WHITE SANDS MISSILE RANGE – NEW MEXICO
ELECTRONIC VALIDATION REVIEW REPORT
SDGs: 1209022 and 1209042
HELSTF DIESEL SPILL
September 2012

Analytical data was evaluated in accordance with applicable USEPA SW-846 method requirements, "USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review" (October 1999); "USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review" (July 2002), site-specific requirements defined in *White Sands Missile Range Site-Wide Quality Assurance Project Plan* (ARCADIS, 2009), and any additional evaluation criteria set forth in the area specific Work Plan. The validation presented in this review was performed at the White Sands defined Level II.

The data review summarized in this report includes a review of all sample collection documentation and the electronic data validation of the analytical data housed in the project database. Sample collection documentation included sample collection logs and chains of custody. The electronic data validation was performed utilizing the EQuIS Data Qualification Module (DQM). DQM checks for the following parameters:

- Holding times and preservation;
- Blank contamination;
  - Method blanks,
  - Trip blanks,
  - Equipment blanks;
- Matrix spike and Duplicate sample recovery;
- Matrix Spike and Matrix Spike Duplicate relative percent differences;
- Laboratory Control Sample and Duplicate recovery;
- Laboratory Control Sample and Duplicate relative percent differences;
- Surrogate recovery (organic analyses only); and
- Field duplicate relative percent difference.

Manually review was performed on the following items:

- Sample dilutions;
- reporting limits and
- Case Narratives.

Reviewed data was generated by DHL Analytical. Data qualifiers were applied electronically to the database with any additional qualifiers added manually. A summary of the data as amended by data qualifiers is included with the original hard copy reports.

The attached table summarizes the data that were qualified due to QC deficiencies. The table indicates compounds/analytes qualified based on electronic and manual validation. Refer to the associated method section of the validation checklist for a detailed explanation of qualification. All other data in this SDG are considered usable as reported.

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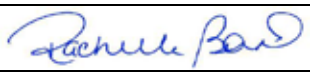
The following list of data qualifiers and definitions were applied in accordance with qualification criteria defined in the greater than guidance documents:

UB Compound/analyte detected in blank or associated blank, qualified as a non-detect at listed value.

J The analyte was positively identified, but the associated numerical value is the approximate concentration of the analyte in the sample.

UJ The analyte was not detected greater than the reporting limit; however, the reported quantitation limit is approximate and may, or may not represent the actual limit of quantitation necessary to accurately and precisely measure analyte in the sample.

R The sample result is rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria; and the presence or absence of the analyte cannot be verified.

DQM RUN BY:	Rachelle Borne	11/08/12
REVIEW PERFORMED BY:	Rachelle Borne	11/08/12
SIGNATURE:		11/08/12
PEER REVIEW:	Dennis Capria	11/09/12

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The following samples were included in this SDG:

SDG	Sample ID	Sample Date	Parent Sample
1209022	HLSF-0154-DRW-012-0912-20120905	9/5/2012	
1209022	HLSF-0154-DRW-013-0912-20120905	9/5/2012	
1209022	HLSF-0154-DRW-016-0912-20120905	9/5/2012	
1209022	HLSF-0154-DRW-016-0912-TB-20120905	9/5/2012	
1209022	HLSF-0154-FB-001-0912-20120905	9/5/2012	
1209022	HLSF-0154-DRW-112-0912-20120905	9/5/2012	HLSF-0154-DRW-012-0912-20120905
1209042	HLSF-0154-DRW-004-0912-20120906	9/6/2012	
1209042	HLSF-0154-DRW-005-0912-20120906	9/6/2012	
1209042	HLSF-0154-HCF-001-0912-20120906	9/6/2012	
1209042	HLSF-0154-HCF-001-0912-TB-20120906	9/6/2012	
1209042	HLSF-0154-RB-001-0912-20120906	9/6/2012	

