

JULY 22, 2010

Analytical Data Package Prepared For
CH2M Hill Plateau Remediation

Radiochemical Analysis By
TestAmerica

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

Assigned Laboratory Code: TARL

Data Package Contains _____ Pages

Report No.: 44296

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.
W05921	L10-007	B23R02	J0F220413-2	L277K1AA	9L277K10	0173168
		B23R07	J0F220413-1	L277A1AC	9L277A10	0173168

JULY 22, 2010



TestAmerica Laboratories, Inc.

Certificate of Analysis

CH2M Hill Plateau Remediation Company
P.O. Box 1600
Richland, WA 99352

July 22, 2010

Attention: John Trechter

SAF Number	:	L10-007
Date SDG Closed	:	June 02, 2010
Number of Samples	:	Two (2)
Sample Type	:	Water
SDG Number	:	W05921
Data Deliverable	:	30/30 Day

CASE NARRATIVE

I. Introduction

On June 02, 2010 TestAmerica received a request to analyze two water samples for radiochemical analysis. Upon receipt, the samples were assigned to lot J0F220413 assigned the following laboratory ID number to correspond with the CH2M specific ID:

<u>CH2M ID#</u>	<u>TARL ID#</u>	<u>MATRIX</u>	<u>DATE OF RECEIPT</u>
B23R07	L277A	WATER	06/02/10
B23R02	L277K	WATER	06/02/10

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.

July 22, 2010

The requested analyses were:

Liquid Scintillation Counting

Mid Level Tritium by method RL-LSC-005 (RICH-RC-5007)*

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

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

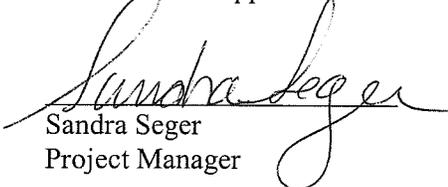
Liquid Scintillation Counting

Mid Level Tritium by method RL-LSC-005 (RICH-RC-5007):

The results for sample B23R07 and B23R07 DUP are more negative than three times the total error. This appears to be a one time occurrence. The laboratory will monitor for trends. The CRDL was not met. Except as noted, the LCS, batch blank, samples and sample duplicate (B23R07) 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

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.

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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 $(\text{Result}/\text{Expected})-1$ 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 COPRECIPIATION
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 / DOE0089T EXT Chromatography	SEPARATION OF AMERICIUM, CURIUM, AND URANIUM BY EXTRACTION CHROMATOGRAPHY
Am	RL-ALP-010	RICH-RC-5080	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 680	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 / DOE0089T EXT Chromatography	SEPARATION OF AMERICIUM, CURIUM, AND URANIUM BY EXTRACTION CHROMATOGRAPHY
Coliform	RL-WC-001	RICH-WC-5001	9222B	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-5003	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 (CrVI) IN SOLID MATRICES WITH ALKALINE DIGESTION
Fe	RL-LSC-015	RICH-RC-5074	EXT Chromatography Mod Fe55/PNL-ALO-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-RB-5013	Mod H-02 / EPA 520	TRITIUM, CARBON-14, NICKEL-63 OR PHOSPHORUS-32 ANALYSIS IN URINE
H3	RL-LSC-003	RICH-RB-5034	7500-3 / SM	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 EB 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

