

April 8, 2016

Analytical Data Package Prepared For
CH2M Hill Plateau Remediation

Radiochemical Analysis By
TestAmerica Inc

2800 G.W. Way, Richland Wa, 99354, (509)-375-3131.

Assigned Laboratory Code: TARL

Data Package Contains 18 Pages

Report No.: 68394

Results in this report relate only to the sample(s) analyzed.

SDG No.	Order No.	Client Sample ID (List Order)	Lot-Sa No.	Work Order	Report DB ID	Batch No.
W07427	F16-020	B34T22	J6C250423-1	M8E441AA	9M8E4410	6088043
		B34T24	J6C250423-2	M8E451AA	9M8E4510	6088043
		B34T28	J6C250423-3	M8E461AA	9M8E4610	6088043

April 8, 2016



Certificate of Analysis

CH2M Hill Plateau Remediation Company
P.O. Box 1600
Mail Stop – R3-60
Richland, WA 99352

April 8, 2016

Attention: Scot Fitzgerald

SAF Number	:	F16-020
Date SDG Closed	:	March 24, 2016
Number of Samples	:	Three (3)
Sample Type	:	Soil
SDG Number	:	W07427
Data Deliverable	:	15-Day / Summary

CASE NARRATIVE

I. Introduction

On March 24, 2016, three soil samples were received at TestAmerica (TARL). Upon receipt, the samples were assigned laboratory ID numbers to correspond with the CH2M specific IDs.

II. Sample Receipt

The samples were received in good condition and no anomalies were noted during check-in.

III. Analytical Results/Methodology

The analytical results for this report are presented by laboratory sample ID. Each set of data includes sample identification information, analytical results and the appropriate associated statistical errors.

The requested analyses were:

Liquid Scintillation Counting
Technetium-99 by TEVA method RL-LSC-014

CH2M Hill Plateau Remediation Company
April 8, 2016

IV. Quality Control

The analytical results for each analysis performed includes a minimum of one laboratory control sample (LCS), one method (reagent) blank, and one duplicate sample analysis. Any exceptions have been noted in the "Comments" section.

The analytical results are reported on a dry weight basis.

QC and sample results are reported in the same units.

V. Comments

Liquid Scintillation Counting

Technetium-99 by TEVA method RL-LSC-014:

No analytical or quality issues were noted. The sample results and associated batch QC results are within contractual requirements.

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 signatures on this report.

Reviewed and approved:

 Digitally signed by
Whitney Ritari
Date: 2016.04.08
16:18:51 -07'00'

Whitney Ritari
Project Manager

April 8, 2016

SAMPLE ISSUE RESOLUTION

SIR NUM	SIR16-287
REV NUM	0
DATE INITIATED	3/31/2016

SAMPLE EVENT INFORMATION

SAF NUM(S) F16-020
OPERABLE UNIT(S) 200-DV-1
PROJECT(S) 200-DV-1
SAMPLE EVENT TITLE(S) 200-DV-1 OU Waste Sites
LABORATORY TestAmerica Incorporated, Richland

SAMPLING INFORMATION

NUMBER OF SAMPLES 3
SAMPLE NUMBERS B34T22, B34T24, B34T28
SAMPLE MATRIX SOIL
COLLECTION DATE 3/24/2016 - 3/24/2016
SDG NUM W07427

ISSUE BACKGROUND

CLASS Chain of Custody Issue (Field)
TYPE No Unit Type Noted For Sample Depths
DESCRIPTION COC F16-020-073 SAMPLE B34T22
COC F16-020-075 SAMPLE B34T24
COC F16-020-079 SAMPLE B34T28
NO UNITS FOR ACTUAL SAMPLE DEPTH

DISPOSITION

DESCRIPTION DOCUMENT AND CLOSE
JUSTIFICATION DOCUMENT AND CLOSE

SUBMITTED BY: Gayelyn Gibson DATE: 03/28/2016
ACCEPTED BY: Kirsten Killand DATE: 03/31/2016

Drinking Water Method Cross References

DRINKING WATER ASTM METHOD CROSS REFERENCES		
Referenced Method	Isotope(s)	TestAmerica Richland's SOP No.
EPA 901.1	Cs-134, I-131	RL-GAM-001
EPA 900.0	Alpha & Beta	RL-GPC-001
EPA 00-02	Gross Alpha (Coprecipitation)	RL-GPC-002
EPA 903.0	Total Alpha Radium (Ra-226)	RL-RA-002
EPA 903.1	Ra-226	RL-RA-001
EPA 904.0	Ra-228	RL-RA-001
EPA 905.0	Sr-89/90	RL-GPC-003
ASTM D5174	Uranium	RL-KPA-003
EPA 906.0	Tritium	RL-LSC-005

Results in this report relate only to the sample(s) analyzed.

