

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: 160-11406-2

TestAmerica SDG: SL1791a TCLP Additional Analysis  
Client Project/Site: F14-031

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 3:59:06 PM

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

### LINKS

Review your project  
results through  
**TotalAccess**

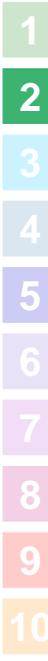
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 **Ask  
The  
Expert**

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[www.testamericainc.com](http://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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Client: CH2M Hill Plateau Remediation Company  
Project/Site: F14-031

TestAmerica Job ID: 160-11406-2  
SDG: SL1791a TCLP Additional Analysis

**Job ID: 160-11406-2**

**Laboratory: TestAmerica St. Louis**

**Narrative**

**CASE NARRATIVE**

CH2MHill Plateau Remediation Company  
P.O. Box 1600  
Richland, Washington 99352  
June 23, 2015  
Attention: Scot Fitzgerald

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SDG : SL1791a  
Number of Samples : 4 samples  
Sample Matrix : Other Solid  
Data Deliverable : Summary  
Date SDG Closed : June 8, 2015

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II. Introduction

On June 8, a request for additional analysis was received for 4 samples received by TestAmerica - St. Louis for chemical analysis. The samples were originally 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: F14-031

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.

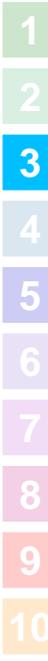
For Anion analysis, samples have been started at a 2x dilution per CHPRC direction. The samples are flagged accordingly with a "D" flag if sample concentration is above the MDL/RL. Non-conformance will be included in the below section only if dilution is greater than 2x.

For WTPH methods, the lab utilizes method 8015B. Per CHPRC direction, the method name in the electronic data has been modified to read WTPH in the place of 8015B.

Per CHPRC direction (June 2014), Boron will be reported for Metals using method 6010. Boron will no longer be reported by method 6020.

IV. Definitions

QCBLK- Quality Control Blank, Method Blank  
QCLCS- Quality Control Laboratory Control Sample, Blank Spike  
DUP- Laboratory Duplicate



**Job ID: 160-11406-2 (Continued)**

**Laboratory: TestAmerica St. Louis (Continued)**

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 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.
- **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.

**TCLP Metals**

**Batch: 196005**

Lead was detected in method blank LB 160-194403/1-C at a level that was above the method detection limit but below the reporting limit. TI 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”.

**TCLP Mercury**

**Batch: 195005**

Mercury was detected in method blank LB 160-194403/1-B 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”.

The following samples were analyzed outside of analytical holding time. Samples were logged in outside of hold time. Hold time expired 5/14/2015 while the samples were logged in for preparation and analysis on 6/8/2015 when request for additional analysis was received. B312V5 (160-11406-1), B312W4 (160-11406-2), B312W1 (160-11406-3), B312V8 (160-11406-4).

We certify that this data package is in compliance with the SOW, both technically and for completeness, including a full description of, explanation of, and corrective actions for, any and all deviations, from either the analyses requested or the case narrative requested. Release of the data contained in this hard copy data package has been authorized by the Laboratory Analytical Manager or designee and the laboratory’s client services representative as verified by their signature on this report.

Reviewed and approved:

Client: CH2M Hill Plateau Remediation Company  
Project/Site: F14-031

TestAmerica Job ID: 160-11406-2  
SDG: SL1791a TCLP Additional Analysis

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**Job ID: 160-11406-2 (Continued)**

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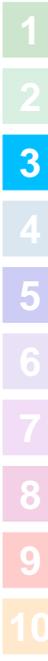
**Laboratory: TestAmerica St. Louis (Continued)**

Jayna Awalt  
St. Louis Project Manager

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

# SAMPLE ISSUE RESOLUTION

<b>SIR NUM</b>	SIR15-339
<b>REV NUM</b>	0
<b>DATE INITIATED</b>	6/16/2015



**SAMPLE EVENT INFORMATION**

<b>SAF NUM(S)</b>	F14-031
<b>OPERABLE UNIT(S)</b>	100-HR-3
<b>PROJECT(S)</b>	CPP 100 Area
<b>SAMPLE EVENT TITLE(S)</b>	100-DX Pump & Treat
<b>LABORATORY</b>	TestAmerica St. Louis

