

November 11, 2015

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 16 Pages*

**Report No.: 67579**

**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.
W07274	X15-048	B32JK0	J5J150403-1	M7QLW1AA	9M7QLW10	5288039
		B32JK1	J5J150403-2	M7QLX1AA	9M7QLX10	5288039



## Certificate of Analysis

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

November 11, 2015

Attention: Scot Fitzgerald

---

SAF Number	:	X15-048
Date SDG Closed	:	October 14, 2015
Number of Samples	:	Two (2)
Sample Type	:	Water
SDG Number	:	W07274
Data Deliverable	:	21-Day / Summary

---

### CASE NARRATIVE

#### **I. Introduction**

On October 14, 2015, two 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**  
Mid-Level Tritium by method RL-LSC-005

CH2M Hill Plateau Remediation Company  
November 11, 2015

---

#### 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.

QC and sample results are reported in the same units.

#### V. Comments

##### **Liquid Scintillation Counting**

##### Mid-Level Tritium by method RL-LSC-005:

The Matrix Spike has no spike recovery in batch 5288030. The sample results are greater than five times the expected value of the spike. 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: 2015.11.11 16:24:45  
-08'00'

Whitney Ritari  
Project Manager

### 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,  $R = \text{constants} * f(x,y,z,\dots)$ . 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

<b>Action Lev</b>	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.
<b>Batch</b>	The QC preparation batch number that relates laboratory samples to QC samples that were prepared and analyzed together.
<b>Bias</b>	Defined by the equation (Result/Expected)-1 as defined by ANSI N13.30.
<b>COC No</b>	Chain of Custody Number assigned by the Client or TestAmerica.
<b>Count Error (#s)</b>	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.
<b>CSU (#s) <i>u<sub>c</sub> Combined Standard Uncert.</i></b>	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<sub>c</sub> the combined standard uncertainty</i> . The uncertainty is absolute and in the same units as the result.
<b>(#s), Coverage Factor</b>	The coverage factor defines the width of the confidence interval, 1, 2 or 3 standard deviations.
<b>CRDL (RL)</b>	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)
<b>Lc</b>	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.
<b>Lot-Sample No</b>	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.
<b>MDC MDA</b>	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.
<b>Primary Detector</b>	The instrument identifier associated with the analysis of the sample aliquot.
<b>Ratio U-234/U-238</b>	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.
<b>Rst/MDC</b>	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.
<b>Rst/TotUcert</b>	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.
<b>Report DB No</b>	Sample Identifier used by the report system. The number is based upon the first five digits of the <b>Work Order</b> Number.
<b>RER</b>	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.
<b>SDG</b>	Sample Delivery Group Number assigned by the Client or assigned by TestAmerica upon sample receipt.
<b>Sum Rpt Alpha Spec Rst(s)</b>	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.
<b>Work Order</b>	The LIMS software assign test specific identifier.
<b>Yield</b>	The recovery of the tracer added to the sample such as Pu-242 used to trace a Pu-239/40 method.

**CH2M Hill Plateau Remediation Company**

**CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST**

C.O.C.#  
**X15-048-021**  
Page 1 of 1

Collector	J.R. Aguilar/CHPRC	Contact/Requester	WATERS-HUSTED, K	Telephone No.	376-4650
SAF No.	X15-048	Sampling Origin	Hanford Site	Purchase Order/Charge Code	302869
Project Title	200-BP-5 Treatability Test -Day 1	Logbook No.	HNF-NI-506 76/82	Ice Chest No.	N/A
Shipped To (Lab)	TestAmerica Incorporated, Richland	Method of Shipment	GOVERNMENT VEHICLE	Bill of Lading/Air Bill No.	N/A
Protocol	CERCLA	Priority:	21 Days	Offsite Property No.	N/A

**POSSIBLE SAMPLE HAZARDS/REMARKS**  
\*Contains Radioactive Material at concentrations that are not be regulated for transportation per 49 CFR/ATA Dangerous Goods Regulations but are not releasable per DOE Order 458.1.

