

Analytical Data Package Prepared For
CH2M Hill Plateau Remediation

Radiochemical Analysis By

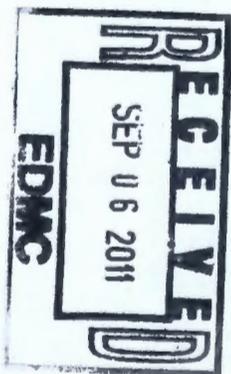
TestAmerica TARL

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

Data Package Contains _____ Pages

Report Nbr: 45758

SDG Nbr	ORDER Nbr	CLIENT ID NUMBER	LOT Nbr	WORK ORDER	RPT DB ID	BATCH
W05947A	X10-080	B264F6	J1B020467-1	MD0V31AA	9MD0V310	1033167



Comments:

RECEIVED FEBRUARY 17, 2011 REVISION 1

0098475



Amended Certificate of Analysis

TestAmerica Laboratories, Inc.

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

February 17, 2011

Attention: Mike Neely

SAF Number : X10-080
 Date SDG Closed : February 2, 2011
 Number of Samples : One (1)
 Sample Type : Water
 SDG Number : W05947A
 Data Deliverable : 10 Day / Summary

AMENDED CASE NARRATIVE

On February 2, 2011 a request for additional analysis (IRF CHPRC TRACKING NUMBER: 11-319) of one water sample was received at TestAmerica for radiochemical analysis. Upon receipt, the sample was assigned the following laboratory ID numbers to correspond with the CH2M specific IDs:

<u>CH2M ID#</u>	<u>TARL ID#</u>	<u>MATRIX</u>	<u>DATE OF RECEIPT</u>
B264F6	MD0V3 (L34EL)	WATER	07/09/10

II. Sample Receipt

The sample was 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:

Gamma Spectroscopy
 Iodine-129 (LL) by method RL-GAM-002 (RICH-RC-5025)*

*SOP ID's changed effective 7-01-2008. Attached is a cross reference until SOP ID's are changed in all systems.

CH2M Hill Plateau Remediation Company
February 17, 2011

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

Gamma Spectroscopy

Iodine-129 (LL) by method RL-GAM-002 (RICH-RC-5025):

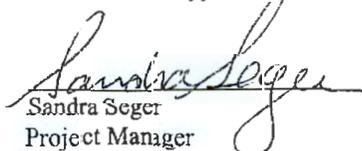
On February 2, 2011 CHPRC directed TARL to use the remainder of the B264F6 C-14 fractions for the low level I-129 aliquot. The gamma, Thiso & Puiso fractions could not be used because these sample fractions had been acidified. Sample B264F6 was out of hold time; the COC indicates a 6 month hold time and the sample was taken on July 8, 2010.

A reduced aliquot size was used, no duplicate was analyzed and the CRDL was not met for sample B264F6 due to insufficient sample volume.

Except as noted, the LCS, batch blank and sample results are within contractual requirements.

I certify that this Certificate of Analysis is in compliance with the SOW, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hard copy data package has been authorized by the Laboratory Manager, or a designee as verified by the following signature.

Reviewed and approved:


Sandra Seger
Project Manager

ISSUE RESOLUTION FORM

<p><u>CHPRC TRACKING NUMBER:</u> 11-319</p> <p>Date: 2/2/2011 SAF No. X10-080</p> <p>SDG: W05947 TEST: I129LL_SEP_LEPS_GS_LL : I-129 (1)</p> <p>Sample No.(s) B264F6</p> <p>Submitted By: S Champoux Submitted To: Sandra Seger Phone No.: 373-5290 Phone No.: 375-3131 Fax. No.: Fax No.:</p>	
<p style="text-align: center;"><u>ISSUE</u></p> <p>Please add I-129 Low Level analysis to the above mentioned sample by using the left over sample volume from the bottle originally intended for C-14 analysis.</p>	<p style="text-align: center;"><u>PROPOSED RESOLUTION</u></p> <p>Please report the data under SDG # W05947A with this documentation inserted in a 10 day TAT.</p>
<p><u>CHPRC/BHI/WMH/PNNL COMMENTS</u></p> <p>Accept proposed resolution.</p> <p style="text-align: center;"><u>Sara Champoux 2/2/2011</u> Signature and Date</p>	

Seger, Sandra

From: Champoux, Sara J [Sara_J_Changpoux@RL.gov]
Sent: Wednesday, February 02, 2011 2:22 PM
To: Seger, Sandra
Cc: Douglas, James G (Jim); Evans, Robert T; Fitzgerald, Scot L; Luke, Scott N; Neely, Michael; Radloff, Anna W; Stinnett, Mark W; Waters-husted, Karen S; Widrig, Dana L
Subject: IRF 11-319 SAF X10-080
Attachments: 11-319.docx

Sandra,

Attached is the formal direction to proceed with the added I-129 analysis. Please be sure to insert this IRF in the final data package. Thank you.

Sara J. Champoux
Chemist/Scientist
Soil and Groundwater Remediation Project
Analytical Support
(509) 373-5290

2/2/2011

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.
Total Uncert (#s) <i>u_c - Combined Uncertainty.</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 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%. $Lc = (1.645 * \text{Sqrt}(2 * (\text{BkgndCnt}/\text{BkgndCntMin})/\text{SCntMin})) * (\text{ConvFct}/(\text{Eff} * \text{Yld} * \text{Abn} * \text{Vol}) * \text{IngrFct})$. 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%. $MDC = (4.65 * \text{Sqrt}((\text{BkgndCnt}/\text{BkgndCntMin})/\text{SCntMin}) + 2.71/\text{SCntMin}) * (\text{ConvFct}/(\text{Eff} * \text{Yld} * \text{Abn} * \text{Vol}) * \text{IngrFct})$. 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 = $(S-D)/[\text{sqrt}(\text{TPUs}^2 + \text{TPUd}^2)]$ 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.