**SAMPLING INFORMATION**

<b>NUMBER OF SAMPLES</b>	4
<b>SAMPLE NUMBERS</b>	B312V5, B312V8, B312W1, B312W4
<b>SAMPLE MATRIX</b>	OTHER SOLID
<b>COLLECTION DATE</b>	4/16/2015 - 4/16/2015
<b>SDG NUM</b>	SL1791a

**ISSUE BACKGROUND**

<b>CLASS</b>	Sample Management Issues
<b>TYPE</b>	Addition of Analyses
<b>DESCRIPTION</b>	The project has need to run TCLP metals on the samples listed above (if sufficient volume remains).

**DISPOSITION**

<b>DESCRIPTION</b>	Run TCLP metals analysis on the listed samples - or notify client if insufficient sample is available.
<b>JUSTIFICATION</b>	Final Disposition: Accept proposed resolution

SUBMITTED BY: Scot Fitzgerald DATE: 06/16/2015  
 ACCEPTED BY: Jayna Awalt DATE: 06/15/2015

Login Sample Receipt Checklist

Client: CH2M Hill Plateau Remediation Company

Job Number: 160-11406-1

SDG Number: SL1791

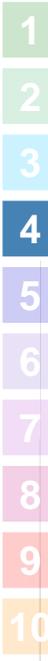
Login Number: 11406

List Number: 1

Creator: Clarke, Jill C

List Source: TestAmerica St. Louis

Question	Answer	Comment
Radioactivity wasn't checked or is <math>\leq</math> 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	1.0
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 <math><6\text{mm}</math> (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	



CH2M Hill Plateau Remediation Company		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST		F14-031-011	PAGE 1 OF 1
COLLECTOR	J.C. Fulton CHPRC	COMPANY CONTACT	EVANS, RT	PROJECT COORDINATOR	SUMNER, LC
SAMPLING LOCATION	Resin Waste Box No. DX8-12-012	PROJECT DESIGNATION	100-DX Pump and Treat Spent Resin - Waste Designation	SAF NO.	F14-031
ICE CHEST NO.	605-330	FIELD LOGBOOK NO.	HVEN-507-31	COA	302841
SHIPPED TO	TestAmerica St. Louis	OFFSITE PROPERTY NO.	N/A	BILL OF LADING/AIR BILL NO. 7734 0047024	

MATRIX*	PRELIMINARY ANALYSIS	ACTUAL SAMPLE DEPTH	TELEPHONE NO.
A=Air DL=Drum L=Liquid O=Oil S=Soil SE=Sediment T=Tissue V=Vegetation W=Water WI=Wipe X=Other	COOL <=6C	N/A	373-7924
PRESERVATION	14 Days		
HOLDING TIME	G		
TYPE OF CONTAINER	1		
NO. OF CONTAINER(S)	20g		
VOLUME	SEE ITEM (1) IN SPECIAL INSTRUCTIONS		
SAMPLE ANALYSIS	SEE ITEM (2) IN SPECIAL INSTRUCTIONS		

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME
B312V5	OTHER SOLID	APR 16 2015	1045

**SPECIAL HANDLING AND/OR STORAGE**  
RADIOACTIVE TIE TO: B312V6

CHAIN OF POSSESSION	SIGN/PRINT NAMES	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM CHPRC		SSU-1	APR 16 2015 112
RELINQUISHED BY/REMOVED FROM SSU-1		L.D. Wall	APR 17 2015 0930
RELINQUISHED BY/REMOVED FROM CHPRC		FEDEX	APR 17 2015 1400
RELINQUISHED BY/REMOVED FROM FED EX		Jay Clarke	APR 15 0845
RELINQUISHED BY/REMOVED FROM			

**SPECIAL INSTRUCTIONS**  
TRVL-15-063  
(1) 8260\_VOA\_GCMS: COMMON {Benzene, Carbon tetrachloride, Chloroform, Trichloroethene};  
(2) 6020\_METALS\_ICPMS: COMMON {Antimony, Barium, Beryllium, Cadmium, Chromium, Lead, Selenium, Silver}; 6020\_METALS\_ICPMS: COMMON (Add-on) {Arsenic, Nickel, Thallium, Vanadium, Zinc};

