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Analytical Data Package Prepared For

Brown and Caldwell

Yerington Air Quality - Event #80

Radiochemical Analysis By

STL Richland

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

Assigned Laboratory Code: STLR

Data Package Contains _____ Pages

Report No.: 32541

SDG No.	Order No.	Client Sample ID (List Order)	Lot-Sa No.	Work Order	Report DB ID	Batch No.
31853		000466	J6F080203-1	H61AE1AG	9H61AE10	6163126
		000466	J6F080203-1	H61AE1AA	9H61AE10	6163128
		000466	J6F080203-1	H61AE1AE	9H61AE10	6163132
		000466	J6F080203-1	H61AE1AF	9H61AE10	6163134
		000466	J6F080203-1	H61AE1AC	9H61AE10	6163137
		000466	J6F080203-1	H61AE1AD	9H61AE10	6163140
		000467	J6F080203-2	H61AH1AG	9H61AH10	6163126
		000467	J6F080203-2	H61AH1AA	9H61AH10	6163128
		000467	J6F080203-2	H61AH1AE	9H61AH10	6163132
		000467	J6F080203-2	H61AH1AF	9H61AH10	6163134
		000467	J6F080203-2	H61AH1AC	9H61AH10	6163137
		000467	J6F080203-2	H61AH1AD	9H61AH10	6163140
		000468	J6F080203-3	H61AK1AG	9H61AK10	6163126
		000468	J6F080203-3	H61AK1AA	9H61AK10	6163128
		000468	J6F080203-3	H61AK1AE	9H61AK10	6163132
		000468	J6F080203-3	H61AK1AF	9H61AK10	6163134
		000468	J6F080203-3	H61AK1AC	9H61AK10	6163137
		000468	J6F080203-3	H61AK1AD	9H61AK10	6163140
		000469	J6F080203-4	H61AL1AG	9H61AL10	6163126
		000469	J6F080203-4	H61AL1AA	9H61AL10	6163128
		000469	J6F080203-4	H61AL1AE	9H61AL10	6163132
		000469	J6F080203-4	H61AL1AF	9H61AL10	6163134
		000469	J6F080203-4	H61AL1AC	9H61AL10	6163137
		000469	J6F080203-4	H61AL1AD	9H61AL10	6163140
		000470	J6F080203-5	H61AM1AG	9H61AM10	6163126
		000470	J6F080203-5	H61AM1AA	9H61AM10	6163128

SDG No.	Order No.	Client Sample ID (List Order)	Lot-Sa No.	Work Order	Report DB ID	Batch No.
31853		000470	J6F080203-5	H61AM1AE	9H61AM10	6163132
		000470	J6F080203-5	H61AM1AF	9H61AM10	6163134
		000470	J6F080203-5	H61AM1AC	9H61AM10	6163137
		000470	J6F080203-5	H61AM1AD	9H61AM10	6163140
		000471	J6F080203-6	H61AR1AG	9H61AR10	6163126
		000471	J6F080203-6	H61AR1AA	9H61AR10	6163128
		000471	J6F080203-6	H61AR1AE	9H61AR10	6163132
		000471	J6F080203-6	H61AR1AF	9H61AR10	6163134
		000471	J6F080203-6	H61AR1AC	9H61AR10	6163137
		000471	J6F080203-6	H61AR1AD	9H61AR10	6163140
		000472	J6F080203-7	H61AT1AG	9H61AT10	6163126
		000472	J6F080203-7	H61AT1AA	9H61AT10	6163128
		000472	J6F080203-7	H61AT1AE	9H61AT10	6163132
		000472	J6F080203-7	H61AT1AF	9H61AT10	6163134
		000472	J6F080203-7	H61AT1AC	9H61AT10	6163137
		000472	J6F080203-7	H61AT1AD	9H61AT10	6163140
		P-0637	J6F080203-8	H61AX1AG	9H61AX10	6163126
		P-0637	J6F080203-8	H61AX1AA	9H61AX10	6163128
		P-0637	J6F080203-8	H61AX1AE	9H61AX10	6163132
		P-0637	J6F080203-8	H61AX1AF	9H61AX10	6163134
		P-0637	J6F080203-8	H61AX1AC	9H61AX10	6163137
		P-0637	J6F080203-8	H61AX1AD	9H61AX10	6163140
		P-0638	J6F080203-9	H61A11AG	9H61A110	6163126
		P-0638	J6F080203-9	H61A11AA	9H61A110	6163128
		P-0638	J6F080203-9	H61A11AE	9H61A110	6163132
		P-0638	J6F080203-9	H61A11AF	9H61A110	6163134
		P-0638	J6F080203-9	H61A11AC	9H61A110	6163137
		P-0638	J6F080203-9	H61A11AD	9H61A110	6163140
		P-0639	J6F080203-10	H61A21AG	9H61A210	6163126
		P-0639	J6F080203-10	H61A21AA	9H61A210	6163128
		P-0639	J6F080203-10	H61A21AE	9H61A210	6163132
		P-0639	J6F080203-10	H61A21AF	9H61A210	6163134
		P-0639	J6F080203-10	H61A21AC	9H61A210	6163137
		P-0639	J6F080203-10	H61A21AD	9H61A210	6163140
		P-0641	J6F080203-11	H61A31AG	9H61A310	6163126
		P-0641	J6F080203-11	H61A31AA	9H61A310	6163128
		P-0641	J6F080203-11	H61A31AE	9H61A310	6163132
		P-0641	J6F080203-11	H61A31AF	9H61A310	6163134
		P-0641	J6F080203-11	H61A31AC	9H61A310	6163137

Report No.: 32541

SDG No.	Order No.	Client Sample ID (List Order)	Lot-Sa No.	Work Order	Report DB ID	Batch No.
31853		P-0641	J6F080203-11	H61A31AD	9H61A310	6163140
		P-0642	J6F080203-12	H61A51AG	9H61A510	6163126
		P-0642	J6F080203-12	H61A51AA	9H61A510	6163128
		P-0642	J6F080203-12	H61A51AE	9H61A510	6163132
		P-0642	J6F080203-12	H61A51AF	9H61A510	6163134
		P-0642	J6F080203-12	H61A51AC	9H61A510	6163137
		P-0642	J6F080203-12	H61A51AD	9H61A510	6163140
		P-0643	J6F080203-13	H61A71AG	9H61A710	6163126
		P-0643	J6F080203-13	H61A71AA	9H61A710	6163128
		P-0643	J6F080203-13	H61A71AE	9H61A710	6163132
		P-0643	J6F080203-13	H61A71AF	9H61A710	6163134
		P-0643	J6F080203-13	H61A71AC	9H61A710	6163137
		P-0643	J6F080203-13	H61A71AD	9H61A710	6163140

SEVERN TRENT STL

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Certificate of Analysis

June 30, 2006

Brown & Caldwell
2701 Prospect Park Drive
Rancho Cordova, CA 95670

Attention: Guy Graening

Date Received at Lab	:	June 7, 2006
Project Name	:	Air Quality Monitoring Yerington Mine
Project Number	:	121243
Event Number	:	80
PO Number	:	129682.001
Sample Type	:	Thirteen (13) Filters
SDG Number	:	31853

CASE NARRATIVE

I. Introduction

On June 7, 2006, thirteen filter samples were received at the STL Richland (STLR) laboratory for radiochemical analysis. Upon receipt, the samples were assigned the STLR identification numbers as described on the cover page of the Analytical Data Package report form. The samples were assigned to Lot Number J6F080203.

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 uncertainties.

The analysis requested was:

Alpha Spectroscopy
Thorium-228, -230, -232 by method RICH-RC-5087
Uranium-234, -235, -238 by method RICH-RC-5067
Gas Proportional Counters
Gross Alpha by method STL-RICHRC5016/5014
Gross Beta by method STL-RICHRC5016/5014
Radium-228 by method STL RICH-RC-5005
Alpha Scintillation Counter
Radium-226 by method STL RICH-RC-5005

IV. Quality Control

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

V. Comments

Thorium-228, -230, -232:
The LCS, batch blank and sample results are within analytical requirements.

Uranium-234, -235, -238:
The LCS, batch blank and sample results are within analytical requirements.

Gross Alpha Analysis:
The LCS, batch blank and sample results are within analytical requirements.

Gross Beta Analysis:
All of the samples do not meet CRDL. The results of the samples are >MDA>CRDL except 000472. That sample has an MDA of 6.68 pCi/sa. Data is accepted. Except as noted, the LCS, batch blank and sample results are within acceptance limits.

Radium-228 Analysis:
The LCS, batch blank and sample results are within analytical requirements.

Radium-226 Analysis:
Sample 000472 has an MDA of 1.29 pCi/L due to a 78% yield. The CRDL is 1.0 pCi/L. Data is accepted. Except as noted, the LCS, batch blank and sample results are within analytical 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. The Laboratory Manager or a designee, as verified by the following signature has authorized release of the data contained in this hard copy data package.

Reviewed and approved:

Sherryl A. Adam
Project Manager

Drinking Water Method Cross References

	DRINKING WATER ASTM METHOD CROSS REFERENCES	
Referenced Method	**Isotope(s)**	**STL Richland's SOP number**
EPA 901.1	Cs-134, I-131	RICH-RC-5017
EPA 900.0	Alpha & Beta	RICH-RC-5014
EPA 903.1	Ra-226	RICH-RC-5005
EPA 904.0	Ra-228	RICH-RC-5005
EPA 905.0	Sr89/90	RICH-RC-5006
ASTM D2460	Total Radium	RICH-RC-5027
Standard Method 7500-U-C & ASTM D5174	Uranium	RICH-RC-5058
EPA 906.0	Tritium	RICH-RC-5007
NOTE:		
The Gross Alpha LCS is prepared with Am-241 (unless otherwise specified in the case narrative)		
The Gross Beta LCS is prepared with Sr/Y-90 (unless otherwise specified in the case narrative)		

Uncertainty Estimation

STL 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 = 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/vn), 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 STL Richland.
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) ***u_c - Combined Uncertainty.***	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, *u_c the combined uncertainty.* 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 STL Richland "default" nominal detection limit. Often referred to the reporting level (RL)
Lc	Decision Level based on instrument background or blank, adjusted by the Efficiency, Chemical Yield, and Volume associated with the sample. The Type I error probability is approximately 5%. Lc=(1.645 * Sqrt(2*(BkgrndCnt/BkgrndCntMin)/SCntMin)) * (ConvFct/(Eff*Yld*Abn*Vol) * IngrFct). For LSC methods the batch blank is used as a measure of the background variability. Lc cannot be calculated when the background count is zero.
Lot-Sample No	The number assigned by the LIMS software to track samples received on the same day for a given client. The sample number is a sequential number assigned to each sample in the Lot.
MDC|MDA	Detection Level based on instrument background or blank, adjusted by the Efficiency, Chemical Yield, and Volume with a Type I and II error probability of approximately 5%. MDC = (4.65 * Sqrt((BkgrndCnt/BkgrndCntMin)/SCntMin) + 2.71/SCntMin) * (ConvFct/(Eff * Yld * Abn * Vol) * IngrFct). For LSC methods the batch blank is used as a measure of the background variability.
Primary Detector	The instrument identifier associated with the analysis of the sample aliquot.
Ratio U-234/U-238	The U-234 result divided by the U-238 result. The U-234/U-238 ratio for natural uranium in NIST SRM 4321C is 1.038.
Rst/MDC	Ratio of the Result to the MDC. A value greater than 1 may indicate activity above background at a high level of confidence. Caution should be used when applying this factor and it should be used in concert with the qualifiers associated with the result.
Rst/TotUcert	Ratio of the Result to the Total Uncertainty. If the uncertainty has a coverage factor of 2 a value greater than 1 may indicate activity above background at approximately the 95% level of confidence assuming a two-sided confidence interval. Caution should be used when applying this factor and it should be used in concert with the qualifiers associated with the result.
Report DB No	Sample Identifier used by the report system. The number is based upon the first five digits of the **Work Order** Number.
RER	The equation Replicate Error Ratio = (S-D)/[sqrt($TPUs^2$ + $TPUd^2$)] as defined by ICPT BOA where S is the original sample result, D is the result of the duplicate, TPUs is the total uncertainty of the original sample and TPUd is the total uncertainty of the duplicate sample.
SDG	Sample Delivery Group Number assigned by the Client or assigned by STL Richland 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.

Sample Results Summary

STL Richland STLR

Ordered by Client Sample ID, Batch No.

Date: 30-Jun-06

Report No. : 32541

SDG No: 31853

Client ID	Work Order Number	Parameter	Result +- Uncertainty (2s)	Qual	Units	Yield	MDC|MDA	RER2
000466	H61AE1AG	U-234	-0.0447 +- 0.0636	ND	pCi/sample	88%	0.631	
		U-235	-0.0223 +- 0.0448	ND	pCi/sample	88%	0.535	
		U-238	0.0670 +- 0.232	ND	pCi/sample	88%	0.631	
000466	H61AE1AA	TH-228	0.0732 +- 0.486	ND	pCi/sample	30%	1.23	
		TH-230	0.564 +- 0.578	ND	pCi/sample	30%	0.382	
		TH-232	0.141 +- 0.284	ND	pCi/sample	30%	0.382	
000466	H61AE1AE	ALPHA	12.9 +- 6.37	=	pCi/sample	100%	6.05	
000466	H61AE1AF	BETA	30.9 +- 6.44	=	pCi/sample	100%	6.21	
000466	H61AE1AC	RA-226	0.864 +- 0.679	ND	pCi/sample	85%	1.03	
000466	H61AE1AD	RA-228	2.36 +- 1.30	ND	pCi/sample	76%	2.57	
000467	H61AH1AG	U-234	0.0994 +- 0.199	ND	pCi/sample	102%	0.269	
		U-235	-0.0199 +- 0.0399	ND	pCi/sample	102%	0.476	
		U-238	-0.0995 +- 0.0904	ND	pCi/sample	102%	0.732	
000467	H61AH1AA	TH-228	0.330 +- 0.472	ND	pCi/sample	40%	0.809	
		TH-230	0.106 +- 0.213	ND	pCi/sample	40%	0.287	
		TH-232	0.212 +- 0.303	ND	pCi/sample	40%	0.287	
000467	H61AH1AE	ALPHA	4.38 +- 4.20	ND	pCi/sample	100%	7.18	
000467	H61AH1AF	BETA	38.3 +- 7.38	=	pCi/sample	100%	6.17	
000467	H61AH1AC	RA-226	-0.0577 +- 0.577	ND	pCi/sample	85%	1.14	
000467	H61AH1AD	RA-228	1.33 +- 1.15	ND	pCi/sample	77%	2.45	
000468	H61AK1AG	U-234	0.0293 +- 0.316	ND	pCi/sample	66%	1.01	
		U-235	0.381 +- 0.518	ND	pCi/sample	66%	0.828	
		U-238	-0.1170 +- 0.119	ND	pCi/sample	66%	1.01	
000468	H61AK1AA	TH-228	-0.0482 +- 0.348	ND	pCi/sample	49%	0.97	
		TH-230	0.139 +- 0.280	ND	pCi/sample	49%	0.557	
		TH-232	0.0929 +- 0.187	ND	pCi/sample	49%	0.252	
000468	H61AK1AE	ALPHA	3.33 +- 3.40	ND	pCi/sample	100%	5.64	
000468	H61AK1AF	BETA	23.7 +- 6.09	=	pCi/sample	100%	6.07	
000468	H61AK1AC	RA-226	0.645 +- 0.628	ND	pCi/sample	84%	1.0	
000468	H61AK1AD	RA-228	2.67 +- 1.31	=	pCi/sample	76%	2.51	

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RER2 - Replicate Error Ratio = (S-D)/[sqrt(sq(TPUs)+sq(TPUd))] as defined by ICPT BOA.

= ERPIMS - Equal To, Analyte Detected

ND 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.

Sample Results Summary

STL Richland STLR

Ordered by Client Sample ID, Batch No.

Date: 30-Jun-06

Report No. : 32541

SDG No: 31853

Client ID	Work Order Number	Parameter	Result +- Uncertainty (2s)	Qual	Units	Yield	MDC|MDA	RER2
000469	H61AL1AG	U-234	0.117 +- 0.287	ND	pCi/sample	97%	0.67	
		U-235	-0.0195 +- 0.0392	ND	pCi/sample	97%	0.467	
		U-238	-0.0976 +- 0.0887	ND	pCi/sample	97%	0.718	
000469	H61AL1AA	TH-228	0.203 +- 0.526	ND	pCi/sample	28%	1.14	
		TH-230	0.130 +- 0.262	ND	pCi/sample	28%	0.353	
		TH-232	0.0651 +- 0.291	ND	pCi/sample	28%	0.781	
000469	H61AL1AE	ALPHA	7.98 +- 5.07	=	pCi/sample	100%	6.39	
000469	H61AL1AF	BETA	26.0 +- 6.08	=	pCi/sample	100%	7.0	
000469	H61AL1AC	RA-226	-0.0818 +- 0.466	ND	pCi/sample	92%	0.947	
000469	H61AL1AD	RA-228	1.62 +- 1.02	ND	pCi/sample	83%	2.04	
000470	H61AM1AG	U-234	-0.0000184 +- 0.285	ND	pCi/sample	101%	0.855	
		U-235	-0.0184 +- 0.0370	ND	pCi/sample	101%	0.441	
		U-238	0.387 +- 0.423	ND	pCi/sample	101%	0.632	
000470	H61AM1AA	TH-228	0.119 +- 0.478	ND	pCi/sample	31%	1.11	
		TH-230	0.402 +- 0.481	ND	pCi/sample	31%	0.689	
		TH-232	0.00000 +- 0.281	ND	pCi/sample	31%	0.311	
000470	H61AM1AE	ALPHA	8.65 +- 5.19	=	pCi/sample	100%	6.5	
000470	H61AM1AF	BETA	44.0 +- 8.45	=	pCi/sample	100%	6.7	
000470	H61AM1AC	RA-226	0.0704 +- 0.367	ND	pCi/sample	85%	0.725	
000470	H61AM1AD	RA-228	1.27 +- 1.03	ND	pCi/sample	74%	2.17	
000471	H61AR1AG	U-234	0.110 +- 0.220	ND	pCi/sample	88%	0.297	
		U-235	-0.0438 +- 0.0624	ND	pCi/sample	88%	0.619	
		U-238	0.197 +- 0.314	ND	pCi/sample	88%	0.525	
000471	H61AR1AA	TH-228	0.0431 +- 0.193	ND	pCi/sample	51%	0.518	
		TH-230	0.623 +- 0.493	=	pCi/sample	51%	0.498	
		TH-232	-0.0415 +- 0.0835	ND	pCi/sample	51%	0.498	
000471	H61AR1AE	ALPHA	5.63 +- 4.31	ND	pCi/sample	100%	6.06	
000471	H61AR1AF	BETA	44.9 +- 8.43	=	pCi/sample	100%	6.62	
000471	H61AR1AC	RA-226	-0.1130 +- 0.458	ND	pCi/sample	95%	0.985	
000471	H61AR1AD	RA-228	2.11 +- 1.01	=	pCi/sample	85%	1.9	

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RER2 - Replicate Error Ratio = (S-D)/[sqrt(sq(TPUs)+sq(TPUd))] as defined by ICPT BOA.
= ERPIMS - Equal To, Analyte Detected
ND 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.

Sample Results Summary

STL Richland STLR

Ordered by Client Sample ID, Batch No.

Date: 30-Jun-06

Report No. : 32541

SDG No: 31853

Client ID	Work Order Number	Parameter	Result +- Uncertainty (2s)	Qual	Units	Yield	MDC|MDA	RER2
000472	H61AT1AG	U-234	0.00000 +- 0.266	ND	pCi/sample	92%	0.294	
		U-235	0.00000 +- 0.266	ND	pCi/sample	92%	0.294	
		U-238	0.109 +- 0.218	ND	pCi/sample	92%	0.294	
000472	H61AT1AA	TH-228	0.120 +- 0.241	ND	pCi/sample	57%	0.479	
		TH-230	0.384 +- 0.352	=	pCi/sample	57%	0.208	
		TH-232	0.115 +- 0.232	ND	pCi/sample	57%	0.461	
000472	H61AT1AE	ALPHA	-2.1900 +- 1.61	ND	pCi/sample	100%	7.17	
000472	H61AT1AF	BETA	0.678 +- 3.04	ND	pCi/sample	100%	6.68	
000472	H61AT1AC	RA-226	-0.1860 +- 0.616	ND	pCi/sample	78%	1.29	
000472	H61AT1AD	RA-228	2.27 +- 1.08	=	pCi/sample	70%	1.85	
P-0637	H61AX1AG	U-234	-0.0662 +- 0.0772	ND	pCi/sample	85%	0.696	
		U-235	0.0882 +- 0.225	ND	pCi/sample	85%	0.528	
		U-238	0.00000 +- 0.270	ND	pCi/sample	85%	0.299	
P-0637	H61AX1AA	TH-228	0.0556 +- 0.176	ND	pCi/sample	69%	0.409	
		TH-230	0.160 +- 0.229	ND	pCi/sample	69%	0.394	
		TH-232	0.00000 +- 0.131	ND	pCi/sample	69%	0.145	
P-0637	H61AX1AE	ALPHA	5.07 +- 4.05	ND	pCi/sample	100%	5.78	
P-0637	H61AX1AF	BETA	26.7 +- 5.93	=	pCi/sample	100%	6.44	
P-0637	H61AX1AC	RA-226	0.554 +- 0.502	ND	pCi/sample	87%	0.772	
P-0637	H61AX1AD	RA-228	1.32 +- 0.889	ND	pCi/sample	79%	1.78	
P-0638	H61A11AG	U-234	0.0862 +- 0.220	ND	pCi/sample	91%	0.516	
		U-235	0.00000 +- 0.264	ND	pCi/sample	91%	0.292	
		U-238	0.00000 +- 0.264	ND	pCi/sample	91%	0.292	
P-0638	H61A11AA	TH-228	0.180 +- 0.257	ND	pCi/sample	64%	0.441	
		TH-230	0.0289 +- 0.129	ND	pCi/sample	64%	0.346	
		TH-232	0.0289 +- 0.129	ND	pCi/sample	64%	0.346	
P-0638	H61A11AE	ALPHA	10.8 +- 5.86	=	pCi/sample	100%	6.41	
P-0638	H61A11AF	BETA	29.1 +- 6.15	=	pCi/sample	100%	6.22	
P-0638	H61A11AC	RA-226	0.447 +- 0.459	ND	pCi/sample	89%	0.697	
P-0638	H61A11AD	RA-228	1.75 +- 0.913	=	pCi/sample	81%	1.65	

STL Richland

rptSTLRchSaSum
V4.15.0 A97

RER2 - Replicate Error Ratio = (S-D)/[sqrt(sq(TPUs)+sq(TPUd))] as defined by ICPT BOA.

= ERPIMS - Equal To, Analyte Detected

ND 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.

Sample Results Summary

STL Richland STLR

Ordered by Client Sample ID, Batch No.

Date: 30-Jun-06

Report No. : 32541

SDG No: 31853

Client ID	Work Order Number	Parameter	Result +- Uncertainty (2s)	Qual	Units	Yield	MDC|MDA	RER2
P-0639	H61A21AG	U-234	0.0828 +- 0.212	ND	pCi/sample	95%	0.496	
		U-235	0.00000 +- 0.254	ND	pCi/sample	95%	0.281	
		U-238	0.0621 +- 0.215	ND	pCi/sample	95%	0.585	
P-0639	H61A21AA	TH-228	0.218 +- 0.222	ND	pCi/sample	79%	0.148	
		TH-230	0.0524 +- 0.105	ND	pCi/sample	79%	0.142	
		TH-232	0.0262 +- 0.117	ND	pCi/sample	79%	0.315	
P-0639	H61A21AE	ALPHA	5.52 +- 4.30	ND	pCi/sample	100%	6.49	
P-0639	H61A21AF	BETA	34.1 +- 8.31	=	pCi/sample	100%	5.49	
P-0639	H61A21AC	RA-226	0.0332 +- 0.398	ND	pCi/sample	98%	0.804	
P-0639	H61A21AD	RA-228	0.678 +- 0.733	ND	pCi/sample	88%	1.61	
P-0641	H61A31AG	U-234	0.0582 +- 0.202	ND	pCi/sample	91%	0.548	
		U-235	-0.0194 +- 0.0389	ND	pCi/sample	91%	0.465	
		U-238	0.175 +- 0.279	ND	pCi/sample	91%	0.465	
P-0641	H61A31AA	TH-228	0.0356 +- 0.0715	ND	pCi/sample	104%	0.0965	
		TH-230	0.0685 +- 0.0977	ND	pCi/sample	104%	0.0929	
		TH-232	0.0685 +- 0.0977	ND	pCi/sample	104%	0.0929	
P-0641	H61A31AE	ALPHA	1.11 +- 2.64	ND	pCi/sample	100%	5.98	
P-0641	H61A31AF	BETA	27.2 +- 5.89	=	pCi/sample	100%	6.2	
P-0641	H61A31AC	RA-226	-0.0737 +- 0.373	ND	pCi/sample	106%	0.764	
P-0641	H61A31AD	RA-228	0.493 +- 0.580	ND	pCi/sample	96%	1.29	
P-0642	H61A51AG	U-234	-0.0211 +- 0.0423	ND	pCi/sample	93%	0.505	
		U-235	0.00000 +- 0.258	ND	pCi/sample	93%	0.286	
		U-238	0.00000 +- 0.258	ND	pCi/sample	93%	0.286	
P-0642	H61A51AA	TH-228	0.179 +- 0.212	ND	pCi/sample	108%	0.328	
		TH-230	0.258 +- 0.215	=	pCi/sample	108%	0.116	
		TH-232	0.0859 +- 0.122	ND	pCi/sample	108%	0.116	
P-0642	H61A51AE	ALPHA	4.92 +- 4.36	ND	pCi/sample	100%	7.16	
P-0642	H61A51AF	BETA	29.9 +- 6.25	=	pCi/sample	100%	6.07	
P-0642	H61A51AC	RA-226	0.201 +- 0.286	ND	pCi/sample	94%	0.483	
P-0642	H61A51AD	RA-228	0.745 +- 0.689	ND	pCi/sample	83%	1.47	

STL Richland

rptSTLRchSaSum
V4.15.0 A97

RER2 - Replicate Error Ratio = (S-D)/[sqrt(sq(TPUs)+sq(TPUd))] as defined by ICPT BOA.

= ERPIMS - Equal To, Analyte Detected

ND 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.

Sample Results Summary

STL Richland STLR

Ordered by Client Sample ID, Batch No.

Date: 30-Jun-06

Report No. : 32541

SDG No: 31853

Client ID	Work Order Number	Parameter	Result +- Uncertainty (2s)	Qual	Units	Yield	MDC|MDA	RER2
P-0643	H61A71AG	U-234	0.0578 +- 0.196	ND	pCi/sample	102%	0.545	
		U-235	-0.0232 +- 0.0270	ND	pCi/sample	102%	0.481	
		U-238	0.0424 +- 0.197	ND	pCi/sample	102%	0.597	
P-0643	H61A71AA	TH-228	0.0575 +- 0.230	ND	pCi/sample	81%	0.534	
		TH-230	0.138 +- 0.201	ND	pCi/sample	81%	0.332	
		TH-232	0.00000 +- 0.136	ND	pCi/sample	81%	0.15	
P-0643	H61A71AE	ALPHA	5.49 +- 4.12	ND	pCi/sample	100%	5.64	
P-0643	H61A71AF	BETA	28.8 +- 6.18	=	pCi/sample	100%	6.28	
P-0643	H61A71AC	RA-226	0.184 +- 0.272	ND	pCi/sample	91%	0.466	
P-0643	H61A71AD	RA-228	0.173 +- 0.689	ND	pCi/sample	81%	1.68	

Number of Results: 130

STL Richland

rptSTLRchSaSum
V4.15.0 A97

RER2 - Replicate Error Ratio = (S-D)/[sqrt(sq(TPUs)+sq(TPUd))] as defined by ICPT BOA.

= ERPIMS - Equal To, Analyte Detected

ND 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.

QC Results Summary
STL Richland STLR

Ordered by QC Type, Batch No.

Date: 30-Jun-06

Report No. : 32541

SDG No.: 31853

QC Type	Work Order Number	Parameter	Result +- Uncertainty (2s)	Qual	Units	Yield	Recovery	Bias	MDC|MDA
BLANK QC	H67QJ1AA	U-234	0.0112 +- 0.0181	N	pCi/sample	97%			0.0317
		U-235	-0.00152 +- 0.00178	N	pCi/sample	97%			0.0317
		U-238	-0.00203 +- 0.00206	N	pCi/sample	97%			0.0339
BLANK QC	H67QL1AA	TH-228	-0.00184 +- 0.0133	N	pCi/sample	77%			0.037
		TH-230	0.0106 +- 0.0151	N	pCi/sample	77%			0.0261
		TH-232	0.00000 +- 0.00868	N	pCi/sample	77%			0.0096
BLANK QC	H67QN1AA	ALPHA	-0.0185 +- 0.0384	N	pCi/sample	100%			0.134
BLANK QC	H67QQ1AA	BETA	0.201 +- 0.252	N	pCi/sample	100%			0.523
BLANK QC	H67QT1AA	RA-226	-0.00353 +- 0.0819	N	pCi/sample	84%			0.171
BLANK QC	H67QX1AA	RA-228	0.403 +- 0.212	=	pCi/sample	76%			0.378
LCS	H67QJ1AC	U-234	0.948 +- 0.250	=	pCi/sample	87%	97%	0.0	0.0535
		U-238	1.18 +- 0.292	=	pCi/sample	87%	116%	0.2	0.0271
LCS	H67QL1AC	TH-230	1.80 +- 0.377	=	pCi/sample	73%	98%	0.0	0.0131
LCS	H67QN1AC	ALPHA	2.22 +- 0.545	=	pCi/sample	100%	93%	-0.1	0.136
LCS	H67QQ1AC	BETA	4.39 +- 0.862	=	pCi/sample	100%	95%	0.0	0.553
LCS	H67QT1AC	RA-226	1.34 +- 0.368	=	pCi/sample	88%	95%	-0.1	0.16
LCS	H67QX1AC	RA-228	4.46 +- 0.715	=	pCi/sample	78%	91%	-0.1	0.416

Number of Results: 17

STL Richland
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Bias - (Result/Expected)-1 as defined by ANSI N13.30.
= ERPIMS - Equal To, Analyte Detected
ND 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

SAMPLE RESULTS

Date: 30-Jun-06

Lab Name: STL Richland
Lot-Sample No.: J6F080203-1
Client Sample ID: 000466
Yerington Air Quality - Event #80

SDG: 31853
Report No. : 32541
COC No. :

Collection Date: 5/22/2006 10:10:00 AM
Received Date: 6/7/2006 10:00:00 AM
Matrix: FILTER AIR

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	Analy Method, Primary Detector
Batch: 6163126	**Work Order:** H61AE1AG			**Report DB ID:** 9H61AE10								
U-234	**-0.0447**	ND	0.063	0.064	0.631	pCi/sample	88%	*-0.07*	6/29/06 03:29 p	1.0	0.06252	E908.0
						0.164	1.0	*-(1.4)*		Sample	Sample	ALP1
U-235	**-0.0223**	ND	0.045	0.045	0.535	pCi/sample	88%	*-0.04*	6/29/06 03:29 p	1.0	0.06252	E908.0
						0.116	1.0	*-1.*		Sample	Sample	ALP1
U-238	**0.0670**	ND	0.23	0.23	0.631	pCi/sample	88%	*0.11*	6/29/06 03:29 p	1.0	0.06252	E908.0
						0.164	1.0	*0.58*		Sample	Sample	ALP1
								Ratio U-234/238 = -0.7				
Batch: 6163128	**Work Order:** H61AE1AA			**Report DB ID:** 9H61AE10								
TH-228	**0.0732**	ND	0.49	0.49	1.23	pCi/sample	30%	*0.06*	6/23/06 10:25 a	1.0	0.08338	ISOTH
						0.417	1.0	*0.3*		Sample	Sample	ALP116
TH-230	**0.564**	ND	0.56	0.58	0.382	pCi/sample	30%	*(1.5)*	6/23/06 10:25 a	1.0	0.08338	ISOTH
							1.0	*(2.)*		Sample	Sample	ALP116
TH-232	**0.141**	ND	0.28	0.28	0.382	pCi/sample	30%	*0.37*	6/23/06 10:25 a	1.0	0.08338	ISOTH
							1.0	*0.99*		Sample	Sample	ALP116
Batch: 6163132	**Work Order:** H61AE1AE			**Report DB ID:** 9H61AE10								
ALPHA	**12.9**	=	5.8	6.4	6.05	pCi/sample	100%	*(2.1)*	6/22/06 06:57 a	1.0	0.02084	E900.0
						2.26	20.0	*(4.1)*		Sample	Sample	GPC10E
Batch: 6163134	**Work Order:** H61AE1AF			**Report DB ID:** 9H61AE10								
BETA	**30.9**	=	4.8	6.4	6.21	pCi/sample	100%	*(5.)*	6/20/06 04:05 p	1.0	0.08327	E900.0
						2.94	5.0	*(9.6)*		Sample	Sample	GPC32A
Batch: 6163137	**Work Order:** H61AE1AC			**Report DB ID:** 9H61AE10								

STL Richland
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V4.15.0 A97

MDC|MDA,Lc - Detection, Decision Level based on instrument background or blank, adjusted by the sample Efficiency, Yield, and Volume.
= ERPIMS - Equal To, Analyte Detected
ND 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

SAMPLE RESULTS

Date: 30-Jun-06

Lab Name: STL Richland
Lot-Sample No.: J6F080203-1
Client Sample ID: 000466
Yerington Air Quality - Event #80

SDG: 31853
Report No. : 32541
COC No. :

Collection Date: 5/22/2006 10:10:00 AM
Received Date: 6/7/2006 10:00:00 AM
Matrix: FILTER AIR

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	Analy Method, Primary Detector
RA-226	**0.864**	ND	0.65	0.68	1.03	pCi/sample	85%	*0.84*	6/23/06 03:15 p	1.0	0.24918	E903.1
						0.455	1.0	*(2.5)*		Sample	Sample	ASC1HB
Batch: 6163140	**Work Order:** H61AE1AD			**Report DB ID:** 9H61AE10								
RA-228	**2.36**	ND	1.2	1.3	2.57	pCi/sample	76%	*0.92*	6/29/06 06:20 a	1.0	0.24918	E904.0
						1.18	3.1	*(3.6)*		Sample	Sample	GPC7A

Number of Results: 10

Comments:

STL Richland
rptSTLRchSample
V4.15.0 A97

MDC|MDA,Lc - Detection, Decision Level based on instrument background or blank, adjusted by the sample Efficiency, Yield, and Volume.
= ERPIMS - Equal To, Analyte Detected
ND 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

SAMPLE RESULTS

Date: 30-Jun-06

Lab Name: STL Richland **SDG:** 31853 **Collection Date:** 5/22/2006 10:30:00 AM

Lot-Sample No.: J6F080203-2 **Report No. :** 32541 **Received Date:** 6/7/2006 10:00:00 AM

Client Sample ID: 000467 **COC No. :** **Matrix:** FILTER AIR

Yerington Air Quality - Event #80

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	Analy Method, Primary Detector
Batch: 6163126	**Work Order:** H61AH1AG			**Report DB ID:** 9H61AH10								
U-234	**0.0994**	ND	0.20	0.20	0.269	pCi/sample	102%	*0.37*	6/29/06 03:29 p	1.0	0.06253	E908.0
							1.0	*1.*		Sample	Sample	ALP2
U-235	**-0.0199**	ND	0.040	0.040	0.476	pCi/sample	102%	*-0.04*	6/29/06 03:29 p	1.0	0.06253	E908.0
						0.103	1.0	*-1.*		Sample	Sample	ALP2
U-238	**-0.0995**	ND	0.089	0.090	0.732	pCi/sample	102%	*-0.14*	6/29/06 03:29 p	1.0	0.06253	E908.0
						0.231	1.0	*-(2.2)*		Sample	Sample	ALP2
								Ratio U-234/238 = -1.0				
Batch: 6163128	**Work Order:** H61AH1AA			**Report DB ID:** 9H61AH10								
TH-228	**0.330**	ND	0.47	0.47	0.809	pCi/sample	40%	*0.41*	6/23/06 10:25 a	1.0	0.08403	ISOTH
						0.256	1.0	*(1.4)*		Sample	Sample	ALP119
TH-230	**0.106**	ND	0.21	0.21	0.287	pCi/sample	40%	*0.37*	6/23/06 10:25 a	1.0	0.08403	ISOTH
							1.0	*0.99*		Sample	Sample	ALP119
TH-232	**0.212**	ND	0.30	0.30	0.287	pCi/sample	40%	*0.74*	6/23/06 10:25 a	1.0	0.08403	ISOTH
							1.0	*(1.4)*		Sample	Sample	ALP119
Batch: 6163132	**Work Order:** H61AH1AE			**Report DB ID:** 9H61AH10								
ALPHA	**4.38**	ND	4.1	4.2	7.18	pCi/sample	100%	*0.61*	6/22/06 08:49 a	1.0	0.0208	E900.0
						2.85	20.0	*(2.1)*		Sample	Sample	GPC10A
Batch: 6163134	**Work Order:** H61AH1AF			**Report DB ID:** 9H61AH10								
BETA	**38.3**	=	5.1	7.4	6.17	pCi/sample	100%	*(6.2)*	6/20/06 04:05 p	1.0	0.08363	E900.0
						2.92	5.0	*(10.4)*		Sample	Sample	GPC32B
Batch: 6163137	**Work Order:** H61AH1AC			**Report DB ID:** 9H61AH10								

STL Richland
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V4.15.0 A97

MDC|MDA,Lc - Detection, Decision Level based on instrument background or blank, adjusted by the sample Efficiency, Yield, and Volume.
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ND 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

SAMPLE RESULTS

Date: 30-Jun-06

Lab Name: STL Richland | **SDG:** 31853 | **Collection Date:** 5/22/2006 10:30:00 AM

Lot-Sample No.: J6F080203-2 | **Report No. :** 32541 | **Received Date:** 6/7/2006 10:00:00 AM

Client Sample ID: 000467 | **COC No. :** | **Matrix:** FILTER AIR

Yerington Air Quality - Event #80

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	Analy Method, Primary Detector
RA-226	-0.0577	ND	0.58	0.58	1.14	pCi/sample	85%	*-0.05*	6/23/06 03:16 p	1.0	0.2498	E903.1
						0.504	1.0	*-0.2*		Sample	Sample	ASC2RC
Batch: 6163140	**Work Order:** H61AH1AD			**Report DB ID:** 9H61AH10								
RA-228	1.33	ND	1.1	1.1	2.45	pCi/sample	77%	*0.54*	6/29/06 06:20 a	1.0	0.2498	E904.0
						1.12	3.1	*(2.3)*		Sample	Sample	GPC7B

Number of Results: 10

Comments:

STL Richland
rptSTLRchSample
V4.15.0 A97

MDC|MDA,Lc - Detection, Decision Level based on instrument background or blank, adjusted by the sample Efficiency, Yield, and Volume.
= ERPIMS - Equal To, Analyte Detected
ND 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

SAMPLE RESULTS

Date: 30-Jun-06

Lab Name: STL Richland **SDG:** 31853 **Collection Date:** 5/22/2006 10:45:00 AM

Lot-Sample No.: J6F080203-3 **Report No. :** 32541 **Received Date:** 6/7/2006 10:00:00 AM

Client Sample ID: 000468 **COC No. :** **Matrix:** FILTER AIR

Yerington Air Quality - Event #80

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	Analy Method, Primary Detector
Batch: 6163126	**Work Order:** H61AK1AG			**Report DB ID:** 9H61AK10								
U-234	**0.0293**	ND	0.32	0.32	1.01	pCi/sample	66%	*0.03*	6/29/06 03:29 p	1.0	0.0623	E908.0
						0.305	1.0	*0.19*		Sample	Sample	ALP3
U-235	**0.381**	ND	0.51	0.52	0.828	pCi/sample	66%	*0.46*	6/29/06 03:29 p	1.0	0.0623	E908.0
						0.215	1.0	*(1.5)*		Sample	Sample	ALP3
U-238	**-0.1170**	ND	0.12	0.12	1.01	pCi/sample	66%	*-0.12*	6/29/06 03:29 p	1.0	0.0623	E908.0
						0.305	1.0	*-(2.)*		Sample	Sample	ALP3
								Ratio U-234/238 = -0.3				
Batch: 6163128	**Work Order:** H61AK1AA			**Report DB ID:** 9H61AK10								
TH-228	**-0.0482**	ND	0.35	0.35	0.97	pCi/sample	49%	*-0.05*	6/23/06 10:25 a	1.0	0.08287	ISOTH
						0.355	1.0	*-0.28*		Sample	Sample	ALP120
TH-230	**0.139**	ND	0.28	0.28	0.557	pCi/sample	49%	*0.25*	6/23/06 10:25 a	1.0	0.08287	ISOTH
						0.153	1.0	*0.99*		Sample	Sample	ALP120
TH-232	**0.0929**	ND	0.19	0.19	0.252	pCi/sample	49%	*0.37*	6/23/06 10:25 a	1.0	0.08287	ISOTH
							1.0	*0.99*		Sample	Sample	ALP120
Batch: 6163132	**Work Order:** H61AK1AE			**Report DB ID:** 9H61AK10								
ALPHA	**3.33**	ND	3.3	3.4	5.64	pCi/sample	100%	*0.59*	6/22/06 08:49 a	1.0	0.02087	E900.0
						2.09	20.0	*(2.)*		Sample	Sample	GPC10B
Batch: 6163134	**Work Order:** H61AK1AF			**Report DB ID:** 9H61AK10								
BETA	**23.7**	=	4.3	6.1	6.07	pCi/sample	100%	*(3.9)*	6/20/06 04:05 p	1.0	0.0828	E900.0
						2.87	5.0	*(7.8)*		Sample	Sample	GPC32C
Batch: 6163137	**Work Order:** H61AK1AC			**Report DB ID:** 9H61AK10								

STL Richland
rptSTLRchSample
V4.15.0 A97

MDC|MDA,Lc - Detection, Decision Level based on instrument background or blank, adjusted by the sample Efficiency, Yield, and Volume.
= ERPIMS - Equal To, Analyte Detected
ND 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

SAMPLE RESULTS

Date: 30-Jun-06

Lab Name: STL Richland
Lot-Sample No.: J6F080203-3
Client Sample ID: 000468
Yerington Air Quality - Event #80

SDG: 31853
Report No. : 32541
COC No. :

Collection Date: 5/22/2006 10:45:00 AM
Received Date: 6/7/2006 10:00:00 AM
Matrix: FILTER AIR

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	Analy Method, Primary Detector
RA-226	**0.645**	ND	0.61	0.63	1.0	pCi/sample	84%	*0.64*	6/23/06 03:15 p	1.0	0.24874	E903.1
						0.443	1.0	*(2.1)*		Sample	Sample	ASC3HA
Batch: 6163140	**Work Order:** H61AK1AD			**Report DB ID:** 9H61AK10								
RA-228	**2.67**	=	1.3	1.3	2.51	pCi/sample	76%	*(1.1)*	6/29/06 06:20 a	1.0	0.24874	E904.0
						1.14	3.1	*(4.1)*		Sample	Sample	GPC7C

Number of Results: 10

Comments:

STL Richland
rptSTLRchSample
V4.15.0 A97

MDC|MDA,Lc - Detection, Decision Level based on instrument background or blank, adjusted by the sample Efficiency, Yield, and Volume.
= ERPIMS - Equal To, Analyte Detected
ND 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

SAMPLE RESULTS

Date: 30-Jun-06

Lab Name: STL Richland **SDG:** 31853 **Collection Date:** 5/22/2006 11:10:00 AM

Lot-Sample No.: J6F080203-4 **Report No. :** 32541 **Received Date:** 6/7/2006 10:00:00 AM

Client Sample ID: 000469 **COC No. :** **Matrix:** FILTER AIR

Yerington Air Quality - Event #80

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	Analy Method, Primary Detector
Batch: 6163126	**Work Order:** H61AL1AG			**Report DB ID:** 9H61AL10								
U-234	0.117	ND	0.29	0.29	0.67	pCi/sample	97%	*0.17*	6/29/06 03:30 p	1.0	0.06239	E908.0
						0.203	1.0	*0.81*		Sample	Sample	ALP4
U-235	-0.0195	ND	0.039	0.039	0.467	pCi/sample	97%	*-0.04*	6/29/06 03:30 p	1.0	0.06239	E908.0
						0.101	1.0	*-1.*		Sample	Sample	ALP4
U-238	-0.0976	ND	0.087	0.089	0.718	pCi/sample	97%	*-0.14*	6/29/06 03:30 p	1.0	0.06239	E908.0
						0.227	1.0	*-(2.2)*		Sample	Sample	ALP4
								Ratio U-234/238 = -1.2				
Batch: 6163128	**Work Order:** H61AL1AA			**Report DB ID:** 9H61AL10								
TH-228	0.203	ND	0.52	0.53	1.14	pCi/sample	28%	*0.18*	6/23/06 07:38 p	1.0	0.08362	ISOTH
						0.385	1.0	*0.77*		Sample	Sample	ALP171
TH-230	0.130	ND	0.26	0.26	0.353	pCi/sample	28%	*0.37*	6/23/06 07:38 p	1.0	0.08362	ISOTH
							1.0	*0.99*		Sample	Sample	ALP171
TH-232	0.0651	ND	0.29	0.29	0.781	pCi/sample	28%	*0.08*	6/23/06 07:38 p	1.0	0.08362	ISOTH
						0.214	1.0	*0.45*		Sample	Sample	ALP171
Batch: 6163132	**Work Order:** H61AL1AE			**Report DB ID:** 9H61AL10								
ALPHA	7.98	=	4.8	5.1	6.39	pCi/sample	100%	*(1.2)*	6/22/06 08:49 a	1.0	0.02093	E900.0
						2.44	20.0	*(3.1)*		Sample	Sample	GPC10C
Batch: 6163134	**Work Order:** H61AL1AF			**Report DB ID:** 9H61AL10								
BETA	26.0	=	4.8	6.1	7.0	pCi/sample	100%	*(3.7)*	6/20/06 04:05 p	1.0	0.0835	E900.0
						3.33	5.0	*(8.6)*		Sample	Sample	GPC32D
Batch: 6163137	**Work Order:** H61AL1AC			**Report DB ID:** 9H61AL10								

STL Richland
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V4.15.0 A97

MDC|MDA,Lc - Detection, Decision Level based on instrument background or blank, adjusted by the sample Efficiency, Yield, and Volume.
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ND 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

SAMPLE RESULTS

Date: 30-Jun-06

Lab Name: STL Richland
Lot-Sample No.: J6F080203-4
Client Sample ID: 000469
Yerington Air Quality - Event #80

SDG: 31853
Report No. : 32541
COC No. :

Collection Date: 5/22/2006 11:10:00 AM
Received Date: 6/7/2006 10:00:00 AM
Matrix: FILTER AIR

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	Analy Method, Primary Detector
RA-226	-0.0818	ND	0.47	0.47	0.947	pCi/sample	92%	*-0.09*	6/23/06 03:14 p	1.0	0.24895	E903.1
						0.413	1.0	*-0.35*		Sample	Sample	ASC4UA
Batch: 6163140	**Work Order:** H61AL1AD			**Report DB ID:** 9H61AL10								
RA-228	1.62	ND	0.94	1.0	2.04	pCi/sample	83%	*0.8*	6/29/06 06:16 a	1.0	0.24895	E904.0
						0.922	3.1	*(3.2)*		Sample	Sample	GPC1A

Number of Results: 10

Comments:

STL Richland
rptSTLRchSample
V4.15.0 A97

MDC|MDA,Lc - Detection, Decision Level based on instrument background or blank, adjusted by the sample Efficiency, Yield, and Volume.
= ERPIMS - Equal To, Analyte Detected
ND 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

SAMPLE RESULTS

Date: 30-Jun-06

Lab Name: STL Richland | **SDG:** 31853 | **Collection Date:** 5/22/2006 11:25:00 AM

Lot-Sample No.: J6F080203-5 | **Report No. :** 32541 | **Received Date:** 6/7/2006 10:00:00 AM

Client Sample ID: 000470 | **COC No. :** | **Matrix:** FILTER AIR

Yerington Air Quality - Event #80

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	Analy Method, Primary Detector
Batch: 6163126	**Work Order:** H61AM1AG			**Report DB ID:** 9H61AM10								
U-234	-0.0000184	ND	0.29	0.29	0.855	pCi/sample	101%	*0.*	6/29/06 03:30 p	1.0	0.06238	E908.0
						0.303	1.0	*0.*		Sample	Sample	ALP5
U-235	-0.0184	ND	0.037	0.037	0.441	pCi/sample	101%	*-0.04*	6/29/06 03:30 p	1.0	0.06238	E908.0
						0.0958	1.0	*-1.*		Sample	Sample	ALP5
U-238	0.387	ND	0.42	0.42	0.632	pCi/sample	101%	*0.61*	6/29/06 03:30 p	1.0	0.06238	E908.0
						0.192	1.0	*(1.8)*		Sample	Sample	ALP5
								Ratio U-234/238 = 0.0				
Batch: 6163128	**Work Order:** H61AM1AA			**Report DB ID:** 9H61AM10								
TH-228	0.119	ND	0.48	0.48	1.11	pCi/sample	31%	*0.11*	6/23/06 07:38 p	1.0	0.08394	ISOTH
						0.392	1.0	*0.5*		Sample	Sample	ALP172
TH-230	0.402	ND	0.47	0.48	0.689	pCi/sample	31%	*0.58*	6/23/06 07:38 p	1.0	0.08394	ISOTH
						0.189	1.0	*(1.7)*		Sample	Sample	ALP172
TH-232	0.00000	ND	0.0000	0.28	0.311	pCi/sample	31%	*0.*	6/23/06 07:38 p	1.0	0.08394	ISOTH
							1.0	*0.*		Sample	Sample	ALP172
Batch: 6163132	**Work Order:** H61AM1AE			**Report DB ID:** 9H61AM10								
ALPHA	8.65	=	4.9	5.2	6.5	pCi/sample	100%	*(1.3)*	6/22/06 08:49 a	1.0	0.02087	E900.0
						2.54	20.0	*(3.3)*		Sample	Sample	GPC10D
Batch: 6163134	**Work Order:** H61AM1AF			**Report DB ID:** 9H61AM10								
BETA	44.0	=	5.5	8.4	6.7	pCi/sample	100%	*(6.6)*	6/20/06 06:46 p	1.0	0.08406	E900.0
						3.19	5.0	*(10.4)*		Sample	Sample	GPC26A
Batch: 6163137	**Work Order:** H61AM1AC			**Report DB ID:** 9H61AM10								

STL Richland
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V4.15.0 A97

MDC|MDA,Lc - Detection, Decision Level based on instrument background or blank, adjusted by the sample Efficiency, Yield, and Volume.
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FORM I

SAMPLE RESULTS

Date: 30-Jun-06

Lab Name: STL Richland | **SDG:** 31853 | **Collection Date:** 5/22/2006 11:25:00 AM

Lot-Sample No.: J6F080203-5 | **Report No. :** 32541 | **Received Date:** 6/7/2006 10:00:00 AM

Client Sample ID: 000470 | **COC No. :** | **Matrix:** FILTER AIR

Yerington Air Quality - Event #80

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	Analy Method, Primary Detector
RA-226	0.0704	ND	0.37	0.37	0.725	pCi/sample	85%	*0.1*	6/23/06 03:18 p	1.0	0.24871	E903.1
						0.299	1.0	*0.38*		Sample	Sample	ASC7UA
Batch: 6163140	**Work Order:** H61AM1AD			**Report DB ID:** 9H61AM10								
RA-228	1.27	ND	1.0	1.0	2.17	pCi/sample	74%	*0.59*	6/29/06 06:16 a	1.0	0.24871	E904.0
						0.974	3.1	*(2.5)*		Sample	Sample	GPC1C

Number of Results: 10

Comments:

STL Richland
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MDC|MDA,Lc - Detection, Decision Level based on instrument background or blank, adjusted by the sample Efficiency, Yield, and Volume.
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FORM I

SAMPLE RESULTS

Date: 30-Jun-06

Lab Name: STL Richland | **SDG:** 31853 | **Collection Date:** 5/22/2006 11:35:00 AM

Lot-Sample No.: J6F080203-6 | **Report No. :** 32541 | **Received Date:** 6/7/2006 10:00:00 AM

Client Sample ID: 000471 | **COC No. :** | **Matrix:** FILTER AIR

Yerington Air Quality - Event #80

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	Analy Method, Primary Detector
Batch: 6163126	**Work Order:** H61AR1AG			**Report DB ID:** 9H61AR10								
U-234	**0.110**	ND	0.22	0.22	0.297	pCi/sample	88%	*0.37*	6/29/06 03:30 p	1.0	0.06248	E908.0
							1.0	*1.*		Sample	Sample	ALP6
U-235	**-0.0438**	ND	0.062	0.062	0.619	pCi/sample	88%	*-0.07*	6/29/06 03:30 p	1.0	0.06248	E908.0
						0.161	1.0	*-(1.4)*		Sample	Sample	ALP6
U-238	**0.197**	ND	0.31	0.31	0.525	pCi/sample	88%	*0.38*	6/29/06 03:30 p	1.0	0.06248	E908.0
						0.114	1.0	*(1.3)*		Sample	Sample	ALP6
								Ratio U-234/238 = 0.6				
Batch: 6163128	**Work Order:** H61AR1AA			**Report DB ID:** 9H61AR10								
TH-228	**0.0431**	ND	0.19	0.19	0.518	pCi/sample	51%	*0.08*	6/23/06 07:38 p	1.0	0.08425	ISOTH
						0.142	1.0	*0.45*		Sample	Sample	ALP173
TH-230	**0.623**	=	0.48	0.49	0.498	pCi/sample	51%	*(1.3)*	6/23/06 07:38 p	1.0	0.08425	ISOTH
						0.137	1.0	*(2.5)*		Sample	Sample	ALP173
TH-232	**-0.0415**	ND	0.083	0.083	0.498	pCi/sample	51%	*-0.08*	6/23/06 07:38 p	1.0	0.08425	ISOTH
						0.137	1.0	*-1.*		Sample	Sample	ALP173
Batch: 6163132	**Work Order:** H61AR1AE			**Report DB ID:** 9H61AR10								
ALPHA	**5.63**	ND	4.2	4.3	6.06	pCi/sample	100%	*0.93*	6/22/06 08:49 a	1.0	0.02089	E900.0
						2.27	20.0	*(2.6)*		Sample	Sample	GPC10E
Batch: 6163134	**Work Order:** H61AR1AF			**Report DB ID:** 9H61AR10								
BETA	**44.9**	=	5.6	8.4	6.62	pCi/sample	100%	*(6.8)*	6/20/06 06:46 p	1.0	0.08346	E900.0
						3.14	5.0	*(10.6)*		Sample	Sample	GPC26B
Batch: 6163137	**Work Order:** H61AR1AC			**Report DB ID:** 9H61AR10								

STL Richland
rptSTLRchSample
V4.15.0 A97

MDC|MDA,Lc - Detection, Decision Level based on instrument background or blank, adjusted by the sample Efficiency, Yield, and Volume.
= ERPIMS - Equal To, Analyte Detected
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FORM I

SAMPLE RESULTS

Date: 30-Jun-06

Lab Name: STL Richland
SDG: 31853
Collection Date: 5/22/2006 11:35:00 AM
Lot-Sample No.: J6F080203-6
Report No. : 32541
Received Date: 6/7/2006 10:00:00 AM
Client Sample ID: 000471
COC No. :
Matrix: FILTER AIR

Yerington Air Quality - Event #80

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	Analy Method, Primary Detector
RA-226	-0.1130	ND	0.46	0.46	0.985	pCi/sample	95%	*-0.11*	6/23/06 03:19 p	1.0	0.24963	E903.1
						0.416	1.0	*-0.49*		Sample	Sample	ASC8RD
Batch: 6163140	**Work Order:** H61AR1AD			**Report DB ID:** 9H61AR10								
RA-228	2.11	=	0.96	1.0	1.9	pCi/sample	85%	*(1.1)*	6/29/06 06:16 a	1.0	0.24963	E904.0
						0.852	3.1	*(4.2)*		Sample	Sample	GPC1D

Number of Results: 10

Comments:

STL Richland
rptSTLRchSample
V4.15.0 A97

MDC|MDA,Lc - Detection, Decision Level based on instrument background or blank, adjusted by the sample Efficiency, Yield, and Volume.
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ND 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

SAMPLE RESULTS

Date: 30-Jun-06

Lab Name: STL Richland
Lot-Sample No.: J6F080203-7
Client Sample ID: 000472
Yerington Air Quality - Event #80

SDG: 31853
Report No. : 32541
COC No. :

Collection Date: 5/22/2006 10:15:00 AM
Received Date: 6/7/2006 10:00:00 AM
Matrix: FILTER AIR

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	Analy Method, Primary Detector
Batch: 6163126	**Work Order:** H61AT1AG			**Report DB ID:** 9H61AT10								
U-234	0.00000	ND	0.0000	0.27	0.294	pCi/sample	92%	0.	6/29/06 03:30 p	1.0	0.06174	E908.0
							1.0	0.		Sample	Sample	ALP7
U-235	0.00000	ND	0.0000	0.27	0.294	pCi/sample	92%	0.	6/29/06 03:30 p	1.0	0.06174	E908.0
							1.0	0.		Sample	Sample	ALP7
U-238	0.109	ND	0.22	0.22	0.294	pCi/sample	92%	0.37	6/29/06 03:30 p	1.0	0.06174	E908.0
							1.0	1.		Sample	Sample	ALP7
Batch: 6163128	**Work Order:** H61AT1AA			**Report DB ID:** 9H61AT10								
TH-228	0.120	ND	0.24	0.24	0.479	pCi/sample	57%	0.25	6/23/06 07:38 p	1.0	0.08303	ISOTH
						0.131	1.0	1.		Sample	Sample	ALP174
TH-230	0.384	=	0.34	0.35	0.208	pCi/sample	57%	(1.8)	6/23/06 07:38 p	1.0	0.08303	ISOTH
							1.0	(2.2)		Sample	Sample	ALP174
TH-232	0.115	ND	0.23	0.23	0.461	pCi/sample	57%	0.25	6/23/06 07:38 p	1.0	0.08303	ISOTH
						0.126	1.0	1.		Sample	Sample	ALP174
Batch: 6163132	**Work Order:** H61AT1AE			**Report DB ID:** 9H61AT10								
ALPHA	-2.1900	ND	1.5	1.6	7.17	pCi/sample	100%	-0.31	6/22/06 10:42 a	1.0	0.02081	E900.0
						2.85	20.0	-(2.7)		Sample	Sample	GPC10A
Batch: 6163134	**Work Order:** H61AT1AF			**Report DB ID:** 9H61AT10								
BETA	0.678	ND	3.0	3.0	6.68	pCi/sample	100%	0.1	6/20/06 06:46 p	1.0	0.08267	E900.0
						3.16	5.0	0.45		Sample	Sample	GPC26C
Batch: 6163137	**Work Order:** H61AT1AC			**Report DB ID:** 9H61AT10								

STL Richland
rptSTLRchSample
V4.15.0 A97

MDC|MDA,Lc - Detection, Decision Level based on instrument background or blank, adjusted by the sample Efficiency, Yield, and Volume.
= ERPIMS - Equal To, Analyte Detected
ND 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

SAMPLE RESULTS

Date: 30-Jun-06

Lab Name: STL Richland | **SDG:** 31853 | **Collection Date:** 5/22/2006 10:15:00 AM

Lot-Sample No.: J6F080203-7 | **Report No. :** 32541 | **Received Date:** 6/7/2006 10:00:00 AM

Client Sample ID: 000472 | **COC No. :** | **Matrix:** FILTER AIR

Yerington Air Quality - Event #80

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	Analy Method, Primary Detector
RA-226	-0.1860	ND	0.61	0.62	1.29	pCi/sample	78%	*-0.14*	6/23/06 03:18 p	1.0	0.24726	E903.1
						0.559	1.0	*-0.6*		Sample	Sample	ASC9RC
Batch: 6163140	**Work Order:** H61AT1AD			**Report DB ID:** 9H61AT10								
RA-228	2.27	=	1.0	1.1	1.85	pCi/sample	70%	*(1.2)*	6/29/06 06:16 a	1.0	0.24726	E904.0
						0.781	3.1	*(4.2)*		Sample	Sample	GPC2A

Number of Results: 10

Comments:

STL Richland
rptSTLRchSample
V4.15.0 A97

MDC|MDA,Lc - Detection, Decision Level based on instrument background or blank, adjusted by the sample Efficiency, Yield, and Volume.
= ERPIMS - Equal To, Analyte Detected
ND 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

SAMPLE RESULTS

Date: 30-Jun-06

Lab Name: STL Richland | **SDG:** 31853 | **Collection Date:** 5/22/2006 10:00:00 AM

Lot-Sample No.: J6F080203-8 | **Report No. :** 32541 | **Received Date:** 6/7/2006 10:00:00 AM

Client Sample ID: P-0637 | **COC No. :** | **Matrix:** FILTER AIR

Yerington Air Quality - Event #80

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	Analy Method, Primary Detector
Batch: 6163126	**Work Order:** H61AX1AG			**Report DB ID:** 9H61AX10								
U-234	-0.0662	ND	0.076	0.077	0.696	pCi/sample	85%	*-0.1*	6/29/06 03:31 p	1.0	0.06184	E908.0
						0.199	1.0	*-(1.7)*		Sample	Sample	ALP8
U-235	0.0882	ND	0.22	0.23	0.528	pCi/sample	85%	*0.17*	6/29/06 03:31 p	1.0	0.06184	E908.0
						0.115	1.0	*0.78*		Sample	Sample	ALP8
U-238	0.00000	ND	0.0000	0.27	0.299	pCi/sample	85%	*0.*	6/29/06 03:31 p	1.0	0.06184	E908.0
							1.0	*0.*		Sample	Sample	ALP8
Batch: 6163128	**Work Order:** H61AX1AA			**Report DB ID:** 9H61AX10								
TH-228	0.0556	ND	0.18	0.18	0.409	pCi/sample	69%	*0.14*	6/23/06 07:38 p	1.0	0.08308	ISOTH
						0.129	1.0	*0.63*		Sample	Sample	ALP175
TH-230	0.160	ND	0.23	0.23	0.394	pCi/sample	69%	*0.41*	6/23/06 07:38 p	1.0	0.08308	ISOTH
						0.124	1.0	*(1.4)*		Sample	Sample	ALP175
TH-232	0.00000	ND	0.0000	0.13	0.145	pCi/sample	69%	*0.*	6/23/06 07:38 p	1.0	0.08308	ISOTH
							1.0	*0.*		Sample	Sample	ALP175
Batch: 6163132	**Work Order:** H61AX1AE			**Report DB ID:** 9H61AX10								
ALPHA	5.07	ND	3.9	4.0	5.78	pCi/sample	100%	*0.88*	6/22/06 10:42 a	1.0	0.02044	E900.0
						2.15	20.0	*(2.5)*		Sample	Sample	GPC10B
Batch: 6163134	**Work Order:** H61AX1AF			**Report DB ID:** 9H61AX10								
BETA	26.7	=	4.7	5.9	6.44	pCi/sample	100%	*(4.1)*	6/20/06 06:46 p	1.0	0.08221	E900.0
						3.05	5.0	*(9.)*		Sample	Sample	GPC26D
Batch: 6163137	**Work Order:** H61AX1AC			**Report DB ID:** 9H61AX10								

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MDC|MDA,Lc - Detection, Decision Level based on instrument background or blank, adjusted by the sample Efficiency, Yield, and Volume.
= ERPIMS - Equal To, Analyte Detected
ND 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

SAMPLE RESULTS

Date: 30-Jun-06

Lab Name: STL Richland
SDG: 31853
Collection Date: 5/22/2006 10:00:00 AM
Lot-Sample No.: J6F080203-8
Report No. : 32541
Received Date: 6/7/2006 10:00:00 AM
Client Sample ID: P-0637
COC No. :
Matrix: FILTER AIR

Yerington Air Quality - Event #80

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	Analy Method, Primary Detector
RA-226	0.554	ND	0.49	0.50	0.772	pCi/sample	87%	*0.72*	6/23/06 03:18 p	1.0	0.2455	E903.1
						0.33	1.0	*(2.2)*		Sample	Sample	ASCBMB
Batch: 6163140	**Work Order:** H61AX1AD			**Report DB ID:** 9H61AX10								
RA-228	1.32	ND	0.84	0.89	1.78	pCi/sample	79%	*0.74*	6/29/06 06:16 a	1.0	0.2455	E904.0
						0.764	3.1	*(3.)*		Sample	Sample	GPC2B

Number of Results: 10

Comments:

STL Richland
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MDC|MDA,Lc - Detection, Decision Level based on instrument background or blank, adjusted by the sample Efficiency, Yield, and Volume.
= ERPIMS - Equal To, Analyte Detected
ND 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

SAMPLE RESULTS

Date: 30-Jun-06

Lab Name: STL Richland
Lot-Sample No.: J6F080203-9
Client Sample ID: P-0638
Yerington Air Quality - Event #80

SDG: 31853
Report No. : 32541
COC No. :

Collection Date: 5/22/2006 10:25:00 AM
Received Date: 6/7/2006 10:00:00 AM
Matrix: FILTER AIR

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	Analy Method, Primary Detector
Batch: 6163126	**Work Order:** H61A11AG			**Report DB ID:** 9H61A110								
U-234	0.0862	ND	0.22	0.22	0.516	pCi/sample	91%	*0.17*	6/29/06 03:31 p	1.0	0.06248	E908.0
						0.112	1.0	*0.78*		Sample	Sample	ALP9
U-235	0.00000	ND	0.0000	0.26	0.292	pCi/sample	91%	*0.*	6/29/06 03:31 p	1.0	0.06248	E908.0
							1.0	*0.*		Sample	Sample	ALP9
U-238	0.00000	ND	0.0000	0.26	0.292	pCi/sample	91%	*0.*	6/29/06 03:31 p	1.0	0.06248	E908.0
							1.0	*0.*		Sample	Sample	ALP9
Batch: 6163128	**Work Order:** H61A11AA			**Report DB ID:** 9H61A110								
TH-228	0.180	ND	0.25	0.26	0.441	pCi/sample	64%	*0.41*	6/23/06 07:38 p	1.0	0.0834	ISOTH
						0.139	1.0	*(1.4)*		Sample	Sample	ALP176
TH-230	0.0289	ND	0.13	0.13	0.346	pCi/sample	64%	*0.08*	6/23/06 07:38 p	1.0	0.0834	ISOTH
						0.0949	1.0	*0.45*		Sample	Sample	ALP176
TH-232	0.0289	ND	0.13	0.13	0.346	pCi/sample	64%	*0.08*	6/23/06 07:38 p	1.0	0.0834	ISOTH
						0.0949	1.0	*0.45*		Sample	Sample	ALP176
Batch: 6163132	**Work Order:** H61A11AE			**Report DB ID:** 9H61A110								
ALPHA	10.8	=	5.4	5.9	6.41	pCi/sample	100%	*(1.7)*	6/22/06 10:42 a	1.0	0.02085	E900.0
						2.45	20.0	*(3.7)*		Sample	Sample	GPC10C
Batch: 6163134	**Work Order:** H61A11AF			**Report DB ID:** 9H61A110								
BETA	29.1	=	4.7	6.2	6.22	pCi/sample	100%	*(4.7)*	6/20/06 06:46 p	1.0	0.08346	E900.0
						2.95	5.0	*(9.5)*		Sample	Sample	GPC27A
Batch: 6163137	**Work Order:** H61A11AC			**Report DB ID:** 9H61A110								

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MDC|MDA,Lc - Detection, Decision Level based on instrument background or blank, adjusted by the sample Efficiency, Yield, and Volume.
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ND 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

SAMPLE RESULTS

Date: 30-Jun-06

Lab Name: STL Richland | **SDG:** 31853 | **Collection Date:** 5/22/2006 10:25:00 AM

Lot-Sample No.: J6F080203-9 | **Report No. :** 32541 | **Received Date:** 6/7/2006 10:00:00 AM

Client Sample ID: P-0638 | **COC No. :** | **Matrix:** FILTER AIR

Yerington Air Quality - Event #80

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	Analy Method, Primary Detector
RA-226	0.447	ND	0.45	0.46	0.697	pCi/sample	89%	*0.64*	6/23/06 04:10 p	1.0	0.24989	E903.1
						0.271	1.0	*(1.9)*		Sample	Sample	ASCCSD
Batch: 6163140	**Work Order:** H61A11AD			**Report DB ID:** 9H61A110								
RA-228	1.75	=	0.89	0.91	1.65	pCi/sample	81%	*(1.1)*	6/29/06 06:16 a	1.0	0.24989	E904.0
						0.703	3.1	*(3.8)*		Sample	Sample	GPC2C

Number of Results: 10

Comments:

STL Richland
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MDC|MDA,Lc - Detection, Decision Level based on instrument background or blank, adjusted by the sample Efficiency, Yield, and Volume.
= ERPIMS - Equal To, Analyte Detected
ND 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

SAMPLE RESULTS

Date: 30-Jun-06

Lab Name:	**STL Richland**	**SDG:**	31853	**Collection Date:**	5/22/2006 10:40:00 AM
Lot-Sample No.:	**J6F080203-10**	**Report No. :**	32541	**Received Date:**	6/7/2006 10:00:00 AM
Client Sample ID:	**P-0639**	**COC No. :**		**Matrix:**	FILTER AIR

Yerington Air Quality - Event #80

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	Analy Method, Primary Detector
Batch: 6163126	**Work Order:** H61A21AG			**Report DB ID:** 9H61A210								
U-234	**0.0828**	ND	0.21	0.21	0.496	pCi/sample	95%	*0.17*	6/29/06 03:31 p	1.0	0.06209	E908.0
						0.108	1.0	*0.78*		Sample	Sample	ALP10
U-235	**0.00000**	ND	0.0000	0.25	0.281	pCi/sample	95%	*0.*	6/29/06 03:31 p	1.0	0.06209	E908.0
							1.0	*0.*		Sample	Sample	ALP10
U-238	**0.0621**	ND	0.22	0.22	0.585	pCi/sample	95%	*0.11*	6/29/06 03:31 p	1.0	0.06209	E908.0
						0.152	1.0	*0.58*		Sample	Sample	ALP10
								Ratio U-234/238 = 1.3				
Batch: 6163128	**Work Order:** H61A21AA			**Report DB ID:** 9H61A210								
TH-228	**0.218**	ND	0.22	0.22	0.148	pCi/sample	79%	*(1.5)*	6/23/06 07:38 p	1.0	0.08282	ISOTH
							1.0	*(2.)*		Sample	Sample	ALP177
TH-230	**0.0524**	ND	0.10	0.11	0.142	pCi/sample	79%	*0.37*	6/23/06 07:38 p	1.0	0.08282	ISOTH
							1.0	*1.*		Sample	Sample	ALP177
TH-232	**0.0262**	ND	0.12	0.12	0.315	pCi/sample	79%	*0.08*	6/23/06 07:38 p	1.0	0.08282	ISOTH
						0.0863	1.0	*0.45*		Sample	Sample	ALP177
Batch: 6163132	**Work Order:** H61A21AE			**Report DB ID:** 9H61A210								
ALPHA	**5.52**	ND	4.1	4.3	6.49	pCi/sample	100%	*0.85*	6/22/06 10:42 a	1.0	0.02095	E900.0
						2.54	20.0	*(2.6)*		Sample	Sample	GPC10D
Batch: 6163134	**Work Order:** H61A21AF			**Report DB ID:** 9H61A210								
BETA	**34.1**	=	4.5	8.3	5.49	pCi/sample	100%	*(6.2)*	6/20/06 06:46 p	1.0	0.0832	E900.0
						2.6	5.0	*(8.2)*		Sample	Sample	GPC27B
Batch: 6163137	**Work Order:** H61A21AC			**Report DB ID:** 9H61A210								

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MDC|MDA,Lc - Detection, Decision Level based on instrument background or blank, adjusted by the sample Efficiency, Yield, and Volume.
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FORM I

SAMPLE RESULTS

Date: 30-Jun-06

Lab Name: STL Richland
SDG: 31853
Collection Date: 5/22/2006 10:40:00 AM
Lot-Sample No.: J6F080203-10
Report No. : 32541
Received Date: 6/7/2006 10:00:00 AM
Client Sample ID: P-0639
COC No. :
Matrix: FILTER AIR

Yerington Air Quality - Event #80

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	Analy Method, Primary Detector
RA-226	0.0332	ND	0.40	0.40	0.804	pCi/sample	98%	*0.04*	6/23/06 04:11 p	1.0	0.24765	E903.1
						0.335	1.0	*0.17*		Sample	Sample	ASCDSA
Batch: 6163140	**Work Order:** H61A21AD			**Report DB ID:** 9H61A210								
RA-228	0.678	ND	0.69	0.73	1.61	pCi/sample	88%	*0.42*	6/29/06 06:16 a	1.0	0.24765	E904.0
						0.695	3.1	*(1.8)*		Sample	Sample	GPC2D

Number of Results: 10

Comments:

STL Richland
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MDC|MDA,Lc - Detection, Decision Level based on instrument background or blank, adjusted by the sample Efficiency, Yield, and Volume.
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FORM I

SAMPLE RESULTS

Date: 30-Jun-06

Lab Name: STL Richland **SDG:** 31853 **Collection Date:** 5/22/2006 11:20:00 AM

Lot-Sample No.: J6F080203-11 **Report No. :** 32541 **Received Date:** 6/7/2006 10:00:00 AM

Client Sample ID: P-0641 **COC No. :** **Matrix:** FILTER AIR

Yerington Air Quality - Event #80

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	Analy Method, Primary Detector
Batch: 6163126	**Work Order:** H61A31AG			**Report DB ID:** 9H61A310								
U-234	**0.0582**	ND	0.20	0.20	0.548	pCi/sample	91%	*0.11*	6/29/06 03:31 p	1.0	0.06242	E908.0
						0.143	1.0	*0.58*		Sample	Sample	ALP11
U-235	**-0.0194**	ND	0.039	0.039	0.465	pCi/sample	91%	*-0.04*	6/29/06 03:31 p	1.0	0.06242	E908.0
						0.101	1.0	*-1.*		Sample	Sample	ALP11
U-238	**0.175**	ND	0.28	0.28	0.465	pCi/sample	91%	*0.38*	6/29/06 03:31 p	1.0	0.06242	E908.0
						0.101	1.0	*(1.3)*		Sample	Sample	ALP11
								Ratio U-234/238 = 0.3				
Batch: 6163128	**Work Order:** H61A31AA			**Report DB ID:** 9H61A310								
TH-228	**0.0356**	ND	0.071	0.071	0.0965	pCi/sample	104%	*0.37*	6/23/06 07:38 p	1.0	0.08398	ISOTH
							1.0	*1.*		Sample	Sample	ALP178
TH-230	**0.0685**	ND	0.097	0.098	0.0929	pCi/sample	104%	*0.74*	6/23/06 07:38 p	1.0	0.08398	ISOTH
							1.0	*(1.4)*		Sample	Sample	ALP178
TH-232	**0.0685**	ND	0.097	0.098	0.0929	pCi/sample	104%	*0.74*	6/23/06 07:38 p	1.0	0.08398	ISOTH
							1.0	*(1.4)*		Sample	Sample	ALP178
Batch: 6163132	**Work Order:** H61A31AE			**Report DB ID:** 9H61A310								
ALPHA	**1.11**	ND	2.6	2.6	5.98	pCi/sample	100%	*0.19*	6/22/06 10:42 a	1.0	0.02102	E900.0
						2.24	20.0	*0.84*		Sample	Sample	GPC10E
Batch: 6163134	**Work Order:** H61A31AF			**Report DB ID:** 9H61A310								
BETA	**27.2**	=	4.6	5.9	6.2	pCi/sample	100%	*(4.4)*	6/20/06 06:46 p	1.0	0.08326	E900.0
						2.94	5.0	*(9.2)*		Sample	Sample	GPC27C
Batch: 6163137	**Work Order:** H61A31AC			**Report DB ID:** 9H61A310								

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FORM I

SAMPLE RESULTS

Date: 30-Jun-06

Lab Name: STL Richland
Lot-Sample No.: J6F080203-11
Client Sample ID: P-0641
Yerington Air Quality - Event #80

SDG: 31853
Report No. : 32541
COC No. :

Collection Date: 5/22/2006 11:20:00 AM
Received Date: 6/7/2006 10:00:00 AM
Matrix: FILTER AIR

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	Analy Method, Primary Detector
RA-226	-0.0737	ND	0.37	0.37	0.764	pCi/sample	106%	*-0.1*	6/23/06 04:12 p	1.0	0.25146	E903.1
						0.332	1.0	*-0.4*		Sample	Sample	ASCEHA
Batch: 6163140	**Work Order:** H61A31AD			**Report DB ID:** 9H61A310								
RA-228	**0.493**	ND	0.57	0.58	1.29	pCi/sample	96%	*0.38*	6/29/06 06:21 a	1.0	0.25146	E904.0
						0.549	3.1	*(1.7)*		Sample	Sample	GPC3A

Number of Results: 10

Comments:

STL Richland
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V4.15.0 A97

MDC|MDA,Lc - Detection, Decision Level based on instrument background or blank, adjusted by the sample Efficiency, Yield, and Volume.
= ERPIMS - Equal To, Analyte Detected
ND 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

SAMPLE RESULTS

Date: 30-Jun-06

Lab Name: STL Richland **SDG:** 31853 **Collection Date:** 5/22/2006 11:30:00 AM

Lot-Sample No.: J6F080203-12 **Report No. :** 32541 **Received Date:** 6/7/2006 10:00:00 AM

Client Sample ID: P-0642 **COC No. :** **Matrix:** FILTER AIR

Yerington Air Quality - Event #80

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	Analy Method, Primary Detector
Batch: 6163126	**Work Order:** H61A51AG			**Report DB ID:** 9H61A510								
U-234	-0.0211	ND	0.042	0.042	0.505	pCi/sample	93%	-0.04	6/29/06 03:31 p	1.0	0.06226	E908.0
						0.11	1.0	-1.		Sample	Sample	ALP12
U-235	0.00000	ND	0.0000	0.26	0.286	pCi/sample	93%	0.	6/29/06 03:31 p	1.0	0.06226	E908.0
							1.0	0.		Sample	Sample	ALP12
U-238	0.00000	ND	0.0000	0.26	0.286	pCi/sample	93%	0.	6/29/06 03:31 p	1.0	0.06226	E908.0
							1.0	0.		Sample	Sample	ALP12
Batch: 6163128	**Work Order:** H61A51AA			**Report DB ID:** 9H61A510								
TH-228	0.179	ND	0.21	0.21	0.328	pCi/sample	108%	0.54	6/23/06 07:39 p	1.0	0.08335	ISOTH
						0.104	1.0	(1.7)		Sample	Sample	ALP119
TH-230	0.258	=	0.21	0.22	0.116	pCi/sample	108%	(2.2)	6/23/06 07:39 p	1.0	0.08335	ISOTH
							1.0	(2.4)		Sample	Sample	ALP119
TH-232	0.0859	ND	0.12	0.12	0.116	pCi/sample	108%	0.74	6/23/06 07:39 p	1.0	0.08335	ISOTH
							1.0	(1.4)		Sample	Sample	ALP119
Batch: 6163132	**Work Order:** H61A51AE			**Report DB ID:** 9H61A510								
ALPHA	4.92	ND	4.2	4.4	7.16	pCi/sample	100%	0.69	6/22/06 12:35 p	1.0	0.02085	E900.0
						2.84	20.0	(2.3)		Sample	Sample	GPC10A
Batch: 6163134	**Work Order:** H61A51AF			**Report DB ID:** 9H61A510								
BETA	29.9	=	4.7	6.2	6.07	pCi/sample	100%	(4.9)	6/20/06 06:46 p	1.0	0.08339	E900.0
						2.87	5.0	(9.6)		Sample	Sample	GPC27D
Batch: 6163137	**Work Order:** H61A51AC			**Report DB ID:** 9H61A510								

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MDC|MDA,Lc - Detection, Decision Level based on instrument background or blank, adjusted by the sample Efficiency, Yield, and Volume.
= ERPIMS - Equal To, Analyte Detected
ND 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

SAMPLE RESULTS

Date: 30-Jun-06

Lab Name: STL Richland
Lot-Sample No.: J6F080203-12
Client Sample ID: P-0642
Yerington Air Quality - Event #80

SDG: 31853
Report No. : 32541
COC No. :

Collection Date: 5/22/2006 11:30:00 AM
Received Date: 6/7/2006 10:00:00 AM
Matrix: FILTER AIR

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	Analy Method, Primary Detector
RA-226	0.201	ND	0.28	0.29	0.483	pCi/sample	94%	*0.42*	6/23/06 04:12 p	1.0	0.2492	E903.1
						0.183	1.0	*(1.4)*		Sample	Sample	ASCGSA
Batch: 6163140	**Work Order:** H61A51AD			**Report DB ID:** 9H61A510								
RA-228	0.745	ND	0.67	0.69	1.47	pCi/sample	83%	*0.51*	6/29/06 06:21 a	1.0	0.2492	E904.0
						0.628	3.1	*(2.2)*		Sample	Sample	GPC3B

Number of Results: 10

Comments:

STL Richland
rptSTLRchSample
V4.15.0 A97

MDC|MDA,Lc - Detection, Decision Level based on instrument background or blank, adjusted by the sample Efficiency, Yield, and Volume.
= ERPIMS - Equal To, Analyte Detected
ND 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

SAMPLE RESULTS

Date: 30-Jun-06

Lab Name: STL Richland | **SDG:** 31853 | **Collection Date:** 5/22/2006 10:05:00 AM

Lot-Sample No.: J6F080203-13 | **Report No. :** 32541 | **Received Date:** 6/7/2006 10:00:00 AM

Client Sample ID: P-0643 | **COC No. :** | **Matrix:** FILTER AIR

Yerington Air Quality - Event #80

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	Analy Method, Primary Detector
Batch: 6163126	**Work Order:** H61A71AG			**Report DB ID:** 9H61A710								
U-234	**0.0578**	ND	0.20	0.20	0.545	pCi/sample	102%	*0.11*	6/29/06 03:32 p	1.0	0.06237	E908.0
						0.142	1.0	*0.59*		Sample	Sample	ALP69
U-235	**-0.0232**	ND	0.027	0.027	0.481	pCi/sample	102%	*-0.05*	6/29/06 03:32 p	1.0	0.06237	E908.0
						0.11	1.0	*-(1.7)*		Sample	Sample	ALP69
U-238	**0.0424**	ND	0.20	0.20	0.597	pCi/sample	102%	*0.07*	6/29/06 03:32 p	1.0	0.06237	E908.0
						0.168	1.0	*0.43*		Sample	Sample	ALP69
								Ratio U-234/238 = 1.4				
Batch: 6163128	**Work Order:** H61A71AA			**Report DB ID:** 9H61A710								
TH-228	**0.0575**	ND	0.23	0.23	0.534	pCi/sample	81%	*0.11*	6/23/06 07:39 p	1.0	0.08372	ISOTH
						0.189	1.0	*0.5*		Sample	Sample	ALP120
TH-230	**0.138**	ND	0.20	0.20	0.332	pCi/sample	81%	*0.42*	6/23/06 07:39 p	1.0	0.08372	ISOTH
						0.091	1.0	*(1.4)*		Sample	Sample	ALP120
TH-232	**0.00000**	ND	0.0000	0.14	0.15	pCi/sample	81%	*0.*	6/23/06 07:39 p	1.0	0.08372	ISOTH
							1.0	*0.*		Sample	Sample	ALP120
Batch: 6163132	**Work Order:** H61A71AE			**Report DB ID:** 9H61A710								
ALPHA	**5.49**	ND	4.0	4.1	5.64	pCi/sample	100%	*0.97*	6/22/06 12:35 p	1.0	0.02084	E900.0
						2.09	20.0	*(2.7)*		Sample	Sample	GPC10B
Batch: 6163134	**Work Order:** H61A71AF			**Report DB ID:** 9H61A710								
BETA	**28.8**	=	4.7	6.2	6.28	pCi/sample	100%	*(4.6)*	6/20/06 06:46 p	1.0	0.08297	E900.0
						2.97	5.0	*(9.3)*		Sample	Sample	GPC28B
Batch: 6163137	**Work Order:** H61A71AC			**Report DB ID:** 9H61A710								

STL Richland
rptSTLRchSample
V4.15.0 A97

MDC|MDA,Lc - Detection, Decision Level based on instrument background or blank, adjusted by the sample Efficiency, Yield, and Volume.
= ERPIMS - Equal To, Analyte Detected
ND 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

SAMPLE RESULTS

Date: 30-Jun-06

Lab Name:	STL Richland	**SDG:**	31853	**Collection Date:**	5/22/2006 10:05:00 AM
Lot-Sample No.:	J6F080203-13	**Report No. :**	32541	**Received Date:**	6/7/2006 10:00:00 AM
Client Sample ID:	P-0643	**COC No. :**		**Matrix:**	FILTER AIR

Yerington Air Quality - Event #80

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	Analy Method, Primary Detector
RA-226	**0.184**	ND	0.27	0.27	0.466	pCi/sample	91%	*0.4*	6/23/06 04:15 p	1.0	0.24892	E903.1
						0.181	1.0	*(1.4)*		Sample	Sample	ASCJMB
Batch: 6163140	**Work Order:** H61A71AD			**Report DB ID:** 9H61A710								
RA-228	**0.173**	ND	0.62	0.69	1.68	pCi/sample	81%	*0.1*	6/29/06 06:21 a	1.0	0.24892	E904.0
						0.727	3.1	*0.5*		Sample	Sample	GPC3C

Number of Results: 10

Comments:

STL Richland
rptSTLRchSample
V4.15.0 A97

MDC|MDA,Lc - Detection, Decision Level based on instrument background or blank, adjusted by the sample Efficiency, Yield, and Volume.
= ERPIMS - Equal To, Analyte Detected
ND 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

BLANK RESULTS

Date: 30-Jun-06

Lab Name: STL Richland

SDG: 31853

Lot-Sample No.: J6F120000-126

Report No. : 32541

Matrix: FILTER

Parameter	Result	Qual	Count Error (2 s)	Total Uncert(2 s)	MDC|MDA, Lc	Rpt Unit, CRDL	Yield	Rst/MDC, Rst/TotUcert	Analysis, Prep Date	Total Sa Size	Aliquot Size	Analy Method, Primary Detector
Batch: 6163126	Work Order: H67QJ1AA			Report DB ID: H67QJ1AB								
U-234	0.0112	ND	0.018	0.018	0.0317	pCi/sample	97%	0.35	6/29/06 03:32 p	1.0	1.0	E908.0
					0.00724	1.0		(1.2)		Sample	Sample	ALP71
U-235	-0.00152	ND	0.0018	0.0018	0.0317	pCi/sample	97%	-0.05	6/29/06 03:32 p	1.0	1.0	E908.0
					0.00724	1.0		-(1.7)		Sample	Sample	ALP71
U-238	-0.00203	ND	0.0020	0.0021	0.0339	pCi/sample	97%	-0.06	6/29/06 03:32 p	1.0	1.0	E908.0
					0.00836	1.0		-(2.)		Sample	Sample	ALP71

Ratio U-234/238 = -5.5

Number of Results: 3

Comments:

STL Richland
rptSTLRchBlank
V4.15.0 A97

MDC|MDA,Lc - Detection, Decision Level based on instrument background or blank, adjusted by the sample Efficiency, Yield, and Volume.
ND 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

BLANK RESULTS

Date: 30-Jun-06

Lab Name: STL Richland

SDG: 31853

Lot-Sample No.: J6F120000-128

Report No. : 32541

Matrix: FILTER

Parameter	Result	Qual	Count Error (2 s)	Total Uncert(2 s)	MDC|MDA, Lc	Rpt Unit, CRDL	Yield	Rst/MDC, Rst/TotUcert	Analysis, Prep Date	Total Sa Size	Aliquot Size	Analy Method, Primary Detector
Batch: 6163128	Work Order: H67QL1AA			Report DB ID: H67QL1AB								
TH-228	-0.00184	ND	0.013	0.013	0.037	pCi/sample	77%	-0.05	6/23/06 07:39 p	1.0	1.0	ISOTH
					0.0135	1.0		-0.28		Sample	Sample	ALP114
TH-230	0.0106	ND	0.015	0.015	0.0261	pCi/sample	77%	0.41	6/23/06 07:39 p	1.0	1.0	ISOTH
					0.00825	1.0		(1.4)		Sample	Sample	ALP114
TH-232	0.00000	ND	0.0000	0.0087	0.0096	pCi/sample	77%	0.	6/23/06 07:39 p	1.0	1.0	ISOTH
						1.0		0.		Sample	Sample	ALP114

Number of Results: 3

Comments:

STL Richland
rptSTLRchBlank
V4.15.0 A97

MDC|MDA,Lc - Detection, Decision Level based on instrument background or blank, adjusted by the sample Efficiency, Yield, and Volume.
ND 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

BLANK RESULTS

Date: 30-Jun-06

Lab Name: STL Richland

SDG: 31853

Lot-Sample No.: J6F120000-132

Report No. : 32541

Matrix: FILTER

Parameter	Result	Qual	Count Error (2 s)	Total Uncert(2 s)	MDC|MDA, Lc	Rpt Unit, CRDL	Yield	Rst/MDC, Rst/TotUcert	Analysis, Prep Date	Total Sa Size	Aliquot Size	Analy Method, Primary Detector
Batch: 6163132	Work Order:	H67QN1AA		Report DB ID:	H67QN1AB							
ALPHA	-0.0185	ND	0.038	0.038	0.134	pCi/sample	100%	-0.14	6/22/06 12:35 p	1.0	1.0	E900.0
					0.0511	20.0		-0.97		Sample	Sample	GPC10C

Number of Results: 1

Comments:

STL Richland

rptSTLRchBlank
V4.15.0 A97

MDC|MDA,Lc - Detection, Decision Level based on instrument background or blank, adjusted by the sample Efficiency, Yield, and Volume.
ND 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

BLANK RESULTS

Date: 30-Jun-06

Lab Name: STL Richland

SDG: 31853

Lot-Sample No.: J6F120000-134

Report No. : 32541

Matrix: FILTER

Parameter	Result	Qual	Count Error (2 s)	Total Uncert(2 s)	MDC|MDA, Lc	Rpt Unit, CRDL	Yield	Rst/MDC, Rst/TotUcert	Analysis, Prep Date	Total Sa Size	Aliquot Size	Analy Method, Primary Detector
Batch: 6163134	Work Order: H67QQ1AA			Report DB ID: H67QQ1AB								
BETA	0.201	ND	0.25	0.25	0.523	pCi/sample	100%	0.38	6/20/06 06:46 p	1.0	1.0	E900.0
					0.248	5.0		(1.6)		Sample	Sample	GPC28C

Number of Results: 1

Comments:

STL Richland

rptSTLRchBlank
V4.15.0 A97

MDC|MDA,Lc - Detection, Decision Level based on instrument background or blank, adjusted by the sample Efficiency, Yield, and Volume.
ND 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

BLANK RESULTS

Date: 30-Jun-06

Lab Name: STL Richland

SDG: 31853

Lot-Sample No.: J6F120000-137

Report No. : 32541

Matrix: FILTER

Parameter	Result	Qual	Count Error (2 s)	Total Uncert(2 s)	MDC|MDA, Lc	Rpt Unit, CRDL	Yield	Rst/MDC, Rst/TotUcert	Analysis, Prep Date	Total Sa Size	Aliquot Size	Analy Method, Primary Detector
Batch: 6163137	Work Order: H67QT1AA			Report DB ID: H67QT1AB								
RA-226	-0.00353	ND	0.082	0.082	0.171	pCi/sample	84%	-0.02	6/23/06 04:17 p	1.0	1.0	E903.1
					0.0711	1.0		-0.09		Sample	Sample	ASCHMA

Number of Results: 1

Comments:

STL Richland

rptSTLRchBlank
V4.15.0 A97

MDC|MDA,Lc - Detection, Decision Level based on instrument background or blank, adjusted by the sample Efficiency, Yield, and Volume.
ND 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

BLANK RESULTS

Date: 30-Jun-06

Lab Name: STL Richland **SDG:** 31853

Lot-Sample No.: J6F120000-140 **Report No. :** 32541 **Matrix:** FILTER

Parameter	Result	Qual	Count Error (2 s)	Total Uncert(2 s)	MDC|MDA, Lc	Rpt Unit, CRDL	Yield	Rst/MDC, Rst/TotUcert	Analysis, Prep Date	Total Sa Size	Aliquot Size	Analy Method, Primary Detector
Batch: 6163140	Work Order: H67QX1AA			Report DB ID: H67QX1AB								
RA-228	0.403	=	0.21	0.21	0.378	pCi/sample	76%	(1.1)	6/29/06 06:21 a	1.0	1.0	E904.0
					0.159	3.1		(3.8)		Sample	Sample	GPC3D

Number of Results: 1

Comments:

STL Richland
rptSTLRchBlank
V4.15.0 A97

MDC|MDA,Lc - Detection, Decision Level based on instrument background or blank, adjusted by the sample Efficiency, Yield, and Volume.
= ERPIMS - Equal To, Analyte Detected

FORM II

LCS RESULTS

Date: 30-Jun-06

Lab Name: STL Richland

SDG: 31853

Lot-Sample No.: J6F120000-126

Report No. : 32541

Matrix: FILTER

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	Analy Method, Primary Detector
Batch: 6163126	Work Order: H67QJ1AC			Report DB ID: H67QJ1CS									
U-234	0.948	=	0.20	0.25	0.0535	pCi/sample	86.99%	0.973	0.0056	97%	6/29/06 03:32 p	1.0	E908.0
						Rec Limits:				0.0		Sample	ALP85
U-238	1.18	=	0.22	0.29	0.0271	pCi/sample	86.99%	1.02	0.0059	116%	6/29/06 03:32 p	1.0	E908.0
						Rec Limits:				0.2		Sample	ALP85

Number of Results: 2

Comments:

STL Richland
rptSTLRchLcs
V4.15.0 A97

Bias - (Result/Expected)-1 as defined by ANSI N13.30.
= ERPIMS - Equal To, Analyte Detected

FORM II

LCS RESULTS

Date: 30-Jun-06

Lab Name: STL Richland

SDG: 31853

Lot-Sample No.: J6F120000-128

Report No. : 32541

Matrix: FILTER

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	Analy Method, Primary Detector
Batch: 6163128	Work Order: H67QL1AC			Report DB ID: H67QL1CS									
TH-230	1.80	=	0.19	0.38	0.0131	pCi/sample	72.89%	1.82	0.06	98%	6/23/06 07:39 p	1.0	ISOTH
							Rec Limits:	70.	130.	0.0		Sample	ALP116

Number of Results: 1

Comments:

STL Richland
rptSTLRchLcs
V4.15.0 A97

Bias - (Result/Expected)-1 as defined by ANSI N13.30.
= ERPIMS - Equal To, Analyte Detected

FORM II

LCS RESULTS

Date: 30-Jun-06

Lab Name: STL Richland

SDG: 31853

Lot-Sample No.: J6F120000-132

Report No. : 32541

Matrix: FILTER

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	Analy Method, Primary Detector
Batch: 6163132	Work Order: H67QN1AC			Report DB ID: H67QN1CS									
ALPHA	2.22	=	0.32	0.55	0.136	pCi/sample	100.00%	2.39	0.075	93%	6/22/06 12:35 p	1.0	E900.0
							Rec Limits:			-0.1		Sample	GPC10D

Number of Results: 1

Comments:

STL Richland

rptSTLRchLcs
V4.15.0 A97

Bias - (Result/Expected)-1 as defined by ANSI N13.30.
= ERPIMS - Equal To, Analyte Detected

FORM II

LCS RESULTS

Date: 30-Jun-06

Lab Name: STL Richland

SDG: 31853

Lot-Sample No.: J6F120000-134

Report No. : 32541

Matrix: FILTER

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	Analy Method, Primary Detector
Batch: 6163134	Work Order: H67QQ1AC			Report DB ID: H67QQ1CS									
BETA	4.39	=	0.50	0.86	0.553	pCi/sample	100.00%	4.61	0.037	95%	6/20/06 06:46 p	1.0	E900.0
						Rec Limits:				0.0		Sample	GPC28D

Number of Results: 1

Comments:

STL Richland
rptSTLRchLcs
V4.15.0 A97

Bias - (Result/Expected)-1 as defined by ANSI N13.30.
= ERPIMS - Equal To, Analyte Detected

FORM II

LCS RESULTS

Date: 30-Jun-06

Lab Name: STL Richland

SDG: 31853

Lot-Sample No.: J6F120000-137

Report No. : 32541

Matrix: FILTER

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	Analy Method, Primary Detector
Batch: 6163137	Work Order: H67QT1AC			Report DB ID: H67QT1CS									
RA-226	1.34	=	0.24	0.37	0.16	pCi/sample	88.11%	1.42	0.022	95%	6/23/06 04:15 p	1.0	E903.1
							Rec Limits:	70.	130.	-0.1		Sample	ASCPMB

Number of Results: 1

Comments:

STL Richland
rptSTLRchLcs
V4.15.0 A97

Bias - (Result/Expected)-1 as defined by ANSI N13.30.
= ERPIMS - Equal To, Analyte Detected

FORM II

LCS RESULTS

Date: 30-Jun-06

Lab Name: STL Richland

SDG: 31853

Lot-Sample No.: J6F120000-140

Report No. : 32541

Matrix: FILTER

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	Analy Method, Primary Detector
Batch: 6163140	Work Order: H67QX1AC			Report DB ID: H67QX1CS									
RA-228	4.46	=	0.50	0.72	0.416	pCi/sample	78.38%	4.92	0.021	91%	6/29/06 06:21 a	1.0	E904.0
							Rec Limits:	70.	130.	-0.1		Sample	GPC4B

Number of Results: 1

Comments:

STL Richland
rptSTLRchLcs
V4.15.0 A97

Bias - (Result/Expected)-1 as defined by ANSI N13.30.
= ERPIMS - Equal To, Analyte Detected

CHAIN OF CUSTODY

BROWN AND CALDWELL

CHAIN OF CUSTODY RECORD

COC No._____

☒ 3264 Goni Road / Suite 153
Carson City, NV 89706
775-883-4118 / FAX 775-883-5108

☐ 4425 W. Spring Mountain Road / Suite 225
Las Vegas, NV 89102
702-938-4080 / FAX 702-938-4082

☐ 201 East Washington Street / Suite 500
Phoenix, AZ 85004
602-567-4000 / FAX 602-567-4001

PROJECT NAME: Livingston Air Qlty

PROJECT NUMBER: [illegible]

LABORATORY NAME & ADDRESS: SEVERN TRENT LABS, WEST SACRAMENTO, SACRAMENTO

1/6 OF THE EXPOSED FILTER WAS UTILIZED FOR THE METALS ANALYSIS. LOT #GGE260197

LINE NO.	SAMPLE - I.D.	COLLECTION DATE	COLLECTION TIME	SAMPLER'S INITIALS	NUMBER OF CONTAINERS	CONTAINER SIZE AND TYPE	PRESER-VATIVE	MATRIX CODE	ANALYSES REQUESTED	FIELD FILTERED	QC - REQ	T-AT	SAMPLING METHOD	DEPTH (FT.) BEGIN / END	PID READING (ppm)
01	P-0637	5/26/06	10:00	MS	1	8x10 Filter	NONE	A	PM-10, Gross Alpha/Beta, Th(228,230,232), Ra(226,228), U (234,235,238), Metals(Client List) H61AX					----	
02	P-0638		10:25		1	8x10 Filter	NONE	A	PM-10, Gross Alpha/Beta, Th(228,230,232), Ra(226,228), U (234,235,238), Metals(Client List) H61A1					----	
03	P-0639		10:40		1	8x10 Filter	NONE	A	PM-10, Gross Alpha/Beta, Th(228,230,232), Ra(226,228), U (234,235,238), Metals(Client List) H61A2					----	
04	~~P-0640~~		~~11:00~~		~~1~~	~~8x10 Filter~~	~~NONE~~	~~A~~	~~PM-10, Gross Alpha/Beta, Th(228,230,232), Ra(226,228), U (234,235,238), Metals(Client List)~~					~~----~~	
05	P-0641		11:20		1	8x10 Filter	NONE	A	PM-10, Gross Alpha/Beta, Th(228,230,232), Ra(226,228), U (234,235,238), Metals(Client List) H61A3					----	
06	P-0642		11:30		1	8x10 Filter	NONE	A	PM-10, Gross Alpha/Beta, Th(228,230,232), Ra(226,228), U (234,235,238), Metals(Client List) H61A5					----	
07	P-0643		10:05		1	8x10 Filter	NONE	A	PM-10, Gross Alpha/Beta, Th(228,230,232), Ra(226,228), U (234,235,238), Metals(Client List) H61A7					----	
08														----	
09														----	
10														----	

COLLECTED & RELEASED BY: [illegible]	DATE 5/26/06	TIME 11:[illegible]	COOLER I.D.:			COMMENTS (see note on back):
RECEIVED BY: [illegible]	DATE 5/26/06	TIME 11:10	RELINQUISHED BY: Steve Johnson	DATE 6/6/06	TIME 1600	RECEIVED MAY 26 2006
[illegible]	6-7-06	10:00				
RECORD RETURNED BY:	DATE / /	TIME :				INI.
COURIER: FEDEX			SHIPPING NUMBER: [illegible]			

DISTRIBUTION: WHITE - PROJECT FILE • CANARY - LAB RECEIPT • PINK - DATA MANAGEMENT • GOLDENROD - FIELD

USE A BALLPOINT PEN, BLACK INK, AND PRESS FIRMLY. INSTRUCTIONS ARE ON THE BACK.

STL RICHLAND

53

BROWN AND CALDWELL

CHAIN OF CUSTODY RECORD

COC No._____

J6F080203
31853
Due 7-5-06

☐ 3264 Goni Road / Suite 153
Carson City, NV 89706
775-883-4118 / FAX 775-883-5108

☐ 4425 W. Spring Mountain Road / Suite 225
Las Vegas, NV 89102
702-938-4080 / FAX 702-938-4082

☐ 201 East Washington Street / Suite 500
Phoenix, AZ 85004
602-567-4000 / FAX 602-567-4001

PROJECT NAME: [illegible]ington Air Qlty

PROJECT NUMBER: [illegible]

LABORATORY NAME & ADDRESS: SEVERN TRENT LABS, WEST SACRAMENTO

1/6 OF THE EXPOSED FILTER WAS UTILIZED FOR THE METALS ANALYSIS. SACRAMENTO LOT # G6E260199

LINE NO.	SAMPLE - I.D.	COLLECTION DATE	COLLECTION TIME	SAMPLER'S INITIALS	NUMBER OF CONTAINERS	CONTAINER SIZE AND TYPE	PRESER-VATIVE	MATRIX CODE	ANALYSES REQUESTED	FIELD FILTERED	QC - REQ	TAT	SAMPLING METHOD	DEPTH (FT.) BEGIN / END	PID READING (ppm)
01	-000466	5/22/06	10:10	MS	1	8x10 Filter	NONE	A	TSP, Gross Alpha/Beta, Th(228,230,232), Ra(226,228), U (234,235,238), Metals(Client List) H61AE					----	
02	-000467		10:30		1	8x10 Filter	NONE	A	TSP, Gross Alpha/Beta, Th(228,230,232), Ra(226,228), U (234,235,238), Metals(Client List) H61AH					----	
03	-000468		10:45		1	8x10 Filter	NONE	A	TSP, Gross Alpha/Beta, Th(228,230,232), Ra(226,228), U (234,235,238), Metals(Client List) H61AK					----	
04	-000469		11:10		1	8x10 Filter	NONE	A	TSP, Gross Alpha/Beta, Th(228,230,232), Ra(226,228), U (234,235,238), Metals(Client List) H61AL					----	
05	-000470		11:25		1	8x10 Filter	NONE	A	TSP, Gross Alpha/Beta, Th(228,230,232), Ra(226,228), U (234,235,238), Metals(Client List) H61AM					----	
06	-000471		11:35		1	8x10 Filter	NONE	A	TSP, Gross Alpha/Beta, Th(228,230,232), Ra(226,228), U (234,235,238), Metals(Client List) H61AR					----	
07	-000472		10:15		1	8x10 Filter	NONE	A	TSP, Gross Alpha/Beta, Th(228,230,232), Ra(226,228), U (234,235,238), Metals(Client List) H61AT					----	
08														----	
09														----	
10														----	

COLLECTED & RELEASED BY:	DATE	TIME	COOLER I.D.:			COMMENTS (see note on back):
[illegible]	5/22/06	16:00				
RECEIVED BY:	DATE	TIME	RELINQUISHED BY:	DATE	TIME	
[illegible]	5/26/06	11:10	Steve Valmors	6/6/06	16:00	RECEIVED IN GOOD CONDITION UNDER COC MAY 26 2006 INI:
S. Welch	6-7-06	10:00				
RECORD RETURNED BY:	DATE	TIME				
COURIER: FED EX			SHIPPING NUMBER: 7914 9527 3598			

DISTRIBUTION: WHITE - PROJECT FILE • CANARY - LAB RECEIPT • PINK - DATA MANAGEMENT • GOLDENROD - FIELD

USE A BALLPOINT PEN, BLACK INK, AND PRESS FIRMLY. INSTRUCTIONS ARE ON THE BACK.

SEVERN TRENT STL

Sample Check-in List

Date/Time Received: 6-7-06 10:00

Client: Bm + Caldwell SDG #: 31853 NA [ ] SAF #: _____ NA [ ]

Work Order Number: J6F080203 Chain of Custody # _____

Shipping Container ID: _____ Air Bill # _____

1. Custody Seals on shipping container intact? NA [ ] Yes [ ] No [ ]
2. Custody Seals dated and signed? NA [ ] Yes [ ] No [ ]
3. Chain of Custody record present? Yes [ ] No [ ]
4. Cooler temperature: _____ NA [ ] 5. Vermiculite/packing materials is NA [ ] Wet [ ] Dry [ ]
6. Number of samples in shipping container: _____
7. Sample holding times exceeded? NA [ ] Yes [ ] No [ ]
8. Samples have:
   _____tape
   _____custody seals
   _____hazard labels
   _____appropriate samples 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 [ ] adjusted pH [ ]
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): _____

Sample Custodian: _____ Date: _____

Client Sample ID	Analysis Requested	Condition	Comments/Action

Client Informed on _____ by _____ Person contacted _____

[ ] No action necessary; process as is.

Project Manager _____ Date _____

LS-023, 12/05, Rev. 6

THORIUM

SAMPLE AND QC DATA

SEVERN TRENT STL

Data Review/Verification Checklist

RADIOCHEMISTRY, First Level Review

6/27/2006 8:09:31 AM

Lot No., Due Date: J6F080203; 07/05/2006

Client, Site: 536403; AIR MONITORING Yerington Mine

QC Batch No., Method Test: 6163128; RTHISO Thlso by ALP

SDG, Matrix: 31853; FILTER

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

6.0 Comments on any No response:

First Level Review Pam Anderson **Date** 6-27-06

SEVERN TRENT STL

Data Review Checklist
RADIOCHEMISTRY
Second Level Review

QC Batch Number: 616128

Review Item	Yes (√)	No (√)	N/A (√)
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 with contract acceptance criteria?	✓		
7. Is the LCS Minimum Detectable Activity ≤ the Contract Detection Limit?	✓		
8. Do the MS/MSD results and yields meet acceptance criteria?			✓
9. Do the duplicate sample results and yields meet acceptance criteria?			✓
C. Other			✓
1. Are all Nonconformances 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: Sherryl R Adam Date: 6-27-04

STL RICHLAND

6/15/2006 4:15:19 PM

Sample Preparation/Analysis

536403, Brown and Caldwell , Brown & Caldwell

9N ThIso PrpRc5016, SepRC~~5084~~(5003) 5087 J.C 6/16/06

S1 Thorium-228,230,232 by Alpha Spec

01 STANDARD TEST SET

AnalyDueDate: 07/04/2006

Batch: 6163128 FILTER pCi/sampl PM, Quote: SA , 63174

SEQ Batch, Test: None

Balance Id:1120373922

Pipet #:

Sep1 DT/Tm Tech:

Sep2 DT/Tm Tech: 6-22-06 MS

Prep Tech: HansenM

Work Order, Lot, Sample Date	Total Amt /Unit	Total Acidified/Unit	Initial Aliquot Amt/Unit	Adj Aliq Amt (Un-Acidified)	QC Tracer Prep Date	Count Time Min	Detector Id	Count On | Off (24hr) Circle	CR Analyst, Init/Date	Comments:
116 **1 H61AE-1-AA** J6F080203-1-SAMP 05/22/2006 10:10	0.833sa,g	501.61sa,g	50.21g,in	0.0834g	THTF0624 06/15/06,pd 10/04/04,r					
		AmtRec: FILTER		#Containers: 1			Scr:	Alpha:		Beta:
119 **2 H61AH-1-AA** J6F080203-2-SAMP 05/22/2006 10:30	0.833sa,g	500.91sa,g	50.53g,in	0.084g	THTF0625 06/15/06,pd 10/04/04,r					
		AmtRec: FILTER		#Containers: 1			Scr:	Alpha:		Beta:
120 **3 H61AK-1-AA** J6F080203-3-SAMP 05/22/2006 10:45	0.833sa,g	503.01sa,g	50.04g,in	0.0829g	THTF0626 06/15/06,pd 10/04/04,r					
		AmtRec: FILTER		#Containers: 1			Scr:	Alpha:		Beta:
121 **4 H61AL-1-AA** J6F080203-4-SAMP 05/22/2006 11:10	0.833sa,g	501.90sa,g	50.38g,in	0.0836g	THTF0627 06/15/06,pd 10/04/04,r					
		AmtRec: FILTER		#Containers: 1			Scr:	Alpha:		Beta:
122 **5 H61AM-1-AA** J6F080203-5-SAMP 05/22/2006 11:25	0.833sa,g	502.63sa,g	50.65g,in	0.0839g	THTF0628 06/15/06,pd 10/04/04,r					
		AmtRec: FILTER		#Containers: 1			Scr:	Alpha:		Beta:
123 **6 H61AR-1-AA** J6F080203-6-SAMP 05/22/2006 11:35	0.833sa,g	501.95sa,g	50.77g,in	0.0843g	THTF0629 06/15/06,pd 10/04/04,r					
		AmtRec: FILTER		#Containers: 1			Scr:	Alpha:		Beta:
124 **7 H61AT-1-AA** J6F080203-7-SAMP 05/22/2006 10:15	0.833sa,g	506.35sa,g	50.47g,in	0.083g	THTF0630 06/15/06,pd 10/04/04,r					
		AmtRec: FILTER		#Containers: 1			Scr:	Alpha:		Beta:

STL RICHLAND

6/15/2006 4:15:20 PM

Sample Preparation/Analysis

Balance Id:1120373922

536403, Brown and Caldwell , Brown & Caldwell

9N ThIso PrpRc5016, SepRC5084(5003)
S1 Thorium-228,230,232 by Alpha Spec
01 STANDARD TEST SET

Pipet #: _____

AnalyDueDate: 07/04/2006

Sep1 DT/Tm Tech:

Batch: 6163128 FILTER pCi/sampl PM, Quote: SA , 63174

Sep2 DT/Tm Tech:

SEQ Batch, Test: None

Prep Tech: HansenM

Work Order, Lot, Sample Date	Total Amt /Unit	Total Acidified/Unit	Initial Aliquot Amt/Unit	Adj Aliq Amt (Un-Acidified)	QC Tracer Prep Date	Count Time Min	Detector Id	Count On | Off (24hr) Circle	CR Analyst, Init/Date	Comments:
125 **8 H61AX-1-AA** J6F080203-8-SAMP 05/22/2006 10:00	0.833sa,g	509.07sa,g	50.77g,in	0.0831g	THTF0631 06/15/06,pd 10/04/04,r					
		AmtRec: FILTER		#Containers: 1			Scr:	Alpha:		Beta:
126 **9 H61A1-1-AA** J6F080203-9-SAMP 05/22/2006 10:25	0.833sa,g	500.52sa,g	50.11g,in	0.0834g	THTF0632 06/15/06,pd 10/04/04,r					
		AmtRec: FILTER		#Containers: 1			Scr:	Alpha:		Beta:
127 **10H61A2-1-AA** J6F080203-10-SAMP 05/22/2006 10:40	0.833sa,g	504.58sa,g	50.17g,in	0.0828g	THTF0633 06/15/06,pd 10/04/04,r					
		AmtRec: FILTER		#Containers: 1			Scr:	Alpha:		Beta:
128 **11H61A3-1-AA** J6F080203-11-SAMP 05/22/2006 11:20	0.833sa,g	500.54sa,g	50.46g,in	0.084g	THTF0634 06/15/06,pd 10/04/04,r					
		AmtRec: FILTER		#Containers: 1			Scr:	Alpha:		Beta:
119 **12H61A5-1-AA** J6F080203-12-SAMP 05/22/2006 11:30	0.833sa,g	502.68sa,g	50.30g,in	0.0834g	THTF0635 06/15/06,pd 10/04/04,r					
		AmtRec: FILTER		#Containers: 1			Scr:	Alpha:		Beta:
120 **13H61A7-1-AA** J6F080203-13-SAMP 05/22/2006 10:05	0.833sa,g	502.48sa,g	50.50g,in	0.0837g	THTF0636 06/15/06,pd 10/04/04,r					
		AmtRec: FILTER		#Containers: 1			Scr:	Alpha:		Beta:
114 **14H67QL-1-AA-B** J6F120000-128-BLK 05/22/2006 10:10			1.00sa,in	1.00sa	THTF0637 06/15/06,pd 10/04/04,r					
		AmtRec:		#Containers: 1			Scr:	Alpha:		Beta:

60

STL RICHLAND

6/15/2006 4:15:21 PM

Sample Preparation/Analysis

SN Thiso PrpRc5016, SepRC5084(5003)
S1 Thorium-228,230,232 by Alpha Spec
01 STANDARD TEST SET

Balance Id:1120373922

Pipet #: _____

Sep1 DT/Tm Tech:

Sep2 DT/Tm Tech:

Prep Tech: ,HansenM

AnalyDueDate: 07/04/2006

Batch: 6163128 pCi/sampl

SEQ Batch, Test: None

Work Order, Lot, Sample Date	Total Amt /Unit	Total Acidified/Unit	Initial Aliquot Amt/Unit	Adj Aliq Amt (Un-Acidified)	QC Tracer Prep Date	Count Time Min	Detector Id	Count On | Off (24hr) Circle	CR Analyst, Init/Date	Comments:
15H67QL-1-AC-C J6F120000-128-LCS 05/22/2006 10:10			1.00sa,in	1.00sa	THSO0078 06/15/06,pd 10/04/04,r					

AmtRec: #Containers: 1 Scr: Alpha: Beta:

Comments:

All Clients for Batch:
536403, Brown and Caldwell Brown & Caldwell , SA , 63174

H61AE1AA-SAMP Constituent List:

Th-228	RDL:1	pCi/sam	LCL:	UCL:	RPD:	Th-230	RDL:1	pCi/sam	LCL:	UCL:	RPD:
Th-232	RDL:1	pCi/sam	LCL:	UCL:	RPD:	Th-234	RDL:	pCi/sam	LCL:20	UCL:115	RPD:20

H67QL1AA-BLK:

Th-228	RDL:1	pCi/sam	LCL:	UCL:	RPD:	Th-230	RDL:1	pCi/sam	LCL:	UCL:	RPD:
Th-232	RDL:1	pCi/sam	LCL:	UCL:	RPD:	Th-234	RDL:	pCi/sam	LCL:20	UCL:115	RPD:20

H67QL1AC-LCS:

Th-230	RDL:1	pCi/sam	LCL:70	UCL:130	RPD:20	Th-234	RDL:	pCi/sam	LCL:20	UCL:115	RPD:20

H61AE1AA-SAMP Calc Info:
Uncert Level (#s).: 2 Decay to SaDt: Y Blk Subt.: N Sci.Not.: Y ODRs: B

H67QL1AA-BLK:
Uncert Level (#s).: 2 Decay to SaDt: Y Blk Subt.: N Sci.Not.: Y ODRs: B

H67QL1AC-LCS:
Uncert Level (#s).: 2 Decay to SaDt: Y Blk Subt.: N Sci.Not.: Y ODRs: B

Approved By _____ Date: _____

61

6/27/2006 7:43:25 AM

ICOC Fraction Transfer/Status Report

ByDate: 6/27/2005, 7/2/2006, Batch: '6163128', User: *ALL Order By DateTimeAccepting

Q Batch	Work Ord	CurStatus	Accepting			Comments
6163128						
AC		**CalcC**	**HansenM**	6/13/2006 1:40:12 PM		
SC			wagarr	IsBatched	6/12/2006 3:36:55 PM	ICOC_RADCALC v4.8.24
SC			HansenM	InPrep2	6/13/2006 1:40:12 PM	RICH-RC-5016 REVISION 5
SC			HansenM	Prep2C	6/16/2006 7:45:43 AM	RICH-RC-5016 REVISION 5
SC			FABREM	Sep2C	6/22/2006 1:45:35 PM	RICH-RC-5039 REV 6
SC			DAWKINSO	InCnt1	6/22/2006 2:30:02 PM	RICH-RD-0008 REVISION 4
SC			BlackCL	CalcC	6/24/2006 7:38:39 AM	RICH-RD-0008 REVISION 4
AC			**HansenM**	6/16/2006 7:45:43		
AC			**FABREM**	6/22/2006 1:45:35 PM		
AC			**DAWKINSO**	6/22/2006 2:30:02 PM		
AC			**BlackCL**	6/24/2006 7:38:39		

AC: Accepting Entry; SC: Status Change

STL Richland

Richland Wa.

Grp Rec Cnt: 5

ICOCFractions v4.8.18

6/27/2006 7:43:24 AM

Rpt DB Transfer log (Batch Results)

SEVERN TRENT STL

SDG or Batch / Isotope	Rpt Db Id / Method	RTst	Qc	LotSample / Analysis Date	Client Id / Result	Matrix / Cnt Uncert	Received Date / Tot Uncert	Sample Date / Mda	Units	Expected	Yield	Volumes
31853	**9H61A110**			**J6F0802039**	P-0638	FILTER	6/7/2006 10:00:00	5/22/2006 10:25:00 AM				
ALPHA	BAS7		0	6/22/2006 10:42:31	**1.078E+01**	2.706E+00	2.929E+00	6.408E+00	PCI/SA	1.0	1.0E+0	2.085E-2
BETA	BDS8		0	6/20/2006 6:46:51 PM	**2.9132E+01**	2.343E+00	3.077E+00	6.219E+00	PCI/SA	1.0	1.0E+0	3.346E-2
RA-226	BXTE		0	6/23/2006 4:10:00 PM	**4.4731E-01**	2.246E-01	2.294E-01	6.968E-01	PCI/SA	0.889	1.0E+0	2.499E-1
TH-228	9NS1		0	6/23/2006 7:38:50 PM	**1.7986E-01**	1.272E-01	1.283E-01	4.412E-01	PCI/SA	0.643	1.0E+0	3.34E-2
TH-230	9NS1		0	6/23/2006 7:38:50 PM	**2.8855E-02**	6.452E-02	6.458E-02	3.461E-01	PCI/SA	0.643	1.0E+0	3.34E-2
TH-232	9NS1		0	6/23/2006 7:38:50 PM	**2.8855E-02**	6.452E-02	6.458E-02	3.461E-01	PCI/SA	0.643	1.0E+0	3.34E-2
31853	**9H61A210**			**J6F08020310**	P-0639	FILTER	6/7/2006 10:00:00	5/22/2006 10:40:00 AM				
ALPHA	BAS7		0	6/22/2006 10:42:31	**5.5159E+00**	2.074E+00	2.15E+00	6.486E+00	PCI/SA	1.0	1.0E+0	2.095E-2
BETA	BDS8		0	6/20/2006 6:46:51 PM	**3.4145E+01**	2.273E+00	4.155E+00	5.488E+00	PCI/SA	1.0	1.0E+0	3.32E-2
RA-226	BXTE		0	6/23/2006 4:11:00 PM	**3.3227E-02**	1.99E-01	1.99E-01	8.041E-01	PCI/SA	0.983	1.0E+0	2.476E-1
TH-228	9NS1		0	6/23/2006 7:38:50 PM	**2.1794E-01**	1.09E-01	1.108E-01	1.477E-01	PCI/SA	0.795	1.0E+0	3.282E-2
TH-230	9NS1		0	6/23/2006 7:38:50 PM	**5.2447E-02**	5.245E-02	5.267E-02	1.421E-01	PCI/SA	0.795	1.0E+0	3.282E-2
TH-232	9NS1		0	6/23/2006 7:38:50 PM	**2.6224E-02**	5.864E-02	5.869E-02	3.146E-01	PCI/SA	0.795	1.0E+0	3.282E-2
31853	**9H61A310**			**J6F08020311**	P-0641	FILTER	6/7/2006 10:00:00	5/22/2006 11:20:00 AM				
ALPHA	BAS7		0	6/22/2006 10:42:31	**1.1105E+00**	1.314E+00	1.319E+00	5.977E+00	PCI/SA	1.0	1.0E+0	2.102E-2
BETA	BDS8		0	6/20/2006 6:46:51 PM	**2.7213E+01**	2.278E+00	2.943E+00	6.204E+00	PCI/SA	1.0	1.0E+0	3.326E-2
RA-226	BXTE		0	6/23/2006 4:12:03 PM	**-7.3711E-02**	1.861E-01	1.863E-01	7.636E-01	PCI/SA	1.064	1.0E+0	2.515E-1
TH-228	9NS1		0	6/23/2006 7:38:50 PM	**3.5601E-02**	3.56E-02	3.574E-02	9.648E-02	PCI/SA	1.038	1.0E+0	3.398E-2
TH-230	9NS1		0	6/23/2006 7:38:50 PM	**6.854E-02**	4.847E-02	4.884E-02	9.287E-02	PCI/SA	1.038	1.0E+0	3.398E-2
TH-232	9NS1		0	6/23/2006 7:38:50 PM	**6.854E-02**	4.847E-02	4.884E-02	9.287E-02	PCI/SA	1.038	1.0E+0	3.398E-2
31853	**9H61A510**			**J6F08020312**	P-0642	FILTER	6/7/2006 10:00:00	5/22/2006 11:30:00 AM				
ALPHA	BAS7		0	6/22/2006 12:35:02 PM	**4.919E+00**	2.117E+00	2.178E+00	7.164E+00	PCI/SA	1.0	1.0E+0	2.085E-2
BETA	BDS8		0	6/20/2006 6:46:51 PM	**2.9855E+01**	2.333E+00	3.123E+00	6.07E+00	PCI/SA	1.0	1.0E+0	3.339E-2
RA-226	BXTE		0	6/23/2006 4:12:01 PM	**2.012E-01**	1.415E-01	1.431E-01	4.829E-01	PCI/SA	0.942	1.0E+0	2.492E-1
TH-228	9NS1		0	6/23/2006 7:39:13 PM	**1.7852E-01**	1.047E-01	1.059E-01	3.285E-01	PCI/SA	1.081	1.0E+0	3.335E-2
TH-230	9NS1		0	6/23/2006 7:39:13 PM	**2.5777E-01**	1.052E-01	1.077E-01	1.164E-01	PCI/SA	1.081	1.0E+0	3.335E-2
TH-232	9NS1		0	6/23/2006 7:39:13 PM	**8.5923E-02**	6.076E-02	6.124E-02	1.164E-01	PCI/SA	1.081	1.0E+0	3.335E-2
31853	**9H61A710**			**J6F08020313**	P-0643	FILTER	6/7/2006 10:00:00	5/22/2006 10:05:00 AM				
ALPHA	BAS7		0	6/22/2006 12:35:02 PM	**5.4878E+00**	1.981E+00	2.062E+00	5.644E+00	PCI/SA	1.0	1.0E+0	2.084E-2
BETA	BDS8		0	6/20/2006 6:46:47 PM	**2.8799E+01**	2.356E+00	3.09E+00	6.278E+00	PCI/SA	1.0	1.0E+0	3.297E-2
RA-226	BXTE		0	6/23/2006 4:15:00 PM	**1.8445E-01**	1.348E-01	1.361E-01	4.656E-01	PCI/SA	0.906	1.0E+0	2.489E-1
TH-228	9NS1		0	6/23/2006 7:39:24 PM	**5.7458E-02**	1.15E-01	1.151E-01	5.337E-01	PCI/SA	0.808	1.0E+0	3.372E-2
TH-230	9NS1		0	6/23/2006 7:39:24 PM	**1.383E-01**	9.974E-02	1.006E-01	3.318E-01	PCI/SA	0.808	1.0E+0	3.372E-2
TH-232	9NS1		0	6/23/2006 7:39:24 PM	**0.0E+00**	0.0E+00	6.776E-02	1.499E-01	PCI/SA	0.808	1.0E+0	3.372E-2
31853	**9H61AE10**			**J6F0802031**	000466	FILTER	6/7/2006 10:00:00	5/22/2006 10:10:00 AM				
ALPHA	BAS7		0	6/22/2006 6:57:33 AM	**1.2919E+01**	2.897E+00	3.187E+00	6.046E+00	PCI/SA	1.0	1.0E+0	2.084E-2
BETA	BDS8		0	6/20/2006 4:05:14 PM	**3.0937E+01**	2.41E+00	3.222E+00	6.21E+00	PCI/SA	1.0	1.0E+0	3.327E-2
RA-226	BXTE		0	6/23/2006 3:15:00 PM	**8.6406E-01**	3.273E-01	3.393E-01	1.025E+00	PCI/SA	0.852	1.0E+0	2.492E-1
TH-228	9NS1		0	6/23/2006 10:25:20	**7.3196E-02**	2.428E-01	2.43E-01	1.231E+00	PCI/SA	0.3	1.0E+0	3.338E-2
TH-230	9NS1		0	6/23/2006 10:25:20	**5.6401E-01**	2.82E-01	2.89E-01	3.821E-01	PCI/SA	0.3	1.0E+0	3.338E-2
TH-232	9NS1		0	6/23/2006 10:25:20	**1.41E-01**	1.41E-01	1.419E-01	3.821E-01	PCI/SA	0.3	1.0E+0	3.338E-2
31853	**9H61AH10**			**J6F0802032**	000467	FILTER	6/7/2006 10:00:00	5/22/2006 10:30:00 AM				
ALPHA	BAS7		0	6/22/2006 8:49:58 AM	**4.3814E+00**	2.049E+00	2.1E+00	7.179E+00	PCI/SA	1.0	1.0E+0	2.08E-2
BETA	BDS8		0	6/20/2006 4:05:14 PM	**3.8297E+01**	2.569E+00	3.691E+00	6.172E+00	PCI/SA	1.0	1.0E+0	3.363E-2
RA-226	BXTE		0	6/23/2006 3:16:00 PM	**-5.7714E-02**	2.883E-01	2.884E-01	1.141E+00	PCI/SA	0.849	1.0E+0	2.498E-1
TH-228	9NS1		0	6/23/2006 10:25:24	**3.2995E-01**	2.333E-01	2.359E-01	8.095E-01	PCI/SA	0.402	1.0E+0	3.403E-2
TH-230	9NS1		0	6/23/2006 10:25:24	**1.0591E-01**	1.059E-01	1.065E-01	2.87E-01	PCI/SA	0.402	1.0E+0	3.403E-2
TH-232	9NS1		0	6/23/2006 10:25:24	**2.1182E-01**	1.498E-01	1.514E-01	2.87E-01	PCI/SA	0.402	1.0E+0	3.403E-2
31853	**9H61AK10**			**J6F0802033**	000468	FILTER	6/7/2006 10:00:00	5/22/2006 10:45:00 AM				
ALPHA	BAS7		0	6/22/2006 8:49:58 AM	**3.3328E+00**	1.662E+00	1.698E+00	5.639E+00	PCI/SA	1.0	1.0E+0	2.087E-2
BETA	BDS8		0	6/20/2006 4:05:14 PM	**2.3712E+01**	2.175E+00	3.046E+00	6.067E+00	PCI/SA	1.0	1.0E+0	3.28E-2

6163128, **Samples Inserted | Updated | NotUpdated => 2 | 0 | 13,
**Results Inserted | ReTestInserted | Updated | NotInserted => 43 | 0 | 0 | 0.
**Diff RptDb | Qtims => *wo:H67QL1AA=> , mat:FILTER | Air *wo:H67QL1AA=> , mat:FILTER | Air *wo:H67QL1AA=> , mat:FILTER | Air.

SDG or Batch / Isotope	Rpt Db Id / Method	RTst	Qc	LotSample / Analysis Date	Client Id / Result	Cnt Uncert	Tot Uncert	Mda	Units	Expected	Yield	Volumes	
RA-226	BXTE	0		6/23/2006 3:15:01 PM	**6.4468E-01**	3.072E-01	3.139E-01	1.003E+00	PCI/SA		0.842	1.0E+0	2.487E-1
TH-228	9NS1	0		6/23/2006 10:25:32	**-4.8231E-02**	1.738E-01	1.739E-01	9.702E-01	PCI/SA		0.486	1.0E+0	3.287E-2
TH-230	9NS1	0		6/23/2006 10:25:32	**1.3927E-01**	1.393E-01	1.4E-01	5.569E-01	PCI/SA		0.486	1.0E+0	3.287E-2
TH-232	9NS1	0		6/23/2006 10:25:32	**9.285E-02**	9.285E-02	9.333E-02	2.516E-01	PCI/SA		0.486	1.0E+0	3.287E-2
31853	**9H61AL10**			**J6F0802034**	000469	FILTER	6/7/2006 10:00:00		5/22/2006 11:10:00 AM				
ALPHA	BAS7	0		6/22/2006 8:49:58 AM	**7.9761E+00**	2.397E+00	2.536E+00	6.388E+00	PCI/SA		1.0	1.0E+0	2.093E-2
BETA	BDS8	0		6/20/2006 4:05:14 PM	**2.6018E+01**	2.395E+00	3.038E+00	7.005E+00	PCI/SA		1.0	1.0E+0	3.35E-2
RA-226	BXTE	0		6/23/2006 3:14:00 PM	**-8.1816E-02**	2.327E-01	2.329E-01	9.467E-01	PCI/SA		0.922	1.0E+0	2.49E-1
TH-228	9NS1	0		6/23/2006 7:38:50 PM	**2.0285E-01**	2.619E-01	2.628E-01	1.137E+00	PCI/SA		0.285	1.0E+0	3.362E-2
TH-230	9NS1	0		6/23/2006 7:38:50 PM	**1.3018E-01**	1.302E-01	1.31E-01	3.528E-01	PCI/SA		0.285	1.0E+0	3.362E-2
TH-232	9NS1	0		6/23/2006 7:38:50 PM	**6.509E-02**	1.455E-01	1.457E-01	7.808E-01	PCI/SA		0.285	1.0E+0	3.362E-2
31853	**9H61AM10**			**J6F0802035**	000470	FILTER	6/7/2006 10:00:00		5/22/2006 11:25:00 AM				
ALPHA	BAS7	0		6/22/2006 8:49:58 AM	**8.6535E+00**	2.438E+00	2.595E+00	6.497E+00	PCI/SA		1.0	1.0E+0	2.087E-2
BETA	BDS8	0		6/20/2006 6:46:45 PM	**4.4033E+01**	2.729E+00	4.225E+00	6.697E+00	PCI/SA		1.0	1.0E+0	3.406E-2
RA-226	BXTE	0		6/23/2006 3:18:01 PM	**7.0427E-02**	1.833E-01	1.835E-01	7.251E-01	PCI/SA		0.854	1.0E+0	2.487E-1
TH-228	9NS1	0		6/23/2006 7:38:50 PM	**1.1928E-01**	2.385E-01	2.389E-01	1.108E+00	PCI/SA		0.312	1.0E+0	3.394E-2
TH-230	9NS1	0		6/23/2006 7:38:50 PM	**4.0186E-01**	2.367E-01	2.406E-01	6.887E-01	PCI/SA		0.312	1.0E+0	3.394E-2
TH-232	9NS1	0		6/23/2006 7:38:50 PM	**0.0E+00**	0.0E+00	1.406E-01	3.112E-01	PCI/SA		0.312	1.0E+0	3.394E-2
31853	**9H61AR10**			**J6F0802036**	000471	FILTER	6/7/2006 10:00:00		5/22/2006 11:35:00 AM				
ALPHA	BAS7	0		6/22/2006 8:49:58 AM	**5.632E+00**	2.077E+00	2.156E+00	6.062E+00	PCI/SA		1.0	1.0E+0	2.089E-2
BETA	BDS8	0		6/20/2006 6:46:45 PM	**4.4882E+01**	2.784E+00	4.217E+00	6.616E+00	PCI/SA		1.0	1.0E+0	3.346E-2
RA-226	BXTE	0		6/23/2006 3:19:01 PM	**-1.1317E-01**	2.287E-01	2.29E-01	9.854E-01	PCI/SA		0.95	1.0E+0	2.496E-1
TH-228	9NS1	0		6/23/2006 7:38:50 PM	**4.3145E-02**	9.647E-02	9.657E-02	5.176E-01	PCI/SA		0.508	1.0E+0	3.425E-2
TH-230	9NS1	0		6/23/2006 7:38:50 PM	**6.2298E-01**	2.386E-01	2.466E-01	4.982E-01	PCI/SA		0.508	1.0E+0	3.425E-2
TH-232	9NS1	0		6/23/2006 7:38:50 PM	**-4.1532E-02**	4.153E-02	4.174E-02	4.982E-01	PCI/SA		0.508	1.0E+0	3.425E-2
31853	**9H61AT10**			**J6F0802037**	000472	FILTER	6/7/2006 10:00:00		5/22/2006 10:15:00 AM				
ALPHA	BAS7	0		6/22/2006 10:42:31	**-2.1888E+00**	7.739E-01	8.069E-01	7.173E+00	PCI/SA		1.0	1.0E+0	2.081E-2
BETA	BDS8	0		6/20/2006 6:46:45 PM	**6.7795E-01**	1.519E+00	1.52E+00	6.677E+00	PCI/SA		1.0	1.0E+0	3.267E-2
RA-226	BXTE	0		6/23/2006 3:18:01 PM	**-1.8619E-01**	3.072E-01	3.078E-01	1.286E+00	PCI/SA		0.784	1.0E+0	2.473E-1
TH-228	9NS1	0		6/23/2006 7:38:50 PM	**1.1971E-01**	1.197E-01	1.203E-01	4.787E-01	PCI/SA		0.57	1.0E+0	3.303E-2
TH-230	9NS1	0		6/23/2006 7:38:50 PM	**3.8409E-01**	1.718E-01	1.759E-01	2.082E-01	PCI/SA		0.57	1.0E+0	3.303E-2
TH-232	9NS1	0		6/23/2006 7:38:50 PM	**1.1523E-01**	1.152E-01	1.158E-01	4.608E-01	PCI/SA		0.57	1.0E+0	3.303E-2
31853	**9H61AX10**			**J6F0802038**	P-0637	FILTER	6/7/2006 10:00:00		5/22/2006 10:00:00 AM				
ALPHA	BAS7	0		6/22/2006 10:42:31	**5.0702E+00**	1.953E+00	2.023E+00	5.782E+00	PCI/SA		1.0	1.0E+0	2.044E-2
BETA	BDS8	0		6/20/2006 6:46:45 PM	**2.6735E+01**	2.345E+00	2.967E+00	6.443E+00	PCI/SA		1.0	1.0E+0	3.221E-2
RA-226	BXTE	0		6/23/2006 3:18:03 PM	**5.5396E-01**	2.448E-01	2.509E-01	7.725E-01	PCI/SA		0.873	1.0E+0	2.455E-1
TH-228	9NS1	0		6/23/2006 7:38:50 PM	**5.5577E-02**	8.787E-02	8.802E-02	4.09E-01	PCI/SA		0.691	1.0E+0	3.308E-2
TH-230	9NS1	0		6/23/2006 7:38:50 PM	**1.6049E-01**	1.135E-01	1.145E-01	3.937E-01	PCI/SA		0.691	1.0E+0	3.308E-2
TH-232	9NS1	0		6/23/2006 7:38:50 PM	**0.0E+00**	0.0E+00	6.552E-02	1.45E-01	PCI/SA		0.691	1.0E+0	3.308E-2
31853	**H67QL1AB**			**J6F120000128**	INTRA-LAB BLANK	FILTER	6/7/2006 10:00:00		5/22/2006 10:10:00 AM				
TH-228	9NS1	0	B	6/23/2006 7:39:00 PM	**-1.8424E-03**	6.638E-03	6.64E-03	3.705E-02	PCI/SA		0.773	1.0E+0	1.0E+0
TH-230	9NS1	0	B	6/23/2006 7:39:00 PM	**1.0631E-02**	7.518E-03	7.575E-03	2.608E-02	PCI/SA		0.773	1.0E+0	1.0E+0
TH-232	9NS1	0	B	6/23/2006 7:39:00 PM	**0.0E+00**	0.0E+00	4.34E-03	9.604E-03	PCI/SA		0.773	1.0E+0	1.0E+0
31853	**H67QL1CS**			**J6F120000128**	INTRA-LAB CHECK	FILTER	6/7/2006 10:00:00		5/22/2006 10:10:00 AM				
TH-230	9NS1	0	S	6/23/2006 7:39:41 PM	**1.7963E+00**	9.326E-02	1.887E-01	1.312E-02	PCI/SA	1.8248E+00	0.729	1.0E+0	1.0E+0

6163128, **Samples Inserted | Updated | NotUpdated => 2 | 0 | 13,
**Results Inserted | ReTestInserted | Updated | NotInserted => 43 | 0 | 0 | 0.
**Diff RptDb | Qtims => *wo:H67QL1AA=> , mat:FILTER | Air *wo:H67QL1AA=> , mat:FILTER | Air *wo:H67QL1AA=> , mat:FILTER | Air.

