

August 17, 2016

# 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: 300-3560-1

TestAmerica Sample Delivery Group: WC1297

Client Project/Site: X16-036

For:

CH2M Hill Plateau Remediation Company

PO BOX 1600

Mail Stop R3-50

Richland, Washington 99352

Attn: CPP Sample Management



Authorized for release by:

8/17/2016 11:04:48 AM

Steven Campbell, Project Mgmt. Assistant

[steven.campbell@testamericainc.com](mailto:steven.campbell@testamericainc.com)

Designee for

Whitney Ritari, Project Manager I

(509)375-3131 ext164

[whitney.ritari@testamericainc.com](mailto:whitney.ritari@testamericainc.com)

### LINKS

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results through

TotalAccess

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[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. The sample/ sample duplicate RPD agreement is not applicable if one or both results are less than five times the MDL.*



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**Qualifiers**

**HPLC/IC**

Qualifier	Qualifier Description
D	The reported value is from a dilution.
U	Analyzed for but not detected.
B	Estimated result. Result is less than the RL, but greater than MDL

**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)



Client: CH2M Hill Plateau Remediation Company  
Project/Site: X16-036

TestAmerica Job ID: 300-3560-1  
SDG: WC1297

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**Job ID: 300-3560-1**

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**Laboratory: TestAmerica Richland**

**Narrative**

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**Job Narrative  
300-3560-1**

**Comments**

No additional comments.

**Receipt**

The samples were received on 7/25/2016 9:27 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**

Method 300.0: The following samples required filtration to reduce matrix interferences: B35LM9 (300-3560-4) and B35LN8 (300-3560-7). Manual integration was performed on the following sample for Sulfate: B35LM3 (300-3560-1).

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



**CH2MHill Plateau Remediation Company**

**CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST**

C.O.C. #  
**X16-036-004**  
Page 1 of 1

Collector	Kevin Patterson CHPRC	Contact/Requester	WATERS-HUSTED, K	Telephone No.	376-4650
SAF No.	X16-036	Sampling Origin	Hanford Site	Purchase Order/Charge Code	303796
Project Title	100-N Bioremediation Monitoring, July 2	Logbook No.	HNF-N-506 <u>Bl / G1</u>	Ice Chest No.	N/A
Shipped To (Lab)	TestAmerica Incorporated, Richland	Method of Shipment	GOVERNMENT VEHICLE	Bill of Lading/Air Bill No.	N/A
Protocol	CERCLA	Priority:	30 Days	Offsite Property No.	N/A
<b>POSSIBLE SAMPLE HAZARDS/REMARKS</b>			<b>PRIORITY</b>	<b>HOLD TIME</b>	<b>TOTAL ACTIVITY EXEMPTION:</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
*Contains Radioactive Material at concentrations that are not be regulated for transportation per 49 CFR/LATA 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
B35LM3	N	W/ JUL 24 2016	0843	1x500-mL P	300.0 ANIONS_IC: COMMON; 300.0 ANIONS_IC: GW 01	48 Hours	Cool <=6C

# 3560  
WTC1297



300-3560 COC

Relinquished By	Print	Sign	Date/Time	Received By	Print	Sign	Date/Time	Matrix *
Kevin Patterson CHPRC			JUL 24 2016 1035	Troy Bacon CHPRC			JUL 24 2016 1035	S = Soil SE = Sediment SO = Solid SL = Sludge W = Water O = Oil A = Air
Relinquished By Troy Bacon CHPRC			JUL 24 2016 1150	Received By SSU #1			JUL 24 2016 1150	DS = Drum Solids DL = Drum Liquids T = Tissue WT = Wipe L = Liquid V = Vegetation X = Other
Relinquished By SSU-1			JUL 25 2016 0830	Received By Chris Fulton CHPRC			JUL 25 2016 0830	
Relinquished By Chris Fulton CHPRC			JUL 25 2016 0927	L Anderson, TRRL			JUL 25 2016 0927	
<b>FINAL SAMPLE DISPOSITION</b>		Disposal Method (e.g., Return to customer, per lab procedure, used in process)		Disposed By		Date/Time		

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

C.O.C. #  
**X16-036-005**  
Page 1 of 1

Collector	Kevin Patterson CHPRC	Contact/Requester	WATERS-HUSTED, K	Telephone No.	376-4650
SAF No.	X16-036	Sampling Origin	Hanford Site	Purchase Order/Charge Code	303796
Project Title	100-N Bioremediation Monitoring, July 2	Logbook No.	HNF-N-506 <i>Sto/61</i>	Ice Chest No.	N/A
Shipped To (Lab)	TestAmerica Incorporated, Richland	Method of Shipment	GOVERNMENT VEHICLE	Bill of Lading/Air Bill No.	N/A
Protocol	CERCLA	Priority:	30 Days	Offsite Property No.	N/A
<b>POSSIBLE SAMPLE HAZARDS/REMARKS</b>			<b>SPECIAL INSTRUCTIONS</b>		
*Contains Radioactive Material at concentrations that are not be regulated for transportation per 49 CFR/LATA Dangerous Goods Regulations but are not releasable per DOE Order 458.1.			N/A		

Sample No.	Filter	* Date	Time	No./Type Container	Sample Analysis	Holding Time	Preservative
B35LM2	N	<i>W</i> JUL 24 2016	0843	1X500-ml P	300.0_ANIONS_IC: COMMON; 300.0_ANIONS_IC: GW 01	48 Hours	Cool <=6C

#3560  
WE1297

Reinquished By	Print	Sign	Date/Time	Received By	Print	Sign	Date/Time	Matrix *
Kevin Patterson CHPRC			JUL 24 2016 1035	Troy Bacon CHPRC	<i>Troy L. Bacon</i>		JUL 24 2016 1035	S = Soil SE = Sediment SO = Solid SL = Sludge W = Water O = Oil A = Air
Troy Bacon CHPRC			JUL 24 2016 1150	Chris Fulton CHPRC	<i>Chris Fulton</i>		JUL 24 2016 1150	DS = Drum Solids DL = Drum Liquids T = Tissue WT = Wipe L = Liquid V = Vegetation X = Other
Chris Fulton CHPRC			JUL 25 2016 0930	L Anderson, TRRL	<i>L Anderson</i>		JUL 25 2016 0930	

FINAL SAMPLE DISPOSITION Disposal Method (e.g., Return to customer, per lab procedure, used in process)

August 17, 2016



**CH2MHill Plateau Remediation Company**

**CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST**

C.O.C. #  
**X16-036-015**

Page 1 of 1

Collector Kevin Patterson CHPRC	Contact/Requester WATERS-HUSTED, K	Telephone No. 376-4650
SAF No. X16-036	Sampling Origin Hanford Site	Purchase Order/Charge Code 303796
Project Title 100-N Bioremediation Monitoring, July 2	Logbook No. HNF-N-506 <i>Bo/lel</i>	Ice Chest No. N/A
Shipped To (Lab) TestAmerica Incorporated, Richland	Method of Shipment GOVERNMENT VEHICLE	Bill of Lading/Air Bill No. N/A
Protocol CERCLA	Priority: 30 Days	Offsite Property No. N/A
<b>POSSIBLE SAMPLE HAZARDS/REMARKS</b>		Total Activity Exemption: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
*Contains Radioactive Material at concentrations that are not be regulated for transportation per 49 CFR/LATA 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
B35LM9	N	JUL 24 2016	1206	1X500-ml P	300.0 ANIONS_IC: COMMON; 300.0 ANIONS_IC: GW 01	48 Hours	Cool <=6C

