

July 13, 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: 300-3376-1  
TestAmerica Sample Delivery Group: WC1209  
Client Project/Site: F13-002

For:  
CH2M Hill Plateau Remediation Company  
PO BOX 1600  
Mail Stop R3-50  
Richland, Washington 99352

Attn: CPP Sample Management



Authorized for release by:  
7/13/2016 11:42:37 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)

*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.*



### LINKS

Review your project  
results through  
**TotalAccess**

Have a Question?



Visit us at:  
[www.testamericainc.com](http://www.testamericainc.com)

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Definitions/Glossary

Client: CH2M Hill Plateau Remediation Company  
 Project/Site: F13-002

TestAmerica Job ID: 300-3376-1  
 SDG: WC1209

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

General Chemistry

Qualifier	Qualifier Description
U	Analyzed for but not detected.

Glossary

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



July 13, 2016

## Case Narrative

Client: CH2M Hill Plateau Remediation Company  
Project/Site: F13-002

TestAmerica Job ID: 300-3376-1  
SDG: WC1209

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**Job ID: 300-3376-1**

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**Laboratory: TestAmerica Richland**

### Narrative

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**Job Narrative**  
**300-3376-1**

### Comments

No additional comments.

### Receipt

The samples were received on 6/28/2016 2:20 PM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 7.9° C.

### HPLC/IC

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

### General Chemistry

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

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CH2MHill Plateau Remediation Company		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST		F13-002-2126	PAGE 1 OF 1
COLLECTOR CHRIS FULTON CHPRC	COMPANY CONTACT SUMNER, LC	TELEPHONE NO. 376-3922	PROJECT COORDINATOR SUMNER, LC	PRICE CODE 7C	DATA TURNAROUND 15 Days / 15 Days
SAMPLING LOCATION 299-E33-350, YE29 Wk 6	PROJECT DESIGNATION 200W Pump & Treat - Extraction Well Water Sampling	FIELD LOGBOOK NO. HNF-N-491-15	SAF NO. F13-002	AIR QUALITY <input type="checkbox"/>	ORIGINAL
ICE CHEST NO. N/A	OFFSITE PROPERTY NO. N/A	ACTUAL SAMPLE DEPTH N/A	COA 303111	METHOD OF SHIPMENT GOVERNMENT VEHICLE	
SHIPPED TO TestAmerica Incorporated, Richland			BILL OF LADING/AIR BILL NO. N/A		

MATRIX*	POSSIBLE SAMPLE HAZARDS/ REMARKS *Contains Radioactive Material at concentrations that are not be regulated for transportation per 49 CFR/JATA Dangerous Goods Regulations but are not releasable per DOE Order 458.1. N/A	NO. OF CONTAINER(S)	VOLUME	7196 CR6; COMMON;
		1	60mL	
DI=Drum L=Liquid S=Soil SE=Sediment T=Tissue V=Vegetation W=Water WT=Wipe X=Other				
SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME	
B35K13	WATER	JUN 28 2016	1210	✓

#  
33916  
W61209  
June 13-14

300-3378 COC



CHAIN OF POSSESSION	SIGN/ PRINT NAMES	SPECIAL INSTRUCTIONS
RELINQUISHED BY/REMOVED FROM CHRIS FULTON CHPRC	RECEIVED BY/STORED IN Frank Hall CHPRC	TRVL-16-137
DATE/TIME JUN 28 7:16 1246	DATE/TIME JUN 28 2016 1246	
RELINQUISHED BY/REMOVED FROM Frank Hall	RECEIVED BY/STORED IN Frank Hall	
DATE/TIME 6-28-16	DATE/TIME 6-28-16	
RELINQUISHED BY/REMOVED FROM	RECEIVED BY/STORED IN	
DATE/TIME	DATE/TIME	
RELINQUISHED BY/REMOVED FROM	RECEIVED BY/STORED IN	
DATE/TIME	DATE/TIME	
RELINQUISHED BY/REMOVED FROM	RECEIVED BY/STORED IN	
DATE/TIME	DATE/TIME	
RELINQUISHED BY/REMOVED FROM	RECEIVED BY/STORED IN	
DATE/TIME	DATE/TIME	

LABORATORY SECTION	RECEIVED BY	TITLE	DATE/TIME
FINAL SAMPLE DISPOSITION	DISPOSAL METHOD	DISPOSED BY	DATE/TIME

PRINTED ON 5/5/2016 FSR ID = FSR32148 TRVL NUM = TRVL-16-137 A-6003-618 (REV 2)



