

7/5/2016

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.

TestAmerica Richland

2800 George Washington Way

Richland, WA 99352

Tel: (509)375-3131

TestAmerica Job ID: 300-3372-1

TestAmerica Sample Delivery Group: WC1207

Client Project/Site: F16-047

For:

CH2M Hill Plateau Remediation Company

PO BOX 1600

Mail Stop R3-50

Richland, Washington 99352

Attn: CPP Sample Management



Authorized for release by:

7/5/2016 4:59:47 PM

Whitney Ritari, Project Manager I

(509)375-3131 ext164

whitney.ritari@testamericainc.com

LINKS

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

The laboratory is accredited to EPA 7196A in Solid and Chemical Materials, per Washington State Department of Ecology this is approved for non-discharge water samples. The sample/ sample duplicate RPD agreement is not applicable if one or both results are less than five times the MDL.



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Definitions/Glossary

Client: CH2M Hill Plateau Remediation Company
Project/Site: F16-047

TestAmerica Job ID: 300-3372-1
SDG: WC1207

Qualifiers

HPLC/IC

Qualifier	Qualifier Description
D	The reported value is from a dilution.
U	Analyzed for but not detected.

General Chemistry

Qualifier	Qualifier Description
U	Analyzed for but not detected.
B	Estimated result. Result is less than the RL, but greater than MDL

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
α	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains no Free Liquid
DER	Duplicate error ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
MDA	Minimum detectable activity
EDL	Estimated Detection Limit
MDC	Minimum detectable concentration
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative error ratio
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Case Narrative

Client: CH2M Hill Plateau Remediation Company
Project/Site: F16-047

TestAmerica Job ID: 300-3372-1
SDG: WC1207

Job ID: 300-3372-1

Laboratory: TestAmerica Richland

Narrative

Job Narrative
300-3372-1

Comments

No additional comments.

Receipt

The samples were received on 6/28/2016 10:50 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 5.4° C.

HPLC/IC

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

General Chemistry

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



CH2M Hill Plateau Remediation Company		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST			F16-047-025	PAGE 1 OF 1
COLLECTOR Kevin Patterson CHPRC	COMPANY CONTACT SUMNER, LC	TELEPHONE NO. 376-3922	PROJECT COORDINATOR SUMNER, LC	PRICE CODE 7C	AIR QUALITY <input type="checkbox"/>	DATA TURNAROUND 15 Days / 15 Days
SAMPLING LOCATION 289-T, Air-Strip Effluent, Valve V05-Y63	PROJECT DESIGNATION 200 West Pump & Treat - Fluidized Bed Reactor (FBR) Micronutrient Analysis	FIELD LOGBOOK NO. HMF-N-49115	SAF NO. F16-047	AIR QUALITY <input type="checkbox"/>	METHOD OF SHIPMENT GOVERNMENT VEHICLE	ORIGINAL
ICE CHEST NO. N/A	OFFSITE PROPERTY NO. N/A	ACTUAL SAMPLE DEPTH N/A	COA 303111			
SHIPPED TO TestAmerica Incorporated, Richland	BILL OF LADING/AIR BILL NO. N/A					

MATRIX* A=Air DL=Drum Liquids DS=Drum Solids L=Liquid O=Oil S=Soil SE=Sediment T=Tissue V=Vegetation W=Water WT=Wipe X=Other	POSSIBLE SAMPLE HAZARDS/ REMARKS *Contains Radioactive Material at concentrations that are not be regulated for transportation per 49 CFR/JA7A Dangerous Goods Regulations but are not releasable per DOE Order 458.1. NA	PRESERVATION Cool <=6C	HOLDING TIME 24 Hours	TYPE OF CONTAINER 3G	NO. OF CONTAINER(S) 1	VOLUME 60mL	SAMPLE ANALYSIS 7196_CRG: COMMON;
SAMPLE NO. B35WH3	MATRIX* WATER	SAMPLE DATE JUN 27 2016	SAMPLE TIME 1305				

