

6/23/2016

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: 300-3229-1
TestAmerica Sample Delivery Group: WC1142
Client Project/Site: F16-043

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

Attn: CPP Sample Management



Authorized for release by:
6/23/2016 2:43:05 PM
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Designee for
Whitney Ritari, Project Manager I
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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 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

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Have a Question?



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Definitions/Glossary

Client: CH2M Hill Plateau Remediation Company
Project/Site: F16-043

TestAmerica Job ID: 300-3229-1
SDG: WC1142

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: F16-043

TestAmerica Job ID: 300-3229-1
SDG: WC1142

Job ID: 300-3229-1

Laboratory: TestAmerica Richland

Narrative

Job Narrative
300-3229-1

Comments

No additional comments.

Receipt

The samples were received on 6/7/2016 2:50 PM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 9.6° C.

General Chemistry

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



CH2MHill Plateau Remediation Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

FL6-043-027

PAGE 1 OF 1

COLLECTOR **J.R. Aguilera/CH2MRC** COMPANY CONTACT **TODAK, D** TELEPHONE NO. **376-6427** PROJECT COORDINATOR **TODAK, D** PRICE CODE **8C** DATA TURNAROUND **15 Days / 15 Days**

SAMPLING LOCATION **C9401, 1-002** PROJECT DESIGNATION **100-NR-2 Drilling - Soil** FIELD LOGBOOK NO. **NAF-N-645-31** OFFSITE PROPERTY NO. **84** ACTUAL SAMPLE DEPTH **52.15' - 54.65'** SAF NO. **F16-043** AIR QUALITY METHOD OF SHIPMENT **GOVERNMENT VEHICLE ORIGINAL**

ICE CHEST NO. **NA** SHIPPED TO **TestAmerica Incorporated, Richland** PRESERVATION **COOL <=6C** HOLDING TIME **30 Days** TYPE OF CONTAINER **G/P** NO. OF CONTAINER(S) **1** VOLUME **60ml** SAMPLE ANALYSIS **7195, CR6; COMMON;**

MATRIX* **DL=Drum** *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
DL=Drum
L=Liquid
O=Oil
S=Soil
SE=Sediment
T=Tissue
V=Vegetation
W=Water
WI=Wipe
X=Other

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME
B35VN4	SOIL	JUN 07 2016	0910

300-3229 COC



3229
USC1142

CHAIN OF POSSESSION

SIGN/ PRINT NAMES

SPECIAL INSTRUCTIONS

RELINQUISHED BY/REMOVED FROM **J.R. Aguilera/CH2MRC** DATE/TIME **JUN 07 2016 1035** RECEIVED BY/STORED IN **J. Bock, TARL** DATE/TIME **JUN 07 2016 1450**
 RELINQUISHED BY/REMOVED FROM **Lesly Mace** DATE/TIME **JUN 07 2016 1450** RECEIVED BY/STORED IN **J. Bock, TARL** DATE/TIME **JUN 07 2016 1450**
 RELINQUISHED BY/REMOVED FROM **Lesly Mace** DATE/TIME **JUN 07 2016 1450** RECEIVED BY/STORED IN **J. Bock, TARL** DATE/TIME **JUN 07 2016 1450**

SPLIT SPOON PARTS B & A WILL BE COMBINED TO ENSURE ADEQUATE SAMPLE MATERIAL FOR ANALYSIS; SAMPLE A AND B PORTION SAMPLES B35VN3, B35VN4, B35VNS

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME

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

6/23/2016

CH2MHill Plateau Remediation Company		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST		FIG-043-030	PAGE 1 OF 1
COLLECTOR J.R. Aguilera/CHPRC	COMPANY CONTACT TODAK, D	TELEPHONE NO. 376-6427	PROJECT COORDINATOR TODAK, D	PRICE CODE 8C	DATA TURNAROUND 15 Days / 15 Days
SAMPLING LOCATION C9401, I-002 DUP	PROJECT DESIGNATION 100-NR-2 Drilling - Soil	FIELD LOGBOOK NO. N/A	SAF NO. F16-043	AIR QUALITY <input type="checkbox"/>	METHOD OF SHIPMENT GOVERNMENT VEHICLE
ICE CHEST NO. N/A	OFFSITE PROPERTY NO. N/A	ACTUAL SAMPLE DEPTH 52.15' - 54.65'	COA 304070		ORIGINAL
SHIPPED TO TestAmerica Incorporated, Richland			BILL OF LADING/AIR BILL NO. N/A		

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME	SPECIAL HANDLING AND/OR STORAGE	
				VOLUME	NO. OF CONTAINER(S)
B35VN7	SOIL	JUN 07 2016	0910	60ml	1

