

July 7, 2016

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
Tel: (314)298-8566

TestAmerica Job ID: 160-18020-1

TestAmerica Sample Delivery Group: SL2236
Client Project/Site: F16-046

For:

CH2M Hill Plateau Remediation Company
PO BOX 1600, MS H8-41
Richland, Washington 99352

Attn: Mr. Scot Fitzgerald



Authorized for release by:
7/7/2016 4:59:32 PM

Jayna Awalt, Project Manager II
(314)298-8566
jayna.awalt@testamericainc.com

LINKS

Review your project
results through
TotalAccess

Have a Question?



Visit us at:
www.testamericainc.com

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.



Table of Contents

| | |
|----------------------------------|----|
| Cover Page | 1 |
| Table of Contents | 2 |
| Case Narrative | 3 |
| Chain of Custody | 6 |
| Definitions/Glossary | 11 |
| Method Summary | 12 |
| Sample Summary | 13 |
| Client Sample Results | 14 |
| QC Sample Results | 16 |
| QC Association Summary | 21 |
| Surrogate Summary | 22 |

Case Narrative

Client: CH2M Hill Plateau Remediation Company
Project/Site: F16-046

TestAmerica Job ID: 160-18020-1
SDG: SL2236

Job ID: 160-18020-1

Laboratory: TestAmerica St. Louis

Narrative

CASE NARRATIVE

CH2M Hill Plateau Remediation Company
P.O. Box 1600
Richland, Washington 99352
July 7, 2016
Attention: Scot Fitzgerald

SDG : SL2236
Number of Samples : 3 samples
Sample Matrix : Water
Data Deliverable : Summary
Date SDG Closed : June 30, 2016

II. Introduction

On June 30, 3 samples were received by TestAmerica - St. Louis for chemical analysis. The samples were received within temperature criteria. See the COC and receipt checklists for documentation of any variations on receipt conditions and temperature. Upon receipt, samples were given laboratory Ids to correspond with specific client Ids. Please refer to the Sample Summary sheets attached to this case narrative. This report is incomplete without the narrative.

The following SAFs are associated with this SDG: F16-046

III. Analytical Results/ Methodology

The analytical results for this report are presented by analytical test. Each set of data includes sample identification information, analytical results and the appropriate detection limits. All results are based upon samples as they were received, i.e. wet weight, unless otherwise noted on the data sheets. See the attached Methods Summary Form for the methods used in this SDG.

MS/MSD/Dup analysis was done per the client requirements. Analytical batches that did not contain matrix QC were analyzed with an LCS/LCS duplicate.

Note: For Metals analyses, per standard practice, all 6020 water and soil samples are initially prepared at 2x dilution. This standard dilution does not affect reporting limits as MDL studies are also prepared in the same manner. These dilutions do not necessitate flagging unless otherwise noted in the case narrative.

For solid matrices, all Metals analyses (including Hg) use a Standard Reference Material for the Laboratory Control Sample (LCS). Certificate for this source material may be obtained from TASL.

For Anion analysis, samples have been started at a 2x dilution per CHPRC direction. The samples are flagged accordingly with a "D" flag if sample concentration is above the MDL/RL. Non-conformance will be included in the below section only if dilution is greater than 2x.

For WTPH methods, the lab utilizes method 8015B. Per CHPRC direction, the method name in the electronic data has been modified to read WTPH in the place of 8015B.

Per CHPRC direction (June 2014), Boron will be reported for Metals using method 6010. Boron will no longer be reported by method 6020.

Per CHPRC direction, due to the short hold times for Nitrate, Nitrite and Phosphate by IC (48 hours) as well as pH analysis (24 hours), a SIR request is not needed when samples are run outside 1x hold but within 2x hold. A narrative comment will be included below if a sample is run outside the lab-specified hold time for waters.



Case Narrative

Client: CH2M Hill Plateau Remediation Company
Project/Site: F16-046

TestAmerica Job ID: 160-18020-1
SDG: SL2236

Job ID: 160-18020-1 (Continued)

Laboratory: TestAmerica St. Louis (Continued)

For extractable and volatile organic analyses, several analytes are considered poor performers and will not meet CHPRC QC limits. Per CHPRC direction, the lab's statistical limits have been reported. Excursions outside these statistical limits will include a non-conformance in the sections below.

IV. Definitions

| | |
|--------|--|
| QCBLK- | Quality Control Blank, Method Blank |
| QCLCS- | Quality Control Laboratory Control Sample, Blank Spike |
| DUP- | Laboratory Duplicate |
| MS- | Matrix Spike |
| MSD- | Matrix Spike Duplicate |

The term "Detection Limit" used in the analytical data report refers to either the lab's standard reporting limits or contractually required reporting limits, whichever is applicable.

The following data qualifiers may be applicable to the results in this report, as appropriate.

- **B** - For inorganic analyses, the sample result is greater than the MDL but less than the RL.
- **B** - For organic analyses, Method Blank contamination. The Method Blank contains the target analyte at a concentration above the MDL.
- **J** - For organic analyses, the sample is estimated and less than the RL.
- **C** - For inorganic analyses, Method Blank contamination. The Method Blank contains the target analyte at a concentration above the MDL.
- **D** - For all analyses, the sample result was obtained from the analysis of a dilution. For Metals analyses, per standard practice, all solid samples are initially prepared at a 2x dilution. This standard dilution does not affect reporting limits as MDL studies are also prepared in the same manner. These dilutions do not necessitate qualification unless otherwise noted in the case narrative.
- **N** - For inorganics and GC analyses, the spike/spike duplicate recoveries are outside QC limits.
- **T** - For GCMS analyses, the spike/spike duplicate recoveries are outside QC limits.
- **O** - For all analyses, the LCS (LCSD) recoveries are outside QC limits.
- **M** - For inorganic analyses, the precision was outside control limits.
- **P** - For organic analyses (PCB/Pests only), the aroclor target analyte has greater than 25% difference for detected concentrations between the two GC columns.

Volatiles

Batch: 259263

The following compound did not meet the minimum relative response factor limits in the continuing calibration verification (CCV) associated with batch 259263: Acetone. A low level CCV was analyzed at the reporting limit (1ug/L) and the affected analyte was detected. The associated sample was not detected above the reporting limit for the affected analyte. (CCVIS 160-259263/4)

The following sample was analyzed at reduced volume due to high concentrations of target analytes: B35WJ0 (160-18020-3). The reporting limits have been elevated by the appropriate factor. These analytes have been qualified accordingly with a "D" flag in the associated samples.

There were no observations or non-conformances associated with the following methods:

TDS
TSS
Alkalinity
TOC

July 7, 2016

Case Narrative

Client: CH2M Hill Plateau Remediation Company
Project/Site: F16-046

TestAmerica Job ID: 160-18020-1
SDG: SL2236

Job ID: 160-18020-1 (Continued)

Laboratory: TestAmerica St. Louis (Continued)

We certify that this data package is in compliance with the SOW, both technically and for completeness, including a full description of, explanation of, and corrective actions for, any and all deviations, from either the analyses requested or the case narrative requested. Release of the data contained in this hard copy data package has been authorized by the Laboratory Analytical Manager or designee and the laboratory's client services representative as verified by their signature on this report.