Batch Nbr: 6163128

Alpha Spec, Thlso by ALP , Results

6/24/2006 7:38:09 AM

Summary Report

Status	Meth	Matrix	Wrk Ord	Parameter	Sa Act	Uncert	Q	Units	Av	ILcC	IDC	QC	Yield	RYld
Thlso by ALP				Richland Standard Alplso Wo Blk Subt.										
Calc	S1	FILTER	H61AE1AA	TH-228	7.32E-02	(2.43E-01)	U4	PCI/SA	R	4.17E-01	1.23E+00	ok	30%	
Calc	S1	FILTER	H61AE1AA	TH-230	5.64E-01	(2.89E-01)		PCI/SA	R		3.82E-01		30%	
Calc	S1	FILTER	H61AE1AA	TH-232	1.41E-01	(1.42E-01)	U4	PCI/SA	R		3.82E-01		30%	
Calc	S1	FILTER	H61AH1AA	TH-228	3.30E-01	(2.36E-01)	U4	PCI/SA	R	2.56E-01	8.09E-01		40%	
Calc	S1	FILTER	H61AH1AA	TH-230	1.06E-01	(1.06E-01)	U4	PCI/SA	R		2.87E-01		40%	
Calc	S1	FILTER	H61AH1AA	TH-232	2.12E-01	(1.51E-01)	U4	PCI/SA	R		2.87E-01		40%	
Calc	S1	FILTER	H61AK1AA	TH-228	-4.82E-02	(1.74E-01)	U4	PCI/SA	R	3.55E-01	9.70E-01		49%	
Calc	S1	FILTER	H61AK1AA	TH-230	1.39E-01	(1.40E-01)	U4	PCI/SA	R	1.53E-01	5.57E-01		49%	
Calc	S1	FILTER	H61AK1AA	TH-232	9.29E-02	(9.33E-02)	U4	PCI/SA	R		2.52E-01		49%	
Calc	S1	FILTER	H61AL1AA	TH-228	2.03E-01	(2.63E-01)	U4	PCI/SA	R	3.85E-01	1.14E+00	ok	28%	
Calc	S1	FILTER	H61AL1AA	TH-230	1.30E-01	(1.31E-01)	U4	PCI/SA	R		3.53E-01		28%	
Calc	S1	FILTER	H61AL1AA	TH-232	6.51E-02	(1.46E-01)	U4	PCI/SA	R	2.14E-01	7.81E-01		28%	
Calc	S1	FILTER	H61AM1AA	TH-228	1.19E-01	(2.39E-01)	U4	PCI/SA	R	3.92E-01	1.11E+00	ok	31%	
Calc	S1	FILTER	H61AM1AA	TH-230	4.02E-01	(2.41E-01)		PCI/SA	R	1.89E-01	6.89E-01		31%	
Calc	S1	FILTER	H61AM1AA	TH-232	0.00E+00	(1.41E-01)	U4	PCI/SA	R		3.11E-01		31%	
Calc	S1	FILTER	H61AR1AA	TH-228	4.31E-02	(9.66E-02)	U4	PCI/SA	R	1.42E-01	5.18E-01		51%	
Calc	S1	FILTER	H61AR1AA	TH-230	6.23E-01	(2.47E-01)		PCI/SA	R	1.37E-01	4.98E-01		51%	
Calc	S1	FILTER	H61AR1AA	TH-232	-4.15E-02	(4.17E-02)	U4	PCI/SA	R	1.37E-01	4.98E-01		51%	
Calc	S1	FILTER	H61AT1AA	TH-228	1.20E-01	(1.20E-01)	U4	PCI/SA	R	1.31E-01	4.79E-01		57%	
Calc	S1	FILTER	H61AT1AA	TH-230	3.84E-01	(1.76E-01)		PCI/SA	R		2.08E-01		57%	
Calc	S1	FILTER	H61AT1AA	TH-232	1.15E-01	(1.16E-01)	U4	PCI/SA	R	1.26E-01	4.61E-01		57%	
Calc	S1	FILTER	H61AX1AA	TH-228	5.56E-02	(8.80E-02)	U4	PCI/SA	R	1.29E-01	4.09E-01		69%	
Calc	S1	FILTER	H61AX1AA	TH-230	1.60E-01	(1.14E-01)	U4	PCI/SA	R	1.24E-01	3.94E-01		69%	
Calc	S1	FILTER	H61AX1AA	TH-232	0.00E+00	(6.55E-02)	U4	PCI/SA	R		1.45E-01		69%	
Calc	S1	FILTER	H61A11AA	TH-228	1.80E-01	(1.28E-01)	U4	PCI/SA	R	1.39E-01	4.41E-01		64%	
Calc	S1	FILTER	H61A11AA	TH-230	2.89E-02	(6.46E-02)	U4	PCI/SA	R	9.49E-02	3.46E-01		64%	
Calc	S1	FILTER	H61A11AA	TH-232	2.89E-02	(6.46E-02)	U4	PCI/SA	R	9.49E-02	3.46E-01		64%	
Calc	S1	FILTER	H61A21AA	TH-228	2.18E-01	(1.11E-01)		PCI/SA	R		1.48E-01		79%	
Calc	S1	FILTER	H61A21AA	TH-230	5.24E-02	(5.27E-02)	U4	PCI/SA	R		1.42E-01		79%	
Calc	S1	FILTER	H61A21AA	TH-232	2.62E-02	(5.87E-02)	U4	PCI/SA	R	8.63E-02	3.15E-01		79%	
Calc	S1	FILTER	H61A31AA	TH-228	3.56E-02	(3.57E-02)	U4	PCI/SA	R		9.65E-02		104%	
Calc	S1	FILTER	H61A31AA	TH-230	6.85E-02	(4.88E-02)	U4	PCI/SA	R		9.29E-02		104%	
Calc	S1	FILTER	H61A31AA	TH-232	6.85E-02	(4.88E-02)	U4	PCI/SA	R		9.29E-02		104%	
Calc	S1	FILTER	H61A51AA	TH-228	1.79E-01	(1.06E-01)		PCI/SA	R	1.04E-01	3.28E-01		108%	
Calc	S1	FILTER	H61A51AA	TH-230	2.58E-01	(1.08E-01)		PCI/SA	R		1.16E-01		108%	
Calc	S1	FILTER	H61A51AA	TH-232	8.59E-02	(6.12E-02)	U4	PCI/SA	R		1.16E-01		108%	
Calc	S1	FILTER	H61A71AA	TH-228	5.75E-02	(1.15E-01)	U4	PCI/SA	R	1.89E-01	5.34E-01		81%	

() - (1s Uncertainities)
IDC - Instrument Detection Level in Conc Units
MLcC- Method Decision Level in Conc Units
MDC - Minimum Detectable Concentration
*Std - Lc, MDC using StdDev for Set of Blanks

Q - Qualifier, U is Less Than Lc = 1.645*TPU
All Results Displayed to Three Digits Reguardless of Significants
Date/Time - mm/dd/yy hh:mm, 24hr Time

RecCnt:51
RADCALC v4.8.18
STL Richland

Batch Nbr: 6163128

Alpha Spec, Thlso by ALP , Results

Summary Report

6/24/2006 7:38:10 AM

Status	Meth	Matrix	Wrk Ord	Parameter	Sa Act	Uncert	Q	Units	Av	ILcC	IDC	QC	Yield	RYld
Calc	S1	FILTER	**H61A71AA**	TH-230	**1.38E-01**	**(1.01E-01)**	**U4**	PCI/SA	R	9.10E-02	3.32E-01		81%	
Calc	S1	FILTER	**H61A71AA**	TH-232	**0.00E+00**	**(6.78E-02)**	**U4**	PCI/SA	R		1.50E-01		81%	
Calc	S1	FILTER	**H67QL1AA**	TH-228	**-1.84E-03**	**(6.64E-03)**	**U4**	PCI/SA	R	1.35E-02	3.70E-02	**B**	77%	
Calc	S1	FILTER	**H67QL1AA**	TH-230	**1.06E-02**	**(7.57E-03)**	**U4**	PCI/SA	R	8.25E-03	2.61E-02	**B**	77%	
Calc	S1	FILTER	**H67QL1AA**	TH-232	**0.00E+00**	**(4.34E-03)**	**U4**	PCI/SA	R		9.60E-03	**B**	77%	
Calc	S1	FILTER	**H67QL1AC**	TH-230	**1.80E+00**	**(1.89E-01)**		PCI/SA	R		1.31E-02	**S**	73%	98%

P Anderson
6-26-04

() - (1s Uncertainities)
IDC - Instrument Detection Level in Conc Units
MLcC- Method Decision Level in Conc Units
MDC - Minimum Detectable Concentration
*Std - Lc, MDC using StdDev for Set of Blanks

Page 2

Q - Qualifier, U is Less Than Lc = 1.645*TPU
All Results Displayed to Three Digits Reguardless of Significants
Date/Time - mm/dd/yy hh:mm, 24hr Time

RecCnt:58
RADCALC v4.8.18
STL Richland

Batch Nbr: 6163128

Alpha Spec, ThIso by ALP , Calculated Results

Detailed Report

6/24/2006 7:38:10 AM

Sq	Status	Method	Matrix	Protocol	Equation Set	Wrk Ord	Units/Matrix	QC/BB	Sa/On Date	AnalysisDate/PptWt	Sep1/Sep2 Date	QC/Tracer Vial	Mult/EntYld	Total/Analy Vol	Final/Count Vol
1	Calc	S1	FILTER	*STLE	AlpIsoWoBS	**H61AE1AA**	**PCI/SA**		05/22/06 10:10	06/23/06 10:25			1	1.00 SA	
536403,000466					,J6F080203-1 v4.8.18		FILTER					THTF0624 Alq		0.083381 SA	

Sq	Cnt Date	Parameter	Sample Cnt	Bkgrnd Cnt	Instr	Geom	Trc/Av	Ent	Efficiency1	Efficiency 2	Ent	Yld Fct	Ent	Blk Value	Ingr Fct	Conv Fct/VolAdj	Decay	Abn
0	06/23/06 06:15	TH-228	2	3	ALP116	ED	N	N	2.5523E-01		N	30%	N		1.0000E+00	4.5045E-01	1.0323E+00	
			500.0833333	1000.0833			Y		(7.657E-03)			3%			(0.000E+00)	11.993086		
1	06/23/06 06:15	TH-229	156	0	ALP116	ED	Y	N	2.5523E-01		N	100%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			500.0833333	1000.0833			Y		(7.657E-03)						(0.000E+00)	11.993086		
2	06/23/06 06:15	TH-230	4	0	ALP116	ED	N	N	2.5523E-01		N	30%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			500.0833333	1000.0833			Y		(7.657E-03)			3%			(0.000E+00)	11.993086		
3	06/23/06 06:15	TH-232	1	0	ALP116	ED	N	N	2.5523E-01		N	30%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			500.0833333	1000.0833			Y		(7.657E-03)			3%			(0.000E+00)	11.993086		

Sq	Calc Date	Parameter	Avg	Sa Act	Q	Net Cnt Rt	Dpm Wo Blk	Dpm-Blk	Vol Used	Yield,EnFct	Chem Yld,EFctU	IDC/ILcC	BlkLcC/MDC	StdDvMdC/LcC
	06/24/06	TH-228	R	**0.073196**	**U4**	9.99583E-04	0.013126	0.013126	1.00 SA	30%		1.230782		
				(0.24297)		(3.3161E-03)	(0.043564)	(0.043564)	(0.028284)			0.417227		
	06/24/06	TH-229	R	**6.60274**		3.11948E-01	1.222212	1.222212	1.00 SA	30%				
				(0.680123)		(2.4976E-02)	(0.104499)	(0.104499)	(0.028284)					
	06/24/06	TH-230	R	**0.564012**		7.99867E-03	0.104403	0.104403	1.00 SA	30%		0.382118		
				(0.289025)		(3.9993E-03)	(0.053163)	(0.053163)	(0.028284)					
	06/24/06	TH-232	R	**0.141003**	**U4**	1.99967E-03	0.026101	0.026101	1.00 SA	30%		0.382118		
				(0.141889)		(1.9997E-03)	(0.026222)	(0.026222)	(0.028284)					

Sq	Status	Method	Matrix	Protocol	Equation Set	Wrk Ord	Units/Matrix	QC/BB	Sa/On Date	AnalysisDate/PptWt	Sep1/Sep2 Date	QC/Tracer Vial	Mult/EntYld	Total/Analy Vol	Final/Count Vol
2	Calc	S1	FILTER	*STLE	AlpIsoWoBS	**H61AH1AA**	**PCI/SA**		05/22/06 10:30	06/23/06 10:25			1	1.00 SA	
536403,000467					,J6F080203-2 v4.8.18		FILTER					THTF0625 Alq		0.08403 SA	

Sq	Cnt Date	Parameter	Sample Cnt	Bkgrnd Cnt	Instr	Geom	Trc/Av	Ent	Efficiency1	Efficiency 2	Ent	Yld Fct	Ent	Blk Value	Ingr Fct	Conv Fct/VolAdj	Decay	Abn
0	06/23/06 06:15	TH-228	4	2	ALP119	ED	N	N	2.5157E-01		N	40%	N		1.0000E+00	4.5045E-01	1.0322E+00	
			500.05	1000.0833			Y		(7.547E-03)			3%			(0.000E+00)	11.900505		
1	06/23/06 06:15	TH-229	208	1	ALP119	ED	Y	N	2.5157E-01		N	100%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			500.05	1000.0833			Y		(7.547E-03)						(0.000E+00)	11.900505		
2	06/23/06 06:15	TH-230	1	0	ALP119	ED	N	N	2.5157E-01		N	40%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			500.05	1000.0833			Y		(7.547E-03)			3%			(0.000E+00)	11.900505		
3	06/23/06 06:15	TH-232	2	0	ALP119	ED	N	N	2.5157E-01		N	40%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			500.05	1000.0833			Y		(7.547E-03)			3%			(0.000E+00)	11.900505		

RecCnt:2 RADCALC v4.8.18 STL Richland

() - (1s Uncertainities), Q - Qualifier, U Result is Less Than Lc = 1.645 * TPU
IDC - Instrument Detection Level in Conc Units, MLcC - Method Decision Level in Conc Units, MDC- Minimum Detectable Concentration
Sr-89 Counts are Derived from the Combination of Each Sr-89/90 and Y-90 Count, All Result Digits May Not be Significants, Date/Time - mm/dd/yy hh:mm, 24hr Time

Batch Nbr: 6163128

Alpha Spec, Thlso by ALP , Calculated Results

6/24/2006 7:38:10 AM

Sq	Calc Date	Parameter	Avg	Sa Act	Q	Net Cnt Rt	Dpm Wo Blk	Dpm-Blk	Vol Used	Yield,EnFct	Chem Yld,EFctU	IDC/ILcC	BlkLcC/MDC	StdDvMdC/LcC
	06/24/06	TH-228	R	**0.329946**	U4	5.99937E-03	0.059628	0.059628	1.00 SA	40%		0.809477		
				(0.235867)		(4.2422E-03)	(0.042488)	(0.042488)	(0.028284)			0.255864		
	06/24/06	TH-229	R	**8.842067**		4.14958E-01	1.64946	1.64946	1.00 SA	40%				
				(0.84054)		(2.8859E-02)	(0.124932)	(0.124932)	(0.028284)					
	06/24/06	TH-230	R	**0.105909**	U4	1.99980E-03	0.019757	0.019757	1.00 SA	40%		0.287012		
				(0.106491)		(1.9998E-03)	(0.019833)	(0.019833)	(0.028284)					
	06/24/06	TH-232	R	**0.211817**	U4	3.99960E-03	0.039514	0.039514	1.00 SA	40%		0.287012		
				(0.15142)		(2.8281E-03)	(0.028156)	(0.028156)	(0.028284)					

Sq	Status	Method	Matrix	Protocol	Equation Set	Wrk Ord	Units/Matrix	QC/BB	Sa/On Date	AnalysisDate/PptWt	Sep1/Sep2 Date	QC/Tracer Vial	Mult/EntYld	Total/Analy Vol	Final/Count Vol
3	Calc	S1	FILTER	*STLE	AlpIsoWoBS	**H61AK1AA**	**PCI/SA**		05/22/06 10:45	06/23/06 10:25			1	1.00 SA	
536403,000468					,J6F080203-3 v4.8.18		FILTER					THTF0626 Alq		0.082868 SA	

Sq	Cnt Date	Parameter	Sample Cnt	Bkgrnd Cnt	Instr	Geom	Trc/Av	Ent	Efficiency1	Efficiency 2	Ent	Yld Fct	Ent	Blk Value	Ingr Fct	Conv Fct/VolAdj	Decay	Abn
0	06/23/06 06:15	TH-228	2	5	ALP120	ED	N	N	2.4073E-01		N	49%	N		1.0000E+00	4.5045E-01	1.0322E+00	
			500.0666666	1000.05			Y		(7.222E-03)			4%			(0.000E+00)	12.067417		
1	06/23/06 06:15	TH-229	240	1	ALP120	ED	Y	N	2.4073E-01		N	100%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			500.0666666	1000.05			Y		(7.222E-03)						(0.000E+00)	12.067417		
2	06/23/06 06:15	TH-230	2	1	ALP120	ED	N	N	2.4073E-01		N	49%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			500.0666666	1000.05			Y		(7.222E-03)			4%			(0.000E+00)	12.067417		
3	06/23/06 06:15	TH-232	1	0	ALP120	ED	N	N	2.4073E-01		N	49%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			500.0666666	1000.05			Y		(7.222E-03)			4%			(0.000E+00)	12.067417		

Sq	Calc Date	Parameter	Avg	Sa Act	Q	Net Cnt Rt	Dpm Wo Blk	Dpm-Blk	Vol Used	Yield,EnFct	Chem Yld,EFctU	IDC/ILcC	BlkLcC/MDC	StdDvMdC/LcC
	06/24/06	TH-228	R	**-0.048231**	U4	-1.00028E-03	-0.008596	-0.008596	1.00 SA	49%		0.970248		
				(0.173901)		(3.6052E-03)	(0.030989)	(0.030989)	(0.028284)			0.354684		
	06/24/06	TH-229	R	**10.814462**		4.78936E-01	1.9895	1.9895	1.00 SA	49%				
				(0.99048)		(3.0996E-02)	(0.141918)	(0.141918)	(0.028284)					
	06/24/06	TH-230	R	**0.139272**	U4	2.99952E-03	0.025621	0.025621	1.00 SA	49%		0.556933		
				(0.139998)		(2.9996E-03)	(0.025713)	(0.025713)	(0.028284)			0.152745		
	06/24/06	TH-232	R	**0.09285**	U4	1.99973E-03	0.017081	0.017081	1.00 SA	49%		0.251624		
				(0.093331)		(1.9997E-03)	(0.017142)	(0.017142)	(0.028284)					

Sq	Status	Method	Matrix	Protocol	Equation Set	Wrk Ord	Units/Matrix	QC/BB	Sa/On Date	AnalysisDate/PptWt	Sep1/Sep2 Date	QC/Tracer Vial	Mult/EntYld	Total/Analy Vol	Final/Count Vol
4	Calc	S1	FILTER	*STLE	AlpIsoWoBS	**H61AL1AA**	**PCI/SA**		05/22/06 11:10	06/23/06 19:38			1	1.00 SA	
536403,000469					,J6F080203-4 v4.8.18		FILTER					THTF0627 Alq		0.083615 SA	

Sq	Cnt Date	Parameter	Sample Cnt	Bkgrnd Cnt	Instr	Geom	Trc/Av	Ent	Efficiency1	Efficiency 2	Ent	Yld Fct	Ent	Blk Value	Ingr Fct	Conv Fct/VolAdj	Decay	Abn
0	06/23/06 15:29	TH-228	3	3	ALP171	ED	N	N	2.9087E-01		N	28%	N		1.0000E+00	4.5045E-01	1.0326E+00	
			499.4666666	998.95			Y		(8.726E-03)			3%			(0.000E+00)	11.959528		

RecCnt:4 RADCALC v4.8.18 STL Richland

() - (1s Uncertainities), Q - Qualifier, U Result is Less Than Lc = 1.645 * TPU
IDC - Instrument Detection Level in Conc Units, MLcC - Method Decision Level in Conc Units, MDC- Minimum Detectable Concentration
Sr-89 Counts are Derived from the Combination of Each Sr-89/90 and Y-90 Count, All Result Digits May Not be Significants, Date/Time - mm/dd/yy hh:mm, 24hr Time

Batch Nbr: 6163128

Alpha Spec, Thiso by ALP , Calculated Results

6/24/2006 7:38:10 AM

1	06/23/06 15:29	TH-229	169	1	ALP171	ED	Y	N	2.9087E-01	N	100%	N	1.0000E+00	4.5045E-01	1.0000E+00
			499.4666666	998.95			Y		(8.726E-03)				(0.000E+00)	11.959528	
2	06/23/06 15:29	TH-230	1	0	ALP171	ED	N	N	2.9087E-01	N	28%	N	1.0000E+00	4.5045E-01	1.0000E+00
			499.4666666	998.95			Y		(8.726E-03)		3%		(0.000E+00)	11.959528	
3	06/23/06 15:29	TH-232	1	1	ALP171	ED	N	N	2.9087E-01	N	28%	N	1.0000E+00	4.5045E-01	1.0000E+00
			499.4666666	998.95			Y		(8.726E-03)		3%		(0.000E+00)	11.959528	

Sq	Calc Date	Parameter	Avg	Sa Act	Q	Net Cnt Rt	Dpm Wo Blk	Dpm-Blk	Vol Used	Yield,EnFct	Chem Yld,EFctU	IDC/ILcC	BlkLcC/MDC	StdDvMdC/LcC
	06/24/06	TH-228	R	**0.202853**	U4	3.00325E-03	0.036466	0.036466	1.00 SA	28%		1.136637		
				(0.26283)		(3.8771E-03)	(0.047201)	(0.047201)	(0.028284)			0.385306		
	06/24/06	TH-229	R	**6.248272**		3.37360E-01	1.159843	1.159843	1.00 SA	28%				
				(0.629841)		(2.6047E-02)	(0.096072)	(0.096072)	(0.028284)					
	06/24/06	TH-230	R	**0.130178**	U4	2.00214E-03	0.024164	0.024164	1.00 SA	28%		0.352781		
				(0.130966)		(2.0021E-03)	(0.024271)	(0.024271)	(0.028284)					
	06/24/06	TH-232	R	**0.06509**	U4	1.00108E-03	0.012082	0.012082	1.00 SA	28%		0.780808		
				(0.145719)		(2.2384E-03)	(0.02704)	(0.02704)	(0.028284)			0.21414		

Sq	Status	Method	Matrix	Protocol	Equation Set	Wrk Ord	Units/Matrix	QC/BB	Sa/On Date	AnalysisDate/PptWt	Sep1/Sep2 Date	QC/Tracer Vial	Mult/EntYld	Total/Analy Vol	Final/Count Vol
5	Calc	S1	FILTER	*STLE	AlpIsoWoBS	**H61AM1AA**	**PCI/SA**		05/22/06 11:25	06/23/06 19:38			1	1.00 SA	
536403,000470					,J6F080203-5 v4.8.18		FILTER					THTF0628 Alq		0.083941 SA	

Sq	Cnt Date	Parameter	Sample Cnt	Bkgrnd Cnt	Instr	Geom	Trc/Av	Ent	Efficiency1	Efficiency 2	Ent	Yld Fct	Ent	Blk Value	Ingr Fct	Conv Fct/VolAdj	Decay	Abn
0	06/23/06 15:29	TH-228	3	4	ALP172	ED	N	N	2.9949E-01		N	31%	N		1.0000E+00	4.5045E-01	1.0326E+00	
			499.4666666	998.95			Y		(8.985E-03)			3%			(0.000E+00)	11.913077		
1	06/23/06 15:29	TH-229	191	4	ALP172	ED	Y	N	2.9949E-01		N	100%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			499.4666666	998.95			Y		(8.985E-03)						(0.000E+00)	11.913077		
2	06/23/06 15:29	TH-230	4	1	ALP172	ED	N	N	2.9949E-01		N	31%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			499.4666666	998.95			Y		(8.985E-03)			3%			(0.000E+00)	11.913077		
3	06/23/06 15:29	TH-232	0	0	ALP172	ED	N	N	2.9949E-01		N	31%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			499.4666666	998.95			Y		(8.985E-03)			3%			(0.000E+00)	11.913077		

Sq	Calc Date	Parameter	Avg	Sa Act	Q	Net Cnt Rt	Dpm Wo Blk	Dpm-Blk	Vol Used	Yield,EnFct	Chem Yld,EFctU	IDC/ILcC	BlkLcC/MDC	StdDvMdC/LcC
	06/24/06	TH-228	R	**0.119278**	U4	2.00220E-03	0.021526	0.021526	1.00 SA	31%		1.107581		
				(0.238891)		(4.0043E-03)	(0.043095)	(0.043095)	(0.028284)			0.392408		
	06/24/06	TH-229	R	**6.780197**		3.78404E-01	1.26349	1.26349	1.00 SA	31%				
				(0.663455)		(2.7742E-02)	(0.100087)	(0.100087)	(0.028284)					
	06/24/06	TH-230	R	**0.401857**		7.00749E-03	0.074886	0.074886	1.00 SA	31%		0.688669		
				(0.240612)		(4.1275E-03)	(0.044631)	(0.044631)	(0.028284)			0.188871		
	06/24/06	TH-232	R	**0.00E00**	U4	0.00000E+00	0.00E00	0.00E00	1.00 SA	31%		0.311152		
				(0.14062)		(0.0000E+00)	(0.026205)	(0.026205)	(0.028284)					

RecCnt:6

RADCALC v4.8.18
STL Richland

() - (1s Uncertainities), Q - Qualifier, U Result is Less Than Lc = 1.645 * TPU
IDC - Instrument Detection Level in Conc Units, MLcC - Method Decision Level in Conc Units, MDC- Minimum Detectable Concentration
Sr-89 Counts are Derived from the Combination of Each Sr-89/90 and Y-90 Count, All Result Digits May Not be Significants, Date/Time - mm/dd/yy hh:mm, 24hr Time

Batch Nbr: 6163128 — Alpha Spec, Thlso by ALP , Calculated Results — 6/24/2006 7:38:10 AM

Sq	Status	Method	Matrix	Protocol	Equation Set	Wrk Ord	Units/Matrix	QC/BB	Sa/On Date	AnalysisDate/PptWt	Sep1/Sep2 Date	QC/Tracer Vial	Mult/EntYld	Total/Analy Vol	Final/Count Vol
6	Calc	S1	FILTER	*STLE	AlpIsoWoBS	**H61AR1AA**	**PCI/SA**		05/22/06 11:35	06/23/06 19:38			1	1.00 SA	
536403,000471					,J6F080203-6 v4.8.18		FILTER					THTF0629 Alq		0.084254 SA	

Sq	Cnt Date	Parameter	Sample Cnt	Bkgrnd Cnt	Instr	Geom	Trc/Av	Ent	Efficiency1	Efficiency 2	Ent	Yld Fct	Ent	Blk Value	Ingr Fct	Conv Fct/VolAdj	Decay	Abn
0	06/23/06 15:29	TH-228	1	1	ALP173	ED	N	N	2.5374E-01		N	51%	N		1.0000E+00	4.5045E-01	1.0326E+00	
			499.4666666	998.95			Y		(7.612E-03)			4%			(0.000E+00)	11.868841		
1	06/23/06 15:29	TH-229	260	0	ALP173	ED	Y	N	2.5374E-01		N	100%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			499.4666666	998.95			Y		(7.612E-03)						(0.000E+00)	11.868841		
2	06/23/06 15:29	TH-230	8	1	ALP173	ED	N	N	2.5374E-01		N	51%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			499.4666666	998.95			Y		(7.612E-03)			4%			(0.000E+00)	11.868841		
3	06/23/06 15:29	TH-232	0	1	ALP173	ED	N	N	2.5374E-01		N	51%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			499.4666666	998.95			Y		(7.612E-03)			4%			(0.000E+00)	11.868841		

Sq	Calc Date	Parameter	Avg	Sa Act	Q	Net Cnt Rt	Dpm Wo Blk	Dpm-Blk	Vol Used	Yield,EnFct	Chem Yld,EFctU	IDC/ILcC	BlkLcC/MDC	StdDvMdC/LcC
	06/24/06	TH-228	R	**0.043145**	U4	1.00108E-03	0.007815	0.007815	1.00 SA	51%		0.517562		
				(0.09657)		(2.2384E-03)	(0.017487)	(0.017487)	(0.028284)			0.141944		
	06/24/06	TH-229	R	**10.968018**		5.20555E-01	2.051508	2.051508	1.00 SA	51%				
				(0.983835)		(3.2283E-02)	(0.141333)	(0.141333)	(0.028284)					
	06/24/06	TH-230	R	**0.622984**		1.50160E-02	0.116526	0.116526	1.00 SA	51%		0.498222		
				(0.246611)		(5.7507E-03)	(0.045639)	(0.045639)	(0.028284)			0.13664		
	06/24/06	TH-232	R	**-0.041532**	U4	-1.00105E-03	-0.007768	-0.007768	1.00 SA	51%		0.498222		
				(0.041739)		(1.0011E-03)	(0.007794)	(0.007794)	(0.028284)			0.13664		

Sq	Status	Method	Matrix	Protocol	Equation Set	Wrk Ord	Units/Matrix	QC/BB	Sa/On Date	AnalysisDate/PptWt	Sep1/Sep2 Date	QC/Tracer Vial	Mult/EntYld	Total/Analy Vol	Final/Count Vol
7	Calc	S1	FILTER	*STLE	AlpIsoWoBS	**H61AT1AA**	**PCI/SA**		05/22/06 10:15	06/23/06 19:38			1	1.00 SA	
536403,000472					,J6F080203-7 v4.8.18		FILTER					THTF0630 Alq		0.083029 SA	

Sq	Cnt Date	Parameter	Sample Cnt	Bkgrnd Cnt	Instr	Geom	Trc/Av	Ent	Efficiency1	Efficiency 2	Ent	Yld Fct	Ent	Blk Value	Ingr Fct	Conv Fct/VolAdj	Decay	Abn
0	06/23/06 15:29	TH-228	2	1	ALP174	ED	N	N	2.4814E-01		N	57%	N		1.0000E+00	4.5045E-01	1.0326E+00	
			499.4666666	998.95			Y		(7.444E-03)			4%			(0.000E+00)	12.044049		
1	06/23/06 15:29	TH-229	287	1	ALP174	ED	Y	N	2.4814E-01		N	100%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			499.4666666	998.95			Y		(7.444E-03)						(0.000E+00)	12.044049		
2	06/23/06 15:29	TH-230	5	0	ALP174	ED	N	N	2.4814E-01		N	57%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			499.4666666	998.95			Y		(7.444E-03)			4%			(0.000E+00)	12.044049		
3	06/23/06 15:29	TH-232	2	1	ALP174	ED	N	N	2.4814E-01		N	57%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			499.4666666	998.95			Y		(7.444E-03)			4%			(0.000E+00)	12.044049		

RecCnt:7 — RADCALC v4.8.18 — STL Richland

() - (1s Uncertainities), Q - Qualifier, U Result is Less Than Lc = 1.645 * TPU
IDC - Instrument Detection Level in Conc Units, MLcC - Method Decision Level in Conc Units, MDC- Minimum Detectable Concentration
Sr-89 Counts are Derived from the Combination of Each Sr-89/90 and Y-90 Count, All Result Digits May Not be Significants, Date/Time - mm/dd/yy hh:mm, 24hr Time

Batch Nbr: 6163128

Alpha Spec, ThIso by ALP , Calculated Results

6/24/2006 7:38:11 AM

Sq	Calc Date	Parameter	Avg	Sa Act	Q	Net Cnt Rt	Dpm Wo Blk	Dpm-Blk	Vol Used	Yield,EnFct	Chem Yld,EFctU	IDC/ILcC	BlkLcC/MDC	StdDvMdC/LcC
	06/24/06	TH-228	R	**0.119708**	U4	3.00322E-03	0.021368	0.021368	1.00 SA	57%		0.478672		
				(0.120286)		(3.0032E-03)	(0.021436)	(0.021436)	(0.028284)			0.131278		
	06/24/06	TH-229	R	**12.541292**		5.73612E-01	2.311656	2.311656	1.00 SA	57%				
				(1.100461)		(3.3933E-02)	(0.15333)	(0.15333)	(0.028284)					
	06/24/06	TH-230	R	**0.384094**		1.00107E-02	0.070798	0.070798	1.00 SA	57%		0.208179		
				(0.175883)		(4.4769E-03)	(0.032163)	(0.032163)	(0.028284)					
	06/24/06	TH-232	R	**0.115229**	U4	3.00322E-03	0.021239	0.021239	1.00 SA	57%		0.46076		
				(0.115785)		(3.0032E-03)	(0.021307)	(0.021307)	(0.028284)			0.126366		

Sq	Status	Method	Matrix	Protocol	Equation Set	Wrk Ord	Units/Matrix	QC/BB	Sa/On Date	AnalysisDate/PptWt	Sep1/Sep2 Date	QC/Tracer Vial	Mult/EntYld	Total/Analy Vol	Final/Count Vol
8	Calc	S1	FILTER	*STLE	AlpIsoWoBS	**H61AX1AA**	**PCI/SA**		05/22/06 10:00	06/23/06 19:38			1	1.00 SA	
536403,P-0637					,J6F080203-8 v4.8.18		FILTER					THTF0631 Alq		0.083076 SA	

Sq	Cnt Date	Parameter	Sample Cnt	Bkgrnd Cnt	Instr	Geom	Trc/Av	Ent	Efficiency1	Efficiency 2	Ent	Yld Fct	Ent	Blk Value	Ingr Fct	Conv Fct/VolAdj	Decay	Abn
0	06/23/06 15:29	TH-228	2	2	ALP175	ED	N	N	2.9360E-01		N	69%	N		1.0000E+00	4.5045E-01	1.0327E+00	
			499.4666666	998.95			Y		(8.808E-03)			5%			(0.000E+00)	12.037196		
1	06/23/06 15:29	TH-229	414	0	ALP175	ED	Y	N	2.9360E-01		N	100%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			499.4666666	998.95			Y		(8.808E-03)						(0.000E+00)	12.037196		
2	06/23/06 15:29	TH-230	4	2	ALP175	ED	N	N	2.9360E-01		N	69%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			499.4666666	998.95			Y		(8.808E-03)			5%			(0.000E+00)	12.037196		
3	06/23/06 15:29	TH-232	0	0	ALP175	ED	N	N	2.9360E-01		N	69%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			499.4666666	998.95			Y		(8.808E-03)			5%			(0.000E+00)	12.037196		

Sq	Calc Date	Parameter	Avg	Sa Act	Q	Net Cnt Rt	Dpm Wo Blk	Dpm-Blk	Vol Used	Yield,EnFct	Chem Yld,EFctU	IDC/ILcC	BlkLcC/MDC	StdDvMdC/LcC
	06/24/06	TH-228	R	**0.055577**	U4	2.00217E-03	0.009926	0.009926	1.00 SA	69%		0.409035		
				(0.088024)		(3.1656E-03)	(0.01571)	(0.01571)	(0.028284)			0.129289		
	06/24/06	TH-229	R	**15.307716**		8.28884E-01	2.823179	2.823179	1.00 SA	69%				
				(1.24506)		(4.0737E-02)	(0.162559)	(0.162559)	(0.028284)					
	06/24/06	TH-230	R	**0.160487**	U4	6.00644E-03	0.029598	0.029598	1.00 SA	69%		0.393724		
				(0.114453)		(4.2472E-03)	(0.02104)	(0.02104)	(0.028284)			0.12445		
	06/24/06	TH-232	R	**0.00E00**	U4	0.00000E+00	0.00E00	0.00E00	1.00 SA	69%		0.144973		
				(0.065518)		(0.0000E+00)	(0.012083)	(0.012083)	(0.028284)					

Sq	Status	Method	Matrix	Protocol	Equation Set	Wrk Ord	Units/Matrix	QC/BB	Sa/On Date	AnalysisDate/PptWt	Sep1/Sep2 Date	QC/Tracer Vial	Mult/EntYld	Total/Analy Vol	Final/Count Vol
9	Calc	S1	FILTER	*STLE	AlpIsoWoBS	**H61A11AA**	**PCI/SA**		05/22/06 10:25	06/23/06 19:38			1	1.00 SA	
536403,P-0638					,J6F080203-9 v4.8.18		FILTER					THTF0632 Alq		0.083397 SA	

Sq	Cnt Date	Parameter	Sample Cnt	Bkgrnd Cnt	Instr	Geom	Trc/Av	Ent	Efficiency1	Efficiency 2	Ent	Yld Fct	Ent	Blk Value	Ingr Fct	Conv Fct/VolAdj	Decay	Abn
0	06/23/06 15:29	TH-228	4	2	ALP176	ED	N	N	2.9146E-01		N	64%	N		1.0000E+00	4.5045E-01	1.0326E+00	
			499.4666666	998.95			Y		(8.744E-03)			4%			(0.000E+00)	11.990907		

RecCnt:9 RADCALC v4.8.18
STL Richland

() - (1s Uncertainities), Q - Qualifier, U Result is Less Than Lc = 1.645 * TPU
IDC - Instrument Detection Level in Conc Units, MLcC - Method Decision Level in Conc Units, MDC- Minimum Detectable Concentration
Sr-89 Counts are Derived from the Combination of Each Sr-89/90 and Y-90 Count, All Result Digits May Not be Significants, Date/Time - mm/dd/yy hh:mm, 24hr Time

Batch Nbr: 6163128

Alpha Spec, Thlso by ALP , Calculated Results

6/24/2006 7:38:11 AM

1	06/23/06 15:29	TH-229	384 /	3	ALP176	ED	Y	N	2.9146E-01	N	100%	N	1.0000E+00	4.5045E-01	1.0000E+00
			499.4666666	998.95			Y		(8.744E-03)				(0.000E+00)	11.990907	
2	06/23/06 15:29	TH-230	1	1	ALP176	ED	N	N	2.9146E-01	N	64%	N	1.0000E+00	4.5045E-01	1.0000E+00
			499.4666666	998.95			Y		(8.744E-03)		4%		(0.000E+00)	11.990907	
3	06/23/06 15:29	TH-232	1	1	ALP176	ED	N	N	2.9146E-01	N	64%	N	1.0000E+00	4.5045E-01	1.0000E+00
			499.4666666	998.95			Y		(8.744E-03)		4%		(0.000E+00)	11.990907	

Sq	Calc Date	Parameter	Avg	Sa Act	Q	Net Cnt Rt	Dpm Wo Blk	Dpm-Blk	Vol Used	Yield,EnFct	Chem Yld,EFctU	IDC/ILcC	BlkLcC/MDC	StdDvMdC/LcC
	06/24/06	TH-228	R	**0.179856**	U4	6.00644E-03	0.032246	0.032246	1.00 SA	64%		0.441241		
				(0.128293)		(4.2472E-03)	(0.022927)	(0.022927)	(0.028284)			0.139469		
	06/24/06	TH-229	R	**14.192023**		7.65817E-01	2.627518	2.627518	1.00 SA	64%				
				(1.172862)		(3.9272E-02)	(0.156105)	(0.156105)	(0.028284)					
	06/24/06	TH-230	R	**0.028855**	U4	1.00108E-03	0.005342	0.005342	1.00 SA	64%		0.346137		
				(0.064577)		(2.2384E-03)	(0.011952)	(0.011952)	(0.028284)			0.09493		
	06/24/06	TH-232	R	**0.028855**	U4	1.00108E-03	0.005342	0.005342	1.00 SA	64%		0.346137		
				(0.064577)		(2.2384E-03)	(0.011952)	(0.011952)	(0.028284)			0.09493		

Sq	Status	Method	Matrix	Protocol	Equation Set	Wrk Ord	Units/Matrix	QC/BB	Sa/On Date	AnalysisDate/PptWt	Sep1/Sep2 Date	QC/Tracer Vial	Mult/EntYld	Total/Analy Vol	Final/Count Vol
10	Calc	S1	FILTER	*STLE	AlpIsoWoBS	**H61A21AA**	**PCI/SA**		05/22/06 10:40	06/23/06 19:38			1	1.00 SA	
536403,P-0639					,J6F080203-10 v4.8.18		FILTER					THTF0633 Alq		0.082825 SA	

Sq	Cnt Date	Parameter	Sample Cnt	Bkgrnd Cnt	Instr	Geom	Trc/Av	Ent	Efficiency1	Efficiency 2	Ent	Yld Fct	Ent	Blk Value	Ingr Fct	Conv Fct/VolAdj	Decay	Abn
0	06/23/06 15:29	TH-228	4	0	ALP177	ED	N	N	2.6130E-01		N	79%	N		1.0000E+00	4.5045E-01	1.0326E+00	
			499.4666666	998.95			Y		(7.839E-03)			5%			(0.000E+00)	12.073715		
1	06/23/06 15:29	TH-229	428 /	0	ALP177	ED	Y	N	2.6130E-01		N	100%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			499.4666666	998.95			Y		(7.839E-03)						(0.000E+00)	12.073715		
2	06/23/06 15:29	TH-230	1	0	ALP177	ED	N	N	2.6130E-01		N	79%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			499.4666666	998.95			Y		(7.839E-03)			5%			(0.000E+00)	12.073715		
3	06/23/06 15:29	TH-232	1	1	ALP177	ED	N	N	2.6130E-01		N	79%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			499.4666666	998.95			Y		(7.839E-03)			5%			(0.000E+00)	12.073715		

Sq	Calc Date	Parameter	Avg	Sa Act	Q	Net Cnt Rt	Dpm Wo Blk	Dpm-Blk	Vol Used	Yield,EnFct	Chem Yld,EFctU	IDC/ILcC	BlkLcC/MDC	StdDvMdC/LcC
	06/24/06	TH-228	R	**0.217941**		8.00854E-03	0.038807	0.038807	1.00 SA	79%		0.147655		
				(0.110813)		(4.0043E-03)	(0.019605)	(0.019605)	(0.028284)					
	06/24/06	TH-229	R	**17.835416**		8.56914E-01	3.27941	3.27941	1.00 SA	79%				
				(1.441963)		(4.1421E-02)	(0.186565)	(0.186565)	(0.028284)					
	06/24/06	TH-230	R	**0.052447**	U4	2.00214E-03	0.009643	0.009643	1.00 SA	79%		0.142132		
				(0.05267)		(2.0021E-03)	(0.009669)	(0.009669)	(0.028284)					
	06/24/06	TH-232	R	**0.026224**	U4	1.00108E-03	0.004822	0.004822	1.00 SA	79%		0.314579		
				(0.058688)		(2.2384E-03)	(0.010787)	(0.010787)	(0.028284)			0.086275		

RecCnt:11 RADCALC v4.8.18
STL Richland

() - (1s Uncertainities), Q - Qualifier, U Result is Less Than Lc = 1.645 * TPU
IDC - Instrument Detection Level in Conc Units, MLcC - Method Decision Level in Conc Units, MDC- Minimum Detectable Concentration
Sr-89 Counts are Derived from the Combination of Each Sr-89/90 and Y-90 Count, All Result Digits May Not be Significants, Date/Time - mm/dd/yy hh:mm, 24hr Time

Batch Nbr: 6163128

Alpha Spec, Thlso by ALP , Calculated Results

6/24/2006 7:38:11 AM

Sq	Status	Method	Matrix	Protocol	Equation Set	Wrk Ord	Units/Matrix	QC/BB	Sa/On Date	AnalysisDate/PptWt	Sep1/Sep2 Date	QC/Tracer Vial	Mult/EntYld	Total/Analy Vol	Final/Count Vol
11	Calc	S1	FILTER	*STLE	AlpIsoWoBS	**H61A31AA**	**PCI/SA**		05/22/06 11:20	06/23/06 19:38			1	1.00 SA	
536403,P-0641					,J6F080203-11 v4.8.18		FILTER					THTF0634 Alq		0.083976 SA	

Sq	Cnt Date	Parameter	Sample Cnt	Bkgrnd Cnt	Instr	Geom	Trc/Av	Ent	Efficiency1	Efficiency 2	Ent	Yld Fct	Ent	Blk Value	Ingr Fct	Conv Fct/VolAdj	Decay	Abn
0	06/23/06 15:29	TH-228	1	0	ALP178	ED	N	N	3.1338E-01		N	104%	N		1.0000E+00	4.5045E-01	1.0326E+00	
			499.4666666	998.95			Y		(9.401E-03)			6%			(0.000E+00)	11.908212		
1	06/23/06 15:29	TH-229	653	0	ALP178	ED	Y	N	3.1338E-01		N	100%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			499.4666666	998.95			Y		(9.401E-03)						(0.000E+00)	11.908212		
2	06/23/06 15:29	TH-230	2	0	ALP178	ED	N	N	3.1338E-01		N	104%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			499.4666666	998.95			Y		(9.401E-03)			6%			(0.000E+00)	11.908212		
3	06/23/06 15:29	TH-232	2	0	ALP178	ED	N	N	3.1338E-01		N	104%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			499.4666666	998.95			Y		(9.401E-03)			6%			(0.000E+00)	11.908212		

Sq	Calc Date	Parameter	Avg	Sa Act	Q	Net Cnt Rt	Dpm Wo Blk	Dpm-Blk	Vol Used	Yield,EnFct	Chem Yld,EFctU	IDC/ILcC	BlkLcC/MDC	StdDvMdC/LcC
	06/24/06	TH-228	R	**0.035601**	U4	2.00214E-03	0.006427	0.006427	1.00 SA	104%		0.096478		
				(0.035738)		(2.0021E-03)	(0.006442)	(0.006442)	(0.028284)					
	06/24/06	TH-229	R	**22.378275**		1.30739E+00	4.171896	4.171896	1.00 SA	104%				
				(1.694169)		(5.1162E-02)	(0.205713)	(0.205713)	(0.028284)					
	06/24/06	TH-230	R	**0.06854**	U4	4.00427E-03	0.012778	0.012778	1.00 SA	104%		0.092872		
				(0.048838)		(2.8314E-03)	(0.009075)	(0.009075)	(0.028284)					
	06/24/06	TH-232	R	**0.06854**	U4	4.00427E-03	0.012778	0.012778	1.00 SA	104%		0.092872		
				(0.048838)		(2.8314E-03)	(0.009075)	(0.009075)	(0.028284)					

Sq	Status	Method	Matrix	Protocol	Equation Set	Wrk Ord	Units/Matrix	QC/BB	Sa/On Date	AnalysisDate/PptWt	Sep1/Sep2 Date	QC/Tracer Vial	Mult/EntYld	Total/Analy Vol	Final/Count Vol
12	Calc	S1	FILTER	*STLE	AlpIsoWoBS	**H61A51AA**	**PCI/SA**		05/22/06 11:30	06/23/06 19:39			1	1.00 SA	
536403,P-0642					,J6F080203-12 v4.8.18		FILTER					THTF0635 Alq		0.083353 SA	

Sq	Cnt Date	Parameter	Sample Cnt	Bkgrnd Cnt	Instr	Geom	Trc/Av	Ent	Efficiency1	Efficiency 2	Ent	Yld Fct	Ent	Blk Value	Ingr Fct	Conv Fct/VolAdj	Decay	Abn
0	06/23/06 15:29	TH-228	5	2	ALP119	ED	N	N	2.5157E-01		N	108%	N		1.0000E+00	4.5045E-01	1.0326E+00	
			500.0166666	1000.0833			Y		(7.547E-03)			7%			(0.000E+00)	11.997165		
1	06/23/06 15:29	TH-229	549	1	ALP119	ED	Y	N	2.5157E-01		N	100%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			500.0166666	1000.0833			Y		(7.547E-03)						(0.000E+00)	11.997165		
2	06/23/06 15:29	TH-230	6	0	ALP119	ED	N	N	2.5157E-01		N	108%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			500.0166666	1000.0833			Y		(7.547E-03)			7%			(0.000E+00)	11.997165		
3	06/23/06 15:29	TH-232	2	0	ALP119	ED	N	N	2.5157E-01		N	108%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			500.0166666	1000.0833			Y		(7.547E-03)			7%			(0.000E+00)	11.997165		

RecCnt:12 RADCALC v4.8.18
STL Richland

() - (1s Uncertainities), Q - Qualifier, U Result is Less Than Lc = 1.645 * TPU
IDC - Instrument Detection Level in Conc Units, MLcC - Method Decision Level in Conc Units, MDC- Minimum Detectable Concentration
Sr-89 Counts are Derived from the Combination of Each Sr-89/90 and Y-90 Count, All Result Digits May Not be Significants, Date/Time - mm/dd/yy hh:mm, 24hr Time

Batch Nbr: 6163128 — Alpha Spec, ThIso by ALP , Calculated Results — 6/24/2006 7:38:11 AM

Sq	Calc Date	Parameter	Avg	Sa Act	Q	Net Cnt Rt	Dpm Wo Blk	Dpm-Blk	Vol Used	Yield,EnFct	Chem Yld,EFctU	IDC/ILcC	BlkLcC/MDC	StdDvMdC/LcC
	06/24/06	TH-228	R	**0.178519**		7.99983E-03	0.031991	0.031991	1.00 SA	108%		0.328466		
				(0.105877)		(4.6902E-03)	(0.018884)	(0.018884)	(0.028284)			0.103822		
	06/24/06	TH-229	R	**23.564298**		1.09696E+00	4.36043	4.36043	1.00 SA	108%				
				(1.82918)		(4.6871E-02)	(0.227648)	(0.227648)	(0.028284)					
	06/24/06	TH-230	R	**0.257768**		1.19996E-02	0.047698	0.047698	1.00 SA	108%		0.116425		
				(0.107734)		(4.8988E-03)	(0.019746)	(0.019746)	(0.028284)					
	06/24/06	TH-232	R	**0.085923**	**U4**	3.99987E-03	0.015899	0.015899	1.00 SA	108%		0.116425		
				(0.061242)		(2.8283E-03)	(0.011296)	(0.011296)	(0.028284)					

Sq	Status	Method	Matrix	Protocol	Equation Set	Wrk Ord	Units/Matrix	QC/BB	Sa/On Date	AnalysisDate/PptWt	Sep1/Sep2 Date	QC/Tracer Vial	Mult/EntYld	Total/Analy Vol	Final/Count Vol
13	Calc	S1	FILTER	*STLE	AlpIsoWoBS	**H61A71AA**	**PCI/SA**		05/22/06 10:05	06/23/06 19:39			1	1.00 SA	
536403,P-0643					,J6F080203-13 v4.8.18		FILTER					THTF0636 Alq		0.083718 SA	

Sq	Cnt Date	Parameter	Sample Cnt	Bkgrnd Cnt	Instr	Geom	Trc/Av	Ent	Efficiency1	Efficiency 2	Ent	Yld Fct	Ent	Blk Value	Ingr Fct	Conv Fct/VolAdj	Decay	Abn
0	06/23/06 15:29	TH-228	3	4	ALP120	ED	N	N	2.4073E-01		N	81%	N		1.0000E+00	4.5045E-01	1.0326E+00	
			500.1	1000.05			Y		(7.222E-03)			5%			(0.000E+00)	11.944897		
1	06/23/06 15:29	TH-229	399	1	ALP120	ED	Y	N	2.4073E-01		N	100%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			500.1	1000.05			Y		(7.222E-03)						(0.000E+00)	11.944897		
2	06/23/06 15:29	TH-230	3	1	ALP120	ED	N	N	2.4073E-01		N	81%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			500.1	1000.05			Y		(7.222E-03)			5%			(0.000E+00)	11.944897		
3	06/23/06 15:29	TH-232	0	0	ALP120	ED	N	N	2.4073E-01		N	81%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			500.1	1000.05			Y		(7.222E-03)			5%			(0.000E+00)	11.944897		

Sq	Calc Date	Parameter	Avg	Sa Act	Q	Net Cnt Rt	Dpm Wo Blk	Dpm-Blk	Vol Used	Yield,EnFct	Chem Yld,EFctU	IDC/ILcC	BlkLcC/MDC	StdDvMdC/LcC
	06/24/06	TH-228	R	**0.057458**	**U4**	1.99900E-03	0.010341	0.010341	1.00 SA	81%		0.533744		
				(0.115079)		(3.9994E-03)	(0.020703)	(0.020703)	(0.028284)			0.189106		
	06/24/06	TH-229	R	**17.810121**		7.96840E-01	3.310075	3.310075	1.00 SA	81%				
				(1.459358)		(3.9954E-02)	(0.19341)	(0.19341)	(0.028284)					
	06/24/06	TH-230	R	**0.138305**	**U4**	4.99885E-03	0.025704	0.025704	1.00 SA	81%		0.331847		
				(0.100568)		(3.6049E-03)	(0.018633)	(0.018633)	(0.028284)			0.091014		
	06/24/06	TH-232	R	**0.00E00**	**U4**	0.00000E+00	0.00E00	0.00E00	1.00 SA	81%		0.149927		
				(0.067757)		(0.0000E+00)	(0.012593)	(0.012593)	(0.028284)					

Sq	Status	Method	Matrix	Protocol	Equation Set	Wrk Ord	Units/Matrix	QC/BB	Sa/On Date	AnalysisDate/PptWt	Sep1/Sep2 Date	QC/Tracer Vial	Mult/EntYld	Total/Analy Vol	Final/Count Vol
14	Calc	S1	FILTER	*STLE	AlpIsoWoBS	**H67QL1AA**	**PCI/SA**	**B**	05/22/06 10:10	06/23/06 19:38			1	1.00 SA	
0,INTRA-LAB BLANK					,J6F120000-128		FILTER					THTF0637 Alq		1.00 SA	

Sq	Cnt Date	Parameter	Sample Cnt	Bkgrnd Cnt	Instr	Geom	Trc/Av	Ent	Efficiency1	Efficiency 2	Ent	Yld Fct	Ent	Blk Value	Ingr Fct	Conv Fct/VolAdj	Decay	Abn
0	06/23/06 15:28	TH-228	2	5	ALP114	ED	N	N	3.2873E-01		N	77%	N		1.0000E+00	4.5045E-01	1.0326E+00	
			500.0833333	1000			Y		(9.862E-03)			5%			(0.000E+00)	1.00		

() - (1s Uncertainities), Q - Qualifier, U Result is Less Than Lc = 1.645 * TPU
IDC - Instrument Detection Level in Conc Units, MLcC - Method Decision Level in Conc Units, MDC- Minimum Detectable Concentration
Sr-89 Counts are Derived from the Combination of Each Sr-89/90 and Y-90 Count, All Result Digits May Not be Significants, Date/Time - mm/dd/yy hh:mm, 24hr Time

RecCnt:14 RADCALC v4.8.18 STL Richland

Batch Nbr: 6163128

Alpha Spec, Thiso by ALP , Calculated Results

6/24/2006 7:38:11 AM

1	06/23/06 15:28	TH-229	514	0	ALP114	ED	Y	N	3.2873E-01	N	100%	N	1.0000E+00	4.5045E-01	1.0000E+00
			500.0833333	1000			Y		(9.862E-03)				(0.000E+00)	1.00	
2	06/23/06 15:28	TH-230	4	2	ALP114	ED	N	N	3.2873E-01	N	77%	N	1.0000E+00	4.5045E-01	1.0000E+00
			500.0833333	1000			Y		(9.862E-03)		5%		(0.000E+00)	1.00	
3	06/23/06 15:28	TH-232	0	0	ALP114	ED	N	N	3.2873E-01	N	77%	N	1.0000E+00	4.5045E-01	1.0000E+00
			500.0833333	1000			Y		(9.862E-03)		5%		(0.000E+00)	1.00	

Sq	Calc Date	Parameter	Avg	Sa Act	Q	Net Cnt Rt	Dpm Wo Blk	Dpm-Blk	Vol Used	Yield,EnFct	Chem Yld,EFctU	IDC/ILcC	BlkLcC/MDC	StdDvMdC/LcC
	06/24/06	TH-228	R	**-0.001842**	U4	-1.00067E-03	-0.003961	-0.003961	1.00 SA	77%		0.037048		
				(0.00664)		(3.6052E-03)	(0.014272)	(0.014272)	(0.017321)			0.013543		
	06/24/06	TH-229	R	**1.408402**		1.02783E+00	3.126655	3.126655	1.00 SA	77%				
				(0.105823)		(4.5336E-02)	(0.166787)	(0.166787)	(0.017321)					
	06/24/06	TH-230	R	**0.010631**	U4	5.99867E-03	0.023601	0.023601	1.00 SA	77%		0.026084		
				(0.007575)		(4.2420E-03)	(0.01677)	(0.01677)	(0.017321)			0.008245		
	06/24/06	TH-232	R	**0.00E00**	U4	0.00000E+00	0.00E00	0.00E00	1.00 SA	77%		0.009604		
				(0.00434)		(0.0000E+00)	(0.009636)	(0.009636)	(0.017321)					

Sq	Status	Method	Matrix	Protocol	Equation Set	Wrk Ord	Units/Matrix	QC/BB	Sa/On Date	AnalysisDate/PptWt	Sep1/Sep2 Date	QC/Tracer Vial	Mult/EntYld	Total/Analy Vol	Final/Count Vol
15	Calc	S1	FILTER	*STLE	AlpIsoWoBS	**H67QL1AC**	**PCI/SA**	**S**	05/22/06 10:10	06/23/06 19:39		THSO0078	1	1.00 SA	
0,INTRA-LAB CHECK					,J6F120000-128		FILTER					THSO0078 Alq		1.00 SA	

Sq	Cnt Date	Parameter	Sample Cnt	Bkgrnd Cnt	Instr	Geom	Trc/Av	Ent	Efficiency1	Efficiency 2	Ent	Yld Fct	Ent	Blk Value	Ingr Fct	Conv Fct/VolAdj	Decay	Abn
1	06/23/06 15:29	TH-229	378	0	ALP116	ED	Y	N	2.5523E-01		N	100%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			500.1	1000.0833			Y		(7.657E-03)						(0.000E+00)	1.00		
2	06/23/06 15:29	TH-230	371	0	ALP116	ED	N	N	2.5523E-01		N	73%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			500.1	1000.0833			Y		(7.657E-03)			5%			(0.000E+00)	1.00		

Sq	Calc Date	Parameter	Avg	Sa Act	Q	Net Cnt Rt	Dpm Wo Blk	Dpm-Blk	Vol Used	Yield,EnFct	Chem Yld,EFctU	IDC/ILcC	BlkLcC/MDC	StdDvMdC/LcC
	06/24/06	TH-229	R	**1.33397**		7.55849E-01	2.961416	2.961416	1.00 SA	73%				
				(0.106262)		(3.8877E-02)	(0.176335)	(0.176335)	(0.017321)					
	06/24/06	TH-230	R	**1.796343**		7.41852E-01	3.987885	3.987885	1.00 SA	73%	98%	0.013122		
				(0.188658)		(3.8515E-02)	(0.361776)	(0.361776)	(0.017321)					

RecCnt:15 RADCALC v4.8.18
STL Richland

() - (1s Uncertainities), Q - Qualifier, U Result is Less Than Lc = 1.645 * TPU
IDC - Instrument Detection Level in Conc Units, MLcC - Method Decision Level in Conc Units, MDC- Minimum Detectable Concentration
Sr-89 Counts are Derived from the Combination of Each Sr-89/90 and Y-90 Count, All Result Digits May Not be Significants, Date/Time - mm/dd/yy hh:mm, 24hr Time

SEVERN TRENT **STL**

THORIUM ISOTOPIC COUNTING REQUEST

14/35

C.R. Technician CC
Date Counted 6/23
C.R. Analyst AD
Date Analyzed 6/23/06

Counting Time
Sample SW Minutes

Background **See Alpha Analysis Report**

SOP's
Operating: RICHRD008
Review: RICHRD0016

BRC 5/22 6/23/08

WorkOrder #	Th-229 (4845 KeV) Tracer from Th-234 Beta Count (7)				TOTAL COUNTS			Det #	Comment
					Th-228 (5423 KeV)	Th-230 (4688 KeV)	Th-232 (4010 KeV)		
	ID	Activity	ROI Cts	BKG	(6)	(8)	(9)		
1A61AE1A2		10		0	See Alpha Analysis Report for ROI Information			116	
1A61AH1A2		10		0	See Alpha Analysis Report for ROI Information			119	
1A61AK1A2		10		0	See Alpha Analysis Report for ROI Information			120	
		10		0	See Alpha Analysis Report for ROI Information				
		10		0	See Alpha Analysis Report for ROI Information				
		10		0	See Alpha Analysis Report for ROI Information				
		10		0	See Alpha Analysis Report for ROI Information				
		10		0	See Alpha Analysis Report for ROI Information				
		10		0	See Alpha Analysis Report for ROI Information				

Comments:

Approved by: AD Date: 6/23/06

Form No: RC-012, 10/02, Rev 9

STL RICHLAND

Alpha Analysis Report
(Version: 7-Feb-98)

Sample Identity: H61AE1AA

Detector: ALP116 1
Report Date: 23-Jun-06 06:15 PM
Acquire Date: 23-JUN-2006 06:15:17.90
Tracer Nuclide: TH-229
Sample Live Time: 500 minutes
Bkgrnd Live Time: 1000 minutes

Nuclide Name	Smpl Count	Bkg Count	Count Rate C/Min	Centrd Energy keV	Region Width keV	Left Chnl	Rght Chnl
TH-228	2	3	0.001	5423.2	149.6	326	346
TH-229	156	0	0.312	4845.3	390.3	249	301
TH-230	4	0	0.008	4687.7	150.4	228	248
TH-232	1	0	0.002	4013.0	151.2	139	159

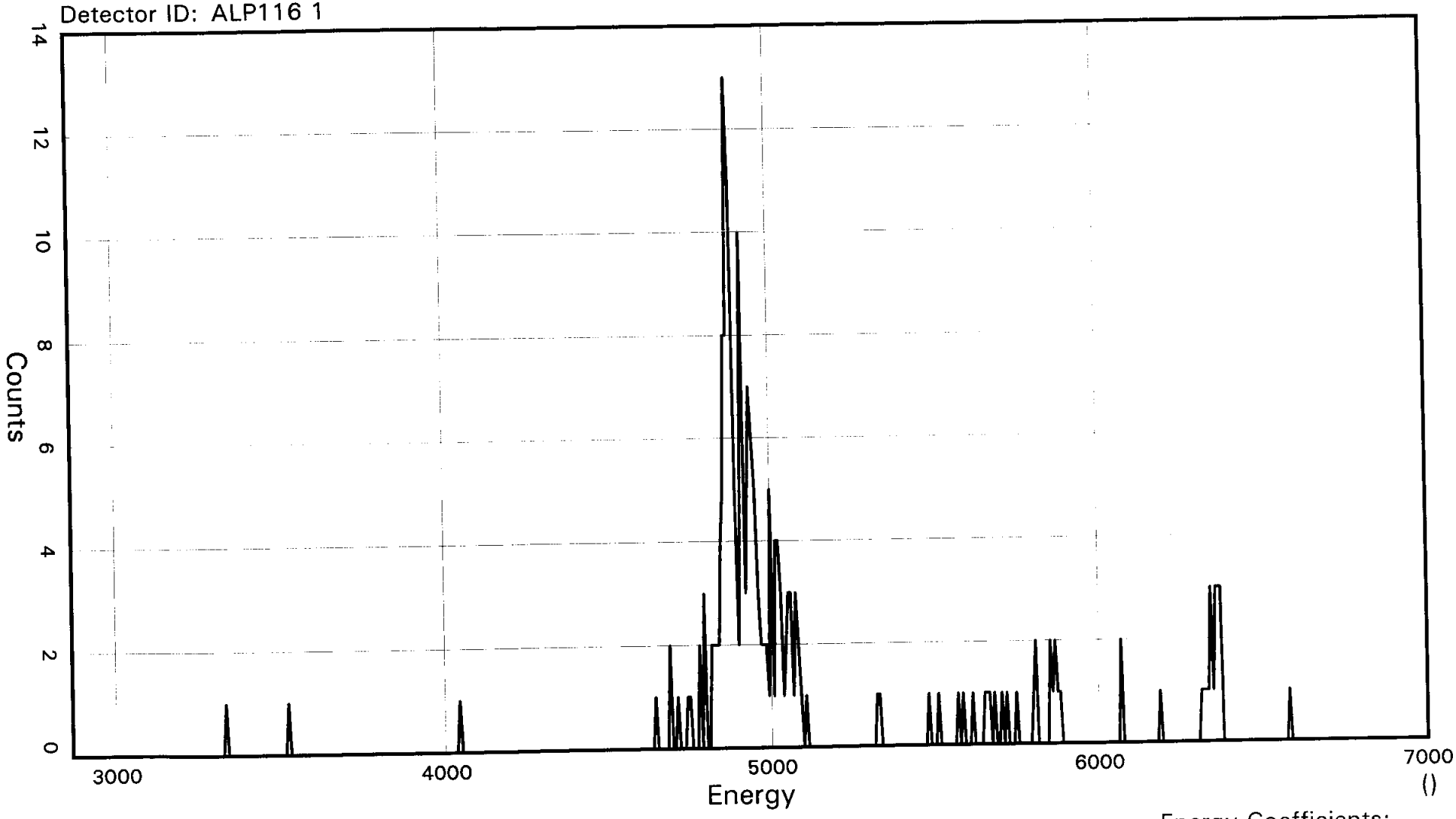
End of Alpha Region Report
(Produced by ANAL Report)

STL Richland WA.

TH BRC

Batch ID: 6163128

Sample ID: H61AE1AA
Detector ID: ALP116 1



Acquisition Start: 23-JUN-2006 06:15:17.90
Preset Live Time: 0 08:20:00.00
Elapsed Live Time: 0 08:20:05.00

Energy Coefficients:
Offset: 2.84555E+03
Slope: 7.62237E+00
Quadrature: -2.12519E-04

SAMPLE IDENTIITY: H61AE1AA

TITLE : TH BRC

DETECTOR : ALP116 1
CONFIGURATION NAME : RDND06$DKA100:[ALP116.SAMPLE]H61AE1AA_230660
615.CNF;1
ACQUIRE DATE of BACKGROUND: 22-JUN-2006 10:15:09

REPORT DATE : 23-Jun-06
ACQUIRE DATE: 23-JUN-2006 06:15:17

SAMPLE DATE: 22-MAY-2006 12:00:00
CALIB DATE : 22-JUN-2006 09:30:10

PRESET LIVE TIME: 0 08:20:00

ELAPSED LIVE TIME: 0 08:20:05

OFFSET : 2845.55 keV
SLOPE : 7.62237 keV/C
QUAD COEFF : -.212519E-03 keV/C^2

CONSTANT FWHM : 8.83333 Channels
SENSITIVITY : 6.00000 Std Dev's
SUM SENSITIVITY: 0.10000 %

Alpha Spectrum Listing
for Spectra Not Processed by Alp_rgn_cnts
(Version: 29-Jun-92)

Sample Identity: H61AE1AA
Detector: ALP116 1
Report Date: 23 Jun-06 02:35 PM
Acquire Date: 23-JUN-2006 06:15:17.90

Flags Key

Intersect Region: @
Non-Intersect Region: +, -

Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn
		1	0		51	0		101	0		151	0		201	1		251	0		301	0		351	2		401	0		451	0		501
		2	0		52	0		102	0		152	0		202	1		252	0		302	0		352	1		402	0		452	0		502
0		3	0		53	0		103	0		153	0		203	0		253	0		303	1		353	1		403	0		453	0		503
0		4	0		54	0		104	0		154	0		204	0		254	0		304	0		354	0		404	0		454	0		504
0		5	0		55	0		105	0		155	0		205	0		255	0		305	0		355	0		405	0		455	0		505
0		6	0		56	0		106	0		156	0		206	2		256	0		306	0		356	0		406	0		456	0		506
0		7	0		57	0		107	0		157	0		207	0		257	0		307	0		357	0		407	0		457	0		507
0		8	0		58	0		108	1		158	0		208	3		258	0		308	0		358	0		408	0		458	0		508
0		9	0		59	0		109	0		159	0		209	0		259	0		309	0		359	0		409	0		459	0		509
0		10	0		60	0		110	0		160	0		210	0		260	0		310	0		360	0		410	0		460	0		510
0		11	0		61	0		111	0		161	0		211	2		261	0		311	1		361	0		411	1		461	0		511
0		12	0		62	0		112	0		162	0		212	2		262	0		312	0		362	0		412	1		462	0		512
0		13	0		63	0		113	0		163	0		213	2		263	0		313	1		363	0		413	1		463			
0		14	1		64	0		114	0		164	0		214	2		264	0		314	0		364	0		414	1		464			
0		15	0		65	0		115	0		165	0		215	4		265	0		315	0		365	0		415	3		465			
0		16	0		66	0		116	0		166	0		216	5		266	0		316	0		366	0		416	1		466			
0		17	0		67	0		117	0		167	0		217	8		267	0		317	1		367	0		417	3		467			
0		18	0		68	0		118	0		168	0		218	8		268	0		318	0		368	0		418	3		468			
0		19	0		69	0		119	0		169	0		219	13		269	0		319	0		369	0		419	3		469			
0		20	0		70	0		120	0		170	0		220	11		270	0		320	0		370	0		420	0		470			
0		21	0		71	0		121	0		171	0		221	5		271	0		321	0		371	0		421	0		471			
0		22	0		72	0		122	0		172	0		222	2		272	0		322	1		372	0		422	0		472			
0		23	0		73	0		123	0		173	0		223	5		273	0		323	1		373	0		423	0		473			
0		24	0		74	0		124	0		174	0		224	10		274	0		324	1		374	0		424	0		474			
0		25	0		75	0		125	0		175	0		225	3		275	0		325	0		375	0		425	0		475			
0		26	0		76	0		126	0		176	0		226	5		276	0		326	1		376	0		426	0		476			
0		27	0		77	0		127	0		177	0		227	7		277	0		327	0		377	0		427	0		477			
0		28	0		78	0		128	0		178	0		228	6		278	1		328	0		378	2		428	0		478			
0		29	0		79	0		129	0		179	0		229	5		279	1		329	1		379	0		429	0		479			
0		30	0		80	0		130	0		180	0		230	3		280	0		330	0		380	0		430	0		480			
0		31	0		81	0		131	0		181	0		231	2		281	0		331	1		381	0		431	0		481			
0		32	0		82	0		132	0		182	0		232	2		282	0		332	0		382	0		432	0		482			
0		33	0		83	0		133	0		183	0		233	2		283	0		333	0		383	0		433	0		483			
0		34	0		84	0		134	0		184	0		234	1		284	0		334	0		384	0		434	0		484			
0		35	0		85	0		135	0		185	0		235	5		285	0		335	1		385	0		435	0		485			
0		36	0		86	0		136	0		186	0		236	1		286	0		336	0		386	0		436	0		486			
0		37	0		87	0		137	0		187	0		237	4		287	0		337	0		387	0		437	0		487			
0		38	0		88	0		138	0		188	1		238	4		288	0		338	0		388	0		438	0		488			
0		39	1		89	0		139	0		189	0		239	3		289	0		339	0		389	0		439	0		489			
0		40	0		90	0		140	0		190	0		240	1		290	0		340	0		390	0		440	0		490			
0		41	0		91	0		141	0		191	0		241	2		291	0		341	0		391	0		441	0		491			
0		42	0		92	0		142	0		192	0		242	3		292	0		342	1		392	0		442	0		492			
0		43	0		93	0		143	0		193	0		243	3		293	0		343	2		393	0		443	0		493			
0		44	0		94	0		144	0		194	2		244	1		294	0		344	0		394	1		444	0		494			
0		45	0		95	0		145	0		195	0		245	3		295	0		345	0		395	0		445	0		495			
0		46	0		96	0		146	0		196	0		246	2		296	0		346	0		396	0		446	0		496			
0		47	0		97	0		147	0		197	1		247	1		297	0		347	0		397	0		447	1		497			
0		48	0		98	0		148	0		198	0		248	0		298	0		348	0		398	0		448	0		498			
0		49	0		99	0		149	0		199	0		249	1		299	1		349	2		399	0		449	0		499			

0 50 0 100 0 150 0 200 0 250 0 300 0 350 1 400 0 450 0 500

VMS Peak Search Report V1.9 Generated 23-JUN-2006 14:35:25

```
Configuration     : RDND06$DKA100:[ALP116.SAMPLE]H61AE1AA_230660615.CNF;1
Analyses by       : ALPHA V1.8
Sample title      : TH BRC
Sample date       : 22-MAY-2006 12:00:00 Acquisition date : 23-JUN-2006 06:15:17
Sample ID         : H61AE1AA             Sample quantity  : 0.00000E+00 SAMPLE
Sample type       : disk                 Sample geometry  :
Detector name     : ALP116               Detector geometry:
Elapsed live time: 0 08:20:05.00         Elapsed real time: 0 08:20:05.00   0.0%
Start energy      :  2868.42             End energy       :  6692.50
Sensitivity       :     6.00             Sum Sensitivity  :     0.10
No peaks were found
```

VMS Nuclide Identification Report V3.1 Generated 23-JUN-2006 14:35:26

Configuration	: RDND06$DKA100:[ALP116.SAMPLE]H61AE1AA_230660615.CNF;1		
Analyses by	: ALPHA V1.8,PEAKEFF V2.2,NID V3.4		
Sample title	: TH BRC		
Sample date	: 22-MAY-2006 12:00:00	Acquisition date	: 23-JUN-2006 06:15:17
Sample ID	: H61AE1AA	Sample quantity	: 0.00000E+00 SAMPLE
Sample type	: disk	Sample geometry	:
Detector name	: ALP116	Detector geometry	:
Elapsed live time	: 0 08:20:05.00	Elapsed real time	: 0 08:20:05.00 0.0%
Energy tolerance	: 80.00	Half life ratio	: 1.00
Errors propagated	: No	Systematic Error	: 0.00 %
Efficiency type	: Spline	Efficiencies at	: Peak Energy
Abundance limit	: 0.00		

Summary of Nuclide Activity

**** There are no nuclides meeting summary criteria ****

Flags: "K" = Keyline not found "M" = Manually accepted
"E" = Manually edited "A" = Nuclide specific abn. limit

```
  Error Report  (Date: 23-Jun-06  02:35 PM)

Program: Alp_rgn_cnts
subroutine: Main
Message: No trace pk or nucl
Record being processed:  7

System Status Message:

%NONAME-W-NOMSG, Message number 00000000
```

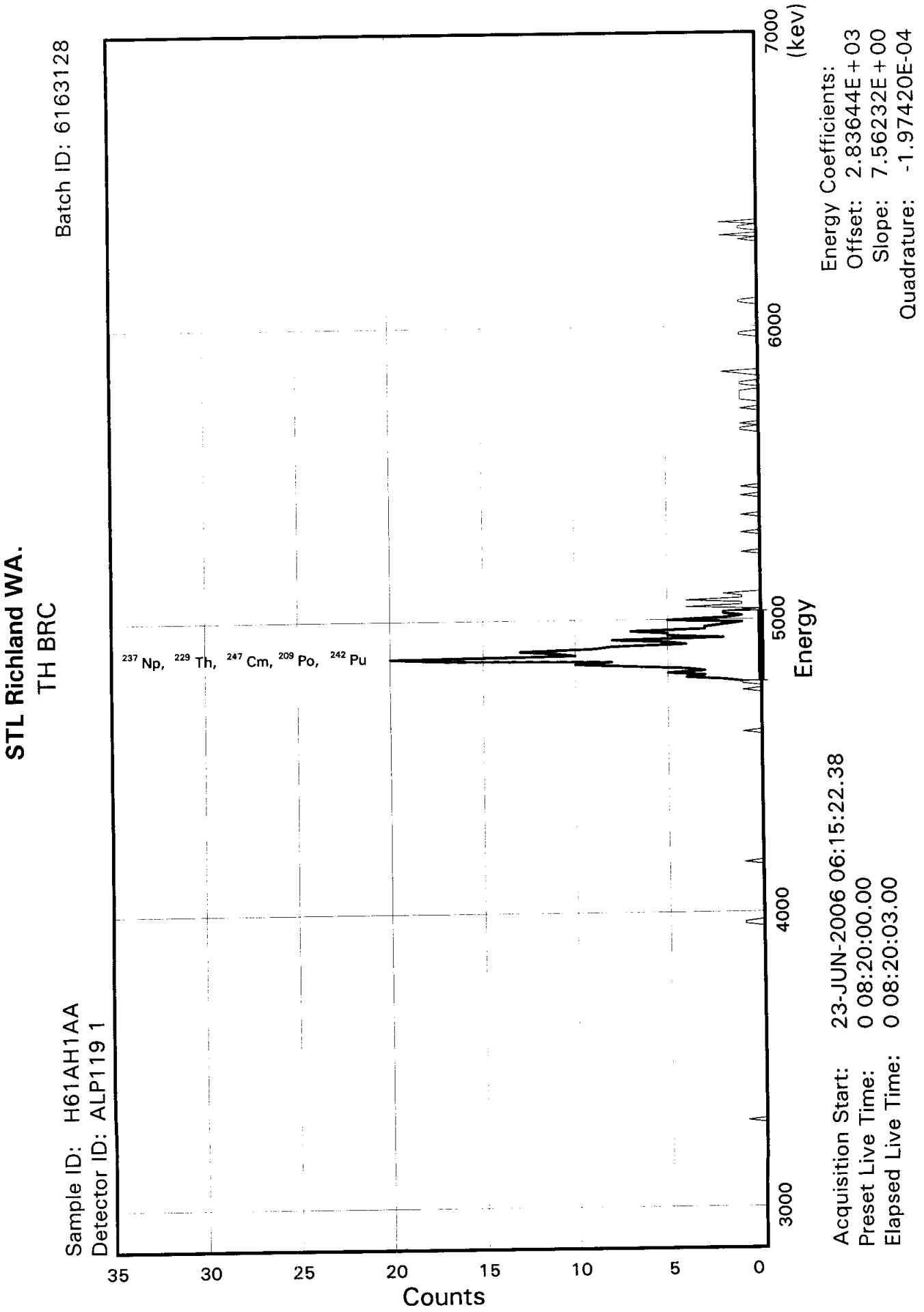
Alpha Analysis Report
(Version: 7-Feb-98)

Sample Identity: H61AH1AA

Detector: ALP119 1
Report Date: 23-Jun-06 06:16 PM
Acquire Date: 23-JUN-2006 06:15:22.38
Tracer Nuclide: TH-229
Sample Live Time: 500 minutes
Bkgrnd Live Time: 1000 minutes

Nuclide Name	Smpl Count	Bkg Count	Count Rate C/Min	Centrd Energy keV	Region Width keV	Left Chnl	Rght Chnl
TH-228	4	2	0.006	5423.2	170.9	327	350
TH-229	208	1	0.415	4845.3	357.7	253	301
TH-230	1	0	0.002	4687.7	149.3	231	251
TH-232	2	0	0.004	4013.0	150.1	141	161

End of Alpha Region Report
(Produced by ANAL Report)


STL Richland WA.
TH BRC
Batch ID: 6163128
Sample ID: H61AH1AA
Detector ID: ALP119 1
237 Np, 229 Th, 247 Cm, 209 Po, 242 Pu
Counts
35
30
25
20
15
10
5
0
Energy
3000
4000
5000
6000
7000
(kev)
Acquisition Start: 23-JUN-2006 06:15:22.38
Preset Live Time: 0 08:20:00.00
Elapsed Live Time: 0 08:20:03.00
Energy Coefficients:
Offset: 2.83644E+03
Slope: 7.56232E+00
Quadrature: -1.97420E-04

SAMPLE IDENTIITY: H61AH1AA

TITLE : TH BRC

DETECTOR : ALP119 1
CONFIGURATION NAME : RDND06$DKA100:[ALP119.SAMPLE]H61AH1AA_230660
615.CNF;1
ACQUIRE DATE of BACKGROUND: 22-JUN-2006 10:15:44

REPORT DATE : 23-Jun-06 SAMPLE DATE: 22-MAY-2006 12:00:00
ACQUIRE DATE: 23-JUN-2006 06:15:22 CALIB DATE : 22-JUN-2006 09:30:26

PRESET LIVE TIME: 0 08:20:00 ELAPSED LIVE TIME: 0 08:20:03

OFFSET : 2836.44 keV CONSTANT FWHM : 9.00000 Channels
SLOPE : 7.56232 keV/C SENSITIVITY : 3.00000 Std Dev's
QUAD COEFF : -.197420E-03 keV/C^2 SUM SENSITIVITY: 1.00000 %

Alpha Regions Report
(Version: 8-Oct-91)

Sample Identity: H61AH1AA

Detector: ALP119 1
Report Date: 23-Jun-06 02:35 PM
Acquire Date: 23-JUN-2006 06:15:22.38
Tracer Nuclide: TH-229
High Counts Limit: 36
Sample Live Time: 500 minutes
Bkgrnd Live Time: 1000 minutes

Flags Key

P: Peak Identified
I: Peak Intersect
S: Single Non-peak Intersect
M: Multiple Non-peak Intersect
H: High Non-peak Sample Count
A: Altered via ALP-RGN-EDIT

Nuclide Name	Smpl Count	Bkg Count	Intrsct Count	Count Rate C/Min	Centrd Energy keV	Region Width keV	Left Chnl	Rght Chnl	Left Wdth Mult	Rght Wdth Mult	Flags
PO-208	-9999	-9999	0	-9.998	5146.3	238.1	296	328	0.00	0.00	M
PO-209	189	0	0	0.378	4914.6	238.5	260	292	0.00	0.00	P
PO-210	-9999	-9999	0	-9.998	5335.8	237.7	322	354	0.00	0.00	M
AC-227	1	6	2	-0.003	6069.4	236.5	421	453	0.00	0.00	S
TH-227	1	6	2	-0.003	6069.4	236.5	421	453	0.00	0.00	S
TH-228	-9999	-9999	0	-9.998	5454.6	237.5	338	370	0.00	0.00	M
TH-229	189	0	0	0.378	4876.7	238.5	260	292	0.00	0.00	P
TH-230	-9999	-9999	0	-9.998	4719.1	238.8	239	271	0.00	0.00	S I
TH-232	3	0	1	0.005	4044.4	239.9	149	181	0.00	0.00	S
U-232	-9999	-9999	0	-9.998	5351.6	237.7	324	356	0.00	0.00	M
U-234	-9999	-9999	0	-9.998	4806.0	238.6	251	283	0.00	0.00	S I
U-235	0	0	0	0.000	4429.2	239.3	200	232	0.00	0.00	S
PU-236	6	10	10	0.002	5799.1	236.9	384	416	0.00	0.00	S
NP-237	189	0	0	0.378	4819.4	238.5	260	292	0.00	0.00	P
PU-238	-9999	-9999	0	-9.998	5530.5	237.4	348	380	0.00	0.00	M
U-238	-9999	-9999	0	-9.998	4229.4	239.6	173	205	0.00	0.00	M
PU-239	-9999	-9999	0	-9.998	5188.0	238.0	302	334	0.00	0.00	M
AM-241	-9999	-9999	0	-9.998	5517.0	237.4	346	378	0.00	0.00	M
AM-242M	-9999	-9999	0	-9.998	5238.2	237.9	309	341	0.00	0.00	M
CM-242	-9999	-9999	0	-9.998	6144.1	236.3	431	463	0.00	0.00	M
PU-242	189	0	0	0.378	4931.9	238.5	260	292	0.00	0.00	P
AM-243	-9999	-9999	0	-9.998	5306.7	237.8	318	350	0.00	0.00	M
CM-244	7	8	10	0.006	5836.2	236.9	389	421	0.00	0.00	S
CM-246	-9999	-9999	0	-9.998	5417.9	237.6	333	365	0.00	0.00	M
CM-247	189	0	0	0.378	4901.8	238.5	260	292	0.00	0.00	P
CM-248	-9999	-9999	0	-9.998	5110.0	238.1	291	323	0.00	0.00	M

End of Alpha Region Report
(Produced by Alp_rgn_cnts)

Alpha Spectrum Listing
(Version: 29-Jun-92)

Sample Identity: H61AH1AA
Detector: ALP119 1
Report Date: 23-Jun-06 02:35 PM
Acquire Date: 23-JUN-2006 06:15:22.38

Flags Key

Intersect Region: @
Non-Intersect Region: +,

Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn
		1	0		51	0		101	0	+	151	0	@	201	0	@	251	0	@	301	0	@	351	1	@	401	0	@	451
		2	0		52	0		102	0	+	152	0	@	202	0	@	252	0	@	302	0	@	352	2	@	402	0	@	452
0		3	0		53	0		103	0	+	153	0	@	203	0	@	253	0	@	303	0	@	353	0	@	403	0	@	453
0		4	0		54	0		104	0	+	154	0	@	204	0	@	254	0	@	304	0	@	354	0	@	404	0	-	454
0		5	0		55	0		105	0	+	155	0	@	205	0	@	255	0	@	305	0	@	355	0	@	405	0	-	455
0		6	0		56	0		106	0	+	156	0	+	206	1	@	256	0	@	306	0	@	356	0	@	406	0	-	456
0		7	0		57	0		107	0	+	157	0	+	207	0	@	257	0	@	307	0	@	357	0	@	407	0	-	457
0		8	0		58	0		108	0	+	158	0	+	208	0	@	258	0	@	308	0	@	358	0	@	408	0	-	458
0		9	0		59	0		109	0	+	159	0	+	209	1	@	259	0	@	309	0	@	359	0	@	409	0	-	459
0		10	1		60	0		110	0	+	160	0	+	210	1	-	260	0	@	310	0	@	360	0	@	410	0	-	460
0		11	0		61	0		111	0	+	161	0	+	211	2	@	261	0	@	311	0	@	361	0	@	411	0	-	461
0		12	0		62	0		112	0	+	162	0	+	212	4	@	262	0	@	312	0	@	362	0	@	412	0	-	462
0		13	0		63	0		113	0	+	163	0	+	213	3	@	263	0	@	313	0	@	363	0	@	413	1	-	463
0		14	0		64	0		114	0	+	164	0	+	214	5	@	264	0	@	314	0	@	364	0	@	414	0		464
0		15	0		65	0		115	0	+	165	0	+	215	3	@	265	0	@	315	0	@	365	0	@	415	2		465
0		16	0		66	0		116	0	+	166	0	+	216	4	@	266	0	@	316	0	@	366	0	@	416	0		466
0		17	0		67	0		117	0	+	167	0	+	217	7	@	267	0	@	317	0	@	367	0	-	417	0		467
0		18	0		68	0		118	0	+	168	0	+	218	10	@	268	0	@	318	0	@	368	0	-	418	1		468
0		19	0		69	0		119	0	+	169	0	+	219	8	@	269	1	@	319	0	@	369	1	-	419	1		469
0		20	0		70	0		120	0	+	170	0	+	220	17	@	270	0	@	320	0	@	370	1	-	420	0		470
0		21	0		71	0		121	0	+	171	0	+	221	20	@	271	0	@	321	0	@	371	0	@	421	2		471
0		22	0		72	0		122	0	+	172	0	+	222	10	@	272	0	@	322	0	@	372	0	@	422	0		472
0		23	0		73	0		123	0	@	173	0	+	223	11	@	273	0	@	323	0	@	373	0	@	423	0		473
0		24	0		74	0		124	0	@	174	0	+	224	13	@	274	0	@	324	0	@	374	0	@	424	0		474
0		25	0		75	0		125	0	@	175	0	+	225	9	@	275	0	@	325	1	@	375	0	@	425	0		475
0		26	0		76	0		126	0	@	176	0	+	226	8	@	276	0	@	326	1	@	376	0	@	426	0		476
0		27	0		77	0		127	1	@	177	0	+	227	4	@	277	0	@	327	0	@	377	0	@	427	0		477
0		28	0		78	0		128	0	@	178	0	+	228	5	@	278	1	@	328	1	@	378	0	@	428	0		478
0		29	0		79	0		129	0	@	179	0	+	229	8	@	279	0	@	329	0	+	379	0	@	429	0		479
0		30	0		80	0		130	0	@	180	0	+	230	2	@	280	0	@	330	0	+	380	0	@	430	0		480
0		31	0		81	0		131	0	@	181	0	+	231	5	@	281	0	@	331	0		381	0	-	431	0		481
0		32	0		82	0		132	0	-	182	0	+	232	5	@	282	0	@	332	0		382	0	@	432	0		482
0		33	0		83	0		133	0	-	183	0		233	7	@	283	0	-	333	0		383	0	@	433	0		483
0		34	0		84	0		134	0	-	184	0		234	3	@	284	0	@	334	0	+	384	1	@	434	0		484
0		35	0		85	0		135	0	-	185	0		235	3	@	285	0	@	335	1	+	385	1	@	435	0		485
0		36	0		86	0		136	0	-	186	0		236	2	@	286	1	@	336	0	+	386	0	@	436	0		486
0		37	0		87	0		137	0	-	187	1		237	1	@	287	0	@	337	0	+	387	0	@	437	0		487
0		38	0		88	0		138	0	-	188	0		238	5	@	288	0	@	338	0	+	388	0	@	438	0		488
0		39	0		89	0		139	0	-	189	0	+	239	2	@	289	0	@	339	1	@	389	0	@	439	0		489
0		40	0		90	0		140	0	-	190	0	+	240	1	@	290	0	@	340	1	@	390	0	@	440	0		490
0		41	0		91	0		141	0	-	191	0	+	241	2	-	291	0	@	341	1	@	391	0	@	441	0		491
0		42	0		92	0		142	0	-	192	0	+	242	2	+	292	0	@	342	1	@	392	0	@	442	0		492
0		43	0		93	0		143	0	-	193	0	+	243	0	+	293	0	@	343	1	@	393	0	@	443	0		493
0		44	0		94	0		144	0	-	194	0	+	244	4	+	294	0	@	344	0	@	394	0	@	444	0		494
0		45	0		95	0		145	0	-	195	0	+	245	1	+	295	1	@	345	0	@	395	0	@	445	0		495
0		46	0		96	0		146	0	-	196	0	+	246	1	@	296	0	@	346	1	@	396	0	@	446	0		496
0		47	0		97	0		147	0	-	197	0	+	247	4	@	297	0	@	347	1	@	397	0	@	447	0		497
0		48	0		98	0		148	0	-	198	0	+	248	1	@	298	0	@	348	0	@	398	0	@	448	0		498
0		49	0		99	1	+	149	0	-	199	0	+	249	1	@	299	1	@	349	0	@	399	0	@	449	0		499
0		50	0		100	1	+	150	0	@	200	0	+	250	2	@	300	0	@	350	0	@	400	0	@	450	0		500

VMS Peak Search Report V1.9 Generated 23-JUN-2006 14:35:31

```
Configuration     : RDND06$DKA100:[ALP119.SAMPLE]H61AH1AA_230660615.CNF;1
Analyses by       : ALPHA V1.8
Sample title      : TH BRC
Sample date       : 22-MAY-2006 12:00:00 Acquisition date : 23-JUN-2006 06:15:22
Sample ID         : H61AH1AA             Sample quantity  : 0.00000E+00 SAMPLE
Sample type       : disk                 Sample geometry  :
Detector name     : ALP119               Detector geometry:
Elapsed live time: 0 08:20:03.00         Elapsed real time: 0 08:20:03.00   0.0%
Start energy      :  2859.13 kev         End energy       :  6656.60 kev
Sensitivity       :     3.00             Sum Sensitivity  :     1.00
```

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4876.73	189	0	68.06	271.72	260	32	6.30E-03	7.3	

VMS Nuclide Identification Report V3.1 Generated 23-JUN-2006 14:35:33

```
Configuration     : RDND06$DKA100:[ALP119.SAMPLE]H61AH1AA_230660615.CNF;1
Analyses by       : ALPHA V1.8,PEAKEFF V2.2,NID V3.4
Sample title      : TH BRC
Sample date       : 22-MAY-2006 12:00:00 Acquisition date : 23-JUN-2006 06:15:22
Sample ID         : H61AH1AA             Sample quantity  : 0.00000E+00 SAMPLE
Sample type       : disk                 Sample geometry  :
Detector name     : ALP119               Detector geometry:
Elapsed live time: 0 08:20:03.00         Elapsed real time: 0 08:20:03.00   0.0%
Energy tolerance :   100.00 kev          Half life ratio  :     1.00
Errors propagated: No                    Systematic Error :     0.00 %
Efficiency type  : Spline                Efficiencies at  : Peak Energy
Abundance limit  :     0.00
```

Summary of Nuclide Activity

Total number of lines in spectrum	1	
Number of unidentified lines	0	
Number of lines tentatively identified by NID	1	100.00%

Nuclide Type : NP

Nuclide	Hlife	Decay	Uncorrected PCI/SAMPLE	Decay Corr PCI/SAMPLE	Decay Corr 0-Sigma Error	0-Sigma %Error	Flags
PO-209	102.00Y	1.00	0.000E+00	0.000E+00	0.000E+00	0.00	
			---	---			
Total Activity :			0.000E+00	0.000E+00			

Nuclide Type : AP

Nuclide	Hlife	Decay	Uncorrected PCI/SAMPLE	Decay Corr PCI/SAMPLE	Decay Corr 0-Sigma Error	0-Sigma %Error	Flags
TH-229	7340.00Y	1.00	0.000E+00	0.000E+00	0.000E+00	0.00	
NP-237	2.14E+06Y	1.00	0.000E+00	0.000E+00	0.000E+00	0.00	
PU-242	3.73E+05Y	1.00	0.000E+00	0.000E+00	0.000E+00	0.00	
CM-247	1.56E+07Y	1.00	0.000E+00	0.000E+00	0.000E+00	0.00	
			---	---			
Total Activity :			0.000E+00	0.000E+00			

Grand Total Activity : 0.000E+00 0.000E+00

Flags: "K" = Keyline not found "M" = Manually accepted
"E" = Manually edited "A" = Nuclide specific abn. limit

ITRD PEAK TEST REPORT (Version 16-May-94)

Configuration: RDND06$DKA100:[ALP119.SAMPLE]H61AH1AA_230660615.CNF;1

Peak Energy	Left Chan	Rght Chan	Peak Area	Total Counts	Diff/ StDev	Overlap Counts	Multiplet Diff/StDev
4876.72	260	292	189	192	-0.22		

End of Report

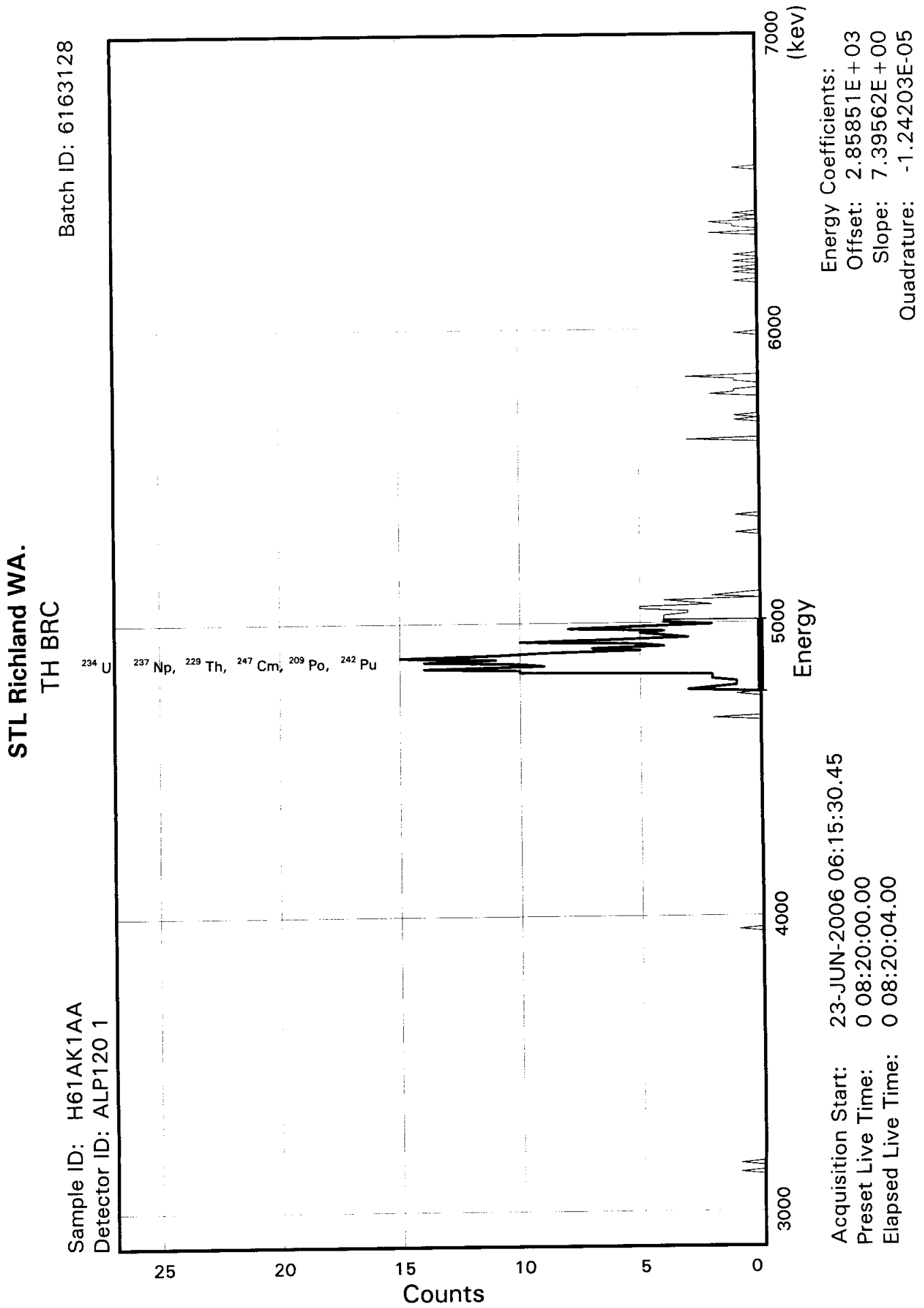
Alpha Analysis Report
(Version: 7-Feb-98)

Sample Identity: H61AK1AA

Detector: ALP120 1
Report Date: 23-Jun-06 06:17 PM
Acquire Date: 23-JUN-2006 06:15:30.45
Tracer Nuclide: TH-229
Sample Live Time: 500 minutes
Bkgrnd Live Time: 1000 minutes

Nuclide Name	Smpl Count	Bkg Count	Count Rate C/Min	Centrd Energy keV	Region Width keV	Left Chnl	Rght Chnl
TH-228	2	5	-0.001	5423.2	162.5	330	352
TH-229	240	1	0.479	4845.3	369.4	254	304
TH-230	2	1	0.003	4687.7	147.8	232	252
TH-232	1	0	0.002	4013.0	147.8	141	161

End of Alpha Region Report
(Produced by ANAL Report)


STL Richland WA.
TH BRC
Batch ID: 6163128
Sample ID: H61AK1AA
Detector ID: ALP120 1
234 U
237 Np, 229 Th, 247 Cm, 209 Po, 242 Pu
Counts
25
20
15
10
5
0
Energy
3000
4000
5000
6000
7000
(kev)
Acquisition Start: 23-JUN-2006 06:15:30.45
Preset Live Time: 0 08:20:00.00
Elapsed Live Time: 0 08:20:04.00
Energy Coefficients:
Offset: 2.85851E+03
Slope: 7.39562E+00
Quadrature: -1.24203E-05

SAMPLE IDENTITY: H61AK1AA

TITLE : TH BRC

DETECTOR : ALP120 1
CONFIGURATION NAME : RDND06$DKA100:[ALP120.SAMPLE]H61AK1AA_230660
615.CNF;1
ACQUIRE DATE of BACKGROUND: 22-JUN-2006 10:15:46

REPORT DATE : 23-Jun-06 SAMPLE DATE: 22-MAY-2006 12:00:00
ACQUIRE DATE: 23-JUN-2006 06:15:30 CALIB DATE : 22-JUN-2006 09:30:33

PRESET LIVE TIME: 0 08:20:00 ELAPSED LIVE TIME: 0 08:20:04

OFFSET : 2858.51 keV CONSTANT FWHM : 9.66667 Channels
SLOPE : 7.39562 keV/C SENSITIVITY : 3.00000 Std Dev's
QUAD COEFF : -.124203E-04 keV/C^2 SUM SENSITIVITY: 1.00000 %

Alpha Regions Report
(Version: 8-Oct-91)

Sample Identity: H61AK1AA

Detector: ALP120 1
Report Date: 23-Jun-06 02:35 PM
Acquire Date: 23-JUN-2006 06:15:30.45
Tracer Nuclide: TH-229
High Counts Limit: 36
Sample Live Time: 500 minutes
Bkgrnd Live Time: 1000 minutes

Flags Key

P: Peak Identified
I: Peak Intersect
S: Single Non-peak Intersect
M: Multiple Non-peak Intersect
H: High Non-peak Sample Count
A: Altered via ALP-RGN-EDIT

Nuclide Name	Smpl Count	Bkg Count	Intrsct Count	Count Rate C/Min	Centrd Energy keV	Region Width keV	Left Chnl	Rght Chnl	Left Wdth Mult	Rght Wdth Mult	Flags
PO-208	-9999	-9999	0	-9.997	5138.5	243.8	294	327	0.00	0.00	M
PO-209	204	1	0	0.407	4906.8	243.8	258	291	0.00	0.00	P
PO-210	-9999	-9999	0	-9.997	5328.0	243.8	320	353	0.00	0.00	M
AC-227	-9999	-9999	0	-9.997	6061.6	243.7	419	452	0.00	0.00	M
TH-227	-9999	-9999	0	-9.997	6061.6	243.7	419	452	0.00	0.00	M
TH-228	-9999	-9999	0	-9.997	5446.8	243.8	336	369	0.00	0.00	M
TH-229	204	1	0	0.407	4868.9	243.8	258	291	0.00	0.00	P
TH-230	-9999	-9999	0	-9.997	4711.3	243.8	237	270	0.00	0.00	I
TH-232	1	0	0	0.002	4036.6	243.9	145	178	0.00	0.00	S
U-232	-9999	-9999	0	-9.997	5343.8	243.8	322	355	0.00	0.00	M
U-234	204	1	0	0.407	4798.2	243.8	258	291	0.00	0.00	P
U-235	0	1	0	-0.001	4421.4	243.9	197	230	0.00	0.00	S
PU-236	7	17	9	-0.004	5791.2	243.7	383	416	0.00	0.00	S
NP-237	204	1	0	0.407	4811.6	243.8	258	291	0.00	0.00	P
PU-238	-9999	-9999	0	-9.997	5522.6	243.8	346	379	0.00	0.00	M
U-238	-9999	-9999	0	-9.997	4221.6	243.9	170	203	0.00	0.00	M
PU-239	-9999	-9999	0	-9.997	5180.2	243.8	300	333	0.00	0.00	M
AM-241	-9999	-9999	0	-9.997	5509.2	243.8	345	378	0.00	0.00	M
AM-242M	-9999	-9999	0	-9.997	5230.4	243.8	307	340	0.00	0.00	M
CM-242	-9999	-9999	0	-9.997	6136.3	243.7	430	463	0.00	0.00	M
PU-242	204	1	0	0.407	4924.1	243.8	258	291	0.00	0.00	P
AM-243	-9999	-9999	0	-9.997	5298.9	243.8	316	349	0.00	0.00	M
CM-244	-9999	-9999	0	-9.997	5828.4	243.7	388	421	0.00	0.00	M
CM-246	-9999	-9999	0	-9.997	5410.1	243.8	331	364	0.00	0.00	M
CM-247	204	1	0	0.407	4894.0	243.8	258	291	0.00	0.00	P
CM-248	-9999	-9999	0	-9.997	5102.2	243.8	290	323	0.00	0.00	M

End of Alpha Region Report
(Produced by Alp_rgn_cnts)

Alpha Spectrum Listing
(Version: 29-Jun-92)

Sample Identity: H61AK1AA
Detector: ALP120 1
Report Date: 23-Jun 06 02:35 PM
Acquire Date: 23-JUN-2006 06:15:30.45

Flags Key

Intersect Region: @
Non-Intersect Region: +, -

Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn
		1	0		51	0		101	0	+	151	0	@	201	0	+	251	0	@	301	0	@	351	1	@	401	1	@	451
		2	0		52	0		102	0	+	152	0	@	202	0	+	252	2	@	302	0	@	352	1	@	402	0	@	452
0		3	0		53	0		103	0	+	153	0	@	203	0	+	253	1	@	303	0	@	353	3	@	403	1	-	453
0		4	0		54	0		104	0	+	154	0	+	204	0	+	254	0	@	304	0	@	354	0	@	404	0	-	454
0		5	0		55	0		105	0	+	155	0	+	205	0	+	255	0	@	305	0	@	355	0	@	405	0	-	455
0		6	0		56	0		106	0	+	156	0	+	206	0	+	256	0	@	306	0	@	356	0	@	406	1	-	456
0		7	0		57	0		107	0	+	157	0	+	207	1	+	257	0	@	307	0	@	357	0	@	407	0	-	457
0		8	0		58	0		108	0	+	158	0	+	208	0	@	258	0	@	308	0	@	358	0	@	408	0	-	458
0		9	0		59	0		109	0	+	159	0	+	209	3	@	259	0	@	309	0	@	359	0	@	409	1	-	459
0		10	0		60	0		110	0	+	160	0	+	210	2	@	260	0	@	310	0	@	360	0	@	410	0	-	460
0		11	0		61	0		111	0	+	161	0	+	211	1	@	261	0	@	311	0	@	361	0	@	411	0	-	461
0		12	0		62	0		112	0	+	162	0	+	212	1	@	262	0	@	312	0	@	362	0	@	412	0	-	462
0		13	0		63	0		113	0	+	163	0	+	213	1	@	263	0	@	313	0	@	363	0	@	413	0	-	463
0		14	0		64	0		114	0	+	164	0	+	214	2	@	264	0	@	314	0	@	364	0	@	414	0		464
0		15	0		65	0		115	0	+	165	0	+	215	2	@	265	0	@	315	0	@	365	0	@	415	0		465
0		16	0		66	0		116	0	+	166	0	+	216	2	@	266	0	@	316	0	@	366	0	@	416	0		466
0		17	0		67	0		117	0	+	167	0	+	217	10	@	267	0	@	317	0	@	367	0	-	417	0		467
0		18	0		68	0		118	0	+	168	0	+	218	10	@	268	0	@	318	0	@	368	0	-	418	0		468
0		19	0		69	0		119	0	+	169	0	+	219	14	@	269	0	@	319	0	@	369	0	@	419	2		469
0		20	0		70	0		120	0	@	170	0	+	220	9	@	270	0	@	320	0	@	370	0	@	420	0		470
0		21	0		71	0		121	0	@	171	0	+	221	10	@	271	0	@	321	0	@	371	0	@	421	0		471
0		22	0		72	0		122	0	@	172	0	+	222	14	@	272	0	@	322	0	@	372	0	@	422	1		472
0		23	0		73	0		123	0	@	173	0	+	223	11	@	273	0	@	323	0	@	373	1	@	423	1		473
0		24	0		74	0		124	0	@	174	0	+	224	15	@	274	0	@	324	3	@	374	0	@	424	2		474
0		25	0		75	0		125	0	@	175	0	+	225	11	@	275	0	@	325	0	@	375	0	@	425	0		475
0		26	0		76	0		126	0	@	176	0	+	226	9	@	276	0	@	326	0	@	376	0	@	426	1		476
0		27	0		77	0		127	0	@	177	0	+	227	5	@	277	0	@	327	0	@	377	0	@	427	0		477
0		28	0		78	0		128	0	@	178	0	+	228	7	@	278	0	@	328	0	@	378	0	@	428	1		478
0		29	0		79	0		129	0	-	179	0	+	229	4	@	279	0	@	329	0	+	379	0	@	429	0		479
0		30	0		80	0		130	0	-	180	0	+	230	5	@	280	0	@	330	0		380	0	-	430	0		480
0		31	0		81	0		131	0	-	181	0		231	10	@	281	1	-	331	0		381	0	@	431	0		481
0		32	0		82	0		132	0	-	182	0		232	6	@	282	0	@	332	0		382	0	@	432	0		482
0		33	0		83	0		133	0	-	183	0		233	3	@	283	0	@	333	1	+	383	0	@	433	0		483
0		34	0		84	0		134	0	-	184	0		234	4	@	284	0	@	334	0	+	384	0	@	434	0		484
0		35	0		85	0		135	0	-	185	0		235	5	@	285	0	@	335	1	+	385	0	@	435	0		485
0		36	0		86	0		136	0	-	186	0		236	4	@	286	0	@	336	0	+	386	0	@	436	0		486
1		37	0		87	0		137	0	-	187	0	+	237	8	@	287	0	@	337	0	+	387	0	@	437	0		487
0		38	0		88	0		138	0	-	188	0	+	238	5	@	288	0	@	338	0	@	388	0	@	438	0		488
0		39	0		89	0		139	0	-	189	0	+	239	2	@	289	1	@	339	0	@	389	0	@	439	0		489
0		40	0		90	0		140	0	-	190	0	+	240	4	-	290	0	@	340	0	@	390	0	@	440	0		490
1		41	0		91	0		141	0	-	191	0	+	241	4	+	291	0	@	341	0	@	391	0	@	441	0		491
0		42	0		92	0		142	0	-	192	0	+	242	4	+	292	0	@	342	0	@	392	0	@	442	0		492
0		43	0		93	0		143	0	-	193	0	+	243	4	+	293	0	@	343	0	@	393	0	@	443	0		493
0		44	0		94	0		144	0	-	194	0	+	244	3	@	294	0	@	344	0	@	394	0	@	444	0		494
0		45	0		95	0	+	145	0	-	195	0	+	245	3	@	295	0	@	345	2	@	395	0	@	445	0		495
0		46	0		96	0	+	146	0	-	196	2	+	246	5	@	296	0	@	346	1	@	396	0	@	446	0		496
0		47	0		97	0	+	147	0	@	197	0	+	247	5	@	297	0	@	347	1	@	397	1	@	447	0		497
0		48	0		98	1	+	148	0	@	198	0	+	248	2	@	298	0	@	348	0	@	398	0	@	448	0		498
0		49	0		99	0	+	149	0	@	199	0	+	249	3	@	299	0	@	349	0	@	399	0	@	449	1		499
0		50	0		100	0	+	150	0	@	200	0	+	250	4	@	300	0	@	350	0	@	400	0	@	450	0		500

VMS Peak Search Report V1.9 Generated 23-JUN-2006 14:35:38

Configuration	: RDND06$DKA100:[ALP120.SAMPLE]H61AK1AA_230660615.CNF;1		
Analyses by	: ALPHA V1.8		
Sample title	: TH BRC		
Sample date	: 22-MAY-2006 12:00:00	Acquisition date	: 23-JUN-2006 06:15:30
Sample ID	: H61AK1AA	Sample quantity	: 0.00000E+00 SAMPLE
Sample type	: disk	Sample geometry	:
Detector name	: ALP120	Detector geometry	:
Elapsed live time	: 0 08:20:04.00	Elapsed real time	: 0 08:20:04.00 0.0%
Start energy	: 2880.70 kev	End energy	: 6641.81 kev
Sensitivity	: 3.00	Sum Sensitivity	: 1.00

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4868.88	204	0	81.35	271.96	258	33	6.80E-03	7.0	

VMS Nuclide Identification Report V3.1 Generated 23-JUN-2006 14:35:39

```
Configuration     : RDND06$DKA100:[ALP120.SAMPLE]H61AK1AA_230660615.CNF;1
Analyses by       : ALPHA V1.8,PEAKEFF V2.2,NID V3.4
Sample title      : TH BRC
Sample date       : 22-MAY-2006 12:00:00 Acquisition date : 23-JUN-2006 06:15:30
Sample ID         : H61AK1AA             Sample quantity  : 0.00000E+00 SAMPLE
Sample type       : disk                 Sample geometry  :
Detector name     : ALP120               Detector geometry:
Elapsed live time: 0 08:20:04.00         Elapsed real time: 0 08:20:04.00   0.0%
Energy tolerance :   100.00 kev          Half life ratio  :     1.00
Errors propagated: No                    Systematic Error :     0.00 %
Efficiency type  : Spline                Efficiencies at  : Peak Energy
Abundance limit  :     0.00
```

Summary of Nuclide Activity

```
 Total number of lines in spectrum                  1
 Number of unidentified lines                       0
 Number of lines tentatively identified by NID      1      100.00%
```

Nuclide Type : NP

Nuclide	Hlife	Decay	Uncorrected PCI/SAMPLE	Decay Corr PCI/SAMPLE	Decay Corr 0-Sigma Error	0-Sigma %Error	Flags
PO-209	102.00Y	1.00	0.000E+00	0.000E+00	0.000E+00	0.00	
U-234	2.45E+05Y	1.00	0.000E+00	0.000E+00	0.000E+00	0.00	
			---	---			
Total Activity :			0.000E+00	0.000E+00			

Nuclide Type : AP

Nuclide	Hlife	Decay	Uncorrected PCI/SAMPLE	Decay Corr PCI/SAMPLE	Decay Corr 0-Sigma Error	0-Sigma %Error	Flags
TH-229	7340.00Y	1.00	0.000E+00	0.000E+00	0.000E+00	0.00	
NP-237	2.14E+06Y	1.00	0.000E+00	0.000E+00	0.000E+00	0.00	
PU-242	3.73E+05Y	1.00	0.000E+00	0.000E+00	0.000E+00	0.00	
CM-247	1.56E+07Y	1.00	0.000E+00	0.000E+00	0.000E+00	0.00	
			---	---			
Total Activity :			0.000E+00	0.000E+00			

Grand Total Activity : 0.000E+00 0.000E+00

Flags: "K" = Keyline not found "M" = Manually accepted
"E" = Manually edited "A" = Nuclide specific abn. limit

ITRD PEAK TEST REPORT (Version 16-May-94)

Configuration: RDND06$DKA100:[ALP120.SAMPLE]H61AK1AA_230660615.CNF;1

Peak Energy	Left Chan	Rght Chan	Peak Area	Total Counts	Diff/ StDev	Overlap Counts	Multiplet Diff/StDev
4868.88	258	291	204	203	0.07		

End of Report

SEVERN TRENT **STL**

THORIUM ISOTOPIC COUNTING REQUEST

2349

C.R. Technician: AD
Date Counted: 6/23/06
C.R. Analyst: AD
Date Analyzed: 6/24/06

Counting Time
Sample: 500 Minutes
Background: See Alpha Analysis Report

SOP's
Operating: RICHRD008
Review: RICHRD0016

BRC 5/22 6163128

WorkOrder #	Th-229 (4845 KeV) Tracer from Th-234 Beta Count (7)				TOTAL COUNTS			Det #	Comment
					Th-228 (5423 KeV)	Th-230 (4688 KeV)	Th-232 (4010 KeV)		
	ID	Activity	ROI Cts	BKG	(6)	(8)	(9)		
H61A2IAA		10		0	See Alpha Analysis Report for ROI Information			171	
H61AMIAA		10		0	See Alpha Analysis Report for ROI Information			172	
H61ARIAA		10		0	See Alpha Analysis Report for ROI Information			173	
H61ATIAA		10		0	See Alpha Analysis Report for ROI Information			174	
H61AXIAA		10		0	See Alpha Analysis Report for ROI Information			175	
H61A1IAA		10		0	See Alpha Analysis Report for ROI Information			176	
H61A2IAA		10		0	See Alpha Analysis Report for ROI Information			177	
H61A3IAA		10		0	See Alpha Analysis Report for ROI Information			178	
		10		0	See Alpha Analysis Report for ROI Information				

Comments:

Approved by: S Date: 6/24/06

Form No: RC-012, 10/02, Rev 9

Alpha Analysis Report
(Version: 7-Feb-98)

Sample Identity: H61AL1AA

Detector: ALP171 1
Report Date: 24-Jun-06 06:31 AM
Acquire Date: 23-JUN-2006 15:29:06.03
Tracer Nuclide: TH-229
Sample Live Time: 499 minutes
Bkgrnd Live Time: 999 minutes

Nuclide Name	Smpl Count	Bkg Count	Count Rate C/Min	Centrd Energy keV	Region Width keV	Left Chnl	Rght Chnl
TH-228	3	3	0.003	5423.2	116.3	316	336
TH-229	169	1	0.337	4845.3	319.9	223	278
TH-230	1	0	0.002	4687.7	116.3	190	210
TH-232	1	1	0.001	4013.0	116.4	74	94

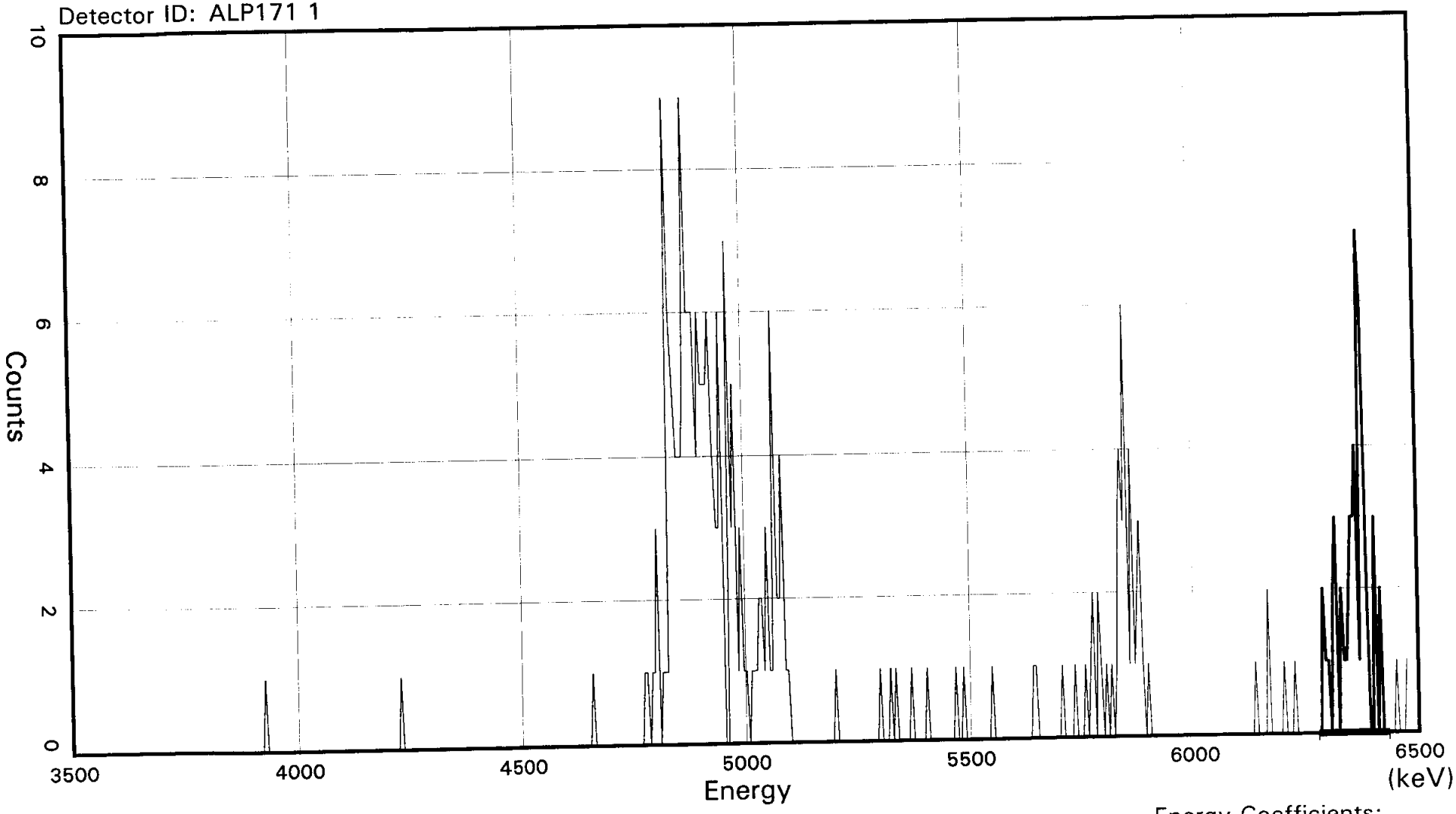
End of Alpha Region Report
(Produced by ANAL Report)

STL Richland WA.

TH BRC

Batch ID: 6163128

Sample ID: H61AL1AA
Detector ID: ALP171 1



Acquisition Start: 23-JUN-2006 15:29:06.03
Preset Live Time: 0 08:20:00.00
Elapsed Live Time: 0 08:19:28.00

Energy Coefficients:
Offset: 3.49600E+03
Slope: 5.81791E+00
Quadrature: -1.51993E-06

SAMPLE IDENTIITY: H61AL1AA

TITLE : TH BRC

DETECTOR : ALP171 1
CONFIGURATION NAME : $DISK1:[ALP171.SAMPLE]H61AL1AA_230661529A.CN
F;1
ACQUIRE DATE of BACKGROUND: 10-JUN-2006 06:49:56

REPORT DATE : 23-Jun-06 SAMPLE DATE: 22-MAY-2006 12:00:00
ACQUIRE DATE: 23-JUN-2006 15:29:06 CALIB DATE : 09-JUN-2006 02:56:15

PRESET LIVE TIME: 0 08:20:00 ELAPSED LIVE TIME: 0 08:19:28

OFFSET : 3496.00 keV CONSTANT FWHM : 8.50000 Channels
SLOPE : 5.81791 keV/C SENSITIVITY : 3.00000 Std Dev's
QUAD COEFF : -.151993E-05 keV/C^2 SUM SENSITIVITY: 1.00000 %

Alpha Spectrum Listing
for Spectra Not Processed by Alp_rgn_cnts
(Version: 29-Jun-92)

Sample Identity: H61AL1AA
Detector: ALP171 1
Report Date: 23-Jun-06 11:49 PM
Acquire Date: 23-JUN-2006 15:29:06.03

Flags Key

Intersect Region: @
Non-Intersect Region: +, -

Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn
		1	0		51	0		101	0		151	0		201	0		251	0		301	0		351	1		401	0		451	0		501
		2	0		52	0		102	0		152	0		202	0		252	0		302	0		352	3		402	0		452	2		502
0		3	0		53	0		103	0		153	0		203	7		253	0		303	1		353	4		403	0		453	0		503
0		4	0		54	0		104	0		154	0		204	3		254	0		304	0		354	3		404	1		454	0		504
0		5	0		55	0		105	0		155	0		205	5		255	0		305	0		355	6		405	0		455	0		505
0		6	0		56	0		106	0		156	0		206	1		256	0		306	0		356	1		406	0		456	0		506
0		7	0		57	0		107	0		157	0		207	3		257	0		307	0		357	4		407	0		457	0		507
0		8	0		58	0		108	0		158	0		208	1		258	0		308	0		358	1		408	0		458	1		508
0		9	0		59	0		109	0		159	0		209	1		259	0		309	0		359	2		409	2		459	0		509
0		10	0		60	0		110	0		160	0		210	0		260	1		310	0		360	3		410	0		460	0		510
0		11	0		61	0		111	0		161	0		211	1		261	0		311	0		361	1		411	0		461	0		511
0		12	0		62	0		112	0		162	0		212	1		262	0		312	0		362	0		412	0		462	1		512
0		13	0		63	0		113	0		163	0		213	1		263	0		313	0		363	1		413	0		463			
0		14	0		64	0		114	0		164	0		214	2		264	1		314	0		364	0		414	0		464			
0		15	0		65	0		115	0		165	0		215	2		265	0		315	0		365	0		415	1		465			
0		16	0		66	0		116	0		166	0		216	1		266	1		316	0		366	0		416	0		466			
0		17	0		67	0		117	0		167	0		217	3		267	0		317	0		367	0		417	0		467			
0		18	0		68	0		118	0		168	0		218	1		268	0		318	0		368	0		418	0		468			
0		19	0		69	0		119	0		169	0		219	1		269	0		319	1		369	0		419	1		469			
0		20	0		70	0		120	0		170	1		220	6		270	0		320	1		370	0		420	0		470			
0		21	0		71	0		121	0		171	1		221	2		271	0		321	0		371	0		421	0		471			
0		22	0		72	0		122	0		172	0		222	2		272	1		322	0		372	0		422	0		472			
0		23	0		73	0		123	0		173	1		223	4		273	0		323	0		373	0		423	0		473			
0		24	1		74	0		124	0		174	1		224	1		274	0		324	0		374	0		424	0		474			
0		25	0		75	0		125	0		175	3		225	1		275	0		325	0		375	0		425	0		475			
0		26	0		76	1		126	0		176	0		226	0		276	0		326	0		376	0		426	0		476			
0		27	0		77	0		127	0		177	1		227	0		277	0		327	0		377	0		427	0		477			
0		28	0		78	0		128	0		178	1		228	0		278	1		328	0		378	0		428	0		478			
0		29	0		79	0		129	0		179	1		229	0		279	0		329	0		379	0		429	0		479			
0		30	0		80	0		130	0		180	9		230	0		280	0		330	1		380	0		430	2		480			
0		31	0		81	0		131	0		181	6		231	0		281	0		331	0		381	0		431	1		481			
0		32	0		82	0		132	0		182	5		232	0		282	0		332	0		382	0		432	1		482			
0		33	0		83	0		133	0		183	4		233	0		283	0		333	0		383	0		433	0		483			
0		34	0		84	0		134	0		184	4		234	0		284	0		334	0		384	0		434	2		484			
0		35	0		85	0		135	0		185	4		235	0		285	0		335	1		385	0		435	3		485			
0		36	0		86	0		136	0		186	5		236	0		286	0		336	0		386	0		436	0		486			
0		37	0		87	0		137	0		187	9		237	0		287	0		337	0		387	0		437	2		487			
0		38	0		88	0		138	0		188	6		238	0		288	0		338	0		388	0		438	1		488			
0		39	0		89	0		139	0		189	6		239	0		289	1		339	1		389	0		439	1		489			
0		40	0		90	0		140	0		190	6		240	0		290	0		340	0		390	0		440	2		490			
0		41	0		91	0		141	0		191	4		241	0		291	0		341	1		391	0		441	3		491			
0		42	0		92	0		142	0		192	6		242	0		292	1		342	2		392	0		442	3		492			
0		43	0		93	0		143	0		193	5		243	1		293	0		343	0		393	0		443	4		493			
0		44	0		94	0		144	0		194	5		244	0		294	0		344	2		394	0		444	1		494			
0		45	0		95	0		145	0		195	5		245	0		295	0		345	1		395	0		445	7		495			
0		46	0		96	0		146	0		196	6		246	0		296	0		346	0		396	0		446	6		496			
0		47	0		97	0		147	0		197	4		247	0		297	0		347	1		397	0		447	2		497			
0		48	0		98	0		148	0		198	3		248	0		298	0		348	0		398	0		448	0		498			
0		49	0		99	0		149	0		199	3		249	0		299	0		349	1		399	0		449	0		499			

0	50	0	100	0	150	1	200	6	250	0	300	0	350	0	400	0	450	3	500

VMS Peak Search Report V1.9 Generated 23-JUN-2006 23:49:38

Configuration	: $DISK1:[ALP171.SAMPLE]H61AL1AA_230661529A.CNF;1		
Analyses by	: ALPHA V1.8		
Sample title	: TH BRC		
Sample date	: 22-MAY-2006 12:00:00	Acquisition date	: 23-JUN-2006 15:29:06
Sample ID	: H61AL1AA	Sample quantity	: 0.00000E+00 SAMPLE
Sample type	: disk	Sample geometry	:
Detector name	: ALP171 1	Detector geometry	:
Elapsed live time	: 0 08:19:28.00	Elapsed real time	: 0 08:19:28.00 0.0%
Start energy	: 3513.45 keV	End energy	: 6474.37 keV
Sensitivity	: 3.00	Sum Sensitivity	: 1.00

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	6369.00	45	0	46.54	493.88	478	27	1.50E-03	14.9	

VMS Nuclide Identification Report V3.0 Generated 23-JUN-2006 23:49:42

```
Configuration     : $DISK1:[ALP171.SAMPLE]H61AL1AA_230661529A.CNF;1
Analyses by       : ALPHA V1.8,PEAKEFF V2.2,NID V3.3
Sample title      : TH BRC
Sample date       : 22-MAY-2006 12:00:00 Acquisition date : 23-JUN-2006 15:29:06
Sample ID         : H61AL1AA             Sample quantity  : 0.00000E+00 SAMPLE
Sample type       : disk                 Sample geometry  :
Detector name     : ALP171 1             Detector geometry:
Elapsed live time: 0 08:19:28.00         Elapsed real time: 0 08:19:28.00   0.0%
Energy tolerance :    80.00 keV          Half life ratio  :     1.00
Errors propagated: No                    Systematic Error :     0.00 %
Efficiency type  : Spline                Efficiencies at  : Peak Energy
Abundance limit  :    70.00
```

Summary of Nuclide Activity

```
 Total number of lines in spectrum                1
 Number of unidentified lines                     1
 Number of lines tentatively identified by NID    0        0.00%
**** There are no nuclides meeting summary criteria ****

Flags: "K" = Keyline not found          "M" = Manually accepted
       "E" = Manually edited            "A" = Nuclide specific abn. limit
```

```
  Error Report  (Date: 23-Jun-06  11:49 PM)

Program: Alp_rgn_cnts
subroutine: Main
Message: No trace pk or nucl
Record being processed:  7

System Status Message:

%NONAME-W-NOMSG, Message number 00000000
```

Alpha Analysis Report
(Version: 7-Feb-98)

Sample Identity: H61AM1AA

Detector: ALP171 2
Report Date: 24-Jun-06 06:31 AM
Acquire Date: 23-JUN-2006 15:29:06.03
Tracer Nuclide: TH-229
Sample Live Time: 499 minutes
Bkgrnd Live Time: 999 minutes

Nuclide Name	Smpl Count	Bkg Count	Count Rate C/Min	Centrd Energy keV	Region Width keV	Left Chnl	Rght Chnl
TH-228	3	4	0.002	5423.2	112.9	320	340
TH-229	191	4	0.378	4845.3	322.1	225	282
TH-230	4	1	0.007	4687.7	113.1	190	210
TH-232	0	0	0.000	4013.0	113.2	70	90

End of Alpha Region Report
(Produced by ANAL Report)

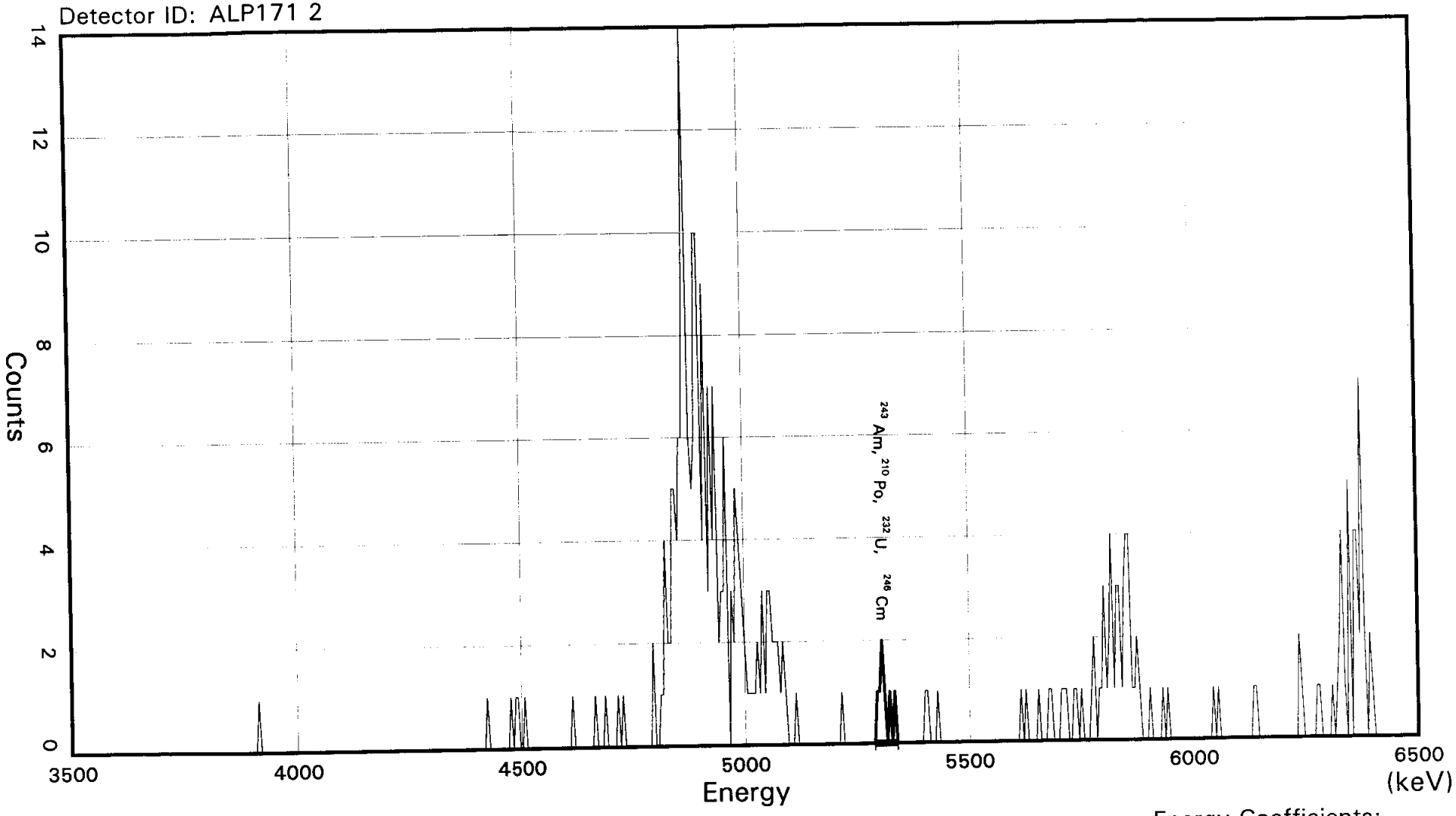
STL Richland WA.

TH BRC

Sample ID: H61AM1AA

Detector ID: ALP171 2

Batch ID: 6163128



Acquisition Start: 23-JUN-2006 15:29:06.03

Preset Live Time: 0 08:20:00.00

Elapsed Live Time: 0 08:19:28.00

Energy Coefficients:

Offset: 3.52894E+03

Slope: 5.66647E+00

Quadrature: -3.05585E-05

SAMPLE IDENTIITY: H61AM1AA

TITLE : TH BRC

DETECTOR : ALP171 2
CONFIGURATION NAME : $DISK1:[ALP171.SAMPLE]H61AM1AA_230661529B.CN
F;1
ACQUIRE DATE of BACKGROUND: 09-JUN-2006 06:58:01

REPORT DATE : 23-Jun-06
ACQUIRE DATE: 23-JUN-2006 15:29:06

SAMPLE DATE: 22-MAY-2006 12:00:00
CALIB DATE : 09-JUN-2006 02:56:29

PRESET LIVE TIME: 0 08:20:00

ELAPSED LIVE TIME: 0 08:19:28

OFFSET : 3528.94 keV
SLOPE : 5.66647 keV/C
QUAD COEFF : -.305585E-04 keV/C^2

CONSTANT FWHM : 10.00000 Channels
SENSITIVITY : 3.00000 Std Dev's
SUM SENSITIVITY: 1.00000 %

Alpha Spectrum Listing
for Spectra Not Processed by Alp_rgn_cnts
(Version: 29-Jun-92)

Sample Identity: H61AM1AA
Detector: ALP171 2
Report Date: 23-Jun-06 11:49 PM
Acquire Date: 23-JUN-2006 15:29:06.03

Flags Key

Intersect Region: @
Non-Intersect Region: +, -

Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn
		1	0		51	0		101	0		151	1		201	3		251	0		301	0		351	1		401	0		451	4		501
		2	0		52	0		102	0		152	0		202	3		252	0		302	0		352	3		402	0		452	4		502
0		3	0		53	0		103	0		153	0		203	6		253	0		303	0		353	1		403	0		453	2		503
0		4	0		54	0		104	0		154	0		204	0		254	0		304	0		354	2		404	0		454	7		504
0		5	0		55	0		105	0		155	1		205	3		255	0		305	0		355	4		405	0		455	2		505
0		6	0		56	0		106	0		156	0		206	2		256	0		306	0		356	1		406	0		456	0		506
0		7	0		57	0		107	0		157	0		207	5		257	0		307	0		357	3		407	0		457	2		507
0		8	0		58	0		108	1		158	0		208	4		258	0		308	0		358	3		408	0		458	1		508
0		9	0		59	0		109	0		159	0		209	3		259	0		309	0		359	1		409	0		459	0		509
0		10	0		60	0		110	0		160	1		210	2		260	0		310	0		360	3		410	0		460	0		510
0		11	0		61	0		111	0		161	0		211	1		261	0		311	0		361	4		411	1		461	0		511
0		12	0		62	0		112	0		162	1		212	1		262	1		312	0		362	4		412	1		462	0		512
0		13	0		63	0		113	0		163	0		213	1		263	1		313	0		363	1		413	0		463			
0		14	0		64	0		114	0		164	0		214	1		264	2		314	0		364	1		414	0		464			
0		15	0		65	0		115	0		165	0		215	2		265	1		315	0		365	2		415	0		465			
0		16	0		66	0		116	0		166	0		216	1		266	0		316	0		366	1		416	0		466			
0		17	0		67	0		117	1		167	0		217	3		267	1		317	0		367	0		417	0		467			
0		18	1		68	0		118	0		168	0		218	1		268	0		318	0		368	0		418	0		468			
0		19	0		69	0		119	1		169	0		219	3		269	1		319	1		369	0		419	0		469			
0		20	0		70	0		120	1		170	0		220	3		270	0		320	0		370	1		420	0		470			
0		21	0		71	0		121	0		171	0		221	2		271	0		321	1		371	0		421	0		471			
0		22	0		72	0		122	0		172	0		222	2		272	0		322	0		372	0		422	0		472			
0		23	0		73	0		123	1		173	0		223	2		273	0		323	0		373	0		423	0		473			
0		24	0		74	0		124	0		174	2		224	1		274	0		324	0		374	0		424	0		474			
0		25	0		75	0		125	0		175	0		225	2		275	0		325	0		375	1		425	0		475			
0		26	0		76	0		126	0		176	0		226	1		276	0		326	1		376	0		426	0		476			
0		27	0		77	0		127	0		177	1		227	0		277	0		327	0		377	1		427	0		477			
0		28	0		78	0		128	0		178	1		228	0		278	0		328	0		378	0		428	0		478			
0		29	0		79	0		129	0		179	4		229	0		279	0		329	0		379	0		429	2		479			
0		30	0		80	0		130	0		180	2		230	1		280	0		330	1		380	0		430	1		480			
0		31	0		81	0		131	0		181	2		231	0		281	1		331	1		381	0		431	0		481			
0		32	0		82	0		132	0		182	5		232	0		282	1		332	0		382	0		432	0		482			
0		33	0		83	0		133	0		183	5		233	0		283	0		333	0		383	0		433	0		483			
0		34	0		84	0		134	0		184	4		234	0		284	0		334	0		384	0		434	0		484			
0		35	0		85	0		135	0		185	6		235	0		285	0		335	1		385	0		435	0		485			
0		36	0		86	0		136	0		186	6		236	0		286	1		336	1		386	0		436	1		486			
0		37	0		87	0		137	0		187	9		237	0		287	0		337	1		387	0		437	1		487			
0		38	0		88	0		138	0		188	14		238	0		288	0		338	0		388	0		438	0		488			
0		39	0		89	0		139	0		189	6		239	0		289	0		339	0		389	0		439	0		489			
0		40	0		90	0		140	0		190	5		240	0		290	0		340	1		390	0		440	0		490			
0		41	0		91	0		141	0		191	6		241	0		291	0		341	1		391	0		441	0		491			
0		42	0		92	0		142	1		192	10		242	0		292	0		342	0		392	0		442	1		492			
0		43	0		93	0		143	0		193	10		243	0		293	0		343	1		393	0		443	0		493			
0		44	0		94	0		144	0		194	4		244	0		294	0		344	0		394	0		444	1		494			
0		45	0		95	0		145	0		195	9		245	0		295	0		345	0		395	1		445	2		495			
0		46	0		96	0		146	0		196	3		246	0		296	0		346	0		396	0		446	4		496			
0		47	0		97	0		147	0		197	7		247	0		297	0		347	1		397	1		447	1		497			
0		48	0		98	0		148	0		198	4		248	1		298	0		348	2		398	0		448	0		498			
0		49	0		99	0		149	0		199	7		249	0		299	0		349	0		399	0		449	5		499			

0	50	0	100	0	150	0	200	2	250	0	300	0	350	1	400	0	450	0	500

VMS Peak Search Report V1.9 Generated 23-JUN-2006 23:49:44

Configuration	: $DISK1:[ALP171.SAMPLE]H61AM1AA_230661529B.CNF;1		
Analyses by	: ALPHA V1.8		
Sample title	: TH BRC		
Sample date	: 22-MAY-2006 12:00:00	Acquisition date	: 23-JUN-2006 15:29:06
Sample ID	: H61AM1AA	Sample quantity	: 0.00000E+00 SAMPLE
Sample type	: disk	Sample geometry	:
Detector name	: ALP171 1	Detector geometry	:
Elapsed live time	: 0 08:19:28.00	Elapsed real time	: 0 08:19:28.00 0.0%
Start energy	: 3545.94 keV	End energy	: 6422.16 keV
Sensitivity	: 3.00	Sum Sensitivity	: 1.00

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	5308.02	6	0	34.00	314.50	311	9	2.00E-04	40.8	

VMS Nuclide Identification Report V3.0 Generated 23-JUN-2006 23:49:47

```
Configuration     : $DISK1:[ALP171.SAMPLE]H61AM1AA_230661529B.CNF;1
Analyses by       : ALPHA V1.8,PEAKEFF V2.2,NID V3.3
Sample title      : TH BRC
Sample date       : 22-MAY-2006 12:00:00 Acquisition date : 23-JUN-2006 15:29:06
Sample ID         : H61AM1AA             Sample quantity  : 0.00000E+00 SAMPLE
Sample type       : disk                 Sample geometry  :
Detector name     : ALP171 1             Detector geometry:
Elapsed live time: 0 08:19:28.00         Elapsed real time: 0 08:19:28.00   0.0%
Energy tolerance :    80.00 keV          Half life ratio  :     1.00
Errors propagated: No                    Systematic Error :     0.00 %
Efficiency type  : Spline                Efficiencies at  : Peak Energy
Abundance limit  :    70.00
```

Summary of Nuclide Activity

Total number of lines in spectrum	1	
Number of unidentified lines	0	
Number of lines tentatively identified by NID	1	100.00%

Nuclide Type : NP

Nuclide	Hlife	Decay	Uncorrected PCI/SAMPLE	Decay Corr PCI/SAMPLE	Decay Corr 0-Sigma Error	0-Sigma %Error	Flags
PO-210	138.38D	1.18	0.000E+00	0.000E+00	0.000E+00	0.00	
CM-246	8500.00Y	1.00	0.000E+00	0.000E+00	0.000E+00	0.00	
			---	---			
Total Activity :			0.000E+00	0.000E+00			

Nuclide Type : AP

Nuclide	Hlife	Decay	Uncorrected PCI/SAMPLE	Decay Corr PCI/SAMPLE	Decay Corr 0-Sigma Error	0-Sigma %Error	Flags
U-232	68.90Y	1.00	0.000E+00	0.000E+00	0.000E+00	0.00	
AM-243	7370.00Y	1.00	0.000E+00	0.000E+00	0.000E+00	0.00	
			---	---			
Total Activity :			0.000E+00	0.000E+00			

Grand Total Activity : 0.000E+00 0.000E+00

Flags: "K" = Keyline not found "M" = Manually accepted
"E" = Manually edited "A" = Nuclide specific abn. limit

```
  Error Report  (Date: 23-Jun-06  11:49 PM)

Program: Alp_rgn_cnts
subroutine: Main
Message: No trace pk or nucl
Record being processed:  7

System Status Message:

%NONAME-W-NOMSG, Message number 00000000
```

Alpha Analysis Report
(Version: 7-Feb-98)

Sample Identity: H61AR1AA

Detector: ALP171 3
Report Date: 24-Jun-06 06:31 AM
Acquire Date: 23-JUN-2006 15:29:06.03
Tracer Nuclide: TH-229
Sample Live Time: 499 minutes
Bkgrnd Live Time: 999 minutes

Nuclide Name	Smpl Count	Bkg Count	Count Rate C/Min	Centrd Energy keV	Region Width keV	Left Chnl	Rght Chnl
TH-228	1	1	0.001	5423.2	119.4	309	329
TH-229	260	0	0.521	4845.3	334.0	216	272
TH-230	8	1	0.015	4687.7	119.2	185	205
TH-232	0	1	-0.001	4013.0	119.0	72	92

End of Alpha Region Report
(Produced by ANAL Report)

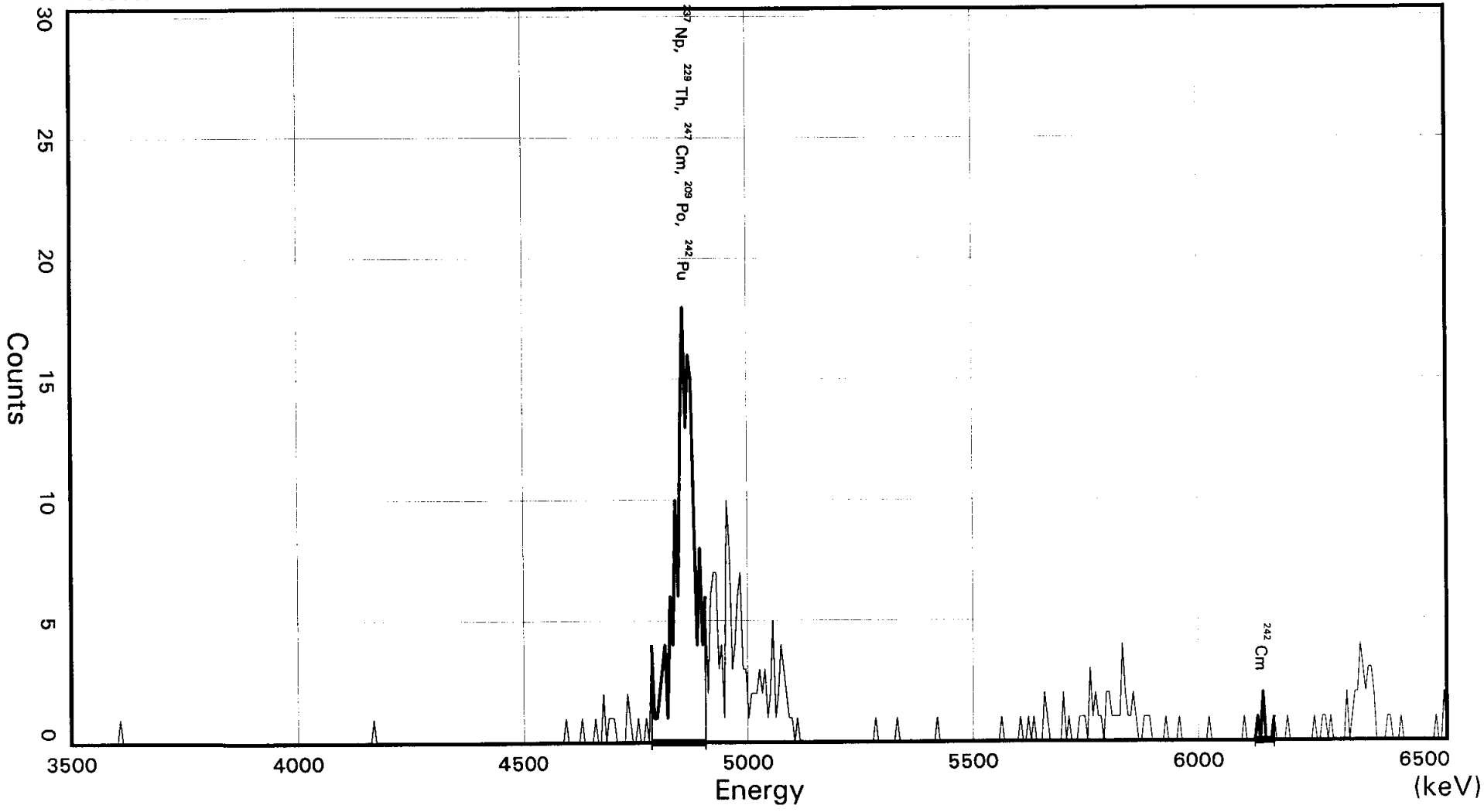
STL Richland WA.

TH BRC

Sample ID: H61AR1AA

Detector ID: ALP171 3

Batch ID: 6163128



Acquisition Start: 23-JUN-2006 15:29:06.03

Preset Live Time: 0 08:20:00.00

Elapsed Live Time: 0 08:19:28.00

Energy Coefficients:

Offset: 3.49562E+03

Slope: 5.94301E+00

Quadrature: 4.47075E-05

SAMPLE IDENTIITY: H61AR1AA

TITLE : TH BRC

DETECTOR : ALP171 3
CONFIGURATION NAME : $DISK1:[ALP171.SAMPLE]H61AR1AA_230661529C.CN
F;1
ACQUIRE DATE of BACKGROUND: 09-JUN-2006 06:58:01

REPORT DATE : 23-Jun-06 SAMPLE DATE: 22-MAY-2006 12:00:00
ACQUIRE DATE: 23-JUN-2006 15:29:06 CALIB DATE : 09-JUN-2006 02:56:42

PRESET LIVE TIME: 0 08:20:00 ELAPSED LIVE TIME: 0 08:19:28

OFFSET : 3495.62 keV CONSTANT FWHM : 8.66667 Channels
SLOPE : 5.94301 keV/C SENSITIVITY : 3.00000 Std Dev's
QUAD COEFF : 4.470750E-05 keV/C^2 SUM SENSITIVITY: 1.00000 %

Alpha Regions Report
(Version: 8-Oct-91)

Sample Identity: H61AR1AA

Detector: ALP171 3
Report Date: 23-Jun-06 11:49 PM
Acquire Date: 23-JUN-2006 15:29:06.03
Tracer Nuclide: TH-229
High Counts Limit: 36
Sample Live Time: 499 minutes
Bkgrnd Live Time: 999 minutes

Flags Key

P: Peak Identified
I: Peak Intersect
S: Single Non-peak Intersect
M: Multiple Non-peak Intersect
H: High Non-peak Sample Count
A: Altered via ALP-RGN-EDIT

Nuclide Name	Smpl Count	Bkg Count	Intrsct Count	Count Rate C/Min	Centrd Energy keV	Region Width keV	Left Chnl	Rght Chnl	Left Wdth Mult	Rght Wdth Mult	Flags
PO-208	-9999	-9999	0	-10.010	5132.7	119.3	262	282	0.00	0.00	M
PO-209	150	0	0	0.300	4901.0	119.3	217	237	0.00	0.00	P
PO-210	-9999	-9999	0	-10.010	5322.1	119.4	294	314	0.00	0.00	M
AC-227	2	0	0	0.004	6055.8	119.6	417	437	0.00	0.00	
TH-227	2	0	0	0.004	6055.8	119.6	417	437	0.00	0.00	
TH-228	-9999	-9999	0	-10.010	5441.0	119.4	314	334	0.00	0.00	M
TH-229	150	0	0	0.300	4863.1	119.3	217	237	0.00	0.00	P
TH-230	9	1	3	0.016	4705.5	119.2	191	211	0.00	0.00	S
TH-232	0	1	0	-0.001	4030.8	119.0	77	97	0.00	0.00	
U-232	-9999	-9999	0	-10.010	5337.9	119.4	297	317	0.00	0.00	M
U-234	-9999	-9999	0	-10.010	4792.4	119.2	205	225	0.00	0.00	S I
U-235	0	0	0	0.000	4415.6	119.1	142	162	0.00	0.00	
PU-236	12	11	17	0.013	5785.4	113.6	372	391	0.00	0.00	S
NP-237	150	0	0	0.300	4805.8	119.3	217	237	0.00	0.00	P
PU-238	-9999	-9999	0	-10.010	5516.8	119.5	327	347	0.00	0.00	M
U-238	1	0	0	0.002	4215.8	119.1	108	128	0.00	0.00	
PU-239	-9999	-9999	0	-10.010	5174.4	119.4	269	289	0.00	0.00	M
AM-241	-9999	-9999	0	-10.010	5503.4	119.5	324	344	0.00	0.00	M
AM-242M	-9999	-9999	0	-10.010	5224.6	119.4	278	298	0.00	0.00	M
CM-242	4	2	0	0.006	6130.5	41.9	441	448	0.00	0.00	P
PU-242	150	0	0	0.300	4918.3	119.3	217	237	0.00	0.00	P
AM-243	-9999	-9999	0	-10.010	5293.1	119.4	289	309	0.00	0.00	M
CM-244	20	26	17	0.014	5822.6	119.6	378	398	0.00	0.00	S
CM-246	-9999	-9999	0	-10.010	5404.3	119.4	308	328	0.00	0.00	M
CM-247	150	0	0	0.300	4888.2	119.3	217	237	0.00	0.00	P
CM-248	-9999	-9999	0	-10.010	5096.4	119.3	256	276	0.00	0.00	M

End of Alpha Region Report
(Produced by Alp_rgn_cnts)

Alpha Spectrum Listing
(Version: 29-Jun-92)

Sample Identity: H61AR1AA
Detector: ALP171 3
Report Date: 23-Jun-06 11:49 PM
Acquire Date: 23-JUN-2006 15:29:06.03

Flags Key

Intersect Region: @
Non-Intersect Region: +,

Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn
		1	0		51	0		101	0	+	151	1	+	201	3		251	0	@	301	0		351	1		401	0		451	0		501
		2	0		52	0		102	0	+	152	1	+	202	3		252	0	@	302	0		352	1		402	0		452	0		502
0		3	0		53	0		103	0	+	153	1	+	203	1		253	0	@	303	0		353	0		403	1		453	0		503
0		4	0		54	0		104	0	+	154	0	+	204	2		254	0	@	304	1		354	0		404	0		454	0		504
0		5	0		55	0		105	0	+	155	0	@	205	2		255	0	@	305	0		355	0		405	0		455	0		505
0		6	0		56	0		106	0	+	156	0	@	206	2	+	256	0	@	306	0		356	0		406	0		456	0		506
0		7	0		57	0		107	0	+	157	0	@	207	3	+	257	0	@	307	1		357	0		407	0		457	0		507
0		8	0		58	0	+	108	0	+	158	2	@	208	2	+	258	1	-	308	0		358	1		408	0		458	1		508
0		9	0		59	0	+	109	0	+	159	1	@	209	3	+	259	0	@	309	1		359	0		409	0		459	0		509
0		10	0		60	0	+	110	0	+	160	0	@	210	1	+	260	0	@	310	0		360	0		410	0		460	0		510
0		11	0		61	0	+	111	0	+	161	0	@	211	2	+	261	0	@	311	0		361	0		411	0		461	2		511
0		12	0		62	0	+	112	0	+	162	1	-	212	5	@	262	0	@	312	0		362	0		412	0		462	0		512
0		13	0		63	1	+	113	0		163	0	-	213	1	@	263	0	@	313	2		363	1		413	1		463			
0		14	0		64	0	+	114	0		164	0	-	214	2	@	264	0	@	314	1		364	0		414	0		464			
0		15	0		65	0	+	115	0		165	1	-	215	4	@	265	0	@	315	0		365	0		415	0		465			
0		16	0		66	0	+	116	0		166	0	-	216	3	@	266	0	@	316	0		366	0		416	1		466			
0		17	0		67	0	+	117	0		167	4	-	217	2	@	267	0	@	317	0		367	0	@	417	1		467			
0		18	0		68	0	+	118	0		168	1	@	218	1	@	268	0	@	318	0		368	0	@	418	0		468			
1		19	0		69	0	+	119	0		169	1	@	219	1	@	269	0	@	319	0		369	0	@	419	1		469			
0		20	0		70	0	+	120	0		170	2	@	220	0	@	270	0	@	320	2		370	0	@	420	0		470			
0		21	0		71	0	+	121	0		171	3	@	221	1	@	271	0	@	321	0		371	0	@	421	0		471			
0		22	0		72	0	+	122	0		172	4	@	222	0	@	272	0	@	322	1	+	372	0	@	422	0		472			
0		23	0		73	0	+	123	0		173	1	@	223	0	@	273	1	@	323	0	+	373	0	@	423	0		473			
0		24	0		74	0	+	124	0		174	6	@	224	0	@	274	0	@	324	0	+	374	1	@	424	0		474			
0		25	0		75	0	+	125	0		175	4	@	225	0	@	275	0	@	325	0	+	375	0	@	425	2		475			
0		26	0		76	0	+	126	0		176	10	@	226	0	@	276	0	@	326	1	+	376	0	@	426	0		476			
0		27	0	+	77	0	+	127	0		177	6	@	227	0	@	277	0	@	327	1	+	377	0	@	427	1		477			
0		28	0	+	78	0	+	128	0		178	13	@	228	0	-	278	0	@	328	1	@	378	0	@	428	2		478			
0		29	0	+	79	0		129	0		179	18	@	229	0	@	279	0	@	329	0	@	379	0	@	429	2		479			
0		30	0	+	80	0		130	0		180	13	@	230	0	@	280	0	@	330	3	@	380	0	@	430	4		480			
0		31	0	+	81	0		131	0		181	16	@	231	0	@	281	0	@	331	1	@	381	0	@	431	3		481			
0		32	0	+	82	0		132	0		182	15	@	232	0	@	282	0	@	332	2	@	382	0	@	432	2		482			
0		33	0	+	83	0		133	0		183	9	@	233	0	@	283	0	@	333	1	@	383	0	@	433	3		483			
0		34	0	+	84	0		134	0		184	4	@	234	0	@	284	0	@	334	1	@	384	0	@	434	3		484			
0		35	0	+	85	0		135	1		185	8	@	235	0	@	285	0	@	335	0	@	385	0	@	435	2		485			
0		36	0	+	86	0		136	0		186	4	@	236	0	@	286	0	@	336	2	@	386	0	@	436	0		486			
0		37	0	+	87	0		137	0		187	6		237	0	@	287	0	@	337	2	@	387	1	@	437	0		487			
0		38	0	+	88	0		138	0		188	2		238	0	@	288	0	@	338	1	@	388	0		438	0		488			
0		39	0	+	89	0		139	0		189	6		239	0	-	289	0	@	339	1	@	389	0		439	0		489			
0		40	0	+	90	0		140	0		190	7		240	0	@	290	0	@	340	1	@	390	0		440	1		490			
0		41	0	+	91	0		141	1	+	191	7		241	0	@	291	0	@	341	1	@	391	0	+	441	1		491			
0		42	0	+	92	0	+	142	0	+	192	3		242	0	@	292	0	@	342	4	-	392	1	+	442	0		492			
0		43	0	+	93	0	+	143	0	+	193	4		243	0	@	293	0	@	343	2	-	393	0	+	443	0		493			
0		44	0	+	94	0	+	144	0	+	194	1		244	0	@	294	0	@	344	1	-	394	2	+	444	0		494			
0		45	0	+	95	0	+	145	0	+	195	10		245	0	@	295	0	+	345	1	-	395	0	+	445	1		495			
0		46	0	+	96	0	+	146	1	+	196	8		246	0	@	296	0	+	346	2	-	396	0	+	446	0		496			
0		47	0	-	97	0	+	147	0	+	197	3		247	0	@	297	1	+	347	1	-	397	0	+	447	0		497			
0		48	0		98	0	+	148	0	+	198	4		248	0	@	298	0		348	0	-	398	1		448	0		498			
0		49	0		99	0	+	149	2	+	199	6		249	0	@	299	0		349	0		399	0		449	0		499			
0		50	0		100	0	+	150	0	+	200	7		250	1	@	300	0		350	1		400	0		450	0		500			

VMS Peak Search Report V1.9 Generated 23-JUN-2006 23:49:49

Configuration : $DISK1:[ALP171.SAMPLE]H61AR1AA_230661529C.CNF;1
Analyses by : ALPHA V1.8
Sample title : TH BRC
Sample date : 22-MAY-2006 12:00:00 Acquisition date : 23-JUN-2006 15:29:06
Sample ID : H61AR1AA Sample quantity : 0.00000E+00 SAMPLE
Sample type : disk Sample geometry :
Detector name : ALP171 1 Detector geometry:
Elapsed live time: 0 08:19:28.00 Elapsed real time: 0 08:19:28.00 0.0%
Start energy : 3513.45 keV End energy : 6550.16 keV
Sensitivity : 3.00 Sum Sensitivity : 1.00

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4863.07	150	0	47.54	229.70	217	20	5.01E-03	8.2	
2	0	6140.14	4	0	23.77	443.50	441	7	1.33E-04	50.0	

VMS Nuclide Identification Report V3.0 Generated 23-JUN-2006 23:49:53

Configuration	: $DISK1:[ALP171.SAMPLE]H61AR1AA_230661529C.CNF;1		
Analyses by	: ALPHA V1.8,PEAKEFF V2.2,NID V3.3		
Sample title	: TH BRC		
Sample date	: 22-MAY-2006 12:00:00	Acquisition date	: 23-JUN-2006 15:29:06
Sample ID	: H61AR1AA	Sample quantity	: 0.00000E+00 SAMPLE
Sample type	: disk	Sample geometry	:
Detector name	: ALP171 1	Detector geometry	:
Elapsed live time	: 0 08:19:28.00	Elapsed real time	: 0 08:19:28.00 0.0%
Energy tolerance	: 80.00 keV	Half life ratio	: 1.00
Errors propagated	: No	Systematic Error	: 0.00 %
Efficiency type	: Spline	Efficiencies at	: Peak Energy
Abundance limit	: 70.00		

Summary of Nuclide Activity

Total number of lines in spectrum	2	
Number of unidentified lines	0	
Number of lines tentatively identified by NID	2	100.00%

Nuclide Type : NP

Nuclide	Hlife	Decay	Uncorrected PCI/SAMPLE	Decay Corr PCI/SAMPLE	Decay Corr 0-Sigma Error	0-Sigma %Error	Flags
PO-209	102.00Y	1.00	0.000E+00	0.000E+00	0.000E+00	0.00	
			---	---			
Total Activity :			0.000E+00	0.000E+00			

Nuclide Type : AP

Nuclide	Hlife	Decay	Uncorrected PCI/SAMPLE	Decay Corr PCI/SAMPLE	Decay Corr 0-Sigma Error	0-Sigma %Error	Flags
TH-229	7340.00Y	1.00	0.000E+00	0.000E+00	0.000E+00	0.00	
NP-237	2.14E+06Y	1.00	0.000E+00	0.000E+00	0.000E+00	0.00	
CM-242	162.80D	1.15	0.000E+00	0.000E+00	0.000E+00	0.00	
PU-242	3.73E+05Y	1.00	0.000E+00	0.000E+00	0.000E+00	0.00	
CM-247	1.56E+07Y	1.00	0.000E+00	0.000E+00	0.000E+00	0.00	
			---	---			
Total Activity :			0.000E+00	0.000E+00			

Grand Total Activity :	0.000E+00	0.000E+00

Flags: "K" = Keyline not found "M" = Manually accepted
"E" = Manually edited "A" = Nuclide specific abn. limit

ITRD PEAK TEST REPORT (Version 16-May-94)

Configuration: $DISK1:[ALP171.SAMPLE]H61AR1AA_230661529C.CNF;1

Peak Energy	Left Chan	Rght Chan	Peak Area	Total Counts	Diff/ StDev	Overlap Counts	Multiplet Diff/StDev
4863.06	217	237	150	148	0.16		
6140.13	441	448	4	4	0.00		

End of Report

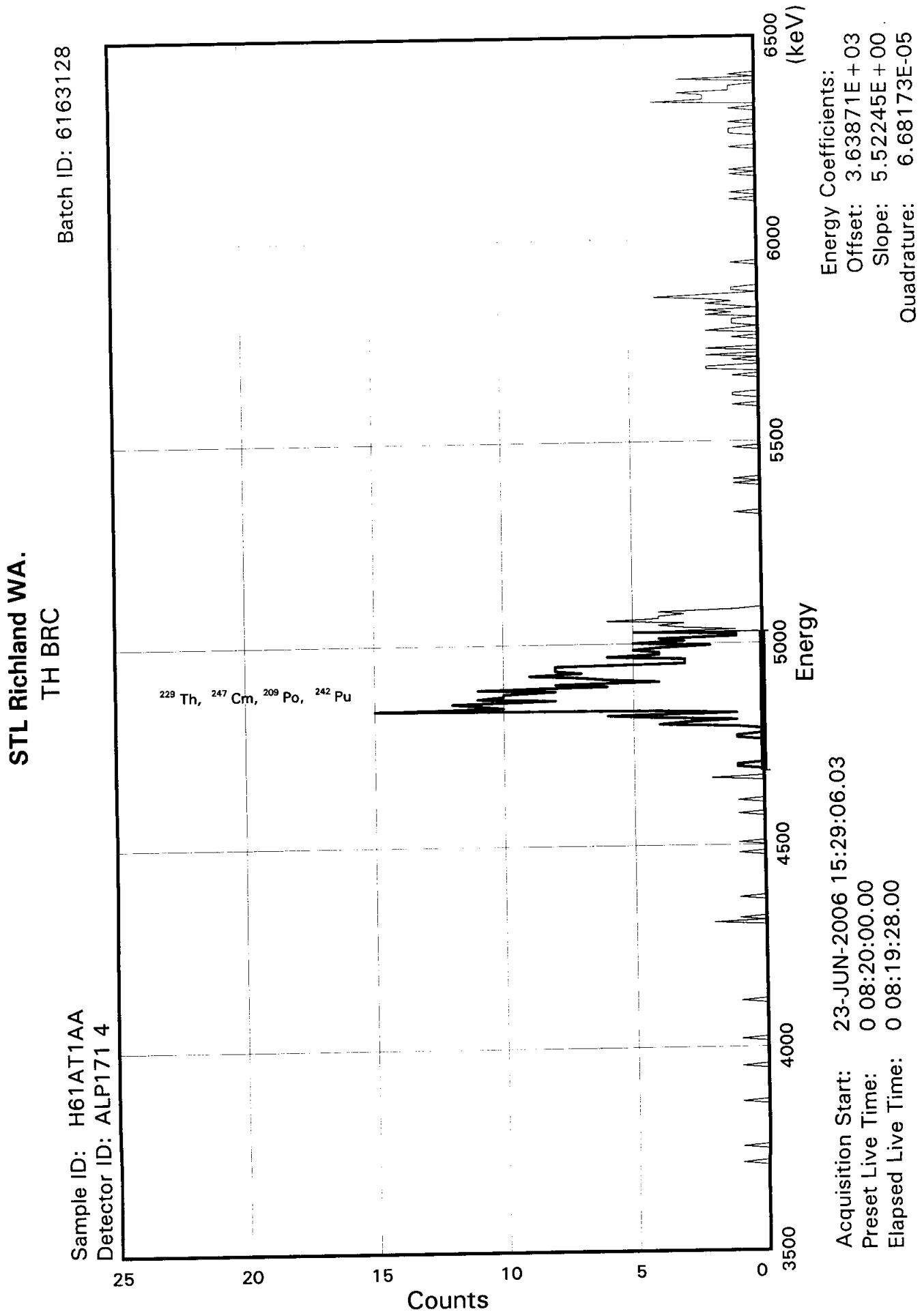
Alpha Analysis Report
(Version: 7-Feb-98)

Sample Identity: H61AT1AA

Detector: ALP171 4
Report Date: 24-Jun-06 06:31 AM
Acquire Date: 23-JUN-2006 15:29:06.03
Tracer Nuclide: TH-229
Sample Live Time: 499 minutes
Bkgrnd Live Time: 999 minutes

Nuclide Name	Smpl Count	Bkg Count	Count Rate C/Min	Centrd Energy keV	Region Width keV	Left Chnl	Rght Chnl
TH-228	2	1	0.003	5423.2	111.3	307	327
TH-229	287	1	0.574	4845.3	322.1	206	264
TH-230	5	0	0.010	4687.7	110.9	175	195
TH-232	2	1	0.003	4013.0	110.6	53	73

End of Alpha Region Report
(Produced by ANAL Report)


STL Richland WA.
TH BRC
Batch ID: 6163128
Sample ID: H61AT1AA
Detector ID: ALP171 4
229 Th, 247 Cm, 209 Po, 242 Pu
Counts
25
20
15
10
5
0
Energy
3500
4000
4500
5000
5500
6000
6500
(keV)
Acquisition Start: 23-JUN-2006 15:29:06.03
Preset Live Time: 0 08:20:00.00
Elapsed Live Time: 0 08:19:28.00
Energy Coefficients:
Offset: 3.63871E+03
Slope: 5.52245E+00
Quadrature: 6.68173E-05

SAMPLE IDENTIITY: H61AT1AA

TITLE : TH BRC

DETECTOR : ALP171 4
CONFIGURATION NAME : $DISK1:[ALP171.SAMPLE]H61AT1AA_230661529D.CN
F;1
ACQUIRE DATE of BACKGROUND: 09-JUN-2006 06:58:01

REPORT DATE : 23-Jun-06
ACQUIRE DATE: 23-JUN-2006 15:29:06

SAMPLE DATE: 22-MAY-2006 12:00:00
CALIB DATE : 09-JUN-2006 02:56:58

PRESET LIVE TIME: 0 08:20:00

ELAPSED LIVE TIME: 0 08:19:28

OFFSET : 3638.71 keV
SLOPE : 5.52245 keV/C
QUAD COEFF : 6.681730E-05 keV/C^2

CONSTANT FWHM : 11.00000 Channels
SENSITIVITY : 3.00000 Std Dev's
SUM SENSITIVITY: 1.00000 %

Alpha Regions Report
(Version: 8-Oct-91)

Sample Identity: H61AT1AA

Detector: ALP171 4
Report Date: 23-Jun-06 11:49 PM
Acquire Date: 23-JUN-2006 15:29:06.03
Tracer Nuclide: TH-229
High Counts Limit: 36
Sample Live Time: 499 minutes
Bkgrnd Live Time: 999 minutes

Flags Key

P: Peak Identified
I: Peak Intersect
S: Single Non-peak Intersect
M: Multiple Non-peak Intersect
H: High Non-peak Sample Count
A: Altered via ALP-RGN-EDIT

Nuclide Name	Smpl Count	Bkg Count	Intrsct Count	Count Rate C/Min	Centrd Energy keV	Region Width keV	Left Chnl	Rght Chnl	Left Wdth Mult	Rght Wdth Mult	Flags
PO-208	-9999	-9999	0	-10.010	5153.2	339.1	238	299	0.00	0.00	M I
PO-209	251	0	0	0.503	4921.5	344.2	189	251	0.00	0.00	P
PO-210	-9999	-9999	0	-10.010	5342.6	344.9	272	334	0.00	0.00	M
AC-227	-9999	-9999	0	-10.010	6076.3	346.0	403	465	0.00	0.00	M
TH-227	-9999	-9999	0	-10.010	6076.3	346.0	403	465	0.00	0.00	M
TH-228	-9999	-9999	0	-10.010	5461.5	345.1	293	355	0.00	0.00	M
TH-229	251	0	0	0.503	4883.6	344.2	189	251	0.00	0.00	P
TH-230	-9999	-9999	0	-10.010	4726.0	344.0	161	223	0.00	0.00	M I
TH-232	4	1	1	0.006	4051.3	343.0	39	101	0.00	0.00	S
U-232	-9999	-9999	0	-10.010	5358.4	339.4	275	336	0.00	0.00	M
U-234	-9999	-9999	0	-10.010	4812.9	344.1	176	238	0.00	0.00	M I
U-235	-9999	-9999	0	-10.010	4436.1	343.5	108	170	0.00	0.00	M
PU-236	-9999	-9999	0	-10.010	5805.9	345.6	355	417	0.00	0.00	M
NP-237	-9999	-9999	0	-10.010	4826.3	344.1	179	241	0.00	0.00	M I
PU-238	-9999	-9999	0	-10.010	5537.3	339.6	307	368	0.00	0.00	M
U-238	-9999	-9999	0	-10.010	4236.3	343.2	72	134	0.00	0.00	M
PU-239	-9999	-9999	0	-10.010	5194.9	344.7	245	307	0.00	0.00	M I
AM-241	-9999	-9999	0	-10.010	5523.9	345.2	304	366	0.00	0.00	M
AM-242M	-9999	-9999	0	-10.010	5245.1	344.8	254	316	0.00	0.00	M
CM-242	-9999	-9999	0	-10.010	6151.0	340.5	417	478	0.00	0.00	M
PU-242	251	0	0	0.503	4938.8	344.2	189	251	0.00	0.00	P
AM-243	-9999	-9999	0	-10.010	5313.6	344.9	266	328	0.00	0.00	M
CM-244	-9999	-9999	0	-10.010	5843.1	340.1	362	423	0.00	0.00	M
CM-246	-9999	-9999	0	-10.010	5424.8	345.0	286	348	0.00	0.00	M
CM-247	251	0	0	0.503	4908.7	344.2	189	251	0.00	0.00	P
CM-248	-9999	-9999	0	-10.010	5116.9	344.6	231	293	0.00	0.00	M I

End of Alpha Region Report
(Produced by Alp_rgn_cnts)

Alpha Spectrum Listing
(Version: 29-Jun-92)

Sample Identity: H61AT1AA
Detector: ALP171 4
Report Date: 23-Jun-06 11:49 PM
Acquire Date: 23-JUN-2006 15:29:06.03

Flags Key

Intersect Region: @
Non-Intersect Region: +, -

Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn
		1	0	+	51	0	@	101	0	+	151	0	@	201	5	@	251	0	@	301	0	@	351	2	@	401
		2	0	+	52	0	-	102	1	+	152	0	@	202	1	@	252	0	@	302	1	@	352	0	@	402
0		3	0	+	53	0	-	103	0	+	153	0	@	203	3	@	253	0	@	303	0	@	353	1	@	403
0		4	0	+	54	0	-	104	0	+	154	1	@	204	4	@	254	1	@	304	0	@	354	1	@	404
0		5	0	+	55	0	-	105	0	+	155	1	@	205	3	@	255	0	@	305	0	@	355	0	@	405
0		6	0	+	56	0	-	106	0	+	156	0	@	206	6	@	256	0	@	306	1	@	356	0	@	406
0		7	1	+	57	0	-	107	1	+	157	0	@	207	4	@	257	0	@	307	1	@	357	0	@	407
0		8	0	+	58	0	@	108	0	+	158	0	@	208	4	@	258	0	@	308	0	@	358	0	@	408
0		9	0	+	59	0	@	109	0	+	159	1	@	209	3	@	259	0	@	309	0	@	359	0	@	409
0		10	0	+	60	0	@	110	0	+	160	4	@	210	4	@	260	0	@	310	0	@	360	0	@	410
0		11	0	+	61	0	@	111	0	@	161	3	@	211	1	@	261	0	@	311	0	@	361	0	@	411
0		12	0	+	62	0	@	112	0	@	162	1	@	212	0	@	262	0	@	312	0	-	362	0	@	412
0		13	0	+	63	0	@	113	0	@	163	4	@	213	0	@	263	0	@	313	0	@	363	0	@	413
1		14	0	+	64	0	@	114	0	@	164	6	@	214	0	@	264	0	@	314	0	@	364	0	@	414
0		15	0	+	65	0	@	115	0	@	165	1	@	215	0	@	265	0	@	315	1	@	365	1	@	415
0		16	0	+	66	0	@	116	0	@	166	4	@	216	0	@	266	0	@	316	0	@	366	0	@	416
0		17	0	+	67	0	@	117	0	@	167	15	@	217	0	@	267	1	@	317	0	@	367	0	@	417
0		18	0	+	68	0	@	118	0	@	168	10	@	218	0	@	268	0	@	318	2	@	368	0	@	418
0		19	1	+	69	0	@	119	0	@	169	11	@	219	0	@	269	1	@	319	2	@	369	0	@	419
0		20	0	+	70	0	@	120	1	@	170	12	@	220	0	@	270	0	@	320	0	@	370	0	@	420
1		21	0	+	71	2	@	121	0	+	171	8	@	221	0	@	271	0	@	321	0	@	371	0	@	421
0		22	0	@	72	0	@	122	0	+	172	11	@	222	0	@	272	0	@	322	1	@	372	0	@	422
0		23	0	@	73	1	@	123	0	+	173	10	@	223	0	@	273	0	@	323	0	@	373	0	@	423
0		24	0	@	74	0	@	124	0	+	174	10	@	224	0	@	274	0	@	324	2	@	374	0	@	424
0		25	0	@	75	0	@	125	0	+	175	8	@	225	0	@	275	0	@	325	0	@	375	0	@	425
0		26	0	@	76	0	@	126	1	@	176	11	@	226	0	@	276	0	@	326	0	@	376	0	@	426
0		27	0	@	77	0	@	127	0	@	177	6	@	227	0	@	277	0	@	327	2	@	377	0	@	427
0		28	0	@	78	0	@	128	0	@	178	8	@	228	0	@	278	0	@	328	0	@	378	0	@	428
0		29	0	@	79	0	@	129	0	-	179	4	@	229	0	@	279	0	@	329	0	@	379	0	@	429
0		30	0	@	80	0	@	130	0	@	180	6	@	230	0	@	280	0	@	330	0	@	380	0	@	430
0		31	0	@	81	0	@	131	0	@	181	7	-	231	0	@	281	0	@	331	0	@	381	0	@	431
0		32	0	@	82	1	@	132	0	@	182	9	@	232	0	@	282	0	@	332	1	@	382	0	@	432
0		33	0	@	83	0	@	133	0	@	183	7	@	233	0	@	283	1	@	333	0	@	383	0	@	433
0		34	0	@	84	0	@	134	0	@	184	8	@	234	0	@	284	0	@	334	0	@	384	0	@	434
0		35	0	@	85	0	+	135	0	@	185	8	@	235	0	@	285	0	@	335	2	@	385	0	@	435
0		36	1	@	86	0	+	136	2	@	186	8	@	236	0	@	286	0	@	336	1	@	386	0	@	436
0		37	0	@	87	0	+	137	0	@	187	3	@	237	0	@	287	0	@	337	0	@	387	0	@	437
0		38	0	@	88	0	+	138	0	@	188	3	@	238	0	@	288	0	@	338	1	@	388	0	@	438
0	+	39	0	@	89	0	+	139	0	@	189	3	@	239	0	@	289	0	@	339	1	@	389	0	@	439
0	+	40	0	@	90	0	+	140	0	@	190	6	@	240	0	@	290	0	@	340	1	@	390	0	@	440
1	+	41	0	@	91	0	+	141	1	@	191	4	@	241	0	@	291	0	@	341	0	@	391	0	@	441
0	+	42	0	@	92	0	+	142	1	@	192	4	@	242	0	@	292	0	@	342	2	@	392	0	@	442
0	+	43	0	@	93	0	+	143	0	@	193	5	@	243	0	@	293	0	@	343	1	@	393	1	@	443
0	+	44	0	@	94	0	+	144	0	@	194	4	@	244	0	@	294	0	@	344	2	@	394	0	@	444
0	+	45	0	@	95	0	+	145	0	@	195	2	@	245	0	@	295	0	@	345	0	@	395	0	@	445
0	+	46	0	@	96	0	+	146	0	@	196	5	@	246	0	@	296	0	@	346	1	@	396	1	@	446
0	+	47	0	@	97	0	+	147	0	@	197	3	@	247	0	@	297	0	@	347	2	@	397	0	@	447
0	+	48	0	@	98	0	+	148	0	@	198	4	@	248	0	@	298	0	@	348	1	@	398	0	@	448
0	+	49	0	@	99	0	+	149	0	@	199	1	@	249	0	@	299	0	@	349	2	@	399	0	@	449
0	+	50	0	@	100	0	+	150	0	@	200	1	@	250	0	@	300	0	@	350	4	@	400	0	@	450

Cnt	F	Chn
0		501
0		502
0		503
0		504
0		505
0		506
0		507
0		508
0		509
0		510
0		511
0		512

VMS Peak Search Report V1.9 Generated 23-JUN-2006 23:49:55

Configuration	: $DISK1:[ALP171.SAMPLE]H61AT1AA_230661529D.CNF;1		
Analyses by	: ALPHA V1.8		
Sample title	: TH BRC		
Sample date	: 22-MAY-2006 12:00:00	Acquisition date	: 23-JUN-2006 15:29:06
Sample ID	: H61AT1AA	Sample quantity	: 0.00000E+00 SAMPLE
Sample type	: disk	Sample geometry	:
Detector name	: ALP171 1	Detector geometry	:
Elapsed live time	: 0 08:19:28.00	Elapsed real time	: 0 08:19:28.00 0.0%
Start energy	: 3655.27 keV	End energy	: 6483.72 keV
Sensitivity	: 3.00	Sum Sensitivity	: 1.00

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4883.56	251	0110.45		224.81	189	62	8.38E-03	6.3	

VMS Nuclide Identification Report V3.0 Generated 23-JUN-2006 23:49:57

Configuration : $DISK1:[ALP171.SAMPLE]H61AT1AA_230661529D.CNF;1
Analyses by : ALPHA V1.8,PEAKEFF V2.2,NID V3.3
Sample title : TH BRC
Sample date : 22-MAY-2006 12:00:00 Acquisition date : 23-JUN-2006 15:29:06
Sample ID : H61AT1AA Sample quantity : 0.00000E+00 SAMPLE
Sample type : disk Sample geometry :
Detector name : ALP171 1 Detector geometry:
Elapsed live time: 0 08:19:28.00 Elapsed real time: 0 08:19:28.00 0.0%
Energy tolerance : 80.00 keV Half life ratio : 1.00
Errors propagated: No Systematic Error : 0.00 %
Efficiency type : Spline Efficiencies at : Peak Energy
Abundance limit : 70.00

Summary of Nuclide Activity

Total number of lines in spectrum	1	
Number of unidentified lines	0	
Number of lines tentatively identified by NID	1	100.00%

Nuclide Type : NP

Nuclide	Hlife	Decay	Uncorrected PCI/SAMPLE	Decay Corr PCI/SAMPLE	Decay Corr 0-Sigma Error	0-Sigma %Error	Flags
PO-209	102.00Y	1.00	0.000E+00	0.000E+00	0.000E+00	0.00	
			---	---			
Total Activity :			0.000E+00	0.000E+00			

Nuclide Type : AP

Nuclide	Hlife	Decay	Uncorrected PCI/SAMPLE	Decay Corr PCI/SAMPLE	Decay Corr 0-Sigma Error	0-Sigma %Error	Flags
TH-229	7340.00Y	1.00	0.000E+00	0.000E+00	0.000E+00	0.00	
PU-242	3.73E+05Y	1.00	0.000E+00	0.000E+00	0.000E+00	0.00	
CM-247	1.56E+07Y	1.00	0.000E+00	0.000E+00	0.000E+00	0.00	
			---	---			
Total Activity :			0.000E+00	0.000E+00			

Grand Total Activity : 0.000E+00 0.000E+00

Flags: "K" = Keyline not found "M" = Manually accepted
"E" = Manually edited "A" = Nuclide specific abn. limit

ITRD PEAK TEST REPORT (Version 16-May-94)

Configuration: $DISK1:[ALP171.SAMPLE]H61AT1AA_230661529D.CNF;1

Peak Energy	Left Chan	Rght Chan	Peak Area	Total Counts	Diff/ StDev	Overlap Counts	Multiplet Diff/StDev
4883.56	189	251	251	258	-0.44		

End of Report

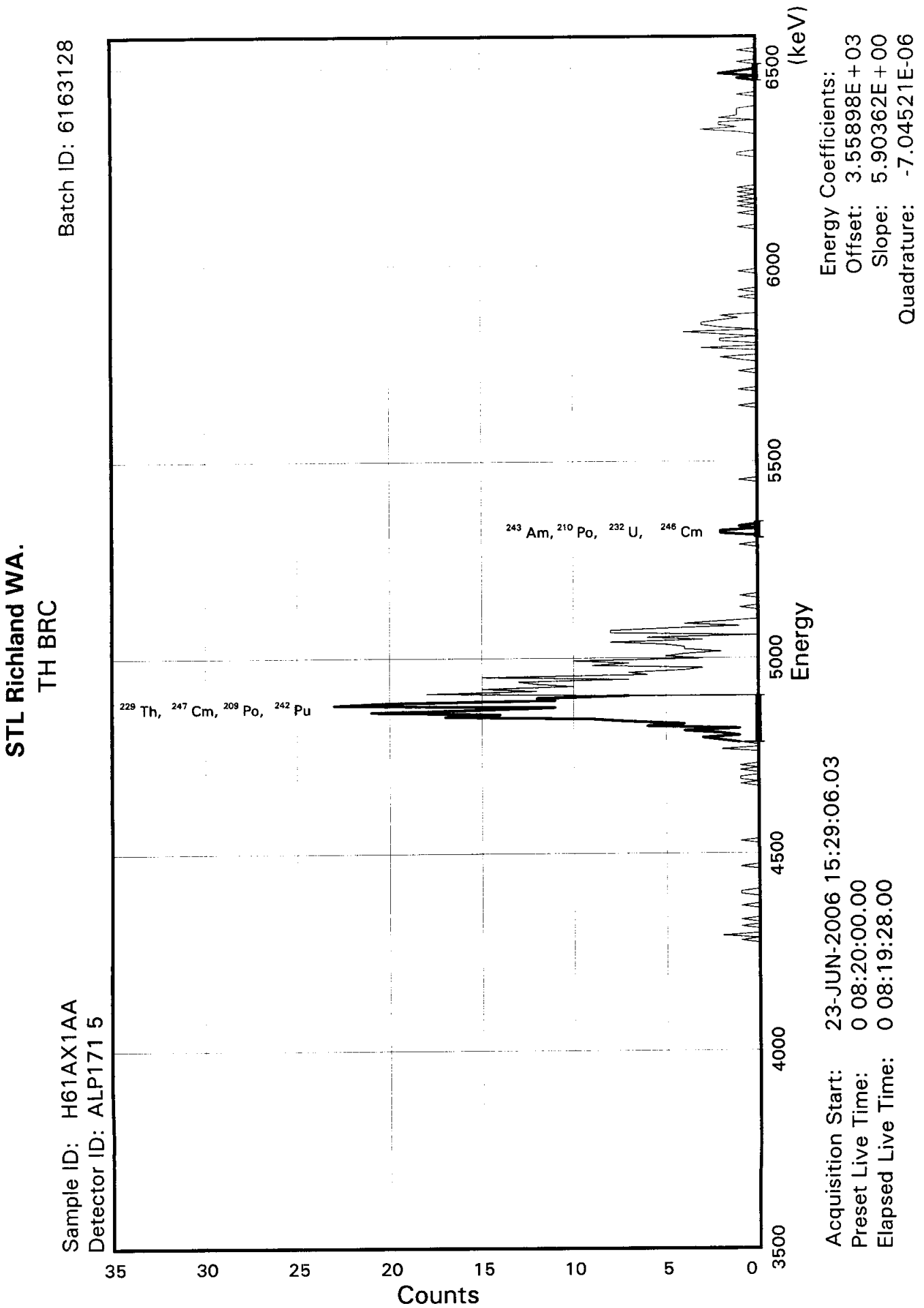
Alpha Analysis Report
(Version: 7-Feb-98)

