

White Sands Missile Range- HELSTF TSA Gasoline Spill

Data Review

WHITE SANDS MISSILE RANGE, NEW MEXICO

Volatiles Analysis

SDG #1309037

Analyses Performed By:
DHL Analytical, Inc.
Round Rock, Texas

Report # 20421R
Review Level: Tier II
Project: GP08WSMR.2012.MON13

SUMMARY

This data quality assessment summarizes the review of Sample Delivery Group (SDG) #1309037 for samples collected in association with the HELSTF TSA Gasoline Spill. The review was conducted as a Tier II evaluation and included review of data package completeness. Only analytical data associated with constituents of concern were reviewed for this validation. Field documentation was not included in this review. Included with this assessment are the validation annotated sample result sheets, and chain of custody. Analyses were performed on the following samples:

| Sample ID | Lab ID | Matrix | Sample Collection Date | Parent Sample | Analysis | | | | |
|---------------------------|------------|--------|------------------------|------------------------|----------|-----|------|-----|------|
| | | | | | VOC | DRO | SVOC | MET | MISC |
| HTSA-0197-HMW-048-0913-TB | 1309037-01 | Water | 09/05/13 | | X | | | | |
| HTSA-0197-HMW-048-0913 | 1309037-02 | Water | 09/05/13 | | X | | | | |
| HTSA-0197-HMW-049-0913 | 1309037-03 | Water | 09/05/13 | | X | | | | |
| HTSA-0197-HMW-149-0913 | 1309037-04 | Water | 09/05/13 | HTSA-0197-HMW-049-0913 | X | | | | |
| HTSA-0197-FB-001-0913 | 1309037-05 | Water | 09/05/13 | | X | | | | |
| HTSA-0197-HMW-050-0913 | 1309037-06 | Water | 09/05/13 | | X | | | | |
| HTSA-0197-RB-001-0913 | 1309037-07 | Water | 09/05/13 | | X | | | | |
| HTSA-0197-HMW-052-0913 | 1309037-08 | Water | 09/05/13 | | X | | | | |

Note:

1. Matrix spike/matrix spike duplicate (MS/MSD) was performed on sample location HTSA-0197-HMW-052-0913.

ANALYTICAL DATA PACKAGE DOCUMENTATION

The table below is the evaluation of the data package completeness.

| Items Reviewed | Reported | | Performance Acceptable | | Not Required |
|---|----------|-----|------------------------|-----|--------------|
| | No | Yes | No | Yes | |
| 1. Sample receipt condition | | X | | X | |
| 2. Requested analyses and sample results | | X | | X | |
| 3. Master tracking list | | X | | X | |
| 4. Methods of analysis | | X | | X | |
| 5. Reporting limits | | X | | X | |
| 6. Sample collection date | | X | | X | |
| 7. Laboratory sample received date | | X | | X | |
| 8. Sample preservation verification (as applicable) | | X | | X | |
| 9. Sample preparation/extraction/analysis dates | | X | | X | |
| 10. Fully executed Chain-of-Custody (COC) form | | X | | X | |
| 11. Narrative summary of QA or sample problems provided | | X | | X | |
| 12. Data Package Completeness and Compliance | | X | | X | |

QA - Quality Assurance

ORGANIC ANALYSIS INTRODUCTION

Analyses were performed according to United States Environmental Protection Agency (USEPA) SW-846 8260B. Data were reviewed in accordance with USEPA National Functional Guidelines of October 1999.

The data review process is an evaluation of data on a technical basis rather than a determination of contract compliance. As such, the standards against which the data are being weighed may differ from those specified in the analytical method. It is assumed that the data package represents the best efforts of the laboratory and had already been subjected to adequate and sufficient quality review prior to submission.

During the review process, laboratory qualified and unqualified data are verified against the supporting documentation. Based on this evaluation, qualifier codes may be added, deleted, or modified by the data reviewer. Results are qualified with the following codes in accordance with USEPA National Functional Guidelines:

- Concentration (C) Qualifiers
 - U The compound was analyzed for but not detected. The associated value is the compound quantitation limit.
 - B The compound has been found in the sample as well as its associated blank, its presence in the sample may be suspect.
- Quantitation (Q) Qualifiers
 - E The compound was quantitated above the calibration range.
 - D Concentration is based on a diluted sample analysis.
- Validation Qualifiers
 - J The compound was positively identified; however, the associated numerical value is an estimated concentration only.
 - UJ The compound was not detected above the reported sample quantitation limit. However, the reported limit is approximate and may or may not represent the actual limit of quantitation.
 - UB Compound considered non-detect at the listed value due to associated blank contamination.
 - R The sample results are rejected.