Isotope	Richland SOP #	Old Richland SOP #	Method Reference	Title
Asbestos	RL-ASB-001	N/A	NIOSH 7400	Fiber Counting by Phase Contrast Microscopy based on NIOSH 7400
Asbestos	RL-ASB-002	N/A	NIOSH 9002	Sample Prep and Analysis for Asbestos (bulk) by Polarized Light Microscopy based on NIOSH 9002
Alpha - Gross	ARCHIVED	RICH-RB-5035	Liquid Scintillation Anal/ Packard	DETERMINATION OF GROSS ALPHA IN NASAL SMEARS BY LIQUID SCINTILLATION COUNTING
Alpha - Gross	RL-GPC-001	RICH-RC-5014	9310 / EPA SW846 900.0 / EPA 600	DETERMINATION OF GROSS ALPHA AND GROSS BETA IN WATER BY METHOD 9310
Alpha - Gross	RL-GPC-007	RICH-RC-5020	SM 7110B EPA 680	DETERMINATION OF GROSS ALPHA AND GROSS BETA IN SOIL, SHORELINE SOIL, FOOD AND VEGETATION
Alpha - Gross	RL-GPC-002	RICH-RC-5021	00-02 EPA 520	DETERMINATION OF GROSS ALPHA ACTIVITY IN WATER BY COPRECIPITATION
Alpha - Gross	RL-GPC-008	RICH-RC-5036	ER100 / LANL	PREPARATION OF AIR FILTERS FOR GROSS ALPHA/BETA AND COMPOSITING AIR FILTERS
Am	RL-ALP-003	RICH-RC-5072	Mod RP 725 / DOE089T EXT Chromatography	SEPARATION OF AMERICIUM, CURIUM, AND URANIUM BY EXTRACTION CHROMATOGRAPHY
Am	RL-ALP-010	RICH-RC-6080	Am03/Pu11HASL 300 NAS-NS-3006	SEQUENTIAL SEPARATION OF PLUTONIUM AND AMERICIUM
Beta - Gross	RL-GPC-001	RICH-RC-5014	9310 / EPA SW846 900.0 / EPA 600	DETERMINATION OF GROSS ALPHA AND GROSS BETA IN WATER BY METHOD 9310
Beta - Gross	RL-GPC-007	RICH-RC-5020	SM 7110B EPA 680	DETERMINATION OF GROSS ALPHA AND GROSS BETA IN SOIL, SHORELINE SOIL, FOOD AND VEGETATION
Beta - Gross	RL-GPC-008	RICH-RC-5036	ER100 / LANL	PREPARATION OF AIR FILTERS FOR GROSS ALPHA/BETA AND COMPOSITING AIR FILTERS
C14	RL-LSC-001	RICH-RB-5013	Mod H-02 / EPA 520	TRITIUM, CARBON-14, NICKEL-63 OR PHOSPHORUS-32 ANALYSIS IN URINE
C14	RL-LSC-008	RICH-RC-5022	EPA C-01 / EPA 520	CARBON 14 BY DIGESTION METHOD
C14	RL-LSC-009	RICH-RC-5040	Mod C14 / EPA 690	DETERMINATION OF CARBON-14 BY BENZENE SYNTHESIS
C14	RL-LSC-010	RICH-RC-5046	EPA C-01 / EPA 520	DETERMINATION OF CARBON-14 IN GRAPHITE AND SOIL
C14	RL-LSC-011	RICH-RC-5047	Mod H-02 / EPA 520	DETERMINATION OF CARBON-14 IN WATER BY DIRECT COUNTING
Cm	RL-ALP-003	RICH-RC-5072	Mod RP 725 / DOE089T EXT Chromatography	SEPARATION OF AMERICIUM, CURIUM, AND URANIUM BY EXTRACTION CHROMATOGRAPHY
Coliform	RL-WC-001	RICH-WC-5001	922B	DETERMINATION OF TOTAL COLIFORM: MULTIPLE TUBE FERMENTATION TECHNIQUE
Coliform	RL-WC-002	RICH-WC-5002	9131	TOTAL COLIFORMS BY MEMBRANE FILTRATION
Coliform	RL-WC-005	RICH-WC-5007	9223	TOTAL COLIFORM BY THE COLILERT METHOD
Cr6+	RL-WC-003	RICH-WC-5005	7196A, SW846	DETERMINATION OF HEXAVALENT CHROMIUM (Cr(VI)) IN WATER, SOIL, AND SIMILAR MATRICES
Cr6+	RL-WC-004	RICH-WC-5005	3060 / SW846	DETERMINATION OF HEXAVALENT CHROMIUM (Cr(VI)) IN SOLID MATRICES WITH ALKALINE DIGESTION
Fe	RL-LSC-015	RICH-RC-5074	EXT Chromatography Mod Fe55/PNL-ALD-435	SEPARATION OF IRON AND NICKEL BY EXTRACTION CHROMATOGRAPHY
Fe55	RL-LSC-016	RICH-RC-5023	R4-73-014 / EPA HASL 300	DETERMINATION OF IRON-55 AND IRON-59 IN WATER
Fe59	RL-LSC-016	RICH-RC-5023	R4-73-014 / EPA HASL 300	DETERMINATION OF IRON-55 AND IRON-59 IN WATER
Gamma	RL-GAM-001	RICH-RC-5017	901.0 / HASL 300 ASTM D3649	PREPARATION OF ALL MATRICES FOR ANALYSIS BY GAMMA SPECTROSCOPY
H3	RL-LSC-001	RICH-R3-5013	Mod H-02 / EPA 520	TRITIUM, CARBON-14, NICKEL-63 OR PHOSPHORUS-32 ANALYSIS IN URINE
H3	RL-LSC-003	RICH-R3-5034	7500-3 / 9M	DETERMINATION OF TRITIUM IN URINE BY DISTILLATION
H3	RL-LSC-004	RICH-RC-5004	H3 / EPA LV539	DETERMINATION OF TRITIUM IN AIR
H3	RL-LSC-005	RICH-RC-5007	Mod 906.0 / EPA 600	SEPARATION OF TRITIUM IN WATER AND AQUEOUS COMPONENT OF WINE
H3	RL-LSC-007	RICH-RC-5024	H-3 by BE EPA LV539 / HASL 300	DETERMINATION OF LOW LEVEL TRITIUM IN WATER BY ELECTROLYTIC ENRICHMENT
H3	RL-LSC-002	RICH-RC-5037	H-3 In Water/Tissue / LV 539	DETERMINATION OF TRITIUM BY CRYOGENIC DISTILLATION
H3	RL-LSC-006	RICH-RC-5048	H-3 In Water/Tissue / LV 539	TRITIUM PREPARATION IN MILK SAMPLES
I129	RL-GAM-002	RICH-RC-5025	R4-73-014/EPA ASTM D2334 (Discontinued)	DETERMINATION OF IODINE-131 AND 129 IN WATER BY SOLVENT EXTRACTION METHOD
I131	RL-GAM-002	RICH-RC-5025	R4-73-014/EPA ASTM D2334 (Discontinued)	DETERMINATION OF IODINE-131 AND 129 IN WATER BY SOLVENT EXTRACTION METHOD
I131	ARCHIVED	RICH-RC-5049	HASL 300 (1983)	DETERMINATION OF IODINE-131 IN MILK BY BATCH ION-EXCHANGE
Metals	ARCHIVED	BHI-MT-0001	6010	ICP-AE SPECTROSCOPY, SPECTROMETRIC METHOD FOR TRACE ELEMENT ANALYSIS, METHOD 6010A FOR Bechtel

