TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

# ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Richland
2800 George Washington Way
Richland, WA 99352
Tel: (509)375-3131

TestAmerica Job ID: 300-9106-1
TestAmerica Sample Delivery Group: RL9106-1
Client Project/Site: I19-006

For:
CH2M Hill Plateau Remediation Company
825 Jadwin Avenue
Richland, Washington 99352

Attn: CPP Sample Management

Ashley L Worthy

*Authorized for release by:*
*12/31/2018 8:58:37 AM*

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LINKS

Review your project results through TotalAccess

Have a Question? Ask The Expert

Visit us at: www.testamericainc.com

*I certify that this Certificate of Analysis is in compliance with the SOW, both technically and for completeness, for other than the conditions detailed in this package. Release of the data contained in this hard copy data package has been authorized by the Laboratory Manager, or a desingee as verified by the attached signature.*

*The laboratory is accredited to EPA 7196A in Solid and Chemical Materials, per Washington State Department of Ecology this is approved for non-discharge water samples.*

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# Definitions/Glossary

Client: CH2M Hill Plateau Remediation Company
Project/Site: I19-006

TestAmerica Job ID: 300-9106-1
SDG: RL9106-1

## Qualifiers

### HPLC/IC

| Qualifier | Qualifier Description |
|---|---|
| D | The reported value is from a dilution. |
| U | Analyzed for but not detected. |
| X | See case narrative notes for explanation of the 'X' flag |

## Glossary

| Abbreviation | These commonly used abbreviations may or may not be present in this report. |
|---|---|
| ¤ | 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 | Detection Limit (DoD/DOE) |
| DL, RA, RE, IN | Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample |
| DLC | Decision Level Concentration (Radiochemistry) |
| EDL | Estimated Detection Limit (Dioxin) |
| LOD | Limit of Detection (DoD/DOE) |
| LOQ | Limit of Quantitation (DoD/DOE) |
| MDA | Minimum Detectable Activity (Radiochemistry) |
| MDC | Minimum Detectable Concentration (Radiochemistry) |
| 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 (Radiochemistry) |
| 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) |

# Case Narrative

Client: CH2M Hill Plateau Remediation Company
Project/Site: I19-006

TestAmerica Job ID: 300-9106-1
SDG: RL9106-1

## Job ID: 300-9106-1

### Laboratory: TestAmerica Richland

**Narrative**

**Job Narrative**
**300-9106-1**

**Comments**
No additional comments.

**Receipt**
The samples were received on 12/20/2018 10:45 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 7.6° C.

**HPLC/IC**
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

| CH2MHill Plateau Remediation Company | CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST | C.O.C. # I19-006-159 Page 1 of 1 |
|---|---|---|

| | | |
|---|---|---|
| **Collector:** Jeff Tucksen CHPRC | **Contact/Requester:** Karen Waters-Husted | **Telephone No.:** 509-376-4650 |
| **SAF No.:** I19-006 | **Sampling Origin:** Hanford Site | **Purchase Order/Charge Code:** 300071 |
| **Project Title:** AEA, DECEMBER 2018 | **Logbook No.:** HNF-N-506 106 | **Ice Chest No.:** N/A |
| **Shipped To (Lab):** TestAmerica Incorporated, Rich | **Method of Shipment:** GOVERNMENT VEHICLE | **Bill of Lading/Air Bill No.:** N/A |
| **Protocol:** SURV | **Priority:** 15 Days PRIORITY | **Offsite Property No.:** N/A |

**POSSIBLE SAMPLE HAZARDS/REMARK**
** ** 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

**SPECIAL INSTRUCTIONS**
N/A

| Sample No. | Filter | * | Date | Time | No/Type Container | Sample Analysis | Holding Time | Preservative |
|---|---|---|---|---|---|---|---|---|
| B3M8C5 | N | W | DEC 20 2018 | 0930 | 1x125-mL P | 300.0_ANIONS_IC: COMMON | 48 Hours | Cool <=6C |

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300-9106 COC

| Relinquished By: | | | Received By: | | |
|---|---|---|---|---|---|
| Jeff Tucksen CHPRC | | DEC 20 2018 1045 | Charlotte Borgnes CB STARC | | DEC 20 2018 1045 |
| *Print First and Last Name* | *Signature* | *Date/Time* | *Print First and Last Name* | *Signature* | *Date/Time* |
| Relinquished By: | | | Received By: | | |
| *Print First and Last Name* | *Signature* | *Date/Time* | *Print First and Last Name* | *Signature* | *Date/Time* |
| Relinquished By: | | | Received By: | | |
| *Print First and Last Name* | *Signature* | *Date/Time* | *Print First and Last Name* | *Signature* | *Date/Time* |
| Relinquished By: | | | Received By: | | |
| *Print First and Last Name* | *Signature* | *Date/Time* | *Print First and Last Name* | *Signature* | *Date/Time* |

