TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
Tel: (314)298-8566

TestAmerica Job ID: 160-15218-1
TestAmerica Sample Delivery Group: SL2044
Client Project/Site: X15-068

For:
CH2M Hill Plateau Remediation Company
PO BOX 1600, MS H8-41
Richland, Washington 99352

Attn: Mr. Scot Fitzgerald

Authorized for release by:
1/14/2016 3:40:38 PM

Jayna Awalt, Project Manager II
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jayna.awalt@testamericainc.com

LINKS

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This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

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Job ID: 160-15218-1

Laboratory: TestAmerica St. Louis

Narrative

CASE NARRATIVE

CH2MHill Plateau Remediation Company
P.O. Box 1600
Richland, Washington 99352
January 14, 2016
Attention: Scot Fitzgerald

SDG	: SL2044
Number of Samples	: 20 samples
Sample Matrix	: Water
Data Deliverable	: Summary
Date SDG Closed	: December 4, 2015

II. Introduction

On December 4, 20 samples were received by TestAmerica - St. Louis for chemical analysis. The samples were received within temperature criteria. See the COC and receipt checklists for documentation of any variations on receipt conditions and temperature. Upon receipt, samples were given laboratory Ids to correspond with specific client Ids. Please refer to the Sample Summary sheets attached to this case narrative. This report is incomplete without the narrative.

The following SAFs are associated with this SDG: X15-068

Due to the large ICP backlog, requested 6010 Metals were reported by ICPMS 6020 per SIR16-166.

III. Analytical Results/ Methodology

The analytical results for this report are presented by analytical test. Each set of data includes sample identification information, analytical results and the appropriate detection limits. All results are based upon samples as they were received, i.e. wet weight, unless otherwise noted on the data sheets. See the attached Methods Summary Form for the methods used in this SDG.

MS/MSD/Dup analysis was done per the client requirements. Analytical batches that did not contain matrix QC were analyzed with an LCS/LCS duplicate.

Note: For Metals analyses, per standard practice, all 6020 water and soil samples are initially prepared at 2x dilution. This standard dilution does not affect reporting limits as MDL studies are also prepared in the same manner. These dilutions do not necessitate flagging unless otherwise noted in the case narrative.

For Anion analysis, samples have been started at a 2x dilution per CHPRC direction. The samples are flagged accordingly with a “D” flag if sample concentration is above the MDL/RL. Non-conformance will be included in the below section only if dilution is greater than 2x.

For WTPH methods, the lab utilizes method 8015B. Per CHPRC direction, the method name in the electronic data has been modified to read WTPH in the place of 8015B.

Per CHPRC direction (June 2014), Boron will be reported for Metals using method 6010. Boron will no longer be reported by method 6020.

Per CHPRC direction, due to the short hold times for Nitrate, Nitrite and Phosphate by IC (48 hours) as well as pH analysis (24 hours), a SIR request is not needed when samples are run outside 1x hold but within 2x hold. A narrative comment will be included below if a sample is run outside the lab-specified hold time for waters.

Per CHPRC direction, data for pH analysis will be reported outside 1x 24 hour hold time due to this being a field parameter.

Job ID: 160-15218-1 (Continued)

Laboratory: TestAmerica St. Louis (Continued)

IV. Definitions

QCBLK- Quality Control Blank, Method Blank
QCLCS- Quality Control Laboratory Control Sample, Blank Spike
DUP- Laboratory Duplicate
MS- Matrix Spike
MSD- Matrix Spike Duplicate

The term "Detection Limit" used in the analytical data report refers to either the lab's standard reporting limits or contractually required reporting limits, whichever is applicable.

The following data qualifiers may be applicable to the results in this report, as appropriate.

- **B** - For inorganic analyses, the sample result is greater than the MDL but less than the RL.
- **B** - For organic analyses, Method Blank contamination. The Method Blank contains the target analyte at a concentration above the MDL.
- **J** - For organic analyses, the sample is estimated and less than the RL.
- **C** - For inorganic analyses, Method Blank contamination. The Method Blank contains the target analyte at a concentration above the MDL.
- **D** - For all analyses, the sample result was obtained from the analysis of a dilution. For Metals analyses, per standard practice, all solid samples are initially prepared at a 2x dilution. This standard dilution does not affect reporting limits as MDL studies are also prepared in the same manner. These dilutions do not necessitate qualification unless otherwise noted in the case narrative.
- **N** - For inorganics and GC analyses, the spike/spike duplicate recoveries are outside QC limits.
- **T** - For GCMS analyses, the spike/spike duplicate recoveries are outside QC limits.
- **O**- For all analyses, the LCS (LCSD) recoveries are outside QC limits.
- **M**- For inorganic analyses, the precision was outside control limits.
- **P -** For organic analyses (PCB/Pests only), the aroclor target analyte has greater than 25% difference for detected concentrations between the two GC columns.

ICPMS Metals

Batch: 231467

The CRI/CCVL was outside upper QC limits for calcium. The concentration of this analyte in the samples was either not detected above the reporting limit, or at such a high level as to make the CRI/CCVL unnecessary. (CCVL 160-231467/38), (CCVL 160-231467/51), (CCVL 160-231467/59) and (CRI 160-231467/23)

Batch: 231776

Sodium was detected in method blank MB 160-227137/1-A at a level that was above the method detection limit but below the reporting limit. The value should be considered an estimate, and has been flagged "B". If the associated sample reported a result above the MDL and/or RL and is not greater than 5x the method blank, the result has been flagged "C".

The following samples were diluted to bring the concentration of target analytes within the calibration range: B338P3 (160-15218-3), B338P4 (160-15218-4), B33913 (160-15218-5), B33914 (160-15218-6), B33933 (160-15218-7), B33932 (160-15218-8), B338W8 (160-15218-9), B338W7 (160-15218-10), B338P0 (160-15218-15), B338N9 (160-15218-16), B338X2 (160-15218-17) and B338X1 (160-15218-18). Elevated reporting limits (RLs) are provided. These analytes have been qualified accordingly with a "D" flag in the associated samples.

The CCVL was outside upper QC limits for sodium. The concentration of this analyte in the reported samples was at such a high level as to make the CCVL unnecessary. (CCVL 160-231776/40) and (CCVL 160-231776/48)

There were no observations or non-conformances associated with the following methods:

Job ID: 160-15218-1 (Continued)

Laboratory: TestAmerica St. Louis (Continued)

Alkalinity

We certify that this data package is in compliance with the SOW, both technically and for completeness, including a full description of, explanation of, and corrective actions for, any and all deviations, from either the analyses requested or the case narrative requested. Release of the data contained in this hard copy data package has been authorized by the Laboratory Analytical Manager or designee and the laboratory's client services representative as verified by their signature on this report.

Reviewed and approved:

Jayna Awalt
St. Louis Project Manager

SAMPLE ISSUE RESOLUTION		
	SIR NUM	SIR16-166
	REV NUM	0
	DATE INITIATED	1/8/2016

SAMPLE EVENT INFORMATION

SAF NUM(S)	X15-068
OPERABLE UNIT(S)	300-FF-5
PROJECT(S)	CERC15
SAMPLE EVENT TITLE(S)	CERC15
LABORATORY	TestAmerica St. Louis

SAMPLING INFORMATION

NUMBER OF SAMPLES	20
SAMPLE NUMBERS	B338N9, B338P0, B338P3, B338P4, B338P7, B338P8, B338T7, B338T8, B338W7, B338W8, B338X1, B338X2, B33905, B33906, B33913, B33914, B33932, B33933, B33935, B33936
SAMPLE MATRIX	WATER
COLLECTION DATE	12/2/2015 - 12/3/2015
SDG NUM	SL2044

ISSUE BACKGROUND

CLASS	Sample Management Issues
TYPE	Method Correction
DESCRIPTION	The laboratory has a backlog for ICP and has requested permission to subtitute ICP-MS.

