

# TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

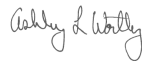
## ANALYTICAL REPORT

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

TestAmerica Job ID: 300-6966-1  
TestAmerica Sample Delivery Group: WC2808  
Client Project/Site: X18-028

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

Attn: CPP Sample Management



Authorized for release by:  
4/11/2018 1:58:32 PM

Ashley Worthy, Project Manager I  
(509)375-3131  
[ashley.worthy@testamericainc.com](mailto:ashley.worthy@testamericainc.com)



### LINKS

Review your project results through  
**TotalAccess**

Have a Question?



Visit us at:  
[www.testamericainc.com](http://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 designee 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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Client: CH2M Hill Plateau Remediation Company  
 Project/Site: X18-028

TestAmerica Job ID: 300-6966-1  
 SDG: WC2808

**Qualifiers**

**HPLC/IC**

| Qualifier | Qualifier Description  |
|-----------|--|
| D         | The reported value is from a dilution.                             |
| B         | Estimated result. Result is less than the RL, but greater than MDL |
| X         | See case narrative notes for explanation of the 'X' flag           |
| 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             | 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)   |



Client: CH2M Hill Plateau Remediation Company  
Project/Site: X18-028

TestAmerica Job ID: 300-6966-1  
SDG: WC2808

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**Job ID: 300-6966-1**

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**Laboratory: TestAmerica Richland**

**Narrative**

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**Job Narrative  
300-6966-1**

**Comments**

No additional comments.

**Receipt**

The samples were received on 4/3/2018 2:45 PM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 4.6° C.

**HPLC/IC**

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

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|   |   |                                |
|---|---|--------------------------------|
| <b>CH2MHill Plateau<br/>Remediation Company</b> | <b>CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST</b> | C.O.C. #<br><b>X18-028-023</b> |
|   |   | Page 1 of 1                    |

|   |   |   |
|---|---|---|
| <b>Collector:</b> Juan Aguilar /CHPRC                   | <b>Contact/Requester:</b> Karen Waters-Husted | <b>Telephone No.:</b> 509-376-4650        |
| <b>CAF No.:</b> X18-028                                 | <b>Sampling Origin:</b> Hanford Site          | <b>Purchase Order/Charge Code:</b> 304546 |
| <b>Project Title:</b> 300-FF-5 Uranium Sequestration    | <b>Logbook No.:</b> HNF-N-506-98168           | <b>Ice Chest No.:</b> N/A                 |
| <b>Shipped To (Lab):</b> TestAmerica Incorporated, Rich | <b>Method of Shipment:</b> GOVERNMENT VEHICLE | <b>Bill of Lading/Air Bill No.:</b> N/A   |
| <b>Protocol:</b> CERCLA                                 | <b>Priority:</b> 30 Days                      | <b>Offsite Property No.:</b> 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 |
|------------|--------|---|--------|------|-------------------|--|--------------|--------------|
| B3HNL4     | N      | W | 4-3-18 | 0822 | 1x125-mL P        | 300.0_ANIONS_IC: COMMON;<br>300.0_ANIONS_IC: GW 01 | 48 Hours     | Cool <=6C    |