CH2M Hill Plateau Remediation Company		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST		F13-002-2071	PAGE 1 OF 1
COLLECTOR <b>CHRIS FULTON</b> CHPRC	COMPANY CONTACT SUMNER, LC	TELEPHONE NO. 376-3922	PROJECT COORDINATOR SUMNER, LC	PRICE CODE 7C	DATA TURNAROUND 15 Days / 15 Days
SAMPLING LOCATION 299-E33-344, YE28 WK 6	PROJECT DESIGNATION 200W Pump & Treat - Extraction Well Water Sampling	FIELD LOGBOOK NO. HMFN-471-15	ACTUAL SAMPLE DEPTH N/A	SAF NO. F13-002	AIR QUALITY <input type="checkbox"/>
ICE CHEST NO. N/A	OFFSITE PROPERTY NO. N/A	NO. OF CONTAINER(S) 1	VOLUME 60mL	COA 303111	METHOD OF SHIPMENT GOVERNMENT VEHICLE
SHIPPED TO TestAmerica Incorporated, Richland	PRESERVATION Cool <=-6C	HOLDING TIME 24-Hours	TYPE OF CONTAINER ag	BILL OF LADING/AIR BILL NO. N/A	ORIGINAL
MATRIX* A=Air DL=Drum Liquids DS=Drum Solids L=Liquid O=Oil S=Soil SE=Sediment T=Tissue V=Vegetation W=Water WL=Wipe X=Other	<p><b>POSSIBLE SAMPLE HAZARDS/ REMARKS</b></p> <p>*Contains Radioactive Material at concentrations that are not be regulated for transportation per 49 CFR/JATA Dangerous Goods Regulations but are not releasable per DOE Order 458.1. N/A</p>		<p><b>SPECIAL HANDLING AND/OR STORAGE</b></p> <p>W333110 W341209</p>		

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE/TIME	
B35J79	WATER	JUN 28 2016	1410	1230 ✓

CHAIN OF POSSESSION		SIGN/ PRINT NAMES		SPECIAL INSTRUCTIONS	
RELINQUISHED BY/REMOVED FROM <b>CHRIS FULTON</b>	DATE/TIME JUN 28 2016 1246	RECEIVED BY/STORED IN <b>Frank Hill</b>	DATE/TIME JUN 28 2016 1246	TRVL-16-137	
RELINQUISHED BY/REMOVED FROM <b>Frank Hill</b>	DATE/TIME 6-28-16	RECEIVED BY/STORED IN <b>J. Bock, TARI</b>	DATE/TIME 6-28-16		
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME		
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME		
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME		
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME		
LABORATORY SECTION	RECEIVED BY	TITLE		DATE/TIME	DATE/TIME
FINAL SAMPLE DISPOSITION	DISPOSAL METHOD	DISPOSED BY		DATE/TIME	DATE/TIME

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CH2Mhill Plateau Remediation Company		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST		F13-002-2127	PAGE 1 OF 1
COLLECTOR	CHRIS FULTON CHPRC	COMPANY CONTACT	SUMNER, LC	TELEPHONE NO.	376-3922
SAMPLING LOCATION	299-E33-350, YC29 Wk 6	PROJECT DESIGNATION	200W Pump & Treat - Extraction Well Water Sampling		
ICE CHEST NO.	N/A	FIELD LOGBOOK NO.	HNF-N-491-15	ACTUAL SAMPLE DEPTH	N/A
SHIPPED TO	TestAmerica Incorporated, Richland	OFFSITE PROPERTY NO.	N/A		
MATRIX*	<p><b>POSSIBLE SAMPLE HAZARDS/ REMARKS</b></p> <p>*Contains Radioactive Material at concentrations that are not be regulated for transportation per 49 CFR/JATA Dangerous Goods Regulations but are not releasable per DOE Order 458.1. N/A</p>	PRESERVATION	Cool <=6C	PROJECT COORDINATOR	SUMNER, LC
		HOLDING TIME	48 Hours	PRICE CODE	7C
		TYPE OF CONTAINER	P	AIR QUALITY	<input type="checkbox"/>
		NO. OF CONTAINER(S)	1	METHOD OF SHIPMENT	GOVERNMENT VEHICLE
		VOLUME	125ml	BILL OF LADING/AIR BILL NO.	N/A
		SPECIAL HANDLING AND/OR STORAGE	SEE ITEM (1) IN SPECIAL INSTRUCTIONS		
B35K14	WATER	SAMPLE DATE	JUN 28 2016	SAMPLE TIME	1210