#3572
WCI201
Jun 9-13-16



CHAIN OF POSSESSION **SIGN/ PRINT NAMES** **SPECIAL INSTRUCTIONS**

RECEIVED BY Kevin Patterson CHPRC	DATE/TIME JUN 27 2016 1415	RECEIVED BY/STORED IN SSU-1	DATE/TIME JUN 27 2016 1415	The 200 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF. TRVL-16-129
RECEIVED BY [Signature]	DATE/TIME JUN 28 2016 0815	RECEIVED BY/STORED IN [Signature]	DATE/TIME JUN 28 2016 0815	
RECEIVED BY [Signature]	DATE/TIME JUN 28 2016 1050	RECEIVED BY/STORED IN J. Bock, TARR	DATE/TIME JUN 28 2016 1050	
RECEIVED BY [Signature]	DATE/TIME [Blank]	RECEIVED BY/STORED IN [Blank]	DATE/TIME [Blank]	
RECEIVED BY [Signature]	DATE/TIME [Blank]	RECEIVED BY/STORED IN [Blank]	DATE/TIME [Blank]	

LABORATORY SECTION	RECEIVED BY	TITLE	DATE/TIME
FINAL SAMPLE DISPOSITION	DISPOSAL METHOD	DISPOSED BY	DATE/TIME

CH2MHill Plateau Remediation Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

F16-047-026

PAGE 1 OF 1

COLLECTOR Kevin Patterson CHPRC	COMPANY CONTACT SUMNER, LC	TELEPHONE NO. 376-3922	PROJECT COORDINATOR SUMNER, LC	PRICE CODE 7C	DATA TURNAROUND 15 Days / 15 Days
SAMPLING LOCATION 289-T, Air-Strip Effluent, Valve V05-Y63	PROJECT DESIGNATION 200 West Pump & Treat - Fluidized Bed Reactor (FBR) Micronutrient Analysis	FIELD LOGBOOK NO. HNF-N-49115	SAF NO. F16-047	AIR QUALITY <input type="checkbox"/>	METHOD OF SHIPMENT GOVERNMENT VEHICLE
ICE CHEST NO. N/A	OFFSITE PROPERTY NO. N/A	ACTUAL SAMPLE DEPTH N/A	COA 303111	BILL OF LADING/AIR BILL NO. N/A	
SHIPPED TO TestAmerica Incorporated, Richland	PRESERVATION Cool <=6C		ORIGINAL		

MATRIX* A=Air DL=Drum Liquids DS=Drum Solids L=Liquid O=Oil S=Soil SF=Sediment T=Tissue V=Vegetation W=Water WI=Wipe X=Other	POSSIBLE SAMPLE HAZARDS/ REMARKS *Contains Radioactive Material at concentrations that are not be regulated for transportation per 49 CFR/DATA Dangerous Goods Regulations but are not releasable per DOE Order 458.1, NA	HOLDING TIME 24 Hours	TYPE OF CONTAINER ag	NO. OF CONTAINER(S) 1	VOLUME 60mL	SPECIAL HANDLING AND/OR STORAGE 7196 CRG: COMMON;
SAMPLE NO. B35WH4	MATRIX* WATER	SAMPLE DATE JUN 27 2016	SAMPLE TIME 1305	35372 WCE1201		

CHAIN OF POSSESSION	SIGN/ PRINT NAMES	SPECIAL INSTRUCTIONS
RELINQUISHED BY/REMOVED FROM <i>Kevin Patterson</i>	RECEIVED BY/STORED IN <i>SSU-1</i>	Filtering shall be performed by SGRP Field Sampling Services using a (0.45µm) filter while in the field. The 200 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF. FILTER
DATE/TIME JUN 27 2016 1415	DATE/TIME JUN 27 2016 1415	
RELINQUISHED BY/REMOVED FROM <i>SSU-1</i>	RECEIVED BY/STORED IN <i>SSU-1</i>	
DATE/TIME JUN 28 2016 0815	DATE/TIME JUN 28 2016 0815	
RELINQUISHED BY/REMOVED FROM <i>SSU-1</i>	RECEIVED BY/STORED IN <i>SSU-1</i>	
DATE/TIME JUN 28 2016 1850	DATE/TIME JUN 28 2016 1850	
RELINQUISHED BY/REMOVED FROM	RECEIVED BY/STORED IN	
DATE/TIME	DATE/TIME	
RELINQUISHED BY/REMOVED FROM	RECEIVED BY/STORED IN	
DATE/TIME	DATE/TIME	
RELINQUISHED BY/REMOVED FROM	RECEIVED BY/STORED IN	
DATE/TIME	DATE/TIME	
RELINQUISHED BY/REMOVED FROM	RECEIVED BY/STORED IN	
DATE/TIME	DATE/TIME	
LABORATORY SECTION	RECEIVED BY	TITLE
FINAL SAMPLE DISPOSITION	DISPOSAL METHOD	DISPOSED BY

