

September 19, 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: 160-8080-1

TestAmerica Sample Delivery Group: SL1569
Client Project/Site: X14-059

For:

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

Attn: General Mailbox



Authorized for release by:
9/19/2014 5:06:17 PM

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

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

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

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Client: CH2M Hill Plateau Remediation Company
Project/Site: X14-059

TestAmerica Job ID: 160-8080-1
SDG: SL1569

Job ID: 160-8080-1

Laboratory: TestAmerica St. Louis

Narrative

CASE NARRATIVE

CH2MHill Plateau Remediation Company
P.O. Box 1600
MS B3-60
Richland, Washington 99352
September 19, 2014
Attention: Scot Fitzgerald

SDG : SL1569
Number of Samples : 2 samples
Sample Matrix : Water
Data Deliverable : Summary
Date SDG Closed : August 23, 2014

II. Introduction

On August 23, 2 samples were received by TestAmerica - St. Louis for chemical analysis. The samples were received within temperature criteria. See the COC and receipt checklists for documentation of any variations on receipt conditions and temperature. Upon receipt, samples were given laboratory Ids to correspond with specific client Ids. Please refer to the Sample Summary sheets attached to this case narrative. This report is incomplete without the narrative.

The following SAFs are associated with this SDG: X14-059

III. Analytical Results/ Methodology

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

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

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

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.



Job ID: 160-8080-1 (Continued)

Laboratory: TestAmerica St. Louis (Continued)

- **B** - For inorganic analyses, the sample result is greater than the MDL but less than the RL.
- **B** - For organic analyses, Method Blank contamination. The Method Blank contains the target analyte at a concentration above the MDL.
- **J** - For organic analyses, the sample is estimated and less than the RL.
- **C** - For inorganic analyses, Method Blank contamination. The Method Blank contains the target analyte at a concentration above the MDL.
- **D** - For all analyses, the sample result was obtained from the analysis of a dilution. For Metals analyses, per standard practice, all solid samples are initially prepared at a 2x dilution. This standard dilution does not affect reporting limits as MDL studies are also prepared in the same manner. These dilutions do not necessitate qualification unless otherwise noted in the case narrative. Due to limitations of the LIMS system, "D" flags may appear on QC samples.
- **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 organic 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.

DRO

Batch: 142050

The LCS spike recovery for Diesel is outside the upper QC limits indicating a potential high bias for the analytes in the associated samples: (160-8080-2 MS), (160-8080-2 MSD), (LCS 160-141019/2-A), (MB 160-141019/1-A), B2XV5 (160-8080-2) There were no hits for Diesel above the reporting limit in the sample; therefore this excursion does not affect the data results. Results are provided with this narrative. No further action is required. This analyte has been qualified accordingly with an "O" flag in the associated samples.

ICP Metals

Batch: 143963

Calcium was detected in method blank MB 160-143762/1-A at a level that was above the method detection limit but below the reporting limit. The value should be considered an estimate, and has been flagged "B". If the associated sample reported a result above the MDL and/or RL and is not greater than 5x the method blank, the result has been flagged "C".

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



Login Sample Receipt Checklist

Client: CH2M Hill Plateau Remediation Company

Job Number: 160-8080-1

SDG Number: SL1569

Login Number: 8080

List Number: 1

Creator: Daniels, Brian J

List Source: TestAmerica St. Louis

Question	Answer	Comment
Radioactivity wasn't checked or is \neq background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	1.00
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 $<6\text{mm}$ (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	



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CH2M Hill Plateau Remediation Company C.O.C.# **X14-059-193**
Page 1 of 1

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

Collector: J.R. Aguilar **CHPRC** Telephone No. 509-376-4650
SAF No.: X14-059 Purchase Order/Charge Code 303064ES20
Project Title: 100-NR-2 Apatite Barrier, September 201 Ice Chest No. 605-258
Shipped To (Lab): TestAmerica St. Louis Bill of Lading/Air Bill No. 7709 1933 4185
Protocol: CERCLA Priority: 30 Days **PRIORITY** Offsite Property No. N/A

POSSIBLE SAMPLE HAZARDS/REMARKS
 *** 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