Sample Identity: H61AX1AA

Detector: ALP171 5
Report Date: 24-Jun-06 06:32 AM
Acquire Date: 23-JUN-2006 15:29:06.03
Tracer Nuclide: TH-229
Sample Live Time: 499 minutes
Bkgrnd Live Time: 999 minutes

Nuclide Name	Smpl Count	Bkg Count	Count Rate C/Min	Centrd Energy keV	Region Width keV	Left Chnl	Rght Chnl
TH-228	2	2	0.002	5423.2	118.0	301	321
TH-229	414	0	0.829	4845.3	377.6	203	267
TH-230	4	2	0.006	4687.7	118.0	176	196
TH-232	0	0	0.000	4013.0	118.1	62	82

End of Alpha Region Report
(Produced by ANAL Report)


STL Richland WA.
TH BRC
Batch ID: 6163128
Sample ID: H61AX1AA
Detector ID: ALP171 5
229 Th, 247 Cm, 209 Po, 242 Pu
243 Am, 210 Po, 232 U, 246 Cm
Counts
35
30
25
20
15
10
5
0
Energy
3500
4000
4500
5000
5500
6000
6500
(keV)
Acquisition Start: 23-JUN-2006 15:29:06.03
Preset Live Time: 0 08:20:00.00
Elapsed Live Time: 0 08:19:28.00
Energy Coefficients:
Offset: 3.55898E+03
Slope: 5.90362E+00
Quadrature: -7.04521E-06

SAMPLE IDENTIITY: H61AX1AA

TITLE : TH BRC

DETECTOR : ALP171 5
CONFIGURATION NAME : $DISK1:[ALP171.SAMPLE]H61AX1AA_230661529E.CN
F;1
ACQUIRE DATE of BACKGROUND: 09-JUN-2006 06:58:01

REPORT DATE : 23-Jun-06 SAMPLE DATE: 22-MAY-2006 12:00:00
ACQUIRE DATE: 23-JUN-2006 15:29:06 CALIB DATE : 09-JUN-2006 02:57:11

PRESET LIVE TIME: 0 08:20:00 ELAPSED LIVE TIME: 0 08:19:28

OFFSET : 3558.98 keV CONSTANT FWHM : 7.66667 Channels
SLOPE : 5.90362 keV/C SENSITIVITY : 3.00000 Std Dev's
QUAD COEFF : -.704521E-05 keV/C^2 SUM SENSITIVITY: 1.00000 %

Alpha Regions Report
(Version: 8-Oct-91)

Sample Identity: H61AX1AA

Detector: ALP171 5
Report Date: 23-Jun-06 11:50 PM
Acquire Date: 23-JUN-2006 15:29:06.03
Tracer Nuclide: TH-229
High Counts Limit: 36
Sample Live Time: 499 minutes
Bkgrnd Live Time: 999 minutes

Flags Key

P: Peak Identified
I: Peak Intersect
S: Single Non-peak Intersect
M: Multiple Non-peak Intersect
H: High Non-peak Sample Count
A: Altered via ALP-RGN-EDIT

Nuclide Name	Smpl Count	Bkg Count	Intrsct Count	Count Rate C/Min	Centrd Energy keV	Region Width keV	Left Chnl	Rght Chnl	Left Wdth Mult	Rght Wdth Mult	Flags
PO-208	-9999	-9999	0	-10.010	5142.7	118.0	254	274	0.00	0.00	M
PO-209	197	0	0	0.394	4911.0	118.0	208	228	0.00	0.00	P
PO-210	4	2	0	0.006	5332.2	41.3	296	303	0.00	0.00	P
AC-227	2	0	1	0.003	6065.8	118.0	410	430	0.00	0.00	S
TH-227	2	0	1	0.003	6065.8	118.0	410	430	0.00	0.00	S
TH-228	-9999	-9999	0	-10.010	5451.0	118.0	306	326	0.00	0.00	M
TH-229	197	0	0	0.394	4873.1	118.0	208	228	0.00	0.00	P
TH-230	-9999	-9999	0	-10.010	4715.5	118.0	181	201	0.00	0.00	M
TH-232	0	0	0	0.000	4040.8	118.1	67	87	0.00	0.00	
U-232	4	2	0	0.006	5348.0	41.3	296	303	0.00	0.00	P
U-234	-9999	-9999	0	-10.010	4802.4	118.0	196	216	0.00	0.00	M I
U-235	3	0	0	0.006	4425.6	118.0	132	152	0.00	0.00	
PU-236	7	10	12	0.005	5795.4	118.0	364	384	0.00	0.00	S
NP-237	-9999	-9999	0	-10.010	4815.8	118.0	198	218	0.00	0.00	M I
PU-238	-9999	-9999	0	-10.010	5526.8	118.0	319	339	0.00	0.00	M
U-238	0	1	0	-0.001	4225.8	118.0	98	118	0.00	0.00	
PU-239	-9999	-9999	0	-10.010	5184.4	118.0	261	281	0.00	0.00	M
AM-241	-9999	-9999	0	-10.010	5513.4	118.0	317	337	0.00	0.00	M
AM-242M	-9999	-9999	0	-10.010	5234.6	118.0	269	289	0.00	0.00	M
CM-242	-9999	-9999	0	-10.010	6140.5	118.0	423	443	0.00	0.00	M
PU-242	197	0	0	0.394	4928.3	118.0	208	228	0.00	0.00	P
AM-243	4	2	0	0.006	5303.1	41.3	296	303	0.00	0.00	P
CM-244	21	30	12	0.013	5832.6	118.0	371	391	0.00	0.00	S
CM-246	4	2	0	0.006	5414.3	41.3	296	303	0.00	0.00	P
CM-247	197	0	0	0.394	4898.2	118.0	208	228	0.00	0.00	P
CM-248	-9999	-9999	0	-10.010	5106.4	118.0	248	268	0.00	0.00	M

End of Alpha Region Report
(Produced by Alp_rgn_cnts)

Alpha Spectrum Listing
(Version: 29-Jun-92)

Sample Identity: H61AX1AA
Detector: ALP171 5
Report Date: 23-Jun-06 11:50 PM
Acquire Date: 23-JUN-2006 15:29:06.03

Flags Key

Intersect Region: @
Non-Intersect Region: +, -

Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn
		1	0		51	0	+	101	0	+	151	0	@	201	8	+	251	1	@	301	0		351	0		401	0		451	1		501
		2	0		52	0	+	102	0	+	152	0	@	202	3	+	252	0	@	302	0		352	0		402	0		452	0		502
0		3	0		53	0	+	103	0		153	0	@	203	6	+	253	0		303	1		353	1		403	0		453	0		503
0		4	0		54	0	+	104	1		154	0	@	204	0	@	254	0		304	0		354	0		404	0		454	0		504
0		5	0		55	0	+	105	0		155	2	@	205	8	@	255	0		305	0		355	0		405	0		455	0		505
0		6	0		56	0	+	106	0		156	0	@	206	8	@	256	0	+	306	0		356	0		406	0		456	1		506
0		7	0		57	0	+	107	0		157	0	@	207	5	@	257	0	+	307	0		357	0		407	0		457	0		507
0		8	0		58	0	+	108	0		158	1	@	208	1	@	258	0	+	308	0		358	0		408	0		458	0		508
0		9	0		59	0	+	109	0		159	2	@	209	4	@	259	0	+	309	0		359	0		409	0		459	0		509
0		10	0		60	0	+	110	0		160	3	@	210	2	@	260	0	+	310	1		360	0	@	410	0		460	0		510
0		11	0		61	0	+	111	0		161	1	@	211	0	@	261	0	+	311	0		361	1	@	411	1		461	0		511
0		12	0		62	0	+	112	0		162	2	@	212	0	@	262	0	+	312	0		362	0	@	412	1		462	0		512
0		13	0		63	0	+	113	0		163	4	@	213	0	@	263	0	+	313	0		363	0	@	413	0		463			
0		14	0		64	0	+	114	0		164	1	@	214	0	@	264	0	+	314	0	+	364	0	@	414	0		464			
0		15	0		65	0	+	115	1		165	6	@	215	0	@	265	0	+	315	0	+	365	0	@	415	0		465			
0		16	0		66	0	+	116	0		166	4	@	216	1	@	266	0	+	316	0	+	366	0	@	416	0		466			
0		17	0	+	67	0	+	117	0		167	7	@	217	0	@	267	0	@	317	0	+	367	0	@	417	0		467			
0		18	0	+	68	0	+	118	0		168	9	@	218	0	@	268	0	@	318	1	+	368	0	@	418	0		468			
0		19	0	+	69	0		119	0		169	17	@	219	0	+	269	0	@	319	0	+	369	0	@	419	0		469			
0		20	0	+	70	0		120	0		170	14	@	220	0	@	270	0	@	320	0	+	370	0	@	420	0		470			
0		21	0	+	71	0		121	0		171	21	@	221	1	@	271	1	@	321	0	@	371	0	@	421	1		471			
0		22	0	+	72	1		122	0		172	15	@	222	0	@	272	0	@	322	0	@	372	0	@	422	3		472			
0		23	0	+	73	0		123	0		173	11	@	223	0	@	273	0	@	323	1	@	373	0	-	423	1		473			
0		24	0	+	74	2		124	0		174	23	@	224	0	@	274	0	@	324	2	@	374	0	@	424	2		474			
0		25	0	+	75	0		125	0		175	20	@	225	0	@	275	0	@	325	0	@	375	0	@	425	2		475			
0		26	0	+	76	0		126	0		176	11	@	226	0	@	276	0	@	326	0	@	376	0	@	426	0		476			
0		27	0	+	77	0		127	0		177	12	@	227	0	@	277	0	@	327	0	@	377	0	@	427	2		477			
0		28	0	+	78	1		128	0		178	7		228	0	@	278	0	@	328	3	@	378	0	@	428	1		478			
0		29	0	+	79	0		129	0		179	18		229	0	@	279	0	@	329	0	@	379	0	@	429	1		479			
0		30	0	+	80	0		130	0		180	12		230	0	@	280	0	@	330	0	@	380	1	@	430	1		480			
0		31	0	+	81	1		131	0	+	181	15		231	0	@	281	0	@	331	2	@	381	0	-	431	1		481			
0		32	0	+	82	0	+	132	0	+	182	10		232	0	-	282	0	@	332	2	@	382	0	-	432	0		482			
0		33	0	+	83	0	+	133	0	+	183	12		233	0	-	283	0	@	333	0	@	383	0	-	433	0		483			
0		34	0	+	84	0	+	134	0	+	184	13		234	0	-	284	0	@	334	2	@	384	0	-	434	0		484			
0		35	0	+	85	0	+	135	0	+	185	7		235	0	-	285	0	@	335	4	-	385	0	-	435	0		485			
0		36	0	+	86	0	+	136	0	+	186	15		236	0	-	286	0	@	336	0	-	386	1	-	436	0		486			
0		37	0	+	87	1	+	137	0	+	187	6		237	0	-	287	0	@	337	2	-	387	0	-	437	1		487			
0		38	0		88	0	+	138	0	+	188	7		238	0	-	288	0	+	338	3	-	388	0	-	438	0		488			
0		39	0		89	0	+	139	0	+	189	4		239	0	-	289	0	+	339	3	-	389	1	-	439	0		489			
0		40	0		90	0	+	140	1	+	190	3		240	0		290	0		340	2	-	390	0	-	440	0		490			
0		41	0		91	0	+	141	0	+	191	9		241	0		291	0		341	1	-	391	1	-	441	0		491			
0		42	0		92	1	+	142	1	+	192	7		242	0		292	0		342	2		392	0	-	442	0		492			
0		43	0		93	1	+	143	1	+	193	10		243	1		293	0		343	0		393	1	-	443	0		493			
0		44	0		94	0	+	144	0	+	194	3		244	0		294	0		344	0		394	0		444	1		494			
0		45	0		95	0	+	145	0	+	195	5		245	0		295	0		345	0		395	1		445	0		495			
0		46	0		96	0	+	146	1	@	196	4		246	0	@	296	0		346	0		396	0		446	2		496			
0		47	0		97	0	+	147	0	@	197	2		247	0	@	297	0		347	0		397	1		447	1		497			
0		48	0	+	98	0	+	148	1	-	198	4	+	248	2	@	298	0		348	0		398	0		448	0		498			
0		49	0	+	99	0	+	149	0	@	199	4	+	249	2	@	299	0		349	0		399	0		449	0		499			
0		50	0	+	100	0	+	150	0	@	200	5	+	250	0	@	300	0		350	1		400	0		450	0		500			

VMS Peak Search Report V1.9 Generated 23-JUN-2006 23:50:00

Configuration : $DISK1:[ALP171.SAMPLE]H61AX1AA_230661529E.CNF;1
Analyses by : ALPHA V1.8
Sample title : TH BRC
Sample date : 22-MAY-2006 12:00:00 Acquisition date : 23-JUN-2006 15:29:06
Sample ID : H61AX1AA Sample quantity : 0.00000E+00 SAMPLE
Sample type : disk Sample geometry :
Detector name : ALP171 1 Detector geometry:
Elapsed live time: 0 08:19:28.00 Elapsed real time: 0 08:19:28.00 0.0%
Start energy : 3576.69 keV End energy : 6579.78 keV
Sensitivity : 3.00 Sum Sensitivity : 1.00

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4873.09	197	0	70.84	222.65	208	20	6.57E-03	7.1	
2	0	5320.58	4	0	23.61	298.50	296	7	1.33E-04	50.0	
3	0	6482.49	4	0	23.61	495.50	493	7	1.33E-04	50.0	

VMS Nuclide Identification Report V3.0 Generated 23-JUN-2006 23:50:02

Configuration : $DISK1:[ALP171.SAMPLE]H61AX1AA_230661529E.CNF;1
Analyses by : ALPHA V1.8,PEAKEFF V2.2,NID V3.3
Sample title : TH BRC
Sample date : 22-MAY-2006 12:00:00
Sample ID : H61AX1AA
Sample type : disk
Detector name : ALP171 1
Elapsed live time: 0 08:19:28.00
Energy tolerance : 80.00 keV
Errors propagated: No
Efficiency type : Spline
Abundance limit : 70.00

Acquisition date : 23-JUN-2006 15:29:06
Sample quantity : 0.00000E+00 SAMPLE
Sample geometry :
Detector geometry:
Elapsed real time: 0 08:19:28.00 0.0%
Half life ratio : 1.00
Systematic Error : 0.00 %
Efficiencies at : Peak Energy

Summary of Nuclide Activity

Total number of lines in spectrum	3	
Number of unidentified lines	1	
Number of lines tentatively identified by NID	2	66.67%

Nuclide Type : NP

Nuclide	Hlife	Decay	Uncorrected PCI/SAMPLE	Decay Corr PCI/SAMPLE	Decay Corr 0-Sigma Error	0-Sigma %Error	Flags
PO-209	102.00Y	1.00	0.000E+00	0.000E+00	0.000E+00	0.00	
PO-210	138.38D	1.18	0.000E+00	0.000E+00	0.000E+00	0.00	
CM-246	8500.00Y	1.00	0.000E+00	0.000E+00	0.000E+00	0.00	
			---	---			
Total Activity :			0.000E+00	0.000E+00			

Nuclide Type : AP

Nuclide	Hlife	Decay	Uncorrected PCI/SAMPLE	Decay Corr PCI/SAMPLE	Decay Corr 0-Sigma Error	0-Sigma %Error	Flags
TH-229	7340.00Y	1.00	0.000E+00	0.000E+00	0.000E+00	0.00	
U-232	68.90Y	1.00	0.000E+00	0.000E+00	0.000E+00	0.00	
PU-242	3.73E+05Y	1.00	0.000E+00	0.000E+00	0.000E+00	0.00	
AM-243	7370.00Y	1.00	0.000E+00	0.000E+00	0.000E+00	0.00	
CM-247	1.56E+07Y	1.00	0.000E+00	0.000E+00	0.000E+00	0.00	
			---	---			
Total Activity :			0.000E+00	0.000E+00			

Grand Total Activity : 0.000E+00 0.000E+00

Flags: "K" = Keyline not found
"E" = Manually edited
"M" = Manually accepted
"A" = Nuclide specific abn. limit

ITRD PEAK TEST REPORT (Version 16-May-94)

Configuration: $DISK1:[ALP171.SAMPLE]H61AX1AA_230661529E.CNF;1

Peak Energy	Left Chan	Rght Chan	Peak Area	Total Counts	Diff/ StDev	Overlap Counts	Multiplet Diff/StDev
4873.08	208	228	197	191	0.43		
5320.58	296	303	4	5	-0.50		
6482.49	493	500	4	4	0.00		

End of Report

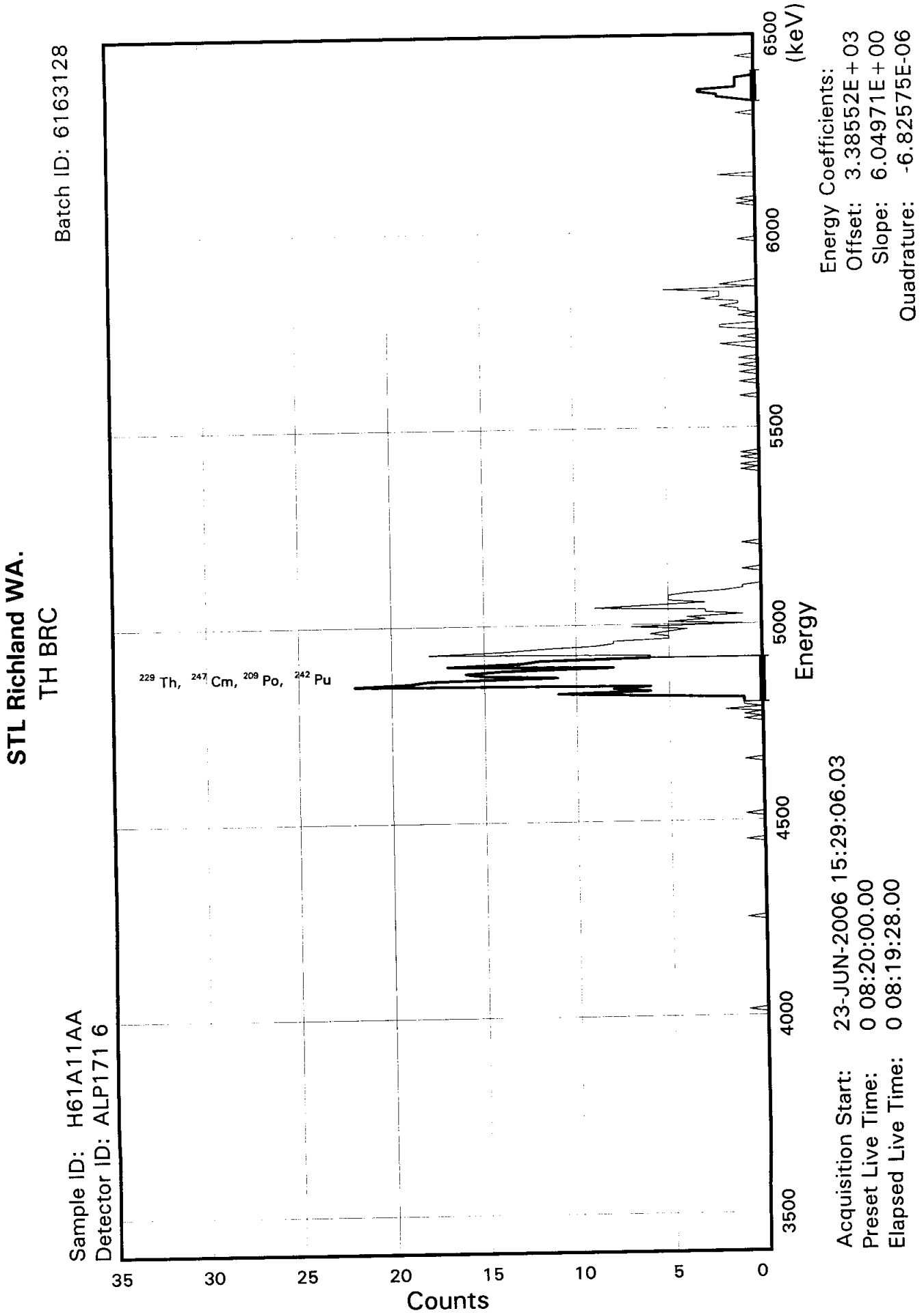
Alpha Analysis Report
(Version: 7-Feb-98)

Sample Identity: H61A11AA

Detector: ALP171 6
Report Date: 24-Jun-06 06:40 AM
Acquire Date: 23-JUN-2006 15:29:06.03
Tracer Nuclide: TH-229
Sample Live Time: 499 minutes
Bkgrnd Live Time: 999 minutes

Nuclide Name	Smpl Count	Bkg Count	Count Rate C/Min	Centrd Energy keV	Region Width keV	Left Chnl	Rght Chnl
TH-228	4	2	0.006	5423.2	120.9	322	342
TH-229	384	3	0.766	4845.3	350.7	226	284
TH-230	1	1	0.001	4687.7	120.9	200	220
TH-232	1	1	0.001	4013.0	121.0	89	109

End of Alpha Region Report
(Produced by ANAL Report)


STL Richland WA.
TH BRC
Batch ID: 6163128
Sample ID: H61A11AA
Detector ID: ALP171 6
229 Th, 247 Cm, 209 Po, 242 Pu
Counts
35
30
25
20
15
10
5
0
Energy
3500
4000
4500
5000
5500
6000
6500
(keV)
Acquisition Start: 23-JUN-2006 15:29:06.03
Preset Live Time: 0 08:20:00.00
Elapsed Live Time: 0 08:19:28.00
Energy Coefficients:
Offset: 3.38552E+03
Slope: 6.04971E+00
Quadrature: -6.82575E-06

SAMPLE IDENTIITY: H61A11AA

TITLE : TH BRC

DETECTOR : ALP171 6
CONFIGURATION NAME : $DISK1:[ALP171.SAMPLE]H61A11AA_230661529F.CN
F;1
ACQUIRE DATE of BACKGROUND: 09-JUN-2006 06:58:01

REPORT DATE : 23-Jun-06 SAMPLE DATE: 22-MAY-2006 12:00:00
ACQUIRE DATE: 23-JUN-2006 15:29:06 CALIB DATE : 09-JUN-2006 02:57:29

PRESET LIVE TIME: 0 08:20:00 ELAPSED LIVE TIME: 0 08:19:28

OFFSET : 3385.52 keV CONSTANT FWHM : 7.83333 Channels
SLOPE : 6.04971 keV/C SENSITIVITY : 3.00000 Std Dev's
QUAD COEFF : -.682575E-05 keV/C^2 SUM SENSITIVITY: 1.00000 %

Alpha Regions Report
(Version: 8-Oct-91)

Sample Identity: H61A11AA

Detector: ALP171 6
Report Date: 23-Jun-06 11:50 PM
Acquire Date: 23-JUN-2006 15:29:06.03
Tracer Nuclide: TH-229
High Counts Limit: 36
Sample Live Time: 499 minutes
Bkgrnd Live Time: 999 minutes

Flags Key

P: Peak Identified
I: Peak Intersect
S: Single Non-peak Intersect
M: Multiple Non-peak Intersect
H: High Non-peak Sample Count
A: Altered via ALP-RGN-EDIT

Nuclide Name	Smpl Count	Bkg Count	Intrsct Count	Count Rate C/Min	Centrd Energy keV	Region Width keV	Left Chnl	Rght Chnl	Left Wdth Mult	Rght Wdth Mult	Flags
PO-208	-9999	-9999	0	-10.010	5144.0	114.9	279	298	0.00	0.00	M
PO-209	229	1	0	0.457	4912.3	114.9	234	253	0.00	0.00	P
PO-210	-9999	-9999	0	-10.010	5333.4	114.9	310	329	0.00	0.00	M
AC-227	1	1	2	0.002	6067.1	114.8	431	450	0.00	0.00	S
TH-227	1	1	2	0.002	6067.1	114.8	431	450	0.00	0.00	S
TH-228	-9999	-9999	0	-10.010	5452.3	114.9	330	349	0.00	0.00	M
TH-229	229	1	0	0.457	4874.4	114.9	234	253	0.00	0.00	P
TH-230	-9999	-9999	0	-10.010	4716.8	114.9	208	227	0.00	0.00	M
TH-232	1	2	0	0.000	4042.1	114.9	96	115	0.00	0.00	
U-232	-9999	-9999	0	-10.010	5349.2	114.9	313	332	0.00	0.00	M
U-234	-9999	-9999	0	-10.010	4803.7	114.9	222	241	0.00	0.00	M I
U-235	1	1	0	0.001	4426.9	114.9	160	179	0.00	0.00	
PU-236	11	10	16	0.012	5796.7	114.8	387	406	0.00	0.00	S
NP-237	-9999	-9999	0	-10.010	4817.1	114.9	225	244	0.00	0.00	M I
PU-238	-9999	-9999	0	-10.010	5528.1	114.9	342	361	0.00	0.00	M
U-238	1	0	0	0.002	4227.1	114.9	127	146	0.00	0.00	
PU-239	-9999	-9999	0	-10.010	5185.7	114.9	285	304	0.00	0.00	M
AM-241	-9999	-9999	0	-10.010	5514.7	114.9	340	359	0.00	0.00	M
AM-242M	-9999	-9999	0	-10.010	5235.9	114.9	294	313	0.00	0.00	M
CM-242	-9999	-9999	0	-10.010	6141.8	114.8	444	463	0.00	0.00	M
PU-242	229	1	0	0.457	4929.6	114.9	234	253	0.00	0.00	P
AM-243	-9999	-9999	0	-10.010	5304.4	114.9	305	324	0.00	0.00	M
CM-244	18	22	16	0.014	5833.9	114.8	393	412	0.00	0.00	S
CM-246	-9999	-9999	0	-10.010	5415.6	114.9	324	343	0.00	0.00	M
CM-247	229	1	0	0.457	4899.5	114.9	234	253	0.00	0.00	P
CM-248	-9999	-9999	0	-10.010	5107.7	114.9	273	292	0.00	0.00	M

End of Alpha Region Report
(Produced by Alp_rgn_cnts)

Alpha Spectrum Listing
(Version: 29-Jun-92)

Sample Identity: H61A11AA
Detector: ALP171 6
Report Date: 23-Jun-06 11:50 PM
Acquire Date: 23-JUN-2006 15:29:06.03

Flags Key

Intersect Region: @
Non-Intersect Region: +, -

Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn
		1	0		51	0	+	101	0		151	0		201	13	@	251	1	@	301	0	@	351	2	@	401
		2	0		52	0	+	102	0		152	0		202	12	@	252	0	@	302	0	@	352	1	@	402
0		3	0		53	0	+	103	0		153	0		203	6		253	0	@	303	0	@	353	1	@	403
0		4	0		54	1	+	104	0		154	0		204	6		254	0	@	304	0	@	354	3	@	404
0		5	0		55	0	+	105	0		155	0		205	18		255	0	@	305	0	@	355	2	@	405
0		6	0		56	0	+	106	0		156	0		206	14		256	0	@	306	0	@	356	2	@	406
0		7	0		57	0	+	107	0		157	0		207	12		257	0	@	307	0	@	357	2	-	407
0		8	0		58	0	+	108	0		158	0	+	208	9		258	0	@	308	0	@	358	5	-	408
0		9	0		59	0	+	109	0		159	0	+	209	8		259	0	@	309	0	@	359	0	-	409
0		10	0		60	0	+	110	0	+	160	1	+	210	8		260	0	@	310	0	+	360	2	-	410
0		11	0		61	0	+	111	0	+	161	0	+	211	5		261	0	@	311	0	+	361	1	-	411
0		12	0		62	0	+	112	0	+	162	0	+	212	5		262	0	@	312	0		362	0	-	412
0		13	0		63	0	+	113	0	+	163	0	+	213	6		263	0	@	313	1		363	0		413
0		14	0		64	0	+	114	0	+	164	0	+	214	5		264	0	@	314	0		364	0		414
0		15	0		65	0	+	115	0	+	165	0	+	215	4		265	0	@	315	0		365	0		415
0		16	0		66	0		116	0	+	166	0	+	216	7		266	0	@	316	0		366	0		416
0		17	0		67	0		117	0	+	167	0	+	217	1		267	0	@	317	0		367	0		417
0		18	0		68	0		118	0	+	168	0	+	218	5		268	0	@	318	0		368	0		418
0		19	0		69	0		119	0	+	169	0	+	219	3		269	0	@	319	1		369	0		419
0		20	0		70	0		120	0	+	170	0	+	220	4		270	0	@	320	0		370	0		420
0		21	0		71	0		121	0	+	171	0	+	221	1		271	0	@	321	0		371	0		421
0		22	0		72	0		122	0	+	172	0	@	222	3		272	0	@	322	0		372	0		422
0		23	0		73	0		123	0	+	173	0	@	223	3	+	273	0	@	323	1		373	0		423
0		24	0		74	0		124	0	+	174	0	@	224	9	+	274	0	-	324	0		374	0		424
0		25	0		75	0		125	0	+	175	0	-	225	6	+	275	0	@	325	0		375	0		425
0		26	0		76	0		126	1	+	176	0	@	226	3	+	276	0	@	326	1		376	0		426
0		27	0		77	0	+	127	0	+	177	1	@	227	5	+	277	0	@	327	0		377	0		427
0		28	0		78	0	+	128	0	+	178	0	@	228	5	+	278	0	@	328	0		378	0		428
0		29	0		79	0	+	129	0	+	179	1	@	229	5	@	279	0	@	329	1		379	1		429
0		30	0		80	0	+	130	0		180	0	@	230	4	@	280	0	@	330	0		380	0		430
0		31	0		81	0	+	131	0		181	2	@	231	2	@	281	0	@	331	0		381	0	@	431
0		32	0		82	0	+	132	0		182	0	@	232	1	@	282	1	@	332	0		382	0	@	432
0		33	0		83	0	+	133	0		183	1	@	233	1	@	283	0	@	333	0		383	0	@	433
0		34	0		84	0	+	134	0		184	1	@	234	0	@	284	1	@	334	1		384	0	@	434
0		35	0		85	0	+	135	0		185	1	@	235	0	@	285	0	@	335	2		385	0	@	435
0		36	0		86	0	+	136	0		186	1	@	236	0	@	286	0	@	336	0		386	0	@	436
0		37	0		87	0	+	137	1		187	6	@	237	0	@	287	1	@	337	0	+	387	0	@	437
0		38	0		88	0	+	138	0		188	11	@	238	0	@	288	0	@	338	1	+	388	0	@	438
0		39	0		89	0	+	139	0		189	6	@	239	0	@	289	1	@	339	0	+	389	0	@	439
0		40	0		90	0	+	140	0		190	8	@	240	1	@	290	0	@	340	0	+	390	0	@	440
0		41	0		91	0	+	141	0		191	6	@	241	0	@	291	0	@	341	0	+	391	0	@	441
0		42	0		92	0	+	142	0		192	22	@	242	0	@	292	0	@	342	2	+	392	0	@	442
0		43	0		93	1	+	143	0		193	19	@	243	0	@	293	0	@	343	2	@	393	0	@	443
0		44	0		94	0	+	144	0		194	18	@	244	0	-	294	0	@	344	0	@	394	1	-	444
0		45	0		95	0	+	145	0		195	11	@	245	0	@	295	0	@	345	0	@	395	0	@	445
0		46	0	+	96	0	+	146	0		196	15	@	246	0	@	296	0	@	346	0	@	396	1	@	446
0		47	0	+	97	0		147	0		197	16	@	247	0	@	297	0	@	347	1	@	397	0	@	447
0		48	0	+	98	0		148	0		198	14	@	248	0	@	298	0	@	348	0	@	398	0	@	448
0		49	0	+	99	0		149	0		199	8	@	249	0	@	299	0	@	349	1	@	399	0	@	449
0		50	0	+	100	0		150	0		200	17	@	250	0	@	300	0	@	350	1	@	400	0	@	450

Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn
0	-	451	0		501									
0	-	452	0		502									
0	-	453	0		503									
0	-	454	0		504									
0	-	455	0		505									
2	-	456	1		506									
0	-	457	0		507									
0	-	458	0		508									
0	-	459	0		509									
0	-	460	0		510									
0	-	461	0		511									
0	-	462	0		512									
0	-	463												
0		464												
0		465												
0		466												
0		467												
0		468												
0		469												
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0		471												
0		472												
0		473												
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2		489												
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3		491												
3		492												
1		493												
1		494												
1		495												
1		496												
1		497												
0		498												
0		499												
0		500												

VMS Peak Search Report V1.9 Generated 23-JUN-2006 23:50:05

Configuration : $DISK1:[ALP171.SAMPLE]H61A11AA_230661529F.CNF;1
Analyses by : ALPHA V1.8
Sample title : TH BRC
Sample date : 22-MAY-2006 12:00:00 Acquisition date : 23-JUN-2006 15:29:06
Sample ID : H61A11AA Sample quantity : 0.00000E+00 SAMPLE
Sample type : disk Sample geometry :
Detector name : ALP171 1 Detector geometry:
Elapsed live time: 0 08:19:28.00 Elapsed real time: 0 08:19:28.00 0.0%
Start energy : 3403.67 keV End energy : 6481.19 keV
Sensitivity : 3.00 Sum Sensitivity : 1.00

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4874.37	229	0	72.60	246.17	234	19	7.64E-03	6.6	
2	0	6353.78	17	0	30.25	490.92	487	13	5.67E-04	24.3	

VMS Nuclide Identification Report V3.0 Generated 23-JUN-2006 23:50:07

Configuration	: $DISK1:[ALP171.SAMPLE]H61A11AA_230661529F.CNF;1		
Analyses by	: ALPHA V1.8,PEAKEFF V2.2,NID V3.3		
Sample title	: TH BRC		
Sample date	: 22-MAY-2006 12:00:00	Acquisition date	: 23-JUN-2006 15:29:06
Sample ID	: H61A11AA	Sample quantity	: 0.00000E+00 SAMPLE
Sample type	: disk	Sample geometry	:
Detector name	: ALP171 1	Detector geometry	:
Elapsed live time	: 0 08:19:28.00	Elapsed real time	: 0 08:19:28.00 0.0%
Energy tolerance	: 80.00 keV	Half life ratio	: 1.00
Errors propagated	: No	Systematic Error	: 0.00 %
Efficiency type	: Spline	Efficiencies at	: Peak Energy
Abundance limit	: 70.00		

Summary of Nuclide Activity

Total number of lines in spectrum	2	
Number of unidentified lines	1	
Number of lines tentatively identified by NID	1	50.00%

Nuclide Type : NP

Nuclide	Hlife	Decay	Uncorrected PCI/SAMPLE	Decay Corr PCI/SAMPLE	Decay Corr 0-Sigma Error	0-Sigma %Error	Flags
PO-209	102.00Y	1.00	0.000E+00	0.000E+00	0.000E+00	0.00	
			---	---			
Total Activity :			0.000E+00	0.000E+00			

Nuclide Type : AP

Nuclide	Hlife	Decay	Uncorrected PCI/SAMPLE	Decay Corr PCI/SAMPLE	Decay Corr 0-Sigma Error	0-Sigma %Error	Flags
TH-229	7340.00Y	1.00	0.000E+00	0.000E+00	0.000E+00	0.00	
PU-242	3.73E+05Y	1.00	0.000E+00	0.000E+00	0.000E+00	0.00	
CM-247	1.56E+07Y	1.00	0.000E+00	0.000E+00	0.000E+00	0.00	
			---	---			
Total Activity :			0.000E+00	0.000E+00			

Grand Total Activity :	0.000E+00	0.000E+00

Flags: "K" = Keyline not found "M" = Manually accepted
"E" = Manually edited "A" = Nuclide specific abn. limit

ITRD PEAK TEST REPORT (Version 16-May-94)

Configuration: $DISK1:[ALP171.SAMPLE]H61A11AA_230661529F.CNF;1

Peak Energy	Left Chan	Rght Chan	Peak Area	Total Counts	Diff/ StDev	Overlap Counts	Multiplet Diff/StDev
4874.36	234	253	229	211	1.19		
6353.78	487	500	17	16	0.24		

***** WARNING: Possible PEAK/ALPHA Error *****
Review Spectrum on Screen

End of Report

Alpha Analysis Report
(Version: 7-Feb-98)

Sample Identity: H61A21AA

Detector: ALP171 7
Report Date: 24-Jun-06 06:40 AM
Acquire Date: 23-JUN-2006 15:29:06.03
Tracer Nuclide: TH-229
Sample Live Time: 499 minutes
Bkgrnd Live Time: 999 minutes

Nuclide Name	Smpl Count	Bkg Count	Count Rate C/Min	Centrd Energy keV	Region Width keV	Left Chnl	Rght Chnl
TH-228	4	0	0.008	5423.2	112.7	311	331
TH-229	428	0	0.857	4845.3	315.7	214	270
TH-230	1	0	0.002	4687.7	112.8	180	200
TH-232	1	1	0.001	4013.0	112.9	60	80

End of Alpha Region Report
(Produced by ANAL Report)

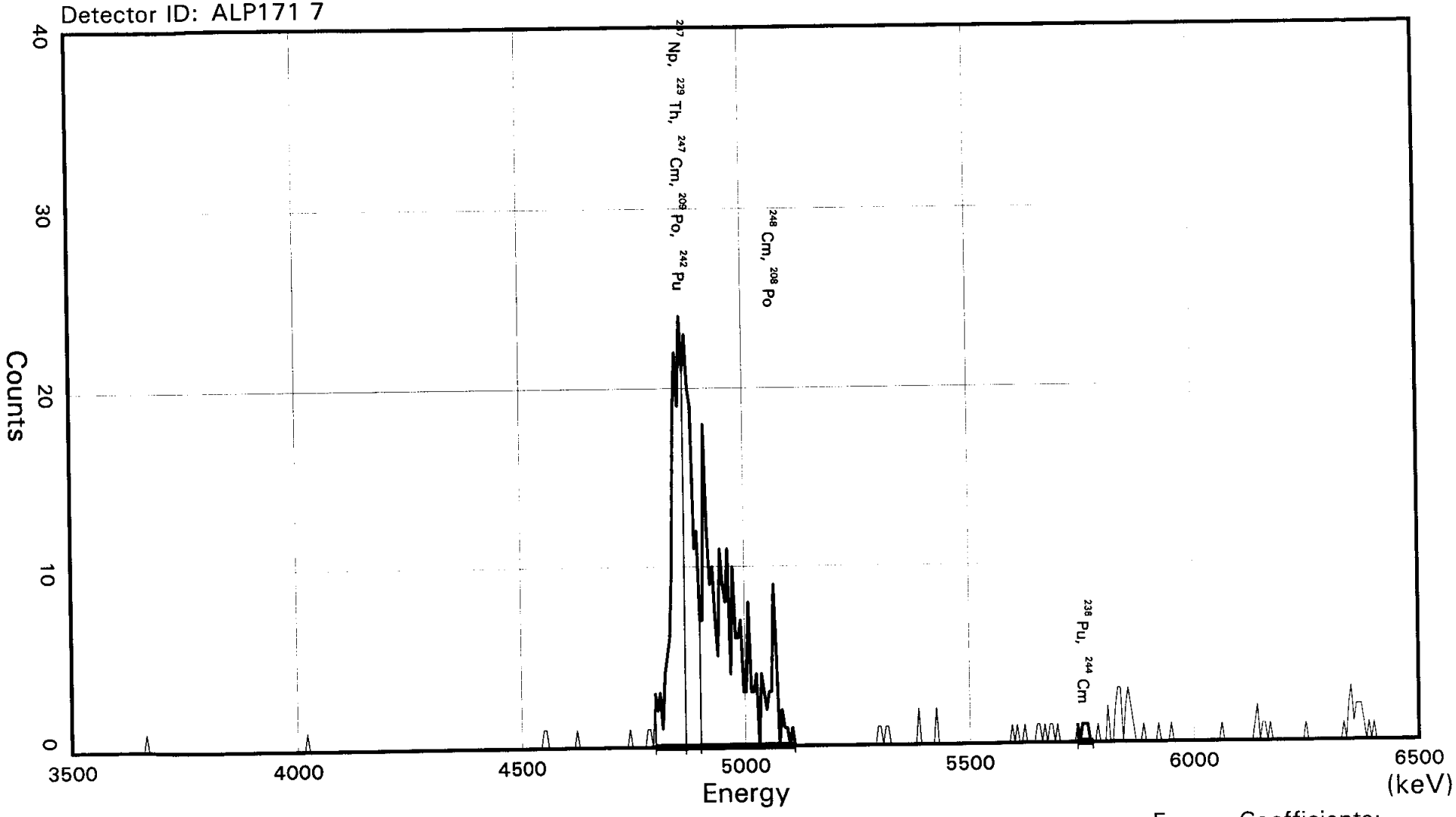
STL Richland WA.

TH BRC

Sample ID: H61A21AA

Detector ID: ALP171 7

Batch ID: 6163128



Acquisition Start: 23-JUN-2006 15:29:06.03

Preset Live Time: 0 08:20:00.00

Elapsed Live Time: 0 08:19:28.00

Energy Coefficients:

Offset: 3.58695E+03

Slope: 5.64544E+00

Quadrature: -1.52186E-05

SAMPLE IDENTIITY: H61A21AA

TITLE : TH BRC

DETECTOR : ALP171 7
CONFIGURATION NAME : $DISK1:[ALP171.SAMPLE]H61A21AA_230661529G.CN
F;1
ACQUIRE DATE of BACKGROUND: 09-JUN-2006 06:58:01

REPORT DATE : 23-Jun-06 SAMPLE DATE: 22-MAY-2006 12:00:00
ACQUIRE DATE: 23-JUN-2006 15:29:06 CALIB DATE : 09-JUN-2006 02:57:47

PRESET LIVE TIME: 0 08:20:00 ELAPSED LIVE TIME: 0 08:19:28

OFFSET : 3586.95 keV CONSTANT FWHM : 6.33333 Channels
SLOPE : 5.64544 keV/C SENSITIVITY : 3.00000 Std Dev's
QUAD COEFF : -.152186E-04 keV/C^2 SUM SENSITIVITY: 1.00000 %

Alpha Regions Report
(Version: 8-Oct-91)

Sample Identity: H61A21AA

Detector: ALP171 7
Report Date: 23-Jun-06 11:50 PM
Acquire Date: 23-JUN-2006 15:29:06.03
Tracer Nuclide: TH-229
High Counts Limit: 36
Sample Live Time: 499 minutes
Bkgrnd Live Time: 999 minutes

Flags Key

P: Peak Identified
I: Peak Intersect
S: Single Non-peak Intersect
M: Multiple Non-peak Intersect
H: High Non-peak Sample Count
A: Altered via ALP-RGN-EDIT

Nuclide Name	Smpl Count	Bkg Count	Intrsct Count	Count Rate C/Min	Centrd Energy keV	Region Width keV	Left Chnl	Rght Chnl	Left Wdth Mult	Rght Wdth Mult	Flags
PO-208	159	0	0	0.318	5133.9	242.4	227	270	0.00	0.00	P
PO-209	270	0	0	0.541	4902.2	101.5	215	233	0.00	0.00	P
PO-210	-9999	-9999	0	-10.010	5323.4	101.5	296	314	0.00	0.00	M
AC-227	1	1	0	0.002	6057.0	101.4	427	445	0.00	0.00	S
TH-227	1	1	0	0.002	6057.0	101.4	427	445	0.00	0.00	S
TH-228	-9999	-9999	0	-10.010	5442.2	101.4	318	336	0.00	0.00	M
TH-229	270	0	0	0.541	4864.3	101.5	215	233	0.00	0.00	P
TH-230	1	0	1	0.001	4706.7	101.5	187	205	0.00	0.00	S
TH-232	1	1	0	0.001	4032.0	101.6	67	85	0.00	0.00	
U-232	-9999	-9999	0	-10.010	5339.2	101.4	299	317	0.00	0.00	M
U-234	-9999	-9999	0	-10.010	4793.6	101.5	202	220	0.00	0.00	S I
U-235	0	1	0	-0.001	4416.8	101.5	136	154	0.00	0.00	
PU-236	4	1	0	0.007	5786.6	33.8	382	388	0.00	0.00	P
NP-237	270	0	0	0.541	4807.0	101.5	215	233	0.00	0.00	P
PU-238	-9999	-9999	0	-10.010	5518.0	101.4	331	349	0.00	0.00	M
U-238	0	0	0	0.000	4217.0	101.6	100	118	0.00	0.00	
PU-239	0	2	0	-0.002	5175.6	101.5	270	288	0.00	0.00	S
AM-241	-9999	-9999	0	-10.010	5504.6	101.4	329	347	0.00	0.00	M
AM-242M	-9999	-9999	0	-10.010	5225.8	101.5	279	297	0.00	0.00	M
CM-242	-9999	-9999	0	-10.010	6131.7	101.4	440	458	0.00	0.00	M
PU-242	270	0	0	0.541	4919.5	101.5	215	233	0.00	0.00	P
AM-243	-9999	-9999	0	-10.010	5294.3	101.5	291	309	0.00	0.00	M
CM-244	4	1	0	0.007	5823.8	33.8	382	388	0.00	0.00	P
CM-246	-9999	-9999	0	-10.010	5405.5	101.4	311	329	0.00	0.00	M
CM-247	270	0	0	0.541	4889.4	101.5	215	233	0.00	0.00	P
CM-248	159	0	0	0.318	5097.6	242.4	227	270	0.00	0.00	P

End of Alpha Region Report
(Produced by Alp_rgn_cnts)

Alpha Spectrum Listing
(Version: 29-Jun-92)

Sample Identity: H61A21AA
Detector: ALP171 7
Report Date: 23-Jun-06 11:50 PM
Acquire Date: 23-JUN-2006 15:29:06.03

Flags Key

Intersect Region: @
Non-Intersect Region: +, -

Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn
		1	0		51	0	+	101	0	+	151	0	+	201	3	@	251	0	@	301	0		351	2		401	0	-	451	0		501
		2	0		52	0	+	102	0	+	152	0	@	202	8	@	252	0	@	302	0		352	3		402	1	-	452	0		502
0		3	0		53	0	+	103	0	+	153	0	@	203	3	@	253	1	@	303	0		353	2		403	2	-	453	0		503
0		4	0		54	0	+	104	0	+	154	0	@	204	3	@	254	1	@	304	0		354	1		404	0	-	454	0		504
0		5	0		55	0	+	105	0		155	1	@	205	4	@	255	0	@	305	0		355	0		405	1	-	455	0		505
0		6	0		56	0	+	106	0		156	0	-	206	0	@	256	1	@	306	1		356	0		406	1	-	456	0		506
0		7	0		57	0	+	107	0		157	0	-	207	4	@	257	1	@	307	0		357	0		407	0	-	457	0		507
0		8	0		58	0	+	108	0		158	0	-	208	3	@	258	0	@	308	1		358	1		408	1	-	458	0		508
0		9	0		59	0	+	109	0		159	0	-	209	2	@	259	0	@	309	0		359	0		409	0		459	0		509
0		10	0		60	0	+	110	0		160	0	-	210	3	@	260	0	@	310	0		360	0		410	0		460	0		510
0		11	0		61	0	+	111	0		161	0	-	211	3	@	261	0	-	311	1		361	0		411	0		461	0		511
0		12	0		62	0	+	112	0		162	1	-	212	9	@	262	0	@	312	0		362	0		412	0		462	0		512
0		13	0		63	0	+	113	0		163	1	-	213	5	@	263	0	@	313	0		363	0		413	0		463			
1		14	0		64	0	+	114	0		164	0	-	214	0	@	264	0	@	314	0		364	1		414	0		464			
0		15	0		65	0	+	115	0		165	3	-	215	2	@	265	0	@	315	0		365	0		415	0		465			
0		16	0		66	0	+	116	0		166	2	@	216	1	@	266	0	@	316	1		366	0		416	0		466			
0		17	0	+	67	0	+	117	0		167	3	@	217	1	@	267	0	@	317	1		367	0		417	0		467			
0		18	0	+	68	0	+	118	0		168	1	@	218	0	@	268	0	@	318	0		368	0		418	0		468			
0		19	0	+	69	0		119	0		169	4	@	219	1	@	269	2	@	319	1		369	1		419	0		469			
0		20	0	+	70	0		120	0		170	5	@	220	0	+	270	0	@	320	0		370	0		420	0		470			
0		21	0	+	71	0		121	1		171	6	@	221	0	+	271	0	@	321	1		371	0		421	0		471			
0		22	0	+	72	0		122	1		172	10	@	222	0	+	272	0	@	322	1		372	0		422	1		472			
0		23	0	+	73	0		123	0		173	18	@	223	0	+	273	0	@	323	0		373	0		423	0		473			
0		24	0	+	74	0		124	0		174	22	@	224	0	+	274	0	@	324	1		374	0		424	0		474			
0		25	0	+	75	0		125	0		175	19	@	225	0	+	275	0	@	325	0		375	0		425	0		475			
0		26	0	+	76	0		126	0		176	24	@	226	0	+	276	2	@	326	0		376	0		426	0		476			
0		27	1	+	77	0		127	0		177	21	-	227	0	+	277	0	@	327	0		377	0	@	427	0		477			
0		28	0	+	78	0		128	0		178	23	@	228	0	+	278	0	@	328	0		378	0	@	428	0		478			
0		29	0	+	79	0		129	0		179	20	@	229	0	@	279	0	@	329	0		379	0	@	429	0		479			
0		30	0	+	80	0		130	0		180	19	@	230	0	@	280	0	@	330	0		380	0	@	430	0		480			
0		31	0	+	81	0		131	0		181	11	@	231	0	@	281	0	@	331	0		381	0	@	431	0		481			
0		32	0	+	82	0		132	0		182	12	@	232	0	@	282	0	@	332	1	@	382	0	@	432	0		482			
0		33	0	+	83	0		133	0		183	7	@	233	0	@	283	0	@	333	0	@	383	0	@	433	0		483			
0		34	0	+	84	0		134	1		184	7	@	234	0	@	284	0	@	334	1	@	384	0	@	434	0		484			
0		35	0	+	85	0		135	0		185	18	@	235	0	@	285	0	@	335	1	@	385	0	@	435	0		485			
0		36	0		86	0	+	136	0		186	12	@	236	0	@	286	0	@	336	1	@	386	0	@	436	0		486			
0		37	0		87	0	+	137	0	+	187	9	@	237	0	@	287	0	@	337	0	@	387	0	@	437	1		487			
0		38	0		88	0	+	138	0	+	188	10	@	238	0	@	288	0	@	338	0		388	0	@	438	0		488			
0		39	0		89	0	+	139	0	+	189	7	@	239	0	-	289	0	@	339	0		389	1	@	439	2		489			
0		40	0		90	0	+	140	0	+	190	5	@	240	0	-	290	0	@	340	1		390	0	-	440	3		490			
0		41	0		91	0	+	141	0	+	191	11	@	241	0	@	291	0	@	341	0		391	0	@	441	1		491			
0		42	0		92	0	+	142	0	+	192	9	@	242	0	@	292	0	@	342	0		392	0	@	442	2		492			
0		43	0		93	0	+	143	0	+	193	8	@	243	0	@	293	0	@	343	0		393	0	@	443	2		493			
0		44	0		94	0	+	144	0	+	194	11	@	244	0	@	294	0	@	344	2		394	0	@	444	2		494			
0		45	0		95	0	+	145	0	+	195	4	@	245	0	@	295	0	@	345	0		395	0	@	445	1		495			
0		46	0		96	0	+	146	0	+	196	10	@	246	0	@	296	0	@	346	0		396	0	-	446	0		496			
0		47	0		97	0	+	147	0	+	197	6	@	247	0	@	297	0	@	347	2		397	0	-	447	1		497			
0		48	0		98	0	+	148	0	+	198	6	@	248	0	@	298	0	+	348	3		398	0	-	448	0		498			
0		49	0		99	0	+	149	0	+	199	7	@	249	0	@	299	0	+	349	3		399	0	-	449	1		499			
0		50	0	+	100	0	+	150	0	+	200	3	@	250	0	@	300	0		350	0		400	0	-	450	0		500			

VMS Peak Search Report V1.9 Generated 23-JUN-2006 23:50:09

Configuration : $DISK1:[ALP171.SAMPLE]H61A21AA_230661529G.CNF;1
Analyses by : ALPHA V1.8
Sample title : TH BRC
Sample date : 22-MAY-2006 12:00:00 Acquisition date : 23-JUN-2006 15:29:06
Sample ID : H61A21AA Sample quantity : 0.00000E+00 SAMPLE
Sample type : disk Sample geometry :
Detector name : ALP171 1 Detector geometry:
Elapsed live time: 0 08:19:28.00 Elapsed real time: 0 08:19:28.00 0.0%
Start energy : 3603.88 keV End energy : 6473.42 keV
Sensitivity : 3.00 Sum Sensitivity : 1.00

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4864.29	270	0	56.45	226.40	215	18	9.01E-03	6.1	
2	0	5065.01	159	0	16.94	262.00	227	43	5.31E-03	7.9	
3	0	5755.37	4	0	22.58	384.50	382	6	1.33E-04	50.0	

VMS Nuclide Identification Report V3.0 Generated 23-JUN-2006 23:50:12

```
Configuration     : $DISK1:[ALP171.SAMPLE]H61A21AA_230661529G.CNF;1
Analyses by       : ALPHA V1.8,PEAKEFF V2.2,NID V3.3
Sample title      : TH BRC
Sample date       : 22-MAY-2006 12:00:00 Acquisition date : 23-JUN-2006 15:29:06
Sample ID         : H61A21AA             Sample quantity  : 0.00000E+00 SAMPLE
Sample type       : disk                 Sample geometry  :
Detector name     : ALP171 1             Detector geometry:
Elapsed live time: 0 08:19:28.00         Elapsed real time: 0 08:19:28.00   0.0%
Energy tolerance :    80.00 keV          Half life ratio  :     1.00
Errors propagated: No                    Systematic Error :     0.00 %
Efficiency type  : Spline                Efficiencies at  : Peak Energy
Abundance limit  :    70.00
```

Summary of Nuclide Activity

Total number of lines in spectrum	3	
Number of unidentified lines	0	
Number of lines tentatively identified by NID	3	100.00%

Nuclide Type : NP

Nuclide	Hlife	Decay	Uncorrected PCI/SAMPLE	Decay Corr PCI/SAMPLE	Decay Corr 0-Sigma Error	0-Sigma %Error	Flags
PO-208	2.90Y	1.02	0.000E+00	0.000E+00	0.000E+00	0.00	
PO-209	102.00Y	1.00	0.000E+00	0.000E+00	0.000E+00	0.00	
			---	---			
Total Activity :			0.000E+00	0.000E+00			

Nuclide Type : AP

Nuclide	Hlife	Decay	Uncorrected PCI/SAMPLE	Decay Corr PCI/SAMPLE	Decay Corr 0-Sigma Error	0-Sigma %Error	Flags
TH-229	7340.00Y	1.00	0.000E+00	0.000E+00	0.000E+00	0.00	
PU-236	2.86Y	1.02	0.000E+00	0.000E+00	0.000E+00	0.00	
NP-237	2.14E+06Y	1.00	0.000E+00	0.000E+00	0.000E+00	0.00	
PU-242	3.73E+05Y	1.00	0.000E+00	0.000E+00	0.000E+00	0.00	
CM-244	18.10Y	1.00	0.000E+00	0.000E+00	0.000E+00	0.00	
CM-247	1.56E+07Y	1.00	0.000E+00	0.000E+00	0.000E+00	0.00	
CM-248	3.39E+05Y	1.00	0.000E+00	0.000E+00	0.000E+00	0.00	
			---	---			
Total Activity :			0.000E+00	0.000E+00			

Grand Total Activity : 0.000E+00 0.000E+00

Flags: "K" = Keyline not found "M" = Manually accepted
"E" = Manually edited "A" = Nuclide specific abn. limit

ITRD PEAK TEST REPORT (Version 16-May-94)

Configuration: $DISK1:[ALP171.SAMPLE]H61A21AA_230661529G.CNF;1

Peak Energy	Left Chan	Rght Chan	Peak Area	Total Counts	Diff/ StDev	Overlap Counts	Multiplet Diff/StDev
4864.28	215	233	270	230	2.43		
5065.00	227	270	159	311	-12.05	113	0.05
5755.36	382	388	4	4	0.00		

***** WARNING: Possible PEAK/ALPHA Error *****
Review Spectrum on Screen

End of Report

Alpha Analysis Report
(Version: 7-Feb-98)

Sample Identity: H61A31AA

Detector: ALP171 8
Report Date: 24-Jun-06 06:41 AM
Acquire Date: 23-JUN-2006 15:29:06.03
Tracer Nuclide: TH-229
Sample Live Time: 499 minutes
Bkgrnd Live Time: 999 minutes

Nuclide Name	Smpl Count	Bkg Count	Count Rate C/Min	Centrd Energy keV	Region Width keV	Left Chnl	Rght Chnl
TH-228	1	0	0.002	5423.2	117.6	307	327
TH-229	653	0	1.307	4845.3	329.6	213	269
TH-230	2	0	0.004	4687.7	117.8	182	202
TH-232	2	0	0.004	4013.0	117.9	67	87

End of Alpha Region Report
(Produced by ANAL Report)

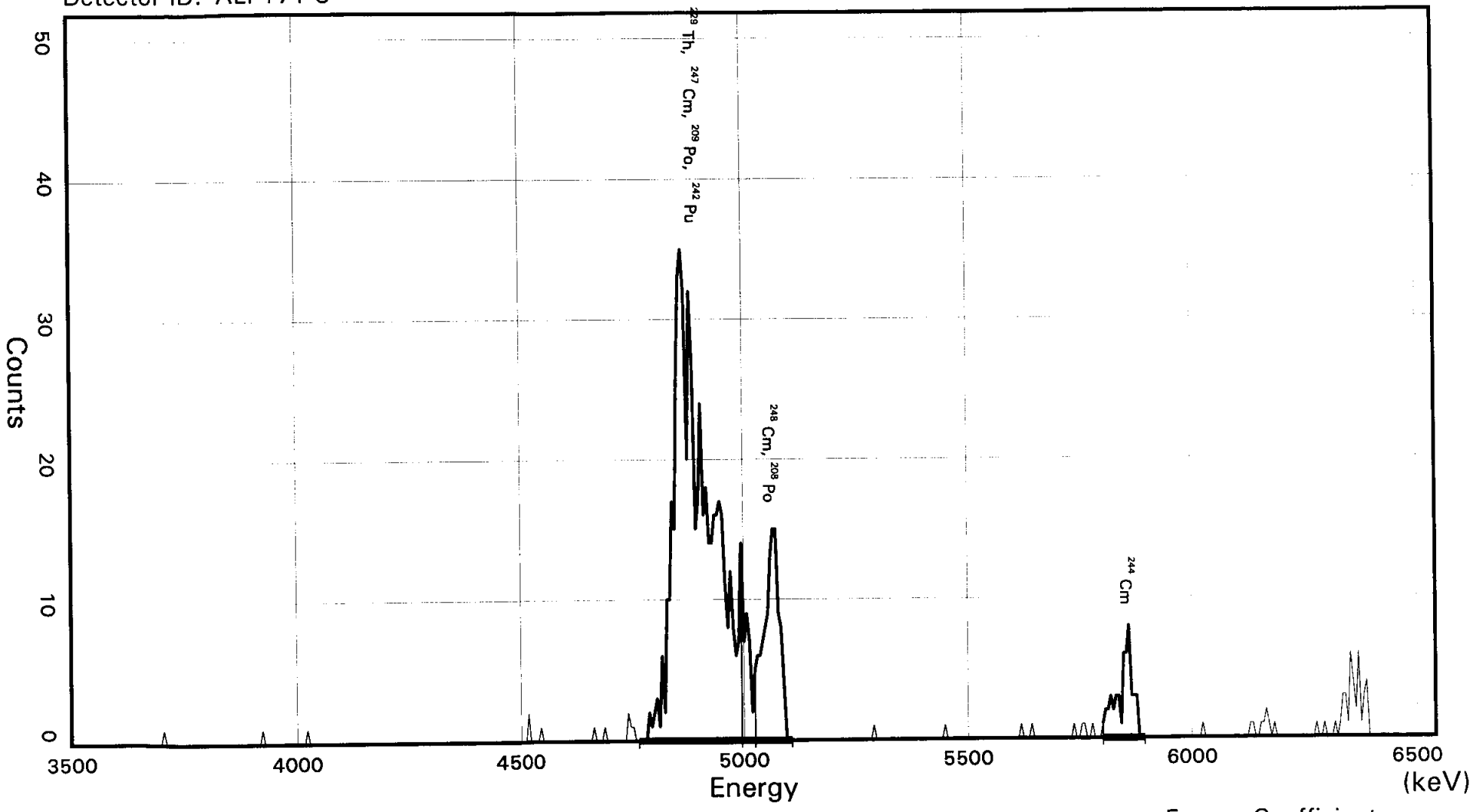
STL Richland WA.

TH BRC

Sample ID: H61A31AA

Detector ID: ALP171 8

Batch ID: 6163128



Acquisition Start: 23-JUN-2006 15:29:06.03

Preset Live Time: 0 08:20:00.00

Elapsed Live Time: 0 08:19:28.00

Energy Coefficients:

Offset: 3.52789E+03

Slope: 5.89894E+00

Quadrature: -2.64137E-05

SAMPLE IDENTIITY: H61A31AA

TITLE : TH BRC

DETECTOR : ALP171 8
CONFIGURATION NAME : $DISK1:[ALP171.SAMPLE]H61A31AA_230661529H.CN
F;1
ACQUIRE DATE of BACKGROUND: 09-JUN-2006 06:58:01

REPORT DATE : 23-Jun-06 SAMPLE DATE: 22-MAY-2006 12:00:00
ACQUIRE DATE: 23-JUN-2006 15:29:06 CALIB DATE : 09-JUN-2006 02:58:05

PRESET LIVE TIME: 0 08:20:00 ELAPSED LIVE TIME: 0 08:19:28

OFFSET : 3527.89 keV CONSTANT FWHM : 7.33333 Channels
SLOPE : 5.89894 keV/C SENSITIVITY : 3.00000 Std Dev's
QUAD COEFF : -.264137E-04 keV/C^2 SUM SENSITIVITY: 1.00000 %

Alpha Regions Report
(Version: 8-Oct-91)

Sample Identity: H61A31AA

Detector: ALP171 8
Report Date: 23-Jun-06 11:50 PM
Acquire Date: 23-JUN-2006 15:29:06.03
Tracer Nuclide: TH-229
High Counts Limit: 36
Sample Live Time: 499 minutes
Bkgrnd Live Time: 999 minutes

Flags Key

P: Peak Identified
I: Peak Intersect
S: Single Non-peak Intersect
M: Multiple Non-peak Intersect
H: High Non-peak Sample Count
A: Altered via ALP-RGN-EDIT

Nuclide Name	Smpl Count	Bkg Count	Intrsct Count	Count Rate C/Min	Centrd Energy keV	Region Width keV	Left Chnl	Rght Chnl	Left Wdth Mult	Rght Wdth Mult	Flags
PO-208	109	0	0	0.218	5161.1	111.8	249	268	0.00	0.00	P
PO-209	545	0	0	1.091	4929.4	259.0	210	254	0.00	0.00	P
PO-210	-9999	-9999	0	-10.010	5350.6	258.8	288	332	0.00	0.00	M
AC-227	5	6	8	0.005	6084.2	258.5	413	457	0.00	0.00	S
TH-227	5	6	8	0.005	6084.2	258.5	413	457	0.00	0.00	S
TH-228	-9999	-9999	0	-10.010	5469.4	258.8	308	352	0.00	0.00	M
TH-229	545	0	0	1.091	4891.5	259.0	210	254	0.00	0.00	P
TH-230	-9999	-9999	0	-10.010	4733.9	259.1	183	227	0.00	0.00	M I
TH-232	1	0	0	0.002	4059.2	259.3	69	113	0.00	0.00	S
U-232	-9999	-9999	0	-10.010	5366.4	258.8	291	335	0.00	0.00	M
U-234	-9999	-9999	0	-10.010	4820.8	259.0	198	242	0.00	0.00	M I
U-235	3	1	0	0.006	4444.0	259.2	134	178	0.00	0.00	S
PU-236	-9999	-9999	0	-10.010	5813.9	258.6	367	411	0.00	0.00	I
NP-237	-9999	-9999	0	-10.010	4834.2	259.0	200	244	0.00	0.00	M I
PU-238	-9999	-9999	0	-10.010	5545.2	258.8	321	365	0.00	0.00	M
U-238	-9999	-9999	0	-10.010	4244.2	259.3	100	144	0.00	0.00	M
PU-239	-9999	-9999	0	-10.010	5202.8	258.9	263	307	0.00	0.00	M I
AM-241	-9999	-9999	0	-10.010	5531.8	258.8	319	363	0.00	0.00	M
AM-242M	-9999	-9999	0	-10.010	5253.0	258.9	271	315	0.00	0.00	M
CM-242	-9999	-9999	0	-10.010	6158.9	264.4	425	470	0.00	0.00	M
PU-242	545	0	0	1.091	4946.7	259.0	210	254	0.00	0.00	P
AM-243	-9999	-9999	0	-10.010	5321.5	258.8	283	327	0.00	0.00	M
CM-244	45	30	0	0.060	5851.0	94.0	386	402	0.00	0.00	P
CM-246	-9999	-9999	0	-10.010	5432.7	258.8	302	346	0.00	0.00	M
CM-247	545	0	0	1.091	4916.6	259.0	210	254	0.00	0.00	P
CM-248	109	0	0	0.218	5124.8	111.8	249	268	0.00	0.00	P

End of Alpha Region Report
(Produced by Alp_rgn_cnts)

Alpha Spectrum Listing
(Version: 29-Jun-92)

Sample Identity: H61A31AA
Detector: ALP171 8
Report Date: 23-Jun-06 11:50 PM
Acquire Date: 23-JUN-2006 15:29:06.03

Flags Key

Intersect Region: @
Non-Intersect Region: +, -

Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn
		1	0		51	0	@	101	0	+	151	0	@	201	9	@	251	0	@	301	0	@	351	0	@	401
		2	0		52	0	@	102	0	+	152	0	@	202	7	@	252	0	-	302	0	@	352	0	+	402
0		3	0		53	0	@	103	0	+	153	0	@	203	2	@	253	0	@	303	0	@	353	0	+	403
0		4	0		54	0	@	104	0	+	154	0	@	204	5	@	254	0	@	304	0	@	354	0	+	404
0		5	0		55	0	@	105	0	+	155	0	@	205	6	@	255	0	@	305	1	@	355	0	+	405
0		6	0		56	0	@	106	0	+	156	2	@	206	6	@	256	0	@	306	0	@	356	0	+	406
0		7	0		57	0	@	107	0	+	157	1	@	207	7	@	257	0	@	307	0	@	357	0	+	407
0		8	0		58	0	@	108	0	+	158	1	@	208	8	@	258	0	@	308	0	@	358	0	+	408
0		9	0		59	0	@	109	0	+	159	0	@	209	9	@	259	0	@	309	1	@	359	0	+	409
0		10	0		60	0	@	110	0	+	160	0	@	210	13	@	260	0	@	310	0	@	360	0	+	410
0		11	0		61	0	@	111	0	+	161	0	@	211	15	@	261	0	@	311	0	@	361	0	+	411
0		12	0		62	0	@	112	0	+	162	0	@	212	15	@	262	0	@	312	0	@	362	0		412
0		13	0		63	0	@	113	0	+	163	0	@	213	9	@	263	0	@	313	0	@	363	0	@	413
0		14	0		64	0	-	114	0	+	164	2	@	214	8	@	264	0	@	314	0	+	364	0	@	414
0		15	0		65	0	-	115	0	+	165	1	@	215	4	@	265	0	@	315	0	+	365	0	@	415
0		16	0		66	0	-	116	0	+	166	2	@	216	0	@	266	0	@	316	0		366	0	@	416
0		17	1		67	0	-	117	0	+	167	3	@	217	0	@	267	0	@	317	0	+	367	0	@	417
0		18	0		68	0	-	118	2	+	168	1	@	218	0	+	268	0	@	318	0	+	368	0	@	418
0		19	0	+	69	0	-	119	0	+	169	6	@	219	0	+	269	0	@	319	0	+	369	0	@	419
0		20	0	+	70	0	-	120	0	+	170	2	@	220	0	+	270	0	@	320	0	+	370	0	@	420
0		21	0	+	71	0	-	121	0	+	171	10	@	221	0	@	271	0	@	321	0	+	371	0	@	421
0		22	0	+	72	0	-	122	0	+	172	10	@	222	0	@	272	0	@	322	0	+	372	0	@	422
0		23	0	+	73	0	-	123	1	+	173	17	@	223	0	@	273	0	@	323	0	+	373	0	@	423
0		24	0	+	74	0	-	124	0	+	174	15	@	224	0	@	274	0	@	324	0	+	374	1	@	424
0		25	0	+	75	0	-	125	0	+	175	26	@	225	0	@	275	0	@	325	1	+	375	0	-	425
0		26	0	+	76	0	-	126	0	+	176	33	@	226	0	@	276	1	@	326	0	+	376	0	@	426
0		27	0	+	77	0	-	127	0	+	177	35	@	227	0	@	277	0	@	327	0	+	377	0	@	427
0		28	0	+	78	0	-	128	0	+	178	32	@	228	0	@	278	0	@	328	1	+	378	0	@	428
0		29	0	+	79	0	-	129	0		179	20	@	229	0	@	279	0	@	329	1	+	379	0	@	429
1		30	0	+	80	0	-	130	0		180	32	@	230	0	@	280	0	@	330	0	+	380	0	@	430
0		31	0	+	81	0	-	131	0		181	27	@	231	0	@	281	0	@	331	0	+	381	0	@	431
0		32	0	+	82	0	-	132	0		182	15	@	232	0	@	282	0	@	332	1	+	382	0	@	432
0		33	0	+	83	0	-	133	0	+	183	17	@	233	0	-	283	0	@	333	0	+	383	0	@	433
0		34	1	+	84	0	@	134	0	+	184	24	@	234	0	@	284	0	@	334	0	+	384	0	@	434
0		35	0	+	85	0	@	135	0	+	185	16	@	235	0	@	285	0	@	335	0	+	385	0	@	435
0		36	0	+	86	0	@	136	0	+	186	18	@	236	0	@	286	0	@	336	1	@	386	0	@	436
0		37	0	+	87	0	@	137	0	+	187	14	@	237	0	@	287	0	@	337	2	@	387	0	@	437
0		38	0	+	88	0	@	138	0	+	188	14	@	238	0	@	288	0	@	338	2	@	388	0	@	438
0		39	0	+	89	0	@	139	0	+	189	16	@	239	0	@	289	0	@	339	3	@	389	0	@	439
0		40	0	+	90	0	@	140	0	+	190	16	@	240	0	@	290	0	@	340	2	@	390	0	@	440
0		41	0	+	91	0	@	141	0	+	191	17	@	241	0	@	291	0	@	341	3	@	391	0	@	441
0		42	0	+	92	0	@	142	0	+	192	16	@	242	0	@	292	0	@	342	3	@	392	1	@	442
0		43	0	+	93	0	@	143	1	+	193	11	@	243	0	@	293	0	@	343	1	@	393	1	@	443
0		44	0	+	94	0	@	144	0	+	194	8	@	244	0	@	294	0	@	344	6	@	394	0	@	444
0		45	0	+	95	0	+	145	0	+	195	12	@	245	0	@	295	0	@	345	6	@	395	0	@	445
0		46	0	+	96	0	+	146	0	+	196	8	@	246	0	@	296	0	@	346	8	@	396	1	@	446
0		47	0	+	97	0	+	147	1	+	197	6	@	247	0	@	297	0	@	347	3	@	397	1	@	447
0		48	0	+	98	0	+	148	0	@	198	7	@	248	0	@	298	0	@	348	3	@	398	2	@	448
0		49	0	+	99	0	+	149	0	@	199	14	-	249	1	@	299	0	@	349	3	@	399	1	@	449
0		50	0	@	100	0	+	150	0	-	200	7	@	250	0	@	300	0	@	350	0	@	400	0	@	450

Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn
		451	0		501						
		452	0		502						
		453	0		503						
		454	0		504						
		455	0		505						
		456	0		506						
		457	0		507						
		458	0		508						
		459	0		509						
		460	0		510						
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		500									

VMS Peak Search Report V1.9 Generated 23-JUN-2006 23:50:14

Configuration : $DISK1:[ALP171.SAMPLE]H61A31AA_230661529H.CNF;1
Analyses by : ALPHA V1.8
Sample title : TH BRC
Sample date : 22-MAY-2006 12:00:00 Acquisition date : 23-JUN-2006 15:29:06
Sample ID : H61A31AA Sample quantity : 0.00000E+00 SAMPLE
Sample type : disk Sample geometry :
Detector name : ALP171 1 Detector geometry:
Elapsed live time: 0 08:19:28.00 Elapsed real time: 0 08:19:28.00 0.0%
Start energy : 3545.58 keV End energy : 6541.22 keV
Sensitivity : 3.00 Sum Sensitivity : 1.00

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4891.50	545	0	106.18	231.40	210	44	1.82E-02	4.3	
2	0	5059.83	109	0	47.19	260.00	249	19	3.64E-03	9.6	
3	0	5855.02	45	0	29.49	395.20	386	16	1.50E-03	14.9	

VMS Nuclide Identification Report V3.0 Generated 23-JUN-2006 23:50:17

```
Configuration     : $DISK1:[ALP171.SAMPLE]H61A31AA_230661529H.CNF;1
Analyses by       : ALPHA V1.8,PEAKEFF V2.2,NID V3.3
Sample title      : TH BRC
Sample date       : 22-MAY-2006 12:00:00 Acquisition date : 23-JUN-2006 15:29:06
Sample ID         : H61A31AA             Sample quantity  : 0.00000E+00 SAMPLE
Sample type       : disk                 Sample geometry  :
Detector name     : ALP171 1             Detector geometry:
Elapsed live time: 0 08:19:28.00         Elapsed real time: 0 08:19:28.00   0.0%
Energy tolerance :    80.00 keV          Half life ratio  :     1.00
Errors propagated: No                    Systematic Error :     0.00 %
Efficiency type  : Spline                Efficiencies at  : Peak Energy
Abundance limit  :    70.00
```

Summary of Nuclide Activity

Total number of lines in spectrum	3	
Number of unidentified lines	0	
Number of lines tentatively identified by NID	3	100.00%

Nuclide Type : NP

Nuclide	Hlife	Decay	Uncorrected PCI/SAMPLE	Decay Corr PCI/SAMPLE	Decay Corr 0-Sigma Error	0-Sigma %Error	Flags
PO-208	2.90Y	1.02	0.000E+00	0.000E+00	0.000E+00	0.00	
PO-209	102.00Y	1.00	0.000E+00	0.000E+00	0.000E+00	0.00	
			---	---			
	Total Activity :		0.000E+00	0.000E+00			

Nuclide Type : AP

Nuclide	Hlife	Decay	Uncorrected PCI/SAMPLE	Decay Corr PCI/SAMPLE	Decay Corr 0-Sigma Error	0-Sigma %Error	Flags
TH-229	7340.00Y	1.00	0.000E+00	0.000E+00	0.000E+00	0.00	
PU-242	3.73E+05Y	1.00	0.000E+00	0.000E+00	0.000E+00	0.00	
CM-244	18.10Y	1.00	0.000E+00	0.000E+00	0.000E+00	0.00	
CM-247	1.56E+07Y	1.00	0.000E+00	0.000E+00	0.000E+00	0.00	
CM-248	3.39E+05Y	1.00	0.000E+00	0.000E+00	0.000E+00	0.00	
			---	---			
	Total Activity :		0.000E+00	0.000E+00			

Grand Total Activity : 0.000E+00 0.000E+00

Flags: "K" = Keyline not found "M" = Manually accepted
"E" = Manually edited "A" = Nuclide specific abn. limit

ITRD PEAK TEST REPORT (Version 16-May-94)

Configuration: $DISK1:[ALP171.SAMPLE]H61A31AA_230661529H.CNF;1

Peak Energy	Left Chan	Rght Chan	Peak Area	Total Counts	Diff/ StDev	Overlap Counts	Multiplet Diff/StDev
4891.50	210	254	545	553	-0.34		
5059.82	249	268	109	144	-3.35	44	0.04
5855.02	386	402	45	46	-0.15		

End of Report

STL RICHLAND

SEVERN TRENT **STL**

THORIUM ISOTOPIC COUNTING REQUEST 2349

C.R. Technician: OD
Date Counted: 6/23/06
C.R. Analyst: CP
Date Analyzed: 6/24/06

Counting Time
Sample: 50 Minutes
Background: See Alpha Analysis Report BRC 5/22

SOP's
Operating: RICHRD008
Review: RICHRD0016 6/6/3/06

WorkOrder #	Th-229 (4845 KeV) Tracer from Th-234 Beta Count (7)				TOTAL COUNTS			Det #	Comment
	ID	Activity	ROI Cts	BKG	Th-228 (5423 KeV) (6)	Th-230 (4688 KeV) (8)	Th-232 (4010 KeV) (9)		
H61A51AA		10		0	See Alpha Analysis Report for ROI Information			119	
H61A71AA		10		0	See Alpha Analysis Report for ROI Information			120	
H67QL1AA		10		0	See Alpha Analysis Report for ROI Information			114	
H67QL1AC		10		0	See Alpha Analysis Report for ROI Information			116	
		10		0	See Alpha Analysis Report for ROI Information				
		10		0	See Alpha Analysis Report for ROI Information				
		10		0	See Alpha Analysis Report for ROI Information				
		10		0	See Alpha Analysis Report for ROI Information				
		10		0	See Alpha Analysis Report for ROI Information				

Comments:

Approved by: [illegible] Date: 6/24/06

Form No: RC-012, 10/02, Rev 9

Alpha Analysis Report
(Version: 7-Feb-98)

Sample Identity: H61A51AA

Detector: ALP119 1
Report Date: 24-Jun-06 06:29 AM
Acquire Date: 23-JUN-2006 15:29:12.99
Tracer Nuclide: TH-229
Sample Live Time: 500 minutes
Bkgrnd Live Time: 1000 minutes

Nuclide Name	Smpl Count	Bkg Count	Count Rate C/Min	Centrd Energy keV	Region Width keV	Left Chnl	Rght Chnl
TH-228	5	2	0.008	5423.2	148.6	330	350
TH-229	549	1	1.097	4845.3	365.2	253	302
TH-230	6	0	0.012	4687.7	149.3	231	251
TH-232	2	0	0.004	4013.0	150.1	141	161

End of Alpha Region Report
(Produced by ANAL Report)

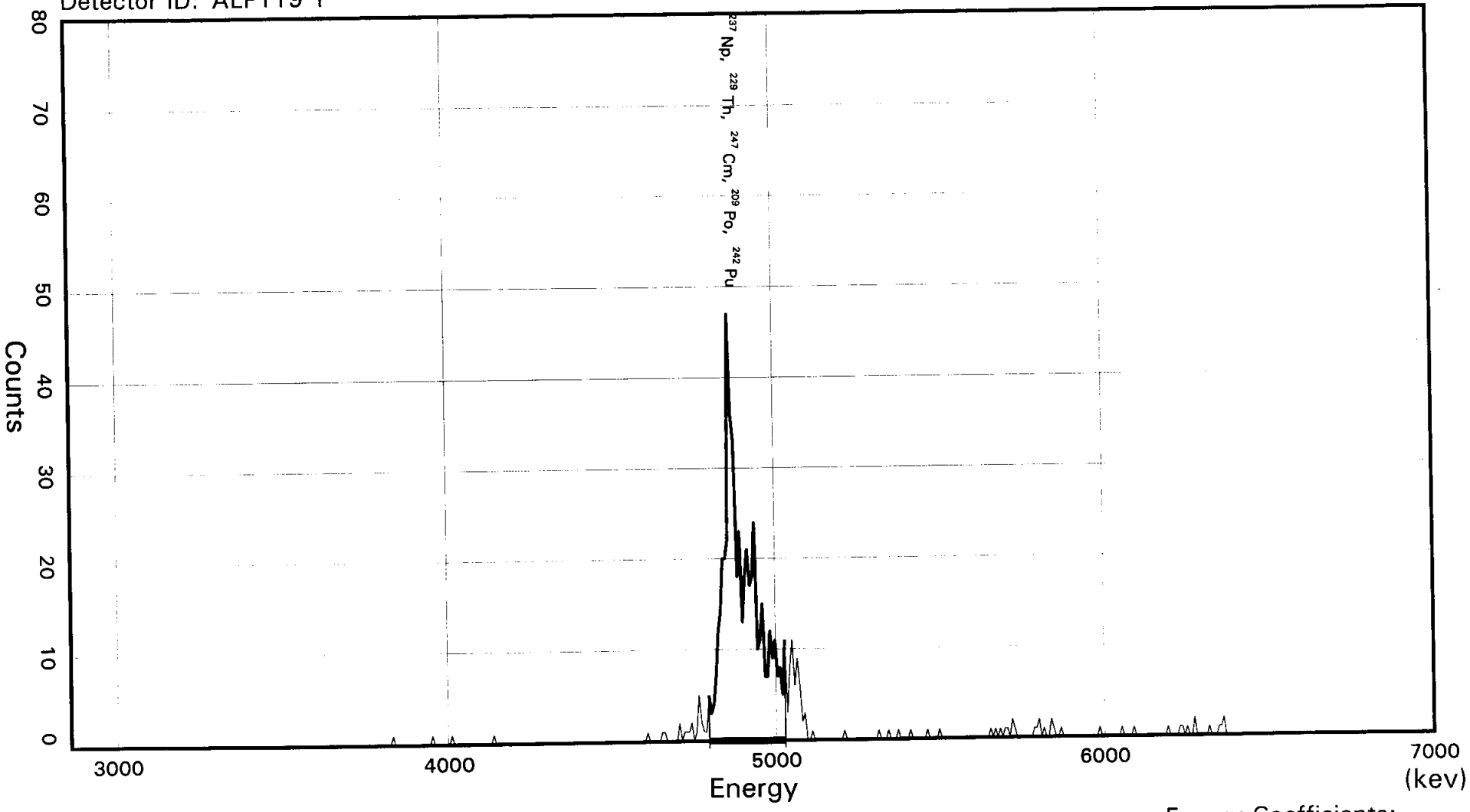
STL Richland WA.

TH BRC

Sample ID: H61A51AA

Detector ID: ALP119 1

Batch ID: 6163128



Acquisition Start: 23-JUN-2006 15:29:12.99

Preset Live Time: 0 08:20:00.00

Elapsed Live Time: 0 08:20:01.00

Energy Coefficients:

Offset: 2.83644E+03

Slope: 7.56232E+00

Quadrature: -1.97420E-04

SAMPLE IDENTITY: H61A51AA

TITLE : TH BRC

DETECTOR : ALP119 1
CONFIGURATION NAME : RDND06$DKA100:[ALP119.SAMPLE]H61A51AA_230661
529.CNF;1
ACQUIRE DATE of BACKGROUND: 22-JUN-2006 10:15:44

REPORT DATE : 23-Jun-06 SAMPLE DATE: 22-MAY-2006 12:00:00
ACQUIRE DATE: 23-JUN-2006 15:29:12 CALIB DATE : 22-JUN-2006 09:30:26

PRESET LIVE TIME: 0 08:20:00 ELAPSED LIVE TIME: 0 08:20:01

OFFSET : 2836.44 keV CONSTANT FWHM : 9.00000 Channels
SLOPE : 7.56232 keV/C SENSITIVITY : 3.00000 Std Dev's
QUAD COEFF : -.197420E-03 keV/C^2 SUM SENSITIVITY: 1.00000 %

Alpha Regions Report
(Version: 8-Oct-91)

Sample Identity: H61A51AA

Detector: ALP119 1
Report Date: 23-Jun-06 11:49 PM
Acquire Date: 23-JUN-2006 15:29:12.99
Tracer Nuclide: TH-229
High Counts Limit: 36
Sample Live Time: 500 minutes
Bkgrnd Live Time: 1000 minutes

Flags Key

P: Peak Identified
I: Peak Intersect
S: Single Non-peak Intersect
M: Multiple Non-peak Intersect
H: High Non-peak Sample Count
A: Altered via ALP-RGN-EDIT

Nuclide Name	Smpl Count	Bkg Count	Intrsct Count	Count Rate C/Min	Centrd Energy keV	Region Width keV	Left Chnl	Rght Chnl	Left Wdth Mult	Rght Wdth Mult	Flags
PO-208	-9999	-9999	0	-9.999	5151.9	230.6	297	328	0.00	0.00	M
PO-209	483	0	0	0.966	4920.2	231.0	261	292	0.00	0.00	P
PO-210	-9999	-9999	0	-9.999	5341.4	230.3	323	354	0.00	0.00	M
AC-227	2	5	2	0.000	6075.0	229.1	422	453	0.00	0.00	S
TH-227	2	5	2	0.000	6075.0	229.1	422	453	0.00	0.00	S
TH-228	-9999	-9999	0	-9.999	5460.2	230.1	339	370	0.00	0.00	M
TH-229	483	0	0	0.966	4882.3	231.0	261	292	0.00	0.00	P
TH-230	-9999	-9999	0	-9.999	4724.7	231.3	240	271	0.00	0.00	S I
TH-232	2	0	0	0.004	4050.0	232.4	150	181	0.00	0.00	S
U-232	-9999	-9999	0	-9.999	5357.2	230.3	325	356	0.00	0.00	M
U-234	-9999	-9999	0	-9.999	4811.6	231.2	252	283	0.00	0.00	S I
U-235	0	0	0	0.000	4434.8	231.8	201	232	0.00	0.00	S
PU-236	8	10	9	0.006	5804.7	229.5	385	416	0.00	0.00	S
NP-237	483	0	0	0.966	4825.0	231.0	261	292	0.00	0.00	P
PU-238	-9999	-9999	0	-9.999	5536.0	230.0	349	380	0.00	0.00	M
U-238	-9999	-9999	0	-9.999	4235.0	232.1	174	205	0.00	0.00	M
PU-239	-9999	-9999	0	-9.999	5193.6	230.5	303	334	0.00	0.00	M
AM-241	-9999	-9999	0	-9.999	5522.6	230.0	347	378	0.00	0.00	M
AM-242M	-9999	-9999	0	-9.999	5243.8	230.4	310	341	0.00	0.00	M
CM-242	-9999	-9999	0	-9.999	6149.7	229.0	432	463	0.00	0.00	M
PU-242	483	0	0	0.966	4937.5	231.0	261	292	0.00	0.00	P
AM-243	-9999	-9999	0	-9.999	5312.3	230.3	319	350	0.00	0.00	M
CM-244	6	8	9	0.004	5841.8	229.5	390	421	0.00	0.00	S
CM-246	-9999	-9999	0	-9.999	5423.5	230.2	334	365	0.00	0.00	M
CM-247	483	0	0	0.966	4907.4	231.0	261	292	0.00	0.00	P
CM-248	-9999	-9999	0	-9.999	5115.6	230.7	292	323	0.00	0.00	M

End of Alpha Region Report
(Produced by Alp_rgn_cnts)

Alpha Spectrum Listing
(Version: 29-Jun-92)

Sample Identity: H61A51AA
Detector: ALP119 1
Report Date: 23-Jun-06 11:49 PM
Acquire Date: 23-JUN-2006 15:29:12.99

Flags Key

Intersect Region: @
Non-Intersect Region: +, -

Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn
		1	0		51	0		101	0	+	151	0	@	201	1	+	251	0	@	301	0	@	351	2	@	401
		2	0		52	0		102	0	+	152	0	@	202	1	@	252	0	@	302	0	@	352	1	@	402
0		3	0		53	0		103	0	+	153	0	@	203	1	@	253	1	@	303	0	@	353	0	@	403
0		4	0		54	0		104	0	+	154	0	@	204	2	@	254	0	@	304	0	@	354	0	@	404
0		5	0		55	0		105	0	+	155	0	@	205	0	@	255	0	@	305	1	@	355	1	@	405
0		6	0		56	0		106	1	+	156	0	+	206	1	@	256	0	@	306	0	@	356	0	@	406
0		7	0		57	0		107	0	+	157	0	+	207	5	@	257	0	@	307	0	@	357	0	@	407
0		8	0		58	0		108	0	+	158	0	+	208	2	@	258	0	@	308	0	@	358	0	@	408
0		9	0		59	0		109	0	+	159	0	+	209	1	@	259	0	@	309	0	@	359	0	@	409
0		10	0		60	0		110	0	+	160	0	+	210	1	@	260	0	@	310	0	@	360	0	@	410
0		11	0		61	0		111	0	+	161	0	+	211	5	-	261	0	@	311	0	@	361	0	@	411
0		12	0		62	0		112	0	+	162	0	+	212	3	@	262	0	@	312	0	@	362	0	@	412
0		13	0		63	0		113	0	+	163	0	+	213	4	@	263	0	@	313	0	@	363	0	@	413
0		14	0		64	0		114	0	+	164	0	+	214	7	@	264	0	@	314	0	@	364	0	@	414
0		15	0		65	0		115	0	+	165	0	+	215	12	@	265	0	@	315	0	@	365	0	@	415
0		16	0		66	0		116	0	+	166	0	+	216	14	@	266	1	@	316	0	@	366	0	@	416
0		17	0		67	0		117	0	+	167	0	+	217	20	@	267	0	@	317	0	@	367	0	-	417
0		18	0		68	0		118	0	+	168	0	+	218	20	@	268	0	@	318	0	@	368	0	-	418
0		19	0		69	0		119	0	+	169	0	+	219	22	@	269	0	@	319	0	@	369	0	-	419
0		20	0		70	0		120	0	+	170	0	+	220	47	@	270	0	@	320	0	@	370	0	-	420
0		21	0		71	0		121	0	+	171	0	+	221	36	@	271	0	@	321	0	@	371	1	-	421
0		22	0		72	0		122	0	+	172	0	+	222	33	@	272	0	@	322	0	@	372	0	@	422
0		23	0		73	0		123	1	+	173	0	+	223	18	@	273	0	@	323	0	@	373	0	@	423
0		24	0		74	0		124	0	@	174	0	+	224	23	@	274	0	@	324	0	@	374	0	@	424
0		25	0		75	0		125	0	@	175	0	+	225	13	@	275	0	@	325	0	@	375	0	@	425
0		26	0		76	0		126	0	@	176	0	+	226	18	@	276	0	@	326	1	@	376	0	@	426
0		27	0		77	0		127	0	@	177	0	+	227	21	@	277	0	@	327	0	@	377	0	@	427
0		28	0		78	0		128	0	@	178	0	+	228	17	@	278	0	@	328	1	@	378	0	@	428
0		29	0		79	0		129	0	@	179	0	+	229	18	@	279	0	@	329	0	+	379	0	@	429
0		30	0		80	0		130	0	@	180	0	+	230	24	@	280	1	@	330	1	+	380	1	@	430
0		31	0		81	0		131	0	@	181	0	+	231	10	@	281	0	@	331	0		381	0	@	431
0		32	0		82	1		132	0	-	182	0	+	232	11	@	282	0	@	332	1		382	0	-	432
0		33	0		83	0		133	0	-	183	0		233	15	@	283	0	@	333	1		383	0	@	433
0		34	0		84	0		134	0	-	184	0		234	7	@	284	1	-	334	0		384	0	@	434
0		35	0		85	0		135	0	-	185	0		235	7	@	285	0	@	335	2	+	385	1	@	435
0		36	0		86	0		136	0	-	186	1		236	12	@	286	0	@	336	1	+	386	0	@	436
0		37	0		87	0		137	0	-	187	0		237	9	@	287	0	@	337	0	+	387	0	@	437
0		38	0		88	0		138	0	-	188	0		238	11	@	288	1	@	338	0	+	388	0	@	438
0		39	0		89	0		139	0	-	189	0		239	7	@	289	0	@	339	0	+	389	0	@	439
0		40	0		90	0		140	0	-	190	0	+	240	8	@	290	0	@	340	0	@	390	0	@	440
0		41	0		91	0		141	0	-	191	0	+	241	5	@	291	0	@	341	0	@	391	0	@	441
0		42	0		92	0		142	0	-	192	1	+	242	11	+	292	0	@	342	0	@	392	0	@	442
0		43	0		93	0		143	0	-	193	1	+	243	3	+	293	1	@	343	0	@	393	0	@	443
0		44	0		94	0		144	0	-	194	0	+	244	8	+	294	0	@	344	1	@	394	0	@	444
0		45	0		95	0		145	0	-	195	0	+	245	11	+	295	0	@	345	1	@	395	0	@	445
0		46	0		96	0		146	0	-	196	0	+	246	6	+	296	0	@	346	2	@	396	0	@	446
0		47	0		97	0		147	0	-	197	0	+	247	9	@	297	0	@	347	0	@	397	0	@	447
0		48	0		98	1		148	0	-	198	0	+	248	6	@	298	0	@	348	1	@	398	0	@	448
0		49	0		99	0		149	0	-	199	2	+	249	2	@	299	0	@	349	0	@	399	1	@	449
0		50	0		100	0	+	150	0	-	200	0	+	250	3	@	300	1	@	350	0	@	400	0	@	450

Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn
0		451	0		501									
0		452	0		502									
0		453	0		503									
1	-	454	0		504									
1	-	455	0		505									
0	-	456	0		506									
1	-	457	0		507									
0	-	458	0		508									
0	-	459	0		509									
2	-	460	0		510									
0	-	461	0		511									
0	-	462	0		512									
0	-	463												
0		464												
0		465												
1		466												
0		467												
0		468												
0		469												
1		470												
1		471												
2		472												
0		473												
0		474												
0		475												
0		476												
0		477												
0		478												
0		479												
0		480												
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0		491												
0		492												
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0		494												
0		495												
0		496												
0		497												
0		498												
0		499												
0		500												

VMS Peak Search Report V1.9 Generated 23-JUN-2006 23:49:16

```
Configuration     : RDND06$DKA100:[ALP119.SAMPLE]H61A51AA_230661529.CNF;1
Analyses by       : ALPHA V1.8
Sample title      : TH BRC
Sample date       : 22-MAY-2006 12:00:00 Acquisition date : 23-JUN-2006 15:29:12
Sample ID         : H61A51AA             Sample quantity  : 0.00000E+00 SAMPLE
Sample type       : disk                 Sample geometry  :
Detector name     : ALP119               Detector geometry:
Elapsed live time: 0 08:20:01.00         Elapsed real time: 0 08:20:01.00   0.0%
Start energy      :  2859.13 kev         End energy       :  6656.60 kev
Sensitivity       :     3.00             Sum Sensitivity  :     1.00
```

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4882.30	483	0	98.31	272.47	261	31	1.61E-02	4.6	

VMS Nuclide Identification Report V3.1 Generated 23-JUN-2006 23:49:18

```
Configuration     : RDND06$DKA100:[ALP119.SAMPLE]H61A51AA_230661529.CNF;1
Analyses by       : ALPHA V1.8,PEAKEFF V2.2,NID V3.4
Sample title      : TH BRC
Sample date       : 22-MAY-2006 12:00:00 Acquisition date : 23-JUN-2006 15:29:12
Sample ID         : H61A51AA             Sample quantity  : 0.00000E+00 SAMPLE
Sample type       : disk                 Sample geometry  :
Detector name     : ALP119               Detector geometry:
Elapsed live time: 0 08:20:01.00         Elapsed real time: 0 08:20:01.00   0.0%
Energy tolerance :   100.00 kev          Half life ratio  :     1.00
Errors propagated: No                    Systematic Error :     0.00 %
Efficiency type  : Spline                Efficiencies at  : Peak Energy
Abundance limit  :     0.00
```

Summary of Nuclide Activity

```
 Total number of lines in spectrum                1
 Number of unidentified lines                     0
 Number of lines tentatively identified by NID    1      100.00%
```

Nuclide Type : NP

Nuclide	Hlife	Decay	Uncorrected PCI/SAMPLE	Decay Corr PCI/SAMPLE	Decay Corr 0-Sigma Error	0-Sigma %Error	Flags
PO-209	102.00Y	1.00	0.000E+00	0.000E+00	0.000E+00	0.00	
			---	---			
Total Activity :			0.000E+00	0.000E+00			

Nuclide Type : AP

Nuclide	Hlife	Decay	Uncorrected PCI/SAMPLE	Decay Corr PCI/SAMPLE	Decay Corr 0-Sigma Error	0-Sigma %Error	Flags
TH-229	7340.00Y	1.00	0.000E+00	0.000E+00	0.000E+00	0.00	
NP-237	2.14E+06Y	1.00	0.000E+00	0.000E+00	0.000E+00	0.00	
PU-242	3.73E+05Y	1.00	0.000E+00	0.000E+00	0.000E+00	0.00	
CM-247	1.56E+07Y	1.00	0.000E+00	0.000E+00	0.000E+00	0.00	
			---	---			
Total Activity :			0.000E+00	0.000E+00			

Grand Total Activity : 0.000E+00 0.000E+00

Flags: "K" = Keyline not found "M" = Manually accepted
"E" = Manually edited "A" = Nuclide specific abn. limit

ITRD PEAK TEST REPORT (Version 16-May-94)

Configuration: RDND06$DKA100:[ALP119.SAMPLE]H61A51AA_230661529.CNF;1

Peak Energy	Left Chan	Rght Chan	Peak Area	Total Counts	Diff/ StDev	Overlap Counts	Multiplet Diff/StDev
4882.29	261	292	483	488	-0.23		

End of Report

Alpha Analysis Report
(Version: 7-Feb-98)

Sample Identity: H61A71AA

Detector: ALP120 1
Report Date: 24-Jun-06 06:29 AM
Acquire Date: 23-JUN-2006 15:29:21.35
Tracer Nuclide: TH-229
Sample Live Time: 500 minutes
Bkgrnd Live Time: 1000 minutes

Nuclide Name	Smpl Count	Bkg Count	Count Rate C/Min	Centrd Energy keV	Region Width keV	Left Chnl	Rght Chnl
TH-228	3	4	0.002	5423.2	147.7	332	352
TH-229	399	1	0.797	4845.3	347.3	259	306
TH-230	3	1	0.005	4687.7	147.8	232	252
TH-232	0	0	0.000	4013.0	147.8	141	161

End of Alpha Region Report
(Produced by ANAL Report)

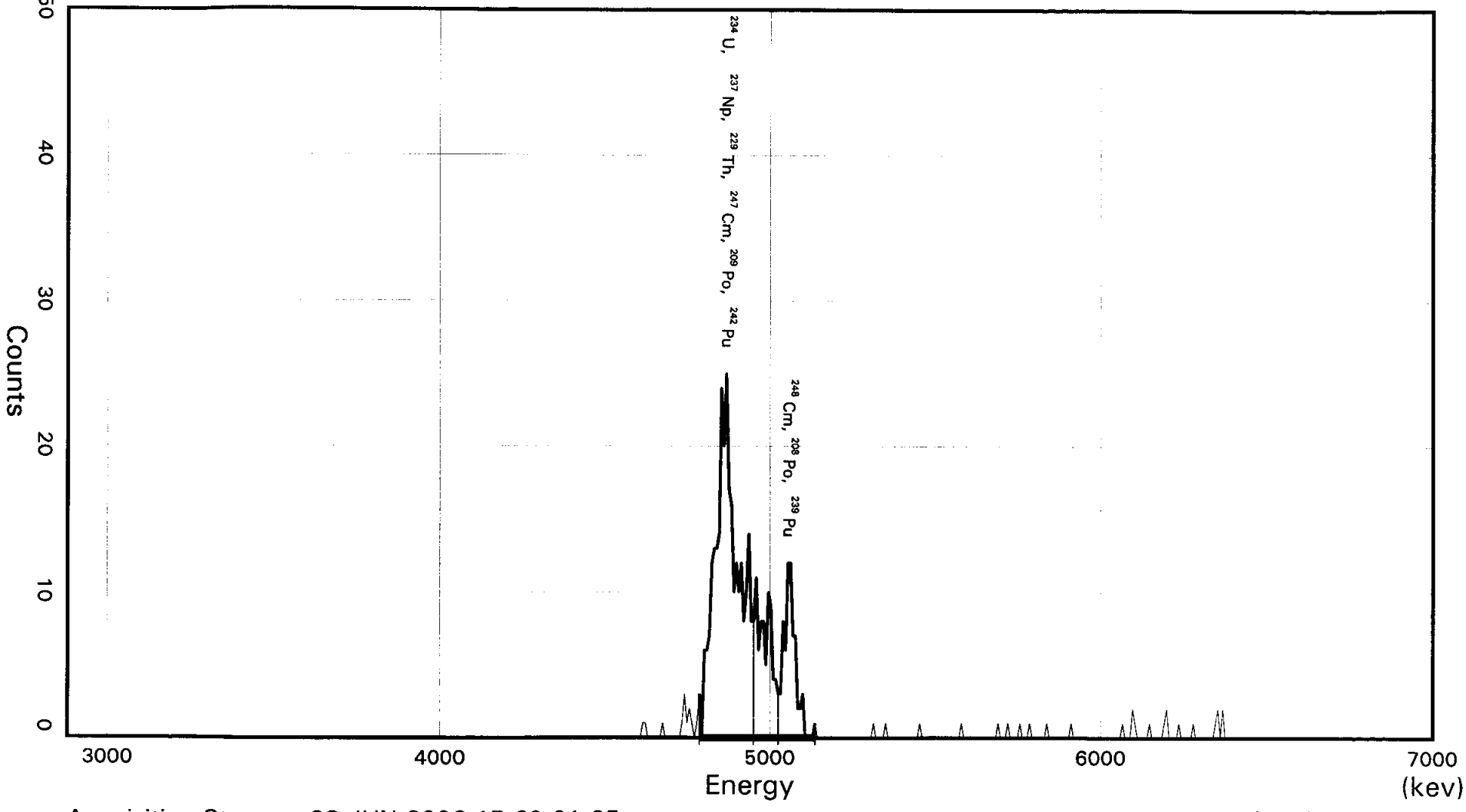
STL Richland WA.

TH BRC

Sample ID: H61A71AA

Detector ID: ALP120 1

Batch ID: 6163128



Acquisition Start: 23-JUN-2006 15:29:21.35

Preset Live Time: 0 08:20:00.00

Elapsed Live Time: 0 08:20:06.00

Energy Coefficients:

Offset: 2.85851E+03

Slope: 7.39562E+00

Quadrature: -1.24203E-05

SAMPLE IDENTIITY: H61A71AA

TITLE : TH BRC

DETECTOR : ALP120 1
CONFIGURATION NAME : RDND06$DKA100:[ALP120.SAMPLE]H61A71AA_230661
529.CNF;1
ACQUIRE DATE of BACKGROUND: 22-JUN-2006 10:15:46

REPORT DATE : 23-Jun-06 SAMPLE DATE: 22-MAY-2006 12:00:00
ACQUIRE DATE: 23-JUN-2006 15:29:21 CALIB DATE : 22-JUN-2006 09:30:33

PRESET LIVE TIME: 0 08:20:00 ELAPSED LIVE TIME: 0 08:20:06

OFFSET : 2858.51 keV CONSTANT FWHM : 9.66667 Channels
SLOPE : 7.39562 keV/C SENSITIVITY : 3.00000 Std Dev's
QUAD COEFF : -.124203E-04 keV/C^2 SUM SENSITIVITY: 1.00000 %

Alpha Regions Report
(Version: 8-Oct-91)

Sample Identity: H61A71AA

Detector: ALP120 1
Report Date: 23-Jun-06 11:49 PM
Acquire Date: 23-JUN-2006 15:29:21.35
Tracer Nuclide: TH-229
High Counts Limit: 36
Sample Live Time: 500 minutes
Bkgrnd Live Time: 1000 minutes

Flags Key

P: Peak Identified
I: Peak Intersect
S: Single Non-peak Intersect
M: Multiple Non-peak Intersect
H: High Non-peak Sample Count
A: Altered via ALP-RGN-EDIT

Nuclide Name	Smpl Count	Bkg Count	Intrsct Count	Count Rate C/Min	Centrd Energy keV	Region Width keV	Left Chnl	Rght Chnl	Left Wdth Mult	Rght Wdth Mult	Flags
PO-208	73	1	0	0.145	5142.0	184.7	283	308	0.00	0.00	P
PO-209	325	1	0	0.649	4910.3	236.4	261	293	0.00	0.00	P
PO-210	-9999	-9999	0	-9.996	5331.4	236.4	323	355	0.00	0.00	M
AC-227	-9999	-9999	0	-9.996	6065.1	236.3	422	454	0.00	0.00	M
TH-227	-9999	-9999	0	-9.996	6065.1	236.3	422	454	0.00	0.00	M
TH-228	-9999	-9999	0	-9.996	5450.3	236.4	339	371	0.00	0.00	M
TH-229	325	1	0	0.649	4872.4	236.4	261	293	0.00	0.00	P
TH-230	-9999	-9999	0	-9.996	4714.8	236.5	240	272	0.00	0.00	I
TH-232	0	0	0	0.000	4040.1	236.5	148	180	0.00	0.00	S
U-232	-9999	-9999	0	-9.996	5347.2	236.4	325	357	0.00	0.00	M
U-234	325	1	0	0.649	4801.7	236.4	261	293	0.00	0.00	P
U-235	0	1	0	-0.001	4424.9	236.5	200	232	0.00	0.00	S
PU-236	3	16	4	-0.010	5794.7	236.3	386	418	0.00	0.00	S
NP-237	325	1	0	0.649	4815.1	236.4	261	293	0.00	0.00	P
PU-238	-9999	-9999	0	-9.996	5526.1	236.4	349	381	0.00	0.00	M
U-238	-9999	-9999	0	-9.996	4225.1	236.5	173	205	0.00	0.00	M
PU-239	73	1	0	0.145	5183.7	184.7	283	308	0.00	0.00	P
AM-241	-9999	-9999	0	-9.996	5512.7	236.4	348	380	0.00	0.00	M
AM-242M	-9999	-9999	0	-9.996	5233.9	236.4	310	342	0.00	0.00	M
CM-242	-9999	-9999	0	-9.996	6139.8	236.3	433	465	0.00	0.00	M
PU-242	325	1	0	0.649	4927.6	236.4	261	293	0.00	0.00	P
AM-243	-9999	-9999	0	-9.996	5302.4	236.4	319	351	0.00	0.00	M
CM-244	-9999	-9999	0	-9.996	5831.9	236.3	391	423	0.00	0.00	M
CM-246	-9999	-9999	0	-9.996	5413.6	236.4	334	366	0.00	0.00	M
CM-247	325	1	0	0.649	4897.5	236.4	261	293	0.00	0.00	P
CM-248	73	1	0	0.145	5105.7	184.7	283	308	0.00	0.00	P

End of Alpha Region Report
(Produced by Alp_rgn_cnts)

Alpha Spectrum Listing
(Version: 29-Jun-92)

Sample Identity: H61A71AA
Detector: ALP120 1
Report Date: 23-Jun-06 11:49 PM
Acquire Date: 23-JUN-2006 15:29:21.35

Flags Key

Intersect Region: @
Non-Intersect Region: +, -

Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn
		1	0		51	0		101	0	+	151	0	@	201	0	+	251	2	@	301	1	@	351	0	@	401	1	@	451
		2	0		52	0		102	0	+	152	0	@	202	0	+	252	2	@	302	0	@	352	0	@	402	2	@	452
0		3	0		53	0		103	0	+	153	0	@	203	0	+	253	3	@	303	0	@	353	1	@	403	0	@	453
0		4	0		54	0		104	0	+	154	0	@	204	1	+	254	0	@	304	0	@	354	0	@	404	0	@	454
0		5	0		55	0		105	0	+	155	0	@	205	3	+	255	0	@	305	0	@	355	0	@	405	0	-	455
0		6	0		56	0		106	0	+	156	0	+	206	1	+	256	0	@	306	0	@	356	0	@	406	0	-	456
0		7	0		57	0		107	0	+	157	0	+	207	2	+	257	0	@	307	0	@	357	0	@	407	1	-	457
0		8	0		58	0		108	0	+	158	0	+	208	1	+	258	1		308	0	@	358	0	@	408	0	-	458
0		9	0		59	0		109	0	+	159	0	+	209	0	+	259	0		309	0	@	359	0	@	409	0	-	459
0		10	0		60	0		110	0	+	160	0	+	210	1	+	260	0	+	310	0	@	360	0	@	410	0	-	460
0		11	0		61	0		111	0	+	161	0	+	211	3	@	261	0	+	311	0	@	361	0	@	411	0	-	461
0		12	0		62	0		112	0	+	162	0	+	212	0	@	262	0	+	312	0	@	362	0	@	412	0	-	462
0		13	0		63	0		113	0	+	163	0	+	213	6	@	263	0	+	313	0	@	363	1	@	413	1	-	463
0		14	0		64	0		114	0	+	164	0	+	214	6	@	264	0	+	314	0	@	364	0	@	414	0	-	464
0		15	0		65	0		115	0	+	165	0	+	215	7	@	265	0	+	315	0	@	365	0	@	415	0	-	465
0		16	0		66	0		116	0	+	166	0	+	216	12	@	266	0	+	316	0	@	366	0	@	416	0		466
0		17	0		67	0		117	0	+	167	0	+	217	13	@	267	0	+	317	0	@	367	0	@	417	0		467
0		18	0		68	0		118	0	+	168	0	+	218	13	@	268	0	+	318	1	@	368	0	@	418	0		468
0		19	0		69	0		119	0	+	169	0	+	219	14	@	269	0	@	319	0	@	369	0	-	419	0		469
0		20	0		70	0		120	0	+	170	0	+	220	24	@	270	0	@	320	0	@	370	0	-	420	0		470
0		21	0		71	0		121	0	+	171	0	+	221	20	@	271	0	@	321	0	@	371	0	-	421	0		471
0		22	0		72	0		122	0	+	172	0	+	222	25	@	272	0	@	322	0	@	372	0	@	422	1		472
0		23	0		73	0		123	0	@	173	0	+	223	17	@	273	0	@	323	0	@	373	0	@	423	2		473
0		24	0		74	0		124	0	@	174	0	+	224	16	@	274	0	@	324	0	@	374	0	@	424	0		474
0		25	0		75	0		125	0	@	175	0	+	225	10	@	275	0	@	325	0	@	375	0	@	425	2		475
0		26	0		76	0		126	0	@	176	0	+	226	12	@	276	0	@	326	0	@	376	0	@	426	0		476
0		27	0		77	0		127	0	@	177	0	+	227	10	@	277	0	@	327	0	@	377	0	@	427	0		477
0		28	0		78	0		128	0	@	178	0	+	228	12	@	278	0	@	328	0	@	378	0	@	428	0		478
0		29	0		79	0		129	0	@	179	0	+	229	8	@	279	0	@	329	0	@	379	0	@	429	0		479
0		30	0		80	0		130	0	@	180	0	+	230	10	@	280	0	@	330	0	@	380	0	@	430	0		480
0		31	0		81	0		131	0	-	181	0	+	231	14	@	281	0	@	331	0	+	381	0	@	431	0		481
0		32	0		82	0		132	0	-	182	0	+	232	8	@	282	1	@	332	0		382	0	@	432	0		482
0		33	0		83	0		133	0	-	183	0		233	8	-	283	0	@	333	1		383	0	-	433	0		483
0		34	0		84	0		134	0	-	184	0		234	11	@	284	0	-	334	0		384	1	@	434	0		484
0		35	0		85	0		135	0	-	185	0		235	6	@	285	0	@	335	0		385	0	@	435	0		485
0		36	0		86	0		136	0	-	186	0		236	8	@	286	0	@	336	0	+	386	0	@	436	0		486
0		37	0		87	0		137	0	-	187	0		237	8	@	287	1	@	337	1	+	387	0	@	437	0		487
0		38	0		88	0		138	0	-	188	1		238	5	@	288	0	@	338	0	+	388	2	@	438	0		488
0		39	0		89	0		139	0	-	189	1		239	10	@	289	0	@	339	0	+	389	1	@	439	0		489
0		40	0		90	0		140	0	-	190	0	+	240	9	@	290	0	@	340	0	+	390	0	@	440	0		490
0		41	0		91	0		141	0	-	191	0	+	241	4	@	291	0	@	341	0	@	391	0	@	441	0		491
0		42	0		92	0		142	0	-	192	0	+	242	4	@	292	0	@	342	1	@	392	0	@	442	0		492
0		43	0		93	0		143	0	-	193	0	+	243	3	@	293	0	@	343	0	@	393	0	@	443	0		493
0		44	0		94	0		144	0	-	194	0	+	244	3	@	294	0	@	344	0	@	394	0	@	444	0		494
0		45	0		95	0		145	0	-	195	0	+	245	8	@	295	0	@	345	0	@	395	1	@	445	0		495
0		46	0		96	0		146	0	-	196	1	+	246	6	@	296	0	@	346	1	@	396	0	@	446	0		496
0		47	0		97	0		147	0	-	197	0	+	247	12	@	297	0	@	347	0	@	397	0	@	447	0		497
0		48	0		98	0	+	148	0	-	198	0	+	248	12	@	298	0	@	348	0	@	398	0	@	448	0		498
0		49	0		99	0	+	149	0	-	199	0	+	249	7	@	299	0	@	349	0	@	399	0	@	449	0		499
0		50	0		100	0	+	150	0	@	200	0	+	250	7	@	300	0	@	350	0	@	400	0	@	450	0		500

VMS Peak Search Report V1.9 Generated 23-JUN-2006 23:49:28

```
Configuration     : RDND06$DKA100:[ALP120.SAMPLE]H61A71AA_230661529.CNF;1
Analyses by       : ALPHA V1.8
Sample title      : TH BRC
Sample date       : 22-MAY-2006 12:00:00 Acquisition date : 23-JUN-2006 15:29:21
Sample ID         : H61A71AA             Sample quantity  : 0.00000E+00 SAMPLE
Sample type       : disk                 Sample geometry  :
Detector name     : ALP120               Detector geometry:
Elapsed live time: 0 08:20:06.00         Elapsed real time: 0 08:20:06.00   0.0%
Start energy      :  2880.70 kev         End energy       :  6641.81 kev
Sensitivity       :     3.00             Sum Sensitivity  :     1.00
```

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4872.37	325	0	96.14	272.43	261	32	1.08E-02	5.5	
2	0	5057.61	73	0	44.37	297.50	283	25	2.43E-03	11.7	

VMS Nuclide Identification Report V3.1 Generated 23-JUN-2006 23:49:30

```
Configuration     : RDND06$DKA100:[ALP120.SAMPLE]H61A71AA_230661529.CNF;1
Analyses by       : ALPHA V1.8,PEAKEFF V2.2,NID V3.4
Sample title      : TH BRC
Sample date       : 22-MAY-2006 12:00:00 Acquisition date : 23-JUN-2006 15:29:21
Sample ID         : H61A71AA             Sample quantity  : 0.00000E+00 SAMPLE
Sample type       : disk                 Sample geometry  :
Detector name     : ALP120               Detector geometry:
Elapsed live time: 0 08:20:06.00         Elapsed real time: 0 08:20:06.00   0.0%
Energy tolerance :   100.00 kev          Half life ratio  :     1.00
Errors propagated: No                    Systematic Error :     0.00 %
Efficiency type  : Spline                Efficiencies at  : Peak Energy
Abundance limit  :     0.00
```

Summary of Nuclide Activity

```
 Total number of lines in spectrum                2
 Number of unidentified lines                     0
 Number of lines tentatively identified by NID    2      100.00%
```

Nuclide Type : NP

Nuclide	Hlife	Decay	Uncorrected PCI/SAMPLE	Decay Corr PCI/SAMPLE	Decay Corr 0-Sigma Error	0-Sigma %Error	Flags
PO-208	2.90Y	1.02	0.000E+00	0.000E+00	0.000E+00	0.00	
PO-209	102.00Y	1.00	0.000E+00	0.000E+00	0.000E+00	0.00	
U-234	2.45E+05Y	1.00	0.000E+00	0.000E+00	0.000E+00	0.00	
			---	---			
	Total Activity :		0.000E+00	0.000E+00			

Nuclide Type : AP

Nuclide	Hlife	Decay	Uncorrected PCI/SAMPLE	Decay Corr PCI/SAMPLE	Decay Corr 0-Sigma Error	0-Sigma %Error	Flags
TH-229	7340.00Y	1.00	0.000E+00	0.000E+00	0.000E+00	0.00	
NP-237	2.14E+06Y	1.00	0.000E+00	0.000E+00	0.000E+00	0.00	
PU-239	24110.00Y	1.00	0.000E+00	0.000E+00	0.000E+00	0.00	
PU-242	3.73E+05Y	1.00	0.000E+00	0.000E+00	0.000E+00	0.00	
CM-247	1.56E+07Y	1.00	0.000E+00	0.000E+00	0.000E+00	0.00	
CM-248	3.39E+05Y	1.00	0.000E+00	0.000E+00	0.000E+00	0.00	
			---	---			
	Total Activity :		0.000E+00	0.000E+00			

```
   Grand Total Activity :  0.000E+00    0.000E+00
```

```
Flags: "K" = Keyline not found          "M" = Manually accepted
       "E" = Manually edited            "A" = Nuclide specific abn. limit
```

ITRD PEAK TEST REPORT (Version 16-May-94)

Configuration: RDND06$DKA100:[ALP120.SAMPLE]H61A71AA_230661529.CNF;1

Peak Energy	Left Chan	Rght Chan	Peak Area	Total Counts	Diff/ StDev	Overlap Counts	Multiplet Diff/StDev
4872.36	261	293	325	336	-0.61		
5057.61	283	308	73	139	-7.72	76	-0.05

End of Report

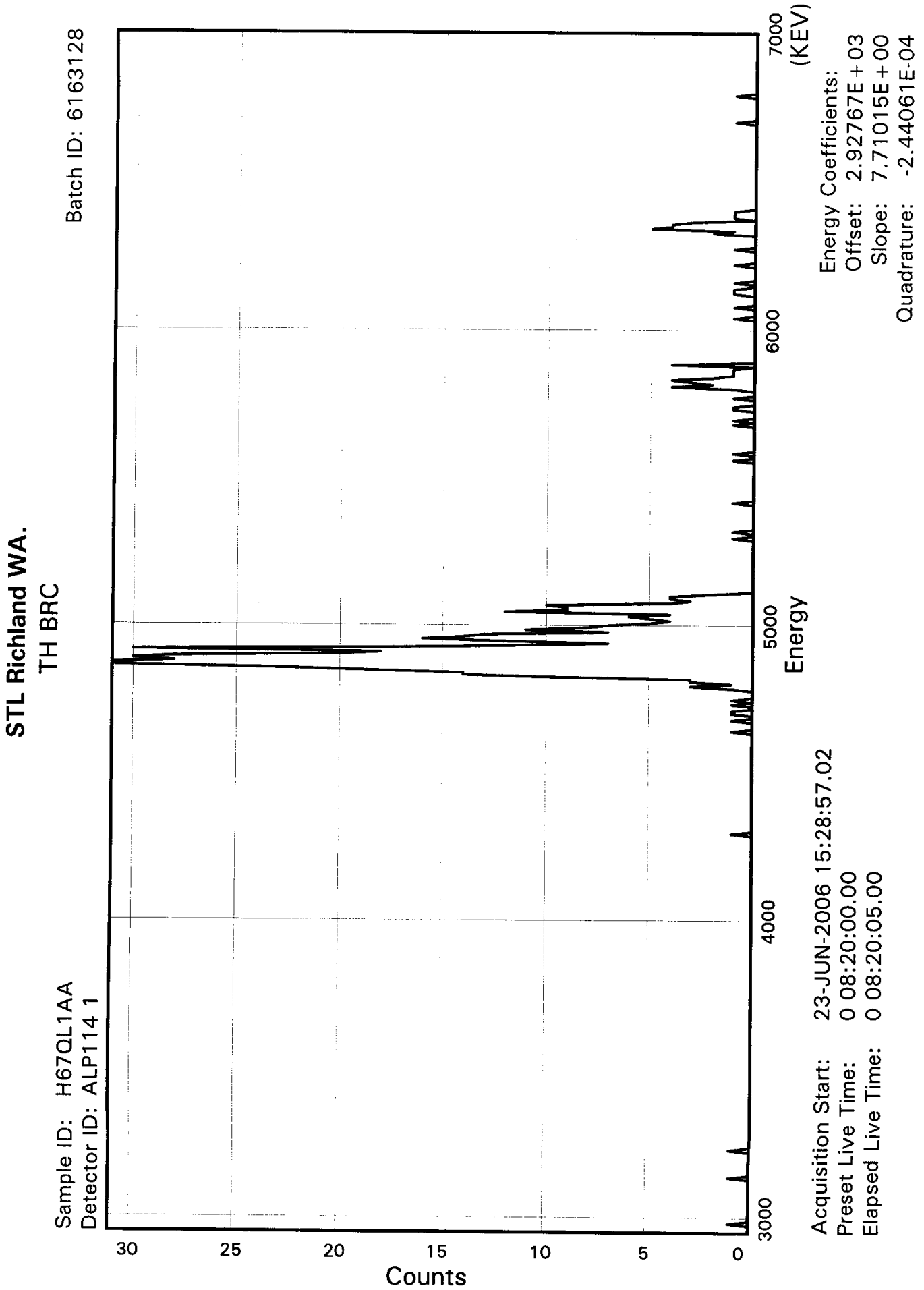
Alpha Analysis Report
(Version: 7-Feb-98)

Sample Identity: H67QL1AA

Detector: ALP114 1
Report Date: 24-Jun-06 06:29 AM
Acquire Date: 23-JUN-2006 15:28:57.02
Tracer Nuclide: TH-229
Sample Live Time: 500 minutes
Bkgrnd Live Time: 1000 minutes

Nuclide Name	Smpl Count	Bkg Count	Count Rate C/Min	Centrd Energy keV	Region Width keV	Left Chnl	Rght Chnl
TH-228	2	5	-0.001	5423.2	151.1	312	332
TH-229	514	0	1.028	4845.3	363.9	241	289
TH-230	4	2	0.006	4687.7	152.0	215	235
TH-232	0	0	0.000	4013.0	152.9	126	146

End of Alpha Region Report
(Produced by ANAL Report)


STL Richland WA.
TH BRC
Batch ID: 6163128
Sample ID: H67QL1AA
Detector ID: ALP114 1
Counts
30
25
20
15
10
5
0
3000
4000
5000
6000
7000
(KEV)
Energy
Energy Coefficients:
Offset: 2.92767E+03
Slope: 7.71015E+00
Quadrature: -2.44061E-04
Acquisition Start: 23-JUN-2006 15:28:57.02
Preset Live Time: 0 08:20:00.00
Elapsed Live Time: 0 08:20:05.00

SAMPLE IDENTIITY: H67QL1AA

TITLE : TH BRC

DETECTOR : ALP114 1
CONFIGURATION NAME : RDND06$DKA100:[ALP114.SAMPLE]H67QL1AA_230661
528.CNF;1
ACQUIRE DATE of BACKGROUND: 22-JUN-2006 10:15:05

REPORT DATE : 23-Jun-06 SAMPLE DATE: 22-MAY-2006 12:00:00
ACQUIRE DATE: 23-JUN-2006 15:28:57 CALIB DATE : 22-JUN-2006 09:29:59

PRESET LIVE TIME: 0 08:20:00 ELAPSED LIVE TIME: 0 08:20:05

OFFSET : 2927.67 keV CONSTANT FWHM : 7.40000 Channels
SLOPE : 7.71015 keV/C SENSITIVITY : 6.00000 Std Dev's
QUAD COEFF : -.244061E-03 keV/C^2 SUM SENSITIVITY: 0.10000 %

Alpha Spectrum Listing
for Spectra Not Processed by Alp_rgn_cnts
(Version: 29-Jun-92)

Sample Identity: H67QL1AA
Detector: ALP114 1
Report Date: 23-Jun-06 11:49 PM
Acquire Date: 23-JUN-2006 15:28:57.02

Flags Key

Intersect Region: @
Non-Intersect Region: +, -

Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn
		1	0		51	0		101	0		151	0		201	19		251	0		301	0		351	0		401	4		451	0		501
		2	0		52	0		102	0		152	0		202	24		252	0		302	0		352	0		402	3		452	0		502
0		3	0		53	0		103	0		153	0		203	31		253	0		303	0		353	0		403	0		453	0		503
0		4	0		54	0		104	0		154	0		204	31		254	0		304	0		354	0		404	1		454	0		504
0		5	0		55	0		105	0		155	0		205	28		255	0		305	0		355	0		405	1		455	0		505
0		6	0		56	0		106	0		156	0		206	30		256	0		306	0		356	0		406	1		456	0		506
1		7	0		57	0		107	0		157	0		207	28		257	0		307	0		357	0		407	1		457	0		507
0		8	0		58	0		108	0		158	0		208	20		258	0		308	0		358	0		408	0		458	0		508
0		9	0		59	0		109	0		159	0		209	18		259	0		309	0		359	1		409	0		459	1		509
0		10	0		60	0		110	0		160	0		210	30		260	1		310	0		360	0		410	0		460	0		510
0		11	0		61	0		111	0		161	0		211	18		261	0		311	1		361	0		411	0		461	0		511
0		12	0		62	0		112	0		162	0		212	12		262	0		312	0		362	0		412	0		462	0		512
0		13	0		63	0		113	0		163	0		213	7		263	1		313	1		363	0		413	0		463			
0		14	0		64	0		114	0		164	0		214	12		264	0		314	0		364	1		414	0		464			
0		15	0		65	0		115	0		165	0		215	16		265	0		315	0		365	0		415	0		465			
0		16	0		66	0		116	0		166	0		216	14		266	0		316	0		366	0		416	0		466			
0		17	0		67	0		117	0		167	0		217	13		267	0		317	0		367	0		417	0		467			
0		18	0		68	0		118	0		168	0		218	7		268	0		318	1		368	0		418	0		468			
0		19	0		69	0		119	0		169	0		219	11		269	0		319	1		369	0		419	0		469			
0		20	0		70	0		120	0		170	0		220	8		270	0		320	0		370	1		420	0		470			
0		21	0		71	0		121	0		171	0		221	7		271	0		321	0		371	1		421	0		471			
0		22	0		72	0		122	0		172	0		222	5		272	0		322	0		372	1		422	0		472			
0		23	0		73	0		123	0		173	0		223	4		273	0		323	1		373	0		423	0		473			
0		24	0		74	0		124	0		174	1		224	5		274	0		324	0		374	0		424	0		474			
0		25	0		75	0		125	0		175	0		225	6		275	0		325	0		375	1		425	0		475			
0		26	0		76	0		126	0		176	0		226	4		276	1		326	0		376	0		426	0		476			
1		27	0		77	0		127	0		177	0		227	12		277	0		327	1		377	0		427	0		477			
0		28	0		78	0		128	1		178	0		228	9		278	0		328	4		378	0		428	0		478			
0		29	0		79	0		129	0		179	1		229	9		279	0		329	2		379	0		429	0		479			
0		30	0		80	0		130	0		180	0		230	10		280	0		330	3		380	0		430	0		480			
0		31	0		81	0		131	0		181	0		231	4		281	0		331	4		381	0		431	0		481			
0		32	0		82	0		132	0		182	1		232	3		282	0		332	2		382	0		432	0		482			
0		33	0		83	0		133	0		183	1		233	4		283	0		333	1		383	1		433	0		483			
0		34	0		84	0		134	0		184	0		234	4		284	0		334	1		384	0		434	0		484			
0		35	0		85	0		135	0		185	0		235	2		285	0		335	1		385	0		435	0		485			
0		36	0		86	0		136	0		186	1		236	0		286	0		336	1		386	0		436	0		486			
0		37	0		87	0		137	0		187	0		237	0		287	0		337	0		387	0		437	0		487			
0		38	0		88	0		138	0		188	1		238	0		288	0		338	4		388	0		438	0		488			
1		39	0		89	0		139	0		189	0		239	0		289	0		339	0		389	0		439	0		489			
0		40	0		90	0		140	0		190	0		240	0		290	0		340	0		390	1		440	0		490			
0		41	0		91	0		141	0		191	0		241	0		291	0		341	0		391	0		441	0		491			
0		42	0		92	0		142	0		192	0		242	0		292	0		342	0		392	0		442	0		492			
0		43	0		93	0		143	0		193	1		243	0		293	0		343	0		393	0		443	0		493			
0		44	0		94	0		144	0		194	3		244	0		294	0		344	0		394	0		444	0		494			
0		45	0		95	0		145	0		195	1		245	0		295	1		345	0		395	0		445	0		495			
0		46	0		96	0		146	0		196	3		246	0		296	0		346	0		396	0		446	0		496			
0		47	0		97	0		147	0		197	3		247	0		297	0		347	0		397	2		447	1		497			
0		48	0		98	0		148	0		198	10		248	0		298	1		348	0		398	1		448	0		498			
0		49	0		99	0		149	0		199	14		249	0		299	0		349	0		399	5		449	0		499			

0 50 0 100 0 150 0 200 14 250 0 300 0 350 0 400 4 450 0 500

VMS Peak Search Report V1.9 Generated 23-JUN-2006 23:49:04

```
Configuration     : RDND06$DKA100:[ALP114.SAMPLE]H67QL1AA_230661528.CNF;1
Analyses by       : ALPHA V1.8
Sample title      : TH BRC
Sample date       : 22-MAY-2006 12:00:00 Acquisition date : 23-JUN-2006 15:28:57
Sample ID         : H67QL1AA             Sample quantity  : 0.00000E+00 SAMPLE
Sample type       : disk                 Sample geometry  :
Detector name     : ALP114               Detector geometry:
Elapsed live time: 0 08:20:05.00         Elapsed real time: 0 08:20:05.00   0.0%
Start energy      :  2950.80 KEV         End energy       :  6811.29 KEV
Sensitivity       :     6.00             Sum Sensitivity  :     0.10
No peaks were found
```

VMS Nuclide Identification Report V3.1 Generated 23-JUN-2006 23:49:05

```
Configuration     : RDND06$DKA100:[ALP114.SAMPLE]H67QL1AA_230661528.CNF;1
Analyses by       : ALPHA V1.8,PEAKEFF V2.2,NID V3.4
Sample title      : TH BRC
Sample date       : 22-MAY-2006 12:00:00 Acquisition date : 23-JUN-2006 15:28:57
Sample ID         : H67QL1AA             Sample quantity  : 0.00000E+00 SAMPLE
Sample type       : disk                 Sample geometry  :
Detector name     : ALP114               Detector geometry:
Elapsed live time: 0 08:20:05.00         Elapsed real time: 0 08:20:05.00   0.0%
Energy tolerance :    80.00 KEV          Half life ratio  :     1.00
Errors propagated: No                    Systematic Error :     0.00 %
Efficiency type  : Spline                Efficiencies at  : Peak Energy
Abundance limit  :     0.00
```

Summary of Nuclide Activity

**** There are no nuclides meeting summary criteria ****

```
Flags: "K" = Keyline not found          "M" = Manually accepted
       "E" = Manually edited            "A" = Nuclide specific abn. limit
```

```
  Error Report  (Date: 23-Jun-06  11:49 PM)

Program: Alp_rgn_cnts
subroutine: Main
Message: No trace pk or nucl
Record being processed:  7

System Status Message:

%NONAME-W-NOMSG, Message number 00000000
```

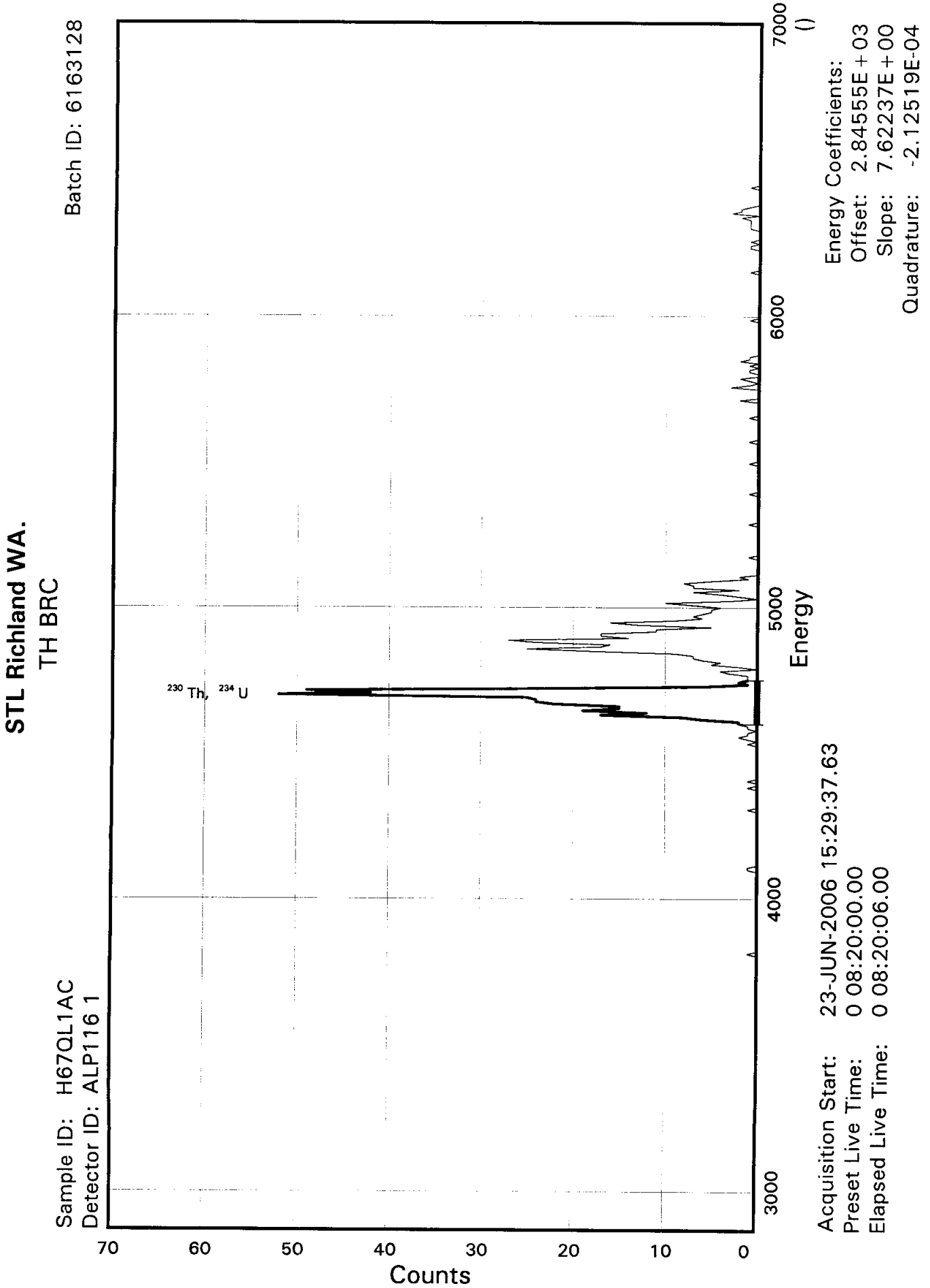
Alpha Analysis Report
(Version: 7-Feb-98)

Sample Identity: H67QL1AC

Detector: ALP116 1
Report Date: 24-Jun-06 06:30 AM
Acquire Date: 23-JUN-2006 15:29:37.63
Tracer Nuclide: TH-229
Sample Live Time: 500 minutes
Bkgrnd Live Time: 1000 minutes

Nuclide Name	Smpl Count	Bkg Count	Count Rate C/Min	Centrd Energy keV	Region Width keV	Left Chnl	Rght Chnl
TH-228	1	3	-0.001	5423.2	149.6	326	346
TH-229	378	0	0.756	4845.3	345.2	257	303
TH-230	371	0	0.742	4687.7	180.5	228	252
TH-232	0	0	0.000	4013.0	151.2	139	159

End of Alpha Region Report
(Produced by ANAL Report)


STL Richland WA.
TH BRC
Batch ID: 6163128
Sample ID: H67QL1AC
Detector ID: ALP116 1
230 Th, 234 U
Counts
70
60
50
40
30
20
10
0
3000
4000
5000
6000
7000
()
Energy
Energy Coefficients:
Offset: 2.84555E+03
Slope: 7.62237E+00
Quadrature: -2.12519E-04
Acquisition Start: 23-JUN-2006 15:29:37.63
Preset Live Time: 0 08:20:00.00
Elapsed Live Time: 0 08:20:06.00

SAMPLE IDENTIITY: H67QL1AC

TITLE : TH BRC

DETECTOR : ALP116 1
CONFIGURATION NAME : RDND06$DKA100:[ALP116.SAMPLE]H67QL1AC_230661
529.CNF;1
ACQUIRE DATE of BACKGROUND: 22-JUN-2006 10:15:09

REPORT DATE : 23-Jun-06 SAMPLE DATE: 22-MAY-2006 12:00:00
ACQUIRE DATE: 23-JUN-2006 15:29:37 CALIB DATE : 22-JUN-2006 09:30:10

PRESET LIVE TIME: 0 08:20:00 ELAPSED LIVE TIME: 0 08:20:06

OFFSET : 2845.55 keV CONSTANT FWHM : 8.83333 Channels
SLOPE : 7.62237 keV/C SENSITIVITY : 6.00000 Std Dev's
QUAD COEFF : -.212519E-03 keV/C^2 SUM SENSITIVITY: 0.10000 %

Alpha Spectrum Listing
for Spectra Not Processed by Alp_rgn_cnts
(Version: 29-Jun-92)

Sample Identity: H67QL1AC
Detector: ALP116 1
Report Date: 23-Jun-06 11:49 PM
Acquire Date: 23-JUN-2006 15:29:37.63

Flags Key

Intersect Region: @
Non-Intersect Region: +, -

Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn
		1	0		51	0		101	0		151	0		201	2		251	0		301	1		351	0		401	1		451	0		501
		2	0		52	0		102	0		152	0		202	1		252	0		302	0		352	0		402	0		452	0		502
0		3	0		53	0		103	0		153	1		203	1		253	0		303	0		353	0		403	1		453	0		503
0		4	0		54	0		104	0		154	0		204	1		254	0		304	0		354	0		404	0		454	0		504
0		5	0		55	0		105	0		155	0		205	3		255	0		305	0		355	0		405	0		455	0		505
0		6	0		56	0		106	0		156	1		206	4		256	0		306	0		356	0		406	0		456	0		506
0		7	0		57	0		107	0		157	0		207	0		257	0		307	0		357	0		407	0		457	0		507
0		8	0		58	0		108	0		158	0		208	2		258	1		308	0		358	0		408	0		458	0		508
0		9	0		59	0		109	0		159	0		209	5		259	0		309	0		359	0		409	1		459	0		509
0		10	0		60	0		110	0		160	0		210	4		260	0		310	0		360	0		410	1		460	0		510
0		11	0		61	0		111	0		161	0		211	6		261	0		311	1		361	0		411	1		461	0		511
0		12	0		62	0		112	0		162	0		212	7		262	0		312	0		362	0		412	1		462	0		512
0		13	0		63	0		113	0		163	0		213	7		263	0		313	0		363	0		413	1		463			
0		14	0		64	0		114	0		164	0		214	9		264	0		314	0		364	0		414	2		464			
0		15	0		65	0		115	1		165	0		215	18		265	0		315	0		365	0		415	0		465			
0		16	0		66	0		116	1		166	0		216	25		266	0		316	0		366	0		416	3		466			
0		17	0		67	0		117	0		167	0		217	17		267	0		317	0		367	1		417	2		467			
0		18	0		68	0		118	0		168	0		218	16		268	0		318	0		368	0		418	2		468			
0		19	0		69	0		119	0		169	0		219	24		269	0		319	0		369	0		419	1		469			
0		20	0		70	0		120	0		170	0		220	27		270	0		320	0		370	0		420	0		470			
0		21	0		71	0		121	0		171	0		221	14		271	0		321	0		371	0		421	0		471			
0		22	0		72	0		122	0		172	0		222	17		272	0		322	1		372	0		422	0		472			
0		23	0		73	0		123	0		173	1		223	17		273	1		323	0		373	0		423	0		473			
0		24	0		74	0		124	0		174	0		224	11		274	0		324	0		374	0		424	0		474			
0		25	0		75	0		125	0		175	1		225	11		275	0		325	0		375	0		425	0		475			
0		26	0		76	0		126	0		176	2		226	5		276	0		326	0		376	0		426	0		476			
0		27	0		77	1		127	0		177	1		227	13		277	0		327	0		377	0		427	0		477			
0		28	0		78	0		128	0		178	1		228	16		278	0		328	0		378	0		428	1		478			
0		29	0		79	0		129	0		179	0		229	9		279	0		329	0		379	0		429	0		479			
0		30	0		80	0		130	0		180	1		230	6		280	0		330	2		380	0		430	0		480			
0		31	0		81	0		131	0		181	1		231	7		281	0		331	0		381	0		431	0		481			
0		32	0		82	0		132	0		182	2		232	6		282	0		332	0		382	0		432	0		482			
0		33	0		83	0		133	0		183	2		233	5		283	0		333	0		383	0		433	0		483			
0		34	0		84	0		134	0		184	6		234	5		284	0		334	0		384	0		434	0		484			
0		35	0		85	0		135	0		185	8		235	4		285	0		335	0		385	0		435	0		485			
0		36	0		86	0		136	0		186	17		236	7		286	0		336	3		386	0		436	0		486			
0		37	0		87	0		137	0		187	12		237	10		287	1		337	1		387	0		437	0		487			
0		38	0		88	0		138	0		188	19		238	3		288	0		338	0		388	0		438	0		488			
0		39	0		89	0		139	0		189	15		239	0		289	0		339	1		389	1		439	0		489			
0		40	0		90	0		140	0		190	15		240	2		290	0		340	2		390	0		440	0		490			
0		41	0		91	0		141	0		191	22		241	4		291	0		341	0		391	0		441	0		491			
0		42	0		92	0		142	0		192	24		242	7		292	0		342	0		392	0		442	0		492			
0		43	0		93	0		143	1		193	24		243	2		293	0		343	1		393	0		443	0		493			
0		44	0		94	0		144	0		194	25		244	7		294	0		344	1		394	0		444	0		494			
0		45	0		95	0		145	0		195	52		245	7		295	0		345	0		395	0		445	0		495			
0		46	0		96	0		146	0		196	42		246	8		296	0		346	1		396	0		446	0		496			
0		47	0		97	0		147	0		197	49		247	5		297	0		347	0		397	0		447	0		497			
0		48	0		98	0		148	0		198	24		248	1		298	0		348	2		398	0		448	0		498			
0		49	0		99	0		149	0		199	6		249	2		299	0		349	1		399	0		449	0		499			

0 50 0 100 0 150 0 200 1 250 0 300 0 350 1 400 1 450 0 500

VMS Peak Search Report V1.9 Generated 23-JUN-2006 23:49:45

Configuration	: RDND06$DKA100:[ALP116.SAMPLE]H67QL1AC_230661529.CNF;1		
Analyses by	: ALPHA V1.8		
Sample title	: TH BRC		
Sample date	: 22-MAY-2006 12:00:00	Acquisition date	: 23-JUN-2006 15:29:37
Sample ID	: H67QL1AC	Sample quantity	: 0.00000E+00 SAMPLE
Sample type	: disk	Sample geometry	:
Detector name	: ALP116	Detector geometry	:
Elapsed live time	: 0 08:20:06.00	Elapsed real time	: 0 08:20:06.00 0.0%
Start energy	: 2868.42	End energy	: 6692.50
Sensitivity	: 6.00	Sum Sensitivity	: 0.10

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4701.53	370	0	53.36	245.17	232	20	1.23E-02	5.2	

VMS Nuclide Identification Report V3.1 Generated 23-JUN-2006 23:49:46

Configuration : RDND06$DKA100:[ALP116.SAMPLE]H67QL1AC_230661529.CNF;1
Analyses by : ALPHA V1.8,PEAKEFF V2.2,NID V3.4
Sample title : TH BRC
Sample date : 22-MAY-2006 12:00:00 Acquisition date : 23-JUN-2006 15:29:37
Sample ID : H67QL1AC Sample quantity : 0.00000E+00 SAMPLE
Sample type : disk Sample geometry :
Detector name : ALP116 Detector geometry:
Elapsed live time: 0 08:20:06.00 Elapsed real time: 0 08:20:06.00 0.0%
Energy tolerance : 80.00 Half life ratio : 1.00
Errors propagated: No Systematic Error : 0.00 %
Efficiency type : Spline Efficiencies at : Peak Energy
Abundance limit : 0.00

Summary of Nuclide Activity

Total number of lines in spectrum	1	
Number of unidentified lines	0	
Number of lines tentatively identified by NID	1	100.00%

Nuclide Type : NP

Nuclide	Hlife	Decay	Uncorrected PCI/SAMPLE	Decay Corr PCI/SAMPLE	Decay Corr 0-Sigma Error	0-Sigma %Error	Flags
TH-230	7.54E+04Y	1.00	0.000E+00	0.000E+00	0.000E+00	0.00	
U-234	2.45E+05Y	1.00	0.000E+00	0.000E+00	0.000E+00	0.00	
			---	---			
Total Activity :			0.000E+00	0.000E+00			

Grand Total Activity : 0.000E+00 0.000E+00

Flags: "K" = Keyline not found "M" = Manually accepted
"E" = Manually edited "A" = Nuclide specific abn. limit

```
  Error Report   (Date: 23-Jun-06  11:49 PM)

Program: Alp_rgn_cnts
subroutine: Main
Message: No trace pk or nucl
Record being processed:  7

System Status Message:

%NONAME-W-NOMSG, Message number 00000000
```

URANIUM ISOTOPIC

SAMPLE AND QC DATA

SEVERN TRENT STL

Data Review/Verification Checklist

RADIOCHEMISTRY, First Level Review

6/30/2006 10:50:36 AM

Lot No., Due Date: J6F080203; 07/05/2006

Client, Site: 536403; AIR MONITORING Yerington Mine

QC Batch No., Method Test: 6163126; RUSIO Uiso by ALP

SDG, Matrix: 31853; FILTER

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:

First Level Review Pam Anderson **Date** 6-30-06

SEVERN TRENT STL

Data Review Checklist
RADIOCHEMISTRY
Second Level Review

QC Batch Number: 6163126

Review Item	Yes (√)	No (√)	N/A (√)
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 with contract acceptance criteria?	/		
7. Is the LCS Minimum Detectable Activity ≤ the Contract Detection Limit?	/		
8. Do the MS/MSD results and yields meet acceptance criteria?			/
9. Do the duplicate sample results and yields meet acceptance criteria?			/
C. Other 1. Are all Nonconformances 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: Sherry R Adam Date: _____

STL RICHLAND

6/15/2006 4:15:17 PM

Sample Preparation/Analysis

Balance Id:1120373922

536403, Brown and Caldwell , Brown & Caldwell

7Y Uiso PrpRC5016/5086, SepRC5067(5039)
SR Uranium-234,235,238 by Alpha Spec
01 STANDARD TEST SET

Pipet #: _____

AnalyDueDate: 07/04/2006

Sep1 DT/Tm Tech:

Batch: 6163126 FILTER pCi/sampl PM, Quote: SA , 63174

Sep2 DT/Tm Tech:

SEQ Batch, Test: None

Prep Tech: HansenM

Work Order, Lot, Sample Date	Total Amt /Unit	Total Acidified/Unit	Initial Aliquot Amt/Unit	Adj Aliq Amt (Un-Acidified)	QC Tracer Prep Date	Count Time Min	Detector Id	Count On | Off (24hr) Circle	CR Analyst, Init/Date	Comments:
1 **H61AE-1-AG** J6F080203-1-SAMP 05/22/2006 10:10	0.833sa,g	501.61sa,g	37.65g,in	0.0625g	UITC15740 05/24/06,pd 01/20/04,r	200 mL				
		AmtRec: FILTER	#Containers: 1				Scr:	Alpha:		Beta:
2 **H61AH-1-AG** J6F080203-2-SAMP 05/22/2006 10:30	0.833sa,g	500.91sa,g	37.60g,in	0.0625g	UITC15741 05/24/06,pd 01/20/04,r					
		AmtRec: FILTER	#Containers: 1				Scr:	Alpha:		Beta:
3 **H61AK-1-AG** J6F080203-3-SAMP 05/22/2006 10:45	0.833sa,g	503.01sa,g	37.62g,in	0.0623g	UITC15742 05/24/06,pd 01/20/04,r					
		AmtRec: FILTER	#Containers: 1				Scr:	Alpha:		Beta:
4 **H61AL-1-AG** J6F080203-4-SAMP 05/22/2006 11:10	0.833sa,g	501.90sa,g	37.59g,in	0.0624g	UITC15743 05/24/06,pd 01/20/04,r					
		AmtRec: FILTER	#Containers: 1				Scr:	Alpha:		Beta:
5 **H61AM-1-AG** J6F080203-5-SAMP 05/22/2006 11:25	0.833sa,g	502.63sa,g	37.64g,in	0.0624g	UITC15744 05/24/06,pd 01/20/04,r					
		AmtRec: FILTER	#Containers: 1				Scr:	Alpha:		Beta:
6 **H61AR-1-AG** J6F080203-6-SAMP 05/22/2006 11:35	0.833sa,g	501.95sa,g	37.65g,in	0.0625g	UITC15745 05/24/06,pd 01/20/04,r					
		AmtRec: FILTER	#Containers: 1				Scr:	Alpha:		Beta:
7 **H61AT-1-AG** J6F080203-7-SAMP 05/22/2006 10:15	0.833sa,g	506.35sa,g	37.53g,in	0.0617g	UITC15746 05/24/06,pd 01/20/04,r					
		AmtRec: FILTER	#Containers: 1				Scr:	Alpha:		Beta:

209

STL RICHLAND

6/15/2006 4:15:18 PM

Sample Preparation/Analysis

Balance Id:1120373922

536403, Brown and Caldwell , Brown & Caldwell

7Y Ulso PrpRC5016/5086, SepRC5067(5039)
SR Uranium-234,235,238 by Alpha Spec
01 STANDARD TEST SET

Pipet #: _____

AnalyDueDate: 07/04/2006

Sep1 DT/Tm Tech:

Batch: 6163126 FILTER pCi/sampl PM, Quote: SA , 63174

SEQ Batch, Test: None

Sep2 DT/Tm Tech:

Prep Tech: HansenM

Work Order, Lot, Sample Date	Total Amt /Unit	Total Acidified/Unit	Initial Aliquot Amt/Unit	Adj Aliq Amt (Un-Acidified)	QC Tracer Prep Date	Count Time Min	Detector Id	Count On | Off (24hr) Circle	CR Analyst, Init/Date	Comments:
8 **H61AX-1-AG** J6F080203-8-SAMP 05/22/2006 10:00	0.833sa,g	509.07sa,g	37.79g,in	0.0618g	UITC15747 05/24/06,pd 01/20/04,r					
		AmtRec: FILTER		#Containers: 1			Scr:	Alpha:		Beta:
9 **H61A1-1-AG** J6F080203-9-SAMP 05/22/2006 10:25	0.833sa,g	500.52sa,g	37.54g,in	0.0625g	UITC15748 05/24/06,pd 01/20/04,r					
		AmtRec: FILTER		#Containers: 1			Scr:	Alpha:		Beta:
10 **H61A2-1-AG** J6F080203-10-SAMP 05/22/2006 10:40	0.833sa,g	504.58sa,g	37.61g,in	0.0621g	UITC15749 05/24/06,pd 01/20/04,r					
		AmtRec: FILTER		#Containers: 1			Scr:	Alpha:		Beta:
11 **H61A3-1-AG** J6F080203-11-SAMP 05/22/2006 11:20	0.833sa,g	500.54sa,g	37.51g,in	0.0624g	UITC15750 05/24/06,pd 01/20/04,r					
		AmtRec: FILTER		#Containers: 1			Scr:	Alpha:		Beta:
12 **H61A5-1-AG** J6F080203-12-SAMP 05/22/2006 11:30	0.833sa,g	502.68sa,g	37.57g,in	0.0623g	UITC15751 05/24/06,pd 01/20/04,r					
		AmtRec: FILTER		#Containers: 1			Scr:	Alpha:		Beta:
13 **H61A7-1-AG** J6F080203-13-SAMP 05/22/2006 10:05	0.833sa,g	502.48sa,g	37.62g,in	0.0624g	UITC15752 05/24/06,pd 01/20/04,r					
		AmtRec: FILTER		#Containers: 1			Scr:	Alpha:		Beta:
14 **H67QJ-1-AA-B** J6F120000-126-BLK 05/22/2006 10:10			1.00sa,in	1.00sa	UITC15753 05/24/06,pd 01/20/04,r					
		AmtRec:		#Containers: 1			Scr:	Alpha:		Beta:

6/30/2006 10:30:01 AM

ICOC Fraction Transfer/Status Report

ByDate: 6/30/2005, 7/5/2006, Batch: '6163126', User: *ALL Order By DateTimeAccepting

Q Batch	Work Ord	CurStatus	Accepting			Comments
6163126						
AC		**CalcC**	**HansenM**	6/13/2006 1:40:07 PM		
SC			wagarr	IsBatched	6/12/2006 3:36:55 PM	ICOC_RADCALC v4.8.24
SC			HansenM	InPrep2	6/13/2006 1:40:07 PM	RICH-RC-5016 REVISION 5
SC			HansenM	Prep2C	6/16/2006 7:45:23 AM	RICH-RC-5016 REVISION 5
SC			BarbosaH	Sep2C	6/29/2006 1:03:55 PM	RICH-RC-5039 REV5
SC			BlackCL	InCnt1	6/29/2006 1:07:59 PM	RICH-RD-0008 REVISION 4
SC			AndersonE	Sep1C	6/29/2006 1:41:50 PM	RICH-RC-5067 REV 6
SC			DAWKINSO	CalcC	6/29/2006 8:22:49 PM	RICH-RD-0008 REVISION 4
AC			**HansenM**	6/16/2006 7:45:23		
AC			**BarbosaH**	6/29/2006 1:03:55 PM		one
AC			**BlackCL**	6/29/2006 1:07:59 PM		
AC			**AndersonE**	6/29/2006 1:41:50 PM		
AC			**DAWKINSO**	6/29/2006 8:22:49 PM		

AC: Accepting Entry; SC: Status Change

STL Richland

Richland Wa.

Grp Rec Cnt:6

ICOCFractions v4.8.18

6/30/2006 10:30:00 AM

Rpt DB Transfer log (Batch Results)

SEVERN TRENT STL

SDG or Batch / Isotope	Rpt Db Id / Method	RTst	Qc	LotSample / Analysis Date	Client Id / Result	Matrix / Cnt Uncert	Received Date / Tot Uncert	Sample Date / Mda	Units	Expected	Yield	Volumes
31853	**9H61A110**			**J6F0802039**	P-0638	FILTER	6/7/2006 10:00:00	5/22/2006 10:25:00 AM				
ALPHA	BAS7		0	6/22/2006 10:42:31	**1.078E+01**	2.706E+00	2.929E+00	6.408E+00	PCI/SA	1.0	1.0E+0	2.085E-2
BETA	BDS8		0	6/20/2006 6:46:51 PM	**2.9132E+01**	2.343E+00	3.077E+00	6.219E+00	PCI/SA	1.0	1.0E+0	3.346E-2
RA-226	BXTE		0	6/23/2006 4:10:00 PM	**4.4731E-01**	2.246E-01	2.294E-01	6.968E-01	PCI/SA	0.889	1.0E+0	2.499E-1
RA-228	BXTF		0	6/29/2006 6:16:21 AM	**1.7535E+00**	4.45E-01	4.564E-01	1.653E+00	PCI/SA	0.812	1.0E+0	2.499E-1
TH-228	9NS1		0	6/23/2006 7:38:50 PM	**1.7986E-01**	1.272E-01	1.283E-01	4.412E-01	PCI/SA	0.643	1.0E+0	3.34E-2
TH-230	9NS1		0	6/23/2006 7:38:50 PM	**2.8855E-02**	6.452E-02	6.458E-02	3.461E-01	PCI/SA	0.643	1.0E+0	3.34E-2
TH-232	9NS1		0	6/23/2006 7:38:50 PM	**2.8855E-02**	6.452E-02	6.458E-02	3.461E-01	PCI/SA	0.643	1.0E+0	3.34E-2
U-234	7YSR		0	6/29/2006 3:31:10 PM	**8.6191E-02**	1.099E-01	1.101E-01	5.161E-01	PCI/SA	0.912	1.0E+0	3.248E-2
U-235	7YSR		0	6/29/2006 3:31:10 PM	**0.0E+00**	0.0E+00	1.32E-01	2.92E-01	PCI/SA	0.912	1.0E+0	3.248E-2
U-238	7YSR		0	6/29/2006 3:31:10 PM	**0.0E+00**	0.0E+00	1.32E-01	2.92E-01	PCI/SA	0.912	1.0E+0	3.248E-2
31853	**9H61A210**			**J6F08020310**	P-0639	FILTER	6/7/2006 10:00:00	5/22/2006 10:40:00 AM				
ALPHA	BAS7		0	6/22/2006 10:42:31	**5.5159E+00**	2.074E+00	2.15E+00	6.486E+00	PCI/SA	1.0	1.0E+0	2.095E-2
BETA	BDS8		0	6/20/2006 6:46:51 PM	**3.4145E+01**	2.273E+00	4.155E+00	5.488E+00	PCI/SA	1.0	1.0E+0	3.32E-2
RA-226	BXTE		0	6/23/2006 4:11:00 PM	**3.3227E-02**	1.99E-01	1.99E-01	8.041E-01	PCI/SA	0.983	1.0E+0	2.476E-1
RA-228	BXTF		0	6/29/2006 6:16:21 AM	**6.7756E-01**	3.466E-01	3.665E-01	1.614E+00	PCI/SA	0.883	1.0E+0	2.476E-1
TH-228	9NS1		0	6/23/2006 7:38:50 PM	**2.1794E-01**	1.09E-01	1.108E-01	1.477E-01	PCI/SA	0.795	1.0E+0	3.282E-2
TH-230	9NS1		0	6/23/2006 7:38:50 PM	**5.2447E-02**	5.245E-02	5.267E-02	1.421E-01	PCI/SA	0.795	1.0E+0	3.282E-2
TH-232	9NS1		0	6/23/2006 7:38:50 PM	**2.6224E-02**	5.864E-02	5.869E-02	3.146E-01	PCI/SA	0.795	1.0E+0	3.282E-2
U-234	7YSR		0	6/29/2006 3:31:21 PM	**8.2833E-02**	1.056E-01	1.058E-01	4.96E-01	PCI/SA	0.948	1.0E+0	3.209E-2
U-235	7YSR		0	6/29/2006 3:31:21 PM	**0.0E+00**	0.0E+00	1.268E-01	2.806E-01	PCI/SA	0.948	1.0E+0	3.209E-2
U-238	7YSR		0	6/29/2006 3:31:21 PM	**6.2116E-02**	1.076E-01	1.077E-01	5.852E-01	PCI/SA	0.948	1.0E+0	3.209E-2
31853	**9H61A310**			**J6F08020311**	P-0641	FILTER	6/7/2006 10:00:00	5/22/2006 11:20:00 AM				
ALPHA	BAS7		0	6/22/2006 10:42:31	**1.1105E+00**	1.314E+00	1.319E+00	5.977E+00	PCI/SA	1.0	1.0E+0	2.102E-2
BETA	BDS8		0	6/20/2006 6:46:51 PM	**2.7213E+01**	2.278E+00	2.943E+00	6.204E+00	PCI/SA	1.0	1.0E+0	3.326E-2
RA-226	BXTE		0	6/23/2006 4:12:03 PM	**-7.3711E-02**	1.861E-01	1.863E-01	7.636E-01	PCI/SA	1.064	1.0E+0	2.515E-1
RA-228	BXTF		0	6/29/2006 6:21:29 AM	**4.93E-01**	2.852E-01	2.898E-01	1.288E+00	PCI/SA	0.959	1.0E+0	2.515E-1
TH-228	9NS1		0	6/23/2006 7:38:50 PM	**3.5601E-02**	3.56E-02	3.574E-02	9.648E-02	PCI/SA	1.038	1.0E+0	3.398E-2
TH-230	9NS1		0	6/23/2006 7:38:50 PM	**6.854E-02**	4.847E-02	4.884E-02	9.287E-02	PCI/SA	1.038	1.0E+0	3.398E-2
TH-232	9NS1		0	6/23/2006 7:38:50 PM	**6.854E-02**	4.847E-02	4.884E-02	9.287E-02	PCI/SA	1.038	1.0E+0	3.398E-2
U-234	7YSR		0	6/29/2006 3:31:34 PM	**5.8206E-02**	1.008E-01	1.009E-01	5.484E-01	PCI/SA	0.908	1.0E+0	3.242E-2
U-235	7YSR		0	6/29/2006 3:31:34 PM	**-1.9412E-02**	1.941E-02	1.947E-02	4.648E-01	PCI/SA	0.908	1.0E+0	3.242E-2
U-238	7YSR		0	6/29/2006 3:31:34 PM	**1.7465E-01**	1.386E-01	1.393E-01	4.648E-01	PCI/SA	0.908	1.0E+0	3.242E-2
31853	**9H61A510**			**J6F08020312**	P-0642	FILTER	6/7/2006 10:00:00	5/22/2006 11:30:00 AM				
ALPHA	BAS7		0	6/22/2006 12:35:02 PM	**4.919E+00**	2.117E+00	2.178E+00	7.164E+00	PCI/SA	1.0	1.0E+0	2.085E-2
BETA	BDS8		0	6/20/2006 6:46:51 PM	**2.9855E+01**	2.333E+00	3.123E+00	6.07E+00	PCI/SA	1.0	1.0E+0	3.339E-2
RA-226	BXTE		0	6/23/2006 4:12:01 PM	**2.012E-01**	1.415E-01	1.431E-01	4.829E-01	PCI/SA	0.942	1.0E+0	2.492E-1
RA-228	BXTF		0	6/29/2006 6:21:29 AM	**7.4514E-01**	3.359E-01	3.447E-01	1.472E+00	PCI/SA	0.835	1.0E+0	2.492E-1
TH-228	9NS1		0	6/23/2006 7:39:13 PM	**1.7852E-01**	1.047E-01	1.059E-01	3.285E-01	PCI/SA	1.081	1.0E+0	3.335E-2
TH-230	9NS1		0	6/23/2006 7:39:13 PM	**2.5777E-01**	1.052E-01	1.077E-01	1.164E-01	PCI/SA	1.081	1.0E+0	3.335E-2
TH-232	9NS1		0	6/23/2006 7:39:13 PM	**8.5923E-02**	6.076E-02	6.124E-02	1.164E-01	PCI/SA	1.081	1.0E+0	3.335E-2
U-234	7YSR		0	6/29/2006 3:31:44 PM	**-2.1106E-02**	2.111E-02	2.117E-02	5.052E-01	PCI/SA	0.933	1.0E+0	3.226E-2
U-235	7YSR		0	6/29/2006 3:31:44 PM	**0.0E+00**	0.0E+00	1.292E-01	2.858E-01	PCI/SA	0.933	1.0E+0	3.226E-2
U-238	7YSR		0	6/29/2006 3:31:44 PM	**0.0E+00**	0.0E+00	1.292E-01	2.858E-01	PCI/SA	0.933	1.0E+0	3.226E-2
31853	**9H61A710**			**J6F08020313**	P-0643	FILTER	6/7/2006 10:00:00	5/22/2006 10:05:00 AM				
ALPHA	BAS7		0	6/22/2006 12:35:02 PM	**5.4878E+00**	1.981E+00	2.062E+00	5.644E+00	PCI/SA	1.0	1.0E+0	2.084E-2
BETA	BDS8		0	6/20/2006 6:46:47 PM	**2.8799E+01**	2.356E+00	3.09E+00	6.278E+00	PCI/SA	1.0	1.0E+0	3.297E-2
RA-226	BXTE		0	6/23/2006 4:15:00 PM	**1.8445E-01**	1.348E-01	1.361E-01	4.656E-01	PCI/SA	0.906	1.0E+0	2.489E-1
RA-228	BXTF		0	6/29/2006 6:21:29 AM	**1.733E-01**	3.102E-01	3.443E-01	1.68E+00	PCI/SA	0.811	1.0E+0	2.489E-1
TH-228	9NS1		0	6/23/2006 7:39:24 PM	**5.7458E-02**	1.15E-01	1.151E-01	5.337E-01	PCI/SA	0.808	1.0E+0	3.372E-2
TH-230	9NS1		0	6/23/2006 7:39:24 PM	**1.383E-01**	9.974E-02	1.006E-01	3.318E-01	PCI/SA	0.808	1.0E+0	3.372E-2
TH-232	9NS1		0	6/23/2006 7:39:24 PM	**0.0E+00**	0.0E+00	6.776E-02	1.499E-01	PCI/SA	0.808	1.0E+0	3.372E-2

6163126, **Samples Inserted | Updated | NotUpdated => 2 | 0 | 13,
**Results Inserted | ReTestInserted | Updated | NotInserted => 44 | 0 | 0 | 0.
**Diff RptDb | Qtims => *wo:H67QJ1AA=> , mat:FILTER | Air *wo:H67QJ1AA=> , mat:FILTER | Air *wo:H67QJ1AC=> , mat:FILTER | Air *wo:H67QJ1AC=> , mat:FILTER | Air.