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300-6966 COC

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|  |  |  |            |
|--|--|--|------------|
| Relinquished By: Juan Aguilar /CHPRC<br><i>[Signature]</i> APR 03 2018 1020<br>Print First and Last Name Signature Date/Time     | Received By: Roger Friesz Jr. /CHPRC<br><i>[Signature]</i> APR 03 2018 1020<br>Print First and Last Name Signature Date/Time | Matrix *<br>S = Soil DS = Drum Solids<br>SE = Sediment DL = Drum Liquid<br>SO = Solid T = Tissue<br>SL = Sludge WI = Wipe<br>W = Water L = Liquid<br>O = Oil V = Vegetation<br>A = Air X = Other |            |
| Relinquished By: Roger Friesz Jr. /CHPRC<br><i>[Signature]</i> APR 03 2018 1340<br>Print First and Last Name Signature Date/Time | Received By: Mike Esparza /CHPRC<br><i>[Signature]</i> APR 03 2018 1340<br>Print First and Last Name Signature Date/Time     |  |            |
| Relinquished By: Mike Esparza /CHPRC<br><i>[Signature]</i> APR 03 2018 1445<br>Print First and Last Name Signature Date/Time     | Received By: B. Jorgenson, TARL<br><i>[Signature]</i> APR 03 2018 1445<br>Print First and Last Name Signature Date/Time      |  |            |
| Relinquished By:<br>Print First and Last Name Signature Date/Time  | Received By:<br>Print First and Last Name Signature Date/Time  |  |            |
| <b>FINAL SAMPLE DISPOSITION</b>  | Disposal Method (e.g., Return to customer, per lab procedure, used in process):  | Disposed By:   | Date/Time: |

|  |   |                               |
|--|---|-------------------------------|
| <b>CH2M Hill Plateau<br/>Remediation Company</b> | <b>CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST</b> | C.O.C.#<br><b>X18-028-020</b> |
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|   |   |   |
|---|---|---|
| <b>Collector:</b> Juan Aguilar /CHPRC                   | <b>Contact/Requester:</b> Karen Waters-Husted | <b>Telephone No.:</b> 509-376-4650        |
| <b>CAF No.:</b> X18-028                                 | <b>Sampling Origin:</b> Hanford Site          | <b>Purchase Order/Charge Code:</b> 304546 |
| <b>Project Title:</b> 300-FF-5 Uranium Sequestration    | <b>Logbook No.:</b> HNF-N-506 - 98/68         | <b>Ice Chest No.:</b> N/A                 |
| <b>Shipped To (Lab):</b> TestAmerica Incorporated, Rich | <b>Method of Shipment:</b> GOVERNMENT VEHICLE | <b>Bill of Lading/Air Bill No.:</b> N/A   |
| <b>Protocol:</b> CERCLA                                 | <b>Priority:</b> 30 Days                      | <b>Offsite Property No.:</b> N/A          |

|   |                                    |
|---|------------------------------------|
| <b>POSSIBLE SAMPLE HAZARDS/REMARK</b><br>** ** 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 | <b>SPECIAL INSTRUCTIONS</b><br>N/A |
|---|------------------------------------|

| Sample No. | Filter | * | Date   | Time | No/Type Container | Sample Analysis                                    | Holding Time | Preservative |
|------------|--------|---|--------|------|-------------------|--|--------------|--------------|
| B3HNK5     | N      | W | 4-3-18 | 0959 | 1x125-mL P        | 300.0_ANIONS_IC: COMMON;<br>300.0_ANIONS_IC: GW 01 | 48 Hours     | Cool <=6C    |

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|   |   |   |
|---|---|---|
| Relinquished By: <u>Juan Aguilar</u> /CHPRC<br>Signature: _____ Date/Time: APR 03 2018 1020                           | Received By: <u>Roger Friesz Jr.</u> /CHPRC<br>Signature: _____ Date/Time: APR 03 2018 1020 | Matrix *<br>S = Soil      DS = Drum Solids<br>SE = Sediment    DL = Drum Liquid<br>SO = Solid      T = Tissue<br>SL = Sludge      WI = Wipe<br>W = Water        L = Liquid<br>O = Oil            V = Vegetation<br>A = Air            X = Other |
| Relinquished By: <u>Roger Friesz Jr.</u> /CHPRC<br>Signature: _____ Date/Time: APR 03 2018 1340                       | Received By: <u>Mike Esparza</u> /CHPRC<br>Signature: _____ Date/Time: APR 03 2018 1340     |   |
| Relinquished By: <u>Mike Esparza</u> /CHPRC<br>Signature: _____ Date/Time: APR 03 2018 1445                           | Received By: <u>B. Jorgenson, TARL</u><br>Signature: _____ Date/Time: APR 03 2018 1445      |   |
| Relinquished By: _____<br>Signature: _____ Date/Time: _____   | Received By: _____<br>Signature: _____ Date/Time: _____                                     |   |
| <b>FINAL SAMPLE DISPOSITION</b> Disposal Method (e.g., Return to customer, per lab procedure, used in process): _____ |   | Disposed By: _____ Date/Time: _____   |