7/5/2016

7/5/2016

CH2M Hill Plateau Remediation Company		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST		FIG-047-022	PAGE 1 OF 1
COLLECTOR Kevin Patterson CHPRC	COMPANY CONTACT SUMNER, LC	TELEPHONE NO. 376-3922	PROJECT COORDINATOR SUMNER, LC	PRICE CODE 7C	DATA TURNAROUND 15 Days / 15 Days
SAMPLING LOCATION 289-T, MBR Effluent, Valve V15-V50	PROJECT DESIGNATION 200 West Pump & Treat - Fluidized Bed Reactor (FBR) Micro nutrient Analysis	FIELD LOGBOOK NO. HNF-N-49115	SAF NO. F16-047	AIR QUALITY <input type="checkbox"/>	METHOD OF SHIPMENT GOVERNMENT VEHICLE
ICE CHEST NO. N/A	OFFSITE PROPERTY NO. N/A	ACTUAL SAMPLE DEPTH N/A	COA 303111	ORIGINAL	
SHIPPED TO TestAmerica Incorporated, Richland	BILL OF LADING/AIR BILL NO. N/A				

MATRIX* A=Air DL=Drum Liquids DS=Drum Solids L=Liquid O=Oil S=Sediment T=Tissue V=Vegetation W=Water WI=Wipe X=Other	POSSIBLE SAMPLE HAZARDS/ REMARKS *Contains Radioactive Material at concentrations that are not be regulated for transportation per 49 CFR/ATA Dangerous Goods Regulations but are not releasable per DOE Order 458.1, NA	PRESERVATION	Cool <=6C
		HOLDING TIME	24 Hours
		TYPE OF CONTAINER	ag
		NO. OF CONTAINER(S)	1
		VOLUME	60mL
		SAMPLE ANALYSIS	7196,CR6; COMMON;
SAMPLE NO. B35WH10	MATRIX* WATER	SAMPLE DATE JUN 27 2016	SAMPLE TIME 1310
			✓

43572
WCI201

CHAIN OF POSSESSION	SIGN/ PRINT NAMES	SPECIAL INSTRUCTIONS
RELINQUISHED BY/REMOVED FROM Kevin Patterson CHPRC	RECEIVED BY/STORED IN SSU-1	The 200 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF. TRVL-16-129
DATE/TIME JUN 27 2016 1415	DATE/TIME JUN 27 2016 1415	
RELINQUISHED BY/REMOVED FROM SSU-1	RECEIVED BY/STORED IN SSU-1	
DATE/TIME JUN 28 2016 0800	DATE/TIME JUN 28 2016 0800	
RELINQUISHED BY/REMOVED FROM Lashley West CHPRC	RECEIVED BY/STORED IN J. Bock, TART	
DATE/TIME JUN 28 2016 1850	DATE/TIME JUN 28 2016 1850	
RELINQUISHED BY/REMOVED FROM	RECEIVED BY/STORED IN	
DATE/TIME	DATE/TIME	
RELINQUISHED BY/REMOVED FROM	RECEIVED BY/STORED IN	
DATE/TIME	DATE/TIME	
RELINQUISHED BY/REMOVED FROM	RECEIVED BY/STORED IN	
DATE/TIME	DATE/TIME	

LABORATORY SECTION	RECEIVED BY	TITLE	DATE/TIME
FINAL SAMPLE DISPOSITION	DISPOSAL METHOD	DISPOSED BY	DATE/TIME

PRINTED ON 5/26/2016

FSR ID = FSR32753

TRVL NUM = TRVL-16-157

A-6003-618 (REV 2)

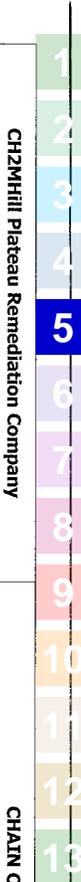
CH2M Hill Plateau Remediation Company		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST			FIG-047-023	PAGE 1 OF 1
COLLECTOR Kevin Patterson CHPEC	COMPANY CONTACT SUMNER, LC	TELEPHONE NO. 376-3922	PROJECT COORDINATOR SUMNER, LC	PRICE CODE 7C	AIR QUALITY	DATA TURNAROUND 15 Days / 15 Days
SAMPLING LOCATION 289-T, MBR Effluent, Valve V15-Y50	PROJECT DESIGNATION 200 West Pump & Treat - Fluidized Bed Reactor (FBR) Micronutrient Analy	FIELD LOGBOOK NO. HNF-N-49115	ACTUAL SAMPLE DEPTH N/A	SAF NO. F16-047	<input type="checkbox"/>	ORIGINAL
ICE CHEST NO. N/A	OFFSITE PROPERTY NO. N/A	SAF NO. 303111	METHOD OF SHIPMENT GOVERNMENT VEHICLE	BILL OF LADING/AIR BILL NO. N/A		
SHIPPED TO TestAmerica Incorporated, Richland						