ANALYTICAL DATA PACKAGE DOCUMENTATION

GENERAL INFORMATION

Items Reviewed	Reported		Performance Acceptable		Not Required
	No	Yes	No	Yes	
1. Sample results		X		X	
2. Parameters analyzed		X		X	
3. Methods of analysis		X		X	
4. Reporting limits of analysis		X		X	
5. Master tracking list		X		X	
6. Sample collection date		X		X	
7. Laboratory sample received date		X		X	
8. Sample preparation/extraction date		X		X	
9. Sample analysis date		X		X	
10. Copy of chain-of-custody form signed by lab sample custodian		X		X	
11. Narrative summary of QA or sample problems provided		X		X	
12. Laboratory Signature		X		X	

QA – quality assurance

The analytical report was complete with the following exceptions or notations.

Comments:

Note: ICV and CCV recoveries were discussed in the case narrative; however, ICVs and CCVs are not included in a Tier II validation. Therefore, the CCVs and ICVs were not evaluated and qualifications were not applied due to ICV and CCV deviations.

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VOLATILE ORGANIC COMPOUNDS

Items Reviewed	DQM Deficiency		Qualification Applied	
	No	Yes	No	Yes
1. Holding times/Preservation	DQM		DQM	
2. Reporting limits	M		M	
3. Blanks				
A. Method blanks	DQM		DQM	
B. Equipment/Field blanks		DQM		DQM
C. Trip blanks		DQM		DQM
4. Surrogate spike recoveries	DQM		DQM	
5. Laboratory control sample (LCS) A. LCS %R	DQM		DQM	
B. LCS duplicate (LCSD) %R	NA		NA	
C. LCS/LCSD RPD	NA		NA	
6. Matrix spike (MS)				
A. MS %R	DQM		DQM	
B. MS duplicate (MSD) %R	DQM		DQM	
C. MS/MSD precision (RPD)	DQM		DQM	
7. Field Duplicate precision (RPD)	DQM		DQM	

M – Manual Review %R - percent recovery RPD - relative percent difference
DQM – Data Qualification Module

Comments:
This section presents a discussion of any additions or changes to the electronic data validation for compounds analyzed by Method 8260C.

Note: The compound 2-Chloroethyl vinyl ether degrades in the presence of acid. Since the samples were preserved with acid to a pH of less than 2, all sample results for 2-chloroethyl vinyl ether are rejected.

3B. SDG (1209022 and 1209042) Acetone was detected in the field blank or the rinsate blank. The associated field samples were qualified as estimated for this compound if the sample concentrations were less than ten times the blank value.

3C. SDG (1209022) Acetone was detected in the trip blank. The associated field samples were qualified as estimated for this compound if the sample concentrations were less than ten times the blank value.

7. SDG (1209022) Sample HLSF-0154-DRW-112-0912 was collected as a field duplicate of HLSF-0154-DRW-012-0912. The RPDs were acceptable at less than 40%.

TPH – DIESEL RANGE ORGANICS

Items Reviewed	DQM Deficiency		Qualification Applied	
	No	Yes	No	Yes
1. Holding times/Preservation	DQM		DQM	
2. Reporting limits	M		M	
3. Blanks				
A. Method blanks	DQM		DQM	
B. Equipment blanks		DQM	DQM	
4. Surrogate spike recoveries		DQM		DQM
5. Laboratory control sample (LCS) A. LCS %R	DQM		DQM	
B. LCS duplicate (LCSD) %R	NA		NA	
C. LCS/LCSD RPD	NA		NA	
6. Matrix spike (MS)				
A. MS %R	DQM		DQM	
B. MS duplicate (MSD) %R	DQM		DQM	
C. MS/MSD precision (RPD)	DQM		DQM	
7. Field Duplicate precision (RPD)	DQM		DQM	

M – Manual Review %R - percent recovery RPD - relative percent difference
DQM – Data Qualification Module

Comments:
This section presents a discussion of any additions or changes to the electronic data validation for compounds analyzed by Method M8015D.

3B. SDG (1209042) DRO was detected in the rinsate blank. The associated field samples were greater than five times the blank values; therefore, qualification of the data was not warranted.