SPECIAL INSTRUCTIONS  
N/A

Hold Time  
Total Activity Exemption: Yes  No

Sample No.	Filter	*	Date	Time	No./Type Container	Sample Analysis	Holding Time	Preservative
B32JK0	N	W	10-14-15	0834	1x1-L-P	906.0ML_TRTIUM_LSC: COMMON	6 Months	None

M7QLW

November 11, 2015

J5J150403  
60727 607274  
JF 10/15/15



Relinquished By J.R. Aguilar/CHPRC	Print	Sign	Date/Time OCT 14 2015 0910	Received By E.L. Kauer CHPRC	Sign	Date/Time OCT 14 2015 0910	Matrix *
Relinquished By E.L. Kauer CHPRC	Print	Sign	Date/Time OCT 14 2015 1420	Received By J. Friesz, TARL	Sign	Date/Time OCT 14 2015 1420	Matrix *
Relinquished By 6	Print	Sign	Date/Time	Received By	Sign	Date/Time	Matrix *
Relinquished By 6	Print	Sign	Date/Time	Received By	Sign	Date/Time	Matrix *

- S = Soil
- SE = Sediment
- SO = Solid
- SL = Sludge
- W = Water
- O = Oil
- A = Air
- DS = Drum Solids
- DL = Drum Liquids
- T = Tissue
- WI = Wipe
- L = Liquid
- V = Vegetation
- X = Other

FINAL SAMPLE DISPOSITION  
Disposal Method (e.g., Return to customer, per lab procedure, used in process)

Disposed By

Date/Time

# CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

<b>CH2M Hill Plateau Remediation Company</b>	<b>Collector</b> J.R. Aguilar/CHPRC	<b>Contact/Requester</b> WATERS-HUSTED, K	<b>Telephone No.</b> 376-4650
<b>SAF No.</b> X15-048	<b>Sampling Origin</b> Hanford Site	<b>Purchase Order/Charge Code</b>	302869
<b>Project Title</b> 200-BP-5 Treatability Test -Day 1	<b>Logbook No.</b> HNF-N-506 76 / 82	<b>Ice Chest No.</b> N/A	
<b>Shipped To (Lab)</b> TestAmerica Incorporated, Richland	<b>Method of Shipment</b> GOVERNMENT VEHICLE	<b>Bill of Lading/Air Bill No.</b> N/A	
<b>Protocol</b> CERCLA	<b>Priority:</b> 21 Days	<b>Offsite Property No.</b> N/A	
<b>POSSIBLE SAMPLE HAZARDS/REMARKS</b> *Contains Radioactive Material at concentrations that are not be regulated for transportation per 49 CFR/TATA Dangerous Goods Regulations but are not releasable per DOE Order 458.1.		<b>SPECIAL INSTRUCTIONS</b> N/A	<b>Total Activity Exemption:</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
<b>Sample No.</b> B32JK1	<b>Filter</b> # N	<b>Date</b> 10-14-15	<b>Time</b> 0834
<b>No/Type Container</b> 1x1-LP	<b>Sample Analysis</b> 906.0ML_TRITIUM_LSC: COMMON	<b>Holding Time</b> 6 Months	<b>Preservative</b> None

November 11, 2015



J5J150403  
w67274

<b>Relinquished By</b> J.R. Aguilar/CHPRC	<b>Print</b>	<b>Sign</b>	<b>Date/Time</b> OCT 14 2015 0900
<b>Relinquished By</b> E.L. Kauer/CHPRC	<b>Print</b>	<b>Sign</b> E.L. Kauer/CHPRC	<b>Date/Time</b> OCT 14 2015 0900
<b>Relinquished By</b> J. Friesz, TARC	<b>Print</b>	<b>Sign</b> J. Friesz, TARC	<b>Date/Time</b> OCT 14 2015 1400
<b>Relinquished By</b> <span style="color: red;">of 1</span>	<b>Print</b>	<b>Sign</b>	<b>Date/Time</b>

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

**FINAL SAMPLE DISPOSITION** Disposal Method (e.g., Return to customer, per lab procedure, used in process)

Date/Time Received: 10-14-15 / 1420 Container GM Screen Result: (Airlock) 0 cpm Initials [B] ]  
Sample GM Screen Result (Sample Receiving) 0 cpm Initials [B] ]

Client: Pbw SDG #: W07274 SAF #: X15-048 NA [ ]

