

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

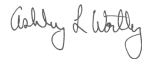
ANALYTICAL REPORT

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

TestAmerica Job ID: 300-6813-1
TestAmerica Sample Delivery Group: WC2729
Client Project/Site: S18-002
Revision: 1

For:
CH2M Hill Plateau Remediation Company
825 Jadwin Avenue
Richland, Washington 99352

Attn: CPP Sample Management



Authorized for release by:
3/22/2018 11:13:05 AM

Ashley Worthy, Project Manager I
(509)375-3131
ashley.worthy@testamericainc.com

LINKS

Review your project results through
TotalAccess

Have a Question?



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 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.

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Client: CH2M Hill Plateau Remediation Company
 Project/Site: S18-002

TestAmerica Job ID: 300-6813-1
 SDG: WC2729

Qualifiers

General Chemistry

Qualifier	Qualifier Description
B	Estimated result. Result is less than the RL, but greater than MDL
y	Duplicate analysis not within control limits.
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	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
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 (Radiochemistry)
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: S18-002

TestAmerica Job ID: 300-6813-1
SDG: WC2729

Job ID: 300-6813-1

Laboratory: TestAmerica Richland

Narrative

Job Narrative
300-6813-1

Comments

No additional comments.

Receipt

The samples were received on 2/22/2018 1:10 PM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 4.9° C.

Receipt Exceptions

The incorrect SDG name was reported.

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	C.O.C.# S18-002-329
		Page 1 of 1

Collector: Juan Aguilar ICMPC	Contact/Requester: Karen Waters-Husted	Telephone No.: 509-376-4650
SAF No.: S18-002	Sampling Origin: Hanford Site	Purchase Order/Charge Code: 300071
Project Title: Sitewide Surv, February 2018	Logbook No.: HNF-N-506- 98145	Ice Chest No.: N/A
Shipped To (Lab): TestAmerica Incorporated, Rich	Method of Shipment: GOVERNMENT VEHICLE	Bill of Lading/Air Bill No.: N/A
Protocol: SURV	Priority: 30 Days	Offsite Property No.: N/A

POSSIBLE SAMPLE HAZARDS/REMARK
 ** ** 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
 N/A

Sample No.	Filter	*	Date	Time	No/Type Container	Sample Analysis	Holding Time	Preservative
B3H586	N	W	2-22-18	1128	1x60-mL aG	7196_CR6: COMMON	24 Hours	Cool <=6C
B3H587	Y	W	2-22-18	1128	1x60-mL aG	7196_CR6: COMMON	24 Hours	Cool <=6C

03/22/2018

LP813
 W02729



300-6813 COC

Relinquished By: Juan Aguilar <i>Juan Aguilar</i> Print First and Last Name Signature Date/Time FEB 22 2018 1310	Received By: B. Jorgenson, TARL <i>B. Jorgenson</i> Print First and Last Name Signature Date/Time FEB 22 2018 1310	Matrix * S = Soil DS = Drum Solids SE = Sediment DL = Drum Liquid SO = Solid T = Tissue SL = Sludge WI = Wipe W = Water L = Liquid O = Oil V = Vegetation A = Air X = Other	
Relinquished By:	Received By:		
Relinquished By:	Received By:		
Relinquished By:	Received By:		
FINAL SAMPLE DISPOSITION	Disposal Method (e.g., Return to customer, per lab procedure, used in process):	Disposed By:	Date/Time:

CH2M Hill Plateau Remediation Company	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	C.O.C.# S18-002-334
		Page 1 of 1

REV 1

Collector: Juan Aguilar ICHPRC	Contact/Requester: Karen Waters-Husted	Telephone No.: 509-376-4650
SAF No.: S18-002	Sampling Origin: Hanford Site	Purchase Order/Charge Code: 300071
Project Title: Sitewide Surv, February 2018	Logbook No.: HNF-N-506-98145	Ice Chest No.: N/A
Shipped To (Lab): TestAmerica Incorporated, Rich	Method of Shipment GOVERNMENT VEHICLE	Bill of Lading/Air Bill No.: N/A
Protocol SURV	Priority: 30 Days	Offsite Property No.: N/A