# 35LM0  
WTC1297

Relinquished By	Print	Sign	Date/Time	Received By	Print	Sign	Date/Time	Matrix *
Kevin Patterson CHPRC			JUL 24 2016 1255	Troy Bacon CHPRC			JUL 24 2016 1255	S = Soil SE = Sediment SO = Solid SL = Sludge W = Water O = Oil A = Air
Relinquished By Troy Bacon CHPRC			JUL 24 2016 1325	Received By SSU #1			JUL 24 2016 1325	DS = Drum Solids DL = Drum Liquids T = Tissue WT = Wipe L = Liquid V = Vegetation X = Other
Relinquished By SSU #1			JUL 25 2016 0830	Received By Chris Fulton CHPRC			JUL 25 2016 0830	
Relinquished By Chris Fulton CHPRC			JUL 25 2016 0927	Received By L Anderson, TARI			JUL 25 2016 0927	
FINAL SAMPLE DISPOSITION			Disposal Method (e.g., Return to customer, per lab procedure, used in process)				Date/Time	

August 17, 2016

**CH2M HILL Plateau Remediation Company**

**CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST**

C.O.C. #

**X16-036-016**

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Collector Kevin Patterson CHPRC	X16-036	Contact/Requester WATERS-HUSTED, K	Telephone No. 376-4650
Project Title 100-N Bioremediation Monitoring, July 2	Sampling Origin Hanford Site	Logbook No. HNF-N-506 <i>810/61</i>	Purchase Order/Charge Code 303796
Shipped To (Lab) TestAmerica Incorporated, Richland	Method of Shipment GOVERNMENT VEHICLE	Ice Chest No. N/A	Bill of Lading/Air Bill No. N/A
Protocol CERCLA	Priority: 30 Days	Offsite Property No. N/A	
<b>POSSIBLE SAMPLE HAZARDS/REMARKS</b>		<b>SPECIAL INSTRUCTIONS</b>	
*Contains Radioactive Material at concentrations that are not be regulated for transportation per 49 CER/LA T.A Dangerous Goods Regulations but are not releasable per DOE Order 458.1.		Hold Time N/A	
		Total Activity Exemption: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	

Sample No.	Filter	* Date	Time	No./Type Container	Sample Analysis	Holding Time	Preservative
B35LN2	N	JUL 24 2016	1038	1x500-mL P	300.0_ANIONS_IC: COMMON; 300.0_ANIONS_IC: GW 01	48 Hours	Cool <=6C

#35LN0  
WGC1297

Relinquished By	Print	Sign	Date/Time	Received By	Print	Sign	Date/Time	Matrix *
Kevin Patterson CHPRC			JUL 24 2016 1042	Troy Bacon CHPRC			JUL 24 2016 1042	S = Soil SE = Sediment SO = Solid SL = Sludge W = Water O = Oil A = Air
Troy Bacon CHPRC			JUL 24 2016 1150	SSU #1			JUL 24 2016 1150	DS = Drum Solids DL = Drum Liquids T = Tissue WI = Wipe L = Liquid V = Vegetation X = Other
Relinquished By SSU-1			JUL 25 2016 0830	Chris Fulton CHPRC			JUL 25 2016 0830	
Relinquished By Chris Fulton CHPRC			JUL 25 2016 0902	L Anderson, TMR			JUL 25 2016 0902	
<b>FINAL SAMPLE DISPOSITION</b>		Disposal Method (e.g., Return to customer, per lab procedure, used in process)		Disposed By		Date/Time		

August 17, 2016

August 17, 2016

**CH2M/Hill Plateau Remediation Company**

**CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST**

C.O.C. #

**X16-036-017**

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Collector Will Wise CHPRC	Will Wise CHPRC	Contact/Requester WATERS-HUSTED, K	Telephone No. 376-4650
SAF No. X16-036	X16-036	Sampling Origin Hanford Site	Purchase Order/Charge Code 303796
Project Title 100-N Bioremediation Monitoring, July 2	100-N Bioremediation Monitoring, July 2	Logbook No. HNF-N-506 <u>8291</u>	Ice Chest No. N/A
Shipped To (Lab) TestAmerica Incorporated, Richland	TestAmerica Incorporated, Richland	Method of Shipment GOVERNMENT VEHICLE	Bill of Lading/Air Bill No. N/A
Protocol CERCLA	CERCLA	Priority: 30 Days	Offsite Property No. N/A
<b>POSSIBLE SAMPLE HAZARDS/REMARKS</b>		<b>SPECIAL INSTRUCTIONS</b>	<b>Hold Time</b>
*Contains Radioactive Material at concentrations that are not be regulated for transportation per 49 CFR/LATA Dangerous Goods Regulations but are not releasable per DOE Order 458.1.		N/A	N/A

Sample No.	Filter	*	Date	Time	No./Type Container	Sample Analysis	Holding Time	Preservative
B35LN5	N	W	7/16/16	1330	1x500-mL P	300.0_ANIONS_IC: COMMON; 300.0_ANIONS_IC: GW 01	48 Hours	Cool <=6C

#3560  
WCG291

Relinquished By Will Wise CHPRC	Print 	Sign Will Wise	Date/Time JUL 24 2016 1501	Received By SSU #1	Print 	Sign SSU #1	Date/Time JUL 24 2016 1501
Relinquished By SSU #1	Print 	Sign SSU #1	Date/Time JUL 25 2016 0830	Received By Chris Fulton CHPRC	Print 	Sign Chris Fulton	Date/Time JUL 25 2016 0830
Relinquished By Chris Fulton CHPRC	Print 	Sign Chris Fulton	Date/Time JUL 25 2016 0937	Received By L Anderson, TARL	Print 	Sign L Anderson	Date/Time JUL 25 2016 0937

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

<b>FINAL SAMPLE DISPOSITION</b>	Disposal Method (e.g., Return to customer, per lab procedure, used in process)	Disposed By	Date/Time
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CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

C.O.C.#  
**X16-036-026**  
Page 1 of 1

Collector	Kevin Patterson CHPRC	Contact/Requester	WATERS-HUSTED, K	Telephone No.	376-4650
SAF No.	X16-036	Sampling Origin	Hanford Site	Purchase Order/Charge Code	303796
Project Title	100-N Bioremediation Monitoring, July 2	Logbook No.	HNF-N-506 <i>Be/62</i>	Ice Chest No.	N/A
Shipped To (Lab)	TestAmerica Incorporated, Richland	Method of Shipment	GOVERNMENT VEHICLE	Bill of Lading/Air Bill No.	N/A
Protocol	CERCLA	Priority:	30 Days	Offsite Property No.	N/A
<b>POSSIBLE SAMPLE HAZARDS/REMARKS</b>			<b>SPECIAL INSTRUCTIONS</b>	<b>Hold Time</b>	<b>Total Activity Exemption:</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
*Contains Radioactive Material at concentrations that are not be regulated for transportation per 49 CER/LATA Dangerous Goods Regulations but are not releasable per DOE Order 458.1.			N/A		