Two facts should be noted by all data users. First, the "R" flag means that the associated value is unusable. In other words, due to significant quality control (QC) problems, the analysis is invalid and provides no information as to whether the compound is present or not. "R" values should not appear on data tables because they cannot be relied upon, even as a last resort. The second fact to keep in mind is that no compound concentration, even if it has passed all QC tests, is guaranteed to be accurate. Strict QC serves to increase confidence in data but any value potentially contains error.

VOLATILE ORGANIC COMPOUND (VOC) ANALYSES

1. Holding Times

The specified holding times for the following methods are presented in the following table.

| Method | Matrix | Holding Time | Preservation |
|-------------|--------|--|--|
| SW-846 8260 | Water | 14 days from collection to analysis | Cool to <6 °C; preserved to a pH of less than 2 s.u. |
| | Soil | 48 hours from collection to extraction and 14 days from extraction to analysis | Cool to <6 °C. |

s.u. Standard units

All samples were analyzed within the specified holding times.

2. Blank Contamination

Quality assurance (QA) blanks (i.e., method and rinse blanks) are prepared to identify any contamination with which may have been introduced into the samples during sample preparation or field activity. Method blanks measure laboratory contamination. Rinse blanks measure contamination of samples during field operations.

A blank action level (BAL) of five times the concentration of a detected compound in an associated blank (common laboratory contaminant compounds are calculated at ten times) is calculated for QA blanks containing concentrations greater than the method detection limit (MDL). The BAL is compared to the associated sample results to determine the appropriate qualification of the sample results, if needed.

Analytes were not detected above the MDL in the associated blanks; therefore detected sample results were not associated with blank contamination.

3. Surrogates/System Monitoring Compounds

All samples to be analyzed for organic compounds are spiked with surrogate compounds prior to sample preparation to evaluate overall laboratory performance and efficiency of the analytical technique. VOC analysis requires that all surrogates associated with the analysis exhibit recoveries within the laboratory-established acceptance limits.

Sample locations associated with surrogates exhibiting recoveries outside of the control limits presented in the following table.

| Sample Locations | Surrogate | Recovery |
|-----------------------|-----------------------|----------|
| HTSA-0197-RB-001-0913 | 1,2-Dichloroethane-d4 | AC |
| | 4-Bromofluorobenzene | AC |
| | Dibromofluoromethane | > UL |
| | Toluene-d8 | AC |

UL Upper control limit

AC Acceptable

The criteria used to evaluate the surrogate recoveries are presented in the following table. In the case of a surrogate deviation, the sample results associated with the deviant fraction are qualified as documented in the table below.

| Control Limit | Sample Result | Qualification |
|----------------|---------------|---------------|
| > UL | Non-detect | No Action |
| | Detect | J |
| < LL but > 10% | Non-detect | UJ |
| | Detect | J |
| < 10% | Non-detect | R |
| | Detect | J |

4. Matrix Spike/Matrix Spike Duplicate (MS/MSD) Analysis

MS/MSD data are used to assess the precision and accuracy of the analytical method. The compounds used to perform the MS/MSD analysis must exhibit a percent recovery within the laboratory-established acceptance limits. The relative percent difference (RPD) between the MS/MSD recoveries must exhibit an RPD within the laboratory-established acceptance limits.

Note: The MS/MSD recovery control limits do not apply for MS/MSD performed on sample locations where the compound concentration detected in the parent sample exceeds the MS/MSD concentration by a factor of four or greater.

The MS/MSD exhibited acceptable recoveries and RPD between the MS/MSD recoveries.

5. Laboratory Control Sample (LCS) Analysis

The LCS analysis is used to assess the precision and accuracy of the analytical method independent of matrix interferences. The compounds associated with the LCS analysis must exhibit a percent recovery within the laboratory-established acceptance limits.

All compounds associated with the LCS analysis exhibited recoveries within the control limits.

6. Field Duplicate Analysis

Field duplicate analysis is used to assess the precision and accuracy of the field sampling procedures and analytical method. A control limit of 40% for water matrices and 70% for soil matrices is applied to the RPD between the parent sample and the field duplicate. In the instance when the parent and/or duplicate sample concentrations are less than or equal to 5 times the RL, a control limit of two times the RL is applied for water matrices or three times the RL is applied for soil matrices.

