TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

TestAmerica Laboratories, Inc.

ANALYTICAL REPORT

F11-031

Lot #: F2D040447
SDG #: SL1262

Scot Fitzgerald

CH2M Hill Plateau Remediation
PO Box 1600, MS H8-41
Richland, WA 99352

TESTAMERICA LABORATORIES, INC.

Jayna Awalt
Project Manager

April 13, 2012

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

CASE NARRATIVE

CH2MHill Plateau Remediation Company
P.O. Box 1600
MS B3-60
Richland, Washington 99352
April 23, 2012
Attention: Scot Fitzgerald

TestAmerica Laboratories, Inc.

SDG	: SL1262
Number of Samples	: sample
Sample Matrix	: Water
Data Deliverable	: Summary
Date SDG Closed	: April 4, 2012

II. Introduction

On April 4, 2012, one sample was received by TestAmerica - St. Louis for chemical analysis. The sample was 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: F11-031

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 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.

TestAmerica

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CH2M Hill Plateau Remediation Company

April 23, 2012
SDG: SL1262

TestAmerica Laboratories, Inc.

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.
- **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.

TCLP Volatiles

Batch: 2099012

The CCV recovery was outside the upper QC limit (greater than 20% D) for Chloromethane indicating a potential high bias for this analyte in the samples associated with this CCV. This analyte was not detected above the reporting limit in the associated samples.
Affected Samples:
F2D040447 (1): B2KFT2

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 following signature has authorized release of the data contained in this hard copy data package.

Reviewed and approved:

Jayna Awalt

Jayna Awalt
St. Louis Project Manager

METHODS SUMMARY

SL1262

PARAMETER	ANALYTICAL METHOD	PREPARATION METHOD
Volatile Organics by GC/MS	SW846 8260B	SW846 1311/5030

References:

SW846 "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 and its updates.

SAMPLE SUMMARY

SL1262 : F2D040447

WO #	SAMPLE#	CLIENT SAMPLE ID	SAMPLED DATE	SAMP TIME
MRR3H	001	B2KFT2	03/28/12	09:30

NOTE(S):

- The analytical results of the samples listed above are presented on the following pages.
- All calculations are performed before rounding to avoid round-off errors in calculated results.
- Results noted as "ND" were not detected at or above the stated limit.
- This report must not be reproduced, except in full, without the written approval of the laboratory.
- Results for the following parameters are never reported on a dry weight basis: color, corrosivity, density, flashpoint, ignitability, layers, odor, paint filter test, pH, porosity pressure, reactivity, redox potential, specific gravity, spot tests, solids, solubility, temperature, viscosity, and weight.

CH2MHill Plateau Remediation Company SL1262	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST 9165	F11-031-024	PAGE 1 OF 1

COLLECTOR	COMPANY CONTACT	TELEPHONE NO.	PROJECT COORDINATOR	PRICE CODE 9D	DATA TURNAROUND
KAUER AGUILAR	EVANS, RT	373-7924	EVANS, RT	AIR QUALITY ☐	21 Days / 21 Days
SAMPLING LOCATION	**PROJECT DESIGNATION**		**SAF NO.**		
ZP-1 SPENT GAC; AE-1076	200-PW-1 & 200-ZP-1 Spent GAC Canisters and Filters		F11-031		
ICE CHEST NO.	**FIELD LOGBOOK NO.**	**ACTUAL SAMPLE DEPTH**	**COA**	**METHOD OF SHIPMENT**	
GWS-249	PS 53 HNF-N-585-6	N/A	302937ES10	FEDERAL EXPRESS	**ORIGINAL**
SHIPPED TO	**OFFSITE PROPERTY NO.**		**BILL OF LADING/AIR BILL NO.**		
TestAmerica St. Louis	~~SEE PTR~~ 3647 LO. 4/3/12		~~SEE PTR~~ 798242837890 AW. 4/3/12		

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

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 5400.5 (1990/1993)

SPECIAL HANDLING AND/OR STORAGE

PRESERVATION	None
HOLDING TIME	14/14 Days
TYPE OF CONTAINER	aGs
NO. OF CONTAINER(S)	1
VOLUME	120mL
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME	
B2KFT2	OTHER SOLID	3-28-12	0930	✓

CHAIN OF POSSESSION		SIGN/ PRINT NAMES	
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
Ed Kauer	3-28-12 1040	SSU #1	3-28-12 1040
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
SSU-1	APR 03 2012 0915	L.D. Wall CHPRC LO. Wall	APR 03 2012 0915
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
L.D. Wall CHPRC LO. Wall	APR 03 2012 1400	FEDEX	
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
FedEx		SWilson	4-4-12 0920
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME