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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 ModFe55/PNL-ALO-435	SEPARATION OF IRON AND NICKEL BY EXTRACTION CHROMATOGRAPHY
Ni63	RL-LSC-001	RICH-RB-5013	Mod H-02 / EPA 520	TRITIUM, CARBON-14, NICKEL-63 OR PHOSPHORUS-32 ANALYSIS IN URINE
Ni63	RL-LSC-017	RICH-RC-5069	EXT Chromatography Mod RP300 / DOE0089T	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 / EPA 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 HPS N13.30 PERFORMANCE TESTING
Prep - Bioassay	RL-PRP-002	RICH-RB-5037	LA-10300-M R200 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	G-03 / HASL 300 Anal Chem 1972	ELECTRODEPOSITION OF ACTINIDES
Prep - Count	RL-ALP-014	RICH-RC-5085	Morrison & Freiser 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	Sr02 / 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 ER100 / 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	D5259 / 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 ER100 / 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 / DOE0089T	URINE AND WATER SAMPLE PREPARATION BY CALCIUM PHOSPHATE PRECIPITATION
Prep - Water	RL-PRP-010	RICH-RC-5086	AnalyticaChemActa1992 RP800 / DOE0089T	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 / DOE0089T	DETERMINATION OF PLUTONIUM BY EXTRACTION CHROMATOGRAPHY
Ra	RL-RA-001	RICH-RC-5005	903.1 / EPA 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 / EPA 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
S35	ARCHIVED	RICH-RB-5020	Hillebrand, Lundeell, Bright, Hoffman 1953	DETERMINATION OF SULFUR-35 IN URINE
Se79	RL-LSC-012	RICH-RC-5043	Selenium / NAS-NS-3030	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 FECES
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 FECES
Sr	RL-GPC-003	RICH-RC-5006	Mod Sr02 / HASL300 Mod 905.0 / EPA 600	STRONTIUM SEPARATION IN ENVIROMENTAL MATRICES
Sr - Yt	RL-GPC-004	RICH-RC-5071	Mod Sr02 / HASL300 Mod 905.0 / EPA 600	YTTRIUM-90 SEPARATION FOR STRONTIUM-90 DETERMINATION IN ALL MATRICES
Tc	RL-LSC-014	RICH-RC-5065	EXT Chromatography Mod RP550 / DOE0089T	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	D5174 / ASTM	DETERMINATION OF URANIUM BY PHOSPHORESCENCE ANALYSIS
U	RL-ALP-004	RICH-RC-5067	EXT Chromatography Mod RP725 / DOE0089T	SEPARATION OF URANIUM BY EXTRACTION CHROMATOGRAPHY
U	RL-ALP-003	RICH-RC-5072	EXT Chrom Mod RP725 & 800 / DOE0089T	SEPARATION OF AMERICIUM, CURIUM, AND URANIUM BY EXTRACTION CHROMATOGRAPHY
U	RL-ALP-009	RICH-RC-5079	EXT Chromatography Mod RP725 / DOE0089T	DETERMINATION OF ISOTOPIC URANIUM IN ALL MATRICES

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Sample Results Summary

Date: 22-Jul-10

TestAmerica TARL

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

Report No. : 44296

SDG No: W05921

Batch	Client Id Work Order	Parameter	Result +- Uncertainty (2s)	Qual	Units	Tracer Yield	MDC or MDA	CRDL	RPD
0173168	906.0ML_H3_LSC								
	B23R02								
	L277K1AA	H-3	-1.64E+01 +- 2.6E+01	U	pCi/L	100%	2.98E+01	2.50E+01	
	B23R07								
	L277A1AC	H-3	-4.24E+01 +- 2.6E+01	U	pCi/L	100%	3.06E+01	2.50E+01	
	B23R07 DUP								
	L277A1AD	H-3	-4.72E+01 +- 2.6E+01	U	pCi/L	100%	2.98E+01	2.50E+01	-10.6
	No. of Results:	3							

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QC Results Summary

Date: 22-Jul-10

TestAmerica TARL

Ordered by Method, Batch No, QC Type,.

Report No. : 44296

SDG No.: W05921

Batch	Work Order	Parameter	Result +- Uncertainty (2s)	Qual	Units	Tracer Yield	LCS Recovery	Bias	MDC MDA
906.0ML_H3_LSC	0173168	BLANK QC,							
	L28C81AA	H-3	-1.01E+01 +- 2.7E+01	U	pCi/L	100%			3.08E+01
	0173168	LCS,							
	L28C81AC	H-3	9.88E+03 +- 1.1E+03		pCi/L	100%	109%	0.1	3.17E+01
No. of Results: 2									

TestAmerica

Bias - (Result/Expected)-1 as defined by ANSI N13.30.

rptSTLRchQcSummary V5.2.5 A2002

U Qual - Analyzed for but not detected above limiting criteria. Limit criteria is less than the Mdc/Mda or Total Uncert or not identified by gamma scan software.

FORM I

Date: 22-Jul-10

SAMPLE RESULTS

Lab Name: TestAmerica
 Lot-Sample No.: J0F220413-2
 Client Sample ID: B23R02

SDG: W05921
 Report No.: 44296
 COC No.: L10-007-005

Collection Date: 6/1/2010 11:08:00 AM
 Received Date: 6/2/2010 12:45:00 PM
 Matrix: WATER LIQUID

Ordered by Client Sample ID, Batch No.

