

8/16/2016

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: 300-3549-1
TestAmerica Sample Delivery Group: WC1287
Client Project/Site: S16-007

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

Attn: CPP Sample Management



Authorized for release by:
8/16/2016 12:43:39 PM
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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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Definitions/Glossary

Client: CH2M Hill Plateau Remediation Company
Project/Site: S16-007

TestAmerica Job ID: 300-3549-1
SDG: WC1287

Qualifiers

HPLC/IC

Qualifier	Qualifier Description
D	The reported value is from a dilution.
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, 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: S16-007

TestAmerica Job ID: 300-3549-1
SDG: WC1287

Job ID: 300-3549-1

Laboratory: TestAmerica Richland

Narrative

**Job Narrative
300-3549-1**

Comments

No additional comments.

Receipt

The sample was received on 7/22/2016 8:50 AM; the sample arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 10.0° C.

HPLC/IC

Method 300.0: Manual integration was performed on the following sample for Nitrite as N: B35YJ2 (300-3549-1).

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

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CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

C.O.C. #
S16-007-341
Page 1 of 1

Collector	JR Aguilar/CHPRC	Contact/Requester	Karen Waters-Husted	Telephone No.	509-376-4650
SAF No.	S16-007	Sampling Origin	Hanford Site	Purchase Order/Charge Code	300071
Project Title	SURV, JULY 2016	Logbook No.	HNF-N-506 86 / S-7	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			SPECIAL INSTRUCTIONS		
*** 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			N/A		
Sample No.	B35YJ2	Filter	N	Date	W JUL 21 2016
		*		Time	13:13
		No./Type Container	1x500-ml P	Sample Analysis	300.0_ANIONS_IC: COMMON; 300.0_ANIONS_IC: GW 02
		Holding Time	48 Hours	Preservative	Cool <=6C

8/16/2016

3549
WOLAN



300-3549 COC

Relinquished By	JR Aguilar/CHPRC	Print	Sign	Date/Time	JUL 21 2016 13:50	Received By	SSU-1	Print	Sign	Date/Time	JUL 21 2016 13:50	Matrix *	
Relinquished By	Janelle Zunker/CHPRC	55041		Date/Time	JUL 22 2016 07:00	Received By	Janelle Zunker/CHPRC			Date/Time	JUL 22 2016 07:00	S = Soil	DS = Drum Solids
Relinquished By	Janelle Zunker/CHPRC			Date/Time	JUL 22 2016 08:50	Received By	Trahanstraw, Ther			Date/Time	JUL 22 2016 08:50	SE = Sediment	DL = Drum Liquids
Relinquished By				Date/Time		Received By				Date/Time		SO = Solid	T = Tissue
Relinquished By				Date/Time		Received By				Date/Time		SL = Sludge	WT = Wipe
Relinquished By				Date/Time		Received By				Date/Time		W = Water	L = Liquid
Relinquished By				Date/Time		Received By				Date/Time		O = Oil	V = Vegetation
Relinquished By				Date/Time		Received By				Date/Time		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: S16-007

TestAmerica Job ID: 300-3549-1
 SDG: WC1287

Client Sample ID: B35YJ2

Lab Sample ID: 300-3549-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	29	D	0.40	0.20	mg/L	2		300.0	Total/NA
Nitrate as N	7.0	D	0.28	0.14	mg/L	10		300.0	Total/NA
Fluoride	0.18	D	0.10	0.050	mg/L	2		300.0	Total/NA
Nitrite as N	0.088	D	0.076	0.038	mg/L	2		300.0	Total/NA
Sulfate	99	D	2.5	1.3	mg/L	10		300.0	Total/NA
Bromide	0.28	D	0.25	0.13	mg/L	2		300.0	Total/NA

This Detection Summary does not include radiochemical test results.



Client Sample Results

Client: CH2M Hill Plateau Remediation Company
 Project/Site: S16-007

TestAmerica Job ID: 300-3549-1
 SDG: WC1287

Client Sample ID: B35YJ2

Lab Sample ID: 300-3549-1

Date Collected: 07/21/16 13:13

Matrix: Water

Date Received: 07/22/16 08:50

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	29	D	0.40	0.20	mg/L			07/22/16 19:11	2
Nitrate as N	7.0	D	0.28	0.14	mg/L			07/22/16 22:27	10
Fluoride	0.18	D	0.10	0.050	mg/L			07/22/16 19:11	2
Nitrite as N	0.088	D	0.076	0.038	mg/L			07/22/16 19:11	2
Orthophosphate as P	0.41	U D	0.82	0.41	mg/L			07/22/16 22:27	10
Sulfate	99	D	2.5	1.3	mg/L			07/22/16 22:27	10
Bromide	0.28	D	0.25	0.13	mg/L			07/22/16 19:11	2