Results for duplicate samples are summarized in the following table.

| Sample ID/Duplicate ID | Compound | Sample Result | Duplicate Result | RPD |
|--|---------------|---------------|------------------|-----|
| HTSA-0197-HMW-049-0913 HTSA-0197-HMW-149-0913 | All Compounds | U | U | AC |

AC Acceptable
U Not detected

The calculated RPDs between the parent sample and field duplicate were acceptable.

7. Compound Identification

Compounds are identified on the GC/MS by laboratory personnel using the analytes relative retention time and ion spectra. These identifications were not reviewed by the data validator.

8. System Performance and Overall Assessment

Overall system performance was acceptable. Other than for those deviations specifically mentioned in this review, the overall data quality is within the guidelines specified in the method.

DATA VALIDATION CHECKLIST FOR VOCs

| VOCs: SW-846 8260B | Reported | | Performance Acceptable | | Not Required |
|--|----------|-----|------------------------|-----|--------------|
| | No | Yes | No | Yes | |
| GAS CHROMATOGRAPHY/MASS SPECTROMETRY (GC/MS) | | | | | |
| Tier II Validation | | | | | |
| Holding times | | X | | X | |
| Reporting limits (units) | | X | | X | |
| Blanks | | | | | |
| A. Method blanks | | X | | X | |
| B. Equipment blanks | | X | | X | |
| C. Trip blanks | | X | | X | |
| Laboratory Control Sample (LCS) | | X | | X | |
| Laboratory Control Sample Duplicate(LCSD) | | | | | X |
| LCS/LCSD Precision (RPD) | | | | | X |
| Matrix Spike (MS) | | X | | X | |
| Matrix Spike Duplicate(MSD) | | X | | X | |
| MS/MSD Precision (RPD) | | X | | X | |
| Field/Lab Duplicate (RPD) | | X | | X | |
| Surrogate Spike Recoveries | | X | | X | |
| Dilution Factor | | X | | X | |
| Moisture Content | | | | | X |

%R Percent recovery
 RPD Relative percent difference

VALIDATION PERFORMED

BY:

Jeffrey L. Davin

SIGNATURE:

A handwritten signature in black ink, appearing to read "Jeffrey L. Davin", written over a horizontal line.

DATE: October 17, 2013

PEER REVIEW: Dennis Capria

DATE: October 23, 2013

**CHAIN OF CUSTODY/
CORRECTED SAMPLE ANALYSIS DATA SHEETS**

DHL Analytical, Inc.

Date: 18-Sep-13

CLIENT: Zia Engineering & Environmental
Project: HELSTF TSA
Project No:
Lab Order: 1309037

Client Sample ID: HTSA-0197-HMW-048-0913-TB
Lab ID: 1309037-01
Collection Date: 09/05/13 11:05 AM
Matrix: TRIP BLANK

| Analyses | Result | MDL | RL | Qual | Units | DF | Date Analyzed |
|--------------------------------------|-----------|----------------|---------|------|---------------------|----|-------------------|
| 8260 WATER VOLATILES BY GC/MS | | SW8260C | | | Analyst: DEW | | |
| Methyl tert-butyl ether | <0.000300 | 0.000300 | 0.00100 | | mg/L | 1 | 09/09/13 05:34 PM |
| Benzene | <0.000200 | 0.000200 | 0.00100 | | mg/L | 1 | 09/09/13 05:34 PM |
| Ethylbenzene | <0.000300 | 0.000300 | 0.00100 | | mg/L | 1 | 09/09/13 05:34 PM |
| Toluene | <0.000600 | 0.000600 | 0.00200 | | mg/L | 1 | 09/09/13 05:34 PM |
| m,p-Xylene | <0.000600 | 0.000600 | 0.00200 | | mg/L | 1 | 09/09/13 05:34 PM |
| o-Xylene | <0.000300 | 0.000300 | 0.00100 | | mg/L | 1 | 09/09/13 05:34 PM |
| Surr: 1,2-Dichloroethane-d4 | 107 | 0 | 70-120 | | %REC | 1 | 09/09/13 05:34 PM |
| Surr: 4-Bromofluorobenzene | 105 | 0 | 75-120 | | %REC | 1 | 09/09/13 05:34 PM |
| Surr: Dibromofluoromethane | 108 | 0 | 85-115 | | %REC | 1 | 09/09/13 05:34 PM |
| Surr: Toluene-d8 | 99.8 | 0 | 85-120 | | %REC | 1 | 09/09/13 05:34 PM |