#3229
WTC 1142

CHAIN OF POSSESSION		SIGN / PRINT NAMES		SPECIAL INSTRUCTIONS	
RELINQUISHED BY/REMOVED FROM J.R. Aguilera/CHPRC	DATE/TIME JUN 07 2016 1035	RECEIVED BY/STORED IN Lesly Neal	DATE/TIME JUN 07 2016 1035	SPLIT SPOON PARTS B & A WILL BE COMBINED TO ENSURE ADEQUATE SAMPLE MATERIAL FOR ANALYSIS; SAMPLE A AND B PORTION SAMPLES B35VN6, B35VN7, B35VN8	
RELINQUISHED BY/REMOVED FROM Lesly Neal	DATE/TIME JUN 07 2016 1450	RECEIVED BY/STORED IN J. Bock, TARL	DATE/TIME JUN 07 2016 1450		
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME		
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME		
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME		
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME		
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME		
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME		
LABORATORY SECTION	RECEIVED BY	TITLE		DATE/TIME	
FINAL SAMPLE DISPOSITION	DISPOSAL METHOD	DISPOSED BY		DATE/TIME	

Detection Summary

Client: CH2M Hill Plateau Remediation Company
Project/Site: F16-043

TestAmerica Job ID: 300-3229-1
SDG: WC1142

Client Sample ID: B35VN4

Lab Sample ID: 300-3229-1

No Detections.

Client Sample ID: B35VN7

Lab Sample ID: 300-3229-2

No Detections.

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This Detection Summary does not include radiochemical test results.

Client Sample Results

Client: CH2M Hill Plateau Remediation Company
 Project/Site: F16-043

TestAmerica Job ID: 300-3229-1
 SDG: WC1142

Client Sample ID: B35VN4

Lab Sample ID: 300-3229-1

Date Collected: 06/07/16 09:10

Matrix: Soil

Date Received: 06/07/16 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		06/15/16 08:52	06/15/16 17:15	1

Client Sample ID: B35VN7

Lab Sample ID: 300-3229-2

Date Collected: 06/07/16 09:10

Matrix: Soil

Date Received: 06/07/16 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		06/15/16 08:52	06/15/16 17:16	1

QC Sample Results

Client: CH2M Hill Plateau Remediation Company
 Project/Site: F16-043

TestAmerica Job ID: 300-3229-1
 SDG: WC1142

Method: 7196A - Chromium, Hexavalent

Lab Sample ID: MB 300-4550/1-A
 Matrix: Solid
 Analysis Batch: 4678

Client Sample ID: Method Blank
 Prep Type: Total/NA
 Prep Batch: 4550

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cr (VI)	0.15	U	2.0	0.15	mg/Kg		06/15/16 08:52	06/15/16 17:00	1

Lab Sample ID: LCS 300-4550/2-A
 Matrix: Solid
 Analysis Batch: 4678

Client Sample ID: Lab Control Sample
 Prep Type: Total/NA
 Prep Batch: 4550

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Cr (VI)	20.0	19.64		mg/Kg		98	85 - 115

Lab Sample ID: 300-3189-A-1-B MS
 Matrix: Solid
 Analysis Batch: 4678

Client Sample ID: Matrix Spike
 Prep Type: Total/NA
 Prep Batch: 4550

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Cr (VI)	0.15	U	30.0	27.81		mg/Kg		93	75 - 125

Lab Sample ID: 300-3189-A-1-D MSI
 Matrix: Solid
 Analysis Batch: 4678

Client Sample ID: Matrix Spike
 Prep Type: Total/NA
 Prep Batch: 4550

Analyte	Sample Result	Sample Qualifier	Spike Added	MSI Result	MSI Qualifier	Unit	D	%Rec	%Rec. Limits
Cr (VI)	0.15	U	727	750.1	D	mg/Kg		103	

Lab Sample ID: 300-3189-A-1-C DU
 Matrix: Solid
 Analysis Batch: 4678

Client Sample ID: Duplicate
 Prep Type: Total/NA
 Prep Batch: 4550

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: F16-043

TestAmerica Job ID: 300-3229-1
SDG: WC1142

General Chemistry

Prep Batch: 4550

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
300-3189-A-1-B MS	Matrix Spike	Total/NA	Solid	3060A	
300-3189-A-1-C DU	Duplicate	Total/NA	Solid	3060A	
300-3189-A-1-D MSI	Matrix Spike	Total/NA	Solid	3060A	
300-3229-1	B35VN4	Total/NA	Soil	3060A	
300-3229-2	B35VN7	Total/NA	Soil	3060A	
LCS 300-4550/2-A	Lab Control Sample	Total/NA	Solid	3060A	
MB 300-4550/1-A	Method Blank	Total/NA	Solid	3060A	