Parameter	Result	Qual	Count Error (2 s)	Total Uncert(2 s)	MDC MDA, Action Lev	Rpt Unit, Lc	Yield CRDL(RL)	Rst/MDC, Rst/TotUcert	Analysis, Prep Date	Total Sa Size	Aliquot Size	Primary Detector
Batch: 0173168	906.0ML_H3_LSC											
H-3	-1.64E+01	U	1.3E+01	2.6E+01	2.98E+01 pCi/L	1.47E+01	100%	-0.55	7/12/10 02:17 a		0.01	LSCQ1
						2.50E+01		-(1.3)			L	

Work Order: L277K1AA Report DB ID: 9L277K10

No. of Results: 1 Comments:

JULY 22, 2010

TestAmerica MDC|MDA,Lc - Detection, Decision Level based on instrument background or blank, adjusted by the sample Efficiency, Yield, and Volume.
 rptSTLRchSample U Qual - Analyzed for but not detected above limiting criteria. Limit criteria is less than the Mdc/Mda or Total Uncert or not identified by gamma scan software.
 V5.2.5 A2002

FORM I

Date: 22-Jul-10

SAMPLE RESULTS

Lab Name: TestAmerica
 Lot-Sample No.: J0F220413-1
 Client Sample ID: B23R07

SDG: W05921
 Report No.: 44296
 COC No.: L10-007-010

Collection Date: 6/1/2010 1:05:00 PM

Received Date: 6/2/2010 12:45:00 PM

Matrix: WATER LIQUID

Ordered by Client Sample ID, Batch No.

Parameter	Result	Qual	Count Error (2 s)	Total Uncert(2 s)	MDC MDA, Action Lev	Rpt Unit, Lc	Yield CRDL(RL)	Rst/MDC, Rst/TotUcert	Analysis, Prep Date	Total Sa Size	Aliquot Size	Primary Detector
Batch: 0173168	906.0ML_H3_LSC											
H-3	-4.24E+01	U	1.3E+01	2.6E+01	3.06E+01 pCi/L	1.51E+01	100%	-(1.4)	7/12/10 02:17 a		0.01	LSCQ1
						2.50E+01		-(3.3)			L	

Work Order: L277A1AC

Report DB ID: 9L277A10

No. of Results: 1 Comments:

JULY 22, 2010

FORM II

Date: 22-Jul-10

DUPLICATE RESULTS

Lab Name: TestAmerica
 Lot-Sample No.: J0F220413-1
 Client Sample ID: B23R07 DUP

SDG: W05921
 Report No.: 44296
 COC No.: L10-007-010
 Collection Date: 6/1/2010 1:05:00 PM
 Received Date: 6/2/2010 12:45:00 PM
 Matrix: WATER LIQUID

Parameter	Result, Orig Rst	Qual	Count Error (2 s)	Total Uncert(2 s)	MDC MDA, Action Lev	Rpt Unit, CRDL	Yield	Rst/MDC, Rst/TotUcert	Analysis, Prep Date	Total Sa Size	Aliquot Size	Primary Detector
Batch: 0173168	906.0ML_H3_LSC											
H-3	-4.72E+01	U	1.2E+01	2.6E+01	2.98E+01	pCi/L	100%	- (1.6)	7/12/10 02:17 a		0.01	LSCQ1
	-4.24E+01	U	RPD -10.6			2.50E+01		-(3.7)	Orig Sa DB ID: 9L277A10		L	

No. of Results: 1 Comments:

JULY 22, 2010

TestAmerica RPD - Relative Percent Difference.
 rptSTLRchDupV5.2 MDC|MDA,Lc - Detection, Decision Level based on instrument background or blank, adjusted by the sample Efficiency, Yield, and Volume.
 .5 A2002 U Qual - Analyzed for but not detected above limiting criteria. Limit criteria is less than the Mdc/Mda or Total Uncert or not identified by gamma scan software.

FORM II

Date: 22-Jul-10

BLANK RESULTS

Lab Name: TestAmerica
 Matrix: WATER

SDG: W05921
 Report No.: 44296

Parameter	Result	Qual	Count Error (2 s)	Total Uncert(2 s)	MDC MDA	Rpt Unit, CRDL	Yield	Rst/MDC, Rst/TotUcert	Analysis, Prep Date	Total Sa Size	Aliquot Size	Primary Detector
Batch: 0173168	906.0ML_H3_LSC											
H-3	-1.01E+01	U	1.3E+01	2.7E+01	3.08E+01 1.52E+01	pCi/L 2.50E+01	100%	-0.33 -0.76	7/12/10 02:17 a		0.01 L	LSCQ1
Work Order: L28C81AA Report DB ID: L28C81AB												

No. of Results: 1 Comments:

