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: 300-6845-1
TestAmerica Sample Delivery Group: WC2750
Client Project/Site: W18-002

For:
CH2M Hill Plateau Remediation Company
825 Jadwin Avenue
Richland, Washington 99352

Attn: CPP Sample Management

Authorized for release by:
3/27/2018 2:06:49 PM

Ashley Worthy, Project Manager I
(509)375-3131
ashley.worthy@testamericainc.com

LINKS

Review your project results through TotalAccess

Have a Question? Ask The Expert

Visit us at: www.testamericainc.com

I certify that this Certificate of Analysis is in compliance with the SOW, both technically and for completeness, for other than the conditions detailed in this package. Release of the data contained in this hard copy data package has been authorized by the Laboratory Manager, or a 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.

Table of Contents

Cover Page 1
Table of Contents 2
Definitions/Glossary 3
Case Narrative 4
Chain of Custody 6
Detection Summary 10
Client Sample Results 11
QC Sample Results 12
QC Association Summary 16
Lab Chronicle 17
Method Summary 21
Sample Summary 22
Receipt Checklists 23

Qualifiers

HPLC/IC

Qualifier	Qualifier Description
D	The reported value is from a dilution.
U	Analyzed for but not detected.
Z	Sample was prepped or analyzed beyond the specified holding time
B	Estimated result. Result is less than the RL, but greater than MDL

General Chemistry

Qualifier	Qualifier Description
U	Analyzed for but not detected.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	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	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
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 (Radiochemistry)
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)

Job ID: 300-6845-1

Laboratory: TestAmerica Richland

Narrative

Job Narrative
300-6845-1

Comments
No additional comments.

Receipt
The samples were received on 3/6/2018 2:25 PM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 2.3º C.

HPLC/IC
Method(s) 300.0: The matrix spike (MS) recoveries for analytical batch 300-10565 were outside control limits for Nitrite as N. Sample matrix interference is suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.

Method(s) 300.0: Reanalysis of the following sample was performed outside of the analytical holding time due to all previous analytical runs over calibrated range for Nitrate as N : B3H393 (300-6845-3).

Method(s) 300.0: Reanalysis of the following sample was performed outside of the analytical holding time due to failure of quality control parameters in the initial analysis, Nitrate as N CCV failed high. B3H399 (300-6845-4)

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

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

SAMPLE ISSUE RESOLUTION (SIR) REPORT

SIR Number: SIR18-0543
Rev. Number: 0
Date Initiated: 03/12/2018

SAMPLE EVENT INFORMATION

SAF NUM(S): W18-002

LABORATORY: TARL

SAMPLING INFORMATION

NUMBER OF SAMPLES: 2

SAMPLE NUMBERS: B3H393, B3H399

SAMPLE MATRIX: WATER

SDG NUM(S): WC2750

ISSUE BACKGROUND

CLASS: Laboratory Issue

TYPE: Instrument Failure

DESCRIPTION: The CCVs failed for the initial analytical run. The anion samples listed above were affected. All samples were re-analyzed with passing instrument QC (CCVs) outside of the required 48 hour holding time, but within 2X the holding time of 96 hours.

RESOLUTION

PROPOSED RESOLUTION: Initiate SIR, report results and include comments in the case narrative.

FINAL RESOLUTION: Accept proposed resolution

SUBMITTED BY:

WORTHY, A — 03/12/2018

ACCEPTED BY:

NAGEL, SE — 03/12/2018

REV 0

03/27/2018

CH2MHill Plateau Remediation Company	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	C.O.C. # W18-002-114 Page 1 of 1

Collector:	Juan Aguilar CHPRC	**Contact/Requester:**	Karen Waters-Husted	**Telephone No.:**	509-376-4650
SAF No.:	W18-002	**Sampling Origin:**	Hanford Site	**Purchase Order/Charge Code:**	300071
Project Title:	RCRA, February 2018	**Logbook No.:**	HNF-N-506-9916	**Ice Chest No.:**	N/A
Shipped To (Lab):	TestAmerica Incorporated, Rich	**Method of Shipment**	GOVERNMENT VEHICLE	**Bill of Lading/Air Bill No.:**	N/A
Protocol	RCRA	**Priority:**	30 Days	**Offsite Property No.:**	N/A

POSSIBLE SAMPLE HAZARDS/REMARK

** ** Contains Radioactive Material at concentrations that are not regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 458.1

SPECIAL INSTRUCTIONS

Low Volume Wells. Do not use for QC.