Analysis Batch: 4678

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
300-3189-A-1-B MS	Matrix Spike	Total/NA	Solid	7196A	4550
300-3189-A-1-C DU	Duplicate	Total/NA	Solid	7196A	4550
300-3189-A-1-D MSI	Matrix Spike	Total/NA	Solid	7196A	4550
300-3229-1	B35VN4	Total/NA	Soil	7196A	4550
300-3229-2	B35VN7	Total/NA	Soil	7196A	4550
LCS 300-4550/2-A	Lab Control Sample	Total/NA	Solid	7196A	4550
MB 300-4550/1-A	Method Blank	Total/NA	Solid	7196A	4550

Lab Chronicle

Client: CH2M Hill Plateau Remediation Company
Project/Site: F16-043

TestAmerica Job ID: 300-3229-1
SDG: WC1142

Client Sample ID: B35VN4

Date Collected: 06/07/16 09:10

Date Received: 06/07/16 14:50

Lab Sample ID: 300-3229-1

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			2.5045 g	100 mL	4550	06/15/16 08:52	HR	TAL RCH
Total/NA	Analysis	7196A		1	2.5045 g	100 mL	4678	06/15/16 17:15	TDA	TAL RCH

Client Sample ID: B35VN7

Date Collected: 06/07/16 09:10

Date Received: 06/07/16 14:50

Lab Sample ID: 300-3229-2

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			2.5094 g	100 mL	4550	06/15/16 08:52	HR	TAL RCH
Total/NA	Analysis	7196A		1	2.5094 g	100 mL	4678	06/15/16 17:16	TDA	TAL RCH

Client Sample ID: Duplicate

Date Collected: 06/01/16 11:30

Date Received: 06/01/16 15:45

Lab Sample ID: 300-3189-A-1-C DU

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			2.4986 g	100 mL	4550	06/15/16 08:52	HR	TAL RCH
Total/NA	Analysis	7196A		1	2.4986 g	100 mL	4678	06/15/16 17:04	TDA	TAL RCH

Client Sample ID: Lab Control Sample

Date Collected: N/A

Date Received: N/A

Lab Sample ID: LCS 300-4550/2-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	4550	06/15/16 08:52	HR	TAL RCH
Total/NA	Analysis	7196A		1	2.5 g	100 mL	4678	06/15/16 17:01	TDA	TAL RCH

Client Sample ID: Method Blank

Date Collected: N/A

Date Received: N/A

Lab Sample ID: MB 300-4550/1-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	4550	06/15/16 08:52	HR	TAL RCH
Total/NA	Analysis	7196A		1	2.5 g	100 mL	4678	06/15/16 17:00	TDA	TAL RCH

Client Sample ID: Matrix Spike

Date Collected: 06/01/16 11:30

Date Received: 06/01/16 15:45

Lab Sample ID: 300-3189-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			2.5013 g	100 mL	4550	06/15/16 08:52	HR	TAL RCH
Total/NA	Analysis	7196A		1	2.5013 g	100 mL	4678	06/15/16 17:03	TDA	TAL RCH

TestAmerica Richland

Lab Chronicle

Client: CH2M Hill Plateau Remediation Company
 Project/Site: F16-043

TestAmerica Job ID: 300-3229-1
 SDG: WC1142

Client Sample ID: Matrix Spike

Lab Sample ID: 300-3189-A-1-D MSI

Date Collected: 06/01/16 11:30

Matrix: Solid

Date Received: 06/01/16 15:45

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3060A			2.5013 g	100 mL	4550	06/15/16 08:52	HR	TAL RCH
Total/NA	Analysis	7196A		20	2.5013 g	100 mL	4678	06/15/16 17:05	TDA	TAL RCH

Laboratory References:

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

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Method Summary

Client: CH2M Hill Plateau Remediation Company
Project/Site: F16-043

TestAmerica Job ID: 300-3229-1
SDG: WC1142

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



6/23/2016

Sample Summary

Client: CH2M Hill Plateau Remediation Company
Project/Site: F16-043

TestAmerica Job ID: 300-3229-1
SDG: WC1142

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
300-3229-1	B35VN4	Soil	06/07/16 09:10	06/07/16 14:50
300-3229-2	B35VN7	Soil	06/07/16 09:10	06/07/16 14:50

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Login Sample Receipt Checklist

Client: CH2M Hill Plateau Remediation Company

Job Number: 300-3229-1

SDG Number: WC1142

Login Number: 3229

List Number: 1

Creator: Anderson, Lori 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 $<6\text{mm}$ (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	