POSSIBLE SAMPLE HAZARDS/REMARK ** ** 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 N/A
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Sample No.	Filter	*	Date	Time	No/Type Container	Sample Analysis	Holding Time	Preservative
B3H698	Y	W	2-22-18	1157	1x60-mL aG	7196_CR6: COMMON	24 Hours	Cool <=6C
B3H688	N	W	2-22-18	1157	1x60-mL aG	7196_CR6: COMMON	24 Hours	Cool <=6C

03/22/2018

6813
WC2729

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Relinquished By: Juan Aguilar ICHPRC Print First and Last Name Signature Date/Time FEB 22 2018 1310	Received By: B. Jorgenson, TARL Print First and Last Name Signature Date/Time FEB 22 2018 1310	Matrix * S = Soil DS = Drum Solids SE = Sediment DL = Drum Liquid SO = Solid T = Tissue SL = Sludge WI = Wipe W = Water L = Liquid O = Oil V = Vegetation A = Air X = Other
Relinquished By:	Received By:	
Relinquished By:	Received By:	
Relinquished By:	Received By:	
FINAL SAMPLE DISPOSITION	Disposal Method (e.g., Return to customer, per lab procedure, used in process):	Disposed By:
		Date/Time:

03/22/2018
Detection Summary

REV.1

Client: CH2M Hill Plateau Remediation Company
Project/Site: S18-002

TestAmerica Job ID: 300-6813-1
SDG: WC2729

Client Sample ID: B3H586

Lab Sample ID: 300-6813-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Cr (VI)	0.021		0.0040	0.0015	mg/L	1		7196A	Total/NA

Client Sample ID: B3H587

Lab Sample ID: 300-6813-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Cr (VI)	0.021		0.0040	0.0015	mg/L	1		7196A	Total/NA

Client Sample ID: B3H698

Lab Sample ID: 300-6813-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Cr (VI)	0.0077		0.0040	0.0015	mg/L	1		7196A	Total/NA

Client Sample ID: B3H688

Lab Sample ID: 300-6813-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Cr (VI)	0.0077		0.0040	0.0015	mg/L	1		7196A	Total/NA

This Detection Summary does not include radiochemical test results.

TestAmerica Richland

03/22/2018
Client Sample Results

REV.1

Client: CH2M Hill Plateau Remediation Company
 Project/Site: S18-002

TestAmerica Job ID: 300-6813-1
 SDG: WC2729

Client Sample ID: B3H586
Date Collected: 02/22/18 11:28
Date Received: 02/22/18 13:10

Lab Sample ID: 300-6813-1
Matrix: Water

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cr (VI)	0.021		0.0040	0.0015	mg/L			02/22/18 15:47	1

Client Sample ID: B3H587
Date Collected: 02/22/18 11:28
Date Received: 02/22/18 13:10

Lab Sample ID: 300-6813-2
Matrix: Water

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cr (VI)	0.021		0.0040	0.0015	mg/L			02/22/18 15:47	1

Client Sample ID: B3H698
Date Collected: 02/22/18 11:57
Date Received: 02/22/18 13:10

Lab Sample ID: 300-6813-3
Matrix: Water

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cr (VI)	0.0077		0.0040	0.0015	mg/L			02/22/18 15:50	1

Client Sample ID: B3H688
Date Collected: 02/22/18 11:57
Date Received: 02/22/18 13:10

Lab Sample ID: 300-6813-4
Matrix: Water

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cr (VI)	0.0077		0.0040	0.0015	mg/L			02/22/18 15:50	1

Client: CH2M Hill Plateau Remediation Company
Project/Site: S18-002

TestAmerica Job ID: 300-6813-1
SDG: WC2729

Method: 7196A - Chromium, Hexavalent

Lab Sample ID: MB 300-10485/31
Matrix: Water
Analysis Batch: 10485

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	-		02/22/18 15:41	1

Lab Sample ID: LCS 300-10485/32
Matrix: Water
Analysis Batch: 10485

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	0.260		mg/L	-	104	80 - 120

Lab Sample ID: 300-6816-A-1 MS
Matrix: Water
Analysis Batch: 10485

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
Cr (VI)	0.0023	B y	0.0501	0.0535		mg/L	-	102	75 - 125

