

May 16, 2016

# TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

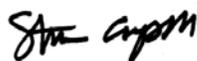
## ANALYTICAL REPORT

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

TestAmerica Job ID: 300-3040-1  
TestAmerica Sample Delivery Group: WC1065  
Client Project/Site: F16-025

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

Attn: CPP Sample Management



Authorized for release by:  
5/16/2016 11:23:50 AM  
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*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: F16-025

TestAmerica Job ID: 300-3040-1  
 SDG: WC1065

Qualifiers

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.
□	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)



**May 16, 2016**  
**Case Narrative**

Client: CH2M Hill Plateau Remediation Company  
Project/Site: F16-025

TestAmerica Job ID: 300-3040-1  
SDG: WC1065

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**Job ID: 300-3040-1**

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**Laboratory: TestAmerica Richland**

**Narrative**

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**Job Narrative**  
**300-3040-1**

**Comments**

No additional comments.

**Receipt**

The sample was received on 5/12/2016 12:50 PM; the sample arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 10.1° C.

**General Chemistry**

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

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CH2M Hill Plateau Remediation Company		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST		FIG-025-001		PAGE 1 OF 1	
COLLECTOR <i>Wingfield</i>	COMPANY CONTACT TODAK, D	TELEPHONE NO. 376-6427	PROJECT COORDINATOR TODAK, D	PRICE CODE 1A	DATA TURNAROUND 24 Hours / 15 Days	ORIGINAL	
SAMPLING LOCATION C9413, I-001	PROJECT DESIGNATION FY2016 200-UP-1 Remedial Action Wells Sampling and Analysis - Water	FIELD LOGBOOK NO. <i>HOPE-N-CYS-3/69</i>	ACTUAL SAMPLE DEPTH <i>274</i>	SAF NO. F16-025	AIR QUALITY <input type="checkbox"/>	METHOD OF SHIPMENT GOVERNMENT VEHICLE	
ICE CHEST NO.	OFFSITE PROPERTY NO.	COA 303979	BILL OF LADING/AIR BILL NO.				
SHIPPED TO TestAmerica Incorporated, Richland							

MATRIX*	POSSIBLE SAMPLE HAZARDS/ REMARKS	PRESERVATION	Cool <=6C
		HOLDING TIME	24 Hours
SPECIAL HANDLING AND/OR STORAGE		TYPE OF CONTAINER	ag
		NO. OF CONTAINER(S)	1
SAMPLE NO.	MATRIX*	VOLUME	60ml
		SAMPLE DATE	7196 CR6; COMMON;
B34TC8	WATER	5-12-16	1050

**FILTER**



300-3040 CO

CHAIN OF POSSESSION	SIGN/ PRINT NAMES	SPECIAL INSTRUCTIONS
RELINQUISHED BY/REMOVED FROM <i>Wingfield</i>	DATE/TIME 5-12-16 11:55	RECEIVED BY/STORED IN <i>Troy Bacon</i>
RELINQUISHED BY/REMOVED FROM <i>Troy Bacon</i>	DATE/TIME MAY 12 2016 12:55	RECEIVED BY/STORED IN <i>Wingfield</i>
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN
LABORATORY SECTION	RECEIVED BY	TITLE
FINAL SAMPLE DISPOSITION	DISPOSAL METHOD	DATE/TIME

May 16, 2016

### Detection Summary

Client: CH2M Hill Plateau Remediation Company  
Project/Site: F16-025

TestAmerica Job ID: 300-3040-1  
SDG: WC1065

Client Sample ID: B34TC8

Lab Sample ID: 300-3040-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Cr (VI)	0.011		0.0040	0.0015	mg/L	1		7196A	Total/NA

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This Detection Summary does not include radiochemical test results.