Sample No.	Filter	*	Date	Time	No/Type Container	Sample Analysis	Holding Time	Preservative
B3H3B0	N	W	3-6-18	1011	1x60-mL aG	7196_CR6: COMMON	24 Hours	Cool <=6C

#6845
WC2750

300-6845 COC

Relinquished By:	Signature	Date/Time	Received By:	Signature	Date/Time
Juan Aguilar CHPRC	MAR 06 2018	1150	Troy Bacon CHPRC	Troy L. Bacon	MAR 06 2018 1150
Troy Bacon CHPRC	Troy L. Bacon MAR 06 2018	1425	J. Bock, TARL	3-6-18	1425

Print First and Last Name

Matrix *

S = Soil	DS = Drum Solids
SE = Sediment	DL = Drum Liquid
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:

3/27/2018

REV.0

03/27/2018

CH2MHill Plateau Remediation Company	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	C.O.C. # W18-002-112 Page 1 of 1

Collector: Juan Aguilar /CHPRC	**Contact/Requester:** Karen Waters-Husted	**Telephone No.:** 509-376-4650
SAF No.: W18-002	**Sampling Origin:** Hanford Site	**Purchase Order/Charge Code:** 300071
Project Title: RCRA, February 2018	**Logbook No.:** HNF-N-506-9917	**Ice Chest No.:** N/A
Shipped To (Lab): TestAmerica Incorporated, Rich	**Method of Shipment** GOVERNMENT VEHICLE	**Bill of Lading/Air Bill No.:** N/A
Protocol RCRA	**Priority:** 30 Days	**Offsite Property No.:** N/A

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

SPECIAL INSTRUCTIONS
Low Volume Wells. Do not use for QC.

Sample No.	Filter	*	Date	Time	No/Type Container	Sample Analysis	Holding Time	Preservative
B3H394	N	W	3-6-18	1105	1x60-mL aG	7196_CR6: COMMON	24 Hours	Cool <=6C

$6845
WC2750

Relinquished By	Received By
Juan Aguilar /CHPRC — MAR 06 2018 1150 (Print First and Last Name / Signature / Date/Time)	Troy Bacon CHPRC — Troy L. Bacon — MAR 06 2018 1150 (Print First and Last Name / Signature / Date/Time)
Troy Bacon CHPRC — Troy L. Bacon — MAR 06 2018 1425 (Print First and Last Name / Signature / Date/Time)	J. Bock, TARL — 3-6-18 1425 (Print First and Last Name / Signature / Date/Time)
Relinquished By: (Print First and Last Name / Signature / Date/Time)	Received By: (Print First and Last Name / Signature / Date/Time)
Relinquished By: (Print First and Last Name / Signature / Date/Time)	Received By: (Print First and Last Name / Signature / Date/Time)

Matrix *
S = Soil, DS = Drum Solids
SE = Sediment, DL = Drum Liquid
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:

3/27/2018

REV.0

03/27/2018

CH2MHill Plateau Remediation Company	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	C.O.C. # W18-002-111 Page 1 of 1

Collector:	Juan Aguilar /CHPRC	**Contact/Requester:**	Karen Waters-Husted	**Telephone No.:**	509-376-4650
SAF No.:	W18-002	**Sampling Origin:**	Hanford Site	**Purchase Order/Charge Code:**	300071
Project Title:	RCRA, February 2018	**Logbook No.:**	HNF-N-506 -99/7	**Ice Chest No.:**	N/A
Shipped To (Lab):	TestAmerica Incorporated, Rich	**Method of Shipment**	GOVERNMENT VEHICLE	**Bill of Lading/Air Bill No.:**	N/A
Protocol	RCRA	**Priority:**	30 Days	**Offsite Property No.:**	N/A

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

SPECIAL INSTRUCTIONS
Low Volume Wells. Do not use for QC.