QC Sample Results

Client: CH2M Hill Plateau Remediation Company
Project/Site: S16-007

TestAmerica Job ID: 300-3549-1
SDG: WC1287

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 300-5004/5
Matrix: Water
Analysis Batch: 5004

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			07/22/16 18:41	1
Nitrite as N	0.019	U	0.038	0.019	mg/L			07/22/16 18:41	1
Orthophosphate as P	0.041	U	0.082	0.041	mg/L			07/22/16 18:41	1

Lab Sample ID: LCS 300-5004/6
Matrix: Water
Analysis Batch: 5004

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	2.36		mg/L		104	80 - 120
Nitrite as N	3.04	3.21		mg/L		105	80 - 120
Orthophosphate as P	6.53	6.79		mg/L		104	80 - 120

Lab Sample ID: 300-3549-1 MS
Matrix: Water
Analysis Batch: 5004

Client Sample ID: B35YJ2
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Nitrite as N	0.088	D	0.609	0.602	D	mg/L		84	75 - 125

Lab Sample ID: 300-3549-1 MS
Matrix: Water
Analysis Batch: 5004

Client Sample ID: B35YJ2
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Nitrate as N	7.0	D	2.26	9.34	D	mg/L		105	75 - 125
Orthophosphate as P	0.41	U D	6.53	5.63	D	mg/L		86	75 - 125

Lab Sample ID: 300-3549-1 DU
Matrix: Water
Analysis Batch: 5004

Client Sample ID: B35YJ2
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Nitrite as N	0.088	D	0.0877	D	mg/L		0.3	20

Lab Sample ID: 300-3549-1 DU
Matrix: Water
Analysis Batch: 5004

Client Sample ID: B35YJ2
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Nitrate as N	7.0	D	6.85	D	mg/L		2	20
Orthophosphate as P	0.41	U D	0.41	U D	mg/L		NC	20

Lab Sample ID: MB 300-5005/5
Matrix: Water
Analysis Batch: 5005

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			07/22/16 18:41	1

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QC Sample Results

Client: CH2M Hill Plateau Remediation Company
 Project/Site: S16-007

TestAmerica Job ID: 300-3549-1
 SDG: WC1287

Method: 300.0 - Anions, Ion Chromatography (Continued)

Lab Sample ID: MB 300-5005/5
 Matrix: Water
 Analysis Batch: 5005

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	0.025	U	0.050	0.025	mg/L			07/22/16 18:41	1
Sulfate	0.13	U	0.25	0.13	mg/L			07/22/16 18:41	1
Bromide	0.063	U	0.13	0.063	mg/L			07/22/16 18:41	1

Lab Sample ID: LCS 300-5005/6
 Matrix: Water
 Analysis Batch: 5005

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	16.5		mg/L		103	80 - 120
Fluoride	4.00	4.14		mg/L		103	80 - 120
Sulfate	20.0	20.8		mg/L		104	80 - 120
Bromide	10.0	10.4		mg/L		104	80 - 120

Lab Sample ID: 300-3549-1 MS
 Matrix: Water
 Analysis Batch: 5005

Client Sample ID: B35YJ2
 Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	29	D	3.20	31.4	D	mg/L		76	75 - 125
Fluoride	0.18	D	0.800	0.899	D	mg/L		90	75 - 125
Bromide	0.28	D	2.00	1.97	D	mg/L		85	75 - 125

Lab Sample ID: 300-3549-1 MS
 Matrix: Water
 Analysis Batch: 5005

Client Sample ID: B35YJ2
 Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfate	99	D	20.0	119	D	mg/L		103	75 - 125

Lab Sample ID: 300-3549-1 DU
 Matrix: Water
 Analysis Batch: 5005

Client Sample ID: B35YJ2
 Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Chloride	29	D	28.9	D	mg/L		0	20
Fluoride	0.18	D	0.178	D	mg/L		0.2	20
Bromide	0.28	D	0.280	D	mg/L		0.4	20

Lab Sample ID: 300-3549-1 DU
 Matrix: Water
 Analysis Batch: 5005

Client Sample ID: B35YJ2
 Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Sulfate	99	D	96.6	D	mg/L		2	20