SPECIAL INSTRUCTIONS
Field Samplers will collect Generic Testing from AE-1076 only (do not collect from composite sample).☐** The 200 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF.
(1) TCLP VOA -- 1311/8260 {1,1,1,2-Tetrachloroethane, 1,1,1-Trichloroethane, 1,1-Dichloroethane, 1,2-Dichloroethane, 2-Butanone, 4-Methyl-2-pentanone, Benzene, Bromodichloromethane, Carbon tetrachloride, Chlorobenzene, Chloroform, Chloromethane, Ethylbenzene, Methylene chloride, Tetrachloroethene, Toluene, trans-1,2-Dichloroethylene, Trichloroethene, Xylenes (total)};

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

PRINTED ON 3/7/2012

A-6003-618 (REV 2)

SDG #SL1262

APRIL 23, 2012

TestAmerica - St. Louis

Print page | Close

FedEx

Detailed Results

Tracking no.: 798242837890 Select time format: **12H**

Delivered

Delivered
Signed for by: B.DANIELS

Shipment Dates	Destination
Ship date Apr 3, 2012	EARTH CITY, MO
Delivery date Apr 4, 2012 9:20 AM	Signature Proof of Delivery

Shipment Options

Hold at FedEx Location
Hold at FedEx Location service is not available for this shipment.

Shipment Facts

Service type	Priority Overnight	Delivered to	Shipping/Receiving
Weight	9.0 lbs/4.1 kg	Reference	3EKOO/ 300072/ ES10 PTR3647

Shipment Travel History

Select time zone: Local Scan Time

All shipment travel activity is displayed in local time for the location

Date/Time	Activity	Location	Details
Apr 4, 2012 9:20 AM	**Delivered**	EARTH CITY, MO	
Apr 4, 2012 7:14 AM	On FedEx vehicle for delivery	EARTH CITY, MO	
Apr 4, 2012 7:09 AM	At local FedEx facility	EARTH CITY, MO	
Apr 4, 2012 5:18 AM	At destination sort facility	BERKELEY, MO	
Apr 4, 2012 4:31 AM	Departed FedEx location	MEMPHIS, TN	
Apr 4, 2012 12:59 AM	Arrived at FedEx location	MEMPHIS, TN	
Apr 3, 2012 5:12 PM	Left FedEx origin facility	PASCO, WA	
Apr 3, 2012 3:18 PM	Picked up	PASCO, WA	
Apr 3, 2012 2:10 PM	Shipment information sent to FedEx		

APRIL 23, 2012

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

Lot #(s): F2D040447

TestAmerica - St. Louis

CUR Form #: 4 3 9

CONDITION UPON RECEIPT FORM

Client: CHPRC

Quote No: ~~90029~~ 87862

COC/RFA No: F11-031-024

Initiated By: 4/4/12 Date: 4.4.12 Time: 0920

Shipping Information

Shipper: FedEx UPS DHL Courier Client Other: _____ Multiple Packages: Y N

Shipping # (s):*

1. 7982 4283 7890
2.
3.
4.
5.
6.
7.
8.
9.
10.

Sample Temperature (s):**

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

*Numbered shipping lines correspond to Numbered Sample Temp lines

**Sample must be received at 4°C ± 2°C- If not, note contents below. Temperature variance does NOT affect the following: Metals-Liquid; Rad tests- Liquid or Solids; Perchlorate

Condition (Circle "Y" for yes, "N" for no and "N/A" for not applicable):

1.	Y N	Are there custody seals present on the cooler?	8.	Y N	Are there custody seals present on bottles?
2.	Y N N/A	Do custody seals on cooler appear to be tampered with?	9.	Y N N/A	Do custody seals on bottles appear to be tampered with?
3.	Y N	Were contents of cooler frisked after opening, but before unpacking?	10.	Y N N/A	Was sample received with proper pH[1]? (If not, make note below)
4.	Y N	Sample received with Chain of Custody?	11.	Y N N/A	Containers for C-14, H-3 & I-129/131 marked with "Do Not Preserve" label?
5.	Y N N/A	Does the Chain of Custody match sample ID's on the container(s)?	12.	Y N	Sample received in proper containers?
6.	Y N	Was sample received broken?	13.	Y N N/A	Headspace in VOA or TOX liquid samples? (If Yes, note sample ID's below)
7.	Y N	Is sample volume sufficient for analysis?	14.	Y N N/A	Was Internal COC/Workshare received?

[1] For DOE-AL (Pantex, LANL, Sandia) sites, pH of ALL containers received must be verified, EXCEPT VOA, TOX, Oil & Grease and soils.

Notes:

Corrective Action:

☐ Client Contact Name: _____ Informed by: _____

☐ Sample(s) processed "as is"

☐ Sample(s) on hold until: _____ If released, notify: _____

Project Management Review: Jayma Awalt Date: 4/5/12

THIS FORM MUST BE COMPLETED AT THE TIME THE ITEMS ARE BEING CHECKED IN. IF ANY ITEM IS COMPLETED BY SOMEONE OTHER THAN THE INITIATOR, THEN THAT PERSON IS REQUIRED TO APPLY THEIR INITIAL AND THE DATE NEXT TO THAT ITEM.