Sample No.	Filter	*	Date	Time	No/Type Container	Sample Analysis	Holding Time	Preservative
B2XFV3	N	W	8-22-14	1018	1x500-mL G/P	6010_METALS_ICP: COMMON; 6010_METALS_ICP: GW 05	6 Months	HNO3 to pH <2
B2XFV5	Y	W	8-22-14	1018	1x500-mL G/P	6010_METALS_ICP: COMMON; 6010_METALS_ICP: GW 05	6 Months	HNO3 to pH <2
B2XFV5	Y	W	8-22-14	1018	3x1-L aG	WTPH_DIESEL: COMMON	14/40 Days	HCl to pH <2/Cool <=6C

Relinquished By	Print	Sign	Date/Time	Received By	Print	Sign	Date/Time
J.R. Aguilar CHPRC			AUG 22 2014 1245	L.D. Wall CHPRC			AUG 22 2014 1245
L.D. Wall CHPRC			AUG 22 2014 1400	Robert D. Castle FEDEX			8.23.14 / 0840
FED EX							

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



FedEx® Tracking

770919334185

Ship (P/U) date :
Fri 8/22/2014 3:49 pm

Actual delivery :
Sat 8/23/2014 8:31 am

RICHLAND, WA US

Delivered

EARTH CITY, MO US

Signed for by: B DANIELS

Let us tell you when your shipment arrives. Sign up for delivery notifications

Travel History

Date/Time	Activity	Location
8/23/2014 - Saturday		
8:31 am	Delivered	EARTH CITY, MO
8:20 am	On FedEx vehicle for delivery	EARTH CITY, MO
7:45 am	At local FedEx facility	EARTH CITY, MO
5:35 am	At destination sort facility	BERKELEY, MO
4:53 am	Departed FedEx location	MEMPHIS, TN
8/22/2014 - Friday		
5:09 pm	Left FedEx origin facility	PASCO, WA
3:49 pm	Picked up	PASCO, WA
3:29 pm	Shipment information sent to FedEx	

Shipment Facts

Tracking number	770919334185	Service	FedEx Priority Overnight
Weight	69 lbs / 31.3 kgs	Delivered To	Receptionist/Front Desk
Total pieces	1	Total shipment weight	69 lbs / 31.3 kgs
Shipper reference	gws-258	Packaging	Your Packaging
Special handling section	For Saturday Delivery		



Qualifiers

GC Semi VOA

Qualifier	Qualifier Description
O	LCS, LCSD: Recovery exceeds upper or lower control limits.
U	Analyzed for but not detected.

Metals

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)

Client: CH2M Hill Plateau Remediation Company
Project/Site: X14-059

TestAmerica Job ID: 160-8080-1
SDG: SL1569

Method	Method Description	Protocol	Laboratory
8015B	Diesel Range Organics (DRO) (GC)	SW846	TAL SL
6010C	Metals (ICP)	SW846	TAL SL

Protocol References:

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



September 19, 2014
Sample Summary

Client: CH2M Hill Plateau Remediation Company
Project/Site: X14-059

TestAmerica Job ID: 160-8080-1
SDG: SL1569

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
160-8080-1	B2XFV3	Water	08/22/14 10:18	08/23/14 08:40
160-8080-2	B2XFV5	Water	08/22/14 10:18	08/23/14 08:40

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Client: CH2M Hill Plateau Remediation Company
Project/Site: X14-059

TestAmerica Job ID: 160-8080-1
SDG: SL1569

Method: 8015B - Diesel Range Organics (DRO) (GC)

Client Sample ID: B2XFV5
Date Collected: 08/22/14 10:18
Date Received: 08/23/14 08:40

Lab Sample ID: 160-8080-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Petroleum Hydrocarbons (C10-C28)	0.017	U O	0.49	0.017	mg/L		08/29/14 11:13	09/04/14 23:25	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
<i>o</i> -Terphenyl	82		47 - 136				08/29/14 11:13	09/04/14 23:25	1

Method: 6010C - Metals (ICP)

Client Sample ID: B2XFV3
Date Collected: 08/22/14 10:18
Date Received: 08/23/14 08:40