MATRIX* A=Air DL=Drum Liquids DS=Drum Solids L=Liquid O=Oil S=Soil SE=Sediment T=Tissue V=Vegetation W=Water WT=Wipe X=Other	POSSIBLE SAMPLE HAZARDS/ REMARKS *Contains Radioactive Material at concentrations that are not regulated for transportation per 49 CFR/JATIA Dangerous Goods Regulations but are not releasable per DOE Order 458.1. NA	PRESERVATION Cool <=6C	HOLDING TIME 24 Hours	TYPE OF CONTAINER aG	NO. OF CONTAINER(S) 1	VOLUME 60ml	SAMPLE ANALYSIS 7196 CR6: COMMON;
SAMPLE NO. B35WH1	MATRIX* WATER	SAMPLE DATE JUN 27 2016	SAMPLE TIME 1310	# 3572 USE 12011			

FILTER

CHAIN OF POSSESSION		SIGN/ PRINT NAMES		SPECIAL INSTRUCTIONS	
RELINQUISHED BY/REMOVED FROM <i>Kevin Patterson</i>	DATE/TIME JUN 27 2016 1415	RECEIVED BY/STORED IN SSU-1	DATE/TIME JUN 27 2016 1415	Filtering shall be performed by SGRP Field Sampling Services using a (0.45um) filter while in the field. The 200 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF. FILTER	
RELINQUISHED BY/REMOVED FROM SSU-1	DATE/TIME JUN 28 2016 0800	RECEIVED BY/STORED IN Lost with Kevin Wood	DATE/TIME JUN 28 2016 0800		
RELINQUISHED BY/REMOVED FROM <i>Kevin Patterson</i>	DATE/TIME JUN 28 2016 1050	RECEIVED BY/STORED IN 3. Bock, TARL	DATE/TIME JUN 28 2016 1050		
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME		
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME		
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME		
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME		
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME		

LABORATORY SECTION	RECEIVED BY	TITLE	DATE/TIME
FINAL SAMPLE DISPOSITION	DISPOSAL METHOD	DISPOSED BY	DATE/TIME
PRINTED ON 5/26/2016			
FSR ID = FSR32753			
TRVL NUM = TRVL-16-157			
A-6003-618 (REV 2)			



CH2MHill Plateau Remediation Company		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST		F16-047-002	PAGE 1 OF 1
COLLECTOR Kevin Patterson CHERC	COMPANY CONTACT SUMNER, LC	TELEPHONE NO. 376-3922	PROJECT COORDINATOR SUMNER, LC	PRICE CODE 7C	DATA TURNAROUND 15 Days / 15 Days
SAMPLING LOCATION 289-T, Influent Tank, Valve V12-Y30	PROJECT DESIGNATION 200 West Pump & Treat - Fluidized Bed Reactor (FBR) Micronutrient Anlys	FIELD LOGBOOK NO. HNF-# 49115	ACTUAL SAMPLE DEPTH N/A	SAF NO. F16-047	AIR QUALITY <input type="checkbox"/>
ICE CHEST NO. N/A	OFFSITE PROPERTY NO. N/A	NO. OF CONTAINER(S) 1	BILL OF LADING/AIR BILL NO. N/A	METHOD OF SHIPMENT GOVERNMENT VEHICLE	ORIGINAL
SHIPPED TO TestAmerica Incorporated, Richland	PRESERVATION Cool <=6C	HOLDING TIME 48 Hours			

MATRIX*	POSSIBLE SAMPLE HAZARDS/ REMARKS	NO. OF CONTAINER(S)	VOLUME	SPECIAL HANDLING AND/OR STORAGE
A=Air DL=Drum Liquids DS=Drum Solids L=Liquid O=Oil S=Soil SE=Sediment T=Tissue V=Vegetation W=Water WI=Wipe X=Other	*Contains Radioactive Material at concentrations that are not be regulated for transportation per 49 CFR/DATA Dangerous Goods Regulations but are not releasable per DOE Order 458.1. NA	1	250ml	SEE ITEM (1) IN SPECIAL INSTRUCTIONS
B35WDO	WATER	JUN 27 2016	1332	✓