Lot Number: J5J150403

Chain of Custody # X15-048-021, 022

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: 6.2 °C Ice NA [ ]
- 4. Vermiculite/packing materials is NA [ ] 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): 2
- 7. Containers received: 2 x 10

- 8. Sample holding times exceeded? NA [ ] Yes [ ] No [B] ]
- 9. Samples have: tape hazard labels [B] custody seals [B] appropriate sample labels
- 10. Matrix: A (FLT, Wipe, Solid, Soil) [B] I (Water) S (Air, Niosh 7400) T (Biological, Ni-63)

11. Samples: [B] 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 [B] ] No [ ] NA [ ]  
(If acidification is necessary go to pH area & document sample ID, initial pH, amount of HNO<sub>3</sub> 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. [B] Client/Courier unpack cooler.

Sample Check-in List completed by Sample Custodian:  
Signature: [Signature] Date: 10-14-15

Client Notification needed? Yes [ ] No [B] ] Date: \_\_\_\_\_  
By: \_\_\_\_\_  
Person contacted: \_\_\_\_\_

No action necessary; process as is  
Project Manager Whitney Whitari Date 10/15/15

November 11, 2015

Sample Results Summary

Date: 11-Nov-15

TestAmerica Inc TARL

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

Report No. : 67579

SDG No: W07274

Batch	Client Id Work Order	Parameter	Result +- CSU ( 2 s)	Qual	Units	Tracer Yield	MDL	CRDL	RPD
5288039	906.0ML_H3_LSC								
	<b>B32JK0</b>								
	M7QLW1AA H-3		1.10E+04 +- 1.2E+03		pCi/L	100%	2.23E+01	3.00E+01	
	<b>B32JK0 DUP</b>								
	M7QLW1AC H-3		1.08E+04 +- 1.2E+03		pCi/L	100%	2.21E+01	3.00E+01	1.3
	<b>B32JK1</b>								
	M7QLX1AA H-3		1.07E+04 +- 1.2E+03		pCi/L	100%	2.21E+01	3.00E+01	
	No. of Results:		3						

TestAmerica Inc RPD - Relative Percent Difference.

rptTALRchSaSum  
mary2 V5.4.1  
A2002

November 11, 2015

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

Date: 11-Nov-15

Report No. : 67579

SDG No.: W07274

Batch	Work Order	Parameter	Result +- CSU ( 2 s)	Qual	Units	Tracer Yield	LCS Recovery	Bias	MDL
<b>906.0ML_H3_LSC</b>									
5288039	MATRIX SPIKE, B32JK1								
	M7QLX1AC	H-3	-5.16E+02 +- 1.7E+03	U	pCi/L	100%			2.18E+01
5288039	BLANK QC,								
	M7QQD1AA	H-3	-2.29E+01 +- 1.8E+01	U	pCi/L	100%			2.07E+01
<b>906.0ML_H3_LSC</b>									
5308030	LCS,								
	M7QQD2AC	H-3	7.57E+03 +- 8.5E+02		pCi/L	100%	84%	-0.2	2.63E+01
<b>No. of Results: 3</b>									

TestAmerica Inc Bias - (Result/Expected)-1 as defined by ANSI N13.30.  
 rptSTLRchQcSummary V5.4.1 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: 11-Nov-15

SAMPLE RESULTS

Lab Name: TestAmerica Inc  
Lot-Sample No.: J5J150403-1  
Client Sample ID: B32JK0

SDG: W07274  
Report No.: 67579  
COC No.: X15-048-021  
Collection Date: 10/14/2015 8:34:00 AM  
Received Date: 10/14/2015 2:20:00 PM  
Matrix: WATER

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: 5288039	906.0ML_H3_LSC											
	1.10E+04		6.9E+01	1.2E+03	2.23E+01 pCi/L	1.10E+01	100%	(491.1)	10/25/15 04:09 p		0.01002	LSCQ1
						3.00E+01	(17.8)				L	

No. of Results: 1  
Comments:

November 11, 2015

11 of 16

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.  
V5.4.1 A2002

FORM I

Date: 11-Nov-15

SAMPLE RESULTS

Lab Name: TestAmerica Inc  
Lot-Sample No.: J5J150403-2  
Client Sample ID: B32JK1