Uncertainty Estimation

TestAmerica Richland has adopted the internationally accepted approach to estimating uncertainties described in "NIST Technical Note 1297, 1994 Edition". The approach, "Law of Propagation of Errors", involves the identification of all variables in an analytical method which are used to derive a result. These variables are related to the analytical result (R) by some functional relationship, $R = \text{constants} * f(x,y,z,...)$. The components (x,y,z) are evaluated to determine their contribution to the overall method uncertainty. The individual component uncertainties (u_i) are then combined using a statistical model that provides the most probable overall uncertainty value. All component uncertainties are categorized as type A, evaluated by statistical methods, or type B, evaluated by other means. Uncertainties not included in the components, such as sample homogeneity, are combined with the component uncertainty as the square root of the sum-of-the-squares of the individual uncertainties. The uncertainty associated with the derived result is the combined uncertainty (u_c) multiplied by the coverage factor (1,2, or 3).

When three or more sample replicates are used to derive the analytical result, the type A uncertainty is the standard deviation of the mean value (S/\sqrt{n}), where S is the standard deviation of the derived results. The type B uncertainties are all other random or non-random components that are not included in the standard deviation.

The derivation of the general "Law of Propagation of Errors" equations and specific example are available on request.

Report Definitions

Action Lev	An agreed upon activity level used to trigger some action when the final result is greater than or equal to the Action Level. Often the Action Level is related to the Decision Limit.
Batch	The QC preparation batch number that relates laboratory samples to QC samples that were prepared and analyzed together.
Bias	Defined by the equation (Result/Expected)-1 as defined by ANSI N13.30.
COC No	Chain of Custody Number assigned by the Client or TestAmerica.
Count Error (#s)	Poisson counting statistics of the gross sample count and background. The uncertainty is absolute and in the same units as the result. For Liquid Scintillation Counting (LSC) the batch blank count is the background.
CSU (#s) <i>u_c Combined Standard Uncert.</i>	All known uncertainties associated with the preparation and analysis of the sample are propagated to give a measure of the uncertainty associated with the result, <i>u_c the combined standard uncertainty</i> . The uncertainty is absolute and in the same units as the result.
(#s), Coverage Factor	The coverage factor defines the width of the confidence interval, 1, 2 or 3 standard deviations.
CRDL (RL)	Contractual Required Detection Limit as defined in the Client's Statement Of Work or TestAmerica "default" nominal detection limit. Often referred to the reporting level (RL)
Lc	Decision Level based on instrument background or blank, adjusted by the Efficiency, Chemical Yield, and Volume associated with the sample. The Type I error probability is approximately 5%. $Lc = (1.645 * \sqrt{2 * (BkgrndCnt / BkgrndCntMin) / SCntMin}) * (ConvFct / (Eff * Yld * Abn * Vol) * IngrFct)$. For LSC methods the batch blank is used as a measure of the background variability. Lc cannot be calculated when the background count is zero.
Lot-Sample No	The number assigned by the LIMS software to track samples received on the same day for a given client. The sample number is a sequential number assigned to each sample in the Lot.
MDC MDA	Detection Level based on instrument background or blank, adjusted by the Efficiency, Chemical Yield, and Volume with a Type I and II error probability of approximately 5%. $MDC = (4.65 * \sqrt{(BkgrndCnt / BkgrndCntMin) / SCntMin} + 2.71 / SCntMin) * (ConvFct / (Eff * Yld * Abn * Vol) * IngrFct)$. For LSC methods the batch blank is used as a measure of the background variability.
Primary Detector	The instrument identifier associated with the analysis of the sample aliquot.
Ratio U-234/U-238	The U-234 result divided by the U-238 result. The U-234/U-238 ratio for natural uranium in NIST SRM 4321C is 1.038.
Rst/MDC	Ratio of the Result to the MDC. A value greater than 1 may indicate activity above background at a high level of confidence. Caution should be used when applying this factor and it should be used in concert with the qualifiers associated with the result.
Rst/TotUcert	Ratio of the Result to the Total Uncertainty. If the uncertainty has a coverage factor of 2 a value greater than 1 may indicate activity above background at approximately the 95% level of confidence assuming a two-sided confidence interval. Caution should be used when applying this factor and it should be used in concert with the qualifiers associated with the result.
Report DB No	Sample Identifier used by the report system. The number is based upon the first five digits of the Work Order Number.
RER	The equation Replicate Error Ratio = $(S - D) / [\sqrt{TPUs^2 + TPUD^2}]$ as defined by ICPT BOA where S is the original sample result, D is the result of the duplicate, TPUs is the total uncertainty of the original sample and TPUD is the total uncertainty of the duplicate sample.
SDG	Sample Delivery Group Number assigned by the Client or assigned by TestAmerica upon sample receipt.
Sum Rpt Alpha Spec Rst(s)	The sum of the reported alpha spec results for tests derived from the same sample excluding duplicate result where the results are in the same units.
Work Order	The LIMS software assign test specific identifier.
Yield	The recovery of the tracer added to the sample such as Pu-242 used to trace a Pu-239/40 method.