TRVL-15-063

LABORATORY SECTION	RECEIVED BY	DATE/TIME
CHPRC	Jay Clarke	APR 15 0845



CH2M Hill Plateau Remediation Company		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST		F14-031-017	PAGE 1 OF 1
COLLECTOR	J.C. Fulton CHPRC	COMPANY CONTACT	EVANS, RT	PROJECT COORDINATOR	SUMNER, LC
SAMPLING LOCATION	Resin Waste Box No. DX-15-003	PROJECT DESIGNATION	100-DX Pump and Treat Spent Resin - Waste Designation	SAF NO.	F14-031
ICE CHEST NO.	GWS-330	FIELD LOGBOOK NO.	HNF-N-507-31	COA	302841
SHIPPED TO	TestAmerica St. Louis	OFFSITE PROPERTY NO.	N/A	BILL OF LADING/AIR BILL NO.	7734 0004 7026

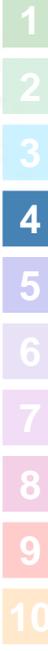
MATRIX*	A=Air DL=Drum L=Liquid O=Oil S=Soil SE=Sediment T=Tissue V=Vegetation WI=Wipe X=Other	PRELIMINARY ANALYSIS	COOLING	DATE/TIME
POSSIBLE SAMPLE HAZARDS/ REMARKS	*Contains Radioactive Material at concentrations that are not be regulated for transportation per 49 CFR/IATA Dangerous Goods Regulations but are not releasable per DOE Order 458.1.	PRELIMINARY ANALYSIS	Cool <=6C	DATE/TIME
SPECIAL HANDLING AND/OR STORAGE	RADIOACTIVE TIE TO: B312W2	HOLDING TIME	14 Days	DATE/TIME
		TYPE OF CONTAINER	G	DATE/TIME
		NO. OF CONTAINER(S)	1	DATE/TIME
		VOLUME	20g	DATE/TIME
		SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	DATE/TIME
			SEE ITEM (2) IN SPECIAL INSTRUCTIONS	DATE/TIME

SAMPLE NO.	B312W1	MATRIX*	OTHER SOLID	SAMPLE DATE	APR 16 2015	SAMPLE TIME	1021	DATE/TIME	APR 16 2015 1125
RELINQUISHED BY/REMOVED FROM	J.C. Fulton	RELINQUISHED BY/REMOVED FROM	CHPRC	RECEIVED BY/STORED IN	SSU-1	DATE/TIME	APR 16 2015 1125	DATE/TIME	APR 16 2015 1125
RELINQUISHED BY/REMOVED FROM	CHPRC	RELINQUISHED BY/REMOVED FROM	L.D. WALKER	RECEIVED BY/STORED IN	CHPRC	DATE/TIME	APR 17 2015 0930	DATE/TIME	APR 17 2015 0930
RELINQUISHED BY/REMOVED FROM	L.D. WALKER	RELINQUISHED BY/REMOVED FROM	L.D. WALKER	RECEIVED BY/STORED IN	FEDEX	DATE/TIME	APR 17 2015 1400	DATE/TIME	APR 17 2015 0930
RELINQUISHED BY/REMOVED FROM	FEDEX	RELINQUISHED BY/REMOVED FROM	FEDEX	RECEIVED BY/STORED IN	Jill Clarke	DATE/TIME	APR 17 2015 0930	DATE/TIME	APR 17 2015 0930
RELINQUISHED BY/REMOVED FROM	FEDEX	RELINQUISHED BY/REMOVED FROM	FEDEX	RECEIVED BY/STORED IN	FEDEX	DATE/TIME	APR 17 2015 0930	DATE/TIME	APR 17 2015 0930
RELINQUISHED BY/REMOVED FROM	FEDEX	RELINQUISHED BY/REMOVED FROM	FEDEX	RECEIVED BY/STORED IN	FEDEX	DATE/TIME	APR 17 2015 0930	DATE/TIME	APR 17 2015 0930
RELINQUISHED BY/REMOVED FROM	FEDEX	RELINQUISHED BY/REMOVED FROM	FEDEX	RECEIVED BY/STORED IN	FEDEX	DATE/TIME	APR 17 2015 0930	DATE/TIME	APR 17 2015 0930

