

8/15/2016

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: 300-3605-1
TestAmerica Sample Delivery Group: WC1306
Client Project/Site: F16-040

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

Attn: CPP Sample Management



Authorized for release by:
8/15/2016 3:04:23 PM
Steven Campbell, Project Mgmt. Assistant
steven.campbell@testamericainc.com

Designee for
Whitney Ritari, Project Manager I
(509)375-3131 ext164
whitney.ritari@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 less than five times the MDL.



LINKS

Review your project results through
TotalAccess

Have a Question?



Visit us at:
www.testamericainc.com

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13



Table of Contents

Cover Page	1
Table of Contents	2
Definitions/Glossary	3
Case Narrative	4
Chain of Custody	5
Detection Summary	7
Client Sample Results	8
QC Sample Results	9
QC Association Summary	10
Lab Chronicle	11
Method Summary	13
Sample Summary	14
Receipt Checklists	15

Definitions/Glossary

Client: CH2M Hill Plateau Remediation Company
Project/Site: F16-040

TestAmerica Job ID: 300-3605-1
SDG: WC1306

Qualifiers

General Chemistry

Qualifier	Qualifier Description
U	Analyzed for but not detected.
D	The reported value is from a dilution.

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

Client: CH2M Hill Plateau Remediation Company
Project/Site: F16-040

TestAmerica Job ID: 300-3605-1
SDG: WC1306

Job ID: 300-3605-1

Laboratory: TestAmerica Richland

Narrative

**Job Narrative
300-3605-1**

Comments

No additional comments.

Receipt

The samples were received on 7/27/2016 2:50 PM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 6.5° C.

General Chemistry

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

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13

CH2M Hill Plateau Remediation Company		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST		FIG-040-066	PAGE 1 OF 1
COLLECTOR Chris Fulton CHPRC	COMPANY CONTACT LYNCH, SA	TELEPHONE NO. 373-5586	PROJECT COORDINATOR TODAK, D	PRICE CODE 8C	DATA TURNAROUND 15 Days / 15 Days
SAMPLING LOCATION C9613, 1-001 DUP	PROJECT DESIGNATION 100-HR-3 Long Term & Interim Action Monitoring - Soil	FIELD LOGBOOK NO. 1891-27-14	SAF NO. F16-040	AIR QUALITY <input type="checkbox"/>	ORIGINAL
ICE CHEST NO. N/A	ACTUAL SAMPLE DEPTH 18.645-4 / pg. 11	COA 300115	METHOD OF SHIPMENT GOVERNMENT VEHICLE		
SHIPPED TO TestAmerica Incorporated, Richland	OFFSITE PROPERTY NO. N/A	BILL OF LADING/AIR BILL NO. N/A			

MATRIX* A=Air DL=Drum Liquids DS=Drum Solids L=Liquid O=Oil S=Soil SE=Sediment T=Tissue V=Vegetation W=Water WI=Pipe X=Other	POSSIBLE SAMPLE HAZARDS/ REMARKS *Contains Radioactive Material at concentrations that are not regulated for transportation per 49 CFR/DATA Dangerous Goods Regulations but are not releasable per DOE Order 458.1. NA	PRESERVATION Cool-to-4C	HOLDING TIME 30 Days	NO. OF CONTAINER(S) 1	VOLUME 60ml	SAMPLE ANALYSIS 7196, CR6; COMMON;
SAMPLE NO. B36088	MATRIX* SOIL	SAMPLE DATE JUL 27 2016	SAMPLE TIME 1040			

#3605
WUC1300
Date 8.11.16



300-3605 COC

CHAIN OF POSSESSION	SIGN/ PRINT NAMES	SPECIAL INSTRUCTIONS
RELINQUISHED BY/REMOVED FROM Chris Fulton CHPRC	RECEIVED BY/STORED IN LESLY WEAVER JUL 27 2016 1330	** All requests for Hexavalent Chromium at Test America Richland are to have a unique HEMS sample number and be assigned to a separate COC.
RELINQUISHED BY/REMOVED FROM LESLY WEAVER JUL 27 2016 1450	RECEIVED BY/STORED IN J. BOCK JUL 27 2016 1450	
RELINQUISHED BY/REMOVED FROM	RECEIVED BY/STORED IN	
RELINQUISHED BY/REMOVED FROM	RECEIVED BY/STORED IN	
RELINQUISHED BY/REMOVED FROM	RECEIVED BY/STORED IN	
RELINQUISHED BY/REMOVED FROM	RECEIVED BY/STORED IN	
RELINQUISHED BY/REMOVED FROM	RECEIVED BY/STORED IN	