Matrix *

| | |
|---|---|
| S = Soil | DS = Drum Solids |
| SE = Sediment | DL = Drum Liquids |
| SO = Solid | T = Tissue |
| SL = Sludge | WI = Wipe |
| W = Water | L = Liquid |
| O = Oil | V = Vegetation |
| A = Air | X = Other |

| FINAL SAMPLE DISPOSITION | Disposal Method (e.g., Return to customer, per lab procedure, used in process): | Disposed By: | Date/Time: |
|---|---|---|---|

Printed On 10/29/2018

FSR ID = FSR71395

A-6004-842 (REV 3)

| CH2MHill Plateau Remediation Company | CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST | C.O.C. # I19-006-160 |
|---|---|---|
| | | Page 1 of 1 |

| | | |
|---|---|---|
| **Collector:** Jeff Tucksen CHPRC | **Contact/Requester:** Karen Waters-Husted | **Telephone No.:** 509-376-4650 |
| **SAF No.:** I19-006 | **Sampling Origin:** Hanford Site | **Purchase Order/Charge Code:** 300071 |
| **Project Title:** AEA, DECEMBER 2018 | **Logbook No.:** HNF-N-506 106 | **Ice Chest No.:** N/A |
| **Shipped To (Lab):** TestAmerica Incorporated, Rich | **Method of Shipment:** GOVERNMENT VEHICLE | **Bill of Lading/Air Bill No.:** N/A |
| **Protocol:** SURV | **Priority:** 15 Days PRIORITY | **Offsite Property No.:** N/A |

**POSSIBLE SAMPLE HAZARDS/REMARK**
** ** 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

**SPECIAL INSTRUCTIONS**
N/A

| Sample No. | Filter | * | Date | Time | No/Type Container | Sample Analysis | Holding Time | Preservative |
|---|---|---|---|---|---|---|---|---|
| B3M8C8 | N | W | DEC 2 0 2018 | 1017 | 1x125-mL P | 300.0_ANIONS_IC: COMMON | 48 Hours | Cool <=6C |

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| | | |
|---|---|---|
| Relinquished By: Jeff Tucksen CHPRC — Print First and Last Name / Signature / DEC 2 0 2018 1045 Date/Time | Received By: Charlotte Bruyneel CB TAL — Print First and Last Name / Signature / DEC 2 0 2018 1045 Date/Time | Matrix * |
| Relinquished By: — Print First and Last Name / Signature / Date/Time | Received By: — Print First and Last Name / Signature / Date/Time | S = Soil, SE = Sediment, SO = Solid, SL = Sludge, W = Water, O = Oil, A = Air; DS = Drum Solids, DL = Drum Liquids, T = Tissue, WI = Wipe, L = Liquid, V = Vegetation, X = Other |
| Relinquished By: — Print First and Last Name / Signature / Date/Time | Received By: — Print First and Last Name / Signature / Date/Time | |
| Relinquished By: — Print First and Last Name / Signature / Date/Time | Received By: — Print First and Last Name / Signature / Date/Time | |
| **FINAL SAMPLE DISPOSITION** — Disposal Method (e.g., Return to customer, per lab procedure, used in process): | Disposed By: | Date/Time: |

Printed On 10/29/2018

FSR ID = FSR71396

A-6004-842 (REV 3)

# Detection Summary

Client: CH2M Hill Plateau Remediation Company
Project/Site: I19-006

TestAmerica Job ID: 300-9106-1
SDG: RL9106-1

## Client Sample ID: B3M8C5 — Lab Sample ID: 300-9106-1

| Analyte | Result | Qualifier | RL | MDL | Unit | Dil Fac | D | Method | Prep Type |
|---|---|---|---|---|---|---|---|---|---|
| Chloride | 82 | D | 4.0 | 2.0 | mg/L | 20 | | 300.0 | Total/NA |
| Nitrate as N | 18 | D | 0.56 | 0.28 | mg/L | 20 | | 300.0 | Total/NA |
| Fluoride | 0.25 | D | 0.10 | 0.050 | mg/L | 2 | | 300.0 | Total/NA |
| Sulfate | 44 | D | 0.50 | 0.25 | mg/L | 2 | | 300.0 | Total/NA |