| | | |
|--------------------|---|---|
| Qualifiers: | * Value exceeds TCLP Maximum Concentration Level | B Analyte detected in the associated Method Blank |
| | C Sample Result or QC discussed in the Case Narrative | DF Dilution Factor |
| | E TPH pattern not Gas or Diesel Range Pattern | J Analyte detected between MDL and RL |
| | MDL Method Detection Limit | ND Not Detected at the Method Detection Limit |
| | RL Reporting Limit | S Spike Recovery outside control limits |
| | N Parameter not NELAC certified | |

DHL Analytical, Inc.

Date: 18-Sep-13

CLIENT: Zia Engineering & Environmental
Project: HELSTF TSA
Project No:
Lab Order: 1309037

Client Sample ID: HTSA-0197-HMW-048-0913
Lab ID: 1309037-02
Collection Date: 09/05/13 11:05 AM
Matrix: AQUEOUS

| Analyses | Result | MDL | RL | Qual | Units | DF | Date Analyzed |
|--------------------------------------|-----------|----------------|---------|------|---------------------|----|-------------------|
| 8260 WATER VOLATILES BY GC/MS | | SW8260C | | | Analyst: DEW | | |
| Methyl tert-butyl ether | <0.000300 | 0.000300 | 0.00100 | | mg/L | 1 | 09/09/13 08:01 PM |
| Benzene | <0.000200 | 0.000200 | 0.00100 | | mg/L | 1 | 09/09/13 08:01 PM |
| Ethylbenzene | <0.000300 | 0.000300 | 0.00100 | | mg/L | 1 | 09/09/13 08:01 PM |
| Toluene | <0.000600 | 0.000600 | 0.00200 | | mg/L | 1 | 09/09/13 08:01 PM |
| m,p-Xylene | <0.000600 | 0.000600 | 0.00200 | | mg/L | 1 | 09/09/13 08:01 PM |
| o-Xylene | <0.000300 | 0.000300 | 0.00100 | | mg/L | 1 | 09/09/13 08:01 PM |
| Surr: 1,2-Dichloroethane-d4 | 107 | 0 | 70-120 | | %REC | 1 | 09/09/13 08:01 PM |
| Surr: 4-Bromofluorobenzene | 103 | 0 | 75-120 | | %REC | 1 | 09/09/13 08:01 PM |
| Surr: Dibromofluoromethane | 109 | 0 | 85-115 | | %REC | 1 | 09/09/13 08:01 PM |
| Surr: Toluene-d8 | 99.3 | 0 | 85-120 | | %REC | 1 | 09/09/13 08:01 PM |

Qualifiers:

| | | | |
|-----|---|----|---|
| * | Value exceeds TCLP Maximum Concentration Level | B | Analyte detected in the associated Method Blank |
| C | Sample Result or QC discussed in the Case Narrative | DF | Dilution Factor |
| E | TPH pattern not Gas or Diesel Range Pattern | J | Analyte detected between MDL and RL |
| MDL | Method Detection Limit | ND | Not Detected at the Method Detection Limit |
| RL | Reporting Limit | S | Spike Recovery outside control limits |
| N | Parameter not NELAC certified | | |

DHL Analytical, Inc.

Date: 18-Sep-13

CLIENT: Zia Engineering & Environmental
Project: HELSTF TSA
Project No:
Lab Order: 1309037

Client Sample ID: HTSA-0197-HMW-049-0913
Lab ID: 1309037-03
Collection Date: 09/05/13 12:05 PM
Matrix: AQUEOUS