DISPOSITION

DESCRIPTION	Report requested analytes (sodium, calcium, potassium and magnesium) by 6020.
JUSTIFICATION	Final Disposition: Accept proposed resolution. SUBMITTED BY: Jayna Awalt DATE: 01/07/2016 ACCEPTED BY: Karen Waters-Husted DATE: 01/08/2016

Login Sample Receipt Checklist

Client: CH2M Hill Plateau Remediation Company

Job Number: 160-15218-1
SDG Number: SL2044

Login Number: 15218
List Number: 1
Creator: Clarke, Jill C

List Source: TestAmerica St. Louis

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	1.2°, 0.9°, 1.0°
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.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

CH2MHill Plateau Remediation Company SL2044

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

C.O.C. # **X15-068-070**

Collector	J.R. Aguilar/CHPRC	**Contact/Requester**	WHITLEY, KM	**Telephone No.**	373-4929
SAF No.	X15-068	**Sampling Origin**	Hanford Site	**Purchase Order/Charge Code**	300205
Project Title	300 Area Uranium Sequestration Post Inj	**Logbook No.**	HNF-N-506 80 / 45	**Ice Chest No.**	GWS-498
Shipped To (Lab)	TestAmerica St. Louis	**Method of Shipment**	Commercial Carrier	**Bill of Lading/Air Bill No.**	7751 1329 6583
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
B33906	N	W	12-2-15	1225	1x500-mL G/P	6020_METALS_ICPMS: Uranium (1); 6010_METALS_ICP: GW 04	6 Months	HNO3 to pH <2
B33906	N	W	12-2-15	1225	1x500-mL G/P	310.1_ALKALINITY: GW 01	14 Days	Cool <=6C
B33905	Y	W	12-2-15	1225	1x500-mL G/P	6020_METALS_ICPMS: Uranium (1); 6010_METALS_ICP: GW 04	6 Months	HNO3 to pH <2

Relinquished By	Print	Sign	Date/Time	Received By	Print	Sign	Date/Time
J.R. Aguilar/CHPRC			DEC 0 2 2015 1420	SSU-1			DEC 0 2 2015 1420
SSU-1			DEC 0 3 2015 1020	M.A. White CHPRC			DEC 0 3 2015 1020
M.A. White CHPRC			DEC 0 3 2015 1400	FEDEX			
		FED EX		Jill Clarke		Jill Clarke	12.4.15 0915

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 9/30/2015 **FSR ID = FSR7346** A-6004-842 (REV 2)

CH2MHill Plateau Remediation Company SLZ044

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

C.O.C. # **X15-068-071**

Collector	J.R. Aguilar/CHPRC	**Contact/Requester**	WHITLEY, KM	**Telephone No.**	373-4929
SAF No.	X15-068	**Sampling Origin**	Hanford Site	**Purchase Order/Charge Code**	300205
Project Title	300 Area Uranium Sequestration Post Inj	**Logbook No.**	HNF-N-506 81 / 53-54	**Ice Chest No.**	GWS-508
Shipped To (Lab)	TestAmerica St. Louis	**Method of Shipment**	Commercial Carrier	**Bill of Lading/Air Bill No.**	775117914706
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
B338P3	Y	W	12-3-15	1200	1x500-mL G/P	6020_METALS_ICPMS: Uranium (1); 6010_METALS_ICP: GW 04	6 Months	HNO3 to pH <2
B338P4	N	W	12-3-15	1200	1x500-mL G/P	6020_METALS_ICPMS: Uranium (1); 6010_METALS_ICP: GW 04	6 Months	HNO3 to pH <2
B338P4	N	W	12-3-15	1200	1x500-mL G/P	310.1_ALKALINITY: GW 01	14 Days	Cool <=6C

Relinquished By	Print	Sign	Date/Time	Received By	Print	Sign	Date/Time
J.R. Aguilar/CHPRC			DEC 03 2015 1315	CHRIS FULTON CHPRC			DEC 03 2015 1315
CHRIS FULTON CHPRC			DEC 03 2015 1430	FEDEX			
				Jill Clark	Jill Clark		12.4.15 0915

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 9/30/2015 **FSR ID = FSR7329** A-6004-842 (REV 2)

CH2MHill Plateau Remediation Company SL2044

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

C.O.C. # **X15-068-068**

Collector	J.R. Aguilar/CHPRC	**Contact/Requester**	WHITLEY, KM	**Telephone No.**	373-4929
SAF No.	X15-068	**Sampling Origin**	Hanford Site	**Purchase Order/Charge Code**	300205
Project Title	300 Area Uranium Sequestration Post Inj	**Logbook No.**	HNF-N-506 81 / 53-54	**Ice Chest No.**	GWS-508
Shipped To (Lab)	TestAmerica St. Louis	**Method of Shipment**	Commercial Carrier	**Bill of Lading/Air Bill No.**	775117914706
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
B33913	Y	W	12-3-15	1231	1x500-mL G/P	6020_METALS_ICPMS: Uranium (1); 6010_METALS_ICP: GW 04	6 Months	HNO3 to pH <2
B33914	N	W	12-3-15	1231	1x500-mL G/P	6020_METALS_ICPMS: Uranium (1); 6010_METALS_ICP: GW 04	6 Months	HNO3 to pH <2
B33914	N	W	12-3-15	1231	1x500-mL G/P	310.1_ALKALINITY: GW 01	14 Days	Cool <=6C

Relinquished By	Print	Sign	Date/Time	Received By	Print	Sign	Date/Time
J.R. Aguilar/CHPRC			DEC 03 2015 1315	CHRIS FULTON CHPRC			DEC 03 2015 1315
CHRIS FULTON CHPRC			DEC 03 2015 1400	FEDEX			
				Jill Clark	Jill Clark		12-4-15 0915

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 9/30/2015 **FSR ID = FSR7348** A-6004-842 (REV 2)

CH2MHill Plateau Remediation Company SL2044

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

C.O.C. # **X15-068-055**

Collector	J.R. Aguilar/CHPRC	**Contact/Requester**	WHITLEY, KM	**Telephone No.**	373-4929
SAF No.	X15-068	**Sampling Origin**	Hanford Site	**Purchase Order/Charge Code**	300205
Project Title	300 Area Uranium Sequestration Post Inj	**Logbook No.**	HNF-N-506 81 / 53	**Ice Chest No.**	GWS-511
Shipped To (Lab)	TestAmerica St. Louis	**Method of Shipment**	Commercial Carrier	**Bill of Lading/Air Bill No.**	7751155 36306
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
B33933	N	W	12-3-15	0826	1x500-mL G/P	6020_METALS_ICPMS: Uranium (1); 6010_METALS_ICP: GW 04	6 Months	HNO3 to pH <2
B33933	N	W	12-3-15	0826	1x500-mL G/P	310.1_ALKALINITY: GW 01	14 Days	Cool <=6C
B33932	Y	W	12-3-15	0826	1x500-mL G/P	6020_METALS_ICPMS: Uranium (1); 6010_METALS_ICP: GW 04	6 Months	HNO3 to pH <2

Relinquished By	Print	Sign	Date/Time	Received By	Print	Sign	Date/Time
J.R. Aguilar/CHPRC		DEC 0 3 2015	1050	F.M. Hall/CHPRC		DEC 0 3 2015	1050
F.M. Hall/CHPRC		DEC 0 3 2015	1400	FEDEX		12-3-15 ~~DEC 0 3 2015~~	
		FED EX		Jill Clarke	Jill Clarke	12.4.15	0915

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 9/30/2015 **FSR ID = FSR7339** A-6004-842 (REV 2)

CH2MHill Plateau Remediation Company SL2044

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

C.O.C. # **X15-068-077**

Collector	J.R. Aguilar/CHPRC	**Contact/Requester**	WHITLEY, KM	**Telephone No.**	373-4929
SAF No.	X15-068	**Sampling Origin**	Hanford Site	**Purchase Order/Charge Code**	300205
Project Title	300 Area Uranium Sequestration Post Inj	**Logbook No.**	HNF-N-506 81 / 53	**Ice Chest No.**	GWS-511
Shipped To (Lab)	TestAmerica St. Louis	**Method of Shipment**	Commercial Carrier	**Bill of Lading/Air Bill No.**	7751155 36306
Protocol	CERCLA	**Priority:**	**30 Days** **PRIORITY**	**Offsite Property No.**	NA

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
B338W8	N	W	12-3-15	0826	1x500-mL G/P	6020_METALS_ICPMS: Uranium (1); 6010_METALS_ICP: GW 04	6 Months	HNO3 to pH <2
B338W8	N	W	12-3-15	0826	1x500-mL G/P	310.1_ALKALINITY: GW 01	14 Days	Cool <=6C
B338W7	Y	W	12-3-15	0826	1x500-mL G/P	6020_METALS_ICPMS: Uranium (1); 6010_METALS_ICP: GW 04	6 Months	HNO3 to pH <2