Sample No.	Filter	*	Date	Time	No/Type Container	Sample Analysis	Holding Time	Preservative
B3H393	N	W	3-6-18	1105	1x60-mL P	300.0_ANIONS_IC: COMMON	48 Hours	Cool <=6C

03/27/2018

6845
WC2750

Relinquished By	Print First and Last Name	Signature	Date/Time	Received By	Print First and Last Name	Signature	Date/Time
Juan Aguilar /CHPRC			MAR 0 6 2018 1150	Troy Bacon CHPRC		Troy L. Bacon	MAR 0 6 2018 1150
Troy Bacon CHPRC		Troy L. Bacon	MAR 0 6 2018 1425		J. Bock, TARL		3-6-18 1425

Matrix *

S = Soil	DS = Drum Solids
SE = Sediment	DL = Drum Liquid
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 1/17/2018 FSR ID = FSR57280 A-6004-842 (REV 3)

3/27/2018

REV.0

03/27/2018

CH2MHill Plateau Remediation Company	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	C.O.C.# W18-002-113 Page 1 of 1

Collector: Juan Aguilar /CHPRC	**Contact/Requester:** Karen Waters-Husted	**Telephone No.:** 509-376-4650
SAF No.: W18-002	**Sampling Origin:** Hanford Site	**Purchase Order/Charge Code:** 300071
Project Title: RCRA, February 2018	**Logbook No.:** HNF-N-506-9916	**Ice Chest No.:** N/A
Shipped To (Lab): TestAmerica Incorporated, Rich	**Method of Shipment** GOVERNMENT VEHICLE	**Bill of Lading/Air Bill No.:** N/A
Protocol RCRA	**Priority:** 30 Days	**Offsite Property No.:** N/A

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

SPECIAL INSTRUCTIONS
Low Volume Wells. Do not use for QC.

Sample No.	Filter	*	Date	Time	No/Type Container	Sample Analysis	Holding Time	Preservative
B3H399	N	W	3-6-18	1011	1x60-mL P	300.0_ANIONS_IC: COMMON	48 Hours	Cool <=6C

6845
WC2750

Relinquished By	Received By
Juan Aguilar /CHPRC — MAR 06 2018 1150 (Print First and Last Name / Signature / Date/Time)	Troy Bacon CHPRC — Troy L. Bacon — MAR 06 2018 1150 (Print First and Last Name / Signature / Date/Time)
Troy Bacon CHPRC — Troy L. Bacon — MAR 06 2018 1425 (Print First and Last Name / Signature / Date/Time)	J. Bock, TARL — 3-6-18 1425 (Print First and Last Name / Signature / Date/Time)
Relinquished By: (Print First and Last Name / Signature / Date/Time)	Received By: (Print First and Last Name / Signature / Date/Time)
Relinquished By: (Print First and Last Name / Signature / Date/Time)	Received By: (Print First and Last Name / Signature / Date/Time)

Matrix *
S = Soil, DS = Drum Solids
SE = Sediment, DL = Drum Liquid
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:

Detection Summary

Client: CH2M Hill Plateau Remediation Company
Project/Site: W18-002

TestAmerica Job ID: 300-6845-1
SDG: WC2750

Client Sample ID: B3H3B0 — Lab Sample ID: 300-6845-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Cr (VI)	0.035		0.0040	0.0015	mg/L	1		7196A	Total/NA

Client Sample ID: B3H394 — Lab Sample ID: 300-6845-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Cr (VI)	0.044		0.0040	0.0015	mg/L	1		7196A	Total/NA

Client Sample ID: B3H393 — Lab Sample ID: 300-6845-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	23	D	4.0	2.0	mg/L	20		300.0	Total/NA
Nitrate as N	59	Z D	0.56	0.28	mg/L	20		300.0	Total/NA
Fluoride	1.1	D	1.0	0.50	mg/L	20		300.0	Total/NA
Sulfate	39	D	5.0	2.5	mg/L	20		300.0	Total/NA

Client Sample ID: B3H399 — Lab Sample ID: 300-6845-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	24	D	2.0	1.0	mg/L	10		300.0	Total/NA
Nitrate as N	49	Z D	0.28	0.14	mg/L	10		300.0	Total/NA
Fluoride	0.73	D	0.50	0.25	mg/L	10		300.0	Total/NA
Sulfate	43	D	2.5	1.3	mg/L	10		300.0	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample Results