4. SDG (1209022) One surrogate recovery was below the control limit in samples HLSF-0154-DRW-012-0192 and HLSF-0154-DRW-112-0912. The DRO results for these samples were qualified as estimated.

SDG (1209042) One surrogate recovery was above the control limit in samples HLSF-0154-HCF-001-0912, HLSF-0154-DRW-005-0912 and HLSF-0154-DRW-004-0912. All detections of DRO in the following samples were qualified as estimated.

7. SDG (1209022) Sample HLSF-0154-DRW-112-0912 was collected as a field duplicate of HLSF-0154-DRW-012-0912. The RPD was acceptable at less than 40%.

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METALS

Items Reviewed	DQM Deficiency		Qualification Applied	
	No	Yes	No	Yes
1. Holding times/Preservation	DQM		DQM	
2. Reporting limits	M		M	
3. Blanks				
A. Method blanks	DQM		DQM	
B. Equipment blanks	DQM		DQM	
4. Serial Dilutions	M		M	
5. Laboratory control sample (LCS) A. LCS %R	DQM		DQM	
B. LCS duplicate (LCSD) %R	DQM		DQM	
C. LCS/LCSD RPD	DQM		DQM	
6. Matrix spike (MS)				
A. MS %R	DQM		DQM	
B. MS duplicate (MSD) %R	DQM		DQM	
C. MS/MSD precision (RPD)	DQM		DQM	
7. Post Digestion Spikes	M		M	
8. Field Duplicate precision (RPD)	DQM		DQM	

M – Manual Review %R - percent recovery RPD - relative percent difference
DQM – Data Qualification Module

Comments:
This section presents a discussion of any additions or changes to the electronic data validation for compounds analyzed by Methods 6020.

8. SDG (1209022) Sample HLSF-0154-DRW-112-0912 was collected as a field duplicate of HLSF-0154-DRW-012-0912. The RPD was acceptable at less than 40%.

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GENERAL CHEMISTRY

Items Reviewed	DQM Deficiency		Qualification Applied	
	No	Yes	No	Yes
1. Holding times/Preservation	DQM		DQM	
2. Reporting limits	M		M	
3. Blanks				
A. Method blanks	DQM		DQM	
B. Equipment blanks		DQM		DQM
4. Laboratory control sample (LCS) A. LCS %R	DQM		DQM	
B. LCS duplicate (LCSD) %R	DQM		DQM	
C. LCS/LCSD RPD	DQM		DQM	
5. Matrix spike (MS)				
A. MS %R	DQM		DQM	
B. MS duplicate (MSD) %R	DQM		DQM	
C. MS/MSD precision (RPD)		DQM		DQM
6. Field Duplicate precision (RPD)	DQM		DQM	

M – Manual Review %R - percent recovery RPD - relative percent difference
DQM – Data Qualification Module

Comments:
This section presents a discussion of any additions or changes to the electronic data validation for compounds analyzed by Methods M3500 – Hexavalent/Trivalent Chromium and M5310C - TOC.

3B. SDG (1209042) TOC was detected in the rinsate blank. The associated field samples were qualified as non-detect for TOC if the sample concentrations were less than five times the blank value.

5. SDG (1209042) Sample HLSF-0154-DRW-004-0912 was used as the MS/MSD. The RPD between the MS/MSD pair was above the control limit for hexavalent chromium. The parent sample was qualified as estimated for hexavalent chromium.

6. SDG (1209022) Sample HLSF-0154-DRW-112-0912 was collected as a field duplicate of HLSF-0154-DRW-012-0912. The RPDs were acceptable at less than 40%.