3396  
W21209

CHAIN OF POSSESSION	SIGN/ PRINT NAMES	SPECIAL INSTRUCTIONS
RELINQUISHED BY/REMOVED FROM	RECEIVED BY/STORED IN	TRVL-16-137
CHRIS FULTON	JUN 28 2016 1210	300.0 ANIONS_IC: COMMON; 300.0 ANIONS_IC: COMMON (Add Bromide);
RELINQUISHED BY/REMOVED FROM	RECEIVED BY/STORED IN	
6-28-16 [Signature]	6-28-16 [Signature]	
RELINQUISHED BY/REMOVED FROM	RECEIVED BY/STORED IN	
[Signature]	[Signature]	
RELINQUISHED BY/REMOVED FROM	RECEIVED BY/STORED IN	
[Signature]	[Signature]	
RELINQUISHED BY/REMOVED FROM	RECEIVED BY/STORED IN	
[Signature]	[Signature]	
RELINQUISHED BY/REMOVED FROM	RECEIVED BY/STORED IN	
[Signature]	[Signature]	
RELINQUISHED BY/REMOVED FROM	RECEIVED BY/STORED IN	
[Signature]	[Signature]	
LABORATORY SECTION	RECEIVED BY	TITLE
FINAL SAMPLE DISPOSITION	DISPOSAL METHOD	DISPOSED BY

~~COPY~~ 6-22-16



CH2MHill Plateau Remediation Company		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST		F13-002-2072	PAGE 1 OF 1
COLLECTOR CHRIS FULTON CHPRC	COMPANY CONTACT SUMNER, LC	TELEPHONE NO. 376-3922	PROJECT COORDINATOR SUMNER, LC	PRICE CODE 7C	DATA TURNAROUND 15 Days / 15 Days
SAMPLING LOCATION 299-E33-344, Y228 WK 6	PROJECT DESIGNATION 200W Pump & Treat - Extraction Well Water Sampling	FIELD LOGBOOK NO. F13-002	SAF NO. F13-002	AIR QUALITY <input type="checkbox"/>	METHOD OF SHIPMENT GOVERNMENT VEHICLE <b>ORIGINAL</b>
ICE CHEST NO. N/A	FIELD LOGBOOK NO. F13-002	ACTUAL SAMPLE DEPTH N/A	COA 303111	BILL OF LADING/AIR BILL NO. N/A	
SHIPPED TO TestAmerica Incorporated, Richland	OFFSITE PROPERTY NO. N/A				

MATRIX*	POSSIBLE SAMPLE HAZARDS/ REMARKS	PRESERVATION	COOL <=6C
A=Air	*Contains Radioactive Material at concentrations that are not be regulated for transportation per 49 CFR/DATA Dangerous Goods Regulations but are not releasable per DOE Order 458.1. N/A	HOLDING TIME	48 Hours
DL=Drum		TYPE OF CONTAINER	P
L=Liquid		NO. OF CONTAINER(S)	1
O=Oil		VOLUME	125ml
SE=Sediment		SPECIAL HANDLING AND/OR STORAGE	SEE ITEM (1) IN SPECIAL INSTRUCTIONS
T=Tissue			
V=Vegetation			
W=Water			
WT=Wipe			
X=Other			

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME	✓
B35JV0	WATER	JUN 28 2016	1230	

CHAIN OF POSSESSION		SIGN/ PRINT NAMES		SPECIAL INSTRUCTIONS	
RELINQUISHED BY/REMOVED FROM CHRIS FULTON	DATE/TIME JUN 28 2016 1246	RECEIVED BY/STORED IN CHPRC	DATE/TIME JUN 28 2016 1246	TRVL-16-137 (1) 300.0 ANIONS_IC: COMMON; 300.0 ANIONS_IC: COMMON (Add-on) {Bromide};	
RELINQUISHED BY/REMOVED FROM CHPRC	DATE/TIME 6-28-16	RECEIVED BY/STORED IN J. BOCK, TARA	DATE/TIME 6-28-16		
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME		
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME		
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME		
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME		
LABORATORY SECTION	RECEIVED BY	TITLE	DATE/TIME		
FINAL SAMPLE DISPOSITION	DISPOSAL METHOD	DISPOSED BY	DATE/TIME		