Lab Sample ID: 160-8080-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	3.7	U	10.0	3.7	ug/L		09/12/14 10:29	09/15/14 13:09	1
Arsenic	1.8	U	10.0	1.8	ug/L		09/12/14 10:29	09/15/14 13:09	1
Barium	20.7	B	50.0	2.1	ug/L		09/12/14 10:29	09/15/14 13:09	1
Cadmium	0.34	U	5.0	0.34	ug/L		09/12/14 10:29	09/15/14 13:09	1
Calcium	22300		1000	54.2	ug/L		09/12/14 10:29	09/15/14 13:09	1
Chromium	3.4	U	10.0	3.4	ug/L		09/12/14 10:29	09/15/14 13:09	1
Cobalt	2.7	U	50.0	2.7	ug/L		09/12/14 10:29	09/15/14 13:09	1
Copper	2.1	U	25.0	2.1	ug/L		09/12/14 10:29	09/15/14 13:09	1
Iron	71.4	B	100	12.8	ug/L		09/12/14 10:29	09/15/14 13:09	1
Lead	5.6	B	10.0	0.60	ug/L		09/12/14 10:29	09/15/14 13:09	1
Magnesium	4090		1000	50.5	ug/L		09/12/14 10:29	09/15/14 13:09	1
Manganese	4.2	B	15.0	1.0	ug/L		09/12/14 10:29	09/15/14 13:09	1
Molybdenum	1.9	U	40.0	1.9	ug/L		09/12/14 10:29	09/15/14 13:09	1
Nickel	2.6	U	40.0	2.6	ug/L		09/12/14 10:29	09/15/14 13:09	1
Potassium	1050	B	5000	456	ug/L		09/12/14 10:29	09/15/14 13:09	1
Silver	0.99	U	10.0	0.99	ug/L		09/12/14 10:29	09/15/14 13:09	1
Sodium	2710		1000	105	ug/L		09/12/14 10:29	09/15/14 13:09	1
Strontium	89.6		5.0	0.24	ug/L		09/12/14 10:29	09/15/14 13:09	1
Vanadium	5.3	B	50.0	4.4	ug/L		09/12/14 10:29	09/15/14 13:09	1
Zinc	15.0	B	20.0	8.3	ug/L		09/12/14 10:29	09/15/14 13:09	1

Method: 6010C - Metals (ICP) - Dissolved

Client Sample ID: B2XFV5
Date Collected: 08/22/14 10:18
Date Received: 08/23/14 08:40

Lab Sample ID: 160-8080-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	3.7	U	10.0	3.7	ug/L		09/12/14 10:29	09/15/14 13:24	1
Arsenic	1.8	U	10.0	1.8	ug/L		09/12/14 10:29	09/15/14 13:24	1
Barium	19.6	B	50.0	2.1	ug/L		09/12/14 10:29	09/15/14 13:24	1
Cadmium	0.34	U	5.0	0.34	ug/L		09/12/14 10:29	09/15/14 13:24	1
Calcium	22100		1000	54.2	ug/L		09/12/14 10:29	09/15/14 13:24	1
Chromium	3.4	U	10.0	3.4	ug/L		09/12/14 10:29	09/15/14 13:24	1
Cobalt	2.7	U	50.0	2.7	ug/L		09/12/14 10:29	09/15/14 13:24	1
Copper	2.1	U	25.0	2.1	ug/L		09/12/14 10:29	09/15/14 13:24	1
Iron	16.0	B	100	12.8	ug/L		09/12/14 10:29	09/15/14 13:24	1
Lead	4.6	B	10.0	0.60	ug/L		09/12/14 10:29	09/15/14 13:24	1
Magnesium	4040		1000	50.5	ug/L		09/12/14 10:29	09/15/14 13:24	1

TestAmerica St. Louis

Client: CH2M Hill Plateau Remediation Company
 Project/Site: X14-059

TestAmerica Job ID: 160-8080-1
 SDG: SL1569

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

Client Sample ID: B2XFV5
Date Collected: 08/22/14 10:18
Date Received: 08/23/14 08:40

Lab Sample ID: 160-8080-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Manganese	2.7	B	15.0	1.0	ug/L		09/12/14 10:29	09/15/14 13:24	1
Molybdenum	1.9	U	40.0	1.9	ug/L		09/12/14 10:29	09/15/14 13:24	1
Nickel	2.6	U	40.0	2.6	ug/L		09/12/14 10:29	09/15/14 13:24	1
Potassium	995	B	5000	456	ug/L		09/12/14 10:29	09/15/14 13:24	1
Silver	0.99	U	10.0	0.99	ug/L		09/12/14 10:29	09/15/14 13:24	1
Sodium	2590		1000	105	ug/L		09/12/14 10:29	09/15/14 13:24	1
Strontium	87.1		5.0	0.24	ug/L		09/12/14 10:29	09/15/14 13:24	1
Vanadium	4.4	U	50.0	4.4	ug/L		09/12/14 10:29	09/15/14 13:24	1
Zinc	8.3	U	20.0	8.3	ug/L		09/12/14 10:29	09/15/14 13:24	1