Relinquished By	Print	Sign	Date/Time	Received By	Print	Sign	Date/Time
J.R. Aguilar/CHPRC		DEC 0 3 2015	1030	F.M. Hall/CHPRC		DEC 0 3 2015	1030
F.M. Hall/CHPRC		DEC 0 3 2015	1400	FEDEX		12-3-15 ~~DEC 0 3 2015~~	
FED EX				Jill Clarke	Jill Clarke	12-4-15	0915

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 9/30/2015 **FSR ID = FSR7339** A-6004-842 (REV 2)

CH2MHill Plateau Remediation Company SL2044

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

C.O.C. # **X15-068-062**

Collector	J.R. Aguilar/CHPRC	**Contact/Requester**	WHITLEY, KM	**Telephone No.**	373-4929
SAF No.	X15-068	**Sampling Origin**	Hanford Site	**Purchase Order/Charge Code**	300205
Project Title	300 Area Uranium Sequestration Post Inj	**Logbook No.**	HNF-N-506 81 / 53	**Ice Chest No.**	GWS-511
Shipped To (Lab)	TestAmerica St. Louis	**Method of Shipment**	Commercial Carrier	**Bill of Lading/Air Bill No.**	7751155363 06
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
B33935	Y	W	12-3-15	0700	1x500-mL G/P	6020_METALS_ICPMS: Uranium (1); 6010_METALS_ICP: GW 04	6 Months	HNO3 to pH <2
B33936	N	W	12-3-15	0700	1x500-mL G/P	6020_METALS_ICPMS: Uranium (1); 6010_METALS_ICP: GW 04	6 Months	HNO3 to pH <2
B33936	N	W	12-3-15	0700	1x500-mL G/P	310.1_ALKALINITY: GW 01	14 Days	Cool <=6C

Relinquished By	Print	Sign	Date/Time	Received By	Print	Sign	Date/Time
J.R. Aguilar/CHPRC		DEC 0 3 2015	1050	F.M. Hall/CHPRC		DEC 0 3 2015	1050
Relinquished By	F.M. Hall/CHPRC	DEC 0 3 2015	Date/Time 1400	Received By	FEDEX	1-3-15 DEC 0 3 2015	Date/Time
Relinquished By		FED EX	Date/Time	Received By	Jill Clark	Jill Clark	12-4-15 0915 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 9/30/2015 **FSR ID = FSR7328** A-6004-842 (REV 2)

CH2MHill Plateau Remediation Company SL2044

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

C.O.C. # **X15-068-072**

Collector	K.C. Patterson/CHPRC	**Contact/Requester**	WHITLEY, KM	**Telephone No.**	373-4929
SAF No.	X15-068	**Sampling Origin**	Hanford Site	**Purchase Order/Charge Code**	300205
Project Title	300 Area Uranium Sequestration Post Inj	**Logbook No.**	HNF-N-506 80148	**Ice Chest No.**	GW5-511
Shipped To (Lab)	TestAmerica St. Louis	**Method of Shipment**	Commercial Carrier	**Bill of Lading/Air Bill No.**	7751155 36306
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
B338T7	Y	W	12/3/15	1048	1x500-mL G/P	6020_METALS_ICPMS: Uranium (1); 6010_METALS_ICP: GW 04	6 Months	HNO3 to pH <2
B338T8	N	W	↓	↓	1x500-mL G/P	6020_METALS_ICPMS: Uranium (1); 6010_METALS_ICP: GW 04	6 Months	HNO3 to pH <2
B338T8	N	W			1x500-mL G/P	310.1_ALKALINITY: GW 01	14 Days	Cool <=6C

Relinquished By	Print	Sign	Date/Time	Received By	Print	Sign	Date/Time
K.C. Patterson/CHPRC			DEC 03 2015 1100	F.M. Hall/CHPRC			DEC 03 2015 1100
F.M. Hall/CHPRC			DEC 03 2015 1400	FEDEX			
FED EX				Jill Clarke	Jill Clarke		12.4.15 0915

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 9/30/2015 **FSR ID = FSR7334** A-6004-842 (REV 2)

CH2MHill Plateau Remediation Company SL2044

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

C.O.C. # **X15-068-081**

Collector	J.R. Aguilar/CHPRC	**Contact/Requester**	WHITLEY, KM	**Telephone No.**	373-4929
SAF No.	X15-068	**Sampling Origin**	Hanford Site	**Purchase Order/Charge Code**	300205
Project Title	300 Area Uranium Sequestration Post Inj	**Logbook No.**	HNF-N-506 81 / 53-54	**Ice Chest No.**	GW5-511
Shipped To (Lab)	TestAmerica St. Louis	**Method of Shipment**	Commercial Carrier	**Bill of Lading/Air Bill No.**	7751155 36306
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
B338P0	N	W	12-3-15	1045	1x500-mL G/P	6020_METALS_ICPMS: Uranium (1); 6010_METALS_ICP: GW 04	6 Months	HNO3 to pH <2
B338P0	N	W	12-3-15	1045	1x500-mL G/P	310.1_ALKALINITY: GW 01	14 Days	Cool <=6C
B338N9	Y	W	12-3-15	1045	1x500-mL G/P	6020_METALS_ICPMS: Uranium (1); 6010_METALS_ICP: GW 04	6 Months	HNO3 to pH <2

Relinquished By	Print	Sign	Date/Time	Received By	Print	Sign	Date/Time
J.R. Aguilar/CHPRC		DEC 0 3 2015	1050	F.M. Hall/CHPRC		DEC 0 3 2015	1050
F.M. Hall/CHPRC		DEC 0 3 2015	1400	FEDEX		12-3-15 ~~DEC 0 3 2015~~	
FED EX				Jill Clark	Jill Clarke	12.4.15	0915

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 9/30/2015 FSR ID = FSR7326 A-6004-842 (REV 2)

CH2MHill Plateau Remediation Company SL2044

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

C.O.C. # **X15-068-060**

Collector	J.R. Aguilar/CHPRC	**Contact/Requester**	WHITLEY, KM	**Telephone No.**	373-4929
SAF No.	X15-068	**Sampling Origin**	Hanford Site	**Purchase Order/Charge Code**	300205
Project Title	300 Area Uranium Sequestration Post Inj	**Logbook No.**	HNF-N-506 81 / 53	**Ice Chest No.**	GW5-511
Shipped To (Lab)	TestAmerica St. Louis	**Method of Shipment**	Commercial Carrier	**Bill of Lading/Air Bill No.**	7751155536306
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
B338X2	N	W	12-3-15	0856	1x500-mL G/P	6020_METALS_ICPMS: Uranium (1); 6010_METALS_ICP: GW 04	6 Months	HNO3 to pH <2
B338X2	N	W	12-3-15	0856	1x500-mL G/P	310.1_ALKALINITY: GW 01	14 Days	Cool <=6C
B338X1	Y	W	12-3-15	0856	1x500-mL G/P	6020_METALS_ICPMS: Uranium (1); 6010_METALS_ICP: GW 04	6 Months	HNO3 to pH <2

Relinquished By	Print	Sign	Date/Time	Received By	Print	Sign	Date/Time
J.R. Aguilar/CHPRC		DEC 0 3 2015	1090	F.M. Hall/CHPRC		DEC 0 3 2015	1050
F.M. Hall/CHPRC		DEC 0 3 2015	1400	FEDEX		12-3-15 DEC 0 3 2015	
FED EX				Jill Clark	Jill Clark	12.4.15	0915

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 9/30/2015 FSR ID = FSR7340 A-6004-842 (REV 2)

CH2MHill Plateau Remediation Company SL2044

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

C.O.C. # **X15-068-078**

Collector	J.R. Aguilar/CHPRC	**Contact/Requester**	WHITLEY, KM	**Telephone No.**	373-4929
SAF No.	X15-068	**Sampling Origin**	Hanford Site	**Purchase Order/Charge Code**	300205
Project Title	300 Area Uranium Sequestration Post Inj	**Logbook No.**	HNF-N-506 81 / 53	**Ice Chest No.**	GWS-511
Shipped To (Lab)	TestAmerica St. Louis	**Method of Shipment**	Commercial Carrier	**Bill of Lading/Air Bill No.**	7751155363 06
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
B338P7	Y	W	12-3-15	0934	1x500-mL G/P	6020_METALS_ICPMS: Uranium (1); 6010_METALS_ICP: GW 04	6 Months	HNO3 to pH <2
B338P8	N	W	12-3-15	0934	1x500-mL G/P	6020_METALS_ICPMS: Uranium (1); 6010_METALS_ICP: GW 04	6 Months	HNO3 to pH <2
B338P8	N	W	12-3-15	0934	1x500-mL G/P	310.1_ALKALINITY: GW 01	14 Days	Cool <=6C