Sample No.	Filter	* Date	Time	No/Type Container	Sample Analysis	Holding Time	Preservative
B35LN8	N	JUL 24 2016	1341	1x500-mL P	300.0_ANIONS_IC: COMMON; 300.0_ANIONS_IC: GW 01	48 Hours	Cool <=6C

# 3560  
WCE1291

August 17, 2016

Relinquished By	Kevin Patterson CHPRC	Print	Sign	Date/Time	Received By	SSU-1	Print	Sign	Date/Time	Matrix *
Relinquished By	SSU-1			JUL 24 2016 1:52	Received By	Chris Fulton CHPRC			JUL 24 2016 1:52	S = Soil SE = Sediment SO = Solid SL = Sludge W = Water O = Oil A = Air
Relinquished By	Chris Fulton CHPRC			JUL 25 2016 0830	Received By	L. Anderson, TARI			JUL 25 2016 0830	DS = Drum Solids DL = Drum Liquids T = Tissue WI = Wipe L = Liquid V = Vegetation X = Other
Relinquished By					Received By					

**CH2M Hill Plateau Remediation Company**

**CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST**

C.O.C. # **X16-036-027**  
Page 1 of 1

Collector Kevin Patterson CHPRC	Contact/Requester WATERS-HUSTED, K	Telephone No. 376-4650
SAF No. X16-036	Sampling Origin Hanford Site	Purchase Order/Charge Code 303796
Project Title 100-N Bioremediation Monitoring, July 2	Logbook No. HNF-N-506 <i>Stop</i>	Ice Chest No. N/A
Shipped To (Lab) TestAmerica Incorporated, Richland	Method of Shipment GOVERNMENT VEHICLE	Bill of Lading/Air Bill No. N/A
Protocol CERCLA	Priority: 30 Days	Offsite Property No. N/A
<b>POSSIBLE SAMPLE HAZARDS/REMARKS</b>		Total Activity Exemption: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
*Contains Radioactive Material at concentrations that are not be regulated for transportation per 49 CFR/ATA 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
B35LP1	N	<b>JUL 24 2016</b>	1415	1x500-mL P	300.0_ANIONS_IC: COMMON; 300.0_ANIONS_IC: GW 01	48 Hours	Cool <=6C

# 3560  
WTC1297

August 17, 2016

Relinquished By Kevin Patterson CHPRC	Print 	Sign	Date/Time <b>JUL 24 2016 1450</b>	Received By SSU-1	Print 	Sign	Date/Time <b>JUL 24 2016 1450</b>	Matrix * S = Soil SE = Sediment SO = Solid SL = Sludge W = Water O = Oil A = Air DS = Drum Solids DL = Drum Liquids T = Tissue WT = Wipe L = Liquid V = Vegetation X = Other
Relinquished By Chris Fulton CHPRC	Print 	Sign	Date/Time <b>JUL 25 2016 0830</b>	Received By Chris Fulton CHPRC	Print 	Sign	Date/Time <b>JUL 25 2016 0830</b>	
Relinquished By	Print 	Sign	Date/Time <b>JUL 25 2016 0900</b>	Received By L. Anderson, TMR	Print 	Sign	Date/Time <b>JUL 25 2016 0900</b>	
Relinquished By	Print	Sign	Date/Time	Received By	Print	Sign	Date/Time	

**CH2M Hill Plateau Remediation Company**

**CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST**

C.O.C. #  
**X16-036-028**  
Page 1 of 1

Collector Will Wise CHPRC	X16-036	Contact/Requester WATERS-HUSTED, K	Telephone No. 376-4650
Project Title 100-N Bioremediation Monitoring, July 2	Logbook No. HNF-N-506 <u>8291</u>	Sampling Origin Hanford Site	Purchase Order/Charge Code 303796
Shipped To (Lab) TestAmerica Incorporated, Richland	Method of Shipment GOVERNMENT VEHICLE	Ice Chest No. N/A	Bill of Lading/Air Bill No. N/A
Protocol CERCLA	Priority: 30 Days	Offsite Property No. N/A	
<b>POSSIBLE SAMPLE HAZARDS/REMARKS</b>		<b>SPECIAL INSTRUCTIONS</b>	
*Contains Radioactive Material at concentrations that are not regulated for transportation per 49 CFR/LATA Dangerous Goods Regulations but are not releasable per DOE Order 458.1.		N/A	

Sample No.	Filter	*	Date	Time	No./Type Container	Sample Analysis	Holding Time	Preservative
B35LP4	N	W	7/24/16	1219	1x500-mL P	300.0_ANIONS_IC: COMMON; 300.0_ANIONS_IC: GW 01	48 Hours	Cool <=6C

# 35160  
WGC1297

August 17, 2016

Relinquished By Will Wise CHPRC		Print Will Wise	Sign	Date/Time JUL 24 2016 1325	Received By SSU #1		Print SSU #1	Sign	Date/Time JUL 24 2016 1325
Relinquished By Chris Fulton CHPRC		Print Chris Fulton	Sign	Date/Time JUL 25 2016 0830	Received By Chris Fulton CHPRC		Print Chris Fulton	Sign	Date/Time JUL 25 2016 0830
Relinquished By Chris Fulton CHPRC		Print Chris Fulton	Sign	Date/Time JUL 25 2016 0927	Received By L. Anderson, TARI		Print L. Anderson	Sign	Date/Time JUL 25 2016 0927

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

<b>FINAL SAMPLE DISPOSITION</b>	Disposal Method (e.g., Return to customer, per lab procedure, used in process)	Disposed By	Date/Time
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CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

C.O.C. #  
**X16-036-029**  
Page 1 of 1

Collector	Will Wise CHPRC	Contact/Requester	WATERS-HUSTED, K	Telephone No.	376-4650
SAF No.	X16-036	Sampling Origin	Hanford Site	Purchase Order/Charge Code	303796
Project Title	100-N Bioremediation Monitoring, July 2	Logbook No.	HNF-N-506 <u>82/91</u>	Ice Chest No.	N/A
Shipped To (Lab)	TestAmerica Incorporated, Richland	Method of Shipment	GOVERNMENT VEHICLE	Bill of Lading/Air Bill No.	N/A
Protocol	CERCLA	Priority:	30 Days	Offsite Property No.	N/A
<b>POSSIBLE SAMPLE HAZARDS/REMARKS</b>			<b>SPECIAL INSTRUCTIONS</b>		
*Contains Radioactive Material at concentrations that are not be regulated for transportation per 49 CER/LATA Dangerous Goods Regulations but are not releasable per DOE Order 458.1.			N/A		