SDG or Batch / Isotope	Rpt Db Id / Method	RTst	Qc	LotSample / Analysis Date	Client Id / Result	Matrix / Cnt Uncert	Received Date / Tot Uncert	Mda	Sample Date / Units	Expected	Yield	Volumes
U-234	7YSR	0		6/29/2006 3:32:14 PM	**5.7815E-02**	9.796E-02	9.807E-02	5.451E-01	PCI/SA	1.024	1.0E+0	3.237E-2
U-235	7YSR	0		6/29/2006 3:32:14 PM	**-2.3167E-02**	1.338E-02	1.35E-02	4.811E-01	PCI/SA	1.024	1.0E+0	3.237E-2
U-238	7YSR	0		6/29/2006 3:32:14 PM	**4.237E-02**	9.857E-02	9.863E-02	5.97E-01	PCI/SA	1.024	1.0E+0	3.237E-2
31853	**9H61AE10**			**J6F0802031**	000466	FILTER	6/7/2006 10:00:00		5/22/2006 10:10:00 AM			
ALPHA	BAS7	0		6/22/2006 6:57:33 AM	**1.2919E+01**	2.897E+00	3.187E+00	6.046E+00	PCI/SA	1.0	1.0E+0	2.084E-2
BETA	BDS8	0		6/20/2006 4:05:14 PM	**3.0937E+01**	2.41E+00	3.222E+00	6.21E+00	PCI/SA	1.0	1.0E+0	3.327E-2
RA-226	BXTE	0		6/23/2006 3:15:00 PM	**8.6406E-01**	3.273E-01	3.393E-01	1.025E+00	PCI/SA	0.852	1.0E+0	2.492E-1
RA-228	BXTF	0		6/29/2006 6:20:56 AM	**2.361E+00**	6.086E-01	6.506E-01	2.57E+00	PCI/SA	0.761	1.0E+0	2.492E-1
TH-228	9NS1	0		6/23/2006 10:25:20	**7.3196E-02**	2.428E-01	2.43E-01	1.231E+00	PCI/SA	0.3	1.0E+0	3.338E-2
TH-230	9NS1	0		6/23/2006 10:25:20	**5.6401E-01**	2.82E-01	2.89E-01	3.821E-01	PCI/SA	0.3	1.0E+0	3.338E-2
TH-232	9NS1	0		6/23/2006 10:25:20	**1.41E-01**	1.41E-01	1.419E-01	3.821E-01	PCI/SA	0.3	1.0E+0	3.338E-2
U-234	7YSR	0		6/29/2006 3:29:16 PM	**-4.466E-02**	3.158E-02	3.179E-02	6.308E-01	PCI/SA	0.882	1.0E+0	3.252E-2
U-235	7YSR	0		6/29/2006 3:29:16 PM	**-2.233E-02**	2.233E-02	2.24E-02	5.347E-01	PCI/SA	0.882	1.0E+0	3.252E-2
U-238	7YSR	0		6/29/2006 3:29:16 PM	**6.6968E-02**	1.16E-01	1.161E-01	6.308E-01	PCI/SA	0.882	1.0E+0	3.252E-2
31853	**9H61AH10**			**J6F0802032**	000467	FILTER	6/7/2006 10:00:00		5/22/2006 10:30:00 AM			
ALPHA	BAS7	0		6/22/2006 8:49:58 AM	**4.3814E+00**	2.049E+00	2.1E+00	7.179E+00	PCI/SA	1.0	1.0E+0	2.08E-2
BETA	BDS8	0		6/20/2006 4:05:14 PM	**3.8297E+01**	2.569E+00	3.691E+00	6.172E+00	PCI/SA	1.0	1.0E+0	3.363E-2
RA-226	BXTE	0		6/23/2006 3:16:00 PM	**-5.7714E-02**	2.883E-01	2.884E-01	1.141E+00	PCI/SA	0.849	1.0E+0	2.498E-1
RA-228	BXTF	0		6/29/2006 6:20:56 AM	**1.3342E+00**	5.423E-01	5.742E-01	2.453E+00	PCI/SA	0.768	1.0E+0	2.498E-1
TH-228	9NS1	0		6/23/2006 10:25:24	**3.2995E-01**	2.333E-01	2.359E-01	8.095E-01	PCI/SA	0.402	1.0E+0	3.403E-2
TH-230	9NS1	0		6/23/2006 10:25:24	**1.0591E-01**	1.059E-01	1.065E-01	2.87E-01	PCI/SA	0.402	1.0E+0	3.403E-2
TH-232	9NS1	0		6/23/2006 10:25:24	**2.1182E-01**	1.498E-01	1.514E-01	2.87E-01	PCI/SA	0.402	1.0E+0	3.403E-2
U-234	7YSR	0		6/29/2006 3:29:46 PM	**9.9421E-02**	9.942E-02	9.974E-02	2.694E-01	PCI/SA	1.018	1.0E+0	3.253E-2
U-235	7YSR	0		6/29/2006 3:29:46 PM	**-1.9894E-02**	1.989E-02	1.996E-02	4.762E-01	PCI/SA	1.018	1.0E+0	3.253E-2
U-238	7YSR	0		6/29/2006 3:29:46 PM	**-9.9471E-02**	4.448E-02	4.52E-02	7.319E-01	PCI/SA	1.018	1.0E+0	3.253E-2
31853	**9H61AK10**			**J6F0802033**	000468	FILTER	6/7/2006 10:00:00		5/22/2006 10:45:00 AM			
ALPHA	BAS7	0		6/22/2006 8:49:58 AM	**3.3328E+00**	1.662E+00	1.698E+00	5.639E+00	PCI/SA	1.0	1.0E+0	2.087E-2
BETA	BDS8	0		6/20/2006 4:05:14 PM	**2.3712E+01**	2.175E+00	3.046E+00	6.067E+00	PCI/SA	1.0	1.0E+0	3.28E-2
RA-226	BXTE	0		6/23/2006 3:15:01 PM	**6.4468E-01**	3.072E-01	3.139E-01	1.003E+00	PCI/SA	0.842	1.0E+0	2.487E-1
RA-228	BXTF	0		6/29/2006 6:20:56 AM	**2.6725E+00**	6.332E-01	6.539E-01	2.51E+00	PCI/SA	0.761	1.0E+0	2.487E-1
TH-228	9NS1	0		6/23/2006 10:25:32	**-4.8231E-02**	1.738E-01	1.739E-01	9.702E-01	PCI/SA	0.486	1.0E+0	3.287E-2
TH-230	9NS1	0		6/23/2006 10:25:32	**1.3927E-01**	1.393E-01	1.4E-01	5.569E-01	PCI/SA	0.486	1.0E+0	3.287E-2
TH-232	9NS1	0		6/23/2006 10:25:32	**9.285E-02**	9.285E-02	9.333E-02	2.516E-01	PCI/SA	0.486	1.0E+0	3.287E-2
U-234	7YSR	0		6/29/2006 3:29:54 PM	**2.9292E-02**	1.577E-01	1.578E-01	1.006E+00	PCI/SA	0.656	1.0E+0	3.23E-2
U-235	7YSR	0		6/29/2006 3:29:54 PM	**3.8079E-01**	2.57E-01	2.59E-01	8.276E-01	PCI/SA	0.656	1.0E+0	3.23E-2
U-238	7YSR	0		6/29/2006 3:29:54 PM	**-1.1717E-01**	5.858E-02	5.941E-02	1.006E+00	PCI/SA	0.656	1.0E+0	3.23E-2
31853	**9H61AL10**			**J6F0802034**	000469	FILTER	6/7/2006 10:00:00		5/22/2006 11:10:00 AM			
ALPHA	BAS7	0		6/22/2006 8:49:58 AM	**7.9761E+00**	2.397E+00	2.536E+00	6.388E+00	PCI/SA	1.0	1.0E+0	2.093E-2
BETA	BDS8	0		6/20/2006 4:05:14 PM	**2.6018E+01**	2.395E+00	3.038E+00	7.005E+00	PCI/SA	1.0	1.0E+0	3.35E-2
RA-226	BXTE	0		6/23/2006 3:14:00 PM	**-8.1816E-02**	2.327E-01	2.329E-01	9.467E-01	PCI/SA	0.922	1.0E+0	2.49E-1
RA-228	BXTF	0		6/29/2006 6:16:16 AM	**1.6221E+00**	4.686E-01	5.091E-01	2.039E+00	PCI/SA	0.826	1.0E+0	2.49E-1
TH-228	9NS1	0		6/23/2006 7:38:50 PM	**2.0285E-01**	2.619E-01	2.628E-01	1.137E+00	PCI/SA	0.285	1.0E+0	3.362E-2
TH-230	9NS1	0		6/23/2006 7:38:50 PM	**1.3018E-01**	1.302E-01	1.31E-01	3.528E-01	PCI/SA	0.285	1.0E+0	3.362E-2
TH-232	9NS1	0		6/23/2006 7:38:50 PM	**6.509E-02**	1.455E-01	1.457E-01	7.808E-01	PCI/SA	0.285	1.0E+0	3.362E-2
U-234	7YSR	0		6/29/2006 3:30:05 PM	**1.1701E-01**	1.434E-01	1.437E-01	6.701E-01	PCI/SA	0.975	1.0E+0	3.239E-2
U-235	7YSR	0		6/29/2006 3:30:05 PM	**-1.9515E-02**	1.951E-02	1.958E-02	4.672E-01	PCI/SA	0.975	1.0E+0	3.239E-2
U-238	7YSR	0		6/29/2006 3:30:05 PM	**-9.7575E-02**	4.364E-02	4.433E-02	7.18E-01	PCI/SA	0.975	1.0E+0	3.239E-2
31853	**9H61AM10**			**J6F0802035**	000470	FILTER	6/7/2006 10:00:00		5/22/2006 11:25:00 AM			
ALPHA	BAS7	0		6/22/2006 8:49:58 AM	**8.6535E+00**	2.438E+00	2.595E+00	6.497E+00	PCI/SA	1.0	1.0E+0	2.087E-2
BETA	BDS8	0		6/20/2006 6:46:45 PM	**4.4033E+01**	2.729E+00	4.225E+00	6.697E+00	PCI/SA	1.0	1.0E+0	3.406E-2
RA-226	BXTE	0		6/23/2006 3:18:01 PM	**7.0427E-02**	1.833E-01	1.835E-01	7.251E-01	PCI/SA	0.854	1.0E+0	2.487E-1
RA-228	BXTF	0		6/29/2006 6:16:16 AM	**1.2747E+00**	5.057E-01	5.149E-01	2.17E+00	PCI/SA	0.742	1.0E+0	2.487E-1
TH-228	9NS1	0		6/23/2006 7:38:50 PM	**1.1928E-01**	2.385E-01	2.389E-01	1.108E+00	PCI/SA	0.312	1.0E+0	3.394E-2
TH-230	9NS1	0		6/23/2006 7:38:50 PM	**4.0186E-01**	2.367E-01	2.406E-01	6.887E-01	PCI/SA	0.312	1.0E+0	3.394E-2

6163126, **Samples Inserted | Updated | NotUpdated => 2 | 0 | 13,
**Results Inserted | ReTestInserted | Updated | NotInserted => 44 | 0 | 0 | 0.
**Diff RptDb | Qtims => *wo:H67QJ1AA=> , mat:FILTER | Air *wo:H67QJ1AA=> , mat:FILTER | Air *wo:H67QJ1AC=> , mat:FILTER | Air *wo:H67QJ1AC=> , mat:FILTER | Air.

SDG or Batch / Isotope	Rpt Db Id / Method	RTst	Qc	LotSample / Analysis Date	Client Id / Result	Matrix / Cnt Uncert	Received Date / Tot Uncert	Sample Date / Mda	Units	Expected	Yield	Volumes
TH-232	9NS1	0		6/23/2006 7:38:50 PM	**0.0E+00**	0.0E+00	1.406E-01	3.112E-01	PCI/SA	0.312	1.0E+0	3.394E-2
U-234	7YSR	0		6/29/2006 3:30:18 PM	**-1.841E-05**	1.426E-01	1.426E-01	8.55E-01	PCI/SA	1.014	1.0E+0	3.238E-2
U-235	7YSR	0		6/29/2006 3:30:18 PM	**-1.8417E-02**	1.842E-02	1.848E-02	4.41E-01	PCI/SA	1.014	1.0E+0	3.238E-2
U-238	7YSR	0		6/29/2006 3:30:18 PM	**3.867E-01**	2.092E-01	2.114E-01	6.325E-01	PCI/SA	1.014	1.0E+0	3.238E-2
31853	**9H61AR10**			**J6F0802036**	000471	FILTER	6/7/2006 10:00:00	5/22/2006 11:35:00 AM				
ALPHA	BAS7	0		6/22/2006 8:49:58 AM	**5.632E+00**	2.077E+00	2.156E+00	6.062E+00	PCI/SA	1.0	1.0E+0	2.089E-2
BETA	BDS8	0		6/20/2006 6:46:45 PM	**4.4882E+01**	2.784E+00	4.217E+00	6.616E+00	PCI/SA	1.0	1.0E+0	3.346E-2
RA-226	BXTE	0		6/23/2006 3:19:01 PM	**-1.1317E-01**	2.287E-01	2.29E-01	9.854E-01	PCI/SA	0.95	1.0E+0	2.496E-1
RA-228	BXTF	0		6/29/2006 6:16:16 AM	**2.1115E+00**	4.783E-01	5.027E-01	1.895E+00	PCI/SA	0.848	1.0E+0	2.496E-1
TH-228	9NS1	0		6/23/2006 7:38:50 PM	**4.3145E-02**	9.647E-02	9.657E-02	5.176E-01	PCI/SA	0.508	1.0E+0	3.425E-2
TH-230	9NS1	0		6/23/2006 7:38:50 PM	**6.2298E-01**	2.386E-01	2.466E-01	4.982E-01	PCI/SA	0.508	1.0E+0	3.425E-2
TH-232	9NS1	0		6/23/2006 7:38:50 PM	**-4.1532E-02**	4.153E-02	4.174E-02	4.982E-01	PCI/SA	0.508	1.0E+0	3.425E-2
U-234	7YSR	0		6/29/2006 3:30:29 PM	**1.0952E-01**	1.095E-01	1.099E-01	2.968E-01	PCI/SA	0.875	1.0E+0	3.248E-2
U-235	7YSR	0		6/29/2006 3:30:29 PM	**-4.3823E-02**	3.099E-02	3.119E-02	6.189E-01	PCI/SA	0.875	1.0E+0	3.248E-2
U-238	7YSR	0		6/29/2006 3:30:29 PM	**1.9713E-01**	1.564E-01	1.572E-01	5.246E-01	PCI/SA	0.875	1.0E+0	3.248E-2
31853	**9H61AT10**			**J6F0802037**	000472	FILTER	6/7/2006 10:00:00	5/22/2006 10:15:00 AM				
ALPHA	BAS7	0		6/22/2006 10:42:31	**-2.1888E+00**	7.739E-01	8.069E-01	7.173E+00	PCI/SA	1.0	1.0E+0	2.081E-2
BETA	BDS8	0		6/20/2006 6:46:45 PM	**6.7795E-01**	1.519E+00	1.52E+00	6.677E+00	PCI/SA	1.0	1.0E+0	3.267E-2
RA-226	BXTE	0		6/23/2006 3:18:01 PM	**-1.8619E-01**	3.072E-01	3.078E-01	1.286E+00	PCI/SA	0.784	1.0E+0	2.473E-1
RA-228	BXTF	0		6/29/2006 6:16:21 AM	**2.2713E+00**	5.213E-01	5.392E-01	1.851E+00	PCI/SA	0.702	1.0E+0	2.473E-1
TH-228	9NS1	0		6/23/2006 7:38:50 PM	**1.1971E-01**	1.197E-01	1.203E-01	4.787E-01	PCI/SA	0.57	1.0E+0	3.303E-2
TH-230	9NS1	0		6/23/2006 7:38:50 PM	**3.8409E-01**	1.718E-01	1.759E-01	2.082E-01	PCI/SA	0.57	1.0E+0	3.303E-2
TH-232	9NS1	0		6/23/2006 7:38:50 PM	**1.1523E-01**	1.152E-01	1.158E-01	4.608E-01	PCI/SA	0.57	1.0E+0	3.303E-2
U-234	7YSR	0		6/29/2006 3:30:42 PM	**0.0E+00**	0.0E+00	1.33E-01	2.943E-01	PCI/SA	0.925	1.0E+0	3.174E-2
U-235	7YSR	0		6/29/2006 3:30:42 PM	**0.0E+00**	0.0E+00	1.33E-01	2.943E-01	PCI/SA	0.925	1.0E+0	3.174E-2
U-238	7YSR	0		6/29/2006 3:30:42 PM	**1.0858E-01**	1.086E-01	1.089E-01	2.943E-01	PCI/SA	0.925	1.0E+0	3.174E-2
31853	**9H61AX10**			**J6F0802038**	P-0637	FILTER	6/7/2006 10:00:00	5/22/2006 10:00:00 AM				
ALPHA	BAS7	0		6/22/2006 10:42:31	**5.0702E+00**	1.953E+00	2.023E+00	5.782E+00	PCI/SA	1.0	1.0E+0	2.044E-2
BETA	BDS8	0		6/20/2006 6:46:45 PM	**2.6735E+01**	2.345E+00	2.967E+00	6.443E+00	PCI/SA	1.0	1.0E+0	3.221E-2
RA-226	BXTE	0		6/23/2006 3:18:03 PM	**5.5396E-01**	2.448E-01	2.509E-01	7.725E-01	PCI/SA	0.873	1.0E+0	2.455E-1
RA-228	BXTF	0		6/29/2006 6:16:21 AM	**1.3233E+00**	4.199E-01	4.445E-01	1.778E+00	PCI/SA	0.786	1.0E+0	2.455E-1
TH-228	9NS1	0		6/23/2006 7:38:50 PM	**5.5577E-02**	8.787E-02	8.802E-02	4.09E-01	PCI/SA	0.691	1.0E+0	3.308E-2
TH-230	9NS1	0		6/23/2006 7:38:50 PM	**1.6049E-01**	1.135E-01	1.145E-01	3.937E-01	PCI/SA	0.691	1.0E+0	3.308E-2
TH-232	9NS1	0		6/23/2006 7:38:50 PM	**0.0E+00**	0.0E+00	6.552E-02	1.45E-01	PCI/SA	0.691	1.0E+0	3.308E-2
U-234	7YSR	0		6/29/2006 3:31:04 PM	**-6.6215E-02**	3.823E-02	3.861E-02	6.961E-01	PCI/SA	0.845	1.0E+0	3.184E-2
U-235	7YSR	0		6/29/2006 3:31:04 PM	**8.8178E-02**	1.124E-01	1.127E-01	5.282E-01	PCI/SA	0.845	1.0E+0	3.184E-2
U-238	7YSR	0		6/29/2006 3:31:04 PM	**0.0E+00**	0.0E+00	1.35E-01	2.988E-01	PCI/SA	0.845	1.0E+0	3.184E-2
31853	**H67QJ1AB**			**J6F120000126**	INTRA-LAB BLANK	FILTER	6/7/2006 10:00:00	5/22/2006 10:10:00 AM				
U-234	7YSR	0	B	6/29/2006 3:32:20 PM	**1.1181E-02**	9.027E-03	9.069E-03	3.169E-02	PCI/SA	0.97	1.0E+0	1.0E+0
U-235	7YSR	0	B	6/29/2006 3:32:20 PM	**-1.5247E-03**	8.803E-04	8.882E-04	3.169E-02	PCI/SA	0.97	1.0E+0	1.0E+0
U-238	7YSR	0	B	6/29/2006 3:32:20 PM	**-2.0329E-03**	1.016E-03	1.029E-03	3.393E-02	PCI/SA	0.97	1.0E+0	1.0E+0
31853	**H67QJ1CS**			**J6F120000126**	INTRA-LAB CHECK	FILTER	6/7/2006 10:00:00	5/22/2006 10:10:00 AM				
U-234	7YSR	0	S	6/29/2006 3:32:42 PM	**9.4772E-01**	9.758E-02	1.252E-01	5.347E-02	PCI/SA	9.7268E-01 0.87	1.0E+0	1.0E+0
U-238	7YSR	0	S	6/29/2006 3:32:42 PM	**1.1811E+00**	1.087E-01	1.462E-01	2.713E-02	PCI/SA	1.0187E+00 0.87	1.0E+0	1.0E+0

6163126, **Samples Inserted | Updated | NotUpdated => 2 | 0 | 13,
**Results Inserted | ReTestInserted | Updated | NotInserted => 44 | 0 | 0 | 0.
**Diff RptDb | Qtims => *wo:H67QJ1AA=> , mat:FILTER | Air *wo:H67QJ1AA=> , mat:FILTER | Air *wo:H67QJ1AC=> , mat:FILTER | Air *wo:H67QJ1AC=> , mat:FILTER | Air.

Batch Nbr: 6163126

Alpha Spec, UIso by ALP , Results

Summary Report

6/29/2006 6:28:45 PM

Status	Meth	Matrix	Wrk Ord	Parameter	Sa Act	Uncert	Q	Units	Av	MLcC	MDC	QC	Yield	RYld
UIso by ALP				Richland Standard AlpIso Wo Blk Subt.										
Calc	SR	FILTER	H61AE1AG	U-234	-4.47E-02	(3.18E-02)	U4	PCI/SA	R	1.64E-01	6.31E-01	CRX met	88%	
Calc	SR	FILTER	H61AE1AG	U-235	-2.23E-02	(2.24E-02)	U4	PCI/SA	R	1.16E-01	5.35E-01		88%	
Calc	SR	FILTER	H61AE1AG	U-238	6.70E-02	(1.16E-01)	U4	PCI/SA	R	1.64E-01	6.31E-01		88%	
Calc	SR	FILTER	H61AH1AG	U-234	9.94E-02	(9.97E-02)	U4	PCI/SA	R		2.69E-01		102%	
Calc	SR	FILTER	H61AH1AG	U-235	-1.99E-02	(2.00E-02)	U4	PCI/SA	R	1.03E-01	4.76E-01		102%	
Calc	SR	FILTER	H61AH1AG	U-238	-9.95E-02	(4.52E-02)	U4	PCI/SA	R	2.31E-01	7.32E-01		102%	
Calc	SR	FILTER	H61AK1AG	U-234	2.93E-02	(1.58E-01)	U4	PCI/SA	R	3.05E-01	1.01E+00		66%	
Calc	SR	FILTER	H61AK1AG	U-235	3.81E-01	(2.59E-01)	U4	PCI/SA	R	2.15E-01	8.28E-01		66%	
Calc	SR	FILTER	H61AK1AG	U-238	-1.17E-01	(5.94E-02)	U4	PCI/SA	R	3.05E-01	1.01E+00		66%	
Calc	SR	FILTER	H61AL1AG	U-234	1.17E-01	(1.44E-01)	U4	PCI/SA	R	2.03E-01	6.70E-01		97%	
Calc	SR	FILTER	H61AL1AG	U-235	-1.95E-02	(1.96E-02)	U4	PCI/SA	R	1.01E-01	4.67E-01		97%	
Calc	SR	FILTER	H61AL1AG	U-238	-9.76E-02	(4.43E-02)	U4	PCI/SA	R	2.27E-01	7.18E-01		97%	
Calc	SR	FILTER	H61AM1AG	U-234	-1.84E-05	(1.43E-01)	U4	PCI/SA	R	3.03E-01	8.55E-01		101%	
Calc	SR	FILTER	H61AM1AG	U-235	-1.84E-02	(1.85E-02)	U4	PCI/SA	R	9.58E-02	4.41E-01		101%	
Calc	SR	FILTER	H61AM1AG	U-238	3.87E-01	(2.11E-01)		PCI/SA	R	1.92E-01	6.32E-01		101%	
Calc	SR	FILTER	H61AR1AG	U-234	1.10E-01	(1.10E-01)	U4	PCI/SA	R		2.97E-01		88%	
Calc	SR	FILTER	H61AR1AG	U-235	-4.38E-02	(3.12E-02)	U4	PCI/SA	R	1.61E-01	6.19E-01		88%	
Calc	SR	FILTER	H61AR1AG	U-238	1.97E-01	(1.57E-01)	U4	PCI/SA	R	1.14E-01	5.25E-01		88%	
Calc	SR	FILTER	H61AT1AG	U-234	0.00E+00	(1.33E-01)	U4	PCI/SA	R		2.94E-01		92%	
Calc	SR	FILTER	H61AT1AG	U-235	0.00E+00	(1.33E-01)	U4	PCI/SA	R		2.94E-01		92%	
Calc	SR	FILTER	H61AT1AG	U-238	1.09E-01	(1.09E-01)	U4	PCI/SA	R		2.94E-01		92%	
Calc	SR	FILTER	H61AX1AG	U-234	-6.62E-02	(3.86E-02)	U4	PCI/SA	R	1.99E-01	6.96E-01		85%	
Calc	SR	FILTER	H61AX1AG	U-235	8.82E-02	(1.13E-01)	U4	PCI/SA	R	1.15E-01	5.28E-01		85%	
Calc	SR	FILTER	H61AX1AG	U-238	0.00E+00	(1.35E-01)	U4	PCI/SA	R		2.99E-01		85%	
Calc	SR	FILTER	H61A11AG	U-234	8.62E-02	(1.10E-01)	U4	PCI/SA	R	1.12E-01	5.16E-01		91%	
Calc	SR	FILTER	H61A11AG	U-235	0.00E+00	(1.32E-01)	U4	PCI/SA	R		2.92E-01		91%	
Calc	SR	FILTER	H61A11AG	U-238	0.00E+00	(1.32E-01)	U4	PCI/SA	R		2.92E-01		91%	
Calc	SR	FILTER	H61A21AG	U-234	8.28E-02	(1.06E-01)	U4	PCI/SA	R	1.08E-01	4.96E-01		95%	
Calc	SR	FILTER	H61A21AG	U-235	0.00E+00	(1.27E-01)	U4	PCI/SA	R		2.81E-01		95%	
Calc	SR	FILTER	H61A21AG	U-238	6.21E-02	(1.08E-01)	U4	PCI/SA	R	1.52E-01	5.85E-01		95%	
Calc	SR	FILTER	H61A31AG	U-234	5.82E-02	(1.01E-01)	U4	PCI/SA	R	1.43E-01	5.48E-01		91%	
Calc	SR	FILTER	H61A31AG	U-235	-1.94E-02	(1.95E-02)	U4	PCI/SA	R	1.01E-01	4.65E-01		91%	
Calc	SR	FILTER	H61A31AG	U-238	1.75E-01	(1.39E-01)	U4	PCI/SA	R	1.01E-01	4.65E-01		91%	
Calc	SR	FILTER	H61A51AG	U-234	-2.11E-02	(2.12E-02)	U4	PCI/SA	R	1.10E-01	5.05E-01		93%	
Calc	SR	FILTER	H61A51AG	U-235	0.00E+00	(1.29E-01)	U4	PCI/SA	R		2.86E-01		93%	
Calc	SR	FILTER	H61A51AG	U-238	0.00E+00	(1.29E-01)	U4	PCI/SA	R		2.86E-01		93%	
Calc	SR	FILTER	H61A71AG	U-234	5.78E-02	(9.81E-02)	U4	PCI/SA	R	1.42E-01	5.45E-01		102%	

() - (1s Uncertainities)
IDC - Instrument Detection Level in Conc Units
MLcC - Method Decision Level in Conc Units
MDC - Minimum Detectable Concentration
*Std - Lc, MDC using StdDev for Set of Blanks

Q - Qualifier, U is Less Than Lc = 1.645*TPU
All Results Displayed to Three Digits Reguardless of Significants
Date/Time - mm/dd/yy hh:mm, 24hr Time

RecCnt:51
RADCALC v4.8.18
STL Richland

Batch Nbr: 6163126

Alpha Spec, Uiso by ALP , Results

6/29/2006 6:28:45 PM

Summary Report

Status	Meth	Matrix	Wrk Ord	Parameter	Sa Act	Uncert	Q	Units	Av	ILcC	IDC	QC	Yield	RYld
Calc	SR	FILTER	**H61A71AG**	U-235	**-2.32E-02**	**(1.35E-02)**	**U4**	PCI/SA	R	1.10E-01	4.81E-01		102%	
Calc	SR	FILTER	**H61A71AG**	U-238	**4.24E-02**	**(9.86E-02)**	**U4**	PCI/SA	R	1.68E-01	5.97E-01		102%	
Calc	SR	FILTER	**H67QJ1AA**	U-234	**1.12E-02**	**(9.07E-03)**	**U4**	PCI/SA	R	7.24E-03	3.17E-02	**B**	97%	
Calc	SR	FILTER	**H67QJ1AA**	U-235	**-1.52E-03**	**(8.88E-04)**	**U4**	PCI/SA	R	7.24E-03	3.17E-02	**B**	97%	
Calc	SR	FILTER	**H67QJ1AA**	U-238	**-2.03E-03**	**(1.03E-03)**	**U4**	PCI/SA	R	8.36E-03	3.39E-02	**B**	97%	
Calc	SR	FILTER	**H67QJ1AC**	U-234	**9.48E-01**	**(1.25E-01)**		PCI/SA	R	1.32E-02	5.35E-02	**S**	87%	97%
Calc	SR	FILTER	**H67QJ1AC**	U-235	**1.29E-01**	**(3.76E-02)**		PCI/SA	R	9.32E-03	4.58E-02	**S**	87%	290%
Calc	SR	FILTER	**H67QJ1AC**	U-238	**1.18E+00**	**(1.46E-01)**		PCI/SA	R		2.71E-02	**S**	87%	116%

P Anderson
6-30-06

() - (1s Uncertainities)
IDC - Instrument Detection Level in Conc Units
MLcC- Method Decision Level in Conc Units
MDC - Minimum Detectable Concentration
*Std - Lc, MDC using StdDev for Set of Blanks

Page 2

Q - Qualifier, U is Less Than Lc = 1.645*TPU
All Results Displayed to Three Digits Reguardless of Significants
Date/Time - mm/dd/yy hh:mm, 24hr Time

RecCnt:60
RADCALC v4.8.18
STL Richland

Batch Nbr: 6163126

Alpha Spec, Uiso by ALP , Calculated Results

6/29/2006 6:28:46 PM

Detailed Report

Sq	Status	Method	Matrix	Protocol	Equation Set	Wrk Ord	Units/Matrix	QC/BB	Sa/On Date	AnalysisDate/PptWt	Sep1/Sep2 Date	QC/Tracer Vial	Mult/EntYld	Total/Analy Vol	Final/Count Vol
1	Calc	SR	FILTER	*STLE	AlpIsoWoBS	**H61AE1AG**	**PCI/SA**		05/22/06 10:10	06/29/06 15:29			1	1.00 Sa	
536403,000466					,J6F080203-1 v4.8.18		FILTER					UITC15740 Alq		0.062524 Sa	

Sq	Cnt Date	Parameter	Sample Cnt	Bkgrnd Cnt	Instr	Geom	Trc/Av	Ent	Efficiency1	Efficiency 2	Ent	Yld Fct	Ent	Blk Value	Ingr Fct	Conv Fct/VolAdj	Decay	Abn
0	06/29/06 13:49	U-232	649	8	ALP1	ED	Y	N	3.6576E-01		N	100%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			200.0833333	1000.2166			Y		(1.097E-02)						(0.000E+00)	15.993967		
1	06/29/06 13:49	U-234	0	2	ALP1	ED	N	N	3.6576E-01		N	88%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			200.0833333	1000.2166			Y		(1.097E-02)			4%			(0.000E+00)	15.993967		
2	06/29/06 13:49	U-235	0	1	ALP1	ED	N	N	3.6576E-01		N	88%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			200.0833333	1000.2166			Y		(1.097E-02)			4%			(0.000E+00)	15.993967		
3	06/29/06 13:49	U-238	1	2	ALP1	ED	N	N	3.6576E-01		N	88%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			200.0833333	1000.2166			Y		(1.097E-02)			4%			(0.000E+00)	15.993967		

Sq	Calc Date	Parameter	Avg	Sa Act	Q	Net Cnt Rt	Dpm Wo Blk	Dpm-Blk	Vol Used	Yield,EnFct	Chem Yld,EFctU	IDC/ILcC	BlkLcC/MDC	StdDvMdC/LcC
	06/29/06	U-232	R	**63.732781**		3.23565E+00	8.846268	8.846268	1.00 Sa	88%				
				(4.832451)		(1.2736E-01)	(0.437798)	(0.437798)	(0.028284)					
	06/29/06	U-234	R	**-0.04466**	**U4**	-1.99957E-03	-0.006199	-0.006199	1.00 Sa	88%		0.630831		
				(0.031789)		(1.4139E-03)	(0.004398)	(0.004398)	(0.028284)			0.164258		
	06/29/06	U-235	R	**-0.02233**	**U4**	-9.99783E-04	-0.003099	-0.003099	1.00 Sa	88%		0.534668		
				(0.022404)		(9.9978E-04)	(0.003105)	(0.003105)	(0.028284)			0.116148		
	06/29/06	U-238	R	**0.066968**	**U4**	2.99835E-03	0.009295	0.009295	1.00 Sa	88%		0.630831		
				(0.116137)		(5.1941E-03)	(0.016111)	(0.016111)	(0.028284)			0.164258		

Sq	Status	Method	Matrix	Protocol	Equation Set	Wrk Ord	Units/Matrix	QC/BB	Sa/On Date	AnalysisDate/PptWt	Sep1/Sep2 Date	QC/Tracer Vial	Mult/EntYld	Total/Analy Vol	Final/Count Vol
2	Calc	SR	FILTER	*STLE	AlpIsoWoBS	**H61AH1AG**	**PCI/SA**		05/22/06 10:30	06/29/06 15:29			1	1.00 Sa	
536403,000467					,J6F080203-2 v4.8.18		FILTER					UITC15741 Alq		0.062528 Sa	

Sq	Cnt Date	Parameter	Sample Cnt	Bkgrnd Cnt	Instr	Geom	Trc/Av	Ent	Efficiency1	Efficiency 2	Ent	Yld Fct	Ent	Blk Value	Ingr Fct	Conv Fct/VolAdj	Decay	Abn
0	06/29/06 13:49	U-232	742	9	ALP2	ED	Y	N	3.6206E-01		N	100%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			200.1333333	1000.1666			Y		(1.086E-02)						(0.000E+00)	15.992887		
1	06/29/06 13:49	U-234	1	0	ALP2	ED	N	N	3.6206E-01		N	102%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			200.1333333	1000.1666			Y		(1.086E-02)			5%			(0.000E+00)	15.992887		
2	06/29/06 13:49	U-235	0	1	ALP2	ED	N	N	3.6206E-01		N	102%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			200.1333333	1000.1666			Y		(1.086E-02)			5%			(0.000E+00)	15.992887		
3	06/29/06 13:49	U-238	0	5	ALP2	ED	N	N	3.6206E-01		N	102%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			200.1333333	1000.1666			Y		(1.086E-02)			5%			(0.000E+00)	15.992887		

() - (1s Uncertainities), Q - Qualifier, U Result is Less Than Lc = 1.645 * TPU

IDC - Instrument Detection Level in Conc Units, MLcC - Method Decision Level in Conc Units, MDC- Minimum Detectable Concentration

Sr-89 Counts are Derived from the Combination of Each Sr-89/90 and Y-90 Count, All Result Digits May Not be Significants, Date/Time - mm/dd/yy hh:mm, 24hr Time

RecCnt:2

RADCALC v4.8.18

STL Richland

Batch Nbr: 6163126

Alpha Spec, UIso by ALP , Calculated Results

6/29/2006 6:28:46 PM

Sq	Calc Date	Parameter	Avg	Sa Act	Q	Net Cnt Rt	Dpm Wo Blk	Dpm-Blk	Vol Used	Yield,EnFct	Chem Yld,EFctU	IDC/ILcC	BlkLcC/MDC	StdDvMdC/LcC
	06/29/06	U-232	R	**73.591261**		3.69853E+00	10.215339	10.215339	1.00 Sa	102%				
				(5.484861)		(1.3614E-01)	(0.485087)	(0.485087)	(0.028284)					
	06/29/06	U-234	R	**0.099421**	U4	4.99667E-03	0.013801	0.013801	1.00 Sa	102%		0.269431		
				(0.099741)		(4.9967E-03)	(0.013823)	(0.013823)	(0.028284)					
	06/29/06	U-235	R	**-0.019894**	U4	-9.99833E-04	-0.002762	-0.002762	1.00 Sa	102%		0.476232		
				(0.019958)		(9.9983E-04)	(0.002766)	(0.002766)	(0.028284)			0.103462		
	06/29/06	U-238	R	**-0.099471**	U4	-4.99917E-03	-0.013808	-0.013808	1.00 Sa	102%		0.731853		
				(0.045197)		(2.2357E-03)	(0.006224)	(0.006224)	(0.028284)			0.231349		

Sq	Status	Method	Matrix	Protocol	Equation Set	Wrk Ord	Units/Matrix	QC/BB	Sa/On Date	AnalysisDate/PptWt	Sep1/Sep2 Date	QC/Tracer Vial	Mult/EntYld	Total/Analy Vol	Final/Count Vol
3	Calc	SR	FILTER	*STLE	AlpIsoWoBS	**H61AK1AG**	**PCI/SA**		05/22/06 10:45	06/29/06 15:29			1	1.00 Sa	
536403,000468					,J6F080203-3 v4.8.18		FILTER					UITC15742 Alq		0.0623 Sa	

Sq	Cnt Date	Parameter	Sample Cnt	Bkgrnd Cnt	Instr	Geom	Trc/Av	Ent	Efficiency1	Efficiency 2	Ent	Yld Fct	Ent	Blk Value	Ingr Fct	Conv Fct/VolAdj	Decay	Abn
0	06/29/06 13:49	U-232	499	18	ALP3	ED	Y	N	3.7651E-01		N	100%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			200.0166666	1000.0833			Y		(1.130E-02)						(0.000E+00)	16.051397		
1	06/29/06 13:49	U-234	1	4	ALP3	ED	N	N	3.7651E-01		N	66%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			200.0166666	1000.0833			Y		(1.130E-02)			4%			(0.000E+00)	16.051397		
2	06/29/06 13:49	U-235	3	2	ALP3	ED	N	N	3.7651E-01		N	66%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			200.0166666	1000.0833			Y		(1.130E-02)			4%			(0.000E+00)	16.051397		
3	06/29/06 13:49	U-238	0	4	ALP3	ED	N	N	3.7651E-01		N	66%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			200.0166666	1000.0833			Y		(1.130E-02)			4%			(0.000E+00)	16.051397		

Sq	Calc Date	Parameter	Avg	Sa Act	Q	Net Cnt Rt	Dpm Wo Blk	Dpm-Blk	Vol Used	Yield,EnFct	Chem Yld,EFctU	IDC/ILcC	BlkLcC/MDC	StdDvMdC/LcC
	06/29/06	U-232	R	**47.563883**		2.47679E+00	6.578364	6.578364	1.00 Sa	66%				
				(3.756093)		(1.1176E-01)	(0.356458)	(0.356458)	(0.028284)					
	06/29/06	U-234	R	**0.029292**	U4	9.99917E-04	0.004051	0.004051	1.00 Sa	66%		1.006035		
				(0.15776)		(5.3847E-03)	(0.021818)	(0.021818)	(0.028284)			0.304747		
	06/29/06	U-235	R	**0.380792**	U4	1.29989E-02	0.052666	0.052666	1.00 Sa	66%		0.827624		
				(0.259038)		(8.7742E-03)	(0.035699)	(0.035699)	(0.028284)			0.215489		
	06/29/06	U-238	R	**-0.117167**	U4	-3.99967E-03	-0.016205	-0.016205	1.00 Sa	66%		1.006035		
				(0.059414)		(1.9998E-03)	(0.008164)	(0.008164)	(0.028284)			0.304747		

Sq	Status	Method	Matrix	Protocol	Equation Set	Wrk Ord	Units/Matrix	QC/BB	Sa/On Date	AnalysisDate/PptWt	Sep1/Sep2 Date	QC/Tracer Vial	Mult/EntYld	Total/Analy Vol	Final/Count Vol
4	Calc	SR	FILTER	*STLE	AlpIsoWoBS	**H61AL1AG**	**PCI/SA**		05/22/06 11:10	06/29/06 15:30			1	1.00 Sa	
536403,000469					,J6F080203-4 v4.8.18		FILTER					UITC15743 Alq		0.062388 Sa	

Sq	Cnt Date	Parameter	Sample Cnt	Bkgrnd Cnt	Instr	Geom	Trc/Av	Ent	Efficiency1	Efficiency 2	Ent	Yld Fct	Ent	Blk Value	Ingr Fct	Conv Fct/VolAdj	Decay	Abn
0	06/29/06 13:50	U-232	745	5	ALP4	ED	Y	N	3.7951E-01		N	100%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			200.0833333	1000.0166			Y		(1.139E-02)						(0.000E+00)	16.028758		

() - (1s Uncertainities), Q - Qualifier, U Result is Less Than Lc = 1.645 * TPU

IDC - Instrument Detection Level in Conc Units, MLcC - Method Decision Level in Conc Units, MDC- Minimum Detectable Concentration

Sr-89 Counts are Derived from the Combination of Each Sr-89/90 and Y-90 Count, All Result Digits May Not be Significants, Date/Time - mm/dd/yy hh:mm, 24hr Time

RecCnt:4

RADCALC v4.8.18

STL Richland

Batch Nbr: 6163126 Alpha Spec, UIso by ALP , Calculated Results 6/29/2006 6:28:46 PM

1	06/29/06 13:50	U-234	2	4	ALP4	ED	N	N	3.7951E-01	N	97%	N	1.0000E+00	4.5045E-01	1.0000E+00
			200.0833333	1000.0166			Y		(1.139E-02)		5%		(0.000E+00)	16.028758	
2	06/29/06 13:50	U-235	0	1	ALP4	ED	N	N	3.7951E-01	N	97%	N	1.0000E+00	4.5045E-01	1.0000E+00
			200.0833333	1000.0166			Y		(1.139E-02)		5%		(0.000E+00)	16.028758	
3	06/29/06 13:50	U-238	0	5	ALP4	ED	N	N	3.7951E-01	N	97%	N	1.0000E+00	4.5045E-01	1.0000E+00
			200.0833333	1000.0166			Y		(1.139E-02)		5%		(0.000E+00)	16.028758	

Sq	Calc Date	Parameter	Avg	Sa Act	Q	Net Cnt Rt	Dpm Wo Blk	Dpm-Blk	Vol Used	Yield,EnFct	Chem Yld,EFctU	IDC/ILcC	BlkLcC/MDC	StdDvMdC/LcC
	06/29/06	U-232	R	**70.743879**		3.71845E+00	9.798112	9.798112	1.00 Sa	97%				
				(5.268522)		(1.3643E-01)	(0.464378)	(0.464378)	(0.028284)					
	06/29/06	U-234	R	**0.117011**	**U4**	5.99590E-03	0.016206	0.016206	1.00 Sa	97%		0.670061		
				(0.143659)		(7.3456E-03)	(0.019875)	(0.019875)	(0.028284)			0.20299		
	06/29/06	U-235	R	**-0.019515**	**U4**	-9.99983E-04	-0.002703	-0.002703	1.00 Sa	97%		0.467191		
				(0.019578)		(9.9998E-04)	(0.002707)	(0.002707)	(0.028284)			0.101495		
	06/29/06	U-238	R	**-0.097575**	**U4**	-4.99992E-03	-0.013514	-0.013514	1.00 Sa	97%		0.717952		
				(0.044334)		(2.2360E-03)	(0.006091)	(0.006091)	(0.028284)			0.22695		

Sq	Status	Method	Matrix	Protocol	Equation Set	Wrk Ord	Units/Matrix	QC/BB	Sa/On Date	AnalysisDate/PptWt	Sep1/Sep2 Date	QC/Tracer Vial	Mult/EntYld	Total/Analy Vol	Final/Count Vol
5	Calc	SR	FILTER	*STLE	AlpIsoWoBS	**H61AM1AG**	**PCI/SA**		05/22/06 11:25	06/29/06 15:30			1	1.00 Sa	
536403,000470					,J6F080203-5 v4.8.18		FILTER					UITC15744 Alq		0.06238 Sa	

Sq	Cnt Date	Parameter	Sample Cnt	Bkgrnd Cnt	Instr	Geom	Trc/Av	Ent	Efficiency1	Efficiency 2	Ent	Yld Fct	Ent	Blk Value	Ingr Fct	Conv Fct/VolAdj	Decay	Abn
0	06/29/06 13:50	U-232	799	6	ALP5	ED	Y	N	3.9200E-01		N	100%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			200.0666666	1000.2333			Y		(1.176E-02)						(0.000E+00)	16.030748		
1	06/29/06 13:50	U-234	2	10	ALP5	ED	N	N	3.9200E-01		N	101%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			200.0666666	1000.2333			Y		(1.176E-02)			5%			(0.000E+00)	16.030748		
2	06/29/06 13:50	U-235	0	1	ALP5	ED	N	N	3.9200E-01		N	101%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			200.0666666	1000.2333			Y		(1.176E-02)			5%			(0.000E+00)	16.030748		
3	06/29/06 13:50	U-238	5	4	ALP5	ED	N	N	3.9200E-01		N	101%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			200.0666666	1000.2333			Y		(1.176E-02)			5%			(0.000E+00)	16.030748		

Sq	Calc Date	Parameter	Avg	Sa Act	Q	Net Cnt Rt	Dpm Wo Blk	Dpm-Blk	Vol Used	Yield,EnFct	Chem Yld,EFctU	IDC/ILcC	BlkLcC/MDC	StdDvMdC/LcC
	06/29/06	U-232	R	**73.456473**		3.98767E+00	10.172547	10.172547	1.00 Sa	101%				
				(5.425699)		(1.4131E-01)	(0.472308)	(0.472308)	(0.028284)					
	06/29/06	U-234	R	**-1.841E-05**	**U4**	-9.99434E-07	-2.5496E-06	-2.5496E-06	1.00 Sa	101%		0.855036		
				(0.142643)		(7.7435E-03)	(0.019754)	(0.019754)	(0.028284)			0.302938		
	06/29/06	U-235	R	**-0.018417**	**U4**	-9.99767E-04	-0.00255	-0.00255	1.00 Sa	101%		0.441001		
				(0.018475)		(9.9977E-04)	(0.002554)	(0.002554)	(0.028284)			0.095797		
	06/29/06	U-238	R	**0.386703**		2.09926E-02	0.053552	0.053552	1.00 Sa	101%		0.632482		
				(0.211412)		(1.1354E-02)	(0.029115)	(0.029115)	(0.028284)			0.191595		

() - (1s Uncertainities), Q - Qualifier, U Result is Less Than Lc = 1.645 * TPU
IDC - Instrument Detection Level in Conc Units, MLcC - Method Decision Level in Conc Units, MDC- Minimum Detectable Concentration
Sr-89 Counts are Derived from the Combination of Each Sr-89/90 and Y-90 Count, All Result Digits May Not be Significants, Date/Time - mm/dd/yy hh:mm, 24hr Time

RecCnt:6 RADCALC v4.8.18
STL Richland

Batch Nbr: 6163126 — Alpha Spec, UIso by ALP , Calculated Results — 6/29/2006 6:28:46 PM

Sq	Status	Method	Matrix	Protocol	Equation Set	Wrk Ord	Units/Matrix	QC/BB	Sa/On Date	AnalysisDate/PptWt	Sep1/Sep2 Date	QC/Tracer Vial	Mult/EntYld	Total/Analy Vol	Final/Count Vol
6	Calc	SR	FILTER	*STLE	AlpIsoWoBS	**H61AR1AG**	**PCI/SA**		05/22/06 11:35	06/29/06 15:30			1	1.00 Sa	
536403,000471					,J6F080203-6 v4.8.18		FILTER					UITC15745 Alq		0.062481 Sa	

Sq	Cnt Date	Parameter	Sample Cnt	Bkgrnd Cnt	Instr	Geom	Trc/Av	Ent	Efficiency1	Efficiency 2	Ent	Yld Fct	Ent	Blk Value	Ingr Fct	Conv Fct/VolAdj	Decay	Abn
0	06/29/06 13:50	U-232	663	7	ALP6	ED	Y	N	3.7594E-01		N	100%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			200.0833333	1000.0666			Y		(1.128E-02)						(0.000E+00)	16.004808		
1	06/29/06 13:50	U-234	1	0	ALP6	ED	N	N	3.7594E-01		N	88%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			200.0833333	1000.0666			Y		(1.128E-02)			4%			(0.000E+00)	16.004808		
2	06/29/06 13:50	U-235	0	2	ALP6	ED	N	N	3.7594E-01		N	88%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			200.0833333	1000.0666			Y		(1.128E-02)			4%			(0.000E+00)	16.004808		
3	06/29/06 13:50	U-238	2	1	ALP6	ED	N	N	3.7594E-01		N	88%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			200.0833333	1000.0666			Y		(1.128E-02)			4%			(0.000E+00)	16.004808		

Sq	Calc Date	Parameter	Avg	Sa Act	Q	Net Cnt Rt	Dpm Wo Blk	Dpm-Blk	Vol Used	Yield,EnFct	Chem Yld,EFctU	iDC/iLcC	BlkLcC/MDC	StdDvMdC/LcC
	06/29/06	U-232	R	**63.410761**		3.30662E+00	8.795609	8.795609	1.00 Sa	88%				
				(4.79384)		(1.2872E-01)	(0.432269)	(0.432269)	(0.028284)					
	06/29/06	U-234	R	**0.109519**	**U4**	4.99792E-03	0.015191	0.015191	1.00 Sa	88%		0.296798		
				(0.109881)		(4.9979E-03)	(0.015216)	(0.015216)	(0.028284)					
	06/29/06	U-235	R	**-0.043823**	**U4**	-1.99987E-03	-0.006079	-0.006079	1.00 Sa	88%		0.618941		
				(0.031192)		(1.4141E-03)	(0.004312)	(0.004312)	(0.028284)			0.161168		
	06/29/06	U-238	R	**0.197127**	**U4**	8.99590E-03	0.027343	0.027343	1.00 Sa	88%		0.524588		
				(0.157246)		(7.1385E-03)	(0.021755)	(0.021755)	(0.028284)			0.113963		

Sq	Status	Method	Matrix	Protocol	Equation Set	Wrk Ord	Units/Matrix	QC/BB	Sa/On Date	AnalysisDate/PptWt	Sep1/Sep2 Date	QC/Tracer Vial	Mult/EntYld	Total/Analy Vol	Final/Count Vol
7	Calc	SR	FILTER	*STLE	AlpIsoWoBS	**H61AT1AG**	**PCI/SA**		05/22/06 10:15	06/29/06 15:30			1	1.00 Sa	
536403,000472					,J6F080203-7 v4.8.18		FILTER					UITC15746 Alq		0.061741 Sa	

Sq	Cnt Date	Parameter	Sample Cnt	Bkgrnd Cnt	Instr	Geom	Trc/Av	Ent	Efficiency1	Efficiency 2	Ent	Yld Fct	Ent	Blk Value	Ingr Fct	Conv Fct/VolAdj	Decay	Abn
0	06/29/06 13:50	U-232	674	2	ALP7	ED	Y	N	3.6324E-01		N	100%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			200.0833333	1000.05			Y		(1.090E-02)						(0.000E+00)	16.196726		
1	06/29/06 13:50	U-234	0	0	ALP7	ED	N	N	3.6324E-01		N	92%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			200.0833333	1000.05			Y		(1.090E-02)			5%			(0.000E+00)	16.196726		
2	06/29/06 13:50	U-235	0	0	ALP7	ED	N	N	3.6324E-01		N	92%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			200.0833333	1000.05			Y		(1.090E-02)			5%			(0.000E+00)	16.196726		
3	06/29/06 13:50	U-238	1	0	ALP7	ED	N	N	3.6324E-01		N	92%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			200.0833333	1000.05			Y		(1.090E-02)			5%			(0.000E+00)	16.196726		

() - (1s Uncertainities), Q - Qualifier, U Result is Less Than Lc = 1.645 * TPU
IDC - Instrument Detection Level in Conc Units, MLcC - Method Decision Level in Conc Units, MDC- Minimum Detectable Concentration
Sr-89 Counts are Derived from the Combination of Each Sr-89/90 and Y-90 Count, All Result Digits May Not be Significants, Date/Time - mm/dd/yy hh:mm, 24hr Time

RecCnt:7 RADCALC v4.8.18 STL Richland

Batch Nbr: 6163126 — Alpha Spec, UIso by ALP , Calculated Results — 6/29/2006 6:28:47 PM

Sq	Calc Date	Parameter	Avg	Sa Act	Q	Net Cnt Rt	Dpm Wo Blk	Dpm-Blk	Vol Used	Yield,EnFct	Chem Yld,EFctU	IDC/ILcC	BlkLcC/MDC	StdDvMdC/LcC
	06/29/06	U-232	R	**67.61937**		3.36660E+00	9.26824	9.26824	1.00 Sa	92%				
				(5.098706)		(1.2976E-01)	(0.452687)	(0.452687)	(0.028284)					
	06/29/06	U-234	R	**0.00E00**	U4	0.00000E+00	0.00E00	0.00E00	1.00 Sa	92%		0.294257		
				(0.132985)		(0.0000E+00)	(0.018228)	(0.018228)	(0.028284)					
	06/29/06	U-235	R	**0.00E00**	U4	0.00000E+00	0.00E00	0.00E00	1.00 Sa	92%		0.294257		
				(0.132985)		(0.0000E+00)	(0.018228)	(0.018228)	(0.028284)					
	06/29/06	U-238	R	**0.108582**	U4	4.99792E-03	0.014883	0.014883	1.00 Sa	92%		0.294257		
				(0.108939)		(4.9979E-03)	(0.014907)	(0.014907)	(0.028284)					

Sq	Status	Method	Matrix	Protocol	Equation Set	Wrk Ord	Units/Matrix	QC/BB	Sa/On Date	AnalysisDate/PptWt	Sep1/Sep2 Date	QC/Tracer Vial	Mult/EntYld	Total/Analy Vol	Final/Count Vol
8	Calc	SR	FILTER	*STLE	AlpIsoWoBS	**H61AX1AG**	**PCI/SA**		05/22/06 10:00	06/29/06 15:31			1	1.00 Sa	
536403,P-0637					,J6F080203-8 v4.8.18		FILTER					UITC15747 Alq		0.061836 Sa	

Sq	Cnt Date	Parameter	Sample Cnt	Bkgrnd Cnt	Instr	Geom	Trc/Av	Ent	Efficiency1	Efficiency 2	Ent	Yld Fct	Ent	Blk Value	Ingr Fct	Conv Fct/VolAdj	Decay	Abn
0	06/29/06 13:50	U-232	666	9	ALP8	ED	Y	N	3.9047E-01		N	100%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			200.2	1000.0166			Y		(1.171E-02)						(0.000E+00)	16.171698		
1	06/29/06 13:50	U-234	0	3	ALP8	ED	N	N	3.9047E-01		N	85%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			200.2	1000.0166			Y		(1.171E-02)			4%			(0.000E+00)	16.171698		
2	06/29/06 13:50	U-235	1	1	ALP8	ED	N	N	3.9047E-01		N	85%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			200.2	1000.0166			Y		(1.171E-02)			4%			(0.000E+00)	16.171698		
3	06/29/06 13:50	U-238	0	0	ALP8	ED	N	N	3.9047E-01		N	85%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			200.2	1000.0166			Y		(1.171E-02)			4%			(0.000E+00)	16.171698		

Sq	Calc Date	Parameter	Avg	Sa Act	Q	Net Cnt Rt	Dpm Wo Blk	Dpm-Blk	Vol Used	Yield,EnFct	Chem Yld,EFctU	IDC/ILcC	BlkLcC/MDC	StdDvMdC/LcC
	06/29/06	U-232	R	**61.893554**		3.31767E+00	8.496562	8.496562	1.00 Sa	85%				
				(4.677153)		(1.2894E-01)	(0.417152)	(0.417152)	(0.028284)					
	06/29/06	U-234	R	**-0.066215**	U4	-2.99995E-03	-0.00909	-0.00909	1.00 Sa	85%		0.696079		
				(0.038606)		(1.7320E-03)	(0.005274)	(0.005274)	(0.028284)			0.198769		
	06/29/06	U-235	R	**0.088178**	U4	3.99502E-03	0.012105	0.012105	1.00 Sa	85%		0.528159		
				(0.112666)		(5.0941E-03)	(0.015451)	(0.015451)	(0.028284)			0.114759		
	06/29/06	U-238	R	**0.00E00**	U4	0.00000E+00	0.00E00	0.00E00	1.00 Sa	85%		0.298777		
				(0.135028)		(0.0000E+00)	(0.018536)	(0.018536)	(0.028284)					

Sq	Status	Method	Matrix	Protocol	Equation Set	Wrk Ord	Units/Matrix	QC/BB	Sa/On Date	AnalysisDate/PptWt	Sep1/Sep2 Date	QC/Tracer Vial	Mult/EntYld	Total/Analy Vol	Final/Count Vol
9	Calc	SR	FILTER	*STLE	AlpIsoWoBS	**H61A11AG**	**PCI/SA**		05/22/06 10:25	06/29/06 15:31			1	1.00 Sa	
536403,P-0638					,J6F080203-9 v4.8.18		FILTER					UITC15748 Alq		0.062477 Sa	

Sq	Cnt Date	Parameter	Sample Cnt	Bkgrnd Cnt	Instr	Geom	Trc/Av	Ent	Efficiency1	Efficiency 2	Ent	Yld Fct	Ent	Blk Value	Ingr Fct	Conv Fct/VolAdj	Decay	Abn
0	06/29/06 13:51	U-232	674	2	ALP9	ED	Y	N	3.6670E-01		N	100%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			200.05	1000.0333			Y		(1.100E-02)						(0.000E+00)	16.005976		

() - (1s Uncertainities), Q - Qualifier, U Result is Less Than Lc = 1.645 * TPU
IDC - Instrument Detection Level in Conc Units, MLcC - Method Decision Level in Conc Units, MDC- Minimum Detectable Concentration
Sr-89 Counts are Derived from the Combination of Each Sr-89/90 and Y-90 Count, All Result Digits May Not be Significants, Date/Time - mm/dd/yy hh:mm, 24hr Time

RecCnt:9 RADCALC v4.8.18
STL Richland

Batch Nbr: 6163126 Alpha Spec, UIso by ALP , Calculated Results 6/29/2006 6:28:47 PM

1	06/29/06 13:51	U-234	1	1	ALP9	ED	N	N	3.6670E-01	N	91%	N	1.0000E+00	4.5045E-01	1.0000E+00
			200.05	1000.0333			Y		(1.100E-02)		4%		(0.000E+00)	16.005976	
2	06/29/06 13:51	U-235	0	0	ALP9	ED	N	N	3.6670E-01	N	91%	N	1.0000E+00	4.5045E-01	1.0000E+00
			200.05	1000.0333			Y		(1.100E-02)		4%		(0.000E+00)	16.005976	
3	06/29/06 13:51	U-238	0	0	ALP9	ED	N	N	3.6670E-01	N	91%	N	1.0000E+00	4.5045E-01	1.0000E+00
			200.05	1000.0333			Y		(1.100E-02)		4%		(0.000E+00)	16.005976	

Sq	Calc Date	Parameter	Avg	Sa Act	Q	Net Cnt Rt	Dpm Wo Blk	Dpm-Blk	Vol Used	Yield,EnFct	Chem Yld,EFctU	IDC/ILcC	BlkLcC/MDC	StdDvMdC/LcC
	06/29/06	U-232	R	**66.202953**		3.36716E+00	9.182239	9.182239	1.00 Sa	91%				
				(4.991904)		(1.2978E-01)	(0.448486)	(0.448486)	(0.028284)					
	06/29/06	U-234	R	**0.086191**	**U4**	3.99878E-03	0.011954	0.011954	1.00 Sa	91%		0.516069		
				(0.110101)		(5.0978E-03)	(0.015255)	(0.015255)	(0.028284)			0.112108		
	06/29/06	U-235	R	**0.00E00**	**U4**	0.00000E+00	0.00E00	0.00E00	1.00 Sa	91%		0.291986		
				(0.131959)		(0.0000E+00)	(0.018302)	(0.018302)	(0.028284)					
	06/29/06	U-238	R	**0.00E00**	**U4**	0.00000E+00	0.00E00	0.00E00	1.00 Sa	91%		0.291986		
				(0.131959)		(0.0000E+00)	(0.018302)	(0.018302)	(0.028284)					

Sq	Status	Method	Matrix	Protocol	Equation Set	Wrk Ord	Units/Matrix	QC/BB	Sa/On Date	AnalysisDate/PptWt	Sep1/Sep2 Date	QC/Tracer Vial	Mult/EntYld	Total/Analy Vol	Final/Count Vol
10	Calc	SR	FILTER	*STLE	AlpIsoWoBS	**H61A21AG**	**PCI/SA**		05/22/06 10:40	06/29/06 15:31			1	1.00 Sa	
536403,P-0639					,J6F080203-10 v4.8.18		FILTER					UITC15749 Alq		0.06209 Sa	

Sq	Cnt Date	Parameter	Sample Cnt	Bkgrnd Cnt	Instr	Geom	Trc/Av	Ent	Efficiency1	Efficiency 2	Ent	Yld Fct	Ent	Blk Value	Ingr Fct	Conv Fct/VolAdj	Decay	Abn
0	06/29/06 13:51	U-232	707	6	ALP10	ED	Y	N	3.6914E-01		N	100%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			200.1166666	1000.25			Y		(1.107E-02)						(0.000E+00)	16.105778		
1	06/29/06 13:51	U-234	1	1	ALP10	ED	N	N	3.6914E-01		N	95%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			200.1166666	1000.25			Y		(1.107E-02)			5%			(0.000E+00)	16.105778		
2	06/29/06 13:51	U-235	0	0	ALP10	ED	N	N	3.6914E-01		N	95%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			200.1166666	1000.25			Y		(1.107E-02)			5%			(0.000E+00)	16.105778		
3	06/29/06 13:51	U-238	1	2	ALP10	ED	N	N	3.6914E-01		N	95%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			200.1166666	1000.25			Y		(1.107E-02)			5%			(0.000E+00)	16.105778		

Sq	Calc Date	Parameter	Avg	Sa Act	Q	Net Cnt Rt	Dpm Wo Blk	Dpm-Blk	Vol Used	Yield,EnFct	Chem Yld,EFctU	IDC/ILcC	BlkLcC/MDC	StdDvMdC/LcC
	06/29/06	U-232	R	**69.316311**		3.52694E+00	9.554482	9.554482	1.00 Sa	95%				
				(5.196285)		(1.3289E-01)	(0.460177)	(0.460177)	(0.028284)					
	06/29/06	U-234	R	**0.082833**	**U4**	3.99733E-03	0.011418	0.011418	1.00 Sa	95%		0.495995		
				(0.105814)		(5.0961E-03)	(0.014571)	(0.014571)	(0.028284)			0.107751		
	06/29/06	U-235	R	**0.00E00**	**U4**	0.00000E+00	0.00E00	0.00E00	1.00 Sa	95%		0.280621		
				(0.126823)		(0.0000E+00)	(0.017481)	(0.017481)	(0.028284)					
	06/29/06	U-238	R	**0.062116**	**U4**	2.99758E-03	0.008562	0.008562	1.00 Sa	95%		0.585205		
				(0.107732)		(5.1933E-03)	(0.014842)	(0.014842)	(0.028284)			0.152382		

() - (1s Uncertainities), Q - Qualifier, U Result is Less Than Lc = 1.645 * TPU
IDC - Instrument Detection Level in Conc Units, MLcC - Method Decision Level in Conc Units, MDC- Minimum Detectable Concentration
Sr-89 Counts are Derived from the Combination of Each Sr-89/90 and Y-90 Count, All Result Digits May Not be Significants, Date/Time - mm/dd/yy hh:mm, 24hr Time

RecCnt:11 RADCALC v4.8.18
STL Richland

Batch Nbr: 6163126 — Alpha Spec, UIso by ALP , Calculated Results — 6/29/2006 6:28:47 PM

Sq	Status	Method	Matrix	Protocol	Equation Set	Wrk Ord	Units/Matrix	QC/BB	Sa/On Date	AnalysisDate/PptWt	Sep1/Sep2 Date	QC/Tracer Vial	Mult/EntYld	Total/Analy Vol	Final/Count Vol
11	Calc	SR	FILTER	*STLE	AlpIsoWoBS	**H61A31AG**	**PCI/SA**		05/22/06 11:20	06/29/06 15:31			1	1.00 Sa	
536403,P-0641					,J6F080203-11 v4.8.18		FILTER					UITC15750 Alq		0.062424 Sa	

Sq	Cnt Date	Parameter	Sample Cnt	Bkgrnd Cnt	Instr	Geom	Trc/Av	Ent	Efficiency1	Efficiency 2	Ent	Yld Fct	Ent	Blk Value	Ingr Fct	Conv Fct/VolAdj	Decay	Abn
0	06/29/06 13:51	U-232	747	8	ALP11	ED	Y	N	4.0933E-01		N	100%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			200.1	1000.2			Y		(1.228E-02)						(0.000E+00)	16.019418		
1	06/29/06 13:51	U-234	1	2	ALP11	ED	N	N	4.0933E-01		N	91%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			200.1	1000.2			Y		(1.228E-02)			4%			(0.000E+00)	16.019418		
2	06/29/06 13:51	U-235	0	1	ALP11	ED	N	N	4.0933E-01		N	91%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			200.1	1000.2			Y		(1.228E-02)			4%			(0.000E+00)	16.019418		
3	06/29/06 13:51	U-238	2	1	ALP11	ED	N	N	4.0933E-01		N	91%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			200.1	1000.2			Y		(1.228E-02)			4%			(0.000E+00)	16.019418		

Sq	Calc Date	Parameter	Avg	Sa Act	Q	Net Cnt Rt	Dpm Wo Blk	Dpm-Blk	Vol Used	Yield,EnFct	Chem Yld,EFctU	IDC/ILcC	BlkLcC/MDC	StdDvMdC/LcC
	06/29/06	U-232	R	**65.668758**		3.72514E+00	9.100505	9.100505	1.00 Sa	91%				
				(4.890017)		(1.3662E-01)	(0.431197)	(0.431197)	(0.028284)					
	06/29/06	U-234	R	**0.058206**	**U4**	2.99790E-03	0.008066	0.008066	1.00 Sa	91%		0.548351		
				(0.100947)		(5.1937E-03)	(0.013982)	(0.013982)	(0.028284)			0.142785		
	06/29/06	U-235	R	**-0.019412**	**U4**	-9.99800E-04	-0.00269	-0.00269	1.00 Sa	91%		0.464759		
				(0.019474)		(9.9980E-04)	(0.002694)	(0.002694)	(0.028284)			0.100964		
	06/29/06	U-238	R	**0.174648**	**U4**	8.99520E-03	0.024203	0.024203	1.00 Sa	91%		0.464759		
				(0.139295)		(7.1379E-03)	(0.019254)	(0.019254)	(0.028284)			0.100964		

Sq	Status	Method	Matrix	Protocol	Equation Set	Wrk Ord	Units/Matrix	QC/BB	Sa/On Date	AnalysisDate/PptWt	Sep1/Sep2 Date	QC/Tracer Vial	Mult/EntYld	Total/Analy Vol	Final/Count Vol
12	Calc	SR	FILTER	*STLE	AlpIsoWoBS	**H61A51AG**	**PCI/SA**		05/22/06 11:30	06/29/06 15:31			1	1.00 Sa	
536403,P-0642					,J6F080203-12 v4.8.18		FILTER					UITC15751 Alq		0.062258 Sa	

Sq	Cnt Date	Parameter	Sample Cnt	Bkgrnd Cnt	Instr	Geom	Trc/Av	Ent	Efficiency1	Efficiency 2	Ent	Yld Fct	Ent	Blk Value	Ingr Fct	Conv Fct/VolAdj	Decay	Abn
0	06/29/06 13:51	U-232	694	12	ALP12	ED	Y	N	3.6724E-01		N	100%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			200.1333333	1000.1333			Y		(1.102E-02)						(0.000E+00)	16.062214		
1	06/29/06 13:51	U-234	0	1	ALP12	ED	N	N	3.6724E-01		N	93%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			200.1333333	1000.1333			Y		(1.102E-02)			5%			(0.000E+00)	16.062214		
2	06/29/06 13:51	U-235	0	0	ALP12	ED	N	N	3.6724E-01		N	93%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			200.1333333	1000.1333			Y		(1.102E-02)			5%			(0.000E+00)	16.062214		
3	06/29/06 13:51	U-238	0	0	ALP12	ED	N	N	3.6724E-01		N	93%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			200.1333333	1000.1333			Y		(1.102E-02)			5%			(0.000E+00)	16.062214		

() - (1s Uncertainities), Q - Qualifier, U Result is Less Than Lc = 1.645 * TPU
IDC - Instrument Detection Level in Conc Units, MLcC - Method Decision Level in Conc Units, MDC- Minimum Detectable Concentration
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RecCnt:12 RADCALC v4.8.18
STL Richland

Batch Nbr: 6163126 — Alpha Spec, UIso by ALP , Calculated Results — 6/29/2006 6:28:47 PM

Sq	Calc Date	Parameter	Avg	Sa Act	Q	Net Cnt Rt	Dpm Wo Blk	Dpm-Blk	Vol Used	Yield,EnFct	Chem Yld,EFctU	IDC/ILcC	BlkLcC/MDC	StdDvMdC/LcC
	06/29/06	U-232	R	**68.082328**		3.45569E+00	9.409843	9.409843	1.00 Sa	93%				
				(5.118392)		(1.3168E-01)	(0.456348)	(0.456348)	(0.028284)					
	06/29/06	U-234	R	**-0.021106**	U4	-9.99867E-04	-0.002917	-0.002917	1.00 Sa	93%		0.505225		
				(0.021175)		(9.9987E-04)	(0.002922)	(0.002922)	(0.028284)			0.109762		
	06/29/06	U-235	R	**0.00E00**	U4	0.00000E+00	0.00E00	0.00E00	1.00 Sa	93%		0.285831		
				(0.129177)		(0.0000E+00)	(0.017854)	(0.017854)	(0.028284)					
	06/29/06	U-238	R	**0.00E00**	U4	0.00000E+00	0.00E00	0.00E00	1.00 Sa	93%		0.285831		
				(0.129177)		(0.0000E+00)	(0.017854)	(0.017854)	(0.028284)					

Sq	Status	Method	Matrix	Protocol	Equation Set	Wrk Ord	Units/Matrix	QC/BB	Sa/On Date	AnalysisDate/PptWt	Sep1/Sep2 Date	QC/Tracer Vial	Mult/EntYld	Total/Analy Vol	Final/Count Vol
13	Calc	SR	FILTER	*STLE	AlpIsoWoBS	**H61A71AG**	**PCI/SA**		05/22/06 10:05	06/29/06 15:32			1	1.00 Sa	
536403,P-0643					,J6F080203-13 v4.8.18		FILTER					UITC15752 Alq		0.062366 Sa	

Sq	Cnt Date	Parameter	Sample Cnt	Bkgrnd Cnt	Instr	Geom	Trc/Av	Ent	Efficiency1	Efficiency 2	Ent	Yld Fct	Ent	Blk Value	Ingr Fct	Conv Fct/VolAdj	Decay	Abn
0	06/29/06 13:52	U-232	772	26	ALP69	ED	Y	N	3.7411E-01		N	100%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			200.2166666	2500.0166			Y		(1.122E-02)						(0.000E+00)	16.034484		
1	06/29/06 13:52	U-234	1	5	ALP69	ED	N	N	3.7411E-01		N	102%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			200.2166666	2500.0166			Y		(1.122E-02)			5%			(0.000E+00)	16.034484		
2	06/29/06 13:52	U-235	0	3	ALP69	ED	N	N	3.7411E-01		N	102%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			200.2166666	2500.0166			Y		(1.122E-02)			5%			(0.000E+00)	16.034484		
3	06/29/06 13:52	U-238	1	7	ALP69	ED	N	N	3.7411E-01		N	102%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			200.2166666	2500.0166			Y		(1.122E-02)			5%			(0.000E+00)	16.034484		

Sq	Calc Date	Parameter	Avg	Sa Act	Q	Net Cnt Rt	Dpm Wo Blk	Dpm-Blk	Vol Used	Yield,EnFct	Chem Yld,EFctU	IDC/ILcC	BlkLcC/MDC	StdDvMdC/LcC
	06/29/06	U-232	R	**74.241143**		3.84542E+00	10.278815	10.278815	1.00 Sa	102%				
				(5.507189)		(1.3879E-01)	(0.482408)	(0.482408)	(0.028284)					
	06/29/06	U-234	R	**0.057815**	U4	2.99460E-03	0.008005	0.008005	1.00 Sa	102%		0.545056		
				(0.098071)		(5.0740E-03)	(0.01357)	(0.01357)	(0.028284)			0.141953		
	06/29/06	U-235	R	**-0.023167**	U4	-1.19999E-03	-0.003208	-0.003208	1.00 Sa	102%		0.4811		
				(0.013504)		(6.9282E-04)	(0.00186)	(0.00186)	(0.028284)			0.109956		
	06/29/06	U-238	R	**0.04237**	U4	2.19461E-03	0.005866	0.005866	1.00 Sa	102%		0.597041		
				(0.098627)		(5.1055E-03)	(0.013651)	(0.013651)	(0.028284)			0.167961		

Sq	Status	Method	Matrix	Protocol	Equation Set	Wrk Ord	Units/Matrix	QC/BB	Sa/On Date	AnalysisDate/PptWt	Sep1/Sep2 Date	QC/Tracer Vial	Mult/EntYld	Total/Analy Vol	Final/Count Vol
14	Calc	SR	FILTER	*STLE	AlpIsoWoBS	**H67QJ1AA**	**PCI/SA**	**B**	05/22/06 10:10	06/29/06 15:32			1	1.00 Sa	
0,INTRA-LAB BLANK					,J6F120000-126		FILTER					UITC15753 Alq		1.00 Sa	

Sq	Cnt Date	Parameter	Sample Cnt	Bkgrnd Cnt	Instr	Geom	Trc/Av	Ent	Efficiency1	Efficiency 2	Ent	Yld Fct	Ent	Blk Value	Ingr Fct	Conv Fct/VolAdj	Decay	Abn
0	06/29/06 13:52	U-232	715	28	ALP71	ED	Y	N	3.6536E-01		N	100%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			200	2500.0333			Y		(1.096E-02)						(0.000E+00)	1.00		

() - (1s Uncertainities), Q - Qualifier, U Result is Less Than Lc = 1.645 * TPU
IDC - Instrument Detection Level in Conc Units, MLcC - Method Decision Level in Conc Units, MDC- Minimum Detectable Concentration
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RecCnt:14 RADCALC v4.8.18
STL Richland

Batch Nbr: 6163126 — Alpha Spec, UIso by ALP , Calculated Results — 6/29/2006 6:28:48 PM

1	06/29/06 13:52	U-234	2	3	ALP71	ED	N	N	3.6536E-01	N	97%	N	1.0000E+00	4.5045E-01	1.0000E+00
			200	2500.0333			Y		(1.096E-02)		5%		(0.000E+00)	1.00	
2	06/29/06 13:52	U-235	0	3	ALP71	ED	N	N	3.6536E-01	N	97%	N	1.0000E+00	4.5045E-01	1.0000E+00
			200	2500.0333			Y		(1.096E-02)		5%		(0.000E+00)	1.00	
3	06/29/06 13:52	U-238	0	4	ALP71	ED	N	N	3.6536E-01	N	97%	N	1.0000E+00	4.5045E-01	1.0000E+00
			200	2500.0333			Y		(1.096E-02)		5%		(0.000E+00)	1.00	

Sq	Calc Date	Parameter	Avg	Sa Act	Q	Net Cnt Rt	Dpm Wo Blk	Dpm-Blk	Vol Used	Yield,EnFct	Chem Yld,EFctU	IDC/ILcC	BlkLcC/MDC	StdDvMdC/LcC
	06/29/06	U-232	R	**4.393744**		3.56380E+00	9.754121	9.754121	1.00 Sa	97%				
				(0.314015)		(1.3371E-01)	(0.46858)	(0.46858)	(0.017321)					
	06/29/06	U-234	R	**0.011181**	U4	8.80002E-03	0.024822	0.024822	1.00 Sa	97%		0.031689		
				(0.009069)		(7.1049E-03)	(0.02009)	(0.02009)	(0.017321)			0.00724		
	06/29/06	U-235	R	**-0.001525**	U4	-1.19998E-03	-0.003385	-0.003385	1.00 Sa	97%		0.031689		
				(0.000888)		(6.9281E-04)	(0.001964)	(0.001964)	(0.017321)			0.00724		
	06/29/06	U-238	R	**-0.002033**	U4	-1.59998E-03	-0.004513	-0.004513	1.00 Sa	97%		0.033928		
				(0.001029)		(7.9999E-04)	(0.002271)	(0.002271)	(0.017321)			0.00836		

Sq	Status	Method	Matrix	Protocol	Equation Set	Wrk Ord	Units/Matrix	QC/BB	Sa/On Date	AnalysisDate/PptWt	Sep1/Sep2 Date	QC/Tracer Vial	Mult/EntYld	Total/Analy Vol	Final/Count Vol
15	Calc	SR	FILTER	*STLE	AlpIsoWoBS	**H67QJ1AC**	**PCI/SA**	**S**	05/22/06 10:10	06/29/06 15:32		UISF0457	1	1.00 Sa	
0,INTRA-LAB CHECK					,J6F120000-126		FILTER					UISF0457 Alq		1.00 Sa	

Sq	Cnt Date	Parameter	Sample Cnt	Bkgrnd Cnt	Instr	Geom	Trc/Av	Ent	Efficiency1	Efficiency 2	Ent	Yld Fct	Ent	Blk Value	Ingr Fct	Conv Fct/VolAdj	Decay	Abn
0	06/29/06 13:52	U-232	456	64	ALP85	ED	Y	N	2.5840E-01		N	100%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			200.2	2500.1166			Y		(7.752E-03)						(0.000E+00)	1.00		
1	06/29/06 13:52	U-234	95	4	ALP85	ED	N	N	2.5840E-01		N	87%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			200.2	2500.1166			Y		(7.752E-03)			5%			(0.000E+00)	1.00		
2	06/29/06 13:52	U-235	13	2	ALP85	ED	N	N	2.5840E-01		N	87%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			200.2	2500.1166			Y		(7.752E-03)			5%			(0.000E+00)	1.00		
3	06/29/06 13:52	U-238	118	0	ALP85	ED	N	N	2.5840E-01		N	87%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			200.2	2500.1166			Y		(7.752E-03)			5%			(0.000E+00)	1.00		

Sq	Calc Date	Parameter	Avg	Sa Act	Q	Net Cnt Rt	Dpm Wo Blk	Dpm-Blk	Vol Used	Yield,EnFct	Chem Yld,EFctU	IDC/ILcC	BlkLcC/MDC	StdDvMdC/LcC
	06/29/06	U-232	R	**3.925995**		2.25212E+00	8.715718	8.715718	1.00 Sa	87%				
				(0.302713)		(1.0671E-01)	(0.488791)	(0.488791)	(0.017321)					
	06/29/06	U-234	R	**0.947717**		4.72926E-01	2.103933	2.103933	1.00 Sa	87%	97%	0.053469		
				(0.125177)		(4.8692E-02)	(0.254617)	(0.254617)	(0.017321)			0.013179		
	06/29/06	U-235	R	**0.128523**		6.41351E-02	0.285322	0.285322	1.00 Sa	87%	290%	0.045753		
				(0.037641)		(1.8019E-02)	(0.082189)	(0.082189)	(0.017321)			0.009319		
	06/29/06	U-238	R	**1.181146**		5.89411E-01	2.622147	2.622147	1.00 Sa	87%	116%	0.027126		
				(0.146194)		(5.4260E-02)	(0.293397)	(0.293397)	(0.017321)					

() - (1s Uncertainities), Q - Qualifier, U Result is Less Than Lc = 1.645 * TPU
IDC - Instrument Detection Level in Conc Units, MLcC - Method Decision Level in Conc Units, MDC- Minimum Detectable Concentration
Sr-89 Counts are Derived from the Combination of Each Sr-89/90 and Y-90 Count, All Result Digits May Not be Significants, Date/Time - mm/dd/yy hh:mm, 24hr Time

RecCnt:15 RADCALC v4.8.18
STL Richland

STL RICHLAND

SEVERN TRENT **STL**

URANIUM ISOTOPIC COUNTING REQUEST

1712

C.R. Technician: OD

Date Counted: 6/29/06

Counting Time
Sample: 200 Minutes
Background: See Alpha Regions Report

SOP's
Operating: RICHRD008
Review: RICHRD0016

BRC 5/22 6/23/06

WorkOrder #	U-232 (5320 KeV) Tracer	TOTAL COUNTS U-238 (4196 KeV)	U-235 (4396 KeV)	U-234 (4776 KeV)	Det #	Comments/Edits
H61AC1AG	See Counting Room Printout for ROI information				1	
H61AH1AG	See Counting Room Printout for ROI information				2	
H61AK1AG	See Counting Room Printout for ROI information				3	
H61AL1AG	See Counting Room Printout for ROI information				4	
H61Am1AG	See Counting Room Printout for ROI information				5	
H61AR1AG	See Counting Room Printout for ROI information				6	
H61AT1AG	See Counting Room Printout for ROI information				7	
H61AX1AG	See Counting Room Printout for ROI information				8	
	See Counting Room Printout for ROI information					

Comments:

226

Form No: RC-011, 7/02, Rev 8

Approved by: OD

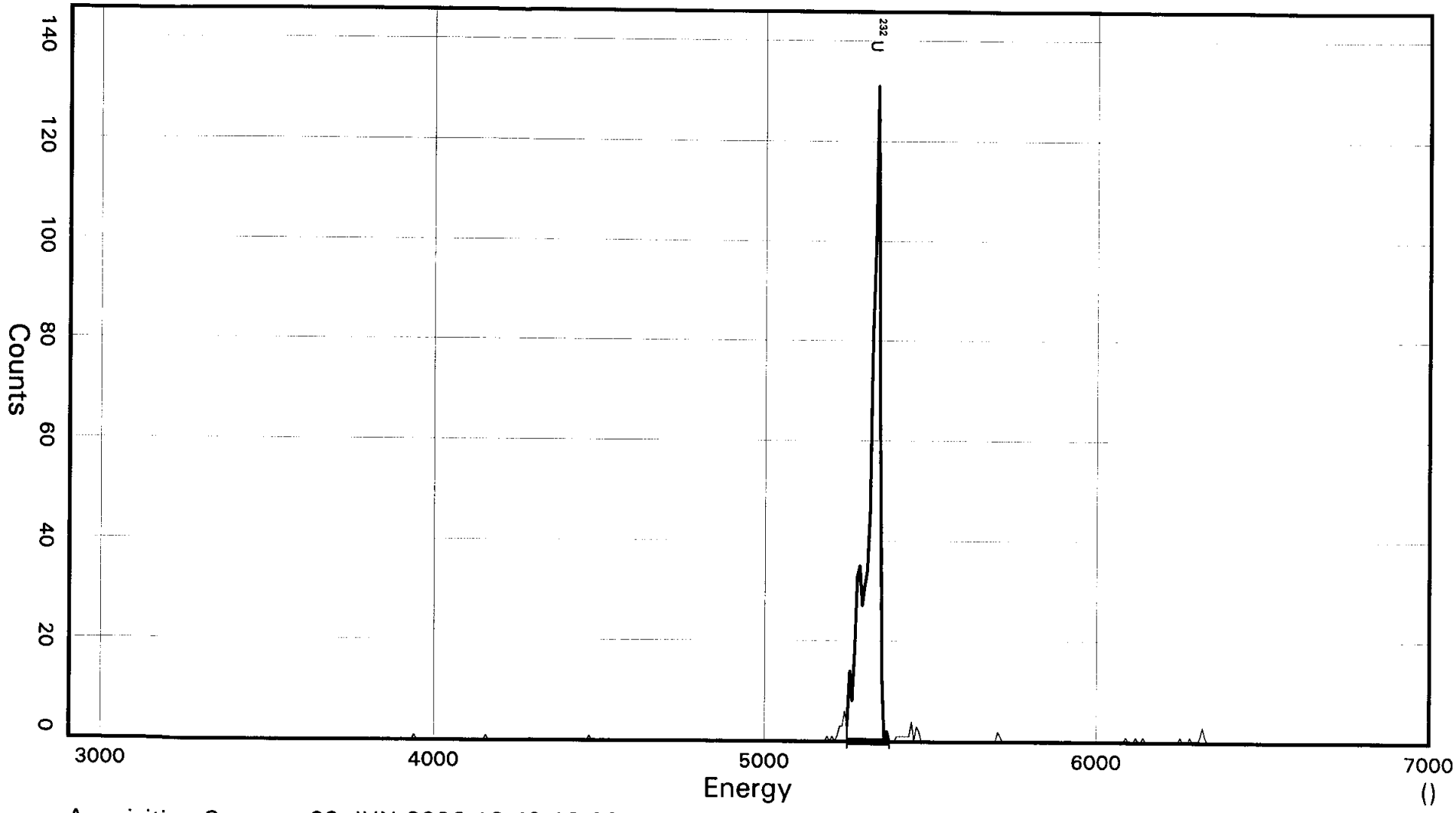
Date: 6/29/06

STL Richland WA.

U BRC

Sample ID: H61AE1AG
Detector ID: ALP1 1

Batch ID: 6163126



Acquisition Start: 29-JUN-2006 13:49:13.02
Preset Live Time: 0 03:20:00.00
Elapsed Live Time: 0 03:20:05.00

Energy Coefficients:
Offset: 2.88299E+03
Slope: 7.51639E+00
Quadrature: -9.96225E-05

SAMPLE IDENTIITY: H61AE1AG

TITLE : U BRC

DETECTOR : ALP1 1
CONFIGURATION NAME : $DISK1:[ALP1.SAMPLE]H61AE1AG_290661349.CNF;1

ACQUIRE DATE of BACKGROUND: 02-JUN-2006 07:26:49

REPORT DATE : 29-Jun-06 SAMPLE DATE: 22-MAY-2006 10:10:00
ACQUIRE DATE: 29-JUN-2006 13:49:13 CALIB DATE : 01-JUN-2006 23:52:47

PRESET LIVE TIME: 0 03:20:00 ELAPSED LIVE TIME: 0 03:20:05

OFFSET : 2882.99 keV CONSTANT FWHM : 8.50000 Channels
SLOPE : 7.51639 keV/C SENSITIVITY : 4.00000 Std Dev's
QUAD COEFF : -.996225E-04 keV/C^2 SUM SENSITIVITY: 1.00000 %

Alpha Regions Report
(Version: 8-Oct-91)

Sample Identity: H61AE1AG

Detector: ALP1 1
Report Date: 29-Jun-06 05:09 PM
Acquire Date: 29-JUN-2006 13:49:13.02
Tracer Nuclide: U-232
High Counts Limit: 36
Sample Live Time: 200 minutes
Bkgrnd Live Time: 1000 minutes

Flags Key

P: Peak Identified
I: Peak Intersect
S: Single Non-peak Intersect
M: Multiple Non-peak Intersect
H: High Non-peak Sample Count
A: Altered via ALP-RGN-EDIT

Nuclide Name	Smpl Count	Bkg Count	Intrsct Count	Count Rate C/Min	Centrd Energy keV	Region Width keV	Left Chnl	Rght Chnl	Left Wdth Mult	Rght Wdth Mult	Flags
U-232	649	8	0	3.236	5330.4	126.7	316	333	0.00	0.00	P
U-234	0	2	0	-0.002	4784.9	126.9	243	260	0.00	0.00	
U-235	0	1	0	-0.001	4408.1	127.1	192	209	0.00	0.00	
U-238	1	2	0	0.003	4208.3	127.2	166	183	0.00	0.00	

End of Alpha Region Report
(Produced by Alp_rgn_cnts)

Alpha Spectrum Listing
(Version: 29-Jun-92)

Sample Identity: H61AE1AG
Detector: ALP1 1
Report Date: 29-Jun-06 05:09 PM
Acquire Date: 29-JUN-2006 13:49:13.02

Flags Key

Intersect Region: @
Non-Intersect Region: +, -

Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn
		1	0		51	0		101	0		151	0	+	201	0	+	251	0		301	0		351	0		401	1		451	0		501
		2	0		52	0		102	0		152	0	+	202	0	+	252	0		302	0		352	0		402	0		452	0		502
0		3	0		53	0		103	0		153	0	+	203	0	+	253	0		303	0		353	0		403	0		453	0		503
0		4	0		54	0		104	0		154	0	+	204	0	+	254	0		304	0		354	0		404	0		454	0		504
0		5	0		55	0		105	0		155	0	+	205	0	+	255	0		305	0		355	0		405	1		455	0		505
0		6	0		56	0		106	0		156	0	+	206	0	+	256	0		306	0		356	0		406	0		456	0		506
0		7	0		57	0		107	0		157	0	+	207	0	+	257	0		307	0		357	0		407	0		457	0		507
0		8	0		58	0		108	0		158	0	+	208	0	+	258	1		308	0		358	0		408	0		458	0		508
0		9	0		59	0		109	0		159	0	+	209	0	+	259	0		309	0		359	0		409	1		459	0		509
0		10	0		60	0		110	0		160	0		210	0	+	260	1		310	0		360	0		410	3		460	0		510
0		11	0		61	0		111	0		161	0		211	0		261	0		311	0		361	0		411	1		461	0		511
0		12	0		62	0		112	0		162	1		212	0		262	1		312	0		362	0		412	0		462	0		512
0		13	0		63	0		113	0		163	0		213	0		263	3		313	0		363	0		413	0		463			
0		14	0		64	0		114	0		164	0		214	0		264	3		314	0		364	0		414	0		464			
0		15	0		65	0		115	0		165	0		215	0		265	6		315	0		365	0		415	0		465			
0		16	0		66	0		116	0	+	166	0		216	0		266	3	+	316	0		366	0		416	0		466			
0		17	0		67	0		117	0	+	167	0		217	0		267	14	+	317	0		367	0		417	0		467			
0		18	0		68	0		118	0	+	168	0		218	0		268	8	+	318	0		368	0		418	0		468			
0		19	0		69	0		119	0	+	169	0		219	0		269	18	+	319	0		369	0		419	0		469			
0		20	0		70	0		120	1	+	170	0		220	0		270	33	+	320	0		370	0		420	0		470			
0		21	0		71	0		121	0	+	171	0		221	0		271	35	+	321	0		371	0		421	0		471			
0		22	0		72	0		122	0	+	172	0		222	0		272	27	+	322	0		372	0		422	0		472			
0		23	0		73	0		123	0	+	173	0		223	0		273	31	+	323	0		373	0		423	0		473			
0		24	0		74	0		124	0	+	174	0		224	0		274	34	+	324	0		374	0		424	0		474			
0		25	0		75	0		125	0	+	175	0		225	0		275	46	+	325	0		375	0		425	0		475			
0		26	0		76	0		126	0	+	176	0		226	0		276	82	+	326	0		376	0		426	0		476			
0		27	0		77	0		127	0	+	177	0		227	0		277	99	+	327	2		377	0		427	0		477			
0		28	0		78	0		128	0	+	178	0		228	0		278	131	+	328	1		378	0		428	0		478			
0		29	0		79	0		129	0	+	179	0		229	0		279	62	+	329	0		379	1		429	0		479			
0		30	0		80	0		130	0	+	180	0		230	0		280	13	+	330	0		380	0		430	0		480			
0		31	0		81	0		131	0	+	181	0		231	0		281	0	+	331	0		381	0		431	0		481			
0		32	0		82	0		132	0	+	182	0		232	0		282	2	+	332	0		382	0		432	0		482			
0		33	0		83	0		133	0	+	183	0		233	0		283	0		333	0		383	1		433	0		483			
0		34	0		84	0		134	0		184	0		234	0		284	0		334	0		384	0		434	0		484			
0		35	0		85	0		135	0		185	0		235	0		285	0		335	0		385	0		435	0		485			
0		36	0		86	0		136	0		186	0		236	0		286	1		336	0		386	1		436	0		486			
0		37	0		87	0		137	0		187	0		237	0		287	1		337	0		387	0		437	0		487			
0		38	0		88	0		138	0		188	0		238	0		288	1		338	0		388	0		438	0		488			
0		39	0		89	0		139	0		189	0		239	0		289	1		339	0		389	0		439	0		489			
0		40	0		90	0		140	0		190	0		240	0		290	1		340	0		390	0		440	0		490			
0		41	0		91	1		141	0		191	0		241	0		291	1		341	0		391	0		441	0		491			
0		42	0		92	0		142	0	+	192	0		242	0		292	4		342	0		392	0		442	0		492			
0		43	0		93	0		143	0	+	193	0	+	243	0		293	0		343	0		393	0		443	0		493			
0		44	0		94	0		144	0	+	194	0	+	244	0		294	3		344	0		394	0		444	0		494			
0		45	0		95	0		145	0	+	195	0	+	245	0		295	2		345	0		395	0		445	0		495			
0		46	0		96	0		146	0	+	196	0	+	246	0		296	0		346	0		396	0		446	0		496			
0		47	0		97	0		147	0	+	197	0	+	247	0		297	0		347	0		397	0		447	0		497			
0		48	0		98	0		148	0	+	198	0	+	248	0		298	0		348	0		398	0		448	0		498			
0		49	0		99	0		149	0	+	199	0	+	249	0		299	0		349	0		399	0		449	0		499			
0		50	0		100	0		150	0	+	200	0	+	250	0		300	0		350	0		400	0		450	0		500			

VMS Peak Search Report V1.9 Generated 29-JUN-2006 17:09:34

```
Configuration     : $DISK1:[ALP1.SAMPLE]H61AE1AG_290661349.CNF;1
Analyses by       : ALPHA V1.8
Sample title      : U BRC
Sample date       : 22-MAY-2006 10:10:00 Acquisition date : 29-JUN-2006 13:49:13
Sample ID         : H61AE1AG             Sample quantity  : 0.00000E+00 SAMPLE
Sample type       : disk                 Sample geometry  :
Detector name     : ALP1                 Detector geometry:
Elapsed live time: 0 03:20:05.00         Elapsed real time: 0 03:20:05.00   0.0%
Start energy      :  2905.54             End energy       :  6705.26
Sensitivity       :     4.00             Sum Sensitivity  :     1.00
```

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	5330.42	649	0	37.58	327.03	316	17	5.41E-02	3.9	

VMS Nuclide Identification Report V3.0 Generated 29-JUN-2006 17:09:36

```
Configuration     : $DISK1:[ALP1.SAMPLE]H61AE1AG_290661349.CNF;1
Analyses by       : ALPHA V1.8,PEAKEFF V2.2,NID V3.3
Sample title      : U BRC
Sample date       : 22-MAY-2006 10:10:00 Acquisition date : 29-JUN-2006 13:49:13
Sample ID         : H61AE1AG             Sample quantity  : 0.00000E+00 SAMPLE
Sample type       : disk                 Sample geometry  :
Detector name     : ALP1                 Detector geometry:
Elapsed live time: 0 03:20:05.00         Elapsed real time: 0 03:20:05.00   0.0%
Energy tolerance :    40.00              Half life ratio  :     1.00
Errors propagated: No                    Systematic Error :     0.00 %
Efficiency type  : Spline                Efficiencies at  : Peak Energy
Abundance limit  :    60.00
```

Summary of Nuclide Activity

```
 Total number of lines in spectrum                1
 Number of unidentified lines                     0
 Number of lines tentatively identified by NID    1      100.00%
```

Nuclide Type : AP

Nuclide	Hlife	Decay	Uncorrected PCI/SAMPLE	Decay Corr PCI/SAMPLE	Decay Corr 0-Sigma Error	0-Sigma %Error	Flags
U-232	68.90Y	1.00	0.000E+00	0.000E+00	0.000E+00	0.00	
		Total Activity :	0.000E+00	0.000E+00			
		Grand Total Activity :	0.000E+00	0.000E+00			

Flags: "K" = Keyline not found "M" = Manually accepted
"E" = Manually edited "A" = Nuclide specific abn. limit

ITRD PEAK TEST REPORT (Version 16-May-94)

Configuration: $DISK1:[ALP1.SAMPLE]H61AE1AG_290661349.CNF;1

Peak Energy	Left Chan	Rght Chan	Peak Area	Total Counts	Diff/ StDev	Overlap Counts	Multiplet Diff/StDev
5330.42	316	333	649	638	0.43		

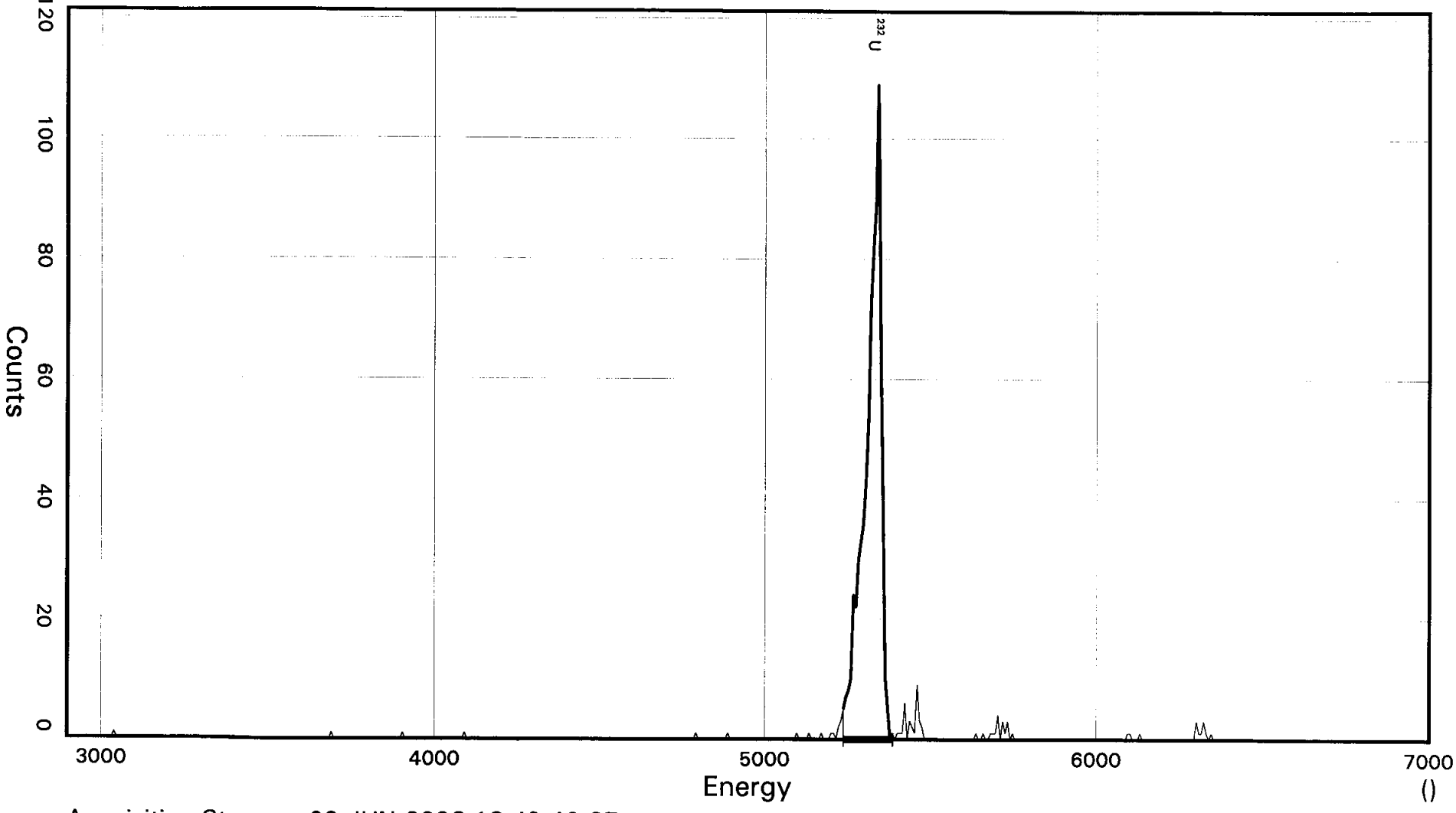
End of Report

STL Richland WA.

U BRC

Sample ID: H61AH1AG
Detector ID: ALP2 1

Batch ID: 6163126



Acquisition Start: 29-JUN-2006 13:49:42.37
Preset Live Time: 0 03:20:00.00
Elapsed Live Time: 0 03:20:08.00

Energy Coefficients:
Offset: 2.87588E+03
Slope: 7.40145E+00
Quadrature: -4.99304E-06

SAMPLE IDENTIITY: H61AH1AG

TITLE : U BRC

DETECTOR : ALP2 1
CONFIGURATION NAME : $DISK1:[ALP2.SAMPLE]H61AH1AG_290661349.CNF;1

ACQUIRE DATE of BACKGROUND: 03-JUN-2006 09:55:02

REPORT DATE : 29-Jun-06 SAMPLE DATE: 22-MAY-2006 10:10:00
ACQUIRE DATE: 29-JUN-2006 13:49:42 CALIB DATE : 02-JUN-2006 00:12:34

PRESET LIVE TIME: 0 03:20:00 ELAPSED LIVE TIME: 0 03:20:08

OFFSET : 2875.88 keV CONSTANT FWHM : 9.50000 Channels
SLOPE : 7.40145 keV/C SENSITIVITY : 4.00000 Std Dev's
QUAD COEFF : -.499304E-05 keV/C^2 SUM SENSITIVITY: 1.00000 %

Alpha Regions Report
(Version: 8-Oct-91)

Sample Identity: H61AH1AG

Detector: ALP2 1
Report Date: 29-Jun-06 05:40 PM
Acquire Date: 29-JUN-2006 13:49:42.37
Tracer Nuclide: U-232
High Counts Limit: 36
Sample Live Time: 200 minutes
Bkgrnd Live Time: 1000 minutes

Flags Key

P: Peak Identified
I: Peak Intersect
S: Single Non-peak Intersect
M: Multiple Non-peak Intersect
H: High Non-peak Sample Count
A: Altered via ALP-RGN-EDIT

Nuclide Name	Smpl Count	Bkg Count	Intrsct Count	Count Rate C/Min	Centrd Energy keV	Region Width keV	Left Chnl	Rght Chnl	Left Wdth Mult	Rght Wdth Mult	Flags
U-232	742	9	0	3.699	5327.2	148.0	319	339	0.00	0.00	P
U-234	1	0	0	0.005	4781.6	148.0	245	265	0.00	0.00	
U-235	0	1	0	-0.001	4404.8	148.0	194	214	0.00	0.00	
U-238	0	5	0	-0.005	4205.0	148.0	167	187	0.00	0.00	

End of Alpha Region Report
(Produced by Alp_rgn_cnts)

Alpha Spectrum Listing
(Version: 29-Jun-92)

Sample Identity: H61AH1AG
Detector: ALP2 1
Report Date: 29-Jun-06 05:40 PM
Acquire Date: 29-JUN-2006 13:49:42.37

Flags Key

Intersect Region: @
Non-Intersect Region: +, -

Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn
		1	0		51	0		101	0		151	0	+	201	0	+	251	0		301	2		351	0		401	0		451	0		501
		2	0		52	0		102	0		152	0	+	202	0	+	252	0		302	0		352	0		402	0		452	0		502
0		3	0		53	0		103	0		153	0	+	203	0	+	253	0		303	0		353	0		403	0		453	0		503
0		4	0		54	0		104	0		154	0	+	204	0	+	254	0		304	0		354	0		404	0		454	0		504
0		5	0		55	0		105	0		155	0	+	205	0	+	255	1		305	0		355	0		405	0		455	0		505
0		6	0		56	0		106	0		156	0	+	206	0	+	256	0		306	0		356	0		406	0		456	0		506
0		7	0		57	0		107	0		157	0	+	207	0	+	257	0		307	0		357	0		407	0		457	0		507
0		8	0		58	0		108	0		158	0	+	208	0	+	258	0		308	0		358	0		408	0		458	0		508
0		9	0		59	0		109	0		159	0	+	209	1	+	259	0		309	0		359	0		409	0		459	0		509
0		10	0		60	1		110	0		160	0	+	210	0	+	260	1		310	0		360	0		410	0		460	0		510
0		11	0		61	0		111	0		161	0	+	211	0	+	261	0		311	0		361	0		411	0		461	0		511
0		12	0		62	0		112	0		162	0	+	212	0	+	262	0		312	0		362	0		412	0		462	0		512
0		13	0		63	0		113	0		163	0	+	213	0	+	263	0		313	0		363	0		413	3		463			
0		14	0		64	0		114	1		164	0	+	214	0	+	264	1		314	0		364	0		414	1		464			
0		15	0		65	0		115	0		165	0		215	0	+	265	1		315	0		365	0		415	1		465			
0		16	0		66	0		116	0		166	0		216	0		266	0		316	0		366	0		416	3		466			
0		17	0		67	0		117	0	+	167	0		217	0		267	2		317	0		367	0		417	1		467			
0		18	0		68	0		118	0	+	168	0		218	0		268	3		318	0		368	0		418	0		468			
0		19	0		69	0		119	0	+	169	0		219	0		269	5	+	319	0		369	0		419	1		469			
0		20	0		70	0		120	0	+	170	0		220	0		270	7	+	320	0		370	0		420	0		470			
0		21	0		71	0		121	0	+	171	0		221	0		271	8	+	321	0		371	0		421	0		471			
1		22	0		72	0		122	0	+	172	0		222	1		272	10	+	322	0		372	0		422	0		472			
0		23	0		73	0		123	0	+	173	0		223	0		273	24	+	323	1		373	0		423	0		473			
0		24	0		74	0		124	0	+	174	0		224	0		274	22	+	324	0		374	0		424	0		474			
0		25	0		75	0		125	0	+	175	0		225	0		275	30	+	325	0		375	0		425	0		475			
0		26	0		76	0		126	0	+	176	0		226	0		276	33	+	326	1		376	0		426	0		476			
0		27	0		77	0		127	0	+	177	0		227	0		277	36	+	327	0		377	0		427	0		477			
0		28	0		78	0		128	0	+	178	0		228	0		278	43	+	328	0		378	0		428	0		478			
0		29	0		79	0		129	0	+	179	0		229	0		279	53	+	329	1		379	0		429	0		479			
0		30	0		80	0		130	0	+	180	0		230	0		280	73	+	330	1		380	0		430	0		480			
0		31	0		81	0		131	0	+	181	0		231	0		281	82	+	331	1		381	0		431	0		481			
0		32	0		82	0		132	0	+	182	0		232	0		282	89	+	332	4		382	0		432	0		482			
0		33	0		83	0		133	0	+	183	0		233	0		283	109	+	333	0		383	0		433	0		483			
0		34	0		84	0		134	0	+	184	0		234	0		284	63	+	334	3		384	0		434	0		484			
0		35	0		85	0		135	0	+	185	0		235	0		285	36	+	335	1		385	1		435	0		485			
0		36	0		86	0		136	0	+	186	0		236	0		286	10	+	336	3		386	1		436	0		486			
0		37	0		87	0		137	0	+	187	0		237	0		287	5	+	337	0		387	0		437	0		487			
0		38	0		88	0		138	0		188	0		238	0		288	0	+	338	1		388	0		438	0		488			
0		39	0		89	1		139	0		189	0		239	0		289	1		339	0		389	0		439	0		489			
0		40	0		90	0		140	0		190	0		240	0		290	0		340	0		390	1		440	0		490			
0		41	0		91	0		141	0		191	0		241	0		291	1		341	0		391	0		441	0		491			
0		42	0		92	0		142	0		192	0		242	0		292	1		342	0		392	0		442	0		492			
0		43	0		93	0		143	0		193	0		243	0		293	1		343	0		393	0		443	0		493			
0		44	0		94	0		144	0	+	194	0		244	0		294	6		344	0		394	0		444	0		494			
0		45	0		95	0		145	0	+	195	0	+	245	0		295	0		345	0		395	0		445	0		495			
0		46	0		96	0		146	0	+	196	0	+	246	0		296	3		346	0		396	0		446	0		496			
0		47	0		97	0		147	0	+	197	0	+	247	0		297	2		347	0		397	0		447	0		497			
0		48	0		98	0		148	0	+	198	0	+	248	0		298	1		348	0		398	0		448	0		498			
0		49	0		99	0		149	0	+	199	0	+	249	0		299	9		349	0		399	0		449	0		499			
0		50	0		100	0		150	0	+	200	0	+	250	1		300	3		350	0		400	0		450	0		500			

VMS Peak Search Report V1.9 Generated 29-JUN-2006 17:40:51

```
Configuration     : $DISK1:[ALP2.SAMPLE]H61AH1AG_290661349.CNF;1
Analyses by       : ALPHA V1.8
Sample title      : U BRC
Sample date       : 22-MAY-2006 10:10:00 Acquisition date : 29-JUN-2006 13:49:42
Sample ID         : H61AH1AG             Sample quantity  : 0.00000E+00 SAMPLE
Sample type       : disk                 Sample geometry  :
Detector name     : ALP2                 Detector geometry:
Elapsed live time: 0 03:20:08.00         Elapsed real time: 0 03:50:50.00    13%
Start energy      :  2898.09             End energy       :  6664.12
Sensitivity       :     4.00             Sum Sensitivity  :     1.00
```

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	5327.16	742	0	51.81	331.26	319	20	6.18E-02	3.7	

VMS Nuclide Identification Report V3.0 Generated 29-JUN-2006 17:40:53

```
Configuration     : $DISK1:[ALP2.SAMPLE]H61AH1AG_290661349.CNF;1
Analyses by       : ALPHA V1.8,PEAKEFF V2.2,NID V3.3
Sample title      : U BRC
Sample date       : 22-MAY-2006 10:10:00 Acquisition date : 29-JUN-2006 13:49:42
Sample ID         : H61AH1AG             Sample quantity  : 0.00000E+00 SAMPLE
Sample type       : disk                 Sample geometry  :
Detector name     : ALP2                 Detector geometry:
Elapsed live time: 0 03:20:08.00         Elapsed real time: 0 03:50:50.00    13%
Energy tolerance :    40.00              Half life ratio  :     1.00
Errors propagated: No                    Systematic Error :     0.00 %
Efficiency type  : Spline                Efficiencies at  : Peak Energy
Abundance limit  :    60.00
```

Summary of Nuclide Activity

```
 Total number of lines in spectrum                1
 Number of unidentified lines                     0
 Number of lines tentatively identified by NID    1      100.00%
```

Nuclide Type : AP

Nuclide	Hlife	Decay	Uncorrected PCI/SAMPLE	Decay Corr PCI/SAMPLE	Decay Corr 0-Sigma Error	0-Sigma %Error	Flags
U-232	68.90Y	1.00	0.000E+00	0.000E+00	0.000E+00	0.00	
		Total Activity :	0.000E+00	0.000E+00			
		Grand Total Activity :	0.000E+00	0.000E+00			

Flags: "K" = Keyline not found "M" = Manually accepted
"E" = Manually edited "A" = Nuclide specific abn. limit

ITRD PEAK TEST REPORT (Version 16-May-94)

Configuration: $DISK1:[ALP2.SAMPLE]H61AH1AG_290661349.CNF;1

Peak Energy	Left Chan	Rght Chan	Peak Area	Total Counts	Diff/ StDev	Overlap Counts	Multiplet Diff/StDev
5327.15	319	339	742	739	0.11		

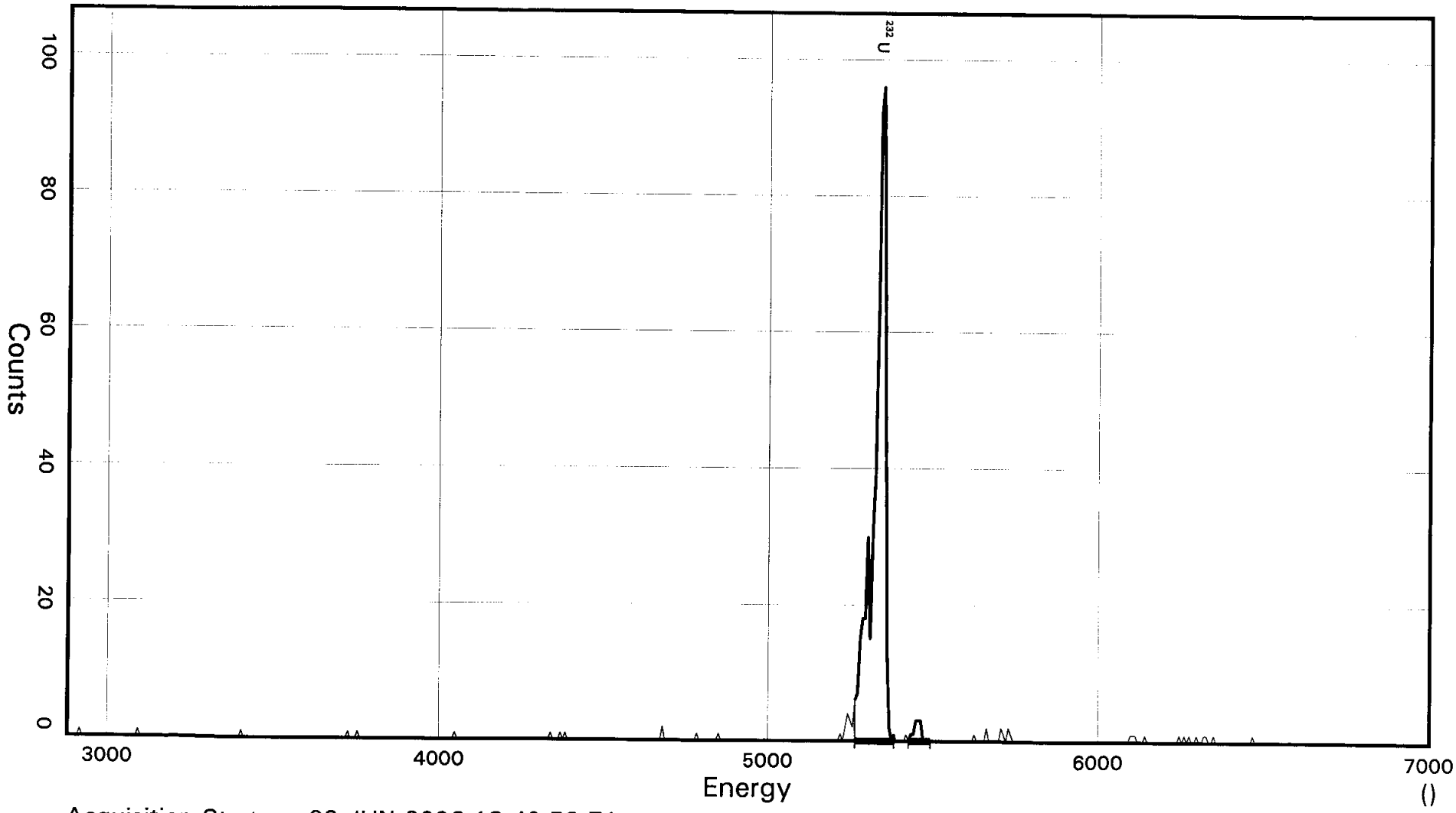
End of Report

STL Richland WA.

U BRC

Sample ID: H61AK1AG
Detector ID: ALP3 1

Batch ID: 6163126



Acquisition Start: 29-JUN-2006 13:49:53.71
Preset Live Time: 0 03:20:00.00
Elapsed Live Time: 0 03:20:01.00

Energy Coefficients:
Offset: 2.85788E+03
Slope: 7.33691E+00
Quadrature: 5.98118E-05

SAMPLE IDENTIITY: H61AK1AG

TITLE : U BRC

DETECTOR : ALP3 1
CONFIGURATION NAME : $DISK1:[ALP3.SAMPLE]H61AK1AG_290661349.CNF;1

ACQUIRE DATE of BACKGROUND: 02-JUN-2006 07:26:57

REPORT DATE : 29-Jun-06 SAMPLE DATE: 22-MAY-2006 10:10:00
ACQUIRE DATE: 29-JUN-2006 13:49:53 CALIB DATE : 01-JUN-2006 23:53:16

PRESET LIVE TIME: 0 03:20:00 ELAPSED LIVE TIME: 0 03:20:01

OFFSET : 2857.88 keV CONSTANT FWHM : 8.33333 Channels
SLOPE : 7.33691 keV/C SENSITIVITY : 4.00000 Std Dev's
QUAD COEFF : 5.981180E-05 keV/C^2 SUM SENSITIVITY: 1.00000 %

Alpha Regions Report
(Version: 8-Oct-91)

Sample Identity: H61AK1AG

Detector: ALP3 1
Report Date: 29-Jun-06 05:10 PM
Acquire Date: 29-JUN-2006 13:49:53.71
Tracer Nuclide: U-232
High Counts Limit: 36
Sample Live Time: 200 minutes
Bkgrnd Live Time: 1000 minutes

Flags Key

P: Peak Identified
I: Peak Intersect
S: Single Non-peak Intersect
M: Multiple Non-peak Intersect
H: High Non-peak Sample Count
A: Altered via ALP-RGN-EDIT

Nuclide Name	Smpl Count	Bkg Count	Intrsct Count	Count Rate C/Min	Centrd Energy keV	Region Width keV	Left Chnl	Rght Chnl	Left Wdth Mult	Rght Wdth Mult	Flags
U-232	499	18	0	2.477	5338.0	118.0	327	343	0.00	0.00	P
U-234	1	4	0	0.001	4792.4	117.9	253	269	0.00	0.00	
U-235	3	2	0	0.013	4415.6	117.8	202	218	0.00	0.00	
U-238	0	4	0	-0.004	4215.8	117.7	175	191	0.00	0.00	

End of Alpha Region Report
(Produced by Alp_rgn_cnts)

Alpha Spectrum Listing
(Version: 29-Jun-92)

Sample Identity: H61AK1AG
Detector: ALP3 1
Report Date: 29-Jun-06 05:10 PM
Acquire Date: 29-JUN-2006 13:49:53.71

Flags Key

Intersect Region: @
Non-Intersect Region: +, -

Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn
		1	0		51	0		101	0		151	0		201	0		251	0		301	1		351	0		401	0		451	0		501
		2	0		52	0		102	0		152	1	+	202	0		252	0		302	3		352	0		402	0		452	0		502
0		3	0		53	0		103	0		153	0	+	203	0	+	253	0		303	3		353	0		403	0		453	0		503
0		4	0		54	0		104	0		154	0	+	204	0	+	254	0		304	3		354	0		404	0		454	0		504
0		5	0		55	0		105	0		155	0	+	205	0	+	255	0		305	0		355	0		405	0		455	0		505
0		6	0		56	0		106	0		156	1	+	206	0	+	256	0		306	0		356	0		406	0		456	0		506
0		7	0		57	0		107	0		157	0	+	207	0	+	257	0		307	0		357	0		407	0		457	0		507
1		8	0		58	0		108	0		158	1	+	208	0	+	258	0		308	0		358	0		408	0		458	0		508
0		9	0		59	0		109	0		159	0	+	209	0	+	259	0		309	0		359	0		409	0		459	0		509
0		10	0		60	0		110	0		160	0	+	210	0	+	260	0		310	0		360	0		410	1		460	0		510
0		11	0		61	0		111	0		161	0	+	211	0	+	261	0		311	0		361	0		411	0		461	0		511
0		12	0		62	0		112	1		162	0	+	212	1	+	262	0		312	0		362	0		412	1		462	0		512
0		13	0		63	0		113	0		163	0	+	213	0	+	263	0		313	0		363	0		413	0		463			
0		14	0		64	0		114	0		164	0	+	214	0	+	264	0		314	0		364	0		414	1		464			
0		15	0		65	0		115	0		165	0	+	215	0	+	265	0		315	0		365	0		415	0		465			
0		16	0		66	0		116	0		166	0	+	216	0	+	266	0		316	0		366	0		416	0		466			
0		17	0		67	0		117	0		167	0	+	217	0	+	267	0		317	0		367	0		417	1		467			
0		18	0		68	1		118	0		168	0	+	218	0	+	268	0		318	0		368	0		418	0		468			
0		19	0		69	0		119	0		169	0		219	0	+	269	0		319	0		369	0		419	0		469			
0		20	0		70	0		120	0		170	0		220	0		270	0		320	0		370	0		420	1		470			
0		21	0		71	0		121	0		171	0		221	1		271	1		321	0		371	0		421	1		471			
0		22	0		72	1		122	0		172	0		222	0		272	0		322	0		372	0		422	0		472			
0		23	0		73	0		123	0		173	0		223	0		273	2		323	0		373	0		423	0		473			
0		24	1		74	0		124	0		174	0		224	0		274	4		324	0		374	0		424	1		474			
0		25	0		75	0		125	0	+	175	0		225	0		275	3		325	0		375	0		425	0		475			
0		26	0		76	0		126	0	+	176	0		226	0		276	2		326	1		376	0		426	0		476			
0		27	0		77	0		127	0	+	177	0		227	0		277	6	+	327	0		377	0		427	0		477			
0		28	0		78	0		128	0	+	178	0		228	0		278	7	+	328	0		378	0		428	0		478			
0		29	0		79	0		129	0	+	179	0		229	0		279	15	+	329	0		379	0		429	0		479			
0		30	0		80	0		130	0	+	180	0		230	0		280	18	+	330	0		380	0		430	0		480			
0		31	0		81	0		131	0	+	181	0		231	0		281	18	+	331	2		381	0		431	0		481			
1		32	0		82	0		132	0	+	182	0		232	0		282	30	+	332	0		382	0		432	0		482			
0		33	0		83	0		133	0	+	183	0		233	0		283	15	+	333	0		383	0		433	0		483			
0		34	0		84	0		134	0	+	184	0		234	0		284	31	+	334	0		384	0		434	0		484			
0		35	0		85	0		135	0	+	185	0		235	0		285	39	+	335	0		385	0		435	0		485			
0		36	0		86	0		136	0	+	186	0		236	0		286	63	+	336	0		386	0		436	0		486			
0		37	0		87	0		137	0	+	187	0		237	0		287	92	+	337	2		387	0		437	0		487			
0		38	0		88	0		138	0	+	188	0		238	0		288	96	+	338	1		388	0		438	0		488			
0		39	0		89	0		139	0	+	189	0		239	0		289	50	+	339	0		389	0		439	0		489			
0		40	0		90	0		140	0	+	190	0		240	0		290	13	+	340	2		390	1		440	1		490			
0		41	0		91	0		141	0	+	191	0		241	0		291	2	+	341	1		391	1		441	0		491			
0		42	0		92	0		142	0		192	0		242	0		292	0	+	342	0		392	1		442	0		492			
0		43	0		93	0		143	0		193	0		243	0		293	1		343	0		393	0		443	0		493			
0		44	0		94	0		144	0		194	0		244	0		294	0		344	0		394	0		444	0		494			
0		45	0		95	0		145	0		195	0		245	0		295	0		345	0		395	0		445	0		495			
0		46	0		96	0		146	0		196	0		246	0		296	0		346	0		396	1		446	0		496			
0		47	0		97	0		147	0		197	0		247	0		297	0		347	0		397	0		447	0		497			
0		48	0		98	0		148	0		198	2		248	0		298	1		348	0		398	0		448	0		498			
0		49	0		99	0		149	0		199	0		249	0		299	0		349	0		399	0		449	0		499			
0		50	0		100	0		150	0		200	0		250	0		300	1		350	0		400	0		450	0		500			

VMS Peak Search Report V1.9 Generated 29-JUN-2006 17:10:28

```
Configuration     : $DISK1:[ALP3.SAMPLE]H61AK1AG_290661349.CNF;1
Analyses by       : ALPHA V1.8
Sample title      : U BRC
Sample date       : 22-MAY-2006 10:10:00 Acquisition date : 29-JUN-2006 13:49:53
Sample ID         : H61AK1AG             Sample quantity  : 0.00000E+00 SAMPLE
Sample type       : disk                 Sample geometry  :
Detector name     : ALP3                 Detector geometry:
Elapsed live time: 0 03:20:01.00         Elapsed real time: 0 03:20:14.00   0.1%
Start energy      :  2879.89             End energy       :  6630.06
Sensitivity       :     4.00             Sum Sensitivity  :     1.00
```

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	5337.97	499	0	36.68	337.10	327	16	4.16E-02	4.5	
2	0	5451.57	12	0	29.35	352.50	349	9	1.00E-03	28.9	

VMS Nuclide Identification Report V3.0 Generated 29-JUN-2006 17:10:30

```
Configuration     : $DISK1:[ALP3.SAMPLE]H61AK1AG_290661349.CNF;1
Analyses by       : ALPHA V1.8,PEAKEFF V2.2,NID V3.3
Sample title      : U BRC
Sample date       : 22-MAY-2006 10:10:00 Acquisition date : 29-JUN-2006 13:49:53
Sample ID         : H61AK1AG             Sample quantity  : 0.00000E+00 SAMPLE
Sample type       : disk                 Sample geometry  :
Detector name     : ALP3                 Detector geometry:
Elapsed live time: 0 03:20:01.00         Elapsed real time: 0 03:20:14.00   0.1%
Energy tolerance :    40.00              Half life ratio  :     1.00
Errors propagated: No                    Systematic Error :     0.00 %
Efficiency type  : Spline                Efficiencies at  : Peak Energy
Abundance limit  :    60.00
```

Summary of Nuclide Activity

```
 Total number of lines in spectrum                2
 Number of unidentified lines                     1
 Number of lines tentatively identified by NID    1       50.00%
```

Nuclide Type : AP

Nuclide	Hlife	Decay	Uncorrected PCI/SAMPLE	Decay Corr PCI/SAMPLE	Decay Corr 0-Sigma Error	0-Sigma %Error	Flags
U-232	68.90Y	1.00	0.000E+00	0.000E+00	0.000E+00	0.00	
		Total Activity :	0.000E+00	0.000E+00			
		Grand Total Activity :	0.000E+00	0.000E+00			

Flags: "K" = Keyline not found "M" = Manually accepted
"E" = Manually edited "A" = Nuclide specific abn. limit

ITRD PEAK TEST REPORT (Version 16-May-94)

Configuration: $DISK1:[ALP3.SAMPLE]H61AK1AG_290661349.CNF;1

Peak Energy	Left Chan	Rght Chan	Peak Area	Total Counts	Diff/ StDev	Overlap Counts	Multiplet Diff/StDev
5337.96	327	343	499	496	0.13		
5451.57	349	358	12	11	0.29		

End of Report

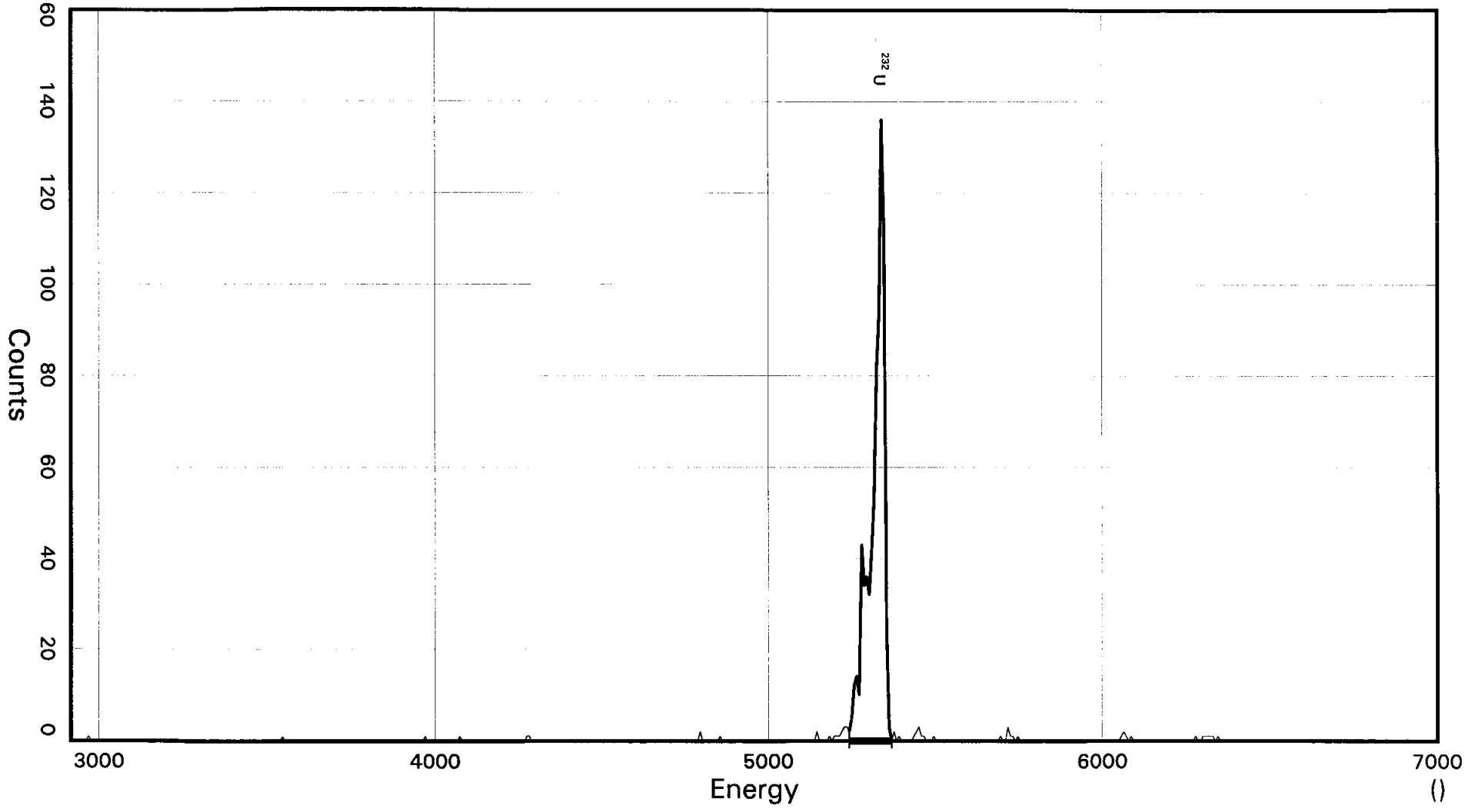
STL Richland WA.

U BRC

Sample ID: H61AL1AG

Detector ID: ALP4 1

Batch ID: 6163126



Acquisition Start: 29-JUN-2006 13:50:02.73

Preset Live Time: 0 03:20:00.00

Elapsed Live Time: 0 03:20:05.00

Energy Coefficients:

Offset: 2.89454E+03

Slope: 7.47977E+00

Quadrature: -9.32582E-05

SAMPLE IDENTIITY: H61AL1AG

TITLE : U BRC

DETECTOR : ALP4 1
CONFIGURATION NAME : $DISK1:[ALP4.SAMPLE]H61AL1AG_290661350.CNF;1

ACQUIRE DATE of BACKGROUND: 02-JUN-2006 07:27:01

REPORT DATE : 29-Jun-06 SAMPLE DATE: 22-MAY-2006 10:10:00
ACQUIRE DATE: 29-JUN-2006 13:50:02 CALIB DATE : 01-JUN-2006 23:53:05

PRESET LIVE TIME: 0 03:20:00 ELAPSED LIVE TIME: 0 03:20:05

OFFSET : 2894.54 keV CONSTANT FWHM : 7.33333 Channels
SLOPE : 7.47977 keV/C SENSITIVITY : 4.00000 Std Dev's
QUAD COEFF : -.932582E-04 keV/C^2 SUM SENSITIVITY: 1.00000 %

Alpha Regions Report
(Version: 8-Oct-91)

Sample Identity: H61AL1AG

Detector: ALP4 1
Report Date: 29-Jun-06 05:10 PM
Acquire Date: 29-JUN-2006 13:50:02.73
Tracer Nuclide: U-232
High Counts Limit: 36
Sample Live Time: 200 minutes
Bkgrnd Live Time: 1000 minutes

Flags Key

P: Peak Identified
I: Peak Intersect
S: Single Non-peak Intersect
M: Multiple Non-peak Intersect
H: High Non-peak Sample Count
A: Altered via ALP-RGN-EDIT

Nuclide Name	Smpl Count	Bkg Count	Intrsct Count	Count Rate C/Min	Centrd Energy keV	Region Width keV	Left Chnl	Rght Chnl	Left Wdth Mult	Rght Wdth Mult	Flags
U-232	745	5	0	3.718	5334.4	126.1	315	332	0.00	0.00	P
U-234	2	4	0	0.006	4788.9	126.4	242	259	0.00	0.00	
U-235	0	1	0	-0.001	4412.1	126.5	191	208	0.00	0.00	
U-238	0	5	0	-0.005	4212.3	126.6	164	181	0.00	0.00	

End of Alpha Region Report
(Produced by Alp_rgn_cnts)

Alpha Spectrum Listing
(Version: 29-Jun-92)

Sample Identity: H61AL1AG
Detector: ALP4 1
Report Date: 29-Jun-06 05:10 PM
Acquire Date: 29-JUN-2006 13:50:02.73

Flags Key

Intersect Region: @
Non-Intersect Region: +, -

Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn
		1	0		51	0		101	0		151	0	+	201	0	+	251	0		301	0		351	0		401	0		451	0		501
		2	0		52	0		102	0		152	0	+	202	0	+	252	2		302	0		352	0		402	0		452	0		502
1		3	0		53	0		103	0		153	0	+	203	0	+	253	0		303	0		353	0		403	0		453	0		503
0		4	0		54	0		104	0		154	0	+	204	0	+	254	0		304	0		354	0		404	0		454	0		504
0		5	0		55	0		105	0		155	0	+	205	2	+	255	0		305	0		355	0		405	1		455	0		505
0		6	0		56	0		106	0		156	0	+	206	0	+	256	0		306	0		356	0		406	0		456	0		506
0		7	0		57	0		107	0		157	0	+	207	0	+	257	1		307	0		357	0		407	0		457	0		507
0		8	0		58	0		108	1		158	0	+	208	0	+	258	0		308	0		358	0		408	1		458	0		508
0		9	0		59	0		109	0		159	0		209	0	+	259	1		309	0		359	0		409	1		459	0		509
1		10	0		60	0		110	0		160	0		210	0		260	1		310	0		360	0		410	1		460	0		510
0		11	0		61	0		111	0		161	0		211	0		261	1		311	0		361	0		411	1		461	0		511
0		12	0		62	0		112	0		162	0		212	0		262	2		312	0		362	0		412	1		462	0		512
0		13	0		63	0		113	0		163	0		213	1		263	3		313	0		363	0		413	0		463			
0		14	0		64	0		114	0	+	164	0		214	0		264	3		314	0		364	0		414	1		464			
0		15	0		65	0		115	0	+	165	0		215	0		265	2	+	315	0		365	0		415	0		465			
0		16	0		66	0		116	0	+	166	0		216	0		266	5	+	316	0		366	0		416	0		466			
0		17	0		67	0		117	0	+	167	0		217	0		267	12	+	317	0		367	0		417	0		467			
0		18	0		68	0		118	0	+	168	0		218	0		268	14	+	318	0		368	0		418	0		468			
0		19	0		69	0		119	0	+	169	0		219	0		269	10	+	319	0		369	0		419	0		469			
0		20	0		70	0		120	0	+	170	0		220	0		270	43	+	320	0		370	0		420	0		470			
0		21	0		71	0		121	0	+	171	0		221	0		271	34	+	321	0		371	0		421	0		471			
0		22	0		72	0		122	0	+	172	0		222	0		272	36	+	322	0		372	0		422	0		472			
0		23	0		73	0		123	0	+	173	0		223	0		273	32	+	323	0		373	0		423	0		473			
0		24	0		74	0		124	0	+	174	0		224	0		274	42	+	324	0		374	0		424	0		474			
0		25	0		75	0		125	0	+	175	0		225	0		275	54	+	325	0		375	1		425	0		475			
0		26	0		76	0		126	0	+	176	0		226	0		276	81	+	326	1		376	2		426	0		476			
0		27	0		77	0		127	0	+	177	0		227	0		277	93	+	327	0		377	1		427	0		477			
0		28	0		78	0		128	0	+	178	0		228	0		278	136	+	328	0		378	0		428	0		478			
0		29	0		79	0		129	0	+	179	0		229	0		279	112	+	329	3		379	1		429	0		479			
0		30	0		80	0		130	0	+	180	0		230	0		280	25	+	330	1		380	0		430	0		480			
0		31	0		81	0		131	0	+	181	0		231	0		281	3	+	331	1		381	0		431	0		481			
0		32	0		82	0		132	0		182	0		232	0		282	0		332	0		382	0		432	0		482			
0		33	0		83	0		133	0		183	0		233	0		283	2		333	1		383	0		433	0		483			
0		34	0		84	0		134	0		184	0		234	0		284	0		334	0		384	0		434	0		484			
0		35	0		85	0		135	1		185	0		235	0		285	1		335	0		385	0		435	0		485			
0		36	0		86	0		136	1		186	0		236	0		286	0		336	0		386	0		436	0		486			
0		37	1		87	0		137	0		187	0		237	0		287	0		337	0		387	0		437	0		487			
0		38	0		88	0		138	0		188	0		238	0		288	0		338	0		388	0		438	0		488			
0		39	0		89	0		139	0		189	0		239	0		289	0		339	0		389	0		439	0		489			
0		40	0		90	0		140	0		190	0		240	0		290	0		340	0		390	0		440	0		490			
0		41	0		91	0		141	0	+	191	0		241	0		291	1		341	0		391	0		441	0		491			
0		42	0		92	0		142	0	+	192	0	+	242	0		292	2		342	0		392	0		442	0		492			
0		43	0		93	0		143	0	+	193	0	+	243	0		293	3		343	0		393	0		443	0		493			
0		44	0		94	1		144	0	+	194	0	+	244	0		294	1		344	0		394	0		444	0		494			
0		45	0		95	0		145	0	+	195	0	+	245	0		295	1		345	0		395	0		445	0		495			
0		46	0		96	0		146	0	+	196	0	+	246	0		296	0		346	0		396	0		446	0		496			
0		47	0		97	0		147	0	+	197	0	+	247	0		297	0		347	0		397	0		447	0		497			
0		48	0		98	0		148	0	+	198	0	+	248	0		298	0		348	0		398	0		448	0		498			
0		49	0		99	0		149	0	+	199	0	+	249	0		299	1		349	0		399	0		449	0		499			
0		50	0		100	0		150	0	+	200	0	+	250	0		300	0		350	0		400	0		450	0		500			

VMS Peak Search Report V1.9 Generated 29-JUN-2006 17:10:23

```
Configuration     : $DISK1:[ALP4.SAMPLE]H61AL1AG_290661350.CNF;1
Analyses by       : ALPHA V1.8
Sample title      : U BRC
Sample date       : 22-MAY-2006 10:10:00 Acquisition date : 29-JUN-2006 13:50:02
Sample ID         : H61AL1AG             Sample quantity  : 0.00000E+00 SAMPLE
Sample type       : disk                 Sample geometry  :
Detector name     : ALP4                 Detector geometry:
Elapsed live time: 0 03:20:05.00         Elapsed real time: 0 03:20:05.00   0.0%
Start energy      :  2916.98             End energy       :  6699.73
Sensitivity       :     4.00             Sum Sensitivity  :     1.00
```

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	5334.43	745	0	29.92	327.54	315	17	6.21E-02	3.7	

VMS Nuclide Identification Report V3.0 Generated 29-JUN-2006 17:10:25

```
Configuration     : $DISK1:[ALP4.SAMPLE]H61AL1AG_290661350.CNF;1
Analyses by       : ALPHA V1.8,PEAKEFF V2.2,NID V3.3
Sample title      : U BRC
Sample date       : 22-MAY-2006 10:10:00 Acquisition date : 29-JUN-2006 13:50:02
Sample ID         : H61AL1AG             Sample quantity  : 0.00000E+00 SAMPLE
Sample type       : disk                 Sample geometry  :
Detector name     : ALP4                 Detector geometry:
Elapsed live time: 0 03:20:05.00         Elapsed real time: 0 03:20:05.00   0.0%
Energy tolerance :    40.00              Half life ratio  :     1.00
Errors propagated: No                    Systematic Error :     0.00 %
Efficiency type  : Spline                Efficiencies at  : Peak Energy
Abundance limit  :    60.00
```

Summary of Nuclide Activity

```
 Total number of lines in spectrum                1
 Number of unidentified lines                     0
 Number of lines tentatively identified by NID    1      100.00%
```

Nuclide Type : AP

```
                            Uncorrected  Decay Corr   Decay Corr   0-Sigma
Nuclide     Hlife   Decay  PCI/SAMPLE   PCI/SAMPLE  0-Sigma Error  %Error Flags
U-232      68.90Y    1.00  0.000E+00    0.000E+00    0.000E+00     0.00
                           ---------    ---------
         Total Activity :  0.000E+00    0.000E+00


   Grand Total Activity :  0.000E+00    0.000E+00
```

```
Flags: "K" = Keyline not found          "M" = Manually accepted
       "E" = Manually edited            "A" = Nuclide specific abn. limit
```

ITRD PEAK TEST REPORT (Version 16-May-94)

Configuration: $DISK1:[ALP4.SAMPLE]H61AL1AG_290661350.CNF;1

Peak Energy	Left Chan	Rght Chan	Peak Area	Total Counts	Diff/ StDev	Overlap Counts	Multiplet Diff/StDev
5334.42	315	332	745	734	0.40		

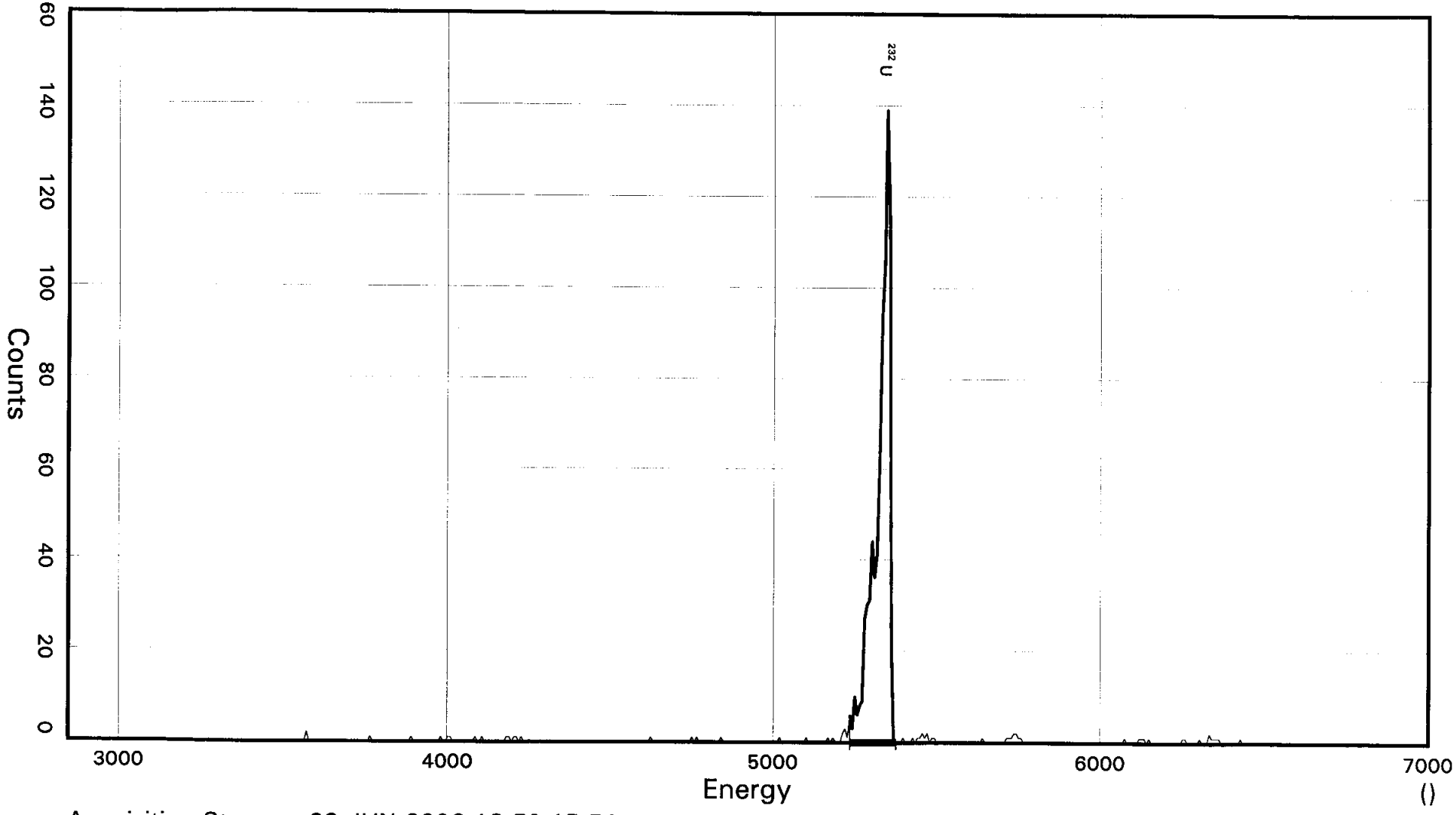
End of Report

STL Richland WA.

U BRC

Sample ID: H61AM1AG
Detector ID: ALP5 1

Batch ID: 6163126



Acquisition Start: 29-JUN-2006 13:50:15.51
Preset Live Time: 0 03:20:00.00
Elapsed Live Time: 0 03:20:04.00

Energy Coefficients:
Offset: 2.82331E+03
Slope: 7.48523E+00
Quadrature: -1.38615E-04

SAMPLE IDENTITY: H61AM1AG

TITLE : U BRC

DETECTOR : ALP5 1
CONFIGURATION NAME : $DISK1:[ALP5.SAMPLE]H61AM1AG_290661350.CNF;1

ACQUIRE DATE of BACKGROUND: 02-JUN-2006 07:27:06

REPORT DATE : 29-Jun-06 SAMPLE DATE: 22-MAY-2006 10:10:00
ACQUIRE DATE: 29-JUN-2006 13:50:15 CALIB DATE : 01-JUN-2006 23:52:54

PRESET LIVE TIME: 0 03:20:00 ELAPSED LIVE TIME: 0 03:20:04

OFFSET : 2823.31 keV CONSTANT FWHM : 7.16667 Channels
SLOPE : 7.48523 keV/C SENSITIVITY : 4.00000 Std Dev's
QUAD COEFF : -.138615E-03 keV/C^2 SUM SENSITIVITY: 1.00000 %

Alpha Regions Report
(Version: 8-Oct-91)

Sample Identity: H61AM1AG

Detector: ALP5 1
Report Date: 29-Jun-06 05:10 PM
Acquire Date: 29-JUN-2006 13:50:15.51
Tracer Nuclide: U-232
High Counts Limit: 36
Sample Live Time: 200 minutes
Bkgrnd Live Time: 1000 minutes

Flags Key

P: Peak Identified
I: Peak Intersect
S: Single Non-peak Intersect
M: Multiple Non-peak Intersect
H: High Non-peak Sample Count
A: Altered via ALP-RGN-EDIT

Nuclide Name	Smpl Count	Bkg Count	Intrsct Count	Count Rate C/Min	Centrd Energy keV	Region Width keV	Left Chnl	Rght Chnl	Left Wdth Mult	Rght Wdth Mult	Flags
U-232	799	6	0	3.988	5338.8	140.5	324	343	0.00	0.00	P
U-234	2	10	0	0.000	4793.3	140.9	250	269	0.00	0.00	
U-235	0	1	0	-0.001	4416.5	133.7	200	218	0.00	0.00	
U-238	5	4	0	0.021	4216.7	141.3	173	192	0.00	0.00	

End of Alpha Region Report
(Produced by Alp_rgn_cnts)

Alpha Spectrum Listing
(Version: 29-Jun 92)

Sample Identity: H61AM1AG
Detector: ALP5 1
Report Date: 29-Jun-06 05:10 PM
Acquire Date: 29-JUN-2006 13:50:15.51

Flags Key

Intersect Region: @
Non-Intersect Region: +, -

Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn
		1	0		51	0		101	0		151	0	+	201	0	+	251	0		301	0		351	0		401	0		451	0		501
		2	0		52	0		102	0		152	0	+	202	0	+	252	0		302	1		352	0		402	0		452	0		502
0		3	0		53	0		103	0		153	0	+	203	0	+	253	0		303	1		353	0		403	0		453	0		503
0		4	0		54	0		104	0		154	0	+	204	0	+	254	0		304	2		354	0		404	0		454	0		504
0		5	0		55	0		105	1		155	0	+	205	0	+	255	0		305	1		355	0		405	0		455	0		505
0		6	0		56	0		106	0		156	0	+	206	0	+	256	1		306	2		356	0		406	0		456	0		506
0		7	0		57	0		107	0		157	0	+	207	0	+	257	0		307	0		357	0		407	0		457	0		507
0		8	0		58	0		108	1		158	0	+	208	0	+	258	0		308	1		358	0		408	0		458	0		508
0		9	0		59	0		109	1		159	0	+	209	1	+	259	0		309	1		359	0		409	0		459	0		509
0		10	0		60	0		110	0		160	0	+	210	0	+	260	0		310	0		360	0		410	0		460	0		510
0		11	0		61	0		111	0		161	0	+	211	1	+	261	0		311	0		361	0		411	0		461	0		511
0		12	0		62	0		112	0		162	0	+	212	0	+	262	0		312	0		362	0		412	1		462	0		512
0		13	0		63	0		113	0		163	0	+	213	0	+	263	0		313	0		363	0		413	1		463			
0		14	0		64	0		114	0		164	0	+	214	0	+	264	0		314	0		364	0		414	0		464			
0		15	0		65	0		115	0		165	0	+	215	0	+	265	1		315	0		365	0		415	0		465			
0		16	0		66	0		116	0		166	0	+	216	0	+	266	0		316	0		366	0		416	0		466			
0		17	0		67	0		117	0		167	0	+	217	0	+	267	1		317	0		367	0		417	0		467			
0		18	0		68	0		118	0		168	0	+	218	0	+	268	0		318	0		368	0		418	0		468			
0		19	0		69	0		119	1		169	0		219	0	+	269	0		319	0		369	0		419	1		469			
0		20	0		70	0		120	0		170	0		220	0		270	0		320	0		370	0		420	0		470			
0		21	0		71	0		121	0		171	0		221	1		271	2		321	0		371	0		421	0		471			
0		22	0		72	0		122	1		172	0		222	0		272	3		322	0		372	0		422	0		472			
0		23	0		73	0		123	0	+	173	0		223	0		273	1		323	0		373	0		423	2		473			
0		24	0		74	0		124	0	+	174	0		224	0		274	6	+	324	0		374	0		424	1		474			
0		25	0		75	0		125	0	+	175	0		225	0		275	3	+	325	0		375	0		425	1		475			
0		26	0		76	1		126	0	+	176	0		226	0		276	10	+	326	0		376	0		426	1		476			
0		27	0		77	0		127	0	+	177	0		227	0		277	6	+	327	0		377	0		427	1		477			
0		28	0		78	0		128	0	+	178	0		228	0		278	8	+	328	0		378	0		428	0		478			
0		29	0		79	0		129	0	+	179	0		229	0		279	9	+	329	1		379	0		429	0		479			
0		30	0		80	0		130	0	+	180	0		230	0		280	27	+	330	0		380	0		430	0		480			
0		31	0		81	0		131	0	+	181	0		231	0		281	30	+	331	0		381	0		431	0		481			
0		32	0		82	0		132	1	+	182	0		232	0		282	31	+	332	0		382	0		432	0		482			
0		33	0		83	0		133	1	+	183	0		233	0		283	44	+	333	0		383	0		433	0		483			
0		34	0		84	0		134	0	+	184	0		234	0		284	36	+	334	0		384	0		434	0		484			
0		35	0		85	0		135	1	+	185	0		235	0		285	41	+	335	0		385	0		435	0		485			
0		36	0		86	0		136	1	+	186	0		236	0		286	62	+	336	0		386	0		436	1		486			
0		37	0		87	0		137	0	+	187	0		237	0		287	94	+	337	0		387	0		437	0		487			
0		38	0		88	0		138	1	+	188	0		238	0		288	105	+	338	0		388	1		438	0		488			
0		39	0		89	0		139	0	+	189	0		239	0		289	139	+	339	1		389	0		439	0		489			
0		40	0		90	0		140	0	+	190	0		240	0		290	116	+	340	1		390	0		440	0		490			
0		41	0		91	0		141	0	+	191	0		241	0		291	22	+	341	1		391	0		441	0		491			
0		42	0		92	0		142	0	+	192	1		242	0		292	1	+	342	2		392	0		442	0		492			
0		43	0		93	1		143	0		193	0		243	0		293	0		343	2		393	0		443	0		493			
0		44	0		94	0		144	0		194	0		244	0		294	0		344	1		394	1		444	0		494			
0		45	0		95	0		145	0		195	0		245	1		295	0		345	1		395	1		445	0		495			
0		46	0		96	0		146	0		196	0		246	0		296	1		346	0		396	1		446	0		496			
0		47	0		97	0		147	0		197	0		247	0		297	0		347	0		397	0		447	0		497			
0		48	0		98	0		148	0		198	0		248	0		298	0		348	0		398	1		448	0		498			
0		49	0		99	0		149	0		199	0		249	0		299	0		349	0		399	0		449	0		499			
0		50	2		100	0		150	0	+	200	0	+	250	0		300	1		350	0		400	0		450	0		500			

VMS Peak Search Report V1.9 Generated 29-JUN-2006 17:10:35

```
Configuration     : $DISK1:[ALP5.SAMPLE]H61AM1AG_290661350.CNF;1
Analyses by       : ALPHA V1.8
Sample title      : U BRC
Sample date       : 22-MAY-2006 10:10:00 Acquisition date : 29-JUN-2006 13:50:15
Sample ID         : H61AM1AG             Sample quantity  : 0.00000E+00 SAMPLE
Sample type       : disk                 Sample geometry  :
Detector name     : ALP5                 Detector geometry:
Elapsed live time: 0 03:20:04.00         Elapsed real time: 0 03:20:04.00   0.0%
Start energy      :  2845.76             End energy       :  6619.41
Sensitivity       :     4.00             Sum Sensitivity  :     1.00
```

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	5338.82	799	0	37.43	338.18	324	19	6.66E-02	3.5	

VMS Nuclide Identification Report V3.0 Generated 29-JUN-2006 17:10:37

```
Configuration     : $DISK1:[ALP5.SAMPLE]H61AM1AG_290661350.CNF;1
Analyses by       : ALPHA V1.8,PEAKEFF V2.2,NID V3.3
Sample title      : U BRC
Sample date       : 22-MAY-2006 10:10:00 Acquisition date : 29-JUN-2006 13:50:15
Sample ID         : H61AM1AG             Sample quantity  : 0.00000E+00 SAMPLE
Sample type       : disk                 Sample geometry  :
Detector name     : ALP5                 Detector geometry:
Elapsed live time: 0 03:20:04.00         Elapsed real time: 0 03:20:04.00   0.0%
Energy tolerance :    40.00              Half life ratio  :     1.00
Errors propagated: No                    Systematic Error :     0.00 %
Efficiency type  : Spline                Efficiencies at  : Peak Energy
Abundance limit  :    60.00
```

Summary of Nuclide Activity

```
 Total number of lines in spectrum                1
 Number of unidentified lines                     0
 Number of lines tentatively identified by NID    1      100.00%
```

Nuclide Type : AP

Nuclide	Hlife	Decay	Uncorrected PCI/SAMPLE	Decay Corr PCI/SAMPLE	Decay Corr 0-Sigma Error	0-Sigma %Error	Flags
U-232	68.90Y	1.00	0.000E+00	0.000E+00	0.000E+00	0.00	
		Total Activity :	0.000E+00	0.000E+00			
		Grand Total Activity :	0.000E+00	0.000E+00			

Flags: "K" = Keyline not found "M" = Manually accepted
"E" = Manually edited "A" = Nuclide specific abn. limit

ITRD PEAK TEST REPORT (Version 16-May-94)

Configuration: $DISK1:[ALP5.SAMPLE]H61AM1AG_290661350.CNF;1

Peak Energy	Left Chan	Rght Chan	Peak Area	Total Counts	Diff/ StDev	Overlap Counts	Multiplet Diff/StDev
5338.82	324	343	799	790	0.32		

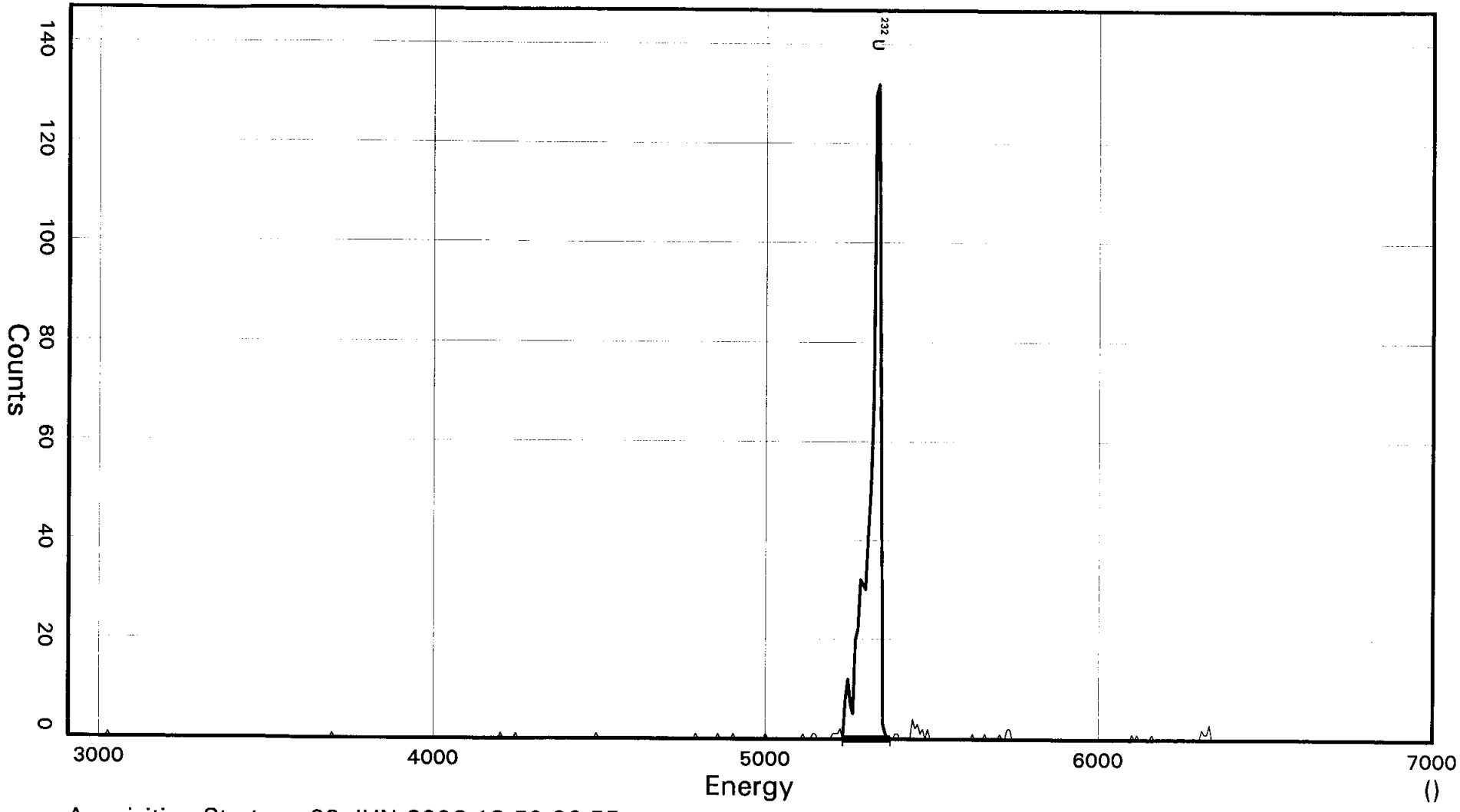
End of Report

STL Richland WA.

