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: 300-1709-1
TestAmerica Sample Delivery Group: WC0645
Client Project/Site: S16-011

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

Attn: CPP Sample Management

Authorized for release by:
12/8/2015 9:17:58 AM
Steven Campbell, Quality Assurance Assistant
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Designee for

Whitney Ritari, Project Manager I
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LINKS

Review your project results through TotalAccess

Have a Question? Ask The Expert

Visit us at: 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 desingee 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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Definitions/Glossary

Client: CH2M Hill Plateau Remediation Company
Project/Site: S16-011

TestAmerica Job ID: 300-1709-1
SDG: WC0645

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)

Case Narrative

Job ID: 300-1709-1

Laboratory: TestAmerica Richland

Narrative

Job Narrative
300-1709-1

Comments
No additional comments.

Receipt
The samples were received on 12/1/2015 8:55 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 2.9º C.

General Chemistry
Method 7196A: The following samples were received with less than 2 days remaining on the holding time or less than one shift (8 hours) remaining on a test with a holding time of 48 hours or less. As such, the laboratory had insufficient time remaining to perform the analysis within holding time: B336M3 (300-1709-1) and B336M1 (300-1709-2). For more information refer to SIR attached to report.

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. # S16-011-276 Page 1 of 1

Collector	D.J. Woehle/CHPRC	Contact/Requester	Karen Waters-Husted	Telephone No.	509-376-4650
SAF No.	S16-011	Sampling Origin	Hanford Site	Purchase Order/Charge Code	300071
Project Title	SURV, NOVEMBER 2016	Logbook No.	HNF-N-506 82/13	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	SURV	Priority:	30 Days PRIORITY	Offsite Property No.	N/A

POSSIBLE SAMPLE HAZARDS/REMARKS

** ** Contains Radioactive Material at concentrations that are not regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 458.1

SPECIAL INSTRUCTIONS **Hold Time** Total Activity Exemption: Yes ☑ No ☐

Sample No.	Filter	*	Date	Time	No/Type Container	Sample Analysis	Holding Time	Preservative
B336M3	Y	W	11-30-15	1349	1x60-mL aG	7196_CR6: COMMON	24 Hours	Cool <=6C
B336M1	N	W	11-30-15	1349	1x60-mL aG	7196_CR6: COMMON	24 Hours	Cool <=6C

300-1709 COC

1709

SDG# W00645

Relinquished By	Print	Sign	Date/Time	Received By	Print	Sign	Date/Time
D.J. Woehle/CHPRC			NOV 30 2015 1505	SSU #1			NOV 30 2015 1505
~~T.L. BAGGI/CHPRC~~			~~NOV 30 2015~~ DEC 01 2015 0730	CHRIS FULTON CHPRC			~~NOV 30 2015~~ DEC 01 2015 0730
CHRIS FULTON CHPRC			DEC 01 2015 0855	J. Friesz, TARL			DEC 01 2015 0855
Relinquished By			Date/Time	Received By			Date/Time

Matrix *

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

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

December 08, 2015

SAMPLE ISSUE RESOLUTION

SIR NUM	SIR16-123
REV NUM	0
DATE INITIATED	12/7/2015

SAMPLE EVENT INFORMATION

SAF NUM(S)	S16-011
OPERABLE UNIT(S)	
PROJECT(S)	SURV16
SAMPLE EVENT TITLE(S)	SURV16
LABORATORY	TestAmerica Incorporated, Richland

SAMPLING INFORMATION

NUMBER OF SAMPLES	2
SAMPLE NUMBERS	B336M1, B336M3
SAMPLE MATRIX	WATER
COLLECTION DATE	11/30/2015 - 11/30/2015
SDG NUM	WC0645

ISSUE BACKGROUND

CLASS	Field Sampling Issue
TYPE	Analysis Hold Time Exceeded
DESCRIPTION	The samples listed above were received with less than half the remaining on the hold time. As such the laboratory had insufficient time remaining to perform the analysis within analytical hold time.

DISPOSITION

DESCRIPTION	PROPOSED DISPOSITION: Initiate SIR, report results and include hold time comment in the case narrative
JUSTIFICATION	ACCEPTED DISPOSITION: Accept the proposed resolution.

