

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: 300-1817-1
TestAmerica Sample Delivery Group: WC0697
Client Project/Site: X15-069

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

Attn: CPP Sample Management



Authorized for release by:
12/21/2015 12:07:29 PM
Steven Campbell, Quality Assurance 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 elss than five times the MDL.

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Definitions/Glossary

Client: CH2M Hill Plateau Remediation Company
 Project/Site: X15-069

TestAmerica Job ID: 300-1817-1
 SDG: WC0697



Qualifiers

HPLC/IC

Qualifier	Qualifier Description
D	The reported value is from a dilution.
U	Analyzed for but not detected.
N	MS, MSD: Spike recovery is outside acceptance limits.
B	Estimated result. Result is less than the RL, but greater than MDL

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: X15-069

TestAmerica Job ID: 300-1817-1
SDG: WC0697



Job ID: 300-1817-1

Laboratory: TestAmerica Richland

Narrative

Job Narrative
300-1817-1

Comments

No additional comments.

Receipt

The samples were received on 12/11/2015 9:45 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 8.0° C.

HPLC/IC

Method 300.0: The matrix spike (MS) recoveries for analytical batch 300-2344 were outside control limits for Orthophosphate as P. Sample matrix interference is suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.

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

SAMPLE ISSUE RESOLUTION

SIR NUM	SIR16-273
REV NUM	0
DATE INITIATED	3/30/2016

SAMPLE EVENT INFORMATION

SAF NUM(S) X15-069
OPERABLE UNIT(S) 300-FF-5
PROJECT(S) CERC15
SAMPLE EVENT TITLE(S) CERC15
LABORATORY TestAmerica Incorporated, Richland

SAMPLING INFORMATION

NUMBER OF SAMPLES 1
SAMPLE NUMBERS B33942
SAMPLE MATRIX WATER
COLLECTION DATE 12/11/2015 - 12/11/2015
SDG NUM WC0697

ISSUE BACKGROUND

CLASS Chain of Custody Issue (Field)
TYPE Incorrect Relinquish/Receipt Date/Time
DESCRIPTION COC X15-069-049 SAMPLE B33942
 RELINQUISHED BY/RECEIVED BY TIMES DO NOT MATCH

DISPOSITION

DESCRIPTION DOCUMENT AND CLOSE
JUSTIFICATION DOCUMENT AND CLOSE

SUBMITTED BY: Jessa Szecsody DATE: 03/10/2016
 ACCEPTED BY: Kirsten Killand DATE: 03/30/2016



CH2MHill Plateau Remediation Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

C.O.C. #

X15-069-045

Page 1 of 1

Collector	S.W. Kang/CHPSC	Contact/Requester	WHITLEY, KM	Telephone No.	373-4929
SAF No.	X15-069	Sampling Origin	Hanford Site	Purchase Order/Charge Code	300205
Project Title	300 Area Uranium Sequestration Post Inj	Logbook No.	HNF-N-5063/9	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	CERCLA	Priority:	30 Days	Offsite Property No.	N/A
POSSIBLE SAMPLE HAZARDS/REMARKS			SPECIAL INSTRUCTIONS	Hold Time	Total Activity Exemption: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
*Contains Radioactive Material at concentrations that are not be regulated for transportation per 49 CFR/ATA Dangerous Goods Regulations but are not releasable per DOE Order 458.1.					

Sample No.	Filter	*	Date	Time	No./Type Container	Sample Analysis	Holding Time	Preservative
B339H1	N		DEC 11 2015	0825	1x500-mL P	300_0_ANIONS_IC: COMMON; 300_0_ANIONS_IC: GW/01	48 Hours	C001 <=6C

#1817
WCO697

Relinquished By	Print	Sign	Date/Time	Received By	Print	Sign	Date/Time	Matrix *
S.W. Kang/CHPSC			DEC 11 2015	F.M. Hall/CHPSC			DEC 11 2015	S = Soil SE = Sediment SO = Solid SL = Sludge W = Water O = Oil A = Air
F.M. Hall/CHPSC			12-11-15	F.M. Hall/CHPSC			12-11-15	DS = Drum Solids DL = Drum Liquids T = Tissue WI = 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
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CH2M HILL Plateau Remediation Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

