

FEBRUARY 20, 2014

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: 160-5399-1

TestAmerica Sample Delivery Group: SL1425
Client Project/Site: F13-047

For:

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

Attn: General Mailbox



Authorized for release by:
2/20/2014 4:03:29 PM

Jayna Awalt, Project Manager I
(314)298-8566

jayna.awalt@testamericainc.com

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

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Client: CH2M Hill Plateau Remediation Company
Project/Site: F13-047

TestAmerica Job ID: 160-5399-1
SDG: SL1425

Job ID: 160-5399-1

Laboratory: TestAmerica St. Louis

Narrative

CASE NARRATIVE

CH2MHill Plateau Remediation Company
P.O. Box 1600
MS B3-60
Richland, Washington 99352
February 20, 2014
Attention: Scot Fitzgerald

SDG : SL1425
Number of Samples : 1 sample
Sample Matrix : Water
Data Deliverable : Summary
Date SDG Closed : February 4, 2014

II. Introduction

On February 4, 1 water samples were received by TestAmerica - St. Louis for chemical analysis. The sample was received within temperature criteria. See the COC and receipt checklist for documentation of any variations on receipt conditions and temperature. Upon receipt, the 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: F13-047

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 a LCS/LCS duplicate.

Deviation from Request: None

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



Job ID: 160-5399-1 (Continued)

Laboratory: TestAmerica St. Louis (Continued)

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.
- **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.

Ion Chromatography

Batch: 104068

The following sample was diluted to bring the concentration of target analytes within the calibration range: (160-5399-1 DU), (160-5399-1 MS), B2R2V2 (160-5399-1). Elevated reporting limits (RLs) are provided. These analytes have been qualified accordingly with a "D" flag in the associated samples.

Alkalinity

Batch: 105711

Bicarbonate Alkalinity as CaCO₃ was detected in method blank MB 160-105711/1 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 5 times the method blank, the result has been flagged "C".

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

Volatiles

ICP Metals

I certify that this Summary Package is in compliance with the SOW, both technically and for completeness, for other than the conditions detailed above. The Laboratory Manager or a designee, as verified by the signature on the cover page has authorized release of the data contained in this hard copy data package.

Reviewed and approved:

Jayna Awalt
St. Louis Project Manager



CH2M Hill Plateau Remediation Company		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST		F13-047-017	PAGE 1 OF 1
COLLECTOR <i>Karin Floyd</i> 51425	COMPANY CONTACT TODAK, D	TELEPHONE NO. 376-6427	PROJECT COORDINATOR TODAK, D	PRICE CODE 7H	DATA TURNAROUND 30 Days / 30 Days
SAMPLING LOCATION C8292, I-012, screened interval SPLIT	PROJECT DESIGNATION 100-KR-4 Long Term & Interim Action Monitoring - Water	SAF NO. F13-047	COA 3001455310 300085 KS 8/30/13	AIR QUALITY <input type="checkbox"/>	METHOD OF SHIPMENT FEDERAL EXPRESS
ICE CHEST NO. GWS-150	FIELD LOGBOOK NO. 507-28/12	ACTUAL SAMPLE DEPTH 142.55	COA 3001455310 300085 KS 8/30/13	ORIGINAL	
SHIPPED TO TestAmerica St. Louis	OFFSITE PROPERTY NO. SEE PTR	INSTRUMENT NO. 51425	BILL OF LADING/AIR BILL NO. SEE PTR	4978 0245 9843	

MATRIX*	PRESERVATION	HNO3 to pH	HNO3 to pH	HCl or H2SO4 to pH	COOLING
POSSIBLE SAMPLE HAZARDS/REMARKS **Contains Radioactive Material at concentrations that may or may not be regulated for transportation per 49 CFR/IATA Dangerous Goods Regulations but are not releasable per DOE Order 458.1.**		<2	<2/cool-to-4C	<2/cool-to-4C	Cool-to-4C
	HOLDING TIME	6 Months	48 Hours	14 Days	14 Days
	TYPE OF CONTAINER	G/P	P	G/P	G/P
	NO. OF CONTAINER(S)	1	1	1	1
	VOLUME	500mL	500mL	500mL	500mL
SPECIAL HANDLING AND/OR STORAGE	SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	SEE ITEM (2) IN SPECIAL INSTRUCTIONS	SEE ITEM (3) IN SPECIAL INSTRUCTIONS	