SUBMITTED BY: Steven Campbell/TARL DATE: 12/7/15
ACCEPTED BY: Karen Waters-Husted/CHPRC DATE: 12/8/15

Detection Summary

Client: CH2M Hill Plateau Remediation Company
Project/Site: S16-011

TestAmerica Job ID: 300-1709-1
SDG: WC0645

Client Sample ID: B336M3 — Lab Sample ID: 300-1709-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Cr (VI)	0.0093		0.0040	0.0015	mg/L	1		7196A	Total/NA

Client Sample ID: B336M1 — Lab Sample ID: 300-1709-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Cr (VI)	0.0093		0.0040	0.0015	mg/L	1		7196A	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample Results

Client: CH2M Hill Plateau Remediation Company
Project/Site: S16-011

TestAmerica Job ID: 300-1709-1
SDG: WC0645

Client Sample ID: B336M3

Lab Sample ID: 300-1709-1
Date Collected: 11/30/15 13:49
Matrix: Water
Date Received: 12/01/15 08:55

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cr (VI)	0.0093		0.0040	0.0015	mg/L			12/01/15 14:18	1

Client Sample ID: B336M1

Lab Sample ID: 300-1709-2
Date Collected: 11/30/15 13:49
Matrix: Water
Date Received: 12/01/15 08:55

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cr (VI)	0.0093		0.0040	0.0015	mg/L			12/01/15 14:18	1

QC Sample Results

Client: CH2M Hill Plateau Remediation Company
Project/Site: S16-011

TestAmerica Job ID: 300-1709-1
SDG: WC0645

Method: 7196A - Chromium, Hexavalent

Lab Sample ID: MB 300-2207/3 — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 2207

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cr (VI)	0.0015	U	0.0040	0.0015	mg/L			12/01/15 14:15	1

Lab Sample ID: LCS 300-2207/4 — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 2207

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Cr (VI)			0.250	0.263		mg/L		105	80 - 120		

Lab Sample ID: 300-1709-1 MS — **Client Sample ID: B336M3**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 2207

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
Cr (VI)	0.0093		0.0500	0.0538		mg/L		89	85 - 115		

Lab Sample ID: 300-1709-1 DU — **Client Sample ID: B336M3**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 2207

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Cr (VI)	0.0093			0.00920		mg/L				1	20

QC Association Summary

Client: CH2M Hill Plateau Remediation Company
Project/Site: S16-011

TestAmerica Job ID: 300-1709-1
SDG: WC0645

General Chemistry

Analysis Batch: 2207

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
300-1709-1	B336M3	Total/NA	Water	7196A	
300-1709-1 DU	B336M3	Total/NA	Water	7196A	
300-1709-1 MS	B336M3	Total/NA	Water	7196A	
300-1709-2	B336M1	Total/NA	Water	7196A	
LCS 300-2207/4	Lab Control Sample	Total/NA	Water	7196A	
MB 300-2207/3	Method Blank	Total/NA	Water	7196A	

Lab Chronicle

Client: CH2M Hill Plateau Remediation Company
Project/Site: S16-011

TestAmerica Job ID: 300-1709-1
SDG: WC0645

Client Sample ID: B336M3 — Lab Sample ID: 300-1709-1

Date Collected: 11/30/15 13:49 — **Matrix: Water**
Date Received: 12/01/15 08:55

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			2207	12/01/15 14:18	AMC	TAL RCH

Client Sample ID: B336M1 — Lab Sample ID: 300-1709-2

Date Collected: 11/30/15 13:49 — **Matrix: Water**
Date Received: 12/01/15 08:55

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			2207	12/01/15 14:18	AMC	TAL RCH

Client Sample ID: B336M3 — Lab Sample ID: 300-1709-1 DU

Date Collected: 11/30/15 13:49 — **Matrix: Water**
Date Received: 12/01/15 08:55

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			2207	12/01/15 14:18	AMC	TAL RCH

Client Sample ID: Lab Control Sample — Lab Sample ID: LCS 300-2207/4

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			2207	12/01/15 14:15	AMC	TAL RCH

Client Sample ID: Method Blank — Lab Sample ID: MB 300-2207/3

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			2207	12/01/15 14:15	AMC	TAL RCH

Client Sample ID: B336M3 — Lab Sample ID: 300-1709-1 MS

Date Collected: 11/30/15 13:49 — **Matrix: Water**
Date Received: 12/01/15 08:55

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	2207	12/01/15 14:15	AMC	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: S16-011

TestAmerica Job ID: 300-1709-1
SDG: WC0645

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

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

Sample Summary

Client: CH2M Hill Plateau Remediation Company
Project/Site: S16-011

TestAmerica Job ID: 300-1709-1
SDG: WC0645

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
300-1709-1	B336M3	Water	11/30/15 13:49	12/01/15 08:55
300-1709-2	B336M1	Water	11/30/15 13:49	12/01/15 08:55

Login Sample Receipt Checklist

Client: CH2M Hill Plateau Remediation Company

Job Number: 300-1709-1
SDG Number: WC0645

Login Number: 1709
List Number: 1
Creator: Friesz, Jordan D

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.	N/A	
Residual Chlorine Checked.	N/A	