Update 9/2/04

1

Isotope	Richland SOP #	Old Richland SOP #	Method Reference	Title
Metals	RL-MT-001	RICH-MT-0001	6010B	ICP-AES for TRACE ELEMENT ANALYSIS, METHOD 6010B
Metals	RL-MT-002	RICH-MT-0002	SW486 3050B	ACID DIGESTION FOR ICP ANALYSIS
Metals	RL-MT-003	RICH-MT-0003	NIOSH 7300	DIGESTION PREP based on METHOD NIOSH 7300
Ni	RL-LSC-015	RICH-RC-5074	EXT Chromatography Mod Fe25 / PNL-ALO-435	SEPARATION OF IRON AND NICKEL BY EXTRACTION CHROMATOGRAPHY
Ni63	RL-LSC-001	RICH-RB-9013	Mod H-02 / BPA 520	TRITIUM, CARBON-14, NICKEL-63 OR PHOSPHORUS-32 ANALYSIS IN URINE
Ni63	RL-LSC-017	RICH-RC-5069	EXT Chromatography Mod RP300 / DOB0089T	SEPARATION OF NI-63 BY EXTRACTION CHROMATOGRAPHY
Np	RL-ALP-013	RICH-RC-5009	NAS-NS-3060	DETERMINATION OF NEPTUNIUM-237 BY LIQUID-LIQUID EXTRACTION IN ALL MATRICES
Np	RL-ALP-006	RICH-RC-5064	EXT Chromatography	SEPARATION OF NEPTUNIUM BY EXTRACTION CHROMATOGRAPHY
P32	RL-LSC-001	RICH-RB-5013	Mod H-02 / BPA 520	TRITIUM, CARBON-14, NICKEL-63 OR PHOSPHORUS-32 ANALYSIS IN URINE
Pb	RL-ALP-011	RICH-RC-5076	EXT Chromatography	DETERMINATION OF LEAD-210 BY EXTRACTION CHROMATOGRAPHY
Po	RL-ALP-007	RICH-RB-5001	NAS-NS-3037 HASL 300	DETERMINATION OF POLONIUM-210 IN URINE
Po	RL-ALP-012	RICH-RC-5012	Po-01 / HASL 300 Mod U01 HASL 300	SEPARATION OF ISOTOPIC URANIUM AND POLONIUM-210 IN WATER, SOIL AND FILTERS
Prep - Bioassay	ARCHIVED	RICH-RB-0001		PREPARATION FOR RAPID BIOASSAY ANALYSES
Prep - Bioassay	RL-PRP-001	RICH-RB-5002	Mod Pu06 / HASL 300	PREPARATION OF URINE AND BLOOD SAMPLES
Prep - Bioassay	ARCHIVED	RICH-RB-5004	ASTM D1429-95	DETERMINATION OF SPECIFIC GRAVITY OF URINE
Prep - Bioassay	RL-RPL-002	RICH-RB-5036	Pub 6490,6601 / PNL	PREPARATION OF SYNTHETIC URINE AND FECES USING RECIPES FROM HP5 N13.30 PERFORMANCE TESTING
Prep - Bioassay	RL-PRP-002	RICH-RB-5037	LA-10300-M R300 ASTM D3865	PREPARATION OF FECAL SAMPLES USING HYDROFLUORIC ACID DIGESTION
Prep - Bioassay	RL-RPL-003	RICH-RC-5028	ICRP Publication 23	PREPARATION OF SYNTHETIC URINE AND FECES
Prep - Count	RL-ALP-016	RICH-RC-5003	G-03 / HASL 300	COPRECIPITATION OF SOME ACTINIDES ON NEODYMIUM FLUORIDE FOR ALPHA-PARTICLE SPECTROMETRY
Prep - Count	RL-ALP-015	RICH-RC-5039	C-03 / HASL 300 Anal Chem 1972	ELECTRODEPOSITION OF ACTINIDES
Prep - Count	RL-ALP-014	RICH-RC-5085	Morison & Preiser NAS-NS-3050	ANHYDROUS ETHER EXTRACTION OF URANIUM
Prep - Env	RL-KPA-001	RICH-RC-5015	ASTM / D5174-97	ENVIRONMENTAL SAMPLE PREPARATION FOR URANIUM BY LASER-INDUCED PHOSPHORESCENCE
Prep - Env	RL-PRP-004	RICH-RC-5016	Sc02 / HASL 300	PREPARATION OF ENVIRONMENTAL MATRICES
Prep - Env	RL-PRP-007	RICH-RC-5045	Mod Pu02 / HASL 300	PREPARATION OF MIXED BED RESINS AND PRE-FILTERS
Prep - Env	RL-PRP-008	RICH-RC-5068	Mod BR100 / LA10300	PREPARATION OF SOIL, VEGETATION AND AIR FILTERS BY MIXED STRONG ACID LEACHING
Prep - Resin	RL-ALP-017	RICH-RC-5018	Mod Pu11 / Mod 300	ION-EXCHANGE PREPARATION
Prep - Soil	RL-PRP-003	RICH-RC-5013	Pu02A / HASL 300	PREPARATION OF SOIL SAMPLES
Prep - Soil	RL-PRP-005	RICH-RC-5019	DS259 / ASTM SW 846/3015/3051/3052	PREPARATION AND DISSOLUTION OF SEDIMENTS AND SOIL BY MICROWAVE BOMB DIGESTION
Prep - Soil	RL-PRP-006	RICH-RC-5032	Pu02A / HASL 300	COMPLETE DISSOLUTION BY MIXED ACIDS IN A TEFLON BEAKER
Prep - Soil	RL-PRP-009	RICH-RC-5077	Mod BR100 / LA10300	PREPARATION OF SMALL SOIL SAMPLES FOR GAMMA SPEC AND/OR RADIOCHEM ANAL BY ACID DIGESTION
Prep - Urine	RL-PRP-010	RICH-RC-5086	AnalyticaChemActa1992 RP800 / DOB0089T	URINE AND WATER SAMPLE PREPARATION BY CALCIUM PHOSPHATE PRECIPITATION
Prep - Water	RL-PRP-010	RICH-RC-5086	AnalyticaChemActa1992 RP800 / DOB0089T	URINE AND WATER SAMPLE PREPARATION BY CALCIUM PHOSPHATE PRECIPITATION
Pu	ARCHIVED	RICH-RB-5015	Pu11 / HASL 300	RAPID DETERMINATION OF PLUTONIUM IN FECES
Pu	RL-ALP-002	RICH-RC-5010	Pu11 / HASL 300	DETERMINATION OF ISOTOPIC PLUTONIUM IN ALL MATRICES
Pu	RL-ALP-010	RICH-RC-5080	Am03 HASL 300 Pu11 / HASL 300	SEQUENTIAL SEPARATION OF PLUTONIUM AND AMERICIUM
Pu	RL-ALP-001	RICH-RC-5087	AnalyticaChemActa1992 RP800 / DOB0089T	DETERMINATION OF PLUTONIUM BY EXTRACTION CHROMATOGRAPHY
Ra	RL-RA-001	RICH-RC-5005	903.1 / BPA 600	RADIUM-226 AND RADIUM-228 SEPARATION IN RADIOCHEMICAL MATRICES - ADAPTED FROM EPA 903.1 AND 904.0
Ra	RL-RA-001	RICH-RC-5005	904.0 / BPA 600	RADIUM-226 AND RADIUM-228 SEPARATION IN RADIOCHEMICAL MATRICES - ADAPTED FROM EPA 903.1 AND 904.0