~~COPY~~

Detection Summary

Client: CH2M Hill Plateau Remediation Company  
 Project/Site: F13-002

TestAmerica Job ID: 300-3376-1  
 SDG: WC1209

Client Sample ID: B35K13

Lab Sample ID: 300-3376-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Cr (VI)	0.080		0.0040	0.0015	mg/L	1		7196A	Total/NA

Client Sample ID: B35JT9

Lab Sample ID: 300-3376-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Cr (VI)	0.044		0.0040	0.0015	mg/L	1		7196A	Total/NA

Client Sample ID: B35K14

Lab Sample ID: 300-3376-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	99	D	1.0	0.50	mg/L	5		300.0	Total/NA
Nitrate as N	180	D	2.8	1.4	mg/L	100		300.0	Total/NA
Fluoride	2.8	D	0.25	0.13	mg/L	5		300.0	Total/NA
Sulfate	600	D	25	13	mg/L	100		300.0	Total/NA
Bromide	1.2	D	0.63	0.31	mg/L	5		300.0	Total/NA

Client Sample ID: B35JV0

Lab Sample ID: 300-3376-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	77	D	1.0	0.50	mg/L	5		300.0	Total/NA
Nitrate as N	140	D	2.8	1.4	mg/L	100		300.0	Total/NA
Fluoride	5.5	D	0.25	0.13	mg/L	5		300.0	Total/NA
Sulfate	470	D	25	13	mg/L	100		300.0	Total/NA
Bromide	0.99	D	0.63	0.31	mg/L	5		300.0	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample Results

Client: CH2M Hill Plateau Remediation Company  
Project/Site: F13-002

TestAmerica Job ID: 300-3376-1  
SDG: WC1209

Client Sample ID: B35K13

Lab Sample ID: 300-3376-1

Date Collected: 06/28/16 12:10  
Date Received: 06/28/16 14:20

Matrix: Water

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cr (VI)	0.080		0.0040	0.0015	mg/L			06/28/16 17:03	1

Client Sample ID: B35JT9

Lab Sample ID: 300-3376-2

Date Collected: 06/28/16 12:30  
Date Received: 06/28/16 14:20

Matrix: Water

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cr (VI)	0.044		0.0040	0.0015	mg/L			06/28/16 17:04	1

Client Sample ID: B35K14

Lab Sample ID: 300-3376-3

Date Collected: 06/28/16 12:10  
Date Received: 06/28/16 14:20

Matrix: Water

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	99	D	1.0	0.50	mg/L			06/29/16 17:00	5
Nitrate as N	180	D	2.8	1.4	mg/L			06/29/16 14:29	100
Fluoride	2.8	D	0.25	0.13	mg/L			06/29/16 17:00	5
Nitrite as N	0.095	U D	0.19	0.095	mg/L			06/29/16 17:00	5
Sulfate	600	D	25	13	mg/L			06/29/16 14:29	100
Bromide	1.2	D	0.63	0.31	mg/L			06/29/16 17:00	5

Client Sample ID: B35JV0

Lab Sample ID: 300-3376-4

Date Collected: 06/28/16 12:30  
Date Received: 06/28/16 14:20

Matrix: Water

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	77	D	1.0	0.50	mg/L			06/29/16 17:15	5
Nitrate as N	140	D	2.8	1.4	mg/L			06/29/16 14:44	100
Fluoride	5.5	D	0.25	0.13	mg/L			06/29/16 17:15	5
Nitrite as N	0.095	U D	0.19	0.095	mg/L			06/29/16 17:15	5
Sulfate	470	D	25	13	mg/L			06/29/16 14:44	100
Bromide	0.99	D	0.63	0.31	mg/L			06/29/16 17:15	5

QC Sample Results

Client: CH2M Hill Plateau Remediation Company  
Project/Site: F13-002

TestAmerica Job ID: 300-3376-1  
SDG: WC1209

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 300-4731/5  
Matrix: Water  
Analysis Batch: 4731

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			06/29/16 12:29	1
Nitrite as N	0.019	U	0.038	0.019	mg/L			06/29/16 12:29	1

Lab Sample ID: LCS 300-4731/6  
Matrix: Water  
Analysis Batch: 4731

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	2.35		mg/L		104	80 - 120
Nitrite as N	3.04	3.16		mg/L		104	80 - 120

