

July 18, 2016

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

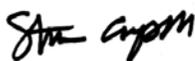
ANALYTICAL REPORT

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

TestAmerica Job ID: 300-3347-1
TestAmerica Sample Delivery Group: WC1196
Client Project/Site: S16-006

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

Attn: CPP Sample Management



Authorized for release by:
7/18/2016 9:48:23 AM
Steven Campbell, Project Mgmt. Assistant
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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

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Definitions/Glossary

Client: CH2M Hill Plateau Remediation Company
 Project/Site: S16-006

TestAmerica Job ID: 300-3347-1
 SDG: WC1196

Qualifiers

HPLC/IC

Qualifier	Qualifier Description
D	The reported value is from a dilution.
U	Analyzed for but not detected.
B	Estimated result. Result is less than the RL, but greater than MDL

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.
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, 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: S16-006

TestAmerica Job ID: 300-3347-1
SDG: WC1196

Job ID: 300-3347-1

Laboratory: TestAmerica Richland

Narrative

Job Narrative
300-3347-1

Comments

No additional comments.

Receipt

The samples were received on 6/24/2016 3:00 PM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 8.6° C.

HPLC/IC

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

General Chemistry

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



CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

C.O.C. #
S16-006-360
Page 1 of 1

Collector	Dave Floyd CHPRC	Contact/Requester	Karen Waters-Husted	Telephone No.	509-376-4650
SAF No.	S16-006	Sampling Origin	Hanford Site	Purchase Order/Charge Code	300071
Project Title	SURV, JUNE 2016	Logbook No.	HNF-N-506 <u>821 84</u>	Ice Chest No.	N/A
Shipped To (Lab)	TestAmerica Incorporated, Richland	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/REMARKS			PRIORITY		
*** 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		
			Hold Time N/A		
			Total Activity Exemption: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>		

Sample No.	Filter	* Date	Time	No/Type Container	Sample Analysis	Holding Time	Preservative
B359W3	N	JUN 24 2016	1303	1x60-mL aG	7196_CR6: COMMON	24 Hours	Cool <=6C
B359W5	Y	JUN 24 2016	1503	1x60-mL aG	7196_CR6: COMMON	24 Hours	Cool <=6C

33411
W 011914



Relinquished By	Dave Floyd CHPRC	Print Sign	JUN 24 2016	Date/Time	1418	Received By	Lesly Bock, TARD	Print Sign	JUN 24 2016	Date/Time	1418	Matrix *
Relinquished By	164109111	Print Sign	1500	Date/Time	1500	Received By	3. Bock, TARD	Print Sign	6/24/16	Date/Time	1500	Matrix *
Relinquished By		Date/Time		Received By		Date/Time						

- S = Soil
- SE = Sediment
- SO = Solid
- SL = Sludge
- W = Water
- O = Oil
- A = Air
- DS = Drum Solids
- DL = Drum Liquids
- T = Tissue
- WT = Wipe
- L = Liquid
- V = Vegetation
- X = Other

FINAL SAMPLE DISPOSITION

Disposal Method (e.g., Return to customer, per lab procedure, used in process)

Disposed By

Date/Time

CH2MHill Plateau Remediation Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

C.O.C. #
S16-006-369

Page 1 of 1

Collector Dave Floyd CHPRC	Contact/Requester Karen Waters-Husted	Telephone No. 509-376-4650
SAF No. S16-006	Sampling Origin Hanford Site	Purchase Order/Charge Code 300071
Project Title SURV, JUNE 2016	Logbook No. HNF-N-506 821 84	Ice Chest No. N/A
Shipped To (Lab) TestAmerica Incorporated, Richland	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/REMARKS		Total Activity Exemption: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
*** 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 438.1		SPECIAL INSTRUCTIONS N/A

Sample No.	Filter	*	Date	Time	No./Type Container	Sample Analysis	Holding Time	Preservative
B35B01	Y	W	JUN 24 2016	1349	1x60-mL aG	7196_CR6: COMMON	24 Hours	Cool <=6C
B359Y9	N	W	JUN 24 2016	1349	1x60-mL aG	7196_CR6: COMMON	24 Hours	Cool <=6C

