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: 300-6364-1
TestAmerica Sample Delivery Group: WC2506
Client Project/Site: I18-002

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

Attn: CPP Sample Management

Kristine D. Allen

Authorized for release by:
11/29/2017 11:51:21 AM
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Designee for

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LINKS

Review your project results through TotalAccess

Have a Question? Ask The Expert

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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 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.

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Definitions/Glossary

Client: CH2M Hill Plateau Remediation Company
Project/Site: I18-002

TestAmerica Job ID: 300-6364-1
SDG: WC2506

Qualifiers

General Chemistry

Qualifier	Qualifier Description
U	Analyzed for but not detected.
B	Estimated result. Result is less than the RL, but greater than MDL

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	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)

Case Narrative

Client: CH2M Hill Plateau Remediation Company
Project/Site: I18-002

TestAmerica Job ID: 300-6364-1
SDG: WC2506

Job ID: 300-6364-1

Laboratory: TestAmerica Richland

Narrative

Job Narrative
300-6364-1

Comments
No additional comments.

Receipt
The samples were received on 11/10/2017 2:50 PM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 3.4º C.

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

REV.0

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CH2MHill Plateau Remediation Company	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	C.O.C.# I18-002-502 Page 1 of 1

Collector: Larry Rosane /CHPRC	**Contact/Requester:** Karen Waters-Husted	**Telephone No.:** 509-376-4650
SAF No.: I18-002	**Sampling Origin:** Hanford Site	**Purchase Order/Charge Code:** 300071
Project Title: CERCLA, NOVEMBER 2017	**Logbook No.:** HNF-N-506 95/62	**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 CERCLA	**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
B3FDT7	N	W	NOV 1 0 2017	0715	1x60-mL aG	7196_CR6: COMMON	24 Hours	Cool <=6C
B3FDT6	Y	W	NOV 1 0 2017	0715	1x60-mL aG	7196_CR6: COMMON	24 Hours	Cool <=6C

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WC2506

300-6364 COC

Relinquished By:	Received By:
Larry Rosane /CHPRC — Larry Rosane — NOV 1 0 2017 1140 (Print First and Last Name / Signature / Date/Time)	Janelle Zunker CHPRC — NOV 1 0 2017 1140 (Print First and Last Name / Signature / Date/Time)
Janelle Zunker CHPRC — NOV 1 0 2017 1230 (Print First and Last Name / Signature / Date/Time)	Jeff Lucas /CHPRC — NOV 1 0 2017 1230 (Print First and Last Name / Signature / Date/Time)
Jeff Lucas /CHPRC — NOV 1 0 2017 1450 (Print First and Last Name / Signature / Date/Time)	L. Anderson, TARL — L. Anderson — 11/10/17 1450 (Print First and Last Name / Signature / Date/Time)
Relinquished By: (Print First and Last Name / Signature / Date/Time)	Received By: (Print First and Last Name / Signature / Date/Time)

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

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

REV.0

11/29/2017 6/15

CH2MHill Plateau Remediation Company	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	C.O.C. # I18-002-503 Page 1 of 1

Collector:	Larry Rosane /CHPRC	**Contact/Requester:**	Karen Waters-Husted	**Telephone No.:**	509-376-4650
SAF No.:	I18-002	**Sampling Origin:**	Hanford Site	**Purchase Order/Charge Code:**	300071
Project Title:	CERCLA, NOVEMBER 2017	**Logbook No.:**	HNF-N-506 95/62	**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	CERCLA	**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
B3FDT4	Y	W	NOV 1 0 2017	1046	1x60-mL aG	7196_CR6: COMMON	24 Hours	Cool <=6C
B3FDT5	N	W	NOV 1 0 2017	1046	1x60-mL aG	7196_CR6: COMMON	24 Hours	Cool <=6C

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Relinquished By:	Received By:
Larry Rosane /CHPRC — Print First and Last Name; Larry Rosane — Signature; NOV 1 0 2017 1140 — Date/Time	Janelle Zunker CHPRC — Print First and Last Name; Janelle Zunker — Signature; NOV 1 0 2017 1140 — Date/Time
Janelle Zunker CHPRC — Print First and Last Name; Janelle Zunker — Signature; NOV 1 0 2017 1230 — Date/Time	Jeff Lucas /CHPRC — Print First and Last Name; Jeff Lucas — Signature; NOV 1 0 2017 1230 — Date/Time
Jeff Lucas /CHPRC — Print First and Last Name; Jeff Lucas — Signature; NOV 1 0 2017 1450 — Date/Time	L Anderson, TARL — Print First and Last Name; L Anderson — Signature; 11/10/17 1450 — Date/Time
Relinquished By: — Print First and Last Name; Signature; Date/Time	Received By: — Print First and Last Name; Signature; Date/Time

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

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

Detection Summary

Client: CH2M Hill Plateau Remediation Company
Project/Site: I18-002

TestAmerica Job ID: 300-6364-1
SDG: WC2506

Client Sample ID: B3FDT7 — Lab Sample ID: 300-6364-1

No Detections.

Client Sample ID: B3FDT6 — Lab Sample ID: 300-6364-2

No Detections.

Client Sample ID: B3FDT4 — Lab Sample ID: 300-6364-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Cr (VI)	0.0020	B	0.0040	0.0015	mg/L	1		7196A	Total/NA

Client Sample ID: B3FDT5 — Lab Sample ID: 300-6364-4

No Detections.

This Detection Summary does not include radiochemical test results.