| Analyses | Result | MDL | RL | Qual | Units | DF | Date Analyzed |
|--------------------------------------|-----------|----------------|---------|------|---------------------|----|-------------------|
| 8260 WATER VOLATILES BY GC/MS | | SW8260C | | | Analyst: DEW | | |
| Methyl tert-butyl ether | <0.000300 | 0.000300 | 0.00100 | | mg/L | 1 | 09/09/13 08:26 PM |
| Benzene | <0.000200 | 0.000200 | 0.00100 | | mg/L | 1 | 09/09/13 08:26 PM |
| Ethylbenzene | <0.000300 | 0.000300 | 0.00100 | | mg/L | 1 | 09/09/13 08:26 PM |
| Toluene | <0.000600 | 0.000600 | 0.00200 | | mg/L | 1 | 09/09/13 08:26 PM |
| m,p-Xylene | <0.000600 | 0.000600 | 0.00200 | | mg/L | 1 | 09/09/13 08:26 PM |
| o-Xylene | <0.000300 | 0.000300 | 0.00100 | | mg/L | 1 | 09/09/13 08:26 PM |
| Surr: 1,2-Dichloroethane-d4 | 112 | 0 | 70-120 | | %REC | 1 | 09/09/13 08:26 PM |
| Surr: 4-Bromofluorobenzene | 107 | 0 | 75-120 | | %REC | 1 | 09/09/13 08:26 PM |
| Surr: Dibromofluoromethane | 112 | 0 | 85-115 | | %REC | 1 | 09/09/13 08:26 PM |
| Surr: Toluene-d8 | 97.9 | 0 | 85-120 | | %REC | 1 | 09/09/13 08:26 PM |

Qualifiers:

| | | | |
|-----|---|----|---|
| * | Value exceeds TCLP Maximum Concentration Level | B | Analyte detected in the associated Method Blank |
| C | Sample Result or QC discussed in the Case Narrative | DF | Dilution Factor |
| E | TPH pattern not Gas or Diesel Range Pattern | J | Analyte detected between MDL and RL |
| MDL | Method Detection Limit | ND | Not Detected at the Method Detection Limit |
| RL | Reporting Limit | S | Spike Recovery outside control limits |
| N | Parameter not NELAC certified | | |

DHL Analytical, Inc.

Date: 18-Sep-13

CLIENT: Zia Engineering & Environmental
Project: HELSTF TSA
Project No:
Lab Order: 1309037

Client Sample ID: HTSA-0197-HMW-149-0913
Lab ID: 1309037-04
Collection Date: 09/05/13 12:05 PM
Matrix: AQUEOUS

| Analyses | Result | MDL | RL | Qual | Units | DF | Date Analyzed |
|--------------------------------------|-----------|----------------|---------|------|---------------------|----|-------------------|
| 8260 WATER VOLATILES BY GC/MS | | SW8260C | | | Analyst: DEW | | |
| Methyl tert-butyl ether | <0.000300 | 0.000300 | 0.00100 | | mg/L | 1 | 09/09/13 08:51 PM |
| Benzene | <0.000200 | 0.000200 | 0.00100 | | mg/L | 1 | 09/09/13 08:51 PM |
| Ethylbenzene | <0.000300 | 0.000300 | 0.00100 | | mg/L | 1 | 09/09/13 08:51 PM |
| Toluene | <0.000600 | 0.000600 | 0.00200 | | mg/L | 1 | 09/09/13 08:51 PM |
| m,p-Xylene | <0.000600 | 0.000600 | 0.00200 | | mg/L | 1 | 09/09/13 08:51 PM |
| o-Xylene | <0.000300 | 0.000300 | 0.00100 | | mg/L | 1 | 09/09/13 08:51 PM |
| Surr: 1,2-Dichloroethane-d4 | 108 | 0 | 70-120 | | %REC | 1 | 09/09/13 08:51 PM |
| Surr: 4-Bromofluorobenzene | 106 | 0 | 75-120 | | %REC | 1 | 09/09/13 08:51 PM |
| Surr: Dibromofluoromethane | 107 | 0 | 85-115 | | %REC | 1 | 09/09/13 08:51 PM |
| Surr: Toluene-d8 | 98.0 | 0 | 85-120 | | %REC | 1 | 09/09/13 08:51 PM |

| | | | | |
|--------------------|-----|---|----|---|
| Qualifiers: | * | Value exceeds TCLP Maximum Concentration Level | B | Analyte detected in the associated Method Blank |
| | C | Sample Result or QC discussed in the Case Narrative | DF | Dilution Factor |
| | E | TPH pattern not Gas or Diesel Range Pattern | J | Analyte detected between MDL and RL |
| | MDL | Method Detection Limit | ND | Not Detected at the Method Detection Limit |
| | RL | Reporting Limit | S | Spike Recovery outside control limits |
| | N | Parameter not NELAC certified | | |

DHL Analytical, Inc.