C.O.C. #
X15-069-041

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Collector K.C. Patterson CHPRC	Contact/Requester WHITLEY, KM	Telephone No. 373-4929
SAF No. X15-069	Sampling Origin Hanford Site	Purchase Order/Charge Code 300205
Project Title 300 Area Uranium Segregation Post Inj	Logbook No. HNF-N-506 80/58	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 CERCLA	Priority: 30 Days PRIORITY	Offsite Property No. N/A

POSSIBLE SAMPLE HAZARDS/REMARKS
 *Contains Radioactive Material at concentrations that are not be regulated for transportation per 49 CFR/ATA Dangerous Goods Regulations but are not releasable per DOE Order 458.1.

Sample No.	Filter	* Date	Time	No/Type Container	Sample Analysis	Holding Time	Preservative
B33974	N	DEC 11 2015	0857	1X500-mL P	300.0 ANIONS, JC: COMMON; 300.0 ANIONS, IC: GW/01	48 Hours	Cool <=6C

SPECIAL INSTRUCTIONS **Hold Time** **Total Activity Exemption:** Yes No

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Relinquished By K.C. Patterson CHPRC	Print	Sign	Date/Time DEC 11 2015 0920	Received By F.M. Haug/CHPRC	Print	Sign	Date/Time DEC 11 2015 0920	
Relinquished By F.M. Haug/CHPRC			Date/Time 12-11-15	Received By J. Friesz, TARL			Date/Time 12-11-15	
Relinquished By			Date/Time	Received By			Date/Time	

S = Soil SE = Sediment SO = Solid SL = Sludge W = Water O = Oil A = Air	Matrix * DS = Drum Solids DL = Dyeam Liquids T = Tissue WI = Wipe L = Liquid V = Vegetation X = Other
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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. #
X15-069-034

Page 1 of 1

Collector K.C. Patterson CHPRC	Contact/Requester WHITLEY, KM	Telephone No. 373-4929
SAF No. X15-069	Sampling Origin Hanford Site	Purchase Order/Charge Code 300205
Project Title 300 Area Uranium Sequestration Post Inj	Logbook No. HNF-N-506 80/58	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 CERCLA	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 be regulated for transportation per 49 CFR/ATA Dangerous Goods Regulations but are not releasable per DOE Order 458.1.		SPECIAL INSTRUCTIONS
		Hold Time

Sample No.	Filter	* Date	Time	No./Type Container	Sample Analysis	Holding Time	Preservative
B33970	N	DEC 11 2015	0806	1X500-mL P	300.0 ANIONS_IC: COMMON; 300.0 ANIONS_IC: GW 01	48 Hours	Cool <=6C

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Relinquished By K.C. Patterson CHPRC	Print 	Sign 	Date/Time DEC 11 2015 0920	Received By F.M. HalcCHPRC	Print 	Sign 	Date/Time DEC 11 2015 0920	Matrix *
Relinquished By			Date/Time 0845	Received By J. Fiesz, TARI			Date/Time 0845	S = Soil SE = Sediment SO = Solid SL = Sludge W = Water O = Oil A = Air
Relinquished By F.M. HalcCHPRC			Date/Time 12-11-15	Received By			Date/Time 12-11-15	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
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CH2MHILL Plateau Remediation Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

C.O.C. # **X15-069-040**
Page 1 of 1

Collector	S.W. King/CHSPCC	Contact/Requester	WHITLEY, KMI	Telephone No.	373-4929
SAF No.	X15-069	Sampling Origin	Hanford Site	Purchase Order/Charge Code	300205
Project Title	300 Area Uranium Sequestration Post Inj	Logbook No.	HNF-N-506 03/9	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	CERCLA	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/171A Dangerous Goods Regulations but are not releasable per DOE Order 458.1.			Hold Time		
			Total Activity Exemption: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>		
Sample No.	Filter	Date	Time	No/Type Container	Sample Analysis
B33938	N	DEC 11 2015	0825	1x500-mL P	300.0 ANIONS_IC: COMMON; 300.0 ANIONS_IC: GW 01
					Preservative
					Cool <=6C
					Holding Time
					48 Hours

