

SEPTEMBER 30, 2013

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: 160-3834-1

TestAmerica Sample Delivery Group: SL1400
Client Project/Site: S,W,I,A ,X SAFS- GROUNDWATER

For:

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

Attn: General Mailbox



Authorized for release by:
9/30/2013 12:23:51 PM

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

jayna.awalt@testamericainc.com

LINKS

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www.testamericainc.com

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.

1

2

3

4

5

6

7

8

9

10

11

12



Table of Contents

Cover Page	1
Table of Contents	2
Case Narrative	3
Chain of Custody	5
Receipt Checklists	7
Definitions/Glossary	8
Method Summary	9
Sample Summary	10
Detection Summary	11
Client Sample Results	12
QC Sample Results	13
QC Association Summary	14

Client: CH2M Hill Plateau Remediation Company
Project/Site: S,W,I,A ,X SAFS- GROUNDWATER

TestAmerica Job ID: 160-3834-1
SDG: SL1400

Job ID: 160-3834-1

Laboratory: TestAmerica St. Louis

Narrative

CASE NARRATIVE

CH2MHill Plateau Remediation Company
P.O. Box 1600
MS B3-60
Richland, Washington 99352
September 30, 2013
Attention: Scot Fitzgerald

SDG : SL1400
Number of Samples : 4 samples
Sample Matrix : Water
Data Deliverable : Summary
Date SDG Closed : September 20, 2013

II. Introduction

On September 20, 2013, 4 water samples were received by TestAmerica - St. Louis for chemical analysis. The samples were received within temperature criteria. See the COC and CUR forms 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: W13-009

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: 160-3834-1 (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.

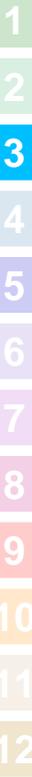
There were no observations or nonconformances for the following methods:

pH

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



CH2MHill Plateau Remediation
Company
SL1400

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

C.O.C. #
W13-009-124
Page 1 of 1

Collector: John Fulton
 Contact/Requester: Karen Waters-Husted
 Telephone No.: 509-376-4650
 SAF No.: W13-009
 Sampling Origin: Hanford Site
 Purchase Order/Charge Code: 300071ES20
 Project Title: RCRA, SEPTEMBER 2013
 Logbook No.: HNF-N-506 57154
 Ice Chest No.: GWS-103 46/63
 Shipped To (Lab): TestAmerica St. Louis
 Method of Shipment: Commercial Carrier
 Bill of Lading/Air Bill No.: 7967 2811 3765
 Protocol: RCRA
 Priority: 15 Days
 Offsite Property No.: N/A

POSSIBLE SAMPLE HAZARDS/REMARKS
 *** ** Contains Radioactive Material at concentrations that are not regulated for transportation per 49 CRF but are not releasable per DOE Order 5400.5 (1990/1993)
SPECIAL INSTRUCTIONS Hold Time Total Activity Exemption: Yes No
 Site Wide Generator Knowledge Information Form applies.
 The CACN for all analytical work at WSCF is 401647.

Sample No.	Filter	*	Date	Time	No/Type Container	Sample Analysis	Holding Time	Preservative
B2RJ14	N	W	SEP 19 2013	0845	1x125-mL G/P	150.1_PH: pH (1)	ASAP	None
B2RJ16	N	W			1x125-mL G/P	150.1_PH: pH (1)	ASAP	None
B2RJ13	N	W			1x20-mL P	Activity Scan	6 Months	None
B2RJ13	N	W			1x125-mL G/P	150.1_PH: pH (1)	ASAP	None
B2RJ15	N	W			1x125-mL G/P	150.1_PH: pH (1)	ASAP	None

Page 5 of 14

Relinquished By John Fulton	Print [Signature]	Sign	SEP 19 2013	Date/Time	Received By FAD Ex	Sign	SEP 19 2013	Date/Time	Print	Matrix *
Relinquished By	Print [Signature]	Sign	SEP 19 2013	Date/Time	Received By Jill Clarke	Sign	SEP 19 2013	Date/Time	Print	Matrix *
Relinquished By	Print [Signature]	Sign	SEP 19 2013	Date/Time	Received By	Sign	SEP 19 2013	Date/Time	Print	Matrix *
Relinquished By	Print [Signature]	Sign	SEP 19 2013	Date/Time	Received By	Sign	SEP 19 2013	Date/Time	Print	Matrix *

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



IMPORTANT!Daily operations have resumed in Colorado. [Learn More](#)**796728113765**Ship (P/U) date :
Thur 9/19/2013 3:54 pm

RICHLAND, WA US

Actual delivery :
Fri 9/20/2013 9:06 am

EARTH CITY, MO US

Delivered

Signed for by: N FALKER

Let us tell you when your shipment arrives. [Sign up for delivery notifications](#)**Travel History**

Date/Time	Activity	Location
- 9/20/2013 - Friday		
9:06 am	Delivered	EARTH CITY, MO
6:46 am	On FedEx vehicle for delivery	EARTH CITY, MO
6:42 am	At local FedEx facility	EARTH CITY, MO
5:29 am	At destination sort facility	BERKELEY, MO
4:36 am	Departed FedEx location	MEMPHIS, TN
12:54 am	Arrived at FedEx location	MEMPHIS, TN
- 9/19/2013 - Thursday		
5:12 pm	Left FedEx origin facility	PASCO, WA
3:54 pm	Picked up	PASCO, WA
3:23 pm	Shipment information sent to FedEx	