Relinquished By	Print	Sign	Date/Time	Received By	Print	Sign	Date/Time
J.R. Aguilar/CHPRC		DEC 0 3 2015	1050	F.M. Hall/CHPRC		DEC 0 3 2015	1050
F.M. Hall/CHPRC		DEC 0 3 2015	1400	FEDEX		~~DEC 0 3 2015~~	12-3-15
FED EX				Jill Clark	Jill Clark		12.4.15 0915

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 9/30/2015 **FSR ID = FSR7327** A-6004-842 (REV 2)

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775113296583

Ship date
Thu 12/03/2015

RICHLAND, WA US

Delivered
Signed for by: R.CASTELLO

Actual delivery
Fri 12/04/2015 9:09 am

EARTH CITY, MO US

Travel History

Date/Time	Activity	Location
- 12/04/2015 - Friday		
9:09 am	Delivered	EARTH CITY, MO
7:17 am	On FedEx vehicle for delivery	EARTH CITY, MO
7:10 am	At local FedEx facility	EARTH CITY, MO
5:38 am	At destination sort facility	BERKELEY, MO
4:55 am	Departed FedEx location	MEMPHIS, TN
12:47 am	Arrived at FedEx location	MEMPHIS, TN
- 12/03/2015 - Thursday		
5:09 pm	Left FedEx origin facility	PASCO, WA
3:25 pm	Picked up	PASCO, WA
1:06 pm	Shipment information sent to FedEx	

Shipment Facts

Tracking number	775113296583	Service	FedEx Priority Overnight
Weight	82 lbs / 37.19 kgs	Delivered To	Shipping/Receiving
Total pieces	1	Total shipment weight	82 lbs / 37.19 kgs
Shipper reference	gws-498	Packaging	Your Packaging
Special handling section	Deliver Weekday, Additional Handling Surcharge		

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775117914706

Ship date
Thu 12/03/2015
RICHLAND, WA US

Delivered
Signed for by: R.CASTELLO

Actual delivery
Fri 12/04/2015 9:09 am
EARTH CITY, MO US

Travel History

Date/Time	Activity	Location
- 12/04/2015 - Friday		
9:09 am	Delivered	EARTH CITY, MO
7:17 am	On FedEx vehicle for delivery	EARTH CITY, MO
7:10 am	At local FedEx facility	EARTH CITY, MO
5:38 am	At destination sort facility	BERKELEY, MO
4:55 am	Departed FedEx location	MEMPHIS, TN
12:47 am	Arrived at FedEx location	MEMPHIS, TN
- 12/03/2015 - Thursday		
5:09 pm	Left FedEx origin facility	PASCO, WA
4:49 pm	Shipment information sent to FedEx	
3:25 pm	Picked up	PASCO, WA

Shipment Facts

Tracking number	775117914706	Service	FedEx Priority Overnight
Weight	74 lbs / 33.57 kgs	Delivered To	Shipping/Receiving
Total pieces	1	Total shipment weight	74 lbs / 33.57 kgs
Shipper reference	GWS-508	Packaging	Your Packaging
Special handling section	Deliver Weekday		

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775115536306

Ship date:
Thu 12/03/2015

RICHLAND, WA US

Delivered
Signed for by: R.CASTELLO

Actual delivery:
Fri 12/04/2015 9:09 am

EARTH CITY, MO US

Travel History

Date/Time	Activity	Location
- 12/04/2015 - Friday		
9:09 am	Delivered	EARTH CITY, MO
7:01 am	On FedEx vehicle for delivery	EARTH CITY, MO
6:55 am	At local FedEx facility	EARTH CITY, MO
5:38 am	At destination sort facility	BERKELEY, MO
4:55 am	Departed FedEx location	MEMPHIS, TN
12:47 am	Arrived at FedEx location	MEMPHIS, TN
- 12/03/2015 - Thursday		
8:17 pm	Shipment information sent to FedEx	
5:09 pm	Left FedEx origin facility	PASCO, WA
3:25 pm	Picked up	PASCO, WA

Shipment Facts

Tracking number	775115536306	Service	FedEx Priority Overnight
Weight	78 lbs / 35.38 kgs	Delivered To	Shipping/Receiving
Total pieces	1	Total shipment weight	78 lbs / 35.38 kgs
Shipper reference	gws-511	Packaging	Your Packaging
Special handling section	Deliver Weekday, Additional Handling Surcharge		

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Qualifiers

Metals

Qualifier	Qualifier Description
B	Estimated result. Result is less than the RL, but greater than MDL
D	The reported value is from a dilution.
U	Analyzed for but not detected.
C	The analyte was detected in both the sample and the assoicated QC blank, and the sample concentration was </= 5X the blank concentration.

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.
¤	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)

Method Summary

Client: CH2M Hill Plateau Remediation Company
Project/Site: X15-068

TestAmerica Job ID: 160-15218-1
SDG: SL2044

Method	Method Description	Protocol	Laboratory
6020A	Metals (ICP/MS)	SW846	TAL SL
310.1	Alkalinity	MCAWW	TAL SL

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 SL = TestAmerica St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

Sample Summary

Client: CH2M Hill Plateau Remediation Company
Project/Site: X15-068

TestAmerica Job ID: 160-15218-1
SDG: SL2044

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
160-15218-1	B33906	Water	12/02/15 12:25	12/04/15 09:15
160-15218-2	B33905	Water	12/02/15 12:25	12/04/15 09:15
160-15218-3	B338P3	Water	12/03/15 12:00	12/04/15 09:15
160-15218-4	B338P4	Water	12/03/15 12:00	12/04/15 09:15
160-15218-5	B33913	Water	12/03/15 12:31	12/04/15 09:15
160-15218-6	B33914	Water	12/03/15 12:31	12/04/15 09:15
160-15218-7	B33933	Water	12/03/15 08:26	12/04/15 09:15
160-15218-8	B33932	Water	12/03/15 08:26	12/04/15 09:15
160-15218-9	B338W8	Water	12/03/15 08:26	12/04/15 09:15
160-15218-10	B338W7	Water	12/03/15 08:26	12/04/15 09:15
160-15218-11	B33935	Water	12/03/15 07:00	12/04/15 09:15
160-15218-12	B33936	Water	12/03/15 07:00	12/04/15 09:15
160-15218-13	B338T7	Water	12/03/15 10:48	12/04/15 09:15
160-15218-14	B338T8	Water	12/03/15 10:48	12/04/15 09:15
160-15218-15	B338P0	Water	12/03/15 10:45	12/04/15 09:15
160-15218-16	B338N9	Water	12/03/15 10:45	12/04/15 09:15
160-15218-17	B338X2	Water	12/03/15 08:56	12/04/15 09:15
160-15218-18	B338X1	Water	12/03/15 08:56	12/04/15 09:15
160-15218-19	B338P7	Water	12/03/15 09:34	12/04/15 09:15
160-15218-20	B338P8	Water	12/03/15 09:34	12/04/15 09:15

Client Sample Results

Client: CH2M Hill Plateau Remediation Company
Project/Site: X15-068

TestAmerica Job ID: 160-15218-1
SDG: SL2044

Method: 6020A - Metals (ICP/MS)

Client Sample ID: B33906 — **Lab Sample ID: 160-15218-1**
Date Collected: 12/02/15 12:25 — **Matrix: Water**
Date Received: 12/04/15 09:15

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Uranium	1270		1.0	0.23	ug/L		12/14/15 14:17	01/09/16 01:29	2
Sodium	37600		50.0	23.7	ug/L		12/14/15 14:17	01/11/16 16:42	2
Potassium	4620		100	41.6	ug/L		12/14/15 14:17	01/09/16 01:29	2
Calcium	97700		100	68.1	ug/L		12/14/15 14:17	01/09/16 01:29	2
Magnesium	21500		50.0	5.6	ug/L		12/14/15 14:17	01/09/16 01:29	2

Client Sample ID: B338P4 — **Lab Sample ID: 160-15218-4**
Date Collected: 12/03/15 12:00 — **Matrix: Water**
Date Received: 12/04/15 09:15

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Uranium	73.1		1.0	0.23	ug/L		12/14/15 14:17	01/09/16 02:09	2
Sodium	333000	D	250	119	ug/L		12/14/15 14:17	01/11/16 17:07	10
Potassium	63400		100	41.6	ug/L		12/14/15 14:17	01/09/16 02:09	2
Calcium	20600		100	68.1	ug/L		12/14/15 14:17	01/09/16 02:09	2
Magnesium	8150		50.0	5.6	ug/L		12/14/15 14:17	01/09/16 02:09	2