TestAmerica Richland

Client Sample Results

Client: CH2M Hill Plateau Remediation Company  
Project/Site: F16-025

TestAmerica Job ID: 300-3040-1  
SDG: WC1065

Client Sample ID: B34TC8

Lab Sample ID: 300-3040-1

Date Collected: 05/12/16 10:50

Matrix: Water

Date Received: 05/12/16 12:50

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cr (VI)	0.011		0.0040	0.0015	mg/L			05/12/16 14:07	1

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QC Sample Results

Client: CH2M Hill Plateau Remediation Company  
 Project/Site: F16-025

TestAmerica Job ID: 300-3040-1  
 SDG: WC1065

Method: 7196A - Chromium, Hexavalent

Lab Sample ID: MB 300-4148/3  
 Matrix: Water  
 Analysis Batch: 4148

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cr (VI)	0.0015	U	0.0040	0.0015	mg/L			05/12/16 14:04	1

Lab Sample ID: LCS 300-4148/4  
 Matrix: Water  
 Analysis Batch: 4148

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

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

Lab Sample ID: 300-3040-1 MS  
 Matrix: Water  
 Analysis Batch: 4148

Client Sample ID: B34TC8  
 Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Cr (VI)	0.011		0.0500	0.0596		mg/L		98	75 - 125

Lab Sample ID: 300-3040-1 DU  
 Matrix: Water  
 Analysis Batch: 4148

Client Sample ID: B34TC8  
 Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Cr (VI)	0.011		0.0118		mg/L		12	20

QC Association Summary

Client: CH2M Hill Plateau Remediation Company  
Project/Site: F16-025

TestAmerica Job ID: 300-3040-1  
SDG: WC1065

General Chemistry

Analysis Batch: 4148

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
300-3040-1	B34TC8	Total/NA	Water	7196A	
300-3040-1 DU	B34TC8	Total/NA	Water	7196A	
300-3040-1 MS	B34TC8	Total/NA	Water	7196A	
LCS 300-4148/4	Lab Control Sample	Total/NA	Water	7196A	
MB 300-4148/3	Method Blank	Total/NA	Water	7196A	

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Lab Chronicle

Client: CH2M Hill Plateau Remediation Company  
 Project/Site: F16-025

TestAmerica Job ID: 300-3040-1  
 SDG: WC1065

**Client Sample ID: B34TC8**

Date Collected: 05/12/16 10:50

Date Received: 05/12/16 12:50

**Lab Sample ID: 300-3040-1**

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			4148	05/12/16 14:07	RLC	TAL RCH

**Client Sample ID: B34TC8**

Date Collected: 05/12/16 10:50

Date Received: 05/12/16 12:50

**Lab Sample ID: 300-3040-1 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			4148	05/12/16 14:07	RLC	TAL RCH

**Client Sample ID: Lab Control Sample**

Date Collected: N/A

Date Received: N/A

**Lab Sample ID: LCS 300-4148/4**

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	7196A		1			4148	05/12/16 14:04	RLC	TAL RCH

**Client Sample ID: Method Blank**

Date Collected: N/A

Date Received: N/A

**Lab Sample ID: MB 300-4148/3**

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	7196A		1			4148	05/12/16 14:04	RLC	TAL RCH

**Client Sample ID: B34TC8**

Date Collected: 05/12/16 10:50

Date Received: 05/12/16 12:50

**Lab Sample ID: 300-3040-1 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	7196A		1		3.0 mL	4148	05/12/16 14:04	RLC	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: F16-025

TestAmerica Job ID: 300-3040-1  
SDG: WC1065

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Method	Method Description	Protocol	Laboratory
7196A	Chromium, Hexavalent	SW846	TAL RCH

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**Protocol References:**

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



May 16, 2016

### Sample Summary

Client: CH2M Hill Plateau Remediation Company  
Project/Site: F16-025

TestAmerica Job ID: 300-3040-1  
SDG: WC1065

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Lab Sample ID	Client Sample ID	Matrix	Collected	Received
300-3040-1	B34TC8	Water	05/12/16 10:50	05/12/16 12:50

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Login Sample Receipt Checklist

Client: CH2M Hill Plateau Remediation Company

Job Number: 300-3040-1

SDG Number: WC1065

Login Number: 3040

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	

