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: 300-1860-1
TestAmerica Sample Delivery Group: WC0720
Client Project/Site: X15-070

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 1:37:21 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 desingee 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: X15-070

TestAmerica Job ID: 300-1860-1
SDG: WC0720

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

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: X15-070

TestAmerica Job ID: 300-1860-1
SDG: WC0720

Job ID: 300-1860-1

Laboratory: TestAmerica Richland

Narrative

Job Narrative
300-1860-1

Comments
No additional comments.

Receipt
The samples were received on 12/16/2015 9:55 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 11.3º C.

HPLC/IC
Method 300.0: Sample B339Y0 (300-1860-5) had a large interferent peak in the Sulfate region, Orthophosphate as P peak was discernible in 2x sample and traces were visible in 10x.There was no discernible Sulfate peak visible.

Samples B33YH9 (300-1861-A-1), (300-1861-A-1 DU) and (300-1861-A-1 MS) had visible interferent in the Fluoride region, Fluoride peak was able to be isolated in 2x MS. Overlays of chromatograms show that the interferent in the Sample, MS and Duplicate does not conform to Fluorides retention time. No discernible Fluoride as found in the Sample or Duplicate. Interferent diluted in 10x samples and MS peak is clearly dominate.

Manual integration was performed on the following samples for Sulfate: B339N8 (300-1860-3) and B339V8 (300-1860-4). Manual integration was performed on the following sample for Orthophosphate as P: B339Y0 (300-1860-5). Manual integration was performed on the following sample for Nitrite as N: (300-1861-A-1), Fluoride: (300-1861-A-1 MS). Sample had visible interferent in the Fluoride region, Fluoride peak was able to be isolated in 2x MS

The following samples required filtration to reduce matrix interferences and solids: B339X7 (300-1860-1) and B339V4 (300-1860-2).

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

CH2MHill Plateau Remediation Company	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	C.O.C. # X15-070-038
		Page 1 of 1

Collector	S.W. King/CHPRC	**Contact/Requester**	WHITLEY, KM	**Telephone No.**	373-4929
SAF No.	X15-070	**Sampling Origin**	Hanford Site	**Purchase Order/Charge Code**	300205
Project Title	300 Area Uranium Sequestration Post Inj	**Logbook No.**	HNF-N-506 81 / 62	**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/IATA Dangerous Goods Regulations but are not releasable per DOE Order 458.1.

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

Sample No.	Filter	*	Date	Time	No/Type Container	Sample Analysis	Holding Time	Preservative
B339X7	N	W	DEC 16 2015	0846	1x500-mL P	300.0_ANIONS_IC: COMMON; 300.0_ANIONS_IC: GW 01	48 Hours	Cool <=6C

12-16-15 Y

300-1860 COC

#1860 WC0720

Relinquished By	Print	Sign	Date/Time	Received By	Print	Sign	Date/Time
	S.W. King/CHPRC		DEC 16 2015 0930		M.A. White, CHPRC		DEC 16 2015 0930
M.A. White, CHPRC	M.A. White		12-16-15 0955	J. Friesz, TARI			12-16-15 0955

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

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

PRINTED ON 10/1/2015 FSR ID = FSR7401 A-6004-842 (REV 2)

CH2MHill Plateau Remediation Company	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	C.O.C. # X15-070-046
		Page 1 of 1

Collector	S.W. King/CHPRC	**Contact/Requester**	WHITLEY, KM	**Telephone No.**	373-4929
SAF No.	X15-070	**Sampling Origin**	Hanford Site	**Purchase Order/Charge Code**	300205
Project Title	300 Area Uranium Sequestration Post Inj	**Logbook No.**	HNF-N-506 81 / 162	**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/IATA Dangerous Goods Regulations but are not releasable per DOE Order 458.1.