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CH2M Hill Plateau Remediation Company		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST		F16-020-073	PAGE 1 OF 1
COLLECTOR <i>SM SEXTON</i>	COMPANY CONTACT TODAK, D	TELEPHONE NO. 376-6427	PROJECT COORDINATOR TODAK, D	PRICE CODE 8H	DATA TURNAROUND 30 Days / 30 Days
SAMPLING LOCATION C9550, Core 5, B340T9	PROJECT DESIGNATION 200-DV-1 Operable Unit Characterization of Waste Sites Phase 3 Sampling	SAF NO. F16-020	COA 302914	AIR QUALITY	<input type="checkbox"/>
ICE CHEST NO. N/A	FIELD LOGBOOK NO. N/A	ACTUAL SAMPLE DEPTH 66.6-67.6	METHOD OF SHIPMENT -GOVERNMENT VEHICLE SAS 3-29-16	ORIGINAL	
SHIPPED TO TestAmerica Incorporated, Richland	OFFSITE PROPERTY NO. N/A	BILL OF LADING/AIR BILL NO. N/A			

MATRIX* A=Air DL=Drum L=Liquid DS=Drum S=Soil SE=Sediment T=Tissue V=Vegetation W=Water WI=Wipe X=Other	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. NA	PRESERVATION None	HOLDING TIME 6 Months	TYPE OF CONTAINER None	NO. OF CONTAINER(S) 1	VOLUME 60mL	SAMPLE ANALYSIS TC99_ETVDSK. LSC: COMMON;
SPECIAL HANDLING AND/OR STORAGE							
SAMPLE NO. B34T22	MATRIX* SOIL	SAMPLE DATE 3/24/16	SAMPLE TIME 1055				X

*Joe B325-16
J6C250423
WONHAN*

M8644



CHAIN OF POSSESSION		SIGN/ PRINT NAMES		SPECIAL INSTRUCTIONS	
RELINQUISHED BY/REMOVED FROM <i>SM SEXTON</i>	DATE/TIME 3/24/16 1005	RECEIVED BY/STORED IN <i>Boyd's</i>	DATE/TIME 3/24/16/1605	Sample From HEIS #: <i>B340T9</i> Actual Aliquot Collection	
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME	Depth: _____	
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		
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME		
LABORATORY SECTION	RECEIVED BY	TITLE		DATE/TIME	
FINAL SAMPLE DISPOSITION	DISPOSAL METHOD	DISPOSED BY		DATE/TIME	