ADMIN-0004 rev13, REVISED 05/27/11 \\Slsvr01\QA\FORMS\ST-LOUIS\ADMIN\Admin-0004 CUR.doc

GC/MS VOLATILES

CH2M Hill Plateau Remediation DOE RL

Client Sample ID: B2KFT2

TCLP GC/MS Volatiles

Lot-Sample #...: F2D040447-001 **Work Order #...:** MRR3H1AA **Matrix.....:** SOLID
Date Sampled...: 03/28/12 **Date Received..:** 04/04/12
Leach Date.....: 04/05/12 **Prep Date.....:** 04/08/12 **Analysis Date..:** 04/09/12
Leach Batch #..: P209601 **Prep Batch #...:** 2099012
Dilution Factor: 1
% Moisture.....: **Method.....:** SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
trans-1,2-Dichloroethene	ND	50	ug/L	1.8
Methylene chloride	ND	50	ug/L	8.0
1,1,1,2-Tetrachloroethane	ND	50	ug/L	2.4
Toluene	ND	50	ug/L	3.0
Bromodichloromethane	ND	50	ug/L	2.5
Chloromethane	ND	50	ug/L	5.5
1,1-Dichloroethane	ND	50	ug/L	3.9
1,1,1-Trichloroethane	ND	50	ug/L	2.9
4-Methyl-2-pentanone	ND	200	ug/L	3.3
Ethylbenzene	ND	50	ug/L	3.0
Xylenes (total)	ND	50	ug/L	8.5
Benzene	ND	50	ug/L	2.5
2-Butanone	ND	50	ug/L	3.9
Carbon tetrachloride	**360**	**50**	**ug/L**	**3.6**
Chlorobenzene	ND	50	ug/L	3.8
Chloroform	**33 J**	**50**	**ug/L**	**0.92**
1,2-Dichloroethane	ND	50	ug/L	3.7
Tetrachloroethene	ND	50	ug/L	2.8
Trichloroethene	ND	50	ug/L	2.9

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	100	(85 - 115)
Toluene-d8	103	(85 - 115)
4-Bromofluorobenzene	106	(84 - 120)
1,2-Dichloroethane-d4	98	(83 - 117)

NOTE(S):

Analysis performed in accordance with USEPA Toxicity Characteristic Leaching Procedure Method 1311

J Estimated result. Result is less than RL.

CH2M Hill Plateau Remediation DOE RL

B2KFT2

GC/MS Volatiles

Lot-Sample #: F2D040447-001 **Work Order #:** MRR3H1AA **Matrix:** SOLID

MASS SPECTROMETER/DATA SYSTEM (MSDS) TENTATIVELY IDENTIFIED COMPOUNDS

PARAMETER	CAS #	ESTIMATED RESULT	RETENTION TIME	UNITS
None				ug/L

METHOD BLANK REPORT

TCLP GC/MS Volatiles

Client Lot #...: SL1262 **Work Order #...:** MRTMT1AA **Matrix.....:** SOLID
MB Lot-Sample #: F2D050000-091
Leach Date.....: 04/05/12 **Prep Date.....:** 04/08/12 **Analysis Date..:** 04/09/12
Leach Batch #..: P209601 **Prep Batch #...:** 2099012
Dilution Factor: 1

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD
Bromodichloromethane	ND	50	ug/L	SW846 8260B
Chloromethane	ND	50	ug/L	SW846 8260B
1,1-Dichloroethane	ND	50	ug/L	SW846 8260B
trans-1,2-Dichloroethene	ND	50	ug/L	SW846 8260B
Ethylbenzene	ND	50	ug/L	SW846 8260B
Methylene chloride	ND	50	ug/L	SW846 8260B
4-Methyl-2-pentanone	ND	200	ug/L	SW846 8260B
1,1,1,2-Tetrachloroethane	ND	50	ug/L	SW846 8260B
Toluene	ND	50	ug/L	SW846 8260B
1,1,1-Trichloroethane	ND	50	ug/L	SW846 8260B
Xylenes (total)	ND	50	ug/L	SW846 8260B
Benzene	ND	50	ug/L	SW846 8260B
2-Butanone	ND	50	ug/L	SW846 8260B
Carbon tetrachloride	ND	50	ug/L	SW846 8260B
Chlorobenzene	ND	50	ug/L	SW846 8260B
Chloroform	ND	50	ug/L	SW846 8260B
1,2-Dichloroethane	ND	50	ug/L	SW846 8260B
Tetrachloroethene	ND	50	ug/L	SW846 8260B
Trichloroethene	ND	50	ug/L	SW846 8260B