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

Sample No.	Filter	*	Date	Time	No/Type Container	Sample Analysis	Holding Time	Preservative
B339V4	N	W	~~DEC 16 2015~~ 12-16-15	0846	1x500-mL P	300.0_ANIONS_IC: COMMON; 300.0_ANIONS_IC: GW 01	48 Hours	Cool <=6C

12-16-15 DEC 16 2015

#1860
WC0720

Relinquished By	Print	Sign	Date/Time	Received By	Print	Sign	Date/Time
	S.W. King/CHPRC		DEC 16 2015 0930		MA White, CHPRC		DEC 16 2015 0930
Relinquished By			Date/Time	Received By			Date/Time
	MA White CHPRC		12-16-15 0955		J. Friesz, TARI		12-16-15 0955
Relinquished By			Date/Time	Received By			Date/Time
Relinquished By			Date/Time	Received By			Date/Time

Matrix *

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

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

PRINTED ON 10/1/2015 FSR ID = FSR7401 A-6004-842 (REV 2)

CH2MHill Plateau Remediation Company	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	C.O.C. # X15-070-048 Page 1 of 1

Collector	J.R. Aguilar/CHPRC	**Contact/Requester**	WHITLEY, KM	**Telephone No.**	373-4929
SAF No.	X15-070	**Sampling Origin**	Hanford Site	**Purchase Order/Charge Code**	300205
Project Title	300 Area Uranium Sequestration Post Inj	**Logbook No.**	HNF-N-506 80/62	**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/IATA Dangerous Goods Regulations but are not releasable per DOE Order 458.1.

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

Sample No.	Filter	*	Date	Time	No/Type Container	Sample Analysis	Holding Time	Preservative
B339N8	N	W	12-16-15	0923	1x500-mL P	300.0_ANIONS_IC: COMMON; 300.0_ANIONS_IC: GW 01	48 Hours	Cool <=6C

#1860
WC0720

Relinquished By	Print	Sign	Date/Time	Received By	Print	Sign	Date/Time
J.R. Aguilar/CHPRC			DEC 16 2015 0930	MaWhite,CHPRC		MaWhite	DEC 16 2015 0930
MaWhite,CHPRC		MaWhite	12-16-15 0955	J. Friesz, TARL			12-16-15 0955

Matrix *

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

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

PRINTED ON 10/1/2015 FSR ID = FSR7392 A-6004-842 (REV 2)

CH2MHill Plateau Remediation Company	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	C.O.C. # X15-070-040
		Page 1 of 1

Collector	S.W. King/CHPRC	**Contact/Requester**	WHITLEY, KM	**Telephone No.**	373-4929
SAF No.	X15-070	**Sampling Origin**	Hanford Site	**Purchase Order/Charge Code**	300205
Project Title	300 Area Uranium Sequestration Post Inj	**Logbook No.**	HNF-N-506 81 / 62	**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/IATA Dangerous Goods Regulations but are not releasable per DOE Order 458.1.

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

Sample No.	Filter	*	Date	Time	No/Type Container	Sample Analysis	Holding Time	Preservative
B339V8	N	W	DEC 16 2015	0912	1x500-mL P	300.0_ANIONS_IC: COMMON; 300.0_ANIONS_IC: GW 01	48 Hours	Cool <=6C

#1860

W0720

Relinquished By	Print	Sign	Date/Time	Received By	Print	Sign	Date/Time
	S.W. King/CHPRC		DEC 16 2015 0930		M.A. White/CHPRC		DEC 16 2015 0930
Relinquished By			Date/Time	Received By			Date/Time
M.A. White/CHPRC			12-16-15 0955	~~J. Friesz, TARL~~	J. Friesz, TARL		12-16-15 0955
Relinquished By			Date/Time	Received By			Date/Time
Relinquished By			Date/Time	Received By			Date/Time

Matrix *

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

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

PRINTED ON 10/1/2015 FSR ID = FSR7402 A-6004-842 (REV 2)

CH2MHill Plateau Remediation Company	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	C.O.C. # X15-070-044
		Page 1 of 1

Collector	J.R. Aguilar/CHPRC	**Contact/Requester**	WHITLEY, KM	**Telephone No.**	373-4929
SAF No.	X15-070	**Sampling Origin**	Hanford Site	**Purchase Order/Charge Code**	300205
Project Title	300 Area Uranium Sequestration Post Inj	**Logbook No.**	HNF-N-506 80/62	**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/IATA Dangerous Goods Regulations but are not releasable per DOE Order 458.1.