3341
w c1194

Relinquished By Dave Floyd CHPRC	Print 	Sign 	Date/Time JUN 24 2016 1418	Received By Lesly WDA11	Sign 	Date/Time JUN 24 2016 1418	Matrix * S = Soil SB = Sediment SO = Solid SL = Sludge W = Water O = Oil A = Air DS = Drum Solids DL = Drum Liquids T = Tissue WT = Wipe L = Liquid V = Vegetation X = Other
Relinquished By Lesly WDA11	Print 	Sign 	Date/Time 1500	Received By J. Bock, TARL	Sign 	Date/Time 6/24/16 1500	
Relinquished By	Print	Sign	Date/Time	Received By	Sign	Date/Time	

FINAL SAMPLE DISPOSITION	Disposal Method (e.g., Return to customer, per lab procedure, used in process)	Disposed By	Date/Time
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CH2MHill Plateau Remediation Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

C.O.C. #
S16-006-368
Page 1 of 1

Collector Dave Floyd CHPRC	Contact/Requester Karen Waters-Husted	Telephone No. 509-376-4650
SAF No. S16-006	Sampling Origin Hanford Site	Purchase Order/Charge Code 300071
Project Title SURV, JUNE 2016	Logbook No. HNF-N-506 821 84	Ice Chest No. N/A
Shipped To (Lab) TestAmerica Incorporated, Richland	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/REMARKS		Total Activity Exemption: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
*** 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. B359Y8	Filter N	* W
Date JUN 24 2016	Time 1349	No./Type Container 1x500-mL P
		Sample Analysis 300.0 ANIONS, JC: COMMON
		Holding Time 48 Hours
		Preservative Cool <=6C

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WCE1190

Relinquished By Dave Floyd CHPRC	Print 	Sign JUN 24 2016	Date/Time 1418	Received By L.O. WAIN	Print 	Sign JUN 24 2016	Date/Time 1418	Matrix * S = Soil SE = Sediment SO = Solid SL = Sludge W = Water O = Oil A = Air DS = Drum Solids DL = Drum Liquids T = Tissue WI = Wipe L = Liquid V = Vegetation X = Other
Relinquished By L.O. WAIN		6/24/16	1500	Received By J. Bock, TARI		6/24/16	1500	
Relinquished By	Date/Time	Received By	Date/Time	Received By	Date/Time			
FINAL SAMPLE DISPOSITION		Disposal Method (e.g., Return to customer, per lab procedure, used in process)		Disposed By		Date/Time		

CH2MHill Plateau Remediation Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

C.O.C. #

S16-006-471

Page 1 of 1

Collector	Dave Floyd CHPRC	Contact/Requester	Karen Waters-Husted	Telephone No.	509-376-4650
SAF No.	S16-006	Sampling Origin	Hanford Site	Purchase Order/Charge Code	300071
Project Title	SURV, JUNE 2016	Logbook No.	HNF-N-506 <u>82/83</u>	Ice Chest No.	N/A
Shipped To (Lab)	TestAmerica Incorporated, Richland	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/REMARKS			PRIORITY		
*** 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		
			Hold Time		
			Total Activity Exemption: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>		
Sample No.	Filter	Date	Time	No/Type Container	Sample Analysis
B35C75	N	JUN 24 2016	0715	1x500-mL P	300.0_ANIONS_JC: COMMON
					Holding Time
					48 Hours
					Preservative
					Cool <=6C

3347
WCL1194

Relinquished By	Print	Sign	Date/Time	Received By	Print	Sign	Date/Time	Matrix *
Relinquished By	Dave Floyd CHPRC	<i>[Signature]</i>	JUN 24 2016 1000	Received By	Janelle Zunker CHPRC	<i>[Signature]</i>	JUN 24 2016 1000	S = Soil SE = Sediment SO = Solid SL = Sludge W = Water O = Oil A = Air
Relinquished By	Janelle Zunker CHPRC	<i>[Signature]</i>	JUN 24 2016 1500	Received By	<i>[Signature]</i>	<i>[Signature]</i>	JUN 24 2016 1500	DS = Drum Solids DL = Drum Liquids T = Tissue WI = Wipe L = Liquid V = Vegetation X = Other
Relinquished By			Date/Time	Received By			Date/Time	
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: S16-006

TestAmerica Job ID: 300-3347-1
 SDG: WC1196

Client Sample ID: B359W3

Lab Sample ID: 300-3347-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Cr (VI)	0.027		0.0040	0.0015	mg/L	1		7196A	Total/NA

Client Sample ID: B359W5

Lab Sample ID: 300-3347-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Cr (VI)	0.030		0.0040	0.0015	mg/L	1		7196A	Total/NA

Client Sample ID: B35B01

Lab Sample ID: 300-3347-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Cr (VI)	0.0095		0.0040	0.0015	mg/L	1		7196A	Total/NA