CHAIN OF POSSESSION	SIGN/PRINT NAMES	RECEIVED BY/STORED IN	DATE/TIME	DATE/TIME
RELINQUISHED BY/REMOVED FROM <i>Karin Floyd</i> 2-3-14	<i>Karin Floyd</i>	RECEIVED BY/STORED IN	DATE/TIME	DATE/TIME
RELINQUISHED BY/REMOVED FROM <i>FILEX</i>	<i>FILEX</i>	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
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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			
FINAL SAMPLE DISPOSITION	DISPOSAL METHOD			

SPECIAL INSTRUCTIONS

** The 100 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF. TRVL-13-087
 (1) 6010_METALS_ICP (Supertrace): COMMON {Chromium};
 6010_METALS_ICP (Supertrace): COMMON (Add-on) {Calcium, Magnesium, Potassium};
 (2) 300.0_ANTONS_IC: COMMON {Nitrogen in Nitrate, Sulfate};
 (3) 2320_ALKALINITY: COMMON (Add-on) {Bicarbonate, Carbonate alkalinity};

TRVL-13-087



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IMPORTANT!

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797802759843			
Ship (PIU) date : Mon 2/03/2014 3:42 pm RICHLAND, WA US	<p>Delivered <i>Signed for by: R.CASTELLO</i></p>	Actual delivery : Tues 2/04/2014 9:23 am EARTH CITY, MO US	
Travel History			
Date/Time	Activity	Location	
- 2/04/2014 - Tuesday			
9:23 am	Delivered	EARTH CITY, MO	
7:24 am	On FedEx vehicle for delivery	EARTH CITY, MO	
7:17 am	At local FedEx facility	EARTH CITY, MO	
12:47 am	Arrived at FedEx location	MEMPHIS, TN	
- 2/03/2014 - Monday			
5:18 pm	Left FedEx origin facility	PASCO, WA	
3:42 pm	Picked up	PASCO, WA	
3:27 pm	Shipment information sent to FedEx		
Local Scan Time			
Shipment Facts			
Tracking number	797802759843	Service	FedEx Priority Overnight
Weight	41 lbs	Delivered To	Shipping/Receiving
Total pieces	1	Total shipment weight	41 lbs / 18.6 kgs
Shipper reference	GWS-150	Packaging	Your Packaging
Special handling section	Deliver Weekday		

Login Sample Receipt Checklist

Client: CH2M Hill Plateau Remediation Company

Job Number: 160-5399-1

SDG Number: SL1425

Login Number: 5399

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	
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").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	



Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
U	Analyzed for but not detected.

Metals

Qualifier	Qualifier Description
U	Analyzed for but not detected.

General Chemistry

Qualifier	Qualifier Description
D	Sample results are obtained from a dilution; the surrogate or matrix spike recoveries reported are calculated from diluted samples.
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
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)

Client: CH2M Hill Plateau Remediation Company
Project/Site: F13-047

TestAmerica Job ID: 160-5399-1
SDG: SL1425

Method	Method Description	Protocol	Laboratory
8260B	Volatile Organic Compounds (GC/MS)	SW846	TAL SL
6010C	Metals (ICP)	SW846	TAL SL
300.0	Anions, Ion Chromatography	MCAWW	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



FEBRUARY 20, 2014
Sample Summary

Client: CH2M Hill Plateau Remediation Company
Project/Site: F13-047

TestAmerica Job ID: 160-5399-1
SDG: SL1425

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
160-5399-1	B2R2V2	Water	02/03/14 12:23	02/04/14 09:45

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- 2
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- 10
- 11
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FEBRUARY 20, 2014
Client Sample Results

Client: CH2M Hill Plateau Remediation Company
 Project/Site: F13-047

TestAmerica Job ID: 160-5399-1
 SDG: SL1425

Method: 8260B - Volatile Organic Compounds (GC/MS)

Client Sample ID: B2R2V2
Date Collected: 02/03/14 12:23
Date Received: 02/04/14 09:45

Lab Sample ID: 160-5399-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Trichloroethene	4.9		1.0	0.25	ug/L			02/06/14 11:00	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	112		75 - 129					02/06/14 11:00	1
4-Bromofluorobenzene (Surr)	94		81 - 130					02/06/14 11:00	1
Dibromofluoromethane (Surr)	98		81 - 124					02/06/14 11:00	1
Toluene-d8 (Surr)	98		87 - 128					02/06/14 11:00	1

Method: 6010C - Metals (ICP)

