

**WHITE SANDS MISSILE RANGE – NEW MEXICO  
ELECTRONIC VALIDATION REVIEW REPORT  
SDGs: 1103174, 1103185 and 1103201  
HELSTF DIESEL SPILL March 2011**

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	04/27/11
REVIEW PERFORMED BY:	Rachelle Borne	04/27/11
SIGNATURE:		04/27/11
PEER REVIEW:	Dennis Capria	5/10/11

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The following samples were included in this SDG:

SDG	Sample ID	Sample Date	Parent Sample
1103174	HLSF-0154-DRW-012-0311	3/22/2011	
1103174	HLSF-0154-DRW-013-0311	3/22/2011	
1103174	HLSF-0154-DRW-016-0311	3/22/2011	
1103174	HLSF-0154-TB-349-0311	3/22/2011	
1103174	HLSF-0154-DRW-113-0311	3/22/2011	HLSF-0154-DRW-013-0311
1103185	HLSF-0154-DRW-004-0311	3/23/2011	
1103185	HLSF-0154-DRW-005-0311	3/23/2011	
1103201	HLSF-0154-FB-001-0311	3/24/2011	
1103201	HLSF-0154-HCF-001-0311	3/24/2011	
1103201	HLSF-0154-RB-002-0311	3/24/2011	
1103201	HLSF-0154-TB-352-0311	3/24/2011	



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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	NA		NA	
B. MS duplicate (MSD) %R	NA		NA	
C. MS/MSD precision (RPD)	NA		NA	
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 8021B.

Note: 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 (1103201) The compounds acetone and toluene were detected in the rinsate blank and/or the field blank. The associated field sample was non-detect for these compounds; therefore, qualification of the data was not warranted.

5. SDG (1103174) The recovery of o-xylene was above the control limit in the LCS. The associated field samples were non-detect for this compound; therefore, qualification of the data was not warranted.

SDG (1103201) The recoveries of 1,2-dichlorobenzene and sec-butylbenzene were above the control limit in the LCS. The associated field sample was non-detect for these compounds; therefore, qualification of the data was not warranted.

7. SDG (1103174) Sample location HELSF-0154-DRW-113-0311 was collected as a field duplicate of HELSF-0154-DRW-013-0311. The RPDs were acceptable at less than 40%.

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**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	DQM		DQM	
C. LCS/LCSD RPD	DQM		DQM	
6. Matrix spike (MS)				
A. MS %R	NA		NA	
B. MS duplicate (MSD) %R	NA		NA	
C. MS/MSD precision (RPD)	NA		NA	
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.

4. Sample locations HLSF-0154-DRW-005-0311 and HLSF-0154-DRW-004-0311 associated with SDG (1103185) and sample location HLSF-0154-HCF-001-0311 one surrogate recovery exhibited a recovery greater than the control limit. DRO was detected in all three samples and qualified as estimated.
  
7. SDG (1103174) Sample location HELSF-0154-DRW-113-0311 was collected as a field duplicate of HELSF-0154-DRW-013-0311. The RPD was acceptable at non-detect.

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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	NA		NA	
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	NA		NA	
B. MS duplicate (MSD) %R	NA		NA	
C. MS/MSD precision (RPD)	NA		NA	
7. Post Digestion Spikes	NA		NA	
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 (1103174) Sample location HELSF-0154-DRW-113-0311 was collected as a field duplicate of HELSF-0154-DRW-013-0311. 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 M3520 - Hexavalent Chromium and M5310 - TOC.

- 3B. SDG (1103201) TOC was detected in the rinsate blank. The associated field sample result was greater than five times the blank value. No qualification is warranted.
  
- 5. SDG (1103174) Sample location HELSTF-054-DRW-113-0311 was used as the MS/MSD for hexavalent chromium. The recoveries and RPD were acceptable.
  
- 6. SDG (1103174) Sample location HELSF-0154-DRW-113-0311 was collected as a field duplicate of HELSF-0154-DRW-013-0311. The RPDs were acceptable at less than 40%.