**SPECIAL INSTRUCTIONS**  
 TRVL-15-063  
 (1) 8260\_VOA\_GCMS: COMMON {Benzene, Carbon tetrachloride, Chloroform, Trichloroethene};  
 (2) 6020\_METALS\_ICPMS: COMMON {Antimony, Barium, Beryllium, Cadmium, Chromium, Lead, Selenium, Silver}; 6020\_METALS\_ICPMS: COMMON (Add-on) {Arsenic, Nickel, Thallium, Vanadium, Zinc};

TRVL-15-063

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



CH2M Hill Plateau Remediation Company		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST		F14-031-014	PAGE 1 OF 1
COLLECTOR	J.C. Fulton CHPRC	COMPANY CONTACT	EVANS, RT	PROJECT COORDINATOR	SUMNER, LC
SAMPLING LOCATION	Resin Waste Box No. DX-15-002	PROJECT DESIGNATION	100-DX Pump and Treat Spent Resin - Waste Designation	SAF NO.	F14-031
ICE CHEST NO.	6W5-320	FIELD LOGBOOK NO.	HNF-N-567-37	COA	302841
SHIPPED TO	TestAmerica St. Louis	OFFSITE PROPERTY NO.	N/A	BILL OF LADING/AIR BILL NO.	7734 00047026

MATRIX*	POSSIBLE SAMPLE HAZARDS/ REMARKS	PRESERVATION	HOLDING TIME	TYPE OF CONTAINER	NO. OF CONTAINER(S)	VOLUME	SAMPLE ANALYSIS
A=Air DL=Drum 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/IATA Dangerous Goods Regulations but are not releasable per DOE Order 458.1.	Cool <=6C	14 Days	G	1	250mL	SEE ITEM (1) IN SPECIAL INSTRUCTIONS
		Cool <=6C	28 Days	G/P	1		SEE ITEM (2) IN SPECIAL INSTRUCTIONS

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME
B312V8	OTHER SOLID	APR 16 2015	1537

CHAIN OF POSSESSION	SIGN/ PRINT NAMES	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM J.C. Fulton		RECEIVED BY/STORED IN SSU-1	DATE/TIME APR 16 2015 1125
RELINQUISHED BY/REMOVED FROM SSU-1		RECEIVED BY/STORED IN L.D. Wall	DATE/TIME APR 17 2015 0930
RELINQUISHED BY/REMOVED FROM L.D. Wall		RECEIVED BY/STORED IN FEDEX	DATE/TIME APR 17 2015 1400
RELINQUISHED BY/REMOVED FROM FED EX		RECEIVED BY/STORED IN Jill Clarke	DATE/TIME 4/18/15 0845
RELINQUISHED BY/REMOVED FROM		RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM		RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM		RECEIVED BY/STORED IN	DATE/TIME

**SPECIAL INSTRUCTIONS**  
 TRVL-15-063  
 (1) 8260\_VOA\_GCMS: COMMON {Benzene, Carbon tetrachloride, Chloroform, Trichloroethene};  
 (2) 6020\_METALS\_ICPMS: COMMON {Antimony, Barium, Beryllium, Cadmium, Chromium, Lead, Selenium, Silver}; 6020\_METALS\_ICPMS: COMMON (Add-on) {Arsenic, Nickel, Thallium, Vanadium, Zinc};

TRVL-15-063

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





Ship

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Manage

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### Delivered

Tracking No. or Nickname	Shipper city, state	Origin Terminal	Ship (P/U) date	Status
773400074784	RICHLAND, WA	PASCO, WA	4/17/2015 3:23 pm	
773400047026	RICHLAND, WA	PASCO, WA	4/17/2015 3:23 pm	

#### Delivered

773400047026

#### Travel History

Date/Time	Activity
- 4/18/2015 - Saturday	
8:37 am	Delivered
8:26 am	On FedEx vehicle for delivery
7:46 am	At local FedEx facility
5:28 am	At destination sort facility
4:40 am	Departed FedEx location
12:38 am	Arrived at FedEx location
- 4/17/2015 - Friday	
5:09 pm	Left FedEx origin facility
3:31 pm	Shipment information sent to FedEx
3:23 pm	Picked up