Lab Sample ID: 300-3378-A-7 MS  
Matrix: Water  
Analysis Batch: 4731

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	5.3	D	0.452	5.64	D	mg/L		83	75 - 125
Nitrite as N	0.063	B D	0.609	0.544	D	mg/L		79	75 - 125

Lab Sample ID: 300-3378-A-7 DU  
Matrix: Water  
Analysis Batch: 4731

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	5.3	D	5.28	D	mg/L		0.3	20
Nitrite as N	0.063	B D	0.0625	B D	mg/L		0.6	20

Lab Sample ID: MB 300-4732/5  
Matrix: Water  
Analysis Batch: 4732

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			06/29/16 12:29	1
Fluoride	0.025	U	0.050	0.025	mg/L			06/29/16 12:29	1
Sulfate	0.13	U	0.25	0.13	mg/L			06/29/16 12:29	1
Bromide	0.063	U	0.13	0.063	mg/L			06/29/16 12:29	1

Lab Sample ID: LCS 300-4732/6  
Matrix: Water  
Analysis Batch: 4732

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	16.4		mg/L		102	80 - 120
Fluoride	4.00	4.12		mg/L		103	80 - 120
Sulfate	20.0	20.6		mg/L		103	80 - 120
Bromide	10.0	10.4		mg/L		104	80 - 120

QC Sample Results

Client: CH2M Hill Plateau Remediation Company  
Project/Site: F13-002

TestAmerica Job ID: 300-3376-1  
SDG: WC1209

Method: 300.0 - Anions, Ion Chromatography (Continued)

Lab Sample ID: 300-3378-A-7 MS  
Matrix: Water  
Analysis Batch: 4732

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

Analyte	Sample		Spike Added	MS		Unit	D	%Rec	%Rec. Limits
	Result	Qualifier		Result	Qualifier				
Chloride	14	D	3.20	17.2	D	mg/L		93	75 - 125
Fluoride	0.19	D	0.800	0.898	D	mg/L		89	75 - 125
Bromide	0.18	B D	2.00	1.83	D	mg/L		83	75 - 125

Lab Sample ID: 300-3378-A-7 MS  
Matrix: Water  
Analysis Batch: 4732

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

Analyte	Sample		Spike Added	MS		Unit	D	%Rec	%Rec. Limits
	Result	Qualifier		Result	Qualifier				
Sulfate	82	D	10.0	93.2	D	mg/L		109	75 - 125

Lab Sample ID: 300-3378-A-7 DU  
Matrix: Water  
Analysis Batch: 4732

Client Sample ID: Duplicate  
Prep Type: Total/NA

Analyte	Sample		DU		Unit	D	RPD	RPD Limit
	Result	Qualifier	Result	Qualifier				
Chloride	14	D	14.3	D	mg/L		0.3	20
Fluoride	0.19	D	0.189	D	mg/L		0.4	20
Bromide	0.18	B D	0.175	B D	mg/L		0.2	20

Lab Sample ID: 300-3378-A-7 DU  
Matrix: Water  
Analysis Batch: 4732

Client Sample ID: Duplicate  
Prep Type: Total/NA

Analyte	Sample		DU		Unit	D	RPD	RPD Limit
	Result	Qualifier	Result	Qualifier				
Sulfate	82	D	82.5	D	mg/L		0.2	20

Method: 7196A - Chromium, Hexavalent

Lab Sample ID: MB 300-4726/3  
Matrix: Water  
Analysis Batch: 4726

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

Analyte	MB		RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Cr (VI)	0.0015	U	0.0040	0.0015	mg/L			06/28/16 17:00	1

Lab Sample ID: LCS 300-4726/4  
Matrix: Water  
Analysis Batch: 4726

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

Analyte	Spike Added	LCS		Unit	D	%Rec	%Rec. Limits
		Result	Qualifier				
Cr (VI)	0.250	0.249		mg/L		100	80 - 120

Lab Sample ID: 300-3376-1 MS  
Matrix: Water  
Analysis Batch: 4726

Client Sample ID: B35K13  
Prep Type: Total/NA

Analyte	Sample		Spike Added	MS		Unit	D	%Rec	%Rec. Limits
	Result	Qualifier		Result	Qualifier				
Cr (VI)	0.080		0.0499	0.129		mg/L		99	75 - 125