Reviewed and approved:

Jayna Awalt
St. Louis Project Manager

1

2

3

4

5

6

7

8

9

10

11

Login Sample Receipt Checklist

Client: CH2M Hill Plateau Remediation Company

Job Number: 160-18020-1

SDG Number: SL2236

Login Number: 18020

List Number: 1

Creator: McKinney, Gerrod E

List Source: TestAmerica St. Louis

| Question | Answer | Comment |
|---|--------|------------|
| Radioactivity wasn't checked or is \leq background as measured by a survey meter. | True | |
| The cooler's custody seal, if present, is intact. | True | |
| Sample custody seals, if present, are intact. | True | |
| The cooler or samples do not appear to have been compromised or tampered with. | True | |
| Samples were received on ice. | True | |
| Cooler Temperature is acceptable. | True | |
| Cooler Temperature is recorded. | True | 1.6°, 1.7° |
| COC is present. | True | |
| COC is filled out in ink and legible. | True | |
| COC is filled out with all pertinent information. | True | |
| Is the Field Sampler's name present on COC? | True | |
| There are no discrepancies between the containers received and the COC. | True | |
| Samples are received within Holding Time (excluding tests with immediate HTs) | True | |
| Sample containers have legible labels. | True | |
| Containers are not broken or leaking. | True | |
| Sample collection date/times are provided. | True | |
| Appropriate sample containers are used. | True | |
| Sample bottles are completely filled. | True | |
| Sample Preservation Verified. | True | |
| There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs | True | |
| Containers requiring zero headspace have no headspace or bubble is <math><6\text{mm}</math> (1/4"). | True | |
| Multiphasic samples are not present. | True | |
| Samples do not require splitting or compositing. | True | |
| Residual Chlorine Checked. | N/A | |

| | | | | | |
|--|--------|--|---|---------------------------------------|---------------------------------------|
| CH2M Hill Plateau Remediation Company | | CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST | | F16-046-017 | PAGE 1 OF 1 |
| COLLECTOR Kevin Patterson CHPRC | SL2236 | COMPANY CONTACT SUMNER, LC | TELEPHONE NO. 376-3922 | PROJECT COORDINATOR SUMNER, LC | PRICE CODE C05 |
| PROJECT DESIGNATION 200W Pump & Treat - Treatment Plant Compliance Sampling - Water | | SAF NO. F16-046 | ACTUAL SAMPLE DEPTH N/A | AIR QUALITY | DATA TURNAROUND 7 Days / 7 Days |
| SAMPLING LOCATION 289-T, Effluent Tank, Valve V07-Y80U * DUP | | FIELD LOGBOOK NO. HNF-N-49115 | | METHOD OF SHIPMENT FEDERAL EXPRESS | ORIGINAL |
| ICE CHEST NO. GWS-502 | | OFFSITE PROPERTY NO. N/A | BILL OF LADING/AIR BILL NO. 7766 2493 9436 | | |

| MATRIX* | PRESERVATION | HOLDING TIME | TYPE OF CONTAINER | NO. OF CONTAINER(S) | VOLUME | SAMPLE ANALYSIS | SAMPLE DATE | SAMPLE TIME |
|--|------------------------------------|--------------|-------------------|---------------------|--------|--------------------------------------|-------------|-------------|
| A=Air DL=Drum L=Liquid O=Oil S=Soil SE=Sediment T=Tissue V=Vegetation W=Water WI=Wipe X=Other | HCl or H2SO4 to pH <2/Cool 14 Days | 7 Days | aGs* | 4 | 40mL | SEE ITEM (1) IN SPECIAL INSTRUCTIONS | JUN 27 2016 | 1220 |
| POSSIBLE SAMPLE HAZARDS/ REMARKS *Contains Radioactive Material at concentrations that are not regulated for transportation per 49 CFR/IATA Dangerous Goods Regulations but are not releasable per DOE Order 458.1. N/A | Cool <=6C | 7 Days | G/P | 1 | 500mL | 160.1_TDS: COMMON; | | |
| SPECIAL HANDLING AND/OR STORAGE | Cool <=6C | 7 Days | G/P | 1 | 500mL | 160.1_TDS: COMMON; | | |
| | | | | | | | | |

| RELINQUISHED BY/REMOVED FROM | DATE/TIME | SIGN/ PRINT NAMES | RECEIVED BY/STORED IN | DATE/TIME | SPECIAL INSTRUCTIONS |
|------------------------------|------------------|-------------------|-----------------------|------------------|---|
| Kevin Patterson CHPRC | JUN 27 2016 1310 | J.C. Patterson | CHPRC | JUN 27 2016 1310 | TRVL-16-158 (1) 8260_VOA_GCMS: CH 01 {Chloromethane}; 8260_VOA_GCMS: COMMON {Acetone, Carbon tetrachloride, Chloroform, Methylene chloride, Trichloroethene, Vinyl chloride}; 8260_VOA_GCMS: COMMON (Add-on) {cis-1,2-Dichloroethylene}; |
| J.C. Patterson CHPRC | JUN 27 2016 1325 | J.C. Patterson | SSU-1 | JUN 27 2016 1325 | |
| Lesly Wall CHPRC | JUN 28 2016 0800 | Lesly Wall | FEDEX | JUN 28 2016 0800 | |
| Lesly Wall CHPRC | JUN 28 2016 1400 | Lesly Wall | GERRO McKinney | JUN 28 2016 1400 | |
| RELINQUISHED BY/REMOVED FROM | DATE/TIME | | RECEIVED BY/STORED IN | DATE/TIME | |
| RELINQUISHED BY/REMOVED FROM | DATE/TIME | | RECEIVED BY/STORED IN | DATE/TIME | |

| | | | |
|--------------------------|-------------------|------------------------|--------------------|
| LABORATORY SECTION | RECEIVED BY | TITLE | DATE/TIME |
| FINAL SAMPLE DISPOSITION | DISPOSAL METHOD | DISPOSED BY | DATE/TIME |
| PRINTED ON 6/16/2016 | FSR ID = FSR32906 | TRVL NUM = TRVL-16-158 | A-6003-618 (REV 2) |



| | | | | | |
|--|--------|--|----------------------------|--|---|
| CH2M Hill Plateau Remediation Company | | CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST | | F16-046-011 | PAGE 1 OF 1 |
| COLLECTOR Kevin Patterson CHPRC | SL2236 | COMPANY CONTACT SUMNER, LC | TELEPHONE NO. 376-3922 | PROJECT COORDINATOR SUMNER, LC | PRICE CODE C05 |
| SAMPLING LOCATION 289-T, Effluent Tank, Valve V07-Y80 | | PROJECT DESIGNATION 200W Pump & Treat - Treatment Plant Compliance Sampling - Water | ACTUAL SAMPLE DEPTH N/A | SAF NO. F16-046 | AIR QUALITY <input type="checkbox"/> |
| ICE CHEST NO. 6055-502 | | FIELD LOGBOOK NO. HNF-N-49115 | | COA 303700 | METHOD OF SHIPMENT FEDERAL EXPRESS |
| SHIPPED TO TestAmerica St. Louis | | OFFSITE PROPERTY NO. N/A | | BILL OF LADING/AIR BILL NO. 7766 24939436 | |