FILTER

33512
WCI2001

CHAIN OF POSSESSION	SIGN/ PRINT NAMES	SPECIAL INSTRUCTIONS
RELINQUISHED BY/REMOVED FROM Kevin Patterson	RECEIVED BY/STORED IN SSU-1	Filtering shall be performed by SGRP Field Sampling Services using a (0.45um) filter while in the field. The 200 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF. (1) 300.0_ANIONS_IC: COMMON {Chloride, Fluoride, Nitrogen in Nitrate, Nitrogen in Nitrite, Sulfate}; 300.0_ANIONS_IC: COMMON (Add-Phosphorus in phosphate); FILTER
RELINQUISHED BY/REMOVED FROM SSU-1	RECEIVED BY/STORED IN SSU-1	
RELINQUISHED BY/REMOVED FROM Lesly Ward	RECEIVED BY/STORED IN Lesly Ward	
RELINQUISHED BY/REMOVED FROM Lesly Ward	RECEIVED BY/STORED IN Lesly Ward	
RELINQUISHED BY/REMOVED FROM Lesly Ward	RECEIVED BY/STORED IN Lesly Ward	
RELINQUISHED BY/REMOVED FROM	RECEIVED BY/STORED IN	
RELINQUISHED BY/REMOVED FROM	RECEIVED BY/STORED IN	
RELINQUISHED BY/REMOVED FROM	RECEIVED BY/STORED IN	
RELINQUISHED BY/REMOVED FROM	RECEIVED BY/STORED IN	
LABORATORY SECTION	RECEIVED BY	TITLE
FINAL SAMPLE DISPOSITION	DISPOSAL METHOD	DISPOSED BY

Detection Summary

Client: CH2M Hill Plateau Remediation Company
Project/Site: F16-047

TestAmerica Job ID: 300-3372-1
SDG: WC1207

Client Sample ID: B35WH3

Lab Sample ID: 300-3372-1

No Detections.

Client Sample ID: B35WH4

Lab Sample ID: 300-3372-2

No Detections.

Client Sample ID: B35WH0

Lab Sample ID: 300-3372-3

No Detections.

Client Sample ID: B35WH1

Lab Sample ID: 300-3372-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Cr (VI)	0.0017	B	0.0040	0.0015	mg/L	1		7196A	Total/NA

Client Sample ID: B35WC9

Lab Sample ID: 300-3372-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Cr (VI)	0.022		0.0040	0.0015	mg/L	1		7196A	Total/NA

Client Sample ID: B35WD0

Lab Sample ID: 300-3372-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	20	D	0.40	0.20	mg/L	2		300.0	Total/NA
Nitrate as N	30	D	0.28	0.14	mg/L	10		300.0	Total/NA
Fluoride	0.40	D	0.10	0.050	mg/L	2		300.0	Total/NA
Sulfate	45	D	0.50	0.25	mg/L	2		300.0	Total/NA

This Detection Summary does not include radiochemical test results.

TestAmerica Richland

Client Sample Results

Client: CH2M Hill Plateau Remediation Company
Project/Site: F16-047

TestAmerica Job ID: 300-3372-1
SDG: WC1207

Client Sample ID: B35WH3

Date Collected: 06/27/16 13:05

Date Received: 06/28/16 10:50

Lab Sample ID: 300-3372-1

Matrix: Water

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cr (VI)	0.0015	U	0.0040	0.0015	mg/L			06/28/16 12:05	1

Client Sample ID: B35WH4

Date Collected: 06/27/16 13:05

Date Received: 06/28/16 10:50

Lab Sample ID: 300-3372-2

Matrix: Water

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cr (VI)	0.0015	U	0.0040	0.0015	mg/L			06/28/16 12:05	1

Client Sample ID: B35WH0

Date Collected: 06/27/16 13:10

Date Received: 06/28/16 10:50

Lab Sample ID: 300-3372-3

Matrix: Water

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cr (VI)	0.0015	U	0.0040	0.0015	mg/L			06/28/16 12:06	1

Client Sample ID: B35WH1

Date Collected: 06/27/16 13:10

Date Received: 06/28/16 10:50

Lab Sample ID: 300-3372-4

Matrix: Water

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cr (VI)	0.0017	B	0.0040	0.0015	mg/L			06/28/16 12:06	1

Client Sample ID: B35WC9

Date Collected: 06/27/16 13:32

Date Received: 06/28/16 10:50

Lab Sample ID: 300-3372-5

Matrix: Water

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cr (VI)	0.022		0.0040	0.0015	mg/L			06/28/16 12:06	1