## Client Sample ID: B3M8C8 — Lab Sample ID: 300-9106-2

| Analyte | Result | Qualifier | RL | MDL | Unit | Dil Fac | D | Method | Prep Type |
|---|---|---|---|---|---|---|---|---|---|
| Chloride | 32 | D | 0.40 | 0.20 | mg/L | 2 | | 300.0 | Total/NA |
| Nitrate as N | 36 | D | 0.28 | 0.14 | mg/L | 10 | | 300.0 | Total/NA |
| Fluoride | 0.17 | D | 0.10 | 0.050 | mg/L | 2 | | 300.0 | Total/NA |
| Sulfate | 84 | D | 0.50 | 0.25 | mg/L | 2 | | 300.0 | Total/NA |

This Detection Summary does not include radiochemical test results.

# Client Sample Results

Client: CH2M Hill Plateau Remediation Company
Project/Site: I19-006

TestAmerica Job ID: 300-9106-1
SDG: RL9106-1

## Client Sample ID: B3M8C5

**Lab Sample ID: 300-9106-1**
**Date Collected: 12/20/18 09:30**
**Matrix: Water**
**Date Received: 12/20/18 10:45**

### Method: 300.0 - Anions, Ion Chromatography

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| **Chloride** | **82** | **D** | 4.0 | 2.0 | mg/L | | | 12/20/18 22:10 | 20 |
| **Nitrate as N** | **18** | **D** | 0.56 | 0.28 | mg/L | | | 12/20/18 22:10 | 20 |
| **Fluoride** | **0.25** | **D** | 0.10 | 0.050 | mg/L | | | 12/20/18 16:33 | 2 |
| Nitrite as N | 0.038 | U D | 0.076 | 0.038 | mg/L | | | 12/20/18 16:33 | 2 |
| **Sulfate** | **44** | **D** | 0.50 | 0.25 | mg/L | | | 12/20/18 16:33 | 2 |

## Client Sample ID: B3M8C8

**Lab Sample ID: 300-9106-2**
**Date Collected: 12/20/18 10:17**
**Matrix: Water**
**Date Received: 12/20/18 10:45**

### Method: 300.0 - Anions, Ion Chromatography

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| **Chloride** | **32** | **D** | 0.40 | 0.20 | mg/L | | | 12/20/18 16:49 | 2 |
| **Nitrate as N** | **36** | **D** | 0.28 | 0.14 | mg/L | | | 12/20/18 22:26 | 10 |
| **Fluoride** | **0.17** | **D** | 0.10 | 0.050 | mg/L | | | 12/20/18 16:49 | 2 |
| Nitrite as N | 0.038 | U D | 0.076 | 0.038 | mg/L | | | 12/20/18 16:49 | 2 |
| **Sulfate** | **84** | **D** | 0.50 | 0.25 | mg/L | | | 12/20/18 16:49 | 2 |

# QC Sample Results

Client: CH2M Hill Plateau Remediation Company
Project/Site: I19-006

TestAmerica Job ID: 300-9106-1
SDG: RL9106-1

## Method: 300.0 - Anions, Ion Chromatography

**Lab Sample ID: MB 300-16852/5**
**Matrix: Water**
**Analysis Batch: 16852**

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

| Analyte | MB Result | MB Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Nitrate as N | 0.014 | U | 0.028 | 0.014 | mg/L | | | 12/20/18 12:31 | 1 |
| Nitrite as N | 0.019 | U | 0.038 | 0.019 | mg/L | | | 12/20/18 12:31 | 1 |

**Lab Sample ID: LCS 300-16852/6**
**Matrix: Water**
**Analysis Batch: 16852**

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

| Analyte | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec. Limits |
|---|---|---|---|---|---|---|---|
| Nitrate as N | 2.26 | 2.12 | | mg/L | | 94 | 80 - 120 |
| Nitrite as N | 3.04 | 3.00 | | mg/L | | 99 | 80 - 120 |

**Lab Sample ID: 300-9105-A-1 MS**
**Matrix: Water**
**Analysis Batch: 16852**

**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 |
|---|---|---|---|---|---|---|---|---|---|
| Nitrite as N | 0.038 | U D | 0.609 | 0.487 | D | mg/L | | 80 | 75 - 125 |