JULY 22, 2010

FORM II

Date: 22-Jul-10

LCS RESULTS

Lab Name: TestAmerica

SDG: W05921

Matrix: WATER

Report No.: 44296

Parameter	Result	Qual	Count Error (2 s)	Total Uncert(2 s)	MDC MDA	Report Unit	Yield	Expected	Expected Uncert	Recovery, Bias	Analysis, Prep Date	Aliquot Size	Primary Detector
Batch: 0173168	906.0ML_H3_LSC												
					Work Order: L28C81AC	Report DB ID: L28C81CS							
H-3	9.88E+03		7.5E+01	1.1E+03	3.17E+01 pCi/L		100%	9.07E+03	2.72E+02	109%	7/12/10 02:17 a	0.01	LSCQ1
Rec Limits:											0.1	L	

No. of Results: 1 Comments:

JULY 22, 2010

JULY 22, 2010

Lot No., Due Date: J0F220413; 07/02/2010
Client, Site: 1378399; RUS TEDF HANFORD
QC Batch No., Method Test: 0173168; RTRITIUM Midlevel Tritium
SDG, Matrix: W05921; WATER

1.0 COC

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:

NCM 10-16326

First Level *[Signature]* Date *7/21/10*

Data Review Checklist RADIOCHEMISTRY Second Level Review

Batch Number: 0173168

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 C

Date: 7/22/10

Clouseau Nonconformance Memo



NCM #: 10-16326	Classification: Anomaly
NCM Initiated By: Lisa Antonson	Status: PMREVIEW
Date Opened: 07/21/2010	Production Area: Counting
Date Closed:	Tests: Midlevel Tritium
	Lot #'s (Sample #'s): J0F220000 (168), J0F220413 (1,2),
	QC Batches: 0173168,
Nonconformance: Other (describe in detail)	
Subcategory: Other (explanation required)	

Problem Description / Root Cause

Name	Date	Description
Lisa Antonson	07/21/2010	The sample and duplicate results are more negative than three times the total error. This appears to be a one time occurrence. The laboratory will monitor for trends.
Lisa Antonson	07/21/2010	The samples also do not meet CRDL.

Corrective Action

Name	Date	Corrective Action
Lisa Antonson	07/21/2010	Will monitor for trends.
Lisa Antonson	07/21/2010	

Client Notification Summary

Client	Project Manager	Notified	Response	How Notified	Note
			Response		Response Note

Quality Assurance Verification

Verified By	Due Date	Status	Notes
Lisa Antonson			This section not yet completed by QA.

Approval History

Date Approved	Approved By	Position
	Lisa Antonson	
	Lisa Antonson	

COLLECTOR

A. McIntyre

COMPANY CONTACT
BOWMAN, MW

TELEPHONE NO.
373-9379

PROJECT COORDINATOR
BOWMAN, M

DATA
TURNAROUND
30 Days / 30
Days

PRICE CODE 7H

SAMPLING LOCATION

699-51-75 May

PROJECT DESIGNATION
H3 GROUNDWATER MONITORING WELLS - FY 2010

FIELD LOGBOOK NO.
HNF-N-506-32 pg 8

ICE CHEST NO.

N/A

ACTUAL SAMPLE DEPTH
N/A

AIR QUALITY

METHOD OF SHIPMENT
Govt. Vehicle

SHIPPED TO

TestAmerica Incorporated, Richland

OFFSITE PROPERTY NO.
N/A

COA
400776CA40

BILL OF LADING/AIR BILL NO.
N/A

MATRIX*

OL = OTHER LIQUID
OS = OTHER SOLID
S = SOIL
W = WATER

SPECIAL HANDLING AND/OR STORAGE

POSSIBLE SAMPLE HAZARDS/ REMARKS

Contains Radioactive Material at concentrations that may or may not be regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 5400.5 (1990/1993)

SAMPLE NO.	LAB ID	MATRIX*	SAMPLE DATE	SAMPLE TIME	NO./TYPE CONTAINER(S)	ANALYSIS	PRESERVATION
B23R07		W	<i>6/11/10</i>	<i>1305</i>	1X1L P Tritium;	<i>L277A</i>	None
B23R07		W			1X20mL G/P Rad Screen;	<i>Q#81939</i> <i>JOF220413</i> <i>JDDG16W05921</i> <i>DAL-70210</i>	None

bb 6/11/10



JULY 22, 2010

CHAIN OF POSSESSION

SPECIAL INSTRUCTIONS

RELINQUISHED BY/REMOVED FROM *A. McIntyre* DATE/TIME *1530* JUN 01 2010 RECEIVED BY/STORED IN *SSU #1* DATE/TIME *1530* JUN 01 2010