U BRC

Sample ID: H61AR1AG
Detector ID: ALP6 1

Batch ID: 6163126



Acquisition Start: 29-JUN-2006 13:50:26.55
Preset Live Time: 0 03:20:00.00
Elapsed Live Time: 0 03:20:05.00

Energy Coefficients:
Offset: 2.88682E+03
Slope: 7.41670E+00
Quadrature: 9.64089E-05

SAMPLE IDENTITY: H61AR1AG

TITLE : U BRC

DETECTOR : ALP6 1
CONFIGURATION NAME : $DISK1:[ALP6.SAMPLE]H61AR1AG_290661350.CNF;1

ACQUIRE DATE of BACKGROUND: 03-JUN-2006 09:55:25

REPORT DATE : 29-Jun-06 SAMPLE DATE: 22-MAY-2006 10:10:00
ACQUIRE DATE: 29-JUN-2006 13:50:26 CALIB DATE : 01-JUN-2006 23:53:37

PRESET LIVE TIME: 0 03:20:00 ELAPSED LIVE TIME: 0 03:20:05

OFFSET : 2886.82 keV CONSTANT FWHM : 7.00000 Channels
SLOPE : 7.41670 keV/C SENSITIVITY : 4.00000 Std Dev's
QUAD COEFF : 9.640890E-05 keV/C^2 SUM SENSITIVITY: 1.00000 %

Alpha Regions Report
(Version: 8-Oct-91)

Sample Identity: H61AR1AG

Detector: ALP6 1
Report Date: 29-Jun-06 05:10 PM
Acquire Date: 29-JUN-2006 13:50:26.55
Tracer Nuclide: U-232
High Counts Limit: 36
Sample Live Time: 200 minutes
Bkgrnd Live Time: 1000 minutes

Flags Key

P: Peak Identified
I: Peak Intersect
S: Single Non-peak Intersect
M: Multiple Non-peak Intersect
H: High Non-peak Sample Count
A: Altered via ALP-RGN-EDIT

Nuclide Name	Smpl Count	Bkg Count	Intrsct Count	Count Rate C/Min	Centrd Energy keV	Region Width keV	Left Chnl	Rght Chnl	Left Wdth Mult	Rght Wdth Mult	Flags
U-232	663	7	0	3.307	5333.0	142.1	315	334	0.00	0.00	P
U-234	1	0	0	0.005	4787.4	141.8	242	261	0.00	0.00	
U-235	0	2	0	-0.002	4410.6	149.1	191	211	0.00	0.00	
U-238	2	1	0	0.009	4210.8	141.6	165	184	0.00	0.00	

End of Alpha Region Report
(Produced by Alp_rgn_cnts)

Alpha Spectrum Listing
(Version: 29-Jun-92)

Sample Identity: H61AR1AG
Detector: ALP6 1
Report Date: 29-Jun-06 05:10 PM
Acquire Date: 29-JUN-2006 13:50:26.55

Flags Key

Intersect Region: @
Non-Intersect Region: +, -

Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn
		1	0		51	0		101	0		151	0	+	201	0	+	251	0		301	0		351	0		401	0		451	0		501
		2	0		52	0		102	0		152	0	+	202	0	+	252	0		302	0		352	0		402	0		452	0		502
0		3	0		53	0		103	0		153	0	+	203	0	+	253	1		303	0		353	0		403	0		453	0		503
0		4	0		54	0		104	0		154	0	+	204	0	+	254	1		304	0		354	0		404	0		454	0		504
0		5	0		55	0		105	0		155	0	+	205	0	+	255	0		305	0		355	0		405	0		455	0		505
0		6	0		56	0		106	0		156	0	+	206	1	+	256	0		306	0		356	0		406	0		456	0		506
0		7	0		57	0		107	0		157	0	+	207	0	+	257	0		307	0		357	0		407	0		457	0		507
0		8	0		58	0		108	0		158	0	+	208	0	+	258	0		308	0		358	0		408	0		458	0		508
0		9	0		59	1		109	0		159	0	+	209	0	+	259	0		309	0		359	0		409	2		459	0		509
0		10	0		60	0		110	0		160	0	+	210	0	+	260	0		310	0		360	0		410	1		460	0		510
0		11	0		61	0		111	0		161	0	+	211	0	+	261	1		311	0		361	0		411	1		461	0		511
0		12	0		62	0		112	0		162	0		212	0		262	1		312	0		362	0		412	3		462	0		512
0		13	0		63	0		113	0		163	0		213	0		263	1		313	0		363	0		413	0		463			
0		14	0		64	0		114	0		164	0		214	0		264	2		314	0		364	0		414	0		464			
0		15	0		65	0		115	0	+	165	0		215	1		265	0	+	315	0		365	0		415	0		465			
0		16	0		66	0		116	0	+	166	1		216	0		266	8	+	316	0		366	0		416	0		466			
0		17	0		67	0		117	0	+	167	0		217	0		267	12	+	317	1		367	0		417	0		467			
0		18	0		68	0		118	0	+	168	0		218	0		268	7	+	318	0		368	0		418	0		468			
1		19	0		69	0		119	0	+	169	0		219	0		269	5	+	319	0		369	0		419	0		469			
0		20	0		70	0		120	0	+	170	0		220	0		270	20	+	320	0		370	0		420	0		470			
0		21	0		71	0		121	0	+	171	0		221	1		271	22	+	321	0		371	0		421	0		471			
0		22	0		72	0		122	0	+	172	0		222	0		272	32	+	322	1		372	0		422	0		472			
0		23	0		73	0		123	0	+	173	0		223	0		273	31	+	323	0		373	0		423	0		473			
0		24	0		74	0		124	0	+	174	0		224	0		274	30	+	324	0		374	0		424	0		474			
0		25	0		75	0		125	0	+	175	0		225	0		275	41	+	325	0		375	0		425	0		475			
0		26	0		76	0		126	0	+	176	0		226	0		276	50	+	326	0		376	0		426	0		476			
0		27	0		77	0		127	1	+	177	0		227	0		277	67	+	327	0		377	0		427	0		477			
0		28	0		78	0		128	0	+	178	0		228	0		278	130	+	328	1		378	0		428	0		478			
0		29	0		79	0		129	0	+	179	0		229	0		279	132	+	329	0		379	0		429	0		479			
0		30	0		80	0		130	0	+	180	0		230	0		280	62	+	330	0		380	0		430	0		480			
0		31	0		81	0		131	0	+	181	0		231	0		281	3	+	331	2		381	1		431	0		481			
0		32	0		82	0		132	0	+	182	0		232	0		282	1	+	332	2		382	0		432	0		482			
0		33	0		83	0		133	1	+	183	0		233	0		283	0	+	333	0		383	1		433	0		483			
0		34	0		84	0		134	0	+	184	0		234	1		284	0		334	0		384	0		434	0		484			
0		35	0		85	0		135	0		185	0		235	0		285	0		335	0		385	0		435	0		485			
0		36	0		86	0		136	0		186	0		236	0		286	1		336	0		386	0		436	0		486			
0		37	0		87	0		137	0		187	0		237	0		287	1		337	0		387	0		437	0		487			
0		38	0		88	0		138	0		188	0		238	0		288	0		338	0		388	0		438	0		488			
0		39	0		89	0		139	0		189	0		239	0		289	0		339	0		389	1		439	0		489			
0		40	0		90	0		140	0		190	0		240	0		290	0		340	0		390	0		440	0		490			
0		41	0		91	0		141	0	+	191	0		241	0		291	0		341	0		391	0		441	0		491			
0		42	0		92	0		142	0	+	192	0	+	242	0		292	0		342	0		392	0		442	0		492			
0		43	0		93	0		143	0	+	193	0	+	243	0		293	4		343	0		393	0		443	0		493			
0		44	0		94	0		144	0	+	194	0	+	244	0		294	2		344	0		394	0		444	0		494			
0		45	0		95	0		145	0	+	195	0	+	245	0		295	3		345	0		395	0		445	0		495			
0		46	0		96	0		146	0	+	196	0	+	246	0		296	1		346	0		396	0		446	0		496			
0		47	0		97	0		147	0	+	197	0	+	247	0		297	2		347	0		397	0		447	0		497			
0		48	0		98	0		148	0	+	198	0	+	248	0		298	0		348	0		398	0		448	0		498			
0		49	0		99	0		149	0	+	199	0	+	249	1		299	2		349	0		399	0		449	0		499			
0		50	0		100	0		150	0	+	200	0	+	250	0		300	0		350	0		400	0		450	0		500			

VMS Peak Search Report V1.9 Generated 29-JUN-2006 17:10:48

```
Configuration     : $DISK1:[ALP6.SAMPLE]H61AR1AG_290661350.CNF;1
Analyses by       : ALPHA V1.8
Sample title      : U BRC
Sample date       : 22-MAY-2006 10:10:00 Acquisition date : 29-JUN-2006 13:50:26
Sample ID         : H61AR1AG             Sample quantity  : 0.00000E+00 SAMPLE
Sample type       : disk                 Sample geometry  :
Detector name     : ALP6                 Detector geometry:
Elapsed live time: 0 03:20:05.00         Elapsed real time: 0 03:20:05.00   0.0%
Start energy      :  2909.07             End energy       :  6709.44
Sensitivity       :     4.00             Sum Sensitivity  :     1.00
```

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	5333.00	663	0	29.67	328.42	315	19	5.52E-02	3.9	

VMS Nuclide Identification Report V3.0 Generated 29-JUN-2006 17:10:49

```
Configuration     : $DISK1:[ALP6.SAMPLE]H61AR1AG_290661350.CNF;1
Analyses by       : ALPHA V1.8,PEAKEFF V2.2,NID V3.3
Sample title      : U BRC
Sample date       : 22-MAY-2006 10:10:00 Acquisition date : 29-JUN-2006 13:50:26
Sample ID         : H61AR1AG             Sample quantity  : 0.00000E+00 SAMPLE
Sample type       : disk                 Sample geometry  :
Detector name     : ALP6                 Detector geometry:
Elapsed live time: 0 03:20:05.00         Elapsed real time: 0 03:20:05.00   0.0%
Energy tolerance :    40.00              Half life ratio  :     1.00
Errors propagated: No                    Systematic Error :     0.00 %
Efficiency type  : Spline                Efficiencies at  : Peak Energy
Abundance limit  :    60.00
```

Summary of Nuclide Activity

```
 Total number of lines in spectrum                1
 Number of unidentified lines                     0
 Number of lines tentatively identified by NID    1      100.00%
```

Nuclide Type : AP

Nuclide	Hlife	Decay	Uncorrected PCI/SAMPLE	Decay Corr PCI/SAMPLE	Decay Corr 0-Sigma Error	0-Sigma %Error	Flags
U-232	68.90Y	1.00	0.000E+00	0.000E+00	0.000E+00	0.00	
		Total Activity :	0.000E+00	0.000E+00			
		Grand Total Activity :	0.000E+00	0.000E+00			

Flags: "K" = Keyline not found "M" = Manually accepted
"E" = Manually edited "A" = Nuclide specific abn. limit

ITRD PEAK TEST REPORT (Version 16-May-94)

Configuration: $DISK1:[ALP6.SAMPLE]H61AR1AG_290661350.CNF;1

Peak Energy	Left Chan	Rght Chan	Peak Area	Total Counts	Diff/ StDev	Overlap Counts	Multiplet Diff/StDev
5332.99	315	334	663	653	0.39		

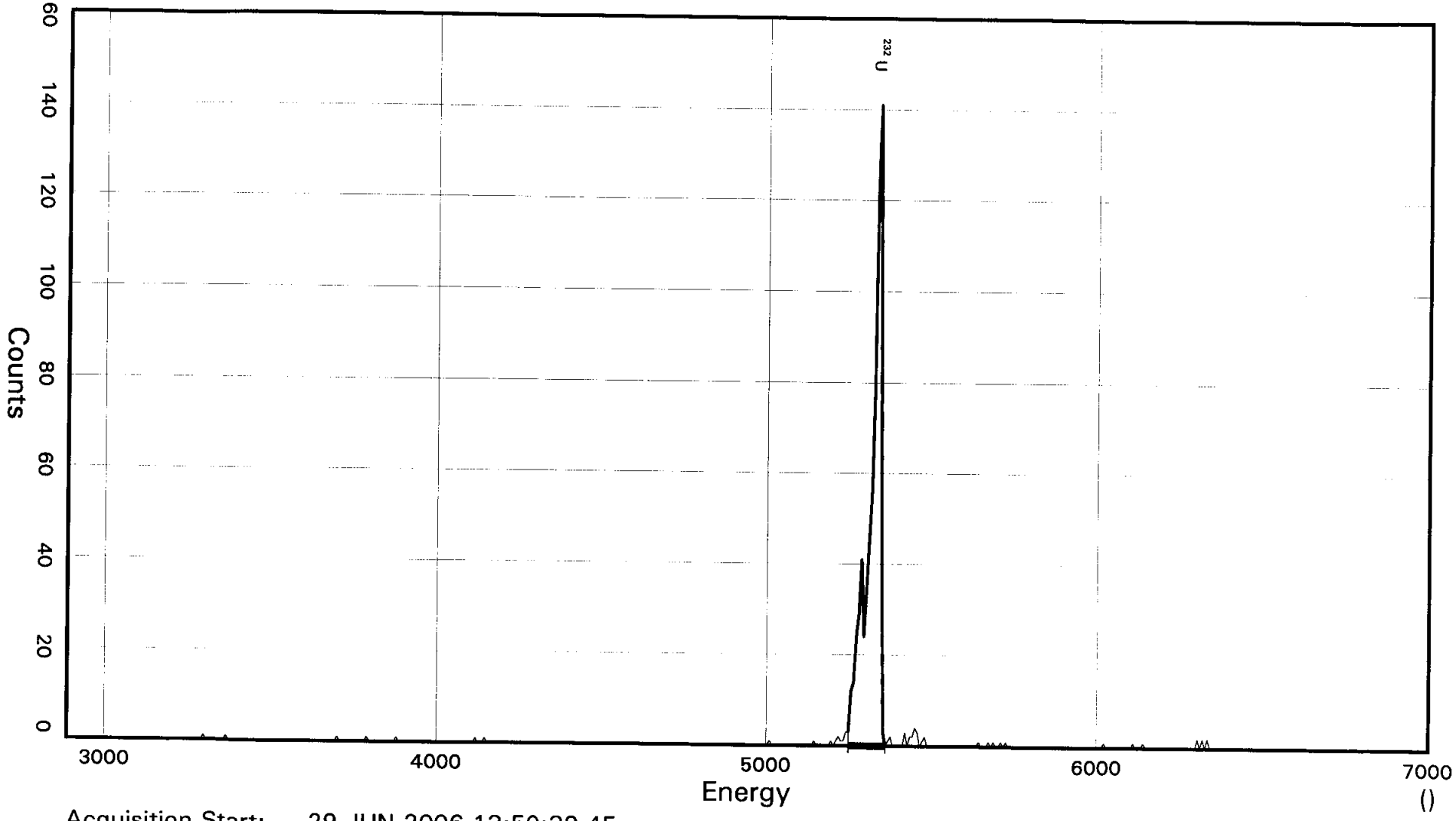
End of Report

STL Richland WA.

U BRC

Sample ID: H61AT1AG
Detector ID: ALP7 1

Batch ID: 6163126



Acquisition Start: 29-JUN-2006 13:50:39.45
Preset Live Time: 0 03:20:00.00
Elapsed Live Time: 0 03:20:05.00

Energy Coefficients:
Offset: 2.86460E+03
Slope: 7.45676E+00
Quadrature: -2.58880E-05

SAMPLE IDENTIITY: H61AT1AG

TITLE : U BRC

DETECTOR : ALP7 1
CONFIGURATION NAME : $DISK1:[ALP7.SAMPLE]H61AT1AG_290661350.CNF;1

ACQUIRE DATE of BACKGROUND: 02-JUN-2006 07:27:16

REPORT DATE : 29-Jun-06 SAMPLE DATE: 22-MAY-2006 10:10:00
ACQUIRE DATE: 29-JUN-2006 13:50:39 CALIB DATE : 01-JUN-2006 23:54:09

PRESET LIVE TIME: 0 03:20:00 ELAPSED LIVE TIME: 0 03:20:05

OFFSET : 2864.60 keV CONSTANT FWHM : 6.16667 Channels
SLOPE : 7.45676 keV/C SENSITIVITY : 4.00000 Std Dev's
QUAD COEFF : -.258880E-04 keV/C^2 SUM SENSITIVITY: 1.00000 %

Alpha Regions Report
(Version: 8-Oct-91)

Sample Identity: H61AT1AG

Detector: ALP7 1
Report Date: 29-Jun-06 05:11 PM
Acquire Date: 29-JUN-2006 13:50:39.45
Tracer Nuclide: U-232
High Counts Limit: 36
Sample Live Time: 200 minutes
Bkgrnd Live Time: 1000 minutes

Flags Key

P: Peak Identified
I: Peak Intersect
S: Single Non-peak Intersect
M: Multiple Non-peak Intersect
H: High Non-peak Sample Count
A: Altered via ALP-RGN-EDIT

Nuclide Name	Smpl Count	Bkg Count	Intrsct Count	Count Rate C/Min	Centrd Energy keV	Region Width keV	Left Chnl	Rght Chnl	Left Wdth Mult	Rght Wdth Mult	Flags
U-232	674	2	0	3.367	5330.8	111.6	320	335	0.00	0.00	P
U-234	0	0	0	0.000	4785.2	111.7	247	262	0.00	0.00	
U-235	0	0	0	0.000	4408.4	111.7	196	211	0.00	0.00	
U-238	1	0	0	0.005	4208.6	111.7	169	184	0.00	0.00	

End of Alpha Region Report
(Produced by Alp_rgn_cnts)

Alpha Spectrum Listing
(Version: 29-Jun-92)

Sample Identity: H61AT1AG
Detector: ALP7 1
Report Date: 29-Jun-06 05:11 PM
Acquire Date: 29-JUN-2006 13:50:39.45

Flags Key

Intersect Region: @
Non-Intersect Region: +, -

Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn
		1	0		51	0		101	0		151	0	+	201	0	+	251	0		301	2		351	0		401	0		451	0		501
		2	0		52	0		102	0		152	0	+	202	0	+	252	0		302	0		352	0		402	0		452	0		502
0		3	0		53	0		103	0		153	0	+	203	0	+	253	0		303	0		353	0		403	0		453	0		503
0		4	0		54	0		104	0		154	0	+	204	0	+	254	0		304	0		354	0		404	0		454	0		504
0		5	0		55	0		105	0		155	0	+	205	0	+	255	0		305	0		355	0		405	0		455	0		505
0		6	0		56	0		106	0		156	0	+	206	0	+	256	1		306	0		356	0		406	0		456	0		506
0		7	0		57	0		107	0		157	0	+	207	0	+	257	0		307	0		357	0		407	0		457	0		507
0		8	1		58	0		108	0		158	0	+	208	0	+	258	0		308	0		358	0		408	0		458	0		508
0		9	0		59	0		109	0		159	0	+	209	0	+	259	0		309	0		359	0		409	0		459	0		509
0		10	0		60	0		110	0		160	0	+	210	0	+	260	0		310	0		360	0		410	0		460	0		510
0		11	0		61	0		111	0		161	0	+	211	0	+	261	0		311	0		361	0		411	0		461	0		511
0		12	0		62	1		112	0		162	0		212	0	+	262	0		312	0		362	0		412	2		462	0		512
0		13	0		63	0		113	0		163	0		213	0		263	1		313	0		363	0		413	0		463			
0		14	0		64	0		114	0		164	0		214	0		264	0		314	0		364	0		414	2		464			
0		15	0		65	0		115	0		165	0		215	0		265	1		315	0		365	0		415	0		465			
0		16	0		66	0		116	0		166	0		216	0		266	2		316	0		366	0		416	2		466			
0		17	1		67	0		117	0		167	0		217	0		267	1		317	0		367	0		417	0		467			
0		18	0		68	0		118	1		168	0		218	0		268	1		318	0		368	0		418	0		468			
0		19	0		69	0		119	0	+	169	0		219	0		269	3		319	0		369	0		419	0		469			
0		20	0		70	0		120	0	+	170	0		220	0		270	3	+	320	0		370	0		420	0		470			
0		21	0		71	0		121	0	+	171	0		221	0		271	12	+	321	0		371	0		421	0		471			
0		22	0		72	0		122	1	+	172	0		222	0		272	14	+	322	0		372	0		422	0		472			
0		23	0		73	0		123	0	+	173	0		223	0		273	24	+	323	1		373	0		423	0		473			
0		24	0		74	1		124	0	+	174	0		224	0		274	29	+	324	0		374	1		424	0		474			
0		25	0		75	0		125	0	+	175	0		225	0		275	41	+	325	0		375	0		425	0		475			
0		26	0		76	0		126	0	+	176	0		226	0		276	24	+	326	0		376	0		426	0		476			
0		27	0		77	0		127	0	+	177	0		227	0		277	34	+	327	1		377	0		427	0		477			
0		28	0		78	0		128	0	+	178	0		228	0		278	45	+	328	0		378	0		428	0		478			
0		29	0		79	0		129	0	+	179	0		229	0		279	55	+	329	1		379	0		429	0		479			
0		30	0		80	0		130	0	+	180	0		230	0		280	78	+	330	0		380	0		430	0		480			
0		31	0		81	0		131	0	+	181	0		231	0		281	123	+	331	0		381	0		431	0		481			
0		32	0		82	0		132	0	+	182	0		232	0		282	141	+	332	1		382	0		432	0		482			
0		33	0		83	0		133	0	+	183	0		233	0		283	46	+	333	0		383	0		433	0		483			
0		34	0		84	0		134	0	+	184	0		234	0		284	3	+	334	1		384	0		434	0		484			
0		35	0		85	0		135	0		185	0		235	0		285	0		335	0		385	0		435	0		485			
0		36	0		86	1		136	0		186	0		236	0		286	1		336	0		386	1		436	0		486			
0		37	0		87	0		137	0		187	0		237	0		287	2		337	0		387	0		437	0		487			
0		38	0		88	0		138	0		188	0		238	1		288	0		338	0		388	0		438	0		488			
0		39	0		89	0		139	0		189	0		239	0		289	0		339	0		389	0		439	0		489			
0		40	0		90	0		140	0		190	0		240	0		290	0		340	0		390	1		440	0		490			
0		41	0		91	0		141	0		191	0		241	0		291	0		341	0		391	0		441	0		491			
0		42	0		92	0		142	0		192	0		242	0		292	0		342	0		392	0		442	0		492			
0		43	0		93	0		143	0		193	0		243	0		293	3		343	0		393	0		443	0		493			
0		44	0		94	0		144	0		194	0		244	0		294	0		344	0		394	0		444	0		494			
0		45	0		95	0		145	0		195	0		245	0		295	2		345	0		395	0		445	0		495			
0		46	0		96	0		146	0	+	196	0		246	0		296	2		346	0		396	0		446	0		496			
0		47	0		97	0		147	0	+	197	0	+	247	0		297	4		347	0		397	0		447	0		497			
0		48	0		98	0		148	0	+	198	0	+	248	0		298	3		348	0		398	0		448	0		498			
0		49	0		99	0		149	0	+	199	0	+	249	0		299	0		349	0		399	0		449	0		499			
0		50	0		100	0		150	0	+	200	0	+	250	0		300	1		350	0		400	0		450	0		500			

VMS Peak Search Report V1.9 Generated 29-JUN-2006 17:11:00

```
Configuration     : $DISK1:[ALP7.SAMPLE]H61AT1AG_290661350.CNF;1
Analyses by       : ALPHA V1.8
Sample title      : U BRC
Sample date       : 22-MAY-2006 10:10:00 Acquisition date : 29-JUN-2006 13:50:39
Sample ID         : H61AT1AG             Sample quantity  : 0.00000E+00 SAMPLE
Sample type       : disk                 Sample geometry  :
Detector name     : ALP7                 Detector geometry:
Elapsed live time: 0 03:20:05.00         Elapsed real time: 0 03:20:05.00   0.0%
Start energy      :  2886.97             End energy       :  6675.68
Sensitivity       :     4.00             Sum Sensitivity  :     1.00
```

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	5330.77	674	0	22.37	331.11	320	15	5.61E-02	3.9	

VMS Nuclide Identification Report V3.0 Generated 29-JUN-2006 17:11:02

```
Configuration     : $DISK1:[ALP7.SAMPLE]H61AT1AG_290661350.CNF;1
Analyses by       : ALPHA V1.8,PEAKEFF V2.2,NID V3.3
Sample title      : U BRC
Sample date       : 22-MAY-2006 10:10:00 Acquisition date : 29-JUN-2006 13:50:39
Sample ID         : H61AT1AG             Sample quantity  : 0.00000E+00 SAMPLE
Sample type       : disk                 Sample geometry  :
Detector name     : ALP7                 Detector geometry:
Elapsed live time: 0 03:20:05.00         Elapsed real time: 0 03:20:05.00   0.0%
Energy tolerance :    40.00              Half life ratio  :     1.00
Errors propagated: No                    Systematic Error :     0.00 %
Efficiency type  : Spline                Efficiencies at  : Peak Energy
Abundance limit  :    60.00
```

Summary of Nuclide Activity

```
 Total number of lines in spectrum                1
 Number of unidentified lines                     0
 Number of lines tentatively identified by NID    1      100.00%
```

Nuclide Type : AP

Nuclide	Hlife	Decay	Uncorrected PCI/SAMPLE	Decay Corr PCI/SAMPLE	Decay Corr 0-Sigma Error	0-Sigma %Error	Flags
U-232	68.90Y	1.00	0.000E+00	0.000E+00	0.000E+00	0.00	
			---	---			
	Total Activity :		0.000E+00	0.000E+00			
	Grand Total Activity :		0.000E+00	0.000E+00			

Flags: "K" = Keyline not found "M" = Manually accepted
"E" = Manually edited "A" = Nuclide specific abn. limit

ITRD PEAK TEST REPORT (Version 16-May-94)

Configuration: $DISK1:[ALP7.SAMPLE]H61AT1AG_290661350.CNF;1

Peak Energy	Left Chan	Rght Chan	Peak Area	Total Counts	Diff/ StDev	Overlap Counts	Multiplet Diff/StDev
5330.76	320	335	674	672	0.08		

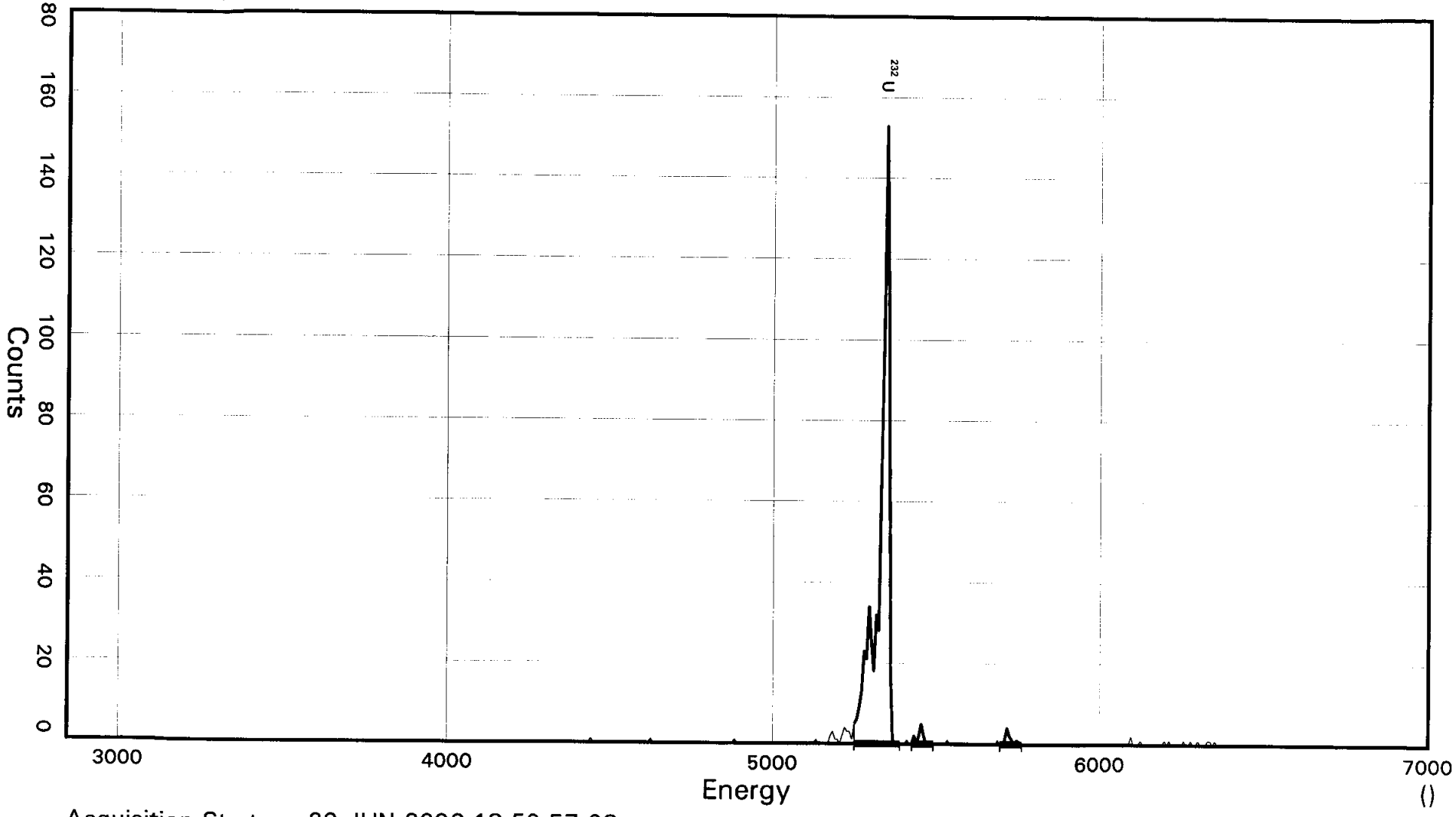
End of Report

STL Richland WA.

U BRC

Sample ID: H61AX1AG
Detector ID: ALP8 1

Batch ID: 6163126



Acquisition Start: 29-JUN-2006 13:50:57.93
Preset Live Time: 0 03:20:00.00
Elapsed Live Time: 0 03:20:12.00

Energy Coefficients:
Offset: 2.82327E+03
Slope: 7.35189E+00
Quadrature: -6.84520E-05

SAMPLE IDENTIITY: H61AX1AG

TITLE : U BRC

DETECTOR : ALP8 1
CONFIGURATION NAME : $DISK1:[ALP8.SAMPLE]H61AX1AG_290661350.CNF;1

ACQUIRE DATE of BACKGROUND: 02-JUN-2006 07:27:19

REPORT DATE : 29-Jun-06 SAMPLE DATE: 22-MAY-2006 10:10:00
ACQUIRE DATE: 29-JUN-2006 13:50:57 CALIB DATE : 01-JUN-2006 23:53:23

PRESET LIVE TIME: 0 03:20:00 ELAPSED LIVE TIME: 0 03:20:12

OFFSET : 2823.27 keV CONSTANT FWHM : 8.66667 Channels
SLOPE : 7.35189 keV/C SENSITIVITY : 4.00000 Std Dev's
QUAD COEFF : -.684520E-04 keV/C^2 SUM SENSITIVITY: 1.00000 %

Alpha Regions Report
(Version: 8-Oct-91)

Sample Identity: H61AX1AG

Detector: ALP8 1
Report Date: 29-Jun-06 05:11 PM
Acquire Date: 29-JUN-2006 13:50:57.93
Tracer Nuclide: U-232
High Counts Limit: 36
Sample Live Time: 200 minutes
Bkgrnd Live Time: 1000 minutes

Flags Key

P: Peak Identified
I: Peak Intersect
S: Single Non-peak Intersect
M: Multiple Non-peak Intersect
H: High Non-peak Sample Count
A: Altered via ALP-RGN-EDIT

Nuclide Name	Smpl Count	Bkg Count	Intrsct Count	Count Rate C/Min	Centrd Energy keV	Region Width keV	Left Chnl	Rght Chnl	Left Wdth Mult	Rght Wdth Mult	Flags
U-232	666	9	0	3.318	5343.0	138.8	331	350	0.00	0.00	P
U-234	0	3	0	-0.003	4797.4	139.0	256	275	0.00	0.00	
U-235	1	1	0	0.004	4420.6	139.1	205	224	0.00	0.00	
U-238	0	0	0	0.000	4220.8	139.2	178	197	0.00	0.00	

End of Alpha Region Report
(Produced by Alp_rgn_cnts)

Alpha Spectrum Listing
(Version: 29-Jun-92)

Sample Identity: H61AX1AG
Detector: ALP8 1
Report Date: 29-Jun-06 05:11 PM
Acquire Date: 29-JUN-2006 13:50:57.93

Flags Key

Intersect Region: @
Non-Intersect Region: +, -

Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn
		1	0		51	0		101	0		151	0		201	0		251	0		301	0		351	0		401	1		451	0		501
		2	0		52	0		102	0		152	0		202	0		252	0		302	0		352	0		402	0		452	0		502
0		3	0		53	0		103	0		153	0		203	0		253	0		303	1		353	0		403	0		453	0		503
0		4	0		54	0		104	0		154	0		204	0		254	0		304	0		354	0		404	0		454	0		504
0		5	0		55	0		105	0		155	0	+	205	0		255	0		305	0		355	0		405	0		455	0		505
0		6	0		56	0		106	0		156	0	+	206	0	+	256	0		306	2		356	0		406	0		456	0		506
0		7	0		57	0		107	0		157	0	+	207	0	+	257	0		307	0		357	0		407	0		457	0		507
0		8	0		58	0		108	0		158	0	+	208	0	+	258	0		308	2		358	0		408	0		458	0		508
0		9	0		59	0		109	0		159	0	+	209	0	+	259	0		309	5		359	0		409	0		459	0		509
0		10	0		60	0		110	0		160	0	+	210	0	+	260	0		310	2		360	0		410	0		460	0		510
0		11	0		61	0		111	0		161	0	+	211	0	+	261	0		311	0		361	0		411	1		461	0		511
0		12	0		62	0		112	0		162	0	+	212	0	+	262	0		312	0		362	0		412	0		462	0		512
0		13	0		63	0		113	0		163	0	+	213	0	+	263	0		313	0		363	0		413	1		463			
0		14	0		64	0		114	0		164	0	+	214	0	+	264	0		314	0		364	0		414	0		464			
0		15	0		65	0		115	0		165	0	+	215	0	+	265	1		315	0		365	0		415	0		465			
0		16	0		66	0		116	0		166	0	+	216	0	+	266	0		316	0		366	0		416	0		466			
0		17	0		67	0		117	0		167	0	+	217	0	+	267	0		317	0		367	0		417	0		467			
0		18	0		68	0		118	0		168	0	+	218	0	+	268	0		318	0		368	0		418	0		468			
0		19	0		69	0		119	0		169	0	+	219	0	+	269	0		319	0		369	0		419	1		469			
0		20	0		70	0		120	0		170	0	+	220	0	+	270	0		320	1		370	0		420	0		470			
0		21	0		71	0		121	0		171	1	+	221	0	+	271	2		321	0		371	0		421	0		471			
0		22	0		72	0		122	0		172	0	+	222	0	+	272	3		322	0		372	0		422	1		472			
0		23	0		73	0		123	0		173	0	+	223	0	+	273	1		323	0		373	0		423	0		473			
0		24	0		74	0		124	0		174	0	+	224	0	+	274	1		324	0		374	0		424	0		474			
0		25	0		75	0		125	0		175	0		225	0	+	275	0		325	0		375	0		425	1		475			
0		26	0		76	0		126	0		176	0		226	0		276	2		326	0		376	0		426	0		476			
0		27	0		77	0		127	0		177	0		227	0		277	4		327	0		377	0		427	0		477			
0		28	0		78	0		128	0	+	178	0		228	0		278	3		328	0		378	0		428	0		478			
0		29	0		79	0		129	0	+	179	0		229	0		279	3		329	0		379	0		429	1		479			
0		30	0		80	0		130	0	+	180	0		230	0		280	1		330	0		380	0		430	1		480			
0		31	0		81	0		131	0	+	181	0		231	1		281	5	+	331	0		381	0		431	0		481			
0		32	0		82	0		132	0	+	182	0		232	0		282	6	+	332	0		382	0		432	1		482			
0		33	0		83	0		133	0	+	183	0		233	0		283	9	+	333	0		383	0		433	0		483			
0		34	0		84	0		134	0	+	184	0		234	0		284	13	+	334	0		384	0		434	0		484			
0		35	0		85	0		135	0	+	185	0		235	0		285	23	+	335	0		385	0		435	0		485			
0		36	0		86	0		136	0	+	186	0		236	0		286	21	+	336	0		386	0		436	0		486			
0		37	0		87	0		137	0	+	187	0		237	0		287	34	+	337	0		387	0		437	0		487			
0		38	0		88	0		138	0	+	188	0		238	0		288	25	+	338	0		388	0		438	0		488			
0		39	0		89	0		139	0	+	189	0		239	0		289	18	+	339	0		389	0		439	0		489			
0		40	0		90	0		140	0	+	190	0		240	0		290	32	+	340	0		390	0		440	0		490			
0		41	0		91	0		141	0	+	191	0		241	0		291	28	+	341	1		391	0		441	0		491			
0		42	0		92	0		142	0	+	192	0		242	0		292	67	+	342	0		392	0		442	0		492			
0		43	0		93	0		143	0	+	193	0		243	0		293	101	+	343	0		393	0		443	0		493			
0		44	0		94	0		144	0	+	194	0		244	0		294	153	+	344	1		394	0		444	0		494			
0		45	0		95	0		145	0	+	195	0		245	0		295	99	+	345	4		395	0		445	0		495			
0		46	0		96	0		146	0	+	196	1		246	0		296	19	+	346	2		396	0		446	0		496			
0		47	0		97	0		147	0	+	197	0		247	0		297	1	+	347	1		397	2		447	0		497			
0		48	0		98	0		148	0		198	0		248	0		298	0	+	348	0		398	0		448	0		498			
0		49	0		99	0		149	0		199	0		249	0		299	0	+	349	1		399	0		449	0		499			
0		50	0		100	0		150	0		200	0		250	0		300	0		350	0		400	0		450	0		500			

VMS Peak Search Report V1.9 Generated 29-JUN-2006 17:11:26

Configuration	: $DISK1:[ALP8.SAMPLE]H61AX1AG_290661350.CNF;1		
Analyses by	: ALPHA V1.8		
Sample title	: U BRC		
Sample date	: 22-MAY-2006 10:10:00	Acquisition date	: 29-JUN-2006 13:50:57
Sample ID	: H61AX1AG	Sample quantity	: 0.00000E+00 SAMPLE
Sample type	: disk	Sample geometry	:
Detector name	: ALP8	Detector geometry	:
Elapsed live time	: 0 03:20:12.00	Elapsed real time	: 0 03:20:12.00 0.0%
Start energy	: 2845.33	End energy	: 6569.50
Sensitivity	: 4.00	Sum Sensitivity	: 1.00

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	5342.97	666	0	36.76	343.83	331	19	5.54E-02	3.9	
2	0	5448.10	10	0	36.76	358.22	355	9	8.33E-04	31.6	
3	0	5718.21	10	0	36.76	395.22	392	9	8.33E-04	31.6	

VMS Nuclide Identification Report V3.0 Generated 29-JUN-2006 17:11:29

Configuration	: $DISK1:[ALP8.SAMPLE]H61AX1AG_290661350.CNF;1		
Analyses by	: ALPHA V1.8,PEAKEFF V2.2,NID V3.3		
Sample title	: U BRC		
Sample date	: 22-MAY-2006 10:10:00	Acquisition date	: 29-JUN-2006 13:50:57
Sample ID	: H61AX1AG	Sample quantity	: 0.00000E+00 SAMPLE
Sample type	: disk	Sample geometry	:
Detector name	: ALP8	Detector geometry	:
Elapsed live time	: 0 03:20:12.00	Elapsed real time	: 0 03:20:12.00 0.0%
Energy tolerance	: 40.00	Half life ratio	: 1.00
Errors propagated	: No	Systematic Error	: 0.00 %
Efficiency type	: Spline	Efficiencies at	: Peak Energy
Abundance limit	: 60.00		

Summary of Nuclide Activity

Total number of lines in spectrum	3	
Number of unidentified lines	2	
Number of lines tentatively identified by NID	1	33.33%

Nuclide Type : AP

Nuclide	Hlife	Decay	Uncorrected PCI/SAMPLE	Decay Corr PCI/SAMPLE	Decay Corr 0-Sigma Error	0-Sigma %Error	Flags
U-232	68.90Y	1.00	0.000E+00	0.000E+00	0.000E+00	0.00	
		Total Activity :	0.000E+00	0.000E+00			
		Grand Total Activity :	0.000E+00	0.000E+00			

Flags: "K" = Keyline not found "M" = Manually accepted
"E" = Manually edited "A" = Nuclide specific abn. limit

ITRD PEAK TEST REPORT (Version 16-May-94)

Configuration: $DISK1:[ALP8.SAMPLE]H61AX1AG_290661350.CNF;1

Peak Energy	Left Chan	Rght Chan	Peak Area	Total Counts	Diff/ StDev	Overlap Counts	Multiplet Diff/StDev
5342.96	331	350	666	654	0.46		
5448.10	355	364	10	11	-0.32		
5718.21	392	401	10	9	0.32		

End of Report

SEVERN TRENT STL

URANIUM ISOTOPIC COUNTING REQUEST

1712

C.R. Technician: OR

Date Counted: 6/29/06

Counting Time
Sample: 200 Minutes
Background: See Alpha Regions Report

BRC 5/22

SOP's
Operating: RICHRD008
Review: RICHRD0016 6/23/06

WorkOrder #	U-232 (5320 KeV) Tracer	TOTAL COUNTS U-238 (4196 KeV)	U-235 (4396 KeV)	U-234 (4776 KeV)	Det #	Comments/Edits
H61A11AG	See Counting Room Printout for ROI information				9	
H61A21AG	See Counting Room Printout for ROI information				10	
H61A31AG	See Counting Room Printout for ROI information				11	
H61A51AG	See Counting Room Printout for ROI information				12	
H61A71AG	See Counting Room Printout for ROI information				69	
H67Q1VAA	See Counting Room Printout for ROI information				71	
H67Q1VAC	See Counting Room Printout for ROI information				85	
	See Counting Room Printout for ROI information					
	See Counting Room Printout for ROI information					

Comments:

Form No: RC-011, 7/02, Rev 8

Approved by: OR

Date: 6/29/06

STL RICHLAND

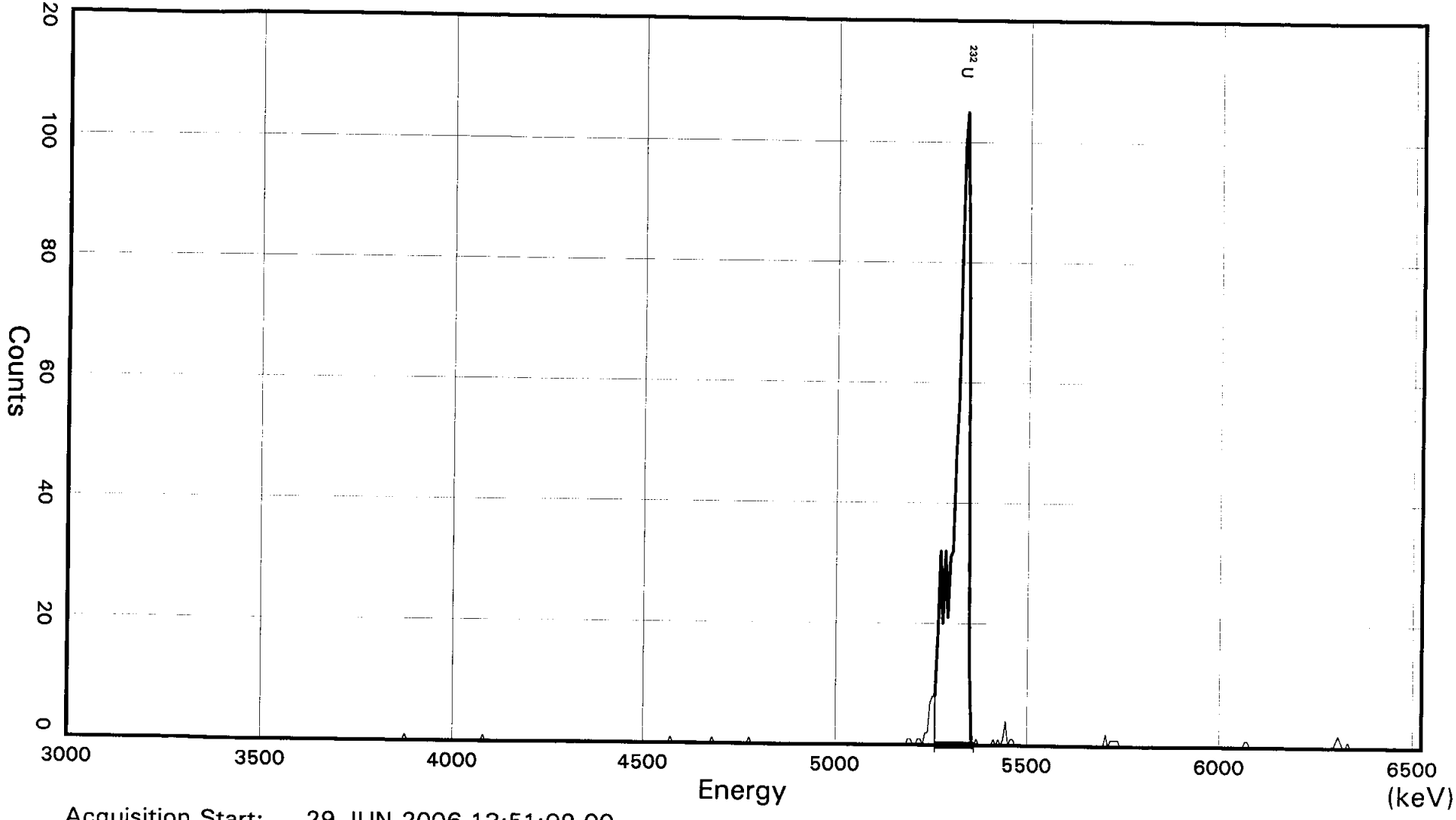
283

STL Richland WA.

U BRC

Sample ID: H61A11AG
Detector ID: ALP9 1

Batch ID: 6163126



Acquisition Start: 29-JUN-2006 13:51:09.00
Preset Live Time: 0 03:20:00.00
Elapsed Live Time: 0 03:20:03.00

Energy Coefficients:
Offset: 3.26308E+03
Slope: 6.39526E+00
Quadrature: -5.61482E-05

SAMPLE IDENTITY: H61A11AG

TITLE : U BRC

DETECTOR : ALP9 1
CONFIGURATION NAME : $DISK1:[ALP9.SAMPLE]H61A11AG_290661351.CNF;1

ACQUIRE DATE of BACKGROUND: 02-JUN-2006 07:27:21

REPORT DATE : 29-Jun-06 SAMPLE DATE: 22-MAY-2006 10:10:00
ACQUIRE DATE: 29-JUN-2006 13:51:09 CALIB DATE : 01-JUN-2006 23:54:19

PRESET LIVE TIME: 0 03:20:00 ELAPSED LIVE TIME: 0 03:20:03

OFFSET : 3263.08 keV CONSTANT FWHM : 5.83333 Channels
SLOPE : 6.39526 keV/C SENSITIVITY : 4.00000 Std Dev's
QUAD COEFF : -.561482E-04 keV/C^2 SUM SENSITIVITY: 1.00000 %

Alpha Regions Report
(Version: 8-Oct-91)

Sample Identity: H61A11AG

Detector: ALP9 1
Report Date: 29-Jun-06 05:11 PM
Acquire Date: 29-JUN-2006 13:51:09.00
Tracer Nuclide: U-232
High Counts Limit: 36
Sample Live Time: 200 minutes
Bkgrnd Live Time: 1000 minutes

Flags Key

P: Peak Identified
I: Peak Intersect
S: Single Non-peak Intersect
M: Multiple Non-peak Intersect
H: High Non-peak Sample Count
A: Altered via ALP-RGN-EDIT

Nuclide Name	Smpl Count	Bkg Count	Intrsct Count	Count Rate C/Min	Centrd Energy keV	Region Width keV	Left Chnl	Rght Chnl	Left Wdth Mult	Rght Wdth Mult	Flags
U-232	674	2	0	3.367	5329.8	101.7	313	329	0.00	0.00	P
U-234	1	1	0	0.004	4784.2	101.9	227	243	0.00	0.00	
U-235	0	0	0	0.000	4407.4	102.0	168	184	0.00	0.00	
U-238	0	0	0	0.000	4207.6	102.1	137	153	0.00	0.00	

End of Alpha Region Report
(Produced by Alp_rgn_cnts)

Alpha Spectrum Listing
(Version: 29-Jun-92)

Sample Identity: H61A11AG
Detector: ALP9 1
Report Date: 29-Jun-06 05:11 PM
Acquire Date: 29-JUN-2006 13:51:09.00

Flags Key

Intersect Region: @
Non-Intersect Region: +, -

Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn
		1	0		51	0		101	0	+	151	0		201	0		251	0		301	0		351	0		401	0		451	0		501
		2	0		52	0		102	0	+	152	0		202	0		252	1		302	0		352	0		402	0		452	0		502
0		3	0		53	0		103	0	+	153	0		203	0		253	1		303	0		353	0		403	0		453	0		503
0		4	0		54	0		104	0		154	0		204	0		254	0		304	0		354	0		404	0		454	0		504
0		5	0		55	0		105	0		155	1		205	0		255	0		305	0		355	0		405	0		455	0		505
0		6	0		56	0		106	0		156	0		206	0		256	1		306	0		356	0		406	0		456	0		506
0		7	0		57	0		107	0		157	0		207	0		257	1		307	0		357	0		407	0		457	0		507
0		8	0		58	0		108	0		158	0		208	0		258	0		308	0		358	0		408	0		458	0		508
0		9	0		59	0		109	0		159	0		209	0		259	2		309	0		359	0		409	0		459	0		509
0		10	0		60	0		110	0		160	0		210	0		260	2		310	0		360	0		410	0		460	0		510
0		11	0		61	0		111	0		161	0		211	0		261	7		311	0		361	0		411	0		461	0		511
0		12	0		62	0		112	0		162	0		212	0		262	8		312	0		362	0		412	0		462	0		512
0		13	0		63	0		113	0		163	0		213	0		263	8	+	313	0		363	0		413	0		463			
0		14	0		64	0		114	0		164	0		214	0		264	18	+	314	0		364	0		414	0		464			
0		15	0		65	0		115	0		165	0		215	0		265	32	+	315	0		365	0		415	0		465			
0		16	0		66	0		116	0		166	0		216	0		266	20	+	316	0		366	0		416	0		466			
0		17	0		67	0		117	0		167	0		217	0		267	32	+	317	0		367	0		417	0		467			
0		18	0		68	0		118	0	+	168	0		218	0		268	21	+	318	0		368	0		418	0		468			
0		19	0		69	0		119	0	+	169	0		219	0		269	31	+	319	0		369	0		419	0		469			
0		20	0		70	0		120	0	+	170	0		220	0		270	32	+	320	0		370	0		420	0		470			
0		21	0		71	0		121	0	+	171	0		221	0		271	48	+	321	0		371	0		421	0		471			
0		22	0		72	0		122	0	+	172	1		222	0		272	57	+	322	0		372	0		422	0		472			
0		23	0		73	0		123	0	+	173	0		223	0		273	82	+	323	0		373	0		423	0		473			
0		24	0		74	0		124	0	+	174	0		224	0		274	99	+	324	0		374	0		424	0		474			
0		25	0		75	0		125	0	+	175	0		225	0		275	105	+	325	0		375	0		425	0		475			
0		26	0		76	0		126	0	+	176	0		226	0		276	74	+	326	0		376	0		426	0		476			
0		27	0		77	0		127	0	+	177	0	+	227	0		277	13	+	327	0		377	0		427	1		477			
0		28	0		78	1		128	0	+	178	0	+	228	0		278	0	+	328	0		378	0		428	2		478			
0		29	0		79	0		129	0	+	179	0	+	229	0		279	0		329	0		379	0		429	1		479			
0		30	0		80	0		130	0	+	180	0	+	230	0		280	1		330	0		380	0		430	0		480			
0		31	0		81	0		131	0	+	181	0	+	231	0		281	0		331	0		381	0		431	0		481			
0		32	0		82	0		132	0	+	182	0	+	232	0		282	0		332	0		382	0		432	1		482			
0		33	0		83	0		133	0	+	183	0	+	233	0		283	0		333	2		383	0		433	0		483			
0		34	0		84	0		134	0	+	184	0	+	234	0		284	0		334	0		384	0		434	0		484			
0		35	0		85	0		135	0		185	0	+	235	0		285	0		335	1		385	0		435	0		485			
0		36	0		86	0		136	0		186	0	+	236	0		286	0		336	1		386	0		436	0		486			
0		37	0		87	0	+	137	0		187	1	+	237	0		287	1		337	1		387	0		437	0		487			
0		38	0		88	0	+	138	0		188	0	+	238	0		288	0		338	1		388	0		438	0		488			
0		39	0		89	0	+	139	0		189	0	+	239	0		289	1		339	0		389	0		439	0		489			
0		40	0		90	0	+	140	0		190	0	+	240	0		290	0		340	0		390	1		440	0		490			
0		41	0		91	0	+	141	0		191	0	+	241	0		291	1		341	0		391	1		441	0		491			
0		42	0		92	0	+	142	0		192	0	+	242	0		292	4		342	0		392	0		442	0		492			
0		43	0		93	0	+	143	0		193	0	+	243	0		293	0		343	0		393	0		443	0		493			
0		44	0		94	0	+	144	0		194	0		244	0		294	1		344	0		394	0		444	0		494			
0		45	0		95	0	+	145	0		195	0		245	0		295	1		345	0		395	0		445	0		495			
0		46	1		96	0	+	146	0		196	0		246	0		296	0		346	0		396	0		446	0		496			
0		47	0		97	0	+	147	0		197	0		247	0		297	0		347	0		397	0		447	0		497			
0		48	0		98	0	+	148	0		198	0		248	0		298	0		348	0		398	0		448	0		498			
0		49	0		99	0	+	149	0		199	0		249	0		299	0		349	0		399	0		449	0		499			
0		50	0		100	0	+	150	0		200	0		250	0		300	0		350	0		400	0		450	0		500			

VMS Peak Search Report V1.9 Generated 29-JUN-2006 17:11:31

```
Configuration     : $DISK1:[ALP9.SAMPLE]H61A11AG_290661351.CNF;1
Analyses by       : ALPHA V1.8
Sample title      : U BRC
Sample date       : 22-MAY-2006 10:10:00 Acquisition date : 29-JUN-2006 13:51:09
Sample ID         : H61A11AG             Sample quantity  : 0.00000E+00 SAMPLE
Sample type       : disk                 Sample geometry  :
Detector name     : ALP9                 Detector geometry:
Elapsed live time: 0 03:20:03.00         Elapsed real time: 0 03:20:03.00   0.0%
Start energy      :  3282.26 keV         End energy       :  6522.74 keV
Sensitivity       :     4.00             Sum Sensitivity  :     1.00
```

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	5329.81	674	0	31.98	324.09	313	16	5.62E-02	3.9	

VMS Nuclide Identification Report V3.0 Generated 29-JUN-2006 17:11:33

```
Configuration     : $DISK1:[ALP9.SAMPLE]H61A11AG_290661351.CNF;1
Analyses by       : ALPHA V1.8,PEAKEFF V2.2,NID V3.3
Sample title      : U BRC
Sample date       : 22-MAY-2006 10:10:00 Acquisition date : 29-JUN-2006 13:51:09
Sample ID         : H61A11AG             Sample quantity  : 0.00000E+00 SAMPLE
Sample type       : disk                 Sample geometry  :
Detector name     : ALP9                 Detector geometry:
Elapsed live time: 0 03:20:03.00         Elapsed real time: 0 03:20:03.00   0.0%
Energy tolerance :    40.00 keV          Half life ratio  :     1.00
Errors propagated: No                    Systematic Error :     0.00 %
Efficiency type  : Spline                Efficiencies at  : Peak Energy
Abundance limit  :    60.00
```

Summary of Nuclide Activity

```
 Total number of lines in spectrum                1
 Number of unidentified lines                     0
 Number of lines tentatively identified by NID    1      100.00%
```

Nuclide Type : AP

Nuclide	Hlife	Decay	Uncorrected PCI/SAMPLE	Decay Corr PCI/SAMPLE	Decay Corr 0-Sigma Error	0-Sigma %Error	Flags
U-232	68.90Y	1.00	0.000E+00	0.000E+00	0.000E+00	0.00	
			---	---			
	Total Activity :		0.000E+00	0.000E+00			
	Grand Total Activity :		0.000E+00	0.000E+00			

Flags: "K" = Keyline not found "M" = Manually accepted
"E" = Manually edited "A" = Nuclide specific abn. limit

ITRD PEAK TEST REPORT (Version 16-May-94)

Configuration: $DISK1:[ALP9.SAMPLE]H61A11AG_290661351.CNF;1

Peak Energy	Left Chan	Rght Chan	Peak Area	Total Counts	Diff/ StDev	Overlap Counts	Multiplet Diff/StDev
5329.80	313	329	674	672	0.08		

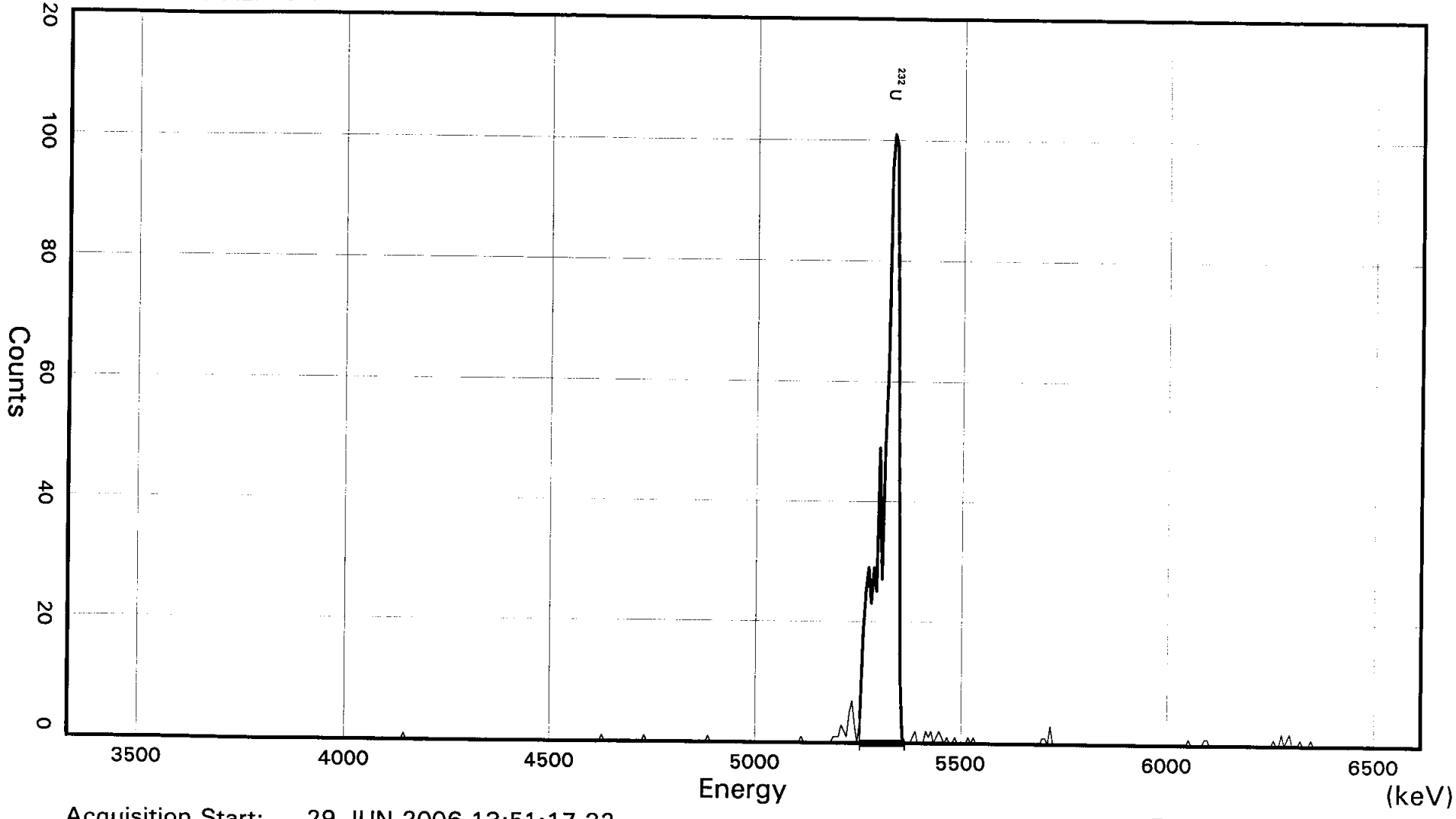
End of Report

STL Richland WA.

U BRC

Sample ID: H61A21AG
Detector ID: ALP10 1

Batch ID: 6163126



Acquisition Start: 29-JUN-2006 13:51:17.32
Preset Live Time: 0 03:20:00.00
Elapsed Live Time: 0 03:20:07.00

Energy Coefficients:
Offset: 3.31262E+03
Slope: 6.45058E+00
Quadrature: -8.95822E-06

SAMPLE IDENTITY: H61A21AG

TITLE : U BRC

DETECTOR : ALP10 1
CONFIGURATION NAME : $DISK1:[ALP10.SAMPLE]H61A21AG_290661351.CNF;
1
ACQUIRE DATE of BACKGROUND: 02-JUN-2006 07:27:26

REPORT DATE : 29-Jun-06 SAMPLE DATE: 22-MAY-2006 10:10:00
ACQUIRE DATE: 29-JUN-2006 13:51:17 CALIB DATE : 01-JUN-2006 23:53:52

PRESET LIVE TIME: 0 03:20:00 ELAPSED LIVE TIME: 0 03:20:07

OFFSET : 3312.62 keV CONSTANT FWHM : 6.83333 Channels
SLOPE : 6.45058 keV/C SENSITIVITY : 4.00000 Std Dev's
QUAD COEFF : -.895822E-05 keV/C^2 SUM SENSITIVITY: 1.00000 %

Alpha Regions Report
(Version: 8-Oct-91)

Sample Identity: H61A21AG

Detector: ALP10 1
Report Date: 29-Jun-06 05:11 PM
Acquire Date: 29-JUN-2006 13:51:17.32
Tracer Nuclide: U-232
High Counts Limit: 36
Sample Live Time: 200 minutes
Bkgrnd Live Time: 1000 minutes

Flags Key

P: Peak Identified
I: Peak Intersect
S: Single Non-peak Intersect
M: Multiple Non-peak Intersect
H: High Non-peak Sample Count
A: Altered via ALP-RGN-EDIT

Nuclide Name	Smpl Count	Bkg Count	Intrsct Count	Count Rate C/Min	Centrd Energy keV	Region Width keV	Left Chnl	Rght Chnl	Left Wdth Mult	Rght Wdth Mult	Flags
U-232	707	6	0	3.527	5328.3	109.6	301	318	0.00	0.00	P
U-234	1	1	0	0.004	4782.7	109.6	216	233	0.00	0.00	
U-235	0	0	0	0.000	4405.9	109.6	158	175	0.00	0.00	
U-238	1	2	0	0.003	4206.1	109.6	127	144	0.00	0.00	

End of Alpha Region Report
(Produced by Alp_rgn_cnts)

Alpha Spectrum Listing
(Version: 29-Jun-92)

Sample Identity: H61A21AG
Detector: ALP10 1
Report Date: 29-Jun-06 05:11 PM
Acquire Date: 29-JUN-2006 13:51:17.32

Flags Key

Intersect Region: @
Non-Intersect Region: +, -

Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn
		1	0		51	0		101	0		151	0		201	0		251	4	+	301	0		351	0		401	0		451	0		501
		2	0		52	0		102	0		152	0		202	0		252	18	+	302	0		352	0		402	0		452	0		502
0		3	0		53	0		103	0		153	0		203	0		253	25	+	303	0		353	0		403	0		453	0		503
0		4	0		54	0		104	0		154	1		204	0		254	29	+	304	0		354	0		404	0		454	0		504
0		5	0		55	0		105	0		155	0		205	0		255	23	+	305	0		355	0		405	0		455	0		505
0		6	0		56	0		106	0		156	0		206	0		256	29	+	306	0		356	0		406	0		456	0		506
0		7	0		57	0		107	0		157	0		207	0		257	25	+	307	0		357	0		407	1		457	0		507
0		8	0		58	0		108	0	+	158	0		208	0		258	49	+	308	0		358	0		408	0		458	0		508
0		9	0		59	0		109	0	+	159	0		209	0		259	27	+	309	0		359	0		409	0		459	0		509
0		10	0		60	0		110	0	+	160	0		210	0		260	49	+	310	0		360	0		410	2		460	0		510
0		11	0		61	0		111	0	+	161	0		211	0		261	62	+	311	0		361	0		411	0		461	0		511
0		12	0		62	0		112	0	+	162	0		212	0		262	95	+	312	0		362	0		412	1		462	0		512
0		13	0		63	0		113	0	+	163	0		213	0		263	101	+	313	0		363	0		413	2		463			
0		14	0		64	0		114	0	+	164	0		214	0		264	99	+	314	0		364	0		414	0		464			
0		15	0		65	0		115	0	+	165	0		215	0		265	57	+	315	0		365	0		415	0		465			
0		16	0		66	0		116	0	+	166	0	+	216	0		266	12	+	316	0		366	0		416	0		466			
0		17	0		67	0		117	0	+	167	0	+	217	0		267	1	+	317	0		367	0		417	1		467			
0		18	0		68	0		118	0	+	168	0	+	218	0		268	0		318	0		368	0		418	0		468			
0		19	0		69	0		119	0	+	169	0	+	219	0		269	0		319	0		369	0		419	0		469			
0		20	0		70	0		120	0	+	170	1	+	220	0		270	0		320	1		370	0		420	0		470			
0		21	0		71	0		121	0	+	171	0	+	221	0		271	1		321	1		371	0		421	1		471			
0		22	0		72	0		122	0	+	172	0	+	222	0		272	2		322	0		372	0		422	0		472			
0		23	0		73	0		123	0	+	173	0	+	223	0		273	0		323	3		373	0		423	0		473			
0		24	0		74	0		124	0	+	174	0	+	224	0		274	0		324	0		374	0		424	0		474			
0		25	0		75	0		125	0	+	175	0	+	225	0		275	0		325	0		375	1		425	0		475			
0		26	0		76	0		126	0		176	0	+	226	0		276	2		326	0		376	0		426	0		476			
0		27	0		77	0	+	127	0		177	0	+	227	0		277	1		327	0		377	0		427	0		477			
0		28	0		78	0	+	128	0		178	0	+	228	0		278	2		328	0		378	0		428	0		478			
0		29	0		79	1	+	129	0		179	0	+	229	1		279	0		329	0		379	0		429	0		479			
0		30	0		80	0	+	130	0		180	0	+	230	0		280	1		330	0		380	0		430	0		480			
0		31	0		81	0	+	131	0		181	0	+	231	0		281	2		331	0		381	1		431	0		481			
0		32	0		82	0	+	132	0		182	0	+	232	0		282	1		332	0		382	1		432	0		482			
0		33	0		83	0	+	133	0		183	0	+	233	0		283	0		333	0		383	0		433	0		483			
0		34	0		84	0	+	134	0		184	0		234	0		284	1		334	0		384	0		434	0		484			
0		35	0		85	0	+	135	0		185	0		235	0		285	0		335	0		385	0		435	0		485			
0		36	0		86	0	+	136	0		186	0		236	0		286	0		336	0		386	0		436	0		486			
0		37	0		87	0	+	137	0		187	0		237	0		287	1		337	0		387	0		437	0		487			
0		38	0		88	0	+	138	0		188	0		238	0		288	0		338	0		388	0		438	0		488			
0		39	0		89	0	+	139	0		189	0		239	0		289	0		339	0		389	0		439	0		489			
0		40	0		90	0	+	140	0		190	0		240	0		290	0		340	0		390	0		440	0		490			
0		41	0		91	0	+	141	0		191	0		241	1		291	0		341	0		391	0		441	0		491			
0		42	0		92	0	+	142	0		192	0		242	1		292	1		342	0		392	0		442	0		492			
0		43	0		93	0	+	143	0		193	0		243	1		293	0		343	0		393	0		443	0		493			
0		44	0		94	0	+	144	0		194	1		244	3		294	1		344	0		394	0		444	0		494			
0		45	0		95	0		145	0		195	0		245	2		295	0		345	0		395	0		445	0		495			
0		46	0		96	0		146	0		196	0		246	1		296	0		346	0		396	0		446	0		496			
0		47	0		97	0		147	0		197	0		247	5		297	0		347	0		397	0		447	0		497			
0		48	0		98	0		148	0		198	0		248	7		298	0		348	0		398	0		448	0		498			
0		49	0		99	0		149	0		199	0		249	3		299	0		349	0		399	0		449	0		499			
0		50	0		100	0		150	0		200	0		250	0		300	0		350	0		400	0		450	0		500			

VMS Peak Search Report V1.9 Generated 29-JUN-2006 17:11:39

Configuration	: $DISK1:[ALP10.SAMPLE]H61A21AG_290661351.CNF;1		
Analyses by	: ALPHA V1.8		
Sample title	: U BRC		
Sample date	: 22-MAY-2006 10:10:00	Acquisition date	: 29-JUN-2006 13:51:17
Sample ID	: H61A21AG	Sample quantity	: 0.00000E+00 SAMPLE
Sample type	: disk	Sample geometry	:
Detector name	: ALP10	Detector geometry	:
Elapsed live time	: 0 03:20:07.00	Elapsed real time	: 0 03:20:07.00 0.0%
Start energy	: 3331.97 keV	End energy	: 6612.96 keV
Sensitivity	: 4.00	Sum Sensitivity	: 1.00

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	5328.28	707	0	38.70	312.61	301	17	5.89E-02	3.8	

VMS Nuclide Identification Report V3.0 Generated 29-JUN-2006 17:11:42

Configuration	: $DISK1:[ALP10.SAMPLE]H61A21AG_290661351.CNF;1		
Analyses by	: ALPHA V1.8,PEAKEFF V2.2,NID V3.3		
Sample title	: U BRC		
Sample date	: 22-MAY-2006 10:10:00	Acquisition date	: 29-JUN-2006 13:51:17
Sample ID	: H61A21AG	Sample quantity	: 0.00000E+00 SAMPLE
Sample type	: disk	Sample geometry	:
Detector name	: ALP10	Detector geometry	:
Elapsed live time	: 0 03:20:07.00	Elapsed real time	: 0 03:20:07.00 0.0%
Energy tolerance	: 40.00 keV	Half life ratio	: 1.00
Errors propagated	: No	Systematic Error	: 0.00 %
Efficiency type	: Spline	Efficiencies at	: Peak Energy
Abundance limit	: 60.00		

Summary of Nuclide Activity

Total number of lines in spectrum	1	
Number of unidentified lines	0	
Number of lines tentatively identified by NID	1	100.00%

Nuclide Type : AP

Nuclide	Hlife	Decay	Uncorrected PCI/SAMPLE	Decay Corr PCI/SAMPLE	Decay Corr 0-Sigma Error	0-Sigma %Error	Flags
U-232	68.90Y	1.00	0.000E+00	0.000E+00	0.000E+00	0.00	
			---	---			
Total Activity :			0.000E+00	0.000E+00			
Grand Total Activity :			0.000E+00	0.000E+00			

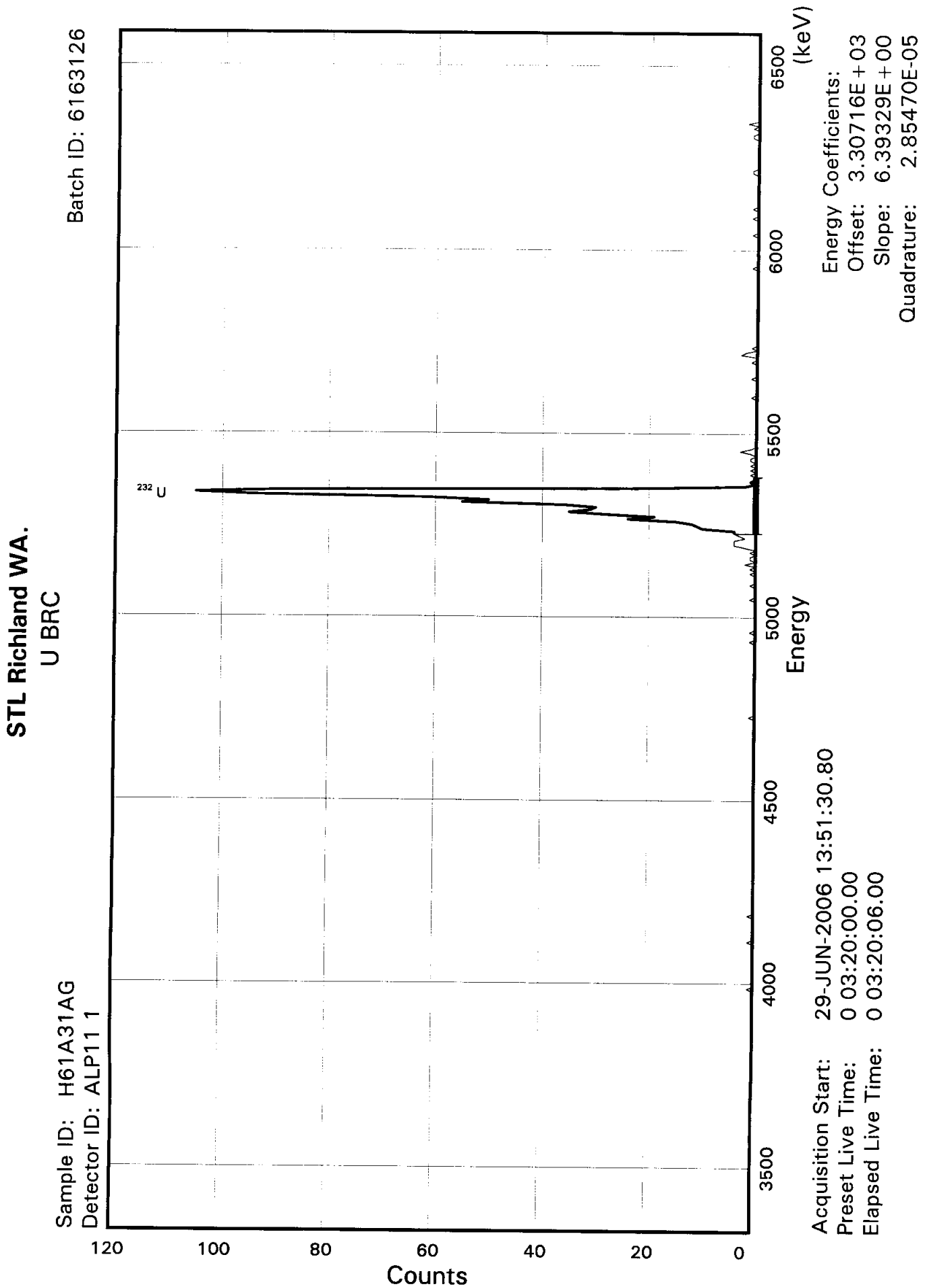
Flags: "K" = Keyline not found "M" = Manually accepted
"E" = Manually edited "A" = Nuclide specific abn. limit

ITRD PEAK TEST REPORT (Version 16-May-94)

Configuration: $DISK1:[ALP10.SAMPLE]H61A21AG_290661351.CNF;1

Peak Energy	Left Chan	Rght Chan	Peak Area	Total Counts	Diff/ StDev	Overlap Counts	Multiplet Diff/StDev
5328.27	301	318	707	705	0.08		

End of Report


STL Richland WA.
U BRC
Batch ID: 6163126
Sample ID: H61A31AG
Detector ID: ALP11 1
232 U
Counts
120
100
80
60
40
20
0
Energy
3500
4000
4500
5000
5500
6000
6500
(keV)
Acquisition Start: 29-JUN-2006 13:51:30.80
Preset Live Time: 0 03:20:00.00
Elapsed Live Time: 0 03:20:06.00
Energy Coefficients:
Offset: 3.30716E+03
Slope: 6.39329E+00
Quadrature: 2.85470E-05

SAMPLE IDENTITY: H61A31AG

TITLE : U BRC

DETECTOR : ALP11 1
CONFIGURATION NAME : $DISK1:[ALP11.SAMPLE]H61A31AG_290661351.CNF;
1
ACQUIRE DATE of BACKGROUND: 02-JUN-2006 07:27:30

REPORT DATE : 29-Jun-06 SAMPLE DATE: 22-MAY-2006 10:10:00
ACQUIRE DATE: 29-JUN-2006 13:51:30 CALIB DATE : 01-JUN-2006 23:54:30

PRESET LIVE TIME: 0 03:20:00 ELAPSED LIVE TIME: 0 03:20:06

OFFSET : 3307.16 keV CONSTANT FWHM : 8.66667 Channels
SLOPE : 6.39329 keV/C SENSITIVITY : 4.00000 Std Dev's
QUAD COEFF : 2.854700E-05 keV/C^2 SUM SENSITIVITY: 1.00000 %

Alpha Regions Report
(Version: 8-Oct-91)

Sample Identity: H61A31AG

Detector: ALP11 1
Report Date: 29-Jun-06 05:11 PM
Acquire Date: 29-JUN-2006 13:51:30.80
Tracer Nuclide: U-232
High Counts Limit: 36
Sample Live Time: 200 minutes
Bkgrnd Live Time: 1000 minutes

Flags Key

P: Peak Identified
I: Peak Intersect
S: Single Non-peak Intersect
M: Multiple Non-peak Intersect
H: High Non-peak Sample Count
A: Altered via ALP-RGN-EDIT

Nuclide Name	Smpl Count	Bkg Count	Intrsct Count	Count Rate C/Min	Centrd Energy keV	Region Width keV	Left Chnl	Rght Chnl	Left Wdth Mult	Rght Wdth Mult	Flags
U-232	747	8	0	3.725	5330.6	153.9	300	324	0.00	0.00	P
U-234	1	2	0	0.003	4785.0	153.7	215	239	0.00	0.00	
U-235	0	1	0	-0.001	4408.2	153.7	156	180	0.00	0.00	
U-238	2	1	0	0.009	4208.4	153.6	125	149	0.00	0.00	

End of Alpha Region Report
(Produced by Alp_rgn_cnts)

Alpha Spectrum Listing
(Version: 29-Jun-92)

Sample Identity: H61A31AG
Detector: ALP11 1
Report Date: 29-Jun-06 05:11 PM
Acquire Date: 29-JUN-2006 13:51:30.80

Flags Key

Intersect Region: @
Non-Intersect Region: +, -

Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn
		1	0		51	0		101	0		151	0		201	0		251	4	+	301	0		351	0		401	0		451	0		501
		2	0		52	0		102	0		152	0		202	0		252	10	+	302	0		352	0		402	0		452	0		502
0		3	0		53	0		103	0		153	0		203	0		253	11	+	303	0		353	0		403	1		453	0		503
0		4	0		54	0		104	0		154	0		204	1		254	12	+	304	0		354	0		404	1		454	0		504
0		5	0		55	0		105	0		155	0		205	0		255	15	+	305	0		355	0		405	0		455	0		505
0		6	0		56	1		106	0	+	156	0		206	0		256	24	+	306	0		356	0		406	0		456	0		506
0		7	0		57	0		107	0	+	157	0		207	0		257	19	+	307	0		357	0		407	0		457	0		507
0		8	0		58	0		108	0	+	158	0		208	1		258	28	+	308	1		358	0		408	0		458	0		508
0		9	0		59	0		109	0	+	159	0		209	0		259	35	+	309	0		359	0		409	0		459	0		509
0		10	0		60	0		110	0	+	160	0		210	0		260	31	+	310	0		360	0		410	0		460	0		510
0		11	0		61	0		111	0	+	161	0		211	0		261	30	+	311	0		361	0		411	0		461	0		511
0		12	0		62	0		112	0	+	162	0		212	0		262	36	+	312	0		362	0		412	0		462	0		512
0		13	0		63	0		113	0	+	163	0		213	0		263	55	+	313	0		363	1		413	0		463			
0		14	0		64	0		114	0	+	164	0		214	0		264	50	+	314	0		364	0		414	0		464			
0		15	0		65	0		115	0	+	165	0	+	215	0		265	62	+	315	0		365	0		415	0		465			
0		16	0		66	0		116	0	+	166	0	+	216	0		266	94	+	316	1		366	0		416	0		466			
0		17	0		67	0		117	0	+	167	0	+	217	0		267	105	+	317	0		367	0		417	0		467			
0		18	0		68	0		118	0	+	168	0	+	218	0		268	88	+	318	0		368	0		418	1		468			
0		19	0		69	0		119	0	+	169	0	+	219	0		269	23	+	319	0		369	0		419	1		469			
0		20	0		70	0		120	0	+	170	0	+	220	0		270	2	+	320	0		370	0		420	0		470			
0		21	0		71	0		121	0	+	171	0	+	221	0		271	0	+	321	0		371	0		421	0		471			
0		22	0		72	0		122	0	+	172	1	+	222	1		272	1	+	322	0		372	0		422	1		472			
0		23	0		73	0		123	0	+	173	0	+	223	0		273	0	+	323	1		373	0		423	0		473			
0		24	0		74	0		124	0	+	174	0	+	224	0		274	0		324	0		374	0		424	2		474			
0		25	0		75	0	+	125	0	+	175	0	+	225	0		275	1		325	0		375	0		425	0		475			
0		26	0		76	1	+	126	0	+	176	0	+	226	0		276	0		326	3		376	0		426	0		476			
0		27	0		77	0	+	127	0	+	177	0	+	227	0		277	1		327	2		377	1		427	0		477			
0		28	0		78	0	+	128	0	+	178	0	+	228	1		278	0		328	0		378	0		428	0		478			
0		29	0		79	0	+	129	0	+	179	0	+	229	0		279	1		329	1		379	0		429	0		479			
0		30	0		80	0	+	130	0	+	180	0	+	230	0		280	0		330	0		380	0		430	0		480			
0		31	0		81	0	+	131	0		181	0	+	231	0		281	1		331	0		381	0		431	0		481			
0		32	0		82	0	+	132	0		182	0	+	232	0		282	1		332	0		382	0		432	0		482			
0		33	0		83	0	+	133	0		183	0	+	233	1		283	0		333	0		383	0		433	0		483			
0		34	0		84	0	+	134	0		184	0	+	234	0		284	1		334	0		384	1		434	0		484			
0		35	0		85	0	+	135	0		185	0	+	235	1		285	3		335	0		385	0		435	0		485			
0		36	0		86	0	+	136	0		186	0	+	236	0		286	1		336	0		386	0		436	0		486			
0		37	0		87	1	+	137	0		187	0	+	237	2		287	0		337	0		387	0		437	0		487			
0		38	0		88	0	+	138	0		188	0	+	238	0		288	0		338	0		388	1		438	0		488			
0		39	0		89	0	+	139	0		189	0	+	239	1		289	0		339	0		389	0		439	0		489			
0		40	0		90	0	+	140	0		190	0		240	1		290	0		340	0		390	0		440	0		490			
0		41	0		91	0	+	141	0		191	0		241	0		291	0		341	0		391	0		441	0		491			
0		42	0		92	0	+	142	0		192	0		242	1		292	0		342	0		392	0		442	0		492			
0		43	0		93	0	+	143	0		193	0		243	0		293	0		343	0		393	0		443	0		493			
0		44	0		94	0	+	144	0		194	0		244	2		294	0		344	0		394	0		444	0		494			
0		45	0		95	0	+	145	0		195	0		245	4		295	0		345	0		395	0		445	0		495			
0		46	0		96	0	+	146	0		196	0		246	4		296	0		346	0		396	0		446	0		496			
0		47	0		97	0	+	147	0		197	0		247	4		297	0		347	0		397	0		447	0		497			
0		48	0		98	0	+	148	0		198	0		248	2		298	0		348	0		398	0		448	0		498			
0		49	0		99	0	+	149	0		199	0		249	3		299	0		349	0		399	0		449	0		499			
0		50	0		100	0		150	0		200	0		250	4	+	300	0		350	0		400	0		450	0		500			

VMS Peak Search Report V1.9 Generated 29-JUN-2006 17:11:53

Configuration	: $DISK1:[ALP11.SAMPLE]H61A31AG_290661351.CNF;1		
Analyses by	: ALPHA V1.8		
Sample title	: U BRC		
Sample date	: 22-MAY-2006 10:10:00	Acquisition date	: 29-JUN-2006 13:51:30
Sample ID	: H61A31AG	Sample quantity	: 0.00000E+00 SAMPLE
Sample type	: disk	Sample geometry	:
Detector name	: ALP11	Detector geometry	:
Elapsed live time	: 0 03:20:06.00	Elapsed real time	: 0 03:20:06.00 0.0%
Start energy	: 3326.34 keV	End energy	: 6588.01 keV
Sensitivity	: 4.00	Sum Sensitivity	: 1.00

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	5330.58	747	0	44.75	316.05	300	24	6.22E-02	3.7	

VMS Nuclide Identification Report V3.0 Generated 29-JUN-2006 17:11:55

Configuration	: $DISK1:[ALP11.SAMPLE]H61A31AG_290661351.CNF;1		
Analyses by	: ALPHA V1.8,PEAKEFF V2.2,NID V3.3		
Sample title	: U BRC		
Sample date	: 22-MAY-2006 10:10:00	Acquisition date	: 29-JUN-2006 13:51:30
Sample ID	: H61A31AG	Sample quantity	: 0.00000E+00 SAMPLE
Sample type	: disk	Sample geometry	:
Detector name	: ALP11	Detector geometry	:
Elapsed live time	: 0 03:20:06.00	Elapsed real time	: 0 03:20:06.00 0.0%
Energy tolerance	: 40.00 keV	Half life ratio	: 1.00
Errors propagated	: No	Systematic Error	: 0.00 %
Efficiency type	: Spline	Efficiencies at	: Peak Energy
Abundance limit	: 60.00		

Summary of Nuclide Activity

Total number of lines in spectrum	1	
Number of unidentified lines	0	
Number of lines tentatively identified by NID	1	100.00%

Nuclide Type : AP

Nuclide	Hlife	Decay	Uncorrected PCI/SAMPLE	Decay Corr PCI/SAMPLE	Decay Corr 0-Sigma Error	0-Sigma %Error	Flags
U-232	68.90Y	1.00	0.000E+00	0.000E+00	0.000E+00	0.00	
			---	---			
Total Activity :			0.000E+00	0.000E+00			
Grand Total Activity :			0.000E+00	0.000E+00			

Flags: "K" = Keyline not found "M" = Manually accepted
"E" = Manually edited "A" = Nuclide specific abn. limit

ITRD PEAK TEST REPORT (Version 16-May-94)

Configuration: $DISK1:[ALP11.SAMPLE]H61A31AG_290661351.CNF;1

Peak Energy	Left Chan	Rght Chan	Peak Area	Total Counts	Diff/ StDev	Overlap Counts	Multiplet Diff/StDev
5330.57	300	324	747	739	0.29		

End of Report

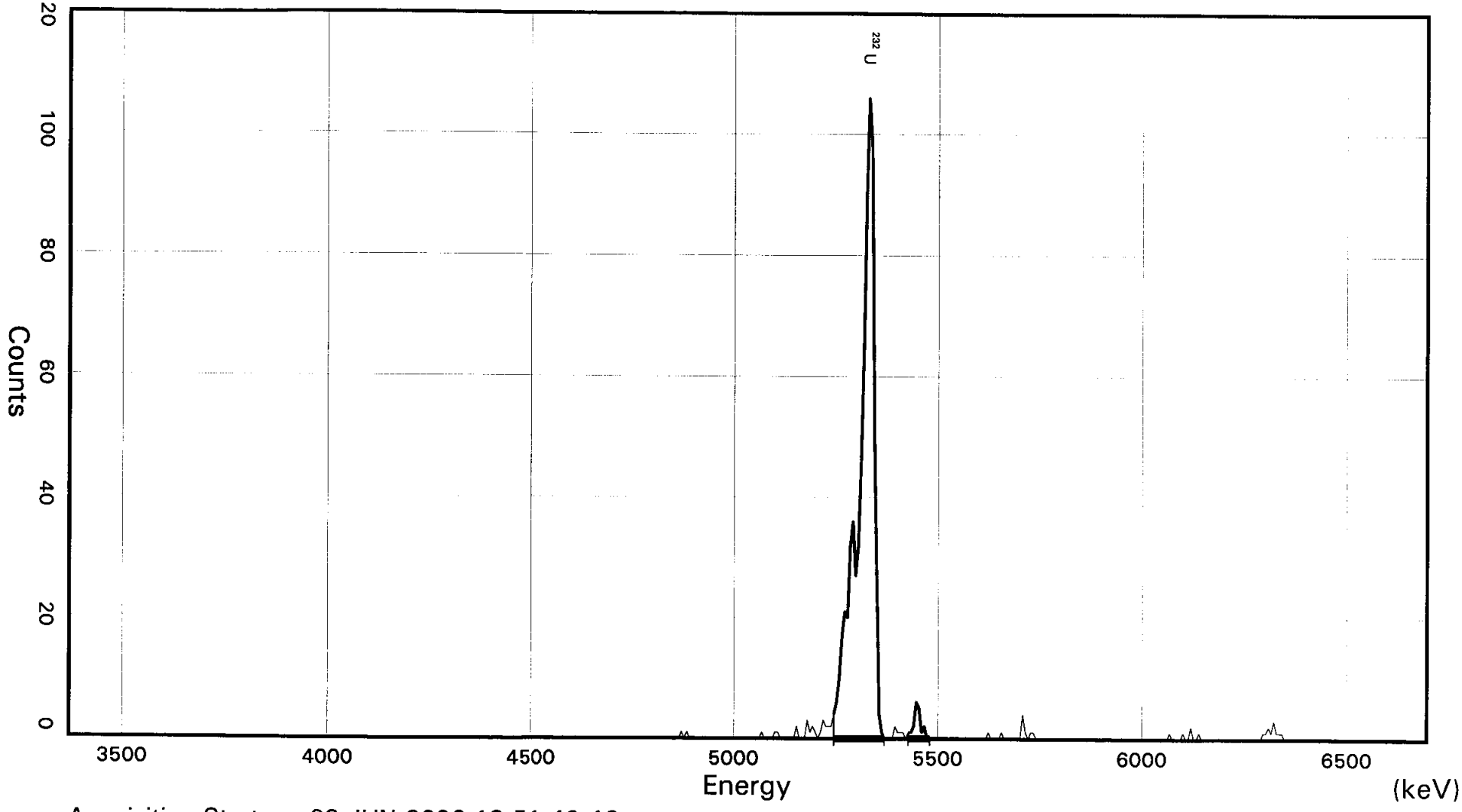
STL Richland WA.

U BRC

Sample ID: H61A51AG

Detector ID: ALP12 1

Batch ID: 6163126



Acquisition Start: 29-JUN-2006 13:51:40.46

Preset Live Time: 0 03:20:00.00

Elapsed Live Time: 0 03:20:08.00

Energy Coefficients:

Offset: 3.35111E+03

Slope: 6.52326E+00

Quadrature: 1.72407E-05

SAMPLE IDENTIITY: H61A51AG

TITLE : U BRC

DETECTOR : ALP12 1
CONFIGURATION NAME : $DISK1:[ALP12.SAMPLE]H61A51AG_290661351.CNF;
1
ACQUIRE DATE of BACKGROUND: 02-JUN-2006 07:27:34

REPORT DATE : 29-Jun-06 SAMPLE DATE: 22-MAY-2006 10:10:00
ACQUIRE DATE: 29-JUN-2006 13:51:40 CALIB DATE : 01-JUN-2006 23:54:41

PRESET LIVE TIME: 0 03:20:00 ELAPSED LIVE TIME: 0 03:20:08

OFFSET : 3351.11 keV CONSTANT FWHM : 7.83333 Channels
SLOPE : 6.52326 keV/C SENSITIVITY : 4.00000 Std Dev's
QUAD COEFF : 1.724070E-05 keV/C^2 SUM SENSITIVITY: 1.00000 %

Alpha Regions Report
(Version: 8-Oct-91)

Sample Identity: H61A51AG

Detector: ALP12 1
Report Date: 29-Jun-06 05:12 PM
Acquire Date: 29-JUN-2006 13:51:40.46
Tracer Nuclide: U-232
High Counts Limit: 36
Sample Live Time: 200 minutes
Bkgrnd Live Time: 1000 minutes

Flags Key

P: Peak Identified
I: Peak Intersect
S: Single Non-peak Intersect
M: Multiple Non-peak Intersect
H: High Non-peak Sample Count
A: Altered via ALP-RGN-EDIT

Nuclide Name	Smpl Count	Bkg Count	Intrsct Count	Count Rate C/Min	Centrd Energy keV	Region Width keV	Left Chnl	Rght Chnl	Left Wdth Mult	Rght Wdth Mult	Flags
U-232	694	12	0	3.456	5328.9	124.1	290	309	0.00	0.00	P
U-234	0	1	0	-0.001	4783.3	124.1	206	225	0.00	0.00	
U-235	0	0	0	0.000	4406.5	124.0	149	168	0.00	0.00	
U-238	0	0	0	0.000	4206.7	124.0	118	137	0.00	0.00	

End of Alpha Region Report
(Produced by Alp_rgn_cnts)

Alpha Spectrum Listing
(Version: 29-Jun-92)

Sample Identity: H61A51AG
Detector: ALP12 1
Report Date: 29-Jun-06 05:12 PM
Acquire Date: 29-JUN-2006 13:51:40.46

Flags Key

Intersect Region: @
Non-Intersect Region: +, -

Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn
		1	0		51	0		101	0	+	151	0		201	0		251	64	+	301	0		351	0		401	1		451	0		501
		2	0		52	0		102	0	+	152	0		202	0		252	91	+	302	0		352	0		402	1		452	0		502
0		3	0		53	0		103	0	+	153	0		203	0		253	106	+	303	1		353	0		403	2		453	0		503
0		4	0		54	0		104	0	+	154	0		204	0		254	98	+	304	0		354	0		404	1		454	0		504
0		5	0		55	0		105	0	+	155	0		205	0		255	50	+	305	0		355	0		405	3		455	0		505
0		6	0		56	0		106	0	+	156	0	+	206	0		256	25	+	306	0		356	0		406	1		456	0		506
0		7	0		57	0		107	0	+	157	0	+	207	0		257	4	+	307	0		357	0		407	1		457	0		507
0		8	0		58	0		108	0	+	158	0	+	208	0		258	1	+	308	0		358	0		408	1		458	0		508
0		9	0		59	0		109	0	+	159	0	+	209	0		259	0		309	0		359	0		409	0		459	0		509
0		10	0		60	0		110	0	+	160	0	+	210	0		260	0		310	0		360	0		410	0		460	0		510
0		11	0		61	0		111	0	+	161	0	+	211	0		261	0		311	4		361	0		411	0		461	0		511
0		12	0		62	0		112	0	+	162	0	+	212	0		262	0		312	1		362	0		412	0		462	0		512
0		13	0		63	0		113	0	+	163	0	+	213	1		263	2		313	0		363	0		413	0		463			
0		14	0		64	0		114	0	+	164	0	+	214	0		264	1		314	1		364	0		414	0		464			
0		15	0		65	0		115	0	+	165	0	+	215	0		265	1		315	1		365	0		415	0		465			
0		16	0		66	0		116	0	+	166	0	+	216	0		266	1		316	0		366	1		416	0		466			
0		17	0		67	0		117	0	+	167	0	+	217	0		267	0		317	0		367	0		417	0		467			
0		18	0		68	0	+	118	0	+	168	0	+	218	1		268	1		318	0		368	0		418	0		468			
0		19	0		69	0	+	119	0		169	0	+	219	1		269	1		319	0		369	0		419	0		469			
0		20	0		70	0	+	120	0		170	0	+	220	0		270	2		320	0		370	0		420	0		470			
0		21	0		71	0	+	121	0		171	0	+	221	0		271	6		321	0		371	1		421	0		471			
0		22	0		72	0	+	122	0		172	0	+	222	0		272	5		322	0		372	0		422	0		472			
0		23	0		73	0	+	123	0		173	0	+	223	0		273	1		323	0		373	0		423	0		473			
0		24	0		74	0	+	124	0		174	0	+	224	0		274	2		324	0		374	2		424	0		474			
0		25	0		75	0	+	125	0		175	0	+	225	0		275	0		325	0		375	0		425	0		475			
0		26	0		76	0	+	126	0		176	0		226	2		276	0		326	0		376	0		426	0		476			
0		27	0		77	0	+	127	0		177	0		227	0		277	0		327	0		377	1		427	0		477			
0		28	0		78	0	+	128	0		178	0		228	0		278	0		328	0		378	0		428	0		478			
0		29	0		79	0	+	129	0		179	0		229	0		279	0		329	0		379	0		429	0		479			
0		30	0		80	0	+	130	0		180	0		230	3		280	0		330	0		380	0		430	0		480			
0		31	0		81	0	+	131	0		181	0		231	1		281	0		331	0		381	0		431	0		481			
0		32	0		82	0	+	132	0		182	0		232	2		282	0		332	0		382	0		432	0		482			
0		33	0		83	0	+	133	0		183	1		233	1		283	0		333	0		383	0		433	0		483			
0		34	0		84	0	+	134	0		184	0		234	0		284	0		334	0		384	0		434	0		484			
0		35	0		85	0	+	135	0		185	1		235	1		285	0		335	0		385	0		435	0		485			
0		36	0		86	0	+	136	0		186	0		236	3		286	0		336	0		386	0		436	0		486			
0		37	0		87	0	+	137	0		187	0		237	2		287	0		337	0		387	0		437	0		487			
0		38	0		88	0		138	0		188	0		238	2		288	0		338	0		388	0		438	0		488			
0		39	0		89	0		139	0		189	0		239	2		289	0		339	0		389	0		439	0		489			
0		40	0		90	0		140	0		190	0		240	4	+	290	0		340	0		390	0		440	0		490			
0		41	0		91	0		141	0		191	0		241	6	+	291	0		341	0		391	0		441	0		491			
0		42	0		92	0		142	0		192	0		242	10	+	292	0		342	0		392	0		442	0		492			
0		43	0		93	0		143	0		193	0		243	17	+	293	0		343	0		393	0		443	0		493			
0		44	0		94	0		144	0		194	0		244	21	+	294	0		344	0		394	0		444	0		494			
0		45	0		95	0		145	0		195	0		245	20	+	295	0		345	0		395	0		445	0		495			
0		46	0		96	0		146	0		196	0		246	32	+	296	0		346	0		396	0		446	0		496			
0		47	0		97	0		147	0		197	0		247	36	+	297	0		347	0		397	0		447	0		497			
0		48	0		98	0		148	0		198	0		248	27	+	298	1		348	0		398	0		448	0		498			
0		49	0		99	0	+	149	0		199	0		249	32	+	299	0		349	0		399	0		449	0		499			
0		50	0		100	0	+	150	0		200	0		250	46	+	300	0		350	0		400	0		450	0		500			

VMS Peak Search Report V1.9 Generated 29-JUN-2006 17:12:05

```
Configuration     : $DISK1:[ALP12.SAMPLE]H61A51AG_290661351.CNF;1
Analyses by       : ALPHA V1.8
Sample title      : U BRC
Sample date       : 22-MAY-2006 10:10:00 Acquisition date : 29-JUN-2006 13:51:40
Sample ID         : H61A51AG             Sample quantity  : 0.00000E+00 SAMPLE
Sample type       : disk                 Sample geometry  :
Detector name     : ALP12                Detector geometry:
Elapsed live time: 0 03:20:08.00         Elapsed real time: 0 03:20:08.00   0.0%
Start energy      :  3370.68 keV         End energy       :  6695.54 keV
Sensitivity       :     4.00             Sum Sensitivity  :     1.00
```

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	5328.87	694	0	32.62	302.94	290	19	5.78E-02	3.8	
2	0	5450.12	16	0	26.09	321.50	318	8	1.33E-03	25.0	

VMS Nuclide Identification Report V3.0 Generated 29-JUN-2006 17:12:08

```
Configuration     : $DISK1:[ALP12.SAMPLE]H61A51AG_290661351.CNF;1
Analyses by       : ALPHA V1.8,PEAKEFF V2.2,NID V3.3
Sample title      : U BRC
Sample date       : 22-MAY-2006 10:10:00 Acquisition date : 29-JUN-2006 13:51:40
Sample ID         : H61A51AG             Sample quantity  : 0.00000E+00 SAMPLE
Sample type       : disk                 Sample geometry  :
Detector name     : ALP12                Detector geometry:
Elapsed live time: 0 03:20:08.00         Elapsed real time: 0 03:20:08.00   0.0%
Energy tolerance :    40.00 keV          Half life ratio  :     1.00
Errors propagated: No                    Systematic Error :     0.00 %
Efficiency type  : Spline                Efficiencies at  : Peak Energy
Abundance limit  :    60.00
```

Summary of Nuclide Activity

```
 Total number of lines in spectrum                2
 Number of unidentified lines                     1
 Number of lines tentatively identified by NID    1       50.00%
```

Nuclide Type : AP

Nuclide	Hlife	Decay	Uncorrected PCI/SAMPLE	Decay Corr PCI/SAMPLE	Decay Corr 0-Sigma Error	0-Sigma %Error	Flags
U-232	68.90Y	1.00	0.000E+00	0.000E+00	0.000E+00	0.00	
			---	---			
Total Activity :			0.000E+00	0.000E+00			
Grand Total Activity :			0.000E+00	0.000E+00			

Flags: "K" = Keyline not found "M" = Manually accepted
"E" = Manually edited "A" = Nuclide specific abn. limit

ITRD PEAK TEST REPORT (Version 16-May-94)

Configuration: $DISK1:[ALP12.SAMPLE]H61A51AG_290661351.CNF;1

Peak Energy	Left Chan	Rght Chan	Peak Area	Total Counts	Diff/ StDev	Overlap Counts	Multiplet Diff/StDev
5328.86	290	309	694	690	0.15		
5450.11	318	326	16	18	-0.50		

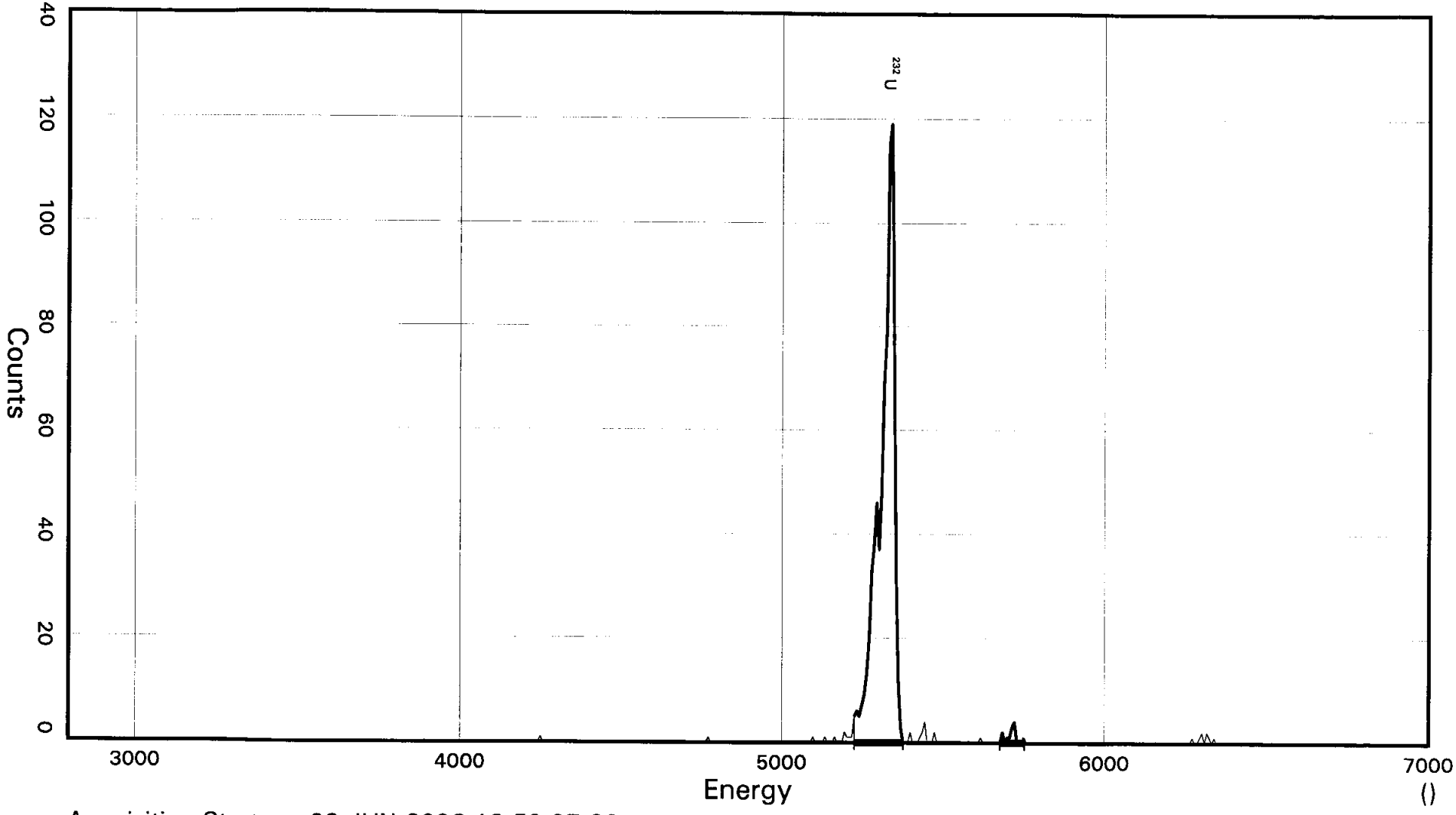
End of Report

STL Richland WA.

U BRC

Sample ID: H61A71AG
Detector ID: ALP69 1

Batch ID: 6163126



Acquisition Start: 29-JUN-2006 13:52:07.80
Preset Live Time: 0 03:20:00.00
Elapsed Live Time: 0 03:20:13.00

Energy Coefficients:
Offset: 2.77160E+03
Slope: 7.51707E+00
Quadrature: 1.81482E-05

SAMPLE IDENTIITY: H61A71AG

TITLE : U BRC

DETECTOR : ALP69 1
CONFIGURATION NAME : RDND06$DKA100:[ALP69.SAMPLE]H61A71AG_290661352.CNF;1
ACQUIRE DATE of BACKGROUND: 12-JUN-2006 08:12:59

REPORT DATE : 29-Jun-06 SAMPLE DATE: 22-MAY-2006 12:00:00
ACQUIRE DATE: 29-JUN-2006 13:52:07 CALIB DATE : 12-JUN-2006 06:25:06

PRESET LIVE TIME: 0 03:20:00 ELAPSED LIVE TIME: 0 03:20:13

OFFSET : 2771.60 keV CONSTANT FWHM : 7.50000 Channels
SLOPE : 7.51707 keV/C SENSITIVITY : 3.00000 Std Dev's
QUAD COEFF : 1.814820E-05 keV/C^2 SUM SENSITIVITY: 1.00000 %

Alpha Regions Report
(Version: 8-Oct-91)

Sample Identity: H61A71AG

Detector: ALP69 1
Report Date: 29-Jun-06 05:12 PM
Acquire Date: 29-JUN-2006 13:52:07.80
Tracer Nuclide: U-232
High Counts Limit: 36
Sample Live Time: 200 minutes
Bkgrnd Live Time: 2500 minutes

Flags Key

P: Peak Identified
I: Peak Intersect
S: Single Non-peak Intersect
M: Multiple Non-peak Intersect
H: High Non-peak Sample Count
A: Altered via ALP-RGN-EDIT

Nuclide Name	Smpl Count	Bkg Count	Intrsct Count	Count Rate C/Min	Centrd Energy keV	Region Width keV	Left Chnl	Rght Chnl	Left Wdth Mult	Rght Wdth Mult	Flags
U-232	772	26	0	3.845	5330.1	150.6	326	346	0.00	0.00	P
U-234	1	5	0	0.003	4784.5	150.5	254	274	0.00	0.00	
U-235	0	3	0	-0.001	4407.7	150.5	203	223	0.00	0.00	
U-238	1	7	0	0.002	4207.9	150.5	177	197	0.00	0.00	

End of Alpha Region Report
(Produced by Alp_rgn_cnts)

Alpha Spectrum Listing
(Version: 29-Jun-92)

Sample Identity: H61A71AG
Detector: ALP69 1
Report Date: 29-Jun-06 05:12 PM
Acquire Date: 29-JUN-2006 13:52:07.80

Flags Key

Intersect Region: @
Non-Intersect Region: +, -

Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn
		1	0		51	0		101	0		151	0		201	0		251	0		301	0		351	0		401	0		451	0		501
		2	0		52	0		102	0		152	0		202	0		252	0		302	0		352	0		402	0		452	0		502
0		3	0		53	0		103	0		153	0	+	203	0		253	0		303	1		353	0		403	0		453	0		503
0		4	0		54	0		104	0		154	0	+	204	0	+	254	0		304	2		354	0		404	0		454	0		504
0		5	0		55	0		105	0		155	0	+	205	0	+	255	0		305	4		355	0		405	0		455	0		505
0		6	0		56	0		106	0		156	0	+	206	0	+	256	0		306	0		356	0		406	0		456	0		506
0		7	0		57	0		107	0		157	0	+	207	0	+	257	0		307	0		357	0		407	0		457	0		507
0		8	0		58	0		108	0		158	0	+	208	0	+	258	0		308	0		358	0		408	0		458	0		508
0		9	0		59	0		109	0		159	0	+	209	0	+	259	1		309	2		359	0		409	0		459	0		509
0		10	0		60	0		110	0		160	0	+	210	0	+	260	0		310	0		360	0		410	0		460	0		510
0		11	0		61	0		111	0		161	0	+	211	0	+	261	0		311	0		361	0		411	0		461	0		511
0		12	0		62	0		112	0		162	0	+	212	0	+	262	0		312	0		362	0		412	0		462	0		512
0		13	0		63	0		113	0		163	0	+	213	0	+	263	0		313	0		363	0		413	0		463			
0		14	0		64	0		114	0		164	0	+	214	0	+	264	1		314	0		364	0		414	0		464			
0		15	0		65	0		115	0		165	0	+	215	0	+	265	0		315	0		365	0		415	1		465			
0		16	0		66	0		116	0		166	0	+	216	1	+	266	0		316	0		366	0		416	0		466			
0		17	0		67	0		117	0		167	0	+	217	0	+	267	0		317	0		367	0		417	0		467			
0		18	0		68	0		118	0		168	0	+	218	0	+	268	1		318	0		368	0		418	1		468			
0		19	0		69	0		119	0		169	0	+	219	0	+	269	0		319	0		369	0		419	2		469			
0		20	0		70	0		120	0		170	0	+	220	0	+	270	0		320	0		370	0		420	0		470			
0		21	0		71	0		121	0		171	0	+	221	0	+	271	0		321	0		371	0		421	2		471			
0		22	0		72	0		122	0		172	0	+	222	0	+	272	2		322	0		372	0		422	1		472			
0		23	0		73	0		123	0		173	0	+	223	0	+	273	1		323	0		373	0		423	0		473			
0		24	0		74	0		124	0		174	0		224	0	+	274	1		324	0		374	0		424	1		474			
0		25	0		75	0		125	0		175	0		225	0		275	1		325	0		375	0		425	0		475			
0		26	0		76	0		126	0		176	0		226	0		276	5	+	326	0		376	0		426	0		476			
0		27	0		77	0		127	0	+	177	0		227	0		277	6	+	327	0		377	0		427	0		477			
0		28	0		78	0		128	0	+	178	0		228	0		278	5	+	328	1		378	0		428	0		478			
0		29	0		79	0		129	0	+	179	0		229	0		279	7	+	329	0		379	0		429	0		479			
0		30	0		80	0		130	0	+	180	0		230	0		280	9	+	330	0		380	0		430	0		480			
0		31	0		81	0		131	0	+	181	0		231	0		281	13	+	331	0		381	0		431	0		481			
0		32	0		82	0		132	0	+	182	0		232	0		282	20	+	332	0		382	0		432	0		482			
0		33	0		83	0		133	0	+	183	0		233	0		283	33	+	333	0		383	0		433	0		483			
0		34	0		84	0		134	0	+	184	0		234	0		284	38	+	334	0		384	0		434	0		484			
0		35	0		85	0		135	0	+	185	0		235	0		285	46	+	335	0		385	0		435	0		485			
0		36	0		86	0		136	0	+	186	0		236	0		286	37	+	336	0		386	0		436	0		486			
0		37	0		87	0		137	0	+	187	0		237	0		287	48	+	337	2		387	0		437	0		487			
0		38	0		88	0		138	0	+	188	0		238	0		288	69	+	338	0		388	0		438	0		488			
0		39	0		89	0		139	0	+	189	0		239	0		289	79	+	339	1		389	0		439	0		489			
0		40	0		90	0		140	0	+	190	0		240	0		290	115	+	340	1		390	0		440	0		490			
0		41	0		91	0		141	0	+	191	0		241	0		291	119	+	341	3		391	0		441	0		491			
0		42	0		92	0		142	0	+	192	0		242	0		292	75	+	342	4		392	0		442	0		492			
0		43	0		93	0		143	0	+	193	0		243	0		293	32	+	343	0		393	0		443	0		493			
0		44	0		94	0		144	0	+	194	0		244	0		294	12	+	344	0		394	0		444	0		494			
0		45	0		95	0		145	0	+	195	0		245	0		295	3	+	345	0		395	0		445	0		495			
0		46	0		96	0		146	0	+	196	0		246	0		296	0		346	1		396	0		446	0		496			
0		47	0		97	0		147	1	+	197	0		247	0		297	0		347	0		397	0		447	0		497			
0		48	0		98	0		148	0		198	0		248	0		298	0		348	0		398	0		448	0		498			
0		49	0		99	0		149	0		199	0		249	0		299	2		349	0		399	0		449	0		499			
0		50	0		100	0		150	0		200	0		250	0		300	0		350	0		400	0		450	0		500			

VMS Peak Search Report V1.9 Generated 29-JUN-2006 17:12:36

```
Configuration     : RDND06$DKA100:[ALP69.SAMPLE]H61A71AG_290661352.CNF;1
Analyses by       : ALPHA V1.8
Sample title      : U BRC
Sample date       : 22-MAY-2006 12:00:00 Acquisition date : 29-JUN-2006 13:52:07
Sample ID         : H61A71AG             Sample quantity  : 0.00000E+00 SAMPLE
Sample type       : disk                 Sample geometry  :
Detector name     : ALP69                Detector geometry:
Elapsed live time: 0 03:20:13.00         Elapsed real time: 0 03:20:13.00   0.0%
Start energy      :  2794.15             End energy       :  6625.10
Sensitivity       :     3.00             Sum Sensitivity  :     1.00
```

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	5330.11	772	0	37.59	340.08	326	20	6.43E-02	3.6	
2	0	5713.55	11	0	22.55	391.00	386	10	9.16E-04	30.2	

VMS Nuclide Identification Report V3.1 Generated 29-JUN-2006 17:12:38

```
Configuration     : RDND06$DKA100:[ALP69.SAMPLE]H61A71AG_290661352.CNF;1
Analyses by       : ALPHA V1.8,PEAKEFF V2.2,NID V3.4
Sample title      : U BRC
Sample date       : 22-MAY-2006 12:00:00 Acquisition date : 29-JUN-2006 13:52:07
Sample ID         : H61A71AG             Sample quantity  : 0.00000E+00 SAMPLE
Sample type       : disk                 Sample geometry  :
Detector name     : ALP69                Detector geometry:
Elapsed live time: 0 03:20:13.00         Elapsed real time: 0 03:20:13.00   0.0%
Energy tolerance :    80.00              Half life ratio  :     1.00
Errors propagated: No                    Systematic Error :     0.00 %
Efficiency type  : Spline                Efficiencies at  : Peak Energy
Abundance limit  :    60.00
```

Summary of Nuclide Activity

```
 Total number of lines in spectrum                2
 Number of unidentified lines                     1
 Number of lines tentatively identified by NID    1       50.00%
```

Nuclide Type : AP

Nuclide	Hlife	Decay	Uncorrected PCI/SAMPLE	Decay Corr PCI/SAMPLE	Decay Corr 0-Sigma Error	0-Sigma %Error	Flags
U-232	68.90Y	1.00	0.000E+00	0.000E+00	0.000E+00	0.00	
			---	---			
	Total Activity :		0.000E+00	0.000E+00			
	Grand Total Activity :		0.000E+00	0.000E+00			

Flags: "K" = Keyline not found "M" = Manually accepted
"E" = Manually edited "A" = Nuclide specific abn. limit

ITRD PEAK TEST REPORT (Version 16-May-94)

Configuration: RDND06$DKA100:[ALP69.SAMPLE]H61A71AG_290661352.CNF;1

Peak Energy	Left Chan	Rght Chan	Peak Area	Total Counts	Diff/ StDev	Overlap Counts	Multiplet Diff/StDev
5330.11	326	346	772	771	0.04		
5713.55	386	396	11	12	-0.30		

End of Report

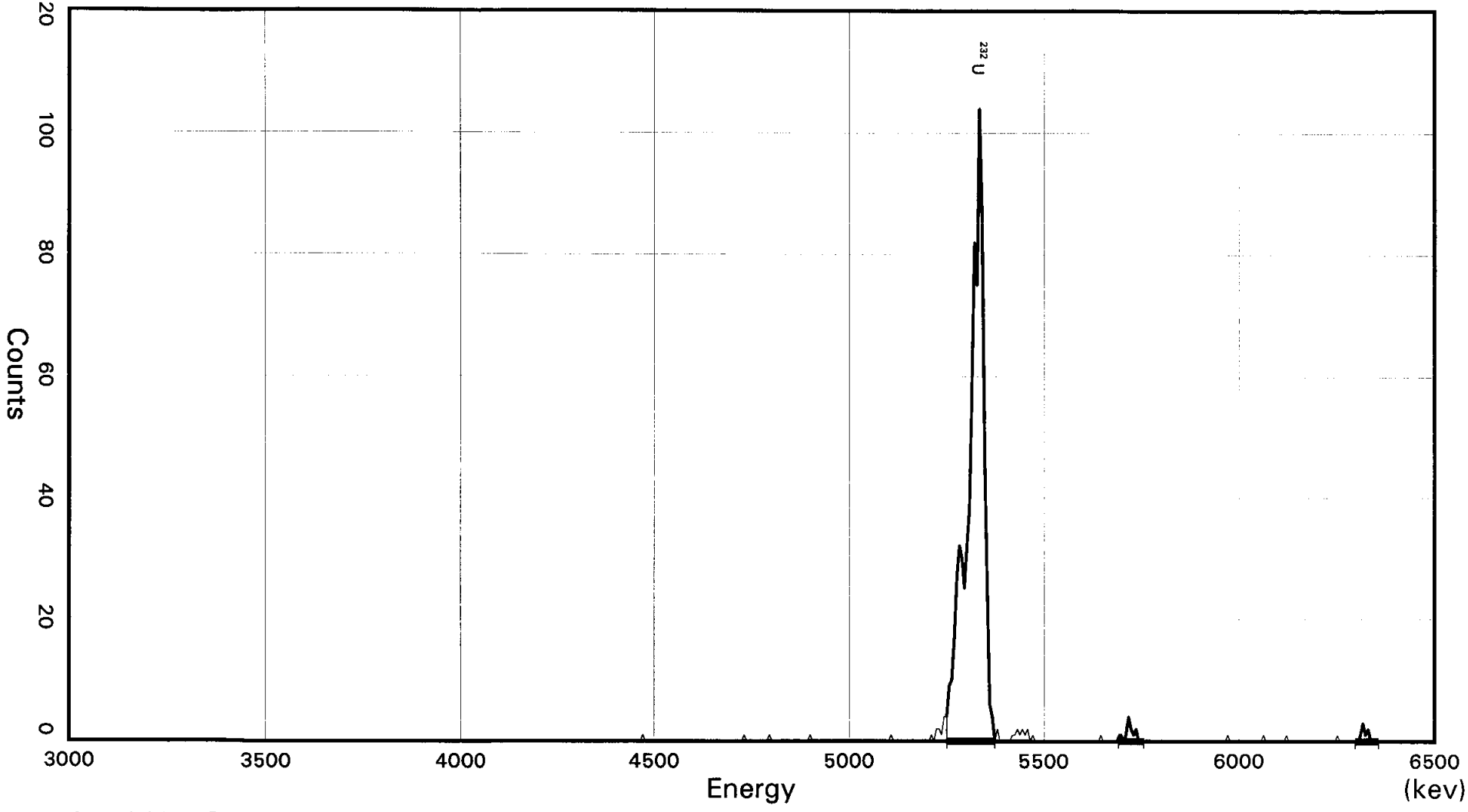
STL Richland WA.

U BRC

Sample ID: H67QJ1AA

Detector ID: ALP71 1

Batch ID: 6163126



Acquisition Start: 29-JUN-2006 13:52:20.31

Preset Live Time: 0 03:20:00.00

Elapsed Live Time: 0 03:20:00.00

Energy Coefficients:

Offset: 3.14844E+03

Slope: 6.47574E+00

Quadrature: 3.38252E-05

SAMPLE IDENTITY: H67QJ1AA

TITLE : U BRC

DETECTOR : ALP71 1
CONFIGURATION NAME : RDND06$DKA100:[ALP71.SAMPLE]H67QJ1AA_2906613
52.CNF;1
ACQUIRE DATE of BACKGROUND: 12-JUN-2006 08:13:05

REPORT DATE : 29-Jun-06 SAMPLE DATE: 22-MAY-2006 12:00:00
ACQUIRE DATE: 29-JUN-2006 13:52:20 CALIB DATE : 12-JUN-2006 06:25:11

PRESET LIVE TIME: 0 03:20:00 ELAPSED LIVE TIME: 0 03:20:00

OFFSET : 3148.44 keV CONSTANT FWHM : 8.66667 Channels
SLOPE : 6.47574 keV/C SENSITIVITY : 3.00000 Std Dev's
QUAD COEFF : 3.382520E-05 keV/C^2 SUM SENSITIVITY: 1.00000 %

Alpha Regions Report
(Version: 8-Oct-91)

Sample Identity: H67QJ1AA

Detector: ALP71 1
Report Date: 29-Jun-06 05:12 PM
Acquire Date: 29-JUN-2006 13:52:20.31
Tracer Nuclide: U-232
High Counts Limit: 36
Sample Live Time: 200 minutes
Bkgrnd Live Time: 2500 minutes

Flags Key

P: Peak Identified
I: Peak Intersect
S: Single Non-peak Intersect
M: Multiple Non-peak Intersect
H: High Non-peak Sample Count
A: Altered via ALP-RGN-EDIT

Nuclide Name	Smpl Count	Bkg Count	Intrsct Count	Count Rate C/Min	Centrd Energy keV	Region Width keV	Left Chnl	Rght Chnl	Left Wdth Mult	Rght Wdth Mult	Flags
U-232	715	28	0	3.564	5331.1	123.5	324	343	0.00	0.00	P
U-234	2	3	0	0.009	4785.5	123.4	240	259	0.00	0.00	
U-235	0	3	0	-0.001	4408.7	123.3	182	201	0.00	0.00	
U-238	0	4	0	-0.002	4208.9	123.2	151	170	0.00	0.00	

End of Alpha Region Report
(Produced by Alp_rgn_cnts)

Alpha Spectrum Listing
(Version: 29-Jun-92)

Sample Identity: H67QJ1AA
Detector: ALP71 1
Report Date: 29-Jun-06 05:12 PM
Acquire Date: 29-JUN-2006 13:52:20.31

Flags Key

Intersect Region: @
Non-Intersect Region: +, -

Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn
		1	0		51	0		101	0	+	151	0	+	201	0	+	251	0		301	1		351	0		401	0		451	0		501
		2	0		52	0		102	0	+	152	0		202	0	+	252	1		302	2		352	0		402	0		452	0		502
0		3	0		53	0		103	0	+	153	0		203	0	+	253	0		303	1		353	0		403	0		453	0		503
0		4	0		54	0		104	0	+	154	1		204	1	+	254	0		304	2		354	0		404	0		454	0		504
0		5	0		55	0		105	0	+	155	0		205	0	+	255	0		305	1		355	0		405	0		455	0		505
0		6	0		56	0		106	0	+	156	0		206	0	+	256	0		306	2		356	0		406	0		456	0		506
0		7	0		57	0		107	0	+	157	0		207	0	+	257	0		307	0		357	0		407	0		457	0		507
0		8	0		58	0		108	0	+	158	0		208	0	+	258	0		308	1		358	0		408	1		458	0		508
0		9	0		59	0		109	0	+	159	0		209	0	+	259	0		309	0		359	0		409	0		459	0		509
0		10	0		60	0		110	0	+	160	0		210	0		260	0		310	0		360	0		410	0		460	0		510
0		11	0		61	0		111	0	+	161	0		211	0		261	0		311	0		361	0		411	0		461	0		511
0		12	0		62	0		112	0	+	162	0		212	0		262	0		312	0		362	0		412	0		462	0		512
0		13	0		63	0		113	0	+	163	0		213	0		263	0		313	0		363	0		413	0		463			
0		14	0		64	0		114	0	+	164	0		214	0		264	0		314	0		364	0		414	0		464			
0		15	0		65	0		115	0	+	165	0		215	0		265	0		315	0		365	0		415	0		465			
0		16	0		66	0		116	0	+	166	0		216	0		266	0		316	0		366	0		416	0		466			
0		17	0		67	0		117	0	+	167	0		217	0		267	0		317	0		367	0		417	0		467			
0		18	0		68	0		118	0	+	168	0		218	0		268	1		318	0		368	0		418	0		468			
0		19	0		69	0		119	0	+	169	0		219	0		269	0		319	0		369	0		419	0		469			
0		20	0		70	0		120	0	+	170	0		220	1		270	2		320	0		370	0		420	0		470			
0		21	0		71	0		121	0		171	0		221	0		271	2		321	0		371	0		421	0		471			
0		22	0		72	0		122	0		172	0		222	0		272	1		322	0		372	0		422	0		472			
0		23	0		73	0		123	0		173	0		223	0		273	4		323	0		373	0		423	0		473			
0		24	0		74	0		124	0		174	0		224	0		274	4	+	324	0		374	0		424	0		474			
0		25	0		75	0		125	0		175	0		225	0		275	9	+	325	0		375	0		425	0		475			
0		26	0		76	0		126	0		176	0		226	0		276	10	+	326	0		376	0		426	0		476			
0		27	0		77	0		127	0		177	0		227	0		277	17	+	327	0		377	0		427	0		477			
0		28	0		78	0		128	0		178	0		228	0		278	27	+	328	0		378	0		428	1		478			
0		29	0		79	0		129	0		179	0		229	0		279	32	+	329	0		379	0		429	0		479			
0		30	0		80	0		130	0		180	0		230	0		280	30	+	330	0		380	0		430	0		480			
0		31	0		81	0		131	0		181	0		231	0		281	25	+	331	0		381	0		431	0		481			
0		32	0		82	0		132	0	+	182	0		232	0		282	32	+	332	0		382	0		432	0		482			
0		33	0		83	0		133	0	+	183	0		233	0		283	38	+	333	0		383	0		433	0		483			
0		34	0		84	0		134	0	+	184	0		234	0		284	59	+	334	0		384	0		434	0		484			
0		35	0		85	0		135	0	+	185	0		235	0		285	82	+	335	1		385	1		435	0		485			
0		36	0		86	0		136	0	+	186	0		236	0		286	75	+	336	0		386	0		436	0		486			
0		37	0		87	0		137	0	+	187	0		237	0		287	104	+	337	0		387	0		437	1		487			
0		38	0		88	0		138	0	+	188	0		238	0		288	85	+	338	0		388	0		438	3		488			
0		39	0		89	0		139	0	+	189	0		239	0		289	47	+	339	0		389	0		439	1		489			
0		40	0		90	0		140	0	+	190	0	+	240	0		290	25	+	340	0		390	0		440	2		490			
0		41	0		91	0		141	0	+	191	0	+	241	0		291	6	+	341	0		391	0		441	0		491			
0		42	0		92	0		142	0	+	192	0	+	242	0		292	4	+	342	1		392	0		442	0		492			
0		43	0		93	0		143	0	+	193	0	+	243	0		293	0		343	1		393	0		443	0		493			
0		44	0		94	0		144	0	+	194	1	+	244	0		294	2		344	0		394	0		444	0		494			
0		45	0		95	0		145	0	+	195	0	+	245	0		295	0		345	1		395	0		445	0		495			
0		46	0		96	0		146	0	+	196	0	+	246	0		296	0		346	4		396	0		446	0		496			
0		47	0		97	0		147	0	+	197	0	+	247	0		297	0		347	2		397	0		447	0		497			
0		48	0		98	0		148	0	+	198	0	+	248	0		298	0		348	1		398	0		448	0		498			
0		49	0		99	0		149	0	+	199	0	+	249	0		299	0		349	2		399	1		449	0		499			
0		50	0		100	0		150	0	+	200	0	+	250	0		300	1		350	0		400	0		450	0		500			

VMS Peak Search Report V1.9 Generated 29-JUN-2006 17:12:39

```
Configuration     : RDND06$DKA100:[ALP71.SAMPLE]H67QJ1AA_290661352.CNF;1
Analyses by       : ALPHA V1.8
Sample title      : U BRC
Sample date       : 22-MAY-2006 12:00:00 Acquisition date : 29-JUN-2006 13:52:20
Sample ID         : H67QJ1AA             Sample quantity  : 0.00000E+00 SAMPLE
Sample type       : disk                 Sample geometry  :
Detector name     : ALP71                Detector geometry:
Elapsed live time: 0 03:20:00.00         Elapsed real time: 0 03:20:00.00   0.0%
Start energy      :  3167.87 kev         End energy       :  6472.89 kev
Sensitivity       :     3.00             Sum Sensitivity  :     1.00
```

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	5331.08	715	0	38.85	336.46	324	19	5.96E-02	3.7	
2	0	5717.49	11	0	38.85	395.90	392	10	9.17E-04	30.2	
3	0	6315.57	8	0	25.90	487.83	485	9	6.67E-04	35.4	

VMS Nuclide Identification Report V3.1 Generated 29-JUN-2006 17:12:41

```
Configuration     : RDND06$DKA100:[ALP71.SAMPLE]H67QJ1AA_290661352.CNF;1
Analyses by       : ALPHA V1.8,PEAKEFF V2.2,NID V3.4
Sample title      : U BRC
Sample date       : 22-MAY-2006 12:00:00 Acquisition date : 29-JUN-2006 13:52:20
Sample ID         : H67QJ1AA             Sample quantity  : 0.00000E+00 SAMPLE
Sample type       : disk                 Sample geometry  :
Detector name     : ALP71                Detector geometry:
Elapsed live time: 0 03:20:00.00         Elapsed real time: 0 03:20:00.00   0.0%
Energy tolerance :    80.00 kev          Half life ratio  :     1.00
Errors propagated: No                    Systematic Error :     0.00 %
Efficiency type  : Spline                Efficiencies at  : Peak Energy
Abundance limit  :    60.00
```

Summary of Nuclide Activity

```
 Total number of lines in spectrum                3
 Number of unidentified lines                     2
 Number of lines tentatively identified by NID    1       33.33%
```

Nuclide Type : AP

Nuclide	Hlife	Decay	Uncorrected PCI/SAMPLE	Decay Corr PCI/SAMPLE	Decay Corr 0-Sigma Error	0-Sigma %Error	Flags
U-232	68.90Y	1.00	0.000E+00	0.000E+00	0.000E+00	0.00	
		Total Activity :	0.000E+00	0.000E+00			
		Grand Total Activity :	0.000E+00	0.000E+00			

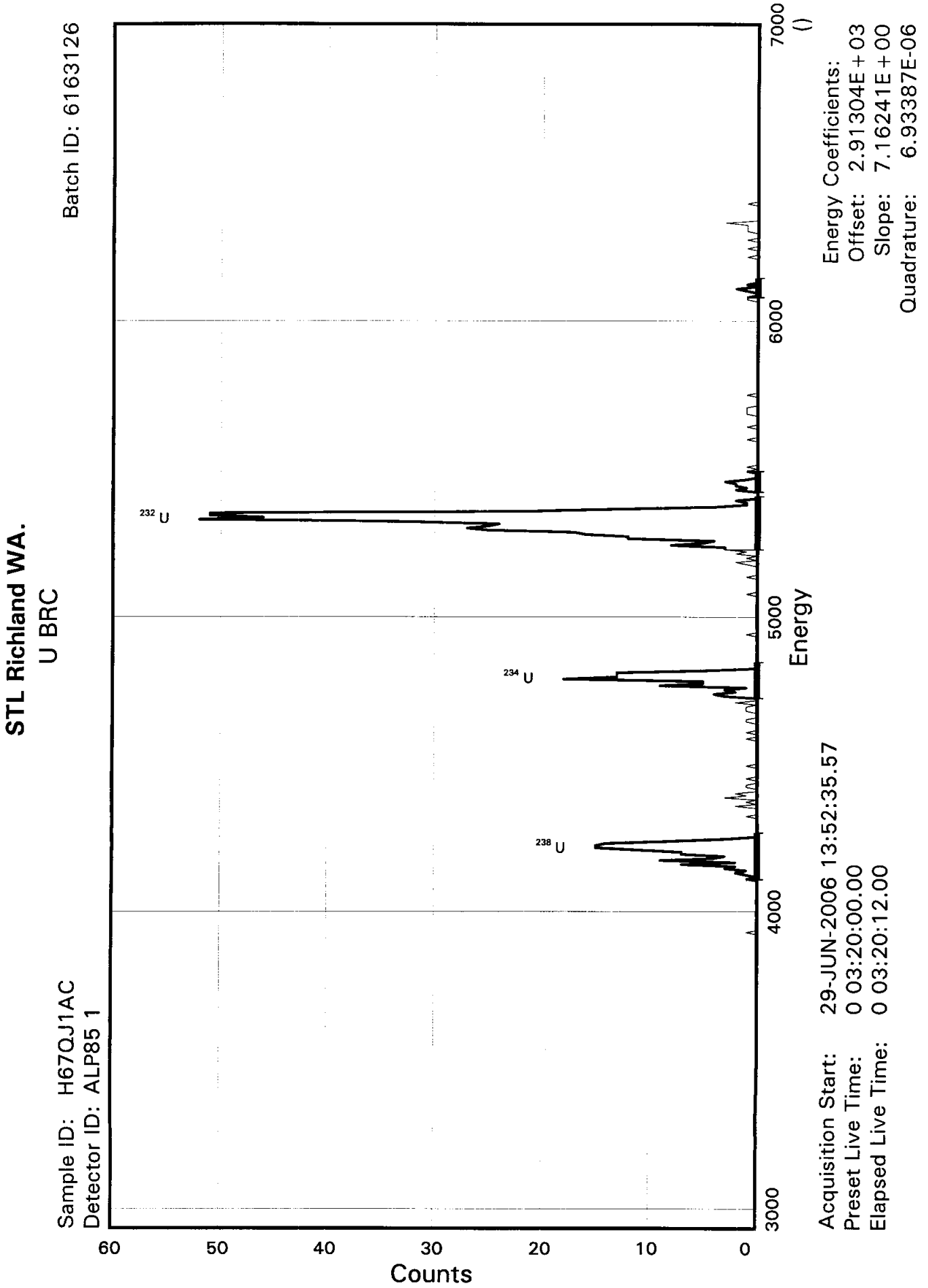
Flags: "K" = Keyline not found "M" = Manually accepted
"E" = Manually edited "A" = Nuclide specific abn. limit

ITRD PEAK TEST REPORT (Version 16-May-94)

Configuration: RDND06$DKA100:[ALP71.SAMPLE]H67QJ1AA_290661352.CNF;1

Peak Energy	Left Chan	Rght Chan	Peak Area	Total Counts	Diff/ StDev	Overlap Counts	Multiplet Diff/StDev
5331.08	324	343	715	711	0.15		
5717.48	392	402	11	12	-0.30		
6315.57	485	494	8	7	0.35		

End of Report


STL Richland WA.
U BRC
Batch ID: 6163126
Sample ID: H67QJ1AC
Detector ID: ALP85 1
232 U
234 U
238 U
Counts
Energy
Energy Coefficients:
Offset: 2.91304E+03
Slope: 7.16241E+00
Quadrature: 6.93387E-06
Acquisition Start: 29-JUN-2006 13:52:35.57
Preset Live Time: 0 03:20:00.00
Elapsed Live Time: 0 03:20:12.00

SAMPLE IDENTITY: H67QJ1AC

TITLE : U BRC

DETECTOR : ALP85 1
CONFIGURATION NAME : RDND06$DKA100:[ALP85.SAMPLE]H67QJ1AC_290661352.CNF;1
ACQUIRE DATE of BACKGROUND: 09-JUN-2006 06:58:12

REPORT DATE : 29-Jun-06 SAMPLE DATE: 22-MAY-2006 12:00:00
ACQUIRE DATE: 29-JUN-2006 13:52:35 CALIB DATE : 09-JUN-2006 06:21:45

PRESET LIVE TIME: 0 03:20:00 ELAPSED LIVE TIME: 0 03:20:12

OFFSET : 2913.04 keV CONSTANT FWHM : 9.83333 Channels
SLOPE : 7.16241 keV/C SENSITIVITY : 3.00000 Std Dev's
QUAD COEFF : 6.933870E-06 keV/C^2 SUM SENSITIVITY: 1.00000 %

Alpha Regions Report
(Version: 8-Oct-91)

Sample Identity: H67QJ1AC

Detector: ALP85 1
Report Date: 29-Jun-06 05:12 PM
Acquire Date: 29-JUN-2006 13:52:35.57
Tracer Nuclide: U-232
High Counts Limit: 36
Sample Live Time: 200 minutes
Bkgrnd Live Time: 2500 minutes

Flags Key

P: Peak Identified
I: Peak Intersect
S: Single Non-peak Intersect
M: Multiple Non-peak Intersect
H: High Non-peak Sample Count
A: Altered via ALP-RGN-EDIT

Nuclide Name	Smpl Count	Bkg Count	Intrsct Count	Count Rate C/Min	Centrd Energy keV	Region Width keV	Left Chnl	Rght Chnl	Left Wdth Mult	Rght Wdth Mult	Flags
U-232	456	64	0	2.252	5332.3	179.2	323	348	0.00	0.00	P
U-234	95	4	0	0.473	4786.8	121.8	253	270	0.00	0.00	P
U-235	13	2	0	0.064	4410.0	179.1	194	219	0.00	0.00	
U-238	118	0	0	0.589	4210.2	157.6	167	189	0.00	0.00	P

End of Alpha Region Report
(Produced by Alp_rgn_cnts)

Alpha Spectrum Listing
(Version: 29-Jun-92)

Sample Identity: H67QJ1AC
Detector: ALP85 1
Report Date: 29-Jun-06 05:12 PM
Acquire Date: 29-JUN-2006 13:52:35.57

Flags Key

Intersect Region: @
Non-Intersect Region: +, -

Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn	Cnt	F	Chn
		1	0		51	0		101	0		151	0	+	201	2		251	0		301	2		351	0		401	0		451	0		501
		2	0		52	0		102	0		152	2	+	202	0		252	1		302	1		352	0		402	0		452	0		502
0		3	0		53	0		103	0		153	0	+	203	0	+	253	0		303	2		353	0		403	0		453	0		503
0		4	0		54	0		104	0		154	1	+	204	3	+	254	0		304	2		354	0		404	0		454	0		504
0		5	0		55	0		105	0		155	0	+	205	4	+	255	0		305	3		355	0		405	0		455	0		505
0		6	0		56	0		106	0		156	3	+	206	2	+	256	0		306	1		356	0		406	0		456	0		506
0		7	0		57	0		107	0		157	1	+	207	3	+	257	0		307	0		357	0		407	0		457	0		507
0		8	0		58	0		108	0		158	2	+	208	1	+	258	0		308	0		358	0		408	0		458	0		508
0		9	0		59	0		109	0		159	0	+	209	9	+	259	0		309	0		359	0		409	0		459	0		509
0		10	0		60	0		110	0		160	0	+	210	5	+	260	1		310	1		360	0		410	0		460	0		510
0		11	0		61	0		111	0		161	1	+	211	5	+	261	0		311	0		361	0		411	1		461	0		511
0		12	0		62	0		112	0		162	1	+	212	18	+	262	0		312	1		362	0		412	0		462	0		512
0		13	0		63	0		113	0		163	0	+	213	13	+	263	0		313	0		363	0		413	0		463			
0		14	0		64	0		114	0		164	0	+	214	13	+	264	0		314	0		364	0		414	0		464			
0		15	0		65	0		115	0		165	1	+	215	13	+	265	0		315	0		365	0		415	1		465			
0		16	0		66	0		116	0		166	0	+	216	5	+	266	1		316	0		366	0		416	0		466			
0		17	0		67	0		117	1	+	167	0	+	217	0	+	267	2		317	0		367	0		417	0		467			
0		18	0		68	0		118	0	+	168	0	+	218	0	+	268	0		318	0		368	0		418	0		468			
0		19	0		69	0		119	1	+	169	0	+	219	0	+	269	1		319	0		369	0		419	1		469			
0		20	0		70	0		120	2	+	170	0		220	0		270	0		320	0		370	0		420	0		470			
0		21	0		71	0		121	1	+	171	1		221	0		271	2		321	0		371	0		421	0		471			
0		22	0		72	0		122	3	+	172	0		222	0		272	1		322	0		372	0		422	0		472			
0		23	0		73	0		123	2	+	173	0		223	0		273	3	+	323	0		373	0		423	1		473			
0		24	0		74	0		124	7	+	174	0		224	0		274	3	+	324	0		374	0		424	1		474			
0		25	0		75	0		125	2	+	175	0		225	0		275	8	+	325	1		375	0		425	1		475			
0		26	0		76	0		126	9	+	176	0		226	0		276	5	+	326	0		376	0		426	1		476			
0		27	0		77	0		127	4	+	177	0		227	0		277	4	+	327	0		377	0		427	3		477			
0		28	0		78	0		128	3	+	178	0		228	0		278	12	+	328	0		378	0		428	0		478			
0		29	0		79	0		129	7	+	179	0		229	0		279	12	+	329	0		379	0		429	0		479			
0		30	0		80	0		130	7	+	180	0		230	0		280	16	+	330	0		380	0		430	0		480			
0		31	0		81	0		131	11	+	181	0		231	0		281	17	+	331	1		381	0		431	0		481			
0		32	0		82	0		132	15	+	182	0		232	0		282	25	+	332	0		382	0		432	0		482			
0		33	0		83	0		133	15	+	183	0		233	1		283	27	+	333	0		383	0		433	0		483			
0		34	0		84	0		134	14	+	184	1		234	0		284	25	+	334	0		384	0		434	0		484			
0		35	0		85	0		135	8	+	185	0		235	0		285	24	+	335	0		385	0		435	0		485			
0		36	0		86	0		136	3	+	186	0		236	0		286	32	+	336	0		386	0		436	1		486			
0		37	0		87	0		137	0	+	187	1		237	0		287	52	+	337	1		387	0		437	0		487			
0		38	0		88	0		138	0	+	188	0		238	0		288	46	+	338	1		388	0		438	0		488			
0		39	0		89	0		139	0		189	0		239	0		289	51	+	339	1		389	0		439	0		489			
0		40	0		90	0		140	0		190	0		240	0		290	51	+	340	1		390	0		440	0		490			
0		41	0		91	0		141	0		191	0		241	0		291	21	+	341	0		391	1		441	0		491			
0		42	0		92	1		142	0		192	1		242	0		292	13	+	342	0		392	1		442	0		492			
0		43	0		93	0		143	0		193	1		243	0		293	4	+	343	0		393	0		443	0		493			
0		44	0		94	0		144	0	+	194	0		244	0		294	1	+	344	0		394	0		444	0		494			
0		45	0		95	0		145	0	+	195	0		245	0		295	1	+	345	0		395	1		445	0		495			
0		46	0		96	0		146	0	+	196	0		246	0		296	2	+	346	1		396	2		446	0		496			
0		47	0		97	0		147	1	+	197	1		247	0		297	0	+	347	0		397	0		447	0		497			
0		48	0		98	0		148	0	+	198	1		248	0		298	0		348	0		398	1		448	0		498			
0		49	0		99	0		149	0	+	199	1		249	0		299	0		349	0		399	0		449	0		499			
0		50	0		100	0		150	0	+	200	0		250	0		300	0		350	0		400	0		450	0		500			

VMS Peak Search Report V1.9 Generated 29-JUN-2006 17:12:49

Configuration : RDND06$DKA100:[ALP85.SAMPLE]H67QJ1AC_290661352.CNF;1
Analyses by : ALPHA V1.8
Sample title : U BRC
Sample date : 22-MAY-2006 12:00:00 Acquisition date : 29-JUN-2006 13:52:35
Sample ID : H67QJ1AC Sample quantity : 0.00000E+00 SAMPLE
Sample type : disk Sample geometry :
Detector name : ALP85 Detector geometry:
Elapsed live time: 0 03:20:12.00 Elapsed real time: 0 03:20:12.00 0.0%
Start energy : 2934.52 End energy : 6582.01
Sensitivity : 3.00 Sum Sensitivity : 1.00

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4218.07	118	0	50.14	182.17	167	22	9.82E-03	9.2	
2	0	4794.95	95	0	42.97	262.68	253	17	7.91E-03	10.3	
3	0	5332.33	456	0	57.30	337.67	323	25	3.80E-02	4.7	
4	0	5443.82	11	0	35.81	353.22	350	10	9.16E-04	30.2	
5	0	6105.27	6	0	42.97	445.50	442	9	5.00E-04	40.8	

VMS Nuclide Identification Report V3.1 Generated 29-JUN-2006 17:12:51

```
Configuration     : RDND06$DKA100:[ALP85.SAMPLE]H67QJ1AC_290661352.CNF;1
Analyses by       : ALPHA V1.8,PEAKEFF V2.2,NID V3.4
Sample title      : U BRC
Sample date       : 22-MAY-2006 12:00:00 Acquisition date : 29-JUN-2006 13:52:35
Sample ID         : H67QJ1AC             Sample quantity  : 0.00000E+00 SAMPLE
Sample type       : disk                 Sample geometry  :
Detector name     : ALP85                Detector geometry:
Elapsed live time: 0 03:20:12.00         Elapsed real time: 0 03:20:12.00   0.0%
Energy tolerance :    80.00              Half life ratio  :     1.00
Errors propagated: No                    Systematic Error :     0.00 %
Efficiency type  : Spline                Efficiencies at  : Peak Energy
Abundance limit  :    70.00
```

Summary of Nuclide Activity

```
 Total number of lines in spectrum                  5
 Number of unidentified lines                       2
 Number of lines tentatively identified by NID      3        60.00%
```

Nuclide Type : AP

Nuclide	Hlife	Decay	Uncorrected PCI/SAMPLE	Decay Corr PCI/SAMPLE	Decay Corr 0-Sigma Error	0-Sigma %Error	Flags
U-232	68.90Y	1.00	0.000E+00	0.000E+00	0.000E+00	0.00	
			---	---			
Total Activity :			0.000E+00	0.000E+00			

Nuclide Type : NP

Nuclide	Hlife	Decay	Uncorrected PCI/SAMPLE	Decay Corr PCI/SAMPLE	Decay Corr 0-Sigma Error	0-Sigma %Error	Flags
U-234	2.45E+05Y	1.00	0.000E+00	0.000E+00	0.000E+00	0.00	
U-238	4.47E+09Y	1.00	0.000E+00	0.000E+00	0.000E+00	0.00	
			---	---			
Total Activity :			0.000E+00	0.000E+00			

Grand Total Activity :	0.000E+00	0.000E+00

Flags: "K" = Keyline not found "M" = Manually accepted
"E" = Manually edited "A" = Nuclide specific abn. limit

ITRD PEAK TEST REPORT (Version 16-May-94)

Configuration: RDND06$DKA100:[ALP85.SAMPLE]H67QJ1AC_290661352.CNF;1

Peak Energy	Left Chan	Rght Chan	Peak Area	Total Counts	Diff/ StDev	Overlap Counts	Multiplet Diff/StDev
4218.06	167	189	118	115	0.28		
4794.94	253	270	95	94	0.10		
5332.32	323	348	456	455	0.05		
5443.82	350	360	11	12	-0.30		
6105.26	442	451	6	5	0.41		

End of Report

ALPHA

SAMPLE AND QC DATA

SEVERN TRENT STL

Data Review/Verification Checklist

RADIOCHEMISTRY, First Level Review

6/26/2006 9:08:28 AM

Lot No., Due Date: J6F080203; 07/05/2006

Client, Site: 536403; AIR MONITORING Yerington Mine

QC Batch No., Method Test: 6163132; RALPHA-A Alpha by GPC-Am

SDG, Matrix: 31853; FILTER

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

6.0 Comments on any No response:

First Level Review Pam Anderson **Date** 6 26 06

SEVERN TRENT STL

Data Review Checklist
RADIOCHEMISTRY
Second Level Review

QC Batch Number: 6163132

Review Item	Yes (√)	No (√)	N/A (√)
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 with contract acceptance criteria?	✓		
7. Is the LCS Minimum Detectable Activity ≤ the Contract Detection Limit?	✓		
8. Do the MS/MSD results and yields meet acceptance criteria?			✓
9. Do the duplicate sample results and yields meet acceptance criteria?			✓
C. Other			
1. Are all Nonconformances 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: Sherry A Wilson Date: 6-26-06

STL RICHLAND

6/15/2006 2:28:09 PM

Sample Preparation/Analysis

Balance Id:1120373922

536403, Brown and Caldwell , Brown & Caldwell

BA Gross Alpha PrpRC5016/5014
S7 Gross Alpha by GPC using Am-241 curve
01 STANDARD TEST SET

Pipet #:

AnalyDueDate: 07/04/2006

Sep1 DT/Tm Tech:

Sep2 DT/Tm Tech:

Batch: 6163132 FILTER pCi/sampl PM, Quote: SA , 63174

SEQ Batch, Test: None

Prep Tech: HansenM

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:
1 H61AE-1-AE J6F080203-1-SAMP 05/22/2006 10:10	0.833sa,g	12.55g,in	AmtRec: FILTER #Containers: 1	1.5	0.4	100	10E	0748	6/20/06	Scr: Alpha: Beta:
2 H61AH-1-AE J6F080203-2-SAMP 05/22/2006 10:30	0.833sa,g	12.51g,in	AmtRec: FILTER #Containers: 1		0.5		10A	0940		Scr: Alpha: Beta:
3 H61AK-1-AE J6F080203-3-SAMP 05/22/2006 10:45	0.833sa,g	12.60g,in	AmtRec: FILTER #Containers: 1		0.4		10B			Scr: Alpha: Beta:
4 H61AL-1-AE J6F080203-4-SAMP 05/22/2006 11:10	0.833sa,g	12.61g,in	AmtRec: FILTER #Containers: 1		0.2		10C			Scr: Alpha: Beta:
5 H61AM-1-AE J6F080203-5-SAMP 05/22/2006 11:25	0.833sa,g	12.59g,in	AmtRec: FILTER #Containers: 1		0.2		10D			Scr: Alpha: Beta:
6 H61AR-1-AE J6F080203-6-SAMP 05/22/2006 11:35	0.833sa,g	12.59g,in	AmtRec: FILTER #Containers: 1		2.0		10E			Scr: Alpha: Beta:
7 H61AT-1-AE J6F080203-7-SAMP 05/22/2006 10:15	0.833sa,g	12.65g,in	AmtRec: FILTER #Containers: 1		0.4		10A	1133	6/20/06	Scr: Alpha: Beta:

STL RICHLAND

6/15/2006 2:28:10 PM

Sample Preparation/Analysis

Balance Id:1120373922

536403, Brown and Caldwell , Brown & Caldwell

BA Gross Alpha PrpRC5016/5014
S7 Gross Alpha by GPC using Am-241 curve
01 STANDARD TEST SET

Pipet #: _____

AnalyDueDate: 07/04/2006

Sep1 DT/Tm Tech:

Batch: 6163132 FILTER pCi/sampl PM, Quote: SA , 63174

Sep2 DT/Tm Tech:

SEQ Batch, Test: None

Prep Tech: HansenM

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:
8 H61AX-1-AE J6F080203-8-SAMP 05/22/2006 10:00	0.833sa,g	12.49g,in AmtRec: FILTER	#Containers: 1	1.5	13	100	10B Scr:	1133 Alpha:	6/22/06 Beta:	
9 H61A1-1-AE J6F080203-9-SAMP 05/22/2006 10:25	0.833sa,g	12.53g,in AmtRec: FILTER	#Containers: 1		0.1		10C Scr:	Alpha:	Beta:	
10 H61A2-1-AE J6F080203-10-SAMP 05/22/2006 10:40	0.833sa,g	12.69g,in AmtRec: FILTER	#Containers: 1		0.7		10D Scr:	Alpha:	Beta:	
11 H61A3-1-AE J6F080203-11-SAMP 05/22/2006 11:20	0.833sa,g	12.63g,in AmtRec: FILTER	#Containers: 1		0.2		10E Scr:	Alpha:	Beta:	
12 H61A5-1-AE J6F080203-12-SAMP 05/22/2006 11:30	0.833sa,g	12.58g,in AmtRec: FILTER	#Containers: 1		0.5		10A Scr:	1325 Alpha:	6/22/06 Beta:	
13 H61A7-1-AE J6F080203-13-SAMP 05/22/2006 10:05	0.833sa,g	12.57g,in AmtRec: FILTER	#Containers: 1		0.3		10B Scr:	Alpha:	Beta:	
14 H67QN-1-AA-B J6F120000-132-BLK 05/22/2006 10:10		1.00sa,in AmtRec:	#Containers: 1		0.1		10C Scr:	Alpha:	Beta:	

6/15/2006 2:28:10 PM

Sample Preparation/Analysis

BA Gross Alpha PrpRC5016/5014
S7 Gross Alpha by GPC using Am-241 curve
01 STANDARD TEST SET

Balance Id:1120373922

Pipet #: _____

AnalyDueDate: 07/04/2006

Sep1 DT/Tm Tech:

Batch: 6163132 pCi/sampl

SEQ Batch, Test: None

Sep2 DT/Tm Tech:

Prep Tech: ,HansenM

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:
15H67QN-1-AC-C J6F120000-132-LCS		1.00sa,in	ASC0391 06/15/06,pd 02/09/06,r	1.5	0.8	100	10D	1325	6/20/06	

05/22/2006 10:10 AmtRec: #Containers: 1 Scr: Alpha: Beta:

Comments:

All Clients for Batch:
536403, Brown and Caldwell Brown & Caldwell , SA , 63174

H61AE1AE-SAMP Constituent List:
ALPHA RDL:20 pCi/sam LCL: UCL: RPD:
H67QN1AA-BLK:
ALPHA RDL:20 pCi/sam LCL: UCL: RPD:
H67QN1AC-LCS:

H61AE1AE-SAMP Calc Info:
Uncert Level (#s).: 2 Decay to SaDt: Y Blk Subt.: N Sci.Not.: Y ODRs: B
H67QN1AA-BLK:
Uncert Level (#s).: 2 Decay to SaDt: Y Blk Subt.: N Sci.Not.: Y ODRs: B
H67QN1AC-LCS:
Uncert Level (#s).: 2 Decay to SaDt: Y Blk Subt.: N Sci.Not.: Y ODRs: B

Approved By _____ Date: _____

6/26/2006 8:59:59 AM

ICOC Fraction Transfer/Status Report

ByDate: 6/26/2005, 7/1/2006, Batch: '6163132', User: *ALL Order By DateTimeAccepting

Q Batch	Work Ord	CurStatus	Accepting			Comments
6163132						
AC		**CalcC**	**HansenM**	6/13/2006 1:40:16 PM		
SC			wagarr	IsBatched	6/12/2006 3:36:55 PM	ICOC_RADCALC v4.8.24
SC			HansenM	InPrep2	6/13/2006 1:40:16 PM	RICH-RC-5016 REVISION 5
SC			BlackCL	InCnt1	6/20/2006 1:04:53 PM	RICH-RD-0003 REVISION 4
SC			ScottM	Prep2C	6/21/2006 8:25:35 AM	RICH-RC-5014 REVISION 6
SC			DAWKINSO	CalcC	6/22/2006 5:04:11 PM	RICH-RD-0003 REVISION 4
AC			**BlackCL**	6/20/2006 1:04:53 PM		
AC			**ScottM**	6/21/2006 8:25:35		
AC			**BlackCL**	6/21/2006 8:36:46		
AC			**DAWKINSO**	6/22/2006 5:04:11 PM		

AC: Accepting Entry; SC: Status Change

STL Richland

Richland Wa.