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Reinquished By	Print	Sign	Date/Time	Received By	Print	Sign	Date/Time	Matrix *
S.W. King/CHSPCC	<i>[Signature]</i>	<i>[Signature]</i>	DEC 11 2015	F.M. Hatcher/CHSPCC	<i>[Signature]</i>	<i>[Signature]</i>	DEC 11 2015	S = Soil SE = Sediment SO = Solid SL = Sludge W = Water O = Oil A = Air
Reinquished By			Date/Time	Received By			Date/Time	DS = Drum Solids DL = Drum Liquids T = Tissue WT = Wipe L = Liquid V = Vegetation X = Other
F.M. Hatcher/CHSPCC	<i>[Signature]</i>	<i>[Signature]</i>	12-11-15	J. Friesz, TARL	<i>[Signature]</i>	<i>[Signature]</i>	0825	
Reinquished By			Date/Time	Received By			Date/Time	
Reinquished 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	



CH2M HILL Plateau Remediation Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

C.O.C. #

X15-069-044

Page 1 of 1

Collector K.C. Patterson CHPRC	Contact/Requester WHITLEY, KM	Telephone No. 373-4929
SAF No. X15-069	Sampling Origin Hanford Site	Purchase Order/Charge Code 300205
Project Title 300 Area Uranium Sequestration Post Inj	Logbook No. HNF-N-506 80/58	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 CERCLA	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 CERCLA/Dangerous Goods Regulations but are not releasable per DOE Order 458.1.		SPECIAL INSTRUCTIONS

Sample No.	Filter	* Date	Time	No/Type Container	Sample Analysis	Holding Time	Preservative
B33962	N	DEC 11 2015	0926	1X500-ml P	300.0_ANIONS_IC: COMMON; 300.0_ANIONS_IC: GW 01	48 Hours	Cool <=6C

#1817
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Relinquished By K.C. Patterson	Print 	Sign 	Date/Time DEC 11 2015 0931	Received By F.M. Hall/CHPRC	Print 	Sign 	Date/Time DEC 11 2015 0930
Relinquished By F.M. Hall/CHPRC			Date/Time 12-11-15	Received By J. Friesz, TARI			Date/Time 12-11-15
Relinquished By			Date/Time	Received By			Date/Time

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

Detection Summary

Client: CH2M Hill Plateau Remediation Company
 Project/Site: X15-069

TestAmerica Job ID: 300-1817-1
 SDG: WC0697



Client Sample ID: B33942

Lab Sample ID: 300-1817-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	27	D	2.0	1.0	mg/L	10		300.0	Total/NA
Nitrate as N	7.6	D	0.28	0.14	mg/L	10		300.0	Total/NA
Fluoride	1.1	D	0.50	0.25	mg/L	10		300.0	Total/NA
Orthophosphate as P	87	D N	0.82	0.41	mg/L	10		300.0	Total/NA
Sulfate	64	D	2.5	1.3	mg/L	10		300.0	Total/NA

Client Sample ID: B339H1

Lab Sample ID: 300-1817-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	21	D	0.40	0.20	mg/L	2		300.0	Total/NA
Nitrate as N	5.1	D	0.056	0.028	mg/L	2		300.0	Total/NA
Fluoride	0.34	D	0.10	0.050	mg/L	2		300.0	Total/NA
Orthophosphate as P	27	D N	0.16	0.082	mg/L	2		300.0	Total/NA
Sulfate	60	D	0.50	0.25	mg/L	2		300.0	Total/NA

Client Sample ID: B33974

Lab Sample ID: 300-1817-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	20	D	2.0	1.0	mg/L	10		300.0	Total/NA
Nitrate as N	5.8	D	0.28	0.14	mg/L	10		300.0	Total/NA
Fluoride	0.40	B D	0.50	0.25	mg/L	10		300.0	Total/NA
Orthophosphate as P	190	D N	4.1	2.1	mg/L	50		300.0	Total/NA
Sulfate	50	D	2.5	1.3	mg/L	10		300.0	Total/NA