#### Shipment Facts

Tracking number	773400047026	Service	FedEx F
Weight	80 lbs / 36.29 kgs	Delivered To	Receptic
Total pieces	1	Total shipment weight	80 lbs / 36.29 kgs
Shipper reference	gws-330	Packaging	Your Pa
Special			

**Qualifiers**

**Metals**

Qualifier	Qualifier Description
U	Analyzed for but not detected.
B	Estimated result. Result is less than the RL, but greater than MDL
C	The analyte was detected in both the sample and the associated QC blank, and the sample concentration was $\leq$ 5X the blank concentration.

**Glossary**

Abbreviation	These commonly used abbreviations may or may not be present in this report.
$\alpha$	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: F14-031

TestAmerica Job ID: 160-11406-2  
SDG: SL1791a TCLP Additional Analysis

Method	Method Description	Protocol	Laboratory
6010C	Metals (ICP)	SW846	TAL SL
7470A	Mercury (CVAA)	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

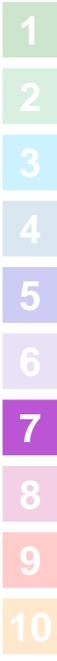


June 23, 2015  
**Sample Summary**

Client: CH2M Hill Plateau Remediation Company  
Project/Site: F14-031

TestAmerica Job ID: 160-11406-2  
SDG: SL1791a TCLP Additional Analysis

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
160-11406-1	B312V5	Solid	04/16/15 10:45	04/18/15 08:45
160-11406-2	B312W4	Solid	04/16/15 10:05	04/18/15 08:45
160-11406-3	B312W1	Solid	04/16/15 10:21	04/18/15 08:45
160-11406-4	B312V8	Solid	04/16/15 10:37	04/18/15 08:45



June 23 2015  
**Client Sample Results**

Client: CH2M Hill Plateau Remediation Company  
Project/Site: F14-031

TestAmerica Job ID: 160-11406-2  
SDG: SL1791a TCLP Additional Analysis

**Method: 6010C - Metals (ICP) - TCLP**

**Client Sample ID: B312V5**  
**Date Collected: 04/16/15 10:45**  
**Date Received: 04/18/15 08:45**

**Lab Sample ID: 160-11406-1**  
**Matrix: Solid**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	4.5	U	500	4.5	ug/L		06/11/15 13:55	06/17/15 13:53	1
<b>Barium</b>	<b>33.0</b>	<b>B</b>	125	5.3	ug/L		06/11/15 13:55	06/17/15 13:53	1
Cadmium	0.84	U	12.5	0.84	ug/L		06/11/15 13:55	06/17/15 13:53	1
<b>Chromium</b>	<b>1180</b>		25.0	8.4	ug/L		06/11/15 13:55	06/17/15 13:53	1
Lead	1.5	U	250	1.5	ug/L		06/11/15 13:55	06/17/15 13:53	1
Selenium	5.2	U	500	5.2	ug/L		06/11/15 13:55	06/17/15 13:53	1
Silver	2.5	U	25.0	2.5	ug/L		06/11/15 13:55	06/17/15 13:53	1

**Client Sample ID: B312W4**  
**Date Collected: 04/16/15 10:05**  
**Date Received: 04/18/15 08:45**

**Lab Sample ID: 160-11406-2**  
**Matrix: Solid**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	4.5	U	500	4.5	ug/L		06/11/15 13:55	06/17/15 14:21	1
<b>Barium</b>	<b>37.8</b>	<b>B</b>	125	5.3	ug/L		06/11/15 13:55	06/17/15 14:21	1
Cadmium	0.84	U	12.5	0.84	ug/L		06/11/15 13:55	06/17/15 14:21	1
<b>Chromium</b>	<b>1240</b>		25.0	8.4	ug/L		06/11/15 13:55	06/17/15 14:21	1
<b>Lead</b>	<b>2.5</b>	<b>B C</b>	250	1.5	ug/L		06/11/15 13:55	06/17/15 14:21	1
<b>Selenium</b>	<b>6.5</b>	<b>B</b>	500	5.2	ug/L		06/11/15 13:55	06/17/15 14:21	1
Silver	2.5	U	25.0	2.5	ug/L		06/11/15 13:55	06/17/15 14:21	1