| MATRIX* | POSSIBLE SAMPLE HAZARDS/ REMARKS | PRESERVATION | HOLDING TIME | TYPE OF CONTAINER | NO. OF CONTAINER(S) | VOLUME | SAMPLE ANALYSIS | SAMPLE DATE | SAMPLE TIME | MATRIX* |
|---|--|------------------------------------|--------------|-------------------|---------------------|--------|--------------------------------------|-------------|-------------|---------|
| A=Air DL=Drum Liquids DS=Drum Solids L=Liquid O=Oil S=Soil SE=Sediment T=Tissue V=Vegetation W=Water WI=Wipe X=Other | *Contains Radioactive Material at concentrations that are not regulated for transportation per 49 CFR/IATA Dangerous Goods Regulations but are not releasable per DOE Order 458.1. N/A | HCl or H2SO4 to pH <2/Cool 14 Days | 14 Days | aGs* | 4 | 40mL | SEE ITEM (1) IN SPECIAL INSTRUCTIONS | JUN 27 2016 | 1720 | WATER |
| | | Cool <=6C | 7 Days | G/P | 1 | 250mL | 310.1 ALKALINITY; COMMON; | | ✓ | |
| | | Cool <=6C | 7 Days | G/P | 1 | 500mL | 160.1 TDS; COMMON; | | ✓ | |
| | | Cool <=6C | 7 Days | G/P | 1 | 250mL | 160.2 TSS; COMMON; | | ✓ | |
| | | HCl or H2SO4 to pH <2/Cool 28 Days | | aG | 1 | 250mL | 9060_TOC; COMMON; | | ✓ | |

| CHAIN OF POSSESSION | SIGN/ PRINT NAMES | RECEIVED BY/STORED IN | DATE/TIME |
|--|-------------------|---|------------------|
| RELINQUISHED BY/REMOVED FROM Kevin Patterson CHPRC | J.C. Patterson | RECEIVED BY/STORED IN CHPRC | JUN 27 2016 1300 |
| RELINQUISHED BY/REMOVED FROM CHPRC | J.C. Patterson | RECEIVED BY/STORED IN SSU-1 | JUN 27 2016 1335 |
| RELINQUISHED BY/REMOVED FROM SSU-1 | Leahy Wall | RECEIVED BY/STORED IN FEDEX | JUN 28 2016 0800 |
| RELINQUISHED BY/REMOVED FROM CHPRC | Leahy Wall | RECEIVED BY/STORED IN GREGG MCKINNEY | JUN 28 2016 1400 |
| RELINQUISHED BY/REMOVED FROM FEDEX | FEDEX | RECEIVED BY/STORED IN | |
| RELINQUISHED BY/REMOVED FROM | | RECEIVED BY/STORED IN | |

| | |
|---|------------------------|
| SPECIAL INSTRUCTIONS TRVL-16-158 (1) 8260_VOA_GCMS: CH 01 {Chloromethane}; 8260_VOA_GCMS: COMMON {Acetone, Carbon tetrachloride, Chloroform, Methylene chloride, Trichloroethene, Vinyl chloride}; 8260_VOA_GCMS: COMMON (Add-on) {cis-1,2-Dichloroethylene}; | |
| LABORATORY SECTION | RECEIVED BY |
| FINAL SAMPLE DISPOSITION | DISPOSAL METHOD |
| PRINTED ON 6/16/2016 | TRVL NUM = FSR32905 |
| | TRVL NUM = TRVL-16-158 |
| | A-6003-618 (REV 2) |



| | | | | | |
|--|--------|--|----------------------------|---|---|
| CH2M Hill Plateau Remediation Company | | CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST | | F16-046-005 | PAGE 1 OF 1 |
| COLLECTOR Kevin Patterson CHPRC | SL2236 | COMPANY CONTACT SUMNER, LC | TELEPHONE NO. 376-3922 | PROJECT COORDINATOR SUMNER, LC | PRICE CODE C05 |
| SAMPLING LOCATION 289-T, Influent Tank, Valve V12-Y30 | | PROJECT DESIGNATION 200W Pump & Treat - Treatment Plant Compliance Sampling - Water | | SAF NO. F16-046 | AIR QUALITY <input type="checkbox"/> |
| ICE CHEST NO. 6W5-502 | | FIELD LOGBOOK NO. HNF-N-49115 | ACTUAL SAMPLE DEPTH N/A | COA 303700 | METHOD OF SHIPMENT FEDERAL EXPRESS |
| SHIPPED TO TestAmerica St. Louis | | OFFSITE PROPERTY NO. N/A | | BILL OF LADING/AIR BILL NO. 7766 2493 9436 | |

| | | | | | | | |
|--|---|---|---------------------|---------------------------|--------------------------|----------------|---|
| MATRIX* A=Air DL=Drum L=Liquid O=Oil S=Soil SE=Sediment T=Tissue V=Vegetation W=Water WI=Wipe X=Other | POSSIBLE SAMPLE HAZARDS/ REMARKS *Contains Radioactive Material at concentrations that are not be regulated for transportation per 49 CFR/1ATA Dangerous Goods Regulations but are not releasable per DOE Order 458.1. N/A | PRESERVATION HCl or H2SO4 to pH <2/ Cool 14 Days | HOLDING TIME | TYPE OF CONTAINER aGs* | NO. OF CONTAINER(S) 4 | VOLUME 40mL | SAMPLE ANALYSIS SEE ITEM (1) IN SPECIAL INSTRUCTIONS |
| SPECIAL HANDLING AND/OR STORAGE | | | | | | | |
| SAMPLE NO. B35WJ0 | MATRIX* WATER | SAMPLE DATE JUN 27 2016 | SAMPLE TIME 1332 | | | | |

| | | | |
|--|-------------------------------|---|-------------------------------|
| RELINQUISHED BY/REMOVED FROM Kevin Patterson CHPRC | DATE/TIME JUN 27 2016 1415 | RECEIVED BY/STORED IN SSU-1 | DATE/TIME JUN 27 2016 1415 |
| RELINQUISHED BY/REMOVED FROM Leahy West CHPRC | DATE/TIME JUN 28 2016 0800 | RECEIVED BY/STORED IN Leahy West CHPRC | DATE/TIME JUN 28 2016 0800 |
| RELINQUISHED BY/REMOVED FROM Leahy West CHPRC | DATE/TIME JUN 28 2016 1400 | RECEIVED BY/STORED IN FEDEX | DATE/TIME JUN 28 2016 1400 |
| RELINQUISHED BY/REMOVED FROM Leahy West CHPRC | DATE/TIME JUN 28 2016 1400 | RECEIVED BY/STORED IN GERARD McGINNEY CHPRC | DATE/TIME JUN 28 2016 1215 |
| RELINQUISHED BY/REMOVED FROM | DATE/TIME | RECEIVED BY/STORED IN | DATE/TIME |
| RELINQUISHED BY/REMOVED FROM | DATE/TIME | RECEIVED BY/STORED IN | DATE/TIME |
| RELINQUISHED BY/REMOVED FROM | DATE/TIME | RECEIVED BY/STORED IN | DATE/TIME |

SPECIAL INSTRUCTIONS
 TRVL-16-158
 (1) 8260_VOA_GCMS: CH 01 {Chloromethane}; 8260_VOA_GCMS: COMMON {Acetone, Carbon tetrachloride, Chloroform, Methylene chloride, Trichloroethene, Vinyl chloride}; 8260_VOA_GCMS: COMMON (Add-on) {cis-1,2-Dichloroethylene};

| | | | |
|--------------------------|-------------------|------------------------|--------------------|
| LABORATORY SECTION | RECEIVED BY | TITLE | DATE/TIME |
| FINAL SAMPLE DISPOSITION | DISPOSAL METHOD | DISPOSED BY | DATE/TIME |
| PRINTED ON 6/16/2016 | FSR ID = FSR32904 | TRVL NUM = TRVL-16-158 | A-6003-618 (REV 2) |



7/9/2016



My Profile Support Locations English Search or tracking number Sub



Shipping Tracking Manage Learn FedEx Office®

Login

FedEx® Tracking

776624939436

Ship date:

Tue 6/28/2016

Actual delivery:

Thu 6/30/2016 12:13 pm

RICHLAND, WA US

Delivered

Signed for by: B. DANIELS

EARTH CITY, MO US

Travel History

Table with columns: Date/Time, Activity, Location. Shows travel history from 6/28/2016 to 6/30/2016.