Client Sample ID: B33970

Lab Sample ID: 300-1817-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	21	D	0.40	0.20	mg/L	2		300.0	Total/NA
Nitrate as N	5.5	D	0.056	0.028	mg/L	2		300.0	Total/NA
Fluoride	0.28	D	0.10	0.050	mg/L	2		300.0	Total/NA
Orthophosphate as P	20	D N	0.16	0.082	mg/L	2		300.0	Total/NA
Sulfate	58	D	0.50	0.25	mg/L	2		300.0	Total/NA

Client Sample ID: B33938

Lab Sample ID: 300-1817-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	21	D	0.40	0.20	mg/L	2		300.0	Total/NA
Nitrate as N	5.1	D	0.056	0.028	mg/L	2		300.0	Total/NA
Fluoride	0.34	D	0.10	0.050	mg/L	2		300.0	Total/NA
Orthophosphate as P	26	D N	0.16	0.082	mg/L	2		300.0	Total/NA
Sulfate	60	D	0.50	0.25	mg/L	2		300.0	Total/NA

Client Sample ID: B33962

Lab Sample ID: 300-1817-6

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	5.6	D	0.056	0.028	mg/L	2		300.0	Total/NA
Fluoride	0.35	D	0.10	0.050	mg/L	2		300.0	Total/NA
Orthophosphate as P	1.4	D N	0.16	0.082	mg/L	2		300.0	Total/NA
Sulfate	59	D	0.50	0.25	mg/L	2		300.0	Total/NA

This Detection Summary does not include radiochemical test results.

TestAmerica Richland

Client Sample Results

Client: CH2M Hill Plateau Remediation Company
Project/Site: X15-069

TestAmerica Job ID: 300-1817-1
SDG: WC0697

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Client Sample ID: B33942

Lab Sample ID: 300-1817-1

Date Collected: 12/11/15 08:55

Matrix: Water

Date Received: 12/11/15 09:45

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	27	D	2.0	1.0	mg/L			12/11/15 15:28	10
Nitrate as N	7.6	D	0.28	0.14	mg/L			12/11/15 15:28	10
Fluoride	1.1	D	0.50	0.25	mg/L			12/11/15 15:28	10
Nitrite as N	0.19	U	0.38	0.19	mg/L			12/11/15 15:28	10
Orthophosphate as P	87	D N	0.82	0.41	mg/L			12/11/15 15:28	10
Sulfate	64	D	2.5	1.3	mg/L			12/11/15 15:28	10

Client Sample ID: B339H1

Lab Sample ID: 300-1817-2

Date Collected: 12/11/15 08:25

Matrix: Water

Date Received: 12/11/15 09:45

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	21	D	0.40	0.20	mg/L			12/11/15 13:27	2
Nitrate as N	5.1	D	0.056	0.028	mg/L			12/11/15 13:27	2
Fluoride	0.34	D	0.10	0.050	mg/L			12/11/15 13:27	2
Nitrite as N	0.038	U	0.076	0.038	mg/L			12/11/15 13:27	2
Orthophosphate as P	27	D N	0.16	0.082	mg/L			12/11/15 13:27	2
Sulfate	60	D	0.50	0.25	mg/L			12/11/15 13:27	2

Client Sample ID: B33974

Lab Sample ID: 300-1817-3

Date Collected: 12/11/15 08:57

Matrix: Water

Date Received: 12/11/15 09:45

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	20	D	2.0	1.0	mg/L			12/11/15 15:13	10
Nitrate as N	5.8	D	0.28	0.14	mg/L			12/11/15 15:13	10
Fluoride	0.40	B D	0.50	0.25	mg/L			12/11/15 15:13	10
Nitrite as N	0.19	U	0.38	0.19	mg/L			12/11/15 15:13	10
Orthophosphate as P	190	D N	4.1	2.1	mg/L			12/11/15 14:28	50
Sulfate	50	D	2.5	1.3	mg/L			12/11/15 15:13	10