**Client Sample ID: B312W1**  
**Date Collected: 04/16/15 10:21**  
**Date Received: 04/18/15 08:45**

**Lab Sample ID: 160-11406-3**  
**Matrix: Solid**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	4.5	U	500	4.5	ug/L		06/11/15 13:55	06/17/15 14:25	1
<b>Barium</b>	<b>35.8</b>	<b>B</b>	125	5.3	ug/L		06/11/15 13:55	06/17/15 14:25	1
Cadmium	0.84	U	12.5	0.84	ug/L		06/11/15 13:55	06/17/15 14:25	1
<b>Chromium</b>	<b>1230</b>		25.0	8.4	ug/L		06/11/15 13:55	06/17/15 14:25	1
Lead	1.5	U	250	1.5	ug/L		06/11/15 13:55	06/17/15 14:25	1
Selenium	5.2	U	500	5.2	ug/L		06/11/15 13:55	06/17/15 14:25	1
Silver	2.5	U	25.0	2.5	ug/L		06/11/15 13:55	06/17/15 14:25	1

**Client Sample ID: B312V8**  
**Date Collected: 04/16/15 10:37**  
**Date Received: 04/18/15 08:45**

**Lab Sample ID: 160-11406-4**  
**Matrix: Solid**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	4.5	U	500	4.5	ug/L		06/11/15 13:55	06/17/15 14:29	1
<b>Barium</b>	<b>34.5</b>	<b>B</b>	125	5.3	ug/L		06/11/15 13:55	06/17/15 14:29	1
Cadmium	0.84	U	12.5	0.84	ug/L		06/11/15 13:55	06/17/15 14:29	1
<b>Chromium</b>	<b>1160</b>		25.0	8.4	ug/L		06/11/15 13:55	06/17/15 14:29	1
Lead	1.5	U	250	1.5	ug/L		06/11/15 13:55	06/17/15 14:29	1
Selenium	5.2	U	500	5.2	ug/L		06/11/15 13:55	06/17/15 14:29	1
Silver	2.5	U	25.0	2.5	ug/L		06/11/15 13:55	06/17/15 14:29	1

June 23, 2015  
**Client Sample Results**

Client: CH2M Hill Plateau Remediation Company  
 Project/Site: F14-031

TestAmerica Job ID: 160-11406-2  
 SDG: SL1791a TCLP Additional Analysis

**Method: 7470A - Mercury (CVAA) - TCLP**

**Client Sample ID: B312V5**  
**Date Collected: 04/16/15 10:45**  
**Date Received: 04/18/15 08:45**

**Lab Sample ID: 160-11406-1**  
**Matrix: Solid**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.079	U	1.0	0.079	ug/L		06/11/15 11:04	06/11/15 17:00	1

**Client Sample ID: B312W4**  
**Date Collected: 04/16/15 10:05**  
**Date Received: 04/18/15 08:45**

**Lab Sample ID: 160-11406-2**  
**Matrix: Solid**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	2.1		1.0	0.079	ug/L		06/11/15 11:04	06/11/15 17:11	1

**Client Sample ID: B312W1**  
**Date Collected: 04/16/15 10:21**  
**Date Received: 04/18/15 08:45**

**Lab Sample ID: 160-11406-3**  
**Matrix: Solid**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.10	B C	1.0	0.079	ug/L		06/11/15 11:04	06/11/15 17:13	1

**Client Sample ID: B312V8**  
**Date Collected: 04/16/15 10:37**  
**Date Received: 04/18/15 08:45**

**Lab Sample ID: 160-11406-4**  
**Matrix: Solid**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.15	B C	1.0	0.079	ug/L		06/11/15 11:04	06/11/15 17:15	1

June 23, 2015  
**QC Sample Results**

Client: CH2M Hill Plateau Remediation Company  
Project/Site: F14-031

TestAmerica Job ID: 160-11406-2  
SDG: SL1791a TCLP Additional Analysis

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

**Lab Sample ID: LCS 160-194567/2-A**  
**Matrix: Solid**  
**Analysis Batch: 196005**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 194567**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
Arsenic	2500	2685		ug/L		107	80 - 120
Barium	2500	2558		ug/L		102	80 - 120
Cadmium	2500	2658		ug/L		106	80 - 120
Chromium	2500	2650		ug/L		106	80 - 120
Lead	2500	2630		ug/L		105	80 - 120
Selenium	1250	1363		ug/L		109	80 - 120
Silver	500	534.0		ug/L		107	80 - 120