Shipment Facts

Table with shipment facts: Tracking number, Weight, Delivered To, Total shipment weight, Shipper reference, Special handling section, Service, Dimensions, Total pieces, Terms, Packaging.



Search or tracking number Sub

Customer Focus

New Customer Center Small Business Center Service Guide Customer Support

Company Information

About FedEx Careers Investor Relations Subscribe to FedEx email

Featured Services

FedEx Delivery Manager FedEx SameDay FedEx Home Delivery FedEx TechConnect Healthcare Solutions Online Retail Solutions Packaging Services Ancillary Clearance Services

Other Resources

FedEx Compatible Developer Resource Center FedEx Ship Manager Software FedEx Mobile

Companies

FedEx Express FedEx Ground FedEx Office FedEx Freight FedEx Custom Critical FedEx Trade Networks FedEx CrossBorder FedEx SupplyChain

Follow FedEx

United States - English

Definitions/Glossary

Client: CH2M Hill Plateau Remediation Company
 Project/Site: F16-046

TestAmerica Job ID: 160-18020-1
 SDG: SL2236

Qualifiers

GC/MS VOA

| Qualifier | Qualifier Description |
|-----------|---|
| U | Analyzed for but not detected. |
| D | Sample results are obtained from a dilution; the surrogate or matrix spike recoveries reported are calculated from diluted samples. |

General Chemistry

| Qualifier | Qualifier Description |
|-----------|--------------------------------|
| U | Analyzed for but not detected. |

Glossary

| Abbreviation | These commonly used abbreviations may or may not be present in this report. |
|----------------|---|
| α | Listed under the "D" column to designate that the result is reported on a dry weight basis |
| %R | Percent Recovery |
| CFL | Contains Free Liquid |
| CNF | Contains no Free Liquid |
| DER | Duplicate error ratio (normalized absolute difference) |
| Dil Fac | Dilution Factor |
| DL, RA, RE, IN | Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample |
| DLC | Decision level concentration |
| MDA | Minimum detectable activity |
| EDL | Estimated Detection Limit |
| MDC | Minimum detectable concentration |
| MDL | Method Detection Limit |
| ML | Minimum Level (Dioxin) |
| NC | Not Calculated |
| ND | Not detected at the reporting limit (or MDL or EDL if shown) |
| PQL | Practical Quantitation Limit |
| QC | Quality Control |
| RER | Relative error ratio |
| RL | Reporting Limit or Requested Limit (Radiochemistry) |
| RPD | Relative Percent Difference, a measure of the relative difference between two points |
| TEF | Toxicity Equivalent Factor (Dioxin) |
| TEQ | Toxicity Equivalent Quotient (Dioxin) |

Method Summary

Client: CH2M Hill Plateau Remediation Company
Project/Site: F16-046

TestAmerica Job ID: 160-18020-1
SDG: SL2236

| Method | Method Description | Protocol | Laboratory |
|--------|------------------------------------|----------|------------|
| 8260C | Volatile Organic Compounds (GC/MS) | SW846 | TAL SL |
| 160.1 | Solids, Total Dissolved (TDS) | MCAWW | TAL SL |
| 160.2 | Solids, Total Suspended (TSS) | MCAWW | TAL SL |
| 310.1 | Alkalinity | MCAWW | TAL SL |
| 9060 | Organic Carbon, Total (TOC) | SW846 | TAL SL |

Protocol References:

MCAWW = "Methods For Chemical Analysis Of Water And Wastes", EPA-600/4-79-020, March 1983 And Subsequent Revisions.

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL SL = TestAmerica St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566



July 7, 2016

Sample Summary

Client: CH2M Hill Plateau Remediation Company
Project/Site: F16-046

TestAmerica Job ID: 160-18020-1
SDG: SL2236

| Lab Sample ID | Client Sample ID | Matrix | Collected | Received |
|---------------|------------------|--------|----------------|----------------|
| 160-18020-1 | B35WK2 | Water | 06/27/16 12:20 | 06/30/16 12:15 |
| 160-18020-2 | B35WJ6 | Water | 06/27/16 12:20 | 06/30/16 12:15 |
| 160-18020-3 | B35WJ0 | Water | 06/27/16 13:32 | 06/30/16 12:15 |

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11

Client Sample Results

Client: CH2M Hill Plateau Remediation Company
 Project/Site: F16-046

TestAmerica Job ID: 160-18020-1
 SDG: SL2236

Method: 8260C - Volatile Organic Compounds (GC/MS)

Client Sample ID: B35WK2
 Date Collected: 06/27/16 12:20
 Date Received: 06/30/16 12:15

Lab Sample ID: 160-18020-1
 Matrix: Water

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|--------------------------|--------|-----------|-----|------|------|---|----------|----------------|---------|
| Acetone | 0.55 | U | 2.0 | 0.55 | ug/L | | | 07/06/16 10:10 | 1 |
| Carbon tetrachloride | 0.18 | U | 1.0 | 0.18 | ug/L | | | 07/06/16 10:10 | 1 |
| Chloroform | 0.10 | U | 1.0 | 0.10 | ug/L | | | 07/06/16 10:10 | 1 |
| Chloromethane | 0.10 | U | 2.0 | 0.10 | ug/L | | | 07/06/16 10:10 | 1 |
| cis-1,2-Dichloroethylene | 0.10 | U | 1.0 | 0.10 | ug/L | | | 07/06/16 10:10 | 1 |
| Methylene Chloride | 0.27 | U | 1.0 | 0.27 | ug/L | | | 07/06/16 10:10 | 1 |
| Trichloroethene | 0.25 | U | 1.0 | 0.25 | ug/L | | | 07/06/16 10:10 | 1 |
| Vinyl chloride | 0.19 | U | 2.0 | 0.19 | ug/L | | | 07/06/16 10:10 | 1 |

| Tentatively Identified Compound | Est. Result | Qualifier | Unit | D | RT | CAS No. | Prepared | Analyzed | Dil Fac |
|---------------------------------|-------------|-----------|------|---|----|---------|----------|----------------|---------|
| Tentatively Identified Compound | None | | ug/L | | | | | 07/06/16 10:10 | 1 |

| Surrogate | %Recovery | Qualifier | Limits | Prepared | Analyzed | Dil Fac |
|------------------------------|-----------|-----------|----------|----------|----------------|---------|
| 1,2-Dichloroethane-d4 (Surr) | 95 | | 75 - 129 | | 07/06/16 10:10 | 1 |
| 4-Bromofluorobenzene (Surr) | 113 | | 81 - 130 | | 07/06/16 10:10 | 1 |
| Dibromofluoromethane (Surr) | 103 | | 81 - 124 | | 07/06/16 10:10 | 1 |
| Toluene-d8 (Surr) | 113 | | 87 - 128 | | 07/06/16 10:10 | 1 |

Client Sample ID: B35WJ6
 Date Collected: 06/27/16 12:20
 Date Received: 06/30/16 12:15