Sample No.	Filter	*	Date	Time	No./Type Container	Sample Analysis	Holding Time	Preservative
B3SLP7	N	W	7/24/16	1108	1x500-mL P	300.0_ANIONS_IC:COMMON; 300.0_ANIONS_IC:GW_01	48 Hours	Cool <=6C

# 3560  
WTC1297

Relinquished By	Will Wise CHPRC	Print	Sign	Date/Time	Received By	SSU#1	Print	Sign	Date/Time	Matrix *
Relinquished By	Chris Fulton CHPRC	Print	Sign	JUL 24 2016 1150	Received By	Chris Fulton CHPRC	Print	Sign	JUL 24 2016 1150	S = Soil SE = Sediment SO = Solid SL = Sludge W = Water O = Oil A = Air
Relinquished By	Chris Fulton CHPRC	Print	Sign	JUL 25 2016 0930	Received By	L. Anderson, TRL	Print	Sign	JUL 25 2016 0930	DS = Drum Solids DL = Drum Liquids T = Tissue WI = Wipe L = Liquid V = Vegetation X = Other

FINAL SAMPLE DISPOSITION	Disposal Method (e.g., Return to customer, per lab procedure, used in process)	Disposed By	Date/Time
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August 17, 2016



**CH2M Hill Plateau Remediation Company**

**CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST**

C.O.C. #  
**X16-036-038**  
Page 1 of 1

Collector	Will Wise CHPRC	Contact/Requester	WATERS-HUSTED, K	Telephone No.	376-4650
SAF No.	X16-036	Sampling Origin	Hanford Site	Purchase Order/Charge Code	303796
Project Title	100-N Bioremediation Monitoring, July 2	Logbook No.	HNF-N-506 <u>82/91</u>	Ice Chest No.	N/A
Shipped To (Lab)	TestAmerica Incorporated, Richland	Method of Shipment	GOVERNMENT VEHICLE	Bill of Lading/Air Bill No.	N/A
Protocol	CERCLA	Priority:	30 Days	Offsite Property No.	N/A
<b>POSSIBLE SAMPLE HAZARDS/REMARKS</b>			<b>SPECIAL INSTRUCTIONS</b>	<b>Hold Time</b>	<b>Total Activity Exemption:</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
*Contains Radioactive Material at concentrations that are not be regulated for transportation per 49 CER/LATA Dangerous Goods Regulations but are not releasable per DOE Order 458.1.			N/A		

Sample No.	Filter	*	Date	Time	No./Type Container	Sample Analysis	Holding Time	Preservative
B35LR0	N	W	7/24/16	0929	1x500-mL P	300.0_ANIONS_IC: COMMON; 300.0_ANIONS_IC: GW 01	48 Hours	Cool <=6C

#3560  
WTC1297

August 17, 2016

Relinquished By Will Wise CHPRC	<i>[Signature]</i>	Print	Sign	Date/Time	1150	Received By SSU #1	<i>[Signature]</i>	Print	Sign	Date/Time	1150	Matrix * S = Soil SE = Sediment SO = Solid SL = Sludge W = Water O = Oil A = Air DS = Drum Solids DL = Drum Liquids T = Tissue WT = Wipe L = Liquid V = Vegetation X = Other
Relinquished By SSU #1	<i>[Signature]</i>			Date/Time	0830	Received By Chris Fulton CHPRC	<i>[Signature]</i>			Date/Time	0830	
Relinquished By Chris Fulton CHPRC	<i>[Signature]</i>			Date/Time	0929	Received By L Anderson, TARI	<i>[Signature]</i>			Date/Time	0929	

<b>FINAL SAMPLE DISPOSITION</b>	Disposal Method (e.g., Return to customer, per lab procedure, used in process)	Disposed By	Date/Time
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# August 17, 2016 Detection Summary

Client: CH2M Hill Plateau Remediation Company  
Project/Site: X16-036

TestAmerica Job ID: 300-3560-1  
SDG: WC1297

## Client Sample ID: B35LM3

Lab Sample ID: 300-3560-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	74	D	0.40	0.20	mg/L	2		300.0	Total/NA
Nitrate as N	11	D	1.4	0.70	mg/L	50		300.0	Total/NA
Fluoride	0.11	D	0.10	0.050	mg/L	2		300.0	Total/NA
Nitrite as N	0.12	D	0.076	0.038	mg/L	2		300.0	Total/NA
Sulfate	170	D	13	6.3	mg/L	50		300.0	Total/NA

## Client Sample ID: B35LM2

Lab Sample ID: 300-3560-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	74	D	0.40	0.20	mg/L	2		300.0	Total/NA
Nitrate as N	11	D	1.4	0.70	mg/L	50		300.0	Total/NA
Fluoride	0.11	D	0.10	0.050	mg/L	2		300.0	Total/NA
Nitrite as N	0.12	D	0.076	0.038	mg/L	2		300.0	Total/NA
Sulfate	170	D	13	6.3	mg/L	50		300.0	Total/NA

## Client Sample ID: B35LM6

Lab Sample ID: 300-3560-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	63	D	0.40	0.20	mg/L	2		300.0	Total/NA
Nitrate as N	11	D	0.056	0.028	mg/L	2		300.0	Total/NA
Fluoride	0.10	D	0.10	0.050	mg/L	2		300.0	Total/NA
Nitrite as N	0.21	D	0.076	0.038	mg/L	2		300.0	Total/NA
Sulfate	170	D	13	6.3	mg/L	50		300.0	Total/NA

## Client Sample ID: B35LM9

Lab Sample ID: 300-3560-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	39	D	0.40	0.20	mg/L	2		300.0	Total/NA
Nitrate as N	1.2	D	0.056	0.028	mg/L	2		300.0	Total/NA
Fluoride	0.10	D	0.10	0.050	mg/L	2		300.0	Total/NA
Nitrite as N	0.15	D	0.076	0.038	mg/L	2		300.0	Total/NA
Sulfate	130	D	13	6.3	mg/L	50		300.0	Total/NA

## Client Sample ID: B35LN2

Lab Sample ID: 300-3560-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	85	D	10	5.0	mg/L	50		300.0	Total/NA
Nitrate as N	0.32	D	0.056	0.028	mg/L	2		300.0	Total/NA
Fluoride	0.11	D	0.10	0.050	mg/L	2		300.0	Total/NA
Sulfate	300	D	13	6.3	mg/L	50		300.0	Total/NA

## Client Sample ID: B35LN5

Lab Sample ID: 300-3560-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	43	D	0.40	0.20	mg/L	2		300.0	Total/NA
Nitrate as N	25	D	1.4	0.70	mg/L	50		300.0	Total/NA
Fluoride	0.11	D	0.10	0.050	mg/L	2		300.0	Total/NA
Sulfate	140	D	13	6.3	mg/L	50		300.0	Total/NA

## Client Sample ID: B35LN8

Lab Sample ID: 300-3560-7

This Detection Summary does not include radiochemical test results.