**Lab Sample ID: 300-9105-A-1 MS**
**Matrix: Water**
**Analysis Batch: 16852**

**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 |
|---|---|---|---|---|---|---|---|---|---|
| Nitrate as N | 7.7 | D | 1.13 | 8.56 | D | mg/L | | 78 | 75 - 125 |

**Lab Sample ID: 300-9105-A-1 DU**
**Matrix: Water**
**Analysis Batch: 16852**

**Client Sample ID: Duplicate**
**Prep Type: Total/NA**

| Analyte | Sample Result | Sample Qualifier | DU Result | DU Qualifier | Unit | D | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|
| Nitrite as N | 0.038 | U D | 0.038 | U D | mg/L | | NC | 20 |

**Lab Sample ID: 300-9105-A-1 DU**
**Matrix: Water**
**Analysis Batch: 16852**

**Client Sample ID: Duplicate**
**Prep Type: Total/NA**

| Analyte | Sample Result | Sample Qualifier | DU Result | DU Qualifier | Unit | D | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|
| Nitrate as N | 7.7 | D | 7.45 | D | mg/L | | 3 | 20 |

**Lab Sample ID: MB 300-16853/5**
**Matrix: Water**
**Analysis Batch: 16853**

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

| Analyte | MB Result | MB Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Chloride | 0.10 | U | 0.20 | 0.10 | mg/L | | | 12/20/18 12:31 | 1 |
| Fluoride | 0.025 | U | 0.050 | 0.025 | mg/L | | | 12/20/18 12:31 | 1 |
| Sulfate | 0.13 | U | 0.25 | 0.13 | mg/L | | | 12/20/18 12:31 | 1 |

# QC Sample Results

Client: CH2M Hill Plateau Remediation Company
Project/Site: I19-006

TestAmerica Job ID: 300-9106-1
SDG: RL9106-1

## Method: 300.0 - Anions, Ion Chromatography (Continued)

**Lab Sample ID: LCS 300-16853/6**
**Matrix: Water**
**Analysis Batch: 16853**

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

| Analyte | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec. Limits |
|---|---|---|---|---|---|---|---|
| Chloride | 16.0 | 15.3 | | mg/L | | 96 | 80 - 120 |
| Fluoride | 4.00 | 3.81 | | mg/L | | 95 | 80 - 120 |
| Sulfate | 20.0 | 19.0 | | mg/L | | 95 | 80 - 120 |

**Lab Sample ID: 300-9113-A-1 MS**
**Matrix: Water**
**Analysis Batch: 16853**

**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 |
|---|---|---|---|---|---|---|---|---|---|
| Chloride | 17 | D | 3.20 | 20.2 | D X | mg/L | | 91 | 75 - 125 |
| Fluoride | 0.32 | D | 0.800 | 1.05 | D | mg/L | | 91 | 75 - 125 |
| Sulfate | 38 | D | 4.00 | 41.5 | D X | mg/L | | 91 | 75 - 125 |

**Lab Sample ID: 300-9113-A-1 DU**
**Matrix: Water**
**Analysis Batch: 16853**

**Client Sample ID: Duplicate**
**Prep Type: Total/NA**

| Analyte | Sample Result | Sample Qualifier | DU Result | DU Qualifier | Unit | D | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|
| Chloride | 17 | D | 16.9 | D | mg/L | | 2 | 20 |
| Fluoride | 0.32 | D | 0.315 | D | mg/L | | 2 | 20 |
| Sulfate | 38 | D | 37.1 | D | mg/L | | 2 | 20 |

# QC Association Summary

Client: CH2M Hill Plateau Remediation Company
Project/Site: I19-006

TestAmerica Job ID: 300-9106-1
SDG: RL9106-1

## HPLC/IC

### Analysis Batch: 16852

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 300-9106-1 | B3M8C5 | Total/NA | Water | 300.0 | |
| 300-9106-1 | B3M8C5 | Total/NA | Water | 300.0 | |
| 300-9106-2 | B3M8C8 | Total/NA | Water | 300.0 | |
| 300-9106-2 | B3M8C8 | Total/NA | Water | 300.0 | |
| MB 300-16852/5 | Method Blank | Total/NA | Water | 300.0 | |
| LCS 300-16852/6 | Lab Control Sample | Total/NA | Water | 300.0 | |
| 300-9105-A-1 MS | Matrix Spike | Total/NA | Water | 300.0 | |
| 300-9105-A-1 MS | Matrix Spike | Total/NA | Water | 300.0 | |
| 300-9105-A-1 DU | Duplicate | Total/NA | Water | 300.0 | |
| 300-9105-A-1 DU | Duplicate | Total/NA | Water | 300.0 | |

