC**

Company Contact: Joan Kessner, Telephone No. 509-375-4688
 Sampling Location: 300-274 Phase 2-Verification
 Field Logbook No. EL-1395-18
 COA: R302742000
 Offsite Property No.: **A100881**

Sample No.	Matrix *	Sample Date	Sample Time	Preservation	Cool 4C	Cool 4C	None	SPECIAL INSTRUCTIONS	
								TPH-Diesel Range - WTRFD+	PCBs - 8032
JTL8D6	SOIL	9/19/11	0807		gG	120mL	None	✓	RCF
JTL8D7	SOIL	9/19/11	0810		gG	120mL	G/P	✓	30415
JTL8D8	SOIL	9/19/11	0814		1	120mL	1	✓	
JTL8D9	SOIL	9/19/11	0820		1	120mL	60g	✓	
JTL8F0	SOIL	9/19/11	0825		1	120mL	RCF OEA Shipping Container	✓	

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 J0079

CHAIN OF POSSESSION		SIGN/PRINT NAMES	
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
DAVID BECKER	9/19/11 0930	DAVID BECKER	9/14/11 0930
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
DAVID BECKER	9/19/11 1405	DAVID BECKER	9/19/11 1405
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
DAVID BECKER	9/30/11 1010	DAVID BECKER	9/21/11 0930
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
DAVID BECKER		DAVID BECKER	
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
DAVID BECKER		DAVID BECKER	

LABORATORY SECTION
 Received By
 Disposal Method
 Disposed By
 Date/Time

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

Company Contact: Joan Kessner Telephone No. 509-375-4688
 Project Coordinator: KESSNER, JH
 Price Code: 8L Data Turnaround: 21 Days

Project No. AFS-04-123
 Sampling Location: 300 Area Field Remediation - Soil Full Protocol
 SAF No. RC-148
 Method of Shipment: Hand Deliver/Government Vehicle/FedEx

Field Notebook No. EL-1395-18 COA: R302742000
 Bill of Lading/Air Bill No. See OSPC

Shipped To: TestAmerica Incorporated, Receiving DENVER
 POSSIBLE SAMPLE HAZARDS/REMARKS: Potential Radioactive < DOT Limit
 A7 9-19-11
 Special Handling and/or Storage: Cool 4 degrees C

Sample No.	Matrix *	Sample Date	Sample Time	Preservation	Cool 4C	Cool 4C	None
J1L8F1	SOIL	9/19/11	0831		120mL	60g	
J1L8F2	SOIL	9/19/11	0833		120mL	60g	
J1L8F3	SOIL	9/19/11	0838		120mL	60g	
J1L8F4	SOIL	9/19/11	0841		120mL	60g	

SPECIAL INSTRUCTIONS

Sample No.	Matrix *	Sample Date	Sample Time	TPH-Diesel Range - WTRH-D+	PCII - BBE2	RCF-GSA Shipping Jar
J1L8F1	SOIL	9/19/11	0831	✓	✓	1/6/16
J1L8F2	SOIL	9/19/11	0833	✓	✓	30415
J1L8F3	SOIL	9/19/11	0838	✓	✓	
J1L8F4	SOIL	9/19/11	0841	✓	✓	



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50879

Chain of Possession	Signature/Print Names	Date/Time
Relinquished By/Removed From	Received By/Stored In	Date/Time
Quincy Stone	Becker	9/19/11 0930
Relinquished By/Removed From	Received By/Stored In	Date/Time
Becker	Bingman	9/19/11 1405
Relinquished By/Removed From	Received By/Stored In	Date/Time
WCH	Fed Ex	9/20/11 1010
Relinquished By/Removed From	Received By/Stored In	Date/Time
		9/20/11 0930
Relinquished By/Removed From	Received By/Stored In	Date/Time
		9/20/11 0930

Appendix 5
Data Validation Supporting Documentation

PCB DATA VALIDATION CHECKLIST

VALIDATION LEVEL:	A	B	C	D	E
PROJECT:	300-274		DATA PACKAGE: J01279		
VALIDATOR:	ELR	LAB:	TAL	DATE:	1/13/13
			SDG:	J01279	
ANALYSES PERFORMED					
SW-846 8081	SW-846 8081 (TCLP)	SW-846 8082	SW-846 8081 (TCLP)		
SAMPLES/MATRIX					
J1L8D1	J1L8D2	J1L8D3	J1L8D4	J1L8D5	
J1L8D6	J1L8D7	J1L8D8	J1L8D9	J1L8F0	
J1L8F1	J1L8F2	J1L8F3	J1L8F4		
					Soil