Isotope	Richland SOP #	Old Richland SOP #	Method Reference	Title
Ra	RL-RA-002	RICH-RC-5027	Mod D2460 / ASTM 903.0 / EPA 600	DETERMINATION OF TOTAL RADIUM
Rn	RL-LSC-019	RICH-RC-5082	913.0 / EPA	DETERMINATION OF RADON-222 - ADAPTED FROM METHOD 913.0
S36	ARCHIVED	RICH-RB-6020	Hillebrand, Lundell, Bright, Hoffman 1953	DETERMINATION OF SULFUR-36 IN URINE
Se79	RL-LSC-012	RICH-RC-5043	Selenium / NAS-NS-300D	RADIOCHEMICAL DETERMINATION OF SELENIUM-79
Solubility	ARCHIVED	RICH-RC-5035	Kalfward&Thomas PNL3716	DETERMINATION OF SOLUBILITY OF RADIOACTIVE PARTICLE CONSTITUENTS
Sr	RL-GPC-005	RICH-RB-5007	Mod Sr02 / HASL 300 Mod 905.0 / EPA 600	DETERMINATION OF TOTAL STRONTIUM IN URINE
Sr	RL-GPC-006	RICH-RB-5021	Mod Sr02 / HASL300 Mod 905.0 / EPA 600	DETERMINATION OF STRONTIUM IN FECS
Sr	ARCHIVED	RICH-RB-5022	Mod Sr02 / HASL300 Mod 905.0 / EPA 600	DETERMINATION OF TOTAL STRONTIUM IN URINE FOR RAPID ANALYSIS
Sr	ARCHIVED	RICH-RB-5031	Mod Sr02 / HASL300 Mod 905.0 / EPA 600	RAPID DETERMINATION OF TOTAL STRONTIUM IN FECS
Sr	RL-GPC-003	RICH-RC-5006	Mod Sr02 / HASL300 Mod 905.0 / EPA 600	STRONTIUM SEPARATION IN ENVIRONMENTAL MATRICES
Sr - Yt	RL-GPC-004	RICH-RC-5071	Mod Sr02 / HASL300 Mod 905.0 / EPA 600	YTRIUM-90 SEPARATION FOR STRONTIUM-90 DETERMINATION IN ALL MATRICES
Tc	RL-LSC-014	RICH-RC-5065	EXT Chromatography Mod RP550 / DOB0089T	DETERMINATION OF TECHNETIUM-99 BY EXTRACTION CHROMATOGRAPHY
Tc	RL-LSC-013	RICH-RC-5078	Tc01 / HASL 300	SEPARATION OF TECHNETIUM-99 IN ALL MATRICES
Th	RL-ALP-008	RICH-RB-5006	Mod Th01 / HASL 300	SEPARATION OF THORIUM FROM URINE AND FECAL SAMPLES
Th	RL-ALP-005	RICH-RC-5084	Mod Th01 / HASL 300 Anal Chim Acta 1982	DETERMINATION OF THORIUM ISOTOPIC IN ENVIRONMENTAL MATRICES
U	RL-ALP-012	RICH-RC-5012	Po-01 / HASL 300 Mod U01 / HASL 300	SEPARATION OF ISOTOPIC URANIUM AND POLONIUM-210 IN WATER, SOIL AND FILTERS
U	RL-KPA-002	RICH-RC-5031	Mod U01 / HASL 300	SEPARATION OF TOTAL URANIUM IN WATER AND URINE
U	RL-KPA-003	RICH-RC-5058	DS174 / ASTM	DETERMINATION OF URANIUM BY PHOSPHORESCENCE ANALYSIS
U	RL-ALP-004	RICH-RC-5067	EXT Chromatography Mod RP725 / DOB0089T	SEPARATION OF URANIUM BY EXTRACTION CHROMATOGRAPHY
U	RL-ALP-003	RICH-RC-5072	EXT Chrom Mod RP725 & 800 / DOB0089T	SEPARATION OF AMERICIUM, CURIUM, AND URANIUM BY EXTRACTION CHROMATOGRAPHY
U	RL-ALP-005	RICH-RC-5099	EXT Chromatography Mod RP725 / DOB0089T	DETERMINATION OF ISOTOPIC URANIUM IN ALL MATRICES