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

Sample No.	Filter	*	Date	Time	No/Type Container	Sample Analysis	Holding Time	Preservative
B339Y0	N	W	12-16-15	0745	1x500-mL P	300.0_ANIONS_IC: COMMON; 300.0_ANIONS_IC: GW 01	48 Hours	Cool <=6C

#1860
WCO720

Relinquished By	Print	Sign	Date/Time	Received By	Print	Sign	Date/Time
J.R. Aguilar/CHPRC			DEC 16 2015 0930	MALWhite CHPRC			DEC 16 2015 0930
Relinquished By			Date/Time	Received By			Date/Time
MALWhite CHPRC			12-16-15 0955	J. Friesz. TARI			12-16-15 0955
Relinquished By			Date/Time	Received By			Date/Time
Relinquished By			Date/Time	Received By			Date/Time

Matrix *

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

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

PRINTED ON 10/1/2015 FSR ID = FSR7391 A-6004-842 (REV 2)

CH2MHill Plateau Remediation Company	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	C.O.C. # X15-070-030
		Page 1 of 1

Collector	J.R. Aguilar/CHPRC	**Contact/Requester**	WHITLEY, KM	**Telephone No.**	373-4929
SAF No.	X15-070	**Sampling Origin**	Hanford Site	**Purchase Order/Charge Code**	300205
Project Title	300 Area Uranium Sequestration Post Inj	**Logbook No.**	HNF-N-506 80 / 62	**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/IATA Dangerous Goods Regulations but are not releasable per DOE Order 458.1.

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

Sample No.	Filter	*	Date	Time	No/Type Container	Sample Analysis	Holding Time	Preservative
B339N4	N	W	12-6-15	0848	1x500-mL P	300.0_ANIONS_IC: COMMON; 300.0_ANIONS_IC: GW 01	48 Hours	Cool <=6C

#1860
WC0720

Relinquished By	Print	Sign	Date/Time	Received By	Print	Sign	Date/Time
J.R. Aguilar/CHPRC		DEC 16 2015	0930	MAWhite CHPRC		MAWhite	DEC 16 2015 0930
MAWhite CHPRC		MAWhite	12-16-15 0955	J. Friesz, TARL			12-16-15 0955
Relinquished By			Date/Time	Received By			Date/Time
Relinquished By			Date/Time	Received By			Date/Time

Matrix *

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

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

PRINTED ON 10/1/2015 FSR ID = FSR7390 A-6004-842 (REV 2)

Detection Summary

Client: CH2M Hill Plateau Remediation Company
Project/Site: X15-070

TestAmerica Job ID: 300-1860-1
SDG: WC0720

Client Sample ID: B339X7 — Lab Sample ID: 300-1860-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	17	D	10	5.0	mg/L	50		300.0	Total/NA
Nitrate as N	5.2	D	1.4	0.70	mg/L	50		300.0	Total/NA
Orthophosphate as P	340	D	4.1	2.1	mg/L	50		300.0	Total/NA
Sulfate	49	D	13	6.3	mg/L	50		300.0	Total/NA

Client Sample ID: B339V4 — Lab Sample ID: 300-1860-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	17	D	10	5.0	mg/L	50		300.0	Total/NA
Nitrate as N	5.2	D	1.4	0.70	mg/L	50		300.0	Total/NA
Orthophosphate as P	340	D	4.1	2.1	mg/L	50		300.0	Total/NA
Sulfate	49	D	13	6.3	mg/L	50		300.0	Total/NA

Client Sample ID: B339N8 — Lab Sample ID: 300-1860-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	20	D	10	5.0	mg/L	50		300.0	Total/NA
Nitrate as N	6.5	D	1.4	0.70	mg/L	50		300.0	Total/NA
Orthophosphate as P	440	D	4.1	2.1	mg/L	50		300.0	Total/NA
Sulfate	49	D	13	6.3	mg/L	50		300.0	Total/NA