1. DATA PACKAGE COMPLETENESS AND CASE NARRATIVE

Technical verification documentation present? Yes No N/A

Comments: _____

2. INSTRUMENT PERFORMANCE AND CALIBRATIONS (Levels D and E)

Initial calibrations acceptable? Yes No N/A
 Continuing calibrations acceptable? Yes No N/A
 Standards traceable? Yes No N/A
 Standards expired? Yes No N/A
 Calculation check acceptable? Yes No N/A
 DDT and endrin breakdowns acceptable? Yes No N/A

Comments: _____

PCB DATA VALIDATION CHECKLIST

3. BLANKS (Levels B, C, D, and E)

Calibration blanks analyzed? (Levels D, E) Yes No N/A
Calibration blank results acceptable? (Levels D, E) Yes No N/A
Laboratory blanks analyzed? Yes No N/A
Laboratory blank results acceptable? Yes No N/A
Field/trip blanks analyzed? (Levels C, D, E) Yes No N/A
Field/trip blank results acceptable? (Levels C, D, E) Yes No N/A
Transcription/calculation errors? (Levels D, E) Yes No N/A
Comments: _____

4. ACCURACY (Levels C, D, and E)

Surrogates analyzed? Yes No N/A
Surrogate recoveries acceptable? Yes No N/A
Surrogates traceable? (Levels D, E) Yes No N/A
Surrogates expired? (Levels D, E) Yes No N/A
MS/MSD samples analyzed? Yes No N/A
MS/MSD results acceptable? Yes No N/A
MS/MSD standards NIST traceable? (Levels D, E) Yes No N/A
MS/MSD standards expired? (Levels D, E) Yes No N/A
LCS/BSS samples analyzed? Yes No N/A
LCS/BSS results acceptable? Yes No N/A
Standards traceable? (Levels D, E) Yes No N/A
Standards expired? (Levels D, E) Yes No N/A
Transcription/calculation errors? (Levels D, E) Yes No N/A
Performance audit sample(s) analyzed? Yes No N/A
Performance audit sample results acceptable? Yes No N/A

Comments: Surr - D6 D9 F0 F1 - J all
MS+MSD - all one - J all details

_____ No P/B

PCB DATA VALIDATION CHECKLIST

5. PRECISION (Levels C, D, and E)

- Duplicate RPD values acceptable? Yes No N/A
- Duplicate results acceptable? Yes No N/A
- MS/MSD standards NIST traceable? (Levels D, E) Yes No N/A
- MS/MSD standards expired? (Levels D, E) Yes No N/A
- Field duplicate RPD values acceptable? Yes No N/A
- Field split RPD values acceptable? Yes No N/A
- Transcription/calculation errors? (Levels D, E) Yes No N/A

Comments: _____

D2/03

6. SYSTEM PERFORMANCE (Levels D and E)

- Chromatographic performance acceptable? Yes No N/A
- Positive results resolved acceptably? Yes No N/A

Comments: _____

7. HOLDING TIMES (all levels)

- Samples properly preserved? Yes No N/A
- Sample holding times acceptable? Yes No N/A

Comments: _____

PCB DATA VALIDATION CHECKLIST

8. COMPOUND IDENTIFICATION, QUANTITATION, AND DETECTION LIMITS (all levels)

- Compound identification acceptable? (Levels D, E) Yes No N/A
- Compound quantitation acceptable? (Levels D, E) Yes No N/A
- Results reported for all requested analyses? Yes No N/A
- Results supported in the raw data? (Levels D, E)..... Yes No N/A
- Samples properly prepared? (Levels D, E)..... Yes No N/A
- Detection limits meet RDL? Yes No N/A
- Transcription/calculation errors? (Levels D, E)..... Yes No N/A

Comments: _____

9. SAMPLE CLEANUP (Levels D and E)

- Fluorilicil ® (or other absorbent) cleanup performed? Yes No N/A
- Lot check performed?..... Yes No N/A
- Check recoveries acceptable? Yes No N/A
- GPC cleanup performed?..... Yes No N/A
- GPC check performed?..... Yes No N/A
- GPC check recoveries acceptable? Yes No N/A
- GPC calibration performed? Yes No N/A
- GPC calibration check performed?..... Yes No N/A
- GPC calibration check retention times acceptable?..... Yes No N/A
- Check/calibration materials traceable? Yes No N/A
- Check/calibration materials Expired?..... Yes No N/A
- Analytical batch QC given similar cleanup? Yes No N/A
- Transcription/Calculation Errors? Yes No N/A