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		F16-040-064	PAGE 1 OF 1
COLLECTOR Chris Fulton CHPRC	COMPANY CONTACT LYNCH, SA	TELEPHONE NO. 373-5586	PROJECT COORDINATOR TODAK, D	PRICE CODE 8C	DATA TURNAROUND 15 Days / 15 Days
SAMPLING LOCATION C9613, 1-001	PROJECT DESIGNATION 100-HR-3 Long Term & Interim Action Monitoring - Soil	FIELD LOGBOOK NO. HNF-N-645-4/Pg. 11	ACTUAL SAMPLE DEPTH 95-8-96.81	SAF NO. E16-040	METHOD OF SHIPMENT GOVERNMENT VEHICLE ORIGINAL
ICE CHEST NO. N/A	OFFSITE PROPERTY NO. N/A	NO. OF CONTAINER(S) 1	VOLUME 60ml	BILL OF LADING/AIR BILL NO. N/A	
SHIPPED TO TestAmerica Incorporated, Richland	PRESERVATION Cool-4C	HOLDING TIME 30 Days	TYPE OF CONTAINER G/P		
MATRIX* A=Air DL=Drum Liquids DS=Drum Solids L=Liquid O=Oil S=Soil SE=Sediment T=Tissue V=Vegetation W=Water WI=Wipe X=Other	<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. NA</p>		<p>SPECIAL HANDLING AND/OR STORAGE</p> <p>7196, CR6: COMMON;</p>		

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME
B36086	SOIL	JUL 27 2016	1040

Handwritten notes:
✓
2005
WCB306

CHAIN OF POSSESSION	SIGN/ PRINT NAMES	SPECIAL INSTRUCTIONS
RELINQUISHED BY/REMOVED FROM Chris Fulton CHPRC	RECEIVED BY/STORED IN JUL 27 2016 1330 Chris Fulton	<p>** All requests for Hexavalent Chromium at Test America Richland are to have a unique HEIS sample number and be assigned to a separate COC.</p>
RELINQUISHED BY/REMOVED FROM Chris Fulton	RECEIVED BY/STORED IN JUL 27 2016 1450 Chris Fulton	
RELINQUISHED BY/REMOVED FROM	RECEIVED BY/STORED IN	
RELINQUISHED BY/REMOVED FROM	RECEIVED BY/STORED IN	
RELINQUISHED BY/REMOVED FROM	RECEIVED BY/STORED IN	

LABORATORY SECTION RECEIVED BY

FINAL SAMPLE DISPOSITION DISPOSAL METHOD

PRINTED ON 6/14/2016 FSR ID = FSR33280 TRVL NUM = TRVL-16-172 A-6003-618 (REV 2)

Detection Summary

Client: CH2M Hill Plateau Remediation Company
Project/Site: F16-040

TestAmerica Job ID: 300-3605-1
SDG: WC1306

Client Sample ID: B36088

Lab Sample ID: 300-3605-1

No Detections.

Client Sample ID: B36086

Lab Sample ID: 300-3605-2

No Detections.

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13

This Detection Summary does not include radiochemical test results.

Client Sample Results

Client: CH2M Hill Plateau Remediation Company
 Project/Site: F16-040

TestAmerica Job ID: 300-3605-1
 SDG: WC1306

Client Sample ID: B36088

Lab Sample ID: 300-3605-1

Date Collected: 07/27/16 10:40

Matrix: Soil

Date Received: 07/27/16 14:50

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cr (VI)	0.15	U	2.0	0.15	mg/Kg		08/09/16 08:47	08/09/16 15:19	1

Client Sample ID: B36086

Lab Sample ID: 300-3605-2

Date Collected: 07/27/16 10:40

Matrix: Soil

Date Received: 07/27/16 14:50

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cr (VI)	0.15	U	2.0	0.15	mg/Kg		08/09/16 08:47	08/09/16 15:20	1

QC Sample Results

Client: CH2M Hill Plateau Remediation Company
 Project/Site: F16-040

TestAmerica Job ID: 300-3605-1
 SDG: WC1306

Method: 7196A - Chromium, Hexavalent

Lab Sample ID: MB 300-5194/1-A
 Matrix: Solid
 Analysis Batch: 5300

Client Sample ID: Method Blank
 Prep Type: Total/NA
 Prep Batch: 5194

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cr (VI)	0.15	U	2.0	0.15	mg/Kg		08/09/16 08:47	08/09/16 15:08	1

Lab Sample ID: LCS 300-5194/2-A
 Matrix: Solid
 Analysis Batch: 5300

Client Sample ID: Lab Control Sample
 Prep Type: Total/NA
 Prep Batch: 5194

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Cr (VI)	20.0	19.11		mg/Kg		96	85 - 115

Lab Sample ID: 300-3589-A-1-B MS
 Matrix: Solid
 Analysis Batch: 5300

Client Sample ID: Matrix Spike
 Prep Type: Total/NA
 Prep Batch: 5194

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Cr (VI)	0.15	U	30.0	27.21		mg/Kg		91	75 - 125

Lab Sample ID: 300-3589-A-1-D MSI
 Matrix: Solid
 Analysis Batch: 5300

Client Sample ID: Matrix Spike
 Prep Type: Total/NA
 Prep Batch: 5194

Analyte	Sample Result	Sample Qualifier	Spike Added	MSI Result	MSI Qualifier	Unit	D	%Rec	%Rec. Limits
Cr (VI)	0.15	U	675	690.8	D	mg/Kg		102	75 - 125