RELINQUISHED BY/REMOVED FROM *SSU-1* DATE/TIME *0730* JUN 02 2010 RECEIVED BY/STORED IN *L.D. Wall* DATE/TIME *0730* JUN 02 2010

RELINQUISHED BY/REMOVED FROM *L.D. Wall* DATE/TIME *0730* JUN 02 2010 RECEIVED BY/STORED IN *CHPRC* DATE/TIME *0730* JUN 02 2010

RELINQUISHED BY/REMOVED FROM *CHPRC* DATE/TIME *0730* JUN 02 2010 RECEIVED BY/STORED IN *Special Storage* DATE/TIME *0730* JUN 02 2010

RELINQUISHED BY/REMOVED FROM *Special Storage* DATE/TIME *0730* JUN 02 2010 RECEIVED BY/STORED IN *D.L. for* DATE/TIME *0730* JUN 02 2010

TARL: Send copy of chain of custody to John Trechter 24 hours after sample receipt. E-Mail preliminary report within 30 days from sample receipt, followed by final hard copy to John Trechter within 45 days of sample receipt.

TARL: Analyze samples for "Mid-Level" Tritium (with MDL of 25 pCi/L).

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

JULY 22, 2010

L10-007-005 PAGE 1 OF 1

PRICE CODE 7H
AIR QUALITY 30 Days / 30 Days

PROJECT COORDINATOR BOWMAN, M

TELEPHONE NO. 373-9379

COMPANY CONTACT BOWMAN, MW

COLLECTOR **J.P. Herrick**
CHPRC

METHOD OF SHIPMENT Govt. Vehicle

SAF NO. L10-007
COA 400776CA40

PROJECT DESIGNATION H3 GROUNDWATER MONITORING WELLS - FY 2010

FIELD LOGBOOK NO. HNF-N-506-25 pg. 36
ACTUAL SAMPLE DEPTH N/A

SHIPPING TO TestAmerica Incorporated, Richland

BILL OF LADING/AIR BILL NO. N/A

OFFSITE PROPERTY NO. N/A

PROJECT DESIGNATION H3 GROUNDWATER MONITORING WELLS - FY 2010

FIELD LOGBOOK NO. HNF-N-506-25 pg. 36
ACTUAL SAMPLE DEPTH N/A

SHIPPING TO TestAmerica Incorporated, Richland

POSSIBLE SAMPLE HAZARDS/REMARKS
Contains Radioactive Material at concentrations that may or may not be regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 5400.5 (1990/1993)

OFFSITE PROPERTY NO. N/A

PROJECT DESIGNATION H3 GROUNDWATER MONITORING WELLS - FY 2010

FIELD LOGBOOK NO. HNF-N-506-25 pg. 36
ACTUAL SAMPLE DEPTH N/A

SHIPPING TO TestAmerica Incorporated, Richland

SAMPLE NO.	LAB ID	MATRIX*	SAMPLE DATE	SAMPLE TIME	NO./TYPE CONTAINER(S)	ANALYSIS	PRESERVATION
B23R02		W	06-21-10	1108	1X1L P Tritium;	L277K RUSA JOF220413 JDSGW05921 DUE 7.02.10	None
B23R02		W	06-01-10	1108	1X20mL G/P Rad Screen;		None

Rnw 06-01-10

CHAIN OF POSSESSION

RELINQUISHED BY/REMOVED FROM
J.P. Herrick
CHPRC

RECEIVED BY/STORED IN
DATE/TIME 5:20
JUN 01 2010

RELINQUISHED BY/REMOVED FROM
L.D. Wall
SSU-1

RECEIVED BY/STORED IN
DATE/TIME 0730
JUN 02 2010

RELINQUISHED BY/REMOVED FROM
L.D. Wall
CHPRC

RECEIVED BY/STORED IN
DATE/TIME 0730
JUN 02 2010

RELINQUISHED BY/REMOVED FROM
L.D. Wall
CHPRC

RECEIVED BY/STORED IN
DATE/TIME 0730
JUN 02 2010

SPECIAL INSTRUCTIONS
TARL: Send copy of chain of custody to John Trechter 24 hours after sample receipt. E-Mail preliminary report within 30 days from sample receipt, followed by final hard copy to John Trechter within 45 days of sample receipt.
TARL: Analyze samples for "Mid-Level" Tritium (with MDL of 25 pCi/L).