TestAmerica Richland

# August 17, 2016 Detection Summary

Client: CH2M Hill Plateau Remediation Company  
Project/Site: X16-036

TestAmerica Job ID: 300-3560-1  
SDG: WC1297

## Client Sample ID: B35LN8 (Continued)

Lab Sample ID: 300-3560-7

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	59	D	0.40	0.20	mg/L	2		300.0	Total/NA
Fluoride	0.93	D	0.10	0.050	mg/L	2		300.0	Total/NA
Sulfate	38	D	0.50	0.25	mg/L	2		300.0	Total/NA

## Client Sample ID: B35LP1

Lab Sample ID: 300-3560-8

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	42	D	0.40	0.20	mg/L	2		300.0	Total/NA
Nitrate as N	0.34	D	0.056	0.028	mg/L	2		300.0	Total/NA
Fluoride	0.10	D	0.10	0.050	mg/L	2		300.0	Total/NA
Sulfate	130	D	13	6.3	mg/L	50		300.0	Total/NA

## Client Sample ID: B35LP4

Lab Sample ID: 300-3560-9

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	69	D	0.40	0.20	mg/L	2		300.0	Total/NA
Nitrate as N	14	D	1.4	0.70	mg/L	50		300.0	Total/NA
Fluoride	0.17	D	0.10	0.050	mg/L	2		300.0	Total/NA
Sulfate	140	D	13	6.3	mg/L	50		300.0	Total/NA

## Client Sample ID: B35LP7

Lab Sample ID: 300-3560-10

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	34	D	0.40	0.20	mg/L	2		300.0	Total/NA
Nitrate as N	18	D	0.28	0.14	mg/L	10		300.0	Total/NA
Fluoride	0.075	B D	0.10	0.050	mg/L	2		300.0	Total/NA
Sulfate	140	D	2.5	1.3	mg/L	10		300.0	Total/NA

## Client Sample ID: B35LR0

Lab Sample ID: 300-3560-11

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	46	D	0.40	0.20	mg/L	2		300.0	Total/NA
Nitrate as N	20	D	1.4	0.70	mg/L	50		300.0	Total/NA
Fluoride	0.074	B D	0.10	0.050	mg/L	2		300.0	Total/NA
Sulfate	110	D	13	6.3	mg/L	50		300.0	Total/NA

This Detection Summary does not include radiochemical test results.

TestAmerica Richland

# August 17, 2016 Client Sample Results

Client: CH2M Hill Plateau Remediation Company  
Project/Site: X16-036

TestAmerica Job ID: 300-3560-1  
SDG: WC1297

**Client Sample ID: B35LM3**

**Lab Sample ID: 300-3560-1**

Date Collected: 07/24/16 08:43

Matrix: Water

Date Received: 07/25/16 09:27

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	74	D	0.40	0.20	mg/L			07/25/16 17:18	2
Nitrate as N	11	D	1.4	0.70	mg/L			07/25/16 19:50	50
Fluoride	0.11	D	0.10	0.050	mg/L			07/25/16 17:18	2
Nitrite as N	0.12	D	0.076	0.038	mg/L			07/25/16 17:18	2
Orthophosphate as P	0.082	U D	0.16	0.082	mg/L			07/25/16 17:18	2
Sulfate	170	D	13	6.3	mg/L			07/25/16 19:50	50

**Client Sample ID: B35LM2**

**Lab Sample ID: 300-3560-2**

Date Collected: 07/24/16 08:43

Matrix: Water

Date Received: 07/25/16 09:27

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	74	D	0.40	0.20	mg/L			07/25/16 17:33	2
Nitrate as N	11	D	1.4	0.70	mg/L			07/25/16 20:05	50
Fluoride	0.11	D	0.10	0.050	mg/L			07/25/16 17:33	2
Nitrite as N	0.12	D	0.076	0.038	mg/L			07/25/16 17:33	2
Orthophosphate as P	0.082	U D	0.16	0.082	mg/L			07/25/16 17:33	2
Sulfate	170	D	13	6.3	mg/L			07/25/16 20:05	50

**Client Sample ID: B35LM6**

**Lab Sample ID: 300-3560-3**

Date Collected: 07/24/16 09:33

Matrix: Water

Date Received: 07/25/16 09:27

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	63	D	0.40	0.20	mg/L			07/25/16 17:48	2
Nitrate as N	11	D	0.056	0.028	mg/L			07/25/16 17:48	2
Fluoride	0.10	D	0.10	0.050	mg/L			07/25/16 17:48	2
Nitrite as N	0.21	D	0.076	0.038	mg/L			07/25/16 17:48	2
Orthophosphate as P	0.082	U D	0.16	0.082	mg/L			07/25/16 17:48	2
Sulfate	170	D	13	6.3	mg/L			07/25/16 20:20	50

**Client Sample ID: B35LM9**

**Lab Sample ID: 300-3560-4**

Date Collected: 07/24/16 12:06

Matrix: Water

Date Received: 07/25/16 09:27

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	39	D	0.40	0.20	mg/L			07/25/16 18:04	2
Nitrate as N	1.2	D	0.056	0.028	mg/L			07/25/16 18:04	2
Fluoride	0.10	D	0.10	0.050	mg/L			07/25/16 18:04	2
Nitrite as N	0.15	D	0.076	0.038	mg/L			07/25/16 18:04	2
Orthophosphate as P	0.082	U D	0.16	0.082	mg/L			07/25/16 18:04	2
Sulfate	130	D	13	6.3	mg/L			07/25/16 20:36	50

TestAmerica Richland

# August 17, 2016 Client Sample Results

Client: CH2M Hill Plateau Remediation Company  
Project/Site: X16-036

TestAmerica Job ID: 300-3560-1  
SDG: WC1297

## Client Sample ID: B35LN2

Lab Sample ID: 300-3560-5

Date Collected: 07/24/16 10:38

Matrix: Water

Date Received: 07/25/16 09:27

### Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	85	D	10	5.0	mg/L			07/25/16 19:51	50
Nitrate as N	0.32	D	0.056	0.028	mg/L			07/25/16 17:05	2
Fluoride	0.11	D	0.10	0.050	mg/L			07/25/16 17:05	2
Nitrite as N	0.038	U D	0.076	0.038	mg/L			07/25/16 17:05	2
Orthophosphate as P	0.082	U D	0.16	0.082	mg/L			07/25/16 17:05	2
Sulfate	300	D	13	6.3	mg/L			07/25/16 19:51	50

## Client Sample ID: B35LN5

Lab Sample ID: 300-3560-6

Date Collected: 07/24/16 13:30

Matrix: Water

Date Received: 07/25/16 09:27

### Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	43	D	0.40	0.20	mg/L			07/25/16 17:20	2
Nitrate as N	25	D	1.4	0.70	mg/L			07/25/16 20:06	50
Fluoride	0.11	D	0.10	0.050	mg/L			07/25/16 17:20	2
Nitrite as N	0.038	U D	0.076	0.038	mg/L			07/25/16 17:20	2
Orthophosphate as P	0.082	U D	0.16	0.082	mg/L			07/25/16 17:20	2
Sulfate	140	D	13	6.3	mg/L			07/25/16 20:06	50