Date: 18-Sep-13

CLIENT: Zia Engineering & Environmental
Project: HELSTF TSA
Project No:
Lab Order: 1309037

Client Sample ID: HTSA-0197-FB-001-0913
Lab ID: 1309037-05
Collection Date: 09/05/13 12:05 PM
Matrix: FIELD BLANK

| Analyses | Result | MDL | RL | Qual | Units | DF | Date Analyzed |
|--------------------------------------|-----------|----------------|---------|------|---------------------|----|-------------------|
| 8260 WATER VOLATILES BY GC/MS | | SW8260C | | | Analyst: DEW | | |
| Methyl tert-butyl ether | <0.000300 | 0.000300 | 0.00100 | | mg/L | 1 | 09/09/13 05:59 PM |
| Benzene | <0.000200 | 0.000200 | 0.00100 | | mg/L | 1 | 09/09/13 05:59 PM |
| Ethylbenzene | <0.000300 | 0.000300 | 0.00100 | | mg/L | 1 | 09/09/13 05:59 PM |
| Toluene | <0.000600 | 0.000600 | 0.00200 | | mg/L | 1 | 09/09/13 05:59 PM |
| m,p-Xylene | <0.000600 | 0.000600 | 0.00200 | | mg/L | 1 | 09/09/13 05:59 PM |
| o-Xylene | <0.000300 | 0.000300 | 0.00100 | | mg/L | 1 | 09/09/13 05:59 PM |
| Surr: 1,2-Dichloroethane-d4 | 115 | 0 | 70-120 | | %REC | 1 | 09/09/13 05:59 PM |
| Surr: 4-Bromofluorobenzene | 104 | 0 | 75-120 | | %REC | 1 | 09/09/13 05:59 PM |
| Surr: Dibromofluoromethane | 119 | 0 | 85-115 | S | %REC | 1 | 09/09/13 05:59 PM |
| Surr: Toluene-d8 | 98.7 | 0 | 85-120 | | %REC | 1 | 09/09/13 05:59 PM |

Qualifiers:

| | | | |
|-----|---|----|---|
| * | Value exceeds TCLP Maximum Concentration Level | B | Analyte detected in the associated Method Blank |
| C | Sample Result or QC discussed in the Case Narrative | DF | Dilution Factor |
| E | TPH pattern not Gas or Diesel Range Pattern | J | Analyte detected between MDL and RL |
| MDL | Method Detection Limit | ND | Not Detected at the Method Detection Limit |
| RL | Reporting Limit | S | Spike Recovery outside control limits |
| N | Parameter not NELAC certified | | |

DHL Analytical, Inc.

Date: 18-Sep-13

CLIENT: Zia Engineering & Environmental
Project: HELSTF TSA
Project No:
Lab Order: 1309037

Client Sample ID: HTSA-0197-HMW-050-0913
Lab ID: 1309037-06
Collection Date: 09/05/13 01:08 PM
Matrix: AQUEOUS

| Analyses | Result | MDL | RL | Qual | Units | DF | Date Analyzed |
|--------------------------------------|-----------|----------------|---------|------|---------------------|----|-------------------|
| 8260 WATER VOLATILES BY GC/MS | | SW8260C | | | Analyst: DEW | | |
| Methyl tert-butyl ether | <0.000300 | 0.000300 | 0.00100 | | mg/L | 1 | 09/09/13 09:16 PM |
| Benzene | <0.000200 | 0.000200 | 0.00100 | | mg/L | 1 | 09/09/13 09:16 PM |
| Ethylbenzene | <0.000300 | 0.000300 | 0.00100 | | mg/L | 1 | 09/09/13 09:16 PM |
| Toluene | <0.000600 | 0.000600 | 0.00200 | | mg/L | 1 | 09/09/13 09:16 PM |
| m,p-Xylene | <0.000600 | 0.000600 | 0.00200 | | mg/L | 1 | 09/09/13 09:16 PM |
| o-Xylene | <0.000300 | 0.000300 | 0.00100 | | mg/L | 1 | 09/09/13 09:16 PM |
| Surr: 1,2-Dichloroethane-d4 | 111 | 0 | 70-120 | | %REC | 1 | 09/09/13 09:16 PM |
| Surr: 4-Bromofluorobenzene | 105 | 0 | 75-120 | | %REC | 1 | 09/09/13 09:16 PM |
| Surr: Dibromofluoromethane | 113 | 0 | 85-115 | | %REC | 1 | 09/09/13 09:16 PM |
| Surr: Toluene-d8 | 100 | 0 | 85-120 | | %REC | 1 | 09/09/13 09:16 PM |

Qualifiers:

| | | | |
|-----|---|----|---|
| * | Value exceeds TCLP Maximum Concentration Level | B | Analyte detected in the associated Method Blank |
| C | Sample Result or QC discussed in the Case Narrative | DF | Dilution Factor |
| E | TPH pattern not Gas or Diesel Range Pattern | J | Analyte detected between MDL and RL |
| MDL | Method Detection Limit | ND | Not Detected at the Method Detection Limit |
| RL | Reporting Limit | S | Spike Recovery outside control limits |
| N | Parameter not NELAC certified | | |

DHL Analytical, Inc.