2/9/2011 11:05:24 AM

TestAmerica Report

Lab Code: TARL

FormNbr: R FormatType: FEAD Version: 05 Rpt Nbr: 45758 File Name: h:\Reportdb\edd\Fead\VRad\W05947A.Edd, h:\Reportdb\edd\Fead\VRad\45758.E

Lab Sample Id:	Client Id:	Test User	Contract Nbr	SAF Nbr	Sdg Nbr:	QC Type:	Moisture/Solids%*:	Distilled Volume	Sample On Date:	Collection Date:				
9MD0V310	B264F6		MW6-SBB-A1	X10-080	W05947A					07/08/2010 11:48				
Batch	Analyte	CAS#	Result	Unit	CntU 2S	TotU 2S	Qual	MDA	TrcYield	Method	Alq Size	Unit	Analy Date/Time	Act
1033167	I-129	15046-84-1	-1.91E-01	pCi/L	2.3E-01	2.3E-01	U	3.82E-01	96.2	I129LL_SEP_LEPS	1.7951E+00	L	02/07/2011 03:59	I

U Qual - Analyzed for, but the result is less than the Mdc or gamma scan did not identify the nuclide.
 J Qual - No U qualifier has been assigned and the result is below the Reporting Limit (CRDL).
 B Qual- Analyte was found in the associated laboratory blank above the MDC.

Wednesday, February 09, 2011

TestAmerica QC Blank Report

Lab Code: TARL

FormNbr: R

FormatType: FEAD

VersionNbr: 05

File Name: h:\Reportdb\edd\Fead\Rad\W05947A.Edd, h:\Reportdb\edd\Fead\Rad\45758.E

Lab Sample Id: MD00V1AB

Sdg/Rept Nbr: W05947A 45758

Collection Date: 07/08/2010 11:48

Client Id: NA

Matrix: WATER WATER

Sample On Date:

Moisture/Solids%+:

QC Type: BLK

Received Date: 07/09/2010

SAF Nbr	Contract Nbr	Test User	Case Nbr	SAS Nbr	Suffix	Decant	Distilled Volume	File Id	FSuffix	RTyp					
	MW6-SBB-A19981								AB	H					
Batch # / Qc Type	Analyt/ CAS#	Result/ Orig Rst	Unit	Tot/Cnt Uncert 2S	Qu- al	MDC	Tracer Yield	Spk Conc/ %Rec	Analy Method	Aliq Size/ L	Date/Time Analyzed	RPD/ UCL	RER/ UCL	LCS LCL/UCL	R Typ
1033167 BLK	I-129 15046-84-1	4.30E-02	pCi/L	2.0E-01 2.0E-01	U	3.75E-01	92.7		I129LL_SEP_L	1.8003E+00	02/07/2011 03:59				D

Wednesday, February 09, 2011

TestAmerica QC Control Sample Report

Lab Code: TARL

FormNbr: R

FormatType: FEAD

VersionNbr: 05

File Name: h:\Reportdb\edd\Fead\VRad\W05947A.Edd, h:\Reportdb\edd\Fead\VRad\45758.E

Lab Sample Id: MD00V1CS

Sdg/Rept Nbr: W05947A 45758

Collection Date: 07/08/2010 11:48

Client Id: NA

Matrix: WATER WATER

Sample On Date:

Moisture/Solids%*:

QC Type: BS

Received Date: 07/09/2010

SAF Nbr	Contract Nbr	Test User	Case Nbr	SAS Nbr	Suffix	Decant	Distilled Volume	File Id	FSuffix	RTyp					
	MW6-SBB-A19981								AC	H					
Batch # / Qc Type	Analyt/ CAS#	Result/ Orig Rst	Unit	Tot/Cnt Uncert 2S	Qu- al	MDC	Tracer Yield	Spk Conc/ %Rec	Analy Method	Allq Size/ L	Date/Time Analyzed	RPD/ UCL	RER/ UCL	LCS LCL/UCL	R Typ
1033167 BS	I-129 15046-84-1	2.48E+01	pCi/L	2.8E+00 2.8E+00		6.19E-01	92.7	2.15E+01 115.5	I129LL_SEP_L	1.8007E+00 L	02/07/2011 07:22			70 130	D

Lot No., Due Date: J1B020467; 02/14/2011
 Client, Site: 384868; PGW 615HANFORD HANFORD
 QC Batch No., Method Test: 1033167; RGAMLEPS Gamma by LEPS
 SDG, Matrix: W05947A; WATER