### Analysis Batch: 16853

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 300-9106-1 | B3M8C5 | Total/NA | Water | 300.0 | |
| 300-9106-1 | B3M8C5 | Total/NA | Water | 300.0 | |
| 300-9106-2 | B3M8C8 | Total/NA | Water | 300.0 | |
| MB 300-16853/5 | Method Blank | Total/NA | Water | 300.0 | |
| LCS 300-16853/6 | Lab Control Sample | Total/NA | Water | 300.0 | |
| 300-9113-A-1 MS | Matrix Spike | Total/NA | Water | 300.0 | |
| 300-9113-A-1 DU | Duplicate | Total/NA | Water | 300.0 | |

# Lab Chronicle

Client: CH2M Hill Plateau Remediation Company
Project/Site: I19-006

TestAmerica Job ID: 300-9106-1
SDG: RL9106-1

## Client Sample ID: B3M8C5
**Date Collected: 12/20/18 09:30**
**Date Received: 12/20/18 10:45**

## Lab Sample ID: 300-9106-1
**Matrix: Water**

| Prep Type | Batch Type | Batch Method | Run | Dil Factor | Initial Amount | Final Amount | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|---|---|
| Total/NA | Analysis | 300.0 | | 2 | | | 16852 | 12/20/18 16:33 | RTQ | TAL RCH |
| Total/NA | Analysis | 300.0 | | 2 | | | 16853 | 12/20/18 16:33 | RTQ | TAL RCH |
| Total/NA | Analysis | 300.0 | | 20 | | | 16852 | 12/20/18 22:10 | RTQ | TAL RCH |
| Total/NA | Analysis | 300.0 | | 20 | | | 16853 | 12/20/18 22:10 | RTQ | TAL RCH |

## Client Sample ID: B3M8C8
**Date Collected: 12/20/18 10:17**
**Date Received: 12/20/18 10:45**

## Lab Sample ID: 300-9106-2
**Matrix: Water**

| Prep Type | Batch Type | Batch Method | Run | Dil Factor | Initial Amount | Final Amount | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|---|---|
| Total/NA | Analysis | 300.0 | | 2 | | | 16852 | 12/20/18 16:49 | RTQ | TAL RCH |
| Total/NA | Analysis | 300.0 | | 2 | | | 16853 | 12/20/18 16:49 | RTQ | TAL RCH |
| Total/NA | Analysis | 300.0 | | 10 | | | 16852 | 12/20/18 22:26 | RTQ | TAL RCH |

## Client Sample ID: Method Blank
**Date Collected: N/A**
**Date Received: N/A**

## Lab Sample ID: MB 300-16852/5
**Matrix: Water**

| Prep Type | Batch Type | Batch Method | Run | Dil Factor | Initial Amount | Final Amount | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|---|---|
| Total/NA | Analysis | 300.0 | | 1 | | | 16852 | 12/20/18 12:31 | RTQ | TAL RCH |

## Client Sample ID: Method Blank
**Date Collected: N/A**
**Date Received: N/A**

## Lab Sample ID: MB 300-16853/5
**Matrix: Water**

| Prep Type | Batch Type | Batch Method | Run | Dil Factor | Initial Amount | Final Amount | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|---|---|
| Total/NA | Analysis | 300.0 | | 1 | | | 16853 | 12/20/18 12:31 | RTQ | TAL RCH |

## Client Sample ID: Lab Control Sample
**Date Collected: N/A**
**Date Received: N/A**

## Lab Sample ID: LCS 300-16852/6
**Matrix: Water**

| Prep Type | Batch Type | Batch Method | Run | Dil Factor | Initial Amount | Final Amount | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|---|---|
| Total/NA | Analysis | 300.0 | | 1 | | | 16852 | 12/20/18 12:47 | RTQ | TAL RCH |

## Client Sample ID: Lab Control Sample
**Date Collected: N/A**
**Date Received: N/A**

## Lab Sample ID: LCS 300-16853/6
**Matrix: Water**

| Prep Type | Batch Type | Batch Method | Run | Dil Factor | Initial Amount | Final Amount | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|---|---|
| Total/NA | Analysis | 300.0 | | 1 | | | 16853 | 12/20/18 12:47 | RTQ | TAL RCH |