20 of 23

LABORATORY SECTION	RECEIVED BY	TITLE	DATE/TIME
FINAL SAMPLE DISPOSITION <td></td> <td></td> <td></td>			

JULY 22, 2010

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

Sample Check-in List

Date/Time Received: JUNE 2.10 @ 12:45 GM Screen Results (out) .0 (in) .2 Initials [B]

Client: RWS 1 SDG #: W0592/NA SAF #: L10-007 NA []

Work Order Number: JOF 220413 Chain of Custody # L10-007-010;

Shipping Container ID: Hand Delivered Air Bill # 005 NA []

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

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

Item 6 through 10 for samples. Initial appropriate response.

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

see other side for additional comments

Sample Custodian: Conger Garcia Jr. Date: JUNE. 2.10

Client Informed on N/A by N/A Person contacted N/A

No action necessary; process as is.

Project Manager [Signature] Date 6/22/10

6/22/2010 9:38:13 AM
 1378399, Fluor Hanford Inc
 Hanford Inc
 Sample Preparation/Analysis
 AR H-3 Prp/Sep LSC005
 T0 Tritium - Midlevel, by Liquid Scint
 5I CLIENT: HANFORD
 PM, Quote: SS, 81939
 Balance Id:
 Pipet #:
 Sep1 DT/Tm Tech:
 Sep2 DT/Tm Tech:
 Prep Tech:

AnalyDueDate: 07/02/2010
 Batch: 0173168
 SEQ Batch, Test: None
 WATER
 All Tests: 0173168 ART0,
 pCi/L
 CR Analyst,
 Init/Date

Work Order, Lot,
 Sample Date/Time
 Total
 Amt/Unit
 Initial Aliquot
 Amt/Unit
 QC Tracer
 Prep Date
 Count
 Time Min
 Detector
 Id
 Count On | Off
 (24hr) Circle
 Comments:

1 L277A-1-AC
 J0F220413-1-SAMP
 06/01/2010 13:05
 AmtRec: VIAL20,1XLP
 #Containers: 2
 Alpha:
 Beta:
 Scr:

2 L277A-1-AD-X
 J0F220413-1-DUP
 06/01/2010 13:05
 AmtRec: VIAL20,1XLP
 #Containers: 2
 Alpha:
 Beta:
 Scr:

3 L277K-1-AA
 J0F220413-2-SAMP
 06/01/2010 11:08
 AmtRec: VIAL20,1XLP
 #Containers: 2
 Alpha:
 Beta:
 Scr:

4 L28C8-1-AA-B
 J0F220000-168-BLK
 06/22/2010 09:38 pd
 AmtRec:
 #Containers: 1
 Alpha:
 Beta:
 Scr:

5 L28C8-1-AC-C
 J0F220000-168-LCS
 06/22/2010 09:38 pd
 AmtRec:
 #Containers: 1
 Alpha:
 Beta:
 Scr:

6 L28C8-1-AD-BN
 J0F220000-168-IBLK
 06/22/2010 09:38 pd
 AmtRec:
 #Containers: 1
 Alpha:
 Beta:
 Scr:

JULY 22, 2010

6/22/2010 9:38:14 AM

Sample Preparation/Analysis

AR H-3 Prp/Sep LSC005
T0 Tritium - Midlevel, by Liquid Scint
5I CLIENT: HANFORD

Balance Id:

Pipet #:

PRIORITY

Analysis Date: 07/02/2010

Batch: 0173168

SEQ Batch, Test: None

pCi/L

Sep1 DT/Tm Tech:

Sep2 DT/Tm Tech:

Prep Tech:

Work Order, Lot, Sample Date/Time	Total Amt/Unit	Initial Aliquot Amt/Unit	QC Tracer Prep Date	Count Time Min	Detector Id	Count On Off (24hr) Circle	CR Analyst, Init/Date	Comments:
								

Comments:

All Clients for Batch:

1378399, Fluor Hanford Inc

Fluor Hanford Inc , SS , 81939

L277A1AC-SAMP Constituent List:

L28C81AA-BLK:

L28C81AC-LCS:

L28C81AD-IBLK:

L277A1AC-SAMP Calc Info:

Uncert Level (#s) : 2	Decay to SaDt: Y	Blk Subt.: N	Sci.Not.: Y	ODRs: B
L28C81AA-BLK:				
L28C81AC-LCS:				
L28C81AD-IBLK:				

JULY 22, 2010