Client Sample ID: B33970

Lab Sample ID: 300-1817-4

Date Collected: 12/11/15 08:06

Matrix: Water

Date Received: 12/11/15 09:45

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	21	D	0.40	0.20	mg/L			12/11/15 13:42	2
Nitrate as N	5.5	D	0.056	0.028	mg/L			12/11/15 13:42	2
Fluoride	0.28	D	0.10	0.050	mg/L			12/11/15 13:42	2
Nitrite as N	0.038	U	0.076	0.038	mg/L			12/11/15 13:42	2
Orthophosphate as P	20	D N	0.16	0.082	mg/L			12/11/15 13:42	2
Sulfate	58	D	0.50	0.25	mg/L			12/11/15 13:42	2

Client Sample Results

Client: CH2M Hill Plateau Remediation Company
 Project/Site: X15-069

TestAmerica Job ID: 300-1817-1
 SDG: WC0697

Client Sample ID: B33938

Lab Sample ID: 300-1817-5

Date Collected: 12/11/15 08:25

Matrix: Water

Date Received: 12/11/15 09:45

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	21	D	0.40	0.20	mg/L			12/11/15 13:58	2
Nitrate as N	5.1	D	0.056	0.028	mg/L			12/11/15 13:58	2
Fluoride	0.34	D	0.10	0.050	mg/L			12/11/15 13:58	2
Nitrite as N	0.038	U	0.076	0.038	mg/L			12/11/15 13:58	2
Orthophosphate as P	26	D N	0.16	0.082	mg/L			12/11/15 13:58	2
Sulfate	60	D	0.50	0.25	mg/L			12/11/15 13:58	2

Client Sample ID: B33962

Lab Sample ID: 300-1817-6

Date Collected: 12/11/15 09:26

Matrix: Water

Date Received: 12/11/15 09:45

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			12/11/15 12:42	2
Nitrate as N	5.6	D	0.056	0.028	mg/L			12/11/15 12:42	2
Fluoride	0.35	D	0.10	0.050	mg/L			12/11/15 12:42	2
Nitrite as N	0.038	U	0.076	0.038	mg/L			12/11/15 12:42	2
Orthophosphate as P	1.4	D N	0.16	0.082	mg/L			12/11/15 12:42	2
Sulfate	59	D	0.50	0.25	mg/L			12/11/15 12:42	2

QC Sample Results

Client: CH2M Hill Plateau Remediation Company
Project/Site: X15-069

TestAmerica Job ID: 300-1817-1
SDG: WC0697

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 300-2344/5
Matrix: Water
Analysis Batch: 2344

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

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	0.014	U	0.028	0.014	mg/L			12/11/15 12:12	1
Nitrite as N	0.019	U	0.038	0.019	mg/L			12/11/15 12:12	1
Orthophosphate as P	0.041	U	0.082	0.041	mg/L			12/11/15 12:12	1

Lab Sample ID: LCS 300-2344/6
Matrix: Water
Analysis Batch: 2344

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	2.34		mg/L		104	80 - 120
Nitrite as N	3.04	3.16		mg/L		104	80 - 120
Orthophosphate as P	6.53	6.72		mg/L		103	80 - 120

Lab Sample ID: 300-1817-6 MS
Matrix: Water
Analysis Batch: 2344

Client Sample ID: B33962
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Nitrate as N	5.6	D	0.452	6.06	D	mg/L		96	75 - 125
Nitrite as N	0.038	U	0.609	0.542	D	mg/L		89	75 - 125
Orthophosphate as P	1.4	D N	1.31	1.69	D N	mg/L		24	75 - 125

Lab Sample ID: 300-1817-6 DU
Matrix: Water
Analysis Batch: 2344

Client Sample ID: B33962
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Nitrate as N	5.6	D	5.61	D	mg/L		0.3	20
Nitrite as N	0.038	U	0.038	U	mg/L		NC	20
Orthophosphate as P	1.4	D N	1.37	D	mg/L		0.08	20

Lab Sample ID: MB 300-2345/5
Matrix: Water
Analysis Batch: 2345

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

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	0.10	U	0.20	0.10	mg/L			12/11/15 12:12	1
Fluoride	0.025	U	0.050	0.025	mg/L			12/11/15 12:12	1
Sulfate	0.13	U	0.25	0.13	mg/L			12/11/15 12:12	1