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	102	(85 - 115)
Toluene-d8	103	(85 - 115)
4-Bromofluorobenzene	107	(84 - 120)
1,2-Dichloroethane-d4	103	(83 - 117)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

CH2M Hill Plateau Remediation DOE RL

Method Blank Report

GC/MS Volatiles

Lot-Sample #: F2D050000-091 B **Work Order #:** MRTMT1AA **Matrix:** SOLID

MASS SPECTROMETER/DATA SYSTEM (MSDS) TENTATIVELY IDENTIFIED COMPOUNDS

PARAMETER	CAS #	ESTIMATED RESULT	RETENTION TIME	UNITS
None				ug/L

LABORATORY CONTROL SAMPLE DATA REPORT

GC/MS Volatiles

Client Lot #...: SL1262 **Work Order #...:** MRWCA1AA **Matrix.....:** SOLID
LCS Lot-Sample#: F2D080000-012
Prep Date.....: 04/08/12 **Analysis Date..:** 04/09/12
Prep Batch #...: 2099012
Dilution Factor: 1

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCENT RECOVERY	METHOD
Benzene	**500**	**499**	**ug/L**	**100**	**SW846 8260B**
2-Butanone	**500**	**473**	**ug/L**	**95**	**SW846 8260B**
Carbon tetrachloride	**500**	**512**	**ug/L**	**102**	**SW846 8260B**
Chlorobenzene	**500**	**465**	**ug/L**	**93**	**SW846 8260B**
Chloroform	**500**	**490**	**ug/L**	**98**	**SW846 8260B**
1,2-Dichloroethane	**500**	**478**	**ug/L**	**96**	**SW846 8260B**
Tetrachloroethene	**500**	**490**	**ug/L**	**98**	**SW846 8260B**
Trichloroethene	**500**	**475**	**ug/L**	**95**	**SW846 8260B**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	96	(85 - 115)
Toluene-d8	103	(85 - 116)
4-Bromofluorobenzene	105	(85 - 119)
1,2-Dichloroethane-d4	94	(80 - 118)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

MATRIX SPIKE SAMPLE DATA REPORT

TCLP GC/MS Volatiles

Client Lot #...: SL1262 **Work Order #...:** MRR3H1AD-MS **Matrix.....:** SOLID
MS Lot-Sample #: F2D040447-001 MRR3H1AE-MSD
Date Sampled...: 03/28/12 **Date Received..:** 04/04/12
Leach Date.....: 04/05/12 **Prep Date.....:** 04/08/12 **Analysis Date..:** 04/09/12
Leach Batch #..: P209601 **Prep Batch #...:** 2099012
Dilution Factor: 1

PARAMETER	SAMPLE AMOUNT	SPIKE AMT	MEASRD AMOUNT	UNITS	PERCNT RECVRY	RPD	METHOD
Benzene	**ND**	**500**	**511**	**ug/L**	**102**		**SW846 8260B**
	ND	**500**	**506**	**ug/L**	**101**	**1.1**	**SW846 8260B**
2-Butanone	**ND**	**500**	**482**	**ug/L**	**96**		**SW846 8260B**
	ND	**500**	**462**	**ug/L**	**92**	**4.3**	**SW846 8260B**
Carbon tetrachloride	**360**	**500**	**880**	**ug/L**	**104**		**SW846 8260B**
	360	**500**	**822**	**ug/L**	**92**	**6.8**	**SW846 8260B**
Chlorobenzene	**ND**	**500**	**483**	**ug/L**	**97**		**SW846 8260B**
	ND	**500**	**482**	**ug/L**	**96**	**0.20**	**SW846 8260B**
Chloroform	**33**	**500**	**545**	**ug/L**	**103**		**SW846 8260B**
	33	**500**	**526**	**ug/L**	**99**	**3.7**	**SW846 8260B**
1,2-Dichloroethane	**ND**	**500**	**498**	**ug/L**	**100**		**SW846 8260B**
	ND	**500**	**490**	**ug/L**	**98**	**1.7**	**SW846 8260B**
Tetrachloroethene	**ND**	**500**	**509**	**ug/L**	**102**		**SW846 8260B**
	ND	**500**	**512**	**ug/L**	**102**	**0.56**	**SW846 8260B**
Trichloroethene	**ND**	**500**	**509**	**ug/L**	**102**		**SW846 8260B**
	ND	**500**	**500**	**ug/L**	**100**	**1.8**	**SW846 8260B**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	99	(85 - 115)
	98	(85 - 115)
Toluene-d8	109	(85 - 115)
	107	(85 - 115)
4-Bromofluorobenzene	109	(84 - 120)
	107	(84 - 120)
1,2-Dichloroethane-d4	101	(83 - 117)
	95	(83 - 117)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters