

**WHITE SANDS MISSILE RANGE – NEW MEXICO  
ELECTRONIC VALIDATION REVIEW REPORT  
SDGs: 1103129 and 1103146  
HELSTF Construction Landfill 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); 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 I.

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.



**WHITE SANDS MISSILE RANGE – NEW MEXICO  
ELECTRONIC VALIDATION REVIEW REPORT  
SDGs: 1103129 and 1103146  
HELSTF Construction Landfill March 2011**

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	04/26/11
REVIEW PERFORMED BY:	Rachelle Borne	04/26/11
SIGNATURE:		04/26/11
PEER REVIEW:	Dennis Capria	05/10/11



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SDGs: 1103129 and 1103146  
HELSTF Construction Landfill March 2011**

**The following samples were included in this SDG:**

<b>SDG</b>	<b>Sample ID</b>	<b>Sample Date</b>	<b>Parent Sample</b>
1103129	HLSF-3839-HMW-008-0311	3/16/2011	
1103129	HLSF-3839-HMW-034-0311	3/16/2011	
1103129	HLSF-3839-HMW-035-0311	3/16/2011	
1103129	HLSF-3839-TB-339-0311	3/16/2011	
1103129	HLSF-3839-TB-342-0311	3/16/2011	
1103146	HLSF-3839-HMW-032-0311	3/17/2011	
1103146	HLSF-3839-HMW-059-0311	3/17/2011	
1103146	HLSF-3839-RB-001-0311	3/17/2011	
1103146	HLSF-3839-TB-340-0311	3/17/2011	
1103146	HLSF-3839-TB-343-0311	3/17/2011	
1103146	HLSF-3839-HMW-159-0311	3/17/2011	HLSF-3839-HMW-059-0311



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HELSTF Construction Landfill March 2011

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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HELSTF Construction Landfill March 2011**

**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			
C. LCS/LCSD RPD	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 8260B.

- 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 (1103146) The compounds bromoform, dibromochloromethane and toluene were detected in the rinsate blank. The associated field samples were non-detect for these compounds; therefore, qualification of the data was not warranted.
6. SDG (1103129) Sample location HLSF-3839-HMW-035-0311 was used as the MS/MSD. The recovery of 2-chloroethyl vinyl ether was 0% in the MS and the MSD. All samples in this SDG were qualified as rejected for this compound because this compound degrades in the presence of the acid preservative.
7. SDG (1103146) Sample location HLSF-3839-HMW-159-0311 was collected as a field duplicate of HLSF-3839-HMW-059-0311. The RPDs were acceptable at less than 40%.

**WHITE SANDS MISSILE RANGE – NEW MEXICO  
ELECTRONIC VALIDATION REVIEW REPORT  
SDGs: 1103129 and 1103146  
HELSTF Construction Landfill March 2011**

**SEMIVOLATILE 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 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 8270C.

- 3B. SDG (1103146) The compound acetophenone was detected in the rinsate blank. The associated field samples were non-detect for this compound; therefore, qualification of the data was not warranted.
  
- 5. SDGs (1103129 and 1103146) The recovery of dimethylphenethylamine was below the control limit in the LCS. The associated field samples were qualified as estimated for this compound. The recoveries of pentachloronitrobenzene and N-nitrosodiphenylamine were above the control limit in LCS. The associated field samples were non-detect for these compounds; therefore, qualification of the data was not warranted.
  
- 6. SDG (1103129) Sample location HLSF-3839-HMW-035-0311 was used as the MS/MSD. The recovery of dimethylphenethylamine was 0% in the MS and the MSD. The parent sample was qualified as rejected for this compound. Several recoveries and RPDs were outside the control limit. The parent sample was qualified as estimated for these compounds when applicable. See the attached qualification summary for details of the qualifications.
  
- 7. SDG (1103146) Sample location HLSF-3839-HMW-159-0311 was collected as a field duplicate of HLSF-3839-HMW-059-0311. The RPDs were acceptable at non-detect.

**WHITE SANDS MISSILE RANGE – NEW MEXICO  
ELECTRONIC VALIDATION REVIEW REPORT  
SDGs: 1103129 and 1103146  
HELSTF Construction Landfill March 2011**

**TPH – GASOLINE RANGE ORGANICS (GRO)**

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	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 M8015V.

6.      SDG (1103129) Sample location HLSF-3839-HMW-035-0311 was used as the MS/MSD. The recoveries and RPD were acceptable.  
  
