

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: 160-3722-1

TestAmerica Sample Delivery Group: SL1395
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 10:22:20 AM

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

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

TestAmerica Job ID: 160-3722-1
SDG: SL1395

Job ID: 160-3722-1

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 : SL1395
Number of Samples : 1 sample
Sample Matrix : Water
Data Deliverable : Summary
Date SDG Closed : September 13, 2013

II. Introduction

On September 13, 2013, 1 water sample was 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: I13-037

This sample was received directly from the on-site lab for TPH_Gasoline analysis.

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.



Job ID: 160-3722-1 (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.
- **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.

Gasoline Range Organics

Batch: 49069

The pH for the following sample in batch 72787 was greater than 2: (160-3722-1 MS), (160-3722-1 MSD), B2PX46 (160-3722-1). The sample had acceptable QC recoveries. No further action is required.

The following sample in batch 72787 contained a single peak which was within the Gasoline Range Organics (GRO) retention time window: B2PX46 (160-3722-1). This peak is large enough that there is a reportable concentration; however, there is no resemblance between the reportable peak and the pattern of GRO.

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



4/2
11/2/13

SEPTEMBER 30, 2013

CUL 436
2M Hill Plateau Remediation Company
84395

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

C.O.C. # **I13-037-185A**
Page 1 of 1

Collector	Frank Hill	Contact/Requester	Karen Waters-Husted	Telephone No.	509-376-4650
SAF No.	I13-037	Sampling Origin	Hanford Site	Purchase Order/Charge Code	300071ES20
Project Title	100NR2, SEPTEMBER 2013	Logbook No.	HNF-N-506 3692	Ice Chest No.	7912-13 N/A GLIS-226
Shipped To (Lab)	Waste Sampling & Characterization	Method of Shipment	GOVERNMENT VEHICLE	Bill of Lading/Air Bill No.	7966 7587 4482
Protocol	CERCLA	Priority:	31 Days	Offsite Property No.	N/A

POSSIBLE SAMPLE HAZARDS/REMARKS
 *** Contains Radioactive Material at concentrations that are not regulated for transportation per 49 CFR but are not releasable per DOE Order 5400.5 (1990/1993) **130962**

SPECIAL INSTRUCTIONS Hold Time
 100 Area Generator Knowledge Information Form applies.
 The CACN for all analytical work at WSCF is 401647.
 FY12 and FY13 samples cannot be in the same SDG.

Total Activity Exemption: Yes No

Sample No.	Filter	*	Date	Time	No/Type Container	Sample Analysis	Holding Time	Preservative
B2PX48	Y	W	9/6/13	1125	1x500-mL G/P	6040_METALS_ICP-List-3 (18)	6 Months	HNO3 to pH <2
B2PX46	N	W			1x250-mL G/P	2920_ALKALINITY-COMMON	14 Days	Cool-4C
B2PX46	N	W			1x500-mL G/P	6010_METALS_ICP-List-3 (18)	6 Months	HNO3 to pH <2
B2PX46	N	W			3x40-mL aGs*	8260_VGA-GCMS-List-2 (25)	14 Days	HCl or H2SO4 to pH <2/Cool-4C
B2PX46	N	W			1x250-mL G	TRITHIUM_EIE_LSC-COMMON	6 Months	None
B2PX46	N	W			4x40-mL aGs*	WTPH_GASOLINE: COMMON	14 Days	HCl to pH <2/Cool-4C

of 15

Relinquished By	Print	Sign	Date/Time	Received By	Print	Sign	Date/Time
Frank Hill			SEP 06 2013 1230	ASHERWOOD			SEP 06 2013 1230
Relinquished By			9/6/13 1245	Received By			9/6/13 1245
				Received By			9/12/13 1205
Relinquished By			9/12/13 1400	Received By			9/13/13 0915
MA White				Received By			
FINAL SAMPLE DISPOSITION	Disposal Method (e.g., Return to customer, per lab procedure, used in process)						
	Brown Dambly 8						

PRINTED ON 8/6/2013
 A-6004-842 (REV 2)

IMPORTANT!
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796675874482			
Ship (P/U) date : Thur 9/12/2013 3:27 pm RICHLAND, WA US	<p>Delivered Signed for by: B.DANIELS</p>	Actual delivery : Fri 9/13/2013 9:08 am EARTH CITY, MO US	
Let us tell you when your shipment arrives. Sign up for delivery notifications			
Travel History			
Date/Time	Activity	Location	
- 9/13/2013 - Friday			
9:08 am	Delivered	EARTH CITY, MO	
7:05 am	On FedEx vehicle for delivery	EARTH CITY, MO	
7:01 am	At local FedEx facility	EARTH CITY, MO	
5:06 am	At destination sort facility	BERKELEY, MO	
4:21 am	Departed FedEx location	MEMPHIS, TN	
12:54 am	Arrived at FedEx location	MEMPHIS, TN	
- 9/12/2013 - Thursday			
5:11 pm	Left FedEx origin facility	PASCO, WA	
3:27 pm	Picked up	PASCO, WA	
3:06 pm	Shipment information sent to FedEx		
		Local Scan Time	
Shipment Facts			
Tracking number	796675874482	Service	FedEx Priority Overnight
Weight	10 lbs	Delivered To	Shipping/Receiving
Total pieces	1	Total shipment weight	10 lbs / 4.5 kgs
Shipper reference	GWS-226	Packaging	Your Packaging
Special handling section	Deliver Weekday		