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CH2M Hill Plateau Remediation Company		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST		F16-020-075	PAGE 1 OF 1
COLLECTOR <i>SM Sexton</i>	COMPANY CONTACT TODAK, D	TELEPHONE NO. 376-6427	PROJECT COORDINATOR TODAK, D	PRICE CODE 8H	DATA TURNAROUND 30 Days / 30 Days
SAMPLING LOCATION C9550, Core 12, B340W3	PROJECT DESIGNATION 200-DV-1 Operable Unit Characterization of Waste Sites Phase 3 Sampling	ACTUAL SAMPLE DEPTH 100.8 - 101.8	SAF NO. F16-020	AJR QUALITY <input type="checkbox"/>	METHOD OF SHIPMENT ORIGINAL
ICE CHEST NO.	FIELD LOGBOOK NO. <i>N/A</i>	OFFSITE PROPERTY NO. <i>N/A</i>	COA 302914	BILL OF LADING/AIR BILL NO. <i>N/A</i>	
SHIPPED TO TestAmerica Incorporated, Richland	METHOD OF SHIPMENT <i>Government Vehicle</i> <i>Company Vehicle</i>				

MATRIX*	POSSIBLE SAMPLE HAZARDS/ REMARKS	PRESERVATION	NO. OF CONTAINER(S)	VOLUME	SAMPLE ANALYSIS
A=Air DL=Drum L=Liquid S=Soil SE=Sediment T=Tissue V=Vegetation W=Water WT=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. NA	None	1	60mL	TC99, ETVDSC, LSC, COMMON;
		HOLDING TIME	6 Months		
		TYPE OF CONTAINER	None		
		SAMPLE DATE	3/24/16	155	X

The casing was won't m8645

CHAIN OF POSSESSION		SIGN/ PRINT NAMES		SPECIAL INSTRUCTIONS	
RELINQUISHED BY/REMOVED FROM <i>SM Sexton</i>	DATE/TIME 3/24/16 1605	RECEIVED BY/STORED IN <i>Bob J. Beck</i>	DATE/TIME 3-24-16/1605	Sample From HEIS #: <i>B340W3</i> Actual Aliquot Collection	
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME	Depth: _____	
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		
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME		
LABORATORY SECTION	RECEIVED BY	TITLE		DATE/TIME	
FINAL SAMPLE DISPOSITION	DISPOSAL METHOD	DISPOSED BY		DATE/TIME	
PRINTED ON 3/16/2016	FSR ID = FSR26364	TRVL NUM = TRVL-16-100		A-6003-618 (REV 2)	

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CH2M Hill Plateau Remediation Company		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST		F16-020-079	PAGE 1 OF 1
COLLECTOR <i>SM Sexton</i>	COMPANY CONTACT TODAK, D	TELEPHONE NO. 376-6427	PROJECT COORDINATOR TODAK, D	PRICE CODE 8H	DATA TURNAROUND 30 Days / 30 Days
SAMPLING LOCATION C9550, Core 18, B340X5	PROJECT DESIGNATION 200-DV-1 Operable Unit Characterization of Waste Sites Phase 3 Sampling	ACTUAL SAMPLE DEPTH 129.5 - 130.5	SAF NO. F16-020	AIR QUALITY <input type="checkbox"/>	ORIGINAL
ICE CHEST NO. N/A	FIELD LOGBOOK NO. N/A	OFFSITE PROPERTY NO.	COA 302914	METHOD OF SHIPMENT 3-24-16 GOVERNMENT VEHICLE	
SHIPPED TO TestAmerica Incorporated, Richland	BILL OF LADING/AIR BILL NO. <i>Company Vehicle</i> N/A				

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 are not be regulated for transportation per 49 CFR/JATA Dangerous Goods Regulations but are not releasable per DOE Order 458.1. NA	PRESERVATION None	HOLDING TIME 6 Months	TYPE OF CONTAINER None	NO. OF CONTAINER(S) 1	VOLUME 60mL	SAMPLE ANALYSIS T099-LEVDSC LSC: COMMON;
SPECIAL HANDLING AND/OR STORAGE							
SAMPLE NO. B34T28	MATRIX* SOIL	SAMPLE DATE 3/24/16	SAMPLE TIME 1350				X

*See 250423
woman
m8644*

CHAIN OF POSSESSION		SIGN/ PRINT NAMES		SPECIAL INSTRUCTIONS	
RELINQUISHED BY/REMOVED FROM <i>SM Sexton</i>	DATE/TIME 3/24/16 1605	RECEIVED BY/STORED IN <i>Rock O. Beck</i>	DATE/TIME 3-24-16 1350	Sample From HEIS #: <i>B340X5</i>	Actual Aliquot Collection
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME	Depth:	
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		
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME		
LABORATORY SECTION	RECEIVED BY	TITLE		DATE/TIME	
FINAL SAMPLE DISPOSITION	DISPOSAL METHOD	DISPOSED BY		DATE/TIME	