Client: CH2M Hill Plateau Remediation Company
Project/Site: X14-059

TestAmerica Job ID: 160-8080-1
SDG: SL1569

Method: 8015B - Diesel Range Organics (DRO) (GC)

Lab Sample ID: MB 160-141019/1-A
Matrix: Water
Analysis Batch: 142050

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 141019

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Petroleum Hydrocarbons (C10-C28)	0.017	U	0.50	0.017	mg/L		08/29/14 11:13	09/04/14 22:31	1
Surrogate	MB %Recovery	MB Qualifier	Limits				Prepared	Analyzed	Dil Fac
<i>o</i> -Terphenyl	93		47 - 136				08/29/14 11:13	09/04/14 22:31	1

Lab Sample ID: LCS 160-141019/2-A
Matrix: Water
Analysis Batch: 142050

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 141019

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Petroleum Hydrocarbons (C10-C28)	2.50	2.56	O	mg/L		102	30 - 100
Surrogate	LCS %Recovery	LCS Qualifier	Limits				
<i>o</i> -Terphenyl	114		47 - 136				

Lab Sample ID: 160-8080-2 MS
Matrix: Water
Analysis Batch: 142050

Client Sample ID: B2XFV5
Prep Type: Total/NA
Prep Batch: 141019

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Petroleum Hydrocarbons (C10-C28)	0.017	U O	2.46	1.92		mg/L		78	28 - 115
Surrogate	MS %Recovery	MS Qualifier	Limits						
<i>o</i> -Terphenyl	90		47 - 136						

Lab Sample ID: 160-8080-2 MSD
Matrix: Water
Analysis Batch: 142050

Client Sample ID: B2XFV5
Prep Type: Total/NA
Prep Batch: 141019

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Total Petroleum Hydrocarbons (C10-C28)	0.017	U O	2.45	1.99		mg/L		81	28 - 115	4	20
Surrogate	MSD %Recovery	MSD Qualifier	Limits								
<i>o</i> -Terphenyl	91		47 - 136								

Method: 6010C - Metals (ICP)

Lab Sample ID: MB 160-143762/1-A
Matrix: Water
Analysis Batch: 143963

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 143762

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	3.7	U	10.0	3.7	ug/L		09/12/14 10:29	09/15/14 12:54	1
Arsenic	1.8	U	10.0	1.8	ug/L		09/12/14 10:29	09/15/14 12:54	1

TestAmerica St. Louis

Client: CH2M Hill Plateau Remediation Company
Project/Site: X14-059

TestAmerica Job ID: 160-8080-1
SDG: SL1569

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

Lab Sample ID: MB 160-143762/1-A
Matrix: Water
Analysis Batch: 143963

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 143762

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Barium	2.1	U	50.0	2.1	ug/L		09/12/14 10:29	09/15/14 12:54	1
Cadmium	0.34	U	5.0	0.34	ug/L		09/12/14 10:29	09/15/14 12:54	1
Calcium	59.10	B	1000	54.2	ug/L		09/12/14 10:29	09/15/14 12:54	1
Chromium	3.4	U	10.0	3.4	ug/L		09/12/14 10:29	09/15/14 12:54	1
Cobalt	2.7	U	50.0	2.7	ug/L		09/12/14 10:29	09/15/14 12:54	1
Copper	2.1	U	25.0	2.1	ug/L		09/12/14 10:29	09/15/14 12:54	1
Iron	12.8	U	100	12.8	ug/L		09/12/14 10:29	09/15/14 12:54	1
Lead	0.60	U	10.0	0.60	ug/L		09/12/14 10:29	09/15/14 12:54	1
Magnesium	50.5	U	1000	50.5	ug/L		09/12/14 10:29	09/15/14 12:54	1
Manganese	1.0	U	15.0	1.0	ug/L		09/12/14 10:29	09/15/14 12:54	1
Molybdenum	1.9	U	40.0	1.9	ug/L		09/12/14 10:29	09/15/14 12:54	1
Nickel	2.6	U	40.0	2.6	ug/L		09/12/14 10:29	09/15/14 12:54	1
Potassium	456	U	5000	456	ug/L		09/12/14 10:29	09/15/14 12:54	1
Silver	0.99	U	10.0	0.99	ug/L		09/12/14 10:29	09/15/14 12:54	1
Sodium	105	U	1000	105	ug/L		09/12/14 10:29	09/15/14 12:54	1
Strontium	0.24	U	5.0	0.24	ug/L		09/12/14 10:29	09/15/14 12:54	1
Vanadium	4.4	U	50.0	4.4	ug/L		09/12/14 10:29	09/15/14 12:54	1
Zinc	8.3	U	20.0	8.3	ug/L		09/12/14 10:29	09/15/14 12:54	1