Client: CH2M Hill Plateau Remediation Company
Project/Site: W18-002

TestAmerica Job ID: 300-6845-1
SDG: WC2750

Client Sample ID: B3H3B0 — Lab Sample ID: 300-6845-1

Date Collected: 03/06/18 10:11
Date Received: 03/06/18 14:25
Matrix: Water

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cr (VI)	0.035		0.0040	0.0015	mg/L			03/06/18 16:19	1

Client Sample ID: B3H394 — Lab Sample ID: 300-6845-2

Date Collected: 03/06/18 11:05
Date Received: 03/06/18 14:25
Matrix: Water

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cr (VI)	0.044		0.0040	0.0015	mg/L			03/06/18 16:20	1

Client Sample ID: B3H393 — Lab Sample ID: 300-6845-3

Date Collected: 03/06/18 11:05
Date Received: 03/06/18 14:25
Matrix: Water

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	23	D	4.0	2.0	mg/L			03/09/18 20:52	20
Nitrate as N	59	Z D	0.56	0.28	mg/L			03/09/18 20:52	20
Fluoride	1.1	D	1.0	0.50	mg/L			03/09/18 20:52	20
Nitrite as N	0.038	U D	0.076	0.038	mg/L			03/07/18 23:05	2
Sulfate	39	D	5.0	2.5	mg/L			03/09/18 20:52	20

Client Sample ID: B3H399 — Lab Sample ID: 300-6845-4

Date Collected: 03/06/18 10:11
Date Received: 03/06/18 14:25
Matrix: Water

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	24	D	2.0	1.0	mg/L			03/09/18 21:08	10
Nitrate as N	49	Z D	0.28	0.14	mg/L			03/09/18 21:08	10
Fluoride	0.73	D	0.50	0.25	mg/L			03/09/18 21:08	10
Nitrite as N	0.038	U D	0.076	0.038	mg/L			03/07/18 23:21	2
Sulfate	43	D	2.5	1.3	mg/L			03/09/18 21:08	10

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 300-10565/18 — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 10565

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			03/07/18 14:47	1
Nitrite as N	0.019	U	0.038	0.019	mg/L			03/07/18 14:47	1

Lab Sample ID: LCS 300-10565/19 — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 10565

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Nitrate as N	2.26	2.11		mg/L		94	80 - 120
Nitrite as N	3.04	3.05		mg/L		100	80 - 120

Lab Sample ID: 300-6846-A-8 DU — **Client Sample ID: Duplicate**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 10565

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Nitrate as N	4.2	D	4.21	D	mg/L		0.1	20
Nitrite as N	0.068	B D N	0.0666	B D	mg/L		3	20

Lab Sample ID: MB 300-10592/5 — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 10592

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			03/09/18 13:54	1
Nitrite as N	0.019	U	0.038	0.019	mg/L			03/09/18 13:54	1

Lab Sample ID: LCS 300-10592/6 — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 10592

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Nitrate as N	2.26	2.23		mg/L		99	80 - 120
Nitrite as N	3.04	3.09		mg/L		101	80 - 120

Lab Sample ID: 300-6851-A-2 MS — **Client Sample ID: Matrix Spike**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 10592

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Nitrate as N	58	D	4.52	59.2	D	mg/L		34	75 - 125
Nitrite as N	0.65	B D	6.09	5.40	D	mg/L		78	75 - 125

Lab Sample ID: 300-6855-A-18 MS — **Client Sample ID: Matrix Spike**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 10592

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Nitrate as N	6.2	D	1.13	7.32	D	mg/L		103	75 - 125

Method: 300.0 - Anions, Ion Chromatography (Continued)

Lab Sample ID: 300-6855-A-18 MS — **Client Sample ID: Matrix Spike**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 10592

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
Nitrite as N	0.15	B D	1.52	1.32	D	mg/L		77	75 - 125		

Lab Sample ID: 300-6851-A-2 DU — **Client Sample ID: Duplicate**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 10592

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Nitrate as N	58	D		54.7	D	mg/L				5	20
Nitrite as N	0.65	B D		0.647	B D	mg/L				0.3	20

