

September 15, 2015

# 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: 300-675-1  
TestAmerica Sample Delivery Group: WC0302  
Client Project/Site: CH2M Hill Chemical

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

Attn: CPP Sample Management



Authorized for release by:  
9/15/2015 1:01:26 PM

Whitney Ritari, Project Manager I  
(509)375-3131 ext164  
[whitney.ritari@testamericainc.com](mailto:whitney.ritari@testamericainc.com)

### LINKS

Review your project  
results through  
**TotalAccess**

Have a Question?



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

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

*The laboratory is accredited to EPA 7196A in Solid and Chemical Materials, per Washington State Department of Ecology this is approved for non-discharge water samples. The sample/ sample duplicate RPD agreement is not applicable if one or both results are elss than five times the MDL.*



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## 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)

Client: CH2M Hill Plateau Remediation Company  
Project/Site: CH2M Hill Chemical

TestAmerica Job ID: 300-675-1  
SDG: WC0302

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**Job ID: 300-675-1**

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**Laboratory: TestAmerica Richland**

**Narrative**

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**Job Narrative  
300-675-1**

**Comments**

No additional comments.

**Receipt**

The sample was received on 9/1/2015 1:00 PM; the sample arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 7.9° 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		F15-028-046	PAGE 1 OF 1
COLLECTOR D.W. Broderick/CHPRC	COMPANY CONTACT TODAK, D.	TELEPHONE NO. 376-6427	PROJECT COORDINATOR TODAK, D.	PRICE CODE 7H	DATA TURNAROUND 30 Days / 30 Days
SAMPLING LOCATION C8797, Interval W-4	PROJECT DESIGNATION 100-KE Characterization Boreholes - Water	FIELD LOGBOOK NO. HAF-N-1045-3/22	ACTUAL SAMPLE DEPTH 95'	SAF NO. F15-028	<input type="checkbox"/>
ICE CHEST NO. N/A	OFFSITE PROPERTY NO. N/A	COA 303581	BILL OF LADING/AIR BILL NO. N/A	METHOD OF SHIPMENT GOVERNMENT VEHICLE	<b>ORIGINAL</b>
SHIPPED TO TestAmerica Incorporated, Richland					

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.	PRESERVATION Cool <=6C
A=Air		HOLDING TIME 24 Hours
DL=Drum		TYPE OF CONTAINER ag
Liquids		NO. OF CONTAINER(S) 1
DS=Drum		VOLUME 60ml
Solids		SAMPLE ANALYSIS 7196 CS6: COMMON
L=Liquid		
O=Oil		
S=Soil		
SE=Sediment		
T=Tissue		
V=Vegetation		
W=Water		
WI=Wipe		
X=Other		

SPECIAL HANDLING AND/OR STORAGE  
RADIOACTIVE-TEL-892334  
JCH 9/1/15



300-675 COC

WCC0302

September 15, 2015

CHAIN OF POSSESSION	SIGN/ PRINT NAMES	SPECIAL INSTRUCTIONS
RELINQUISHED BY/REMOVED FROM D.W. Broderick/CHPRC	RECEIVED BY/STORED IN F.M. HARRIS/CHPRC	TRVL-15-112
DATE/TIME SEP 01 2015 10:15	DATE/TIME SEP 01 2015 10:15	
RELINQUISHED BY/REMOVED FROM F.M. HARRIS/CHPRC	RECEIVED BY/STORED IN J. Friesz, TARI	
DATE/TIME SEP 01 2015 13:00	DATE/TIME SEP 01 2015 13:00	
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 8/19/2015 FSR ID = FSR1224 TRVL NUM = TRVL-15-112 A-6003-618 (REV 2)

Client: CH2M Hill Plateau Remediation Company  
Project/Site: CH2M Hill Chemical

TestAmerica Job ID: 300-675-1  
SDG: WC0302

**Client Sample ID: B31TX5**

**Lab Sample ID: 300-675-1**

No Detections.

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This Detection Summary does not include radiochemical test results.