Client Sample ID: B339V8 — Lab Sample ID: 300-1860-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	19	D	2.0	1.0	mg/L	10		300.0	Total/NA
Nitrate as N	6.3	D	0.28	0.14	mg/L	10		300.0	Total/NA
Fluoride	0.42	B D	0.50	0.25	mg/L	10		300.0	Total/NA
Orthophosphate as P	190	D	4.1	2.1	mg/L	50		300.0	Total/NA
Sulfate	60	D	2.5	1.3	mg/L	10		300.0	Total/NA

Client Sample ID: B339Y0 — Lab Sample ID: 300-1860-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Orthophosphate as P	0.33	D	0.16	0.082	mg/L	2		300.0	Total/NA

Client Sample ID: B339N4 — Lab Sample ID: 300-1860-6

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	5.6	D	0.056	0.028	mg/L	2		300.0	Total/NA
Fluoride	0.29	D	0.10	0.050	mg/L	2		300.0	Total/NA
Orthophosphate as P	32	D	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

This Detection Summary does not include radiochemical test results.

Client Sample Results

Client: CH2M Hill Plateau Remediation Company
Project/Site: X15-070

TestAmerica Job ID: 300-1860-1
SDG: WC0720

Client Sample ID: B339X7
Date Collected: 12/16/15 08:46
Date Received: 12/16/15 09:55

Lab Sample ID: 300-1860-1
Matrix: Water

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	17	D	10	5.0	mg/L			12/16/15 15:02	50
Nitrate as N	5.2	D	1.4	0.70	mg/L			12/16/15 15:02	50
Fluoride	1.3	U	2.5	1.3	mg/L			12/16/15 15:02	50
Nitrite as N	0.95	U	1.9	0.95	mg/L			12/16/15 15:02	50
Orthophosphate as P	340	D	4.1	2.1	mg/L			12/16/15 15:02	50
Sulfate	49	D	13	6.3	mg/L			12/16/15 15:02	50

Client Sample ID: B339V4
Date Collected: 12/16/15 08:46
Date Received: 12/16/15 09:55

Lab Sample ID: 300-1860-2
Matrix: Water

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	17	D	10	5.0	mg/L			12/16/15 14:17	50
Nitrate as N	5.2	D	1.4	0.70	mg/L			12/16/15 14:17	50
Fluoride	1.3	U	2.5	1.3	mg/L			12/16/15 14:17	50
Nitrite as N	0.95	U	1.9	0.95	mg/L			12/16/15 14:17	50
Orthophosphate as P	340	D	4.1	2.1	mg/L			12/16/15 14:17	50
Sulfate	49	D	13	6.3	mg/L			12/16/15 14:17	50

Client Sample ID: B339N8
Date Collected: 12/16/15 09:23
Date Received: 12/16/15 09:55

Lab Sample ID: 300-1860-3
Matrix: Water

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	20	D	10	5.0	mg/L			12/16/15 14:02	50
Nitrate as N	6.5	D	1.4	0.70	mg/L			12/16/15 14:02	50
Fluoride	1.3	U	2.5	1.3	mg/L			12/16/15 14:02	50
Nitrite as N	0.95	U	1.9	0.95	mg/L			12/16/15 14:02	50
Orthophosphate as P	440	D	4.1	2.1	mg/L			12/16/15 14:02	50
Sulfate	49	D	13	6.3	mg/L			12/16/15 14:02	50

Client Sample ID: B339V8
Date Collected: 12/16/15 09:12
Date Received: 12/16/15 09:55

Lab Sample ID: 300-1860-4
Matrix: Water

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	19	D	2.0	1.0	mg/L			12/16/15 16:33	10
Nitrate as N	6.3	D	0.28	0.14	mg/L			12/16/15 16:33	10
Fluoride	0.42	B D	0.50	0.25	mg/L			12/16/15 16:33	10
Nitrite as N	0.19	U	0.38	0.19	mg/L			12/16/15 16:33	10
Orthophosphate as P	190	D	4.1	2.1	mg/L			12/16/15 13:47	50
Sulfate	60	D	2.5	1.3	mg/L			12/16/15 16:33	10