- | | | |
|---|------------|---|
| 1.0 ICOC | | |
| 1.1 Is the ICOC page complete; includes all applicable analysis, dates, SOP numbers, and revisions? | Yes No N/A | ✓ |
| 2.0 QC Batch | | |
| 2.1 Do the Summary/Detailed Reports include a calculated result for each sample listed on the QC Batch Sheet? | Yes No N/A | ✓ |
| 2.2 Are the QC appropriate for the analysis included in the batch? | Yes No N/A | ✓ |
| 2.3 Is the Analytical Batch Worksheet complete; includes as appropriate, volumes, count times, etc? | Yes No N/A | ✓ |
| 2.4 Does the Worksheets include a Tracer Vial label for each sample? | Yes No N/A | ✓ |
| 3.0 QC & Samples | | |
| 3.1 Is the blank results, yield, and MDA within contract limits? | Yes No N/A | ✓ |
| 3.2 Is the LCS result, yield, and MDA within contract limits? | Yes No N/A | ✓ |
| 3.3 Are the MS/MSD results, yields, and MDA within contract limits? | Yes No N/A | ✓ |
| 3.4 Are the duplicate result, yields, and MDAs within contract limits? | Yes No N/A | ✓ |
| 3.5 Are the sample yields and MDAs within contract limits? | Yes No N/A | ✓ |
| 4.0 Raw Data | | |
| 4.1 Were results calculated in the correct units? | Yes No N/A | ✓ |
| 4.2 Were analysis volumes entered correctly? | Yes No N/A | ✓ |
| 4.3 Were Yields entered correctly? | Yes No N/A | ✓ |
| 4.4 Were spectra reviewed/meet contractual requirements? | Yes No N/A | ✓ |
| 4.5 Were raw counts reviewed for anomalies? | Yes No N/A | ✓ |
| 5.0 Other | | |
| 5.1 Are all nonconformances included and noted? | Yes No N/A | ✓ |
| 5.2 Are all required forms filled out? | Yes No N/A | ✓ |
| 5.3 Was the correct methodology used? | Yes No N/A | ✓ |
| 5.4 Was transcription checked? | Yes No N/A | ✓ |
| 5.5 Were all calculations checked at a minimum frequency? | Yes No N/A | ✓ |
| 5.6 Are worksheet entries complete and correct? | Yes No N/A | ✓ |
| 6.0 Comments on any No response:
Please see NCM # 10-17418 | | |

First Level

John North

Date

2-7-11



THE LEADER IN ENVIRONMENTAL TESTING

Data Review Checklist
RADIOCHEMISTRY
 Second Level Review

Batch Number: 1033167

Review Item	Yes (✓)	No (✓)	NA (✓)
A. Sample Analysis			
1. Are the sample yields within acceptance criteria?	✓		
2. Is the sample Minimum Detectable Activity < the Contract Detection Limit?	✓	✓	
3. Are the correct isotopes reported?	✓		
B. QC Samples			
1. Is the Minimum Detectable Activity for the blank result ≤ the Contract Detection Limit?	✓		
2. Does the blank result meet the Contract criteria?	✓		
3. Is the blank result < the Contract Detection Limit?	✓		
4. Is the blank result > the Contract Detection Limit but the sample result < the Contract Detection Limit?			✓
5. Is the LCS recovery within contract acceptance criteria?	✓		
6. Is the LCS Minimum Detectable Activity ≤ the Contract Detection Limit?	✓		
7. Do the MS/MSD results and yields meet acceptance criteria?			✓
8. Do the duplicate sample results and yields meet acceptance criteria?	✓		
C. Other			
1. Are all Non-conformances included and noted?	✓		
2. Are all required forms filled out?	✓		
3. Was the correct methodology used?	✓		
4. Was transcription checked?	✓		
5. Were all calculations checked at a minimum frequency?	✓		
6. Were units checked?	✓		

Comments on any "No" response: _____

Second Level Review: Jodie Date: 2/8/11

LS-038B, Rev. 10, 9/07

**Clouseau
Nonconformance Memo**



NCM #: 10-17418 NCM Initiated By: John Norton Date Opened: 02/07/2011 Date Closed:	Classification: Anomaly Status: PMREVIEW Production Area: Environmental - Prep Tests: Gamma by LEPS Lot #'s (Sample #'s): J1B020000 (167), J1B020467 (1), QC Batches: 1033167,
Nonconformance: MDA not met Subcategory: Data accepted	

Problem Description / Root Cause

<u>Name</u>	<u>Date</u>	<u>Description</u>
John Norton	02/07/2011	The sample did not meet the CRDL and no duplicate sample was created.

Corrective Action

<u>Name</u>	<u>Date</u>	<u>Corrective Action</u>
John Norton	02/07/2011	The CRDL and the lack of a duplicate were both due to the limited supply of sample water available.

Client Notification Summary

<u>Client</u>	<u>Project Manager</u>	<u>Notified</u>	<u>Response</u>	<u>How Notified</u>	<u>Note</u>
			<u>Response</u>		<u>Response Note</u>

Quality Assurance Verification

<u>Verified By</u>	<u>Due Date</u>	<u>Status</u>	<u>Notes</u>
			This section not yet completed by QA.

Approval History

<u>Date Approved</u>	<u>Approved By</u>	<u>Position</u>
----------------------	--------------------	-----------------

CHPRC		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST		C.O.C.# X10-080-14	
Collector KB Hulse CHPRC		Contact/Requester Karen Waters-Husted		Telephone No. 376-4650	
SAF No. X10-080		Sampling Origin Hanford Site		Purchase Order/Charge Code 300118ES20	
Project Title EDURA JULY 2010		Logbook No: HNF-N-506 33/21		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: 45 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)			SPECIAL INSTRUCTIONS Hold Time Total Activity Exemption: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Do not combine samples from this SAF with other data sets. Need SDG to be stand alone. 100 Area Generator Knowledge Information Form applies. The CA/CN for all analytical work at WSCF is 401922. Please report all LICs.		