Date: 18-Sep-13

CLIENT: Zia Engineering & Environmental
Project: HELSTF TSA
Project No:
Lab Order: 1309037

Client Sample ID: HTSA-0197-RB-001-0913
Lab ID: 1309037-07
Collection Date: 09/05/13 01:25 PM
Matrix: EQUIP BLANK

| Analyses | Result | MDL | RL | Qual | Units | DF | Date Analyzed |
|--------------------------------------|-----------|----------------|---------|------|---------------------|----|-------------------|
| 8260 WATER VOLATILES BY GC/MS | | SW8260C | | | Analyst: DEW | | |
| Methyl tert-butyl ether | <0.000300 | 0.000300 | 0.00100 | | mg/L | 1 | 09/09/13 06:24 PM |
| Benzene | <0.000200 | 0.000200 | 0.00100 | | mg/L | 1 | 09/09/13 06:24 PM |
| Ethylbenzene | <0.000300 | 0.000300 | 0.00100 | | mg/L | 1 | 09/09/13 06:24 PM |
| Toluene | <0.000600 | 0.000600 | 0.00200 | | mg/L | 1 | 09/09/13 06:24 PM |
| m,p-Xylene | <0.000600 | 0.000600 | 0.00200 | | mg/L | 1 | 09/09/13 06:24 PM |
| o-Xylene | <0.000300 | 0.000300 | 0.00100 | | mg/L | 1 | 09/09/13 06:24 PM |
| Surr: 1,2-Dichloroethane-d4 | 111 | 0 | 70-120 | | %REC | 1 | 09/09/13 06:24 PM |
| Surr: 4-Bromofluorobenzene | 102 | 0 | 75-120 | | %REC | 1 | 09/09/13 06:24 PM |
| Surr: Dibromofluoromethane | 113 | 0 | 85-115 | | %REC | 1 | 09/09/13 06:24 PM |
| Surr: Toluene-d8 | 98.9 | 0 | 85-120 | | %REC | 1 | 09/09/13 06:24 PM |

Qualifiers:

| | | | |
|-----|---|----|---|
| * | Value exceeds TCLP Maximum Concentration Level | B | Analyte detected in the associated Method Blank |
| C | Sample Result or QC discussed in the Case Narrative | DF | Dilution Factor |
| E | TPH pattern not Gas or Diesel Range Pattern | J | Analyte detected between MDL and RL |
| MDL | Method Detection Limit | ND | Not Detected at the Method Detection Limit |
| RL | Reporting Limit | S | Spike Recovery outside control limits |
| N | Parameter not NELAC certified | | |

DHL Analytical, Inc.

Date: 18-Sep-13

CLIENT: Zia Engineering & Environmental
Project: HELSTF TSA
Project No:
Lab Order: 1309037

Client Sample ID: HTSA-0197-HMW-052-0913
Lab ID: 1309037-08
Collection Date: 09/05/13 02:48 PM
Matrix: AQUEOUS

| Analyses | Result | MDL | RL | Qual | Units | DF | Date Analyzed |
|--------------------------------------|-----------|----------------|---------|------|---------------------|----|-------------------|
| 8260 WATER VOLATILES BY GC/MS | | SW8260C | | | Analyst: DEW | | |
| Methyl tert-butyl ether | 0.0126 | 0.000300 | 0.00100 | | mg/L | 1 | 09/09/13 09:40 PM |
| Benzene | <0.000200 | 0.000200 | 0.00100 | | mg/L | 1 | 09/09/13 09:40 PM |
| Ethylbenzene | <0.000300 | 0.000300 | 0.00100 | | mg/L | 1 | 09/09/13 09:40 PM |
| Toluene | <0.000600 | 0.000600 | 0.00200 | | mg/L | 1 | 09/09/13 09:40 PM |
| m,p-Xylene | <0.000600 | 0.000600 | 0.00200 | | mg/L | 1 | 09/09/13 09:40 PM |
| o-Xylene | <0.000300 | 0.000300 | 0.00100 | | mg/L | 1 | 09/09/13 09:40 PM |
| Surr: 1,2-Dichloroethane-d4 | 113 | 0 | 70-120 | | %REC | 1 | 09/09/13 09:40 PM |
| Surr: 4-Bromofluorobenzene | 106 | 0 | 75-120 | | %REC | 1 | 09/09/13 09:40 PM |
| Surr: Dibromofluoromethane | 112 | 0 | 85-115 | | %REC | 1 | 09/09/13 09:40 PM |
| Surr: Toluene-d8 | 98.1 | 0 | 85-120 | | %REC | 1 | 09/09/13 09:40 PM |