SDG	Sample ID	Method	Analyte	Result	Units	Qualifier	Reason
1209022	HLSF-0154-DRW-012-0912-20120905	M8015D	Diesel Range Organics	0.0510	mg/l	J	Surrogate Recovery
1209022	HLSF-0154-DRW-012-0912-20120905	SW8260	2-Chloroethyl Vinyl Ether	<0.0150	mg/l	R	Compound dissolves in acid preservative
1209022	HLSF-0154-DRW-012-0912-20120905	SW8260	Acetone	0.00855	mg/l	UB	Blank Contamination
1209022	HLSF-0154-DRW-013-0912-20120905	SW8260	Acetone	0.0116	mg/l	UB	Blank Contamination
1209022	HLSF-0154-DRW-013-0912-20120905	SW8260	2-Chloroethyl Vinyl Ether	<0.0150	mg/l	R	Compound dissolves in acid preservative
1209022	HLSF-0154-DRW-016-0912-20120905	SW8260	Acetone	0.0122	mg/l	UB	Blank Contamination
1209022	HLSF-0154-DRW-016-0912-20120905	SW8260	2-Chloroethyl Vinyl Ether	<0.0150	mg/l	R	Compound dissolves in acid preservative
1209022	HLSF-0154-DRW-016-0912-TB-20120905	SW8260	2-Chloroethyl Vinyl Ether	<0.0150	mg/l	R	Compound dissolves in acid preservative
1209022	HLSF-0154-DRW-112-0912-20120905	M8015D	Diesel Range Organics	0.0561	mg/l	J	Surrogate Recovery
1209022	HLSF-0154-DRW-112-0912-20120905	SW8260	Acetone	0.00822	mg/l	UB	Blank Contamination
1209022	HLSF-0154-DRW-112-0912-20120905	SW8260	2-Chloroethyl Vinyl Ether	<0.0150	mg/l	R	Compound dissolves in acid preservative
1209022	HLSF-0154-FB-001-0912-20120905	SW8260	2-Chloroethyl Vinyl Ether	<0.0150	mg/l	R	Compound dissolves in acid preservative
1209042	HLSF-0154-DRW-004-0912-20120906	M5310C	Total Organic Carbon	26.2	mg/l	UB	Blank Contamination
1209042	HLSF-0154-DRW-004-0912-20120906	M8015D	Diesel Range Organics	2.86	mg/l	J	Surrogate Recovery
1209042	HLSF-0154-DRW-004-0912-20120906	SW8260	2-Chloroethyl Vinyl Ether	<0.0150	mg/l	R	Compound dissolves in acid preservative
1209042	HLSF-0154-DRW-004-0912-20120906	SW8260	Acetone	0.0104	mg/l	UB	Blank Contamination
1209042	HLSF-0154-DRW-005-0912-20120906	M8015D	Diesel Range Organics	2.05	mg/l	J	Surrogate Recovery
1209042	HLSF-0154-DRW-005-0912-20120906	SW8260	Acetone	0.00746	mg/l	UB	Blank Contamination
1209042	HLSF-0154-DRW-005-0912-20120906	SW8260	2-Chloroethyl Vinyl Ether	<0.0150	mg/l	R	Compound dissolves in acid preservative
1209042	HLSF-0154-HCF-001-0912-20120906	M3500-Cr D	Chromium (Hexavalent)	<0.0100	mg/l	UJ	MS/MSD RPD
1209042	HLSF-0154-HCF-001-0912-20120906	M8015D	Diesel Range Organics	6.79	mg/l	J	Surrogate Recovery
1209042	HLSF-0154-HCF-001-0912-20120906	SW8260	2-Chloroethyl Vinyl Ether	<0.0150	mg/l	R	Compound dissolves in acid preservative
1209042	HLSF-0154-HCF-001-0912-20120906	SW8260	Acetone	0.0193	mg/l	UB	Blank Contamination

SDG	Sample ID	Method	Analyte	Result	Units	Qualifier	Reason
1209042	HLSF-0154-HCF-001-0912-TB-20120906	SW8260	2-Chloroethyl Vinyl Ether	<0.0150	mg/l	R	Compound dissolves in acid preservative
1209042	HLSF-0154-RB-001-0912-20120906	SW8260	2-Chloroethyl Vinyl Ether	<0.0150	mg/l	R	Compound dissolves in acid preservative

Dilution
1
1
1
1
1
1
1
1
1
1
1
1
1
5
1
1
1
1
1
1
1
10
1
1

Dilution
1
1