Client Sample ID: B359Y9

Lab Sample ID: 300-3347-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Cr (VI)	0.0085		0.0040	0.0015	mg/L	1		7196A	Total/NA

Client Sample ID: B359Y8

Lab Sample ID: 300-3347-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	16	D	0.40	0.20	mg/L	2		300.0	Total/NA
Nitrate as N	5.7	D	0.056	0.028	mg/L	2		300.0	Total/NA
Fluoride	0.19	D	0.10	0.050	mg/L	2		300.0	Total/NA
Sulfate	200	D	5.0	2.5	mg/L	20		300.0	Total/NA

Client Sample ID: B35C75

Lab Sample ID: 300-3347-6

No Detections.

Client Sample ID: B35C76

Lab Sample ID: 300-3347-7

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	23	D	0.40	0.20	mg/L	2		300.0	Total/NA
Nitrate as N	24	D	0.56	0.28	mg/L	20		300.0	Total/NA
Fluoride	0.089	B D	0.10	0.050	mg/L	2		300.0	Total/NA
Sulfate	97	D	5.0	2.5	mg/L	20		300.0	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample Results

Client: CH2M Hill Plateau Remediation Company
Project/Site: S16-006

TestAmerica Job ID: 300-3347-1
SDG: WC1196

Client Sample ID: B359W3

Lab Sample ID: 300-3347-1

Date Collected: 06/24/16 13:03
Date Received: 06/24/16 15:00

Matrix: Water

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cr (VI)	0.027		0.0040	0.0015	mg/L			06/24/16 16:55	1

Client Sample ID: B359W5

Lab Sample ID: 300-3347-2

Date Collected: 06/24/16 13:03
Date Received: 06/24/16 15:00

Matrix: Water

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cr (VI)	0.030		0.0040	0.0015	mg/L			06/24/16 16:56	1

Client Sample ID: B35B01

Lab Sample ID: 300-3347-3

Date Collected: 06/24/16 13:49
Date Received: 06/24/16 15:00

Matrix: Water

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cr (VI)	0.0095		0.0040	0.0015	mg/L			06/24/16 16:56	1

Client Sample ID: B359Y9

Lab Sample ID: 300-3347-4

Date Collected: 06/24/16 13:49
Date Received: 06/24/16 15:00

Matrix: Water

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cr (VI)	0.0085		0.0040	0.0015	mg/L			06/24/16 16:57	1

Client Sample ID: B359Y8

Lab Sample ID: 300-3347-5

Date Collected: 06/24/16 13:49
Date Received: 06/24/16 15:00

Matrix: Water

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	16	D	0.40	0.20	mg/L			06/24/16 22:38	2
Nitrate as N	5.7	D	0.056	0.028	mg/L			06/24/16 22:38	2
Fluoride	0.19	D	0.10	0.050	mg/L			06/24/16 22:38	2
Nitrite as N	0.038	U D	0.076	0.038	mg/L			06/24/16 22:38	2
Sulfate	200	D	5.0	2.5	mg/L			06/25/16 01:54	20

Client Sample ID: B35C75

Lab Sample ID: 300-3347-6

Date Collected: 06/24/16 07:15
Date Received: 06/24/16 15:00

Matrix: Water

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	0.20	U D	0.40	0.20	mg/L			06/24/16 22:23	2
Nitrate as N	0.028	U D	0.056	0.028	mg/L			06/24/16 22:23	2
Fluoride	0.050	U D	0.10	0.050	mg/L			06/24/16 22:23	2
Nitrite as N	0.038	U D	0.076	0.038	mg/L			06/24/16 22:23	2
Sulfate	0.25	U D	0.50	0.25	mg/L			06/24/16 22:23	2

Client Sample Results

Client: CH2M Hill Plateau Remediation Company
 Project/Site: S16-006

TestAmerica Job ID: 300-3347-1
 SDG: WC1196

Client Sample ID: B35C76

Lab Sample ID: 300-3347-7

Date Collected: 06/24/16 09:34

Matrix: Water

Date Received: 06/24/16 15:00

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	23	D	0.40	0.20	mg/L			06/24/16 22:08	2
Nitrate as N	24	D	0.56	0.28	mg/L			06/25/16 01:24	20
Fluoride	0.089	B D	0.10	0.050	mg/L			06/24/16 22:08	2
Nitrite as N	0.038	U D	0.076	0.038	mg/L			06/24/16 22:08	2
Sulfate	97	D	5.0	2.5	mg/L			06/25/16 01:24	20