Comments: _____

Appendix 6
Additional Documentation Requested by Client

Quality Control Results

Client: Washington Closure Hanford

Job Number: 280-20530-1
Sdg Number: J01279

Method Blank - Batch: 280-87218

**Method: 8082
Preparation: 3550C**

Lab Sample ID:	MB 280-87218/1-A	Analysis Batch:	280-89350	Instrument ID:	GCS_W
Client Matrix:	Solid	Prep Batch:	280-87218	Lab File ID:	004F0401.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	31.8 g
Analysis Date:	10/04/2011 1505	Units:	ug/Kg	Final Weight/Volume:	5000 uL
Prep Date:	09/21/2011 2037			Injection Volume:	1 uL
Leach Date:	N/A			Column ID:	PRIMARY

Analyte	Result	Qual	MDL	RL
Aroclor 1016	2.6	U	2.6	9.4
Aroclor 1221	7.6	U	7.6	16
Aroclor 1232	1.9	U	1.9	9.4
Aroclor 1242	4.4	U	4.4	9.4
Aroclor 1248	4.4	U	4.4	9.4
Aroclor 1254	2.5	U	2.5	9.4
Aroclor 1260	2.5	U	2.5	9.4

Surrogate	% Rec	Acceptance Limits
Decachlorobiphenyl	117	59 - 130
Tetrachloro-m-xylene	110	53 - 128

Lab Control Sample - Batch: 280-87218

**Method: 8082
Preparation: 3550C**

Lab Sample ID:	LCS 280-87218/2-A	Analysis Batch:	280-89350	Instrument ID:	GCS_W
Client Matrix:	Solid	Prep Batch:	280-87218	Lab File ID:	005F0501.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	31.9 g
Analysis Date:	10/04/2011 1537	Units:	ug/Kg	Final Weight/Volume:	5000 uL
Prep Date:	09/21/2011 2037			Injection Volume:	1 uL
Leach Date:	N/A			Column ID:	PRIMARY

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Aroclor 1016	31.3	35.3	113	54 - 132	
Aroclor 1260	31.3	40.2	128	62 - 129	

Surrogate	% Rec	Acceptance Limits
Decachlorobiphenyl	120	59 - 130
Tetrachloro-m-xylene	111	53 - 128

Quality Control Results

Client: Washington Closure Hanford

Job Number: 280-20530-1
Sdg Number: J01279

**Matrix Spike/
Matrix Spike Duplicate Recovery Report - Batch: 280-87218**

**Method: 8082
Preparation: 3550C**

MS Lab Sample ID: 280-20530-7
Client Matrix: Solid
Dilution: 8.0
Analysis Date: 10/05/2011 1248
Prep Date: 09/21/2011 2037
Leach Date: N/A

Analysis Batch: 280-89350
Prep Batch: 280-87218
Leach Batch: N/A

Instrument ID: GCS_W
Lab File ID: 045F4501.D
Initial Weight/Volume: 30.7 g
Final Weight/Volume: 5000 uL
Injection Volume: 1 uL
Column ID: PRIMARY

MSD Lab Sample ID: 280-20530-7
Client Matrix: Solid
Dilution: 8.0
Analysis Date: 10/05/2011 1321
Prep Date: 09/21/2011 2037
Leach Date: N/A

Analysis Batch: 280-89350
Prep Batch: 280-87218
Leach Batch: N/A

Instrument ID: GCS_W
Lab File ID: 046F4601.D
Initial Weight/Volume: 31.2 g
Final Weight/Volume: 5000 uL
Injection Volume: 1 uL
Column ID: PRIMARY

Analyte	% Rec.		Limit	RPD	RPD Limit	MS Qual	MSD Qual
	MS	MSD					
Aroclor 1016	1092	1116	54 - 132	1	26	D	D
Aroclor 1260	762	802	62 - 129	1	26	D	D
Surrogate	MS % Rec		MSD % Rec		Acceptance Limits		
Decachlorobiphenyl	93	D	81	D	59 - 130		
Tetrachloro-m-xylene	87	D	84	D	53 - 128		