Login Sample Receipt Checklist

Client: CH2M Hill Plateau Remediation Company

Job Number: 160-3722-1

SDG Number: SL1395

Login Number: 3722

List Number: 1

Creator: Daniels, Brian J

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



Qualifiers

GC VOA

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
U	Analyzed for but not detected.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
♠	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: 160-3722-1
SDG: SL1395

Method	Method Description	Protocol	Laboratory
8015B	Gasoline Range Organics - (GC)	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 30, 2013
Sample Summary

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

TestAmerica Job ID: 160-3722-1
SDG: SL1395

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
160-3722-1	B2PX46	Water	09/06/13 11:25	09/13/13 09:15

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SEPTEMBER 30, 2013
Detection Summary

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

TestAmerica Job ID: 160-3722-1
SDG: SL1395

Client Sample ID: B2PX46

Lab Sample ID: 160-3722-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Gasoline Range Organics (C6-C12)	0.010	J	0.10	0.010	mg/L	1		8015B	Total/NA

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This Detection Summary does not include radiochemical test results.

TestAmerica St. Louis

SEPTEMBER 30, 2013
Client Sample Results

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

TestAmerica Job ID: 160-3722-1
 SDG: SL1395

Method: 8015B - Gasoline Range Organics - (GC)

Client Sample ID: B2PX46
Date Collected: 09/06/13 11:25
Date Received: 09/13/13 09:15

Lab Sample ID: 160-3722-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (C6-C12)	0.010	J	0.10	0.010	mg/L			09/16/13 16:52	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Trifluorotoluene (Surr)	108		69 - 150					09/16/13 16:52	1

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SEPTEMBER 30, 2013
QC Sample Results

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

TestAmerica Job ID: 160-3722-1
SDG: SL1395

Method: 8015B - Gasoline Range Organics - (GC)

Lab Sample ID: MB 160-72787/1
Matrix: Water
Analysis Batch: 72787

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (C6-C12)	0.010	U	0.10	0.010	mg/L			09/16/13 15:44	1
Surrogate	MB %Recovery	MB Qualifier	Limits			D	Prepared	Analyzed	Dil Fac
Trifluorotoluene (Surr)	106		69 - 150					09/16/13 15:44	1

Lab Sample ID: LCS 160-72787/4
Matrix: Water
Analysis Batch: 72787

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Gasoline Range Organics (C6-C12)	1.00	0.986		mg/L		99	85 - 117
Surrogate	LCS %Recovery	LCS Qualifier	Limits			D	%Rec. Limits
Trifluorotoluene (Surr)	101		69 - 150				

Lab Sample ID: 160-3722-1 MS
Matrix: Water
Analysis Batch: 72787

Client Sample ID: B2PX46
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Gasoline Range Organics (C6-C12)	0.010	J	1.00	0.973		mg/L		96	58 - 131
Surrogate	MS %Recovery	MS Qualifier	Limits			D	%Rec	%Rec. Limits	
Trifluorotoluene (Surr)	100		69 - 150						

Lab Sample ID: 160-3722-1 MSD
Matrix: Water
Analysis Batch: 72787

Client Sample ID: B2PX46
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Gasoline Range Organics (C6-C12)	0.010	J	1.00	0.977		mg/L		97	58 - 131	0	20
Surrogate	MSD %Recovery	MSD Qualifier	Limits			D	%Rec	%Rec. Limits	RPD	RPD Limit	
Trifluorotoluene (Surr)	100		69 - 150								

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

TestAmerica Job ID: 160-3722-1
SDG: SL1395

GC VOA

Analysis Batch: 72787

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-3722-1	B2PX46	Total/NA	Water	8015B	
160-3722-1 MS	B2PX46	Total/NA	Water	8015B	
160-3722-1 MSD	B2PX46	Total/NA	Water	8015B	
LCS 160-72787/4	Lab Control Sample	Total/NA	Water	8015B	
MB 160-72787/1	Method Blank	Total/NA	Water	8015B	

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

TestAmerica Job ID: 160-3722-1
SDG: SL1395

Method: 8015B - Gasoline Range Organics - (GC)

Matrix: Water

Prep Type: Total/NA

Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	TFT1 (69-150)
160-3722-1	B2PX46	108
160-3722-1 MS	B2PX46	100
160-3722-1 MSD	B2PX46	100
LCS 160-72787/4	Lab Control Sample	101
MB 160-72787/1	Method Blank	106

Surrogate Legend

TFT = Trifluorotoluene (Surr)

