

June 23, 2015

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: 160-11195-2

TestAmerica Sample Delivery Group: SL1777a
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:
6/23/2015 3:26:46 PM

Jayna Awalt, Project Manager II
(314)298-8566
jayna.awalt@testamericainc.com

LINKS

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results through
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The
Expert**

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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.

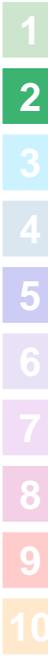
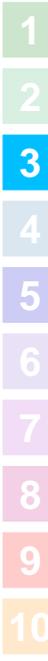


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Job ID: 160-11195-2

Laboratory: TestAmerica St. Louis

Narrative

CASE NARRATIVE

CH2M Hill Plateau Remediation Company
P.O. Box 1600
Mail Stop - R3-60
Richland, Washington 99352
June 23, 2015
Attention: Scot Fitzgerald

SDG	:	SL1777a
Number of Samples	:	2 samples
Sample Matrix	:	Water
Data Deliverable	:	R8526
Date SDG Closed	:	June 3, 2015

II. Introduction

On June 3, 2015 data reanalysis orders were received at TestAmerica St. Louis.

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.

Analyses requested: see attached copies of 150603TASL-R8526

Deviation from Request: No Deviation from requested methods.

IV. Definitions

The definitions can be found in the Definitions/Glossary section of this report.

V. Comments

General: The re-analysis request consists of RDR# 8526. Copies of the requests are included in this package for reference.

The term "Detection Limit" used in the analytical data reports refers to either the lab's standard reporting limits or contractually required reporting limits, whichever is applicable.

9060 TOC Results: Reanalysis of samples B30L39 and B30L40 for 9060 TOC yielded comparable results. The final report and EDD this re-analysis are included with this response.

Analysis Comments: Method(s) 9060: Reanalysis of the following samples in TOC Batch 160-195780 was performed outside of the analytical holding time due to a validation request from the client who was aware that the hold time had expired: B30L39 (160-11195-17) and B30L40 (160-11195-19).

The following samples in TOC Batch 160-195780 were diluted to bring the concentration of target analytes within the calibration range: B30L39 (160-11195-17) and B30L40 (160-11195-19). Elevated reporting limits (RLs) are

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

TestAmerica Job ID: 160-11195-2
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Job ID: 160-11195-2 (Continued)

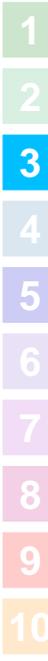
Laboratory: TestAmerica St. Louis (Continued)

provided.

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 front cover, has authorized release of the data contained in this hard copy data package.

Reviewed and approved:

Jayna Awalt
St. Louis Project Manager



RECHECK, RECOUNT, OR REANALYSIS ORDER

06/03/2015

Order Number: 150603TASL-R8526

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63054

Sample Delivery Group:SL1777

Method Name:9060_TOC

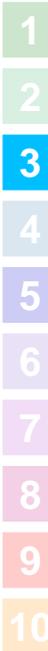
Sample#: B30L39 Sample Date: 4/3/2015 11:17:00 AM SAF #:W15-004

Lab Sample ID	RDR Action Start Date	Constituent	Action	TAT (Hardcopy/EDD)
188948-20	6/3/2015 2:22:12 PM	Total organic carbon	REANALYZE	15 Days / 15 Days
Special Instructions: Results are out of trend and not in agreement with field duplicates.				SLF 06/03/2015

Sample#: B30L40 Sample Date: 4/3/2015 11:17:00 AM SAF #:W15-004

Lab Sample ID	RDR Action Start Date	Constituent	Action	TAT (Hardcopy/EDD)
188948-26	6/3/2015 2:22:12 PM	Total organic carbon	REANALYZE	15 Days / 15 Days
Special Instructions: Results are out of trend and not in agreement with field duplicates.				SLF 06/03/2015

Deliver Report Results to:CHPRC
P.O. Box 1600
Richland, WA 99352
C/O Mr.Scot Fitzgerald



June 23, 2015

Login Sample Receipt Checklist

Client: CH2M Hill Plateau Remediation Company

Job Number: 160-11195-2

SDG Number: SL1777a

Login Number: 11195

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	0.6, 1.3, 1.1
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	Per RDR8526, TOC samples will be run outside hold time.
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	

Collector **EL Kauer/CHPRC** Telephone No. 509-376-4650
 SAF No. W15-004 Purchase Order/Charge Code 300071
 Project Title RCRA, APRIL 2015 Hanford Site
 Shipped To (Lab) TestAmerica St. Louis HNF-N-506 7/1/77
 Protocol RCRA Priority: 30 Days Commercial Carrier
 SPECIAL INSTRUCTIONS: **PRIORITY**
 Hold Time: **N/A**
 Total Activity Exemption: Yes No