Client Sample Results

Client: CH2M Hill Plateau Remediation Company
Project/Site: X15-070

TestAmerica Job ID: 300-1860-1
SDG: WC0720

Client Sample ID: B339Y0

Lab Sample ID: 300-1860-5
Date Collected: 12/16/15 07:45
Matrix: Water
Date Received: 12/16/15 09:55

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	0.20	U	0.40	0.20	mg/L			12/16/15 13:32	2
Nitrate as N	0.028	U	0.056	0.028	mg/L			12/16/15 13:32	2
Fluoride	0.050	U	0.10	0.050	mg/L			12/16/15 13:32	2
Nitrite as N	0.038	U	0.076	0.038	mg/L			12/16/15 13:32	2
Orthophosphate as P	**0.33**	**D**	0.16	0.082	mg/L			12/16/15 13:32	2
Sulfate	0.25	U	0.50	0.25	mg/L			12/16/15 13:32	2

Client Sample ID: B339N4

Lab Sample ID: 300-1860-6
Date Collected: 12/16/15 08:48
Matrix: Water
Date Received: 12/16/15 09:55

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			12/16/15 13:17	2
Nitrate as N	**5.6**	**D**	0.056	0.028	mg/L			12/16/15 13:17	2
Fluoride	**0.29**	**D**	0.10	0.050	mg/L			12/16/15 13:17	2
Nitrite as N	0.038	U	0.076	0.038	mg/L			12/16/15 13:17	2
Orthophosphate as P	**32**	**D**	0.16	0.082	mg/L			12/16/15 13:17	2
Sulfate	**58**	**D**	0.50	0.25	mg/L			12/16/15 13:17	2

QC Sample Results

Client: CH2M Hill Plateau Remediation Company
Project/Site: X15-070

TestAmerica Job ID: 300-1860-1
SDG: WC0720

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 300-2392/5
Matrix: Water
Analysis Batch: 2392

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			12/16/15 12:02	1
Nitrite as N	0.019	U	0.038	0.019	mg/L			12/16/15 12:02	1
Orthophosphate as P	0.041	U	0.082	0.041	mg/L			12/16/15 12:02	1

Lab Sample ID: LCS 300-2392/6
Matrix: Water
Analysis Batch: 2392

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	2.33		mg/L		103	80 - 120
Nitrite as N	3.04	3.15		mg/L		103	80 - 120
Orthophosphate as P	6.53	6.73		mg/L		103	80 - 120

Lab Sample ID: 300-1861-A-1 MS
Matrix: Water
Analysis Batch: 2392

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	0.71	D	0.452	1.19	D	mg/L		106	75 - 125
Nitrite as N	0.043	B D	0.609	0.588	D	mg/L		90	75 - 125
Orthophosphate as P	3.0	D	1.31	4.35	D	mg/L		106	75 - 125

Lab Sample ID: 300-1861-A-1 DU
Matrix: Water
Analysis Batch: 2392

Client Sample ID: Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Nitrate as N	0.71	D	0.715	D	mg/L		0.7	20
Nitrite as N	0.043	B D	0.0425	B D	mg/L		0.7	20
Orthophosphate as P	3.0	D	2.95	D	mg/L		0.6	20

Lab Sample ID: MB 300-2393/5
Matrix: Water
Analysis Batch: 2393

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			12/16/15 12:02	1
Fluoride	0.025	U	0.050	0.025	mg/L			12/16/15 12:02	1
Sulfate	0.13	U	0.25	0.13	mg/L			12/16/15 12:02	1

Lab Sample ID: LCS 300-2393/6
Matrix: Water
Analysis Batch: 2393

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	4.09		mg/L		102	80 - 120
Sulfate	20.0	20.5		mg/L		102	80 - 120