QC Association Summary

Client: CH2M Hill Plateau Remediation Company
 Project/Site: S16-007

TestAmerica Job ID: 300-3549-1
 SDG: WC1287

HPLC/IC

Analysis Batch: 5004

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
300-3549-1	B35YJ2	Total/NA	Water	300.0	
300-3549-1	B35YJ2	Total/NA	Water	300.0	
MB 300-5004/5	Method Blank	Total/NA	Water	300.0	
LCS 300-5004/6	Lab Control Sample	Total/NA	Water	300.0	
300-3549-1 MS	B35YJ2	Total/NA	Water	300.0	
300-3549-1 MS	B35YJ2	Total/NA	Water	300.0	
300-3549-1 DU	B35YJ2	Total/NA	Water	300.0	
300-3549-1 DU	B35YJ2	Total/NA	Water	300.0	

Analysis Batch: 5005

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
300-3549-1	B35YJ2	Total/NA	Water	300.0	
300-3549-1	B35YJ2	Total/NA	Water	300.0	
MB 300-5005/5	Method Blank	Total/NA	Water	300.0	
LCS 300-5005/6	Lab Control Sample	Total/NA	Water	300.0	
300-3549-1 MS	B35YJ2	Total/NA	Water	300.0	
300-3549-1 MS	B35YJ2	Total/NA	Water	300.0	
300-3549-1 DU	B35YJ2	Total/NA	Water	300.0	
300-3549-1 DU	B35YJ2	Total/NA	Water	300.0	

Lab Chronicle

Client: CH2M Hill Plateau Remediation Company
 Project/Site: S16-007

TestAmerica Job ID: 300-3549-1
 SDG: WC1287

Client Sample ID: B35YJ2

Lab Sample ID: 300-3549-1

Date Collected: 07/21/16 13:13

Matrix: Water

Date Received: 07/22/16 08:50

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			5004	07/22/16 19:11	RLC	TAL RCH
Total/NA	Analysis	300.0		2			5005	07/22/16 19:11	RLC	TAL RCH
Total/NA	Analysis	300.0		10			5004	07/22/16 22:27	RLC	TAL RCH
Total/NA	Analysis	300.0		10			5005	07/22/16 22:27	RLC	TAL RCH

Client Sample ID: Method Blank

Lab Sample ID: MB 300-5004/5

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			5004	07/22/16 18:41	RLC	TAL RCH

Client Sample ID: Method Blank

Lab Sample ID: MB 300-5005/5

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			5005	07/22/16 18:41	RLC	TAL RCH

Client Sample ID: Lab Control Sample

Lab Sample ID: LCS 300-5004/6

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			5004	07/22/16 18:56	RLC	TAL RCH

Client Sample ID: Lab Control Sample

Lab Sample ID: LCS 300-5005/6

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			5005	07/22/16 18:56	RLC	TAL RCH

Client Sample ID: B35YJ2

Lab Sample ID: 300-3549-1 MS

Date Collected: 07/21/16 13:13

Matrix: Water

Date Received: 07/22/16 08:50

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			5004	07/22/16 19:26	RLC	TAL RCH
Total/NA	Analysis	300.0		2			5005	07/22/16 19:26	RLC	TAL RCH
Total/NA	Analysis	300.0		10			5004	07/22/16 22:42	RLC	TAL RCH

Lab Chronicle

Client: CH2M Hill Plateau Remediation Company
Project/Site: S16-007

TestAmerica Job ID: 300-3549-1
SDG: WC1287

Client Sample ID: B35YJ2

Lab Sample ID: 300-3549-1 MS

Date Collected: 07/21/16 13:13

Matrix: Water

Date Received: 07/22/16 08:50

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		10			5005	07/22/16 22:42	RLC	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: S16-007

TestAmerica Job ID: 300-3549-1
SDG: WC1287

Method	Method Description	Protocol	Laboratory
300.0	Anions, Ion Chromatography	MCAWW	TAL RCH

Protocol References:

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

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: S16-007

TestAmerica Job ID: 300-3549-1
SDG: WC1287

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
300-3549-1	B35YJ2	Water	07/21/16 13:13	07/22/16 08:50

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Login Sample Receipt Checklist

Client: CH2M Hill Plateau Remediation Company

Job Number: 300-3549-1

SDG Number: WC1287

Login Number: 3549

List Number: 1

Creator: Bock, Julie A

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.	True	
Residual Chlorine Checked.	N/A	