Lab Sample ID: 300-3589-A-1-C DU
 Matrix: Solid
 Analysis Batch: 5300

Client Sample ID: Duplicate
 Prep Type: Total/NA
 Prep Batch: 5194

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Cr (VI)	0.15	U	0.15	U	mg/Kg		NC	35

QC Association Summary

Client: CH2M Hill Plateau Remediation Company
Project/Site: F16-040

TestAmerica Job ID: 300-3605-1
SDG: WC1306

General Chemistry

Prep Batch: 5194

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
300-3605-1	B36088	Total/NA	Soil	3060A	
300-3605-2	B36086	Total/NA	Soil	3060A	
MB 300-5194/1-A	Method Blank	Total/NA	Solid	3060A	
LCS 300-5194/2-A	Lab Control Sample	Total/NA	Solid	3060A	
300-3589-A-1-B MS	Matrix Spike	Total/NA	Solid	3060A	
300-3589-A-1-D MSI	Matrix Spike	Total/NA	Solid	3060A	
300-3589-A-1-C DU	Duplicate	Total/NA	Solid	3060A	

Analysis Batch: 5300

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
300-3605-1	B36088	Total/NA	Soil	7196A	5194
300-3605-2	B36086	Total/NA	Soil	7196A	5194
MB 300-5194/1-A	Method Blank	Total/NA	Solid	7196A	5194
LCS 300-5194/2-A	Lab Control Sample	Total/NA	Solid	7196A	5194
300-3589-A-1-B MS	Matrix Spike	Total/NA	Solid	7196A	5194
300-3589-A-1-D MSI	Matrix Spike	Total/NA	Solid	7196A	5194
300-3589-A-1-C DU	Duplicate	Total/NA	Solid	7196A	5194

Lab Chronicle

Client: CH2M Hill Plateau Remediation Company
Project/Site: F16-040

TestAmerica Job ID: 300-3605-1
SDG: WC1306

Client Sample ID: B36088

Date Collected: 07/27/16 10:40

Date Received: 07/27/16 14:50

Lab Sample ID: 300-3605-1

Matrix: Soil

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3060A			2.506 g	100 mL	5194	08/09/16 08:47	HR	TAL RCH
Total/NA	Analysis	7196A		1			5300	08/09/16 15:19	RLC	TAL RCH

Client Sample ID: B36086

Date Collected: 07/27/16 10:40

Date Received: 07/27/16 14:50

Lab Sample ID: 300-3605-2

Matrix: Soil

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3060A			2.5081 g	100 mL	5194	08/09/16 08:47	HR	TAL RCH
Total/NA	Analysis	7196A		1			5300	08/09/16 15:20	RLC	TAL RCH

Client Sample ID: Method Blank

Date Collected: N/A

Date Received: N/A

Lab Sample ID: MB 300-5194/1-A

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3060A			2.5 g	100 mL	5194	08/09/16 08:47	HR	TAL RCH
Total/NA	Analysis	7196A		1			5300	08/09/16 15:08	RLC	TAL RCH

Client Sample ID: Lab Control Sample

Date Collected: N/A

Date Received: N/A

Lab Sample ID: LCS 300-5194/2-A

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3060A			2.5 g	100 mL	5194	08/09/16 08:47	HR	TAL RCH
Total/NA	Analysis	7196A		1			5300	08/09/16 15:10	RLC	TAL RCH

Client Sample ID: Matrix Spike

Date Collected: 07/26/16 14:00

Date Received: 07/26/16 15:40

Lab Sample ID: 300-3589-A-1-B MS

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3060A			2.503 g	100 mL	5194	08/09/16 08:47	HR	TAL RCH
Total/NA	Analysis	7196A		1			5300	08/09/16 15:12	RLC	TAL RCH

Client Sample ID: Matrix Spike

Date Collected: 07/26/16 14:00

Date Received: 07/26/16 15:40

Lab Sample ID: 300-3589-A-1-D MSI

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3060A			2.503 g	100 mL	5194	08/09/16 08:47	HR	TAL RCH
Total/NA	Analysis	7196A		20			5300	08/09/16 15:15	RLC	TAL RCH

TestAmerica Richland

8/15/2016

Lab Chronicle

Client: CH2M Hill Plateau Remediation Company
Project/Site: F16-040

TestAmerica Job ID: 300-3605-1
SDG: WC1306

Laboratory References:

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

1

2

3

4

5

6

7

8

9

10

11

12

13

Method Summary

Client: CH2M Hill Plateau Remediation Company
Project/Site: F16-040

TestAmerica Job ID: 300-3605-1
SDG: WC1306

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



8/15/2016

Sample Summary

Client: CH2M Hill Plateau Remediation Company
Project/Site: F16-040

TestAmerica Job ID: 300-3605-1
SDG: WC1306

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
300-3605-1	B36088	Soil	07/27/16 10:40	07/27/16 14:50
300-3605-2	B36086	Soil	07/27/16 10:40	07/27/16 14:50

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13

Login Sample Receipt Checklist

Client: CH2M Hill Plateau Remediation Company

Job Number: 300-3605-1

SDG Number: WC1306

Login Number: 3605

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	