QC Sample Results

Client: CH2M Hill Plateau Remediation Company
Project/Site: X15-070

TestAmerica Job ID: 300-1860-1
SDG: WC0720

Method: 300.0 - Anions, Ion Chromatography (Continued)

Lab Sample ID: 300-1861-A-1 MS
Matrix: Water
Analysis Batch: 2393

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		
Chloride	10	D	3.20	13.7	D	mg/L		106	75 - 125		
Fluoride	0.050	U	0.800	0.939	D	mg/L		117	75 - 125		
Sulfate	45	D	4.00	49.0	D	mg/L		109	75 - 125		

Lab Sample ID: 300-1861-A-1 DU
Matrix: Water
Analysis Batch: 2393

Client Sample ID: Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Chloride	10	D		10.4	D	mg/L				0.9	20
Fluoride	0.050	U		0.050	U	mg/L				NC	20
Sulfate	45	D		45.0	D	mg/L				0.8	20

QC Association Summary

Client: CH2M Hill Plateau Remediation Company
Project/Site: X15-070

TestAmerica Job ID: 300-1860-1
SDG: WC0720

HPLC/IC

Analysis Batch: 2392

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
300-1860-1	B339X7	Total/NA	Water	300.0	
300-1860-2	B339V4	Total/NA	Water	300.0	
300-1860-3	B339N8	Total/NA	Water	300.0	
300-1860-4	B339V8	Total/NA	Water	300.0	
300-1860-4	B339V8	Total/NA	Water	300.0	
300-1860-5	B339Y0	Total/NA	Water	300.0	
300-1860-6	B339N4	Total/NA	Water	300.0	
300-1861-A-1 DU	Duplicate	Total/NA	Water	300.0	
300-1861-A-1 MS	Matrix Spike	Total/NA	Water	300.0	
LCS 300-2392/6	Lab Control Sample	Total/NA	Water	300.0	
MB 300-2392/5	Method Blank	Total/NA	Water	300.0	

Analysis Batch: 2393

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
300-1860-1	B339X7	Total/NA	Water	300.0	
300-1860-2	B339V4	Total/NA	Water	300.0	
300-1860-3	B339N8	Total/NA	Water	300.0	
300-1860-4	B339V8	Total/NA	Water	300.0	
300-1860-5	B339Y0	Total/NA	Water	300.0	
300-1860-6	B339N4	Total/NA	Water	300.0	
300-1861-A-1 DU	Duplicate	Total/NA	Water	300.0	
300-1861-A-1 MS	Matrix Spike	Total/NA	Water	300.0	
LCS 300-2393/6	Lab Control Sample	Total/NA	Water	300.0	
MB 300-2393/5	Method Blank	Total/NA	Water	300.0	

Lab Chronicle

Client: CH2M Hill Plateau Remediation Company
Project/Site: X15-070

TestAmerica Job ID: 300-1860-1
SDG: WC0720

Client Sample ID: B339X7
Date Collected: 12/16/15 08:46
Date Received: 12/16/15 09:55

Lab Sample ID: 300-1860-1
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	300.0		50	10 mL		2392	12/16/15 15:02	CPM	TAL RCH
Total/NA	Analysis	300.0		50	10 mL		2393	12/16/15 15:02	CPM	TAL RCH

Client Sample ID: B339V4
Date Collected: 12/16/15 08:46
Date Received: 12/16/15 09:55

Lab Sample ID: 300-1860-2
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	300.0		50	10 mL		2392	12/16/15 14:17	CPM	TAL RCH
Total/NA	Analysis	300.0		50	10 mL		2393	12/16/15 14:17	CPM	TAL RCH

Client Sample ID: B339N8
Date Collected: 12/16/15 09:23
Date Received: 12/16/15 09:55

Lab Sample ID: 300-1860-3
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	300.0		50	10 mL		2392	12/16/15 14:02	CPM	TAL RCH
Total/NA	Analysis	300.0		50	10 mL		2393	12/16/15 14:02	CPM	TAL RCH