Lab Sample ID: 300-6816-A-1 DU
Matrix: Water
Analysis Batch: 10485

Client Sample ID: Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Cr (VI)	0.0023	B y	0.00300	B y	mg/L	-	26	20

03/22/2018
QC Association Summary

REV.1

Client: CH2M Hill Plateau Remediation Company
Project/Site: S18-002

TestAmerica Job ID: 300-6813-1
SDG: WC2729

General Chemistry

Analysis Batch: 10485

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
300-6813-1	B3H586	Total/NA	Water	7196A	
300-6813-2	B3H587	Total/NA	Water	7196A	
300-6813-3	B3H698	Total/NA	Water	7196A	
300-6813-4	B3H688	Total/NA	Water	7196A	
MB 300-10485/31	Method Blank	Total/NA	Water	7196A	
LCS 300-10485/32	Lab Control Sample	Total/NA	Water	7196A	
300-6816-A-1 MS	Matrix Spike	Total/NA	Water	7196A	
300-6816-A-1 DU	Duplicate	Total/NA	Water	7196A	

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Client: CH2M Hill Plateau Remediation Company
Project/Site: S18-002

TestAmerica Job ID: 300-6813-1
SDG: WC2729

Client Sample ID: B3H586
Date Collected: 02/22/18 11:28
Date Received: 02/22/18 13:10

Lab Sample ID: 300-6813-1
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			10485	02/22/18 15:47	TRH	TAL RCH

Client Sample ID: B3H587
Date Collected: 02/22/18 11:28
Date Received: 02/22/18 13:10

Lab Sample ID: 300-6813-2
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			10485	02/22/18 15:47	TRH	TAL RCH

Client Sample ID: B3H698
Date Collected: 02/22/18 11:57
Date Received: 02/22/18 13:10

Lab Sample ID: 300-6813-3
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			10485	02/22/18 15:50	TRH	TAL RCH

Client Sample ID: B3H688
Date Collected: 02/22/18 11:57
Date Received: 02/22/18 13:10

Lab Sample ID: 300-6813-4
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			10485	02/22/18 15:50	TRH	TAL RCH

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

Lab Sample ID: MB 300-10485/31
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			10485	02/22/18 15:41	TRH	TAL RCH

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

Lab Sample ID: LCS 300-10485/32
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			10485	02/22/18 15:41	TRH	TAL RCH

Client: CH2M Hill Plateau Remediation Company
Project/Site: S18-002

TestAmerica Job ID: 300-6813-1
SDG: WC2729

Client Sample ID: Matrix Spike

Lab Sample ID: 300-6816-A-1 MS

Date Collected: 02/22/18 11:57

Matrix: Water

Date Received: 02/22/18 14:10

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			10485	02/22/18 15:41	TRH	TAL RCH

Client Sample ID: Duplicate

Lab Sample ID: 300-6816-A-1 DU

Date Collected: 02/22/18 11:57

Matrix: Water

Date Received: 02/22/18 14:10

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			10485	02/22/18 15:42	TRH	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: S18-002

TestAmerica Job ID: 300-6813-1
SDG: WC2729

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



Client: CH2M Hill Plateau Remediation Company
Project/Site: S18-002

TestAmerica Job ID: 300-6813-1
SDG: WC2729

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
300-6813-1	B3H586	Water	02/22/18 11:28	02/22/18 13:10
300-6813-2	B3H587	Water	02/22/18 11:28	02/22/18 13:10
300-6813-3	B3H698	Water	02/22/18 11:57	02/22/18 13:10
300-6813-4	B3H688	Water	02/22/18 11:57	02/22/18 13:10

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Login Sample Receipt Checklist

Client: CH2M Hill Plateau Remediation Company

Job Number: 300-6813-1

SDG Number: WC2729

Login Number: 6813**List Number: 1****Creator: Jorgenson, Briana F****List Source: TestAmerica Richland**

Question	Answer	Comment
Radioactivity wasn't checked or is \leq 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 <math><6\text{mm}</math> (1/4").	N/A	
Multiphasic samples are not present.	N/A	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	