Client Sample ID: B2R2V2
Date Collected: 02/03/14 12:23
Date Received: 02/04/14 09:45

Lab Sample ID: 160-5399-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	66300		1000	106	ug/L		02/11/14 15:12	02/12/14 16:59	1
Chromium	1670		10.0	3.1	ug/L		02/11/14 15:12	02/12/14 16:59	1
Potassium	6680		5000	1650	ug/L		02/11/14 15:12	02/12/14 16:59	1
Magnesium	17600		1000	132	ug/L		02/11/14 15:12	02/12/14 16:59	1

General Chemistry

Client Sample ID: B2R2V2
Date Collected: 02/03/14 12:23
Date Received: 02/04/14 09:45

Lab Sample ID: 160-5399-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bicarbonate Alkalinity as CaCO3	110		5.0	0.54	mg/L			02/17/14 17:29	1
Carbonate Alkalinity as CaCO3	0.54	U	5.0	0.54	mg/L			02/17/14 17:29	1

General Chemistry - DL

Client Sample ID: B2R2V2
Date Collected: 02/03/14 12:23
Date Received: 02/04/14 09:45

Lab Sample ID: 160-5399-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	6.7	D	0.40	0.080	mg/L			02/04/14 13:18	20
Sulfate	107	D	10.0	1.0	mg/L			02/04/14 13:18	20

Client: CH2M Hill Plateau Remediation Company
Project/Site: F13-047

TestAmerica Job ID: 160-5399-1
SDG: SL1425

Method: 8260B - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 160-103753/2
Matrix: Water
Analysis Batch: 103753

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Trichloroethene	0.25	U	1.0	0.25	ug/L			02/06/14 09:26	1
Surrogate	%Recovery	MB Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	111		75 - 129					02/06/14 09:26	1
4-Bromofluorobenzene (Surr)	98		81 - 130					02/06/14 09:26	1
Dibromofluoromethane (Surr)	100		81 - 124					02/06/14 09:26	1
Toluene-d8 (Surr)	98		87 - 128					02/06/14 09:26	1

Lab Sample ID: LCS 160-103753/4
Matrix: Water
Analysis Batch: 103753

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Trichloroethene	10.0	10.4		ug/L		104	80 - 120
Surrogate	%Recovery	LCS Qualifier	Limits				
1,2-Dichloroethane-d4 (Surr)	108		75 - 129				
4-Bromofluorobenzene (Surr)	99		81 - 130				
Dibromofluoromethane (Surr)	102		81 - 124				
Toluene-d8 (Surr)	98		87 - 128				

Lab Sample ID: LCSD 160-103753/5
Matrix: Water
Analysis Batch: 103753

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	Limit
Trichloroethene	10.0	10.8		ug/L		108	80 - 120	4	20
Surrogate	%Recovery	LCSD Qualifier	Limits						
1,2-Dichloroethane-d4 (Surr)	112		75 - 129						
4-Bromofluorobenzene (Surr)	100		81 - 130						
Dibromofluoromethane (Surr)	105		81 - 124						
Toluene-d8 (Surr)	101		87 - 128						

Lab Sample ID: 160-5367-B-2 MS
Matrix: Water
Analysis Batch: 103753

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
Trichloroethene	0.25	U	10.0	10.5		ug/L		105	81 - 125
Surrogate	%Recovery	MS Qualifier	Limits						
1,2-Dichloroethane-d4 (Surr)	112		75 - 129						
4-Bromofluorobenzene (Surr)	98		81 - 130						
Dibromofluoromethane (Surr)	104		81 - 124						
Toluene-d8 (Surr)	99		87 - 128						

FEBRUARY 20, 2014
QC Sample Results

Client: CH2M Hill Plateau Remediation Company
Project/Site: F13-047

TestAmerica Job ID: 160-5399-1
SDG: SL1425

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 160-5367-C-2 MSD
Matrix: Water
Analysis Batch: 103753

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

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Trichloroethene	0.25	U	10.0	10.4		ug/L		104	81 - 125	0	20
Surrogate	%Recovery	MSD Qualifier	MSD	Limits							
1,2-Dichloroethane-d4 (Surr)	113			75 - 129							
4-Bromofluorobenzene (Surr)	96			81 - 130							
Dibromofluoromethane (Surr)	105			81 - 124							
Toluene-d8 (Surr)	102			87 - 128							

Method: 6010C - Metals (ICP)