Client Sample ID: B35WD0

Date Collected: 06/27/16 13:32

Date Received: 06/28/16 10:50

Lab Sample ID: 300-3372-6

Matrix: Water

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	20	D	0.40	0.20	mg/L			06/28/16 18:33	2
Nitrate as N	30	D	0.28	0.14	mg/L			06/28/16 19:34	10
Fluoride	0.40	D	0.10	0.050	mg/L			06/28/16 18:33	2
Nitrite as N	0.038	U D	0.076	0.038	mg/L			06/28/16 18:33	2
Orthophosphate as P	0.082	U D	0.16	0.082	mg/L			06/28/16 18:33	2
Sulfate	45	D	0.50	0.25	mg/L			06/28/16 18:33	2

TestAmerica Richland

QC Sample Results

Client: CH2M Hill Plateau Remediation Company
Project/Site: F16-047

TestAmerica Job ID: 300-3372-1
SDG: WC1207

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 300-4701/17

Matrix: Water

Analysis Batch: 4701

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	0.014	U	0.028	0.014	mg/L			06/28/16 17:18	1
Nitrite as N	0.019	U	0.038	0.019	mg/L			06/28/16 17:18	1
Orthophosphate as P	0.041	U	0.082	0.041	mg/L			06/28/16 17:18	1

Lab Sample ID: LCS 300-4701/18

Matrix: Water

Analysis Batch: 4701

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Nitrate as N	2.26	2.32		mg/L		103	80 - 120
Nitrite as N	3.04	3.12		mg/L		102	80 - 120
Orthophosphate as P	6.53	6.73		mg/L		103	80 - 120

Lab Sample ID: 300-3371-A-2 MS

Matrix: Water

Analysis Batch: 4701

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Nitrite as N	0.038	U D	0.609	0.519	D	mg/L		85	75 - 125
Orthophosphate as P	0.082	U D	1.31	1.13	D	mg/L		87	75 - 125

Lab Sample ID: 300-3371-A-2 MS

Matrix: Water

Analysis Batch: 4701

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Nitrate as N	30	D	2.26	32.7	D	mg/L		97	75 - 125

Lab Sample ID: 300-3371-A-2 DU

Matrix: Water

Analysis Batch: 4701

Client Sample ID: Duplicate

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Nitrite as N	0.038	U D	0.038	U D	mg/L		NC	20
Orthophosphate as P	0.082	U D	0.082	U D	mg/L		NC	20

Lab Sample ID: 300-3371-A-2 DU

Matrix: Water

Analysis Batch: 4701

Client Sample ID: Duplicate

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Nitrate as N	30	D	30.5	D	mg/L		0	20

Lab Sample ID: MB 300-4702/17

Matrix: Water

Analysis Batch: 4702

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	0.10	U	0.20	0.10	mg/L			06/28/16 17:18	1

TestAmerica Richland

QC Sample Results

Client: CH2M Hill Plateau Remediation Company
Project/Site: F16-047

TestAmerica Job ID: 300-3372-1
SDG: WC1207

Method: 300.0 - Anions, Ion Chromatography (Continued)

Lab Sample ID: MB 300-4702/17

Matrix: Water

Analysis Batch: 4702

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB MB		RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Fluoride	0.025	U	0.050	0.025	mg/L			06/28/16 17:18	1
Sulfate	0.13	U	0.25	0.13	mg/L			06/28/16 17:18	1

Lab Sample ID: LCS 300-4702/18

Matrix: Water

Analysis Batch: 4702

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Fluoride	4.00	4.07		mg/L		102	80 - 120
Sulfate	20.0	20.3		mg/L		102	80 - 120

Lab Sample ID: 300-3371-A-2 MS

Matrix: Water

Analysis Batch: 4702

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Fluoride	0.40	D	0.800	1.16	D	mg/L		96	75 - 125
Sulfate	46	D	4.00	49.9	D	mg/L		94	75 - 125

Lab Sample ID: 300-3371-A-2 DU

Matrix: Water

Analysis Batch: 4702

Client Sample ID: Duplicate

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Fluoride	0.40	D	0.394	D	mg/L		0.5	20
Sulfate	46	D	46.0	D	mg/L		0.4	20

Method: 7196A - Chromium, Hexavalent

Lab Sample ID: MB 300-4714/3

Matrix: Water

Analysis Batch: 4714

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB MB		RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Cr (VI)	0.0015	U	0.0040	0.0015	mg/L			06/28/16 12:01	1