# Lab Chronicle

Client: CH2M Hill Plateau Remediation Company
Project/Site: I19-006

TestAmerica Job ID: 300-9106-1
SDG: RL9106-1

## Client Sample ID: Matrix Spike
**Lab Sample ID: 300-9105-A-1 MS**
**Date Collected: 12/20/18 08:41**
**Matrix: Water**
**Date Received: 12/20/18 10:45**

| Prep Type | Batch Type | Batch Method | Run | Dil Factor | Initial Amount | Final Amount | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|---|---|
| Total/NA | Analysis | 300.0 | | 2 | | | 16852 | 12/20/18 16:01 | RTQ | TAL RCH |
| Total/NA | Analysis | 300.0 | | 5 | | | 16852 | 12/20/18 20:50 | RTQ | TAL RCH |

## Client Sample ID: Matrix Spike
**Lab Sample ID: 300-9113-A-1 MS**
**Date Collected: 12/20/18 08:35**
**Matrix: Water**
**Date Received: 12/20/18 13:55**

| Prep Type | Batch Type | Batch Method | Run | Dil Factor | Initial Amount | Final Amount | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|---|---|
| Total/NA | Analysis | 300.0 | | 2 | | | 16853 | 12/20/18 20:01 | RTQ | TAL RCH |

## Client Sample ID: Duplicate
**Lab Sample ID: 300-9105-A-1 DU**
**Date Collected: 12/20/18 08:41**
**Matrix: Water**
**Date Received: 12/20/18 10:45**

| Prep Type | Batch Type | Batch Method | Run | Dil Factor | Initial Amount | Final Amount | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|---|---|
| Total/NA | Analysis | 300.0 | | 2 | | | 16852 | 12/20/18 16:17 | RTQ | TAL RCH |
| Total/NA | Analysis | 300.0 | | 5 | | | 16852 | 12/20/18 21:06 | RTQ | TAL RCH |

## Client Sample ID: Duplicate
**Lab Sample ID: 300-9113-A-1 DU**
**Date Collected: 12/20/18 08:35**
**Matrix: Water**
**Date Received: 12/20/18 13:55**

| Prep Type | Batch Type | Batch Method | Run | Dil Factor | Initial Amount | Final Amount | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|---|---|
| Total/NA | Analysis | 300.0 | | 2 | | | 16853 | 12/20/18 20:17 | RTQ | TAL RCH |

**Laboratory References:**

TAL RCH = TestAmerica Richland, 2800 George Washington Way, Richland, WA 99352, TEL (509)375-3131

# Method Summary

Client: CH2M Hill Plateau Remediation Company
Project/Site: I19-006

TestAmerica Job ID: 300-9106-1
SDG: RL9106-1

| Method | Method Description | Protocol | Laboratory |
|---|---|---|---|
| 300.0 | Anions, Ion Chromatography | MCAWW | TAL RCH |

**Protocol References:**

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

**Laboratory References:**

TAL RCH = TestAmerica Richland, 2800 George Washington Way, Richland, WA 99352, TEL (509)375-3131

# Sample Summary

Client: CH2M Hill Plateau Remediation Company
Project/Site: I19-006

TestAmerica Job ID: 300-9106-1
SDG: RL9106-1

| Lab Sample ID | Client Sample ID | Matrix | Collected | Received |
|---|---|---|---|---|
| 300-9106-1 | B3M8C5 | Water | 12/20/18 09:30 | 12/20/18 10:45 |
| 300-9106-2 | B3M8C8 | Water | 12/20/18 10:17 | 12/20/18 10:45 |

# Login Sample Receipt Checklist

Client: CH2M Hill Plateau Remediation Company

Job Number: 300-9106-1
SDG Number: RL9106-1

**Login Number: 9106**
**List Number: 1**
**Creator: Burghard, Charlette JA**

**List Source: TestAmerica Richland**

| Question | Answer | Comment |
|---|---|---|
| Radioactivity wasn't checked or is </= background as measured by a survey meter. | True | |
| The cooler's custody seal, if present, is intact. | N/A | |
| 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. | False | Received same day of collection; chilling process has begun. |
| Cooler Temperature is recorded. | True | |
| 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. | N/A | |
| 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 <6mm (1/4"). | N/A | |
| Multiphasic samples are not present. | N/A | |
| Samples do not require splitting or compositing. | True | |
| Residual Chlorine Checked. | N/A | |