TestAmerica Richland

QC Sample Results

Client: CH2M Hill Plateau Remediation Company  
Project/Site: F13-002

TestAmerica Job ID: 300-3376-1  
SDG: WC1209

Method: 7196A - Chromium, Hexavalent (Continued)

Lab Sample ID: 300-3376-1 DU  
Matrix: Water  
Analysis Batch: 4726

Client Sample ID: B35K13  
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Cr (VI)	0.080		0.0806		mg/L		0.9	20

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QC Association Summary

Client: CH2M Hill Plateau Remediation Company  
 Project/Site: F13-002

TestAmerica Job ID: 300-3376-1  
 SDG: WC1209

HPLC/IC

Analysis Batch: 4731

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
300-3376-3	B35K14	Total/NA	Water	300.0	
300-3376-3	B35K14	Total/NA	Water	300.0	
300-3376-4	B35JV0	Total/NA	Water	300.0	
300-3376-4	B35JV0	Total/NA	Water	300.0	
300-3378-A-7 DU	Duplicate	Total/NA	Water	300.0	
300-3378-A-7 MS	Matrix Spike	Total/NA	Water	300.0	
LCS 300-4731/6	Lab Control Sample	Total/NA	Water	300.0	
MB 300-4731/5	Method Blank	Total/NA	Water	300.0	

Analysis Batch: 4732

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
300-3376-3	B35K14	Total/NA	Water	300.0	
300-3376-3	B35K14	Total/NA	Water	300.0	
300-3376-4	B35JV0	Total/NA	Water	300.0	
300-3376-4	B35JV0	Total/NA	Water	300.0	
300-3378-A-7 DU	Duplicate	Total/NA	Water	300.0	
300-3378-A-7 DU	Duplicate	Total/NA	Water	300.0	
300-3378-A-7 MS	Matrix Spike	Total/NA	Water	300.0	
300-3378-A-7 MS	Matrix Spike	Total/NA	Water	300.0	
LCS 300-4732/6	Lab Control Sample	Total/NA	Water	300.0	
MB 300-4732/5	Method Blank	Total/NA	Water	300.0	

General Chemistry

Analysis Batch: 4726

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
300-3376-1	B35K13	Total/NA	Water	7196A	
300-3376-1 DU	B35K13	Total/NA	Water	7196A	
300-3376-1 MS	B35K13	Total/NA	Water	7196A	
300-3376-2	B35JT9	Total/NA	Water	7196A	
LCS 300-4726/4	Lab Control Sample	Total/NA	Water	7196A	
MB 300-4726/3	Method Blank	Total/NA	Water	7196A	

Lab Chronicle

Client: CH2M Hill Plateau Remediation Company  
Project/Site: F13-002

TestAmerica Job ID: 300-3376-1  
SDG: WC1209

**Client Sample ID: B35K13**

Date Collected: 06/28/16 12:10

Date Received: 06/28/16 14:20

**Lab Sample ID: 300-3376-1**

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	7196A		1			4726	06/28/16 17:03	RLC	TAL RCH

**Client Sample ID: B35JT9**

Date Collected: 06/28/16 12:30

Date Received: 06/28/16 14:20

**Lab Sample ID: 300-3376-2**

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	7196A		1			4726	06/28/16 17:04	RLC	TAL RCH

**Client Sample ID: B35K14**

Date Collected: 06/28/16 12:10

Date Received: 06/28/16 14:20

**Lab Sample ID: 300-3376-3**

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		100	10 mL		4731	06/29/16 14:29	CPM	TAL RCH
Total/NA	Analysis	300.0		100	10 mL		4732	06/29/16 14:29	CPM	TAL RCH
Total/NA	Analysis	300.0		5	10 mL		4731	06/29/16 17:00	CPM	TAL RCH
Total/NA	Analysis	300.0		5	10 mL		4732	06/29/16 17:00	CPM	TAL RCH

**Client Sample ID: B35JV0**

Date Collected: 06/28/16 12:30

Date Received: 06/28/16 14:20

**Lab Sample ID: 300-3376-4**

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		100	10 mL		4731	06/29/16 14:44	CPM	TAL RCH
Total/NA	Analysis	300.0		100	10 mL		4732	06/29/16 14:44	CPM	TAL RCH
Total/NA	Analysis	300.0		5	10 mL		4731	06/29/16 17:15	CPM	TAL RCH
Total/NA	Analysis	300.0		5	10 mL		4732	06/29/16 17:15	CPM	TAL RCH