Local Scan Time ▾

Shipment Facts

Tracking number	796728113765	Service	FedEx Priority Overnight
Weight	46 lbs	Delivered To	Shipping/Receiving
Total pieces	1	Total shipment weight	46 lbs / 20.9 kgs
Shipper reference	GWS-103	Packaging	Your Packaging
Special handling section	Deliver Weekday, Additional Handling Surcharge		

Login Sample Receipt Checklist

Client: CH2M Hill Plateau Remediation Company

Job Number: 160-3834-1

SDG Number: SL1400

Login Number: 3834

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



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: S,W,I,A ,X SAFS- GROUNDWATER

TestAmerica Job ID: 160-3834-1
SDG: SL1400

Method	Method Description	Protocol	Laboratory
150.1	pH (Electrometric)	MCAWW	TAL SL

Protocol References:

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

Laboratory References:

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



SEPTEMBER 30, 2013
Sample Summary

Client: CH2M Hill Plateau Remediation Company
Project/Site: S,W,I,A ,X SAFS- GROUNDWATER

TestAmerica Job ID: 160-3834-1
SDG: SL1400

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
160-3834-1	B2RJ14	Water	09/19/13 08:45	09/20/13 09:10
160-3834-2	B2RJ16	Water	09/19/13 08:45	09/20/13 09:10
160-3834-3	B2RJ13	Water	09/19/13 08:45	09/20/13 09:10
160-3834-4	B2RJ15	Water	09/19/13 08:45	09/20/13 09:10

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12

SEPTEMBER 30, 2013
Detection Summary

Client: CH2M Hill Plateau Remediation Company
Project/Site: S,W,I,A ,X SAFS- GROUNDWATER

TestAmerica Job ID: 160-3834-1
SDG: SL1400

Client Sample ID: B2RJ14

Lab Sample ID: 160-3834-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
pH	7.52		0.100	0.100	SU	1		150.1	Total/NA

Client Sample ID: B2RJ16

Lab Sample ID: 160-3834-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
pH	7.52		0.100	0.100	SU	1		150.1	Total/NA

Client Sample ID: B2RJ13

Lab Sample ID: 160-3834-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
pH	7.53		0.100	0.100	SU	1		150.1	Total/NA

Client Sample ID: B2RJ15

Lab Sample ID: 160-3834-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
pH	7.51		0.100	0.100	SU	1		150.1	Total/NA

This Detection Summary does not include radiochemical test results.

TestAmerica St. Louis

Client: CH2M Hill Plateau Remediation Company
Project/Site: S,W,I,A ,X SAFS- GROUNDWATER

TestAmerica Job ID: 160-3834-1
SDG: SL1400

General Chemistry

Client Sample ID: B2RJ14
Date Collected: 09/19/13 08:45
Date Received: 09/20/13 09:10

Lab Sample ID: 160-3834-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	7.52		0.100	0.100	SU			09/20/13 14:08	1

Client Sample ID: B2RJ16
Date Collected: 09/19/13 08:45
Date Received: 09/20/13 09:10

Lab Sample ID: 160-3834-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	7.52		0.100	0.100	SU			09/20/13 14:11	1

Client Sample ID: B2RJ13
Date Collected: 09/19/13 08:45
Date Received: 09/20/13 09:10

Lab Sample ID: 160-3834-3
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	7.53		0.100	0.100	SU			09/20/13 14:08	1

Client Sample ID: B2RJ15
Date Collected: 09/19/13 08:45
Date Received: 09/20/13 09:10

Lab Sample ID: 160-3834-4
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	7.51		0.100	0.100	SU			09/20/13 14:08	1

SEPTEMBER 30, 2013
QC Sample Results

Client: CH2M Hill Plateau Remediation Company
Project/Site: S,W,I,A ,X SAFS- GROUNDWATER

TestAmerica Job ID: 160-3834-1
SDG: SL1400

Method: 150.1 - pH (Electrometric)

Lab Sample ID: LCS 160-73971/5
Matrix: Water
Analysis Batch: 73971

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
pH	7.00	7.030		SU		100	99.0 - 101.0

Lab Sample ID: 160-3834-3 DU
Matrix: Water
Analysis Batch: 73971

Client Sample ID: B2RJ13
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
pH	7.53		7.510		SU		0.3	5

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- 2
- 3
- 4
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- 6
- 7
- 8
- 9
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- 12

Client: CH2M Hill Plateau Remediation Company
Project/Site: S,W,I,A ,X SAFS- GROUNDWATER

TestAmerica Job ID: 160-3834-1
SDG: SL1400

General Chemistry

Analysis Batch: 73971

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-3834-1	B2RJ14	Total/NA	Water	150.1	
160-3834-2	B2RJ16	Total/NA	Water	150.1	
160-3834-3	B2RJ13	Total/NA	Water	150.1	
160-3834-3 DU	B2RJ13	Total/NA	Water	150.1	
160-3834-4	B2RJ15	Total/NA	Water	150.1	
LCS 160-73971/5	Lab Control Sample	Total/NA	Water	150.1	

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- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
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- 11
- 12