

July 17, 2017

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: 300-5759-1

TestAmerica Sample Delivery Group: WC2156

Client Project/Site: F16-025

For:

CH2M Hill Plateau Remediation Company

825 Jadwin Avenue

Richland, Washington 99352

Attn: CPP Sample Management



Authorized for release by:

7/17/2017 5:31:49 PM

Whitney Ritari, Project Manager I

(509)375-3131 ext164

whitney.ritari@testamericainc.com

LINKS

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results through

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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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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	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: F16-025

TestAmerica Job ID: 300-5759-1
SDG: WC2156

Job ID: 300-5759-1

Laboratory: TestAmerica Richland

Narrative

**Job Narrative
300-5759-1**

Comments

No additional comments.

Receipt

The samples were received on 7/12/2017 2:00 PM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 4.4° 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		F16-025-271	PAGE 1 OF 1
COLLECTOR	MIKE ESPARZA CHPRC	COMPANY CONTACT	LYNCH, SA	TELEPHONE NO.	373-5586
SAMPLING LOCATION	C9634, I-001	PROJECT DESIGNATION	FY2016 200-UP-1 Remedial Action Wells Sampling and Analysis - Water		
ICE CHEST NO.	NA	FIELD LOGBOOK NO.	HNF-N-645 2-68	ACTUAL SAMPLE DEPTH	300.89 ft
SHIPPED TO	TestAmerica Incorporated, Richland	OFFSITE PROPERTY NO.	NA	COA	303979
PRESERVATION		COOL <= 6C	BILL OF LADING/AIR BILL NO.		
HOLDING TIME		24 Hours	NA		
TYPE OF CONTAINER		ag	PROJECT COORDINATOR		
NO. OF CONTAINER(S)		1	TODAK, D		
VOLUME		60ml	PRICE CODE		
SAMPLE ANALYSIS		7196 CR6: COMMON;	7A		
SPECIAL HANDLING AND/OR STORAGE		NA	AIR QUALITY		
SAMPLE NO.		WATER	METHOD OF SHIPMENT		
MATRIX*		B3B0C8	GOVERNMENT VEHICLE		
SAMPLE DATE		JUL 12 2017 12:35	ORIGINAL		
SAMPLE TIME			DATA TURNAROUND		
			3 Days / 15 Days		

MATRIX*	<p>A=Air DL=Drum Liquids DS=Drum Solids L=Liquid O=Oil S=Soil SE=Sediment T=Tissue V=Vegetation W=Water WT=Wipe X=Other</p>	<p>POSSIBLE SAMPLE HAZARDS/ REMARKS</p> <p>*Contains Radioactive Material at concentrations that are not be regulated for transportation per 49 CFR/DATA Dangerous Goods Regulations but are not releasable per DOE Order 458.1.</p>
SPECIAL HANDLING AND/OR STORAGE	NA	7196 CR6: COMMON;

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CHAIN OF POSSESSION	SIGN/ PRINT NAMES	SPECIAL INSTRUCTIONS
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN
MIKE ESPARZA	JUL 12 2017 13:15	LESLY WALKER
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN
CHPRC	JUL 12 2017 14:00	LESLY WALKER
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN
CHPRC	JUL 12 2017 14:00	BOB TART
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN
CHPRC	JUL 12 2017 14:00	BOB TART
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN
CHPRC	JUL 12 2017 14:00	BOB TART

LABORATORY SECTION	RECEIVED BY	TITLE	DATE/TIME
FINAL SAMPLE DISPOSITION	DISPOSAL METHOD	DISPOSED BY	DATE/TIME

CH2M Hill Plateau Remediation Company		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST		F16-025-274	PAGE 1 OF 1
COLLECTOR MIKE ESPARZA CHPRC	COMPANY CONTACT LYNCH, SA	TELEPHONE NO. 373-5586	PROJECT COORDINATOR TODAK, D	PRICE CODE 7A	DATA TURNAROUND 3 Days / 15 Days
SAMPLING LOCATION C9634, I-001	PROJECT DESIGNATION FY2016 200-UP-1 Remedial Action Wells Sampling and Analysis - Water	FIELD LOGBOOK NO. HNF-N-645 2-68	ACTUAL SAMPLE DEPTH 300.89 FT	SAF NO. F16-025	METHOD OF SHIPMENT GOVERNMENT VEHICLE ORIGINAL
ICE CHEST NO. NA	OFFSITE PROPERTY NO. NA	COA 303979	BILL OF LADING/AIR BILL NO. NA		
SHIPPED TO TestAmerica Incorporated, Richland					

MATRIX*	POSSIBLE SAMPLE HAZARDS/ REMARKS	PRESERVATION	Cool <=6C
		HOLDING TIME	24 Hours
SPECIAL HANDLING AND/OR STORAGE	NO. OF CONTAINERS(S)	TYPE OF CONTAINER	ag
		VOLUME	60ml
SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME
			JUL 12 2017 12:35