**Lab Sample ID: LB 160-194403/1-C**  
**Matrix: Solid**  
**Analysis Batch: 196005**

**Client Sample ID: Method Blank**  
**Prep Type: TCLP**  
**Prep Batch: 194567**

Analyte	LB Result	LB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	4.5	U	500	4.5	ug/L		06/11/15 13:55	06/17/15 13:45	1
Barium	5.3	U	125	5.3	ug/L		06/11/15 13:55	06/17/15 13:45	1
Cadmium	0.84	U	12.5	0.84	ug/L		06/11/15 13:55	06/17/15 13:45	1
Chromium	8.4	U	25.0	8.4	ug/L		06/11/15 13:55	06/17/15 13:45	1
Lead	3.00	B	250	1.5	ug/L		06/11/15 13:55	06/17/15 13:45	1
Selenium	5.2	U	500	5.2	ug/L		06/11/15 13:55	06/17/15 13:45	1
Silver	2.5	U	25.0	2.5	ug/L		06/11/15 13:55	06/17/15 13:45	1

**Lab Sample ID: 160-11406-1 MS**  
**Matrix: Solid**  
**Analysis Batch: 196005**

**Client Sample ID: B312V5**  
**Prep Type: TCLP**  
**Prep Batch: 194567**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	Limits
Arsenic	4.5	U	2500	2643		ug/L		106	75 - 125
Barium	33.0	B	2500	2618		ug/L		103	75 - 125
Cadmium	0.84	U	2500	2630		ug/L		105	75 - 125
Chromium	1180		2500	3245		ug/L		83	75 - 125
Lead	1.5	U	2500	2665		ug/L		107	75 - 125
Selenium	5.2	U	1250	1328		ug/L		106	75 - 125
Silver	2.5	U	500	522.3		ug/L		104	75 - 125

**Lab Sample ID: 160-11406-1 MSD**  
**Matrix: Solid**  
**Analysis Batch: 196005**

**Client Sample ID: B312V5**  
**Prep Type: TCLP**  
**Prep Batch: 194567**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	Limits	RPD	RPD Limit
Arsenic	4.5	U	2500	2640		ug/L		106	75 - 125	0	20
Barium	33.0	B	2500	2748		ug/L		109	75 - 125	5	20
Cadmium	0.84	U	2500	2633		ug/L		105	75 - 125	0	20
Chromium	1180		2500	3325		ug/L		86	75 - 125	2	20
Lead	1.5	U	2500	2670		ug/L		107	75 - 125	0	20
Selenium	5.2	U	1250	1324		ug/L		106	75 - 125	0	20
Silver	2.5	U	500	539.5		ug/L		108	75 - 125	3	20

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June 23, 2015  
**QC Sample Results**

Client: CH2M Hill Plateau Remediation Company  
Project/Site: F14-031

TestAmerica Job ID: 160-11406-2  
SDG: SL1791a TCLP Additional Analysis

**Method: 7470A - Mercury (CVAA)**

**Lab Sample ID: LCS 160-194541/2-A**  
**Matrix: Solid**  
**Analysis Batch: 195005**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 194541**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
Mercury	25.0	21.66		ug/L		87	80 - 120

**Lab Sample ID: LB 160-194403/1-B**  
**Matrix: Solid**  
**Analysis Batch: 195005**

**Client Sample ID: Method Blank**  
**Prep Type: TCLP**  
**Prep Batch: 194541**

Analyte	LB Result	LB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.131	B	1.0	0.079	ug/L		06/11/15 11:04	06/11/15 16:57	1

**Lab Sample ID: 160-11406-1 MS**  
**Matrix: Solid**  
**Analysis Batch: 195005**

**Client Sample ID: B312V5**  
**Prep Type: TCLP**  
**Prep Batch: 194541**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	Limits
Mercury	0.079	U	25.0	23.50		ug/L		94	70 - 130