September 15, 2015  
Client Sample Results

Client: CH2M Hill Plateau Remediation Company  
Project/Site: CH2M Hill Chemical

TestAmerica Job ID: 300-675-1  
SDG: WC0302

**Client Sample ID: B31TX5**  
**Date Collected: 09/01/15 09:04**  
**Date Received: 09/01/15 13:00**

**Lab Sample ID: 300-675-1**  
**Matrix: Water**

**General Chemistry**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cr (VI)	0.0015	U	0.0040	0.0015	mg/L			09/01/15 14:36	1

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Client: CH2M Hill Plateau Remediation Company  
 Project/Site: CH2M Hill Chemical

TestAmerica Job ID: 300-675-1  
 SDG: WC0302

**Method: 7196A - Chromium, Hexavalent**

**Lab Sample ID: MB 300-962/3**  
**Matrix: Water**  
**Analysis Batch: 962**

**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	-		09/01/15 14:32	1

**Lab Sample ID: LCS 300-962/4**  
**Matrix: Water**  
**Analysis Batch: 962**

**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	0.256		mg/L	-	102	85 - 115

**Lab Sample ID: 300-675-1 MS**  
**Matrix: Water**  
**Analysis Batch: 962**

**Client Sample ID: B31TX5**  
**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Cr (VI)	0.0015	U	0.0501	0.0517		mg/L	-	103	85 - 115

**Lab Sample ID: 300-675-1 DU**  
**Matrix: Water**  
**Analysis Batch: 962**

**Client Sample ID: B31TX5**  
**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Cr (VI)	0.0015	U	0.0015	U	mg/L	-	NC	20

September 15, 2015  
QC Association Summary

Client: CH2M Hill Plateau Remediation Company  
Project/Site: CH2M Hill Chemical

TestAmerica Job ID: 300-675-1  
SDG: WC0302

General Chemistry

Analysis Batch: 962

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
300-675-1	B31TX5	Total/NA	Water	7196A	
300-675-1 DU	B31TX5	Total/NA	Water	7196A	
300-675-1 MS	B31TX5	Total/NA	Water	7196A	
LCS 300-962/4	Lab Control Sample	Total/NA	Water	7196A	
MB 300-962/3	Method Blank	Total/NA	Water	7196A	

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Client: CH2M Hill Plateau Remediation Company  
Project/Site: CH2M Hill Chemical

TestAmerica Job ID: 300-675-1  
SDG: WC0302

**Client Sample ID: B31TX5**  
**Date Collected: 09/01/15 09:04**  
**Date Received: 09/01/15 13:00**

**Lab Sample ID: 300-675-1**  
**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			962	09/01/15 14:36	AMC	TAL RCH

**Client Sample ID: B31TX5**  
**Date Collected: 09/01/15 09:04**  
**Date Received: 09/01/15 13:00**

**Lab Sample ID: 300-675-1 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			962	09/01/15 14:36	AMC	TAL RCH

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

**Lab Sample ID: LCS 300-962/4**  
**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			962	09/01/15 14:33	AMC	TAL RCH

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

**Lab Sample ID: MB 300-962/3**  
**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			962	09/01/15 14:32	AMC	TAL RCH

**Client Sample ID: B31TX5**  
**Date Collected: 09/01/15 09:04**  
**Date Received: 09/01/15 13:00**

**Lab Sample ID: 300-675-1 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	962	09/01/15 14:33	AMC	TAL RCH

**Laboratory References:**

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

Client: CH2M Hill Plateau Remediation Company  
Project/Site: CH2M Hill Chemical

TestAmerica Job ID: 300-675-1  
SDG: WC0302

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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



Client: CH2M Hill Plateau Remediation Company  
Project/Site: CH2M Hill Chemical

TestAmerica Job ID: 300-675-1  
SDG: WC0302

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Lab Sample ID	Client Sample ID	Matrix	Collected	Received
300-675-1	B31TX5	Water	09/01/15 09:04	09/01/15 13:00

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Login Sample Receipt Checklist

Client: CH2M Hill Plateau Remediation Company

Job Number: 300-675-1  
SDG Number: WC0302

**Login Number: 675**  
**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.	True	
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.	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	