SDG: W07274  
Report No.: 67579  
COC No.: X15-048-022  
Collection Date: 10/14/2015 8:34:00 AM  
Received Date: 10/14/2015 2:20:00 PM  
Matrix: WATER

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: 5288039	906.0ML_H3_LSC				Work Order: M7QLX1AA	Report DB ID: 9M7QLX10						
H-3	1.07E+04		6.8E+01	1.2E+03	2.21E+01 pCi/L	1.09E+01	100%	(482.3)	10/25/15 04:09 p		0.01001	LSCQ1
						3.00E+01		(17.8)			L	

No. of Results: 1    Comments:

November 11, 2015

12 of 16

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.  
V5.4.1 A2002

**FORM II**

Date: 11-Nov-15

**DUPLICATE RESULTS**

Lab Name: TestAmerica Inc  
 Lot-Sample No.: J5J150403-1  
 Client Sample ID: B32JK0 DUP

SDG: W07274  
 Report No.: 67579  
 COC No.: X15-048-021  
 Matrix: WATER

Collection Date: 10/14/2015 8:34:00 AM

Received Date: 10/14/2015 2:20:00 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: 5288039	906.0ML_H3_LSC											
H-3	1.08E+04		6.9E+01	1.2E+03	2.21E+01	pCi/L	100%	(489.1)	10/25/15 04:09 p		0.01001	LSCQ1
	1.10E+04		RPD 1.3			3.00E+01		(17.8)	Orig Sa DB ID: 9M7QLW10		L	

No. of Results: 1    Comments:

November 11, 2015

13 of 16

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.  
 4.1 A2002

FORM II

Date: 11-Nov-15

BLANK RESULTS

Lab Name: TestAmerica Inc

SDG: W07274

Matrix: WATER

Report No. : 67579

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: 5288039 906.0ML_H3_LSC Work Order: M7QQD1AA Report DB ID: M7QQD1AB												
H-3	-2.29E+01	U	1.2E+01	1.8E+01	2.07E+01	pCi/L	100%	-(1.1)	10/25/15 04:09 p	0.01001	0.01001	LSCQ1
					1.02E+01	2.50E+01		-(2.5)			L	

No. of Results: 1 Comments:

November 11, 2015

14 of 16

TestAmerica Inc MDC|MDA,Lc - Detection, Decision Level based on instrument background or blank, adjusted by the sample Efficiency, Yield, and Volume.  
 rptSTLRchBlank U Qual - Analyzed for but not detected above limiting criteria, Mdc/Mda/Mdl, Total Uncert, RDL or not identified by gamma scan software.  
 V5.4.1 A2002

**FORM II  
LCS RESULTS**

Date: 11-Nov-15

Lab Name: TestAmerica Inc

SDG: W07274

Matrix: WATER

Report No. : 67579

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: 5308030	906.0ML_H3_LSC												
H-3	7.57E+03		6.3E+01	8.5E+02	2.63E+01	pCi/L	100%	9.04E+03	2.7E+02	84%	11/5/15 02:49 a	0.01003	LSCQ1
							Rec Limits:	70	130	-0.2		L	

No. of Results: 1      Comments:

November 11, 2015

15 of 16

FORM II

Date: 11-Nov-15

MATRIX SPIKE RESULTS

Lab Name: TestAmerica Inc      SDG: W07274      Matrix: WATER  
 Lot-Sample No.: J5J150403-2, B32JK1      Report No.: 67579

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: 5288039	Work Order: M7QLX1AC	Report DB ID: M7QLX1CW	Orig Sa DB ID: 9M7QLX10								
H-3	-5.16E+02 U	6.6E+01	1.7E+03	2.18E+01 pCi/L		100%			10/25/15 04:09 p	0.01003 L	906.0ML_H3_LSC
	1.07E+04										LSCQ1

Number of Results: 1

Comments:

November 11, 2015

16 of 16

TestAmerica Inc      RER - Replicate Error Ratio = (S-D)/[sqrt(sq(TPUs)+sq(TPUd))] as defined by ICPT BOA.  
 rptSTLrchMs      Bias - (Result/Expected)-1 as defined by ANSI N13.30.  
 V5.4.1 A2002      U Qual - Analyzed for but not detected above limiting criteria, Mdc/Mda/Mdl, Total Uncert, RDL or not identified by gamma scan software.