|  |   |                               |
|--|---|-------------------------------|
| <b>CH2M Hill Plateau<br/>Remediation Company</b> | <b>CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST</b> | C.O.C.#<br><b>X18-028-022</b> |
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|   |   |   |
|---|---|---|
| <b>Collector:</b> Juan Aguilar<br>/CHPRC                | <b>Contact/Requester:</b> Karen Waters-Husted | <b>Telephone No.:</b> 509-376-4650        |
| <b>CAF No.:</b> X18-028                                 | <b>Sampling Origin:</b> Hanford Site          | <b>Purchase Order/Charge Code:</b> 304546 |
| <b>Project Title:</b> 300-FF-5 Uranium Sequestration    | <b>Logbook No.:</b> HNF-N-506-98168           | <b>Ice Chest No.:</b> N/A                 |
| <b>Shipped To (Lab):</b> TestAmerica Incorporated, Rich | <b>Method of Shipment:</b> GOVERNMENT VEHICLE | <b>Bill of Lading/Air Bill No.:</b> N/A   |
| <b>Protocol:</b> CERCLA                                 | <b>Priority:</b> 30 Days                      | <b>Offsite Property No.:</b> N/A          |

|   |                                    |
|---|------------------------------------|
| <b>POSSIBLE SAMPLE HAZARDS/REMARK</b><br>** ** 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 | <b>SPECIAL INSTRUCTIONS</b><br>N/A |
|---|------------------------------------|

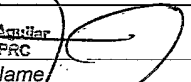
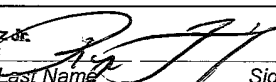
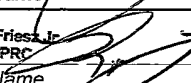
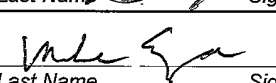


| Sample No. | Filter | * | Date   | Time | No/Type Container | Sample Analysis                                    | Holding Time | Preservative |
|------------|--------|---|--------|------|-------------------|--|--------------|--------------|
| B3HNL3     | N      | W | 4-3-18 | 0822 | 1x125-mL P        | 300.0_ANIONS_IC: COMMON;<br>300.0_ANIONS_IC: GW 01 | 48 Hours     | Cool <=6C    |

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|  |  |  |              |            |
|--|--|--|--------------|------------|
| Relinquished By: Juan Aguilar<br>/CHPRC<br>Signature: <br>Date/Time: APR 03 2018 1020     | Received By: Roger Friesz Jr.<br>/CHPRC<br>Signature: <br>Date/Time: APR 03 2018 1020   | <b>Matrix *</b><br>S = Soil      DS = Drum Solids<br>SE = Sediment      DL = Drum Liquid<br>SO = Solid      T = Tissue<br>SL = Sludge      WI = Wipe<br>W = Water      L = Liquid<br>O = Oil      V = Vegetation<br>A = Air      X = Other |              |            |
| Relinquished By: Roger Friesz Jr.<br>/CHPRC<br>Signature: <br>Date/Time: APR 03 2018 1340 | Received By: Mike Esparza<br>/CHPRC<br>Signature: <br>Date/Time: APR 03 2018 1340       |  |              |            |
| Relinquished By: Mike Esparza<br>/CHPRC<br>Signature: <br>Date/Time: APR 03 2018 1445     | Received By: B. Jorgenson, TARL<br>/CHPRC<br>Signature: <br>Date/Time: APR 03 2018 1445 |  |              |            |
| Relinquished By:<br>Signature: _____<br>Date/Time: _____   | Received By:<br>Signature: _____<br>Date/Time: _____   |  |              |            |
| <b>FINAL SAMPLE DISPOSITION</b>  |  | Disposal Method (e.g., Return to customer, per lab procedure, used in process):  | Disposed By: | Date/Time: |