Client Sample ID: B33914 — **Lab Sample ID: 160-15218-6**
Date Collected: 12/03/15 12:31 — **Matrix: Water**
Date Received: 12/04/15 09:15

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Uranium	8.8		1.0	0.23	ug/L		12/14/15 14:17	01/09/16 02:42	2
Sodium	566000	D	500	237	ug/L		12/14/15 14:17	01/11/16 17:29	20
Potassium	70900		100	41.6	ug/L		12/14/15 14:17	01/09/16 02:42	2
Calcium	18100		100	68.1	ug/L		12/14/15 14:17	01/09/16 02:42	2
Magnesium	11300		50.0	5.6	ug/L		12/14/15 14:17	01/09/16 02:42	2

Client Sample ID: B33933 — **Lab Sample ID: 160-15218-7**
Date Collected: 12/03/15 08:26 — **Matrix: Water**
Date Received: 12/04/15 09:15

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Uranium	0.86	B	1.0	0.23	ug/L		12/14/15 14:17	01/09/16 02:49	2
Sodium	1130000	D	500	237	ug/L		12/14/15 14:17	01/11/16 17:33	20
Potassium	44900		100	41.6	ug/L		12/14/15 14:17	01/09/16 02:49	2
Calcium	10900		100	68.1	ug/L		12/14/15 14:17	01/09/16 02:49	2
Magnesium	16300		50.0	5.6	ug/L		12/14/15 14:17	01/09/16 02:49	2

Client Sample ID: B338W8 — **Lab Sample ID: 160-15218-9**
Date Collected: 12/03/15 08:26 — **Matrix: Water**
Date Received: 12/04/15 09:15

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Uranium	0.85	B	1.0	0.23	ug/L		12/14/15 14:17	01/09/16 03:02	2
Sodium	1030000	D	500	237	ug/L		12/14/15 14:17	01/11/16 17:42	20
Potassium	45000		100	41.6	ug/L		12/14/15 14:17	01/09/16 03:02	2
Calcium	10700		100	68.1	ug/L		12/14/15 14:17	01/09/16 03:02	2
Magnesium	16100		50.0	5.6	ug/L		12/14/15 14:17	01/09/16 03:02	2

Client: CH2M Hill Plateau Remediation Company
Project/Site: X15-068

TestAmerica Job ID: 160-15218-1
SDG: SL2044

Method: 6020A - Metals (ICP/MS)

Client Sample ID: B33936 — **Lab Sample ID: 160-15218-12**
Date Collected: 12/03/15 07:00 — **Matrix: Water**
Date Received: 12/04/15 09:15

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Uranium	0.23	U	1.0	0.23	ug/L		12/14/15 14:17	01/09/16 03:22	2
Sodium	**26.8**	**B C**	50.0	23.7	ug/L		12/14/15 14:17	01/12/16 16:32	2
Potassium	41.6	U	100	41.6	ug/L		12/14/15 14:17	01/09/16 03:22	2
Calcium	68.1	U	100	68.1	ug/L		12/14/15 14:17	01/09/16 03:22	2
Magnesium	5.6	U	50.0	5.6	ug/L		12/14/15 14:17	01/09/16 03:22	2

Client Sample ID: B338T8 — **Lab Sample ID: 160-15218-14**
Date Collected: 12/03/15 10:48 — **Matrix: Water**
Date Received: 12/04/15 09:15

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Uranium	**72.0**		1.0	0.23	ug/L		12/14/15 14:17	01/09/16 03:36	2
Sodium	**29000**		50.0	23.7	ug/L		12/14/15 14:17	01/11/16 18:04	2
Potassium	**5010**		100	41.6	ug/L		12/14/15 14:17	01/09/16 03:36	2
Calcium	**54900**		100	68.1	ug/L		12/14/15 14:17	01/09/16 03:36	2
Magnesium	**13200**		50.0	5.6	ug/L		12/14/15 14:17	01/09/16 03:36	2

Client Sample ID: B338P0 — **Lab Sample ID: 160-15218-15**
Date Collected: 12/03/15 10:45 — **Matrix: Water**
Date Received: 12/04/15 09:15

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Uranium	**20.8**		1.0	0.23	ug/L		12/14/15 14:17	01/09/16 03:43	2
Sodium	**184000**	**D**	125	59.3	ug/L		12/14/15 14:17	01/11/16 18:08	5
Potassium	**19300**		100	41.6	ug/L		12/14/15 14:17	01/09/16 03:43	2
Calcium	**33500**		100	68.1	ug/L		12/14/15 14:17	01/09/16 03:43	2
Magnesium	**11100**		50.0	5.6	ug/L		12/14/15 14:17	01/09/16 03:43	2

Client Sample ID: B338X2 — **Lab Sample ID: 160-15218-17**
Date Collected: 12/03/15 08:56 — **Matrix: Water**
Date Received: 12/04/15 09:15

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Uranium	**418**		1.0	0.23	ug/L		12/14/15 14:17	01/09/16 04:16	2
Sodium	**192000**	**D**	125	59.3	ug/L		12/14/15 14:17	01/11/16 18:29	5
Potassium	**6710**		100	41.6	ug/L		12/14/15 14:17	01/09/16 04:16	2
Calcium	**50500**		100	68.1	ug/L		12/14/15 14:17	01/09/16 04:16	2
Magnesium	**14800**		50.0	5.6	ug/L		12/14/15 14:17	01/09/16 04:16	2

Client Sample ID: B338P8 — **Lab Sample ID: 160-15218-20**
Date Collected: 12/03/15 09:34 — **Matrix: Water**
Date Received: 12/04/15 09:15

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Uranium	**49.7**		1.0	0.23	ug/L		12/14/15 14:17	01/09/16 04:36	2
Sodium	**28800**		50.0	23.7	ug/L		12/14/15 14:17	01/11/16 18:42	2
Potassium	**5030**		100	41.6	ug/L		12/14/15 14:17	01/09/16 04:36	2
Calcium	**55600**		100	68.1	ug/L		12/14/15 14:17	01/09/16 04:36	2
Magnesium	**13500**		50.0	5.6	ug/L		12/14/15 14:17	01/09/16 04:36	2

Client Sample Results

Client: CH2M Hill Plateau Remediation Company
Project/Site: X15-068

TestAmerica Job ID: 160-15218-1
SDG: SL2044

Method: 6020A - Metals (ICP/MS) - Dissolved

Client Sample ID: B33905 — **Lab Sample ID: 160-15218-2**
Date Collected: 12/02/15 12:25 — **Matrix: Water**
Date Received: 12/04/15 09:15

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Uranium	1310		1.0	0.23	ug/L		12/14/15 14:17	01/09/16 01:55	2
Sodium	45700		50.0	23.7	ug/L		12/14/15 14:17	01/11/16 16:59	2
Potassium	4720		100	41.6	ug/L		12/14/15 14:17	01/09/16 01:55	2
Calcium	100000		100	68.1	ug/L		12/14/15 14:17	01/09/16 01:55	2
Magnesium	22300		50.0	5.6	ug/L		12/14/15 14:17	01/09/16 01:55	2

Client Sample ID: B338P3 — **Lab Sample ID: 160-15218-3**
Date Collected: 12/03/15 12:00 — **Matrix: Water**
Date Received: 12/04/15 09:15

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Uranium	69.1		1.0	0.23	ug/L		12/14/15 14:17	01/09/16 02:02	2
Sodium	348000	D	250	119	ug/L		12/14/15 14:17	01/11/16 17:03	10
Potassium	60900		100	41.6	ug/L		12/14/15 14:17	01/09/16 02:02	2
Calcium	19700		100	68.1	ug/L		12/14/15 14:17	01/09/16 02:02	2
Magnesium	7930		50.0	5.6	ug/L		12/14/15 14:17	01/09/16 02:02	2

Client Sample ID: B33913 — **Lab Sample ID: 160-15218-5**
Date Collected: 12/03/15 12:31 — **Matrix: Water**
Date Received: 12/04/15 09:15

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Uranium	8.7		1.0	0.23	ug/L		12/14/15 14:17	01/09/16 02:15	2
Sodium	586000	D	500	237	ug/L		12/14/15 14:17	01/11/16 17:11	20
Potassium	72800		100	41.6	ug/L		12/14/15 14:17	01/09/16 02:15	2
Calcium	18200		100	68.1	ug/L		12/14/15 14:17	01/09/16 02:15	2
Magnesium	11600		50.0	5.6	ug/L		12/14/15 14:17	01/09/16 02:15	2