Sample No.	Filter	*	Date	Time	No/Type Container	Sample Analysis	Holding Time	Preservative
B264F6	N	W	7-8-10	1148	1x20-mL P	Activity Scan	6 Months	None
B264F6	N	W			2x1000-mL G/P	C14_LSC: C-14 (1)	6 Months	None
B264F6	N	W			1x4000-mL G/P	GAMMALL_GS: List-1 (9)	6 Months	HNO3 to pH <2
B264F6	N	W			1x1000-mL G/P	Isotopic Thorium	6 Months	HNO3 to pH <2
B264F6	N	W	7-8-10	1149	1x1000-mL G/P	PUISO_PLATE_AEA: Pu-238 + 239/240 (2)	6 Months	HNO3 to pH <2

C14 Re-logged for Additional
Lowlevel E-129 ANALYSIS.
JIB020467
W05947A
10 DAY TAT - DUE 2/14/11
MD0V3

L34EL

JOB 130416
STD 61W05947

Relinquished By KB Hulse CHPRC	Print <i>[Signature]</i>	Sign	Date/Time JUL 08 2010 1500	Received By SSU-1	Print <i>[Signature]</i>	Sign	Date/Time JUL 08 2010 1500	Matrix * S = Soil DS = Dross Solid SF = Sediment DI = Dross I. Soil SO = Solid T = Tissue SL = Sludge W = Waste W = Water L = Liquid O = Oil V = Vegetation A = Air X = Other
Relinquished By SSU-1			Date/Time JUL 09 2010 1100	Received By KB Hulse CHPRC	Print <i>[Signature]</i>	Sign	Date/Time JUL 09 2010 1100	
Relinquished By KB Hulse CHPRC	Print <i>[Signature]</i>	Sign	Date/Time JUL 09 2010 1406	Received By ANGEL Garcia Cristoforetti	Print <i>[Signature]</i>	Sign	Date/Time JUL 09 2010 1406	
Relinquished By			Date/Time	Received By			Date/Time	
FINAL SAMPLE DISPOSITION	Disposal Method (e.g., Return to customer, per lab procedure, used in process)			Disposed By			Date/Time	

A-5004-842 (05/10)

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

Sample Check-in List

1406
 Date/Time Received: July 9, 10:00 GM Screen Results (out) .2 (in) .3 Initials TC
 Client: POW SDG #: WAS947 NA [] SAP #: X10-080 NA []
 Work Order Number: 7067130416 Chain of Custody # X10-080-22; 30;
 *See Below for 98; 82; 90; 66; 106; 46; NA []
 Shipping Container ID: Hand Delivered NA [] Air Bill # 21438139

Item 1 through 5 for shipping container-only. Initial appropriate response

- Custody Seals on shipping container intact? Yes [] No [] No Custody Seal []
- Custody Seals dated and signed? Yes [] No [] No Custody Seal []
- Chain of Custody record present? Yes [] No []
- Cooler temperature: 4c NA [] 5. Vermiculite/packing materials is NA [] Wet [] Dry []

Item 6 through 10 for samples. Initial appropriate response.

- Number of samples in shipping container (Each sample may contain multiple bottles): _____
- Sample holding times exceeded? NA [] Yes [] No []
- Samples have:
 - tape custody seals
 - hazard labels
 - appropriate sample labels
- Samples are:
 - in good condition
 - broken
 - leaking
 - have air bubbles
 - (Only for samples requiring head space)
- Sample pH taken? NA [] pH < 4 [] pH > 2 [] pH > 9 [] Amount of HNO3 Added _____
- Sample Location, Sample Collector Listed? * Yes [] No []
*For documentation only. No corrective action needed.
- Were any anomalies identified in sample receipt? Yes [] No []
- Description of anomalies (include sample numbers): NA

*ICEchest 6WS-187, 6WS-060, 6WS-188, 6WS-094, 6WS-060

see other side for additional comments.

Sample Custodian: Angela Date: July 9, 10:00/1406
 Client Informed on N/A by N/A Person contacted N/A
 No action necessary; proceed as is.
 Project Manager: Seeger Date: 7/21/10
 LS-023, Rev. 10, 10/09

Seger, Sandra

From: Seger, Sandra
Sent: Wednesday, February 02, 2011 11:19 AM
To: Champoux, Sara J
Cc: 'Waters-husted, Karen S'
Subject: RE: B264F6 Volume Remaining (W05947)

Rhonda sends her apologies for misguiding you yesterday. She did not notice that the COC indicates that we received 2 bottles for C14.

From: Waters-husted, Karen S [mailto:Karen_S_Waters-husted@RL.gov]
Sent: Wednesday, February 02, 2011 11:12 AM
To: Seger, Sandra; Champoux, Sara J
Subject: RE: B264F6 Volume Remaining (W05947)

That will be wonderful. Thank you and Sara for all the work you've done here.
Karen

From: Seger, Sandra [mailto:Sandra.Seger@testamericainc.com]
Sent: Wednesday, February 02, 2011 11:08 AM
To: Champoux, Sara J; Waters-husted, Karen S
Subject: RE: B264F6 Volume Remaining (W05947)

I think there should be some of the C14 fraction left. According to the COC we received 2 1000 ml bottles for the C14. I believe we used 200 ml for the C14 analysis which would leave approximately 1800 ml left.

We can not use the gamma, Thiso or Puiso fractions because they were acidified. We would have to use a reduced aliquot for the low level I129. We usually use 4000 ml. We would not be able to analyze a duplicate. One other thing to mention is the sample is out of hold time (6 months per the COC). The sample was taken on 7/8/10.

I just spoke to Karen on the phone. She instructed me to start the analysis if we have some of the C14 sample left. The project has requested a 10 day TAT if possible. If 10 days is not possible then a 15 day is requested. I'm pretty sure we can meet a 10 day TAT. I'll have the sample re-logged using W05947A for the SDG number unless you prefer to use another SDG number.

As soon as I find out about the sample volume I send a email to both of you.