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QC Sample Results

Client: CH2M Hill Plateau Remediation Company
Project/Site: S16-006

TestAmerica Job ID: 300-3347-1
SDG: WC1196

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 300-4693/29

Matrix: Water

Analysis Batch: 4693

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	0.014	U	0.028	0.014	mg/L			06/24/16 19:07	1
Nitrite as N	0.019	U	0.038	0.019	mg/L			06/24/16 19:07	1

Lab Sample ID: LCS 300-4693/30

Matrix: Water

Analysis Batch: 4693

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Nitrate as N	2.26	2.26		mg/L		100	80 - 120
Nitrite as N	3.04	3.05		mg/L		100	80 - 120

Lab Sample ID: 300-3349-A-12 MS

Matrix: Water

Analysis Batch: 4693

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
Nitrate as N	0.073	D	0.452	0.467	D	mg/L		87	75 - 125
Nitrite as N	0.038	U D	0.609	0.547	D	mg/L		90	75 - 125

Lab Sample ID: 300-3349-A-12 DU

Matrix: Water

Analysis Batch: 4693

Client Sample ID: Duplicate

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	Limit
Nitrate as N	0.073	D	0.0730	D	mg/L		0.3	20
Nitrite as N	0.038	U D	0.038	U D	mg/L		NC	20

Lab Sample ID: MB 300-4694/29

Matrix: Water

Analysis Batch: 4694

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	0.10	U	0.20	0.10	mg/L			06/24/16 19:07	1
Fluoride	0.025	U	0.050	0.025	mg/L			06/24/16 19:07	1
Sulfate	0.13	U	0.25	0.13	mg/L			06/24/16 19:07	1

Lab Sample ID: LCS 300-4694/30

Matrix: Water

Analysis Batch: 4694

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	16.0	15.7		mg/L		98	80 - 120
Fluoride	4.00	3.96		mg/L		99	80 - 120
Sulfate	20.0	19.8		mg/L		99	80 - 120

QC Sample Results

Client: CH2M Hill Plateau Remediation Company
Project/Site: S16-006

TestAmerica Job ID: 300-3347-1
SDG: WC1196

Method: 300.0 - Anions, Ion Chromatography (Continued)

Lab Sample ID: 300-3349-A-12 MS
Matrix: Water
Analysis Batch: 4694

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

Analyte	Sample		Spike Added	MS MS		Unit	D	%Rec	%Rec. Limits	
	Result	Qualifier		Result	Qualifier				Limits	Limits
Chloride	1.0	D	3.20	4.15	D	mg/L		97	75 - 125	
Fluoride	0.17	D	0.800	0.910	D	mg/L		92	75 - 125	
Sulfate	13	D	4.00	17.5	D	mg/L		108	75 - 125	

Lab Sample ID: 300-3349-A-12 DU
Matrix: Water
Analysis Batch: 4694

Client Sample ID: Duplicate
Prep Type: Total/NA

Analyte	Sample		DU DU		Unit	D	RPD	RPD Limit	
	Result	Qualifier	Result	Qualifier				RPD	Limit
Chloride	1.0	D	1.04	D	mg/L		0.1	20	
Fluoride	0.17	D	0.171	D	mg/L		0	20	
Sulfate	13	D	13.2	D	mg/L		0.08	20	

Method: 7196A - Chromium, Hexavalent

Lab Sample ID: MB 300-4697/3
Matrix: Water
Analysis Batch: 4697

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

Analyte	MB MB		RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Cr (VI)	0.0015	U	0.0040	0.0015	mg/L			06/24/16 16:52	1

Lab Sample ID: LCS 300-4697/4
Matrix: Water
Analysis Batch: 4697

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

Analyte	Spike Added	LCS LCS		Unit	D	%Rec	%Rec. Limits	
		Result	Qualifier				Limits	Limits
Cr (VI)	0.250	0.248		mg/L		99	80 - 120	

Lab Sample ID: 300-3347-1 MS
Matrix: Water
Analysis Batch: 4697

Client Sample ID: B359W3
Prep Type: Total/NA

Analyte	Sample		Spike Added	MS MS		Unit	D	%Rec	%Rec. Limits	
	Result	Qualifier		Result	Qualifier				Limits	Limits
Cr (VI)	0.027		0.0499	0.0762		mg/L		99	75 - 125	

Lab Sample ID: 300-3347-1 DU
Matrix: Water
Analysis Batch: 4697

Client Sample ID: B359W3
Prep Type: Total/NA

Analyte	Sample		DU DU		Unit	D	RPD	RPD Limit	
	Result	Qualifier	Result	Qualifier				RPD	Limit
Cr (VI)	0.027		0.0278		mg/L		3	20	