Lab Sample ID: 160-18020-2
 Matrix: Water

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|--------------------------|--------|-----------|-----|------|------|---|----------|----------------|---------|
| Acetone | 0.55 | U | 2.0 | 0.55 | ug/L | | | 07/06/16 10:33 | 1 |
| Carbon tetrachloride | 0.18 | U | 1.0 | 0.18 | ug/L | | | 07/06/16 10:33 | 1 |
| Chloroform | 0.10 | U | 1.0 | 0.10 | ug/L | | | 07/06/16 10:33 | 1 |
| Chloromethane | 0.10 | U | 2.0 | 0.10 | ug/L | | | 07/06/16 10:33 | 1 |
| cis-1,2-Dichloroethylene | 0.10 | U | 1.0 | 0.10 | ug/L | | | 07/06/16 10:33 | 1 |
| Methylene Chloride | 0.27 | U | 1.0 | 0.27 | ug/L | | | 07/06/16 10:33 | 1 |
| Trichloroethene | 0.25 | U | 1.0 | 0.25 | ug/L | | | 07/06/16 10:33 | 1 |
| Vinyl chloride | 0.19 | U | 2.0 | 0.19 | ug/L | | | 07/06/16 10:33 | 1 |

| Tentatively Identified Compound | Est. Result | Qualifier | Unit | D | RT | CAS No. | Prepared | Analyzed | Dil Fac |
|---------------------------------|-------------|-----------|------|---|----|---------|----------|----------------|---------|
| Tentatively Identified Compound | None | | ug/L | | | | | 07/06/16 10:33 | 1 |

| Surrogate | %Recovery | Qualifier | Limits | Prepared | Analyzed | Dil Fac |
|------------------------------|-----------|-----------|----------|----------|----------------|---------|
| 1,2-Dichloroethane-d4 (Surr) | 101 | | 75 - 129 | | 07/06/16 10:33 | 1 |
| 4-Bromofluorobenzene (Surr) | 113 | | 81 - 130 | | 07/06/16 10:33 | 1 |
| Dibromofluoromethane (Surr) | 102 | | 81 - 124 | | 07/06/16 10:33 | 1 |
| Toluene-d8 (Surr) | 107 | | 87 - 128 | | 07/06/16 10:33 | 1 |

Client Sample ID: B35WJ0
 Date Collected: 06/27/16 13:32
 Date Received: 06/30/16 12:15

Lab Sample ID: 160-18020-3
 Matrix: Water

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|--------------------------|--------|-----------|-----|------|------|---|----------|----------------|---------|
| Acetone | 1.4 | U | 5.0 | 1.4 | ug/L | | | 07/06/16 10:57 | 2.5 |
| Carbon tetrachloride | 310 | D | 25 | 4.5 | ug/L | | | 07/06/16 12:07 | 25 |
| Chloroform | 4.5 | D | 2.5 | 0.25 | ug/L | | | 07/06/16 10:57 | 2.5 |
| Chloromethane | 0.26 | U | 5.0 | 0.26 | ug/L | | | 07/06/16 10:57 | 2.5 |
| cis-1,2-Dichloroethylene | 0.25 | U | 2.5 | 0.25 | ug/L | | | 07/06/16 10:57 | 2.5 |
| Methylene Chloride | 0.68 | U | 2.5 | 0.68 | ug/L | | | 07/06/16 10:57 | 2.5 |
| Trichloroethene | 2.6 | D | 2.5 | 0.63 | ug/L | | | 07/06/16 10:57 | 2.5 |

TestAmerica St. Louis

Client Sample Results

Client: CH2M Hill Plateau Remediation Company
 Project/Site: F16-046

TestAmerica Job ID: 160-18020-1
 SDG: SL2236

Method: 8260C - Volatile Organic Compounds (GC/MS) (Continued)

Client Sample ID: B35WJ0
 Date Collected: 06/27/16 13:32
 Date Received: 06/30/16 12:15

Lab Sample ID: 160-18020-3
 Matrix: Water

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|--|--------------------|------------------|---------------|----------|-----------|----------------|-----------------|-----------------|----------------|
| Vinyl chloride | 0.49 | U | 5.0 | 0.49 | ug/L | | | 07/06/16 10:57 | 2.5 |
| Tentatively Identified Compound | Est. Result | Qualifier | Unit | D | RT | CAS No. | Prepared | Analyzed | Dil Fac |
| Tentatively Identified Compound | None | | ug/L | | | | | 07/06/16 10:57 | 2.5 |
| Tentatively Identified Compound | None | | ug/L | | | | | 07/06/16 12:07 | 25 |
| Surrogate | %Recovery | Qualifier | Limits | | | | Prepared | Analyzed | Dil Fac |
| 1,2-Dichloroethane-d4 (Surr) | 98 | | 75 - 129 | | | | | 07/06/16 10:57 | 2.5 |
| 1,2-Dichloroethane-d4 (Surr) | 95 | | 75 - 129 | | | | | 07/06/16 12:07 | 25 |
| 4-Bromofluorobenzene (Surr) | 115 | | 81 - 130 | | | | | 07/06/16 10:57 | 2.5 |
| 4-Bromofluorobenzene (Surr) | 110 | | 81 - 130 | | | | | 07/06/16 12:07 | 25 |
| Dibromofluoromethane (Surr) | 110 | | 81 - 124 | | | | | 07/06/16 10:57 | 2.5 |
| Dibromofluoromethane (Surr) | 101 | | 81 - 124 | | | | | 07/06/16 12:07 | 25 |
| Toluene-d8 (Surr) | 110 | | 87 - 128 | | | | | 07/06/16 10:57 | 2.5 |
| Toluene-d8 (Surr) | 105 | | 87 - 128 | | | | | 07/06/16 12:07 | 25 |

General Chemistry

Client Sample ID: B35WK2
 Date Collected: 06/27/16 12:20
 Date Received: 06/30/16 12:15

Lab Sample ID: 160-18020-1
 Matrix: Water

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|------------------------------|--------|-----------|-----|------|------|---|----------|----------------|---------|
| Total Dissolved Solids (TDS) | 414 | | 5.0 | 3.5 | mg/L | | | 06/30/16 15:54 | 1 |
| Total Suspended Solids | 15.0 | | 4.0 | 4.0 | mg/L | | | 06/30/16 15:55 | 1 |
| Alkalinity | 94.0 | | 5.0 | 0.54 | mg/L | | | 07/06/16 22:53 | 1 |
| Total Organic Carbon | 0.72 | U | 1.0 | 0.72 | mg/L | | | 07/05/16 20:55 | 1 |

Client Sample ID: B35WJ6
 Date Collected: 06/27/16 12:20
 Date Received: 06/30/16 12:15

Lab Sample ID: 160-18020-2
 Matrix: Water

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|------------------------------|--------|-----------|-----|------|------|---|----------|----------------|---------|
| Total Dissolved Solids (TDS) | 407 | | 5.0 | 3.5 | mg/L | | | 06/30/16 15:54 | 1 |
| Total Suspended Solids | 10.0 | | 4.0 | 4.0 | mg/L | | | 06/30/16 15:55 | 1 |
| Alkalinity | 92.0 | | 5.0 | 0.54 | mg/L | | | 07/06/16 23:19 | 1 |
| Total Organic Carbon | 0.72 | U | 1.0 | 0.72 | mg/L | | | 07/05/16 21:06 | 1 |

QC Sample Results

Client: CH2M Hill Plateau Remediation Company
Project/Site: F16-046

TestAmerica Job ID: 160-18020-1
SDG: SL2236

Method: 8260C - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 160-259263/8