Client Sample Results

Client: CH2M Hill Plateau Remediation Company
Project/Site: I18-002

TestAmerica Job ID: 300-6364-1
SDG: WC2506

Client Sample ID: B3FDT7 — Lab Sample ID: 300-6364-1

Date Collected: 11/10/17 07:15 — **Matrix: Water**
Date Received: 11/10/17 14:50

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cr (VI)	0.0015	U	0.0040	0.0015	mg/L			11/10/17 16:26	1

Client Sample ID: B3FDT6 — Lab Sample ID: 300-6364-2

Date Collected: 11/10/17 07:15 — **Matrix: Water**
Date Received: 11/10/17 14:50

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cr (VI)	0.0015	U	0.0040	0.0015	mg/L			11/10/17 16:25	1

Client Sample ID: B3FDT4 — Lab Sample ID: 300-6364-3

Date Collected: 11/10/17 10:46 — **Matrix: Water**
Date Received: 11/10/17 14:50

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cr (VI)	**0.0020**	**B**	0.0040	0.0015	mg/L			11/10/17 16:26	1

Client Sample ID: B3FDT5 — Lab Sample ID: 300-6364-4

Date Collected: 11/10/17 10:46 — **Matrix: Water**
Date Received: 11/10/17 14:50

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cr (VI)	0.0015	U	0.0040	0.0015	mg/L			11/10/17 16:26	1

QC Sample Results

Client: CH2M Hill Plateau Remediation Company
Project/Site: I18-002

TestAmerica Job ID: 300-6364-1
SDG: WC2506

Method: 7196A - Chromium, Hexavalent

Lab Sample ID: MB 300-9653/3 — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 9653

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cr (VI)	0.0015	U	0.0040	0.0015	mg/L			11/10/17 16:22	1

Lab Sample ID: LCS 300-9653/4 — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 9653

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Cr (VI)			0.250	0.254		mg/L		102	80 - 120		

Lab Sample ID: 300-6364-2 MS — **Client Sample ID: B3FDT6**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 9653

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
Cr (VI)	0.0015	U	0.0501	0.0513		mg/L		102	75 - 125		

Lab Sample ID: 300-6364-2 DU — **Client Sample ID: B3FDT6**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 9653

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

QC Association Summary

Client: CH2M Hill Plateau Remediation Company
Project/Site: I18-002

TestAmerica Job ID: 300-6364-1
SDG: WC2506

General Chemistry

Analysis Batch: 9653

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
300-6364-1	B3FDT7	Total/NA	Water	7196A	
300-6364-2	B3FDT6	Total/NA	Water	7196A	
300-6364-3	B3FDT4	Total/NA	Water	7196A	
300-6364-4	B3FDT5	Total/NA	Water	7196A	
MB 300-9653/3	Method Blank	Total/NA	Water	7196A	
LCS 300-9653/4	Lab Control Sample	Total/NA	Water	7196A	
300-6364-2 MS	B3FDT6	Total/NA	Water	7196A	
300-6364-2 DU	B3FDT6	Total/NA	Water	7196A	

Lab Chronicle

Client: CH2M Hill Plateau Remediation Company
Project/Site: I18-002

TestAmerica Job ID: 300-6364-1
SDG: WC2506

Client Sample ID: B3FDT7 — Lab Sample ID: 300-6364-1

Date Collected: 11/10/17 07:15 — **Matrix: Water**
Date Received: 11/10/17 14:50

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			9653	11/10/17 16:26	TRH	TAL RCH

Client Sample ID: B3FDT6 — Lab Sample ID: 300-6364-2

Date Collected: 11/10/17 07:15 — **Matrix: Water**
Date Received: 11/10/17 14:50

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			9653	11/10/17 16:25	TRH	TAL RCH

Client Sample ID: B3FDT4 — Lab Sample ID: 300-6364-3

Date Collected: 11/10/17 10:46 — **Matrix: Water**
Date Received: 11/10/17 14:50

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			9653	11/10/17 16:26	TRH	TAL RCH

Client Sample ID: B3FDT5 — Lab Sample ID: 300-6364-4

Date Collected: 11/10/17 10:46 — **Matrix: Water**
Date Received: 11/10/17 14:50

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			9653	11/10/17 16:26	TRH	TAL RCH

Client Sample ID: Method Blank — Lab Sample ID: MB 300-9653/3

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			9653	11/10/17 16:22	TRH	TAL RCH

Client Sample ID: Lab Control Sample — Lab Sample ID: LCS 300-9653/4

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			9653	11/10/17 16:22	TRH	TAL RCH

Lab Chronicle

Client: CH2M Hill Plateau Remediation Company
Project/Site: I18-002

TestAmerica Job ID: 300-6364-1
SDG: WC2506

Client Sample ID: B3FDT6

Date Collected: 11/10/17 07:15
Date Received: 11/10/17 14:50

Lab Sample ID: 300-6364-2 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			9653	11/10/17 16:22	TRH	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: I18-002

TestAmerica Job ID: 300-6364-1
SDG: WC2506

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: I18-002

TestAmerica Job ID: 300-6364-1
SDG: WC2506

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
300-6364-1	B3FDT7	Water	11/10/17 07:15	11/10/17 14:50
300-6364-2	B3FDT6	Water	11/10/17 07:15	11/10/17 14:50
300-6364-3	B3FDT4	Water	11/10/17 10:46	11/10/17 14:50
300-6364-4	B3FDT5	Water	11/10/17 10:46	11/10/17 14:50

Login Sample Receipt Checklist

Client: CH2M Hill Plateau Remediation Company

Job Number: 300-6364-1
SDG Number: WC2506

Login Number: 6364
List Number: 1
Creator: Anderson, Lori F

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.	N/A	
Cooler Temperature is recorded.	N/A	
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.	N/A	
Residual Chlorine Checked.	N/A	