Client: CH2M Hill Plateau Remediation Company  
Project/Site: X18-028

TestAmerica Job ID: 300-6966-1  
SDG: WC2808

**Client Sample ID: B3HNL4**

**Lab Sample ID: 300-6966-1**

| Analyte             | Result | Qualifier | RL    | MDL   | Unit | Dil Fac | D | Method | Prep Type |
|---------------------|--------|-----------|-------|-------|------|---------|---|--------|-----------|
| Chloride            | 18     | D         | 0.40  | 0.20  | mg/L | 2       |   | 300.0  | Total/NA  |
| Nitrate as N        | 6.0    | D         | 0.056 | 0.028 | mg/L | 2       |   | 300.0  | Total/NA  |
| Fluoride            | 0.40   | D         | 0.10  | 0.050 | mg/L | 2       |   | 300.0  | Total/NA  |
| Nitrite as N        | 0.071  | B D       | 0.076 | 0.038 | mg/L | 2       |   | 300.0  | Total/NA  |
| Orthophosphate as P | 1.1    | D         | 0.16  | 0.082 | mg/L | 2       |   | 300.0  | Total/NA  |
| Sulfate             | 49     | D         | 0.50  | 0.25  | mg/L | 2       |   | 300.0  | Total/NA  |

**Client Sample ID: B3HNL5**

**Lab Sample ID: 300-6966-2**

| Analyte             | Result | Qualifier | RL    | MDL   | Unit | Dil Fac | D | Method | Prep Type |
|---------------------|--------|-----------|-------|-------|------|---------|---|--------|-----------|
| Chloride            | 24     | D         | 0.40  | 0.20  | mg/L | 2       |   | 300.0  | Total/NA  |
| Nitrate as N        | 6.4    | D         | 0.056 | 0.028 | mg/L | 2       |   | 300.0  | Total/NA  |
| Fluoride            | 0.33   | D         | 0.10  | 0.050 | mg/L | 2       |   | 300.0  | Total/NA  |
| Nitrite as N        | 0.075  | B D       | 0.076 | 0.038 | mg/L | 2       |   | 300.0  | Total/NA  |
| Orthophosphate as P | 1.2    | D         | 0.16  | 0.082 | mg/L | 2       |   | 300.0  | Total/NA  |
| Sulfate             | 52     | D         | 0.50  | 0.25  | mg/L | 2       |   | 300.0  | Total/NA  |

**Client Sample ID: B3HNL3**

**Lab Sample ID: 300-6966-3**

| Analyte             | Result | Qualifier | RL    | MDL   | Unit | Dil Fac | D | Method | Prep Type |
|---------------------|--------|-----------|-------|-------|------|---------|---|--------|-----------|
| Chloride            | 18     | D         | 0.40  | 0.20  | mg/L | 2       |   | 300.0  | Total/NA  |
| Nitrate as N        | 6.0    | D         | 0.056 | 0.028 | mg/L | 2       |   | 300.0  | Total/NA  |
| Fluoride            | 0.40   | D         | 0.10  | 0.050 | mg/L | 2       |   | 300.0  | Total/NA  |
| Nitrite as N        | 0.070  | B D       | 0.076 | 0.038 | mg/L | 2       |   | 300.0  | Total/NA  |
| Orthophosphate as P | 1.1    | D         | 0.16  | 0.082 | mg/L | 2       |   | 300.0  | Total/NA  |
| Sulfate             | 49     | D         | 0.50  | 0.25  | mg/L | 2       |   | 300.0  | Total/NA  |

This Detection Summary does not include radiochemical test results.