**Client Sample ID: B35K13**

Date Collected: 06/28/16 12:10

Date Received: 06/28/16 14:20

**Lab Sample ID: 300-3376-1 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	7196A		1			4726	06/28/16 17:04	RLC	TAL RCH

Lab Chronicle

Client: CH2M Hill Plateau Remediation Company  
Project/Site: F13-002

TestAmerica Job ID: 300-3376-1  
SDG: WC1209

Client Sample ID: Duplicate

Lab Sample ID: 300-3378-A-7 DU

Date Collected: 06/28/16 09:33

Matrix: Water

Date Received: 06/28/16 14:20

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	10 mL		4731	06/29/16 13:29	CPM	TAL RCH
Total/NA	Analysis	300.0		2	10 mL		4732	06/29/16 13:29	CPM	TAL RCH
Total/NA	Analysis	300.0		5	10 mL		4732	06/29/16 16:00	CPM	TAL RCH

Client Sample ID: Lab Control Sample

Lab Sample ID: LCS 300-4726/4

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	7196A		1			4726	06/28/16 17:00	RLC	TAL RCH

Client Sample ID: Lab Control Sample

Lab Sample ID: LCS 300-4731/6

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	10 mL		4731	06/29/16 12:44	CPM	TAL RCH

Client Sample ID: Lab Control Sample

Lab Sample ID: LCS 300-4732/6

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	10 mL		4732	06/29/16 12:44	CPM	TAL RCH

Client Sample ID: Method Blank

Lab Sample ID: MB 300-4726/3

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	7196A		1			4726	06/28/16 17:00	RLC	TAL RCH

Client Sample ID: Method Blank

Lab Sample ID: MB 300-4731/5

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	10 mL		4731	06/29/16 12:29	CPM	TAL RCH

Lab Chronicle

Client: CH2M Hill Plateau Remediation Company  
 Project/Site: F13-002

TestAmerica Job ID: 300-3376-1  
 SDG: WC1209

**Client Sample ID: Method Blank**

**Lab Sample ID: MB 300-4732/5**

Date Collected: N/A  
 Date Received: N/A

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	10 mL		4732	06/29/16 12:29	CPM	TAL RCH

**Client Sample ID: B35K13**

**Lab Sample ID: 300-3376-1 MS**

Date Collected: 06/28/16 12:10  
 Date Received: 06/28/16 14:20

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	7196A		1		3.0 mL	4726	06/28/16 17:01	RLC	TAL RCH

**Client Sample ID: Matrix Spike**

**Lab Sample ID: 300-3378-A-7 MS**

Date Collected: 06/28/16 09:33  
 Date Received: 06/28/16 14:20

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	10 mL		4731	06/29/16 13:14	CPM	TAL RCH
Total/NA	Analysis	300.0		2	10 mL		4732	06/29/16 13:14	CPM	TAL RCH
Total/NA	Analysis	300.0		5	10 mL		4732	06/29/16 15:45	CPM	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: F13-002

TestAmerica Job ID: 300-3376-1  
SDG: WC1209

Method	Method Description	Protocol	Laboratory
300.0	Anions, Ion Chromatography	MCAWW	TAL RCH
7196A	Chromium, Hexavalent	SW846	TAL RCH

**Protocol References:**

MCAWW = "Methods For Chemical Analysis Of Water And Wastes", EPA-600/4-79-020, March 1983 And Subsequent Revisions.  
SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

**Laboratory References:**

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



July 13, 2016

### Sample Summary

Client: CH2M Hill Plateau Remediation Company  
Project/Site: F13-002

TestAmerica Job ID: 300-3376-1  
SDG: WC1209

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
300-3376-1	B35K13	Water	06/28/16 12:10	06/28/16 14:20
300-3376-2	B35JT9	Water	06/28/16 12:30	06/28/16 14:20
300-3376-3	B35K14	Water	06/28/16 12:10	06/28/16 14:20
300-3376-4	B35JV0	Water	06/28/16 12:30	06/28/16 14:20

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Login Sample Receipt Checklist

Client: CH2M Hill Plateau Remediation Company

Job Number: 300-3376-1

SDG Number: WC1209

Login Number: 3376

List Number: 1

Creator: Bock, Julie A

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.	True	
Residual Chlorine Checked.	N/A	