Sandra

From: Champoux, Sara J [mailto:Sara_J_Changpoux@RL.gov]
Sent: Wednesday, February 02, 2011 10:38 AM
To: Seger, Sandra
Subject: RE: B264F6 Volume Remaining (W05947)

I talked with Rhonda yesterday, and she relayed to me that there was not enough sample. But any extra info you could give me would be appreciated. Thanks!

Sara J. Champoux
Chemist/Scientist
Soil and Groundwater Remediation Project
Analytical Support

2/2/2011

B264F6 Volume Remaining (W05947)

Page 2 of 2

(509) 373-5290

From: Seger, Sandra [mailto:Sandra.Seger@testamericainc.com]
Sent: Wednesday, February 02, 2011 8:22 AM
To: Champoux, Sara J
Subject: B264F6 Volume Remaining (W05947)

Sara,

I received your voice message regarding volume remaining for sample B264F6. The lab is checking this out for me. As soon as I find out how much sample is left I'll let you know.

Sandra

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Please consider the environment before printing this e-mail.

1/2/2011

TestAmerica

Page 21 of 23

Amended Report

2/2/2011 4:26:53 PM **Sample Preparation/Analysis** Balance Id:1120482733
 384868, Pacific Northwest National Laboratory , BN I-129 Prp/Sep GAM002 Pipet #: _____
 Pacific Northwest National Lab TB Gamma by LEPD
 AnalyDueDate: 02/14/2011 W05947A 5I CLIENT: HANFORD Sep1 DT/Tm Tech:
 Batch: 1033167 WATER pCi/L PM, Quote: SS , 57671 Sep2 DT/Tm Tech:
 SEQ Batch, Test: None All Tests: 1033167 BNTB, Prep Tech: ,ONEILLD

Work Order, Lot, Sample Date/Time	Total Amt/Unit	Initial Allquot Amt/Unit	QC Tracer Prep Date	Dish Size	Ppt or Geometry	Count Time Min	Detector Id	Count On Off (24hr) Circle	CR Analyst, Init/Date	Comments:
1 MD0V3-1-AA J1B020467-1-SAMP 07/08/2010 09:29	1795.10g,in	1795.10g,in	ITA10432 01/05/11	0.1204g 0.0848g	200	200	L4	0719	2/1/11 K	
AmtRec: 2 - 1000 ML PLASTIC #Containers: 2 Scr: Alpha: Beta:										
2 MD00V-1-AA-B J1B020000-167-BLK 02/02/2011 15:45 pd	1800.30g,in	1800.30g,in	ITA10433 01/05/11	0.1210g 0.0867g	34.3mg		L5	0719		
AmtRec: #Containers: 1 Scr: Alpha: Beta:										
3 MD00V-1-AC-C J1B020000-167-LCS 02/02/2011 15:45 pd	1800.70g,in	1800.70g,in	ISD1190 10/16/10,pd 05/26/10	0.1238g 0.0887g	35.1mg		L4	1042	2/1/11 3	
AmtRec: #Containers: 1 Scr: Alpha: Beta:										

Comments:

All Clients for Batch:
 384868, Pacific Northwest National Laboratory Pacific Northwest National Lab, SS , 57671

MD0V31AA-SAMP Constituent List:
 MD00V1AA-BLK Constituent List:
 MD00V1AC-LCS:
 MD0V31AA-SAMP Calc Info:
 Uncert Level (#s): 2 Decay to SaDt: Y Blk Subt.: N Sci.Not.: Y ODRs: B
 MD00V1AA-BLK Calc Info:
 Uncert Level (#s): 2 Decay to SaDt: Y Blk Subt.: N Sci.Not.: Y ODRs: B
 MD00V1AC-LCS:
 Uncert Level (#s): 2 Decay to SaDt: Y Blk Subt.: N Sci.Not.: Y ODRs: B

REVISION 1

2/2/2011 4:26:54 PM

Sample Preparation/Analysis

Balance Id:1120482733

BN I-129 Prp/Sep GAM002

Pipet #: _____

TB Gamma by LEPD

Sep1 DT/Tm Tech:

AnalyDueDate: 02/14/2011

SI CLIENT: HANFORD

Sep2 DT/Tm Tech:

Batch: 1033167

pCi/L

Prep Tech: ,ONeillD

SEQ Batch, Test: None



Work Order, Lot, Sample DateTime	Total Amt/Unit	Initial Aliquot Amt/Unit	QC Tracer Prep Date	Dish Size	Ppt or Geometry	Count Time Min	Detector Id	Count On Off (24hr) Circle	CR Analyst, Init/Date	Comments:
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2/7/2011 3:12:36 PM

ICOC Fraction Transfer/Status Report

ByDate: 2/7/2010, 2/12/2011, Batch: '1033167', User: *ALL Order By DateTimeAccepting

Q Batch	Work Ord	CurStatus	Accepting	Comments
1033167				
AC	Rev1C	ONeillD	2/2/2011 4:13:42 PM	
SC		wagarr	IsBatched 2/2/2011 3:46:49 PM	ICOC_RADCALC v4.8.49
SC		ONeillD	InPrep 2/2/2011 4:13:42 PM	RL-PRP-004 REVISION 1
SC		ONeillD	InPrep2 2/4/2011 1:18:59 PM	RL-GAM-002 REVISION 1
SC		ONeillD	Prep2C 2/6/2011 1:46:13 PM	RL-GAM-002 REVISION 1
SC		BlackCL	InCnt1 2/7/2011 3:27:41 AM	RL-CI-007 REVISION 1
SC		BlackCL	CalcC 2/7/2011 12:40:45 PM	RL-CI-007 REVISION 1
SC		nortonj	Rev1C 2/7/2011 3:12:30 PM	RL-DR-001 Rev 2
AC		ONeillD	2/4/2011 1:18:59 PM	
AC		ONeillD	2/6/2011 1:46:13 PM	
AC		BlackCL	2/7/2011 3:27:41 AM	
AC		BlackCL	2/7/2011 12:40:45 PM	
AC		nortonj	2/7/2011 3:12:30 PM	

AC: Accepting Entry; SC: Status Change

TestAmerica Richland
Richland Wa.