**04/11/2018**  
**Client Sample Results**

**REV.0**

Client: CH2M Hill Plateau Remediation Company  
 Project/Site: X18-028

TestAmerica Job ID: 300-6966-1  
 SDG: WC2808

**Client Sample ID: B3HNL4**  
**Date Collected: 04/03/18 08:22**  
**Date Received: 04/03/18 14:45**

**Lab Sample ID: 300-6966-1**  
**Matrix: Water**

**Method: 300.0 - Anions, Ion Chromatography**

| Analyte             | Result | Qualifier | RL    | MDL   | Unit | D | Prepared | Analyzed       | Dil Fac |
|---------------------|--------|-----------|-------|-------|------|---|----------|----------------|---------|
| Chloride            | 18     | D         | 0.40  | 0.20  | mg/L |   |          | 04/03/18 19:25 | 2       |
| Nitrate as N        | 6.0    | D         | 0.056 | 0.028 | mg/L |   |          | 04/03/18 19:25 | 2       |
| Fluoride            | 0.40   | D         | 0.10  | 0.050 | mg/L |   |          | 04/03/18 19:25 | 2       |
| Nitrite as N        | 0.071  | B D       | 0.076 | 0.038 | mg/L |   |          | 04/03/18 19:25 | 2       |
| Orthophosphate as P | 1.1    | D         | 0.16  | 0.082 | mg/L |   |          | 04/03/18 19:25 | 2       |
| Sulfate             | 49     | D         | 0.50  | 0.25  | mg/L |   |          | 04/03/18 19:25 | 2       |

**Client Sample ID: B3HNK5**  
**Date Collected: 04/03/18 09:59**  
**Date Received: 04/03/18 14:45**

**Lab Sample ID: 300-6966-2**  
**Matrix: Water**

**Method: 300.0 - Anions, Ion Chromatography**

| Analyte             | Result | Qualifier | RL    | MDL   | Unit | D | Prepared | Analyzed       | Dil Fac |
|---------------------|--------|-----------|-------|-------|------|---|----------|----------------|---------|
| Chloride            | 24     | D         | 0.40  | 0.20  | mg/L |   |          | 04/03/18 18:36 | 2       |
| Nitrate as N        | 6.4    | D         | 0.056 | 0.028 | mg/L |   |          | 04/03/18 18:36 | 2       |
| Fluoride            | 0.33   | D         | 0.10  | 0.050 | mg/L |   |          | 04/03/18 18:36 | 2       |
| Nitrite as N        | 0.075  | B D       | 0.076 | 0.038 | mg/L |   |          | 04/03/18 18:36 | 2       |
| Orthophosphate as P | 1.2    | D         | 0.16  | 0.082 | mg/L |   |          | 04/03/18 18:36 | 2       |
| Sulfate             | 52     | D         | 0.50  | 0.25  | mg/L |   |          | 04/03/18 18:36 | 2       |

**Client Sample ID: B3HNL3**  
**Date Collected: 04/03/18 08:22**  
**Date Received: 04/03/18 14:45**

**Lab Sample ID: 300-6966-3**  
**Matrix: Water**

**Method: 300.0 - Anions, Ion Chromatography**

| Analyte             | Result | Qualifier | RL    | MDL   | Unit | D | Prepared | Analyzed       | Dil Fac |
|---------------------|--------|-----------|-------|-------|------|---|----------|----------------|---------|
| Chloride            | 18     | D         | 0.40  | 0.20  | mg/L |   |          | 04/03/18 18:20 | 2       |
| Nitrate as N        | 6.0    | D         | 0.056 | 0.028 | mg/L |   |          | 04/03/18 18:20 | 2       |
| Fluoride            | 0.40   | D         | 0.10  | 0.050 | mg/L |   |          | 04/03/18 18:20 | 2       |
| Nitrite as N        | 0.070  | B D       | 0.076 | 0.038 | mg/L |   |          | 04/03/18 18:20 | 2       |
| Orthophosphate as P | 1.1    | D         | 0.16  | 0.082 | mg/L |   |          | 04/03/18 18:20 | 2       |
| Sulfate             | 49     | D         | 0.50  | 0.25  | mg/L |   |          | 04/03/18 18:20 | 2       |