Client Sample ID: B33932 — **Lab Sample ID: 160-15218-8**
Date Collected: 12/03/15 08:26 — **Matrix: Water**
Date Received: 12/04/15 09:15

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Uranium	0.77	B	1.0	0.23	ug/L		12/14/15 14:17	01/09/16 02:56	2
Sodium	1070000	D	500	237	ug/L		12/14/15 14:17	01/11/16 17:38	20
Potassium	44600		100	41.6	ug/L		12/14/15 14:17	01/09/16 02:56	2
Calcium	10700		100	68.1	ug/L		12/14/15 14:17	01/09/16 02:56	2
Magnesium	16000		50.0	5.6	ug/L		12/14/15 14:17	01/09/16 02:56	2

Client Sample ID: B338W7 — **Lab Sample ID: 160-15218-10**
Date Collected: 12/03/15 08:26 — **Matrix: Water**
Date Received: 12/04/15 09:15

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Uranium	0.80	B	1.0	0.23	ug/L		12/14/15 14:17	01/09/16 03:09	2
Sodium	1080000	D	500	237	ug/L		12/14/15 14:17	01/11/16 17:46	20
Potassium	44600		100	41.6	ug/L		12/14/15 14:17	01/09/16 03:09	2
Calcium	10800		100	68.1	ug/L		12/14/15 14:17	01/09/16 03:09	2
Magnesium	16200		50.0	5.6	ug/L		12/14/15 14:17	01/09/16 03:09	2

Client Sample ID: B33935 — **Lab Sample ID: 160-15218-11**
Date Collected: 12/03/15 07:00 — **Matrix: Water**
Date Received: 12/04/15 09:15

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Uranium	0.23	U	1.0	0.23	ug/L		12/14/15 14:17	01/09/16 03:16	2

Method: 6020A - Metals (ICP/MS) - Dissolved (Continued)

Client Sample ID: B33935 — **Lab Sample ID: 160-15218-11**
Date Collected: 12/03/15 07:00 — **Matrix: Water**
Date Received: 12/04/15 09:15

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sodium	28.4	B C	50.0	23.7	ug/L		12/14/15 14:17	01/12/16 16:28	2
Potassium	41.6	U	100	41.6	ug/L		12/14/15 14:17	01/09/16 03:16	2
Calcium	68.1	U	100	68.1	ug/L		12/14/15 14:17	01/09/16 03:16	2
Magnesium	5.6	U	50.0	5.6	ug/L		12/14/15 14:17	01/09/16 03:16	2

Client Sample ID: B338T7 — **Lab Sample ID: 160-15218-13**
Date Collected: 12/03/15 10:48 — **Matrix: Water**
Date Received: 12/04/15 09:15

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Uranium	72.6		1.0	0.23	ug/L		12/14/15 14:17	01/09/16 03:29	2
Sodium	29300		50.0	23.7	ug/L		12/14/15 14:17	01/11/16 17:59	2
Potassium	5000		100	41.6	ug/L		12/14/15 14:17	01/09/16 03:29	2
Calcium	55500		100	68.1	ug/L		12/14/15 14:17	01/09/16 03:29	2
Magnesium	13100		50.0	5.6	ug/L		12/14/15 14:17	01/09/16 03:29	2

Client Sample ID: B338N9 — **Lab Sample ID: 160-15218-16**
Date Collected: 12/03/15 10:45 — **Matrix: Water**
Date Received: 12/04/15 09:15

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Uranium	21.4		1.0	0.23	ug/L		12/14/15 14:17	01/09/16 04:09	2
Sodium	185000	D	125	59.3	ug/L		12/14/15 14:17	01/11/16 18:25	5
Potassium	18700		100	41.6	ug/L		12/14/15 14:17	01/09/16 04:09	2
Calcium	33400		100	68.1	ug/L		12/14/15 14:17	01/09/16 04:09	2
Magnesium	11000		50.0	5.6	ug/L		12/14/15 14:17	01/09/16 04:09	2

Client Sample ID: B338X1 — **Lab Sample ID: 160-15218-18**
Date Collected: 12/03/15 08:56 — **Matrix: Water**
Date Received: 12/04/15 09:15

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Uranium	416		1.0	0.23	ug/L		12/14/15 14:17	01/09/16 04:23	2
Sodium	196000	D	125	59.3	ug/L		12/14/15 14:17	01/11/16 18:34	5
Potassium	6690		100	41.6	ug/L		12/14/15 14:17	01/09/16 04:23	2
Calcium	51600		100	68.1	ug/L		12/14/15 14:17	01/09/16 04:23	2
Magnesium	14800		50.0	5.6	ug/L		12/14/15 14:17	01/09/16 04:23	2

Client Sample ID: B338P7 — **Lab Sample ID: 160-15218-19**
Date Collected: 12/03/15 09:34 — **Matrix: Water**
Date Received: 12/04/15 09:15

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Uranium	48.1		1.0	0.23	ug/L		12/14/15 14:17	01/09/16 04:30	2
Sodium	30100		50.0	23.7	ug/L		12/14/15 14:17	01/11/16 18:38	2
Potassium	4940		100	41.6	ug/L		12/14/15 14:17	01/09/16 04:30	2
Calcium	54700		100	68.1	ug/L		12/14/15 14:17	01/09/16 04:30	2
Magnesium	13200		50.0	5.6	ug/L		12/14/15 14:17	01/09/16 04:30	2

General Chemistry

Client Sample ID: B33906 **Lab Sample ID: 160-15218-1**
Date Collected: 12/02/15 12:25 **Matrix: Water**
Date Received: 12/04/15 09:15

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	**246**		5.0	0.54	mg/L			12/09/15 11:50	1
Bicarbonate Alkalinity as CaCO3	**246**		5.0	0.54	mg/L			12/09/15 11:50	1
Carbonate Alkalinity as CaCO3	0.54	U	5.0	0.54	mg/L			12/09/15 11:50	1
Hydroxide Alkalinity	0.54	U	5.0	0.54	mg/L			12/09/15 11:50	1

Client Sample ID: B338P4 **Lab Sample ID: 160-15218-4**
Date Collected: 12/03/15 12:00 **Matrix: Water**
Date Received: 12/04/15 09:15

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	**396**		5.0	0.54	mg/L			12/09/15 11:50	1
Bicarbonate Alkalinity as CaCO3	**396**		5.0	0.54	mg/L			12/09/15 11:50	1
Carbonate Alkalinity as CaCO3	0.54	U	5.0	0.54	mg/L			12/09/15 11:50	1
Hydroxide Alkalinity	0.54	U	5.0	0.54	mg/L			12/09/15 11:50	1

Client Sample ID: B33914 **Lab Sample ID: 160-15218-6**
Date Collected: 12/03/15 12:31 **Matrix: Water**
Date Received: 12/04/15 09:15

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	**466**		5.0	0.54	mg/L			12/10/15 08:06	1
Bicarbonate Alkalinity as CaCO3	**466**		5.0	0.54	mg/L			12/10/15 08:06	1
Carbonate Alkalinity as CaCO3	0.54	U	5.0	0.54	mg/L			12/10/15 08:06	1
Hydroxide Alkalinity	0.54	U	5.0	0.54	mg/L			12/10/15 08:06	1

Client Sample ID: B33933 **Lab Sample ID: 160-15218-7**
Date Collected: 12/03/15 08:26 **Matrix: Water**
Date Received: 12/04/15 09:15

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	**888**		5.0	0.54	mg/L			12/10/15 08:06	1
Bicarbonate Alkalinity as CaCO3	**888**		5.0	0.54	mg/L			12/10/15 08:06	1
Carbonate Alkalinity as CaCO3	0.54	U	5.0	0.54	mg/L			12/10/15 08:06	1
Hydroxide Alkalinity	0.54	U	5.0	0.54	mg/L			12/10/15 08:06	1

Client Sample ID: B338W8 **Lab Sample ID: 160-15218-9**
Date Collected: 12/03/15 08:26 **Matrix: Water**
Date Received: 12/04/15 09:15

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	**892**		5.0	0.54	mg/L			12/10/15 08:06	1
Bicarbonate Alkalinity as CaCO3	**892**		5.0	0.54	mg/L			12/10/15 08:06	1
Carbonate Alkalinity as CaCO3	0.54	U	5.0	0.54	mg/L			12/10/15 08:06	1
Hydroxide Alkalinity	0.54	U	5.0	0.54	mg/L			12/10/15 08:06	1