Lab Sample ID: LCS 160-143762/2-A
Matrix: Water
Analysis Batch: 143963

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 143762

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Antimony	500	485.7		ug/L		97	80 - 120
Arsenic	1000	946.4		ug/L		95	80 - 120
Barium	1000	946.9		ug/L		95	80 - 120
Cadmium	1000	959.9		ug/L		96	80 - 120
Calcium	10000	10410		ug/L		104	80 - 120
Chromium	1000	1000		ug/L		100	80 - 120
Cobalt	1000	1041		ug/L		104	80 - 120
Copper	1000	997.1		ug/L		100	80 - 120
Iron	10000	9182		ug/L		92	80 - 120
Lead	1000	1021		ug/L		102	80 - 120
Magnesium	10000	8474		ug/L		85	80 - 120
Manganese	1000	901.9		ug/L		90	80 - 120
Molybdenum	500	515.2		ug/L		103	80 - 120
Nickel	1000	1033		ug/L		103	80 - 120
Potassium	10000	9337		ug/L		93	80 - 120
Silver	200	189.3		ug/L		95	80 - 120
Sodium	10000	9485		ug/L		95	80 - 120
Strontium	1000	973.1		ug/L		97	80 - 120
Vanadium	1000	896.4		ug/L		90	80 - 120
Zinc	1000	1031		ug/L		103	80 - 120

Client: CH2M Hill Plateau Remediation Company
Project/Site: X14-059

TestAmerica Job ID: 160-8080-1
SDG: SL1569

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

Lab Sample ID: 160-8080-1 MS
Matrix: Water
Analysis Batch: 143963

Client Sample ID: B2XFV3
Prep Type: Total/NA
Prep Batch: 143762

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Antimony	3.7	U	500	515.4		ug/L		103	75 - 125
Arsenic	1.8	U	1000	1017		ug/L		102	75 - 125
Barium	20.7	B	1000	1039		ug/L		102	75 - 125
Cadmium	0.34	U	1000	1018		ug/L		102	75 - 125
Calcium	22300		10000	33540		ug/L		113	75 - 125
Chromium	3.4	U	1000	1052		ug/L		105	75 - 125
Cobalt	2.7	U	1000	1096		ug/L		110	75 - 125
Copper	2.1	U	1000	1046		ug/L		105	75 - 125
Iron	71.4	B	10000	9767		ug/L		97	75 - 125
Lead	5.6	B	1000	1081		ug/L		108	75 - 125
Magnesium	4090		10000	13290		ug/L		92	75 - 125
Manganese	4.2	B	1000	963.4		ug/L		96	75 - 125
Molybdenum	1.9	U	500	536.3		ug/L		107	75 - 125
Nickel	2.6	U	1000	1088		ug/L		109	75 - 125
Potassium	1050	B	10000	11200		ug/L		102	75 - 125
Silver	0.99	U	200	203.2		ug/L		102	75 - 125
Sodium	2710		10000	13020		ug/L		103	75 - 125
Strontium	89.6		1000	1137		ug/L		105	75 - 125
Vanadium	5.3	B	1000	965.1		ug/L		96	75 - 125
Zinc	15.0	B	1000	1102		ug/L		109	75 - 125