Client: CH2M Hill Plateau Remediation Company  
Project/Site: X18-028

TestAmerica Job ID: 300-6966-1  
SDG: WC2808

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 300-10780/5  
Matrix: Water  
Analysis Batch: 10780

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 |   |          | 04/03/18 11:59 | 1       |
| Nitrite as N        | 0.019     | U            | 0.038 | 0.019 | mg/L |   |          | 04/03/18 11:59 | 1       |
| Orthophosphate as P | 0.041     | U            | 0.082 | 0.041 | mg/L |   |          | 04/03/18 11:59 | 1       |

Lab Sample ID: LCS 300-10780/6  
Matrix: Water  
Analysis Batch: 10780

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        | 2.44       |               | mg/L |   | 108  | 80 - 120     |
| Nitrite as N        | 3.04        | 3.28       |               | mg/L |   | 108  | 80 - 120     |
| Orthophosphate as P | 6.53        | 7.01       |               | mg/L |   | 107  | 80 - 120     |

Lab Sample ID: 300-6967-A-4 MS  
Matrix: Water  
Analysis Batch: 10780

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        | 5.1           | D                | 0.452       | 5.45      | D            | mg/L |   | 88   | 75 - 125     |
| Nitrite as N        | 0.069         | B D              | 0.609       | 0.544     | D            | mg/L |   | 78   | 75 - 125     |
| Orthophosphate as P | 0.49          | D                | 1.31        | 1.63      | D            | mg/L |   | 88   | 75 - 125     |

Lab Sample ID: 300-6967-A-4 DU  
Matrix: Water  
Analysis Batch: 10780

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        | 5.1           | D                | 4.98      | D            | mg/L |   | 1   | 20        |
| Nitrite as N        | 0.069         | B D              | 0.0653    | B D          | mg/L |   | 6   | 20        |
| Orthophosphate as P | 0.49          | D                | 0.472     | D            | mg/L |   | 4   | 20        |

Lab Sample ID: MB 300-10781/5  
Matrix: Water  
Analysis Batch: 10781

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 |   |          | 04/03/18 11:59 | 1       |
| Fluoride | 0.025     | U            | 0.050 | 0.025 | mg/L |   |          | 04/03/18 11:59 | 1       |
| Sulfate  | 0.13      | U            | 0.25  | 0.13  | mg/L |   |          | 04/03/18 11:59 | 1       |

Lab Sample ID: LCS 300-10781/6  
Matrix: Water  
Analysis Batch: 10781

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        | 17.1       |               | mg/L |   | 107  | 80 - 120     |
| Fluoride | 4.00        | 4.29       |               | mg/L |   | 107  | 80 - 120     |
| Sulfate  | 20.0        | 20.1       |               | mg/L |   | 100  | 80 - 120     |

Client: CH2M Hill Plateau Remediation Company  
 Project/Site: X18-028

TestAmerica Job ID: 300-6966-1  
 SDG: WC2808

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

**Lab Sample ID: 300-6967-A-4 MS**  
**Matrix: Water**  
**Analysis Batch: 10781**

**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 | 16            | D                | 3.20        | 18.6      | D X          | mg/L |   | 96   | 75 - 125     |
| Fluoride | 0.26          | D                | 0.800       | 1.01      | D            | mg/L |   | 94   | 75 - 125     |

**Lab Sample ID: 300-6967-A-4 MS**  
**Matrix: Water**  
**Analysis Batch: 10781**

**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 |
|---------|---------------|------------------|-------------|-----------|--------------|------|---|------|--------------|
| Sulfate | 49            | D                | 10.0        | 57.3      | D            | mg/L |   | 83   | 75 - 125     |