Lab Sample ID: LCS 300-4714/4

Matrix: Water

Analysis Batch: 4714

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits

TestAmerica Richland

QC Sample Results

Client: CH2M Hill Plateau Remediation Company
 Project/Site: F16-047

TestAmerica Job ID: 300-3372-1
 SDG: WC1207

Method: 7196A - Chromium, Hexavalent (Continued)

Lab Sample ID: 300-3371-A-1 MS
 Matrix: Water
 Analysis Batch: 4714

Client Sample ID: Matrix Spike
 Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Cr (VI)	0.022		0.0499	0.0726		mg/L		101	75 - 125

Lab Sample ID: 300-3371-A-1 DU
 Matrix: Water
 Analysis Batch: 4714

Client Sample ID: Duplicate
 Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Cr (VI)	0.022		0.0224		mg/L		0.9	20

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QC Association Summary

Client: CH2M Hill Plateau Remediation Company
Project/Site: F16-047

TestAmerica Job ID: 300-3372-1
SDG: WC1207

HPLC/IC

Analysis Batch: 4701

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
300-3371-A-2 DU	Duplicate	Total/NA	Water	300.0	
300-3371-A-2 DU	Duplicate	Total/NA	Water	300.0	
300-3371-A-2 MS	Matrix Spike	Total/NA	Water	300.0	
300-3371-A-2 MS	Matrix Spike	Total/NA	Water	300.0	
300-3372-6	B35WD0	Total/NA	Water	300.0	
300-3372-6	B35WD0	Total/NA	Water	300.0	
LCS 300-4701/18	Lab Control Sample	Total/NA	Water	300.0	
MB 300-4701/17	Method Blank	Total/NA	Water	300.0	

Analysis Batch: 4702

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
300-3371-A-2 DU	Duplicate	Total/NA	Water	300.0	
300-3371-A-2 MS	Matrix Spike	Total/NA	Water	300.0	
300-3372-6	B35WD0	Total/NA	Water	300.0	
LCS 300-4702/18	Lab Control Sample	Total/NA	Water	300.0	
MB 300-4702/17	Method Blank	Total/NA	Water	300.0	

General Chemistry

Analysis Batch: 4714

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
300-3371-A-1 DU	Duplicate	Total/NA	Water	7196A	
300-3371-A-1 MS	Matrix Spike	Total/NA	Water	7196A	
300-3372-1	B35WH3	Total/NA	Water	7196A	
300-3372-2	B35WH4	Total/NA	Water	7196A	
300-3372-3	B35WH0	Total/NA	Water	7196A	
300-3372-4	B35WH1	Total/NA	Water	7196A	
300-3372-5	B35WC9	Total/NA	Water	7196A	
LCS 300-4714/4	Lab Control Sample	Total/NA	Water	7196A	
MB 300-4714/3	Method Blank	Total/NA	Water	7196A	

Lab Chronicle

Client: CH2M Hill Plateau Remediation Company
Project/Site: F16-047

TestAmerica Job ID: 300-3372-1
SDG: WC1207

Client Sample ID: B35WH3

Date Collected: 06/27/16 13:05

Date Received: 06/28/16 10:50

Lab Sample ID: 300-3372-1

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	7196A		1			4714	06/28/16 12:05	RLC	TAL RCH

Client Sample ID: B35WH4

Date Collected: 06/27/16 13:05

Date Received: 06/28/16 10:50

Lab Sample ID: 300-3372-2

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	7196A		1			4714	06/28/16 12:05	RLC	TAL RCH

Client Sample ID: B35WH0

Date Collected: 06/27/16 13:10

Date Received: 06/28/16 10:50

Lab Sample ID: 300-3372-3

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	7196A		1			4714	06/28/16 12:06	RLC	TAL RCH

Client Sample ID: B35WH1

Date Collected: 06/27/16 13:10

Date Received: 06/28/16 10:50

Lab Sample ID: 300-3372-4

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	7196A		1			4714	06/28/16 12:06	RLC	TAL RCH

Client Sample ID: B35WC9

Date Collected: 06/27/16 13:32

Date Received: 06/28/16 10:50

Lab Sample ID: 300-3372-5

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	7196A		1			4714	06/28/16 12:06	RLC	TAL RCH