QC Association Summary

Client: CH2M Hill Plateau Remediation Company
 Project/Site: S16-006

TestAmerica Job ID: 300-3347-1
 SDG: WC1196

HPLC/IC

Analysis Batch: 4693

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
300-3347-5	B359Y8	Total/NA	Water	300.0	
300-3347-6	B35C75	Total/NA	Water	300.0	
300-3347-7	B35C76	Total/NA	Water	300.0	
300-3347-7	B35C76	Total/NA	Water	300.0	
300-3349-A-12 DU	Duplicate	Total/NA	Water	300.0	
300-3349-A-12 MS	Matrix Spike	Total/NA	Water	300.0	
LCS 300-4693/30	Lab Control Sample	Total/NA	Water	300.0	
MB 300-4693/29	Method Blank	Total/NA	Water	300.0	

Analysis Batch: 4694

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
300-3347-5	B359Y8	Total/NA	Water	300.0	
300-3347-5	B359Y8	Total/NA	Water	300.0	
300-3347-6	B35C75	Total/NA	Water	300.0	
300-3347-7	B35C76	Total/NA	Water	300.0	
300-3347-7	B35C76	Total/NA	Water	300.0	
300-3349-A-12 DU	Duplicate	Total/NA	Water	300.0	
300-3349-A-12 MS	Matrix Spike	Total/NA	Water	300.0	
LCS 300-4694/30	Lab Control Sample	Total/NA	Water	300.0	
MB 300-4694/29	Method Blank	Total/NA	Water	300.0	

General Chemistry

Analysis Batch: 4697

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
300-3347-1	B359W3	Total/NA	Water	7196A	
300-3347-1 DU	B359W3	Total/NA	Water	7196A	
300-3347-1 MS	B359W3	Total/NA	Water	7196A	
300-3347-2	B359W5	Total/NA	Water	7196A	
300-3347-3	B35B01	Total/NA	Water	7196A	
300-3347-4	B359Y9	Total/NA	Water	7196A	
LCS 300-4697/4	Lab Control Sample	Total/NA	Water	7196A	
MB 300-4697/3	Method Blank	Total/NA	Water	7196A	

Lab Chronicle

Client: CH2M Hill Plateau Remediation Company
Project/Site: S16-006

TestAmerica Job ID: 300-3347-1
SDG: WC1196

Client Sample ID: B359W3

Date Collected: 06/24/16 13:03

Date Received: 06/24/16 15:00

Lab Sample ID: 300-3347-1

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			4697	06/24/16 16:55	RLC	TAL RCH

Client Sample ID: B359W5

Date Collected: 06/24/16 13:03

Date Received: 06/24/16 15:00

Lab Sample ID: 300-3347-2

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			4697	06/24/16 16:56	RLC	TAL RCH

Client Sample ID: B35B01

Date Collected: 06/24/16 13:49

Date Received: 06/24/16 15:00

Lab Sample ID: 300-3347-3

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			4697	06/24/16 16:56	RLC	TAL RCH

Client Sample ID: B359Y9

Date Collected: 06/24/16 13:49

Date Received: 06/24/16 15:00

Lab Sample ID: 300-3347-4

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			4697	06/24/16 16:57	RLC	TAL RCH

Client Sample ID: B359Y8

Date Collected: 06/24/16 13:49

Date Received: 06/24/16 15:00

Lab Sample ID: 300-3347-5

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	300.0		2	10 mL		4693	06/24/16 22:38	RLC	TAL RCH
Total/NA	Analysis	300.0		2	10 mL		4694	06/24/16 22:38	RLC	TAL RCH
Total/NA	Analysis	300.0		20	10 mL		4694	06/25/16 01:54	RLC	TAL RCH

Client Sample ID: B35C75

Date Collected: 06/24/16 07:15

Date Received: 06/24/16 15:00

Lab Sample ID: 300-3347-6

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	300.0		2	10 mL		4693	06/24/16 22:23	RLC	TAL RCH
Total/NA	Analysis	300.0		2	10 mL		4694	06/24/16 22:23	RLC	TAL RCH