**Lab Sample ID: 300-6967-A-4 DU**  
**Matrix: Water**  
**Analysis Batch: 10781**

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

| Analyte  | Sample Result | Sample Qualifier | DU Result | DU Qualifier | Unit | D | RPD | RPD Limit |
|----------|---------------|------------------|-----------|--------------|------|---|-----|-----------|
| Chloride | 16            | D                | 15.4      | D            | mg/L |   | 1   | 20        |
| Fluoride | 0.26          | D                | 0.262     | D            | mg/L |   | 0.5 | 20        |

**Lab Sample ID: 300-6967-A-4 DU**  
**Matrix: Water**  
**Analysis Batch: 10781**

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

| Analyte | Sample Result | Sample Qualifier | DU Result | DU Qualifier | Unit | D | RPD | RPD Limit |
|---------|---------------|------------------|-----------|--------------|------|---|-----|-----------|
| Sulfate | 49            | D                | 48.6      | D            | mg/L |   | 0.7 | 20        |

Client: CH2M Hill Plateau Remediation Company  
 Project/Site: X18-028

TestAmerica Job ID: 300-6966-1  
 SDG: WC2808

**HPLC/IC**

**Analysis Batch: 10780**

| Lab Sample ID   | Client Sample ID   | Prep Type | Matrix | Method | Prep Batch |
|-----------------|--------------------|-----------|--------|--------|------------|
| 300-6966-1      | B3HNL4             | Total/NA  | Water  | 300.0  |            |
| 300-6966-2      | B3HNL5             | Total/NA  | Water  | 300.0  |            |
| 300-6966-3      | B3HNL3             | Total/NA  | Water  | 300.0  |            |
| MB 300-10780/5  | Method Blank       | Total/NA  | Water  | 300.0  |            |
| LCS 300-10780/6 | Lab Control Sample | Total/NA  | Water  | 300.0  |            |
| 300-6967-A-4 MS | Matrix Spike       | Total/NA  | Water  | 300.0  |            |
| 300-6967-A-4 DU | Duplicate          | Total/NA  | Water  | 300.0  |            |

**Analysis Batch: 10781**

| Lab Sample ID   | Client Sample ID   | Prep Type | Matrix | Method | Prep Batch |
|-----------------|--------------------|-----------|--------|--------|------------|
| 300-6966-1      | B3HNL4             | Total/NA  | Water  | 300.0  |            |
| 300-6966-2      | B3HNL5             | Total/NA  | Water  | 300.0  |            |
| 300-6966-3      | B3HNL3             | Total/NA  | Water  | 300.0  |            |
| MB 300-10781/5  | Method Blank       | Total/NA  | Water  | 300.0  |            |
| LCS 300-10781/6 | Lab Control Sample | Total/NA  | Water  | 300.0  |            |
| 300-6967-A-4 MS | Matrix Spike       | Total/NA  | Water  | 300.0  |            |
| 300-6967-A-4 MS | Matrix Spike       | Total/NA  | Water  | 300.0  |            |
| 300-6967-A-4 DU | Duplicate          | Total/NA  | Water  | 300.0  |            |
| 300-6967-A-4 DU | Duplicate          | Total/NA  | Water  | 300.0  |            |

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Client: CH2M Hill Plateau Remediation Company  
Project/Site: X18-028

TestAmerica Job ID: 300-6966-1  
SDG: WC2808

**Client Sample ID: B3HNL4**  
Date Collected: 04/03/18 08:22  
Date Received: 04/03/18 14:45

**Lab Sample ID: 300-6966-1**  
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          |                |              | 10780        | 04/03/18 19:25       | RTQ     | TAL RCH |
| Total/NA  | Analysis   | 300.0        |     | 2          |                |              | 10781        | 04/03/18 19:25       | RTQ     | TAL RCH |