Matrix: Water

Analysis Batch: 259263

Client Sample ID: Method Blank

Prep Type: Total/NA

| Analyte | MB Result | MB Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|--------------------------|-----------|--------------|-----|------|------|---|----------|----------------|---------|
| Acetone | 0.55 | U | 2.0 | 0.55 | ug/L | | | 07/06/16 08:36 | 1 |
| Carbon tetrachloride | 0.18 | U | 1.0 | 0.18 | ug/L | | | 07/06/16 08:36 | 1 |
| Chloroform | 0.10 | U | 1.0 | 0.10 | ug/L | | | 07/06/16 08:36 | 1 |
| Chloromethane | 0.10 | U | 2.0 | 0.10 | ug/L | | | 07/06/16 08:36 | 1 |
| cis-1,2-Dichloroethylene | 0.10 | U | 1.0 | 0.10 | ug/L | | | 07/06/16 08:36 | 1 |
| Methylene Chloride | 0.27 | U | 1.0 | 0.27 | ug/L | | | 07/06/16 08:36 | 1 |
| Trichloroethene | 0.25 | U | 1.0 | 0.25 | ug/L | | | 07/06/16 08:36 | 1 |
| Vinyl chloride | 0.19 | U | 2.0 | 0.19 | ug/L | | | 07/06/16 08:36 | 1 |

| Tentatively Identified Compound | MB Est. Result | MB Qualifier | Unit | D | RT | CAS No. | Prepared | Analyzed | Dil Fac |
|---------------------------------|----------------|--------------|------|---|----|---------|----------|----------------|---------|
| Tentatively Identified Compound | None | | ug/L | | | | | 07/06/16 08:36 | 1 |

| Surrogate | MB %Recovery | MB Qualifier | Limits | Prepared | Analyzed | Dil Fac |
|------------------------------|--------------|--------------|----------|----------|----------------|---------|
| 1,2-Dichloroethane-d4 (Surr) | 88 | | 75 - 129 | | 07/06/16 08:36 | 1 |
| 4-Bromofluorobenzene (Surr) | 109 | | 81 - 130 | | 07/06/16 08:36 | 1 |
| Dibromofluoromethane (Surr) | 95 | | 81 - 124 | | 07/06/16 08:36 | 1 |
| Toluene-d8 (Surr) | 109 | | 87 - 128 | | 07/06/16 08:36 | 1 |

Lab Sample ID: LCS 160-259263/5

Matrix: Water

Analysis Batch: 259263

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

| Analyte | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec. Limits |
|--------------------------|-------------|------------|---------------|------|---|------|--------------|
| Acetone | 10.0 | 11.0 | | ug/L | | 110 | 69 - 129 |
| Carbon tetrachloride | 10.0 | 10.4 | | ug/L | | 104 | 83 - 125 |
| Chloroform | 10.0 | 9.89 | | ug/L | | 99 | 80 - 120 |
| Chloromethane | 10.0 | 10.2 | | ug/L | | 102 | 72 - 124 |
| cis-1,2-Dichloroethylene | 10.0 | 9.82 | | ug/L | | 98 | 80 - 120 |
| Methylene Chloride | 10.0 | 9.48 | | ug/L | | 95 | 80 - 120 |
| Trichloroethene | 10.0 | 10.3 | | ug/L | | 103 | 80 - 120 |
| Vinyl chloride | 10.0 | 10.2 | | ug/L | | 102 | 77 - 122 |

| Surrogate | LCS %Recovery | LCS Qualifier | Limits |
|------------------------------|---------------|---------------|----------|
| 1,2-Dichloroethane-d4 (Surr) | 90 | | 75 - 129 |
| 4-Bromofluorobenzene (Surr) | 103 | | 81 - 130 |
| Dibromofluoromethane (Surr) | 99 | | 81 - 124 |
| Toluene-d8 (Surr) | 103 | | 87 - 128 |

Lab Sample ID: LCSD 160-259263/6

Matrix: Water

Analysis Batch: 259263

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

| Analyte | Spike Added | LCSD Result | LCSD Qualifier | Unit | D | %Rec | %Rec. Limits | RPD | RPD Limit |
|----------------------|-------------|-------------|----------------|------|---|------|--------------|-----|-----------|
| Acetone | 10.0 | 9.34 | | ug/L | | 93 | 69 - 129 | 17 | 20 |
| Carbon tetrachloride | 10.0 | 10.1 | | ug/L | | 101 | 83 - 125 | 2 | 20 |
| Chloroform | 10.0 | 10.2 | | ug/L | | 102 | 80 - 120 | 3 | 20 |
| Chloromethane | 10.0 | 9.85 | | ug/L | | 99 | 72 - 124 | 3 | 20 |

TestAmerica St. Louis

QC Sample Results

Client: CH2M Hill Plateau Remediation Company
Project/Site: F16-046

TestAmerica Job ID: 160-18020-1
SDG: SL2236

Method: 8260C - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCSD 160-259263/6

Matrix: Water

Analysis Batch: 259263

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

| Analyte | Spike Added | LCSD Result | LCSD Qualifier | Unit | D | %Rec | %Rec. Limits | RPD | RPD Limit |
|--------------------------|-------------|-------------|----------------|------|---|------|--------------|-----|-----------|
| cis-1,2-Dichloroethylene | 10.0 | 9.74 | | ug/L | | 97 | 80 - 120 | 1 | 20 |
| Methylene Chloride | 10.0 | 9.57 | | ug/L | | 96 | 80 - 120 | 1 | 20 |
| Trichloroethene | 10.0 | 9.90 | | ug/L | | 99 | 80 - 120 | 4 | 20 |
| Vinyl chloride | 10.0 | 9.77 | | ug/L | | 98 | 77 - 122 | 4 | 20 |

| Surrogate | LCSD %Recovery | LCSD Qualifier | LCSD Limits |
|------------------------------|----------------|----------------|-------------|
| 1,2-Dichloroethane-d4 (Surr) | 90 | | 75 - 129 |
| 4-Bromofluorobenzene (Surr) | 105 | | 81 - 130 |
| Dibromofluoromethane (Surr) | 99 | | 81 - 124 |
| Toluene-d8 (Surr) | 102 | | 87 - 128 |

Lab Sample ID: 160-18017-B-1 MS

Matrix: Water

Analysis Batch: 259263

Client Sample ID: Matrix Spike

Prep Type: Total/NA

| Analyte | Sample Result | Sample Qualifier | Spike Added | MS Result | MS Qualifier | Unit | D | %Rec | %Rec. Limits |
|--------------------------|---------------|------------------|-------------|-----------|--------------|------|---|------|--------------|
| Acetone | 0.55 | U | 10.0 | 11.5 | | ug/L | | 115 | 50 - 137 |
| Carbon tetrachloride | 0.18 | U | 10.0 | 10.3 | | ug/L | | 103 | 77 - 131 |
| Chloroform | 0.72 | J | 10.0 | 11.6 | | ug/L | | 109 | 80 - 120 |
| Chloromethane | 0.10 | U | 10.0 | 10.0 | | ug/L | | 100 | 62 - 132 |
| cis-1,2-Dichloroethylene | 0.10 | U | 10.0 | 10.3 | | ug/L | | 103 | 80 - 120 |
| Methylene Chloride | 0.27 | U | 10.0 | 10.2 | | ug/L | | 102 | 80 - 120 |
| Trichloroethene | 3.7 | | 10.0 | 14.4 | | ug/L | | 107 | 81 - 125 |
| Vinyl chloride | 0.19 | U | 10.0 | 9.50 | | ug/L | | 95 | 70 - 129 |

| Surrogate | MS %Recovery | MS Qualifier | MS Limits |
|------------------------------|--------------|--------------|-----------|
| 1,2-Dichloroethane-d4 (Surr) | 98 | | 75 - 129 |
| 4-Bromofluorobenzene (Surr) | 99 | | 81 - 130 |
| Dibromofluoromethane (Surr) | 102 | | 81 - 124 |
| Toluene-d8 (Surr) | 102 | | 87 - 128 |