Lab Sample ID: 160-8080-1 MSD
Matrix: Water
Analysis Batch: 143963

Client Sample ID: B2XFV3
Prep Type: Total/NA
Prep Batch: 143762

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Antimony	3.7	U	500	510.8		ug/L		102	75 - 125	1	20
Arsenic	1.8	U	1000	1017		ug/L		102	75 - 125	0	20
Barium	20.7	B	1000	1041		ug/L		102	75 - 125	0	20
Cadmium	0.34	U	1000	1025		ug/L		103	75 - 125	1	20
Calcium	22300		10000	33270		ug/L		110	75 - 125	1	20
Chromium	3.4	U	1000	1058		ug/L		106	75 - 125	1	20
Cobalt	2.7	U	1000	1100		ug/L		110	75 - 125	0	20
Copper	2.1	U	1000	1056		ug/L		106	75 - 125	1	20
Iron	71.4	B	10000	9851		ug/L		98	75 - 125	1	20
Lead	5.6	B	1000	1084		ug/L		108	75 - 125	0	20
Magnesium	4090		10000	13360		ug/L		93	75 - 125	1	20
Manganese	4.2	B	1000	968.7		ug/L		96	75 - 125	1	20
Molybdenum	1.9	U	500	533.5		ug/L		107	75 - 125	1	20
Nickel	2.6	U	1000	1092		ug/L		109	75 - 125	0	20
Potassium	1050	B	10000	11270		ug/L		102	75 - 125	1	20
Silver	0.99	U	200	201.9		ug/L		101	75 - 125	1	20
Sodium	2710		10000	13030		ug/L		103	75 - 125	0	20
Strontium	89.6		1000	1138		ug/L		105	75 - 125	0	20
Vanadium	5.3	B	1000	970.2		ug/L		96	75 - 125	1	20
Zinc	15.0	B	1000	1116		ug/L		110	75 - 125	1	20

Client: CH2M Hill Plateau Remediation Company
Project/Site: X14-059

TestAmerica Job ID: 160-8080-1
SDG: SL1569

GC Semi VOA

Prep Batch: 141019

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-8080-2	B2XFV5	Total/NA	Water	3510C	
160-8080-2 MS	B2XFV5	Total/NA	Water	3510C	
160-8080-2 MSD	B2XFV5	Total/NA	Water	3510C	
LCS 160-141019/2-A	Lab Control Sample	Total/NA	Water	3510C	
MB 160-141019/1-A	Method Blank	Total/NA	Water	3510C	

Analysis Batch: 142050

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-8080-2	B2XFV5	Total/NA	Water	8015B	141019
160-8080-2 MS	B2XFV5	Total/NA	Water	8015B	141019
160-8080-2 MSD	B2XFV5	Total/NA	Water	8015B	141019
LCS 160-141019/2-A	Lab Control Sample	Total/NA	Water	8015B	141019
MB 160-141019/1-A	Method Blank	Total/NA	Water	8015B	141019

Metals

Prep Batch: 143762

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-8080-1	B2XFV3	Total/NA	Water	3010A	
160-8080-1 MS	B2XFV3	Total/NA	Water	3010A	
160-8080-1 MSD	B2XFV3	Total/NA	Water	3010A	
160-8080-2	B2XFV5	Dissolved	Water	3010A	
LCS 160-143762/2-A	Lab Control Sample	Total/NA	Water	3010A	
MB 160-143762/1-A	Method Blank	Total/NA	Water	3010A	

Analysis Batch: 143963

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-8080-1	B2XFV3	Total/NA	Water	6010C	143762
160-8080-1 MS	B2XFV3	Total/NA	Water	6010C	143762
160-8080-1 MSD	B2XFV3	Total/NA	Water	6010C	143762
160-8080-2	B2XFV5	Dissolved	Water	6010C	143762
LCS 160-143762/2-A	Lab Control Sample	Total/NA	Water	6010C	143762
MB 160-143762/1-A	Method Blank	Total/NA	Water	6010C	143762

Client: CH2M Hill Plateau Remediation Company
Project/Site: X14-059

TestAmerica Job ID: 160-8080-1
SDG: SL1569

Method: 8015B - Diesel Range Organics (DRO) (GC)

Matrix: Water

Prep Type: Total/NA

Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	OTPH1 (47-136)
160-8080-2	B2XFV5	82
160-8080-2 MS	B2XFV5	90
160-8080-2 MSD	B2XFV5	91
LCS 160-141019/2-A	Lab Control Sample	114
MB 160-141019/1-A	Method Blank	93

Surrogate Legend

OTPH = o-Terphenyl