Client Sample ID: B33936 **Lab Sample ID: 160-15218-12**
Date Collected: 12/03/15 07:00 **Matrix: Water**
Date Received: 12/04/15 09:15

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	0.54	U	5.0	0.54	mg/L			12/10/15 08:06	1
Bicarbonate Alkalinity as CaCO3	0.54	U	5.0	0.54	mg/L			12/10/15 08:06	1
Carbonate Alkalinity as CaCO3	0.54	U	5.0	0.54	mg/L			12/10/15 08:06	1
Hydroxide Alkalinity	0.54	U	5.0	0.54	mg/L			12/10/15 08:06	1

General Chemistry

Client Sample ID: B338T8 — **Lab Sample ID: 160-15218-14**
Date Collected: 12/03/15 10:48 — **Matrix: Water**
Date Received: 12/04/15 09:15

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	**130**		5.0	0.54	mg/L			12/10/15 08:06	1
Bicarbonate Alkalinity as CaCO3	**130**		5.0	0.54	mg/L			12/10/15 08:06	1
Carbonate Alkalinity as CaCO3	0.54	U	5.0	0.54	mg/L			12/10/15 08:06	1
Hydroxide Alkalinity	0.54	U	5.0	0.54	mg/L			12/10/15 08:06	1

Client Sample ID: B338P0 — **Lab Sample ID: 160-15218-15**
Date Collected: 12/03/15 10:45 — **Matrix: Water**
Date Received: 12/04/15 09:15

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	**245**		5.0	0.54	mg/L			12/10/15 08:06	1
Bicarbonate Alkalinity as CaCO3	**245**		5.0	0.54	mg/L			12/10/15 08:06	1
Carbonate Alkalinity as CaCO3	0.54	U	5.0	0.54	mg/L			12/10/15 08:06	1
Hydroxide Alkalinity	0.54	U	5.0	0.54	mg/L			12/10/15 08:06	1

Client Sample ID: B338X2 — **Lab Sample ID: 160-15218-17**
Date Collected: 12/03/15 08:56 — **Matrix: Water**
Date Received: 12/04/15 09:15

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	**334**		5.0	0.54	mg/L			12/10/15 08:06	1
Bicarbonate Alkalinity as CaCO3	**334**		5.0	0.54	mg/L			12/10/15 08:06	1
Carbonate Alkalinity as CaCO3	0.54	U	5.0	0.54	mg/L			12/10/15 08:06	1
Hydroxide Alkalinity	0.54	U	5.0	0.54	mg/L			12/10/15 08:06	1

Client Sample ID: B338P8 — **Lab Sample ID: 160-15218-20**
Date Collected: 12/03/15 09:34 — **Matrix: Water**
Date Received: 12/04/15 09:15

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	**134**		5.0	0.54	mg/L			12/10/15 08:06	1
Bicarbonate Alkalinity as CaCO3	**134**		5.0	0.54	mg/L			12/10/15 08:06	1
Carbonate Alkalinity as CaCO3	0.54	U	5.0	0.54	mg/L			12/10/15 08:06	1
Hydroxide Alkalinity	0.54	U	5.0	0.54	mg/L			12/10/15 08:06	1

QC Sample Results

Client: CH2M Hill Plateau Remediation Company
Project/Site: X15-068

TestAmerica Job ID: 160-15218-1
SDG: SL2044

Method: 6020A - Metals (ICP/MS)

Lab Sample ID: MB 160-227137/1-A
Matrix: Water
Analysis Batch: 231467

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 227137

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Uranium	0.23	U	1.0	0.23	ug/L		12/14/15 14:17	01/09/16 01:15	2
Potassium	41.6	U	100	41.6	ug/L		12/14/15 14:17	01/09/16 01:15	2
Calcium	68.1	U	100	68.1	ug/L		12/14/15 14:17	01/09/16 01:15	2
Magnesium	5.6	U	50.0	5.6	ug/L		12/14/15 14:17	01/09/16 01:15	2

Lab Sample ID: MB 160-227137/1-A
Matrix: Water
Analysis Batch: 231776

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 227137

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sodium	39.51	B	50.0	23.7	ug/L		12/14/15 14:17	01/11/16 16:34	2

Lab Sample ID: LCS 160-227137/2-A
Matrix: Water
Analysis Batch: 231467

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 227137

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Uranium	1000	997.0		ug/L		100	80 - 120
Potassium	10000	9895		ug/L		99	80 - 120
Calcium	10000	10300		ug/L		103	80 - 120
Magnesium	10000	9966		ug/L		100	80 - 120

Lab Sample ID: LCS 160-227137/2-A
Matrix: Water
Analysis Batch: 231776

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 227137

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Sodium	10000	10210		ug/L		102	80 - 120

Lab Sample ID: 160-15218-1 MS
Matrix: Water
Analysis Batch: 231467

Client Sample ID: B33906
Prep Type: Total/NA
Prep Batch: 227137

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Uranium	1270		1000	2216		ug/L		94	75 - 125
Potassium	4620		10000	14360		ug/L		97	75 - 125
Calcium	97700		10000	105500		ug/L		78	75 - 125
Magnesium	21500		10000	30900		ug/L		94	75 - 125

Lab Sample ID: 160-15218-1 MS
Matrix: Water
Analysis Batch: 231776

Client Sample ID: B33906
Prep Type: Total/NA
Prep Batch: 227137

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Sodium	37600		10000	45350		ug/L		78	75 - 125

Method: 6020A - Metals (ICP/MS) (Continued)

Lab Sample ID: 160-15218-1 MSD — **Client Sample ID: B33906**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 231467 — **Prep Batch: 227137**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Uranium	1270		1000	2223		ug/L		95	75 - 125	0	20
Potassium	4620		10000	14320		ug/L		97	75 - 125	0	20
Calcium	97700		10000	105300		ug/L		76	75 - 125	0	20
Magnesium	21500		10000	30840		ug/L		93	75 - 125	0	20

Lab Sample ID: 160-15218-1 MSD — **Client Sample ID: B33906**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 231776 — **Prep Batch: 227137**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Sodium	37600		10000	45540		ug/L		80	75 - 125	0	20

Method: 310.1 - Alkalinity

Lab Sample ID: MB 160-226160/1 — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 226160

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	0.54	U	5.0	0.54	mg/L			12/09/15 11:50	1
Bicarbonate Alkalinity as CaCO3	0.54	U	5.0	0.54	mg/L			12/09/15 11:50	1
Carbonate Alkalinity as CaCO3	0.54	U	5.0	0.54	mg/L			12/09/15 11:50	1
Hydroxide Alkalinity	0.54	U	5.0	0.54	mg/L			12/09/15 11:50	1

Lab Sample ID: HLCS 160-226160/3 — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 226160

Analyte	Spike Added	HLCS Result	HLCS Qualifier	Unit	D	%Rec	%Rec. Limits
Alkalinity	400	376.0		mg/L		94	90 - 110
Bicarbonate Alkalinity as CaCO3	400	376.0		mg/L		94	90 - 110

Lab Sample ID: LCS 160-226160/2 — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 226160

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Alkalinity	200	189.0		mg/L		94	90 - 110
Bicarbonate Alkalinity as CaCO3	200	189.0		mg/L		94	90 - 110

Lab Sample ID: 160-15216-A-2 MS — **Client Sample ID: Matrix Spike**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 226160

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Alkalinity	140		100	233.0		mg/L		93	80 - 120
Bicarbonate Alkalinity as CaCO3	140		100	233.0		mg/L		93	80 - 120

Method: 310.1 - Alkalinity (Continued)

Lab Sample ID: 160-15216-A-2 DU — **Client Sample ID: Duplicate**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 226160

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Alkalinity	140		140.0		mg/L		0	20
Bicarbonate Alkalinity as CaCO3	140		140.0		mg/L		0	20
Carbonate Alkalinity as CaCO3	0.54	U	0.54	U	mg/L		NC	20
Hydroxide Alkalinity	0.54	U	0.54	U	mg/L		NC	20

Lab Sample ID: MB 160-226502/1 — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 226502

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	0.54	U	5.0	0.54	mg/L			12/10/15 08:06	1
Bicarbonate Alkalinity as CaCO3	0.54	U	5.0	0.54	mg/L			12/10/15 08:06	1
Carbonate Alkalinity as CaCO3	0.54	U	5.0	0.54	mg/L			12/10/15 08:06	1
Hydroxide Alkalinity	0.54	U	5.0	0.54	mg/L			12/10/15 08:06	1