Date/Time Received: 3-24-16/1405 Container GM Screen Result: (Airlock) 0 cpm Initials B
Sample GM Screen Result (Sample Receiving) 0 cpm Initials B

Client: FLH SDG #: W07427 SAF #: F14-020 NA []

Lot Number: J6C250423

Chain of Custody # F14-020-073; 075; 079

Shipping Container ID or Air Bill Number : _____ NA B]

Samples received inside shipping container/cooler/box Yes B] Continue with 1 through 4. Initial appropriate response.
No [] .Go to 5, add comment to #16.

- 1. Custody Seals on shipping container intact? Yes [] No [] No Custody Seal B]
- 2. Custody Seals dated and signed? Yes [] No [] No Custody Seal B]
- 3. Cooler temperature: _____ °C NA B]
- 4. Vermiculite/packing materials is NA B] Wet [] Dry []

Item 5 through 16 for samples. Initial appropriate response.

5. Chain of Custody record present? Yes B] No []

6. Number of samples received (Each sample may contain multiple bottles): 3

7. Containers received: 3x60ml AG MLP
B3-24-16

8. Sample holding times exceeded? NA [] Yes [] No B]

9. Samples have: _____ tape _____ hazard labels _____ custody seals B appropriate sample labels

10. Matrix: B A (FLT, Wipe, Solid, Soil) _____ I (Water) _____ S (Air, Niosh 7400) _____ T (Biological, Ni-63)

11. Samples: _____ are in good condition _____ are leaking _____ are broken
_____ have air bubbles (Only for samples requiring no head space) _____ Other _____

12. Sample pH appropriate for analysis requested Yes [] No [] NA B]
(If acidification is necessary go to pH area & document sample ID, initial pH, amount of HNO₃ added and pH after addition on table)

13. Were any anomalies identified in sample receipt? Yes [] No B]

14. Description of anomalies (include sample numbers): NA B]

15. Sample Location, Sample Collector Listed on COC? * Yes B] No []

*For documentation only. No corrective action needed.

16. Additional Information: N/A

[] Client/Courier denied temperature check.

[] Client/Courier unpack cooler.

Sample Check-in List completed by Sample Custodian:

Signature: [Signature] Date: 3-24-16

Client Notification needed? Yes [] No [X] Date: _____

By: _____

Person contacted: _____

[] No action necessary, process as is

Project Manager [Signature] Date 3-28-16

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Sample Results Summary

Date: 08-Apr-16

TestAmerica Inc TARL

Ordered by Method, Batch No., Client Sample ID.

Report No. : 68394

SDG No: W07427

Batch	Client Id Work Order	Parameter	Result +- CSU (2 s)	Qual	Units	Tracer Yield	MDL	CRDL	RPD
6088043	TC99_ETVDSK_LSC								
	B34T22								
	M8E441AA	TC-99	2.58E-01 +- 2.9E-01	U	pCi/g	100%	6.13E-01	1.50E+00	
	B34T22 DUP								
	M8E441AC	TC-99	1.66E-01 +- 2.8E-01	U	pCi/g	100%	6.05E-01	1.50E+00	43.5
	B34T24								
	M8E451AA	TC-99	9.95E-01 +- 3.1E-01		pCi/g	100%	5.96E-01	1.50E+00	
	B34T28								
	M8E461AA	TC-99	2.84E+01 +- 1.0E+00		pCi/g	100%	5.68E-01	1.50E+00	
No. of Results: 4									

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QC Results Summary
TestAmerica Inc TARL
Ordered by Method, Batch No, QC Type,.

Date: 08-Apr-16

Report No. : 68394

SDG No.: W07427

Batch	Work Order	Parameter	Result +- CSU (2 s)	Qual	Units	Tracer Yield	LCS Recovery	Bias	MDL
TC99_ETVDSK_LSC									
6088043	MATRIX SPIKE, B34T24								
	M8E451AC	TC-99	1.58E+02 +- 4.2E+00		pCi/g	100%	70%	-0.3	6.14E-01
6088043	BLANK QC,								
	M8E671AA	TC-99	-1.42E-01 +- 2.7E-01	U	pCi/g	100%			5.97E-01
6088043	LCS,								
	M8E671AC	TC-99	2.83E+01 +- 1.0E+00		pCi/g	100%	85%	-0.1	5.96E-01
No. of Results: 3									

TestAmerica Inc Bias - (Result/Expected)-1 as defined by ANSI N13.30.
rptSTLRchQcSummary V5.5.1 A2002 U Qual - Analyzed for but not detected above limiting criteria, Mdc/Mda/Mdl, Total Uncert, RDL or not identified by gamma scan software.