## Client Sample ID: B35LN8

Lab Sample ID: 300-3560-7

Date Collected: 07/24/16 13:41

Matrix: Water

Date Received: 07/25/16 09:27

### Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	59	D	0.40	0.20	mg/L			07/25/16 17:35	2
Nitrate as N	0.028	U D	0.056	0.028	mg/L			07/25/16 17:35	2
Fluoride	0.93	D	0.10	0.050	mg/L			07/25/16 17:35	2
Nitrite as N	0.038	U D	0.076	0.038	mg/L			07/25/16 17:35	2
Orthophosphate as P	0.082	U D	0.16	0.082	mg/L			07/25/16 17:35	2
Sulfate	38	D	0.50	0.25	mg/L			07/25/16 17:35	2

## Client Sample ID: B35LP1

Lab Sample ID: 300-3560-8

Date Collected: 07/24/16 14:15

Matrix: Water

Date Received: 07/25/16 09:27

### Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	42	D	0.40	0.20	mg/L			07/25/16 17:50	2
Nitrate as N	0.34	D	0.056	0.028	mg/L			07/25/16 17:50	2
Fluoride	0.10	D	0.10	0.050	mg/L			07/25/16 17:50	2
Nitrite as N	0.038	U D	0.076	0.038	mg/L			07/25/16 17:50	2
Orthophosphate as P	0.082	U D	0.16	0.082	mg/L			07/25/16 17:50	2
Sulfate	130	D	13	6.3	mg/L			07/25/16 20:37	50

TestAmerica Richland

# August 17, 2016 Client Sample Results

Client: CH2M Hill Plateau Remediation Company  
Project/Site: X16-036

TestAmerica Job ID: 300-3560-1  
SDG: WC1297

## Client Sample ID: B35LP4

Lab Sample ID: 300-3560-9

Date Collected: 07/24/16 12:19

Matrix: Water

Date Received: 07/25/16 09:27

### Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	69	D	0.40	0.20	mg/L			07/25/16 18:05	2
Nitrate as N	14	D	1.4	0.70	mg/L			07/25/16 20:52	50
Fluoride	0.17	D	0.10	0.050	mg/L			07/25/16 18:05	2
Nitrite as N	0.038	U D	0.076	0.038	mg/L			07/25/16 18:05	2
Orthophosphate as P	0.082	U D	0.16	0.082	mg/L			07/25/16 18:05	2
Sulfate	140	D	13	6.3	mg/L			07/25/16 20:52	50

## Client Sample ID: B35LP7

Lab Sample ID: 300-3560-10

Date Collected: 07/24/16 11:08

Matrix: Water

Date Received: 07/25/16 09:27

### Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	34	D	0.40	0.20	mg/L			07/25/16 16:19	2
Nitrate as N	18	D	0.28	0.14	mg/L			07/25/16 19:06	10
Fluoride	0.075	B D	0.10	0.050	mg/L			07/25/16 16:19	2
Nitrite as N	0.038	U D	0.076	0.038	mg/L			07/25/16 16:19	2
Orthophosphate as P	0.41	U D	0.82	0.41	mg/L			07/25/16 19:06	10
Sulfate	140	D	2.5	1.3	mg/L			07/25/16 19:06	10

## Client Sample ID: B35LR0

Lab Sample ID: 300-3560-11

Date Collected: 07/24/16 09:29

Matrix: Water

Date Received: 07/25/16 09:27

### Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	46	D	0.40	0.20	mg/L			07/25/16 18:51	2
Nitrate as N	20	D	1.4	0.70	mg/L			07/25/16 21:07	50
Fluoride	0.074	B D	0.10	0.050	mg/L			07/25/16 18:51	2
Nitrite as N	0.038	U D	0.076	0.038	mg/L			07/25/16 18:51	2
Orthophosphate as P	0.082	U D	0.16	0.082	mg/L			07/25/16 18:51	2
Sulfate	110	D	13	6.3	mg/L			07/25/16 21:07	50

Client: CH2M Hill Plateau Remediation Company  
Project/Site: X16-036

TestAmerica Job ID: 300-3560-1  
SDG: WC1297

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

**Lab Sample ID: MB 300-5018/5**  
**Matrix: Water**  
**Analysis Batch: 5018**

**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			07/25/16 15:49	1
Nitrite as N	0.019	U	0.038	0.019	mg/L			07/25/16 15:49	1
Orthophosphate as P	0.041	U	0.082	0.041	mg/L			07/25/16 15:49	1

**Lab Sample ID: LCS 300-5018/6**  
**Matrix: Water**  
**Analysis Batch: 5018**

**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	2.37		mg/L		105	80 - 120
Nitrite as N	3.04	3.23		mg/L		106	80 - 120
Orthophosphate as P	6.53	6.80		mg/L		104	80 - 120

**Lab Sample ID: 300-3560-10 MS**  
**Matrix: Water**  
**Analysis Batch: 5018**

**Client Sample ID: B35LP7**  
**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	0.489	D	mg/L		80	75 - 125

**Lab Sample ID: 300-3560-10 MS**  
**Matrix: Water**  
**Analysis Batch: 5018**

**Client Sample ID: B35LP7**  
**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Nitrate as N	18	D	2.26	20.1	D	mg/L		101	75 - 125
Orthophosphate as P	0.41	U D	6.53	5.52	D	mg/L		85	75 - 125

**Lab Sample ID: 300-3560-10 DU**  
**Matrix: Water**  
**Analysis Batch: 5018**

**Client Sample ID: B35LP7**  
**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: 300-3560-10 DU**  
**Matrix: Water**  
**Analysis Batch: 5018**

**Client Sample ID: B35LP7**  
**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Nitrate as N	18	D	17.7	D	mg/L		0.5	20
Orthophosphate as P	0.41	U D	0.41	U D	mg/L		NC	20

**Lab Sample ID: MB 300-5019/5**  
**Matrix: Water**  
**Analysis Batch: 5019**

**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			07/25/16 15:49	1

TestAmerica Richland

Client: CH2M Hill Plateau Remediation Company  
Project/Site: X16-036

TestAmerica Job ID: 300-3560-1  
SDG: WC1297

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

Lab Sample ID: MB 300-5019/5  
Matrix: Water  
Analysis Batch: 5019

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	0.025	U	0.050	0.025	mg/L			07/25/16 15:49	1
Sulfate	0.13	U	0.25	0.13	mg/L			07/25/16 15:49	1

Lab Sample ID: LCS 300-5019/6  
Matrix: Water  
Analysis Batch: 5019

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	16.5		mg/L		103	80 - 120
Fluoride	4.00	4.16		mg/L		104	80 - 120
Sulfate	20.0	20.8		mg/L		104	80 - 120

Lab Sample ID: 300-3560-10 MS  
Matrix: Water  
Analysis Batch: 5019

Client Sample ID: B35LP7  
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	34	D	3.20	36.5	D	mg/L		86	75 - 125
Fluoride	0.075	B D	0.800	0.736	D	mg/L		83	75 - 125

Lab Sample ID: 300-3560-10 MS  
Matrix: Water  
Analysis Batch: 5019

Client Sample ID: B35LP7  
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Sulfate	140	D	20.0	157	D	mg/L		102	75 - 125