Grp Rec Cnt: 5

ICOCFractions v4.8.18

6/26/2006 8:59:58 AM

Rpt DB Transfer log (Batch Results)

SEVERN TRENT STL

SDG or Batch / Isotope	Rpt Db Id / Method	RTst	Qc	LotSample / Analysis Date	Client Id / Result	Matrix / Cnt Uncert	Received Date / Tot Uncert	Sample Date / Mda	Units	Expected	Yield	Volumes
31853	**9H61A110**			**J6F0802039**	P-0638	FILTER	6/7/2006 10:00:00	5/22/2006 10:25:00 AM				
ALPHA	BAS7	0		6/22/2006 10:42:31	**1.078E+01**	2.706E+00	2.929E+00	6.408E+00	PCI/SA	1.0	1.0E+0	2.085E-2
BETA	BDS8	0		6/20/2006 6:46:51 PM	**2.9132E+01**	2.343E+00	3.077E+00	6.219E+00	PCI/SA	1.0	1.0E+0	3.346E-2
31853	**9H61A210**			**J6F08020310**	P-0639	FILTER	6/7/2006 10:00:00	5/22/2006 10:40:00 AM				
ALPHA	BAS7	0		6/22/2006 10:42:31	**5.5159E+00**	2.074E+00	2.15E+00	6.486E+00	PCI/SA	1.0	1.0E+0	2.095E-2
BETA	BDS8	0		6/20/2006 6:46:51 PM	**3.4145E+01**	2.273E+00	4.155E+00	5.488E+00	PCI/SA	1.0	1.0E+0	3.32E-2
31853	**9H61A310**			**J6F08020311**	P-0641	FILTER	6/7/2006 10:00:00	5/22/2006 11:20:00 AM				
ALPHA	BAS7	0		6/22/2006 10:42:31	**1.1105E+00**	1.314E+00	1.319E+00	5.977E+00	PCI/SA	1.0	1.0E+0	2.102E-2
BETA	BDS8	0		6/20/2006 6:46:51 PM	**2.7213E+01**	2.278E+00	2.943E+00	6.204E+00	PCI/SA	1.0	1.0E+0	3.326E-2
31853	**9H61A510**			**J6F08020312**	P-0642	FILTER	6/7/2006 10:00:00	5/22/2006 11:30:00 AM				
ALPHA	BAS7	0		6/22/2006 12:35:02 PM	**4.919E+00**	2.117E+00	2.178E+00	7.164E+00	PCI/SA	1.0	1.0E+0	2.085E-2
BETA	BDS8	0		6/20/2006 6:46:51 PM	**2.9855E+01**	2.333E+00	3.123E+00	6.07E+00	PCI/SA	1.0	1.0E+0	3.339E-2
31853	**9H61A710**			**J6F08020313**	P-0643	FILTER	6/7/2006 10:00:00	5/22/2006 10:05:00 AM				
ALPHA	BAS7	0		6/22/2006 12:35:02 PM	**5.4878E+00**	1.981E+00	2.062E+00	5.644E+00	PCI/SA	1.0	1.0E+0	2.084E-2
BETA	BDS8	0		6/20/2006 6:46:47 PM	**2.8799E+01**	2.356E+00	3.09E+00	6.278E+00	PCI/SA	1.0	1.0E+0	3.297E-2
31853	**9H61AE10**			**J6F0802031**	000466	FILTER	6/7/2006 10:00:00	5/22/2006 10:10:00 AM				
ALPHA	BAS7	0		6/22/2006 6:57:33 AM	**1.2919E+01**	2.897E+00	3.187E+00	6.046E+00	PCI/SA	1.0	1.0E+0	2.084E-2
BETA	BDS8	0		6/20/2006 4:05:14 PM	**3.0937E+01**	2.41E+00	3.222E+00	6.21E+00	PCI/SA	1.0	1.0E+0	3.327E-2
31853	**9H61AH10**			**J6F0802032**	000467	FILTER	6/7/2006 10:00:00	5/22/2006 10:30:00 AM				
ALPHA	BAS7	0		6/22/2006 8:49:58 AM	**4.3814E+00**	2.049E+00	2.1E+00	7.179E+00	PCI/SA	1.0	1.0E+0	2.08E-2
BETA	BDS8	0		6/20/2006 4:05:14 PM	**3.8297E+01**	2.569E+00	3.691E+00	6.172E+00	PCI/SA	1.0	1.0E+0	3.363E-2
31853	**9H61AK10**			**J6F0802033**	000468	FILTER	6/7/2006 10:00:00	5/22/2006 10:45:00 AM				
ALPHA	BAS7	0		6/22/2006 8:49:58 AM	**3.3328E+00**	1.662E+00	1.698E+00	5.639E+00	PCI/SA	1.0	1.0E+0	2.087E-2
BETA	BDS8	0		6/20/2006 4:05:14 PM	**2.3712E+01**	2.175E+00	3.046E+00	6.067E+00	PCI/SA	1.0	1.0E+0	3.28E-2
31853	**9H61AL10**			**J6F0802034**	000469	FILTER	6/7/2006 10:00:00	5/22/2006 11:10:00 AM				
ALPHA	BAS7	0		6/22/2006 8:49:58 AM	**7.9761E+00**	2.397E+00	2.536E+00	6.388E+00	PCI/SA	1.0	1.0E+0	2.093E-2
BETA	BDS8	0		6/20/2006 4:05:14 PM	**2.6018E+01**	2.395E+00	3.038E+00	7.005E+00	PCI/SA	1.0	1.0E+0	3.35E-2
31853	**9H61AM10**			**J6F0802035**	000470	FILTER	6/7/2006 10:00:00	5/22/2006 11:25:00 AM				
ALPHA	BAS7	0		6/22/2006 8:49:58 AM	**8.6535E+00**	2.438E+00	2.595E+00	6.497E+00	PCI/SA	1.0	1.0E+0	2.087E-2
BETA	BDS8	0		6/20/2006 6:46:45 PM	**4.4033E+01**	2.729E+00	4.225E+00	6.697E+00	PCI/SA	1.0	1.0E+0	3.406E-2
31853	**9H61AR10**			**J6F0802036**	000471	FILTER	6/7/2006 10:00:00	5/22/2006 11:35:00 AM				
ALPHA	BAS7	0		6/22/2006 8:49:58 AM	**5.632E+00**	2.077E+00	2.156E+00	6.062E+00	PCI/SA	1.0	1.0E+0	2.089E-2
BETA	BDS8	0		6/20/2006 6:46:45 PM	**4.4882E+01**	2.784E+00	4.217E+00	6.616E+00	PCI/SA	1.0	1.0E+0	3.346E-2
31853	**9H61AT10**			**J6F0802037**	000472	FILTER	6/7/2006 10:00:00	5/22/2006 10:15:00 AM				
ALPHA	BAS7	0		6/22/2006 10:42:31	**-2.1888E+00**	7.739E-01	8.069E-01	7.173E+00	PCI/SA	1.0	1.0E+0	2.081E-2
BETA	BDS8	0		6/20/2006 6:46:45 PM	**6.7795E-01**	1.519E+00	1.52E+00	6.677E+00	PCI/SA	1.0	1.0E+0	3.267E-2
31853	**9H61AX10**			**J6F0802038**	P-0637	FILTER	6/7/2006 10:00:00	5/22/2006 10:00:00 AM				
ALPHA	BAS7	0		6/22/2006 10:42:31	**5.0702E+00**	1.953E+00	2.023E+00	5.782E+00	PCI/SA	1.0	1.0E+0	2.044E-2
BETA	BDS8	0		6/20/2006 6:46:45 PM	**2.6735E+01**	2.345E+00	2.967E+00	6.443E+00	PCI/SA	1.0	1.0E+0	3.221E-2
31853	**H67QN1AB**			**J6F120000132**	INTRA-LAB BLANK	FILTER	6/7/2006 10:00:00	5/22/2006 10:10:00 AM				
ALPHA	BAS7	0	B	6/22/2006 12:35:02 PM	**-1.854E-02**	1.911E-02	1.92E-02	1.336E-01	PCI/SA	1.0	1.0E+0	1.0E+0
31853	**H67QN1CS**			**J6F120000132**	INTRA-LAB CHECK	FILTER	6/7/2006 10:00:00	5/22/2006 10:10:00 AM				
ALPHA	BAS7	0	S	6/22/2006 12:35:02 PM	**2.2206E+00**	1.576E-01	2.727E-01	1.359E-01	PCI/SA	2.3879E+00 1.0	1.0E+0	1.0E+0

6163132, **Samples Inserted | Updated | NotUpdated => 2 | 0 | 13,
**Results Inserted | ReTestInserted | Updated | NotInserted => 15 | 0 | 0 | 0.
**Diff RptDb | Qtims => .

Batch Nbr: 6163132

Alpha Beta, Alpha by GPC-Am , Results Summary Report

6/22/2006 5:00:13 PM

Status	Meth	Matrix	Wrk Ord	Parameter	Sa Act	Uncert	Q	Units	Av	ILcC	IDC	QC	Yield	RYld
Alpha by GPC-Am				Richland Standard Gross Alpha/Beta Wo Blk Subt										
Calc	S7	FILTER	**H61AE1AE**	ALPHA	**1.29E+01**	**(3.19E+00)**		PCI/SA	R	2.26E+00	6.05E+00	CRDL met	100%	
Calc	S7	FILTER	**H61AH1AE**	ALPHA	**4.38E+00**	**(2.10E+00)**		PCI/SA	R	2.85E+00	7.18E+00		100%	
Calc	S7	FILTER	**H61AK1AE**	ALPHA	**3.33E+00**	**(1.70E+00)**		PCI/SA	R	2.09E+00	5.64E+00		100%	
Calc	S7	FILTER	**H61AL1AE**	ALPHA	**7.98E+00**	**(2.54E+00)**		PCI/SA	R	2.44E+00	6.39E+00		100%	
Calc	S7	FILTER	**H61AM1AE**	ALPHA	**8.65E+00**	**(2.60E+00)**		PCI/SA	R	2.54E+00	6.50E+00		100%	
Calc	S7	FILTER	**H61AR1AE**	ALPHA	**5.63E+00**	**(2.16E+00)**		PCI/SA	R	2.27E+00	6.06E+00		100%	
Calc	S7	FILTER	**H61AT1AE**	ALPHA	**-2.19E+00**	**(8.07E-01)**	**U4**	PCI/SA	R	2.85E+00	7.17E+00		100%	
Calc	S7	FILTER	**H61AX1AE**	ALPHA	**5.07E+00**	**(2.02E+00)**		PCI/SA	R	2.15E+00	5.78E+00		100%	
Calc	S7	FILTER	**H61A11AE**	ALPHA	**1.08E+01**	**(2.93E+00)**		PCI/SA	R	2.45E+00	6.41E+00		100%	
Calc	S7	FILTER	**H61A21AE**	ALPHA	**5.52E+00**	**(2.15E+00)**		PCI/SA	R	2.54E+00	6.49E+00		100%	
Calc	S7	FILTER	**H61A31AE**	ALPHA	**1.11E+00**	**(1.32E+00)**	**U4**	PCI/SA	R	2.24E+00	5.98E+00		100%	
Calc	S7	FILTER	**H61A51AE**	ALPHA	**4.92E+00**	**(2.18E+00)**		PCI/SA	R	2.84E+00	7.16E+00		100%	
Calc	S7	FILTER	**H61A71AE**	ALPHA	**5.49E+00**	**(2.06E+00)**		PCI/SA	R	2.09E+00	5.64E+00		100%	
Calc	S7	FILTER	**H67QN1AA**	ALPHA	**-1.85E-02**	**(1.92E-02)**	**U4**	PCI/SA	R	5.11E-02	1.34E-01	**B**	100%	
Calc	S7	FILTER	**H67QN1AC**	ALPHA	**2.22E+00**	**(2.73E-01)**		PCI/SA	R	5.32E-02	1.36E-01	**S**	100%	93%

P Henderson
6-23-06

() - (1s Uncertainities)
IDC - Instrument Detection Level in Conc Units
MLcC- Method Decision Level in Conc Units
MDC - Minimum Detectable Concentration
*Std - Lc, MDC using StdDev for Set of Blanks

Q - Qualifier, U is Less Than Lc = 1.645*TPU
All Results Displayed to Three Digits Reguardless of Significants
Date/Time - mm/dd/yy hh:mm, 24hr Time

RecCnt:15
RADCALC v4.8.24
STL Richland

Batch Nbr: 6163132

Alpha Beta, Alpha by GPC-Am , Calculated Results
Detailed Report

6/22/2006 5:00:13 PM

Sq	Status	Method	Matrix	Protocol	Equation Set	Wrk Ord	Units/Matrix	QC/BB	Sa/On Date	AnalysisDate/PptWt	Sep1/Sep2 Date	QC/Tracer Vial	Mult/EntYld	Total/Analy Vol	Final/Count Vol
1	Calc	S7	FILTER	*STLE	GabWoBS	**H61AE1AE**	**PCI/SA**		05/22/06 10:10	06/22/06 06:57			1	1.00 Sa	
536403,000466					,J6F080203-1 v4.8.24		FILTER			00.9				0.020841 Sa	

Sq	Cnt Date	Parameter	Sample Cnt	Bkgrnd Cnt	Instr	Geom	Trc/Av	Ent	Efficiency1	Efficiency 2	Ent	Yld Fct	Ent	Blk Value	Ingr Fct	Conv Fct/VolAdj	Decay	Abn
0	06/22/06 07:47	ALPHA	26	15	GPC10E	1.5	N	N	3.8480E-01	1.0000E+00	N	100%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			100	500			Y		(1.139E-02)	(0.000E+00)		8%			(0.000E+00)	47.981902		

Sq	Calc Date	Parameter	Avg	Sa Act	Q	Net Cnt Rt	Dpm Wo Blk	Dpm-Blk	Vol Used	Yield,EnFct	Chem Yld,EFctU	IDC/ILcC	BlkLcC/MDC	StdDvMdC/LcC
	06/22/06	ALPHA	R	**12.918503**		2.30000E-01	0.597707	0.597707	1.00 Sa	100%		6.04588		
				(3.186948)		(5.1575E-02)	(0.143399)	(0.143399)	(0.028284)			2.263215		

Sq	Status	Method	Matrix	Protocol	Equation Set	Wrk Ord	Units/Matrix	QC/BB	Sa/On Date	AnalysisDate/PptWt	Sep1/Sep2 Date	QC/Tracer Vial	Mult/EntYld	Total/Analy Vol	Final/Count Vol
2	Calc	S7	FILTER	*STLE	GabWoBS	**H61AH1AE**	**PCI/SA**		05/22/06 10:30	06/22/06 08:49			1	1.00 Sa	
536403,000467					,J6F080203-2 v4.8.24		FILTER			00.5				0.020804 Sa	

Sq	Cnt Date	Parameter	Sample Cnt	Bkgrnd Cnt	Instr	Geom	Trc/Av	Ent	Efficiency1	Efficiency 2	Ent	Yld Fct	Ent	Blk Value	Ingr Fct	Conv Fct/VolAdj	Decay	Abn
0	06/22/06 09:39	ALPHA	13	25	GPC10A	1.5	N	N	3.9535E-01	1.0000E+00	N	100%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			100	500			Y		(1.366E-02)	(0.000E+00)		8%			(0.000E+00)	48.068148		

Sq	Calc Date	Parameter	Avg	Sa Act	Q	Net Cnt Rt	Dpm Wo Blk	Dpm-Blk	Vol Used	Yield,EnFct	Chem Yld,EFctU	IDC/ILcC	BlkLcC/MDC	StdDvMdC/LcC
	06/22/06	ALPHA	R	**4.381419**		8.00000E-02	0.202354	0.202354	1.00 Sa	100%		7.178799		
				(2.099623)		(3.7417E-02)	(0.096271)	(0.096271)	(0.028284)			2.848988		

Sq	Status	Method	Matrix	Protocol	Equation Set	Wrk Ord	Units/Matrix	QC/BB	Sa/On Date	AnalysisDate/PptWt	Sep1/Sep2 Date	QC/Tracer Vial	Mult/EntYld	Total/Analy Vol	Final/Count Vol
3	Calc	S7	FILTER	*STLE	GabWoBS	**H61AK1AE**	**PCI/SA**		05/22/06 10:45	06/22/06 08:49			1	1.00 Sa	
536403,000468					,J6F080203-3 v4.8.24		FILTER			00.4				0.020866 Sa	

Sq	Cnt Date	Parameter	Sample Cnt	Bkgrnd Cnt	Instr	Geom	Trc/Av	Ent	Efficiency1	Efficiency 2	Ent	Yld Fct	Ent	Blk Value	Ingr Fct	Conv Fct/VolAdj	Decay	Abn
0	06/22/06 09:39	ALPHA	9	14	GPC10B	1.5	N	N	4.0160E-01	1.0000E+00	N	100%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			100	500			Y		(1.348E-02)	(0.000E+00)		8%			(0.000E+00)	47.924884		

Sq	Calc Date	Parameter	Avg	Sa Act	Q	Net Cnt Rt	Dpm Wo Blk	Dpm-Blk	Vol Used	Yield,EnFct	Chem Yld,EFctU	IDC/ILcC	BlkLcC/MDC	StdDvMdC/LcC
	06/22/06	ALPHA	R	**3.33279**		6.20000E-02	0.154383	0.154383	1.00 Sa	100%		5.639369		
				(1.697847)		(3.0919E-02)	(0.078147)	(0.078147)	(0.028284)			2.092551		

Sq	Status	Method	Matrix	Protocol	Equation Set	Wrk Ord	Units/Matrix	QC/BB	Sa/On Date	AnalysisDate/PptWt	Sep1/Sep2 Date	QC/Tracer Vial	Mult/EntYld	Total/Analy Vol	Final/Count Vol
4	Calc	S7	FILTER	*STLE	GabWoBS	**H61AL1AE**	**PCI/SA**		05/22/06 11:10	06/22/06 08:49			1	1.00 Sa	
536403,000469					,J6F080203-4 v4.8.24		FILTER			00.2				0.020929 Sa	

Sq	Cnt Date	Parameter	Sample Cnt	Bkgrnd Cnt	Instr	Geom	Trc/Av	Ent	Efficiency1	Efficiency 2	Ent	Yld Fct	Ent	Blk Value	Ingr Fct	Conv Fct/VolAdj	Decay	Abn
0	06/22/06 09:39	ALPHA	18	18	GPC10C	1.5	N	N	3.8858E-01	1.0000E+00	N	100%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			100	500			Y		(1.294E-02)	(0.000E+00)		8%			(0.000E+00)	47.781206		

() - (1s Uncertainities), Q - Qualifier, U Result is Less Than Lc = 1.645 * TPU
IDC - Instrument Detection Level in Conc Units, MLcC - Method Decision Level in Conc Units, MDC- Minimum Detectable Concentration
Sr-89 Counts are Derived from the Combination of Each Sr-89/90 and Y-90 Count, All Result Digits May Not be Significants, Date/Time - mm/dd/yy hh:mm, 24hr Time

RecCnt:4

RADCALC v4.8.24
STL Richland

Batch Nbr: 6163132

Alpha Beta, Alpha by GPC-Am , Calculated Results

6/22/2006 5:00:14 PM

Sq	Calc Date	Parameter	Avg	Sa Act	Q	Net Cnt Rt	Dpm Wo Blk	Dpm-Blk	Vol Used	Yield,EnFct	Chem Yld,EFctU	IDC/ILcC	BlkLcC/MDC	StdDvMdC/LcC
	06/22/06	ALPHA	R	**7.976091**		1.44000E-01	0.370584	0.370584	1.00 Sa	100%		6.387937		
				(2.535929)		(4.3267E-02)	(0.115885)	(0.115885)	(0.028284)			2.444892		

Sq	Status	Method	Matrix	Protocol	Equation Set	Wrk Ord	Units/Matrix	QC/BB	Sa/On Date	AnalysisDate/PptWt	Sep1/Sep2 Date	QC/Tracer Vial	Mult/EntYld	Total/Analy Vol	Final/Count Vol
5	Calc	S7	FILTER	*STLE	GabWoBS	**H61AM1AE**	**PCI/SA**		05/22/06 11:25	06/22/06 08:49			1	1.00 Sa	
536403,000470					,J6F080203-5 v4.8.24		FILTER			00.2				0.020865 Sa	

Sq	Cnt Date	Parameter	Sample Cnt	Bkgrnd Cnt	Instr	Geom	Trc/Av	Ent	Efficiency1	Efficiency 2	Ent	Yld Fct	Ent	Blk Value	Ingr Fct	Conv Fct/VolAdj	Decay	Abn
0	06/22/06 09:39	ALPHA	21	22	GPC10D	1.5	N	N	4.1414E-01	1.0000E+00	N	100%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			100	500			Y		(1.205E-02)	(0.000E+00)		8%			(0.000E+00)	47.926716		

Sq	Calc Date	Parameter	Avg	Sa Act	Q	Net Cnt Rt	Dpm Wo Blk	Dpm-Blk	Vol Used	Yield,EnFct	Chem Yld,EFctU	IDC/ILcC	BlkLcC/MDC	StdDvMdC/LcC
	06/22/06	ALPHA	R	**8.653458**		1.66000E-01	0.400835	0.400835	1.00 Sa	100%		6.497351		
				(2.59529)		(4.6776E-02)	(0.11799)	(0.11799)	(0.028284)			2.543834		

Sq	Status	Method	Matrix	Protocol	Equation Set	Wrk Ord	Units/Matrix	QC/BB	Sa/On Date	AnalysisDate/PptWt	Sep1/Sep2 Date	QC/Tracer Vial	Mult/EntYld	Total/Analy Vol	Final/Count Vol
6	Calc	S7	FILTER	*STLE	GabWoBS	**H61AR1AE**	**PCI/SA**		05/22/06 11:35	06/22/06 08:49			1	1.00 Sa	
536403,000471					,J6F080203-6 v4.8.24		FILTER			02.0				0.020893 Sa	

Sq	Cnt Date	Parameter	Sample Cnt	Bkgrnd Cnt	Instr	Geom	Trc/Av	Ent	Efficiency1	Efficiency 2	Ent	Yld Fct	Ent	Blk Value	Ingr Fct	Conv Fct/VolAdj	Decay	Abn
0	06/22/06 09:39	ALPHA	13	15	GPC10E	1.5	N	N	3.8280E-01	1.0000E+00	N	100%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			100	500			Y		(1.133E-02)	(0.000E+00)		8%			(0.000E+00)	47.861877		

Sq	Calc Date	Parameter	Avg	Sa Act	Q	Net Cnt Rt	Dpm Wo Blk	Dpm-Blk	Vol Used	Yield,EnFct	Chem Yld,EFctU	IDC/ILcC	BlkLcC/MDC	StdDvMdC/LcC
	06/22/06	ALPHA	R	**5.631982**		1.00000E-01	0.261231	0.261231	1.00 Sa	100%		6.062286		
				(2.156215)		(3.6878E-02)	(0.098881)	(0.098881)	(0.028284)			2.269357		

Sq	Status	Method	Matrix	Protocol	Equation Set	Wrk Ord	Units/Matrix	QC/BB	Sa/On Date	AnalysisDate/PptWt	Sep1/Sep2 Date	QC/Tracer Vial	Mult/EntYld	Total/Analy Vol	Final/Count Vol
7	Calc	S7	FILTER	*STLE	GabWoBS	**H61AT1AE**	**PCI/SA**		05/22/06 10:15	06/22/06 10:42			1	1.00 Sa	
536403,000472					,J6F080203-7 v4.8.24		FILTER			00.4				0.020811 Sa	

Sq	Cnt Date	Parameter	Sample Cnt	Bkgrnd Cnt	Instr	Geom	Trc/Av	Ent	Efficiency1	Efficiency 2	Ent	Yld Fct	Ent	Blk Value	Ingr Fct	Conv Fct/VolAdj	Decay	Abn
0	06/22/06 11:32	ALPHA	1	25	GPC10A	1.5	N	N	3.9556E-01	1.0000E+00	N	100%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			100	500			Y		(1.366E-02)	(0.000E+00)		8%			(0.000E+00)	48.052423		

Sq	Calc Date	Parameter	Avg	Sa Act	Q	Net Cnt Rt	Dpm Wo Blk	Dpm-Blk	Vol Used	Yield,EnFct	Chem Yld,EFctU	IDC/ILcC	BlkLcC/MDC	StdDvMdC/LcC
	06/22/06	ALPHA	R	**-2.188813**	**U4**	-4.00000E-02	-0.101122	-0.101122	1.00 Sa	100%		7.172586		
				(0.806877)		(1.4142E-02)	(0.036822)	(0.036822)	(0.028284)			2.846523		

Sq	Status	Method	Matrix	Protocol	Equation Set	Wrk Ord	Units/Matrix	QC/BB	Sa/On Date	AnalysisDate/PptWt	Sep1/Sep2 Date	QC/Tracer Vial	Mult/EntYld	Total/Analy Vol	Final/Count Vol
8	Calc	S7	FILTER	*STLE	GabWoBS	**H61AX1AE**	**PCI/SA**		05/22/06 10:00	06/22/06 10:42			1	1.00 Sa	
536403,P-0637					,J6F080203-8 v4.8.24		FILTER			01.3				0.020438 Sa	

Sq	Cnt Date	Parameter	Sample Cnt	Bkgrnd Cnt	Instr	Geom	Trc/Av	Ent	Efficiency1	Efficiency 2	Ent	Yld Fct	Ent	Blk Value	Ingr Fct	Conv Fct/VolAdj	Decay	Abn

() - (1s Uncertainities), Q - Qualifier, U Result is Less Than Lc = 1.645 * TPU

IDC - Instrument Detection Level in Conc Units, MLcC - Method Decision Level in Conc Units, MDC- Minimum Detectable Concentration

Sr-89 Counts are Derived from the Combination of Each Sr-89/90 and Y-90 Count, All Result Digits May Not be Significants, Date/Time - mm/dd/yy hh:mm, 24hr Time

RecCnt:8

RADCALC v4.8.24

STL Richland

Batch Nbr: 6163132

Alpha Beta, Alpha by GPC-Am , Calculated Results

6/22/2006 5:00:14 PM

0	06/22/06 11:32	ALPHA	12	14		GPC10B	1.5	N	N	3.9993E-01	1.0000E+00	N	100%	N		1.0000E+00	4.5045E-01	1.0000E+00
			100	500					Y	(1.343E-02)	(0.000E+00)		8%			(0.000E+00)	48.92942	

Sq	Calc Date	Parameter	Avg	Sa Act	Q	Net Cnt Rt	Dpm Wo Blk	Dpm-Blk	Vol Used	Yield,EnFct	Chem Yld,EFctU	IDC/ILcC	BlkLcC/MDC	StdDvMdC/LcC
	06/22/06	ALPHA	R	**5.07017**		9.20000E-02	0.230041	0.230041	1.00 Sa	100%		5.781613		
				(2.023119)		(3.5440E-02)	(0.090836)	(0.090836)	(0.028284)			2.145333		

Sq	Status	Method	Matrix	Protocol	Equation Set	Wrk Ord	Units/Matrix	QC/BB	Sa/On Date	AnalysisDate/PptWt	Sep1/Sep2 Date	QC/Tracer Vial	Mult/EntYld	Total/Analy Vol	Final/Count Vol
9	Calc	S7	FILTER	*STLE	GabWoBS	**H61A11AE**	**PCI/SA**		05/22/06 10:25	06/22/06 10:42			1	1.00 Sa	
536403,P-0638					,J6F080203-9 v4.8.24		FILTER			00.1				0.020853 Sa	

Sq	Cnt Date	Parameter	Sample Cnt	Bkgrnd Cnt	Instr	Geom	Trc/Av	Ent	Efficiency1	Efficiency 2	Ent	Yld Fct	Ent	Blk Value	Ingr Fct	Conv Fct/VolAdj	Decay	Abn
0	06/22/06 11:32	ALPHA	23	18	GPC10C	1.5	N	N	3.8874E-01	1.0000E+00	N	100%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			100	500			Y		(1.295E-02)	(0.000E+00)		8%			(0.000E+00)	47.954058		

Sq	Calc Date	Parameter	Avg	Sa Act	Q	Net Cnt Rt	Dpm Wo Blk	Dpm-Blk	Vol Used	Yield,EnFct	Chem Yld,EFctU	IDC/ILcC	BlkLcC/MDC	StdDvMdC/LcC
	06/22/06	ALPHA	R	**10.779924**		1.94000E-01	0.49905	0.49905	1.00 Sa	100%		6.408362		
				(2.929159)		(4.8703E-02)	(0.132538)	(0.132538)	(0.028284)			2.45271		

Sq	Status	Method	Matrix	Protocol	Equation Set	Wrk Ord	Units/Matrix	QC/BB	Sa/On Date	AnalysisDate/PptWt	Sep1/Sep2 Date	QC/Tracer Vial	Mult/EntYld	Total/Analy Vol	Final/Count Vol
10	Calc	S7	FILTER	*STLE	GabWoBS	**H61A21AE**	**PCI/SA**		05/22/06 10:40	06/22/06 10:42			1	1.00 Sa	
536403,P-0639					,J6F080203-10 v4.8.24		FILTER			00.7				0.02095 Sa	

Sq	Cnt Date	Parameter	Sample Cnt	Bkgrnd Cnt	Instr	Geom	Trc/Av	Ent	Efficiency1	Efficiency 2	Ent	Yld Fct	Ent	Blk Value	Ingr Fct	Conv Fct/VolAdj	Decay	Abn
0	06/22/06 11:32	ALPHA	15	22	GPC10D	1.5	N	N	4.1320E-01	1.0000E+00	N	100%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			100	500			Y		(1.202E-02)	(0.000E+00)		8%			(0.000E+00)	47.733514		

Sq	Calc Date	Parameter	Avg	Sa Act	Q	Net Cnt Rt	Dpm Wo Blk	Dpm-Blk	Vol Used	Yield,EnFct	Chem Yld,EFctU	IDC/ILcC	BlkLcC/MDC	StdDvMdC/LcC
	06/22/06	ALPHA	R	**5.515896**		1.06000E-01	0.256535	0.256535	1.00 Sa	100%		6.48582		
				(2.149626)		(3.9850E-02)	(0.098883)	(0.098883)	(0.028284)			2.53932		

Sq	Status	Method	Matrix	Protocol	Equation Set	Wrk Ord	Units/Matrix	QC/BB	Sa/On Date	AnalysisDate/PptWt	Sep1/Sep2 Date	QC/Tracer Vial	Mult/EntYld	Total/Analy Vol	Final/Count Vol
11	Calc	S7	FILTER	*STLE	GabWoBS	**H61A31AE**	**PCI/SA**		05/22/06 11:20	06/22/06 10:42			1	1.00 Sa	
536403,P-0641					,J6F080203-11 v4.8.24		FILTER			00.2				0.021019 Sa	

Sq	Cnt Date	Parameter	Sample Cnt	Bkgrnd Cnt	Instr	Geom	Trc/Av	Ent	Efficiency1	Efficiency 2	Ent	Yld Fct	Ent	Blk Value	Ingr Fct	Conv Fct/VolAdj	Decay	Abn
0	06/22/06 11:32	ALPHA	5	15	GPC10E	1.5	N	N	3.8598E-01	1.0000E+00	N	100%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			100	500			Y		(1.142E-02)	(0.000E+00)		8%			(0.000E+00)	47.576275		

Sq	Calc Date	Parameter	Avg	Sa Act	Q	Net Cnt Rt	Dpm Wo Blk	Dpm-Blk	Vol Used	Yield,EnFct	Chem Yld,EFctU	IDC/ILcC	BlkLcC/MDC	StdDvMdC/LcC
	06/22/06	ALPHA	R	**1.110462**	**U4**	2.00000E-02	0.051816	0.051816	1.00 Sa	100%		5.976525		
				(1.318869)		(2.3664E-02)	(0.061469)	(0.061469)	(0.028284)			2.237253		

() - (1s Uncertainities), Q - Qualifier, U Result is Less Than Lc = 1.645 * TPU
IDC - Instrument Detection Level in Conc Units, MLcC - Method Decision Level in Conc Units, MDC- Minimum Detectable Concentration
Sr-89 Counts are Derived from the Combination of Each Sr-89/90 and Y-90 Count, All Result Digits May Not be Significants, Date/Time - mm/dd/yy hh:mm, 24hr Time

RecCnt:12

RADCALC v4.8.24
STL Richland

Batch Nbr: 6163132

Alpha Beta, Alpha by GPC-Am , Calculated Results

6/22/2006 5:00:14 PM

Sq	Status	Method	Matrix	Protocol	Equation Set	Wrk Ord	Units/Matrix	QC/BB	Sa/On Date	AnalysisDate/PptWt	Sep1/Sep2 Date	QC/Tracer Vial	Mult/EntYld	Total/Analy Vol	Final/Count Vol
12	Calc	S7	FILTER	*STLE	GabWoBS	**H61A51AE**	**PCI/SA**		05/22/06 11:30	06/22/06 12:35			1	1.00 Sa	
536403,P-0642					,J6F080203-12 v4.8.24		FILTER			00.5				0.020847 Sa	

Sq	Cnt Date	Parameter	Sample Cnt	Bkgrnd Cnt	Instr	Geom	Trc/Av	Ent	Efficiency1	Efficiency 2	Ent	Yld Fct	Ent	Blk Value	Ingr Fct	Conv Fct/VolAdj	Decay	Abn
0	06/22/06 13:25	ALPHA	14	25	GPC10A	1.5	N	N	3.9535E-01	1.0000E+00	N	100%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			100	500			Y		(1.366E-02)	(0.000E+00)		8%			(0.000E+00)	47.969585		

Sq	Calc Date	Parameter	Avg	Sa Act	Q	Net Cnt Rt	Dpm Wo Blk	Dpm-Blk	Vol Used	Yield,EnFct	Chem Yld,EFctU	IDC/ILcC	BlkLcC/MDC	StdDvMdC/LcC
	06/22/06	ALPHA	R	**4.918989**		9.00000E-02	0.227648	0.227648	1.00 Sa	100%		7.164079		
				(2.178164)		(3.8730E-02)	(0.099952)	(0.099952)	(0.028284)			2.843146		

Sq	Status	Method	Matrix	Protocol	Equation Set	Wrk Ord	Units/Matrix	QC/BB	Sa/On Date	AnalysisDate/PptWt	Sep1/Sep2 Date	QC/Tracer Vial	Mult/EntYld	Total/Analy Vol	Final/Count Vol
13	Calc	S7	FILTER	*STLE	GabWoBS	**H61A71AE**	**PCI/SA**		05/22/06 10:05	06/22/06 12:35			1	1.00 Sa	
536403,P-0643					,J6F080203-13 v4.8.24		FILTER			00.3				0.020838 Sa	

Sq	Cnt Date	Parameter	Sample Cnt	Bkgrnd Cnt	Instr	Geom	Trc/Av	Ent	Efficiency1	Efficiency 2	Ent	Yld Fct	Ent	Blk Value	Ingr Fct	Conv Fct/VolAdj	Decay	Abn
0	06/22/06 13:25	ALPHA	13	14	GPC10B	1.5	N	N	4.0178E-01	1.0000E+00	N	100%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			100	500			Y		(1.349E-02)	(0.000E+00)		8%			(0.000E+00)	47.988647		

Sq	Calc Date	Parameter	Avg	Sa Act	Q	Net Cnt Rt	Dpm Wo Blk	Dpm-Blk	Vol Used	Yield,EnFct	Chem Yld,EFctU	IDC/ILcC	BlkLcC/MDC	StdDvMdC/LcC
	06/22/06	ALPHA	R	**5.487841**		1.02000E-01	0.253873	0.253873	1.00 Sa	100%		5.644373		
				(2.061862)		(3.6824E-02)	(0.094262)	(0.094262)	(0.028284)			2.094408		

Sq	Status	Method	Matrix	Protocol	Equation Set	Wrk Ord	Units/Matrix	QC/BB	Sa/On Date	AnalysisDate/PptWt	Sep1/Sep2 Date	QC/Tracer Vial	Mult/EntYld	Total/Analy Vol	Final/Count Vol
14	Calc	S7	FILTER	*STLE	GabWoBS	**H67QN1AA**	**PCI/SA**	**B**	05/22/06 10:10	06/22/06 12:35			1	1.00 Sa	
0,INTRA-LAB BLANK					,J6F120000-132		FILTER			00.1				1.00 Sa	

Sq	Cnt Date	Parameter	Sample Cnt	Bkgrnd Cnt	Instr	Geom	Trc/Av	Ent	Efficiency1	Efficiency 2	Ent	Yld Fct	Ent	Blk Value	Ingr Fct	Conv Fct/VolAdj	Decay	Abn
0	06/22/06 13:25	ALPHA	2	18	GPC10C	1.5	N	N	3.8874E-01	1.0000E+00	N	100%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			100	500			Y		(1.295E-02)	(0.000E+00)		8%			(0.000E+00)	1.00		

Sq	Calc Date	Parameter	Avg	Sa Act	Q	Net Cnt Rt	Dpm Wo Blk	Dpm-Blk	Vol Used	Yield,EnFct	Chem Yld,EFctU	IDC/ILcC	BlkLcC/MDC	StdDvMdC/LcC
	06/22/06	ALPHA	R	**-0.01854**	**U4**	-1.60000E-02	-0.041159	-0.041159	1.00 Sa	100%		0.133635		
				(0.019203)		(1.6492E-02)	(0.042575)	(0.042575)	(0.017321)			0.051147		

Sq	Status	Method	Matrix	Protocol	Equation Set	Wrk Ord	Units/Matrix	QC/BB	Sa/On Date	AnalysisDate/PptWt	Sep1/Sep2 Date	QC/Tracer Vial	Mult/EntYld	Total/Analy Vol	Final/Count Vol
15	Calc	S7	FILTER	*STLE	GabWoBS	**H67QN1AC**	**PCI/SA**	**S**	05/22/06 10:10	06/22/06 12:35		ASC0391	1	1.00 Sa	
0,INTRA-LAB CHECK					,J6F120000-132		FILTER			00.8		ASC0391 Alq		1.00 Sa	

Sq	Cnt Date	Parameter	Sample Cnt	Bkgrnd Cnt	Instr	Geom	Trc/Av	Ent	Efficiency1	Efficiency 2	Ent	Yld Fct	Ent	Blk Value	Ingr Fct	Conv Fct/VolAdj	Decay	Abn
0	06/22/06 13:25	ALPHA	208	22	GPC10D	1.5	N	N	4.1301E-01	1.0000E+00	N	100%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			100	500			Y		(1.201E-02)	(0.000E+00)		8%			(0.000E+00)	1.00		

() - (1s Uncertainities), Q - Qualifier, U Result is Less Than Lc = 1.645 * TPU
IDC - Instrument Detection Level in Conc Units, MLcC - Method Decision Level in Conc Units, MDC- Minimum Detectable Concentration
Sr-89 Counts are Derived from the Combination of Each Sr-89/90 and Y-90 Count, All Result Digits May Not be Significants, Date/Time - mm/dd/yy hh:mm, 24hr Time

RecCnt:15

RADCALC v4.8.24
STL Richland

Batch Nbr: 6163132

Alpha Beta, Alpha by GPC-Am , Calculated Results

6/22/2006 5:00:14 PM

Sq	Calc Date	Parameter	Avg	Sa Act	Q	Net Cnt Rt	Dpm Wo Blk	Dpm-Blk	Vol Used	Yield,EnFct	Chem Yld,EFctU	IDC/ILcC	BlkLcC/MDC	StdDvMdC/LcC
	06/22/06	ALPHA	R	**2.220577**		2.03600E+00	4.929687	4.929687	1.00 Sa	100%	93%	0.135939		
				(0.272735)		(1.4453E-01)	(0.5464)	(0.5464)	(0.017321)			0.053223		

() - (1s Uncertainities), Q - Qualifier, U Result is Less Than Lc = 1.645 * TPU

IDC - Instrument Detection Level in Conc Units, MLcC - Method Decision Level in Conc Units, MDC- Minimum Detectable Concentration

Sr-89 Counts are Derived from the Combination of Each Sr-89/90 and Y-90 Count, All Result Digits May Not be Significants, Date/Time - mm/dd/yy hh:mm, 24hr Time

RecCnt:15

RADCALC v4.8.24

STL Richland

UST Number: H61AE1AE Isotope: 112 (QREPORT Rev 11-OCT-98)

Detector: 10-E File: [quad10.sample.E]H61AE1AE.112
Dish Size: 15 Bkg File: $DISK1:[QUAD10.BKGRND]CURRENT.E_15;4225

Cycle	Alpha	Beta	Min	Guard	Volts	Finish Date/Time
1	00026	00000	0100	00000	1000	22-JUN-2006 07:47:33.51

Bkg File: [quad10.bkgrnd]2006-06-22_0529.E_15 (QREPORT Rev 11-OCT-98)

Cycle	Count	Min	CPM	Guard	Volts	Date/Time
Bkg	00015	0500	0.03	00000	1000	22-JUN-2006 05:29:45.74

UST Number: H61AH1AE Isotope: 112 (QREPORT Rev 11-OCT-98)

Detector: 10-A File: [quad10.sample.A]H61AH1AE.112
Dish Size: 15 Bkg File: $DISK1:[QUAD10.BKGRND]CURRENT.A_15;4230

Cycle	Alpha	Beta	Min	Guard	Volts	Finish Date/Time
1	00013	00000	0100	00000	1000	22-JUN-2006 09:39:58.97

Bkg File: [quad10.bkgrnd]2006-06-22_0529.A_15 (QREPORT Rev 11-OCT-98)

Cycle	Count	Min	CPM	Guard	Volts	Date/Time
Bkg	00025	0500	0.05	00000	1000	22-JUN-2006 05:29:45.74

UST Number: H61AK1AE Isotope: 112 (QREPORT Rev 11-OCT-98)

Detector: 10-B File: [quad10.sample.B]H61AK1AE.112
Dish Size: 15 Bkg File: $DISK1:[QUAD10.BKGRND]CURRENT.B_15;4227

Cycle	Alpha	Beta	Min	Guard	Volts	Finish Date/Time
1	00009	00000	0100	00000	1000	22-JUN-2006 09:39:58.97

Bkg File: [quad10.bkgrnd]2006-06-22_0529.B_15 (QREPORT Rev 11-OCT-98)

Cycle	Count	Min	CPM	Guard	Volts	Date/Time
Bkg	00014	0500	0.03	00000	1000	22-JUN-2006 05:29:45.74

UST Number: H61AL1AE Isotope: 112 (QREPORT Rev 11-OCT-98)

Detector: 10-C File: [quad10.sample.C]H61AL1AE.112
Dish Size: 15 Bkg File: $DISK1:[QUAD10.BKGRND]CURRENT.C_15;4236

Cycle	Alpha	Beta	Min	Guard	Volts	Finish Date/Time
1	00018	00000	0100	00000	1000	22-JUN-2006 09:39:58.97

Bkg File: [quad10.bkgrnd]2006-06-22_0529.C_15 (QREPORT Rev 11-OCT-98)

Cycle	Count	Min	CPM	Guard	Volts	Date/Time
Bkg	00018	0500	0.04	00000	1000	22-JUN-2006 05:29:45.74

UST Number: H61AM1AE Isotope: 112 (QREPORT Rev 11-OCT-98)

Detector: 10-D File: [quad10.sample.D]H61AM1AE.112
Dish Size: 15 Bkg File: $DISK1:[QUAD10.BKGRND]CURRENT.D_15;4230

Cycle	Alpha	Beta	Min	Guard	Volts	Finish Date/Time
1	00021	00000	0100	00000	1000	22-JUN-2006 09:39:58.97

Bkg File: [quad10.bkgrnd]2006-06-22_0529.D_15 (QREPORT Rev 11-OCT-98)

Cycle	Count	Min	CPM	Guard	Volts	Date/Time
Bkg	00022	0500	0.04	00000	1000	22-JUN-2006 05:29:45.74

UST Number: H61AR1AE Isotope: 112 (QREPORT Rev 11-OCT-98)

Detector: 10-E File: [quad10.sample.E]H61AR1AE.112
Dish Size: 15 Bkg File: $DISK1:[QUAD10.BKGRND]CURRENT.E_15;4225

Cycle	Alpha	Beta	Min	Guard	Volts	Finish Date/Time
1	00013	00000	0100	00000	1000	22-JUN-2006 09:39:58.97

Bkg File: [quad10.bkgrnd]2006-06-22_0529.E_15 (QREPORT Rev 11-OCT-98)

Cycle	Count	Min	CPM	Guard	Volts	Date/Time
Bkg	00015	0500	0.03	00000	1000	22-JUN-2006 05:29:45.74

UST Number: H61AT1AE Isotope: 112 (QREPORT Rev 11-OCT-98)

Detector: 10-A File: [quad10.sample.A]H61AT1AE.112
Dish Size: 15 Bkg File: $DISK1:[QUAD10.BKGRND]CURRENT.A_15;4230

Cycle	Alpha	Beta	Min	Guard	Volts	Finish Date/Time
1	00001	00000	0100	00000	1000	22-JUN-2006 11:32:31.43

Bkg File: [quad10.bkgrnd]2006-06-22_0529.A_15 (QREPORT Rev 11-OCT-98)

Cycle	Count	Min	CPM	Guard	Volts	Date/Time
Bkg	00025	0500	0.05	00000	1000	22-JUN-2006 05:29:45.74

UST Number: H61AX1AE Isotope: 112 (QREPORT Rev 11-OCT-98)

Detector: 10-B File: [quad10.sample.B]H61AX1AE.112
Dish Size: 15 Bkg File: $DISK1:[QUAD10.BKGRND]CURRENT.B_15;4227

Cycle	Alpha	Beta	Min	Guard	Volts	Finish Date/Time
1	00012	00000	0100	00000	1000	22-JUN-2006 11:32:31.43

Bkg File: [quad10.bkgrnd]2006-06-22_0529.B_15 (QREPORT Rev 11-OCT-98)

Cycle	Count	Min	CPM	Guard	Volts	Date/Time
Bkg	00014	0500	0.03	00000	1000	22-JUN-2006 05:29:45.74

UST Number: H61A11AE Isotope: 112 (QREPORT Rev 11-OCT-98)

Detector: 10-C File: [quad10.sample.C]H61A11AE.112
Dish Size: 15 Bkg File: $DISK1:[QUAD10.BKGRND]CURRENT.C_15;4236

Cycle	Alpha	Beta	Min	Guard	Volts	Finish Date/Time
1	00023	00000	0100	00000	1000	22-JUN-2006 11:32:31.43

Bkg File: [quad10.bkgrnd]2006-06-22_0529.C_15 (QREPORT Rev 11-OCT-98)

Cycle	Count	Min	CPM	Guard	Volts	Date/Time
Bkg	00018	0500	0.04	00000	1000	22-JUN-2006 05:29:45.74

UST Number: H61A21AE Isotope: 112 (QREPORT Rev 11-OCT-98)

Detector: 10-D File: [quad10.sample.D]H61A21AE.112
Dish Size: 15 Bkg File: $DISK1:[QUAD10.BKGRND]CURRENT.D_15;4230

Cycle	Alpha	Beta	Min	Guard	Volts	Finish Date/Time
1	00015	00000	0100	00000	1000	22-JUN-2006 11:32:31.43

Bkg File: [quad10.bkgrnd]2006-06-22_0529.D_15 (QREPORT Rev 11-OCT-98)

Cycle	Count	Min	CPM	Guard	Volts	Date/Time
Bkg	00022	0500	0.04	00000	1000	22-JUN-2006 05:29:45.74

UST Number: H61A31AE Isotope: 112 (QREPORT Rev 11-OCT-98)

Detector: 10-E File: [quad10.sample.E]H61A31AE.112
Dish Size: 15 Bkg File: $DISK1:[QUAD10.BKGRND]CURRENT.E_15;4225

Cycle	Alpha	Beta	Min	Guard	Volts	Finish Date/Time
1	00005	00000	0100	00000	1000	22-JUN-2006 11:32:31.43

Bkg File: [quad10.bkgrnd]2006-06-22_0529.E_15 (QREPORT Rev 11-OCT-98)

Cycle	Count	Min	CPM	Guard	Volts	Date/Time
Bkg	00015	0500	0.03	00000	1000	22-JUN-2006 05:29:45.74

UST Number: H61A51AE Isotope: 112 (QREPORT Rev 11-OCT-98)

Detector: 10-A File: [quad10.sample.A]H61A51AE.112
Dish Size: 15 Bkg File: $DISK1:[QUAD10.BKGRND]CURRENT.A_15;4230

Cycle	Alpha	Beta	Min	Guard	Volts	Finish Date/Time
1	00014	00000	0100	00000	1000	22-JUN-2006 13:25:02.41

Bkg File: [quad10.bkgrnd]2006-06-22_0529.A_15 (QREPORT Rev 11-OCT-98)

Cycle	Count	Min	CPM	Guard	Volts	Date/Time
Bkg	00025	0500	0.05	00000	1000	22-JUN-2006 05:29:45.74

UST Number: H61A71AE Isotope: 112 (QREPORT Rev 11-OCT-98)

Detector: 10-B File: [quad10.sample.B]H61A71AE.112
Dish Size: 15 Bkg File: $DISK1:[QUAD10.BKGRND]CURRENT.B_15;4227

Cycle	Alpha	Beta	Min	Guard	Volts	Finish Date/Time
1	00013	00000	0100	00000	1000	22-JUN-2006 13:25:02.41

Bkg File: [quad10.bkgrnd]2006-06-22_0529.B_15 (QREPORT Rev 11-OCT-98)

Cycle	Count	Min	CPM	Guard	Volts	Date/Time
Bkg	00014	0500	0.03	00000	1000	22-JUN-2006 05:29:45.74

UST Number: H67QN1AA Isotope: 112 (QREPORT Rev 11-OCT-98)

Detector: 10-C File: [quad10.sample.C]H67QN1AA.112
Dish Size: 15 Bkg File: $DISK1:[QUAD10.BKGRND]CURRENT.C_15;4236

Cycle	Alpha	Beta	Min	Guard	Volts	Finish Date/Time
1	00002	00000	0100	00000	1000	22-JUN-2006 13:25:02.41

Bkg File: [quad10.bkgrnd]2006-06-22_0529.C_15 (QREPORT Rev 11-OCT-98)

Cycle	Count	Min	CPM	Guard	Volts	Date/Time
Bkg	00018	0500	0.04	00000	1000	22-JUN-2006 05:29:45.74

UST Number: H67QN1AC Isotope: 112 (QREPORT Rev 11-OCT-98)

Detector: 10-D File: [quad10.sample.D]H67QN1AC.112
Dish Size: 15 Bkg File: $DISK1:[QUAD10.BKGRND]CURRENT.D_15;4230

Cycle	Alpha	Beta	Min	Guard	Volts	Finish Date/Time
1	00208	00000	0100	00000	1000	22-JUN-2006 13:25:02.41

Bkg File: [quad10.bkgrnd]2006-06-22_0529.D_15 (QREPORT Rev 11-OCT-98)

Cycle	Count	Min	CPM	Guard	Volts	Date/Time
Bkg	00022	0500	0.04	00000	1000	22-JUN-2006 05:29:45.74

BETA

SAMPLE AND QC DATA

SEVERN TRENT STL

Data Review/Verification Checklist

RADIOCHEMISTRY, First Level Review

6/21/2006 4:24:24 PM

Lot No., Due Date: J6F080203; 07/05/2006

Client, Site: 536403; AIR MONITORING Yerington Mine

QC Batch No., Method Test: 6163134; RBETA-SR Beta by GPC-Sr/Y

SDG, Matrix: 31853; FILTER

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

6.0 Comments on any No response:
See NCM. 10-08216

First Level Review Pam Anderson **Date** 6.21.06

SEVERN TRENT STL

Data Review Checklist
RADIOCHEMISTRY
Second Level Review

QC Batch Number: 6163134

Review Item	Yes (√)	No (√)	N/A (√)
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 with contract acceptance criteria?	✓		
7. Is the LCS Minimum Detectable Activity ≤ the Contract Detection Limit?	✓		
8. Do the MS/MSD results and yields meet acceptance criteria?			✓
9. Do the duplicate sample results and yields meet acceptance criteria?			✓
C. Other			
1. Are all Nonconformances 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: See NCM

Second Level Review: Sherryl A Adam Date: 6-22-06

STL RICHLAND

6/15/2006 2:28:11 PM

Sample Preparation/Analysis

Balance Id:1120373922

536403, Brown and Caldwell , Brown & Caldwell

BD Gross Beta PrpRC5016/5014
S8 Gross Beta by GPC using Sr/Y-90 curve
01 STANDARD TEST SET

Pipet #: _____

AnalyDueDate: 07/04/2006

Sep1 DT/Tm Tech:

Batch: 6163134 FILTER pCi/sampl PM, Quote: SA , 63174

Sep2 DT/Tm Tech:

SEQ Batch, Test: None

Prep Tech: HansenM JSLOT

Work Order, Lot, Sample Date	Total Amt /Unit	Total Acidified/Unit	Initial Aliquot Amt/Unit	Adj Aliq Amt (Un-Acidified)	QC Tracer Prep Date	Count Time Min	Detector Id	Count On | Off (24hr) Circle	CR Analyst, Init/Date	Comments:
1 H61AE-1-AF J6F080203-1-SAMP	0.833sa,g	501.61sa,g	50.14g,in	0.0833g	Dish 1.5	PPT 3.3	100	32A	1654	6/20/06 GD
05/22/2006 10:10		AmtRec: FILTER		#Containers: 1				Scr:	Alpha:	Beta:
2 H61AH-1-AF J6F080203-2-SAMP	0.833sa,g	500.91sa,g	50.29g,in	0.0836g		3.4		32B		
05/22/2006 10:30		AmtRec: FILTER		#Containers: 1				Scr:	Alpha:	Beta:
3 H61AK-1-AF J6F080203-3-SAMP	0.833sa,g	503.01sa,g	50.00g,in	0.0828g		2.8		32C		
05/22/2006 10:45		AmtRec: FILTER		#Containers: 1				Scr:	Alpha:	Beta:
4 H61AL-1-AF J6F080203-4-SAMP	0.833sa,g	501.90sa,g	50.31g,in	0.0835g		3.2		32D		
05/22/2006 11:10		AmtRec: FILTER		#Containers: 1				Scr:	Alpha:	Beta:
5 H61AM-1-AF J6F080203-5-SAMP	0.833sa,g	502.63sa,g	50.72g,in	0.0841g		3.0		26A	1936	
05/22/2006 11:25		AmtRec: FILTER		#Containers: 1				Scr:	Alpha:	Beta:
6 H61AR-1-AF J6F080203-6-SAMP	0.833sa,g	501.95sa,g	50.29g,in	0.0835g		5.4		26B		
05/22/2006 11:35		AmtRec: FILTER		#Containers: 1				Scr:	Alpha:	Beta:
7 H61AT-1-AF J6F080203-7-SAMP	0.833sa,g	506.35sa,g	50.25g,in	0.0827g		0.9		26C		
05/22/2006 10:15		AmtRec: FILTER		#Containers: 1				Scr:	Alpha:	Beta:

STL RICHLAND

6/15/2006 2:28:12 PM

Sample Preparation/Analysis

Balance Id:1120373922

536403, Brown and Caldwell , Brown & Caldwell

BD Gross Beta PrpRC5016/5014
S8 Gross Beta by GPC using Sr/Y-90 curve
01 STANDARD TEST SET

Pipet #: _____

AnalyDueDate: 07/04/2006

Sep1 DT/Tm Tech:

Batch: 6163134 FILTER pCi/sampl PM, Quote: SA , 63174

Sep2 DT/Tm Tech:

SEQ Batch, Test: None

Prep Tech: HansenM

Work Order, Lot, Sample Date	Total Amt /Unit	Total Acidified/Unit	Initial Aliquot Amt/Unit	Adj Aliq Amt (Un-Acidified)	QC Tracer Prep Date	Count Time Min	Detector Id	Count On | Off (24hr) Circle	CR Analyst, Init/Date	Comments:
8 H61AX-1-AF J6F080203-8-SAMP 05/22/2006 10:00	0.833sa,g	509.07sa,g	50.24g,in	0.0822g	DISL 1.5	PPT 1.9	100 26D	1936	6/20/06 DW	
		AmtRec: FILTER	#Containers: 1				Scr:	Alpha:		Beta:
9 H61A1-1-AF J6F080203-9-SAMP 05/22/2006 10:25	0.833sa,g	500.52sa,g	50.15g,in	0.0835g		1.7	27A			
		AmtRec: FILTER	#Containers: 1				Scr:	Alpha:		Beta:
10 H61A2-1-AF J6F080203-10-SAMP 05/22/2006 10:40	0.833sa,g	504.58sa,g	50.40g,in	0.0832g		2.2	27B			
		AmtRec: FILTER	#Containers: 1				Scr:	Alpha:		Beta:
11 H61A3-1-AF J6F080203-11-SAMP 05/22/2006 11:20	0.833sa,g	500.54sa,g	50.03g,in	0.0833g		2.0	27C			
		AmtRec: FILTER	#Containers: 1				Scr:	Alpha:		Beta:
12 H61A5-1-AF J6F080203-12-SAMP 05/22/2006 11:30	0.833sa,g	502.68sa,g	50.32g,in	0.0834g		1.9	27D			
		AmtRec: FILTER	#Containers: 1				Scr:	Alpha:		Beta:
13 H61A7-1-AF J6F080203-13-SAMP 05/22/2006 10:05	0.833sa,g	502.48sa,g	50.05g,in	0.083g		2.1	28B			
		AmtRec: FILTER	#Containers: 1				Scr:	Alpha:		Beta:
14 H67QQ-1-AA-B J6F120000-134-BLK 05/22/2006 10:10			1.00sa,in	1.00sa		0.2	28C			
		AmtRec:	#Containers: 1				Scr:	Alpha:		Beta:

STL RICHLAND

6/15/2006 2:28:12 PM

Sample Preparation/Analysis

BD Gross Beta PrpRC5016/5014
S8 Gross Beta by GPC using Sr/Y-90 curve
01 STANDARD TEST SET

Balance Id:1120373922
Pipet #:
Sep1 DT/Tm Tech:
Sep2 DT/Tm Tech:
Prep Tech: ,HansenM

AnalyDueDate: 07/04/2006

Batch: 6163134 pCi/sampl
SEQ Batch, Test: None

Work Order, Lot, Sample Date	Total Amt /Unit	Total Acidified/Unit	Initial Aliquot Amt/Unit	Adj Aliq Amt (Un-Acidified)	QC Tracer Prep Date	Count Time Min	Detector Id	Count On | Off (24hr) Circle	CR Analyst, Init/Date	Comments:
15H67QQ-1-AC-C J6F120000-134-LCS			1.00sa,in	1.00sa	Disk BESB2832 06/15/06,pd 12/28/05,r	PPT 100 1.5 0.3	28D	1936	6/20/06	

05/22/2006 10:10 AmtRec: #Containers: 1 Scr: Alpha: Beta:

Comments:

All Clients for Batch:
536403, Brown and Caldwell Brown & Caldwell , SA , 63174

H61AE1AF-SAMP Constituent List:

BETA	RDL:5	pCi/sam	LCL:	UCL:	RPD:						
H67QQ1AA-BLK:											
BETA	RDL:5	pCi/sam	LCL:	UCL:	RPD:						
H67QQ1AC-LCS:											
Cs-137	RDL:	pCi/sam	LCL:70	UCL:130	RPD:20	Cs-137DA	RDL:	pCi/sam	LCL:70	UCL:130	RPD:20
Sr-90	RDL:	pCi/sam	LCL:70	UCL:130	RPD:20						

H61AE1AF-SAMP Calc Info:
Uncert Level (#s).: 2 Decay to SaDt: Y Blk Subt.: N Sci.Not.: Y ODRs: B
H67QQ1AA-BLK:
Uncert Level (#s).: 2 Decay to SaDt: Y Blk Subt.: N Sci.Not.: Y ODRs: B
H67QQ1AC-LCS:
Uncert Level (#s).: 2 Decay to SaDt: Y Blk Subt.: N Sci.Not.: Y ODRs: B

Approved By _____ Date: _____

Clouseau
Nonconformance Memo

SEVERN TRENT SERVICES

NCM #: **10-08216**
NCM Initiated By: Pam Anderson
Date Opened: 06/21/2006
Date Closed:

Classification: **Anomaly**
Status: **GLREVIEW**
Production Area: Environmental - Sep
Tests: Beta by GPC-Sr/Y
Lot #'s (Sample #'s): J6F080203 (1,10,11,12,13,2,3,4,5,6,7,8,9),
QC Batches: 6163134

Nonconformance: MDA not met
Subcategory: Data accepted

Problem Description / Root Cause

Name	Date	Description
Pam Anderson	06/21/2006	The CRDL is not met on any sample. All samples have results>MDA>CRDL except sample H61AT1AF . That sample has a MDA of 6.68 pCi/sa.

Corrective Action

Name	Date	Corrective Action
Pam Anderson	06/21/2006	Note in case narrative.

Client Notification Summary

Client	Project Manager	Notified	Response	How Notified	Note	Response	Response Note

Quality Assurance Verification

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

Approval History

Date Approved	Approved By	Position

Date Printed: 6/21/2006

6/21/2006 4:03:09 PM

ICOC Fraction Transfer/Status Report

ByDate: 6/21/2005, 6/26/2006, Batch: '6163134', User: *ALL Order By DateTimeAccepting

Q Batch	Work Ord	CurStatus	Accepting			Comments
6163134						
AC		**CalcC**	**HansenM**	6/13/2006 1:40:20 PM		
SC			wagarr	IsBatched	6/12/2006 3:36:55 PM	ICOC_RADCALC v4.8.24
SC			HansenM	InPrep2	6/13/2006 1:40:20 PM	RICH-RC-5016 REVISION 5
SC			ScottM	Prep2C	6/20/2006 1:01:31 PM	RICH-RC-5014 REVISION 6
SC			DAWKINSO	CalcC	6/20/2006 9:19:00 PM	RICH-RD-0003 REVISION 4
AC			**ScottM**	6/20/2006 1:01:31 PM		
AC			**DAWKINSO**	6/20/2006 9:19:00 PM		

AC: Accepting Entry; SC: Status Change

STL Richland

Richland Wa.

Grp Rec Cnt: 3

ICOCFractions v4.8.18

6/21/2006 4:03:08 PM

Rpt DB Transfer log (Batch Results)

SEVERN TRENT STL

SDG or Batch / Isotope	Rpt Db Id / Method	RTst	Qc	LotSample / Analysis Date	Client Id / Result	Matrix / Cnt Uncert	Received Date / Tot Uncert	Sample Date / Mda	Units	Expected	Yield	Volumes	
31853	**9H61A110**			**J6F0802039**	P-0638	FILTER	6/7/2006 10:00:00	5/22/2006 10:25:00 AM					
BETA	BDS8	0		6/20/2006 6:46:51 PM	**2.9132E+01**	2.343E+00	3.077E+00	6.219E+00	PCI/SA		1.0	1.0E+0	3.346E-2
31853	**9H61A210**			**J6F08020310**	P-0639	FILTER	6/7/2006 10:00:00	5/22/2006 10:40:00 AM					
BETA	BDS8	0		6/20/2006 6:46:51 PM	**3.4145E+01**	2.273E+00	4.155E+00	5.488E+00	PCI/SA		1.0	1.0E+0	3.32E-2
31853	**9H61A310**			**J6F08020311**	P-0641	FILTER	6/7/2006 10:00:00	5/22/2006 11:20:00 AM					
BETA	BDS8	0		6/20/2006 6:46:51 PM	**2.7213E+01**	2.278E+00	2.943E+00	6.204E+00	PCI/SA		1.0	1.0E+0	3.326E-2
31853	**9H61A510**			**J6F08020312**	P-0642	FILTER	6/7/2006 10:00:00	5/22/2006 11:30:00 AM					
BETA	BDS8	0		6/20/2006 6:46:51 PM	**2.9855E+01**	2.333E+00	3.123E+00	6.07E+00	PCI/SA		1.0	1.0E+0	3.339E-2
31853	**9H61A710**			**J6F08020313**	P-0643	FILTER	6/7/2006 10:00:00	5/22/2006 10:05:00 AM					
BETA	BDS8	0		6/20/2006 6:46:47 PM	**2.8799E+01**	2.356E+00	3.09E+00	6.278E+00	PCI/SA		1.0	1.0E+0	3.297E-2
31853	**9H61AE10**			**J6F0802031**	000466	FILTER	6/7/2006 10:00:00	5/22/2006 10:10:00 AM					
BETA	BDS8	0		6/20/2006 4:05:14 PM	**3.0937E+01**	2.41E+00	3.222E+00	6.21E+00	PCI/SA		1.0	1.0E+0	3.327E-2
31853	**9H61AH10**			**J6F0802032**	000467	FILTER	6/7/2006 10:00:00	5/22/2006 10:30:00 AM					
BETA	BDS8	0		6/20/2006 4:05:14 PM	**3.8297E+01**	2.569E+00	3.691E+00	6.172E+00	PCI/SA		1.0	1.0E+0	3.363E-2
31853	**9H61AK10**			**J6F0802033**	000468	FILTER	6/7/2006 10:00:00	5/22/2006 10:45:00 AM					
BETA	BDS8	0		6/20/2006 4:05:14 PM	**2.3712E+01**	2.175E+00	3.046E+00	6.067E+00	PCI/SA		1.0	1.0E+0	3.28E-2
31853	**9H61AL10**			**J6F0802034**	000469	FILTER	6/7/2006 10:00:00	5/22/2006 11:10:00 AM					
BETA	BDS8	0		6/20/2006 4:05:14 PM	**2.6018E+01**	2.395E+00	3.038E+00	7.005E+00	PCI/SA		1.0	1.0E+0	3.35E-2
31853	**9H61AM10**			**J6F0802035**	000470	FILTER	6/7/2006 10:00:00	5/22/2006 11:25:00 AM					
BETA	BDS8	0		6/20/2006 6:46:45 PM	**4.4033E+01**	2.729E+00	4.225E+00	6.697E+00	PCI/SA		1.0	1.0E+0	3.406E-2
31853	**9H61AR10**			**J6F0802036**	000471	FILTER	6/7/2006 10:00:00	5/22/2006 11:35:00 AM					
BETA	BDS8	0		6/20/2006 6:46:45 PM	**4.4882E+01**	2.784E+00	4.217E+00	6.616E+00	PCI/SA		1.0	1.0E+0	3.346E-2
31853	**9H61AT10**			**J6F0802037**	000472	FILTER	6/7/2006 10:00:00	5/22/2006 10:15:00 AM					
BETA	BDS8	0		6/20/2006 6:46:45 PM	**6.7795E-01**	1.519E+00	1.52E+00	6.677E+00	PCI/SA		1.0	1.0E+0	3.267E-2
31853	**9H61AX10**			**J6F0802038**	P-0637	FILTER	6/7/2006 10:00:00	5/22/2006 10:00:00 AM					
BETA	BDS8	0		6/20/2006 6:46:45 PM	**2.6735E+01**	2.345E+00	2.967E+00	6.443E+00	PCI/SA		1.0	1.0E+0	3.221E-2
31853	**H67QQ1AB**			**J6F120000134**	INTRA-LAB BLANK	FILTER	6/7/2006 10:00:00	5/22/2006 10:10:00 AM					
BETA	BDS8	0	B	6/20/2006 6:46:47 PM	**2.0057E-01**	1.252E-01	1.262E-01	5.232E-01	PCI/SA		1.0	1.0E+0	1.0E+0
31853	**H67QQ1CS**			**J6F120000134**	INTRA-LAB CHECK	FILTER	6/7/2006 10:00:00	5/22/2006 10:10:00 AM					
BETA	BDS8	0	S	6/20/2006 6:46:47 PM	**4.3931E+00**	2.484E-01	4.311E-01	5.528E-01	PCI/SA	4.6135E+00	1.0	1.0E+0	1.0E+0

6163134, **Samples Inserted | Updated | NotUpdated => 15 | 0 | 0,
**Results Inserted | ReTestInserted | Updated | NotInserted => 15 | 0 | 0 | 0.
**Diff RptDb | Qtims => .

Batch Nbr: 6163134

Alpha Beta, Beta by GPC-Sr/Y , Results
Summary Report

6/20/2006 9:03:36 PM

Status	Meth	Matrix	Wrk Ord	Parameter	Sa Act	Uncert	Q	Units	Av	ILcC	IDC	QC	Yield	RYld
Beta by GPC-Sr/Y				Richland Standard Gross Alpha/Beta Wo Blk Subt										
Calc	S8	FILTER	H61AE1AF	BETA	3.09E+01	(3.22E+00)		PCI/SA	R	2.94E+00	6.21E+00		100%	
Calc	S8	FILTER	H61AH1AF	BETA	3.83E+01	(3.69E+00)		PCI/SA	R	2.92E+00	6.17E+00		100%	
Calc	S8	FILTER	H61AK1AF	BETA	2.37E+01	(3.05E+00)		PCI/SA	R	2.87E+00	6.07E+00		100%	
Calc	S8	FILTER	H61AL1AF	BETA	2.60E+01	(3.04E+00)		PCI/SA	R	3.33E+00	7.00E+00		100%	
Calc	S8	FILTER	H61AM1AF	BETA	4.40E+01	(4.22E+00)		PCI/SA	R	3.19E+00	6.70E+00		100%	
Calc	S8	FILTER	H61AR1AF	BETA	4.49E+01	(4.22E+00)		PCI/SA	R	3.14E+00	6.62E+00		100%	
Calc	S8	FILTER	H61AT1AF	BETA	6.78E-01	(1.52E+00)	U4	PCI/SA	R	3.16E+00	6.68E+00	NO	100%	
Calc	S8	FILTER	H61AX1AF	BETA	2.67E+01	(2.97E+00)		PCI/SA	R	3.05E+00	6.44E+00		100%	
Calc	S8	FILTER	H61A11AF	BETA	2.91E+01	(3.08E+00)		PCI/SA	R	2.95E+00	6.22E+00		100%	
Calc	S8	FILTER	H61A21AF	BETA	3.41E+01	(4.15E+00)		PCI/SA	R	2.60E+00	5.49E+00		100%	
Calc	S8	FILTER	H61A31AF	BETA	2.72E+01	(2.94E+00)		PCI/SA	R	2.94E+00	6.20E+00		100%	
Calc	S8	FILTER	H61A51AF	BETA	2.99E+01	(3.12E+00)		PCI/SA	R	2.87E+00	6.07E+00		100%	
Calc	S8	FILTER	H61A71AF	BETA	2.88E+01	(3.09E+00)		PCI/SA	R	2.97E+00	6.28E+00		100%	
Calc	S8	FILTER	H67QQ1AA	BETA	2.01E-01	(1.26E-01)	U4	PCI/SA	R	2.48E-01	5.23E-01	B	100%	
Calc	S8	FILTER	H67QQ1AC	BETA	4.39E+00	(4.31E-01)		PCI/SA	R	2.62E-01	5.53E-01	S	100%	95%

* result > MDA > CRDL.

P Anderson
6-21-06

() - (1s Uncertainities)
IDC - Instrument Detection Level in Conc Units
MLcC- Method Decision Level in Conc Units
MDC - Minimum Detectable Concentration
*Std - Lc, MDC using StdDev for Set of Blanks

Q - Qualifier, U is Less Than Lc = 1.645*TPU
All Results Displayed to Three Digits Reguardless of Significants
Date/Time - mm/dd/yy hh:mm, 24hr Time

RecCnt:15
RADCALC v4.8.24
STL Richland

Batch Nbr: 6163134

Alpha Beta, Beta by GPC-Sr/Y , Calculated Results

6/20/2006 9:03:37 PM

Detailed Report

Sq	Status	Method	Matrix	Protocol	Equation Set	Wrk Ord	Units/Matrix	QC/BB	Sa/On Date	AnalysisDate/PptWt	Sep1/Sep2 Date	QC/Tracer Vial	Mult/EntYld	Total/Analy Vol	Final/Count Vol
1	Calc	S8	FILTER	*STLE	GabWoBS	**H61AE1AF**	**PCI/SA**		05/22/06 10:10	06/20/06 16:05			1	1.00 Sa	
536403,000466					,J6F080203-1 v4.8.24		FILTER			03.3				0.083265 Sa	

Sq	Cnt Date	Parameter	Sample Cnt	Bkgrnd Cnt	Instr	Geom	Trc/Av	Ent	Efficiency1	Efficiency 2	Ent	Yld Fct	Ent	Blk Value	Ingr Fct	Conv Fct/VolAdj	Decay	Abn
1	06/20/06 16:55	BETA	346	502	GPC32A	1.5	N	N	4.2947E-01	1.0000E+00	N	100%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			100	500			Y		(1.033E-02)	(0.000E+00)		5%			(0.000E+00)	12.00983		

Sq	Calc Date	Parameter	Avg	Sa Act	Q	Net Cnt Rt	Dpm Wo Blk	Dpm-Blk	Vol Used	Yield,EnFct	Chem Yld,EFctU	IDC/ILcC	BlkLcC/MDC	StdDvMdC/LcC
	06/20/06	BETA	R	**30.936806**		2.45600E+00	5.71863	5.71863	1.00 Sa	100%		6.210401		
				(3.222099)		(1.9133E-01)	(0.546942)	(0.546942)	(0.028284)			2.936262		

Sq	Status	Method	Matrix	Protocol	Equation Set	Wrk Ord	Units/Matrix	QC/BB	Sa/On Date	AnalysisDate/PptWt	Sep1/Sep2 Date	QC/Tracer Vial	Mult/EntYld	Total/Analy Vol	Final/Count Vol
2	Calc	S8	FILTER	*STLE	GabWoBS	**H61AH1AF**	**PCI/SA**		05/22/06 10:30	06/20/06 16:05			1	1.00 Sa	
536403,000467					,J6F080203-2 v4.8.24		FILTER			03.4				0.083631 Sa	

Sq	Cnt Date	Parameter	Sample Cnt	Bkgrnd Cnt	Instr	Geom	Trc/Av	Ent	Efficiency1	Efficiency 2	Ent	Yld Fct	Ent	Blk Value	Ingr Fct	Conv Fct/VolAdj	Decay	Abn
1	06/20/06 16:55	BETA	416	522	GPC32B	1.5	N	N	4.3824E-01	1.0000E+00	N	100%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			100	500			Y		(1.065E-02)	(0.000E+00)		5%			(0.000E+00)	11.957298		

Sq	Calc Date	Parameter	Avg	Sa Act	Q	Net Cnt Rt	Dpm Wo Blk	Dpm-Blk	Vol Used	Yield,EnFct	Chem Yld,EFctU	IDC/ILcC	BlkLcC/MDC	StdDvMdC/LcC
	06/20/06	BETA	R	**38.296883**		3.11600E+00	7.110232	7.110232	1.00 Sa	100%		6.172483		
				(3.691236)		(2.0902E-01)	(0.619449)	(0.619449)	(0.028284)			2.921441		

Sq	Status	Method	Matrix	Protocol	Equation Set	Wrk Ord	Units/Matrix	QC/BB	Sa/On Date	AnalysisDate/PptWt	Sep1/Sep2 Date	QC/Tracer Vial	Mult/EntYld	Total/Analy Vol	Final/Count Vol
3	Calc	S8	FILTER	*STLE	GabWoBS	**H61AK1AF**	**PCI/SA**		05/22/06 10:45	06/20/06 16:05			1	1.00 Sa	
536403,000468					,J6F080203-3 v4.8.24		FILTER			02.8				0.082802 Sa	

Sq	Cnt Date	Parameter	Sample Cnt	Bkgrnd Cnt	Instr	Geom	Trc/Av	Ent	Efficiency1	Efficiency 2	Ent	Yld Fct	Ent	Blk Value	Ingr Fct	Conv Fct/VolAdj	Decay	Abn
1	06/20/06 16:55	BETA	295	507	GPC32C	1.5	N	N	4.4416E-01	1.0000E+00	N	100%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			100	500			Y		(2.771E-02)	(0.000E+00)		5%			(0.000E+00)	12.077071		

Sq	Calc Date	Parameter	Avg	Sa Act	Q	Net Cnt Rt	Dpm Wo Blk	Dpm-Blk	Vol Used	Yield,EnFct	Chem Yld,EFctU	IDC/ILcC	BlkLcC/MDC	StdDvMdC/LcC
	06/20/06	BETA	R	**23.71217**		1.93600E+00	4.358761	4.358761	1.00 Sa	100%		6.06698		
				(3.04616)		(1.7756E-01)	(0.53032)	(0.53032)	(0.028284)			2.869233		

Sq	Status	Method	Matrix	Protocol	Equation Set	Wrk Ord	Units/Matrix	QC/BB	Sa/On Date	AnalysisDate/PptWt	Sep1/Sep2 Date	QC/Tracer Vial	Mult/EntYld	Total/Analy Vol	Final/Count Vol
4	Calc	S8	FILTER	*STLE	GabWoBS	**H61AL1AF**	**PCI/SA**		05/22/06 11:10	06/20/06 16:05			1	1.00 Sa	
536403,000469					,J6F080203-4 v4.8.24		FILTER			03.2				0.083499 Sa	

Sq	Cnt Date	Parameter	Sample Cnt	Bkgrnd Cnt	Instr	Geom	Trc/Av	Ent	Efficiency1	Efficiency 2	Ent	Yld Fct	Ent	Blk Value	Ingr Fct	Conv Fct/VolAdj	Decay	Abn
1	06/20/06 16:55	BETA	337	650	GPC32D	1.5	N	N	4.2920E-01	1.0000E+00	N	100%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			100	500			Y		(1.329E-02)	(0.000E+00)		5%			(0.000E+00)	11.976168		

() - (1s Uncertainities), Q - Qualifier, U Result is Less Than Lc = 1.645 * TPU

IDC - Instrument Detection Level in Conc Units, MLcC - Method Decision Level in Conc Units, MDC- Minimum Detectable Concentration

Sr-89 Counts are Derived from the Combination of Each Sr-89/90 and Y-90 Count, All Result Digits May Not be Significants, Date/Time - mm/dd/yy hh:mm, 24hr Time

RecCnt:4

RADCALC v4.8.24

STL Richland

Batch Nbr: 6163134

Alpha Beta, Beta by GPC-Sr/Y , Calculated Results

6/20/2006 9:03:37 PM

Sq	Calc Date	Parameter	Avg	Sa Act	Q	Net Cnt Rt	Dpm Wo Blk	Dpm-Blk	Vol Used	Yield,EnFct	Chem Yld,EFctU	IDC/ILcC	BlkLcC/MDC	StdDvMdC/LcC
	06/20/06	BETA	R	**26.017948**		2.07000E+00	4.822903	4.822903	1.00 Sa	100%		7.004504		
				(3.037616)		(1.9053E-01)	(0.526796)	(0.526796)	(0.028284)			3.333921		

Sq	Status	Method	Matrix	Protocol	Equation Set	Wrk Ord	Units/Matrix	QC/BB	Sa/On Date	AnalysisDate/PptWt	Sep1/Sep2 Date	QC/Tracer Vial	Mult/EntYld	Total/Analy Vol	Final/Count Vol
5	Calc	S8	FILTER	*STLE	GabWoBS	**H61AM1AF**	**PCI/SA**		05/22/06 11:25	06/20/06 18:46			1	1.00 Sa	
536403,000470					,J6F080203-5 v4.8.24		FILTER			03.0				0.084057 Sa	

Sq	Cnt Date	Parameter	Sample Cnt	Bkgrnd Cnt	Instr	Geom	Trc/Av	Ent	Efficiency1	Efficiency 2	Ent	Yld Fct	Ent	Blk Value	Ingr Fct	Conv Fct/VolAdj	Decay	Abn
1	06/20/06 19:36	BETA	509	677	GPC26A	1.5	N	N	4.5467E-01	1.0000E+00	N	100%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			100	500			Y		(1.552E-02)	(0.000E+00)		5%			(0.000E+00)	11.896636		

Sq	Calc Date	Parameter	Avg	Sa Act	Q	Net Cnt Rt	Dpm Wo Blk	Dpm-Blk	Vol Used	Yield,EnFct	Chem Yld,EFctU	IDC/ILcC	BlkLcC/MDC	StdDvMdC/LcC
	06/20/06	BETA	R	**44.032872**		3.73600E+00	8.216867	8.216867	1.00 Sa	100%		6.696639		
				(4.224771)		(2.3153E-01)	(0.711867)	(0.711867)	(0.028284)			3.190512		

Sq	Status	Method	Matrix	Protocol	Equation Set	Wrk Ord	Units/Matrix	QC/BB	Sa/On Date	AnalysisDate/PptWt	Sep1/Sep2 Date	QC/Tracer Vial	Mult/EntYld	Total/Analy Vol	Final/Count Vol
6	Calc	S8	FILTER	*STLE	GabWoBS	**H61AR1AF**	**PCI/SA**		05/22/06 11:35	06/20/06 18:46			1	1.00 Sa	
536403,000471					,J6F080203-6 v4.8.24		FILTER			05.4				0.083458 Sa	

Sq	Cnt Date	Parameter	Sample Cnt	Bkgrnd Cnt	Instr	Geom	Trc/Av	Ent	Efficiency1	Efficiency 2	Ent	Yld Fct	Ent	Blk Value	Ingr Fct	Conv Fct/VolAdj	Decay	Abn
1	06/20/06 19:36	BETA	481	594	GPC26B	1.5	N	N	4.3557E-01	1.0000E+00	N	100%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			100	500			Y		(1.217E-02)	(0.000E+00)		5%			(0.000E+00)	11.982124		

Sq	Calc Date	Parameter	Avg	Sa Act	Q	Net Cnt Rt	Dpm Wo Blk	Dpm-Blk	Vol Used	Yield,EnFct	Chem Yld,EFctU	IDC/ILcC	BlkLcC/MDC	StdDvMdC/LcC
	06/20/06	BETA	R	**44.881536**		3.62200E+00	8.315479	8.315479	1.00 Sa	100%		6.616107		
				(4.216875)		(2.2467E-01)	(0.702039)	(0.702039)	(0.028284)			3.142016		

Sq	Status	Method	Matrix	Protocol	Equation Set	Wrk Ord	Units/Matrix	QC/BB	Sa/On Date	AnalysisDate/PptWt	Sep1/Sep2 Date	QC/Tracer Vial	Mult/EntYld	Total/Analy Vol	Final/Count Vol
7	Calc	S8	FILTER	*STLE	GabWoBS	**H61AT1AF**	**PCI/SA**		05/22/06 10:15	06/20/06 18:46			1	1.00 Sa	
536403,000472					,J6F080203-7 v4.8.24		FILTER			00.9				0.082667 Sa	

Sq	Cnt Date	Parameter	Sample Cnt	Bkgrnd Cnt	Instr	Geom	Trc/Av	Ent	Efficiency1	Efficiency 2	Ent	Yld Fct	Ent	Blk Value	Ingr Fct	Conv Fct/VolAdj	Decay	Abn
1	06/20/06 19:36	BETA	114	544	GPC26C	1.5	N	N	4.1795E-01	1.0000E+00	N	100%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			100	500			Y		(1.032E-02)	(0.000E+00)		5%			(0.000E+00)	12.096779		

Sq	Calc Date	Parameter	Avg	Sa Act	Q	Net Cnt Rt	Dpm Wo Blk	Dpm-Blk	Vol Used	Yield,EnFct	Chem Yld,EFctU	IDC/ILcC	BlkLcC/MDC	StdDvMdC/LcC
	06/20/06	BETA	R	**0.677948**	**U4**	5.20000E-02	0.124417	0.124417	1.00 Sa	100%		6.67686		
				(1.519802)		(1.1652E-01)	(0.278867)	(0.278867)	(0.028284)			3.163651		

Sq	Status	Method	Matrix	Protocol	Equation Set	Wrk Ord	Units/Matrix	QC/BB	Sa/On Date	AnalysisDate/PptWt	Sep1/Sep2 Date	QC/Tracer Vial	Mult/EntYld	Total/Analy Vol	Final/Count Vol
8	Calc	S8	FILTER	*STLE	GabWoBS	**H61AX1AF**	**PCI/SA**		05/22/06 10:00	06/20/06 18:46			1	1.00 Sa	
536403,P-0637					,J6F080203-8 v4.8.24		FILTER			01.9				0.082209 Sa	

Sq	Cnt Date	Parameter	Sample Cnt	Bkgrnd Cnt	Instr	Geom	Trc/Av	Ent	Efficiency1	Efficiency 2	Ent	Yld Fct	Ent	Blk Value	Ingr Fct	Conv Fct/VolAdj	Decay	Abn

() - (1s Uncertainities), Q - Qualifier, U Result is Less Than Lc = 1.645 * TPU

IDC - Instrument Detection Level in Conc Units, MLcC - Method Decision Level in Conc Units, MDC- Minimum Detectable Concentration

Sr-89 Counts are Derived from the Combination of Each Sr-89/90 and Y-90 Count, All Result Digits May Not be Significants, Date/Time - mm/dd/yy hh:mm, 24hr Time

RecCnt:8

RADCALC v4.8.24

STL Richland

Batch Nbr: 6163134

Alpha Beta, Beta by GPC-Sr/Y , Calculated Results

6/20/2006 9:03:37 PM

1	06/20/06 19:36	BETA	312	520	GPC26D	1.5	N	N	4.2630E-01	1.0000E+00	N	100%	N		1.0000E+00	4.5045E-01	1.0000E+00
			100	500			Y		(8.756E-03)	(0.000E+00)		5%			(0.000E+00)	12.164181	

Sq	Calc Date	Parameter	Avg	Sa Act	Q	Net Cnt Rt	Dpm Wo Blk	Dpm-Blk	Vol Used	Yield,EnFct	Chem Yld,EFctU	IDC/ILcC	BlkLcC/MDC	StdDvMdC/LcC
	06/20/06	BETA	R	**26.73487**		2.08000E+00	4.8792	4.8792	1.00 Sa	100%		6.443474		
				(2.966751)		(1.8243E-01)	(0.502681)	(0.502681)	(0.028284)			3.049385		

Sq	Status	Method	Matrix	Protocol	Equation Set	Wrk Ord	Units/Matrix	QC/BB	Sa/On Date	AnalysisDate/PptWt	Sep1/Sep2 Date	QC/Tracer Vial	Mult/EntYld	Total/Analy Vol	Final/Count Vol
9	Calc	S8	FILTER	*STLE	GabWoBS	**H61A11AF**	**PCI/SA**		05/22/06 10:25	06/20/06 18:46			1	1.00 Sa	
536403,P-0638					,J6F080203-9 v4.8.24		FILTER			01.7				0.083463 Sa	

Sq	Cnt Date	Parameter	Sample Cnt	Bkgrnd Cnt	Instr	Geom	Trc/Av	Ent	Efficiency1	Efficiency 2	Ent	Yld Fct	Ent	Blk Value	Ingr Fct	Conv Fct/VolAdj	Decay	Abn
1	06/20/06 19:36	BETA	345	535	GPC27A	1.5	N	N	4.4091E-01	1.0000E+00	N	100%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			100	500			Y		(9.718E-03)	(0.000E+00)		5%			(0.000E+00)	11.981343		

Sq	Calc Date	Parameter	Avg	Sa Act	Q	Net Cnt Rt	Dpm Wo Blk	Dpm-Blk	Vol Used	Yield,EnFct	Chem Yld,EFctU	IDC/ILcC	BlkLcC/MDC	StdDvMdC/LcC
	06/20/06	BETA	R	**29.132414**		2.38000E+00	5.397894	5.397894	1.00 Sa	100%		6.2194		
				(3.076779)		(1.9142E-01)	(0.524853)	(0.524853)	(0.028284)			2.94559		

Sq	Status	Method	Matrix	Protocol	Equation Set	Wrk Ord	Units/Matrix	QC/BB	Sa/On Date	AnalysisDate/PptWt	Sep1/Sep2 Date	QC/Tracer Vial	Mult/EntYld	Total/Analy Vol	Final/Count Vol
10	Calc	S8	FILTER	*STLE	GabWoBS	**H61A21AF**	**PCI/SA**		05/22/06 10:40	06/20/06 18:46			1	1.00 Sa	
536403,P-0639					,J6F080203-10 v4.8.24		FILTER			02.2				0.083204 Sa	

Sq	Cnt Date	Parameter	Sample Cnt	Bkgrnd Cnt	Instr	Geom	Trc/Av	Ent	Efficiency1	Efficiency 2	Ent	Yld Fct	Ent	Blk Value	Ingr Fct	Conv Fct/VolAdj	Decay	Abn
1	06/20/06 19:36	BETA	426	541	GPC27B	1.5	N	N	5.0387E-01	1.0000E+00	N	100%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			100	500			Y		(3.959E-02)	(0.000E+00)		5%			(0.000E+00)	12.018617		

Sq	Calc Date	Parameter	Avg	Sa Act	Q	Net Cnt Rt	Dpm Wo Blk	Dpm-Blk	Vol Used	Yield,EnFct	Chem Yld,EFctU	IDC/ILcC	BlkLcC/MDC	StdDvMdC/LcC
	06/20/06	BETA	R	**34.145421**		3.17800E+00	6.307124	6.307124	1.00 Sa	100%		5.48808		
				(4.154736)		(2.1158E-01)	(0.722034)	(0.722034)	(0.028284)			2.599999		

Sq	Status	Method	Matrix	Protocol	Equation Set	Wrk Ord	Units/Matrix	QC/BB	Sa/On Date	AnalysisDate/PptWt	Sep1/Sep2 Date	QC/Tracer Vial	Mult/EntYld	Total/Analy Vol	Final/Count Vol
11	Calc	S8	FILTER	*STLE	GabWoBS	**H61A31AF**	**PCI/SA**		05/22/06 11:20	06/20/06 18:46			1	1.00 Sa	
536403,P-0641					,J6F080203-11 v4.8.24		FILTER			02.0				0.08326 Sa	

Sq	Cnt Date	Parameter	Sample Cnt	Bkgrnd Cnt	Instr	Geom	Trc/Av	Ent	Efficiency1	Efficiency 2	Ent	Yld Fct	Ent	Blk Value	Ingr Fct	Conv Fct/VolAdj	Decay	Abn
1	06/20/06 19:36	BETA	337	553	GPC27C	1.5	N	N	4.5010E-01	1.0000E+00	N	100%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			100	500			Y		(9.956E-03)	(0.000E+00)		5%			(0.000E+00)	12.010561		

Sq	Calc Date	Parameter	Avg	Sa Act	Q	Net Cnt Rt	Dpm Wo Blk	Dpm-Blk	Vol Used	Yield,EnFct	Chem Yld,EFctU	IDC/ILcC	BlkLcC/MDC	StdDvMdC/LcC
	06/20/06	BETA	R	**27.212868**		2.26400E+00	5.029959	5.029959	1.00 Sa	100%		6.203721		
				(2.942963)		(1.8950E-01)	(0.502884)	(0.502884)	(0.028284)			2.940738		

() - (1s Uncertainities), Q - Qualifier, U Result is Less Than Lc = 1.645 * TPU
IDC - Instrument Detection Level in Conc Units, MLcC - Method Decision Level in Conc Units, MDC- Minimum Detectable Concentration
Sr-89 Counts are Derived from the Combination of Each Sr-89/90 and Y-90 Count, All Result Digits May Not be Significants, Date/Time - mm/dd/yy hh:mm, 24hr Time

RecCnt:12

RADCALC v4.8.24
STL Richland

Batch Nbr: 6163134

Alpha Beta, Beta by GPC-Sr/Y , Calculated Results

6/20/2006 9:03:38 PM

Sq	Status	Method	Matrix	Protocol	Equation Set	Wrk Ord	Units/Matrix	QC/BB	Sa/On Date	AnalysisDate/PptWt	Sep1/Sep2 Date	QC/Tracer Vial	Mult/EntYld	Total/Analy Vol	Final/Count Vol
12	Calc	S8	FILTER	*STLE	GabWoBS	**H61A51AF**	**PCI/SA**		05/22/06 11:30	06/20/06 18:46			1	1.00 Sa	
536403,P-0642					,J6F080203-12 v4.8.24		FILTER			01.9				0.083386 Sa	

Sq	Cnt Date	Parameter	Sample Cnt	Bkgrnd Cnt	Instr	Geom	Trc/Av	Ent	Efficiency1	Efficiency 2	Ent	Yld Fct	Ent	Blk Value	Ingr Fct	Conv Fct/VolAdj	Decay	Abn
1	06/20/06 19:36	BETA	351	521	GPC27D	1.5	N	N	4.4656E-01	1.0000E+00	N	100%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			100	500			Y		(1.130E-02)	(0.000E+00)		5%			(0.000E+00)	11.992396		

Sq	Calc Date	Parameter	Avg	Sa Act	Q	Net Cnt Rt	Dpm Wo Blk	Dpm-Blk	Vol Used	Yield,EnFct	Chem Yld,EFctU	IDC/ILcC	BlkLcC/MDC	StdDvMdC/LcC
	06/20/06	BETA	R	**29.855037**		2.46800E+00	5.526689	5.526689	1.00 Sa	100%		6.069773		
				(3.123358)		(1.9283E-01)	(0.531391)	(0.531391)	(0.028284)			2.87268		

Sq	Status	Method	Matrix	Protocol	Equation Set	Wrk Ord	Units/Matrix	QC/BB	Sa/On Date	AnalysisDate/PptWt	Sep1/Sep2 Date	QC/Tracer Vial	Mult/EntYld	Total/Analy Vol	Final/Count Vol
13	Calc	S8	FILTER	*STLE	GabWoBS	**H61A71AF**	**PCI/SA**		05/22/06 10:05	06/20/06 18:46			1	1.00 Sa	
536403,P-0643					,J6F080203-13 v4.8.24		FILTER			02.1				0.082972 Sa	

Sq	Cnt Date	Parameter	Sample Cnt	Bkgrnd Cnt	Instr	Geom	Trc/Av	Ent	Efficiency1	Efficiency 2	Ent	Yld Fct	Ent	Blk Value	Ingr Fct	Conv Fct/VolAdj	Decay	Abn
1	06/20/06 19:36	BETA	336	525	GPC28B	1.5	N	N	4.3547E-01	1.0000E+00	N	100%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			100	500			Y		(1.084E-02)	(0.000E+00)		5%			(0.000E+00)	12.052293		

Sq	Calc Date	Parameter	Avg	Sa Act	Q	Net Cnt Rt	Dpm Wo Blk	Dpm-Blk	Vol Used	Yield,EnFct	Chem Yld,EFctU	IDC/ILcC	BlkLcC/MDC	StdDvMdC/LcC
	06/20/06	BETA	R	**28.798805**		2.31000E+00	5.304668	5.304668	1.00 Sa	100%		6.278179		
				(3.089642)		(1.8894E-01)	(0.525398)	(0.525398)	(0.028284)			2.971926		

Sq	Status	Method	Matrix	Protocol	Equation Set	Wrk Ord	Units/Matrix	QC/BB	Sa/On Date	AnalysisDate/PptWt	Sep1/Sep2 Date	QC/Tracer Vial	Mult/EntYld	Total/Analy Vol	Final/Count Vol
14	Calc	S8	FILTER	*STLE	GabWoBS	**H67QQ1AA**	**PCI/SA**	**B**	05/22/06 10:10	06/20/06 18:46			1	1.00 Sa	
0,INTRA-LAB BLANK					,J6F120000-134		FILTER			00.2				1.00 Sa	

Sq	Cnt Date	Parameter	Sample Cnt	Bkgrnd Cnt	Instr	Geom	Trc/Av	Ent	Efficiency1	Efficiency 2	Ent	Yld Fct	Ent	Blk Value	Ingr Fct	Conv Fct/VolAdj	Decay	Abn
1	06/20/06 19:36	BETA	128	542	GPC28C	1.5	N	N	4.4019E-01	1.0000E+00	N	100%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			100	500			Y		(2.153E-02)	(0.000E+00)		5%			(0.000E+00)	1.00		

Sq	Calc Date	Parameter	Avg	Sa Act	Q	Net Cnt Rt	Dpm Wo Blk	Dpm-Blk	Vol Used	Yield,EnFct	Chem Yld,EFctU	IDC/ILcC	BlkLcC/MDC	StdDvMdC/LcC
	06/20/06	BETA	R	**0.20057**	**U4**	1.96000E-01	0.445265	0.445265	1.00 Sa	100%		0.523156		
				(0.126171)		(1.2234E-01)	(0.279676)	(0.279676)	(0.017321)			0.247859		

Sq	Status	Method	Matrix	Protocol	Equation Set	Wrk Ord	Units/Matrix	QC/BB	Sa/On Date	AnalysisDate/PptWt	Sep1/Sep2 Date	QC/Tracer Vial	Mult/EntYld	Total/Analy Vol	Final/Count Vol
15	Calc	S8	FILTER	*STLE	GabWoBS	**H67QQ1AC**	**PCI/SA**	**S**	05/22/06 10:10	06/20/06 18:46		BESB2832	1	1.00 Sa	
0,INTRA-LAB CHECK					,J6F120000-134		FILTER			00.3		BESB2832 Alq		1.00 Sa	

Sq	Cnt Date	Parameter	Sample Cnt	Bkgrnd Cnt	Instr	Geom	Trc/Av	Ent	Efficiency1	Efficiency 2	Ent	Yld Fct	Ent	Blk Value	Ingr Fct	Conv Fct/VolAdj	Decay	Abn
1	06/20/06 19:36	BETA	529	568	GPC28D	1.5	N	N	4.2594E-01	1.0000E+00	N	100%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			100	500			Y		(2.226E-02)	(0.000E+00)		5%			(0.000E+00)	1.00		

() - (1s Uncertainities), Q - Qualifier, U Result is Less Than Lc = 1.645 * TPU
IDC - Instrument Detection Level in Conc Units, MLcC - Method Decision Level in Conc Units, MDC- Minimum Detectable Concentration
Sr-89 Counts are Derived from the Combination of Each Sr-89/90 and Y-90 Count, All Result Digits May Not be Significants, Date/Time - mm/dd/yy hh:mm, 24hr Time

RecCnt:15

RADCALC v4.8.24
STL Richland

Batch Nbr: 6163134

Alpha Beta, Beta by GPC-Sr/Y , Calculated Results

6/20/2006 9:03:38 PM

Sq	Calc Date	Parameter	Avg	Sa Act	Q	Net Cnt Rt	Dpm Wo Blk	Dpm-Blk	Vol Used	Yield,EnFct	Chem Yld,EFctU	IDC/ILcC	BlkLcC/MDC	StdDvMdC/LcC
	06/20/06	BETA	R	**4.393063**		4.15400E+00	9.752609	9.752609	1.00 Sa	100%	95%	0.552794		
				(0.431067)		(2.3489E-01)	(0.895352)	(0.895352)	(0.017321)			0.262223		

() - (1s Uncertainities), Q - Qualifier, U Result is Less Than Lc = 1.645 * TPU
IDC - Instrument Detection Level in Conc Units, MLcC - Method Decision Level in Conc Units, MDC- Minimum Detectable Concentration
Sr-89 Counts are Derived from the Combination of Each Sr-89/90 and Y-90 Count, All Result Digits May Not be Significants, Date/Time - mm/dd/yy hh:mm, 24hr Time

RecCnt:15

RADCALC v4.8.24
STL Richland

STL RICHLAND
Richland, WA

GPC Report
20-JUN-2006 16:55:14.00

LBPRINT - Rev#: 2.4

Sample ID	Isotope	Geometry
H61AE1AF	111	15

Sample Count Date/Time	Beta Counts	Count Duration*	Beta Bkg Counts	Bkg Count Duration*	Instr ID
20-JUN-2006 16:55:14.00	346	100.00	502	500.00	32A

Alpha Counts	Alpha Bkg Counts	Guard Counts	HV
2	15	3122	1492

Bkg Count Date/Time
20-JUN-2006 05:50:01.00

Count Date/Times are the Count Completion Date and Time.

* Count Durations in Minutes.

STL RICHLAND
Richland, WA

GPC Report
20-JUN-2006 16:55:14.00

LBPRINT - Rev#: 2.4

Sample ID	Isotope	Geometry
H61AH1AF	111	15

Sample Count Date/Time	Beta Counts	Count Duration*	Beta Bkg Counts	Bkg Count Duration*	Instr ID
20-JUN-2006 16:55:14.00	416	100.00	522	500.00	32B

Alpha Counts	Alpha Bkg Counts	Guard Counts	HV
2	14	3122	1492

Bkg Count Date/Time
20-JUN-2006 05:50:01.00

Count Date/Times are the Count Completion Date and Time.

* Count Durations in Minutes.

STL RICHLAND
Richland, WA

GPC Report
20-JUN-2006 16:55:14.00

LBPRINT - Rev#: 2.4

Sample ID	Isotope	Geometry
H61AK1AF	111	15

Sample Count Date/Time	Beta Counts	Count Duration*	Beta Bkg Counts	Bkg Count Duration*	Instr ID
20-JUN-2006 16:55:14.00	295	100.00	507	500.00	32C

Alpha Counts	Alpha Bkg Counts	Guard Counts	HV
3	13	3122	1492

Bkg Count Date/Time
20-JUN-2006 05:50:01.00

Count Date/Times are the Count Completion Date and Time.

* Count Durations in Minutes.

STL RICHLAND
Richland, WA

GPC Report
20-JUN-2006 16:55:14.00

LBPRINT - Rev#: 2.4

Sample ID	Isotope	Geometry
H61AL1AF	111	15

Sample Count Date/Time	Beta Counts	Count Duration*	Beta Bkg Counts	Bkg Count Duration*	Instr ID
20-JUN-2006 16:55:14.00	337	100.00	650	500.00	32D

Alpha Counts	Alpha Bkg Counts	Guard Counts	HV
1	17	3122	1492

Bkg Count Date/Time
20-JUN-2006 05:50:01.00

Count Date/Times are the Count Completion Date and Time.

* Count Durations in Minutes.

STL RICHLAND
Richland, WA

GPC Report
20-JUN-2006 19:36:45.00

LBPRINT - Rev#: 2.4

Sample ID	Isotope	Geometry
H61AM1AF	111.15	

Sample Count Date/Time	Beta Counts	Count Duration*	Beta Bkg Counts	Bkg Count Duration*	Instr ID
20-JUN-2006 19:36:45.00	509	100.00	677	500.00	26A

Alpha Counts	Alpha Bkg Counts	Guard Counts	HV
5	27	3254	1500

Bkg Count Date/Time
20-JUN-2006 05:53:03.00

Count Date/Times are the Count Completion Date and Time.

* Count Durations in Minutes.

STL RICHLAND
Richland, WA

GPC Report
20-JUN-2006 19:36:45.00

LBPRINT - Rev#: 2.4

Sample ID	Isotope	Geometry
H61AR1AF	111	15

Sample Count Date/Time	Beta Counts	Count Duration*	Beta Bkg Counts	Bkg Count Duration*	Instr ID
20-JUN-2006 19:36:45.00	481	100.00	594	500.00	26B

Alpha Counts	Alpha Bkg Counts	Guard Counts	HV
9	24	3254	1500

Bkg Count Date/Time
20-JUN-2006 05:53:03.00

Count Date/Times are the Count Completion Date and Time.

* Count Durations in Minutes.

STL RICHLAND
Richland, WA

GPC Report
20-JUN-2006 19:36:45.00

LBPRINT - Rev#: 2.4

Sample ID	Isotope	Geometry
H61AT1AF	111	15

Sample Count Date/Time	Beta Counts	Count Duration*	Beta Bkg Counts	Bkg Count Duration*	Instr ID
20-JUN-2006 19:36:45.00	114	100.00	544	500.00	26C

Alpha Counts	Alpha Bkg Counts	Guard Counts	HV
5	16	3254	1500

Bkg Count Date/Time
20-JUN-2006 05:53:03.00

Count Date/Times are the Count Completion Date and Time.

* Count Durations in Minutes.

STL RICHLAND
Richland, WA

GPC Report
20-JUN-2006 19:36:45.00

LBPRINT - Rev#: 2.4

Sample ID	Isotope	Geometry
H61AX1AF	111	15

Sample Count Date/Time	Beta Counts	Count Duration*	Beta Bkg Counts	Bkg Count Duration*	Instr ID
20-JUN-2006 19:36:45.00	312	100.00	520	500.00	26D

Alpha Counts	Alpha Bkg Counts	Guard Counts	HV
2	18	3254	1500

Bkg Count Date/Time
20-JUN-2006 05:53:03.00

Count Date/Times are the Count Completion Date and Time.

* Count Durations in Minutes.

STL RICHLAND
Richland, WA

GPC Report
20-JUN-2006 19:36:51.00

LBPRINT - Rev#: 2.4

Sample ID	Isotope	Geometry
H61A11AF	111	15

Sample Count Date/Time	Beta Counts	Count Duration*	Beta Bkg Counts	Bkg Count Duration*	Instr ID
20-JUN-2006 19:36:51.00	345	100.00	535	500.00	27A

Alpha Counts	Alpha Bkg Counts	Guard Counts	HV
2	27	3264	1500

Bkg Count Date/Time
20-JUN-2006 05:53:07.00

Count Date/Times are the Count Completion Date and Time.

* Count Durations in Minutes.

STL RICHLAND
Richland, WA

GPC Report
20-JUN-2006 19:36:51.00

LBPRINT - Rev#: 2.4

Sample ID	Isotope	Geometry
H61A21AF	111	15

Sample Count Date/Time	Beta Counts	Count Duration*	Beta Bkg Counts	Bkg Count Duration*	Instr ID
20-JUN-2006 19:36:51.00	426	100.00	541	500.00	27B

Alpha Counts	Alpha Bkg Counts	Guard Counts	HV
8	39	3264	1500

Bkg Count Date/Time
20-JUN-2006 05:53:07.00

Count Date/Times are the Count Completion Date and Time.

* Count Durations in Minutes.

STL RICHLAND
Richland, WA

GPC Report
20-JUN-2006 19:36:51.00

LBPRINT - Rev#: 2.4

Sample ID	Isotope	Geometry
H61A31AF	111	15

Sample Count Date/Time	Beta Counts	Count Duration*	Beta Bkg Counts	Bkg Count Duration*	Instr ID
20-JUN-2006 19:36:51.00	337	100.00	553	500.00	27C

Alpha Counts	Alpha Bkg Counts	Guard Counts	HV
1	16	3264	1500

Bkg Count Date/Time
20-JUN-2006 05:53:07.00

Count Date/Times are the Count Completion Date and Time.

* Count Durations in Minutes.

STL RICHLAND
Richland, WA

GPC Report
20-JUN-2006 19:36:51.00

LBPRINT - Rev#: 2.4

Sample ID	Isotope	Geometry
H61A51AF	111	15

Sample Count Date/Time	Beta Counts	Count Duration*	Beta Bkg Counts	Bkg Count Duration*	Instr ID
20-JUN-2006 19:36:51.00	351	100.00	521	500.00	27D

Alpha Counts	Alpha Bkg Counts	Guard Counts	HV
3	13	3264	1500

Bkg Count Date/Time
20-JUN-2006 05:53:07.00

Count Date/Times are the Count Completion Date and Time.

* Count Durations in Minutes.

STL RICHLAND
Richland, WA

GPC Report
20-JUN-2006 19:36:47.00

LBPRINT - Rev#: 2.4

Sample ID	Isotope	Geometry
H61A71AF	111	15

Sample Count Date/Time	Beta Counts	Count Duration*	Beta Bkg Counts	Bkg Count Duration*	Instr ID
20-JUN-2006 19:36:47.00	336	100.00	525	500.00	28B

Alpha Counts	Alpha Bkg Counts	Guard Counts	HV
13	24	3117	1500

Bkg Count Date/Time
20-JUN-2006 05:53:01.00

Count Date/Times are the Count Completion Date and Time.

* Count Durations in Minutes.

STL RICHLAND
Richland, WA

GPC Report
20-JUN-2006 19:36:47.00

LBPRINT - Rev#: 2.4

Sample ID	Isotope	Geometry
H67QQ1AA	111	15

Sample Count Date/Time	Beta Counts	Count Duration*	Beta Bkg Counts	Bkg Count Duration*	Instr ID
20-JUN-2006 19:36:47.00	128	100.00	542	500.00	28C

Alpha Counts	Alpha Bkg Counts	Guard Counts	HV
2	21	3117	1500

Bkg Count Date/Time
20-JUN-2006 05:53:01.00

Count Date/Times are the Count Completion Date and Time.

* Count Durations in Minutes.

STL RICHLAND
Richland, WA

GPC Report
20-JUN-2006 19:36:47.00

LBPRINT - Rev#: 2.4

Sample ID	Isotope	Geometry
H67QQ1AC	111	15

Sample Count Date/Time	Beta Counts	Count Duration*	Beta Bkg Counts	Bkg Count Duration*	Instr ID
20-JUN-2006 19:36:47.00	529	100.00	568	500.00	28D

Alpha Counts	Alpha Bkg Counts	Guard Counts	HV
8	16	3117	1500

Bkg Count Date/Time
20-JUN-2006 05:53:01.00

Count Date/Times are the Count Completion Date and Time.

* Count Durations in Minutes.

RADIUM 228

SAMPLE AND QC DATA

SEVERN TRENT STL

Data Review/Verification Checklist

RADIOCHEMISTRY, First Level Review

6/29/2006 9:43:55 AM

Lot No., Due Date: J6F080203; 07/05/2006

Client, Site: 536403; AIR MONITORING Yerington Mine

QC Batch No., Method Test: 6163140; RRA228 Ra-228 by GPC

SDG, Matrix: 31853; FILTER

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:

First Level Review Pam Anderson **Date** 6 29 06

SEVERN TRENT STL

Data Review Checklist
RADIOCHEMISTRY
Second Level Review

QC Batch Number: 616,3140

Review Item	Yes (√)	No (√)	N/A (√)
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 with contract acceptance criteria?	✓		
7. Is the LCS Minimum Detectable Activity ≤ the Contract Detection Limit?	✓		
8. Do the MS/MSD results and yields meet acceptance criteria?			✓
9. Do the duplicate sample results and yields meet acceptance criteria?			✓
C. Other 1. Are all Nonconformances 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: Sheryl A Adam Date: 6-29-06

STL RICHLAND

6/16/2006 7:38:01 AM

Sample Preparation/Analysis

Balance Id:1120373922,1120373922,2061

536403, Brown and Caldwell , Brown & Caldwell

BX Ra-226/228 PrpRC5016, SepRC5005
TF Radium-228 by GPC
01 STANDARD TEST SET

Pipet #: _____

AnalyDueDate: 07/04/2006

Sep1 DT/Tm Tech: 6-19-6M 10:45

Batch: 6163140 FILTER pCi/sampl PM, Quote: SA , 63174

Sep2 DT/Tm Tech: 10:40 M 6.28.6

SEQ Batch, Test: 6163137, BXTE

Prep Tech: HansenM,TamosaitisM

Work Order, Lot, Sample Date	Total Amt /Unit	Total Acidified/Unit	Initial Aliquot Amt/Unit	Adj Aliq Amt (Un-Acidified)	QC Tracer Prep Date	Count Time Min	Detector Id	Count On | Off (24hr) Circle	CR Analyst, Init/Date	Comments:
1 H61AE-1-AD J6F080203-1-SAMP	0.833sa,g	501.61sa,g	150.05g,in	0.2492g	RATA22579 06/13/06	in	30.7	3x50	TA 1521 6/28/06	
					0.8523				TA 0616 6/29/06	
05/22/2006 10:10		AmtRec: FILTER		#Containers: 1			Scr:	Alpha:		Beta:
2 H61AH-1-AD J6F080203-2-SAMP	0.833sa,g	500.91sa,g	150.21g,in	0.2498g	RATA22580 06/13/06		31.1		TB 1521 6/28/06	
					0.8494				TB 0616 6/29/06	
05/22/2006 10:30		AmtRec: FILTER		#Containers: 1			Scr:	Alpha:		Beta:
3 H61AK-1-AD J6F080203-3-SAMP	0.833sa,g	503.01sa,g	150.20g,in	0.2487g	RATA22581 06/13/06		31.1		TC 1521 6/28/06	
					0.8422				TC 0616 6/29/06	
05/22/2006 10:45		AmtRec: FILTER		#Containers: 1			Scr:	Alpha:		Beta:
4 H61AL-1-AD J6F080203-4-SAMP	0.833sa,g	501.90sa,g	150.00g,in	0.249g	RATA22582 06/13/06		30.8		1A 1521 6/28/06	
					0.9223				1A 0616 6/29/06	
05/22/2006 11:10		AmtRec: FILTER		#Containers: 1			Scr:	Alpha:		Beta:

STL Richland Key: In - Initial Amt, fi - Final Amt, di - Diluted Amt, s1 - Sep1, s2 - Sep2 Page 1 ISV - Insufficient Volume for Analysis WO Cnt: 4

Richland Wa. pd - Prep Dt, r - Reference Dt, ec-Enrichment Cell, ct-Cocktailed Added ICOC v4.8.24

STL RICHLAND

6/16/2006 7:38:01 AM

Sample Preparation/Analysis

Balance Id:1120373922,1120373922,1120

536403, Brown and Caldwell . Brown & Caldwell

BX Ra-226/228 PrpRC5016, SepRC5005
TF Radium-228 by GPC
01 STANDARD TEST SET

Pipet #: _____

AnalyDueDate: 07/04/2006

Sep1 DT/Tm Tech:

Batch: 6163140 FILTER pCi/sampl PM, Quote: SA , 63174

Sep2 DT/Tm Tech:

SEQ Batch, Test: 6163137, BXTE

Prep Tech: HansenM,TamosaitisM

Work Order, Lot, Sample Date	Total Amt /Unit	Total Acidified/Unit	Initial Aliquot Amt/Unit	Adj Aliq Amt (Un-Acidified)	QC Tracer Prep Date	Count Time Min	Detector Id	Count On | Off (24hr) Circle	CR Analyst, Init/Date	Comments:
5 H61AM-1-AD J6F080203-5-SAMP	0.833sa,g	502.63sa,g	150.07g,in	0.2487g	RATA22583 06/13/06	in	29.9	3x50	IC 1521 6/28/06	
					0.8539				IC 0616 6/29/06	
05/22/2006 11:25		AmtRec: FILTER		#Containers: 1			Scr:	Alpha:		Beta:
6 H61AR-1-AD J6F080203-6-SAMP	0.833sa,g	501.95sa,g	150.42g,in	0.2496g	RATA22584 06/13/06		30.7		ID 1521 6/28/06	
					0.9499				ID 0616 6/29/06	
05/22/2006 11:35		AmtRec: FILTER		#Containers: 1			Scr:	Alpha:		Beta:
7 H61AT-1-AD J6F080203-7-SAMP	0.833sa,g	506.35sa,g	150.30g,in	0.2473g	RATA22585 06/13/06		30.8		2A 1521 6/28/06	
					0.7839				2A 0616 6/29/06	
05/22/2006 10:15		AmtRec: FILTER		#Containers: 1			Scr:	Alpha:		Beta:
8 H61AX-1-AD J6F080203-8-SAMP	0.833sa,g	509.07sa,g	150.03g,in	0.2455g	RATA22586 06/13/06		31.0		2B 1521 6/28/06	
					0.8727				2B 0616 6/29/06	
05/22/2006 10:00		AmtRec: FILTER		#Containers: 1			Scr:	Alpha:		Beta:

STL Richland Key: In - Initial Amt, fi - Final Amt, di - Diluted Amt, s1 - Sep1, s2 - Sep2 Page 2 ISV - Insufficient Volume for Analysis WO Cnt: 8

Richland Wa. pd - Prep Dt, r - Reference Dt, ec-Enrichment Cell, ct-Cocktailed Added ICOC v4.8.24

STL RICHLAND

6/16/2006 7:38:02 AM

Sample Preparation/Analysis

536403, Brown and Caldwell , Brown & Caldwell

BX Ra-226/228 PrpRC5016, SepRC5005
TF Radium-228 by GPC
01 STANDARD TEST SET

Balance Id:1120373922,1120373922,1120

Pipet #:

AnalyDueDate: 07/04/2006

Sep1 DT/Tm Tech:

Batch: 6163140 FILTER pCi/sampl PM, Quote: SA , 63174
SEQ Batch, Test: 6163137, BXTE

Sep2 DT/Tm Tech:

Prep Tech: HansenM,TamosaitisM

Work Order, Lot, Sample Date	Total Amt /Unit	Total Acidified/Unit	Initial Aliquot Amt/Unit	Adj Aliq Amt (Un-Acidified)	QC Tracer Prep Date	Count Time Min	Detector Id	Count On | Off (24hr) Circle	CR Analyst, Init/Date	Comments:
9 H61A1-1-AD J6F080203-9-SAMP	0.833sa,g	500.52sa,g	150.15g,in	0.2499g	RATA22587 06/13/06		in 31.4	3x50 2c 1521 6/26/06	2c 0616 6/26/06	
					0.8892					
05/22/2006 10:25		AmtRec: FILTER	#Containers: 1				Scr:	Alpha:		Beta:
10H61A2-1-AD J6F080203-10-SAMP	0.833sa,g	504.58sa,g	150.01g,in	0.2476g	RATA22588 06/13/06		30.9	2D 1521 6/26/06	2D 0616 6/26/06	
					0.9829					
05/22/2006 10:40		AmtRec: FILTER	#Containers: 1				Scr:	Alpha:		Beta:
11H61A3-1-AD J6F080203-11-SAMP	0.833sa,g	500.54sa,g	151.10g,in	0.2515g	RATA22589 06/13/06		31.0	3A 1521 6/26/06	3A 0616 6/26/06	
					1.0644					
05/22/2006 11:20		AmtRec: FILTER	#Containers: 1				Scr:	Alpha:		Beta:
12H61A5-1-AD J6F080203-12-SAMP	0.833sa,g	502.68sa,g	150.38g,in	0.2492g	RATA22590 06/13/06		30.5	3B 1521 6/26/06	3B 0616 6/26/06	
					0.9416					
05/22/2006 11:30		AmtRec: FILTER	#Containers: 1				Scr:	Alpha:		Beta:

400

STL RICHLAND

6/16/2006 7:38:02 AM

Sample Preparation/Analysis

Balance Id:1120373922,1120373922,1120

536403, Brown and Caldwell , Brown & Caldwell

BX Ra-226/228 PrpRC5016, SepRC5005
TF Radium-228 by GPC
01 STANDARD TEST SET

Pipet #: _____

AnalyDueDate: 07/04/2006

Sep1 DT/Tm Tech:

Batch: 6163140 FILTER pCi/sampl PM, Quote: SA , 63174

SEQ Batch, Test: 6163137, BXTE

Sep2 DT/Tm Tech:

Prep Tech: HansenM,TamosaitisM

Work Order, Lot, Sample Date	Total Amt /Unit	Total Acidified/Unit	Initial Aliquot Amt/Unit	Adj Aliq Amt (Un-Acidified)	QC Tracer Prep Date	Count Time Min	Detector Id	Count On | Off (24hr) Circle	CR Analyst, Init/Date	Comments:
13H61A7-1-AD J6F080203-13-SAMP	0.833sa,g	502.48sa,g	150.15g,in	0.2489g	RATA22591 06/13/06	1in	30.8	3x50	3C 1521 6/28/06 3C 0616 6/28/06	
					0.9057					
05/22/2006 10:05		AmtRec: FILTER	#Containers: 1				Scr:	Alpha:	Beta:	
14H67QX-1-AA-B J6F120000-140-BLK			1.00sa,in	1.00sa	RATA22592		31.1		3D 1521 6/28/06 3D 0616 6/28/06	
					0.8430					
05/22/2006 10:10		AmtRec:	#Containers: 1				Scr:	Alpha:	Beta:	
15H67QX-1-AC-C J6F120000-140-LCS			1.00sa,in	1.00sa	RASC 4118 6-9-06		30.6		4B 1521 6/28/06 4A 0616 6/28/06	
					0.8811					
05/22/2006 10:10		AmtRec:	#Containers: 1				Scr:	Alpha:	Beta:	

Comments:

All Clients for Batch:
536403, Brown and Caldwell Brown & Caldwell , SA , 63174

H61AE1AD-SAMP Constituent List:

Ba-133	RDL:	pCi/sam	LCL:70	UCL:130	RPD:20	RA-228	RDL:3.10E+00	pCi/sam	LCL:	UCL:	RPD:

6/29/2006 9:32:55 AM

ICOC Fraction Transfer/Status Report

ByDate: 6/29/2005, 7/4/2006, Batch: '6163140', User: *ALL Order By DateTimeAccepting

Q Batch	Work Ord	CurStatus	Accepting			Comments
6163140						
AC		**CalcC**	**HansenM**	6/13/2006 1:40:31 PM		
SC			wagarr	IsBatched	6/12/2006 3:36:55 PM	ICOC_RADCALC v4.8.24
SC			HansenM	InPrep2	6/13/2006 1:40:31 PM	RICH-RC-5016 REVISION 5
SC			HansenM	Prep2C	6/15/2006 5:26:56 PM	RICH-RC-5016 REVISION 5
SC			BlackCL	InCnt2	6/28/2006 12:47:02 PM	RICH-RD-0003 REVISION 4
SC			BlackCL	CalcC	6/29/2006 7:00:07 AM	RICH-RD-0003 REVISION 4
SC			BlackCL	CalcC	6/29/2006 7:02:07 AM	RICH-RD-0003 REVISION 4
AC			**HansenM**	6/15/2006 5:26:56 PM		
AC			**BlackCL**	6/28/2006 12:47:02		
AC			**BlackCL**	6/29/2006 7:00:07		
AC			**BlackCL**	6/29/2006 7:02:07		

AC: Accepting Entry; SC: Status Change

STL Richland

Richland Wa.

Page 1

Grp Rec Cnt: 5

ICOCFractions v4.8.18

6/29/2006 9:32:55 AM

Rpt DB Transfer log (Batch Results)

SEVERN TRENT STL

SDG or Batch / Isotope	Rpt Db Id / Method	RTst	Qc	LotSample / Analysis Date	Client Id / Result	Matrix / Cnt Uncert	Received Date / Tot Uncert	Mda	Sample Date / Units	Expected	Yield	Volumes
31853	**9H61A110**			**J6F0802039**	P-0638	FILTER	6/7/2006 10:00:00		5/22/2006 10:25:00 AM			
ALPHA	BAS7		0	6/22/2006 10:42:31	**1.078E+01**	2.706E+00	2.929E+00	6.408E+00	PCI/SA	1.0	1.0E+0	2.085E-2
BETA	BDS8		0	6/20/2006 6:46:51 PM	**2.9132E+01**	2.343E+00	3.077E+00	6.219E+00	PCI/SA	1.0	1.0E+0	3.346E-2
RA-226	BXTE		0	6/23/2006 4:10:00 PM	**4.4731E-01**	2.246E-01	2.294E-01	6.968E-01	PCI/SA	0.889	1.0E+0	2.499E-1
RA-228	BXTF		0	6/29/2006 6:16:21 AM	**1.7535E+00**	4.45E-01	4.564E-01	1.653E+00	PCI/SA	0.812	1.0E+0	2.499E-1
TH-228	9NS1		0	6/23/2006 7:38:50 PM	**1.7986E-01**	1.272E-01	1.283E-01	4.412E-01	PCI/SA	0.643	1.0E+0	3.34E-2
TH-230	9NS1		0	6/23/2006 7:38:50 PM	**2.8855E-02**	6.452E-02	6.458E-02	3.461E-01	PCI/SA	0.643	1.0E+0	3.34E-2
TH-232	9NS1		0	6/23/2006 7:38:50 PM	**2.8855E-02**	6.452E-02	6.458E-02	3.461E-01	PCI/SA	0.643	1.0E+0	3.34E-2
31853	**9H61A210**			**J6F08020310**	P-0639	FILTER	6/7/2006 10:00:00		5/22/2006 10:40:00 AM			
ALPHA	BAS7		0	6/22/2006 10:42:31	**5.5159E+00**	2.074E+00	2.15E+00	6.486E+00	PCI/SA	1.0	1.0E+0	2.095E-2
BETA	BDS8		0	6/20/2006 6:46:51 PM	**3.4145E+01**	2.273E+00	4.155E+00	5.488E+00	PCI/SA	1.0	1.0E+0	3.32E-2
RA-226	BXTE		0	6/23/2006 4:11:00 PM	**3.3227E-02**	1.99E-01	1.99E-01	8.041E-01	PCI/SA	0.983	1.0E+0	2.476E-1
RA-228	BXTF		0	6/29/2006 6:16:21 AM	**6.7756E-01**	3.466E-01	3.665E-01	1.614E+00	PCI/SA	0.883	1.0E+0	2.476E-1
TH-228	9NS1		0	6/23/2006 7:38:50 PM	**2.1794E-01**	1.09E-01	1.108E-01	1.477E-01	PCI/SA	0.795	1.0E+0	3.282E-2
TH-230	9NS1		0	6/23/2006 7:38:50 PM	**5.2447E-02**	5.245E-02	5.267E-02	1.421E-01	PCI/SA	0.795	1.0E+0	3.282E-2
TH-232	9NS1		0	6/23/2006 7:38:50 PM	**2.6224E-02**	5.864E-02	5.869E-02	3.146E-01	PCI/SA	0.795	1.0E+0	3.282E-2
31853	**9H61A310**			**J6F08020311**	P-0641	FILTER	6/7/2006 10:00:00		5/22/2006 11:20:00 AM			
ALPHA	BAS7		0	6/22/2006 10:42:31	**1.1105E+00**	1.314E+00	1.319E+00	5.977E+00	PCI/SA	1.0	1.0E+0	2.102E-2
BETA	BDS8		0	6/20/2006 6:46:51 PM	**2.7213E+01**	2.278E+00	2.943E+00	6.204E+00	PCI/SA	1.0	1.0E+0	3.326E-2
RA-226	BXTE		0	6/23/2006 4:12:03 PM	**-7.3711E-02**	1.861E-01	1.863E-01	7.636E-01	PCI/SA	1.064	1.0E+0	2.515E-1
RA-228	BXTF		0	6/29/2006 6:21:29 AM	**4.93E-01**	2.852E-01	2.898E-01	1.288E+00	PCI/SA	0.959	1.0E+0	2.515E-1
TH-228	9NS1		0	6/23/2006 7:38:50 PM	**3.5601E-02**	3.56E-02	3.574E-02	9.648E-02	PCI/SA	1.038	1.0E+0	3.398E-2
TH-230	9NS1		0	6/23/2006 7:38:50 PM	**6.854E-02**	4.847E-02	4.884E-02	9.287E-02	PCI/SA	1.038	1.0E+0	3.398E-2
TH-232	9NS1		0	6/23/2006 7:38:50 PM	**6.854E-02**	4.847E-02	4.884E-02	9.287E-02	PCI/SA	1.038	1.0E+0	3.398E-2
31853	**9H61A510**			**J6F08020312**	P-0642	FILTER	6/7/2006 10:00:00		5/22/2006 11:30:00 AM			
ALPHA	BAS7		0	6/22/2006 12:35:02 PM	**4.919E+00**	2.117E+00	2.178E+00	7.164E+00	PCI/SA	1.0	1.0E+0	2.085E-2
BETA	BDS8		0	6/20/2006 6:46:51 PM	**2.9855E+01**	2.333E+00	3.123E+00	6.07E+00	PCI/SA	1.0	1.0E+0	3.339E-2
RA-226	BXTE		0	6/23/2006 4:12:01 PM	**2.012E-01**	1.415E-01	1.431E-01	4.829E-01	PCI/SA	0.942	1.0E+0	2.492E-1
RA-228	BXTF		0	6/29/2006 6:21:29 AM	**7.4514E-01**	3.359E-01	3.447E-01	1.472E+00	PCI/SA	0.835	1.0E+0	2.492E-1
TH-228	9NS1		0	6/23/2006 7:39:13 PM	**1.7852E-01**	1.047E-01	1.059E-01	3.285E-01	PCI/SA	1.081	1.0E+0	3.335E-2
TH-230	9NS1		0	6/23/2006 7:39:13 PM	**2.5777E-01**	1.052E-01	1.077E-01	1.164E-01	PCI/SA	1.081	1.0E+0	3.335E-2
TH-232	9NS1		0	6/23/2006 7:39:13 PM	**8.5923E-02**	6.076E-02	6.124E-02	1.164E-01	PCI/SA	1.081	1.0E+0	3.335E-2
31853	**9H61A710**			**J6F08020313**	P-0643	FILTER	6/7/2006 10:00:00		5/22/2006 10:05:00 AM			
ALPHA	BAS7		0	6/22/2006 12:35:02 PM	**5.4878E+00**	1.981E+00	2.062E+00	5.644E+00	PCI/SA	1.0	1.0E+0	2.084E-2
BETA	BDS8		0	6/20/2006 6:46:47 PM	**2.8799E+01**	2.356E+00	3.09E+00	6.278E+00	PCI/SA	1.0	1.0E+0	3.297E-2
RA-226	BXTE		0	6/23/2006 4:15:00 PM	**1.8445E-01**	1.348E-01	1.361E-01	4.656E-01	PCI/SA	0.906	1.0E+0	2.489E-1
RA-228	BXTF		0	6/29/2006 6:21:29 AM	**1.733E-01**	3.102E-01	3.443E-01	1.68E+00	PCI/SA	0.811	1.0E+0	2.489E-1
TH-228	9NS1		0	6/23/2006 7:39:24 PM	**5.7458E-02**	1.15E-01	1.151E-01	5.337E-01	PCI/SA	0.808	1.0E+0	3.372E-2
TH-230	9NS1		0	6/23/2006 7:39:24 PM	**1.383E-01**	9.974E-02	1.006E-01	3.318E-01	PCI/SA	0.808	1.0E+0	3.372E-2
TH-232	9NS1		0	6/23/2006 7:39:24 PM	**0.0E+00**	0.0E+00	6.776E-02	1.499E-01	PCI/SA	0.808	1.0E+0	3.372E-2
31853	**9H61AE10**			**J6F0802031**	000466	FILTER	6/7/2006 10:00:00		5/22/2006 10:10:00 AM			
ALPHA	BAS7		0	6/22/2006 6:57:33 AM	**1.2919E+01**	2.897E+00	3.187E+00	6.046E+00	PCI/SA	1.0	1.0E+0	2.084E-2
BETA	BDS8		0	6/20/2006 4:05:14 PM	**3.0937E+01**	2.41E+00	3.222E+00	6.21E+00	PCI/SA	1.0	1.0E+0	3.327E-2
RA-226	BXTE		0	6/23/2006 3:15:00 PM	**8.6406E-01**	3.273E-01	3.393E-01	1.025E+00	PCI/SA	0.852	1.0E+0	2.492E-1
RA-228	BXTF		0	6/29/2006 6:20:56 AM	**2.361E+00**	6.086E-01	6.506E-01	2.57E+00	PCI/SA	0.761	1.0E+0	2.492E-1
TH-228	9NS1		0	6/23/2006 10:25:20	**7.3196E-02**	2.428E-01	2.43E-01	1.231E+00	PCI/SA	0.3	1.0E+0	3.338E-2
TH-230	9NS1		0	6/23/2006 10:25:20	**5.6401E-01**	2.82E-01	2.89E-01	3.821E-01	PCI/SA	0.3	1.0E+0	3.338E-2
TH-232	9NS1		0	6/23/2006 10:25:20	**1.41E-01**	1.41E-01	1.419E-01	3.821E-01	PCI/SA	0.3	1.0E+0	3.338E-2
31853	**9H61AH10**			**J6F0802032**	000467	FILTER	6/7/2006 10:00:00		5/22/2006 10:30:00 AM			
ALPHA	BAS7		0	6/22/2006 8:49:58 AM	**4.3814E+00**	2.049E+00	2.1E+00	7.179E+00	PCI/SA	1.0	1.0E+0	2.08E-2
BETA	BDS8		0	6/20/2006 4:05:14 PM	**3.8297E+01**	2.569E+00	3.691E+00	6.172E+00	PCI/SA	1.0	1.0E+0	3.363E-2
RA-226	BXTE		0	6/23/2006 3:16:00 PM	**-5.7714E-02**	2.883E-01	2.884E-01	1.141E+00	PCI/SA	0.849	1.0E+0	2.498E-1

6163140, **Samples Inserted | Updated | NotUpdated => 2 | 0 | 13,
**Results Inserted | ReTestInserted | Updated | NotInserted => 15 | 0 | 0 | 0.
**Diff RptDb | Qtims => *wo:H67QX1AA=> , mat:FILTER | Air *wo:H67QX1AC=> , mat:FILTER | Air.

SDG or Batch / Isotope	Rpt Db Id / Method	RTst	Qc	LotSample / Analysis Date	Client Id / Result	Matrix / Cnt Uncert	Received Date / Tot Uncert	Sample Date / Mda	Units	Expected	Yield	Volumes
RA-228	BXTF	0		6/29/2006 6:20:56 AM	**1.3342E+00**	5.423E-01	5.742E-01	2.453E+00	PCI/SA	0.768	1.0E+0	2.498E-1
TH-228	9NS1	0		6/23/2006 10:25:24	**3.2995E-01**	2.333E-01	2.359E-01	8.095E-01	PCI/SA	0.402	1.0E+0	3.403E-2
TH-230	9NS1	0		6/23/2006 10:25:24	**1.0591E-01**	1.059E-01	1.065E-01	2.87E-01	PCI/SA	0.402	1.0E+0	3.403E-2
TH-232	9NS1	0		6/23/2006 10:25:24	**2.1182E-01**	1.498E-01	1.514E-01	2.87E-01	PCI/SA	0.402	1.0E+0	3.403E-2
31853	**9H61AK10**			**J6F0802033**	000468	FILTER	6/7/2006 10:00:00	5/22/2006 10:45:00 AM				
ALPHA	BAS7	0		6/22/2006 8:49:58 AM	**3.3328E+00**	1.662E+00	1.698E+00	5.639E+00	PCI/SA	1.0	1.0E+0	2.087E-2
BETA	BDS8	0		6/20/2006 4:05:14 PM	**2.3712E+01**	2.175E+00	3.046E+00	6.067E+00	PCI/SA	1.0	1.0E+0	3.28E-2
RA-226	BXTE	0		6/23/2006 3:15:01 PM	**6.4468E-01**	3.072E-01	3.139E-01	1.003E+00	PCI/SA	0.842	1.0E+0	2.487E-1
RA-228	BXTF	0		6/29/2006 6:20:56 AM	**2.6725E+00**	6.332E-01	6.539E-01	2.51E+00	PCI/SA	0.761	1.0E+0	2.487E-1
TH-228	9NS1	0		6/23/2006 10:25:32	**-4.8231E-02**	1.738E-01	1.739E-01	9.702E-01	PCI/SA	0.486	1.0E+0	3.287E-2
TH-230	9NS1	0		6/23/2006 10:25:32	**1.3927E-01**	1.393E-01	1.4E-01	5.569E-01	PCI/SA	0.486	1.0E+0	3.287E-2
TH-232	9NS1	0		6/23/2006 10:25:32	**9.285E-02**	9.285E-02	9.333E-02	2.516E-01	PCI/SA	0.486	1.0E+0	3.287E-2
31853	**9H61AL10**			**J6F0802034**	000469	FILTER	6/7/2006 10:00:00	5/22/2006 11:10:00 AM				
ALPHA	BAS7	0		6/22/2006 8:49:58 AM	**7.9761E+00**	2.397E+00	2.536E+00	6.388E+00	PCI/SA	1.0	1.0E+0	2.093E-2
BETA	BDS8	0		6/20/2006 4:05:14 PM	**2.6018E+01**	2.395E+00	3.038E+00	7.005E+00	PCI/SA	1.0	1.0E+0	3.35E-2
RA-226	BXTE	0		6/23/2006 3:14:00 PM	**-8.1816E-02**	2.327E-01	2.329E-01	9.467E-01	PCI/SA	0.922	1.0E+0	2.49E-1
RA-228	BXTF	0		6/29/2006 6:16:16 AM	**1.6221E+00**	4.686E-01	5.091E-01	2.039E+00	PCI/SA	0.826	1.0E+0	2.49E-1
TH-228	9NS1	0		6/23/2006 7:38:50 PM	**2.0285E-01**	2.619E-01	2.628E-01	1.137E+00	PCI/SA	0.285	1.0E+0	3.362E-2
TH-230	9NS1	0		6/23/2006 7:38:50 PM	**1.3018E-01**	1.302E-01	1.31E-01	3.528E-01	PCI/SA	0.285	1.0E+0	3.362E-2
TH-232	9NS1	0		6/23/2006 7:38:50 PM	**6.509E-02**	1.455E-01	1.457E-01	7.808E-01	PCI/SA	0.285	1.0E+0	3.362E-2
31853	**9H61AM10**			**J6F0802035**	000470	FILTER	6/7/2006 10:00:00	5/22/2006 11:25:00 AM				
ALPHA	BAS7	0		6/22/2006 8:49:58 AM	**8.6535E+00**	2.438E+00	2.595E+00	6.497E+00	PCI/SA	1.0	1.0E+0	2.087E-2
BETA	BDS8	0		6/20/2006 6:46:45 PM	**4.4033E+01**	2.729E+00	4.225E+00	6.697E+00	PCI/SA	1.0	1.0E+0	3.406E-2
RA-226	BXTE	0		6/23/2006 3:18:01 PM	**7.0427E-02**	1.833E-01	1.835E-01	7.251E-01	PCI/SA	0.854	1.0E+0	2.487E-1
RA-228	BXTF	0		6/29/2006 6:16:16 AM	**1.2747E+00**	5.057E-01	5.149E-01	2.17E+00	PCI/SA	0.742	1.0E+0	2.487E-1
TH-228	9NS1	0		6/23/2006 7:38:50 PM	**1.1928E-01**	2.385E-01	2.389E-01	1.108E+00	PCI/SA	0.312	1.0E+0	3.394E-2
TH-230	9NS1	0		6/23/2006 7:38:50 PM	**4.0186E-01**	2.367E-01	2.406E-01	6.887E-01	PCI/SA	0.312	1.0E+0	3.394E-2
TH-232	9NS1	0		6/23/2006 7:38:50 PM	**0.0E+00**	0.0E+00	1.406E-01	3.112E-01	PCI/SA	0.312	1.0E+0	3.394E-2
31853	**9H61AR10**			**J6F0802036**	000471	FILTER	6/7/2006 10:00:00	5/22/2006 11:35:00 AM				
ALPHA	BAS7	0		6/22/2006 8:49:58 AM	**5.632E+00**	2.077E+00	2.156E+00	6.062E+00	PCI/SA	1.0	1.0E+0	2.089E-2
BETA	BDS8	0		6/20/2006 6:46:45 PM	**4.4882E+01**	2.784E+00	4.217E+00	6.616E+00	PCI/SA	1.0	1.0E+0	3.346E-2
RA-226	BXTE	0		6/23/2006 3:19:01 PM	**-1.1317E-01**	2.287E-01	2.29E-01	9.854E-01	PCI/SA	0.95	1.0E+0	2.496E-1
RA-228	BXTF	0		6/29/2006 6:16:16 AM	**2.1115E+00**	4.783E-01	5.027E-01	1.895E+00	PCI/SA	0.848	1.0E+0	2.496E-1
TH-228	9NS1	0		6/23/2006 7:38:50 PM	**4.3145E-02**	9.647E-02	9.657E-02	5.176E-01	PCI/SA	0.508	1.0E+0	3.425E-2
TH-230	9NS1	0		6/23/2006 7:38:50 PM	**6.2298E-01**	2.386E-01	2.466E-01	4.982E-01	PCI/SA	0.508	1.0E+0	3.425E-2
TH-232	9NS1	0		6/23/2006 7:38:50 PM	**-4.1532E-02**	4.153E-02	4.174E-02	4.982E-01	PCI/SA	0.508	1.0E+0	3.425E-2
31853	**9H61AT10**			**J6F0802037**	000472	FILTER	6/7/2006 10:00:00	5/22/2006 10:15:00 AM				
ALPHA	BAS7	0		6/22/2006 10:42:31	**-2.1888E+00**	7.739E-01	8.069E-01	7.173E+00	PCI/SA	1.0	1.0E+0	2.081E-2
BETA	BDS8	0		6/20/2006 6:46:45 PM	**6.7795E-01**	1.519E+00	1.52E+00	6.677E+00	PCI/SA	1.0	1.0E+0	3.267E-2
RA-226	BXTE	0		6/23/2006 3:18:01 PM	**-1.8619E-01**	3.072E-01	3.078E-01	1.286E+00	PCI/SA	0.784	1.0E+0	2.473E-1
RA-228	BXTF	0		6/29/2006 6:16:21 AM	**2.2713E+00**	5.213E-01	5.392E-01	1.851E+00	PCI/SA	0.702	1.0E+0	2.473E-1
TH-228	9NS1	0		6/23/2006 7:38:50 PM	**1.1971E-01**	1.197E-01	1.203E-01	4.787E-01	PCI/SA	0.57	1.0E+0	3.303E-2
TH-230	9NS1	0		6/23/2006 7:38:50 PM	**3.8409E-01**	1.718E-01	1.759E-01	2.082E-01	PCI/SA	0.57	1.0E+0	3.303E-2
TH-232	9NS1	0		6/23/2006 7:38:50 PM	**1.1523E-01**	1.152E-01	1.158E-01	4.608E-01	PCI/SA	0.57	1.0E+0	3.303E-2
31853	**9H61AX10**			**J6F0802038**	P-0637	FILTER	6/7/2006 10:00:00	5/22/2006 10:00:00 AM				
ALPHA	BAS7	0		6/22/2006 10:42:31	**5.0702E+00**	1.953E+00	2.023E+00	5.782E+00	PCI/SA	1.0	1.0E+0	2.044E-2
BETA	BDS8	0		6/20/2006 6:46:45 PM	**2.6735E+01**	2.345E+00	2.967E+00	6.443E+00	PCI/SA	1.0	1.0E+0	3.221E-2
RA-226	BXTE	0		6/23/2006 3:18:03 PM	**5.5396E-01**	2.448E-01	2.509E-01	7.725E-01	PCI/SA	0.873	1.0E+0	2.455E-1
RA-228	BXTF	0		6/29/2006 6:16:21 AM	**1.3233E+00**	4.199E-01	4.445E-01	1.778E+00	PCI/SA	0.786	1.0E+0	2.455E-1
TH-228	9NS1	0		6/23/2006 7:38:50 PM	**5.5577E-02**	8.787E-02	8.802E-02	4.09E-01	PCI/SA	0.691	1.0E+0	3.308E-2
TH-230	9NS1	0		6/23/2006 7:38:50 PM	**1.6049E-01**	1.135E-01	1.145E-01	3.937E-01	PCI/SA	0.691	1.0E+0	3.308E-2
TH-232	9NS1	0		6/23/2006 7:38:50 PM	**0.0E+00**	0.0E+00	6.552E-02	1.45E-01	PCI/SA	0.691	1.0E+0	3.308E-2
31853	**H67QX1AB**			**J6F120000140**	INTRA-LAB BLANK	FILTER	6/7/2006 10:00:00	5/22/2006 10:10:00 AM				
RA-228	BXTF	0	B	6/29/2006 6:21:29 AM	**4.0276E-01**	1.031E-01	1.058E-01	3.775E-01	PCI/SA	0.762	1.0E+0	1.0E+0

6163140, **Samples Inserted | Updated | NotUpdated => 2 | 0 | 13,
**Results Inserted | ReTestInserted | Updated | NotInserted => 15 | 0 | 0 | 0.
**Diff RptDb | Qtims => *wo:H67QX1AA=> , mat:FILTER | Air *wo:H67QX1AC=> , mat:FILTER | Air.

SDG or Batch / Isotope	Rpt Db Id / Method	RTst	Qc	LotSample / Analysis Date	Client Id / Result	Cnt Uncert	Tot Uncert	MDA	Matrix / Units	Received Date / Expected	Sample Date / Yield	Volumes	
31853	**H67QX1CS**			**J6F120000140**	INTRA-LAB CHECK	FILTER			6/7/2006 10:00:00	5/22/2006 10:10:00 AM			
RA-228	BXTF	0	S	6/29/2006 6:21:33 AM	**4.458E+00**	2.501E-01	3.575E-01	4.16E-01	PCI/SA	4.9168E+00	0.784	1.0E+0	1.0E+0

6163140, **Samples Inserted | Updated | NotUpdated => 2 | 0 | 13,
**Results Inserted | ReTestInserted | Updated | NotInserted => 15 | 0 | 0 | 0.
**Diff RptDb | Qtims => *wo:H67QX1AA=> , mat:FILTER | Air *wo:H67QX1AC=> , mat:FILTER | Air.