FORM I

Date: 08-Apr-16

SAMPLE RESULTS

Lab Name: TestAmerica Inc
Lot-Sample No.: J6C250423-1
Client Sample ID: B34T22

SDG: W07427
Report No.: 68394
COC No.: F16-020-073

Collection Date: 3/24/2016 10:55:00 AM
Received Date: 3/24/2016 4:05:00 PM
Matrix: SOIL

Ordered by Client Sample ID, Batch No.

Parameter	Result	Qual	Count Error (2 s)	CSU (2 s)	MDL, Action Lev	Rpt Unit, Lc	Yield CRDL(RL)	Rst/MDL, Rst/TotUcert	Analysis, Prep Date	Total Sa Size	Aliquot Size	Primary Detector
Batch: 6088043	TC99_ETVDSK_LSC				Work Order: M8E441AA	Report DB ID: 9M8E4410						
TC-99	2.58E-01	U	2.6E-01	2.9E-01	6.13E-01	pCi/g	100%	0.42	4/8/16 05:15 a		2.03	LSC8
						2.94E-01	1.50E+00	(1.8)			g	

No. of Results: 1 Comments:

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FORM I

Date: 08-Apr-16

SAMPLE RESULTS

Lab Name: TestAmerica Inc
Lot-Sample No.: J6C250423-2
Client Sample ID: B34T24

SDG: W07427
Report No.: 68394
COC No.: F16-020-075

Collection Date: 3/24/2016 11:55:00 AM
Received Date: 3/24/2016 4:05:00 PM
Matrix: SOIL

Ordered by Client Sample ID, Batch No.

Parameter	Result	Qual	Count Error (2 s)	CSU (2 s)	MDL, Action Lev	Rpt Unit, Lc	Yield CRDL(RL)	Rst/TotUcert	Analysis, Prep Date	Total Sa Size	Aliquot Size	Primary Detector
Batch: 6088043	TC99_ETVDSK_LSC				Work Order: M8E451AA	Report DB ID: 9M8E4510						
TC-99	9.95E-01		2.8E-01	3.1E-01	5.96E-01	pCi/g	100%	(1.7)	4/8/16 07:21 a		2.02	LSC8
						2.86E-01	1.50E+00	(6.5)			g	

No. of Results: 1 Comments:

April 8, 2016

FORM I

Date: 08-Apr-16

SAMPLE RESULTS

Lab Name: TestAmerica Inc SDG: W07427 Collection Date: 3/24/2016 1:50:00 PM
 Lot-Sample No.: J6C250423-3 Report No.: 68394 Received Date: 3/24/2016 4:05:00 PM
 Client Sample ID: B34T28 COC No.: F16-020-079 Matrix: SOIL

Ordered by Client Sample ID, Batch No.

Parameter	Result	Qual	Count Error (2 s)	CSU (2 s)	MDL, Action Lev	Rpt Unit, Lc	Yield CRDL(RL)	Rst/TotUcert	Analysis, Prep Date	Total Sa Size	Aliquot Size	Primary Detector
Batch: 6088043	TC99_ETVDSK_LSC				Work Order: M8E461AA		Report DB ID: 9M8E4610					
TC-99	2.84E+01		7.3E-01	1.0E+00	5.68E-01	pCi/g	100%	(50.)	4/8/16 09:26 a		2.16	LSC8
							2.73E-01	1.50E+00			g	

No. of Results: 1 Comments:

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TestAmerica Inc MDC|MDA,Lc - Detection, Decision Level based on instrument background or blank, adjusted by the sample Efficiency, Yield, and Volume.
 rptSTLRLchSample U Qual - Analyzed for but not detected above limiting criteria, Mdc/Mda/Mdl, Total Uncert, RDL or not identified by gamma scan software.
 V5.5.1 A2002