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

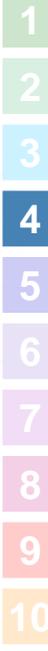
Sample No.	Filter	*	Date	Time	No/Type Container	Sample Analysis	Holding Time	Preservative
B30KL5	Y	W	4-3-15	1117	1x500-mL G/P	6010_METALS_ICP: COMMON ✓	6 Months	HNO3 to pH <2
B30L39	N	W			1x1-L aGs*	9020_TOX: COMMON ✓	28 Days	H2SO4 to pH <2/Cool <=6C
B30L39	N	W			1x250-mL aG	9060_TOX: COMMON ✓	28 Days	HCl or H2SO4 to pH <2/Cool <=6C
B30KL4	N	W			1x500-mL G/P	310.1_ALKALINITY: COMMON ✓	14 Days	Cool <=6C
B30KL4	N	W			1x500-mL G/P	6010_METALS_ICP: COMMON ✓	6 Months	HNO3 to pH <2
B30KL4	N	W			1x1-L aGs*	9020_TOX: COMMON ✓	28 Days	H2SO4 to pH <2/Cool <=6C
B30KL4	N	W			1x250-mL aG	9060_TOX: COMMON ✓	28 Days	HCl or H2SO4 to pH <2/Cool <=6C
B30L40	N	W			1x1-L aGs*	9020_TOX: COMMON ✓	28 Days	H2SO4 to pH <2/Cool <=6C
B30L40	N	W			1x250-mL aG	9060_TOX: COMMON ✓	28 Days	HCl or H2SO4 to pH <2/Cool <=6C
B30L41	N	W			1x250-mL aG	9020_TOX: COMMON ✓	28 Days	HCl or H2SO4 to pH <2/Cool <=6C
B30L41	N	W	4-3-15	1117	1x250-mL aG	9060_TOX: COMMON ✓	28 Days	HCl or H2SO4 to pH <2/Cool <=6C

June 23, 2015

Relinquished By: **EL Kauer/CHPRC** Print: *[Signature]* Sign: *[Signature]* Date/Time: 4-3-15 1190
 Received By: **CHRIS FULTON CHPRC** Print: *[Signature]* Sign: *[Signature]* Date/Time: 4-3-15 1140
 Relinquished By: **CHRIS FULTON CHPRC** Print: *[Signature]* Sign: *[Signature]* Date/Time: APR 03 2015 1400
 Received By: **FED EX** Print: *[Signature]* Sign: *[Signature]* Date/Time: 4.4.15 0830
 Relinquished By: **FED EX** Print: *[Signature]* Sign: *[Signature]* Date/Time: 4.4.15 0830
 Received By: **Jill Clarke, Jill Clarke** Print: *[Signature]* Sign: *[Signature]* Date/Time: 4.4.15 0830

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

Disposal Method (e.g., Return to customer, per lab procedure, used in process)
 Disposed By: _____ Date/Time: _____



Qualifiers

General Chemistry

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

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

TestAmerica Job ID: 160-11195-2
SDG: SL1777a

Method	Method Description	Protocol	Laboratory
9060	Organic Carbon, Total (TOC)	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



June 23, 2015
Sample Summary

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

TestAmerica Job ID: 160-11195-2
SDG: SL1777a

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
160-11195-17	B30L39	Water	04/03/15 11:17	04/04/15 08:30
160-11195-19	B30L40	Water	04/03/15 11:17	04/04/15 08:30

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

June 23, 2015
Client Sample Results

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

TestAmerica Job ID: 160-11195-2
SDG: SL1777a

General Chemistry - RADL

Client Sample ID: B30L39
Date Collected: 04/03/15 11:17
Date Received: 04/04/15 08:30

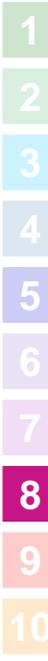
Lab Sample ID: 160-11195-17
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	23.6		2.0	0.71	mg/L			06/16/15 21:31	2

Client Sample ID: B30L40
Date Collected: 04/03/15 11:17
Date Received: 04/04/15 08:30

Lab Sample ID: 160-11195-19
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	21.9		2.0	0.71	mg/L			06/16/15 21:54	2



June 23, 2015
QC Sample Results

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

TestAmerica Job ID: 160-11195-2
 SDG: SL1777a

Method: 9060 - Organic Carbon, Total (TOC)

Lab Sample ID: MB 160-195780/4
Matrix: Water
Analysis Batch: 195780

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	0.35	U	1.0	0.35	mg/L			06/16/15 20:08	1

Lab Sample ID: LCS 160-195780/5
Matrix: Water
Analysis Batch: 195780

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Organic Carbon	10.0	9.51		mg/L		95	90 - 110

Lab Sample ID: 160-12212-C-1 MS
Matrix: Water
Analysis Batch: 195780

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
Total Organic Carbon	0.92	B	5.00	5.77		mg/L		97	76 - 120

Lab Sample ID: 160-12279-F-2 MS
Matrix: Water
Analysis Batch: 195780

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
Total Organic Carbon	0.35	U	5.00	4.75		mg/L		95	76 - 120

Lab Sample ID: 160-12212-C-1 DU
Matrix: Water
Analysis Batch: 195780

Client Sample ID: Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Organic Carbon	0.92	B	0.875	B	mg/L		4	20

June 23, 2015
QC Association Summary

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

TestAmerica Job ID: 160-11195-2
SDG: SL1777a

General Chemistry

Analysis Batch: 195780

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-11195-17 - RADL	B30L39	Total/NA	Water	9060	
160-11195-19 - RADL	B30L40	Total/NA	Water	9060	
160-12212-C-1 DU	Duplicate	Total/NA	Water	9060	
160-12212-C-1 MS	Matrix Spike	Total/NA	Water	9060	
160-12279-F-2 MS	Matrix Spike	Total/NA	Water	9060	
LCS 160-195780/5	Lab Control Sample	Total/NA	Water	9060	
MB 160-195780/4	Method Blank	Total/NA	Water	9060	