Lab Sample ID: 300-6855-A-18 DU — **Client Sample ID: Duplicate**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 10592

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Nitrate as N	6.2	D		6.08	D	mg/L				1	20
Nitrite as N	0.15	B D		0.146	B D	mg/L				0.8	20

Lab Sample ID: MB 300-10593/5 — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 10593

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	0.10	U	0.20	0.10	mg/L			03/09/18 13:54	1
Fluoride	0.025	U	0.050	0.025	mg/L			03/09/18 13:54	1
Sulfate	0.13	U	0.25	0.13	mg/L			03/09/18 13:54	1

Lab Sample ID: LCS 300-10593/6 — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 10593

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Chloride			16.0	16.0		mg/L		100	80 - 120		
Fluoride			4.00	4.02		mg/L		101	80 - 120		
Sulfate			20.0	20.0		mg/L		100	80 - 120		

Lab Sample ID: 300-6851-A-2 MS — **Client Sample ID: Matrix Spike**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 10593

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
Chloride	17	D	32.0	46.7	D	mg/L		91	75 - 125		
Fluoride	0.71	B D	8.00	7.33	D	mg/L		83	75 - 125		
Sulfate	95	D	40.0	131	D	mg/L		90	75 - 125		

Method: 300.0 - Anions, Ion Chromatography (Continued)

Lab Sample ID: 300-6855-A-18 MS — **Client Sample ID: Matrix Spike**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 10593

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	18	D	8.00	25.6	D	mg/L		100	75 - 125
Fluoride	0.48	D	2.00	2.26	D	mg/L		89	75 - 125
Sulfate	98	D	10.0	108	D	mg/L		106	75 - 125

Lab Sample ID: 300-6851-A-2 DU — **Client Sample ID: Duplicate**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 10593

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Chloride	17	D	16.5	D	mg/L		6	20
Fluoride	0.71	B D	0.693	B D	mg/L		2	20
Sulfate	95	D	89.3	D	mg/L		6	20

Lab Sample ID: 300-6855-A-18 DU — **Client Sample ID: Duplicate**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 10593

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Chloride	18	D	17.4	D	mg/L		1	20
Fluoride	0.48	D	0.479	D	mg/L		0.7	20
Sulfate	98	D	97.0	D	mg/L		0.9	20

Method: 7196A - Chromium, Hexavalent

Lab Sample ID: MB 300-10560/3 — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 10560

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cr (VI)	0.0015	U	0.0040	0.0015	mg/L			03/06/18 16:16	1

Lab Sample ID: LCS 300-10560/4 — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 10560

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Cr (VI)	0.250	0.265		mg/L		106	80 - 120

Lab Sample ID: 300-6845-1 MS — **Client Sample ID: B3H3B0**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 10560

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Cr (VI)	0.035		0.0501	0.0855		mg/L		101	75 - 125

Method: 7196A - Chromium, Hexavalent (Continued)

Lab Sample ID: 300-6845-1 DU
Matrix: Water
Analysis Batch: 10560

Client Sample ID: B3H3B0
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Cr (VI)	0.035			0.0350		mg/L				0.9	20

QC Association Summary

Client: CH2M Hill Plateau Remediation Company
Project/Site: W18-002

TestAmerica Job ID: 300-6845-1
SDG: WC2750

HPLC/IC

Analysis Batch: 10565

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
300-6845-3	B3H393	Total/NA	Water	300.0	
300-6845-4	B3H399	Total/NA	Water	300.0	
MB 300-10565/18	Method Blank	Total/NA	Water	300.0	
LCS 300-10565/19	Lab Control Sample	Total/NA	Water	300.0	
300-6846-A-8 DU	Duplicate	Total/NA	Water	300.0	

Analysis Batch: 10592

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
300-6845-3	B3H393	Total/NA	Water	300.0	
300-6845-4	B3H399	Total/NA	Water	300.0	
MB 300-10592/5	Method Blank	Total/NA	Water	300.0	
LCS 300-10592/6	Lab Control Sample	Total/NA	Water	300.0	
300-6851-A-2 MS	Matrix Spike	Total/NA	Water	300.0	
300-6855-A-18 MS	Matrix Spike	Total/NA	Water	300.0	
300-6851-A-2 DU	Duplicate	Total/NA	Water	300.0	
300-6855-A-18 DU	Duplicate	Total/NA	Water	300.0	