Lab Sample ID: 300-3560-10 DU  
Matrix: Water  
Analysis Batch: 5019

Client Sample ID: B35LP7  
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Chloride	34	D	33.7	D	mg/L		0.2	20
Fluoride	0.075	B D	0.0744	B D	mg/L		0.2	20

Lab Sample ID: 300-3560-10 DU  
Matrix: Water  
Analysis Batch: 5019

Client Sample ID: B35LP7  
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Sulfate	140	D	136	D	mg/L		0.5	20

# August 17, 2016 QC Association Summary

Client: CH2M Hill Plateau Remediation Company  
Project/Site: X16-036

TestAmerica Job ID: 300-3560-1  
SDG: WC1297

## HPLC/IC

### Analysis Batch: 5018

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
300-3560-5	B35LN2	Total/NA	Water	300.0	
300-3560-6	B35LN5	Total/NA	Water	300.0	
300-3560-6	B35LN5	Total/NA	Water	300.0	
300-3560-7	B35LN8	Total/NA	Water	300.0	
300-3560-8	B35LP1	Total/NA	Water	300.0	
300-3560-9	B35LP4	Total/NA	Water	300.0	
300-3560-9	B35LP4	Total/NA	Water	300.0	
300-3560-10	B35LP7	Total/NA	Water	300.0	
300-3560-10	B35LP7	Total/NA	Water	300.0	
300-3560-11	B35LR0	Total/NA	Water	300.0	
300-3560-11	B35LR0	Total/NA	Water	300.0	
MB 300-5018/5	Method Blank	Total/NA	Water	300.0	
LCS 300-5018/6	Lab Control Sample	Total/NA	Water	300.0	
300-3560-10 MS	B35LP7	Total/NA	Water	300.0	
300-3560-10 MS	B35LP7	Total/NA	Water	300.0	
300-3560-10 DU	B35LP7	Total/NA	Water	300.0	
300-3560-10 DU	B35LP7	Total/NA	Water	300.0	

### Analysis Batch: 5019

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
300-3560-5	B35LN2	Total/NA	Water	300.0	
300-3560-5	B35LN2	Total/NA	Water	300.0	
300-3560-6	B35LN5	Total/NA	Water	300.0	
300-3560-6	B35LN5	Total/NA	Water	300.0	
300-3560-7	B35LN8	Total/NA	Water	300.0	
300-3560-8	B35LP1	Total/NA	Water	300.0	
300-3560-8	B35LP1	Total/NA	Water	300.0	
300-3560-9	B35LP4	Total/NA	Water	300.0	
300-3560-9	B35LP4	Total/NA	Water	300.0	
300-3560-10	B35LP7	Total/NA	Water	300.0	
300-3560-10	B35LP7	Total/NA	Water	300.0	
300-3560-11	B35LR0	Total/NA	Water	300.0	
300-3560-11	B35LR0	Total/NA	Water	300.0	
MB 300-5019/5	Method Blank	Total/NA	Water	300.0	
LCS 300-5019/6	Lab Control Sample	Total/NA	Water	300.0	
300-3560-10 MS	B35LP7	Total/NA	Water	300.0	
300-3560-10 MS	B35LP7	Total/NA	Water	300.0	
300-3560-10 DU	B35LP7	Total/NA	Water	300.0	
300-3560-10 DU	B35LP7	Total/NA	Water	300.0	

### Analysis Batch: 5020

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
300-3560-1	B35LM3	Total/NA	Water	300.0	
300-3560-1	B35LM3	Total/NA	Water	300.0	
300-3560-2	B35LM2	Total/NA	Water	300.0	
300-3560-2	B35LM2	Total/NA	Water	300.0	
300-3560-3	B35LM6	Total/NA	Water	300.0	
300-3560-4	B35LM9	Total/NA	Water	300.0	

TestAmerica Richland

Client: CH2M Hill Plateau Remediation Company  
Project/Site: X16-036

TestAmerica Job ID: 300-3560-1  
SDG: WC1297

HPLC/IC (Continued)

Analysis Batch: 5021

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
300-3560-1	B35LM3	Total/NA	Water	300.0	
300-3560-1	B35LM3	Total/NA	Water	300.0	
300-3560-2	B35LM2	Total/NA	Water	300.0	
300-3560-2	B35LM2	Total/NA	Water	300.0	
300-3560-3	B35LM6	Total/NA	Water	300.0	
300-3560-3	B35LM6	Total/NA	Water	300.0	
300-3560-4	B35LM9	Total/NA	Water	300.0	
300-3560-4	B35LM9	Total/NA	Water	300.0	

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Client: CH2M Hill Plateau Remediation Company  
Project/Site: X16-036

TestAmerica Job ID: 300-3560-1  
SDG: WC1297

**Client Sample ID: B35LM3**

Date Collected: 07/24/16 08:43

Date Received: 07/25/16 09:27

**Lab Sample ID: 300-3560-1**

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			5020	07/25/16 17:18	RLC	TAL RCH
Total/NA	Analysis	300.0		2			5021	07/25/16 17:18	RLC	TAL RCH
Total/NA	Analysis	300.0		50			5020	07/25/16 19:50	RLC	TAL RCH
Total/NA	Analysis	300.0		50			5021	07/25/16 19:50	RLC	TAL RCH

**Client Sample ID: B35LM2**

Date Collected: 07/24/16 08:43

Date Received: 07/25/16 09:27

**Lab Sample ID: 300-3560-2**

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			5020	07/25/16 17:33	RLC	TAL RCH
Total/NA	Analysis	300.0		2			5021	07/25/16 17:33	RLC	TAL RCH
Total/NA	Analysis	300.0		50			5020	07/25/16 20:05	RLC	TAL RCH
Total/NA	Analysis	300.0		50			5021	07/25/16 20:05	RLC	TAL RCH

**Client Sample ID: B35LM6**

Date Collected: 07/24/16 09:33

Date Received: 07/25/16 09:27

**Lab Sample ID: 300-3560-3**

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			5020	07/25/16 17:48	RLC	TAL RCH
Total/NA	Analysis	300.0		2			5021	07/25/16 17:48	RLC	TAL RCH
Total/NA	Analysis	300.0		50			5021	07/25/16 20:20	RLC	TAL RCH

**Client Sample ID: B35LM9**

Date Collected: 07/24/16 12:06

Date Received: 07/25/16 09:27

**Lab Sample ID: 300-3560-4**

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			5020	07/25/16 18:04	RLC	TAL RCH
Total/NA	Analysis	300.0		2			5021	07/25/16 18:04	RLC	TAL RCH
Total/NA	Analysis	300.0		50			5021	07/25/16 20:36	RLC	TAL RCH

**Client Sample ID: B35LN2**

Date Collected: 07/24/16 10:38

Date Received: 07/25/16 09:27

**Lab Sample ID: 300-3560-5**

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		2			5018	07/25/16 17:05	RLC	TAL RCH
Total/NA	Analysis	300.0		2			5019	07/25/16 17:05	RLC	TAL RCH
Total/NA	Analysis	300.0		50			5019	07/25/16 19:51	RLC	TAL RCH