Client Sample ID: B35WD0

Date Collected: 06/27/16 13:32

Date Received: 06/28/16 10:50

Lab Sample ID: 300-3372-6

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		2	10 mL		4701	06/28/16 18:33	CPM	TAL RCH
Total/NA	Analysis	300.0		2	10 mL		4702	06/28/16 18:33	CPM	TAL RCH
Total/NA	Analysis	300.0		10	10 mL		4701	06/28/16 19:34	CPM	TAL RCH

TestAmerica Richland

Lab Chronicle

Client: CH2M Hill Plateau Remediation Company
Project/Site: F16-047

TestAmerica Job ID: 300-3372-1
SDG: WC1207

Client Sample ID: Duplicate

Lab Sample ID: 300-3371-A-1 DU

Date Collected: 06/27/16 13:32

Matrix: Water

Date Received: 06/28/16 10:50

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			4714	06/28/16 12:05	RLC	TAL RCH

Client Sample ID: Duplicate

Lab Sample ID: 300-3371-A-2 DU

Date Collected: 06/27/16 13:32

Matrix: Water

Date Received: 06/28/16 10:50

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		2	10 mL		4701	06/28/16 18:18	CPM	TAL RCH
Total/NA	Analysis	300.0		2	10 mL		4702	06/28/16 18:18	CPM	TAL RCH
Total/NA	Analysis	300.0		10	10 mL		4701	06/28/16 19:19	CPM	TAL RCH

Client Sample ID: Lab Control Sample

Lab Sample ID: LCS 300-4701/18

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	10 mL		4701	06/28/16 17:33	CPM	TAL RCH

Client Sample ID: Lab Control Sample

Lab Sample ID: LCS 300-4702/18

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	10 mL		4702	06/28/16 17:33	CPM	TAL RCH

Client Sample ID: Lab Control Sample

Lab Sample ID: LCS 300-4714/4

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			4714	06/28/16 12:01	RLC	TAL RCH

Client Sample ID: Method Blank

Lab Sample ID: MB 300-4701/17

Date Collected: N/A

Matrix: Water

Date Received: N/A

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		1	10 mL		4701	06/28/16 17:18	CPM	TAL RCH

TestAmerica Richland

Lab Chronicle

Client: CH2M Hill Plateau Remediation Company
Project/Site: F16-047

TestAmerica Job ID: 300-3372-1
SDG: WC1207

Client Sample ID: Method Blank

Lab Sample ID: MB 300-4702/17

Date Collected: N/A

Matrix: Water

Date Received: N/A

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		1	10 mL		4702	06/28/16 17:18	CPM	TAL RCH

Client Sample ID: Method Blank

Lab Sample ID: MB 300-4714/3

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			4714	06/28/16 12:01	RLC	TAL RCH

Client Sample ID: Matrix Spike

Lab Sample ID: 300-3371-A-1 MS

Date Collected: 06/27/16 13:32

Matrix: Water

Date Received: 06/28/16 10:50

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		3.0 mL	4714	06/28/16 12:02	RLC	TAL RCH

Client Sample ID: Matrix Spike

Lab Sample ID: 300-3371-A-2 MS

Date Collected: 06/27/16 13:32

Matrix: Water

Date Received: 06/28/16 10:50

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		2	10 mL		4701	06/28/16 18:03	CPM	TAL RCH
Total/NA	Analysis	300.0		2	10 mL		4702	06/28/16 18:03	CPM	TAL RCH
Total/NA	Analysis	300.0		10	10 mL		4701	06/28/16 19:03	CPM	TAL RCH

Laboratory References:

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

Method Summary

Client: CH2M Hill Plateau Remediation Company
Project/Site: F16-047

TestAmerica Job ID: 300-3372-1
SDG: WC1207

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: F16-047

TestAmerica Job ID: 300-3372-1
 SDG: WC1207

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
300-3372-1	B35WH3	Water	06/27/16 13:05	06/28/16 10:50
300-3372-2	B35WH4	Water	06/27/16 13:05	06/28/16 10:50
300-3372-3	B35WH0	Water	06/27/16 13:10	06/28/16 10:50
300-3372-4	B35WH1	Water	06/27/16 13:10	06/28/16 10:50
300-3372-5	B35WC9	Water	06/27/16 13:32	06/28/16 10:50
300-3372-6	B35WDO	Water	06/27/16 13:32	06/28/16 10:50

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Login Sample Receipt Checklist

Client: CH2M Hill Plateau Remediation Company

Job Number: 300-3372-1

SDG Number: WC1207

Login Number: 3372

List Number: 1

Creator: Bock, Julie A

List Source: TestAmerica Richland

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