Analysis Batch: 10593

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
300-6845-3	B3H393	Total/NA	Water	300.0	
300-6845-4	B3H399	Total/NA	Water	300.0	
MB 300-10593/5	Method Blank	Total/NA	Water	300.0	
LCS 300-10593/6	Lab Control Sample	Total/NA	Water	300.0	
300-6851-A-2 MS	Matrix Spike	Total/NA	Water	300.0	
300-6855-A-18 MS	Matrix Spike	Total/NA	Water	300.0	
300-6851-A-2 DU	Duplicate	Total/NA	Water	300.0	
300-6855-A-18 DU	Duplicate	Total/NA	Water	300.0	

General Chemistry

Analysis Batch: 10560

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
300-6845-1	B3H3B0	Total/NA	Water	7196A	
300-6845-2	B3H394	Total/NA	Water	7196A	
MB 300-10560/3	Method Blank	Total/NA	Water	7196A	
LCS 300-10560/4	Lab Control Sample	Total/NA	Water	7196A	
300-6845-1 MS	B3H3B0	Total/NA	Water	7196A	
300-6845-1 DU	B3H3B0	Total/NA	Water	7196A	

Client: CH2M Hill Plateau Remediation Company
Project/Site: W18-002

TestAmerica Job ID: 300-6845-1
SDG: WC2750

Client Sample ID: B3H3B0 — Lab Sample ID: 300-6845-1

Date Collected: 03/06/18 10:11 — **Matrix: Water**
Date Received: 03/06/18 14:25

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	7196A		1			10560	03/06/18 16:19	TRH	TAL RCH

Client Sample ID: B3H394 — Lab Sample ID: 300-6845-2

Date Collected: 03/06/18 11:05 — **Matrix: Water**
Date Received: 03/06/18 14:25

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	7196A		1			10560	03/06/18 16:20	TRH	TAL RCH

Client Sample ID: B3H393 — Lab Sample ID: 300-6845-3

Date Collected: 03/06/18 11:05 — **Matrix: Water**
Date Received: 03/06/18 14:25

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		20			10592	03/09/18 20:52	RTQ	TAL RCH
Total/NA	Analysis	300.0		20			10593	03/09/18 20:52	RTQ	TAL RCH
Total/NA	Analysis	300.0		2			10565	03/07/18 23:05	RTQ	TAL RCH

Client Sample ID: B3H399 — Lab Sample ID: 300-6845-4

Date Collected: 03/06/18 10:11 — **Matrix: Water**
Date Received: 03/06/18 14:25

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		10			10592	03/09/18 21:08	RTQ	TAL RCH
Total/NA	Analysis	300.0		10			10593	03/09/18 21:08	RTQ	TAL RCH
Total/NA	Analysis	300.0		2			10565	03/07/18 23:21	RTQ	TAL RCH

Client Sample ID: Method Blank — Lab Sample ID: MB 300-10560/3

Date Collected: N/A — **Matrix: Water**
Date Received: N/A

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	7196A		1			10560	03/06/18 16:16	TRH	TAL RCH

Client Sample ID: Method Blank — Lab Sample ID: MB 300-10565/18

Date Collected: N/A — **Matrix: Water**
Date Received: N/A

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		1			10565	03/07/18 14:47	RTQ	TAL RCH

Client Sample ID: Method Blank — Lab Sample ID: MB 300-10592/5

Date Collected: N/A — **Matrix: Water**
Date Received: N/A

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		1			10592	03/09/18 13:54	RTQ	TAL RCH

Client Sample ID: Method Blank — Lab Sample ID: MB 300-10593/5

Date Collected: N/A — **Matrix: Water**
Date Received: N/A

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		1			10593	03/09/18 13:54	RTQ	TAL RCH

Client Sample ID: Lab Control Sample — Lab Sample ID: LCS 300-10560/4

Date Collected: N/A — **Matrix: Water**
Date Received: N/A

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	7196A		1			10560	03/06/18 16:16	TRH	TAL RCH