         SDG (1103146) Sample location HLSF-3839-HMW-032-0311 was used as the MS/MSD. The recoveries and RPD were acceptable.
7.      SDG (1103146) Sample location HLSF-3839-HMW-159-0311 was collected as a field duplicate of HLSF-3839-HMW-059-0311. The RPD was acceptable at non-detect.

**WHITE SANDS MISSILE RANGE – NEW MEXICO  
ELECTRONIC VALIDATION REVIEW REPORT  
SDGs: 1103129 and 1103146  
HELSTF Construction Landfill March 2011**

**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.

6. SDG (1103129) Sample location HLSF-3839-HMW-035-0311 was used as the MS/MSD. The recoveries and RPD were acceptable.
7. SDG (1103146) Sample location HLSF-3839-HMW-159-0311 was collected as a field duplicate of HLSF-3839-HMW-059-0311. The RPD was acceptable at non-detect.

**WHITE SANDS MISSILE RANGE – NEW MEXICO  
ELECTRONIC VALIDATION REVIEW REPORT  
SDGs: 1103129 and 1103146  
HELSTF Construction Landfill March 2011**

**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. Total vs. Dissolved (%D)	M		M	
9. 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 7471A and 6020.

- 3A. SDG (1103146) Calcium was detected in the method blank. The associated field samples were greater than five times the blank value. No qualification is warranted.
- 3B. SDG (1103146) Calcium was detected in the rinsate blank. The associated field samples were greater than five times the blank value. No qualification is warranted.
- 4. SDG (1103129) Sample location HLSF-3839-HMW-035-0311 was used as the serial dilution. The RPD for potassium and dissolved potassium were above the control limit for the 10x dilution and 100x dilution respectively. The associated samples were qualified as estimated for potassium.  
  
SDG (1103146) Sample location HLSF-3839-HMW-059-0311 was used as the serial dilution. The RPDs for selenium and potassium were above the control limit. The associated field samples were qualified as estimated for these metals.
- 6. SDG (1103129) Sample location HLSF-3839-HMW-035-0311 was used as the MS/MSD. The recoveries of dissolved cadmium, silver and chromium were below the control limit in the MS or the MSD. The RPDs between the MS/MSD pair were above the control limit for dissolved barium, lead and silver. The associated samples were qualified as estimated for all of these metals.

**WHITE SANDS MISSILE RANGE – NEW MEXICO  
ELECTRONIC VALIDATION REVIEW REPORT  
SDGs: 1103129 and 1103146  
HELSTF Construction Landfill March 2011**

SDG (1103146) Sample location HLSF-3839-HMW-059-0311 was used as the MS/MSD. The recovery of silver was below the control limit in the MS and the MSD. The associated samples were qualified as estimated for silver.

7. SDG (1103129) Sample location HLSF-3839-HMW-035-0311 was used as the post digestion spike. The recovery of dissolved silver was below the control limit. The associated field samples were qualified as estimated.

SDG (1103146) Sample location HLSF-3839-HMW-059-0311 was used as the post digestion spike. The recoveries were acceptable.

9. SDG (1103146) Sample location HLSF-3839-HMW-159-0311 was collected as a field duplicate of HLSF-3839-HMW-059-0311. The RPDs were acceptable at less than 40%.

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ELECTRONIC VALIDATION REVIEW REPORT  
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HELSTF Construction Landfill March 2011**

**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. Lab Duplicate RPD	M		M	
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 Methods M2320B-Alkalinity , M5310C – TOC and E300.0 – Sulfate/Chloride.

- 3B.      SDG (1103146) TOC was detected in the rinsate blank. The associated field samples were qualified as non-detect if the sample concentrations were less than five times the blank values.
  
- 5.      SDG (1103129) Sample location HLSF-3839-HMW-035-0311 was used as the MS/MSD. The recoveries and RPDs were acceptable.  
  
          SDG (1103146) Sample location HLSF-3839-HMW-059-0311 was used as the MS/MSD. The recoveries and RPDs were acceptable.
  
- 6.      SDG (1103129) Sample location HLSF-3839-HMW-035-0311 was used as the laboratory duplicate. The RPDs were acceptable.  
  
          SDG (1103146) Sample location HLSF-3839-HMW-059-0311 was used as the laboratory duplicate. The RPDs were acceptable.
  
- 7.      SDG (1103146) Sample location HLSF-3839-HMW-159-0311 was collected as a field duplicate of HLSF-3839-HMW-059-0311. The RPDs were acceptable at less than 40%.