Lab Sample ID: MB 160-104276/1-A
Matrix: Water
Analysis Batch: 105113

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 104276

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	106	U	1000	106	ug/L		02/11/14 15:12	02/12/14 16:36	1
Chromium	3.1	U	10.0	3.1	ug/L		02/11/14 15:12	02/12/14 16:36	1
Potassium	1650	U	5000	1650	ug/L		02/11/14 15:12	02/12/14 16:36	1
Magnesium	132	U	1000	132	ug/L		02/11/14 15:12	02/12/14 16:36	1

Lab Sample ID: LCS 160-104276/2-A
Matrix: Water
Analysis Batch: 105113

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 104276

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Calcium	10000	11100		ug/L		111	80 - 120
Chromium	1000	1080		ug/L		108	80 - 120
Potassium	10000	10320		ug/L		103	80 - 120
Magnesium	10000	9611		ug/L		96	80 - 120

Lab Sample ID: 160-5399-1 MS
Matrix: Water
Analysis Batch: 105113

Client Sample ID: B2R2V2
Prep Type: Total/NA
Prep Batch: 104276

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Calcium	66300		10000	78040		ug/L		118	75 - 125
Chromium	1670		1000	2726		ug/L		106	75 - 125
Potassium	6680		10000	16730		ug/L		101	75 - 125
Magnesium	17600		10000	28320		ug/L		108	75 - 125

Lab Sample ID: 160-5399-1 MSD
Matrix: Water
Analysis Batch: 105113

Client Sample ID: B2R2V2
Prep Type: Total/NA
Prep Batch: 104276

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Calcium	66300		10000	76240		ug/L		100	75 - 125	2	20
Chromium	1670		1000	2680		ug/L		101	75 - 125	2	20
Potassium	6680		10000	16930		ug/L		103	75 - 125	1	20

TestAmerica St. Louis

Client: CH2M Hill Plateau Remediation Company
Project/Site: F13-047

TestAmerica Job ID: 160-5399-1
SDG: SL1425

Method: 6010C - Metals (ICP) (Continued)

Lab Sample ID: 160-5399-1 MSD
Matrix: Water
Analysis Batch: 105113

Client Sample ID: B2R2V2
Prep Type: Total/NA
Prep Batch: 104276

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Magnesium	17600		10000	27510		ug/L		100	75 - 125	3	20

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 160-104068/9
Matrix: Water
Analysis Batch: 104068

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	0.0040	U	0.020	0.0040	mg/L			02/03/14 16:07	1
Sulfate	0.050	U	0.50	0.050	mg/L			02/03/14 16:07	1

Lab Sample ID: LCS 160-104068/10
Matrix: Water
Analysis Batch: 104068

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	0.400	0.404		mg/L		101	90 - 110
Sulfate	8.00	7.77		mg/L		97	90 - 110

Method: 300.0 - Anions, Ion Chromatography - DL

Lab Sample ID: 160-5399-1 MS
Matrix: Water
Analysis Batch: 104068

Client Sample ID: B2R2V2
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Nitrate as N - DL	6.7	D	8.00	14.72		mg/L		100	90 - 110
Sulfate - DL	107	D	80.0	186.1		mg/L		99	90 - 110

Lab Sample ID: 160-5399-1 DU
Matrix: Water
Analysis Batch: 104068

Client Sample ID: B2R2V2
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Nitrate as N - DL	6.7	D	6.62		mg/L		2	20
Sulfate - DL	107	D	107.6		mg/L		0.7	20

Method: 310.1 - Alkalinity

Lab Sample ID: MB 160-105711/1
Matrix: Water
Analysis Batch: 105711

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bicarbonate Alkalinity as CaCO3	0.250	B	1.3	0.14	mg/L			02/17/14 17:29	1
Carbonate Alkalinity as CaCO3	0.14	U	1.3	0.14	mg/L			02/17/14 17:29	1

TestAmerica St. Louis

Client: CH2M Hill Plateau Remediation Company
Project/Site: F13-047

TestAmerica Job ID: 160-5399-1
SDG: SL1425

Method: 310.1 - Alkalinity (Continued)

Lab Sample ID: LCS 160-105711/3
Matrix: Water
Analysis Batch: 105711

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Bicarbonate Alkalinity as CaCO3	400	398.0		mg/L		100	90 - 110