#5959
occasional

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CHAIN OF POSSESSION	SIGN/ PRINT NAMES	SPECIAL INSTRUCTIONS
RELINQUISHED BY/REMOVED FROM MIKE ESPARZA	RECEIVED BY/STORED IN Lesly Wead	TRVL-17-126
DATE/TIME JUL 12 2017 13:15	DATE/TIME JUL 12 2017 13:15	
RELINQUISHED BY/REMOVED FROM Lesly Wead	RECEIVED BY/STORED IN J. Beck	
DATE/TIME JUL 12 2017 14:00	DATE/TIME JUL 12 2017 14:00	
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 4/26/2017 FSR ID = FSR44598 TRVL NUM = TRVL-17-126 A-6003-618 (REV 2)

July 17, 2017 Detection Summary

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

TestAmerica Job ID: 300-5759-1
SDG: WC2156

Client Sample ID: B3B0C8

Lab Sample ID: 300-5759-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Cr (VI)	0.041		0.0040	0.0015	mg/L	1		7196A	Total/NA

Client Sample ID: B3B0D1

Lab Sample ID: 300-5759-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Cr (VI)	0.033		0.0040	0.0015	mg/L	1		7196A	Total/NA

This Detection Summary does not include radiochemical test results.

TestAmerica Richland

July 17, 2017
Client Sample Results

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

TestAmerica Job ID: 300-5759-1
SDG: WC2156

Client Sample ID: B3B0C8

Lab Sample ID: 300-5759-1

Date Collected: 07/12/17 12:35

Matrix: Water

Date Received: 07/12/17 14:00

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cr (VI)	0.041		0.0040	0.0015	mg/L			07/12/17 15:28	1

Client Sample ID: B3B0D1

Lab Sample ID: 300-5759-2

Date Collected: 07/12/17 12:35

Matrix: Water

Date Received: 07/12/17 14:00

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cr (VI)	0.033		0.0040	0.0015	mg/L			07/12/17 15:29	1

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

TestAmerica Job ID: 300-5759-1
SDG: WC2156

Method: 7196A - Chromium, Hexavalent

Lab Sample ID: MB 300-8577/3
Matrix: Water
Analysis Batch: 8577

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			07/12/17 15:25	1

Lab Sample ID: LCS 300-8577/4
Matrix: Water
Analysis Batch: 8577

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	0.254		mg/L		101	80 - 120

Lab Sample ID: 300-5759-1 MS
Matrix: Water
Analysis Batch: 8577

Client Sample ID: B3B0C8
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Cr (VI)	0.041		0.0501	0.0908		mg/L		100	75 - 125

Lab Sample ID: 300-5759-1 DU
Matrix: Water
Analysis Batch: 8577

Client Sample ID: B3B0C8
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Cr (VI)	0.041		0.0407		mg/L		0.2	20

July 17, 2017
QC Association Summary

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

TestAmerica Job ID: 300-5759-1
SDG: WC2156

General Chemistry

Analysis Batch: 8577

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
300-5759-1	B3B0C8	Total/NA	Water	7196A	
300-5759-2	B3B0D1	Total/NA	Water	7196A	
MB 300-8577/3	Method Blank	Total/NA	Water	7196A	
LCS 300-8577/4	Lab Control Sample	Total/NA	Water	7196A	
300-5759-1 MS	B3B0C8	Total/NA	Water	7196A	
300-5759-1 DU	B3B0C8	Total/NA	Water	7196A	

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

TestAmerica Job ID: 300-5759-1
SDG: WC2156

Client Sample ID: B3B0C8
Date Collected: 07/12/17 12:35
Date Received: 07/12/17 14:00

Lab Sample ID: 300-5759-1
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			8577	07/12/17 15:28	TP	TAL RCH

Client Sample ID: B3B0D1
Date Collected: 07/12/17 12:35
Date Received: 07/12/17 14:00

Lab Sample ID: 300-5759-2
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			8577	07/12/17 15:29	TP	TAL RCH

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

Lab Sample ID: MB 300-8577/3
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			8577	07/12/17 15:25	TP	TAL RCH

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

Lab Sample ID: LCS 300-8577/4
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			8577	07/12/17 15:25	TP	TAL RCH

Client Sample ID: B3B0C8
Date Collected: 07/12/17 12:35
Date Received: 07/12/17 14:00

Lab Sample ID: 300-5759-1 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			8577	07/12/17 15:25	TP	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: F16-025

TestAmerica Job ID: 300-5759-1
SDG: WC2156

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



July 17, 2017 Sample Summary

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

TestAmerica Job ID: 300-5759-1
SDG: WC2156

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
300-5759-1	B3B0C8	Water	07/12/17 12:35	07/12/17 14:00
300-5759-2	B3B0D1	Water	07/12/17 12:35	07/12/17 14:00

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Login Sample Receipt Checklist

Client: CH2M Hill Plateau Remediation Company

Job Number: 300-5759-1

SDG Number: WC2156

Login Number: 5759

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	