Client Sample ID: Lab Control Sample — Lab Sample ID: LCS 300-10565/19

Date Collected: N/A — **Matrix: Water**
Date Received: N/A

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		1			10565	03/07/18 15:03	RTQ	TAL RCH

Client Sample ID: Lab Control Sample — Lab Sample ID: LCS 300-10592/6

Date Collected: N/A — **Matrix: Water**
Date Received: N/A

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		1			10592	03/09/18 14:10	RTQ	TAL RCH

Client Sample ID: Lab Control Sample — Lab Sample ID: LCS 300-10593/6

Date Collected: N/A — **Matrix: Water**
Date Received: N/A

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		1			10593	03/09/18 14:10	RTQ	TAL RCH

Client Sample ID: B3H3B0 — Lab Sample ID: 300-6845-1 MS

Date Collected: 03/06/18 10:11 — **Matrix: Water**
Date Received: 03/06/18 14:25

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	7196A		1			10560	03/06/18 16:16	TRH	TAL RCH

Client Sample ID: Matrix Spike — Lab Sample ID: 300-6851-A-2 MS

Date Collected: 03/07/18 09:05 — **Matrix: Water**
Date Received: 03/07/18 14:35

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		20			10592	03/10/18 01:08	RTQ	TAL RCH
Total/NA	Analysis	300.0		20			10593	03/10/18 01:08	RTQ	TAL RCH

Client Sample ID: Matrix Spike — Lab Sample ID: 300-6855-A-18 MS

Date Collected: 03/08/18 11:49 — **Matrix: Water**
Date Received: 03/08/18 14:55

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		5			10592	03/09/18 17:55	RTQ	TAL RCH
Total/NA	Analysis	300.0		5			10593	03/09/18 17:55	RTQ	TAL RCH

Client Sample ID: B3H3B0 — Lab Sample ID: 300-6845-1 DU

Date Collected: 03/06/18 10:11 — **Matrix: Water**
Date Received: 03/06/18 14:25

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	7196A		1			10560	03/06/18 16:19	TRH	TAL RCH

Client Sample ID: Duplicate — Lab Sample ID: 300-6846-A-8 DU

Date Collected: 03/06/18 10:45 — **Matrix: Water**
Date Received: 03/06/18 14:25

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			10565	03/07/18 15:52	RTQ	TAL RCH

Client Sample ID: Duplicate — Lab Sample ID: 300-6851-A-2 DU

Date Collected: 03/07/18 09:05 — **Matrix: Water**
Date Received: 03/07/18 14:35

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		20			10592	03/10/18 01:24	RTQ	TAL RCH
Total/NA	Analysis	300.0		20			10593	03/10/18 01:24	RTQ	TAL RCH

Client: CH2M Hill Plateau Remediation Company
Project/Site: W18-002

TestAmerica Job ID: 300-6845-1
SDG: WC2750

Client Sample ID: Duplicate

Lab Sample ID: 300-6855-A-18 DU

Date Collected: 03/08/18 11:49
Date Received: 03/08/18 14:55

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		5			10592	03/09/18 18:11	RTQ	TAL RCH
Total/NA	Analysis	300.0		5			10593	03/09/18 18:11	RTQ	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: W18-002

TestAmerica Job ID: 300-6845-1
SDG: WC2750

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

Protocol References:

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

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL RCH = TestAmerica Richland, 2800 George Washington Way, Richland, WA 99352, TEL (509)375-3131

Sample Summary

Client: CH2M Hill Plateau Remediation Company
Project/Site: W18-002

TestAmerica Job ID: 300-6845-1
SDG: WC2750

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
300-6845-1	B3H3B0	Water	03/06/18 10:11	03/06/18 14:25
300-6845-2	B3H394	Water	03/06/18 11:05	03/06/18 14:25
300-6845-3	B3H393	Water	03/06/18 11:05	03/06/18 14:25
300-6845-4	B3H399	Water	03/06/18 10:11	03/06/18 14:25

Login Sample Receipt Checklist

Client: CH2M Hill Plateau Remediation Company

Job Number: 300-6845-1
SDG Number: WC2750

Login Number: 6845
List Number: 1
Creator: Bock, Julie A

List Source: TestAmerica Richland

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	N/A	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	
Multiphasic samples are not present.	N/A	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	