Lab Sample ID: LLCS 160-105711/2
Matrix: Water
Analysis Batch: 105711

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

Analyte	Spike Added	LLCS Result	LLCS Qualifier	Unit	D	%Rec	%Rec. Limits
Bicarbonate Alkalinity as CaCO3	200	199.0		mg/L		100	90 - 110

Lab Sample ID: 160-5399-1 MS
Matrix: Water
Analysis Batch: 105711

Client Sample ID: B2R2V2
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Bicarbonate Alkalinity as CaCO3	110		20.0	132.0		mg/L		110	80 - 120

Lab Sample ID: 160-5399-1 DU
Matrix: Water
Analysis Batch: 105711

Client Sample ID: B2R2V2
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	Limit
Bicarbonate Alkalinity as CaCO3	110		112.0		mg/L		2	20
Carbonate Alkalinity as CaCO3	0.54	U	0.54	U	mg/L		NC	20

Client: CH2M Hill Plateau Remediation Company
Project/Site: F13-047

TestAmerica Job ID: 160-5399-1
SDG: SL1425

GC/MS VOA

Analysis Batch: 103753

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-5367-B-2 MS	Matrix Spike	Total/NA	Water	8260B	
160-5367-C-2 MSD	Matrix Spike Duplicate	Total/NA	Water	8260B	
160-5399-1	B2R2V2	Total/NA	Water	8260B	
LCS 160-103753/4	Lab Control Sample	Total/NA	Water	8260B	
LCSD 160-103753/5	Lab Control Sample Dup	Total/NA	Water	8260B	
MB 160-103753/2	Method Blank	Total/NA	Water	8260B	

Metals

Prep Batch: 104276

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-5399-1	B2R2V2	Total/NA	Water	3010A	
160-5399-1 MS	B2R2V2	Total/NA	Water	3010A	
160-5399-1 MSD	B2R2V2	Total/NA	Water	3010A	
LCS 160-104276/2-A	Lab Control Sample	Total/NA	Water	3010A	
MB 160-104276/1-A	Method Blank	Total/NA	Water	3010A	

Analysis Batch: 105113

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-5399-1	B2R2V2	Total/NA	Water	6010C	104276
160-5399-1 MS	B2R2V2	Total/NA	Water	6010C	104276
160-5399-1 MSD	B2R2V2	Total/NA	Water	6010C	104276
LCS 160-104276/2-A	Lab Control Sample	Total/NA	Water	6010C	104276
MB 160-104276/1-A	Method Blank	Total/NA	Water	6010C	104276

General Chemistry

Analysis Batch: 104068

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-5399-1 - DL	B2R2V2	Total/NA	Water	300.0	
160-5399-1 DU - DL	B2R2V2	Total/NA	Water	300.0	
160-5399-1 MS - DL	B2R2V2	Total/NA	Water	300.0	
LCS 160-104068/10	Lab Control Sample	Total/NA	Water	300.0	
MB 160-104068/9	Method Blank	Total/NA	Water	300.0	

Analysis Batch: 105711

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-5399-1	B2R2V2	Total/NA	Water	310.1	
160-5399-1 DU	B2R2V2	Total/NA	Water	310.1	
160-5399-1 MS	B2R2V2	Total/NA	Water	310.1	
LCS 160-105711/3	Lab Control Sample	Total/NA	Water	310.1	
LLCS 160-105711/2	Lab Control Sample	Total/NA	Water	310.1	
MB 160-105711/1	Method Blank	Total/NA	Water	310.1	

Client: CH2M Hill Plateau Remediation Company
 Project/Site: F13-047

TestAmerica Job ID: 160-5399-1
 SDG: SL1425

Method: 8260B - Volatile Organic Compounds (GC/MS)

Matrix: Water

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)			
		12DCE (75-129)	BFB (81-130)	DBFM (81-124)	TOL (87-128)
160-5367-B-2 MS	Matrix Spike	112	98	104	99
160-5367-C-2 MSD	Matrix Spike Duplicate	113	96	105	102
160-5399-1	B2R2V2	112	94	98	98
LCS 160-103753/4	Lab Control Sample	108	99	102	98
LCSD 160-103753/5	Lab Control Sample Dup	112	100	105	101
MB 160-103753/2	Method Blank	111	98	100	98

Surrogate Legend

- 12DCE = 1,2-Dichloroethane-d4 (Surr)
- BFB = 4-Bromofluorobenzene (Surr)
- DBFM = Dibromofluoromethane (Surr)
- TOL = Toluene-d8 (Surr)