TestAmerica Richland

Client: CH2M Hill Plateau Remediation Company  
Project/Site: X16-036

TestAmerica Job ID: 300-3560-1  
SDG: WC1297

**Client Sample ID: B35LN5**

**Lab Sample ID: 300-3560-6**

Date Collected: 07/24/16 13:30

Matrix: Water

Date Received: 07/25/16 09:27

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			5018	07/25/16 17:20	RLC	TAL RCH
Total/NA	Analysis	300.0		2			5019	07/25/16 17:20	RLC	TAL RCH
Total/NA	Analysis	300.0		50			5018	07/25/16 20:06	RLC	TAL RCH
Total/NA	Analysis	300.0		50			5019	07/25/16 20:06	RLC	TAL RCH

**Client Sample ID: B35LN8**

**Lab Sample ID: 300-3560-7**

Date Collected: 07/24/16 13:41

Matrix: Water

Date Received: 07/25/16 09:27

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			5018	07/25/16 17:35	RLC	TAL RCH
Total/NA	Analysis	300.0		2			5019	07/25/16 17:35	RLC	TAL RCH

**Client Sample ID: B35LP1**

**Lab Sample ID: 300-3560-8**

Date Collected: 07/24/16 14:15

Matrix: Water

Date Received: 07/25/16 09:27

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			5018	07/25/16 17:50	RLC	TAL RCH
Total/NA	Analysis	300.0		2			5019	07/25/16 17:50	RLC	TAL RCH
Total/NA	Analysis	300.0		50			5019	07/25/16 20:37	RLC	TAL RCH

**Client Sample ID: B35LP4**

**Lab Sample ID: 300-3560-9**

Date Collected: 07/24/16 12:19

Matrix: Water

Date Received: 07/25/16 09:27

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			5018	07/25/16 18:05	RLC	TAL RCH
Total/NA	Analysis	300.0		2			5019	07/25/16 18:05	RLC	TAL RCH
Total/NA	Analysis	300.0		50			5018	07/25/16 20:52	RLC	TAL RCH
Total/NA	Analysis	300.0		50			5019	07/25/16 20:52	RLC	TAL RCH

**Client Sample ID: B35LP7**

**Lab Sample ID: 300-3560-10**

Date Collected: 07/24/16 11:08

Matrix: Water

Date Received: 07/25/16 09:27

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			5018	07/25/16 16:19	RLC	TAL RCH
Total/NA	Analysis	300.0		2			5019	07/25/16 16:19	RLC	TAL RCH
Total/NA	Analysis	300.0		10			5018	07/25/16 19:06	RLC	TAL RCH
Total/NA	Analysis	300.0		10			5019	07/25/16 19:06	RLC	TAL RCH

TestAmerica Richland

Client: CH2M Hill Plateau Remediation Company  
Project/Site: X16-036

TestAmerica Job ID: 300-3560-1  
SDG: WC1297

**Client Sample ID: B35LR0**

**Lab Sample ID: 300-3560-11**

Date Collected: 07/24/16 09:29

Matrix: Water

Date Received: 07/25/16 09:27

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			5018	07/25/16 18:51	RLC	TAL RCH
Total/NA	Analysis	300.0		2			5019	07/25/16 18:51	RLC	TAL RCH
Total/NA	Analysis	300.0		50			5018	07/25/16 21:07	RLC	TAL RCH
Total/NA	Analysis	300.0		50			5019	07/25/16 21:07	RLC	TAL RCH

**Client Sample ID: Method Blank**

**Lab Sample ID: MB 300-5018/5**

Date Collected: N/A

Matrix: Water

Date Received: N/A

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			5018	07/25/16 15:49	RLC	TAL RCH

**Client Sample ID: Method Blank**

**Lab Sample ID: MB 300-5019/5**

Date Collected: N/A

Matrix: Water

Date Received: N/A

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			5019	07/25/16 15:49	RLC	TAL RCH

**Client Sample ID: Lab Control Sample**

**Lab Sample ID: LCS 300-5018/6**

Date Collected: N/A

Matrix: Water

Date Received: N/A

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			5018	07/25/16 16:04	RLC	TAL RCH

**Client Sample ID: Lab Control Sample**

**Lab Sample ID: LCS 300-5019/6**

Date Collected: N/A

Matrix: Water

Date Received: N/A

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			5019	07/25/16 16:04	RLC	TAL RCH

**Client Sample ID: B35LP7**

**Lab Sample ID: 300-3560-10 MS**

Date Collected: 07/24/16 11:08

Matrix: Water

Date Received: 07/25/16 09:27

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			5018	07/25/16 16:34	RLC	TAL RCH
Total/NA	Analysis	300.0		2			5019	07/25/16 16:34	RLC	TAL RCH
Total/NA	Analysis	300.0		10			5018	07/25/16 19:21	RLC	TAL RCH

Client: CH2M Hill Plateau Remediation Company  
Project/Site: X16-036

TestAmerica Job ID: 300-3560-1  
SDG: WC1297

**Client Sample ID: B35LP7**

**Lab Sample ID: 300-3560-10 MS**

**Date Collected: 07/24/16 11:08**

**Matrix: Water**

**Date Received: 07/25/16 09:27**

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		10			5019	07/25/16 19:21	RLC	TAL RCH

**Laboratory References:**

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

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Client: CH2M Hill Plateau Remediation Company  
Project/Site: X16-036

TestAmerica Job ID: 300-3560-1  
SDG: WC1297

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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



# August 17, 2016 Sample Summary

Client: CH2M Hill Plateau Remediation Company  
Project/Site: X16-036

TestAmerica Job ID: 300-3560-1  
SDG: WC1297

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
300-3560-1	B35LM3	Water	07/24/16 08:43	07/25/16 09:27
300-3560-2	B35LM2	Water	07/24/16 08:43	07/25/16 09:27
300-3560-3	B35LM6	Water	07/24/16 09:33	07/25/16 09:27
300-3560-4	B35LM9	Water	07/24/16 12:06	07/25/16 09:27
300-3560-5	B35LN2	Water	07/24/16 10:38	07/25/16 09:27
300-3560-6	B35LN5	Water	07/24/16 13:30	07/25/16 09:27
300-3560-7	B35LN8	Water	07/24/16 13:41	07/25/16 09:27
300-3560-8	B35LP1	Water	07/24/16 14:15	07/25/16 09:27
300-3560-9	B35LP4	Water	07/24/16 12:19	07/25/16 09:27
300-3560-10	B35LP7	Water	07/24/16 11:08	07/25/16 09:27
300-3560-11	B35LR0	Water	07/24/16 09:29	07/25/16 09:27

## Login Sample Receipt Checklist

Client: CH2M Hill Plateau Remediation Company

Job Number: 300-3560-1

SDG Number: WC1297

**Login Number: 3560**

**List Number: 1**

**Creator: Anderson, Lori 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.	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 <6mm (1/4").	N/A	
Multiphasic samples are not present.	N/A	
Samples do not require splitting or compositing.	N/A	
Residual Chlorine Checked.	N/A	