Lab Sample ID: 160-18017-C-1 MSD

Matrix: Water

Analysis Batch: 259263

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

| Analyte | Sample Result | Sample Qualifier | Spike Added | MSD Result | MSD Qualifier | Unit | D | %Rec | %Rec. Limits | RPD | RPD Limit |
|--------------------------|---------------|------------------|-------------|------------|---------------|------|---|------|--------------|-----|-----------|
| Acetone | 0.55 | U | 10.0 | 12.7 | | ug/L | | 127 | 50 - 137 | 10 | 20 |
| Carbon tetrachloride | 0.18 | U | 10.0 | 10.5 | | ug/L | | 105 | 77 - 131 | 2 | 20 |
| Chloroform | 0.72 | J | 10.0 | 11.1 | | ug/L | | 104 | 80 - 120 | 4 | 20 |
| Chloromethane | 0.10 | U | 10.0 | 10.4 | | ug/L | | 104 | 62 - 132 | 3 | 20 |
| cis-1,2-Dichloroethylene | 0.10 | U | 10.0 | 10.0 | | ug/L | | 100 | 80 - 120 | 3 | 20 |
| Methylene Chloride | 0.27 | U | 10.0 | 9.92 | | ug/L | | 99 | 80 - 120 | 3 | 20 |
| Trichloroethene | 3.7 | | 10.0 | 14.1 | | ug/L | | 104 | 81 - 125 | 2 | 20 |
| Vinyl chloride | 0.19 | U | 10.0 | 10.2 | | ug/L | | 102 | 70 - 129 | 7 | 20 |

| Surrogate | MSD %Recovery | MSD Qualifier | MSD Limits |
|------------------------------|---------------|---------------|------------|
| 1,2-Dichloroethane-d4 (Surr) | 97 | | 75 - 129 |

TestAmerica St. Louis

QC Sample Results

Client: CH2M Hill Plateau Remediation Company
Project/Site: F16-046

TestAmerica Job ID: 160-18020-1
SDG: SL2236

Method: 8260C - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 160-18017-C-1 MSD
Matrix: Water
Analysis Batch: 259263

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

| Surrogate | MSD %Recovery | MSD Qualifier | Limits |
|-----------------------------|---------------|---------------|----------|
| 4-Bromofluorobenzene (Surr) | 100 | | 81 - 130 |
| Dibromofluoromethane (Surr) | 100 | | 81 - 124 |
| Toluene-d8 (Surr) | 101 | | 87 - 128 |

Method: 160.1 - Solids, Total Dissolved (TDS)

Lab Sample ID: MB 160-258641/1
Matrix: Water
Analysis Batch: 258641

Client Sample ID: Method Blank
Prep Type: Total/NA

| Analyte | MB Result | MB Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|------------------------------|-----------|--------------|-----|-----|------|---|----------|----------------|---------|
| Total Dissolved Solids (TDS) | 3.5 | U | 5.0 | 3.5 | mg/L | | | 06/30/16 08:50 | 1 |

Lab Sample ID: LCS 160-258641/2
Matrix: Water
Analysis Batch: 258641

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

| Analyte | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec. Limits |
|------------------------------|-------------|------------|---------------|------|---|------|--------------|
| Total Dissolved Solids (TDS) | 500 | 506.0 | | mg/L | | 101 | 90 - 110 |

Lab Sample ID: 160-17995-B-1 DU
Matrix: Water
Analysis Batch: 258641

Client Sample ID: Duplicate
Prep Type: Total/NA

| Analyte | Sample Result | Sample Qualifier | DU Result | DU Qualifier | Unit | D | RPD | RPD Limit |
|------------------------------|---------------|------------------|-----------|--------------|------|---|-----|-----------|
| Total Dissolved Solids (TDS) | 50.0 | | 50.00 | | mg/L | | 0 | 20 |

Method: 160.2 - Solids, Total Suspended (TSS)

Lab Sample ID: MB 160-258769/1
Matrix: Water
Analysis Batch: 258769

Client Sample ID: Method Blank
Prep Type: Total/NA

| Analyte | MB Result | MB Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|------------------------|-----------|--------------|-----|-----|------|---|----------|----------------|---------|
| Total Suspended Solids | 4.0 | U | 4.0 | 4.0 | mg/L | | | 06/30/16 15:55 | 1 |

Lab Sample ID: LCS 160-258769/2
Matrix: Water
Analysis Batch: 258769

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

| Analyte | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec. Limits |
|------------------------|-------------|------------|---------------|------|---|------|--------------|
| Total Suspended Solids | 500 | 495.0 | | mg/L | | 99 | 78 - 124 |

Lab Sample ID: 160-18020-1 DU
Matrix: Water
Analysis Batch: 258769

Client Sample ID: B35WK2
Prep Type: Total/NA

| Analyte | Sample Result | Sample Qualifier | DU Result | DU Qualifier | Unit | D | RPD | RPD Limit |
|------------------------|---------------|------------------|-----------|--------------|------|---|-----|-----------|
| Total Suspended Solids | 15.0 | | 16.00 | | mg/L | | 6 | 20 |

TestAmerica St. Louis

QC Sample Results

Client: CH2M Hill Plateau Remediation Company
Project/Site: F16-046

TestAmerica Job ID: 160-18020-1
SDG: SL2236

Method: 310.1 - Alkalinity

Lab Sample ID: MB 160-259439/1
Matrix: Water
Analysis Batch: 259439

Client Sample ID: Method Blank
Prep Type: Total/NA

| Analyte | MB Result | MB Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|------------|-----------|--------------|-----|------|------|---|----------|----------------|---------|
| Alkalinity | 0.54 | U | 5.0 | 0.54 | mg/L | | | 07/06/16 22:28 | 1 |

Lab Sample ID: HLCS 160-259439/3
Matrix: Water
Analysis Batch: 259439

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

| Analyte | Spike Added | HLCS Result | HLCS Qualifier | Unit | D | %Rec | %Rec. Limits |
|------------|-------------|-------------|----------------|------|---|------|--------------|
| Alkalinity | 400 | 376.0 | | mg/L | | 94 | 90 - 110 |

Lab Sample ID: LCS 160-259439/2
Matrix: Water
Analysis Batch: 259439

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

| Analyte | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec. Limits |
|------------|-------------|------------|---------------|------|---|------|--------------|
| Alkalinity | 200 | 188.0 | | mg/L | | 94 | 90 - 110 |

Lab Sample ID: 160-18020-1 MS
Matrix: Water
Analysis Batch: 259439

Client Sample ID: B35WK2
Prep Type: Total/NA

| Analyte | Sample Result | Sample Qualifier | Spike Added | MS Result | MS Qualifier | Unit | D | %Rec | %Rec. Limits |
|------------|---------------|------------------|-------------|-----------|--------------|------|---|------|--------------|
| Alkalinity | 94.0 | | 100 | 190.0 | | mg/L | | 96 | 80 - 120 |

Lab Sample ID: 160-18020-1 DU
Matrix: Water
Analysis Batch: 259439

Client Sample ID: B35WK2
Prep Type: Total/NA

| Analyte | Sample Result | Sample Qualifier | DU Result | DU Qualifier | Unit | D | RPD | RPD Limit |
|------------|---------------|------------------|-----------|--------------|------|---|-----|-----------|
| Alkalinity | 94.0 | | 94.00 | | mg/L | | 0 | 20 |