Lab Chronicle

Client: CH2M Hill Plateau Remediation Company
Project/Site: S16-006

TestAmerica Job ID: 300-3347-1
SDG: WC1196

Client Sample ID: B35C76

Lab Sample ID: 300-3347-7

Date Collected: 06/24/16 09:34

Matrix: Water

Date Received: 06/24/16 15:00

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		2	10 mL		4693	06/24/16 22:08	RLC	TAL RCH
Total/NA	Analysis	300.0		2	10 mL		4694	06/24/16 22:08	RLC	TAL RCH
Total/NA	Analysis	300.0		20	10 mL		4693	06/25/16 01:24	RLC	TAL RCH
Total/NA	Analysis	300.0		20	10 mL		4694	06/25/16 01:24	RLC	TAL RCH

Client Sample ID: B359W3

Lab Sample ID: 300-3347-1 DU

Date Collected: 06/24/16 13:03

Matrix: Water

Date Received: 06/24/16 15:00

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			4697	06/24/16 16:56	RLC	TAL RCH

Client Sample ID: Duplicate

Lab Sample ID: 300-3349-A-12 DU

Date Collected: 06/24/16 08:37

Matrix: Water

Date Received: 06/24/16 15:00

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		2	10 mL		4693	06/24/16 20:06	RLC	TAL RCH
Total/NA	Analysis	300.0		2	10 mL		4694	06/24/16 20:06	RLC	TAL RCH

Client Sample ID: Lab Control Sample

Lab Sample ID: LCS 300-4693/30

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	300.0		1	10 mL		4693	06/24/16 19:22	RLC	TAL RCH

Client Sample ID: Lab Control Sample

Lab Sample ID: LCS 300-4694/30

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	300.0		1	10 mL		4694	06/24/16 19:22	RLC	TAL RCH

Client Sample ID: Lab Control Sample

Lab Sample ID: LCS 300-4697/4

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			4697	06/24/16 16:52	RLC	TAL RCH

Lab Chronicle

Client: CH2M Hill Plateau Remediation Company
 Project/Site: S16-006

TestAmerica Job ID: 300-3347-1
 SDG: WC1196

Client Sample ID: Method Blank

Lab Sample ID: MB 300-4693/29

Date Collected: N/A
 Date Received: N/A

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	300.0		1	10 mL		4693	06/24/16 19:07	RLC	TAL RCH

Client Sample ID: Method Blank

Lab Sample ID: MB 300-4694/29

Date Collected: N/A
 Date Received: N/A

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	300.0		1	10 mL		4694	06/24/16 19:07	RLC	TAL RCH

Client Sample ID: Method Blank

Lab Sample ID: MB 300-4697/3

Date Collected: N/A
 Date Received: N/A

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			4697	06/24/16 16:52	RLC	TAL RCH

Client Sample ID: B359W3

Lab Sample ID: 300-3347-1 MS

Date Collected: 06/24/16 13:03
 Date Received: 06/24/16 15:00

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		3.0 mL	4697	06/24/16 16:53	RLC	TAL RCH

Client Sample ID: Matrix Spike

Lab Sample ID: 300-3349-A-12 MS

Date Collected: 06/24/16 08:37
 Date Received: 06/24/16 15:00

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	300.0		2	10 mL		4693	06/24/16 19:51	RLC	TAL RCH
Total/NA	Analysis	300.0		2	10 mL		4694	06/24/16 19:51	RLC	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: S16-006

TestAmerica Job ID: 300-3347-1
SDG: WC1196

Method	Method Description	Protocol	Laboratory
300.0	Anions, Ion Chromatography	MCAWW	TAL RCH
7196A	Chromium, Hexavalent	SW846	TAL RCH

Protocol References:

MCAWW = "Methods For Chemical Analysis Of Water And Wastes", EPA-600/4-79-020, March 1983 And Subsequent Revisions.
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 18, 2016

Sample Summary

Client: CH2M Hill Plateau Remediation Company
Project/Site: S16-006

TestAmerica Job ID: 300-3347-1
SDG: WC1196

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
300-3347-1	B359W3	Water	06/24/16 13:03	06/24/16 15:00
300-3347-2	B359W5	Water	06/24/16 13:03	06/24/16 15:00
300-3347-3	B35B01	Water	06/24/16 13:49	06/24/16 15:00
300-3347-4	B359Y9	Water	06/24/16 13:49	06/24/16 15:00
300-3347-5	B359Y8	Water	06/24/16 13:49	06/24/16 15:00
300-3347-6	B35C75	Water	06/24/16 07:15	06/24/16 15:00
300-3347-7	B35C76	Water	06/24/16 09:34	06/24/16 15:00

- 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: 300-3347-1

SDG Number: WC1196

Login Number: 3347

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	