Lab Sample ID: LCS 300-2345/6
Matrix: Water
Analysis Batch: 2345

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	16.3		mg/L		102	80 - 120
Fluoride	4.00	4.11		mg/L		103	80 - 120
Sulfate	20.0	20.4		mg/L		102	80 - 120

TestAmerica Richland

QC Sample Results

Client: CH2M Hill Plateau Remediation Company
 Project/Site: X15-069

TestAmerica Job ID: 300-1817-1
 SDG: WC0697

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Method: 300.0 - Anions, Ion Chromatography (Continued)

Lab Sample ID: 300-1817-6 MS
 Matrix: Water
 Analysis Batch: 2345

Client Sample ID: B33962
 Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	23	D	3.20	25.6	D	mg/L		95	75 - 125
Fluoride	0.35	D	0.800	1.11	D	mg/L		96	75 - 125
Sulfate	59	D	4.00	62.4	D	mg/L		95	75 - 125

Lab Sample ID: 300-1817-6 DU
 Matrix: Water
 Analysis Batch: 2345

Client Sample ID: B33962
 Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Chloride	23	D	22.6	D	mg/L		0.2	20
Fluoride	0.35	D	0.345	D	mg/L		0.4	20
Sulfate	59	D	58.5	D	mg/L		0.1	20

QC Association Summary

Client: CH2M Hill Plateau Remediation Company
 Project/Site: X15-069

TestAmerica Job ID: 300-1817-1
 SDG: WC0697



HPLC/IC

Analysis Batch: 2344

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
300-1817-1	B33942	Total/NA	Water	300.0	
300-1817-2	B339H1	Total/NA	Water	300.0	
300-1817-3	B33974	Total/NA	Water	300.0	
300-1817-3	B33974	Total/NA	Water	300.0	
300-1817-4	B33970	Total/NA	Water	300.0	
300-1817-5	B33938	Total/NA	Water	300.0	
300-1817-6	B33962	Total/NA	Water	300.0	
300-1817-6 DU	B33962	Total/NA	Water	300.0	
300-1817-6 MS	B33962	Total/NA	Water	300.0	
LCS 300-2344/6	Lab Control Sample	Total/NA	Water	300.0	
MB 300-2344/5	Method Blank	Total/NA	Water	300.0	

Analysis Batch: 2345

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
300-1817-1	B33942	Total/NA	Water	300.0	
300-1817-2	B339H1	Total/NA	Water	300.0	
300-1817-3	B33974	Total/NA	Water	300.0	
300-1817-4	B33970	Total/NA	Water	300.0	
300-1817-5	B33938	Total/NA	Water	300.0	
300-1817-6	B33962	Total/NA	Water	300.0	
300-1817-6 DU	B33962	Total/NA	Water	300.0	
300-1817-6 MS	B33962	Total/NA	Water	300.0	
LCS 300-2345/6	Lab Control Sample	Total/NA	Water	300.0	
MB 300-2345/5	Method Blank	Total/NA	Water	300.0	

Lab Chronicle

Client: CH2M Hill Plateau Remediation Company
Project/Site: X15-069

TestAmerica Job ID: 300-1817-1
SDG: WC0697

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Client Sample ID: B33942

Lab Sample ID: 300-1817-1

Date Collected: 12/11/15 08:55

Matrix: Water

Date Received: 12/11/15 09:45

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	10 mL		2344	12/11/15 15:28	CPM	TAL RCH
Total/NA	Analysis	300.0		10	10 mL		2345	12/11/15 15:28	CPM	TAL RCH

Client Sample ID: B339H1

Lab Sample ID: 300-1817-2

Date Collected: 12/11/15 08:25

Matrix: Water

Date Received: 12/11/15 09:45

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		2344	12/11/15 13:27	CPM	TAL RCH
Total/NA	Analysis	300.0		2	10 mL		2345	12/11/15 13:27	CPM	TAL RCH