Method: 9060 - Organic Carbon, Total (TOC)

Lab Sample ID: MB 160-259381/5
Matrix: Water
Analysis Batch: 259381

Client Sample ID: Method Blank
Prep Type: Total/NA

| Analyte | MB Result | MB Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|----------------------|-----------|--------------|-----|------|------|---|----------|----------------|---------|
| Total Organic Carbon | 0.72 | U | 1.0 | 0.72 | mg/L | | | 07/05/16 15:32 | 1 |

Lab Sample ID: LCS 160-259381/6
Matrix: Water
Analysis Batch: 259381

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

| Analyte | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec. Limits |
|----------------------|-------------|------------|---------------|------|---|------|--------------|
| Total Organic Carbon | 10.0 | 9.66 | | mg/L | | 97 | 90 - 110 |

QC Sample Results

Client: CH2M Hill Plateau Remediation Company
 Project/Site: F16-046

TestAmerica Job ID: 160-18020-1
 SDG: SL2236

Method: 9060 - Organic Carbon, Total (TOC) (Continued)

Lab Sample ID: 160-17938-E-1 MS

Matrix: Water

Analysis Batch: 259381

Client Sample ID: Matrix Spike

Prep Type: Total/NA

| Analyte | Sample Result | Sample Qualifier | Spike Added | MS Result | MS Qualifier | Unit | D | %Rec | %Rec. Limits |
|----------------------|---------------|------------------|-------------|-----------|--------------|------|---|------|--------------|
| Total Organic Carbon | 2.4 | | 5.00 | 7.04 | | mg/L | | 93 | 76 - 120 |

Lab Sample ID: 160-17938-E-1 DU

Matrix: Water

Analysis Batch: 259381

Client Sample ID: Duplicate

Prep Type: Total/NA

| Analyte | Sample Result | Sample Qualifier | DU Result | DU Qualifier | Unit | D | RPD | RPD Limit |
|----------------------|---------------|------------------|-----------|--------------|------|---|-----|-----------|
| Total Organic Carbon | 2.4 | | 2.68 | | mg/L | | 12 | 20 |

QC Association Summary

Client: CH2M Hill Plateau Remediation Company
 Project/Site: F16-046

TestAmerica Job ID: 160-18020-1
 SDG: SL2236

GC/MS VOA

Analysis Batch: 259263

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|--------------------|------------------------|-----------|--------|--------|------------|
| 160-18017-B-1 MS | Matrix Spike | Total/NA | Water | 8260C | |
| 160-18017-C-1 MSD | Matrix Spike Duplicate | Total/NA | Water | 8260C | |
| 160-18020-1 | B35WK2 | Total/NA | Water | 8260C | |
| 160-18020-2 | B35WJ6 | Total/NA | Water | 8260C | |
| 160-18020-3 | B35WJ0 | Total/NA | Water | 8260C | |
| 160-18020-3 | B35WJ0 | Total/NA | Water | 8260C | |
| LCS 160-259263/5 | Lab Control Sample | Total/NA | Water | 8260C | |
| LCS D 160-259263/6 | Lab Control Sample Dup | Total/NA | Water | 8260C | |
| MB 160-259263/8 | Method Blank | Total/NA | Water | 8260C | |

General Chemistry

Analysis Batch: 258641

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|------------------|--------------------|-----------|--------|--------|------------|
| 160-17995-B-1 DU | Duplicate | Total/NA | Water | 160.1 | |
| 160-18020-1 | B35WK2 | Total/NA | Water | 160.1 | |
| 160-18020-2 | B35WJ6 | Total/NA | Water | 160.1 | |
| LCS 160-258641/2 | Lab Control Sample | Total/NA | Water | 160.1 | |
| MB 160-258641/1 | Method Blank | Total/NA | Water | 160.1 | |

Analysis Batch: 258769

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|------------------|--------------------|-----------|--------|--------|------------|
| 160-18020-1 | B35WK2 | Total/NA | Water | 160.2 | |
| 160-18020-1 DU | B35WK2 | Total/NA | Water | 160.2 | |
| 160-18020-2 | B35WJ6 | Total/NA | Water | 160.2 | |
| LCS 160-258769/2 | Lab Control Sample | Total/NA | Water | 160.2 | |
| MB 160-258769/1 | Method Blank | Total/NA | Water | 160.2 | |

Analysis Batch: 259381

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|------------------|--------------------|-----------|--------|--------|------------|
| 160-17938-E-1 DU | Duplicate | Total/NA | Water | 9060 | |
| 160-17938-E-1 MS | Matrix Spike | Total/NA | Water | 9060 | |
| 160-18020-1 | B35WK2 | Total/NA | Water | 9060 | |
| 160-18020-2 | B35WJ6 | Total/NA | Water | 9060 | |
| LCS 160-259381/6 | Lab Control Sample | Total/NA | Water | 9060 | |
| MB 160-259381/5 | Method Blank | Total/NA | Water | 9060 | |

Analysis Batch: 259439

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|-------------------|--------------------|-----------|--------|--------|------------|
| 160-18020-1 | B35WK2 | Total/NA | Water | 310.1 | |
| 160-18020-1 DU | B35WK2 | Total/NA | Water | 310.1 | |
| 160-18020-1 MS | B35WK2 | Total/NA | Water | 310.1 | |
| 160-18020-2 | B35WJ6 | Total/NA | Water | 310.1 | |
| HLCS 160-259439/3 | Lab Control Sample | Total/NA | Water | 310.1 | |
| LCS 160-259439/2 | Lab Control Sample | Total/NA | Water | 310.1 | |
| MB 160-259439/1 | Method Blank | Total/NA | Water | 310.1 | |

Surrogate Summary

Client: CH2M Hill Plateau Remediation Company
 Project/Site: F16-046

TestAmerica Job ID: 160-18020-1
 SDG: SL2236

Method: 8260C - Volatile Organic Compounds (GC/MS)

Matrix: Water

Prep Type: Total/NA

Percent Surrogate Recovery (Acceptance Limits)

| Lab Sample ID | Client Sample ID | 12DCE | BFB | DBFM | TOL |
|-------------------|------------------------|----------|----------|----------|----------|
| | | (75-129) | (81-130) | (81-124) | (87-128) |
| 160-18017-B-1 MS | Matrix Spike | 98 | 99 | 102 | 102 |
| 160-18017-C-1 MSD | Matrix Spike Duplicate | 97 | 100 | 100 | 101 |
| 160-18020-1 | B35WK2 | 95 | 113 | 103 | 113 |
| 160-18020-2 | B35WJ6 | 101 | 113 | 102 | 107 |
| 160-18020-3 | B35WJ0 | 98 | 115 | 110 | 110 |
| 160-18020-3 | B35WJ0 | 95 | 110 | 101 | 105 |
| LCS 160-259263/5 | Lab Control Sample | 90 | 103 | 99 | 103 |
| LCSD 160-259263/6 | Lab Control Sample Dup | 90 | 105 | 99 | 102 |
| MB 160-259263/8 | Method Blank | 88 | 109 | 95 | 109 |

Surrogate Legend

12DCE = 1,2-Dichloroethane-d4 (Surr)

BFB = 4-Bromofluorobenzene (Surr)

DBFM = Dibromofluoromethane (Surr)

TOL = Toluene-d8 (Surr)