FORM II

Date: 08-Apr-16

DUPLICATE RESULTS

Lab Name: TestAmerica Inc
 Lot-Sample No.: J6C250423-1
 Client Sample ID: B34T22 DUP

SDG: W07427
 Report No.: 68394
 COC No.: F16-020-073
 Matrix: SOIL

Collection Date: 3/24/2016 10:55:00 AM

Received Date: 3/24/2016 4:05:00 PM

Parameter	Result, Orig Rst	Qual	Count Error (2 s)	CSU (2 s)	MDL, Action Lev	Rpt Unit, CRDL	Yield	Rst/MDL, Rst/TotUcert	Analysis, Prep Date	Total Sa Size	Aliquot Size	Primary Detector
Batch: 6088043	TC99_ETVDSK_LSC				M8E441AC	Report DB ID: M8E441CR			Orig Sa DB ID: 9M8E4410			
TC-99	1.66E-01	U	2.5E-01	2.8E-01	6.05E-01	pCi/g	100%	0.27	4/8/16 06:18 a		2.02	LSC8
	2.58E-01	U	RPD 43.5			1.50E+00		(1.2)			g	

No. of Results: 1 Comments:

April 8, 2016

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TestAmerica Inc RPD - Relative Percent Difference.
 rptSTLrchDupV5. MDC(MDA),Lc - Detection, Decision Level based on instrument background or blank, adjusted by the sample Efficiency, Yield, and Volume.
 5.1 A2002 U Qual - Analyzed for but not detected above limiting criteria, Mdc/Mda/Mdl, Total Uncert, RDL or not identified by gamma scan software.

FORM II

Date: 08-Apr-16

BLANK RESULTS

Lab Name: TestAmerica Inc

SDG: W07427

Matrix: SOIL

Report No. : 68394

Parameter	Result	Qual	Count Error (2 s)	CSU (2 s)	MDL, Lc	Rpt Unit, CRDL	Yield	Rst/MDL, Rst/TotUcert	Analysis, Prep Date	Total Sa Size	Aliquot Size	Primary Detector
Batch: 6088043 TC99_ETVDSK_LSC Work Order: M8E671AA Report DB ID: M8E671AB												
TC-99	-1.42E-01	U	2.4E-01	2.7E-01	5.97E-01	pCi/g	100%	-0.24	4/8/16 10:29 a	2.02	2.02	LSC8
					2.86E-01	1.50E+00		-(1.)			g	

No. of Results: 1 Comments:

April 8, 2016

**FORM II
LCS RESULTS**

Date: 08-Apr-16

Lab Name: TestAmerica Inc

SDG: W07427

Matrix: SOIL

Report No. : 68394

Parameter	Result	Qual	Count Error (2 s)	CSU (2 s)	MDL	Report Unit	Yield	Expected	Expected Uncert	Recovery, Bias	Analysis, Prep Date	Aliquot Size	Primary Detector
Batch: 6088043	TC99_ETVDSK_LSC												
	2.83E+01		7.5E-01	1.0E+00	5.96E-01	pCi/g	100%	3.32E+01	1.90E-01	85%	4/8/16 11:31 a	2.04	LSC8
								80	120	-0.1		g	

Work Order: M8E671AC Report DB ID: M8E671CS

Rec Limits:

No. of Results: 1 Comments:

April 8, 2016

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FORM II

Date: 08-Apr-16

MATRIX SPIKE RESULTS

Lab Name: TestAmerica Inc SDG: W07427 Matrix: SOIL
 Lot-Sample No.: J6C250423-2, B34T24 Report No.: 68394

Parameter	SpikeResult, Orig Rst	Count Error (2 s)	CSU (2 s)	MDC MDA	Rpt Unit	Yield	Rec-covery	Expected, Uncert	Analysis, Prep Date	Aliquot Size	Analy Method, Primary Detector
Batch: 6088043	Work Order: M8E451AC	Report DB ID: M8E451CW	Orig Sa DB ID: 9M8E4510								
TC-99	1.58E+02	1.7E+00	4.2E+00	6.14E-01	pCi/g	100%	70.05%	2.26E+02	4/8/16 08:23 a	2.01	TC99_ETVDSK_LSC
	9.95E-01							1.29E+00		g	LSC8

Number of Results: 1

Comments:

April 8, 2016