**Lab Sample ID: 160-11406-1 MSD**  
**Matrix: Solid**  
**Analysis Batch: 195005**

**Client Sample ID: B312V5**  
**Prep Type: TCLP**  
**Prep Batch: 194541**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Mercury	0.079	U	25.0	22.33		ug/L		89	70 - 130	5	20

June 23, 2015  
**QC Association Summary**

Client: CH2M Hill Plateau Remediation Company  
 Project/Site: F14-031

TestAmerica Job ID: 160-11406-2  
 SDG: SL1791a TCLP Additional Analysis

**Metals**

**Leach Batch: 194403**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-11406-1	B312V5	TCLP	Solid	1311	
160-11406-1 MS	B312V5	TCLP	Solid	1311	
160-11406-1 MSD	B312V5	TCLP	Solid	1311	
160-11406-2	B312W4	TCLP	Solid	1311	
160-11406-3	B312W1	TCLP	Solid	1311	
160-11406-4	B312V8	TCLP	Solid	1311	
LB 160-194403/1-B	Method Blank	TCLP	Solid	1311	
LB 160-194403/1-C	Method Blank	TCLP	Solid	1311	

**Prep Batch: 194541**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-11406-1	B312V5	TCLP	Solid	7470A	194403
160-11406-1 MS	B312V5	TCLP	Solid	7470A	194403
160-11406-1 MSD	B312V5	TCLP	Solid	7470A	194403
160-11406-2	B312W4	TCLP	Solid	7470A	194403
160-11406-3	B312W1	TCLP	Solid	7470A	194403
160-11406-4	B312V8	TCLP	Solid	7470A	194403
LB 160-194403/1-B	Method Blank	TCLP	Solid	7470A	194403
LCS 160-194541/2-A	Lab Control Sample	Total/NA	Solid	7470A	

**Prep Batch: 194567**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-11406-1	B312V5	TCLP	Solid	3010A	194403
160-11406-1 MS	B312V5	TCLP	Solid	3010A	194403
160-11406-1 MSD	B312V5	TCLP	Solid	3010A	194403
160-11406-2	B312W4	TCLP	Solid	3010A	194403
160-11406-3	B312W1	TCLP	Solid	3010A	194403
160-11406-4	B312V8	TCLP	Solid	3010A	194403
LB 160-194403/1-C	Method Blank	TCLP	Solid	3010A	194403
LCS 160-194567/2-A	Lab Control Sample	Total/NA	Solid	3010A	

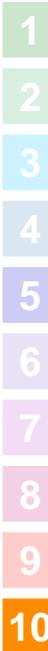
**Analysis Batch: 195005**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-11406-1	B312V5	TCLP	Solid	7470A	194541
160-11406-1 MS	B312V5	TCLP	Solid	7470A	194541
160-11406-1 MSD	B312V5	TCLP	Solid	7470A	194541
160-11406-2	B312W4	TCLP	Solid	7470A	194541
160-11406-3	B312W1	TCLP	Solid	7470A	194541
160-11406-4	B312V8	TCLP	Solid	7470A	194541
LB 160-194403/1-B	Method Blank	TCLP	Solid	7470A	194541
LCS 160-194541/2-A	Lab Control Sample	Total/NA	Solid	7470A	194541

**Analysis Batch: 196005**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-11406-1	B312V5	TCLP	Solid	6010C	194567
160-11406-1 MS	B312V5	TCLP	Solid	6010C	194567
160-11406-1 MSD	B312V5	TCLP	Solid	6010C	194567
160-11406-2	B312W4	TCLP	Solid	6010C	194567
160-11406-3	B312W1	TCLP	Solid	6010C	194567
160-11406-4	B312V8	TCLP	Solid	6010C	194567
LB 160-194403/1-C	Method Blank	TCLP	Solid	6010C	194567

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**QC Association Summary**

Client: CH2M Hill Plateau Remediation Company  
Project/Site: F14-031

TestAmerica Job ID: 160-11406-2  
SDG: SL1791a TCLP Additional Analysis

**Metals (Continued)**

**Analysis Batch: 196005 (Continued)**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 160-194567/2-A	Lab Control Sample	Total/NA	Solid	6010C	194567

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