**Client Sample ID: B3HNL5**  
Date Collected: 04/03/18 09:59  
Date Received: 04/03/18 14:45

**Lab Sample ID: 300-6966-2**  
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          |                |              | 10780        | 04/03/18 18:36       | RTQ     | TAL RCH |
| Total/NA  | Analysis   | 300.0        |     | 2          |                |              | 10781        | 04/03/18 18:36       | RTQ     | TAL RCH |

**Client Sample ID: B3HNL3**  
Date Collected: 04/03/18 08:22  
Date Received: 04/03/18 14:45

**Lab Sample ID: 300-6966-3**  
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          |                |              | 10780        | 04/03/18 18:20       | RTQ     | TAL RCH |
| Total/NA  | Analysis   | 300.0        |     | 2          |                |              | 10781        | 04/03/18 18:20       | RTQ     | TAL RCH |

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

**Lab Sample ID: MB 300-10780/5**  
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          |                |              | 10780        | 04/03/18 11:59       | RTQ     | TAL RCH |

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

**Lab Sample ID: MB 300-10781/5**  
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          |                |              | 10781        | 04/03/18 11:59       | RTQ     | TAL RCH |

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

**Lab Sample ID: LCS 300-10780/6**  
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          |                |              | 10780        | 04/03/18 12:15       | RTQ     | TAL RCH |

Client: CH2M Hill Plateau Remediation Company  
Project/Site: X18-028

TestAmerica Job ID: 300-6966-1  
SDG: WC2808

**Client Sample ID: Lab Control Sample**

Date Collected: N/A

Date Received: N/A

**Lab Sample ID: LCS 300-10781/6**

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          |                |              | 10781        | 04/03/18 12:15       | RTQ     | TAL RCH |

**Client Sample ID: Matrix Spike**

Date Collected: 04/03/18 14:36

Date Received: 04/03/18 14:55

**Lab Sample ID: 300-6967-A-4 MS**

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          |                |              | 10780        | 04/03/18 17:00       | RTQ     | TAL RCH |
| Total/NA  | Analysis   | 300.0        |     | 2          |                |              | 10781        | 04/03/18 17:00       | RTQ     | TAL RCH |
| Total/NA  | Analysis   | 300.0        |     | 5          |                |              | 10781        | 04/03/18 20:45       | RTQ     | TAL RCH |

**Client Sample ID: Duplicate**

Date Collected: 04/03/18 14:36

Date Received: 04/03/18 14:55

**Lab Sample ID: 300-6967-A-4 DU**

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          |                |              | 10780        | 04/03/18 17:16       | RTQ     | TAL RCH |
| Total/NA  | Analysis   | 300.0        |     | 2          |                |              | 10781        | 04/03/18 17:16       | RTQ     | TAL RCH |
| Total/NA  | Analysis   | 300.0        |     | 5          |                |              | 10781        | 04/03/18 21:01       | RTQ     | TAL RCH |

**Laboratory References:**

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

Client: CH2M Hill Plateau Remediation Company  
Project/Site: X18-028

TestAmerica Job ID: 300-6966-1  
SDG: WC2808

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

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**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



Client: CH2M Hill Plateau Remediation Company  
Project/Site: X18-028

TestAmerica Job ID: 300-6966-1  
SDG: WC2808

| Lab Sample ID | Client Sample ID | Matrix | Collected      | Received       |
|---------------|------------------|--------|----------------|----------------|
| 300-6966-1    | B3HNL4           | Water  | 04/03/18 08:22 | 04/03/18 14:45 |
| 300-6966-2    | B3HNK5           | Water  | 04/03/18 09:59 | 04/03/18 14:45 |
| 300-6966-3    | B3HNL3           | Water  | 04/03/18 08:22 | 04/03/18 14:45 |

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## Login Sample Receipt Checklist

Client: CH2M Hill Plateau Remediation Company

Job Number: 300-6966-1

SDG Number: WC2808

**Login Number: 6966****List Number: 1****Creator: Jorgenson, Briana F****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.  | True   |         |
| 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.  | N/A    |         |
| 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    |         |