Client Sample ID: B33974

Lab Sample ID: 300-1817-3

Date Collected: 12/11/15 08:57

Matrix: Water

Date Received: 12/11/15 09:45

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		50	10 mL		2344	12/11/15 14:28	CPM	TAL RCH
Total/NA	Analysis	300.0		10	10 mL		2344	12/11/15 15:13	CPM	TAL RCH
Total/NA	Analysis	300.0		10	10 mL		2345	12/11/15 15:13	CPM	TAL RCH

Client Sample ID: B33970

Lab Sample ID: 300-1817-4

Date Collected: 12/11/15 08:06

Matrix: Water

Date Received: 12/11/15 09:45

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		2344	12/11/15 13:42	CPM	TAL RCH
Total/NA	Analysis	300.0		2	10 mL		2345	12/11/15 13:42	CPM	TAL RCH

Client Sample ID: B33938

Lab Sample ID: 300-1817-5

Date Collected: 12/11/15 08:25

Matrix: Water

Date Received: 12/11/15 09:45

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		2344	12/11/15 13:58	CPM	TAL RCH
Total/NA	Analysis	300.0		2	10 mL		2345	12/11/15 13:58	CPM	TAL RCH

Lab Chronicle

Client: CH2M Hill Plateau Remediation Company
Project/Site: X15-069

TestAmerica Job ID: 300-1817-1
SDG: WC0697

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Client Sample ID: B33962

Lab Sample ID: 300-1817-6

Date Collected: 12/11/15 09:26

Matrix: Water

Date Received: 12/11/15 09:45

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		2344	12/11/15 12:42	CPM	TAL RCH
Total/NA	Analysis	300.0		2	10 mL		2345	12/11/15 12:42	CPM	TAL RCH

Client Sample ID: B33962

Lab Sample ID: 300-1817-6 DU

Date Collected: 12/11/15 09:26

Matrix: Water

Date Received: 12/11/15 09:45

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		2344	12/11/15 13:12	CPM	TAL RCH
Total/NA	Analysis	300.0		2	10 mL		2345	12/11/15 13:12	CPM	TAL RCH

Client Sample ID: Lab Control Sample

Lab Sample ID: LCS 300-2344/6

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	10 mL		2344	12/11/15 12:27	CPM	TAL RCH

Client Sample ID: Lab Control Sample

Lab Sample ID: LCS 300-2345/6

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	10 mL		2345	12/11/15 12:27	CPM	TAL RCH

Client Sample ID: Method Blank

Lab Sample ID: MB 300-2344/5

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	10 mL		2344	12/11/15 12:12	CPM	TAL RCH

Client Sample ID: Method Blank

Lab Sample ID: MB 300-2345/5

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	10 mL		2345	12/11/15 12:12	CPM	TAL RCH

Lab Chronicle

Client: CH2M Hill Plateau Remediation Company
Project/Site: X15-069

TestAmerica Job ID: 300-1817-1
SDG: WC0697

Client Sample ID: B33962

Lab Sample ID: 300-1817-6 MS

Date Collected: 12/11/15 09:26

Matrix: Water

Date Received: 12/11/15 09:45

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		2344	12/11/15 12:57	CPM	TAL RCH
Total/NA	Analysis	300.0		2	10 mL		2345	12/11/15 12:57	CPM	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: X15-069

TestAmerica Job ID: 300-1817-1
SDG: WC0697



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: X15-069

TestAmerica Job ID: 300-1817-1
SDG: WC0697



Lab Sample ID	Client Sample ID	Matrix	Collected	Received
300-1817-1	B33942	Water	12/11/15 08:55	12/11/15 09:45
300-1817-2	B339H1	Water	12/11/15 08:25	12/11/15 09:45
300-1817-3	B33974	Water	12/11/15 08:57	12/11/15 09:45
300-1817-4	B33970	Water	12/11/15 08:06	12/11/15 09:45
300-1817-5	B33938	Water	12/11/15 08:25	12/11/15 09:45
300-1817-6	B33962	Water	12/11/15 09:26	12/11/15 09:45

Login Sample Receipt Checklist



Client: CH2M Hill Plateau Remediation Company

Job Number: 300-1817-1
SDG Number: WC0697

Login Number: 1817
List Number: 1
Creator: Friesz, Jordan D

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.	True	
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.	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 <math><6\text{mm}</math> (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	