| | | | | |
|--------------------|-----|---|----|---|
| Qualifiers: | * | Value exceeds TCLP Maximum Concentration Level | B | Analyte detected in the associated Method Blank |
| | C | Sample Result or QC discussed in the Case Narrative | DF | Dilution Factor |
| | E | TPH pattern not Gas or Diesel Range Pattern | J | Analyte detected between MDL and RL |
| | MDL | Method Detection Limit | ND | Not Detected at the Method Detection Limit |
| | RL | Reporting Limit | S | Spike Recovery outside control limits |
| | N | Parameter not NELAC certified | | |



755 S. Teator Blvd. Ste. F-201
 Las Cruces, NM 88011
 575-632-1526 u
 575-632-1587 f

#1399037

CHAIN OF CUSTODY RECORD

PAGE 1 OF 1

| PROJECT NO. | | PROJECT NAME | | | NO. OF CONTAINERS | ANALYSIS REQUESTED | | | | | REMARKS | |
|---------------------|--------|-------------------------|-----------------------------------|--|-------------------|---------------------------------|---------|---------------------------------|---------|------|---------|--------------------------|
| PROJECT NO. | | PROJECT NAME | | | | Benzene | Toluene | Ethylbenzene | Xylenes | MTBE | | |
| SAMPLER'S SIGNATURE | | | | | Brady T. Davis | | | | | | | |
| DATE | TIME | SAMPLE ID | MATRIX | LAB NO. | | | | | | | | |
| 01 | 9-5-13 | 1105 | HTSA-0197-HMW-048-0913-TB | Water | 2 | X | X | X | X | | | Trip Blank |
| 02 | 9-5-13 | 1105 | HTSA-0197-HMW-048-0913 | Water | 3 | X | X | X | X | X | | |
| 03 | 9-5-13 | 1205 | HTSA-0197-HMW-049-0913 | Water | 3 | X | X | X | X | X | | |
| 04 | 9-5-13 | 1205 | HTSA-0197-HMW-149-0913 | Water | 3 | X | X | X | X | X | | |
| 05 | 9-5-13 | 1205 | HTSA-0197-FB-001-0913 | Water | 3 | X | X | X | X | X | | Field Blank |
| 06 | 9-5-13 | 1308 | HTSA-0197-HMW-050-0913 | Water | 3 | X | X | X | X | X | | |
| 07 | 9-5-13 | 1325 | HTSA-0197-RB-001-0913 | Water | 3 | X | X | X | X | X | | Equipment Blank |
| 08 | 9-5-13 | 1448 | HTSA-0197-HMW-052-0913 | Water | 3 | X | X | X | X | X | | |
| | | | HTSA-0197-HMW-052-0913 -ms/msd | Water | 3 | X | X | X | X | X | | Matrix spike / duplicate |
| PROJECT INFORMATION | | SAMPLES RECEIVED | | 1. RELINQUISHED BY: (SIGNATURE) | | 2. RELINQUISHED BY: (SIGNATURE) | | 3. RECEIVED BY LAB: (SIGNATURE) | | | | |
| PROJECT MANAGER | | TOTAL NO. OF CONTAINERS | | Brady T. Davis (PRINTED NAME) 9-5-13 | | Jed up (PRINTED NAME) | | | | | | |
| SHIPPING TO NO. | | CHAIN OF CUSTODY SEALS | | Brady T. Davis (SIGNATURE) | | Jed up (SIGNATURE) | | | | | | |
| VIA: Fed EX | | GOOD CONDITION/CHECKED | | 9/5/13 (TIME/DATE) | | 9/6/13 945 (TIME/DATE) | | | | | | |
| | | CONFORMS TO RECORD | | SPECIAL INSTRUCTIONS/COMMENTS: | | | | | | | | |