Client Sample ID: B339V8
Date Collected: 12/16/15 09:12
Date Received: 12/16/15 09:55

Lab Sample ID: 300-1860-4
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	300.0		50	10 mL		2392	12/16/15 13:47	CPM	TAL RCH
Total/NA	Analysis	300.0		10	10 mL		2392	12/16/15 16:33	CPM	TAL RCH
Total/NA	Analysis	300.0		10	10 mL		2393	12/16/15 16:33	CPM	TAL RCH

Client Sample ID: B339Y0
Date Collected: 12/16/15 07:45
Date Received: 12/16/15 09:55

Lab Sample ID: 300-1860-5
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		2392	12/16/15 13:32	CPM	TAL RCH
Total/NA	Analysis	300.0		2	10 mL		2393	12/16/15 13:32	CPM	TAL RCH

Lab Chronicle

Client: CH2M Hill Plateau Remediation Company
Project/Site: X15-070

TestAmerica Job ID: 300-1860-1
SDG: WC0720

Client Sample ID: B339N4
Date Collected: 12/16/15 08:48
Date Received: 12/16/15 09:55

Lab Sample ID: 300-1860-6
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		2392	12/16/15 13:17	CPM	TAL RCH
Total/NA	Analysis	300.0		2	10 mL		2393	12/16/15 13:17	CPM	TAL RCH

Client Sample ID: Duplicate
Date Collected: 12/16/15 08:27
Date Received: 12/16/15 09:55

Lab Sample ID: 300-1861-A-1 DU
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		2392	12/16/15 13:02	CPM	TAL RCH
Total/NA	Analysis	300.0		2	10 mL		2393	12/16/15 13:02	CPM	TAL RCH

Client Sample ID: Lab Control Sample
Date Collected: N/A
Date Received: N/A

Lab Sample ID: LCS 300-2392/6
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		1	10 mL		2392	12/16/15 12:17	CPM	TAL RCH

Client Sample ID: Lab Control Sample
Date Collected: N/A
Date Received: N/A

Lab Sample ID: LCS 300-2393/6
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		1	10 mL		2393	12/16/15 12:17	CPM	TAL RCH

Client Sample ID: Method Blank
Date Collected: N/A
Date Received: N/A

Lab Sample ID: MB 300-2392/5
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		1	10 mL		2392	12/16/15 12:02	CPM	TAL RCH

Client Sample ID: Method Blank
Date Collected: N/A
Date Received: N/A

Lab Sample ID: MB 300-2393/5
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		1	10 mL		2393	12/16/15 12:02	CPM	TAL RCH

Lab Chronicle

Client: CH2M Hill Plateau Remediation Company
Project/Site: X15-070

TestAmerica Job ID: 300-1860-1
SDG: WC0720

Client Sample ID: Matrix Spike

Date Collected: 12/16/15 08:27
Date Received: 12/16/15 09:55

Lab Sample ID: 300-1861-A-1 MS

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		2392	12/16/15 12:47	CPM	TAL RCH
Total/NA	Analysis	300.0		2	10 mL		2393	12/16/15 12:47	CPM	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: X15-070

TestAmerica Job ID: 300-1860-1
SDG: WC0720

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: X15-070

TestAmerica Job ID: 300-1860-1
SDG: WC0720

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
300-1860-1	B339X7	Water	12/16/15 08:46	12/16/15 09:55
300-1860-2	B339V4	Water	12/16/15 08:46	12/16/15 09:55
300-1860-3	B339N8	Water	12/16/15 09:23	12/16/15 09:55
300-1860-4	B339V8	Water	12/16/15 09:12	12/16/15 09:55
300-1860-5	B339Y0	Water	12/16/15 07:45	12/16/15 09:55
300-1860-6	B339N4	Water	12/16/15 08:48	12/16/15 09:55

Login Sample Receipt Checklist

Client: CH2M Hill Plateau Remediation Company

Job Number: 300-1860-1
SDG Number: WC0720

Login Number: 1860
List Number: 1
Creator: Friesz, Jordan D

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.	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 <6mm (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	