Lab Sample ID: HLCS 160-226502/3 — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 226502

Analyte	Spike Added	HLCS Result	HLCS Qualifier	Unit	D	%Rec	%Rec. Limits
Alkalinity	400	376.0		mg/L		94	90 - 110
Bicarbonate Alkalinity as CaCO3	400	376.0		mg/L		94	90 - 110

Lab Sample ID: LCS 160-226502/2 — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 226502

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Alkalinity	200	188.0		mg/L		94	90 - 110
Bicarbonate Alkalinity as CaCO3	200	188.0		mg/L		94	90 - 110

Lab Sample ID: 160-15218-6 MS — **Client Sample ID: B33914**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 226502

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Alkalinity	466		100	566.0		mg/L		100	80 - 120
Bicarbonate Alkalinity as CaCO3	466		100	566.0		mg/L		100	80 - 120

Lab Sample ID: 160-15218-6 DU — **Client Sample ID: B33914**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 226502

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Alkalinity	466		468.0		mg/L		0.4	20
Bicarbonate Alkalinity as CaCO3	466		468.0		mg/L		0.4	20
Carbonate Alkalinity as CaCO3	0.54	U	0.54	U	mg/L		NC	20
Hydroxide Alkalinity	0.54	U	0.54	U	mg/L		NC	20

QC Association Summary

Client: CH2M Hill Plateau Remediation Company
Project/Site: X15-068

TestAmerica Job ID: 160-15218-1
SDG: SL2044

Metals

Prep Batch: 227137

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-15218-1	B33906	Total/NA	Water	3010A	
160-15218-1 MS	B33906	Total/NA	Water	3010A	
160-15218-1 MSD	B33906	Total/NA	Water	3010A	
160-15218-2	B33905	Dissolved	Water	3010A	
160-15218-3	B338P3	Dissolved	Water	3010A	
160-15218-4	B338P4	Total/NA	Water	3010A	
160-15218-5	B33913	Dissolved	Water	3010A	
160-15218-6	B33914	Total/NA	Water	3010A	
160-15218-7	B33933	Total/NA	Water	3010A	
160-15218-8	B33932	Dissolved	Water	3010A	
160-15218-9	B338W8	Total/NA	Water	3010A	
160-15218-10	B338W7	Dissolved	Water	3010A	
160-15218-11	B33935	Dissolved	Water	3010A	
160-15218-12	B33936	Total/NA	Water	3010A	
160-15218-13	B338T7	Dissolved	Water	3010A	
160-15218-14	B338T8	Total/NA	Water	3010A	
160-15218-15	B338P0	Total/NA	Water	3010A	
160-15218-16	B338N9	Dissolved	Water	3010A	
160-15218-17	B338X2	Total/NA	Water	3010A	
160-15218-18	B338X1	Dissolved	Water	3010A	
160-15218-19	B338P7	Dissolved	Water	3010A	
160-15218-20	B338P8	Total/NA	Water	3010A	
LCS 160-227137/2-A	Lab Control Sample	Total/NA	Water	3010A	
MB 160-227137/1-A	Method Blank	Total/NA	Water	3010A	

Analysis Batch: 231467

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-15218-1	B33906	Total/NA	Water	6020A	227137
160-15218-1 MS	B33906	Total/NA	Water	6020A	227137
160-15218-1 MSD	B33906	Total/NA	Water	6020A	227137
160-15218-2	B33905	Dissolved	Water	6020A	227137
160-15218-3	B338P3	Dissolved	Water	6020A	227137
160-15218-4	B338P4	Total/NA	Water	6020A	227137
160-15218-5	B33913	Dissolved	Water	6020A	227137
160-15218-6	B33914	Total/NA	Water	6020A	227137
160-15218-7	B33933	Total/NA	Water	6020A	227137
160-15218-8	B33932	Dissolved	Water	6020A	227137
160-15218-9	B338W8	Total/NA	Water	6020A	227137
160-15218-10	B338W7	Dissolved	Water	6020A	227137
160-15218-11	B33935	Dissolved	Water	6020A	227137
160-15218-12	B33936	Total/NA	Water	6020A	227137
160-15218-13	B338T7	Dissolved	Water	6020A	227137
160-15218-14	B338T8	Total/NA	Water	6020A	227137
160-15218-15	B338P0	Total/NA	Water	6020A	227137
160-15218-16	B338N9	Dissolved	Water	6020A	227137
160-15218-17	B338X2	Total/NA	Water	6020A	227137
160-15218-18	B338X1	Dissolved	Water	6020A	227137
160-15218-19	B338P7	Dissolved	Water	6020A	227137
160-15218-20	B338P8	Total/NA	Water	6020A	227137
LCS 160-227137/2-A	Lab Control Sample	Total/NA	Water	6020A	227137
MB 160-227137/1-A	Method Blank	Total/NA	Water	6020A	227137

QC Association Summary

Client: CH2M Hill Plateau Remediation Company
Project/Site: X15-068

TestAmerica Job ID: 160-15218-1
SDG: SL2044

Analysis Batch: 231776

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-15218-1	B33906	Total/NA	Water	6020A	227137
160-15218-1 MS	B33906	Total/NA	Water	6020A	227137
160-15218-1 MSD	B33906	Total/NA	Water	6020A	227137
160-15218-2	B33905	Dissolved	Water	6020A	227137
160-15218-3	B338P3	Dissolved	Water	6020A	227137
160-15218-4	B338P4	Total/NA	Water	6020A	227137
160-15218-5	B33913	Dissolved	Water	6020A	227137
160-15218-6	B33914	Total/NA	Water	6020A	227137
160-15218-7	B33933	Total/NA	Water	6020A	227137
160-15218-8	B33932	Dissolved	Water	6020A	227137
160-15218-9	B338W8	Total/NA	Water	6020A	227137
160-15218-10	B338W7	Dissolved	Water	6020A	227137
160-15218-13	B338T7	Dissolved	Water	6020A	227137
160-15218-14	B338T8	Total/NA	Water	6020A	227137
160-15218-15	B338P0	Total/NA	Water	6020A	227137
160-15218-16	B338N9	Dissolved	Water	6020A	227137
160-15218-17	B338X2	Total/NA	Water	6020A	227137
160-15218-18	B338X1	Dissolved	Water	6020A	227137
160-15218-19	B338P7	Dissolved	Water	6020A	227137
160-15218-20	B338P8	Total/NA	Water	6020A	227137
LCS 160-227137/2-A	Lab Control Sample	Total/NA	Water	6020A	227137
MB 160-227137/1-A	Method Blank	Total/NA	Water	6020A	227137

Analysis Batch: 232108

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-15218-11	B33935	Dissolved	Water	6020A	227137
160-15218-12	B33936	Total/NA	Water	6020A	227137

General Chemistry

Analysis Batch: 226160

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-15216-A-2 DU	Duplicate	Total/NA	Water	310.1	
160-15216-A-2 MS	Matrix Spike	Total/NA	Water	310.1	
160-15218-1	B33906	Total/NA	Water	310.1	
160-15218-4	B338P4	Total/NA	Water	310.1	
HLCS 160-226160/3	Lab Control Sample	Total/NA	Water	310.1	
LCS 160-226160/2	Lab Control Sample	Total/NA	Water	310.1	
MB 160-226160/1	Method Blank	Total/NA	Water	310.1	

Analysis Batch: 226502

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-15218-6	B33914	Total/NA	Water	310.1	
160-15218-6 DU	B33914	Total/NA	Water	310.1	
160-15218-6 MS	B33914	Total/NA	Water	310.1	
160-15218-7	B33933	Total/NA	Water	310.1	
160-15218-9	B338W8	Total/NA	Water	310.1	
160-15218-12	B33936	Total/NA	Water	310.1	
160-15218-14	B338T8	Total/NA	Water	310.1	
160-15218-15	B338P0	Total/NA	Water	310.1	
160-15218-17	B338X2	Total/NA	Water	310.1	
160-15218-20	B338P8	Total/NA	Water	310.1	
HLCS 160-226502/3	Lab Control Sample	Total/NA	Water	310.1	

QC Association Summary

Client: CH2M Hill Plateau Remediation Company
Project/Site: X15-068

TestAmerica Job ID: 160-15218-1
SDG: SL2044

General Chemistry (Continued)

Analysis Batch: 226502 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 160-226502/2	Lab Control Sample	Total/NA	Water	310.1	
MB 160-226502/1	Method Blank	Total/NA	Water	310.1	