Batch Nbr: 6163140

Alpha Beta, Ra-228 by GPC , Results

6/29/2006 8:52:21 AM

Summary Report

Status	Meth	Matrix	Wrk Ord	Parameter	Sa Act	Uncert	Q	Units	Av	ILcC	IDC	QC	Yield	RYld
Ra-228 by GPC				Ra-226/Ra-228 Deem With Out Blk Subt.										
Calc	TF	FILTER	H61AE1AD	RA-228	2.71E+00	(1.05E+00)		PCI/SA	R	1.83E+00	4.00E+00		76%	
Calc	TF	FILTER	H61AE1AD	RA-228	4.12E+00	(1.27E+00)		PCI/SA	R	2.03E+00	4.44E+00		76%	
Calc	TF	FILTER	H61AE1AD	RA-228	2.51E-01	(1.05E+00)	U4	PCI/SA	R	2.25E+00	4.92E+00		76%	
Calc	TF	FILTER	H61AE1AD	RA-228	2.36E+00	(6.51E-01)		PCI/SA	A	1.18E+00	2.57E+00		76%	
Calc	TF	FILTER	H61AE1AD	RA-228	8.74E+00	(6.27E+00)	U4	PCI/SA	R	1.23E+01	2.68E+01		76%	
Calc	TF	FILTER	H61AH1AD	RA-228	1.80E+00	(9.41E-01)		PCI/SA	R	1.74E+00	3.82E+00		77%	
Calc	TF	FILTER	H61AH1AD	RA-228	2.13E+00	(1.06E+00)		PCI/SA	R	1.93E+00	4.23E+00		77%	
Calc	TF	FILTER	H61AH1AD	RA-228	7.62E-02	(9.83E-01)	U4	PCI/SA	R	2.14E+00	4.70E+00		77%	
Calc	TF	FILTER	H61AH1AD	RA-228	1.33E+00	(5.74E-01)		PCI/SA	A	1.12E+00	2.45E+00		77%	
Calc	TF	FILTER	H61AH1AD	RA-228	6.32E+00	(6.06E+00)	U4	PCI/SA	R	1.23E+01	2.67E+01		77%	
Calc	TF	FILTER	H61AK1AD	RA-228	2.52E+00	(1.02E+00)		PCI/SA	R	1.78E+00	3.91E+00		76%	
Calc	TF	FILTER	H61AK1AD	RA-228	2.23E+00	(1.09E+00)		PCI/SA	R	1.97E+00	4.33E+00		76%	
Calc	TF	FILTER	H61AK1AD	RA-228	3.26E+00	(1.27E+00)		PCI/SA	R	2.19E+00	4.81E+00		76%	
Calc	TF	FILTER	H61AK1AD	RA-228	2.67E+00	(6.54E-01)		PCI/SA	A	1.14E+00	2.51E+00		76%	
Calc	TF	FILTER	H61AK1AD	RA-228	-2.50E+00	(5.34E+00)	U4	PCI/SA	R	1.21E+01	2.65E+01		76%	
Calc	TF	FILTER	H61AL1AD	RA-228	3.67E+00	(9.91E-01)		PCI/SA	R	1.43E+00	3.17E+00		83%	
Calc	TF	FILTER	H61AL1AD	RA-228	1.73E-01	(7.40E-01)	U4	PCI/SA	R	1.59E+00	3.52E+00		83%	
Calc	TF	FILTER	H61AL1AD	RA-228	1.03E+00	(8.95E-01)	U4	PCI/SA	R	1.76E+00	3.90E+00		83%	
Calc	TF	FILTER	H61AL1AD	RA-228	1.62E+00	(5.09E-01)		PCI/SA	A	9.22E-01	2.04E+00		83%	
Calc	TF	FILTER	H61AL1AD	RA-228	-6.80E+00	(4.39E+00)	U4	PCI/SA	R	1.03E+01	2.26E+01		83%	
Calc	TF	FILTER	H61AM1AD	RA-228	1.02E+00	(7.87E-01)	U4	PCI/SA	R	1.52E+00	3.38E+00		74%	
Calc	TF	FILTER	H61AM1AD	RA-228	1.70E+00	(9.26E-01)		PCI/SA	R	1.68E+00	3.75E+00		74%	
Calc	TF	FILTER	H61AM1AD	RA-228	1.10E+00	(9.53E-01)	U4	PCI/SA	R	1.87E+00	4.15E+00		74%	
Calc	TF	FILTER	H61AM1AD	RA-228	1.27E+00	(5.15E-01)		PCI/SA	A	9.74E-01	2.17E+00		74%	
Calc	TF	FILTER	H61AM1AD	RA-228	2.20E+00	(5.14E+00)	U4	PCI/SA	R	1.05E+01	2.32E+01		74%	
Calc	TF	FILTER	H61AR1AD	RA-228	2.52E+00	(8.42E-01)		PCI/SA	R	1.33E+00	2.95E+00		85%	
Calc	TF	FILTER	H61AR1AD	RA-228	2.19E+00	(8.75E-01)		PCI/SA	R	1.47E+00	3.27E+00		85%	
Calc	TF	FILTER	H61AR1AD	RA-228	1.62E+00	(8.94E-01)		PCI/SA	R	1.63E+00	3.63E+00		85%	
Calc	TF	FILTER	H61AR1AD	RA-228	2.11E+00	(5.03E-01)		PCI/SA	A	8.52E-01	1.90E+00		85%	
Calc	TF	FILTER	H61AR1AD	RA-228	-3.62E+00	(4.16E+00)	U4	PCI/SA	R	9.43E+00	2.08E+01		85%	
Calc	TF	FILTER	H61AT1AD	RA-228	2.02E+00	(8.27E-01)		PCI/SA	R	1.22E+00	2.88E+00		70%	
Calc	TF	FILTER	H61AT1AD	RA-228	1.50E+00	(8.23E-01)		PCI/SA	R	1.35E+00	3.19E+00		70%	
Calc	TF	FILTER	H61AT1AD	RA-228	3.30E+00	(1.12E+00)		PCI/SA	R	1.50E+00	3.54E+00		70%	
Calc	TF	FILTER	H61AT1AD	RA-228	2.27E+00	(5.39E-01)		PCI/SA	A	7.81E-01	1.85E+00		70%	
Calc	TF	FILTER	H61AT1AD	RA-228	4.14E+00	(4.34E+00)	U4	PCI/SA	R	8.28E+00	1.94E+01		70%	
Calc	TF	FILTER	H61AX1AD	RA-228	2.36E+00	(8.30E-01)		PCI/SA	R	1.19E+00	2.77E+00		79%	
Calc	TF	FILTER	H61AX1AD	RA-228	1.02E+00	(7.31E-01)	U4	PCI/SA	R	1.32E+00	3.07E+00		79%	
Calc	TF	FILTER	H61AX1AD	RA-228	5.97E-01	(7.45E-01)	U4	PCI/SA	R	1.46E+00	3.40E+00		79%	

() - (1s Uncertainities)
IDC - Instrument Detection Level in Conc Units
MLcC- Method Decision Level in Conc Units
MDC - Minimum Detectable Concentration
*Std - Lc, MDC using StdDev for Set of Blanks

Q - Qualifier, U is Less Than Lc = 1.645*TPU
All Results Displayed to Three Digits Reguardless of Significants
Date/Time - mm/dd/yy hh:mm, 24hr Time

RecCnt:39
RADCALC v4.8.24
STL Richland

Summary Report

Status	Meth	Matrix	Wrk Ord	Parameter	Sa Act	Uncert	Q	Units	Av	ILcC	IDC	QC	Yield	RYld
Calc	TF	FILTER	H61AX1AD	RA-228	1.32E+00	(4.45E-01)		PCI/SA	A	7.64E-01	1.78E+00		79%	
Calc	TF	FILTER	H61AX1AD	RA-228	-3.23E+00	(3.17E+00)	U4	PCI/SA	R	7.89E+00	1.83E+01		79%	
Calc	TF	FILTER	H61A11AD	RA-228	1.42E+00	(6.86E-01)		PCI/SA	R	1.09E+00	2.57E+00		81%	
Calc	TF	FILTER	H61A11AD	RA-228	1.57E+00	(7.61E-01)		PCI/SA	R	1.21E+00	2.85E+00		81%	
Calc	TF	FILTER	H61A11AD	RA-228	2.27E+00	(9.09E-01)		PCI/SA	R	1.35E+00	3.16E+00		81%	
Calc	TF	FILTER	H61A11AD	RA-228	1.75E+00	(4.56E-01)		PCI/SA	A	7.03E-01	1.65E+00		81%	
Calc	TF	FILTER	H61A11AD	RA-228	1.48E+00	(3.72E+00)	U4	PCI/SA	R	7.75E+00	1.80E+01		81%	
Calc	TF	FILTER	H61A21AD	RA-228	1.03E+00	(6.22E-01)		PCI/SA	R	1.08E+00	2.51E+00		88%	
Calc	TF	FILTER	H61A21AD	RA-228	1.00E+00	(6.73E-01)	U4	PCI/SA	R	1.20E+00	2.79E+00		88%	
Calc	TF	FILTER	H61A21AD	RA-228	0.00E+00	(6.07E-01)	U4	PCI/SA	R	1.33E+00	3.09E+00		88%	
Calc	TF	FILTER	H61A21AD	RA-228	6.78E-01	(3.66E-01)		PCI/SA	A	6.95E-01	1.61E+00		88%	
Calc	TF	FILTER	H61A21AD	RA-228	4.45E+00	(3.59E+00)	U4	PCI/SA	R	6.57E+00	1.54E+01		88%	
Calc	TF	FILTER	H61A31AD	RA-228	4.10E-01	(4.45E-01)	U4	PCI/SA	R	8.54E-01	2.00E+00		96%	
Calc	TF	FILTER	H61A31AD	RA-228	6.98E-01	(5.26E-01)	U4	PCI/SA	R	9.47E-01	2.22E+00		96%	
Calc	TF	FILTER	H61A31AD	RA-228	3.70E-01	(5.30E-01)	U4	PCI/SA	R	1.05E+00	2.47E+00		96%	
Calc	TF	FILTER	H61A31AD	RA-228	4.93E-01	(2.90E-01)		PCI/SA	A	5.49E-01	1.29E+00		96%	
Calc	TF	FILTER	H61A31AD	RA-228	1.15E+00	(2.99E+00)	U4	PCI/SA	R	6.26E+00	1.44E+01		96%	
Calc	TF	FILTER	H61A51AD	RA-228	1.05E+00	(5.84E-01)		PCI/SA	R	9.77E-01	2.29E+00		83%	
Calc	TF	FILTER	H61A51AD	RA-228	3.44E-01	(5.41E-01)	U4	PCI/SA	R	1.08E+00	2.54E+00		83%	
Calc	TF	FILTER	H61A51AD	RA-228	8.39E-01	(6.60E-01)	U4	PCI/SA	R	1.20E+00	2.82E+00		83%	
Calc	TF	FILTER	H61A51AD	RA-228	7.45E-01	(3.45E-01)		PCI/SA	A	6.28E-01	1.47E+00		83%	
Calc	TF	FILTER	H61A51AD	RA-228	2.91E+00	(3.58E+00)	U4	PCI/SA	R	7.08E+00	1.63E+01		83%	
Calc	TF	FILTER	H61A71AD	RA-228	5.20E-01	(5.80E-01)	U4	PCI/SA	R	1.13E+00	2.61E+00		81%	
Calc	TF	FILTER	H61A71AD	RA-228	0.00E+00	(5.72E-01)	U4	PCI/SA	R	1.26E+00	2.90E+00		81%	
Calc	TF	FILTER	H61A71AD	RA-228	0.00E+00	(6.35E-01)	U4	PCI/SA	R	1.39E+00	3.22E+00		81%	
Calc	TF	FILTER	H61A71AD	RA-228	1.73E-01	(3.44E-01)	U4	PCI/SA	A	7.27E-01	1.68E+00		81%	
Calc	TF	FILTER	H61A71AD	RA-228	-1.47E+00	(3.49E+00)	U4	PCI/SA	R	8.02E+00	1.83E+01		81%	
Calc	TF	FILTER	H67QX1AA	RA-228	3.68E-01	(1.64E-01)		PCI/SA	R	2.47E-01	5.87E-01	B	76%	
Calc	TF	FILTER	H67QX1AA	RA-228	2.16E-01	(1.56E-01)	U4	PCI/SA	R	2.74E-01	6.52E-01	B	76%	
Calc	TF	FILTER	H67QX1AA	RA-228	6.24E-01	(2.23E-01)		PCI/SA	R	3.04E-01	7.23E-01	B	76%	
Calc	TF	FILTER	H67QX1AA	RA-228	4.03E-01	(1.06E-01)		PCI/SA	A	1.59E-01	3.78E-01	B	76%	
Calc	TF	FILTER	H67QX1AA	RA-228	5.89E-01	(9.46E-01)	U4	PCI/SA	R	1.91E+00	4.43E+00	B	76%	
Calc	TF	FILTER	H67QX1AC	RA-228	4.58E+00	(6.13E-01)		PCI/SA	R	2.78E-01	6.47E-01	S	78%	93%
Calc	TF	FILTER	H67QX1AC	RA-228	3.99E+00	(5.70E-01)		PCI/SA	R	3.08E-01	7.18E-01	S	78%	81%
Calc	TF	FILTER	H67QX1AC	RA-228	4.80E+00	(6.71E-01)		PCI/SA	R	3.42E-01	7.96E-01	S	78%	98%
Calc	TF	FILTER	H67QX1AC	RA-228	4.46E+00	(3.58E-01)		PCI/SA	A	1.79E-01	4.16E-01	S	78%	91%
Calc	TF	FILTER	H67QX1AC	RA-228	7.05E+00	(1.65E+00)		PCI/SA	R	1.90E+00	4.36E+00	S	78%	143%

P Anderson
6-29-06

() - (1s Uncertainities)
IDC - Instrument Detection Level in Conc Units
MLcC- Method Decision Level in Conc Units
MDC - Minimum Detectable Concentration
*Std - Lc, MDC using StdDev for Set of Blanks

Q - Qualifier, U is Less Than Lc = 1.645*TPU
All Results Displayed to Three Digits Reguardless of Significants
Date/Time - mm/dd/yy hh:mm, 24hr Time

RecCnt:75
RADCALC v4.8.24
STL Richland

Batch Nbr: 6163140

Alpha Beta, Ra-228 by GPC , Calculated Results

Detailed Report

6/29/2006 8:52:22 AM

Sq	Status	Method	Matrix	Protocol	Equation Set	Wrk Ord	Units/Matrix	QC/BB	Sa/On Date	AnalysisDate/PptWt	Sep1/Sep2 Date	QC/Tracer Vial	Mult/EntYld	Total/Analy Vol	Final/Count Vol
1	Calc	TF	FILTER	*STLE	Ra228WoBS	**H61AE1AD**	**PCI/SA**		05/22/06 10:10	06/29/06 06:20	06/19/06 10:45	RATA22579	1	1.00 SA	
536403,000466					,J6F080203-1 v4.8.24		FILTER			30.7	06/28/06 10:40	RATA22579 Alq	85%	0.249181 SA	

Sq	Cnt Date	Parameter	Sample Cnt	Bkgrnd Cnt	Instr	Geom	Trc/Av	Ent	Efficiency1	Efficiency 2	Ent	Yld Fct	Ent	Blk Value	Ingr Fct	Conv Fct/VolAdj	Decay	Abn
0	06/28/06 13:46	RA-228	61	315	GPC7A	1	N	N	5.1922E-01	1.0000E+00	N	76%	N		1.3571E+00	4.5045E-01	1.0093E+00	
			50	400			Y		(1.200E-02)	(0.000E+00)		6%			(0.000E+00)	4.013148		
1	06/28/06 14:41	RA-228	69	315	GPC7A	1	N	N	5.1922E-01	1.0000E+00	N	76%	N		1.5055E+00	4.5045E-01	1.0093E+00	
			50	400			Y		(1.200E-02)	(0.000E+00)		6%			(0.000E+00)	4.013148		
2	06/28/06 15:36	RA-228	41	315	GPC7A	1	N	N	5.1922E-01	1.0000E+00	N	76%	N		1.6702E+00	4.5045E-01	1.0093E+00	
			50	400			Y		(1.200E-02)	(0.000E+00)		6%			(0.000E+00)	4.013148		
3	06/29/06 06:20	RA-228	53	338	GPC7A	1	N	N	5.1922E-01	1.0000E+00	N	76%	N		8.7956E+00	4.5045E-01	1.0093E+00	
			50	400			N		(1.200E-02)	(0.000E+00)		6%			(0.000E+00)	4.013148		

Sq	Calc Date	Parameter	Avg	Sa Act	Q	Net Cnt Rt	Dpm Wo Blk	Dpm-Blk	Vol Used	Yield,EnFct	Chem Yld,EFctU	IDC/ILcC	BlkLcC/MDC	StdDvMdC/LcC
	06/29/06	RA-228	R	**2.711434**		4.32500E-01	1.486132	1.486132	1.00 SA	76%		3.998318		
				(1.05433)		(1.6238E-01)	(0.571535)	(0.571535)	(0.028284)			1.83035		
	06/29/06	RA-228	R	**4.12086**		5.92500E-01	2.258636	2.258636	1.00 SA	76%		4.435717		
				(1.266533)		(1.7196E-01)	(0.681951)	(0.681951)	(0.028284)			2.030582		
	06/29/06	RA-228	R	**0.250759**	U4	3.25000E-02	0.13744	0.13744	1.00 SA	76%		4.920811		
				(1.04602)		(1.3553E-01)	(0.573267)	(0.573267)	(0.028284)			2.252649		
	06/29/06	RA-228	A	**2.361017**		3.52500E-01	1.294069	1.294069	1.00 SA	76%		2.570141		
				(0.65063)		(9.0864E-02)	(0.352821)	(0.352821)	(0.01633)			1.176559		
	06/29/06	RA-228	R	**8.736097**	U4	2.15000E-01	4.788239	4.788239	1.00 SA	76%		26.764964		
				(6.266655)		(1.5268E-01)	(3.42371)	(3.42371)	(0.028284)			12.288624		

Sq	Status	Method	Matrix	Protocol	Equation Set	Wrk Ord	Units/Matrix	QC/BB	Sa/On Date	AnalysisDate/PptWt	Sep1/Sep2 Date	QC/Tracer Vial	Mult/EntYld	Total/Analy Vol	Final/Count Vol
2	Calc	TF	FILTER	*STLE	Ra228WoBS	**H61AH1AD**	**PCI/SA**		05/22/06 10:30	06/29/06 06:20	06/19/06 10:45	RATA22580	1	1.00 SA	
536403,000467					,J6F080203-2 v4.8.24		FILTER			31.1	06/28/06 10:40	RATA22580 Alq	85%	0.249795 SA	

Sq	Cnt Date	Parameter	Sample Cnt	Bkgrnd Cnt	Instr	Geom	Trc/Av	Ent	Efficiency1	Efficiency 2	Ent	Yld Fct	Ent	Blk Value	Ingr Fct	Conv Fct/VolAdj	Decay	Abn
0	06/28/06 13:46	RA-228	51	292	GPC7B	1	N	N	5.1927E-01	1.0000E+00	N	77%	N		1.3571E+00	4.5045E-01	1.0093E+00	
			50	400			Y		(1.257E-02)	(0.000E+00)		6%			(0.000E+00)	4.003279		
1	06/28/06 14:41	RA-228	52	292	GPC7B	1	N	N	5.1927E-01	1.0000E+00	N	77%	N		1.5055E+00	4.5045E-01	1.0093E+00	
			50	400			Y		(1.257E-02)	(0.000E+00)		6%			(0.000E+00)	4.003279		
2	06/28/06 15:36	RA-228	37	292	GPC7B	1	N	N	5.1927E-01	1.0000E+00	N	77%	N		1.6702E+00	4.5045E-01	1.0093E+00	
			50	400			Y		(1.257E-02)	(0.000E+00)		6%			(0.000E+00)	4.003279		

() - (1s Uncertainities), Q - Qualifier, U Result is Less Than Lc = 1.645 * TPU
IDC - Instrument Detection Level in Conc Units, MLcC - Method Decision Level in Conc Units, MDC- Minimum Detectable Concentration
Sr-89 Counts are Derived from the Combination of Each Sr-89/90 and Y-90 Count, All Result Digits May Not be Significants, Date/Time - mm/dd/yy hh:mm, 24hr Time

RecCnt:2

RADCALC v4.8.24
STL Richland

Batch Nbr: 6163140

Alpha Beta, Ra-228 by GPC , Calculated Results

6/29/2006 8:52:22 AM

3	06/29/06 06:20	RA-228	51	345	GPC7B	1	N	N	5.1927E-01	1.0000E+00	N	77%	N	8.7956E+00	4.5045E-01	1.0093E+00
			50	400			N		(1.257E-02)	(0.000E+00)		6%		(0.000E+00)	4.003279	

Sq	Calc Date	Parameter	Avg	Sa Act	Q	Net Cnt Rt	Dpm Wo Blk	Dpm-Blk	Vol Used	Yield,EnFct	Chem Yld,EFctU	IDC/ILcC	BlkLcC/MDC	StdDvMdC/LcC
	06/29/06	RA-228	R	**1.796216**		2.90000E-01	0.986934	0.986934	1.00 SA	77%		3.815793		
				(0.94118)		(1.4908E-01)	(0.514016)	(0.514016)	(0.028284)			1.741077		
	06/29/06	RA-228	R	**2.130143**		3.10000E-01	1.170411	1.170411	1.00 SA	77%		4.233225		
				(1.05591)		(1.5042E-01)	(0.576263)	(0.576263)	(0.028284)			1.931543		
	06/29/06	RA-228	R	**0.076229**	U4	1.00000E-02	0.041884	0.041884	1.00 SA	77%		4.696175		
				(0.982911)		(1.2894E-01)	(0.540057)	(0.540057)	(0.028284)			2.142779		
	06/29/06	RA-228	A	**1.334196**		2.03333E-01	0.733077	0.733077	1.00 SA	77%		2.452813		
				(0.574155)		(8.2647E-02)	(0.314104)	(0.314104)	(0.01633)			1.119174		
	06/29/06	RA-228	R	**6.322768**	U4	1.57500E-01	3.474057	3.474057	1.00 SA	77%		26.693223		
				(6.06321)		(1.5019E-01)	(3.325459)	(3.325459)	(0.028284)			12.265977		

Sq	Status	Method	Matrix	Protocol	Equation Set	Wrk Ord	Units/Matrix	QC/BB	Sa/On Date	AnalysisDate/PptWt	Sep1/Sep2 Date	QC/Tracer Vial	Mult/EntYld	Total/Analy Vol	Final/Count Vol
3	Calc	TF	FILTER	*STLE	Ra228WoBS	**H61AK1AD**	**PCI/SA**		05/22/06 10:45	06/29/06 06:20	06/19/06 10:45	RATA22581	1	1.00 SA	
536403,000468					,J6F080203-3 v4.8.24		FILTER			31.1	06/28/06 10:40	RATA22581 Aiq	84%	0.248736 SA	

Sq	Cnt Date	Parameter	Sample Cnt	Bkgrnd Cnt	Instr	Geom	Trc/Av	Ent	Efficiency1	Efficiency 2	Ent	Yld Fct	Ent	Blk Value	Ingr Fct	Conv Fct/VolAdj	Decay	Abn
0	06/28/06 13:46	RA-228	55	283	GPC7C	1	N	N	5.0660E-01	1.0000E+00	N	76%	N		1.3571E+00	4.5045E-01	1.0093E+00	
			50	400			Y		(1.090E-02)	(0.000E+00)		6%			(0.000E+00)	4.02033		
1	06/28/06 14:41	RA-228	51	283	GPC7C	1	N	N	5.0660E-01	1.0000E+00	N	76%	N		1.5055E+00	4.5045E-01	1.0093E+00	
			50	400			Y		(1.090E-02)	(0.000E+00)		6%			(0.000E+00)	4.02033		
2	06/28/06 15:36	RA-228	56	283	GPC7C	1	N	N	5.0660E-01	1.0000E+00	N	76%	N		1.6702E+00	4.5045E-01	1.0093E+00	
			50	400			Y		(1.090E-02)	(0.000E+00)		6%			(0.000E+00)	4.02033		
3	06/29/06 06:20	RA-228	36	312	GPC7C	1	N	N	5.0660E-01	1.0000E+00	N	76%	N		8.7956E+00	4.5045E-01	1.0093E+00	
			50	400			N		(1.090E-02)	(0.000E+00)		6%			(0.000E+00)	4.02033		

Sq	Calc Date	Parameter	Avg	Sa Act	Q	Net Cnt Rt	Dpm Wo Blk	Dpm-Blk	Vol Used	Yield,EnFct	Chem Yld,EFctU	IDC/ILcC	BlkLcC/MDC	StdDvMdC/LcC
	06/29/06	RA-228	R	**2.523884**		3.92500E-01	1.380876	1.380876	1.00 SA	76%		3.905333		
				(1.023494)		(1.5417E-01)	(0.554331)	(0.554331)	(0.028284)			1.779462		
	06/29/06	RA-228	R	**2.229288**		3.12500E-01	1.219696	1.219696	1.00 SA	76%		4.33256		
				(1.085668)		(1.4889E-01)	(0.589848)	(0.589848)	(0.028284)			1.974128		
	06/29/06	RA-228	R	**3.264473**		4.12500E-01	1.78607	1.78607	1.00 SA	76%		4.806373		
				(1.27357)		(1.5546E-01)	(0.689205)	(0.689205)	(0.028284)			2.190021		
	06/29/06	RA-228	A	**2.672548**		3.72500E-01	1.462214	1.462214	1.00 SA	76%		2.51037		
				(0.653894)		(8.8259E-02)	(0.35437)	(0.35437)	(0.01633)			1.143849		
	06/29/06	RA-228	R	**-2.500616**	U4	-6.00000E-02	-1.368146	-1.368146	1.00 SA	76%		26.46422		
				(5.335069)		(1.2787E-01)	(2.917883)	(2.917883)	(0.028284)			12.109856		

() - (1s Uncertainities), Q - Qualifier, U Result is Less Than Lc = 1.645 * TPU

IDC - Instrument Detection Level in Conc Units, MLcC - Method Decision Level in Conc Units, MDC- Minimum Detectable Concentration

Sr-89 Counts are Derived from the Combination of Each Sr-89/90 and Y-90 Count, All Result Digits May Not be Significants, Date/Time - mm/dd/yy hh:mm, 24hr Time

RecCnt:4

RADCALC v4.8.24

STL Richland

Batch Nbr: 6163140

Alpha Beta, Ra-228 by GPC , Calculated Results

6/29/2006 8:52:22 AM

Sq	Status	Method	Matrix	Protocol	Equation Set	Wrk Ord	Units/Matrix	QC/BB	Sa/On Date	AnalysisDate/PptWt	Sep1/Sep2 Date	QC/Tracer Vial	Mult/EntYld	Total/Analy Vol	Final/Count Vol
4	Calc	TF	FILTER	*STLE	Ra228WoBS	**H61AL1AD**	**PCI/SA**		05/22/06 11:10	06/29/06 06:16	06/19/06 10:45	RATA22582	1	1.00 SA	
536403,000469					,J6F080203-4 v4.8.24		FILTER			30.8	06/28/06 10:40	RATA22582 Alq	92%	0.248954 SA	

Sq	Cnt Date	Parameter	Sample Cnt	Bkgrnd Cnt	Instr	Geom	Trc/Av	Ent	Efficiency1	Efficiency 2	Ent	Yld Fct	Ent	Blk Value	Ingr Fct	Conv Fct/VolAdj	Decay	Abn
0	06/28/06 13:46	RA-228	62	237	GPC1A	1	N	N	5.3028E-01	1.0000E+00	N	83%	N		1.3576E+00	4.5045E-01	1.0093E+00	
			50	400			Y		(1.447E-02)	(0.000E+00)		7%			(0.000E+00)	4.016807		
1	06/28/06 14:41	RA-228	31	237	GPC1A	1	N	N	5.3028E-01	1.0000E+00	N	83%	N		1.5061E+00	4.5045E-01	1.0093E+00	
			50	400			Y		(1.447E-02)	(0.000E+00)		7%			(0.000E+00)	4.016807		
2	06/28/06 15:36	RA-228	37	237	GPC1A	1	N	N	5.3028E-01	1.0000E+00	N	83%	N		1.6708E+00	4.5045E-01	1.0093E+00	
			50	400			Y		(1.447E-02)	(0.000E+00)		7%			(0.000E+00)	4.016807		
3	06/29/06 06:16	RA-228	28	186	GPC1A	1	N	N	5.3028E-01	1.0000E+00	N	83%	N		8.7188E+00	4.5045E-01	1.0093E+00	
			50	249			N		(1.447E-02)	(0.000E+00)		7%			(0.000E+00)	4.016807		

Sq	Calc Date	Parameter	Avg	Sa Act	Q	Net Cnt Rt	Dpm Wo Blk	Dpm-Blk	Vol Used	Yield,EnFct	Chem Yld,EFctU	IDC/ILcC	BlkLcC/MDC	StdDvMdC/LcC
	06/29/06	RA-228	R	**3.665903**		6.47500E-01	2.007472	2.007472	1.00 SA	83%		3.17271		
				(0.991355)		(1.6211E-01)	(0.530483)	(0.530483)	(0.028284)			1.433776		
	06/29/06	RA-228	R	**0.172727**	**U4**	2.75000E-02	0.094586	0.094586	1.00 SA	83%		3.519791		
				(0.740228)		(1.1782E-01)	(0.405317)	(0.405317)	(0.028284)			1.590625		
	06/29/06	RA-228	R	**1.027762**	**U4**	1.47500E-01	0.562809	0.562809	1.00 SA	83%		3.904719		
				(0.895271)		(1.2760E-01)	(0.489189)	(0.489189)	(0.028284)			1.764578		
	06/29/06	RA-228	A	**1.622131**		2.74167E-01	0.888289	0.888289	1.00 SA	83%		2.039436		
				(0.509055)		(7.9193E-02)	(0.275882)	(0.275882)	(0.01633)			0.921639		
	06/29/06	RA-228	R	**-6.798876**	**U4**	-1.86988E-01	-3.723108	-3.723108	1.00 SA	83%		22.636321		
				(4.388145)		(1.1916E-01)	(2.393439)	(2.393439)	(0.028284)			10.338944		

Sq	Status	Method	Matrix	Protocol	Equation Set	Wrk Ord	Units/Matrix	QC/BB	Sa/On Date	AnalysisDate/PptWt	Sep1/Sep2 Date	QC/Tracer Vial	Mult/EntYld	Total/Analy Vol	Final/Count Vol
5	Calc	TF	FILTER	*STLE	Ra228WoBS	**H61AM1AD**	**PCI/SA**		05/22/06 11:25	06/29/06 06:16	06/19/06 10:45	RATA22583	1	1.00 SA	
536403,000470					,J6F080203-5 v4.8.24		FILTER			29.9	06/28/06 10:40	RATA22583 Alq	85%	0.248708 SA	

Sq	Cnt Date	Parameter	Sample Cnt	Bkgrnd Cnt	Instr	Geom	Trc/Av	Ent	Efficiency1	Efficiency 2	Ent	Yld Fct	Ent	Blk Value	Ingr Fct	Conv Fct/VolAdj	Decay	Abn
0	06/28/06 13:46	RA-228	34	208	GPC1C	1	N	N	5.2336E-01	1.0000E+00	N	74%	N		1.3576E+00	4.5045E-01	1.0093E+00	
			50	400			Y		(1.171E-02)	(0.000E+00)		6%			(0.000E+00)	4.020773		
1	06/28/06 14:41	RA-228	38	208	GPC1C	1	N	N	5.2336E-01	1.0000E+00	N	74%	N		1.5061E+00	4.5045E-01	1.0093E+00	
			50	400			Y		(1.171E-02)	(0.000E+00)		6%			(0.000E+00)	4.020773		
2	06/28/06 15:36	RA-228	33	208	GPC1C	1	N	N	5.2336E-01	1.0000E+00	N	74%	N		1.6708E+00	4.5045E-01	1.0093E+00	
			50	400			Y		(1.171E-02)	(0.000E+00)		6%			(0.000E+00)	4.020773		
3	06/29/06 06:16	RA-228	33	151	GPC1C	1	N	N	5.2336E-01	1.0000E+00	N	74%	N		8.7188E+00	4.5045E-01	1.0093E+00	
			50	249			N		(1.171E-02)	(0.000E+00)		6%			(0.000E+00)	4.020773		

() - (1s Uncertainities), Q - Qualifier, U Result is Less Than Lc = 1.645 * TPU
IDC - Instrument Detection Level in Conc Units, MLcC - Method Decision Level in Conc Units, MDC- Minimum Detectable Concentration
Sr-89 Counts are Derived from the Combination of Each Sr-89/90 and Y-90 Count, All Result Digits May Not be Significants, Date/Time - mm/dd/yy hh:mm, 24hr Time

RecCnt:5

RADCALC v4.8.24
STL Richland

Batch Nbr: 6163140

Alpha Beta, Ra-228 by GPC , Calculated Results

6/29/2006 8:52:22 AM

Sq	Calc Date	Parameter	Avg	Sa Act	Q	Net Cnt Rt	Dpm Wo Blk	Dpm-Blk	Vol Used	Yield,EnFct	Chem Yld,EFctU	IDC/ILcC	BlkLcC/MDC	StdDvMdC/LcC
	06/29/06	RA-228	R	**1.022193**	U4	1.60000E-01	0.55921	0.55921	1.00 SA	74%		3.37585		
				(0.786646)		(1.2207E-01)	(0.429148)	(0.429148)	(0.028284)			1.515691		
	06/29/06	RA-228	R	**1.701026**		2.40000E-01	0.930577	0.930577	1.00 SA	74%		3.745154		
				(0.926488)		(1.2845E-01)	(0.504025)	(0.504025)	(0.028284)			1.681501		
	06/29/06	RA-228	R	**1.10078**	U4	1.40000E-01	0.602202	0.602202	1.00 SA	74%		4.154728		
				(0.953302)		(1.2042E-01)	(0.520372)	(0.520372)	(0.028284)			1.865392		
	06/29/06	RA-228	A	**1.274666**		1.80000E-01	0.697329	0.697329	1.00 SA	74%		2.170016		
				(0.514887)		(7.1414E-02)	(0.280673)	(0.280673)	(0.01633)			0.974295		
	06/29/06	RA-228	R	**2.198122**	U4	5.35743E-02	1.202523	1.202523	1.00 SA	74%		23.235055		
				(5.135192)		(1.2504E-01)	(2.808451)	(2.808451)	(0.028284)			10.511872		

Sq	Status	Method	Matrix	Protocol	Equation Set	Wrk Ord	Units/Matrix	QC/BB	Sa/On Date	AnalysisDate/PptWt	Sep1/Sep2 Date	QC/Tracer Vial	Mult/EntYld	Total/Analy Vol	Final/Count Vol
6	Calc	TF	FILTER	*STLE	Ra228WoBS	**H61AR1AD**	**PCI/SA**		05/22/06 11:35	06/29/06 06:16	06/19/06 10:45	RATA22584	1	1.00 SA	
536403,000471					,J6F080203-6 v4.8.24		FILTER			30.7	06/28/06 10:40	RATA22584 Alq	95%	0.249626 SA	

Sq	Cnt Date	Parameter	Sample Cnt	Bkgrnd Cnt	Instr	Geom	Trc/Av	Ent	Efficiency1	Efficiency 2	Ent	Yld Fct	Ent	Blk Value	Ingr Fct	Conv Fct/VolAdj	Decay	Abn
0	06/28/06 13:46	RA-228	50	216	GPC1D	1	N	N	5.3169E-01	1.0000E+00	N	85%	N		1.3576E+00	4.5045E-01	1.0093E+00	
			50	400			Y		(1.368E-02)	(0.000E+00)		7%			(0.000E+00)	4.00599		
1	06/28/06 14:41	RA-228	45	216	GPC1D	1	N	N	5.3169E-01	1.0000E+00	N	85%	N		1.5061E+00	4.5045E-01	1.0093E+00	
			50	400			Y		(1.368E-02)	(0.000E+00)		7%			(0.000E+00)	4.00599		
2	06/28/06 15:36	RA-228	39	216	GPC1D	1	N	N	5.3169E-01	1.0000E+00	N	85%	N		1.6708E+00	4.5045E-01	1.0093E+00	
			50	400			Y		(1.368E-02)	(0.000E+00)		7%			(0.000E+00)	4.00599		
3	06/29/06 06:16	RA-228	28	165	GPC1D	1	N	N	5.3169E-01	1.0000E+00	N	85%	N		8.7188E+00	4.5045E-01	1.0093E+00	
			50	249			N		(1.368E-02)	(0.000E+00)		7%			(0.000E+00)	4.00599		

Sq	Calc Date	Parameter	Avg	Sa Act	Q	Net Cnt Rt	Dpm Wo Blk	Dpm-Blk	Vol Used	Yield,EnFct	Chem Yld,EFctU	IDC/ILcC	BlkLcC/MDC	StdDvMdC/LcC
	06/29/06	RA-228	R	**2.523336**		4.60000E-01	1.385534	1.385534	1.00 SA	85%		2.948147		
				(0.841675)		(1.4612E-01)	(0.455249)	(0.455249)	(0.028284)			1.326203		
	06/29/06	RA-228	R	**2.190818**		3.60000E-01	1.202952	1.202952	1.00 SA	85%		3.270661		
				(0.875416)		(1.3910E-01)	(0.475688)	(0.475688)	(0.028284)			1.471284		
	06/29/06	RA-228	R	**1.620272**		2.40000E-01	0.889672	0.889672	1.00 SA	85%		3.628344		
				(0.894286)		(1.3019E-01)	(0.488375)	(0.488375)	(0.028284)			1.632186		
	06/29/06	RA-228	A	**2.111476**		3.53333E-01	1.159386	1.159386	1.00 SA	85%		1.895085		
				(0.502717)		(8.0035E-02)	(0.27326)	(0.27326)	(0.01633)			0.852491		
	06/29/06	RA-228	R	**-3.616272**	U4	-1.02651E-01	-1.985652	-1.985652	1.00 SA	85%		20.768024		
				(4.16394)		(1.1773E-01)	(2.283523)	(2.283523)	(0.028284)			9.43491		

() - (1s Uncertainities), Q - Qualifier, U Result is Less Than Lc = 1.645 * TPU

IDC - Instrument Detection Level in Conc Units, MLcC - Method Decision Level in Conc Units, MDC- Minimum Detectable Concentration

Sr-89 Counts are Derived from the Combination of Each Sr-89/90 and Y-90 Count, All Result Digits May Not be Significants, Date/Time - mm/dd/yy hh:mm, 24hr Time

RecCnt:7

RADCALC v4.8.24

STL Richland

Batch Nbr: 6163140

Alpha Beta, Ra-228 by GPC , Calculated Results

6/29/2006 8:52:22 AM

Sq	Status	Method	Matrix	Protocol	Equation Set	Wrk Ord	Units/Matrix	QC/BB	Sa/On Date	AnalysisDate/PptWt	Sep1/Sep2 Date	QC/Tracer Vial	Mult/EntYld	Total/Analy Vol	Final/Count Vol
7	Calc	TF	FILTER	*STLE	Ra228WoBS	**H61AT1AD**	**PCI/SA**		05/22/06 10:15	06/29/06 06:16	06/19/06 10:45	RATA22585	1	1.00 SA	
536403,000472					,J6F080203-7 v4.8.24		FILTER			30.8	06/28/06 10:40	RATA22585 Alq	78%	0.24726 SA	

Sq	Cnt Date	Parameter	Sample Cnt	Bkgrnd Cnt	Instr	Geom	Trc/Av	Ent	Efficiency1	Efficiency 2	Ent	Yld Fct	Ent	Blk Value	Ingr Fct	Conv Fct/VolAdj	Decay	Abn
0	06/28/06 13:46	RA-228	22	79	GPC2A	1	N	N	4.2799E-01	1.0000E+00	N	70%	N		1.3581E+00	4.5045E-01	1.0093E+00	
			50	400			Y		(1.185E-02)	(0.000E+00)		6%			(0.000E+00)	4.044332		
1	06/28/06 14:41	RA-228	18	79	GPC2A	1	N	N	4.2799E-01	1.0000E+00	N	70%	N		1.5066E+00	4.5045E-01	1.0093E+00	
			50	400			Y		(1.185E-02)	(0.000E+00)		6%			(0.000E+00)	4.044332		
2	06/28/06 15:36	RA-228	26	79	GPC2A	1	N	N	4.2799E-01	1.0000E+00	N	70%	N		1.6714E+00	4.5045E-01	1.0093E+00	
			50	400			Y		(1.185E-02)	(0.000E+00)		6%			(0.000E+00)	4.044332		
3	06/29/06 06:16	RA-228	15	89	GPC2A	1	N	N	4.2799E-01	1.0000E+00	N	70%	N		8.7202E+00	4.5045E-01	1.0093E+00	
			50	400			N		(1.185E-02)	(0.000E+00)		6%			(0.000E+00)	4.044332		

Sq	Calc Date	Parameter	Avg	Sa Act	Q	Net Cnt Rt	Dpm Wo Blk	Dpm-Blk	Vol Used	Yield,EnFct	Chem Yld,EFctU	IDC/ILcC	BlkLcC/MDC	StdDvMdC/LcC
	06/29/06	RA-228	R	**2.015847**		2.42500E-01	1.096364	1.096364	1.00 SA	70%		2.879943		
				(0.827496)		(9.6404E-02)	(0.445624)	(0.445624)	(0.028284)			1.215417		
	06/29/06	RA-228	R	**1.498553**		1.62500E-01	0.815022	0.815022	1.00 SA	70%		3.194897		
				(0.823287)		(8.7714E-02)	(0.445309)	(0.445309)	(0.028284)			1.348337		
	06/29/06	RA-228	R	**3.299401**		3.22500E-01	1.794454	1.794454	1.00 SA	70%		3.544405		
				(1.11989)		(1.0437E-01)	(0.600291)	(0.600291)	(0.028284)			1.495839		
	06/29/06	RA-228	A	**2.271267**		2.42500E-01	1.23528	1.23528	1.00 SA	70%		1.851225		
				(0.539208)		(5.5659E-02)	(0.290063)	(0.290063)	(0.01633)			0.781269		
	06/29/06	RA-228	R	**4.136645**	**U4**	7.75000E-02	2.249808	2.249808	1.00 SA	70%		19.449903		
				(4.342566)		(8.0971E-02)	(2.358264)	(2.358264)	(0.028284)			8.283378		

Sq	Status	Method	Matrix	Protocol	Equation Set	Wrk Ord	Units/Matrix	QC/BB	Sa/On Date	AnalysisDate/PptWt	Sep1/Sep2 Date	QC/Tracer Vial	Mult/EntYld	Total/Analy Vol	Final/Count Vol
8	Calc	TF	FILTER	*STLE	Ra228WoBS	**H61AX1AD**	**PCI/SA**		05/22/06 10:00	06/29/06 06:16	06/19/06 10:45	RATA22586	1	1.00 SA	
536403,P-0637					,J6F080203-8 v4.8.24		FILTER			31.0	06/28/06 10:40	RATA22586 Alq	87%	0.245497 SA	

Sq	Cnt Date	Parameter	Sample Cnt	Bkgrnd Cnt	Instr	Geom	Trc/Av	Ent	Efficiency1	Efficiency 2	Ent	Yld Fct	Ent	Blk Value	Ingr Fct	Conv Fct/VolAdj	Decay	Abn
0	06/28/06 13:46	RA-228	29	101	GPC2B	1	N	N	4.4468E-01	1.0000E+00	N	79%	N		1.3581E+00	4.5045E-01	1.0093E+00	
			50	400			Y		(1.049E-02)	(0.000E+00)		6%			(0.000E+00)	4.073375		
1	06/28/06 14:41	RA-228	19	101	GPC2B	1	N	N	4.4468E-01	1.0000E+00	N	79%	N		1.5066E+00	4.5045E-01	1.0093E+00	
			50	400			Y		(1.049E-02)	(0.000E+00)		6%			(0.000E+00)	4.073375		
2	06/28/06 15:36	RA-228	16	101	GPC2B	1	N	N	4.4468E-01	1.0000E+00	N	79%	N		1.6714E+00	4.5045E-01	1.0093E+00	
			50	400			Y		(1.049E-02)	(0.000E+00)		6%			(0.000E+00)	4.073375		
3	06/29/06 06:16	RA-228	10	108	GPC2B	1	N	N	4.4468E-01	1.0000E+00	N	79%	N		8.7202E+00	4.5045E-01	1.0093E+00	
			50	400			N		(1.049E-02)	(0.000E+00)		6%			(0.000E+00)	4.073375		

() - (1s Uncertainities), Q - Qualifier, U Result is Less Than Lc = 1.645 * TPU

IDC - Instrument Detection Level in Conc Units, MLcC - Method Decision Level in Conc Units, MDC- Minimum Detectable Concentration

Sr-89 Counts are Derived from the Combination of Each Sr-89/90 and Y-90 Count, All Result Digits May Not be Significants, Date/Time - mm/dd/yy hh:mm, 24hr Time

RecCnt:8

RADCALC v4.8.24

STL Richland

Batch Nbr: 6163140

Alpha Beta, Ra-228 by GPC , Calculated Results

6/29/2006 8:52:22 AM

Sq	Calc Date	Parameter	Avg	Sa Act	Q	Net Cnt Rt	Dpm Wo Blk	Dpm-Blk	Vol Used	Yield,EnFct	Chem Yld,EFctU	IDC/ILcC	BlkLcC/MDC	StdDvMdC/LcC
	06/29/06	RA-228	R	**2.355219**		3.27500E-01	1.271802	1.271802	1.00 SA	79%		2.766174		
				(0.830341)		(1.1059E-01)	(0.442386)	(0.442386)	(0.028284)			1.188903		
	06/29/06	RA-228	R	**1.017192**	U4	1.27500E-01	0.549277	0.549277	1.00 SA	79%		3.068686		
				(0.731106)		(9.0726E-02)	(0.393529)	(0.393529)	(0.028284)			1.318923		
	06/29/06	RA-228	R	**0.597425**	U4	6.75000E-02	0.322605	0.322605	1.00 SA	79%		3.404387		
				(0.744619)		(8.3853E-02)	(0.401662)	(0.401662)	(0.028284)			1.463208		
	06/29/06	RA-228	A	**1.323278**		1.74167E-01	0.714561	0.714561	1.00 SA	79%		1.778094		
				(0.444527)		(5.5271E-02)	(0.238491)	(0.238491)	(0.01633)			0.764226		
	06/29/06	RA-228	R	**-3.232352**	U4	-7.00000E-02	-1.745447	-1.745447	1.00 SA	79%		18.281434		
				(3.174193)		(6.8374E-02)	(1.711107)	(1.711107)	(0.028284)			7.894022		

Sq	Status	Method	Matrix	Protocol	Equation Set	Wrk Ord	Units/Matrix	QC/BB	Sa/On Date	AnalysisDate/PptWt	Sep1/Sep2 Date	QC/Tracer Vial	Mult/EntYld	Total/Analy Vol	Final/Count Vol
9	Calc	TF	FILTER	*STLE	Ra228WoBS	**H61A11AD**	**PCI/SA**		05/22/06 10:25	06/29/06 06:16	06/19/06 10:45	RATA22587	1	1.00 SA	
536403,P-0638					,J6F080203-9 v4.8.24		FILTER			31.4	06/28/06 10:40	RATA22587 Alq	89%	0.24989 SA	

Sq	Cnt Date	Parameter	Sample Cnt	Bkgrnd Cnt	Instr	Geom	Trc/Av	Ent	Efficiency1	Efficiency 2	Ent	Yld Fct	Ent	Blk Value	Ingr Fct	Conv Fct/VolAdj	Decay	Abn
0	06/28/06 13:46	RA-228	21	88	GPC2C	1	N	N	4.2929E-01	1.0000E+00	N	81%	N		1.3581E+00	4.5045E-01	1.0093E+00	
			50	400			Y		(9.337E-03)	(0.000E+00)		6%			(0.000E+00)	4.001761		
1	06/28/06 14:41	RA-228	21	88	GPC2C	1	N	N	4.2929E-01	1.0000E+00	N	81%	N		1.5066E+00	4.5045E-01	1.0093E+00	
			50	400			Y		(9.337E-03)	(0.000E+00)		6%			(0.000E+00)	4.001761		
2	06/28/06 15:36	RA-228	24	88	GPC2C	1	N	N	4.2929E-01	1.0000E+00	N	81%	N		1.6714E+00	4.5045E-01	1.0093E+00	
			50	400			Y		(9.337E-03)	(0.000E+00)		6%			(0.000E+00)	4.001761		
3	06/29/06 06:16	RA-228	15	107	GPC2C	1	N	N	4.2929E-01	1.0000E+00	N	81%	N		8.7202E+00	4.5045E-01	1.0093E+00	
			50	400			N		(9.337E-03)	(0.000E+00)		6%			(0.000E+00)	4.001761		

Sq	Calc Date	Parameter	Avg	Sa Act	Q	Net Cnt Rt	Dpm Wo Blk	Dpm-Blk	Vol Used	Yield,EnFct	Chem Yld,EFctU	IDC/ILcC	BlkLcC/MDC	StdDvMdC/LcC
	06/29/06	RA-228	R	**1.418194**		2.00000E-01	0.779524	0.779524	1.00 SA	81%		2.571513		
				(0.685918)		(9.4604E-02)	(0.374353)	(0.374353)	(0.028284)			1.094241		
	06/29/06	RA-228	R	**1.573289**		2.00000E-01	0.864774	0.864774	1.00 SA	81%		2.852736		
				(0.760931)		(9.4604E-02)	(0.415292)	(0.415292)	(0.028284)			1.213908		
	06/29/06	RA-228	R	**2.26902**		2.60000E-01	1.247189	1.247189	1.00 SA	81%		3.164813		
				(0.908518)		(1.0075E-01)	(0.49421)	(0.49421)	(0.028284)			1.346704		
	06/29/06	RA-228	A	**1.753501**		2.20000E-01	0.963829	0.963829	1.00 SA	81%		1.652966		
				(0.456424)		(5.5827E-02)	(0.248741)	(0.248741)	(0.01633)			0.703377		
	06/29/06	RA-228	R	**1.479754**	U4	3.25000E-02	0.813361	0.813361	1.00 SA	81%		17.953664		
				(3.721158)		(8.1662E-02)	(2.044837)	(2.044837)	(0.028284)			7.747545		

() - (1s Uncertainities), Q - Qualifier, U Result is Less Than Lc = 1.645 * TPU

IDC - Instrument Detection Level in Conc Units, MLcC - Method Decision Level in Conc Units, MDC- Minimum Detectable Concentration

Sr-89 Counts are Derived from the Combination of Each Sr-89/90 and Y-90 Count, All Result Digits May Not be Significants, Date/Time - mm/dd/yy hh:mm, 24hr Time

RecCnt:10

RADCALC v4.8.24

STL Richland

Batch Nbr: 6163140

Alpha Beta, Ra-228 by GPC , Calculated Results

6/29/2006 8:52:22 AM

Sq	Status	Method	Matrix	Protocol	Equation Set	Wrk Ord	Units/Matrix	QC/BB	Sa/On Date	AnalysisDate/PptWt	Sep1/Sep2 Date	QC/Tracer Vial	Mult/EntYld	Total/Analy Vol	Final/Count Vol
10	Calc	TF	FILTER	*STLE	Ra228WoBS	**H61A21AD**	**PCI/SA**		05/22/06 10:40	06/29/06 06:16	06/19/06 10:45	RATA22588	1	1.00 SA	
536403,P-0639					,J6F080203-10 v4.8.24		FILTER			30.9	06/28/06 10:40	RATA22588 Alq	98%	0.247648 SA	

Sq	Cnt Date	Parameter	Sample Cnt	Bkgrnd Cnt	Instr	Geom	Trc/Av	Ent	Efficiency1	Efficiency 2	Ent	Yld Fct	Ent	Blk Value	Ingr Fct	Conv Fct/VolAdj	Decay	Abn
0	06/28/06 13:46	RA-228	21	104	GPC2D	1	N	N	4.3803E-01	1.0000E+00	N	88%	N		1.3581E+00	4.5045E-01	1.0093E+00	
			50	400			Y		(1.309E-02)	(0.000E+00)		7%			(0.000E+00)	4.037986		
1	06/28/06 14:41	RA-228	20	104	GPC2D	1	N	N	4.3803E-01	1.0000E+00	N	88%	N		1.5066E+00	4.5045E-01	1.0093E+00	
			50	400			Y		(1.309E-02)	(0.000E+00)		7%			(0.000E+00)	4.037986		
2	06/28/06 15:36	RA-228	13	104	GPC2D	1	N	N	4.3803E-01	1.0000E+00	N	88%	N		1.6714E+00	4.5045E-01	1.0093E+00	
			50	400			Y		(1.309E-02)	(0.000E+00)		7%			(0.000E+00)	4.037986		
3	06/29/06 06:16	RA-228	17	93	GPC2D	1	N	N	4.3803E-01	1.0000E+00	N	88%	N		8.7202E+00	4.5045E-01	1.0093E+00	
			50	400			N		(1.309E-02)	(0.000E+00)		7%			(0.000E+00)	4.037986		

Sq	Calc Date	Parameter	Avg	Sa Act	Q	Net Cnt Rt	Dpm Wo Blk	Dpm-Blk	Vol Used	Yield,EnFct	Chem Yld,EFctU	IDC/ILcC	BlkLcC/MDC	StdDvMdC/LcC
	06/29/06	RA-228	R	**1.031459**		1.60000E-01	0.561867	0.561867	1.00 SA	88%		2.511064		
				(0.622398)		(9.5131E-02)	(0.337499)	(0.337499)	(0.028284)			1.081471		
	06/29/06	RA-228	R	**1.001228**	**U4**	1.40000E-01	0.5454	0.5454	1.00 SA	88%		2.785676		
				(0.673076)		(9.3005E-02)	(0.365304)	(0.365304)	(0.028284)			1.199741		
	06/29/06	RA-228	R	**0.00E00**	**U4**	0.00000E+00	0.00E00	0.00E00	1.00 SA	88%		3.090418		
				(0.606833)		(7.6485E-02)	(0.330561)	(0.330561)	(0.028284)			1.330988		
	06/29/06	RA-228	A	**0.677563**		1.00000E-01	0.369089	0.369089	1.00 SA	88%		1.614109		
				(0.366463)		(5.1153E-02)	(0.19906)	(0.19906)	(0.01633)			0.695168		
	06/29/06	RA-228	R	**4.449808**	**U4**	1.07500E-01	2.423946	2.423946	1.00 SA	88%		15.368922		
				(3.585665)		(8.5914E-02)	(1.948251)	(1.948251)	(0.028284)			6.566594		

Sq	Status	Method	Matrix	Protocol	Equation Set	Wrk Ord	Units/Matrix	QC/BB	Sa/On Date	AnalysisDate/PptWt	Sep1/Sep2 Date	QC/Tracer Vial	Mult/EntYld	Total/Analy Vol	Final/Count Vol
11	Calc	TF	FILTER	*STLE	Ra228WoBS	**H61A31AD**	**PCI/SA**		05/22/06 11:20	06/29/06 06:21	06/19/06 10:45	RATA22589	1	1.00 SA	
536403,P-0641					,J6F080203-11 v4.8.24		FILTER			31.0	06/28/06 10:40	RATA22589 Alq	106%	0.251461 SA	

Sq	Cnt Date	Parameter	Sample Cnt	Bkgrnd Cnt	Instr	Geom	Trc/Av	Ent	Efficiency1	Efficiency 2	Ent	Yld Fct	Ent	Blk Value	Ingr Fct	Conv Fct/VolAdj	Decay	Abn
0	06/28/06 13:46	RA-228	15	90	GPC3A	1	N	N	4.6800E-01	1.0000E+00	N	96%	N		1.3588E+00	4.5045E-01	1.0093E+00	
			50	400			Y		(1.324E-02)	(0.000E+00)		8%			(0.000E+00)	3.976759		
1	06/28/06 14:41	RA-228	17	90	GPC3A	1	N	N	4.6800E-01	1.0000E+00	N	96%	N		1.5074E+00	4.5045E-01	1.0093E+00	
			50	400			Y		(1.324E-02)	(0.000E+00)		8%			(0.000E+00)	3.976759		
2	06/28/06 15:37	RA-228	14	90	GPC3A	1	N	N	4.6800E-01	1.0000E+00	N	96%	N		1.6723E+00	4.5045E-01	1.0093E+00	
			50	400			Y		(1.324E-02)	(0.000E+00)		8%			(0.000E+00)	3.976759		
3	06/29/06 06:21	RA-228	16	115	GPC3A	1	N	N	4.6800E-01	1.0000E+00	N	96%	N		8.8047E+00	4.5045E-01	1.0093E+00	
			50	400			N		(1.324E-02)	(0.000E+00)		8%			(0.000E+00)	3.976759		

() - (1s Uncertainities), Q - Qualifier, U Result is Less Than Lc = 1.645 * TPU
IDC - instrument Detection Level in Conc Units, MLcC - Method Decision Level in Conc Units, MDC- Minimum Detectable Concentration
Sr-89 Counts are Derived from the Combination of Each Sr-89/90 and Y-90 Count, All Result Digits May Not be Significants, Date/Time - mm/dd/yy hh:mm, 24hr Time

RecCnt:11 RADCALC v4.8.24
STL Richland

Batch Nbr: 6163140

Alpha Beta, Ra-228 by GPC , Calculated Results

6/29/2006 8:52:22 AM

Sq	Calc Date	Parameter	Avg	Sa Act	Q	Net Cnt Rt	Dpm Wo Blk	Dpm-Blk	Vol Used	Yield,EnFct	Chem Yld,EFctU	IDC/ILcC	BlkLcC/MDC	StdDvMdC/LcC
	06/29/06	RA-228	R	**0.41042**	**U4**	7.50000E-02	0.227013	0.227013	1.00 SA	96%		2.00357		
				(0.445295)		(8.1009E-02)	(0.245957)	(0.245957)	(0.028284)			0.853994		
	06/29/06	RA-228	R	**0.698155**	**U4**	1.15000E-01	0.386165	0.386165	1.00 SA	96%		2.222752		
				(0.525805)		(8.5805E-02)	(0.289987)	(0.289987)	(0.028284)			0.947417		
	06/29/06	RA-228	R	**0.370416**	**U4**	5.50000E-02	0.204885	0.204885	1.00 SA	96%		2.465835		
				(0.530056)		(7.8502E-02)	(0.292949)	(0.292949)	(0.028284)			1.051027		
	06/29/06	RA-228	A	**0.492997**		8.16667E-02	0.272688	0.272688	1.00 SA	96%		1.287906		
				(0.289773)		(4.7243E-02)	(0.160002)	(0.160002)	(0.01633)			0.548952		
	06/29/06	RA-228	R	**1.152449**	**U4**	3.25000E-02	0.637445	0.637445	1.00 SA	96%		14.425248		
				(2.994183)		(8.4373E-02)	(1.655744)	(1.655744)	(0.028284)			6.255373		

Sq	Status	Method	Matrix	Protocol	Equation Set	Wrk Ord	Units/Matrix	QC/BB	Sa/On Date	AnalysisDate/PptWt	Sep1/Sep2 Date	QC/Tracer Vial	Mult/EntYld	Total/Analy Vol	Final/Count Vol
12	Calc	TF	FILTER	*STLE	Ra228WoBS	**H61A51AD**	**PCI/SA**		05/22/06 11:30	06/29/06 06:21	06/19/06 10:45	RATA22590	1	1.00 SA	
536403,P-0642					,J6F080203-12 v4.8.24		FILTER			30.5	06/28/06 10:40	RATA22590 Alq	94%	0.249197 SA	

Sq	Cnt Date	Parameter	Sample Cnt	Bkgrnd Cnt	Instr	Geom	Trc/Av	Ent	Efficiency1	Efficiency 2	Ent	Yld Fct	Ent	Blk Value	Ingr Fct	Conv Fct/VolAdj	Decay	Abn
0	06/28/06 13:46	RA-228	20	92	GPC3B	1	N	N	4.7930E-01	1.0000E+00	N	83%	N		1.3588E+00	4.5045E-01	1.0093E+00	
			50	400			Y		(1.181E-02)	(0.000E+00)		7%			(0.000E+00)	4.012883		
1	06/28/06 14:41	RA-228	14	92	GPC3B	1	N	N	4.7930E-01	1.0000E+00	N	83%	N		1.5074E+00	4.5045E-01	1.0093E+00	
			50	400			Y		(1.181E-02)	(0.000E+00)		7%			(0.000E+00)	4.012883		
2	06/28/06 15:37	RA-228	17	92	GPC3B	1	N	N	4.7930E-01	1.0000E+00	N	83%	N		1.6723E+00	4.5045E-01	1.0093E+00	
			50	400			Y		(1.181E-02)	(0.000E+00)		7%			(0.000E+00)	4.012883		
3	06/29/06 06:21	RA-228	18	115	GPC3B	1	N	N	4.7930E-01	1.0000E+00	N	83%	N		8.8047E+00	4.5045E-01	1.0093E+00	
			50	400			N		(1.181E-02)	(0.000E+00)		7%			(0.000E+00)	4.012883		

Sq	Calc Date	Parameter	Avg	Sa Act	Q	Net Cnt Rt	Dpm Wo Blk	Dpm-Blk	Vol Used	Yield,EnFct	Chem Yld,EFctU	IDC/ILcC	BlkLcC/MDC	StdDvMdC/LcC
	06/29/06	RA-228	R	**1.053128**		1.70000E-01	0.577266	0.577266	1.00 SA	83%		2.289491		
				(0.583531)		(9.2601E-02)	(0.318136)	(0.318136)	(0.028284)			0.977445		
	06/29/06	RA-228	R	**0.343628**	**U4**	5.00000E-02	0.188358	0.188358	1.00 SA	83%		2.539951		
				(0.54118)		(7.8581E-02)	(0.296447)	(0.296447)	(0.028284)			1.084373		
	06/29/06	RA-228	R	**0.838657**	**U4**	1.10000E-01	0.459705	0.459705	1.00 SA	83%		2.817723		
				(0.660259)		(8.5878E-02)	(0.360952)	(0.360952)	(0.028284)			1.202961		
	06/29/06	RA-228	A	**0.745138**		1.10000E-01	0.408443	0.408443	1.00 SA	83%		1.471698		
				(0.344694)		(4.9582E-02)	(0.188378)	(0.188378)	(0.01633)			0.628307		
	06/29/06	RA-228	R	**2.910324**	**U4**	7.25000E-02	1.595277	1.595277	1.00 SA	83%		16.330075		
				(3.584364)		(8.8987E-02)	(1.96261)	(1.96261)	(0.028284)			7.081383		

() - (1s Uncertainities), Q - Qualifier, U Result is Less Than Lc = 1.645 * TPU

IDC - Instrument Detection Level in Conc Units, MLcC - Method Decision Level in Conc Units, MDC- Minimum Detectable Concentration

Sr-89 Counts are Derived from the Combination of Each Sr-89/90 and Y-90 Count, All Result Digits May Not be Significants, Date/Time - mm/dd/yy hh:mm, 24hr Time

RecCnt:13

RADCALC v4.8.24

STL Richland

Batch Nbr: 6163140

Alpha Beta, Ra-228 by GPC , Calculated Results

6/29/2006 8:52:23 AM

Sq	Status	Method	Matrix	Protocol	Equation Set	Wrk Ord	Units/Matrix	QC/BB	Sa/On Date	AnalysisDate/PptWt	Sep1/Sep2 Date	QC/Tracer Vial	Mult/EntYld	Total/Analy Vol	Final/Count Vol
13	Calc	TF	FILTER	*STLE	Ra228WoBS	**H61A71AD**	**PCI/SA**		05/22/06 10:05	06/29/06 06:21	06/19/06 10:45	RATA22591	1	1.00 SA	
536403,P-0643					,J6F080203-13 v4.8.24		FILTER			30.8	06/28/06 10:40	RATA22591 Alq	91%	0.248915 SA	

Sq	Cnt Date	Parameter	Sample Cnt	Bkgrnd Cnt	Instr	Geom	Trc/Av	Ent	Efficiency1	Efficiency 2	Ent	Yld Fct	Ent	Blk Value	Ingr Fct	Conv Fct/VolAdj	Decay	Abn
0	06/28/06 13:46	RA-228	18	112	GPC3C	1	N	N	4.7091E-01	1.0000E+00	N	81%	N		1.3588E+00	4.5045E-01	1.0093E+00	
			50	400			Y		(1.100E-02)	(0.000E+00)		6%			(0.000E+00)	4.017431		
1	06/28/06 14:41	RA-228	14	112	GPC3C	1	N	N	4.7091E-01	1.0000E+00	N	81%	N		1.5074E+00	4.5045E-01	1.0093E+00	
			50	400			Y		(1.100E-02)	(0.000E+00)		6%			(0.000E+00)	4.017431		
2	06/28/06 15:37	RA-228	14	112	GPC3C	1	N	N	4.7091E-01	1.0000E+00	N	81%	N		1.6723E+00	4.5045E-01	1.0093E+00	
			50	400			Y		(1.100E-02)	(0.000E+00)		6%			(0.000E+00)	4.017431		
3	06/29/06 06:21	RA-228	15	134	GPC3C	1	N	N	4.7091E-01	1.0000E+00	N	81%	N		8.8047E+00	4.5045E-01	1.0093E+00	
			50	400			N		(1.100E-02)	(0.000E+00)		6%			(0.000E+00)	4.017431		

Sq	Calc Date	Parameter	Avg	Sa Act	Q	Net Cnt Rt	Dpm Wo Blk	Dpm-Blk	Vol Used	Yield,EnFct	Chem Yld,EFctU	IDC/ILcC	BlkLcC/MDC	StdDvMdC/LcC
	06/29/06	RA-228	R	**0.519903**	**U4**	8.00000E-02	0.284654	0.284654	1.00 SA	81%		2.613647		
				(0.580018)		(8.8882E-02)	(0.317146)	(0.317146)	(0.028284)			1.131378		
	06/29/06	RA-228	R	**0.00E00**	**U4**	0.00000E+00	0.00E00	0.00E00	1.00 SA	81%		2.899569		
				(0.572255)		(7.9373E-02)	(0.313317)	(0.313317)	(0.028284)			1.255146		
	06/29/06	RA-228	R	**0.00E00**	**U4**	0.00000E+00	0.00E00	0.00E00	1.00 SA	81%		3.216669		
				(0.634837)		(7.9373E-02)	(0.347582)	(0.347582)	(0.028284)			1.39241		
	06/29/06	RA-228	A	**0.173301**	**U4**	2.66667E-02	0.094885	0.094885	1.00 SA	81%		1.680067		
				(0.344305)		(4.7726E-02)	(0.188433)	(0.188433)	(0.01633)			0.727256		
	06/29/06	RA-228	R	**-1.473912**	**U4**	-3.50000E-02	-0.806986	-0.806986	1.00 SA	81%		18.311		
				(3.485383)		(8.2689E-02)	(1.90773)	(1.90773)	(0.028284)			8.019032		

Sq	Status	Method	Matrix	Protocol	Equation Set	Wrk Ord	Units/Matrix	QC/BB	Sa/On Date	AnalysisDate/PptWt	Sep1/Sep2 Date	QC/Tracer Vial	Mult/EntYld	Total/Analy Vol	Final/Count Vol
14	Calc	TF	FILTER	*STLE	Ra228WoBS	**H67QX1AA**	**PCI/SA**	**B**	05/22/06 10:10	06/29/06 06:21	06/19/06 10:45		1	1.00 SA	
0,INTRA-LAB BLANK					,J6F120000-140		FILTER			31.1	06/28/06 10:40		84%	1.00 SA	

Sq	Cnt Date	Parameter	Sample Cnt	Bkgrnd Cnt	Instr	Geom	Trc/Av	Ent	Efficiency1	Efficiency 2	Ent	Yld Fct	Ent	Blk Value	Ingr Fct	Conv Fct/VolAdj	Decay	Abn
0	06/28/06 13:46	RA-228	20	75	GPC3D	1	N	N	4.6776E-01	1.0000E+00	N	76%	N		1.3588E+00	4.5045E-01	1.0093E+00	
			50	400			Y		(1.145E-02)	(0.000E+00)		6%			(0.000E+00)	1.00		
1	06/28/06 14:41	RA-228	15	75	GPC3D	1	N	N	4.6776E-01	1.0000E+00	N	76%	N		1.5074E+00	4.5045E-01	1.0093E+00	
			50	400			Y		(1.145E-02)	(0.000E+00)		6%			(0.000E+00)	1.00		
2	06/28/06 15:37	RA-228	24	75	GPC3D	1	N	N	4.6776E-01	1.0000E+00	N	76%	N		1.6723E+00	4.5045E-01	1.0093E+00	
			50	400			Y		(1.145E-02)	(0.000E+00)		6%			(0.000E+00)	1.00		
3	06/29/06 06:21	RA-228	16	107	GPC3D	1	N	N	4.6776E-01	1.0000E+00	N	76%	N		8.8047E+00	4.5045E-01	1.0093E+00	
			50	400			N		(1.145E-02)	(0.000E+00)		6%			(0.000E+00)	1.00		

() - (1s Uncertainities), Q - Qualifier, U Result is Less Than Lc = 1.645 * TPU
IDC - Instrument Detection Level in Conc Units, MLcC - Method Decision Level in Conc Units, MDC- Minimum Detectable Concentration
Sr-89 Counts are Derived from the Combination of Each Sr-89/90 and Y-90 Count, All Result Digits May Not be Significants, Date/Time - mm/dd/yy hh:mm, 24hr Time

RecCnt:14

RADCALC v4.8.24
STL Richland

Batch Nbr: 6163140

Alpha Beta, Ra-228 by GPC , Calculated Results

6/29/2006 8:52:23 AM

Sq	Calc Date	Parameter	Avg	Sa Act	Q	Net Cnt Rt	Dpm Wo Blk	Dpm-Blk	Vol Used	Yield,EnFct	Chem Yld,EFctU	IDC/ILcC	BlkLcC/MDC	StdDvMdC/LcC
	06/29/06	RA-228	R	**0.368222**		2.12500E-01	0.80994	0.80994	1.00 SA	76%		0.587341		
				(0.163576)		(9.2026E-02)	(0.35724)	(0.35724)	(0.017321)			0.246858		
	06/29/06	RA-228	R	**0.216267**	U4	1.12500E-01	0.4757	0.4757	1.00 SA	76%		0.651594		
				(0.156089)		(8.0429E-02)	(0.342408)	(0.342408)	(0.017321)			0.273863		
	06/29/06	RA-228	R	**0.623786**		2.92500E-01	1.37208	1.37208	1.00 SA	76%		0.722853		
				(0.222723)		(1.0034E-01)	(0.484491)	(0.484491)	(0.017321)			0.303813		
	06/29/06	RA-228	A	**0.402758**		2.05833E-01	0.885907	0.885907	1.00 SA	76%		0.377546		
				(0.105791)		(5.2711E-02)	(0.230843)	(0.230843)	(0.01)			0.158682		
	06/29/06	RA-228	R	**0.589496**	U4	5.25000E-02	1.296655	1.296655	1.00 SA	76%		4.427599		
				(0.945847)		(8.4076E-02)	(2.079352)	(2.079352)	(0.017321)			1.910642		

Sq	Status	Method	Matrix	Protocol	Equation Set	Wrk Ord	Units/Matrix	QC/BB	Sa/On Date	AnalysisDate/PptWt	Sep1/Sep2 Date	QC/Tracer Vial	Mult/EntYld	Total/Analy Vol	Final/Count Vol
15	Calc	TF	FILTER	*STLE	Ra228WoBS	**H67QX1AC**	**PCI/SA**	**S**	05/22/06 10:10	06/29/06 06:21	06/19/06 10:45	RASC4118	1	1.00 SA	
0,INTRA-LAB CHECK					,J6F120000-140		FILTER			30.6	06/28/06 10:40		88%	1.00 SA	

Sq	Cnt Date	Parameter	Sample Cnt	Bkgrnd Cnt	Instr	Geom	Trc/Av	Ent	Efficiency1	Efficiency 2	Ent	Yld Fct	Ent	Blk Value	Ingr Fct	Conv Fct/VolAdj	Decay	Abn
0	06/28/06 13:41	RA-228	148	65	GPC4B	1	N	N	4.6220E-01	1.0000E+00	N	78%	N		1.3462E+00	4.5045E-01	1.0093E+00	
			50	260			Y		(1.048E-02)	(0.000E+00)		6%			(0.000E+00)	1.00		
1	06/28/06 14:37	RA-228	119	65	GPC4B	1	N	N	4.6220E-01	1.0000E+00	N	78%	N		1.4935E+00	4.5045E-01	1.0093E+00	
			50	260			Y		(1.048E-02)	(0.000E+00)		6%			(0.000E+00)	1.00		
2	06/28/06 15:32	RA-228	128	65	GPC4B	1	N	N	4.6220E-01	1.0000E+00	N	78%	N		1.6569E+00	4.5045E-01	1.0093E+00	
			50	260			Y		(1.048E-02)	(0.000E+00)		6%			(0.000E+00)	1.00		
3	06/29/06 06:21	RA-228	48	118	GPC4A	1	N	N	4.8160E-01	1.0000E+00	N	78%	N		8.8058E+00	4.5045E-01	1.0093E+00	
			50	400			N		(1.103E-02)	(0.000E+00)		6%			(0.000E+00)	1.00		

Sq	Calc Date	Parameter	Avg	Sa Act	Q	Net Cnt Rt	Dpm Wo Blk	Dpm-Blk	Vol Used	Yield,EnFct	Chem Yld,EFctU	IDC/ILcC	BlkLcC/MDC	StdDvMdC/LcC
	06/29/06	RA-228	R	**4.578488**		2.71000E+00	10.070838	10.070838	1.00 SA	78%	93%	0.647078		
				(0.612658)		(2.4528E-01)	(1.237761)	(1.237761)	(0.017321)			0.277919		
	06/29/06	RA-228	R	**3.992261**		2.13000E+00	8.781373	8.781373	1.00 SA	78%	81%	0.717866		
				(0.570455)		(2.2037E-01)	(1.165564)	(1.165564)	(0.017321)			0.308323		
	06/29/06	RA-228	R	**4.803279**		2.31000E+00	10.565288	10.565288	1.00 SA	78%	98%	0.796397		
				(0.670555)		(2.2839E-01)	(1.364892)	(1.364892)	(0.017321)			0.342052		
	06/29/06	RA-228	A	**4.458009**		2.38333E+00	9.805833	9.805833	1.00 SA	78%	91%	0.41595		
				(0.357524)		(1.3370E-01)	(0.726752)	(0.726752)	(0.01)			0.17865		
	06/29/06	RA-228	R	**7.052959**		6.65000E-01	15.513681	15.513681	1.00 SA	78%	143%	4.363006		
				(1.65119)		(1.4120E-01)	(3.537967)	(3.537967)	(0.017321)			1.895207		

() - (1s Uncertainities), Q - Qualifier, U Result is Less Than Lc = 1.645 * TPU

IDC - Instrument Detection Level in Conc Units, MLcC - Method Decision Level in Conc Units, MDC- Minimum Detectable Concentration

Sr-89 Counts are Derived from the Combination of Each Sr-89/90 and Y-90 Count, All Result Digits May Not be Significants, Date/Time - mm/dd/yy hh:mm, 24hr Time

RecCnt:15

RADCALC v4.8.24

STL Richland

Calculation Log

Batch Nbr: 6163140

6/29/2006 8:52:23 AM

Time Stamp	Log Entry	User
6/29/2006 6:56:43	Loaded IDB Rows => 15	BlackCL
6/29/2006 6:56:43	Updated Sep Date => 15	BlackCL
6/29/2006 6:56:44	Inserted IDB Rows => 60	BlackCL
6/29/2006 6:58:18	********** Calculating .... _AB_v, 6/29/2006 6:58:14 AM	BlackCL
6/29/2006 6:58:23	=>Start 184433, H61AE1AD, 0, RA-228	BlackCL
6/29/2006 6:58:23	PptWt/tSie Out of Equation Range... -1; 16-37; GPC7A, SR-89: , Aborting...	BlackCL
6/29/2006 6:58:23	=>Skip 184433, CalDpmWOBlk	BlackCL
6/29/2006 6:59:41	********** Calculating .... _AB_v, 6/29/2006 6:59:39 AM	BlackCL
6/29/2006 6:59:41	=>Start 184433, H61AE1AD, 0, RA-228	BlackCL
6/29/2006 6:59:41	=>Start 184433, H61AE1AD, 1, RA-228	BlackCL
6/29/2006 6:59:41	=>Start 184433, H61AE1AD, 2, RA-228	BlackCL
6/29/2006 6:59:42	=>Start 184433, H61AE1AD, 3, RA-228	BlackCL
6/29/2006 6:59:42	=> Calc	BlackCL
6/29/2006 6:59:43	=>Start 184434, H61AH1AD, 0, RA-228	BlackCL
6/29/2006 6:59:43	=>Start 184434, H61AH1AD, 1, RA-228	BlackCL
6/29/2006 6:59:43	=>Start 184434, H61AH1AD, 2, RA-228	BlackCL
6/29/2006 6:59:43	=>Start 184434, H61AH1AD, 3, RA-228	BlackCL
6/29/2006 6:59:44	=> Calc	BlackCL
6/29/2006 6:59:44	=>Start 184435, H61AK1AD, 0, RA-228	BlackCL
6/29/2006 6:59:44	=>Start 184435, H61AK1AD, 1, RA-228	BlackCL
6/29/2006 6:59:44	=>Start 184435, H61AK1AD, 2, RA-228	BlackCL
6/29/2006 6:59:44	=>Start 184435, H61AK1AD, 3, RA-228	BlackCL
6/29/2006 6:59:45	=> Calc	BlackCL
6/29/2006 6:59:45	=>Start 184436, H61AL1AD, 0, RA-228	BlackCL
6/29/2006 6:59:45	=>Start 184436, H61AL1AD, 1, RA-228	BlackCL
6/29/2006 6:59:45	=>Start 184436, H61AL1AD, 2, RA-228	BlackCL
6/29/2006 6:59:45	=>Start 184436, H61AL1AD, 3, RA-228	BlackCL
6/29/2006 6:59:46	=> Calc	BlackCL
6/29/2006 6:59:46	=>Start 184437, H61AM1AD, 0, RA-228	BlackCL
6/29/2006 6:59:46	=>Start 184437, H61AM1AD, 1, RA-228	BlackCL
6/29/2006 6:59:46	=>Start 184437, H61AM1AD, 2, RA-228	BlackCL
6/29/2006 6:59:46	=>Start 184437, H61AM1AD, 3, RA-228	BlackCL
6/29/2006 6:59:46	=> Calc	BlackCL
6/29/2006 6:59:47	=>Start 184438, H61AR1AD, 0, RA-228	BlackCL
6/29/2006 6:59:47	=>Start 184438, H61AR1AD, 1, RA-228	BlackCL
6/29/2006 6:59:47	=>Start 184438, H61AR1AD, 2, RA-228	BlackCL
6/29/2006 6:59:47	=>Start 184438, H61AR1AD, 3, RA-228	BlackCL
6/29/2006 6:59:47	=> Calc	BlackCL
6/29/2006 6:59:48	=>Start 184439, H61AT1AD, 0, RA-228	BlackCL
6/29/2006 6:59:48	=>Start 184439, H61AT1AD, 1, RA-228	BlackCL
6/29/2006 6:59:48	=>Start 184439, H61AT1AD, 2, RA-228	BlackCL
6/29/2006 6:59:48	=>Start 184439, H61AT1AD, 3, RA-228	BlackCL
6/29/2006 6:59:48	=> Calc	BlackCL
6/29/2006 6:59:49	=>Start 184440, H61AX1AD, 0, RA-228	BlackCL
6/29/2006 6:59:49	=>Start 184440, H61AX1AD, 1, RA-228	BlackCL
6/29/2006 6:59:49	=>Start 184440, H61AX1AD, 2, RA-228	BlackCL
6/29/2006 6:59:49	=>Start 184440, H61AX1AD, 3, RA-228	BlackCL
6/29/2006 6:59:49	=> Calc	BlackCL
6/29/2006 6:59:49	=>Start 184441, H61A11AD, 0, RA-228	BlackCL
6/29/2006 6:59:50	=>Start 184441, H61A11AD, 1, RA-228	BlackCL
6/29/2006 6:59:50	=>Start 184441, H61A11AD, 2, RA-228	BlackCL

UST Number: H61AE1AD Isotope: 180 (QREPORT Rev 11-OCT-98)

Detector: 7-A File: [quad7.sample.A]H61AE1AD.180
Dish Size: 1 Bkg File: $DISK1:[QUAD7.BKGRND]CURRENT.A_1;2931

Cycle	Alpha	Beta	Min	Guard	Volts	Finish Date/Time
1	00000	00061	0050	01137	1700	28-JUN-2006 13:46:00.30
2	00000	00069	0050	01152	1700	28-JUN-2006 14:41:16.02
3	00000	00041	0050	01155	1700	28-JUN-2006 15:36:31.70

Bkg File: [quad7.bkgrnd]2006-06-28_0442.A_1 (QREPORT Rev 11-OCT-98)

Cycle	Count	Min	CPM	Guard	Volts	Date/Time
Bkg	00315	0400	0.79	09197	1700	28-JUN-2006 04:42:45.48

UST Number: H61AE1AD Isotope: 430 (QREPORT Rev 11-OCT-98)

Detector: 7-A File: [quad7.sample.A]H61AE1AD.430
Dish Size: 1 Bkg File: $DISK1:[QUAD7.BKGRND]CURRENT.A_1;2932

Cycle	Alpha	Beta	Min	Guard	Volts	Finish Date/Time
1	00000	00053	0050	01132	1700	29-JUN-2006 06:20:56.30

Bkg File: [quad7.bkgrnd]2006-06-29_0455.A_1 (QREPORT Rev 11-OCT-98)

Cycle	Count	Min	CPM	Guard	Volts	Date/Time
Bkg	00338	0400	0.85	09099	1700	29-JUN-2006 04:55:53.35

UST Number: H61AH1AD Isotope: 180 (QREPORT Rev 11-OCT-98)

Detector: 7-B File: [quad7.sample.B]H61AH1AD.180
Dish Size: 1 Bkg File: $DISK1:[QUAD7.BKGRND]CURRENT.B_1;2918

Cycle	Alpha	Beta	Min	Guard	Volts	Finish Date/Time
1	00000	00051	0050	01137	1700	28-JUN-2006 13:46:00.30
2	00000	00052	0050	01152	1700	28-JUN-2006 14:41:16.02
3	00000	00037	0050	01155	1700	28-JUN-2006 15:36:31.70

Bkg File: [quad7.bkgrnd]2006-06-28_0442.B_1 (QREPORT Rev 11-OCT-98)

Cycle	Count	Min	CPM	Guard	Volts	Date/Time
Bkg	00292	0400	0.73	09197	1700	28-JUN-2006 04:42:45.48

UST Number: H61AH1AD Isotope: 430 (QREPORT Rev 11-OCT-98)

Detector: 7-B File: [quad7.sample.B]H61AH1AD.430
Dish Size: 1 Bkg File: $DISK1:[QUAD7.BKGRND]CURRENT.B_1;2919

Cycle	Alpha	Beta	Min	Guard	Volts	Finish Date/Time
1	00000	00051	0050	01132	1700	29-JUN-2006 06:20:56.30

Bkg File: [quad7.bkgrnd]2006-06-29_0455.B_1 (QREPORT Rev 11-OCT-98)

Cycle	Count	Min	CPM	Guard	Volts	Date/Time
Bkg	00345	0400	0.86	09099	1700	29-JUN-2006 04:55:53.35

UST Number: H61AK1AD Isotope: 180 (QREPORT Rev 11-OCT-98)

Detector: 7-C File: [quad7.sample.C]H61AK1AD.180
Dish Size: 1 Bkg File: $DISK1:[QUAD7.BKGRND]CURRENT.C_1;2923

Cycle	Alpha	Beta	Min	Guard	Volts	Finish Date/Time
1	00000	00055	0050	01137	1700	28-JUN-2006 13:46:00.30
2	00000	00051	0050	01152	1700	28-JUN-2006 14:41:16.02
3	00000	00056	0050	01155	1700	28-JUN-2006 15:36:31.70

Bkg File: [quad7.bkgrnd]2006-06-28_0442.C_1 (QREPORT Rev 11-OCT-98)

Cycle	Count	Min	CPM	Guard	Volts	Date/Time
Bkg	00283	0400	0.71	09197	1700	28-JUN-2006 04:42:45.48

UST Number: H61AK1AD Isotope: 430 (QREPORT Rev 11-OCT-98)

Detector: 7-C File: [quad7.sample.C]H61AK1AD.430
Dish Size: 1 Bkg File: $DISK1:[QUAD7.BKGRND]CURRENT.C_1;2924

Cycle	Alpha	Beta	Min	Guard	Volts	Finish Date/Time
1	00000	00036	0050	01132	1700	29-JUN-2006 06:20:56.30

Bkg File: [quad7.bkgrnd]2006-06-29_0455.C_1 (QREPORT Rev 11-OCT-98)

Cycle	Count	Min	CPM	Guard	Volts	Date/Time
Bkg	00312	0400	0.78	09099	1700	29-JUN-2006 04:55:53.35

UST Number: H61AL1AD Isotope: 180 (QREPORT Rev 11-OCT-98)

Detector: 1-A File: [quad1.sample.A]H61AL1AD.180
Dish Size: 1 Bkg File: $DISK1:[QUAD1.BKGRND]CURRENT.A_1;2980

Cycle	Alpha	Beta	Min	Guard	Volts	Finish Date/Time
1	00000	00062	0050	01151	1650	28-JUN-2006 13:46:13.59
2	00000	00031	0050	01154	1650	28-JUN-2006 14:41:29.30
3	00000	00037	0050	01161	1650	28-JUN-2006 15:36:44.99

Bkg File: [quad1.bkgrnd]2006-06-28_0446.A_1 (QREPORT Rev 11-OCT-98)

Cycle	Count	Min	CPM	Guard	Volts	Date/Time
Bkg	00237	0400	0.59	09215	1650	28-JUN-2006 04:46:46.50

UST Number: H61AL1AD Isotope: 430 (QREPORT Rev 11-OCT-98)

Detector: 1-A File: [quad1.sample.A]H61AL1AD.430
Dish Size: 1 Bkg File: $DISK1:[QUAD1.BKGRND]CURRENT.A_1;2981

Cycle	Alpha	Beta	Min	Guard	Volts	Finish Date/Time
1	00000	00028	0050	01147	1650	29-JUN-2006 06:16:16.56

Bkg File: [quad1.bkgrnd]2006-06-29_0224.A_1 (QREPORT Rev 11-OCT-98)

Cycle	Count	Min	CPM	Guard	Volts	Date/Time
Bkg	00186	0249	0.75	05736	1650	29-JUN-2006 02:24:37.55

UST Number: H61AM1AD Isotope: 180 (QREPORT Rev 11-OCT-98)

Detector: 1-C File: [quad1.sample.C]H61AM1AD.180
Dish Size: 1 Bkg File: $DISK1:[QUAD1.BKGRND]CURRENT.C_1;2976

Cycle	Alpha	Beta	Min	Guard	Volts	Finish Date/Time
1	00000	00034	0050	01151	1650	28-JUN-2006 13:46:13.59
2	00000	00038	0050	01154	1650	28-JUN-2006 14:41:29.30
3	00000	00033	0050	01161	1650	28-JUN-2006 15:36:44.99

Bkg File: [quad1.bkgrnd]2006-06-28_0446.C_1 (QREPORT Rev 11-OCT-98)

Cycle	Count	Min	CPM	Guard	Volts	Date/Time
Bkg	00208	0400	0.52	09215	1650	28-JUN-2006 04:46:46.50

UST Number: H61AM1AD Isotope: 430 (QREPORT Rev 11-OCT-98)

Detector: 1-C File: [quad1.sample.C]H61AM1AD.430
Dish Size: 1 Bkg File: $DISK1:[QUAD1.BKGRND]CURRENT.C_1;2977

Cycle	Alpha	Beta	Min	Guard	Volts	Finish Date/Time
1	00000	00033	0050	01147	1650	29-JUN-2006 06:16:16.56

Bkg File: [quad1.bkgrnd]2006-06-29_0224.C_1 (QREPORT Rev 11-OCT-98)

Cycle	Count	Min	CPM	Guard	Volts	Date/Time
Bkg	00151	0249	0.61	05736	1650	29-JUN-2006 02:24:37.55

UST Number: H61AR1AD Isotope: 180 (QREPORT Rev 11-OCT-98)

Detector: 1-D File: [quad1.sample.D]H61AR1AD.180
Dish Size: 1 Bkg File: $DISK1:[QUAD1.BKGRND]CURRENT.D_1;2979

Cycle	Alpha	Beta	Min	Guard	Volts	Finish Date/Time
1	00000	00050	0050	01151	1650	28-JUN-2006 13:46:13.59
2	00000	00045	0050	01154	1650	28-JUN-2006 14:41:29.30
3	00000	00039	0050	01161	1650	28-JUN-2006 15:36:44.99

Bkg File: [quad1.bkgrnd]2006-06-28_0446.D_1 (QREPORT Rev 11-OCT-98)

Cycle	Count	Min	CPM	Guard	Volts	Date/Time
Bkg	00216	0400	0.54	09215	1650	28-JUN-2006 04:46:46.50

UST Number: H61AR1AD Isotope: 430 (QREPORT Rev 11-OCT-98)

Detector: 1-D File: [quad1.sample.D]H61AR1AD.430
Dish Size: 1 Bkg File: $DISK1:[QUAD1.BKGRND]CURRENT.D_1;2980

Cycle	Alpha	Beta	Min	Guard	Volts	Finish Date/Time
1	00000	00028	0050	01147	1650	29-JUN-2006 06:16:16.56

Bkg File: [quad1.bkgrnd]2006-06-29_0224.D_1 (QREPORT Rev 11-OCT-98)

Cycle	Count	Min	CPM	Guard	Volts	Date/Time
Bkg	00165	0249	0.66	05736	1650	29-JUN-2006 02:24:37.55

UST Number: H61AT1AD Isotope: 180 (QREPORT Rev 11-OCT-98)

Detector: 2-A File: [quad2.sample.A]H61AT1AD.180
Dish Size: 1 Bkg File: $DISK1:[QUAD2.BKGRND]CURRENT.A_1;3521

Cycle	Alpha	Beta	Min	Guard	Volts	Finish Date/Time
1	00000	00022	0050	01162	1810	28-JUN-2006 13:46:24.21
2	00000	00018	0050	01164	1810	28-JUN-2006 14:41:39.95
3	00000	00026	0050	01171	1810	28-JUN-2006 15:36:55.69

Bkg File: [quad2.bkgrnd]2006-06-28_0446.A_1 (QREPORT Rev 11-OCT-98)

Cycle	Count	Min	CPM	Guard	Volts	Date/Time
Bkg	00079	0400	0.20	09330	1810	28-JUN-2006 04:46:59.35

UST Number: H61AT1AD Isotope: 430 (QREPORT Rev 11-OCT-98)

Detector: 2-A File: [quad2.sample.A]H61AT1AD.430
Dish Size: 1 Bkg File: $DISK1:[QUAD2.BKGRND]CURRENT.A_1;3522

Cycle	Alpha	Beta	Min	Guard	Volts	Finish Date/Time
1	00000	00015	0050	01144	1810	29-JUN-2006 06:16:21.92

Bkg File: [quad2.bkgrnd]2006-06-29_0455.A_1 (QREPORT Rev 11-OCT-98)

Cycle	Count	Min	CPM	Guard	Volts	Date/Time
Bkg	00089	0400	0.22	09168	1810	29-JUN-2006 04:55:46.36

UST Number: H61AX1AD Isotope: 180 (QREPORT Rev 11-OCT-98)

Detector: 2-B File: [quad2.sample.B]H61AX1AD.180
Dish Size: 1 Bkg File: $DISK1:[QUAD2.BKGRND]CURRENT.B_1;3518

Cycle	Alpha	Beta	Min	Guard	Volts	Finish Date/Time
1	00000	00029	0050	01162	1810	28-JUN-2006 13:46:24.21
2	00000	00019	0050	01164	1810	28-JUN-2006 14:41:39.95
3	00000	00016	0050	01171	1810	28-JUN-2006 15:36:55.69

Bkg File: [quad2.bkgrnd]2006-06-28_0446.B_1 (QREPORT Rev 11-OCT-98)

Cycle	Count	Min	CPM	Guard	Volts	Date/Time
Bkg	00101	0400	0.25	09330	1810	28-JUN-2006 04:46:59.35

UST Number: H61AX1AD Isotope: 430 (QREPORT Rev 11-OCT-98)

Detector: 2-B File: [quad2.sample.B]H61AX1AD.430
Dish Size: 1 Bkg File: $DISK1:[QUAD2.BKGRND]CURRENT.B_1;3519

Cycle	Alpha	Beta	Min	Guard	Volts	Finish Date/Time
1	00000	00010	0050	01144	1810	29-JUN-2006 06:16:21.92

Bkg File: [quad2.bkgrnd]2006-06-29_0455.B_1 (QREPORT Rev 11-OCT-98)

Cycle	Count	Min	CPM	Guard	Volts	Date/Time
Bkg	00108	0400	0.27	09168	1810	29-JUN-2006 04:55:46.36

UST Number: H61A11AD Isotope: 180 (QREPORT Rev 11-OCT-98)

Detector: 2-C File: [quad2.sample.C]H61A11AD.180
Dish Size: 1 Bkg File: $DISK1:[QUAD2.BKGRND]CURRENT.C_1;3519

Cycle	Alpha	Beta	Min	Guard	Volts	Finish Date/Time
1	00000	00021	0050	01162	1810	28-JUN-2006 13:46:24.21
2	00000	00021	0050	01164	1810	28-JUN-2006 14:41:39.95
3	00000	00024	0050	01171	1810	28-JUN-2006 15:36:55.69

Bkg File: [quad2.bkgrnd]2006-06-28_0446.C_1 (QREPORT Rev 11-OCT-98)

Cycle	Count	Min	CPM	Guard	Volts	Date/Time
Bkg	00088	0400	0.22	09330	1810	28-JUN-2006 04:46:59.35

UST Number: H61A11AD Isotope: 430 (QREPORT Rev 11-OCT-98)

Detector: 2-C File: [quad2.sample.C]H61A11AD.430
Dish Size: 1 Bkg File: $DISK1:[QUAD2.BKGRND]CURRENT.C_1;3520

Cycle	Alpha	Beta	Min	Guard	Volts	Finish Date/Time
1	00000	00015	0050	01144	1810	29-JUN-2006 06:16:21.92

Bkg File: [quad2.bkgrnd]2006-06-29_0455.C_1 (QREPORT Rev 11-OCT-98)

Cycle	Count	Min	CPM	Guard	Volts	Date/Time
Bkg	00107	0400	0.27	09168	1810	29-JUN-2006 04:55:46.36

UST Number: H61A21AD Isotope: 180 (QREPORT Rev 11-OCT-98)

Detector: 2-D File: [quad2.sample.D]H61A21AD.180
Dish Size: 1 Bkg File: $DISK1:[QUAD2.BKGRND]CURRENT.D_1;3518

Cycle	Alpha	Beta	Min	Guard	Volts	Finish Date/Time
1	00000	00021	0050	01162	1810	28-JUN-2006 13:46:24.21
2	00000	00020	0050	01164	1810	28-JUN-2006 14:41:39.95
3	00000	00013	0050	01171	1810	28-JUN-2006 15:36:55.69

Bkg File: [quad2.bkgrnd]2006-06-28_0446.D_1 (QREPORT Rev 11-OCT-98)

Cycle	Count	Min	CPM	Guard	Volts	Date/Time
Bkg	00104	0400	0.26	09330	1810	28-JUN-2006 04:46:59.35

UST Number: H61A21AD Isotope: 430 (QREPORT Rev 11-OCT-98)

Detector: 2-D File: [quad2.sample.D]H61A21AD.430
Dish Size: 1 Bkg File: $DISK1:[QUAD2.BKGRND]CURRENT.D_1;3519

Cycle	Alpha	Beta	Min	Guard	Volts	Finish Date/Time
1	00000	00017	0050	01144	1810	29-JUN-2006 06:16:21.92

Bkg File: [quad2.bkgrnd]2006-06-29_0455.D_1 (QREPORT Rev 11-OCT-98)

Cycle	Count	Min	CPM	Guard	Volts	Date/Time
Bkg	00093	0400	0.23	09168	1810	29-JUN-2006 04:55:46.36

UST Number: H61A31AD Isotope: 180 (QREPORT Rev 11-OCT-98)

Detector: 3-A File: [quad3.sample.A]H61A31AD.180
Dish Size: 1 Bkg File: $DISK1:[QUAD3.BKGRND]CURRENT.A_1;5435

Cycle	Alpha	Beta	Min	Guard	Volts	Finish Date/Time
1	00000	00015	0050	01256	1920	28-JUN-2006 13:46:40.36
2	00000	00017	0050	01257	1920	28-JUN-2006 14:41:56.06
3	00000	00014	0050	01271	1920	28-JUN-2006 15:37:11.72

Bkg File: [quad3.bkgrnd]2006-06-28_0446.A_1 (QREPORT Rev 11-OCT-98)

Cycle	Count	Min	CPM	Guard	Volts	Date/Time
Bkg	00090	0400	0.23	10050	1920	28-JUN-2006 04:46:57.20

UST Number: H61A31AD Isotope: 430 (QREPORT Rev 11-OCT-98)

Detector: 3-A File: [quad3.sample.A]H61A31AD.430
Dish Size: 1 Bkg File: $DISK1:[QUAD3.BKGRND]CURRENT.A_1;5436

Cycle	Alpha	Beta	Min	Guard	Volts	Finish Date/Time
1	00000	00016	0050	01234	1920	29-JUN-2006 06:21:29.23

Bkg File: [quad3.bkgrnd]2006-06-29_0455.A_1 (QREPORT Rev 11-OCT-98)

Cycle	Count	Min	CPM	Guard	Volts	Date/Time
Bkg	00115	0400	0.29	09950	1920	29-JUN-2006 04:55:41.47

UST Number: H61A51AD Isotope: 180 (QREPORT Rev 11-OCT-98)

Detector: 3-B File: [quad3.sample.B]H61A51AD.180
Dish Size: 1 Bkg File: $DISK1:[QUAD3.BKGRND]CURRENT.B_1;5444

Cycle	Alpha	Beta	Min	Guard	Volts	Finish Date/Time
1	00000	00020	0050	01256	1920	28-JUN-2006 13:46:40.36
2	00000	00014	0050	01257	1920	28-JUN-2006 14:41:56.06
3	00000	00017	0050	01271	1920	28-JUN-2006 15:37:11.72

Bkg File: [quad3.bkgrnd]2006-06-28_0446.B_1 (QREPORT Rev 11-OCT-98)

Cycle	Count	Min	CPM	Guard	Volts	Date/Time
Bkg	00092	0400	0.23	10050	1920	28-JUN-2006 04:46:57.20

UST Number: H61A51AD Isotope: 430 (QREPORT Rev 11-OCT-98)

Detector: 3-B File: [quad3.sample.B]H61A51AD.430
Dish Size: 1 Bkg File: $DISK1:[QUAD3.BKGRND]CURRENT.B_1;5445

Cycle	Alpha	Beta	Min	Guard	Volts	Finish Date/Time
1	00000	00018	0050	01234	1920	29-JUN-2006 06:21:29.23

Bkg File: [quad3.bkgrnd]2006-06-29_0455.B_1 (QREPORT Rev 11-OCT-98)

Cycle	Count	Min	CPM	Guard	Volts	Date/Time
Bkg	00115	0400	0.29	09950	1920	29-JUN-2006 04:55:41.47

UST Number: H61A71AD Isotope: 180 (QREPORT Rev 11-OCT-98)

Detector: 3-C File: [quad3.sample.C]H61A71AD.180
Dish Size: 1 Bkg File: $DISK1:[QUAD3.BKGRND]CURRENT.C_1;5449

Cycle	Alpha	Beta	Min	Guard	Volts	Finish Date/Time
1	00000	00018	0050	01256	1920	28-JUN-2006 13:46:40.36
2	00000	00014	0050	01257	1920	28-JUN-2006 14:41:56.06
3	00000	00014	0050	01271	1920	28-JUN-2006 15:37:11.72

Bkg File: [quad3.bkgrnd]2006-06-28_0446.C_1 (QREPORT Rev 11-OCT-98)

Cycle	Count	Min	CPM	Guard	Volts	Date/Time
Bkg	00112	0400	0.28	10050	1920	28-JUN-2006 04:46:57.20

UST Number: H61A71AD Isotope: 430 (QREPORT Rev 11-OCT-98)

Detector: 3-C File: [quad3.sample.C]H61A71AD.430
Dish Size: 1 Bkg File: $DISK1:[QUAD3.BKGRND]CURRENT.C_1;5450

Cycle	Alpha	Beta	Min	Guard	Volts	Finish Date/Time
1	00000	00015	0050	01234	1920	29-JUN-2006 06:21:29.23

Bkg File: [quad3.bkgrnd]2006-06-29_0455.C_1 (QREPORT Rev 11-OCT-98)

Cycle	Count	Min	CPM	Guard	Volts	Date/Time
Bkg	00134	0400	0.34	09950	1920	29-JUN-2006 04:55:41.47

UST Number: H67QX1AA Isotope: 180 (QREPORT Rev 11-OCT-98)

Detector: 3-D File: [quad3.sample.D]H67QX1AA.180
Dish Size: 1 Bkg File: $DISK1:[QUAD3.BKGRND]CURRENT.D_1;5429

Cycle	Alpha	Beta	Min	Guard	Volts	Finish Date/Time
1	00000	00020	0050	01256	1920	28-JUN-2006 13:46:40.36
2	00000	00015	0050	01257	1920	28-JUN-2006 14:41:56.06
3	00000	00024	0050	01271	1920	28-JUN-2006 15:37:11.72

Bkg File: [quad3.bkgrnd]2006-06-28_0446.D_1 (QREPORT Rev 11-OCT-98)

Cycle	Count	Min	CPM	Guard	Volts	Date/Time
Bkg	00075	0400	0.19	10050	1920	28-JUN-2006 04:46:57.20

UST Number: H67QX1AA Isotope: 430 (QREPORT Rev 11-OCT-98)

Detector: 3-D File: [quad3.sample.D]H67QX1AA.430
Dish Size: 1 Bkg File: $DISK1:[QUAD3.BKGRND]CURRENT.D_1;5430

Cycle	Alpha	Beta	Min	Guard	Volts	Finish Date/Time
1	00000	00016	0050	01234	1920	29-JUN-2006 06:21:29.23

Bkg File: [quad3.bkgrnd]2006-06-29_0455.D_1 (QREPORT Rev 11-OCT-98)

Cycle	Count	Min	CPM	Guard	Volts	Date/Time
Bkg	00107	0400	0.27	09950	1920	29-JUN-2006 04:55:41.47

UST Number: H67QX1AC Isotope: 180 (QREPORT Rev 11-OCT-98)

Detector: 4-B File: [quad4.sample.B]H67QX1AC.180
Dish Size: 1 Bkg File: $DISK1:[QUAD4.BKGRND]CURRENT.B_1;5452

Cycle	Alpha	Beta	Min	Guard	Volts	Finish Date/Time
1	00000	00148	0050	01196	1850	28-JUN-2006 13:41:44.84
2	00000	00119	0050	01209	1850	28-JUN-2006 14:37:00.54
3	00000	00128	0050	01224	1850	28-JUN-2006 15:32:16.23

Bkg File: [quad4.bkgrnd]2006-06-28_0221.B_1 (QREPORT Rev 11-OCT-98)

Cycle	Count	Min	CPM	Guard	Volts	Date/Time
Bkg	00065	0260	0.25	06247	1850	28-JUN-2006 02:21:37.47

UST Number: H67QX1AC Isotope: 430 (QREPORT Rev 11-OCT-98)

Detector: 4-A File: [quad4.sample.A]H67QX1AC.430
Dish Size: 1 Bkg File: $DISK1:[QUAD4.BKGRND]CURRENT.A_1;5454

Cycle	Alpha	Beta	Min	Guard	Volts	Finish Date/Time
1	00000	00048	0050	01188	1850	29-JUN-2006 06:21:33.93

Bkg File: [quad4.bkgrnd]2006-06-29_0455.A_1 (QREPORT Rev 11-OCT-98)

Cycle	Count	Min	CPM	Guard	Volts	Date/Time
Bkg	00118	0400	0.30	09511	1850	29-JUN-2006 04:55:49.51

RADIUM 226

SAMPLE AND QC DATA

SEVERN TRENT STL

Data Review/Verification Checklist

RADIOCHEMISTRY, First Level Review

6/27/2006 8:07:02 AM

Lot No., Due Date: J6F080203; 07/05/2006

Client, Site: 536403; AIR MONITORING Yerington Mine

QC Batch No., Method Test: 6163137; RRA2267 Ra-226 by ASC-7

SDG, Matrix: 31853; FILTER

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:
See NCM. 10.08232

First Level Review Pam Anderson **Date** 6.27.06

SEVERN TRENT STL

Data Review Checklist
RADIOCHEMISTRY
Second Level Review

QC Batch Number: 6163157

Review Item	Yes (√)	No (√)	N/A (√)
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 with contract acceptance criteria?	✓		
7. Is the LCS Minimum Detectable Activity ≤ the Contract Detection Limit?	✓		
8. Do the MS/MSD results and yields meet acceptance criteria?			✓
9. Do the duplicate sample results and yields meet acceptance criteria?			✓
C. Other			
1. Are all Nonconformances 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: See NCM

Second Level Review: Sheryl A Adkins Date: 6-27-06

6/16/2006 7:37:36 AM

Sample Preparation/Analysis

Balance Id:1120373922,206120

536403, Brown and Caldwell , Brown & Caldwell

BX Ra-226/228 PrpRC5016, SepRC5005
TE Ba-133 by NaI & Ra-226 by Alpha Scint 7 day ingrow
01 STANDARD TEST SET

Pipet #:

AnalyDueDate: 07/04/2006

Sep1 DT/Tm Tech: 6-19-6 M 10:45

Batch: 6163137 FILTER pCi/sampl PM, Quote: SA , 63174

Sep2 DT/Tm Tech:

SEQ Batch, Test: 6163140, BXTF

Prep Tech: HansenM,TamosaitisM

STL RICHLAND

Work Order, Lot, Sample Date	Total Amt /Unit	Total Acidified/Unit	Initial Aliquot Amt/Unit	Adj Aliq Amt (Un-Acidified)	QC Tracer Prep Date	Count Time Min	Detector Id	Count On | Off (24hr) Circle	CR Analyst, Init/Date	Comments:
1 H61AE-1-AC J6F080203-1-SAMP	0.833sa,g	501.61sa,g	150.05g,in	0.2492g 7.4967 = 6.39 1.1732	RATA22579 06/13/06		9"	1204	6/19/06 6-20-6 M 12:01 2HB 6/23/06 1215 R	
05/22/2006 10:10		AmtRec: FILTER		#Containers: 1			Scr:	Alpha:		Beta:
2 H61AH-1-AC J6F080203-2-SAMP	0.833sa,g	500.91sa,g	150.21g,in	0.2498g 7.5462 = 6.410 1.1773	RATA22580 06/13/06		610	1205	6/19/06 6-20-6 M 12:01 2RC 6/23/06 1216 R	
05/22/2006 10:30		AmtRec: FILTER		#Containers: 1			Scr:	Alpha:		Beta:
3 H61AK-1-AC J6F080203-3-SAMP	0.833sa,g	503.01sa,g	150.20g,in	0.2487g 7.5264 = 6.339 1.1873	RATA22581 06/13/06		613	1205	6/19/06 6-20-6 M 12:01 3HA 6/23/06 1215 R	
05/22/2006 10:45		AmtRec: FILTER		#Containers: 1			Scr:	Alpha:		Beta:
4 H61AL-1-AC J6F080203-4-SAMP	0.833sa,g	501.90sa,g	150.00g,in	0.249g 7.4868 = 6.905 1.0843	RATA22582 06/13/06		612	1205	6/19/06 6-20-6M 12:01 4HA 6/23/06 1214 R	
05/22/2006 11:10		AmtRec: FILTER		#Containers: 1			Scr:	Alpha:		Beta:

STL RICHLAND

6/16/2006 7:37:37 AM

Sample Preparation/Analysis

Balance Id:1120373922,1120373922,1120

536403, Brown and Caldwell , Brown & Caldwell

BX Ra-226/228 PrpRC5016, SepRC5005
TE Ba-133 by NaI & Ra-226 by Alpha Scint 7 day ingrow
01 STANDARD TEST SET

Pipet #:

AnalyDueDate: 07/04/2006

Sep1 DT/Tm Tech:

Batch: 6163137 FILTER pCi/sampl PM, Quote: SA , 63174

Sep2 DT/Tm Tech:

SEQ Batch, Test: 6163140, BXTF

Prep Tech: HansenM,TamosaitisM

Work Order, Lot, Sample Date	Total Amt /Unit	Total Acidified/Unit	Initial Aliquot Amt/Unit	Adj Aliq Amt (Un-Acidified)	QC Tracer Prep Date	Count Time Min	Detector Id	Count On | Off (24hr) Circle	CR Analyst, Init/Date	Comments:
5 H61AM-1-AC J6F080203-5-SAMP	0.833sa,g	502.63sa,g	150.07g,in	0.2487g 7.5066 - 6.41 - 1.1711 -	RATA22583 06/13/06		9"	1237	6/19/06 6-20-6 M 12:16 7UA 6/23/06 1218 R	
05/22/2006 11:25		AmtRec: FILTER	#Containers: 1				Scr:	Alpha:		Beta:
6 H61AR-1-AC J6F080203-6-SAMP	0.833sa,g	501.95sa,g	150.42g,in	0.2496g 7.5363 - 7.159 - 1.0527 -	RATA22584 06/13/06		610	1239	6/19/06 6-20-6 M 12:16 8RD 6/23/06 1219 R	
05/22/2006 11:35		AmtRec: FILTER	#Containers: 1				Scr:	Alpha:		Beta:
7 H61AT-1-AC J6F080203-7-SAMP	0.833sa,g	506.35sa,g	150.30g,in	0.2473g 7.5363 - 5.908 - 1.2956 -	RATA22585 06/13/06		613	1239	6/19/06 6-20-6 M 12:16 9RC 6/23/06 1218 R	
05/22/2006 10:15		AmtRec: FILTER	#Containers: 1				Scr:	Alpha:		Beta:
8 H61AX-1-AC J6F080203-8-SAMP	0.833sa,g	509.07sa,g	150.03g,in	0.2455g 7.5264 - 6.568 - 1.1459	RATA22586 06/13/06		612	1241	6/19/06 6-20-6 M 12:16 BMB 6/23/06 1218 R	
05/22/2006 10:00		AmtRec: FILTER	#Containers: 1				Scr:	Alpha:		Beta:

STL RICHLAND

6/16/2006 7:37:37 AM

Sample Preparation/Analysis

Balance Id:1120373922,1120373922,1120

536403, Brown and Caldwell , Brown & Caldwell

BX Ra-226/228 PrpRC5016, SepRC5005
TE Ba-133 by NaI & Ra-226 by Alpha Scint 7 day ingrow
01 STANDARD TEST SET

Pipet #:

AnalyDueDate: 07/04/2006

Sep1 DT/Tm Tech:

Batch: 6163137 FILTER pCi/sampl PM, Quote: SA , 63174

Sep2 DT/Tm Tech:

SEQ Batch, Test: 6163140, BXTF

Prep Tech: HansenM,TamosaitisM

Work Order, Lot, Sample Date	Total Amt /Unit	Total Acidified/Unit	Initial Aliquot Amt/Unit	Adj Aliq Amt (Un-Acidified)	QC Tracer Prep Date	Count Time Min	Detector Id	Count On | Off (24hr) Circle	CR Analyst, Init/Date	Comments:
9 H61A1-1-AC J6F080203-9-SAMP	0.833sa,g	500.52sa,g	150.15g,in	0.2499g	RATA22587 06/13/06					
				7.5462			9"	1312	6/19/06	
				6.71				6-20-6 M 12:45		
				1.1246			CSD	6/23/06	1310 R	
05/22/2006 10:25		AmtRec: FILTER		#Containers: 1			Scr:	Alpha:		Beta:
10H61A2-1-AC J6F080203-10-SAMP	0.833sa,g	504.58sa,g	150.01g,in	0.2476g	RATA22588 06/13/06					
				7.5165			610	1312	6/19/06	
				7.388				6-20-6 M 12:45		
				1.0174			DSA	6/23/06	1311 R	
05/22/2006 10:40		AmtRec: FILTER		#Containers: 1			Scr:	Alpha:		Beta:
11H61A3-1-AC J6F080203-11-SAMP	0.833sa,g	500.54sa,g	151.10g,in	0.2515g	RATA22589 06/13/06					
				7.5363			613	1312	6/19/06	
				8.022				6-20-6 M 12:45		
				0.9395			EHA	6/23/06	1312 R	
05/22/2006 11:20		AmtRec: FILTER		#Containers: 1			Scr:	Alpha:		Beta:
12H61A5-1-AC J6F080203-12-SAMP	0.833sa,g	502.68sa,g	150.38g,in	0.2492g	RATA22590 06/13/06					
				7.5264			612	1313	6/19/06	
				7.087				6-20-6 M 12:45		
				1.0620			GSA	6/23/06	1312 R	
05/22/2006 11:30		AmtRec: FILTER		#Containers: 1			Scr:	Alpha:		Beta:

STL RICHLAND

6/16/2006 7:37:37 AM

Sample Preparation/Analysis

Balance Id:1120373922,1120373922,1120

536403, Brown and Caldwell , Brown & Caldwell

BX Ra-226/228 PrpRC5016, SepRC5005
TE Ba-133 by NaI & Ra-226 by Alpha Scint 7 day ingrow
01 STANDARD TEST SET

Pipet #:

AnalyDueDate: 07/04/2006

Sep1 DT/Tm Tech:

Batch: 6163137 FILTER pCi/sampl PM, Quote: SA , 63174

Sep2 DT/Tm Tech:

SEQ Batch, Test: 6163140, BXTF

Prep Tech: HansenM,TamosaitisM

Work Order, Lot, Sample Date	Total Amt /Unit	Total Acidified/Unit	Initial Aliquot Amt/Unit	Adj Aliq Amt (Un-Acidified)	QC Tracer Prep Date	Count Time Min	Detector Id	Count On | Off (24hr) Circle	CR Analyst, Init/Date	Comments:
13H61A7-1-AC J6F080203-13-SAMP	0.833sa,g	502.48sa,g	150.15g,in	0.2489g 7.4967 6.79 1.1041	RATA22591 06/13/06		5 JMB	1346 6-20-6 M 13:13 6/23/06 1315	6/19/06 R	
05/22/2006 10:05		AmtRec: FILTER	#Containers: 1				Scr:	Alpha:		Beta:
14H67QT-1-AA-B J6F120000-137-BLK		1.00sa,in	1.00sa ~~7.4~~ 7.5264 6.345 1.1862		RATA22592 06/13/06		610 HMA	1346 6-20-6 M 13:13 6/23/06 1317	6/19/06 R	
05/22/2006 10:10		AmtRec:	#Containers: 1				Scr:	Alpha:		Beta:
15H67QT-1-AC-C J6F120000-137-LCS		1.00sa,in	1.00sa 7.4826 6.593 1.1349		RASC4118 06/09/06		613 PMB	1346 6-20-6 M 13:13 6/23/06 1315	6/19/06 R	
05/22/2006 10:10		AmtRec:	#Containers: 1				Scr:	Alpha:		Beta:

Comments:

All Clients for Batch:
536403, Brown and Caldwell Brown & Caldwell , SA , 63174

H61AE1AC-SAMP Constituent List:
Ba-133 RDL: pCi/sam LCL:20 UCL:115 RPD:20 Ra-226 RDL:1.00E+00 pCi/sam LCL: UCL: RPD:

Clouseau
Nonconformance Memo

SEVERN TRENT SERVICES

NCM #: **10-08232**
NCM Initiated By: Pam Anderson
Date Opened: 06/27/2006
Date Closed:

Classification: **Anomaly**
Status: **GLREVIEW**
Production Area: Environmental - Sep
Tests: Ra-226 by ASC-7
Lot #'s (Sample #'s): J6F080203 (7),
QC Batches: 6163137

Nonconformance: Other (describe in detail)
Subcategory: Other (explanation required)

Problem Description / Root Cause

Name	Date	Description
Pam Anderson	06/27/2006	Sample H61AT1AC has an MDA of 1.29 pCi/L due to a 78% yield. The CRDL is 1.0 pCi/L. Data will be accepted.

Corrective Action

Name	Date	Corrective Action
Pam Anderson	06/27/2006	Note in case narrative.

Client Notification Summary

Client	Project Manager	Notified	Response	How Notified	Note	Response	Response Note

Quality Assurance Verification

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

Approval History

Date Approved	Approved By	Position

Date Printed: 6/27/2006

6/27/2006 7:39:37 AM

ICOC Fraction Transfer/Status Report

ByDate: 6/27/2005, 7/2/2006, Batch: '6163137', User: *ALL Order By DateTimeAccepting

Q Batch	Work Ord	CurStatus	Accepting			Comments
6163137						
AC		**CalcC**	**HansenM**	6/13/2006 1:40:25 PM		
SC			wagarr	IsBatched	6/12/2006 3:36:55 PM	ICOC_RADCALC v4.8.24
SC			HansenM	InPrep2	6/13/2006 1:40:25 PM	RICH-RC-5016 REVISION 5
SC			HansenM	Prep2C	6/15/2006 5:26:51 PM	RICH-RC-5016 REVISION 5
SC			TamosaitisM	InPrep	6/16/2006 7:34:12 AM	RICH-RC-5005 Revision 5
SC			TamosaitisM	Sep1C	6/19/2006 9:44:50 AM	RICH-RC-5005 REVISION 4
SC			BlackCL	InCnt1	6/19/2006 11:23:04 AM	RICH-RD-0007 REVISION 5
SC			DAWKINSO	Cnt1C	6/19/2006 2:12:27 PM	RICH-RD-0007 REVISION 5
SC			TamosaitisM	InSep2	6/20/2006 7:55:12 AM	RICH-RC-5005 REVISION 5
SC			StringerR	CalcC	6/23/2006 5:30:16 PM	RICH-RC-5005 REVISION 5
AC			**HansenM**	6/15/2006 5:26:51 PM		
AC			**TamosaitisM**	6/16/2006 7:34:12		
AC			**TamosaitisM**	6/19/2006 9:44:50		
AC			**BlackCL**	6/19/2006 11:23:04		
AC			**DAWKINSO**	6/19/2006 2:12:27 PM		
AC			**TamosaitisM**	6/20/2006 7:55:12		
AC			**StringerR**	6/23/2006 5:30:16 PM		

AC: Accepting Entry; SC: Status Change

STL Richland

Richland Wa.

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Grp Rec Cnt: 8

ICOCFractions v4.8.18

6/27/2006 7:39:37 AM

Rpt DB Transfer log (Batch Results)

SEVERN TRENT STL

SDG or Batch / Isotope	Rpt Db Id / Method	RTst	Qc	LotSample / Analysis Date	Client Id / Result	Matrix / Cnt Uncert	Received Date / Tot Uncert	Sample Date / Mda	Units	Expected	Yield	Volumes
31853	**9H61A110**			**J6F0802039**	P-0638	FILTER	6/7/2006 10:00:00	5/22/2006 10:25:00 AM				
ALPHA	BAS7		0	6/22/2006 10:42:31	**1.078E+01**	2.706E+00	2.929E+00	6.408E+00	PCI/SA	1.0	1.0E+0	2.085E-2
BETA	BDS8		0	6/20/2006 6:46:51 PM	**2.9132E+01**	2.343E+00	3.077E+00	6.219E+00	PCI/SA	1.0	1.0E+0	3.346E-2
RA-226	BXTE		0	6/23/2006 4:10:00 PM	**4.4731E-01**	2.246E-01	2.294E-01	6.968E-01	PCI/SA	0.889	1.0E+0	2.499E-1
31853	**9H61A210**			**J6F08020310**	P-0639	FILTER	6/7/2006 10:00:00	5/22/2006 10:40:00 AM				
ALPHA	BAS7		0	6/22/2006 10:42:31	**5.5159E+00**	2.074E+00	2.15E+00	6.486E+00	PCI/SA	1.0	1.0E+0	2.095E-2
BETA	BDS8		0	6/20/2006 6:46:51 PM	**3.4145E+01**	2.273E+00	4.155E+00	5.488E+00	PCI/SA	1.0	1.0E+0	3.32E-2
RA-226	BXTE		0	6/23/2006 4:11:00 PM	**3.3227E-02**	1.99E-01	1.99E-01	8.041E-01	PCI/SA	0.983	1.0E+0	2.476E-1
31853	**9H61A310**			**J6F08020311**	P-0641	FILTER	6/7/2006 10:00:00	5/22/2006 11:20:00 AM				
ALPHA	BAS7		0	6/22/2006 10:42:31	**1.1105E+00**	1.314E+00	1.319E+00	5.977E+00	PCI/SA	1.0	1.0E+0	2.102E-2
BETA	BDS8		0	6/20/2006 6:46:51 PM	**2.7213E+01**	2.278E+00	2.943E+00	6.204E+00	PCI/SA	1.0	1.0E+0	3.326E-2
RA-226	BXTE		0	6/23/2006 4:12:03 PM	**-7.3711E-02**	1.861E-01	1.863E-01	7.636E-01	PCI/SA	1.064	1.0E+0	2.515E-1
31853	**9H61A510**			**J6F08020312**	P-0642	FILTER	6/7/2006 10:00:00	5/22/2006 11:30:00 AM				
ALPHA	BAS7		0	6/22/2006 12:35:02 PM	**4.919E+00**	2.117E+00	2.178E+00	7.164E+00	PCI/SA	1.0	1.0E+0	2.085E-2
BETA	BDS8		0	6/20/2006 6:46:51 PM	**2.9855E+01**	2.333E+00	3.123E+00	6.07E+00	PCI/SA	1.0	1.0E+0	3.339E-2
RA-226	BXTE		0	6/23/2006 4:12:01 PM	**2.012E-01**	1.415E-01	1.431E-01	4.829E-01	PCI/SA	0.942	1.0E+0	2.492E-1
31853	**9H61A710**			**J6F08020313**	P-0643	FILTER	6/7/2006 10:00:00	5/22/2006 10:05:00 AM				
ALPHA	BAS7		0	6/22/2006 12:35:02 PM	**5.4878E+00**	1.981E+00	2.062E+00	5.644E+00	PCI/SA	1.0	1.0E+0	2.084E-2
BETA	BDS8		0	6/20/2006 6:46:47 PM	**2.8799E+01**	2.356E+00	3.09E+00	6.278E+00	PCI/SA	1.0	1.0E+0	3.297E-2
RA-226	BXTE		0	6/23/2006 4:15:00 PM	**1.8445E-01**	1.348E-01	1.361E-01	4.656E-01	PCI/SA	0.906	1.0E+0	2.489E-1
31853	**9H61AE10**			**J6F0802031**	000466	FILTER	6/7/2006 10:00:00	5/22/2006 10:10:00 AM				
ALPHA	BAS7		0	6/22/2006 6:57:33 AM	**1.2919E+01**	2.897E+00	3.187E+00	6.046E+00	PCI/SA	1.0	1.0E+0	2.084E-2
BETA	BDS8		0	6/20/2006 4:05:14 PM	**3.0937E+01**	2.41E+00	3.222E+00	6.21E+00	PCI/SA	1.0	1.0E+0	3.327E-2
RA-226	BXTE		0	6/23/2006 3:15:00 PM	**8.6406E-01**	3.273E-01	3.393E-01	1.025E+00	PCI/SA	0.852	1.0E+0	2.492E-1
31853	**9H61AH10**			**J6F0802032**	000467	FILTER	6/7/2006 10:00:00	5/22/2006 10:30:00 AM				
ALPHA	BAS7		0	6/22/2006 8:49:58 AM	**4.3814E+00**	2.049E+00	2.1E+00	7.179E+00	PCI/SA	1.0	1.0E+0	2.08E-2
BETA	BDS8		0	6/20/2006 4:05:14 PM	**3.8297E+01**	2.569E+00	3.691E+00	6.172E+00	PCI/SA	1.0	1.0E+0	3.363E-2
RA-226	BXTE		0	6/23/2006 3:16:00 PM	**-5.7714E-02**	2.883E-01	2.884E-01	1.141E+00	PCI/SA	0.849	1.0E+0	2.498E-1
31853	**9H61AK10**			**J6F0802033**	000468	FILTER	6/7/2006 10:00:00	5/22/2006 10:45:00 AM				
ALPHA	BAS7		0	6/22/2006 8:49:58 AM	**3.3328E+00**	1.662E+00	1.698E+00	5.639E+00	PCI/SA	1.0	1.0E+0	2.087E-2
BETA	BDS8		0	6/20/2006 4:05:14 PM	**2.3712E+01**	2.175E+00	3.046E+00	6.067E+00	PCI/SA	1.0	1.0E+0	3.28E-2
RA-226	BXTE		0	6/23/2006 3:15:01 PM	**6.4468E-01**	3.072E-01	3.139E-01	1.003E+00	PCI/SA	0.842	1.0E+0	2.487E-1
31853	**9H61AL10**			**J6F0802034**	000469	FILTER	6/7/2006 10:00:00	5/22/2006 11:10:00 AM				
ALPHA	BAS7		0	6/22/2006 8:49:58 AM	**7.9761E+00**	2.397E+00	2.536E+00	6.388E+00	PCI/SA	1.0	1.0E+0	2.093E-2
BETA	BDS8		0	6/20/2006 4:05:14 PM	**2.6018E+01**	2.395E+00	3.038E+00	7.005E+00	PCI/SA	1.0	1.0E+0	3.35E-2
RA-226	BXTE		0	6/23/2006 3:14:00 PM	**-8.1816E-02**	2.327E-01	2.329E-01	9.467E-01	PCI/SA	0.922	1.0E+0	2.49E-1
31853	**9H61AM10**			**J6F0802035**	000470	FILTER	6/7/2006 10:00:00	5/22/2006 11:25:00 AM				
ALPHA	BAS7		0	6/22/2006 8:49:58 AM	**8.6535E+00**	2.438E+00	2.595E+00	6.497E+00	PCI/SA	1.0	1.0E+0	2.087E-2
BETA	BDS8		0	6/20/2006 6:46:45 PM	**4.4033E+01**	2.729E+00	4.225E+00	6.697E+00	PCI/SA	1.0	1.0E+0	3.406E-2
RA-226	BXTE		0	6/23/2006 3:18:01 PM	**7.0427E-02**	1.833E-01	1.835E-01	7.251E-01	PCI/SA	0.854	1.0E+0	2.487E-1
31853	**9H61AR10**			**J6F0802036**	000471	FILTER	6/7/2006 10:00:00	5/22/2006 11:35:00 AM				
ALPHA	BAS7		0	6/22/2006 8:49:58 AM	**5.632E+00**	2.077E+00	2.156E+00	6.062E+00	PCI/SA	1.0	1.0E+0	2.089E-2
BETA	BDS8		0	6/20/2006 6:46:45 PM	**4.4882E+01**	2.784E+00	4.217E+00	6.616E+00	PCI/SA	1.0	1.0E+0	3.346E-2
RA-226	BXTE		0	6/23/2006 3:19:01 PM	**-1.1317E-01**	2.287E-01	2.29E-01	9.854E-01	PCI/SA	0.95	1.0E+0	2.496E-1
31853	**9H61AT10**			**J6F0802037**	000472	FILTER	6/7/2006 10:00:00	5/22/2006 10:15:00 AM				
ALPHA	BAS7		0	6/22/2006 10:42:31	**-2.1888E+00**	7.739E-01	8.069E-01	7.173E+00	PCI/SA	1.0	1.0E+0	2.081E-2
BETA	BDS8		0	6/20/2006 6:46:45 PM	**6.7795E-01**	1.519E+00	1.52E+00	6.677E+00	PCI/SA	1.0	1.0E+0	3.267E-2
RA-226	BXTE		0	6/23/2006 3:18:01 PM	**-1.8619E-01**	3.072E-01	3.078E-01	1.286E+00	PCI/SA	0.784	1.0E+0	2.473E-1
31853	**9H61AX10**			**J6F0802038**	P-0637	FILTER	6/7/2006 10:00:00	5/22/2006 10:00:00 AM				
ALPHA	BAS7		0	6/22/2006 10:42:31	**5.0702E+00**	1.953E+00	2.023E+00	5.782E+00	PCI/SA	1.0	1.0E+0	2.044E-2
BETA	BDS8		0	6/20/2006 6:46:45 PM	**2.6735E+01**	2.345E+00	2.967E+00	6.443E+00	PCI/SA	1.0	1.0E+0	3.221E-2
RA-226	BXTE		0	6/23/2006 3:18:03 PM	**5.5396E-01**	2.448E-01	2.509E-01	7.725E-01	PCI/SA	0.873	1.0E+0	2.455E-1

6163137, **Samples Inserted | Updated | NotUpdated => 2 | 0 | 13,
**Results Inserted | ReTestInserted | Updated | NotInserted => 15 | 0 | 0 | 0.
**Diff RptDb | Qtims => .

STL Richland, Wa Calc Review v4.8.18

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SDG or Batch / Isotope	Rpt Db Id / Method	RTst	Qc	LotSample / Analysis Date	Client Id / Result	Matrix / Cnt Uncert	Received Date / Tot Uncert	Sample Date / Mda	Units	Expected	Yield	Volumes	
31853	**H67QT1AB**			**J6F120000137**	INTRA-LAB BLANK	FILTER	6/7/2006 10:00:00	5/22/2006 10:10:00 AM					
RA-226	BXTE	0	B	6/23/2006 4:17:00 PM	**-3.529E-03**	4.093E-02	4.093E-02	1.708E-01	PCI/SA		0.843	1.0E+0	1.0E+0
31853	**H67QT1CS**			**J6F120000137**	INTRA-LAB CHECK	FILTER	6/7/2006 10:00:00	5/22/2006 10:10:00 AM					
RA-226	BXTE	0	S	6/23/2006 4:15:01 PM	**1.3422E+00**	1.216E-01	1.839E-01	1.596E-01	PCI/SA	1.4154E+00	0.881	1.0E+0	1.0E+0

6163137, **Samples Inserted | Updated | NotUpdated => 2 | 0 | 13,
**Results Inserted | ReTestInserted | Updated | NotInserted => 15 | 0 | 0 | 0.
**Diff RptDb | Qtims => .

Batch Nbr: 6163137

Alpha Beta, Ra-226 by ASC-7 , Results

Summary Report

6/26/2006 5:04:11 PM

Status	Meth	Matrix	Wrk Ord	Parameter	Sa Act	Uncert	Q	Units	Av	ILcC	IDC	QC	Yield	RYld
Ra-226 by ASC-7				Richland Standard Ra-226/Ra-228 Deem Wo Blk Subt.										
Calc	TE	FILTER	**H61AE1AC**	RA-226	**8.64E-01**	**(3.39E-01)**		PCI/SA	R	4.55E-01	1.03E+00	ok	85%	
Calc	TE	FILTER	**H61AH1AC**	RA-226	**-5.77E-02**	**(2.88E-01)**	**U4**	PCI/SA	R	5.04E-01	1.14E+00	ok	85%	
Calc	TE	FILTER	**H61AK1AC**	RA-226	**6.45E-01**	**(3.14E-01)**		PCI/SA	R	4.43E-01	1.00E+00	ok	84%	
Calc	TE	FILTER	**H61AL1AC**	RA-226	**-8.18E-02**	**(2.33E-01)**	**U4**	PCI/SA	R	4.13E-01	9.47E-01		92%	
Calc	TE	FILTER	**H61AM1AC**	RA-226	**7.04E-02**	**(1.84E-01)**	**U4**	PCI/SA	R	2.99E-01	7.25E-01		85%	
Calc	TE	FILTER	**H61AR1AC**	RA-226	**-1.13E-01**	**(2.29E-01)**	**U4**	PCI/SA	R	4.16E-01	9.85E-01		95%	
Calc	TE	FILTER	**H61AT1AC**	RA-226	**-1.86E-01**	**(3.08E-01)**	**U4**	PCI/SA	R	5.59E-01	1.29E+00	—	78%	
Calc	TE	FILTER	**H61AX1AC**	RA-226	**5.54E-01**	**(2.51E-01)**		PCI/SA	R	3.30E-01	7.72E-01		87%	
Calc	TE	FILTER	**H61A11AC**	RA-226	**4.47E-01**	**(2.29E-01)**		PCI/SA	R	2.71E-01	6.97E-01		89%	
Calc	TE	FILTER	**H61A21AC**	RA-226	**3.32E-02**	**(1.99E-01)**	**U4**	PCI/SA	R	3.35E-01	8.04E-01		98%	
Calc	TE	FILTER	**H61A31AC**	RA-226	**-7.37E-02**	**(1.86E-01)**	**U4**	PCI/SA	R	3.32E-01	7.64E-01		106%	
Calc	TE	FILTER	**H61A51AC**	RA-226	**2.01E-01**	**(1.43E-01)**	**U4**	PCI/SA	R	1.83E-01	4.83E-01		94%	
Calc	TE	FILTER	**H61A71AC**	RA-226	**1.84E-01**	**(1.36E-01)**	**U4**	PCI/SA	R	1.81E-01	4.66E-01		91%	
Calc	TE	FILTER	**H67QT1AA**	RA-226	**-3.53E-03**	**(4.09E-02)**	**U4**	PCI/SA	R	7.11E-02	1.71E-01	**B**	84%	
Calc	TE	FILTER	**H67QT1AC**	RA-226	**1.34E+00**	**(1.84E-01)**		PCI/SA	R	6.64E-02	1.60E-01	**S**	88%	95%

P Anderson
6-26-06

() - (1s Uncertainities)
IDC - Instrument Detection Level in Conc Units
MLcC- Method Decision Level in Conc Units
MDC - Minimum Detectable Concentration
*Std - Lc, MDC using StdDev for Set of Blanks

Q - Qualifier, U is Less Than Lc = 1.645*TPU
All Results Displayed to Three Digits Reguardless of Significants
Date/Time - mm/dd/yy hh:mm, 24hr Time

RecCnt:15
RADCALC v4.8.24
STL Richland

Batch Nbr: 6163137

Alpha Beta, Ra-226 by ASC-7 , Calculated Results
Detailed Report

6/26/2006 5:04:11 PM

Sq	Status	Method	Matrix	Protocol	Equation Set	Wrk Ord	Units/Matrix	QC/BB	Sa/On Date	AnalysisDate/PptWt	Sep1/Sep2 Date	QC/Tracer Vial	Mult/EntYld	Total/Analy Vol	Final/Count Vol
1	Calc	TE	FILTER	*STLE	Ra226WoBS	**H61AE1AC**	**PCI/SA**		05/22/06 10:10	06/23/06 15:15	06/20/06 12:01	RATA22579	1	1.00 Sa	
CID:000466LOT:J6F0802031 v4.8.24							FILTER				06/23/06 12:15	RATA22579 Alq	85%	0.249181 Sa	

Sq	Cnt Date	Parameter	Sample Cnt	Bkgrnd Cnt	Instr	Geom	Trc/Av	Ent	Efficiency1	Efficiency 2	Ent	Yld Fct	Ent	Blk Value	Ingr Fct	Conv Fct/VolAdj	Decay	Abn
1	06/23/06 15:15	RA-226	41	25	ASC1HB	ASC		N	2.4125E+00	1.0000E+00	N	85%	N		2.4369E+00	4.5045E-01	1.0000E+00	
			50	60			Y		(7.648E-02)	(0.000E+00)		7%			(0.000E+00)	4.013148		

Sq	Calc Date	Parameter	Avg	Sa Act	Q	Net Cnt Rt	Dpm Wo Blk	Dpm-Blk	Vol Used	Yield,EnFct	Chem Yld,EFctU	IDC/ILcC	BlkLcC/MDC	StdDvMdC/LcC
	06/26/06	RA-226	R	**0.864058**		4.03333E-01	0.477965	0.477965	1.00 Sa	85%		1.025484		
				(0.339308)		(1.5279E-01)	(0.185673)	(0.185673)	(0.028284)			0.454956		

Sq	Status	Method	Matrix	Protocol	Equation Set	Wrk Ord	Units/Matrix	QC/BB	Sa/On Date	AnalysisDate/PptWt	Sep1/Sep2 Date	QC/Tracer Vial	Mult/EntYld	Total/Analy Vol	Final/Count Vol
2	Calc	TE	FILTER	*STLE	Ra226WoBS	**H61AH1AC**	**PCI/SA**		05/22/06 10:30	06/23/06 15:16	06/20/06 12:01	RATA22580	1	1.00 Sa	
CID:000467LOT:J6F0802032 v4.8.24							FILTER				06/23/06 12:16	RATA22580 Alq	85%	0.249795 Sa	

Sq	Cnt Date	Parameter	Sample Cnt	Bkgrnd Cnt	Instr	Geom	Trc/Av	Ent	Efficiency1	Efficiency 2	Ent	Yld Fct	Ent	Blk Value	Ingr Fct	Conv Fct/VolAdj	Decay	Abn
1	06/23/06 15:16	RA-226	18	23	ASC2RC	ASC		N	2.0913E+00	1.0000E+00	N	85%	N		2.4365E+00	4.5045E-01	1.0000E+00	
			50	60			Y		(6.818E-02)	(0.000E+00)		7%			(0.000E+00)	4.003279		

Sq	Calc Date	Parameter	Avg	Sa Act	Q	Net Cnt Rt	Dpm Wo Blk	Dpm-Blk	Vol Used	Yield,EnFct	Chem Yld,EFctU	IDC/ILcC	BlkLcC/MDC	StdDvMdC/LcC
	06/26/06	RA-226	R	**-0.057714**	**U4**	-2.33333E-02	-0.032004	-0.032004	1.00 Sa	85%		1.141141		
				(0.288398)		(1.1657E-01)	(0.159914)	(0.159914)	(0.028284)			0.503838		

Sq	Status	Method	Matrix	Protocol	Equation Set	Wrk Ord	Units/Matrix	QC/BB	Sa/On Date	AnalysisDate/PptWt	Sep1/Sep2 Date	QC/Tracer Vial	Mult/EntYld	Total/Analy Vol	Final/Count Vol
3	Calc	TE	FILTER	*STLE	Ra226WoBS	**H61AK1AC**	**PCI/SA**		05/22/06 10:45	06/23/06 15:15	06/20/06 12:01	RATA22581	1	1.00 Sa	
CID:000468LOT:J6F0802033 v4.8.24							FILTER				06/23/06 12:15	RATA22581 Alq	84%	0.248736 Sa	

Sq	Cnt Date	Parameter	Sample Cnt	Bkgrnd Cnt	Instr	Geom	Trc/Av	Ent	Efficiency1	Efficiency 2	Ent	Yld Fct	Ent	Blk Value	Ingr Fct	Conv Fct/VolAdj	Decay	Abn
1	06/23/06 15:15	RA-226	34	23	ASC3HA	ASC		N	2.4113E+00	1.0000E+00	N	84%	N		2.4369E+00	4.5045E-01	1.0000E+00	
			50	60			Y		(4.316E-02)	(0.000E+00)		7%			(0.000E+00)	4.02033		

Sq	Calc Date	Parameter	Avg	Sa Act	Q	Net Cnt Rt	Dpm Wo Blk	Dpm-Blk	Vol Used	Yield,EnFct	Chem Yld,EFctU	IDC/ILcC	BlkLcC/MDC	StdDvMdC/LcC
	06/26/06	RA-226	R	**0.644678**		2.96667E-01	0.355975	0.355975	1.00 Sa	84%		1.002551		
				(0.313938)		(1.4138E-01)	(0.172138)	(0.172138)	(0.028284)			0.442648		

Sq	Status	Method	Matrix	Protocol	Equation Set	Wrk Ord	Units/Matrix	QC/BB	Sa/On Date	AnalysisDate/PptWt	Sep1/Sep2 Date	QC/Tracer Vial	Mult/EntYld	Total/Analy Vol	Final/Count Vol
4	Calc	TE	FILTER	*STLE	Ra226WoBS	**H61AL1AC**	**PCI/SA**		05/22/06 11:10	06/23/06 15:14	06/20/06 12:01	RATA22582	1	1.00 Sa	
CID:000469LOT:J6F0802034 v4.8.24							FILTER				06/23/06 12:14	RATA22582 Alq	92%	0.248954 Sa	

Sq	Cnt Date	Parameter	Sample Cnt	Bkgrnd Cnt	Instr	Geom	Trc/Av	Ent	Efficiency1	Efficiency 2	Ent	Yld Fct	Ent	Blk Value	Ingr Fct	Conv Fct/VolAdj	Decay	Abn
1	06/23/06 15:14	RA-226	14	19	ASC4UA	ASC		N	2.1431E+00	1.0000E+00	N	92%	N		2.4373E+00	4.5045E-01	1.0000E+00	
			50	60			Y		(1.080E-01)	(0.000E+00)		7%			(0.000E+00)	4.016807		

() - (1s Uncertainities), Q - Qualifier, U Result is Less Than Lc = 1.645 * TPU
IDC - Instrument Detection Level in Conc Units, MLcC - Method Decision Level in Conc Units, MDC- Minimum Detectable Concentration
Sr-89 Counts are Derived from the Combination of Each Sr-89/90 and Y-90 Count, All Result Digits May Not be Significants, Date/Time - mm/dd/yy hh:mm, 24hr Time

RecCnt:4

RADCALC v4.8.24
STL Richland

Batch Nbr: 6163137

Alpha Beta, Ra-226 by ASC-7 , Calculated Results

6/26/2006 5:04:12 PM

Sq	Calc Date	Parameter	Avg	Sa Act	Q	Net Cnt Rt	Dpm Wo Blk	Dpm-Blk	Vol Used	Yield,EnFct	Chem Yld,EFctU	IDC/ILcC	BlkLcC/MDC	StdDvMdC/LcC
	06/26/06	RA-226	R	**-0.081816**	**U4**	-3.66667E-02	-0.045216	-0.045216	1.00 Sa	92%		0.946664		
				(0.232897)		(1.0430E-01)	(0.128687)	(0.128687)	(0.028284)			0.413108		

Sq	Status	Method	Matrix	Protocol	Equation Set	Wrk Ord	Units/Matrix	QC/BB	Sa/On Date	AnalysisDate/PptWt	Sep1/Sep2 Date	QC/Tracer Vial	Mult/EntYld	Total/Analy Vol	Final/Count Vol
5	Calc	TE	FILTER	*STLE	Ra226WoBS	**H61AM1AC**	**PCI/SA**		05/22/06 11:25	06/23/06 15:18	06/20/06 12:16	RATA22583	1	1.00 Sa	
CID:000470LOT:J6F0802035 v4.8.24							FILTER				06/23/06 12:18	RATA22583 Alq	85%	0.248708 Sa	

Sq	Cnt Date	Parameter	Sample Cnt	Bkgrnd Cnt	Instr	Geom	Trc/Av	Ent	Efficiency1	Efficiency 2	Ent	Yld Fct	Ent	Blk Value	Ingr Fct	Conv Fct/VolAdj	Decay	Abn
1	06/23/06 15:18	RA-226	9	9	ASC7UA	ASC		N	2.2064E+00	1.0000E+00	N	85%	N		2.4420E+00	4.5045E-01	1.0000E+00	
			50	60			Y		(1.072E-01)	(0.000E+00)		7%			(0.000E+00)	4.020773		

Sq	Calc Date	Parameter	Avg	Sa Act	Q	Net Cnt Rt	Dpm Wo Blk	Dpm-Blk	Vol Used	Yield,EnFct	Chem Yld,EFctU	IDC/ILcC	BlkLcC/MDC	StdDvMdC/LcC
	06/26/06	RA-226	R	**0.070427**	**U4**	3.00000E-02	0.038884	0.038884	1.00 Sa	85%		0.725138		
				(0.183513)		(7.8102E-02)	(0.101295)	(0.101295)	(0.028284)			0.299128		

Sq	Status	Method	Matrix	Protocol	Equation Set	Wrk Ord	Units/Matrix	QC/BB	Sa/On Date	AnalysisDate/PptWt	Sep1/Sep2 Date	QC/Tracer Vial	Mult/EntYld	Total/Analy Vol	Final/Count Vol
6	Calc	TE	FILTER	*STLE	Ra226WoBS	**H61AR1AC**	**PCI/SA**		05/22/06 11:35	06/23/06 15:19	06/20/06 12:16	RATA22584	1	1.00 Sa	
CID:000471LOT:J6F0802036 v4.8.24							FILTER				06/23/06 12:19	RATA22584 Alq	95%	0.249626 Sa	

Sq	Cnt Date	Parameter	Sample Cnt	Bkgrnd Cnt	Instr	Geom	Trc/Av	Ent	Efficiency1	Efficiency 2	Ent	Yld Fct	Ent	Blk Value	Ingr Fct	Conv Fct/VolAdj	Decay	Abn
1	06/23/06 15:19	RA-226	8	12	ASC8RD	ASC		N	1.6393E+00	1.0000E+00	N	95%	N		2.4416E+00	4.5045E-01	1.0000E+00	
			50	60			Y		(4.623E-02)	(0.000E+00)		8%			(0.000E+00)	4.00599		

Sq	Calc Date	Parameter	Avg	Sa Act	Q	Net Cnt Rt	Dpm Wo Blk	Dpm-Blk	Vol Used	Yield,EnFct	Chem Yld,EFctU	IDC/ILcC	BlkLcC/MDC	StdDvMdC/LcC
	06/26/06	RA-226	R	**-0.113174**	**U4**	-4.00000E-02	-0.062715	-0.062715	1.00 Sa	95%		0.985438		
				(0.228987)		(8.0829E-02)	(0.126842)	(0.126842)	(0.028284)			0.416291		

Sq	Status	Method	Matrix	Protocol	Equation Set	Wrk Ord	Units/Matrix	QC/BB	Sa/On Date	AnalysisDate/PptWt	Sep1/Sep2 Date	QC/Tracer Vial	Mult/EntYld	Total/Analy Vol	Final/Count Vol
7	Calc	TE	FILTER	*STLE	Ra226WoBS	**H61AT1AC**	**PCI/SA**		05/22/06 10:15	06/23/06 15:18	06/20/06 12:16	RATA22585	1	1.00 Sa	
CID:000472LOT:J6F0802037 v4.8.24							FILTER				06/23/06 12:18	RATA22585 Alq	78%	0.24726 Sa	

Sq	Cnt Date	Parameter	Sample Cnt	Bkgrnd Cnt	Instr	Geom	Trc/Av	Ent	Efficiency1	Efficiency 2	Ent	Yld Fct	Ent	Blk Value	Ingr Fct	Conv Fct/VolAdj	Decay	Abn
1	06/23/06 15:18	RA-226	12	18	ASC9RC	ASC		N	1.8288E+00	1.0000E+00	N	78%	N		2.4420E+00	4.5045E-01	1.0000E+00	
			50	60			Y		(5.139E-02)	(0.000E+00)		6%			(0.000E+00)	4.044332		

Sq	Calc Date	Parameter	Avg	Sa Act	Q	Net Cnt Rt	Dpm Wo Blk	Dpm-Blk	Vol Used	Yield,EnFct	Chem Yld,EFctU	IDC/ILcC	BlkLcC/MDC	StdDvMdC/LcC
	06/26/06	RA-226	R	**-0.186192**	**U4**	-6.00000E-02	-0.1022	-0.1022	1.00 Sa	78%		1.285925		
				(0.307792)		(9.8995E-02)	(0.168844)	(0.168844)	(0.028284)			0.559198		

Sq	Status	Method	Matrix	Protocol	Equation Set	Wrk Ord	Units/Matrix	QC/BB	Sa/On Date	AnalysisDate/PptWt	Sep1/Sep2 Date	QC/Tracer Vial	Mult/EntYld	Total/Analy Vol	Final/Count Vol
8	Calc	TE	FILTER	*STLE	Ra226WoBS	**H61AX1AC**	**PCI/SA**		05/22/06 10:00	06/23/06 15:18	06/20/06 12:16	RATA22586	1	1.00 Sa	
CID:P-0637LOT:J6F0802038 v4.8.24							FILTER				06/23/06 12:18	RATA22586 Alq	87%	0.245497 Sa	

Sq	Cnt Date	Parameter	Sample Cnt	Bkgrnd Cnt	Instr	Geom	Trc/Av	Ent	Efficiency1	Efficiency 2	Ent	Yld Fct	Ent	Blk Value	Ingr Fct	Conv Fct/VolAdj	Decay	Abn

() - (1s Uncertainities), Q - Qualifier, U Result is Less Than Lc = 1.645 * TPU
IDC - Instrument Detection Level in Conc Units, MLcC - Method Decision Level in Conc Units, MDC- Minimum Detectable Concentration
Sr-89 Counts are Derived from the Combination of Each Sr-89/90 and Y-90 Count, All Result Digits May Not be Significants, Date/Time - mm/dd/yy hh:mm, 24hr Time

RecCnt:8

RADCALC v4.8.24
STL Richland

Batch Nbr: 6163137

Alpha Beta, Ra-226 by ASC-7 , Calculated Results

6/26/2006 5:04:12 PM

1	06/23/06 15:18	RA-226	25	14	ASCBMB	ASC		N	2.4717E+00	1.0000E+00	N	87%	N		2.4420E+00	4.5045E-01	1.0000E+00
			50	60				Y	(2.991E-02)	(0.000E+00)		7%			(0.000E+00)	4.073375	

Sq	Calc Date	Parameter	Avg	Sa Act	Q	Net Cnt Rt	Dpm Wo Blk	Dpm-Blk	Vol Used	Yield,EnFct	Chem Yld,EFctU	IDC/ILcC	BlkLcC/MDC	StdDvMdC/LcC
	06/26/06	RA-226	R	**0.553961**		2.66667E-01	0.3019	0.3019	1.00 Sa	87%		0.772476		
				(0.250914)		(1.1785E-01)	(0.13564)	(0.13564)	(0.028284)			0.330138		

Sq	Status	Method	Matrix	Protocol	Equation Set	Wrk Ord	Units/Matrix	QC/BB	Sa/On Date	AnalysisDate/PptWt	Sep1/Sep2 Date	QC/Tracer Vial	Mult/EntYld	Total/Analy Vol	Final/Count Vol
9	Calc	TE	FILTER	*STLE	Ra226WoBS	**H61A11AC**	**PCI/SA**		05/22/06 10:25	06/23/06 16:10	06/20/06 12:45	RATA22587	1	1.00 Sa	
CID:P-0638LOT:J6F0802039 v4.8.24							FILTER				06/23/06 13:10	RATA22587 Alq	89%	0.24989 Sa	

Sq	Cnt Date	Parameter	Sample Cnt	Bkgrnd Cnt	Instr	Geom	Trc/Av	Ent	Efficiency1	Efficiency 2	Ent	Yld Fct	Ent	Blk Value	Ingr Fct	Conv Fct/VolAdj	Decay	Abn
1	06/23/06 16:10	RA-226	12	5	ASCCSD	ASC		N	1.7270E+00	1.0000E+00	N	89%	N		2.4322E+00	4.5045E-01	1.0000E+00	
			50	60			Y		(5.958E-02)	(0.000E+00)		7%			(0.000E+00)	4.001761		

Sq	Calc Date	Parameter	Avg	Sa Act	Q	Net Cnt Rt	Dpm Wo Blk	Dpm-Blk	Vol Used	Yield,EnFct	Chem Yld,EFctU	IDC/ILcC	BlkLcC/MDC	StdDvMdC/LcC
	06/26/06	RA-226	R	**0.447313**		1.56667E-01	0.248141	0.248141	1.00 Sa	89%		0.696767		
				(0.229416)		(7.8669E-02)	(0.126465)	(0.126465)	(0.028284)			0.271169		

Sq	Status	Method	Matrix	Protocol	Equation Set	Wrk Ord	Units/Matrix	QC/BB	Sa/On Date	AnalysisDate/PptWt	Sep1/Sep2 Date	QC/Tracer Vial	Mult/EntYld	Total/Analy Vol	Final/Count Vol
10	Calc	TE	FILTER	*STLE	Ra226WoBS	**H61A21AC**	**PCI/SA**		05/22/06 10:40	06/23/06 16:11	06/20/06 12:45	RATA22588	1	1.00 Sa	
CID:P-0639LOT:J6F08020310 v4.8.24							FILTER				06/23/06 13:11	RATA22588 Alq	98%	0.247648 Sa	

Sq	Cnt Date	Parameter	Sample Cnt	Bkgrnd Cnt	Instr	Geom	Trc/Av	Ent	Efficiency1	Efficiency 2	Ent	Yld Fct	Ent	Blk Value	Ingr Fct	Conv Fct/VolAdj	Decay	Abn
1	06/23/06 16:11	RA-226	9	10	ASCDSA	ASC		N	1.8059E+00	1.0000E+00	N	98%	N		2.4318E+00	4.5045E-01	1.0000E+00	
			50	60			Y		(3.449E-02)	(0.000E+00)		8%			(0.000E+00)	4.037986		

Sq	Calc Date	Parameter	Avg	Sa Act	Q	Net Cnt Rt	Dpm Wo Blk	Dpm-Blk	Vol Used	Yield,EnFct	Chem Yld,EFctU	IDC/ILcC	BlkLcC/MDC	StdDvMdC/LcC
	06/26/06	RA-226	R	**0.033227**	**U4**	1.33333E-02	0.018267	0.018267	1.00 Sa	98%		0.804091		
				(0.199042)		(7.9861E-02)	(0.10942)	(0.10942)	(0.028284)			0.334711		

Sq	Status	Method	Matrix	Protocol	Equation Set	Wrk Ord	Units/Matrix	QC/BB	Sa/On Date	AnalysisDate/PptWt	Sep1/Sep2 Date	QC/Tracer Vial	Mult/EntYld	Total/Analy Vol	Final/Count Vol
11	Calc	TE	FILTER	*STLE	Ra226WoBS	**H61A31AC**	**PCI/SA**		05/22/06 11:20	06/23/06 16:12	06/20/06 12:45	RATA22589	1	1.00 Sa	
CID:P-0641LOT:J6F08020311 v4.8.24							FILTER				06/23/06 13:12	RATA22589 Alq	106%	0.251461 Sa	

Sq	Cnt Date	Parameter	Sample Cnt	Bkgrnd Cnt	Instr	Geom	Trc/Av	Ent	Efficiency1	Efficiency 2	Ent	Yld Fct	Ent	Blk Value	Ingr Fct	Conv Fct/VolAdj	Decay	Abn
1	06/23/06 16:12	RA-226	13	18	ASCEHA	ASC		N	2.3636E+00	1.0000E+00	N	106%	N		2.4314E+00	4.5045E-01	1.0000E+00	
			50	60			Y		(1.057E-01)	(0.000E+00)		9%			(0.000E+00)	3.976759		

Sq	Calc Date	Parameter	Avg	Sa Act	Q	Net Cnt Rt	Dpm Wo Blk	Dpm-Blk	Vol Used	Yield,EnFct	Chem Yld,EFctU	IDC/ILcC	BlkLcC/MDC	StdDvMdC/LcC
	06/26/06	RA-226	R	**-0.073711**	**U4**	-4.00000E-02	-0.041147	-0.041147	1.00 Sa	106%		0.763625		
				(0.186282)		(1.0100E-01)	(0.103961)	(0.103961)	(0.028284)			0.33207		

() - (1s Uncertainities), Q - Qualifier, U Result is Less Than Lc = 1.645 * TPU

IDC - Instrument Detection Level in Conc Units, MLcC - Method Decision Level in Conc Units, MDC- Minimum Detectable Concentration

Sr-89 Counts are Derived from the Combination of Each Sr-89/90 and Y-90 Count, All Result Digits May Not be Significants, Date/Time - mm/dd/yy hh:mm, 24hr Time

RecCnt:12

RADCALC v4.8.24

STL Richland

Batch Nbr: 6163137

Alpha Beta, Ra-226 by ASC-7 , Calculated Results

6/26/2006 5:04:12 PM

Sq	Status	Method	Matrix	Protocol	Equation Set	Wrk Ord	Units/Matrix	QC/BB	Sa/On Date	AnalysisDate/PptWt	Sep1/Sep2 Date	QC/Tracer Vial	Mult/EntYld	Total/Analy Vol	Final/Count Vol
12	Calc	TE	FILTER	*STLE	Ra226WoBS	**H61A51AC**	**PCI/SA**		05/22/06 11:30	06/23/06 16:12	06/20/06 12:45	RATA22590	1	1.00 Sa	
CID:P-0642LOT:J6F08020312 v4.8.24							FILTER				06/23/06 13:12	RATA22590 Alq	94%	0.249197 Sa	

Sq	Cnt Date	Parameter	Sample Cnt	Bkgrnd Cnt	Instr	Geom	Trc/Av	Ent	Efficiency1	Efficiency 2	Ent	Yld Fct	Ent	Blk Value	Ingr Fct	Conv Fct/VolAdj	Decay	Abn
1	06/23/06 16:12	RA-226	8	4	ASCGSA	ASC		N	2.1653E+00	1.0000E+00	N	94%	N		2.4314E+00	4.5045E-01	1.0000E+00	
			50	60			Y		(7.622E-02)	(0.000E+00)		8%			(0.000E+00)	4.012883		

Sq	Calc Date	Parameter	Avg	Sa Act	Q	Net Cnt Rt	Dpm Wo Blk	Dpm-Blk	Vol Used	Yield,EnFct	Chem Yld,EFctU	IDC/ILcC	BlkLcC/MDC	StdDvMdC/LcC
	06/26/06	RA-226	R	**0.201201**	**U4**	9.33333E-02	0.111304	0.111304	1.00 Sa	94%		0.482868		
				(0.143098)		(6.5659E-02)	(0.078903)	(0.078903)	(0.028284)			0.183123		

Sq	Status	Method	Matrix	Protocol	Equation Set	Wrk Ord	Units/Matrix	QC/BB	Sa/On Date	AnalysisDate/PptWt	Sep1/Sep2 Date	QC/Tracer Vial	Mult/EntYld	Total/Analy Vol	Final/Count Vol
13	Calc	TE	FILTER	*STLE	Ra226WoBS	**H61A71AC**	**PCI/SA**		05/22/06 10:05	06/23/06 16:15	06/20/06 13:13	RATA22591	1	1.00 Sa	
CID:P-0643LOT:J6F08020313 v4.8.24							FILTER				06/23/06 13:15	RATA22591 Alq	91%	0.248915 Sa	

Sq	Cnt Date	Parameter	Sample Cnt	Bkgrnd Cnt	Instr	Geom	Trc/Av	Ent	Efficiency1	Efficiency 2	Ent	Yld Fct	Ent	Blk Value	Ingr Fct	Conv Fct/VolAdj	Decay	Abn
1	06/23/06 16:15	RA-226	9	5	ASCJMB	ASC		N	2.5572E+00	1.0000E+00	N	91%	N		2.4420E+00	4.5045E-01	1.0000E+00	
			50	60			Y		(6.981E-02)	(0.000E+00)		7%			(0.000E+00)	4.017431		

Sq	Calc Date	Parameter	Avg	Sa Act	Q	Net Cnt Rt	Dpm Wo Blk	Dpm-Blk	Vol Used	Yield,EnFct	Chem Yld,EFctU	IDC/ILcC	BlkLcC/MDC	StdDvMdC/LcC
	06/26/06	RA-226	R	**0.184451**	**U4**	9.66667E-02	0.101922	0.101922	1.00 Sa	91%		0.465646		
				(0.136086)		(7.0632E-02)	(0.074969)	(0.074969)	(0.028284)			0.181221		

Sq	Status	Method	Matrix	Protocol	Equation Set	Wrk Ord	Units/Matrix	QC/BB	Sa/On Date	AnalysisDate/PptWt	Sep1/Sep2 Date	QC/Tracer Vial	Mult/EntYld	Total/Analy Vol	Final/Count Vol
14	Calc	TE	FILTER	*STLE	Ra226WoBS	**H67QT1AA**	**PCI/SA**	**B**	05/22/06 10:10	06/23/06 16:17	06/20/06 13:13	RATA22592	1	1.00 Sa	
CID:INTRA-LAB BLANKLOT:J6F120000137 v4.8.24							FILTER				06/23/06 13:17	RATA22592 Alq	84%	1.00 Sa	

Sq	Cnt Date	Parameter	Sample Cnt	Bkgrnd Cnt	Instr	Geom	Trc/Av	Ent	Efficiency1	Efficiency 2	Ent	Yld Fct	Ent	Blk Value	Ingr Fct	Conv Fct/VolAdj	Decay	Abn
1	06/23/06 16:17	RA-226	8	10	ASCHMA	ASC		N	2.4641E+00	1.0000E+00	N	84%	N		2.4411E+00	4.5045E-01	1.0000E+00	
			50	60			Y		(1.254E-01)	(0.000E+00)		7%			(0.000E+00)	1.00		

Sq	Calc Date	Parameter	Avg	Sa Act	Q	Net Cnt Rt	Dpm Wo Blk	Dpm-Blk	Vol Used	Yield,EnFct	Chem Yld,EFctU	IDC/ILcC	BlkLcC/MDC	StdDvMdC/LcC
	06/23/06	RA-226	R	**-0.003529**	**U4**	-6.66667E-03	-0.007834	-0.007834	1.00 Sa	84%		0.170804		
				(0.040929)		(7.7316E-02)	(0.090859)	(0.090859)	(0.017321)			0.071099		

Sq	Status	Method	Matrix	Protocol	Equation Set	Wrk Ord	Units/Matrix	QC/BB	Sa/On Date	AnalysisDate/PptWt	Sep1/Sep2 Date	QC/Tracer Vial	Mult/EntYld	Total/Analy Vol	Final/Count Vol
15	Calc	TE	FILTER	*STLE	Ra226WoBS	**H67QT1AC**	**PCI/SA**	**S**	05/22/06 10:10	06/23/06 16:15	06/20/06 13:13	RASC4118	1	1.00 Sa	
CID:INTRA-LAB CHECKLOT:J6F120000137 v4.8.24							FILTER				06/23/06 13:15	RASC4118 Alq	88%	1.00 Sa	

Sq	Cnt Date	Parameter	Sample Cnt	Bkgrnd Cnt	Instr	Geom	Trc/Av	Ent	Efficiency1	Efficiency 2	Ent	Yld Fct	Ent	Blk Value	Ingr Fct	Conv Fct/VolAdj	Decay	Abn
1	06/23/06 16:15	RA-226	144	10	ASCPMB	ASC		N	2.5237E+00	1.0000E+00	N	88%	N		2.4420E+00	4.5045E-01	1.0000E+00	
			50	60			Y		(9.363E-02)	(0.000E+00)		7%			(0.000E+00)	1.00		

() - (1s Uncertainities), Q - Qualifier, U Result is Less Than Lc = 1.645 * TPU

IDC - Instrument Detection Level in Conc Units, MLcC - Method Decision Level in Conc Units, MDC- Minimum Detectable Concentration

Sr-89 Counts are Derived from the Combination of Each Sr-89/90 and Y-90 Count, All Result Digits May Not be Significants, Date/Time - mm/dd/yy hh:mm, 24hr Time

RecCnt:15

RADCALC v4.8.24

STL Richland

Batch Nbr: 6163137

Alpha Beta, Ra-226 by ASC-7 , Calculated Results

6/26/2006 5:04:12 PM

Sq	Calc Date	Parameter	Avg	Sa Act	Q	Net Cnt Rt	Dpm Wo Blk	Dpm-Blk	Vol Used	Yield,EnFct	Chem Yld,EFctU	IDC/ILcC	BlkLcC/MDC	StdDvMdC/LcC
	06/23/06	RA-226	R	**1.342215**		2.71333E+00	2.979618	2.979618	1.00 Sa	88%	95%	0.159615		
				(0.183925)		(2.4572E-01)	(0.37663)	(0.37663)	(0.017321)			0.066441		

() - (1s Uncertainities), Q - Qualifier, U Result is Less Than Lc = 1.645 * TPU

IDC - Instrument Detection Level in Conc Units, MLcC - Method Decision Level in Conc Units, MDC- Minimum Detectable Concentration

Sr-89 Counts are Derived from the Combination of Each Sr-89/90 and Y-90 Count, All Result Digits May Not be Significants, Date/Time - mm/dd/yy hh:mm, 24hr Time

RecCnt:15

RADCALC v4.8.24

STL Richland

ALPHA SCINTILLATION REPORT
(Version: 17-Oct-1998)

Sample ID: H61AE1AC Isotope: RA-226

Client: STL Matrix Code: 103

Batch Nbr: 6163137 Activity Unit: PCI/SA Multiplier: 1.1732
Technician: RS

Analysis Size: 0.2492 Analysis Unit: SA

Report Date: 23-JUN-2006 16:05:00.97
First Separation Date: 20-JUN-2006 12:01:00.00
Second Separation Date: 23-JUN-2006 12:15:00.00

Detector ID: 1 Cell ID: 1HB

Bkg Date: 23-JUN-2006 08:13:59.49
Bkg Counts: 000025 Bkg Duration: 000060.0

Count Date: 23-JUN-2006 15:15:00.46
Counts: 000041 Count Duration: 000050.0

End of Report

ALPHA SCINTILLATION REPORT
(Version: 17-Oct-1998)

Sample ID: H61AH1AC Isotope: RA-226

Client: STL Matrix Code: 103

Batch Nbr: 6163137 Activity Unit: PCI/SA Multiplier: 1.1773
Technician: RS

Analysis Size: 0.2498 Analysis Unit: SA

Report Date: 23-JUN-2006 16:06:00.65
First Separation Date: 20-JUN-2006 12:01:00.00
Second Separation Date: 23-JUN-2006 12:16:00.00

Detector ID: 2 Cell ID: 2RC

Bkg Date: 22-JUN-2006 08:56:59.39
Bkg Counts: 000023 Bkg Duration: 000060.0

Count Date: 23-JUN-2006 15:16:00.29
Counts: 000018 Count Duration: 000050.0

End of Report

ALPHA SCINTILLATION REPORT
(Version: 17-Oct-1998)

Sample ID: H61AK1AC Isotope: RA-226

Client: STL Matrix Code: 103

Batch Nbr: 6163137 Activity Unit: PCI/SA Multiplier: 1.1873
Technician: RS

Analysis Size: 0.2487 Analysis Unit: SA

Report Date: 23-JUN-2006 16:05:01.07
First Separation Date: 20-JUN-2006 12:01:00.00
Second Separation Date: 23-JUN-2006 12:15:00.00

Detector ID: 3 Cell ID: 3HA

Bkg Date: 22-JUN-2006 10:20:45.03
Bkg Counts: 000023 Bkg Duration: 000060.0

Count Date: 23-JUN-2006 15:15:00.53
Counts: 000034 Count Duration: 000050.0

End of Report

ALPHA SCINTILLATION REPORT
(Version: 17-Oct-1998)

Sample ID: H61AL1AC Isotope: RA-226

Client: STL Matrix Code: 103

Batch Nbr: 6163137 Activity Unit: PCI/SA Multiplier: 1.0843
Technician: RS

Analysis Size: 0.249 Analysis Unit: SA

Report Date: 23-JUN-2006 16:04:00.74
First Separation Date: 20-JUN-2006 12:01:00.00
Second Separation Date: 23-JUN-2006 12:14:00.00

Detector ID: 4 Cell ID: 4UA

Bkg Date: 22-JUN-2006 10:46:29.60
Bkg Counts: 000019 Bkg Duration: 000060.0

Count Date: 23-JUN-2006 15:14:00.38
Counts: 000014 Count Duration: 000050.0

End of Report

ALPHA SCINTILLATION REPORT
(Version: 17-Oct-1998)

Sample ID: H61AM1AC Isotope: RA-226

Client: STL Matrix Code: 103

Batch Nbr: 6163137 Activity Unit: PCI/SA Multiplier: 1.1711
Technician: RS

Analysis Size: 0.2487 Analysis Unit: SA

Report Date: 23-JUN-2006 16:08:00.96
First Separation Date: 20-JUN-2006 12:16:00.00
Second Separation Date: 23-JUN-2006 12:18:00.00

Detector ID: 7 Cell ID: 7UA

Bkg Date: 22-JUN-2006 18:37:22.53
Bkg Counts: 000009 Bkg Duration: 000060.0

Count Date: 23-JUN-2006 15:18:00.56
Counts: 000009 Count Duration: 000050.0

End of Report

ALPHA SCINTILLATION REPORT
(Version: 17-Oct-1998)

Sample ID: H61AR1AC Isotope: RA-226

Client: STL Matrix Code: 103

Batch Nbr: 6163137 Activity Unit: PCI/SA Multiplier: 1.0527
Technician: RS

Analysis Size: 0.2496 Analysis Unit: SA

Report Date: 23-JUN-2006 16:09:01.19
First Separation Date: 20-JUN-2006 12:16:00.00
Second Separation Date: 23-JUN-2006 12:19:00.00

Detector ID: 8 Cell ID: 8RD

Bkg Date: 22-JUN-2006 08:33:43.11
Bkg Counts: 000012 Bkg Duration: 000060.0

Count Date: 23-JUN-2006 15:19:00.55
Counts: 000008 Count Duration: 000050.0

End of Report

ALPHA SCINTILLATION REPORT
(Version: 17-Oct-1998)

Sample ID: H61AT1AC Isotope: RA-226

Client: STL Matrix Code: 103

Batch Nbr: 6163137 Activity Unit: PCI/SA Multiplier: 1.2756
Technician: RS

Analysis Size: 0.2473 Analysis Unit: SA

Report Date: 23-JUN-2006 16:08:01.15
First Separation Date: 20-JUN-2006 12:16:00.00
Second Separation Date: 23-JUN-2006 12:18:00.00

Detector ID: 9 Cell ID: 9RC

Bkg Date: 22-JUN-2006 18:37:30.47
Bkg Counts: 000018 Bkg Duration: 000060.0

Count Date: 23-JUN-2006 15:18:00.67
Counts: 000012 Count Duration: 000050.0

End of Report

ALPHA SCINTILLATION REPORT
(Version: 17-Oct-1998)

Sample ID: H61AX1AC Isotope: RA-226

Client: STL Matrix Code: 103

Batch Nbr: 6163137 Activity Unit: PCI/SA Multiplier: 1.1459
Technician: RS

Analysis Size: 0.2455 Analysis Unit: SA

Report Date: 23-JUN-2006 16:08:03.23
First Separation Date: 20-JUN-2006 12:16:00.00
Second Separation Date: 23-JUN-2006 12:18:00.00

Detector ID: 11 Cell ID: BMB

Bkg Date: 22-JUN-2006 08:33:35.54
Bkg Counts: 000014 Bkg Duration: 000060.0

Count Date: 23-JUN-2006 15:18:02.69
Counts: 000025 Count Duration: 000050.0

End of Report

ALPHA SCINTILLATION REPORT
(Version: 17-Oct-1998)

Sample ID: H61A11AC Isotope: RA-226

Client: STL Matrix Code: 103

Batch Nbr: 6163137 Activity Unit: PCI/SA Multiplier: 1.1246
Technician: RS

Analysis Size: 0.2499 Analysis Unit: SA

Report Date: 23-JUN-2006 17:00:00.67
First Separation Date: 20-JUN-2006 12:45:00.00
Second Separation Date: 23-JUN-2006 13:10:00.00

Detector ID: 12 Cell ID: CSD

Bkg Date: 23-JUN-2006 10:17:10.52
Bkg Counts: 000005 Bkg Duration: 000060.0

Count Date: 23-JUN-2006 16:10:00.34
Counts: 000012 Count Duration: 000050.0

End of Report

ALPHA SCINTILLATION REPORT
(Version: 17-Oct-1998)

Sample ID: H61A21AC Isotope: RA-226

Client: STL Matrix Code: 103

Batch Nbr: 6163137 Activity Unit: PCI/SA Multiplier: 1.0174
Technician: RS

Analysis Size: 0.2476 Analysis Unit: SA

Report Date: 23-JUN-2006 17:01:00.67
First Separation Date: 20-JUN-2006 12:45:00.00
Second Separation Date: 23-JUN-2006 13:11:00.00

Detector ID: 13 Cell ID: DSA

Bkg Date: 22-JUN-2006 08:32:44.20
Bkg Counts: 000010 Bkg Duration: 000060.0

Count Date: 23-JUN-2006 16:11:00.33
Counts: 000009 Count Duration: 000050.0

End of Report

ALPHA SCINTILLATION REPORT
(Version: 17-Oct-1998)

Sample ID: H61A31AC Isotope: RA-226

Client: STL Matrix Code: 103

Batch Nbr: 6163137 Activity Unit: PCI/SA Multiplier: 0.9395
Technician: RS

Analysis Size: 0.2515 Analysis Unit: SA

Report Date: 23-JUN-2006 17:02:03.06
First Separation Date: 20-JUN-2006 12:45:00.00
Second Separation Date: 23-JUN-2006 13:12:00.00

Detector ID: 14 Cell ID: EHA

Bkg Date: 23-JUN-2006 08:44:54.41
Bkg Counts: 000018 Bkg Duration: 000060.0

Count Date: 23-JUN-2006 16:12:02.55
Counts: 000013 Count Duration: 000050.0

End of Report

ALPHA SCINTILLATION REPORT
(Version: 17-Oct-1998)

Sample ID: H61A51AC Isotope: RA-226

Client: STL Matrix Code: 103

Batch Nbr: 6163137 Activity Unit: PCI/SA Multiplier: 1.062
Technician: RS

Analysis Size: 0.2492 Analysis Unit: SA

Report Date: 23-JUN-2006 17:02:00.86
First Separation Date: 20-JUN-2006 12:45:00.00
Second Separation Date: 23-JUN-2006 13:12:00.00

Detector ID: 16 Cell ID: GSA

Bkg Date: 22-JUN-2006 18:37:59.03
Bkg Counts: 000004 Bkg Duration: 000060.0

Count Date: 23-JUN-2006 16:12:00.52
Counts: 000008 Count Duration: 000050.0

End of Report

ALPHA SCINTILLATION REPORT
(Version: 17-Oct-1998)

Sample ID: H61A71AC Isotope: RA-226

Client: STL Matrix Code: 103

Batch Nbr: 6163137 Activity Unit: PCI/SA Multiplier: 1.1041
Technician: RS

Analysis Size: 0.2489 Analysis Unit: SA

Report Date: 23-JUN-2006 17:05:01.00
First Separation Date: 20-JUN-2006 13:13:00.00
Second Separation Date: 23-JUN-2006 13:15:00.00

Detector ID: 18 Cell ID: JMB

Bkg Date: 22-JUN-2006 18:38:35.57
Bkg Counts: 000005 Bkg Duration: 000060.0

Count Date: 23-JUN-2006 16:15:00.49
Counts: 000009 Count Duration: 000050.0

End of Report

ALPHA SCINTILLATION REPORT
(Version: 17-Oct-1998)

Sample ID: H67QT1AA Isotope: RA-226

Client: STL Matrix Code: 103

Batch Nbr: 6163137 Activity Unit: PCI/SA Multiplier: 1.1862
Technician: RS

Analysis Size: 1.0 Analysis Unit: SA

Report Date: 23-JUN-2006 17:07:00.66
First Separation Date: 20-JUN-2006 13:13:00.00
Second Separation Date: 23-JUN-2006 13:17:00.00

Detector ID: 17 Cell ID: HMA

Bkg Date: 22-JUN-2006 08:32:20.70
Bkg Counts: 000010 Bkg Duration: 000060.0

Count Date: 23-JUN-2006 16:17:00.33
Counts: 000008 Count Duration: 000050.0

End of Report

ALPHA SCINTILLATION REPORT
(Version: 17-Oct-1998)

Sample ID: H67QT1AC Isotope: RA-226

Client: STL Matrix Code: 103

Batch Nbr: 6163137 Activity Unit: PCI/SA Multiplier: 1.1349
Technician: RS

Analysis Size: 1.0 Analysis Unit: SA

Report Date: 23-JUN-2006 17:05:01.03
First Separation Date: 20-JUN-2006 13:13:00.00
Second Separation Date: 23-JUN-2006 13:15:00.00

Detector ID: 23 Cell ID: PMB

Bkg Date: 23-JUN-2006 09:14:16.01
Bkg Counts: 000010 Bkg Duration: 000060.0

Count Date: 23-JUN-2006 16:15:00.54
Counts: 000144 Count Duration: 000050.0

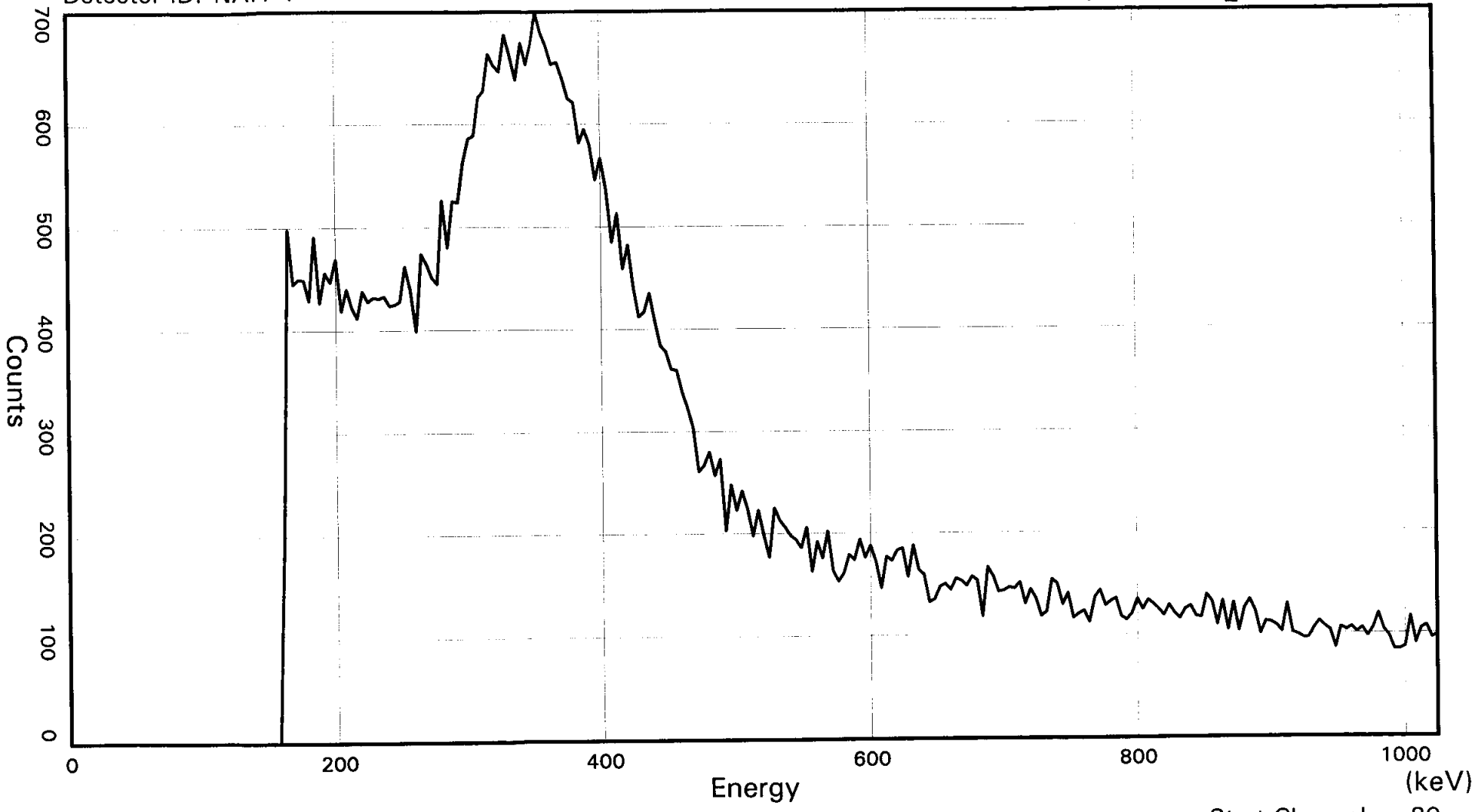
End of Report

STL Richland WA.

BA133

Sample ID: H61AE1AC
Detector ID: NAI1 1

Library: [NUC_LIBR]BA133.NLB



Acquisition Start: 19-JUN-2006 11:34:44.06
Preset Live Time: 0 00:30:00
Elapsed Live Time: 0 00:30:00
Weighting: DERIVED

Start Channel: 80
End Channel: 113
Iterations: 5
Gain shift: Iter

SAMPLE IDENTIFICATION: H61AE1AC

CONFIGURATION ID: NAI1:H61AE1AC_190661134
TITLE : BA133
SAMPLE ID : H61AE1AC

REPORT DATE: 19-JUN-06
ACQUIRE DATE: 19-JUN-06 11:34:44
ELAPSED LIVE TIME: 1800.0 Sec
PRESET LIVE TIME: 0 00:30:00

SAMPLE DATE: 13-JUN-2006 12:00:00.00
CALIB DATE: 17-NOV-1993 10:39:59.60
ELAPSED LIVE TIME: 0 00:30:00
ELAPSED REAL TIME: 0 00:30:00

SAMPLE QUANTITY: 1.0000E+00
SAMPLE GEOMETRY:

UNITS: SAMPL
SAMPLE TYPE:

ENERGY OFFSET: 0.0000E+00 keV
ENERGY SLOPE: 4.0000E+00 keV/C
ENERGY Q COEFF: 0.0000E+00 keV/C^^2
PEAK SENSITIVITY: 5.000

FWHM OFFSET: -.2302E+02 keV
FWHM SLOPE: 5.7163E+00 sqr keV
ITERATIONS: 5
GAUSSIAN SENSITIVITY: 35.00 %

ABUNDANCE LIMIT: 75.00 %
ENERGY TOLERANCE: 20.000 keV
VARIABLE PEAK WIDTH: 3.00

HALF-LIFE RATIO: 8.00
ACTIVITY MULTIPLIER: 2.2200E+06
LIBRARY: [NUC_LIBR]BA133.NLB

VMS NAI Report V1.2 Generated 19-JUN-2006 12:04:48

Configuration	: RDND06$DKA100:[NAI1.SAMPLE]H61AE1AC_190661134.CNF;1		
Analyses by	: NAI V3.0		
Sample title	: BA133		
Sample date	: 13-JUN-2006 12:00:00	Acquisition date	: 19-JUN-2006 11:34:44
Sample ID	: H61AE1AC	Sample quantity	: 1.0000 sampl
Elapsed live time	: 0 00:30:00.00	Elapsed real time	: 0 00:30:00.64 0.0%
Sample Multiplier	: 1.00	Rejection Coeff.	: 0.00
Gain shift type	: ITER	Threshold Shift	: No
Weighting type	: DERIVED	Calculated counts	: No
Iterations	: 5		

NAI Residuals Report

Ratio of Residuals Over Standard Deviation Per Channel

80:	5.8	5.0	5.5	3.8	2.7	3.2	2.6	2.2
88:	2.6	2.3	0.7	-0.7	0.7	-1.8	-1.0	-0.8
96:	-2.2	-2.1	-1.7	-3.0	-2.8	-2.0	-4.4	-2.4
104:	-5.5	-4.2	-4.7	-5.1	-4.3	-2.3	-3.4	-4.3
112:	-3.0	-4.0						

List of Suspicious Channels

81	82	83	84	85	86	87	88

Iteration	Chi-Squared	Threshold Shift	Gain Shift
1	1.13E+01	0.00E+00	1.03E+00
2	5.08E+00	0.00E+00	1.06E+00
3	1.50E+00	0.00E+00	1.08E+00
4	6.17E-01	0.00E+00	1.09E+00

Sample ID : H61AE1AC
Acquisition date : 19-JUN-2006 11:34:44

Brief Report

Nuclide	Activity DPM/sampl	1-Sigma Error
BA-133	639.	6.98

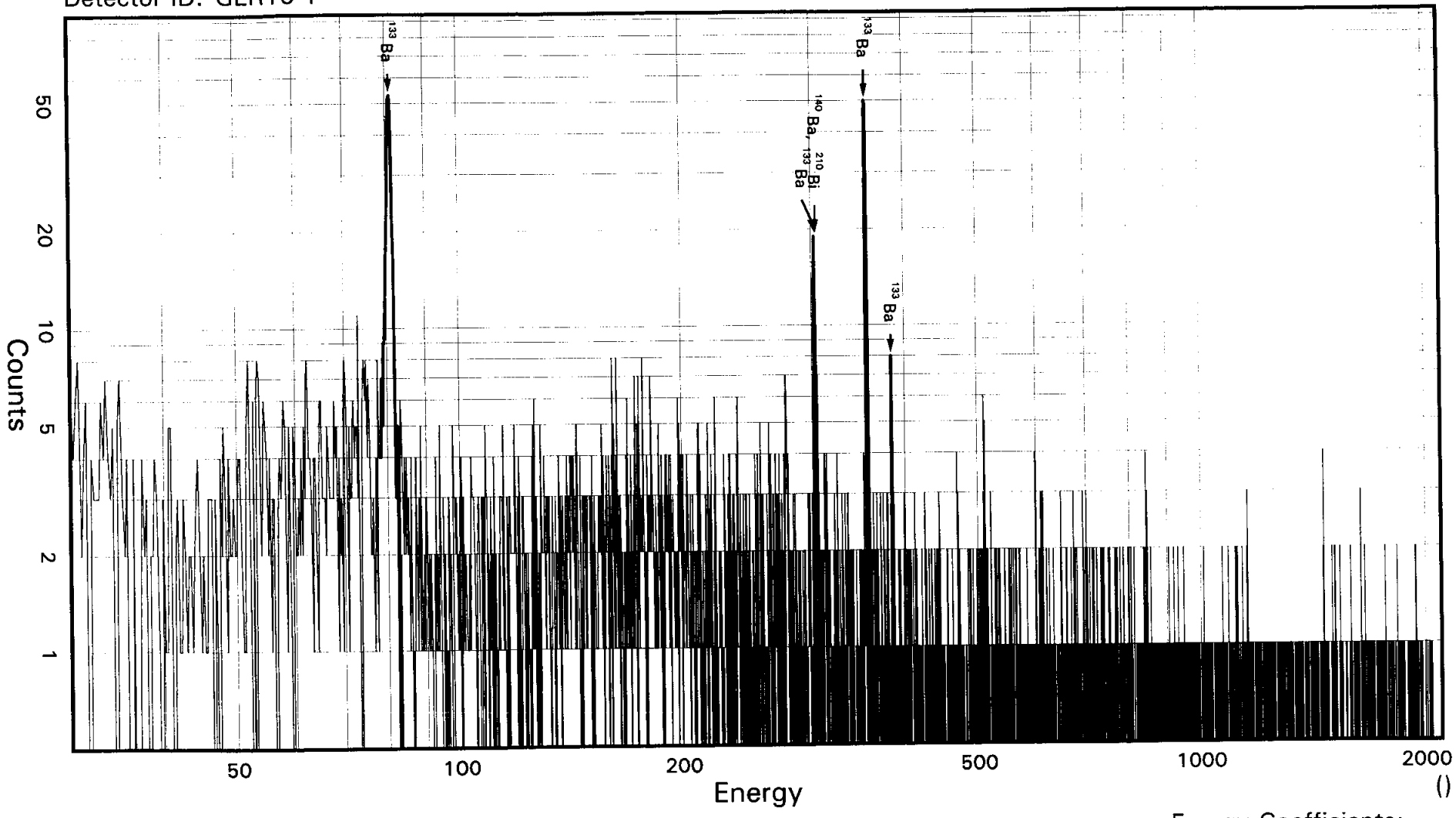
Total Activity :	639.	

STL Richland WA.

BA133

Sample ID: H61AH1AC
Detector ID: GER10 1

Batch ID: 6163137



Acquisition Start: 19-JUN-2006 11:35:29.24
Preset Live Time: 0 00:30:00.00
Elapsed Live Time: 0 00:30:00.00

Energy Coefficients:
Offset: 1.56759E+01
Slope: 2.46944E-01
Quadrature: 3.15282E-09

SAMPLE IDENTIFICATION: H61AH1AC

CONFIGURATION ID: GER10:H61AH1AC_190661135
TITLE : BA133
SAMPLE ID : H61AH1AC

REPORT DATE: 19-JUN-06
ACQUIRE DATE: 19-JUN-06 11:35:29
ELAPSED LIVE TIME: 1800.0 Sec
PRESET LIVE TIME: 0 00:30:00

SAMPLE DATE: 13-JUN-2006 12:00:00.00
CALIB DATE: 19-JUN-2006 05:29:08.65
ELAPSED LIVE TIME: 0 00:30:00
ELAPSED REAL TIME: 0 00:30:00

SAMPLE QUANTITY: 1.0000E+00
SAMPLE GEOMETRY: BA133T15

UNITS: SAMPL
SAMPLE TYPE:

ENERGY OFFSET: 1.5676E+01 keV
ENERGY SLOPE: 2.4694E-01 keV/C
ENERGY Q COEFF: 3.1528E-09 keV/C^^2
PEAK SENSITIVITY: 5.000

FWHM OFFSET: 8.9758E-01 keV
FWHM SLOPE: 2.6348E-02 sqr keV
ITERATIONS: 10
GAUSSIAN SENSITIVITY: 10.00 %

ABUNDANCE LIMIT: 80.00 %
ENERGY TOLERANCE: 1.500 keV
VARIABLE PEAK WIDTH: 3.00

HALF-LIFE RATIO: 8.00
ACTIVITY MULTIPLIER: 2.2200E+06
LIBRARY: [NUC_LIBR]QRL.NLB

VMS Peak Search Report V1.9 Generated 19-JUN-2006 12:10:40

Configuration : $DISK1:[GER10.SAMPLE]H61AH1AC_190661135.CNF;1
Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6
Sample title : BA133
Sample date : 13-JUN-2006 12:00:00 Acquisition date : 19-JUN-2006 11:35:29
Sample ID : H61AH1AC Sample quantity : 1.0000 SAMPL
Sample type : Sample geometry : BA133T15
Elapsed live time: 0 00:30:00.00 Elapsed real time: 0 00:30:00.21 0.0%
Start energy : 18.15 End energy : 2038.85
Sensitivity : 5.00 Gaussian : 10.00
Critical level : No

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	81.00	284	77	1.14	264.52	252	21	1.58E-01	9.6	
2	2	302.86	87	16	1.34	1162.95	1150	22	4.84E-02	15.4	2.30E+00
3	2	304.37	20	7	1.10	1169.06	1150	22	1.14E-02	31.8	
4	0	356.06	308	0	1.50	1378.38	1370	18	1.71E-01	5.7	
5	0	384.01	26	7	0.64	1491.55	1483	14	1.42E-02	29.6	

Flag: "*" = Peak area was modified by background subtraction

VMS Nuclide Identification Report V3.0 Generated 19-JUN-2006 12:10:40

Configuration : $DISK1:[GER10.SAMPLE]H61AH1AC_190661135.CNF;1
Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.3
Sample title : BA133
Sample date : 13-JUN-2006 12:00:00 Acquisition date : 19-JUN-2006 11:35:29
Sample ID : H61AH1AC Sample quantity : 1.0000 SAMPL
Sample type : Sample geometry : BA133T15
Elapsed live time: 0 00:30:00.00 Elapsed real time: 0 00:30:00.21 0.0%
Energy tolerance : 1.50 Half life ratio : 8.00
Errors propagated: Yes Systematic Error : 5.00 %
Efficiency type : Empirical Efficiencies at : Peak Energy
Abundance limit : 80.00

Nuclide Line Activity Report

Nuclide Type: FP

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected DPM/SAMPL	Decay Corr DPM/SAMPL	1-Sigma %Error
BA-133	81.00	284	33.00	2.399E+00	1.195E+03	1.196E+03	11.06
	276.40	------	6.90	2.578E+00	------ Line Not Found		------
	302.84	87	17.80	2.582E+00	6.318E+02	6.325E+02	16.28
	356.00	308	62.05*	2.584E+00	6.403E+02	6.410E+02	7.84
	383.85	26	8.70	2.583E+00	3.793E+02	3.797E+02	30.13

Flag: "*" = Keyline

Unidentified Energy Lines
Sample ID : H61AH1AC

Acquisition date : 19-JUN-2006 11:35:29

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
2	304.37	20	7	1.10	1169.06	1150	22	1.14E-02	31.8	2.58E+00	T

Flags: "T" = Tentatively associated

Sample ID : H61AH1AC
Acquisition date : 19-JUN-2006 11:35:29

Nuclide	Half-life	Half-Life Ratio	Energy	%Abund	Activity (DPM/SAMPL)	1-Sigma %Error	Rejected by
BA-140	12.79D	0.47	162.64	6.70	--- Not Found ---		Abun.
			304.84	4.50	8.113E+02	32.26	
			423.70	3.20	--- Not Found ---		
			537.32*	25.00	--- Not Found ---		
		% Abundances Found =		11.42			
BI-210M	3.00E+06Y	0.00	266.15*	50.00	--- Not Found ---		Abun.
			305.25	28.00	9.422E+01	32.26	
		% Abundances Found =		35.90			

Flag: "*" = Keyline

VMS Nuclide Identification Report V3.0 Generated 19-JUN-2006 12:10:42

Configuration : $DISK1:[GER10.SAMPLE]H61AH1AC_190661135.CNF;1
Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.3,WTMEAN/KEY V1.8
Analyses by : MINACT V2.8
Sample title : BA133
Sample date : 13-JUN-2006 12:00:00 Acquisition date : 19-JUN-2006 11:35:29
Sample ID : H61AH1AC Sample quantity : 1.0000 SAMPL
Sample type : Sample geometry : BA133T15
Elapsed live time: 0 00:30:00.00 Elapsed real time: 0 00:30:00.21 0.0%
Peak Width (FWHM): 3.00 Confidence level : 5.00 %
Energy tolerance : 1.50 Half life ratio : 8.00
Errors propagated: Yes Systematic Error : 5.00 %
Efficiency type : Empirical Efficiencies at : Peak Energy
Abundance limit : 80.00 WTM error limit : 3.00

Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Activity (DPM/SAMPL)	Act error	MDA (DPM/SAMPL)	MDA error	Act/MDA
BA-133	6.410E+02	5.026E+01	4.546E+01	9.092E-01	14.100

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (DPM/SAMPL)	K.L. Ided	Act error	MDA (DPM/SAMPL)	MDA error	Act/MDA
BE-7	-2.631E+01		4.636E+01	1.758E+02	3.526E+00	-0.150
NA-22	-2.802E+00		2.775E+00	1.007E+01	2.129E-01	-0.278
K-40	8.921E+01		5.563E+01	2.756E+02	5.896E+00	0.324
SC-46	3.701E+00		4.576E+00	2.069E+01	4.326E-01	0.179
CR-51	-3.221E+01		8.312E+01	3.016E+02	6.035E+00	-0.107
MN-54	-1.402E+00		4.464E+00	1.756E+01	3.599E-01	-0.080
CO-57	2.378E+01		9.487E+01	3.482E+02	7.185E+00	0.068
CO-58	1.407E+00		2.441E+00	1.307E+01	2.674E-01	0.108
FE-59	-2.501E+00		4.467E+00	1.924E+01	4.017E-01	-0.130
CO-60	1.298E+00		3.101E+00	1.475E+01	3.130E-01	0.088
ZN-65	-2.304E+00		1.036E+01	4.055E+01	8.477E-01	-0.057
SE-75	-6.716E-01		1.587E+01	5.800E+01	1.164E+00	-0.012
SR-85	-1.150E+01		1.011E+01	3.412E+01	6.855E-01	-0.337
Y-88	-3.072E+00		3.019E+00	1.087E+01	2.382E-01	-0.283
NB-94	-1.489E+00		4.825E+00	1.868E+01	3.839E-01	-0.080
NB-95	-3.163E+00		5.855E+00	2.196E+01	4.480E-01	-0.144
TC-95M	5.911E+00		1.525E+01	5.752E+01	1.163E+00	0.103
ZR-95	5.296E+00		9.440E+00	4.023E+01	8.203E-01	0.132
ZRNB-95	-5.993E+00		1.110E+01	4.161E+01	8.489E-01	-0.144
MO-99	4.154E+01		5.413E+01	2.021E+02	4.161E+00	0.206
RH-101	-5.145E+00		1.488E+01	5.579E+01	1.129E+00	-0.092
RH-102M	-1.644E-01		5.068E+00	2.031E+01	4.074E-01	-0.008
RU-103	1.806E+00		4.321E+00	1.964E+01	3.943E-01	0.092
RU-106DA	-8.867E+01		5.916E+01	1.896E+02	3.832E+00	-0.468
AG-108M	-7.276E+00		6.743E+00	2.348E+01	4.703E-01	-0.310
AG-110M	4.348E+00		6.053E+00	2.692E+01	5.538E-01	0.161
SN-113DA	9.846E+00		8.738E+00	3.805E+01	7.612E-01	0.259

---- Non-Identified Nuclides ----

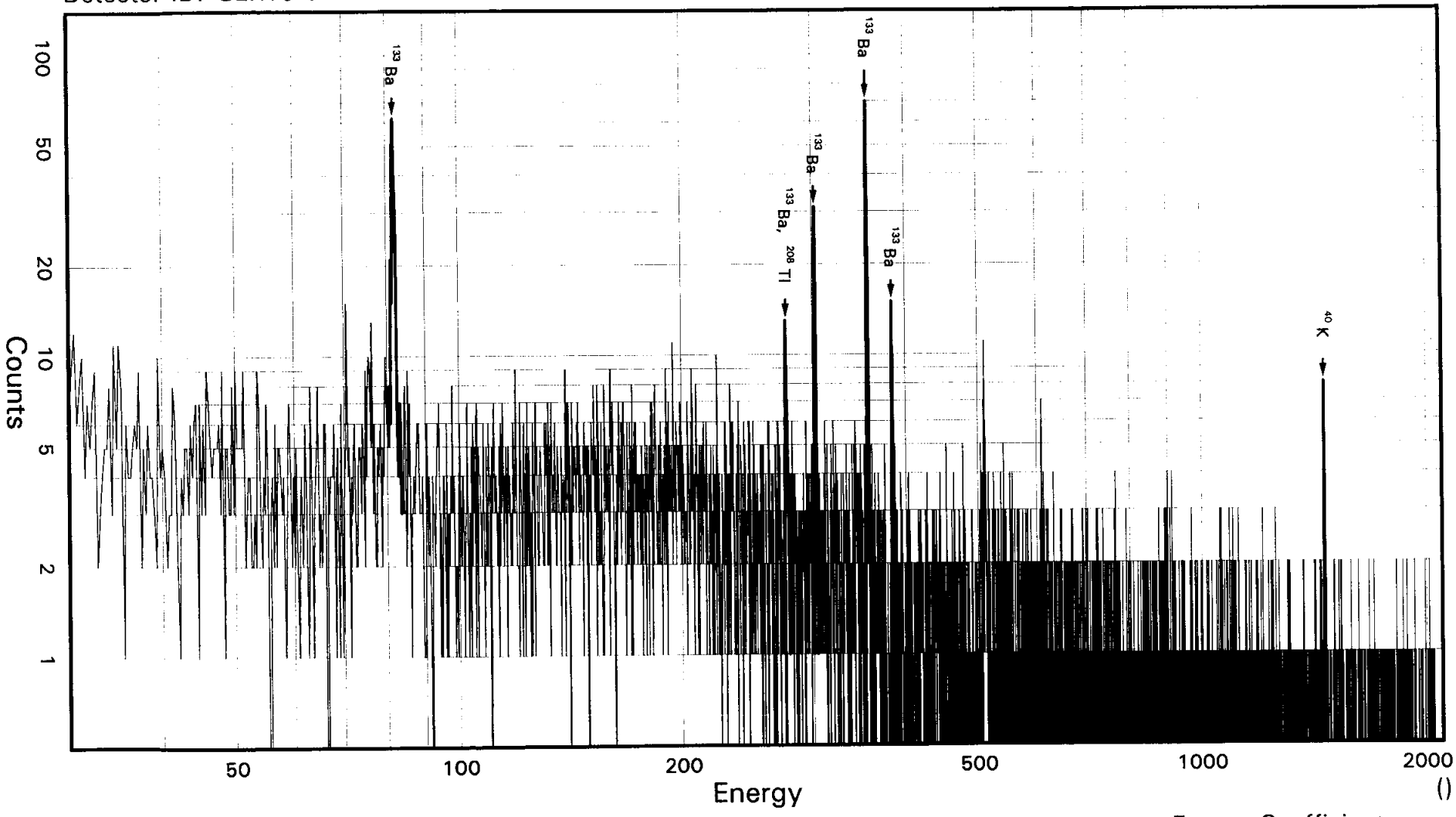
Nuclide	Key-Line Activity (DPM/SAMPL)	K.L. Ided	Act error	MDA (DPM/SAMPL)	MDA error	Act/MDA
SB-124	-1.677E+01		7.402E+00	2.139E+01	4.319E-01	-0.784
SB-125	-1.385E+01		2.068E+01	7.540E+01	1.510E+00	-0.184
SN-126DA	-3.542E+00		4.228E+00	1.570E+01	3.182E-01	-0.226
I-131	1.896E+01		1.443E+01	6.042E+01	1.208E+00	0.314
CS-134	2.047E-02		4.384E+00	1.864E+01	3.810E-01	0.001
CS-137DA	-8.489E+00		5.982E+00	2.013E+01	4.078E-01	-0.422
LA-138	8.322E-02		2.863E+00	1.519E+01	3.245E-01	0.005
CE-139	-3.588E+01		1.349E+01	4.133E+01	8.430E-01	-0.868
BA-140	1.307E+01		3.397E+01	1.351E+02	2.717E+00	0.097
BALA-140	-7.350E+00		5.864E+00	1.824E+01	3.938E-01	-0.403
LA-140	-1.695E+01		2.988E+01	1.279E+02	2.761E+00	-0.133
CE-141	-2.354E+01		2.534E+01	8.539E+01	1.755E+00	-0.276
CE-144	-1.013E+02		9.374E+01	3.143E+02	6.495E+00	-0.322
CEPR-144	-2.025E+02		1.875E+02	6.287E+02	1.299E+01	-0.322
PM-144	6.674E+00		4.919E+00	2.237E+01	4.520E-01	0.298
PM-146	-2.006E+00		7.610E+00	2.962E+01	5.937E-01	-0.068
EU-152	2.783E+01		2.229E+01	9.511E+01	1.902E+00	0.293
EU-154	-7.863E+00		7.788E+00	2.827E+01	5.975E-01	-0.278
EU-155	-3.187E+01		5.023E+01	1.752E+02	3.684E+00	-0.182
HF-181	-3.408E+00		5.442E+00	2.069E+01	4.151E-01	-0.165
BI-207	3.710E+00		5.558E+00	2.316E+01	4.667E-01	0.160
TL-208	4.417E+00		5.195E+00	2.318E+01	4.674E-01	0.191
BI-210M	1.288E+01		1.706E+01	6.609E+01	1.326E+00	0.195
BI-212	-2.549E+01		7.510E+01	2.911E+02	8.894E+00	-0.088
PB-212	2.423E+01		2.135E+01	8.329E+01	1.675E+00	0.291
BI-214	2.997E+01		1.546E+01	6.620E+01	1.337E+00	0.453
PB-214	3.497E+01		2.269E+01	8.389E+01	1.678E+00	0.417
RA-223	-2.760E+01		6.150E+01	2.202E+02	4.415E+00	-0.125
RA-224DA	2.438E+01		2.147E+01	8.379E+01	1.685E+00	0.291
RA-226DA	2.986E+01		1.545E+01	6.614E+01	1.336E+00	0.451
AC-227DA	1.316E+02		8.191E+01	3.286E+02	6.609E+00	0.400
AC-228	6.712E+00		1.498E+01	6.536E+01	1.347E+00	0.103
RA-228DA	6.725E+00		1.501E+01	6.548E+01	1.350E+00	0.103
TH-228DA	1.237E+01		1.455E+01	6.491E+01	1.309E+00	0.191
TH-232DA	2.838E+01		5.766E+01	2.239E+02	4.478E+00	0.127
TH-234DA	-1.877E+02		3.462E+02	1.513E+03	3.138E+01	-0.124
U-234DA	3.359E+01		4.162E+01	1.629E+02	3.261E+00	0.206
U-235HP	2.206E+01		1.031E+02	3.733E+02	7.677E+00	0.059
NP-237DA	2.417E+01		2.563E+01	9.865E+01	1.974E+00	0.245
U-238DA	3.497E+01		2.269E+01	8.389E+01	1.678E+00	0.417
U-238DHP	3.387E+02		3.642E+02	1.364E+03	3.019E+01	0.248
AM-241HP	-4.047E+01		3.702E+01	1.266E+02	2.821E+00	-0.320

STL Richland WA.

BA133

Sample ID: H61AK1AC
Detector ID: GER13 1

Batch ID: 6163137



Acquisition Start: 19-JUN-2006 11:35:35.09
Preset Live Time: 0 00:30:00.00
Elapsed Live Time: 0 00:30:00.00

Energy Coefficients:
Offset: -6.10701E-01
Slope: 2.50772E-01
Quadrature: -1.04651E-07

SAMPLE IDENTIFICATION: H61AK1AC

CONFIGURATION ID: GER13:H61AK1AC_190661135
TITLE : BA133
SAMPLE ID : H61AK1AC

REPORT DATE: 19-JUN-06
ACQUIRE DATE: 19-JUN-06 11:35:35
ELAPSED LIVE TIME: 1800.0 Sec
PRESET LIVE TIME: 0 00:30:00

SAMPLE DATE: 13-JUN-2006 12:00:00.00
CALIB DATE: 19-JUN-2006 05:44:45.22
ELAPSED LIVE TIME: 0 00:30:00
ELAPSED REAL TIME: 0 00:30:00

SAMPLE QUANTITY: 1.0000E+00
SAMPLE GEOMETRY: BA133T15

UNITS: SAMPL
SAMPLE TYPE:

ENERGY OFFSET: -.6107E+00 keV
ENERGY SLOPE: 2.5077E-01 keV/C
ENERGY Q COEFF: -.1047E-06 keV/C^^2
PEAK SENSITIVITY: 5.000

FWHM OFFSET: 4.1661E-01 keV
FWHM SLOPE: 4.3284E-02 sqr keV
ITERATIONS: 10
GAUSSIAN SENSITIVITY: 10.00 %

ABUNDANCE LIMIT: 80.00 %
ENERGY TOLERANCE: 1.500 keV
VARIABLE PEAK WIDTH: 3.00

HALF-LIFE RATIO: 8.00
ACTIVITY MULTIPLIER: 2.2200E+06
LIBRARY: [NUC_LIBR]QRL.NLB

VMS Peak Search Report V1.9 Generated 19-JUN-2006 12:10:57

Configuration : $DISK1:[GER13.SAMPLE]H61AK1AC_190661135.CNF;1
Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6
Sample title : BA133
Sample date : 13-JUN-2006 12:00:00 Acquisition date : 19-JUN-2006 11:35:35
Sample ID : H61AK1AC Sample quantity : 1.0000 SAMPL
Sample type : Sample geometry : BA133T15
Elapsed live time: 0 00:30:00.00 Elapsed real time: 0 00:30:00.37 0.0%
Start energy : 19.45 End energy : 2046.69
Sensitivity : 5.00 Gaussian : 10.00
Critical level : No

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	81.88	197	65	0.77	329.00	323	15	1.10E-01	11.5	
2	0	276.54	69	23	1.43	1105.72	1098	19	3.84E-02	20.7	
3	0	302.59	142	33	0.98	1209.66	1200	19	7.88E-02	12.9	
4	0	355.78	342	12	1.20	1422.02	1414	16	1.90E-01	5.9	
5	0	383.61	48	21	0.92	1533.14	1526	14	2.65E-02	25.1	
6	0	1460.46*	5	0	1.92	5840.52	5827	25	2.53E-03	183.2	

Flag: "*" = Peak area was modified by background subtraction

VMS Nuclide Identification Report V3.0 Generated 19-JUN-2006 12:10:57

Configuration : $DISK1:[GER13.SAMPLE]H61AK1AC_190661135.CNF;1
Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.3
Sample title : BA133
Sample date : 13-JUN-2006 12:00:00 Acquisition date : 19-JUN-2006 11:35:35
Sample ID : H61AK1AC Sample quantity : 1.0000 SAMPL
Sample type : Sample geometry : BA133T15
Elapsed live time: 0 00:30:00.00 Elapsed real time: 0 00:30:00.37 0.0%
Energy tolerance : 1.50 Half life ratio : 8.00
Errors propagated: Yes Systematic Error : 5.00 %
Efficiency type : Empirical Efficiencies at : Peak Energy
Abundance limit : 80.00

Nuclide Line Activity Report

Nuclide Type: NP

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected DPM/SAMPL	Decay Corr DPM/SAMPL	1-Sigma %Error
K-40	1460.81	5	10.67*	2.719E+00	5.228E+01	5.228E+01	183.25

Nuclide Type: FP

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected DPM/SAMPL	Decay Corr DPM/SAMPL	1-Sigma %Error
BA-133	81.00	197	33.00	2.704E+00	7.374E+02	7.382E+02	12.72
	276.40	69	6.90	2.897E+00	1.152E+03	1.153E+03	21.41
	302.84	142	17.80	2.900E+00	9.154E+02	9.164E+02	13.95
	356.00	342	62.05*	2.903E+00	6.332E+02	6.339E+02	7.96
	383.85	48	8.70	2.902E+00	6.290E+02	6.297E+02	25.62

Flag: "*" = Keyline

Unidentified Energy Lines
Sample ID : H61AK1AC

Acquisition date : 19-JUN-2006 11:35:35

None

Flags: "T" = Tentatively associated

Sample ID : H61AK1AC
Acquisition date : 19-JUN-2006 11:35:35

Nuclide	Half-life	Half-Life Ratio	Energy	%Abund	Activity (DPM/SAMPL)	1-Sigma %Error	Rejected by
TL-208	1.41E+10Y	0.00	277.35	6.80	1.169E+03	21.41	Abun.
			510.84	21.60	--- Not Found ---		
			583.14*	84.20	--- Not Found ---		
			860.37	12.46	--- Not Found ---		
		% Abundances Found =		5.44			

Flag: "*" = Keyline

VMS Nuclide Identification Report V3.0 Generated 19-JUN-2006 12:10:59

Configuration : $DISK1:[GER13.SAMPLE]H61AK1AC_190661135.CNF;1
Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.3,WTMEAN/KEY V1.8
Analyses by : MINACT V2.8
Sample title : BA133
Sample date : 13-JUN-2006 12:00:00 Acquisition date : 19-JUN-2006 11:35:35
Sample ID : H61AK1AC Sample quantity : 1.0000 SAMPL
Sample type : Sample geometry : BA133T15
Elapsed live time: 0 00:30:00.00 Elapsed real time: 0 00:30:00.37 0.0%
Peak Width (FWHM): 3.00 Confidence level : 5.00 %
Energy tolerance : 1.50 Half life ratio : 8.00
Errors propagated: Yes Systematic Error : 5.00 %
Efficiency type : Empirical Efficiencies at : Peak Energy
Abundance limit : 80.00 WTM error limit : 3.00

Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Activity (DPM/SAMPL)	Act error	MDA (DPM/SAMPL)	MDA error	Act/MDA
K-40	5.228E+01	9.579E+01	1.048E+02	2.238E+00	0.499
BA-133	6.339E+02	5.045E+01	3.810E+01	7.619E-01	16.640

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (DPM/SAMPL)	K.L. Ided	Act error	MDA (DPM/SAMPL)	MDA error	Act/MDA
BE-7	8.428E+01		6.958E+01	2.825E+02	5.667E+00	0.298
NA-22	5.510E+00		3.108E+00	1.657E+01	3.496E-01	0.333
SC-46	3.051E+00		5.565E+00	2.421E+01	5.056E-01	0.126
CR-51	1.028E+01		1.157E+02	4.174E+02	8.352E+00	0.025
MN-54	5.004E+00		5.355E+00	2.256E+01	4.621E-01	0.222
CO-57	-7.625E+01		9.791E+01	3.450E+02	7.112E+00	-0.221
CO-58	1.440E+00		5.969E+00	2.356E+01	4.818E-01	0.061
FE-59	2.182E+00		1.017E+01	4.048E+01	8.442E-01	0.054
CO-60	4.061E-02		4.548E+00	1.828E+01	3.872E-01	0.002
ZN-65	-2.204E+01		1.064E+01	3.147E+01	6.569E-01	-0.701
SE-75	-2.987E+01		1.529E+01	4.923E+01	9.875E-01	-0.607
SR-85	-4.170E+01		1.185E+01	3.267E+01	6.563E-01	-1.276
Y-88	1.429E+00		3.429E+00	1.575E+01	3.441E-01	0.091
NB-94	-8.456E+00		5.206E+00	1.661E+01	3.411E-01	-0.509
NB-95	7.108E-02		7.052E+00	2.698E+01	5.501E-01	0.003
TC-95M	-1.578E+01		1.824E+01	6.169E+01	1.246E+00	-0.256
ZR-95	-5.038E+00		1.020E+01	3.812E+01	7.768E-01	-0.132
ZRNB-95	-2.061E+00		1.360E+01	5.126E+01	1.045E+00	-0.040
MO-99	4.989E+01		5.675E+01	2.137E+02	4.397E+00	0.233
RH-101	3.784E+00		1.674E+01	5.963E+01	1.206E+00	0.063
RH-102M	-1.350E+01		7.345E+00	2.313E+01	4.639E-01	-0.583
RU-103	-1.310E+00		7.093E+00	2.657E+01	5.333E-01	-0.049
RU-106DA	-1.395E+01		6.830E+01	2.532E+02	5.116E+00	-0.055
AG-108M	-1.122E+01		7.724E+00	2.563E+01	5.133E-01	-0.438
AG-110M	-1.651E+00		8.387E+00	3.136E+01	6.445E-01	-0.053
SN-113DA	5.110E+00		1.047E+01	4.117E+01	8.237E-01	0.124

Sample ID : H61AK1AC Acquisition date : 19-JUN-2006 11:35:35

---- Non-Identified Nuclides ----

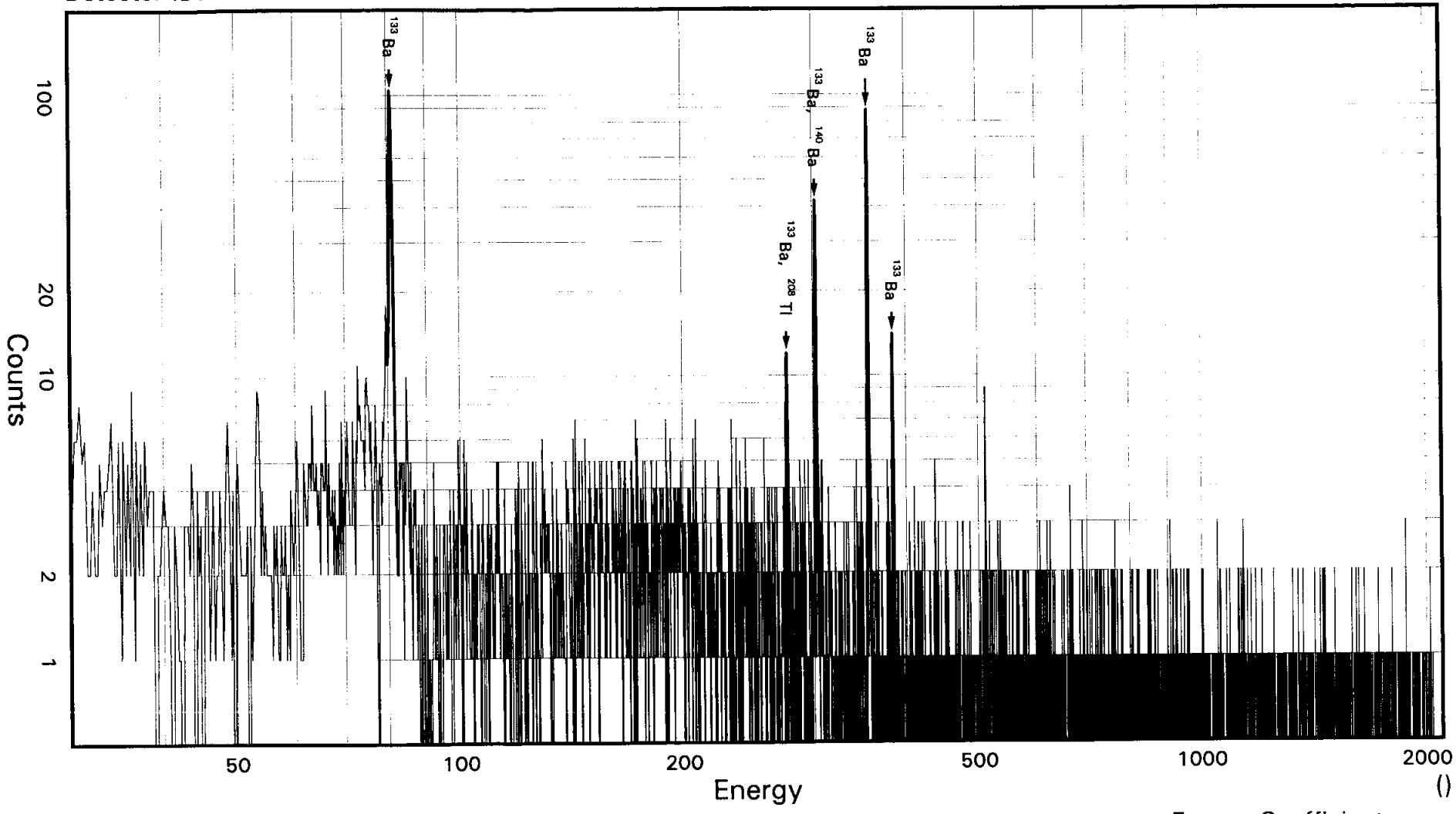
Nuclide	Key-Line Activity (DPM/SAMPL)	K.L. Ided	Act error	MDA (DPM/SAMPL)	MDA error	Act/MDA
SB-124	-1.070E-01		6.376E+00	2.445E+01	4.934E-01	-0.004
SB-125	-1.512E+00		2.249E+01	8.450E+01	1.692E+00	-0.018
SN-126DA	-6.194E-02		5.778E+00	2.203E+01	4.463E-01	-0.003
I-131	9.494E+00		1.713E+01	6.408E+01	1.282E+00	0.148
CS-134	1.691E+00		6.560E+00	2.598E+01	5.307E-01	0.065
CS-137DA	-4.348E-01		6.142E+00	2.364E+01	4.789E-01	-0.018
LA-138	5.413E+00		4.899E+00	2.404E+01	5.125E-01	0.225
CE-139	2.656E+01		1.450E+01	5.610E+01	1.144E+00	0.473
BA-140	-3.891E+01		3.572E+01	1.201E+02	2.414E+00	-0.324
BALA-140	-1.131E-01		1.002E+01	4.267E+01	9.188E-01	-0.003
LA-140	7.750E-01		4.341E+01	1.854E+02	3.992E+00	0.004
CE-141	2.313E+00		2.620E+01	9.542E+01	1.959E+00	0.024
CE-144	1.039E+02		1.057E+02	3.878E+02	8.004E+00	0.268
CEPR-144	2.087E+02		2.114E+02	7.758E+02	1.601E+01	0.269
PM-144	-2.620E+00		6.839E+00	2.497E+01	5.044E-01	-0.105
PM-146	1.013E+01		1.030E+01	4.136E+01	8.289E-01	0.245
EU-152	-4.168E+00		3.719E+01	1.319E+02	2.638E+00	-0.032
EU-154	1.670E+01		8.969E+00	4.771E+01	1.006E+00	0.350
EU-155	8.694E+01		4.953E+01	1.931E+02	4.056E+00	0.450
HF-181	-4.812E+00		8.397E+00	3.008E+01	6.034E-01	-0.160
BI-207	-1.926E+00		5.904E+00	2.216E+01	4.465E-01	-0.087
TL-208	1.496E+00		8.601E+00	3.459E+01	6.974E-01	0.043
BI-210M	-4.101E+01		1.842E+01	5.807E+01	1.165E+00	-0.706
BI-212	3.741E+00		9.794E+01	3.670E+02	1.121E+01	0.010
PB-212	4.762E+00		2.173E+01	8.192E+01	1.647E+00	0.058
BI-214	1.253E+01		1.932E+01	7.804E+01	1.576E+00	0.161
PB-214	-2.274E+00		2.825E+01	9.252E+01	1.850E+00	-0.025
RA-223	8.090E+01		6.810E+01	2.640E+02	5.293E+00	0.306
RA-224DA	4.790E+00		2.186E+01	8.241E+01	1.657E+00	0.058
RA-226DA	1.233E+01		1.931E+01	7.796E+01	1.574E+00	0.158
AC-227DA	-2.028E+02		9.354E+01	2.856E+02	5.745E+00	-0.710
AC-228	-1.660E+01		2.133E+01	8.578E+01	1.766E+00	-0.193
RA-228DA	-1.663E+01		2.137E+01	8.595E+01	1.770E+00	-0.193
TH-228DA	4.188E+00		2.408E+01	9.686E+01	1.953E+00	0.043
TH-232DA	-1.019E+02		7.403E+01	2.470E+02	4.941E+00	-0.413
TH-234DA	2.198E+02		6.993E+02	2.901E+03	6.009E+01	0.076
U-234DA	2.934E+01		4.964E+01	1.873E+02	3.750E+00	0.157
U-235HP	1.360E+02		1.045E+02	4.011E+02	8.241E+00	0.339
NP-237DA	1.320E+01		2.229E+01	8.479E+01	1.697E+00	0.156
U-238DA	-2.274E+00		2.825E+01	9.252E+01	1.850E+00	-0.025
U-238DHP	1.181E+02		2.527E+02	9.635E+02	2.125E+01	0.123
AM-241HP	1.304E+01		2.879E+01	1.043E+02	2.317E+00	0.125

STL Richland WA.

BA133

Sample ID: H61AL1AC
Detector ID: GER12 1

Batch ID: 6163137



Acquisition Start: 19-JUN-2006 11:35:41.93
Preset Live Time: 0 00:30:00.00
Elapsed Live Time: 0 00:30:00.00

Energy Coefficients:
Offset: 1.25233E+01
Slope: 2.47509E-01
Quadrature: -2.00961E-09

SAMPLE IDENTIFICATION: H61AL1AC

CONFIGURATION ID: GER12:H61AL1AC_190661135
TITLE : BA133
SAMPLE ID : H61AL1AC

REPORT DATE: 19-JUN-06
ACQUIRE DATE: 19-JUN-06 11:35:41
ELAPSED LIVE TIME: 1800.0 Sec
PRESET LIVE TIME: 0 00:30:00

SAMPLE DATE: 13-JUN-2006 12:00:00.00
CALIB DATE: 19-JUN-2006 05:29:53.77
ELAPSED LIVE TIME: 0 00:30:00
ELAPSED REAL TIME: 0 00:30:00

SAMPLE QUANTITY: 1.0000E+00
SAMPLE GEOMETRY: BA133T15

UNITS: SAMPL
SAMPLE TYPE:

ENERGY OFFSET: 1.2523E+01 keV
ENERGY SLOPE: 2.4751E-01 keV/C
ENERGY Q COEFF: -.2010E-08 keV/C^^2
PEAK SENSITIVITY: 5.000

FWHM OFFSET: 4.0884E-01 keV
FWHM SLOPE: 3.5936E-02 sqr keV
ITERATIONS: 10
GAUSSIAN SENSITIVITY: 10.00 %

ABUNDANCE LIMIT: 80.00 %
ENERGY TOLERANCE: 2.000 keV
VARIABLE PEAK WIDTH: 3.00

HALF-LIFE RATIO: 8.00
ACTIVITY MULTIPLIER: 2.2200E+06
LIBRARY: [NUC_LIBR]QRL.NLB

VMS Peak Search Report V1.9 Generated 19-JUN-2006 12:10:09

```
Configuration     : $DISK1:[GER12.SAMPLE]H61AL1AC_190661135.CNF;1
Analyses by       : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6
Sample title      : BA133
Sample date       : 13-JUN-2006 12:00:00 Acquisition date : 19-JUN-2006 11:35:41
Sample ID         : H61AL1AC             Sample quantity  : 1.0000 SAMPL
Sample type       :                      Sample geometry  : BA133T15
Elapsed live time: 0 00:30:00.00         Elapsed real time: 0 00:30:00.35   0.0%
Start energy      :    12.77             End energy       :  2039.98
Sensitivity       :     5.00             Gaussian         :    10.00
Critical level    : No
```

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	53.53	23	26	0.65	165.68	159	15	1.25E-02	53.9	
2	0	81.00	286	76	0.70	276.67	272	11	1.59E-01	8.6	
3	0	276.71	50	18	1.25	1067.40	1060	16	2.77E-02	24.4	
4	0	302.85	150	30	0.87	1173.01	1164	17	8.36E-02	11.6	
5	0	356.06	400	11	1.00	1387.97	1378	21	2.22E-01	5.4	
6	0	383.80	54	3	0.79	1500.07	1493	12	2.98E-02	15.2	

Flag: "*" = Peak area was modified by background subtraction

VMS Nuclide Identification Report V3.0 Generated 19-JUN-2006 12:10:09

Configuration : $DISK1:[GER12.SAMPLE]H61AL1AC_190661135.CNF;1
Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.3
Sample title : BA133
Sample date : 13-JUN-2006 12:00:00 Acquisition date : 19-JUN-2006 11:35:41
Sample ID : H61AL1AC Sample quantity : 1.0000 SAMPL
Sample type : Sample geometry : BA133T15
Elapsed live time: 0 00:30:00.00 Elapsed real time: 0 00:30:00.35 0.0%
Energy tolerance : 2.00 Half life ratio : 8.00
Errors propagated: Yes Systematic Error : 5.00 %
Efficiency type : Empirical Efficiencies at : Peak Energy
Abundance limit : 80.00

Nuclide Line Activity Report

Nuclide Type: FP

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected DPM/SAMPL	Decay Corr DPM/SAMPL	1-Sigma %Error
BA-133	81.00	286	33.00	2.899E+00	9.976E+02	9.987E+02	10.21
	276.40	50	6.90	3.105E+00	7.770E+02	7.779E+02	24.95
	302.84	150	17.80	3.109E+00	9.061E+02	9.071E+02	12.82
	356.00	400	62.05*	3.111E+00	6.898E+02	6.905E+02	7.63
	383.85	54	8.70	3.111E+00	6.601E+02	6.609E+02	16.09

Flag: "*" = Keyline

Sample ID : H61AL1AC
Acquisition date : 19-JUN-2006 11:35:41

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
0	53.53	23	26	0.65	165.68	159	15	1.25E-02	53.9	2.77E+00	

Flags: "T" = Tentatively associated

Sample ID : H61AL1AC
Acquisition date : 19-JUN-2006 11:35:41

Nuclide	Half-life	Half-Life Ratio	Energy	%Abund	Activity (DPM/SAMPL)	1-Sigma %Error	Rejected by
BA-140	12.79D	0.47	162.64	6.70	--- Not Found ---		Abun.
			304.84	4.50	4.960E+03	12.82	
			423.70	3.20	--- Not Found ---		
			537.32*	25.00	--- Not Found ---		
		% Abundances Found =		11.42			
TL-208	1.41E+10Y	0.00	277.35	6.80	7.885E+02	24.95	Abun.
			510.84	21.60	--- Not Found ---		
			583.14*	84.20	--- Not Found ---		
			860.37	12.46	--- Not Found ---		
		% Abundances Found =		5.44			

Flag: "*" = Keyline

VMS Nuclide Identification Report V3.0 Generated 19-JUN-2006 12:10:11

Configuration : $DISK1:[GER12.SAMPLE]H61AL1AC_190661135.CNF;1
Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.3,WTMEAN/KEY V1.8
Analyses by : MINACT V2.8
Sample title : BA133
Sample date : 13-JUN-2006 12:00:00 Acquisition date : 19-JUN-2006 11:35:41
Sample ID : H61AL1AC Sample quantity : 1.0000 SAMPL
Sample type : Sample geometry : BA133T15
Elapsed live time: 0 00:30:00.00 Elapsed real time: 0 00:30:00.35 0.0%
Peak Width (FWHM): 3.00 Confidence level : 5.00 %
Energy tolerance : 2.00 Half life ratio : 8.00
Errors propagated: Yes Systematic Error : 5.00 %
Efficiency type : Empirical Efficiencies at : Peak Energy
Abundance limit : 80.00 WTM error limit : 3.00

Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Activity (DPM/SAMPL)	Act error	MDA (DPM/SAMPL)	MDA error	Act/MDA
BA-133	6.905E+02	5.265E+01	3.487E+01	6.974E-01	19.804

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (DPM/SAMPL)	K.L. Ided	Act error	MDA (DPM/SAMPL)	MDA error	Act/MDA
BE-7	7.374E+01		4.338E+01	2.000E+02	4.012E+00	0.369
NA-22	-8.609E-02		2.815E+00	1.220E+01	2.572E-01	-0.007
K-40	-5.929E+01		4.762E+01	2.163E+02	4.612E+00	-0.274
SC-46	-3.266E-01		4.274E+00	1.716E+01	3.581E-01	-0.019
CR-51	4.837E+01		5.550E+01	2.318E+02	4.639E+00	0.209
MN-54	2.337E+00		3.482E+00	1.567E+01	3.207E-01	0.149
CO-57	7.863E+01		6.144E+01	2.511E+02	5.173E+00	0.313
CO-58	2.545E+00		3.989E+00	1.753E+01	3.583E-01	0.145
FE-59	-2.898E+00		6.216E+00	2.476E+01	5.158E-01	-0.117
CO-60	2.174E+00		2.824E+00	1.363E+01	2.883E-01	0.160
ZN-65	6.392E+00		8.508E+00	3.678E+01	7.670E-01	0.174
SE-75	1.115E+01		1.056E+01	4.277E+01	8.578E-01	0.261
SR-85	-4.277E+01		9.327E+00	2.067E+01	4.152E-01	-2.069
Y-88	4.909E+00		2.998E+00	1.601E+01	3.492E-01	0.307
NB-94	-2.153E+00		2.677E+00	1.020E+01	2.093E-01	-0.211
NB-95	2.146E+00		4.073E+00	1.789E+01	3.646E-01	0.120
TC-95M	8.691E-01		1.248E+01	4.668E+01	9.429E-01	0.019
ZR-95	9.250E+00		6.979E+00	3.263E+01	6.646E-01	0.284
ZRNB-95	4.350E+00		7.762E+00	3.416E+01	6.962E-01	0.127
MO-99	4.457E+00		3.601E+01	1.414E+02	2.908E+00	0.032
RH-101	1.510E+01		1.187E+01	4.759E+01	9.623E-01	0.317
RH-102M	5.530E+00		4.145E+00	1.890E+01	3.791E-01	0.293
RU-103	1.215E+00		3.061E+00	1.444E+01	2.899E-01	0.084
RU-106DA	-9.266E+01		4.396E+01	1.282E+02	2.591E+00	-0.723
AG-108M	-1.183E+01		6.142E+00	1.905E+01	3.814E-01	-0.621
AG-110M	3.043E-02		4.348E+00	1.850E+01	3.799E-01	0.002
SN-113DA	-6.226E+00		7.525E+00	2.714E+01	5.430E-01	-0.229

Sample ID : H61AL1AC Acquisition date : 19-JUN-2006 11:35:41

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (DPM/SAMPL)	K.L. Ided	Act error	MDA (DPM/SAMPL)	MDA error	Act/MDA
SB-124	7.004E+00		5.487E+00	2.360E+01	4.762E-01	0.297
SB-125	6.277E+00		1.453E+01	6.026E+01	1.207E+00	0.104
SN-126DA	5.332E+00		4.762E+00	2.042E+01	4.136E-01	0.261
I-131	8.319E+00		9.996E+00	4.204E+01	8.409E-01	0.198
CS-134	-2.047E+00		3.134E+00	1.245E+01	2.543E-01	-0.164
CS-137DA	-2.574E-01		5.420E+00	2.112E+01	4.277E-01	-0.012
LA-138	-6.588E+00		4.761E+00	1.587E+01	3.378E-01	-0.415
CE-139	3.515E+00		1.035E+01	3.816E+01	7.777E-01	0.092
BA-140	-2.077E+00		2.649E+01	1.038E+02	2.087E+00	-0.020
BALA-140	1.002E+01		5.808E+00	3.591E+01	7.722E-01	0.279
LA-140	4.317E+01		2.504E+01	1.548E+02	3.329E+00	0.279
CE-141	-2.290E+01		1.955E+01	6.552E+01	1.345E+00	-0.350
CE-144	-9.790E+01		6.628E+01	2.184E+02	4.505E+00	-0.448
CEPR-144	-1.950E+02		1.326E+02	4.373E+02	9.021E+00	-0.446
PM-144	5.554E+00		4.263E+00	1.919E+01	3.876E-01	0.289
PM-146	7.545E+00		7.938E+00	3.292E+01	6.597E-01	0.229
EU-152	1.028E+01		2.265E+01	8.951E+01	1.790E+00	0.115
EU-154	-2.412E-01		7.899E+00	3.425E+01	7.219E-01	-0.007
EU-155	-6.587E+00		3.066E+01	1.151E+02	2.415E+00	-0.057
HF-181	1.909E+00		4.938E+00	2.086E+01	4.185E-01	0.091
BI-207	5.366E-01		4.608E+00	1.850E+01	3.726E-01	0.029
TL-208	-9.871E-01		4.543E+00	1.807E+01	3.643E-01	-0.055
BI-210M	9.339E+00		1.227E+01	4.868E+01	9.764E-01	0.192
BI-212	-2.164E+01		6.112E+01	2.333E+02	7.125E+00	-0.093
PB-212	8.578E+00		1.529E+01	5.925E+01	1.191E+00	0.145
BI-214	-5.771E-01		1.024E+01	3.991E+01	8.056E-01	-0.014
PB-214	-1.833E+01		1.948E+01	5.667E+01	1.133E+00	-0.323
RA-223	-2.308E+01		4.144E+01	1.497E+02	3.002E+00	-0.154
RA-224DA	8.629E+00		1.538E+01	5.961E+01	1.198E+00	0.145
RA-226DA	-4.825E-01		1.025E+01	3.998E+01	8.071E-01	-0.012
AC-227DA	1.456E+01		5.388E+01	2.082E+02	4.187E+00	0.070
AC-228	-1.031E-01		1.494E+01	5.976E+01	1.230E+00	-0.002
RA-228DA	-1.033E-01		1.497E+01	5.988E+01	1.232E+00	-0.002
TH-228DA	-2.764E+00		1.272E+01	5.061E+01	1.020E+00	-0.055
TH-232DA	6.965E-01		4.304E+01	1.624E+02	3.247E+00	0.004
TH-234DA	7.486E+02		6.137E+02	2.781E+03	5.756E+01	0.269
U-234DA	4.430E+00		2.856E+01	1.096E+02	2.194E+00	0.040
U-235HP	1.253E+02		7.047E+01	2.872E+02	5.899E+00	0.436
NP-237DA	-1.863E+01		1.706E+01	5.743E+01	1.149E+00	-0.324
U-238DA	-1.833E+01		1.948E+01	5.667E+01	1.133E+00	-0.323
U-238DHP	2.712E+02		2.626E+02	9.882E+02	2.176E+01	0.274
AM-241HP	3.182E+01		2.190E+01	8.775E+01	1.945E+00	0.363

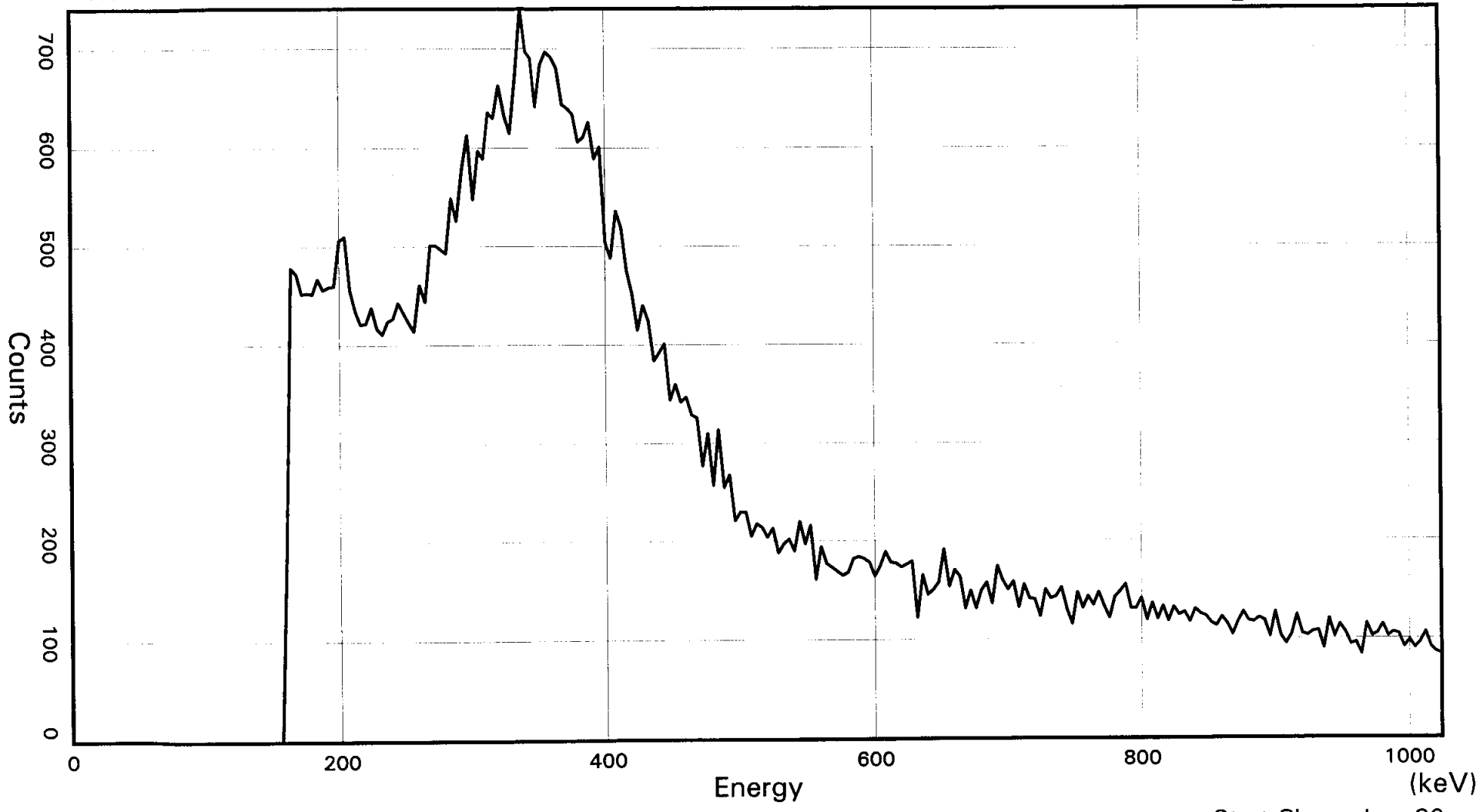
STL Richland WA.

BA133

Sample ID: H61AM1AC

Detector ID: NAI1 1

Library: [NUC_LIBR]BA133.NLB



Acquisition Start:	19-JUN-2006 12:07:57.63
Preset Live Time:	0 00:30:00
Elapsed Live Time:	0 00:30:00
Weighting:	DERIVED

Start Channel:	80
End Channel:	113
Iterations:	5
Gain shift:	Iter

SAMPLE IDENTIFICATION: H61AM1AC

CONFIGURATION ID: NAI1:H61AM1AC_190661207
TITLE : BA133
SAMPLE ID : H61AM1AC

REPORT DATE: 19-JUN-06
ACQUIRE DATE: 19-JUN-06 12:07:57
ELAPSED LIVE TIME: 1800.0 Sec
PRESET LIVE TIME: 0 00:30:00

SAMPLE DATE: 13-JUN-2006 12:00:00.00
CALIB DATE: 17-NOV-1993 10:39:59.60
ELAPSED LIVE TIME: 0 00:30:00
ELAPSED REAL TIME: 0 00:30:00

SAMPLE QUANTITY: 1.0000E+00
SAMPLE GEOMETRY:

UNITS: SAMPL
SAMPLE TYPE:

ENERGY OFFSET: 0.0000E+00 keV
ENERGY SLOPE: 4.0000E+00 keV/C
ENERGY Q COEFF: 0.0000E+00 keV/C^^2
PEAK SENSITIVITY: 5.000

FWHM OFFSET: -.2302E+02 keV
FWHM SLOPE: 5.7163E+00 sqr keV
ITERATIONS: 5
GAUSSIAN SENSITIVITY: 35.00 %

ABUNDANCE LIMIT: 75.00 %
ENERGY TOLERANCE: 20.000 keV
VARIABLE PEAK WIDTH: 3.00

HALF-LIFE RATIO: 8.00
ACTIVITY MULTIPLIER: 2.2200E+06
LIBRARY: [NUC_LIBR]BA133.NLB

VMS NAI Report V1.2 Generated 19-JUN-2006 12:38:02

```
Configuration     : RDND06$DKA100:[NAI1.SAMPLE]H61AM1AC_190661207.CNF;1
Analyses by       : NAI V3.0
Sample title      : BA133
Sample date       : 13-JUN-2006 12:00:00 Acquisition date : 19-JUN-2006 12:07:57
Sample ID         : H61AM1AC             Sample quantity  : 1.0000 sampl
Elapsed live time: 0 00:30:00.00         Elapsed real time: 0 00:30:00.65   0.0%
Sample Multiplier:     1.00              Rejection Coeff. :     0.00
Gain shift type   : ITER                 Threshold Shift  : No
Weighting type    : DERIVED              Calculated counts: No
Iterations        :  5
```

NAI Residuals Report

Ratio of Residuals Over Standard Deviation Per Channel

80:	6.9	4.4	2.6	4.1	6.7	4.1	4.1	0.8
88:	1.1	1.5	0.8	0.6	0.7	-1.6	-0.6	-1.5
96:	-1.2	-1.0	-1.1	-0.6	-5.4	-4.2	-2.7	-2.7
104:	-5.0	-5.1	-5.2	-2.9	-4.1	-6.1	-4.3	-2.8
112:	-4.1	-3.9						

List of Suspicious Channels

81	82	83	84	85

Iteration	Chi-Squared	Threshold Shift	Gain Shift
1	1.41E+01	0.00E+00	1.02E+00
2	8.39E+00	0.00E+00	1.03E+00
3	4.81E+00	0.00E+00	1.05E+00
4	1.75E+00	0.00E+00	1.07E+00
5	6.24E-01	0.00E+00	1.08E+00

Brief Report

Nuclide	Activity DPM/sampl	1-Sigma Error
BA-133	641.	7.05

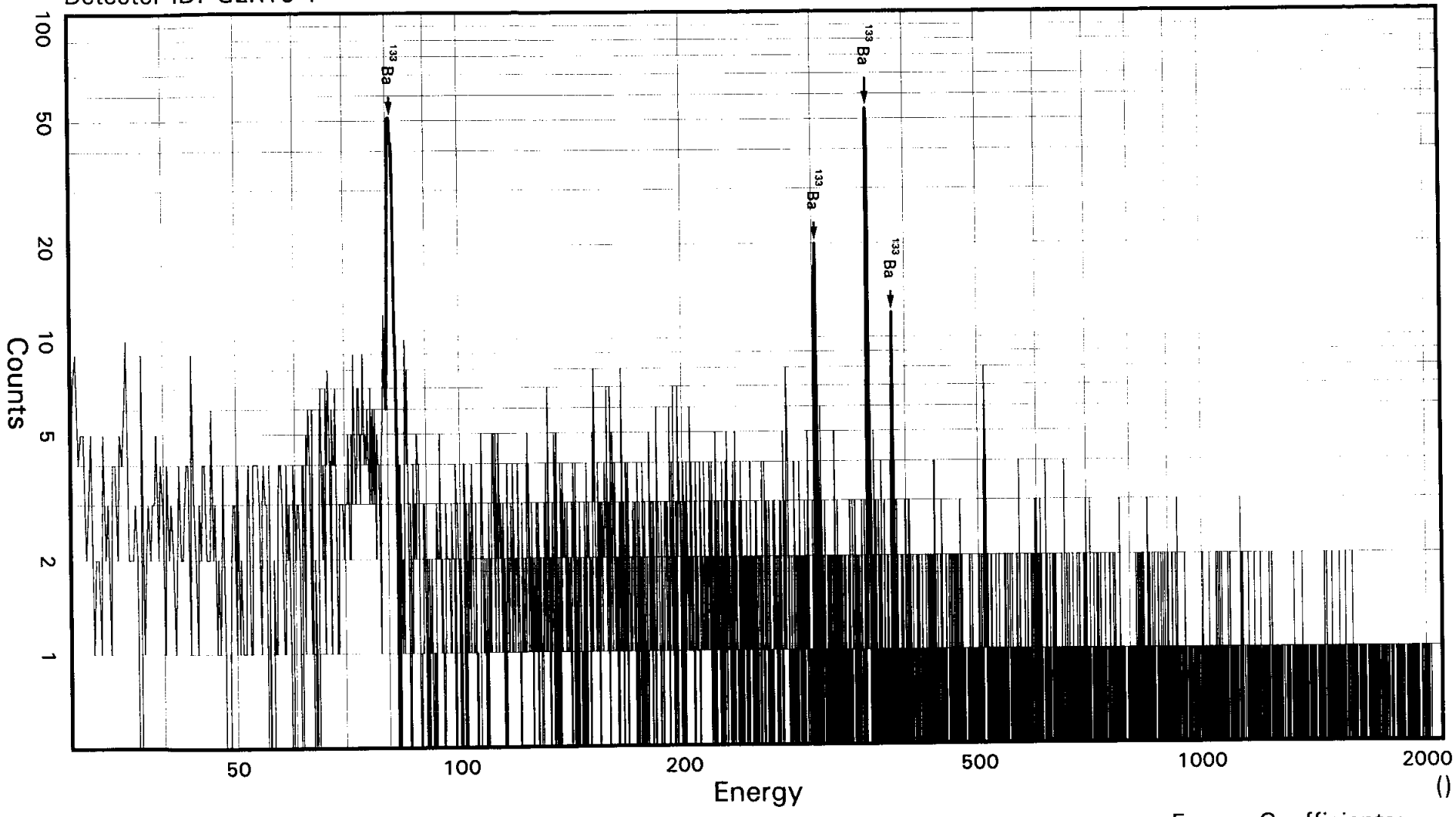
Total Activity :	641.	

STL Richland WA.

BA133

Sample ID: H61AR1AC
Detector ID: GER10 1

Batch ID: 6163137



Acquisition Start: 19-JUN-2006 12:09:15.57
Preset Live Time: 0 00:30:00.00
Elapsed Live Time: 0 00:30:00.00

Energy Coefficients:
Offset: 1.56759E+01
Slope: 2.46944E-01
Quadrature: 3.15282E-09

SAMPLE IDENTIFICATION: H61AR1AC

CONFIGURATION ID: GER10:H61AR1AC_190661209
TITLE : BA133
SAMPLE ID : H61AR1AC

REPORT DATE: 19-JUN-06
ACQUIRE DATE: 19-JUN-06 12:09:15
ELAPSED LIVE TIME: 1800.0 Sec
PRESET LIVE TIME: 0 00:30:00

SAMPLE DATE: 13-JUN-2006 12:00:00.00
CALIB DATE: 19-JUN-2006 05:29:08.65
ELAPSED LIVE TIME: 0 00:30:00
ELAPSED REAL TIME: 0 00:30:00

SAMPLE QUANTITY: 1.0000E+00
SAMPLE GEOMETRY: BA133T15

UNITS: SAMPL
SAMPLE TYPE:

ENERGY OFFSET: 1.5676E+01 keV
ENERGY SLOPE: 2.4694E-01 keV/C
ENERGY Q COEFF: 3.1528E-09 keV/C^^2
PEAK SENSITIVITY: 5.000

FWHM OFFSET: 8.9758E-01 keV
FWHM SLOPE: 2.6348E-02 sqr keV
ITERATIONS: 10
GAUSSIAN SENSITIVITY: 10.00 %

ABUNDANCE LIMIT: 80.00 %
ENERGY TOLERANCE: 1.500 keV
VARIABLE PEAK WIDTH: 3.00

HALF-LIFE RATIO: 8.00
ACTIVITY MULTIPLIER: 2.2200E+06
LIBRARY: [NUC_LIBR]QRL.NLB

VMS Peak Search Report V1.9 Generated 19-JUN-2006 12:39:35

Configuration : $DISK1:[GER10.SAMPLE]H61AR1AC_190661209.CNF;1
Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6
Sample title : BA133
Sample date : 13-JUN-2006 12:00:00 Acquisition date : 19-JUN-2006 12:09:15
Sample ID : H61AR1AC Sample quantity : 1.0000 SAMPL
Sample type : Sample geometry : BA133T15
Elapsed live time: 0 00:30:00.00 Elapsed real time: 0 00:30:00.22 0.0%
Start energy : 18.15 End energy : 2038.85
Sensitivity : 5.00 Gaussian : 10.00
Critical level : No

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	81.06	242	80	1.38	264.79	258	14	1.35E-01	10.3	
2	0	84.90*	9	17	0.79	280.34	274	10	4.85E-03	103.6	
3	0	302.96	83	27	1.30	1163.34	1153	16	4.60E-02	18.0	
4	0	356.10	344	19	1.48	1378.53	1370	19	1.91E-01	6.2	
5	0	383.88	60	4	0.93	1490.99	1483	16	3.34E-02	14.9	

Flag: "*" = Peak area was modified by background subtraction

VMS Nuclide Identification Report V3.0 Generated 19-JUN-2006 12:39:35

Configuration : $DISK1:[GER10.SAMPLE]H61AR1AC_190661209.CNF;1
Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.3
Sample title : BA133
Sample date : 13-JUN-2006 12:00:00 Acquisition date : 19-JUN-2006 12:09:15
Sample ID : H61AR1AC Sample quantity : 1.0000 SAMPL
Sample type : Sample geometry : BA133T15
Elapsed live time: 0 00:30:00.00 Elapsed real time: 0 00:30:00.22 0.0%
Energy tolerance : 1.50 Half life ratio : 8.00
Errors propagated: Yes Systematic Error : 5.00 %
Efficiency type : Empirical Efficiencies at : Peak Energy
Abundance limit : 80.00

Nuclide Line Activity Report

Nuclide Type: FP

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected DPM/SAMPL	Decay Corr DPM/SAMPL	1-Sigma %Error
BA-133	81.00	242	33.00	2.399E+00	1.020E+03	1.021E+03	11.69
	276.40	------	6.90	2.578E+00	------ Line Not Found		------
	302.84	83	17.80	2.582E+00	6.000E+02	6.006E+02	18.80
	356.00	344	62.05*	2.584E+00	7.152E+02	7.159E+02	8.20
	383.85	60	8.70	2.584E+00	8.903E+02	8.913E+02	15.84

Flag: "*" = Keyline

Unidentified Energy Lines
Sample ID : H61AR1AC
Acquisition date : 19-JUN-2006 12:09:15

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
0	84.90	9	17	0.79	280.34	274	10	4.85E-03	****	2.41E+00	

Flags: "T" = Tentatively associated

Sample ID : H61AR1AC
Acquisition date : 19-JUN-2006 12:09:15

Flag: "*" = Keyline

VMS Nuclide Identification Report V3.0 Generated 19-JUN-2006 12:39:37

Configuration : $DISK1:[GER10.SAMPLE]H61AR1AC_190661209.CNF;1
Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.3,WTMEAN/KEY V1.8
Analyses by : MINACT V2.8
Sample title : BA133
Sample date : 13-JUN-2006 12:00:00
Sample ID : H61AR1AC
Sample type :
Elapsed live time: 0 00:30:00.00
Peak Width (FWHM): 3.00
Energy tolerance : 1.50
Errors propagated: Yes
Efficiency type : Empirical
Abundance limit : 80.00

Acquisition date : 19-JUN-2006 12:09:15
Sample quantity : 1.0000 SAMPL
Sample geometry : BA133T15
Elapsed real time: 0 00:30:00.22 0.0%
Confidence level : 5.00 %
Half life ratio : 8.00
Systematic Error : 5.00 %
Efficiencies at : Peak Energy
WTM error limit : 3.00

Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Activity (DPM/SAMPL)	Act error	MDA (DPM/SAMPL)	MDA error	Act/MDA
BA-133	7.159E+02	5.873E+01	4.788E+01	9.575E-01	14.954

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (DPM/SAMPL)	K.L. Ided	Act error	MDA (DPM/SAMPL)	MDA error	Act/MDA
BE-7	5.330E+01		4.640E+01	2.123E+02	4.258E+00	0.251
NA-22	-1.432E+00		3.092E+00	1.271E+01	2.687E-01	-0.113
K-40	-1.381E+01		4.534E+01	2.154E+02	4.609E+00	-0.064
SC-46	-4.155E+00		3.134E+00	1.042E+01	2.180E-01	-0.399
CR-51	3.724E+01		9.469E+01	3.595E+02	7.193E+00	0.104
MN-54	3.392E+00		3.934E+00	1.831E+01	3.753E-01	0.185
CO-57	2.937E+01		9.884E+01	3.621E+02	7.472E+00	0.081
CO-58	-1.420E+00		5.811E+00	2.233E+01	4.570E-01	-0.064
FE-59	2.790E+00		6.861E+00	3.141E+01	6.559E-01	0.089
CO-60	1.298E+00		3.101E+00	1.475E+01	3.130E-01	0.088
ZN-65	5.505E+00		6.586E+00	3.244E+01	6.781E-01	0.170
SE-75	6.721E+00		1.332E+01	5.160E+01	1.035E+00	0.130
SR-85	-3.000E+01		1.156E+01	3.470E+01	6.972E-01	-0.865
Y-88	-7.636E-02		2.996E+00	1.372E+01	3.006E-01	-0.006
NB-94	2.604E+00		3.269E+00	1.591E+01	3.269E-01	0.164
NB-95	-4.442E+00		5.302E+00	1.932E+01	3.941E-01	-0.230
TC-95M	2.374E+01		1.596E+01	6.327E+01	1.279E+00	0.375
ZR-95	-1.215E+01		8.392E+00	2.763E+01	5.633E-01	-0.440
ZRNB-95	-8.758E+00		9.998E+00	3.624E+01	7.394E-01	-0.242
MO-99	-5.436E+01		5.113E+01	1.712E+02	3.526E+00	-0.317
RH-101	1.174E+00		1.525E+01	5.815E+01	1.177E+00	0.020
RH-102M	-2.458E+00		5.474E+00	2.068E+01	4.149E-01	-0.119
RU-103	-6.303E+00		6.097E+00	2.140E+01	4.296E-01	-0.295
RU-106DA	-4.632E+01		5.372E+01	1.896E+02	3.832E+00	-0.244
AG-108M	-6.536E+00		8.150E+00	2.888E+01	5.785E-01	-0.226
AG-110M	-2.095E+00		6.236E+00	2.434E+01	5.007E-01	-0.086
SN-113DA	-1.115E+01		9.431E+00	3.269E+01	6.539E-01	-0.341

Sample ID : H61AR1AC Acquisition date : 19-JUN-2006 12:09:15

---- Non-Identified Nuclides ----

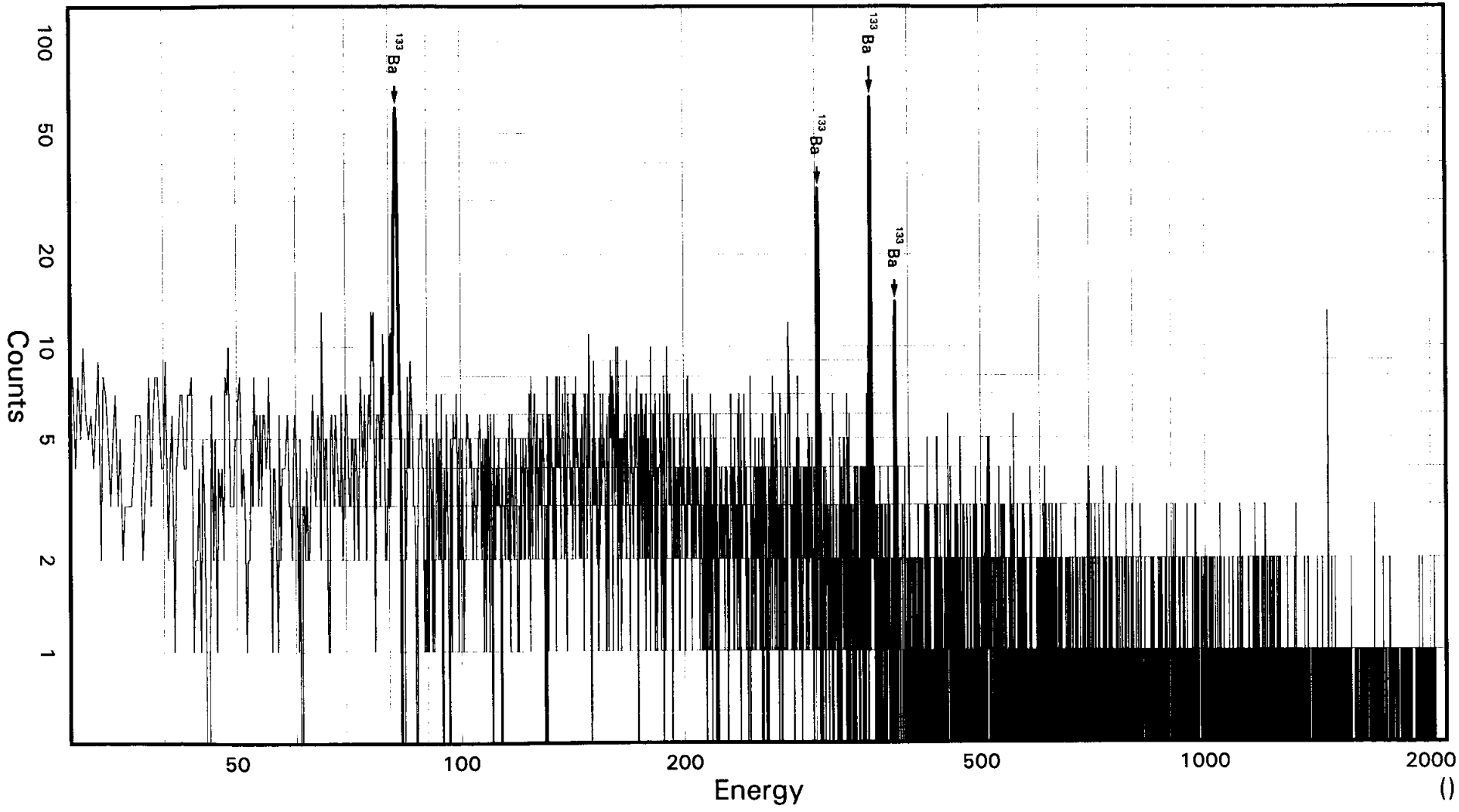
Nuclide	Key-Line Activity (DPM/SAMPL)	K.L. Ided	Act error	MDA (DPM/SAMPL)	MDA error	Act/MDA
SB-124	-8.435E+00		7.579E+00	2.561E+01	5.170E-01	-0.329
SB-125	1.001E+01		2.050E+01	8.317E+01	1.665E+00	0.120
SN-126DA	-5.374E+00		4.685E+00	1.646E+01	3.336E-01	-0.326
I-131	-2.449E+01		1.542E+01	5.121E+01	1.024E+00	-0.478
CS-134	-3.080E+00		4.386E+00	1.670E+01	3.414E-01	-0.184
CS-137DA	4.991E+00		5.853E+00	2.557E+01	5.181E-01	0.195
LA-138	4.298E+00		4.999E+00	2.480E+01	5.297E-01	0.173
CE-139	1.366E+01		1.320E+01	5.122E+01	1.045E+00	0.267
BA-140	-3.723E+01		2.826E+01	9.421E+01	1.895E+00	-0.395
BALA-140	1.839E+01		1.036E+01	5.514E+01	1.190E+00	0.334
LA-140	1.352E+01		4.531E+01	2.052E+02	4.430E+00	0.066
CE-141	-4.052E+01		2.256E+01	7.090E+01	1.457E+00	-0.571
CE-144	1.187E+02		9.599E+01	3.707E+02	7.661E+00	0.320
CEPR-144	2.345E+02		1.918E+02	7.403E+02	1.530E+01	0.317
PM-144	9.928E+00		5.356E+00	2.471E+01	4.994E-01	0.402
PM-146	-8.233E+00		7.310E+00	2.549E+01	5.107E-01	-0.323
EU-152	-1.603E+01		2.819E+01	9.975E+01	1.995E+00	-0.161
EU-154	-4.018E+00		8.678E+00	3.568E+01	7.540E-01	-0.113
EU-155	5.955E+00		4.345E+01	1.616E+02	3.399E+00	0.037
HF-181	-8.700E+00		6.200E+00	2.054E+01	4.120E-01	-0.424
BI-207	7.742E+00		5.717E+00	2.503E+01	5.043E-01	0.309
TL-208	4.417E+00		5.195E+00	2.318E+01	4.674E-01	0.191
BI-210M	2.300E+01		1.583E+01	6.469E+01	1.298E+00	0.356
BI-212	-1.140E+02		8.360E+01	2.812E+02	8.593E+00	-0.406
PB-212	-2.872E+01		2.006E+01	6.657E+01	1.339E+00	-0.431
BI-214	-6.034E+00		1.007E+01	3.735E+01	7.543E-01	-0.162
PB-214	6.515E+00		2.330E+01	7.568E+01	1.514E+00	0.086
RA-223	3.670E+01		6.201E+01	2.381E+02	4.775E+00	0.154
RA-224DA	-2.890E+01		2.018E+01	6.697E+01	1.347E+00	-0.431
RA-226DA	-6.375E+00		1.003E+01	3.700E+01	7.473E-01	-0.172
AC-227DA	-3.257E+01		7.792E+01	2.799E+02	5.630E+00	-0.116
AC-228	1.124E+01		1.851E+01	7.807E+01	1.609E+00	0.144
RA-228DA	1.126E+01		1.854E+01	7.822E+01	1.612E+00	0.144
TH-228DA	1.237E+01		1.455E+01	6.491E+01	1.309E+00	0.191
TH-232DA	-6.232E+01		6.340E+01	2.155E+02	4.310E+00	-0.289
TH-234DA	4.569E+02		7.004E+02	3.088E+03	6.404E+01	0.148
U-234DA	-3.397E-01		4.110E+01	1.524E+02	3.051E+00	-0.002
U-235HP	1.566E+02		8.295E+01	3.402E+02	6.996E+00	0.460
NP-237DA	-4.363E+00		1.759E+01	6.549E+01	1.311E+00	-0.067
U-238DA	6.515E+00		2.330E+01	7.568E+01	1.514E+00	0.086
U-238DHP	-3.470E+02		3.467E+02	1.189E+03	2.632E+01	-0.292
AM-241HP	-6.161E+01		3.381E+01	1.103E+02	2.460E+00	-0.558

STL Richland WA.

BA133

Sample ID: H61AT1AC
Detector ID: GER13 1

Batch ID: 6163137



Acquisition Start: 19-JUN-2006 12:09:22.28
Preset Live Time: 0 00:30:00.00
Elapsed Live Time: 0 00:30:00.00

Energy Coefficients:
Offset: -6.10701E-01
Slope: 2.50772E-01
Quadrature: -1.04651E-07

SAMPLE IDENTIFICATION: H61AT1AC

CONFIGURATION ID: GER13:H61AT1AC_190661209
TITLE : BA133
SAMPLE ID : H61AT1AC

REPORT DATE: 19-JUN-06
ACQUIRE DATE: 19-JUN-06 12:09:22
ELAPSED LIVE TIME: 1800.0 Sec
PRESET LIVE TIME: 0 00:30:00

SAMPLE DATE: 13-JUN-2006 12:00:00.00
CALIB DATE: 19-JUN-2006 05:44:45.22
ELAPSED LIVE TIME: 0 00:30:00
ELAPSED REAL TIME: 0 00:30:00

SAMPLE QUANTITY: 1.0000E+00
SAMPLE GEOMETRY: BA133T15

UNITS: SAMPL
SAMPLE TYPE:

ENERGY OFFSET: -.6107E+00 keV
ENERGY SLOPE: 2.5077E-01 keV/C
ENERGY Q COEFF: -.1047E-06 keV/C^^2
PEAK SENSITIVITY: 5.000

FWHM OFFSET: 4.1661E-01 keV
FWHM SLOPE: 4.3284E-02 sqr keV
ITERATIONS: 10
GAUSSIAN SENSITIVITY: 10.00 %

ABUNDANCE LIMIT: 80.00 %
ENERGY TOLERANCE: 1.500 keV
VARIABLE PEAK WIDTH: 3.00

HALF-LIFE RATIO: 8.00
ACTIVITY MULTIPLIER: 2.2200E+06
LIBRARY: [NUC_LIBR]QRL.NLB

VMS Peak Search Report V1.9 Generated 19-JUN-2006 12:39:51

Configuration : $DISK1:[GER13.SAMPLE]H61AT1AC_190661209.CNF;1
Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6
Sample title : BA133
Sample date : 13-JUN-2006 12:00:00 Acquisition date : 19-JUN-2006 12:09:22
Sample ID : H61AT1AC Sample quantity : 1.0000 SAMPL
Sample type : Sample geometry : BA133T15
Elapsed live time: 0 00:30:00.00 Elapsed real time: 0 00:30:00.38 0.0%
Start energy : 19.45 End energy : 2046.69
Sensitivity : 5.00 Gaussian : 10.00
Critical level : No

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	76.10*	2	37	0.70	305.95	301	8	9.77E-04	583.4	
2	0	81.89	230	27	0.69	329.04	321	15	1.28E-01	8.2	
3	0	302.60	154	17	1.14	1209.70	1202	17	8.56E-02	10.1	
4	0	355.82	319	58	1.08	1422.18	1411	23	1.77E-01	8.3	
5	0	383.64	55	19	1.03	1533.24	1526	15	3.04E-02	21.9	

Flag: "*" = Peak area was modified by background subtraction

VMS Nuclide Identification Report V3.0 Generated 19-JUN-2006 12:39:51

Configuration : $DISK1:[GER13.SAMPLE]H61AT1AC_190661209.CNF;1
Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.3
Sample title : BA133
Sample date : 13-JUN-2006 12:00:00
Sample ID : H61AT1AC
Sample type :
Elapsed live time: 0 00:30:00.00
Energy tolerance : 1.50
Errors propagated: Yes
Efficiency type : Empirical
Abundance limit : 80.00

Acquisition date : 19-JUN-2006 12:09:22
Sample quantity : 1.0000 SAMPL
Sample geometry : BA133T15
Elapsed real time: 0 00:30:00.38 0.0%
Half life ratio : 8.00
Systematic Error : 5.00 %
Efficiencies at : Peak Energy

Nuclide Line Activity Report

Nuclide Type: FP

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected DPM/SAMPL	Decay Corr DPM/SAMPL	1-Sigma %Error
BA-133	81.00	230	33.00	2.704E+00	8.608E+02	8.617E+02	9.83
	276.40	------	6.90	2.897E+00	------	Line Not Found	------
	302.84	154	17.80	2.900E+00	9.943E+02	9.954E+02	11.47
	356.00	319	62.05*	2.903E+00	5.901E+02	5.908E+02	9.93
	383.85	55	8.70	2.902E+00	7.227E+02	7.234E+02	22.60

Flag: "*" = Keyline

Unidentified Energy Lines
Sample ID : H61AT1AC
Acquisition date : 19-JUN-2006 12:09:22

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
0	76.10	2	37	0.70	305.95	301	8	9.77E-04	****	2.68E+00	

Flags: "T" = Tentatively associated

Sample ID : H61AT1AC
Acquisition date : 19-JUN-2006 12:09:22

Flag: "*" = Keyline

VMS Nuclide Identification Report V3.0 Generated 19-JUN-2006 12:39:53

Configuration : $DISK1:[GER13.SAMPLE]H61AT1AC_190661209.CNF;1
Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.3,WTMEAN/KEY V1.8
Analyses by : MINACT V2.8
Sample title : BA133
Sample date : 13-JUN-2006 12:00:00 Acquisition date : 19-JUN-2006 12:09:22
Sample ID : H61AT1AC Sample quantity : 1.0000 SAMPL
Sample type : Sample geometry : BA133T15
Elapsed live time: 0 00:30:00.00 Elapsed real time: 0 00:30:00.38 0.0%
Peak Width (FWHM): 3.00 Confidence level : 5.00 %
Energy tolerance : 1.50 Half life ratio : 8.00
Errors propagated: Yes Systematic Error : 5.00 %
Efficiency type : Empirical Efficiencies at : Peak Energy
Abundance limit : 80.00 WTM error limit : 3.00

Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Activity (DPM/SAMPL)	Act error	MDA (DPM/SAMPL)	MDA error	Act/MDA
BA-133	5.908E+02	5.866E+01	6.094E+01	1.219E+00	9.695

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (DPM/SAMPL)	K.L. Ided	Act error	MDA (DPM/SAMPL)	MDA error	Act/MDA
BE-7	-7.071E+01		6.219E+01	2.113E+02	4.238E+00	-0.335
NA-22	-2.273E+00		3.801E+00	1.461E+01	3.082E-01	-0.156
K-40	-5.298E+01		9.671E+01	4.551E+02	9.718E+00	-0.116
SC-46	4.834E+00		5.175E+00	2.370E+01	4.950E-01	0.204
CR-51	-1.931E+02		9.995E+01	3.147E+02	6.296E+00	-0.614
MN-54	7.239E-01		4.547E+00	1.849E+01	3.787E-01	0.039
CO-57	1.673E+02		1.104E+02	4.256E+02	8.774E+00	0.393
CO-58	4.439E-01		5.314E+00	2.109E+01	4.312E-01	0.021
FE-59	-1.649E+01		1.023E+01	3.279E+01	6.837E-01	-0.503
CO-60	1.247E+00		4.033E+00	1.717E+01	3.637E-01	0.073
ZN-65	1.310E+01		1.174E+01	4.913E+01	1.026E+00	0.267
SE-75	1.875E+01		1.730E+01	6.613E+01	1.327E+00	0.284
SR-85	3.130E+00		9.954E+00	3.636E+01	7.305E-01	0.086
Y-88	-1.196E+00		2.884E+00	1.218E+01	2.661E-01	-0.098
NB-94	1.924E+00		4.996E+00	2.029E+01	4.167E-01	0.095
NB-95	-7.064E-01		5.958E+00	2.308E+01	4.706E-01	-0.031
TC-95M	-1.179E+00		1.837E+01	6.478E+01	1.309E+00	-0.018
ZR-95	3.122E+00		9.164E+00	3.773E+01	7.688E-01	0.083
ZRNB-95	5.530E+00		1.044E+01	4.344E+01	8.858E-01	0.127
MO-99	-6.299E+01		5.892E+01	2.029E+02	4.176E+00	-0.310
RH-101	7.910E+00		1.460E+01	5.345E+01	1.081E+00	0.148
RH-102M	-9.620E-01		6.430E+00	2.404E+01	4.820E-01	-0.040
RU-103	-1.836E+01		8.385E+00	2.503E+01	5.025E-01	-0.734
RU-106DA	2.875E+00		6.335E+01	2.418E+02	4.886E+00	0.012
AG-108M	-8.066E+00		8.551E+00	2.960E+01	5.927E-01	-0.273
AG-110M	1.324E+01		7.491E+00	3.335E+01	6.854E-01	0.397
SN-113DA	-3.101E+01		9.478E+00	2.404E+01	4.810E-01	-1.290

---- Non-Identified Nuclides ----

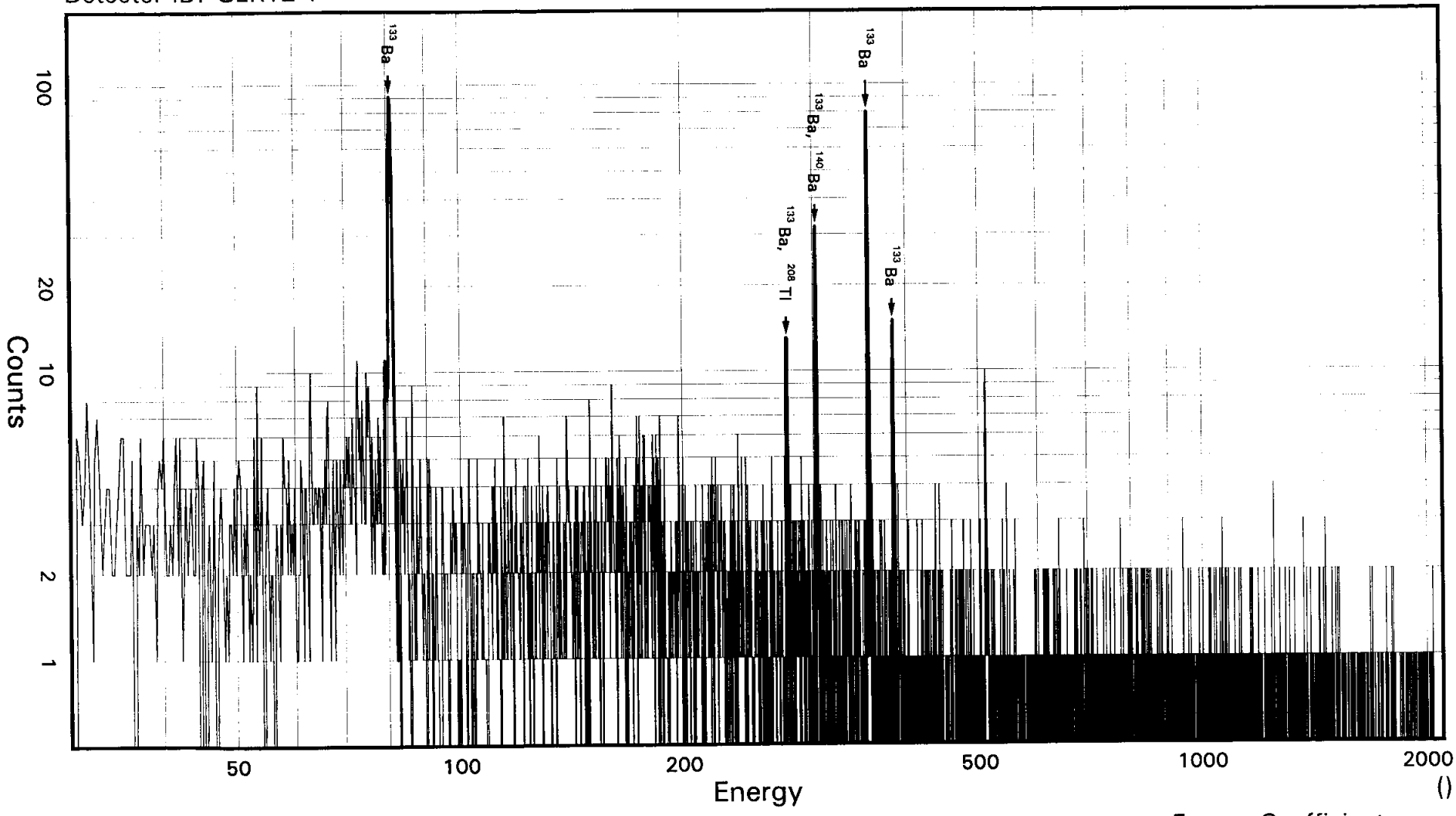
Nuclide	Key-Line Activity (DPM/SAMPL)	K.L. Ided	Act error	MDA (DPM/SAMPL)	MDA error	Act/MDA
SB-124	3.764E+00		7.419E+00	2.894E+01	5.841E-01	0.130
SB-125	-3.671E+01		2.148E+01	6.934E+01	1.388E+00	-0.529
SN-126DA	-3.413E+00		5.924E+00	2.137E+01	4.329E-01	-0.160
I-131	-2.660E+00		1.704E+01	6.095E+01	1.219E+00	-0.044
CS-134	-3.777E+00		6.550E+00	2.404E+01	4.911E-01	-0.157
CS-137DA	-1.424E+01		7.344E+00	2.266E+01	4.590E-01	-0.628
LA-138	6.476E+00		5.743E+00	2.689E+01	5.732E-01	0.241
CE-139	-1.655E+01		1.475E+01	5.004E+01	1.020E+00	-0.331
BA-140	-1.928E+01		3.622E+01	1.285E+02	2.585E+00	-0.150
BALA-140	-1.437E+01		1.003E+01	3.280E+01	7.064E-01	-0.438
LA-140	-6.121E+01		4.382E+01	1.447E+02	3.116E+00	-0.423
CE-141	-5.756E+01		2.693E+01	8.703E+01	1.787E+00	-0.661
CE-144	-1.323E+02		1.133E+02	3.695E+02	7.626E+00	-0.358
CEPR-144	-2.655E+02		2.265E+02	7.386E+02	1.525E+01	-0.359
PM-144	-2.437E+00		6.219E+00	2.291E+01	4.628E-01	-0.106
PM-146	-4.030E+00		1.172E+01	4.229E+01	8.475E-01	-0.095
EU-152	-3.837E+00		3.137E+01	1.129E+02	2.258E+00	-0.034
EU-154	-6.380E+00		1.067E+01	4.101E+01	8.651E-01	-0.156
EU-155	2.457E+01		4.996E+01	1.835E+02	3.854E+00	0.134
HF-181	-4.525E-01		8.504E+00	3.182E+01	6.384E-01	-0.014
BI-207	9.679E-01		5.969E+00	2.331E+01	4.696E-01	0.042
TL-208	9.319E+00		8.178E+00	3.514E+01	7.084E-01	0.265
BI-210M	-3.930E+01		2.055E+01	6.667E+01	1.337E+00	-0.589
BI-212	-4.575E+01		7.746E+01	2.806E+02	8.573E+00	-0.163
PB-212	-5.213E+01		2.489E+01	8.053E+01	1.619E+00	-0.647
BI-214	2.937E+00		1.621E+01	6.697E+01	1.352E+00	0.044
PB-214	4.744E+01		2.756E+01	1.026E+02	2.053E+00	0.462
RA-223	7.128E+01		6.746E+01	2.603E+02	5.220E+00	0.274
RA-224DA	-5.244E+01		2.504E+01	8.101E+01	1.629E+00	-0.647
RA-226DA	2.836E+00		1.620E+01	6.692E+01	1.351E+00	0.042
AC-227DA	3.224E+01		8.947E+01	3.224E+02	6.483E+00	0.100
AC-228	1.806E+01		2.123E+01	9.572E+01	1.971E+00	0.189
RA-228DA	1.810E+01		2.127E+01	9.591E+01	1.975E+00	0.189
TH-228DA	2.610E+01		2.290E+01	9.840E+01	1.984E+00	0.265
TH-232DA	3.553E+00		6.928E+01	2.555E+02	5.110E+00	0.014
TH-234DA	7.384E+01		8.476E+02	3.327E+03	6.892E+01	0.022
U-234DA	3.440E+01		5.204E+01	1.957E+02	3.919E+00	0.176
U-235HP	7.775E+01		1.055E+02	3.957E+02	8.130E+00	0.197
NP-237DA	-1.382E+01		2.357E+01	8.273E+01	1.656E+00	-0.167
U-238DA	4.744E+01		2.756E+01	1.026E+02	2.053E+00	0.462
U-238DHP	-7.039E+01		2.807E+02	1.021E+03	2.253E+01	-0.069
AM-241HP	1.895E+01		2.864E+01	1.051E+02	2.334E+00	0.180

STL Richland WA.

BA133

Sample ID: H61AX1AC
Detector ID: GER12 1

Batch ID: 6163137



Acquisition Start: 19-JUN-2006 12:11:11.75
Preset Live Time: 0 00:30:00.00
Elapsed Live Time: 0 00:30:00.00

Energy Coefficients:
Offset: 1.25233E+01
Slope: 2.47509E-01
Quadrature: -2.00961E-09

SAMPLE IDENTIFICATION: H61AX1AC

CONFIGURATION ID: GER12:H61AX1AC_190661211
TITLE : BA133
SAMPLE ID : H61AX1AC

REPORT DATE: 19-JUN-06
ACQUIRE DATE: 19-JUN-06 12:11:11
ELAPSED LIVE TIME: 1800.0 Sec
PRESET LIVE TIME: 0 00:30:00

SAMPLE DATE: 13-JUN-2006 12:00:00.00
CALIB DATE: 19-JUN-2006 05:29:53.77
ELAPSED LIVE TIME: 0 00:30:00
ELAPSED REAL TIME: 0 00:30:00

SAMPLE QUANTITY: 1.0000E+00
SAMPLE GEOMETRY: BA133T15

UNITS: SAMPL
SAMPLE TYPE:

ENERGY OFFSET: 1.2523E+01 keV
ENERGY SLOPE: 2.4751E-01 keV/C
ENERGY Q COEFF: -.2010E-08 keV/C^^2
PEAK SENSITIVITY: 5.000

FWHM OFFSET: 4.0884E-01 keV
FWHM SLOPE: 3.5936E-02 sqr keV
ITERATIONS: 10
GAUSSIAN SENSITIVITY: 10.00 %

ABUNDANCE LIMIT: 80.00 %
ENERGY TOLERANCE: 2.000 keV
VARIABLE PEAK WIDTH: 3.00

HALF-LIFE RATIO: 8.00
ACTIVITY MULTIPLIER: 2.2200E+06
LIBRARY: [NUC_LIBR]QRL.NLB

VMS Peak Search Report V1.9 Generated 19-JUN-2006 12:41:29

```
Configuration     : $DISK1:[GER12.SAMPLE]H61AX1AC_190661211.CNF;1
Analyses by       : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6
Sample title      : BA133
Sample date       : 13-JUN-2006 12:00:00 Acquisition date : 19-JUN-2006 12:11:11
Sample ID         : H61AX1AC             Sample quantity  : 1.0000 SAMPL
Sample type       :                      Sample geometry  : BA133T15
Elapsed live time: 0 00:30:00.00         Elapsed real time: 0 00:30:00.34   0.0%
Start energy      :    12.77             End energy       :  2039.98
Sensitivity       :     5.00             Gaussian         :    10.00
Critical level    : No
```

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	80.80	353	22	0.84	275.85	268	14	1.96E-01	6.0	
2	0	276.55	64	16	1.19	1066.74	1058	15	3.58E-02	18.1	
3	0	303.03	140	20	1.05	1173.74	1166	17	7.80E-02	11.3	
4	0	356.02	380	30	1.04	1387.85	1379	20	2.11E-01	6.2	
5	0	383.83	75	4	1.24	1500.20	1490	18	4.17E-02	13.3	

Flag: "*" = Peak area was modified by background subtraction

VMS Nuclide Identification Report V3.0 Generated 19-JUN-2006 12:41:30

Configuration : $DISK1:[GER12.SAMPLE]H61AX1AC_190661211.CNF;1
Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.3
Sample title : BA133
Sample date : 13-JUN-2006 12:00:00
Sample ID : H61AX1AC
Sample type :
Elapsed live time: 0 00:30:00.00
Energy tolerance : 2.00
Errors propagated: Yes
Efficiency type : Empirical
Abundance limit : 80.00

Acquisition date : 19-JUN-2006 12:11:11
Sample quantity : 1.0000 SAMPL
Sample geometry : BA133T15
Elapsed real time: 0 00:30:00.34 0.0%
Half life ratio : 8.00
Systematic Error : 5.00 %
Efficiencies at : Peak Energy

Nuclide Line Activity Report

Nuclide Type: FP

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected DPM/SAMPL	Decay Corr DPM/SAMPL	1-Sigma %Error
BA-133	81.00	353	33.00	2.899E+00	1.231E+03	1.232E+03	8.10
	276.40	64	6.90	3.105E+00	1.003E+03	1.004E+03	18.89
	302.84	140	17.80	3.109E+00	8.456E+02	8.465E+02	12.49
	356.00	380	62.05*	3.111E+00	6.561E+02	6.568E+02	8.23
	383.85	75	8.70	3.111E+00	9.252E+02	9.262E+02	14.31

Flag: "*" = Keyline

None

Flags: "T" = Tentatively associated

Sample ID : H61AX1AC Acquisition date : 19-JUN-2006 12:11:11

Nuclide	Half-life	Half-Life Ratio	Energy	%Abund	Activity (DPM/SAMPL)	1-Sigma %Error	Rejected by
BA-140	12.79D	0.47	162.64	6.70	--- Not Found ---		Abun.
			304.84	4.50	4.635E+03	12.49	
			423.70	3.20	--- Not Found ---		
			537.32*	25.00	--- Not Found ---		
		% Abundances Found =		11.42			
TL-208	1.41E+10Y	0.00	277.35	6.80	1.018E+03	18.89	Abun.
			510.84	21.60	--- Not Found ---		
			583.14*	84.20	--- Not Found ---		
			860.37	12.46	--- Not Found ---		
		% Abundances Found =		5.44			

Flag: "*" = Keyline

VMS Nuclide Identification Report V3.0 Generated 19-JUN-2006 12:41:31

Configuration : $DISK1:[GER12.SAMPLE]H61AX1AC_190661211.CNF;1
Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.3,WTMEAN/KEY V1.8
Analyses by : MINACT V2.8
Sample title : BA133
Sample date : 13-JUN-2006 12:00:00 Acquisition date : 19-JUN-2006 12:11:11
Sample ID : H61AX1AC Sample quantity : 1.0000 SAMPL
Sample type : Sample geometry : BA133T15
Elapsed live time: 0 00:30:00.00 Elapsed real time: 0 00:30:00.34 0.0%
Peak Width (FWHM): 3.00 Confidence level : 5.00 %
Energy tolerance : 2.00 Half life ratio : 8.00
Errors propagated: Yes Systematic Error : 5.00 %
Efficiency type : Empirical Efficiencies at : Peak Energy
Abundance limit : 80.00 WTM error limit : 3.00

Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Activity (DPM/SAMPL)	Act error	MDA (DPM/SAMPL)	MDA error	Act/MDA
BA-133	6.568E+02	5.408E+01	3.866E+01	7.731E-01	16.991

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (DPM/SAMPL)	K.L. Ided	Act error	MDA (DPM/SAMPL)	MDA error	Act/MDA
BE-7	-8.855E+00		4.160E+01	1.617E+02	3.243E+00	-0.055
NA-22	-3.547E+00		3.062E+00	1.053E+01	2.219E-01	-0.337
K-40	-1.216E+01		5.040E+01	2.377E+02	5.068E+00	-0.051
SC-46	7.130E+00		4.380E+00	2.043E+01	4.263E-01	0.349
CR-51	6.900E+01		7.392E+01	2.929E+02	5.860E+00	0.236
MN-54	3.534E+00		4.540E+00	1.935E+01	3.962E-01	0.183
CO-57	4.627E+01		6.573E+01	2.563E+02	5.279E+00	0.181
CO-58	-2.041E-01		3.179E+00	1.358E+01	2.777E-01	-0.015
FE-59	-1.348E+01		7.223E+00	2.185E+01	4.552E-01	-0.617
CO-60	-1.330E+00		3.079E+00	1.222E+01	2.584E-01	-0.109
ZN-65	-1.294E+01		7.646E+00	2.409E+01	5.025E-01	-0.537
SE-75	1.107E+01		1.088E+01	4.371E+01	8.768E-01	0.253
SR-85	-2.400E+01		9.203E+00	2.685E+01	5.394E-01	-0.894
Y-88	1.222E+00		1.224E+00	8.989E+00	1.960E-01	0.136
NB-94	-1.042E+00		3.279E+00	1.320E+01	2.708E-01	-0.079
NB-95	1.368E+00		2.696E+00	1.325E+01	2.701E-01	0.103
TC-95M	-1.896E+00		1.111E+01	4.144E+01	8.371E-01	-0.046
ZR-95	-1.565E+01		8.025E+00	2.308E+01	4.701E-01	-0.678
ZRNB-95	2.591E+00		5.108E+00	2.511E+01	5.117E-01	0.103
MO-99	6.037E+01		4.193E+01	1.707E+02	3.509E+00	0.354
RH-101	3.604E+00		1.145E+01	4.423E+01	8.944E-01	0.081
RH-102M	6.629E+00		4.601E+00	2.058E+01	4.126E-01	0.322
RU-103	-7.228E+00		4.627E+00	1.445E+01	2.900E-01	-0.500
RU-106DA	-5.431E+01		4.842E+01	1.676E+02	3.385E+00	-0.324
AG-108M	3.433E+00		6.198E+00	2.465E+01	4.935E-01	0.139
AG-110M	-1.518E+00		3.437E+00	1.430E+01	2.937E-01	-0.106
SN-113DA	5.261E+00		9.049E+00	3.615E+01	7.233E-01	0.146

Sample ID : H61AX1AC Acquisition date : 19-JUN-2006 12:11:11

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (DPM/SAMPL)	K.L. Ided	Act error	MDA (DPM/SAMPL)	MDA error	Act/MDA
SB-124	1.264E+00		4.525E+00	1.868E+01	3.770E-01	0.068
SB-125	-1.939E+01		1.501E+01	5.066E+01	1.014E+00	-0.383
SN-126DA	1.908E-01		2.238E+00	1.042E+01	2.111E-01	0.018
I-131	2.310E+00		1.068E+01	4.232E+01	8.463E-01	0.055
CS-134	-3.485E+00		4.163E+00	1.546E+01	3.157E-01	-0.225
CS-137DA	1.081E+00		3.819E+00	1.655E+01	3.352E-01	0.065
LA-138	1.920E+00		5.610E+00	2.410E+01	5.131E-01	0.080
CE-139	-3.812E+00		1.048E+01	3.687E+01	7.514E-01	-0.103
BA-140	-4.843E+01		2.634E+01	8.414E+01	1.692E+00	-0.576
BALA-140	-5.431E-02		4.766E+00	2.458E+01	5.285E-01	-0.002
LA-140	-2.375E-01		2.073E+01	1.069E+02	2.299E+00	-0.002
CE-141	-1.725E+00		1.805E+01	6.560E+01	1.346E+00	-0.026
CE-144	-1.543E+02		6.863E+01	2.094E+02	4.320E+00	-0.737
CEPR-144	-3.069E+02		1.374E+02	4.199E+02	8.661E+00	-0.731
PM-144	3.040E+00		4.744E+00	1.974E+01	3.987E-01	0.154
PM-146	-7.946E+00		6.560E+00	2.225E+01	4.459E-01	-0.357
EU-152	2.969E+01		2.313E+01	9.587E+01	1.917E+00	0.310
EU-154	-9.955E+00		8.594E+00	2.955E+01	6.227E-01	-0.337
EU-155	3.210E+01		3.061E+01	1.253E+02	2.628E+00	0.256
HF-181	2.265E+00		5.408E+00	2.247E+01	4.508E-01	0.101
BI-207	2.777E+00		3.502E+00	1.593E+01	3.209E-01	0.174
TL-208	3.778E+00		5.176E+00	2.205E+01	4.445E-01	0.171
BI-210M	-1.556E+01		1.275E+01	4.301E+01	8.626E-01	-0.362
BI-212	8.614E+00		6.042E+01	2.452E+02	7.490E+00	0.035
PB-212	1.271E+01		1.666E+01	6.453E+01	1.297E+00	0.197
BI-214	2.678E+00		9.548E+00	3.889E+01	7.851E-01	0.069
PB-214	2.846E+01		1.732E+01	6.726E+01	1.345E+00	0.423
RA-223	-1.172E+01		4.396E+01	1.620E+02	3.249E+00	-0.072
RA-224DA	1.278E+01		1.676E+01	6.491E+01	1.305E+00	0.197
RA-226DA	2.677E+00		9.549E+00	3.889E+01	7.851E-01	0.069
AC-227DA	-2.852E+00		6.142E+01	2.284E+02	4.594E+00	-0.012
AC-228	1.661E+01		1.276E+01	6.038E+01	1.242E+00	0.275
RA-228DA	1.665E+01		1.278E+01	6.050E+01	1.245E+00	0.275
TH-228DA	1.058E+01		1.449E+01	6.175E+01	1.245E+00	0.171
TH-232DA	-3.059E+01		4.750E+01	1.664E+02	3.328E+00	-0.184
TH-234DA	1.427E+02		5.213E+02	2.235E+03	4.626E+01	0.064
U-234DA	1.155E+01		3.035E+01	1.175E+02	2.353E+00	0.098
U-235HP	5.070E+01		6.944E+01	2.679E+02	5.501E+00	0.189
NP-237DA	1.735E+01		1.564E+01	6.406E+01	1.282E+00	0.271
U-238DA	2.846E+01		1.732E+01	6.726E+01	1.345E+00	0.423
U-238DHP	2.562E+02		2.495E+02	9.452E+02	2.081E+01	0.271
AM-241HP	-2.803E+01		2.365E+01	7.881E+01	1.747E+00	-0.356

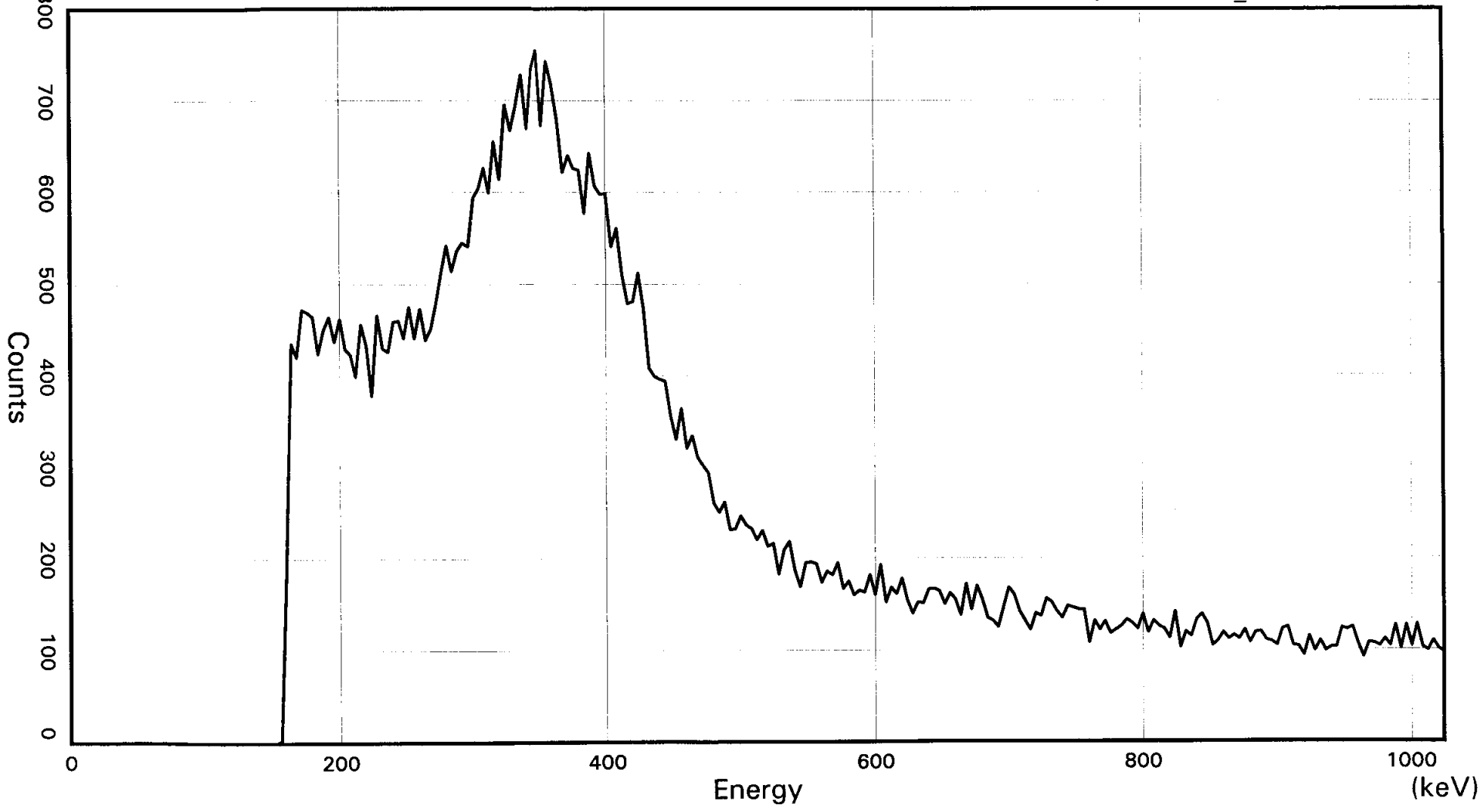
STL Richland WA.

BA133

Sample ID: H61A11AC

Detector ID: NAI1 1

Library: [NUC_LIBR]BA133.NLB



Acquisition Start:	19-JUN-2006 12:42:11.65
Preset Live Time:	0 00:30:00
Elapsed Live Time:	0 00:30:00
Weighting:	DERIVED

Start Channel:	80
End Channel:	113
Iterations:	5
Gain shift:	Iter

SAMPLE IDENTIFICATION: H61A11AC

CONFIGURATION ID: NAI1:H61A11AC_190661242
TITLE : BA133
SAMPLE ID : H61A11AC

REPORT DATE: 19-JUN-06
ACQUIRE DATE: 19-JUN-06 12:42:11
ELAPSED LIVE TIME: 1800.0 Sec
PRESET LIVE TIME: 0 00:30:00

SAMPLE DATE: 13-JUN-2006 12:00:00.00
CALIB DATE: 17-NOV-1993 10:39:59.60
ELAPSED LIVE TIME: 0 00:30:00
ELAPSED REAL TIME: 0 00:30:00

SAMPLE QUANTITY: 1.0000E+00
SAMPLE GEOMETRY:

UNITS: SAMPL
SAMPLE TYPE:

ENERGY OFFSET: 0.0000E+00 keV
ENERGY SLOPE: 4.0000E+00 keV/C
ENERGY Q COEFF: 0.0000E+00 keV/C^^2
PEAK SENSITIVITY: 5.000

FWHM OFFSET: -.2302E+02 keV
FWHM SLOPE: 5.7163E+00 sqr keV
ITERATIONS: 5
GAUSSIAN SENSITIVITY: 35.00 %

ABUNDANCE LIMIT: 75.00 %
ENERGY TOLERANCE: 20.000 keV
VARIABLE PEAK WIDTH: 3.00

HALF-LIFE RATIO: 8.00
ACTIVITY MULTIPLIER: 2.2200E+06
LIBRARY: [NUC_LIBR]BA133.NLB

VMS NAI Report V1.2 Generated 19-JUN-2006 13:12:16

```
Configuration     : RDND06$DKA100:[NAI1.SAMPLE]H61A11AC_190661242.CNF;1
Analyses by       : NAI V3.0
Sample title      : BA133
Sample date       : 13-JUN-2006 12:00:00 Acquisition date : 19-JUN-2006 12:42:11
Sample ID         : H61A11AC             Sample quantity  : 1.0000 sampl
Elapsed live time: 0 00:30:00.00         Elapsed real time: 0 00:30:00.65   0.0%
Sample Multiplier:     1.00              Rejection Coeff. :     0.00
Gain shift type   : ITER                 Threshold Shift  : No
Weighting type    : DERIVED              Calculated counts: No
Iterations        :  5
```

NAI Residuals Report

Ratio of Residuals Over Standard Deviation Per Channel

80:	3.5	6.3	4.5	4.8	5.7	2.0	4.5	4.4
88:	0.3	3.2	1.4	-0.8	-1.7	-2.1	-1.2	-1.4
96:	-2.7	-0.4	-0.9	-1.6	-2.5	-2.6	-2.3	-4.0
104:	-5.6	-4.8	-2.2	-2.5	-5.0	-4.9	-4.1	-4.2
112:	-5.1	-6.1						

List of Suspicious Channels

81 82 83

Iteration	Chi-Squared	Threshold Shift	Gain Shift
1	1.34E+01	0.00E+00	1.02E+00
2	6.88E+00	0.00E+00	1.04E+00
3	3.01E+00	0.00E+00	1.06E+00
4	1.50E+00	0.00E+00	1.07E+00
5	8.17E-01	0.00E+00	1.08E+00

Brief Report

Nuclide	Activity DPM/sampl	1-Sigma Error
BA-133	671.	8.11

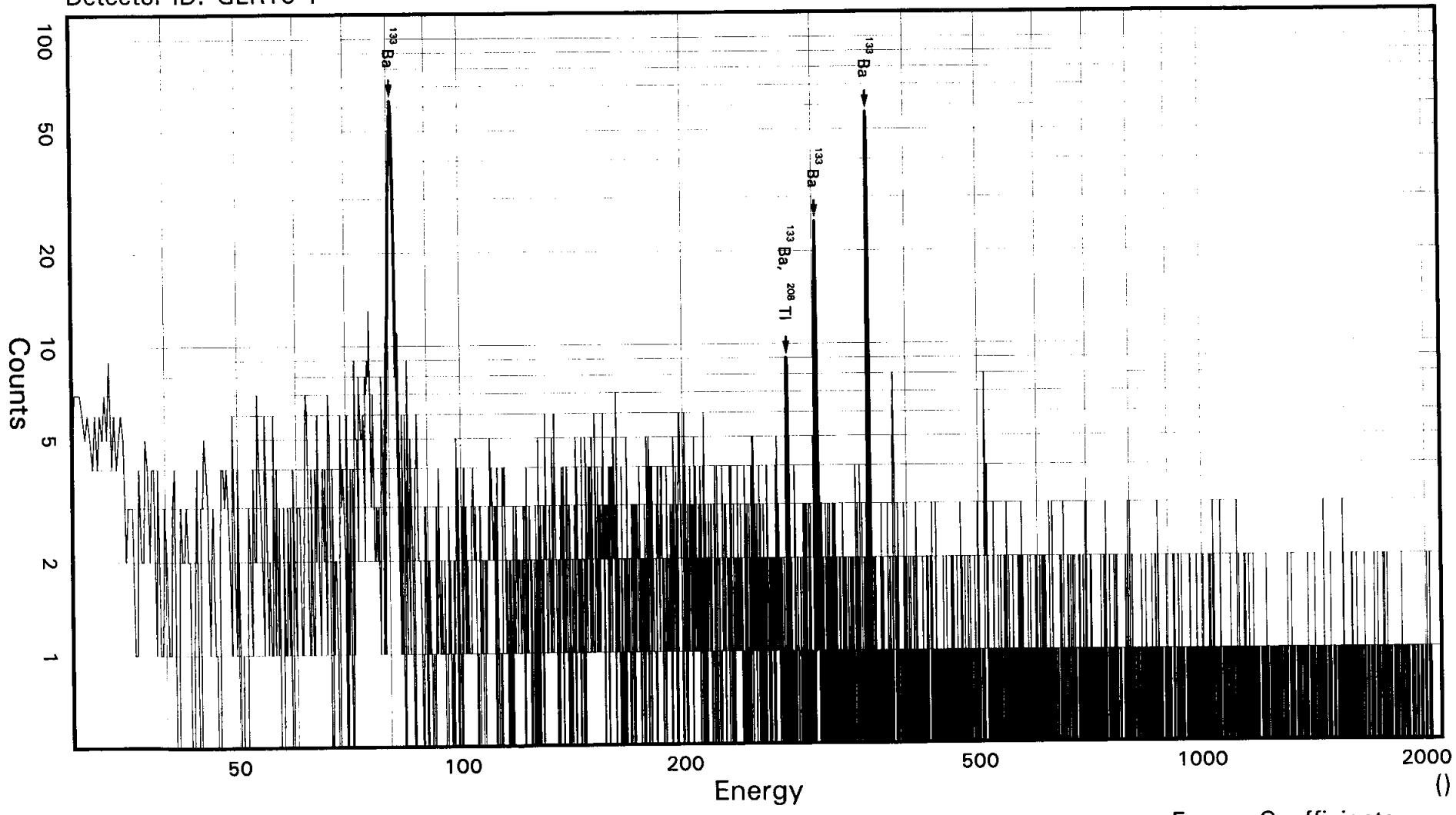
Total Activity :	671.	

STL Richland WA.

BA133

Sample ID: H61A21AC
Detector ID: GER10 1

Batch ID: 6163137



Acquisition Start: 19-JUN-2006 12:42:54.28
Preset Live Time: 0 00:30:00.00
Elapsed Live Time: 0 00:30:00.00

Energy Coefficients:
Offset: 1.56759E+01
Slope: 2.46944E-01
Quadrature: 3.15282E-09

SAMPLE IDENTIFICATION: H61A21AC

CONFIGURATION ID: GER10:H61A21AC_190661242
TITLE : BA133
SAMPLE ID : H61A21AC

REPORT DATE: 19-JUN-06
ACQUIRE DATE: 19-JUN-06 12:42:54
ELAPSED LIVE TIME: 1800.0 Sec
PRESET LIVE TIME: 0 00:30:00

SAMPLE DATE: 13-JUN-2006 12:00:00.00
CALIB DATE: 19-JUN-2006 05:29:08.65
ELAPSED LIVE TIME: 0 00:30:00
ELAPSED REAL TIME: 0 00:30:00

SAMPLE QUANTITY: 1.0000E+00
SAMPLE GEOMETRY: BA133T15

UNITS: SAMPL
SAMPLE TYPE:

ENERGY OFFSET: 1.5676E+01 keV
ENERGY SLOPE: 2.4694E-01 keV/C
ENERGY Q COEFF: 3.1528E-09 keV/C^^2
PEAK SENSITIVITY: 5.000

FWHM OFFSET: 8.9758E-01 keV
FWHM SLOPE: 2.6348E-02 sqr keV
ITERATIONS: 10
GAUSSIAN SENSITIVITY: 10.00 %

ABUNDANCE LIMIT: 80.00 %
ENERGY TOLERANCE: 1.500 keV
VARIABLE PEAK WIDTH: 3.00

HALF-LIFE RATIO: 8.00
ACTIVITY MULTIPLIER: 2.2200E+06
LIBRARY: [NUC_LIBR]QRL.NLB

VMS Peak Search Report V1.9 Generated 19-JUN-2006 13:13:11

```
Configuration     : $DISK1:[GER10.SAMPLE]H61A21AC_190661242.CNF;1
Analyses by       : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6
Sample title      : BA133
Sample date       : 13-JUN-2006 12:00:00 Acquisition date : 19-JUN-2006 12:42:54
Sample ID         : H61A21AC             Sample quantity  : 1.0000 SAMPL
Sample type       :                      Sample geometry  : BA133T15
Elapsed live time: 0 00:30:00.00         Elapsed real time: 0 00:30:00.22   0.0%
Start energy      :    18.15             End energy       :  2038.85
Sensitivity       :     5.00             Gaussian         :    10.00
Critical level    : No
```

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	80.88	313	40	1.14	264.05	255	18	1.74E-01	7.4	
2	0	276.62	51	8	1.25	1056.70	1048	15	2.83E-02	18.3	
3	0	303.09	126	15	1.21	1163.85	1156	19	7.01E-02	12.1	
4	0	355.95	355	0	1.33	1377.91	1365	23	1.97E-01	5.3	

Flag: "*" = Peak area was modified by background subtraction

VMS Nuclide Identification Report V3.0 Generated 19-JUN-2006 13:13:11

```
Configuration     : $DISK1:[GER10.SAMPLE]H61A21AC_190661242.CNF;1
Analyses by       : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.3
Sample title      : BA133
Sample date       : 13-JUN-2006 12:00:00 Acquisition date : 19-JUN-2006 12:42:54
Sample ID         : H61A21AC             Sample quantity  : 1.0000 SAMPL
Sample type       :                      Sample geometry  : BA133T15
Elapsed live time: 0 00:30:00.00         Elapsed real time: 0 00:30:00.22   0.0%
Energy tolerance :     1.50              Half life ratio  :     8.00
Errors propagated: Yes                   Systematic Error :     5.00 %
Efficiency type  : Empirical             Efficiencies at  : Peak Energy
Abundance limit  :    80.00
```

Nuclide Line Activity Report

Nuclide Type: FP

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected DPM/SAMPL	Decay Corr DPM/SAMPL	1-Sigma %Error
BA-133	81.00	313	33.00	2.399E+00	1.317E+03	1.319E+03	9.18
	276.40	51	6.90	2.578E+00	9.558E+02	9.569E+02	19.07
	302.84	126	17.80	2.582E+00	9.152E+02	9.162E+02	13.20
	356.00	355	62.05*	2.584E+00	7.380E+02	7.388E+02	7.56
	383.85	------	8.70	2.584E+00	------	Line Not Found	------

Flag: "*" = Keyline

None

Flags: "T" = Tentatively associated

Sample ID : H61A21AC
Acquisition date : 19-JUN-2006 12:42:54

Nuclide	Half-life	Half-Life Ratio	Energy	%Abund	Activity (DPM/SAMPL)	1-Sigma %Error	Rejected by
TL-208	1.41E+10Y	0.00	277.35	6.80	9.699E+02	19.07	Abun.
			510.84	21.60	--- Not Found ---		
			583.14*	84.20	--- Not Found ---		
			860.37	12.46	--- Not Found ---		
		% Abundances Found =		5.44			

Flag: "*" = Keyline

VMS Nuclide Identification Report V3.0 Generated 19-JUN-2006 13:13:14

Configuration : $DISK1:[GER10.SAMPLE]H61A21AC_190661242.CNF;1
Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.3,WTMEAN/KEY V1.8
Analyses by : MINACT V2.8
Sample title : BA133
Sample date : 13-JUN-2006 12:00:00 Acquisition date : 19-JUN-2006 12:42:54
Sample ID : H61A21AC Sample quantity : 1.0000 SAMPL
Sample type : Sample geometry : BA133T15
Elapsed live time: 0 00:30:00.00 Elapsed real time: 0 00:30:00.22 0.0%
Peak Width (FWHM): 3.00 Confidence level : 5.00 %
Energy tolerance : 1.50 Half life ratio : 8.00
Errors propagated: Yes Systematic Error : 5.00 %
Efficiency type : Empirical Efficiencies at : Peak Energy
Abundance limit : 80.00 WTM error limit : 3.00

Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Activity (DPM/SAMPL)	Act error	MDA (DPM/SAMPL)	MDA error	Act/MDA
BA-133	7.388E+02	5.586E+01	2.789E+01	5.579E-01	26.487

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (DPM/SAMPL)	K.L. Ided	Act error	MDA (DPM/SAMPL)	MDA error	Act/MDA
BE-7	-2.611E+01		5.681E+01	2.129E+02	4.271E+00	-0.123
NA-22	2.719E+00		2.754E+00	1.474E+01	3.114E-01	0.185
K-40	1.206E+01		4.889E+01	2.345E+02	5.017E+00	0.051
SC-46	-4.783E-01		5.172E+00	2.070E+01	4.328E-01	-0.023
CR-51	4.433E+00		9.468E+01	3.508E+02	7.018E+00	0.013
MN-54	1.299E+00		4.035E+00	1.756E+01	3.599E-01	0.074
CO-57	-1.583E+02		1.045E+02	3.385E+02	6.983E+00	-0.468
CO-58	1.401E+00		5.082E+00	2.114E+01	4.326E-01	0.066
FE-59	1.726E-01		6.343E+00	2.816E+01	5.881E-01	0.006
CO-60	2.324E+00		2.668E+00	1.423E+01	3.018E-01	0.163
ZN-65	1.106E+01		1.006E+01	4.501E+01	9.409E-01	0.246
SE-75	-1.589E+01		1.610E+01	5.505E+01	1.104E+00	-0.289
SR-85	-2.443E+01		1.169E+01	3.668E+01	7.370E-01	-0.666
Y-88	-1.146E-01		3.670E+00	1.591E+01	3.486E-01	-0.007
NB-94	-6.884E+00		5.540E+00	1.868E+01	3.839E-01	-0.369
NB-95	-5.877E+00		6.250E+00	2.218E+01	4.525E-01	-0.265
TC-95M	-1.628E+01		1.722E+01	5.942E+01	1.201E+00	-0.274
ZR-95	-9.897E+00		7.965E+00	2.731E+01	5.568E-01	-0.362
ZRNB-95	-1.147E+01		1.180E+01	4.171E+01	8.509E-01	-0.275
MO-99	-6.675E+01		5.256E+01	1.732E+02	3.567E+00	-0.385
RH-101	-1.326E+01		1.600E+01	5.793E+01	1.172E+00	-0.229
RH-102M	2.765E+00		5.451E+00	2.274E+01	4.561E-01	0.122
RU-103	1.712E-01		6.505E+00	2.582E+01	5.184E-01	0.007
RU-106DA	-1.326E+01		5.047E+01	1.941E+02	3.924E+00	-0.068
AG-108M	-3.570E+00		6.833E+00	2.523E+01	5.053E-01	-0.141
AG-110M	-3.947E-02		2.656E+00	1.366E+01	2.811E-01	-0.003
SN-113DA	-1.931E+01		8.991E+00	2.701E+01	5.404E-01	-0.715

Sample ID : H61A21AC Acquisition date : 19-JUN-2006 12:42:54

---- Non-Identified Nuclides ----

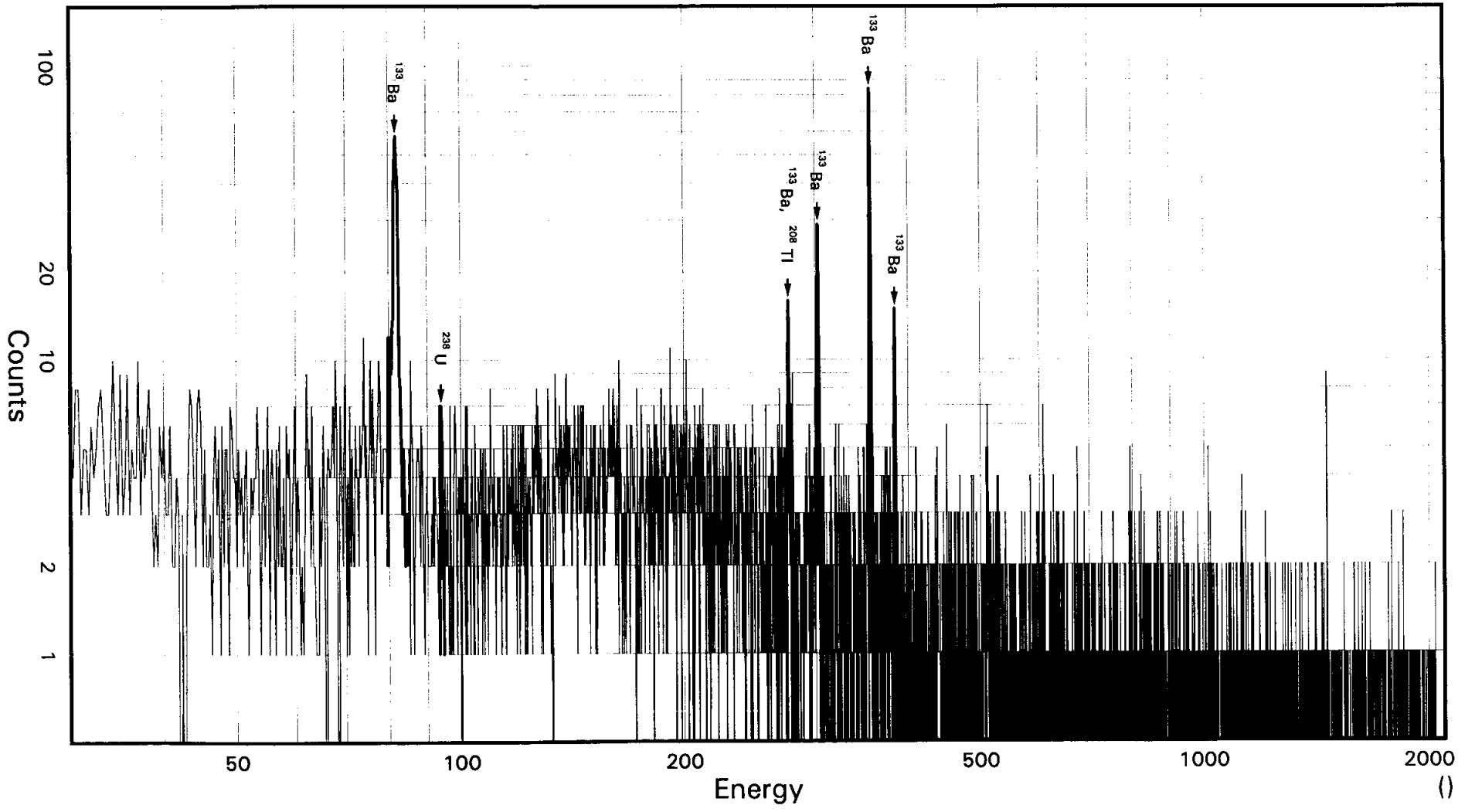
Nuclide	Key-Line Activity (DPM/SAMPL)	K.L. Ided	Act error	MDA (DPM/SAMPL)	MDA error	Act/MDA
SB-124	5.003E+00		5.373E+00	2.344E+01	4.732E-01	0.213
SB-125	-3.385E+01		1.948E+01	6.221E+01	1.246E+00	-0.544
SN-126DA	-2.071E+00		5.423E+00	2.074E+01	4.203E-01	-0.100
I-131	-8.462E+00		1.322E+01	4.850E+01	9.700E-01	-0.174
CS-134	9.975E-01		6.688E+00	2.658E+01	5.434E-01	0.038
CS-137DA	9.987E+00		6.143E+00	2.815E+01	5.704E-01	0.355
LA-138	-5.781E+00		5.319E+00	1.917E+01	4.095E-01	-0.302
CE-139	-1.863E+01		1.119E+01	3.706E+01	7.561E-01	-0.503
BA-140	-3.498E+01		2.858E+01	9.669E+01	1.945E+00	-0.362
BALA-140	-3.683E+00		1.449E+01	5.701E+01	1.231E+00	-0.065
LA-140	-1.615E+01		6.351E+01	2.499E+02	5.395E+00	-0.065
CE-141	-2.526E+01		2.354E+01	7.869E+01	1.617E+00	-0.321
CE-144	1.144E+01		1.008E+02	3.643E+02	7.528E+00	0.031
CEPR-144	2.289E+01		2.017E+02	7.287E+02	1.506E+01	0.031
PM-144	-8.431E-01		4.655E+00	1.831E+01	3.699E-01	-0.046
PM-146	7.820E+00		6.832E+00	3.133E+01	6.279E-01	0.250
EU-152	1.198E+01		2.966E+01	1.127E+02	2.254E+00	0.106
EU-154	7.632E+00		7.730E+00	4.136E+01	8.741E-01	0.185
EU-155	-1.194E+01		4.413E+01	1.594E+02	3.352E+00	-0.075
HF-181	6.946E+00		7.318E+00	3.127E+01	6.273E-01	0.222
BI-207	6.038E-02		6.943E+00	2.628E+01	5.295E-01	0.002
TL-208	4.308E+00		6.072E+00	2.572E+01	5.188E-01	0.167
BI-210M	1.641E+01		1.919E+01	7.347E+01	1.474E+00	0.223
BI-212	-1.671E+01		7.103E+01	2.811E+02	8.590E+00	-0.059
PB-212	-5.413E-01		1.954E+01	7.214E+01	1.451E+00	-0.008
BI-214	2.622E+01		1.198E+01	5.567E+01	1.124E+00	0.471
PB-214	1.028E+01		1.900E+01	6.606E+01	1.321E+00	0.156
RA-223	6.431E+01		6.832E+01	2.639E+02	5.292E+00	0.244
RA-224DA	-5.446E-01		1.966E+01	7.258E+01	1.459E+00	-0.008
RA-226DA	2.645E+01		1.200E+01	5.582E+01	1.127E+00	0.474
AC-227DA	1.673E+01		7.822E+01	2.928E+02	5.889E+00	0.057
AC-228	-1.974E+01		9.926E+00	1.297E+01	2.673E-01	-1.522
RA-228DA	-1.978E+01		9.946E+00	1.300E+01	2.678E-01	-1.522
TH-228DA	1.206E+01		1.700E+01	7.203E+01	1.453E+00	0.167
TH-232DA	-7.540E+01		6.420E+01	2.142E+02	4.284E+00	-0.352
TH-234DA	6.636E+02		7.306E+02	3.264E+03	6.768E+01	0.203
U-234DA	1.814E+01		3.536E+01	1.393E+02	2.790E+00	0.130
U-235HP	3.254E+01		8.947E+01	3.322E+02	6.832E+00	0.098
NP-237DA	-6.143E+00		2.157E+01	7.826E+01	1.566E+00	-0.079
U-238DA	1.028E+01		1.900E+01	6.606E+01	1.321E+00	0.156
U-238DHP	5.172E+01		3.290E+02	1.204E+03	2.663E+01	0.043
AM-241HP	-3.593E+01		3.112E+01	1.065E+02	2.373E+00	-0.337

STL Richland WA.

BA133

Sample ID: H61A31AC
Detector ID: GER13 1

Batch ID: 6163137



Acquisition Start: 19-JUN-2006 12:43:00.24
Preset Live Time: 0 00:30:00.00
Elapsed Live Time: 0 00:30:00.00

Energy Coefficients:
Offset: -6.10701E-01
Slope: 2.50772E-01
Quadrature: -1.04651E-07

SAMPLE IDENTIFICATION: H61A31AC

CONFIGURATION ID: GER13:H61A31AC_190661243
TITLE : BA133
SAMPLE ID : H61A31AC

REPORT DATE: 19-JUN-06
ACQUIRE DATE: 19-JUN-06 12:43:00
ELAPSED LIVE TIME: 1800.0 Sec
PRESET LIVE TIME: 0 00:30:00

SAMPLE DATE: 13-JUN-2006 12:00:00.00
CALIB DATE: 19-JUN-2006 05:44:45.22
ELAPSED LIVE TIME: 0 00:30:00
ELAPSED REAL TIME: 0 00:30:00

SAMPLE QUANTITY: 1.0000E+00
SAMPLE GEOMETRY: BA133T15

UNITS: SAMPL
SAMPLE TYPE:

ENERGY OFFSET: -.6107E+00 keV
ENERGY SLOPE: 2.5077E-01 keV/C
ENERGY Q COEFF: -.1047E-06 keV/C^^2
PEAK SENSITIVITY: 5.000

FWHM OFFSET: 4.1661E-01 keV
FWHM SLOPE: 4.3284E-02 sqr keV
ITERATIONS: 10
GAUSSIAN SENSITIVITY: 10.00 %

ABUNDANCE LIMIT: 80.00 %
ENERGY TOLERANCE: 1.500 keV
VARIABLE PEAK WIDTH: 3.00

HALF-LIFE RATIO: 8.00
ACTIVITY MULTIPLIER: 2.2200E+06
LIBRARY: [NUC_LIBR]QRL.NLB

VMS Peak Search Report V1.9 Generated 19-JUN-2006 13:13:27

```
Configuration     : $DISK1:[GER13.SAMPLE]H61A31AC_190661243.CNF;1
Analyses by       : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6
Sample title      : BA133
Sample date       : 13-JUN-2006 12:00:00 Acquisition date : 19-JUN-2006 12:43:00
Sample ID         : H61A31AC             Sample quantity  : 1.0000 SAMPL
Sample type       :                      Sample geometry  : BA133T15
Elapsed live time: 0 00:30:00.00         Elapsed real time: 0 00:30:00.36   0.0%
Start energy      :    19.45             End energy       :  2046.69
Sensitivity       :     5.00             Gaussian         :    10.00
Critical level    : No
```

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	81.79	274	61	1.15	328.62	320	21	1.52E-01	9.4	
2	0	94.00	17	10	0.78	377.34	374	7	9.44E-03	39.6	
3	0	276.23	101	15	0.96	1104.48	1095	20	5.59E-02	13.7	
4	0	302.84	131	25	1.04	1210.66	1203	15	7.26E-02	12.2	
5	0	355.75	433	9	1.14	1421.90	1412	18	2.41E-01	5.1	
6	0	383.97	68	12	1.11	1534.55	1526	18	3.79E-02	17.4	

Flag: "*" = Peak area was modified by background subtraction

VMS Nuclide Identification Report V3.0 Generated 19-JUN-2006 13:13:28

Configuration : $DISK1:[GER13.SAMPLE]H61A31AC_190661243.CNF;1
Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.3
Sample title : BA133
Sample date : 13-JUN-2006 12:00:00 Acquisition date : 19-JUN-2006 12:43:00
Sample ID : H61A31AC Sample quantity : 1.0000 SAMPL
Sample type : Sample geometry : BA133T15
Elapsed live time: 0 00:30:00.00 Elapsed real time: 0 00:30:00.36 0.0%
Energy tolerance : 1.50 Half life ratio : 8.00
Errors propagated: Yes Systematic Error : 5.00 %
Efficiency type : Empirical Efficiencies at : Peak Energy
Abundance limit : 80.00

Nuclide Line Activity Report

Nuclide Type: FP

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected DPM/SAMPL	Decay Corr DPM/SAMPL	1-Sigma %Error
BA-133	81.00	274	33.00	2.704E+00	1.023E+03	1.024E+03	10.88
	276.40	101	6.90	2.897E+00	1.679E+03	1.680E+03	14.75
	302.84	131	17.80	2.900E+00	8.441E+02	8.451E+02	13.34
	356.00	433	62.05*	2.903E+00	8.013E+02	8.022E+02	7.40
	383.85	68	8.70	2.902E+00	9.009E+02	9.019E+02	18.20

Flag: "*" = Keyline

Sample ID : H61A31AC Acquisition date : 19-JUN-2006 12:43:00

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
0	94.00	17	10	0.78	377.34	374	7	9.44E-03	39.6	2.74E+00	T

Flags: "T" = Tentatively associated

Sample ID : H61A31AC Acquisition date : 19-JUN-2006 12:43:00

Nuclide	Half-life	Half-Life Ratio	Energy	%Abund	Activity (DPM/SAMPL)	1-Sigma %Error	Rejected by
TL-208	1.41E+10Y	0.00	277.35	6.80	1.703E+03	14.75	Abun.
			510.84	21.60	--- Not Found ---		
			583.14*	84.20	--- Not Found ---		
			860.37	12.46	--- Not Found ---		
		% Abundances Found =		5.44			
U-238DHP	4.47E+09Y	0.00	63.28*	3.80	--- Not Found ---		Abun.
			92.59	5.41	3.824E+02	39.99	
		% Abundances Found =		58.74			

Flag: "*" = Keyline

VMS Nuclide Identification Report V3.0 Generated 19-JUN-2006 13:13:30

Configuration : $DISK1:[GER13.SAMPLE]H61A31AC_190661243.CNF;1
Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.3,WTMEAN/KEY V1.8
Analyses by : MINACT V2.8
Sample title : BA133
Sample date : 13-JUN-2006 12:00:00 Acquisition date : 19-JUN-2006 12:43:00
Sample ID : H61A31AC Sample quantity : 1.0000 SAMPL
Sample type : Sample geometry : BA133T15
Elapsed live time: 0 00:30:00.00 Elapsed real time: 0 00:30:00.36 0.0%
Peak Width (FWHM): 3.00 Confidence level : 5.00 %
Energy tolerance : 1.50 Half life ratio : 8.00
Errors propagated: Yes Systematic Error : 5.00 %
Efficiency type : Empirical Efficiencies at : Peak Energy
Abundance limit : 80.00 WTM error limit : 3.00

Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Activity (DPM/SAMPL)	Act error	MDA (DPM/SAMPL)	MDA error	Act/MDA
BA-133	8.022E+02	5.935E+01	4.719E+01	9.437E-01	17.000

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (DPM/SAMPL)	K.L. Ided	Act error	MDA (DPM/SAMPL)	MDA error	Act/MDA
BE-7	-1.487E+01		6.035E+01	2.248E+02	4.509E+00	-0.066
NA-22	2.515E+00		3.418E+00	1.595E+01	3.364E-01	0.158
K-40	4.467E+00		1.000E+02	4.716E+02	1.007E+01	0.009
SC-46	-7.933E+00		6.327E+00	2.285E+01	4.771E-01	-0.347
CR-51	6.466E+01		9.411E+01	3.598E+02	7.199E+00	0.180
MN-54	-5.223E+00		4.999E+00	1.745E+01	3.574E-01	-0.299
CO-57	-8.781E+01		1.114E+02	3.902E+02	8.043E+00	-0.225
CO-58	4.220E+00		6.009E+00	2.458E+01	5.027E-01	0.172
FE-59	-4.767E+00		8.099E+00	3.049E+01	6.358E-01	-0.156
CO-60	3.200E+00		3.135E+00	1.547E+01	3.276E-01	0.207
ZN-65	-1.721E+01		1.060E+01	3.386E+01	7.068E-01	-0.508
SE-75	-7.279E+00		1.663E+01	5.922E+01	1.188E+00	-0.123
SR-85	-2.937E+01		1.004E+01	2.857E+01	5.739E-01	-1.028
Y-88	-1.937E+00		2.015E+00	7.712E+00	1.685E-01	-0.251
NB-94	6.705E+00		5.542E+00	2.355E+01	4.834E-01	0.285
NB-95	1.685E+00		5.362E+00	2.201E+01	4.487E-01	0.077
TC-95M	-1.518E+01		1.848E+01	6.263E+01	1.265E+00	-0.242
ZR-95	5.389E+00		1.130E+01	4.529E+01	9.229E-01	0.119
ZRNB-95	5.608E+00		9.869E+00	4.169E+01	8.499E-01	0.135
MO-99	-3.098E+01		5.813E+01	2.058E+02	4.234E+00	-0.151
RH-101	4.073E-02		1.557E+01	5.524E+01	1.117E+00	0.001
RH-102M	2.504E+00		6.039E+00	2.388E+01	4.789E-01	0.105
RU-103	-6.380E+00		6.897E+00	2.398E+01	4.815E-01	-0.266
RU-106DA	-3.284E+01		6.665E+01	2.419E+02	4.887E+00	-0.136
AG-108M	-1.405E+01		8.115E+00	2.621E+01	5.250E-01	-0.536
AG-110M	1.742E-01		6.728E+00	2.655E+01	5.457E-01	0.007
SN-113DA	1.625E+01		1.058E+01	4.429E+01	8.860E-01	0.367

Sample ID : H61A31AC Acquisition date : 19-JUN-2006 12:43:00

---- Non-Identified Nuclides ----

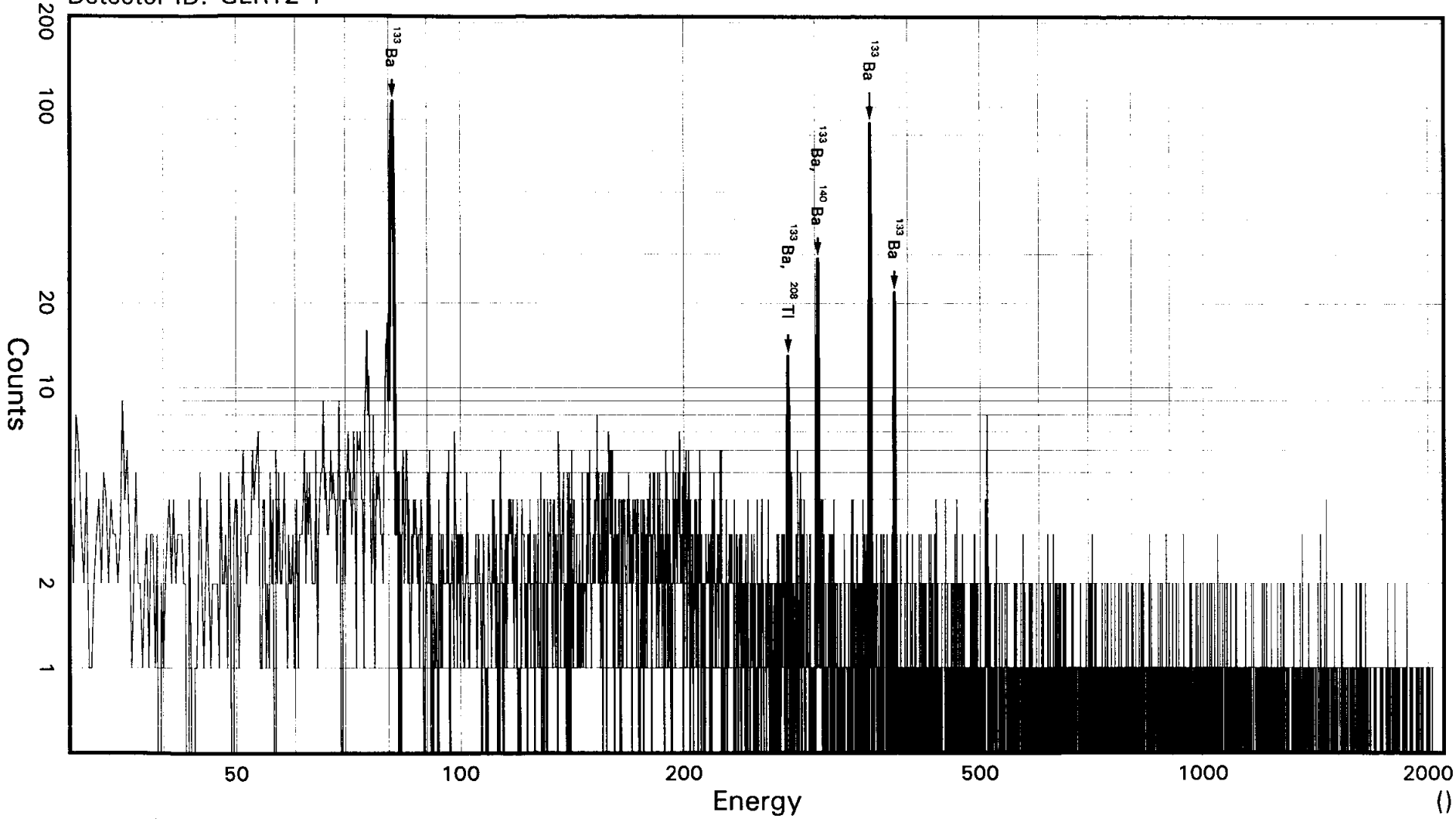
Nuclide	Key-Line Activity (DPM/SAMPL)	K.L. Ided	Act error	MDA (DPM/SAMPL)	MDA error	Act/MDA
SB-124	6.985E+00		6.600E+00	2.727E+01	5.504E-01	0.256
SB-125	-1.587E+00		2.180E+01	8.220E+01	1.646E+00	-0.019
SN-126DA	3.508E+00		5.140E+00	2.123E+01	4.301E-01	0.165
I-131	6.988E+00		1.550E+01	5.841E+01	1.168E+00	0.120
CS-134	1.415E+01		8.032E+00	3.386E+01	6.916E-01	0.418
CS-137DA	-3.689E+00		5.430E+00	1.984E+01	4.019E-01	-0.186
LA-138	6.476E+00		5.743E+00	2.689E+01	5.732E-01	0.241
CE-139	-2.834E+01		1.341E+01	4.273E+01	8.710E-01	-0.663
BA-140	-1.857E+01		3.507E+01	1.249E+02	2.511E+00	-0.149
BALA-140	3.683E+00		7.995E+00	3.864E+01	8.321E-01	0.095
LA-140	3.189E+01		3.845E+01	1.890E+02	4.070E+00	0.169
CE-141	3.257E+01		2.733E+01	1.037E+02	2.129E+00	0.314
CE-144	-1.717E+02		1.076E+02	3.413E+02	7.046E+00	-0.503
CEPR-144	-3.461E+02		2.151E+02	6.816E+02	1.407E+01	-0.508
PM-144	-3.356E+00		5.413E+00	1.978E+01	3.996E-01	-0.170
PM-146	-1.978E+01		9.901E+00	3.064E+01	6.139E-01	-0.646
EU-152	-2.328E+01		3.068E+01	1.057E+02	2.115E+00	-0.220
EU-154	7.059E+00		9.591E+00	4.476E+01	9.442E-01	0.158
EU-155	3.367E+01		4.684E+01	1.754E+02	3.684E+00	0.192
HF-181	2.929E+00		8.528E+00	3.290E+01	6.600E-01	0.089
BI-207	1.641E+00		6.036E+00	2.374E+01	4.782E-01	0.069
TL-208	-5.339E+00		8.263E+00	3.182E+01	6.415E-01	-0.168
BI-210M	-2.338E+01		1.888E+01	6.407E+01	1.285E+00	-0.365
BI-212	6.163E+01		8.895E+01	3.567E+02	1.090E+01	0.173
PB-212	-1.585E+01		2.292E+01	8.154E+01	1.639E+00	-0.194
BI-214	3.588E+00		1.626E+01	6.726E+01	1.358E+00	0.053
PB-214	5.348E+01		2.702E+01	1.028E+02	2.055E+00	0.520
RA-223	1.003E+02		7.224E+01	2.801E+02	5.616E+00	0.358
RA-224DA	-1.595E+01		2.306E+01	8.203E+01	1.649E+00	-0.194
RA-226DA	3.588E+00		1.626E+01	6.726E+01	1.358E+00	0.053
AC-227DA	-5.369E-01		9.018E+01	3.183E+02	6.402E+00	-0.002
AC-228	-2.744E+01		2.451E+01	9.241E+01	1.903E+00	-0.297
RA-228DA	-2.749E+01		2.456E+01	9.260E+01	1.906E+00	-0.297
TH-228DA	-1.495E+01		2.314E+01	8.911E+01	1.796E+00	-0.168
TH-232DA	5.639E+01		6.057E+01	2.404E+02	4.809E+00	0.235
TH-234DA	1.297E+03		6.591E+02	3.185E+03	6.597E+01	0.407
U-234DA	-9.460E+01		5.231E+01	1.711E+02	3.425E+00	-0.553
U-235HP	-2.488E+01		1.106E+02	3.964E+02	8.145E+00	-0.063
NP-237DA	-2.328E+01		2.106E+01	7.148E+01	1.430E+00	-0.326
U-238DA	5.348E+01		2.702E+01	1.028E+02	2.055E+00	0.520
U-238DHP	5.346E+01		2.364E+02	8.967E+02	1.978E+01	0.060
AM-241HP	5.831E+01		2.585E+01	1.049E+02	2.329E+00	0.556

STL Richland WA.

BA133

Sample ID: H61A51AC
Detector ID: GER12 1

Batch ID: 6163137



Acquisition Start: 19-JUN-2006 12:43:06.79
Preset Live Time: 0 00:30:00.00
Elapsed Live Time: 0 00:30:00.00

Energy Coefficients:
Offset: 1.25233E+01
Slope: 2.47509E-01
Quadrature: -2.00961E-09

SAMPLE IDENTIFICATION: H61A51AC

CONFIGURATION ID: GER12:H61A51AC_190661243
TITLE : BA133
SAMPLE ID : H61A51AC

REPORT DATE: 19-JUN-06
ACQUIRE DATE: 19-JUN-06 12:43:06
ELAPSED LIVE TIME: 1800.0 Sec
PRESET LIVE TIME: 0 00:30:00

SAMPLE DATE: 13-JUN-2006 12:00:00.00
CALIB DATE: 19-JUN-2006 05:29:53.77
ELAPSED LIVE TIME: 0 00:30:00
ELAPSED REAL TIME: 0 00:30:00

SAMPLE QUANTITY: 1.0000E+00
SAMPLE GEOMETRY: BA133T15

UNITS: SAMPL
SAMPLE TYPE:

ENERGY OFFSET: 1.2523E+01 keV
ENERGY SLOPE: 2.4751E-01 keV/C
ENERGY Q COEFF: -.2010E-08 keV/C^^2
PEAK SENSITIVITY: 5.000

FWHM OFFSET: 4.0884E-01 keV
FWHM SLOPE: 3.5936E-02 sqr keV
ITERATIONS: 10
GAUSSIAN SENSITIVITY: 10.00 %

ABUNDANCE LIMIT: 80.00 %
ENERGY TOLERANCE: 2.000 keV
VARIABLE PEAK WIDTH: 3.00

HALF-LIFE RATIO: 8.00
ACTIVITY MULTIPLIER: 2.2200E+06
LIBRARY: [NUC_LIBR]QRL.NLB

VMS Peak Search Report V1.9 Generated 19-JUN-2006 13:13:42

```
Configuration     : $DISK1:[GER12.SAMPLE]H61A51AC_190661243.CNF;1
Analyses by       : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6
Sample title      : BA133
Sample date       : 13-JUN-2006 12:00:00 Acquisition date : 19-JUN-2006 12:43:06
Sample ID         : H61A51AC             Sample quantity  : 1.0000 SAMPL
Sample type       :                      Sample geometry  : BA133T15
Elapsed live time: 0 00:30:00.00         Elapsed real time: 0 00:30:00.33   0.0%
Start energy      :    12.77             End energy       :  2039.98
Sensitivity       :     5.00             Gaussian         :    10.00
Critical level    : No
```

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	75.06*	14	29	0.82	252.68	248	9	7.90E-03	80.7	
2	0	81.03	315	83	0.79	276.78	272	13	1.75E-01	8.8	
3	0	276.49	59	18	1.37	1066.49	1056	18	3.28E-02	21.3	
4	0	302.92	108	41	0.95	1173.28	1166	17	5.99E-02	16.8	
5	0	355.98	410	20	1.01	1387.68	1379	20	2.28E-01	5.6	
6	0	383.86	87	4	0.79	1500.30	1492	15	4.83E-02	11.8	

Flag: "*" = Peak area was modified by background subtraction

VMS Nuclide Identification Report V3.0 Generated 19-JUN-2006 13:13:43

Configuration : $DISK1:[GER12.SAMPLE]H61A51AC_190661243.CNF;1
Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.3
Sample title : BA133
Sample date : 13-JUN-2006 12:00:00
Sample ID : H61A51AC
Sample type :
Elapsed live time: 0 00:30:00.00
Energy tolerance : 2.00
Errors propagated: Yes
Efficiency type : Empirical
Abundance limit : 80.00

Acquisition date : 19-JUN-2006 12:43:06
Sample quantity : 1.0000 SAMPL
Sample geometry : BA133T15
Elapsed real time: 0 00:30:00.33 0.0%
Half life ratio : 8.00
Systematic Error : 5.00 %
Efficiencies at : Peak Energy

Nuclide Line Activity Report

Nuclide Type: FP

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected DPM/SAMPL	Decay Corr DPM/SAMPL	1-Sigma %Error
BA-133	81.00	315	33.00	2.899E+00	1.098E+03	1.099E+03	10.34
	276.40	59	6.90	3.105E+00	9.180E+02	9.190E+02	21.98
	302.84	108	17.80	3.109E+00	6.498E+02	6.505E+02	17.67
	356.00	410	62.05*	3.111E+00	7.079E+02	7.087E+02	7.78
	383.85	87	8.70	3.111E+00	1.071E+03	1.072E+03	12.96

Flag: "*" = Keyline

Unidentified Energy Lines
Sample ID : H61A51AC

Acquisition date : 19-JUN-2006 12:43:06

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
0	75.06	14	29	0.82	252.68	248	9	7.90E-03	80.7	2.88E+00	

Flags: "T" = Tentatively associated

Rejected Report
Sample ID : H61A51AC

Acquisition date : 19-JUN-2006 12:43:06

Nuclide	Half-life	Half-Life Ratio	Energy	%Abund	Activity (DPM/SAMPL)	1-Sigma %Error	Rejected by
BA-140	12.79D	0.47	162.64	6.70	--- Not Found ---		Abun.
			304.84	4.50	3.566E+03	17.67	
			423.70	3.20	--- Not Found ---		
			537.32*	25.00	--- Not Found ---		
		% Abundances Found =		11.42			
TL-208	1.41E+10Y	0.00	277.35	6.80	9.315E+02	21.98	Abun.
			510.84	21.60	--- Not Found ---		
			583.14*	84.20	--- Not Found ---		
			860.37	12.46	--- Not Found ---		
		% Abundances Found =		5.44			

Flag: "*" = Keyline

VMS Nuclide Identification Report V3.0 Generated 19-JUN-2006 13:13:45

Configuration : $DISK1:[GER12.SAMPLE]H61A51AC_190661243.CNF;1
Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.3,WTMEAN/KEY V1.8
Analyses by : MINACT V2.8
Sample title : BA133
Sample date : 13-JUN-2006 12:00:00
Sample ID : H61A51AC
Sample type :
Elapsed live time: 0 00:30:00.00
Peak Width (FWHM): 3.00
Energy tolerance : 2.00
Errors propagated: Yes
Efficiency type : Empirical
Abundance limit : 80.00

Acquisition date : 19-JUN-2006 12:43:06
Sample quantity : 1.0000 SAMPL
Sample geometry : BA133T15
Elapsed real time: 0 00:30:00.33 0.0%
Confidence level : 5.00 %
Half life ratio : 8.00
Systematic Error : 5.00 %
Efficiencies at : Peak Energy
WTM error limit : 3.00

Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Activity (DPM/SAMPL)	Act error	MDA (DPM/SAMPL)	MDA error	Act/MDA
BA-133	7.087E+02	5.514E+01	3.775E+01	7.550E-01	18.773

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (DPM/SAMPL)	K.L. Ided	Act error	MDA (DPM/SAMPL)	MDA error	Act/MDA
BE-7	2.671E+00		3.998E+01	1.618E+02	3.244E+00	0.017
NA-22	-3.076E-01		3.216E+00	1.339E+01	2.822E-01	-0.023
K-40	-6.588E+01		4.188E+01	1.983E+02	4.230E+00	-0.332
SC-46	3.552E+00		2.622E+00	1.410E+01	2.943E-01	0.252
CR-51	-9.654E+00		6.408E+01	2.384E+02	4.771E+00	-0.040
MN-54	-4.248E+00		3.461E+00	1.196E+01	2.448E-01	-0.355
CO-57	9.160E+01		7.996E+01	3.100E+02	6.386E+00	0.295
CO-58	2.462E+00		3.265E+00	1.531E+01	3.130E-01	0.161
FE-59	1.426E+01		7.037E+00	3.530E+01	7.355E-01	0.404
CO-60	-1.281E+00		2.606E+00	1.054E+01	2.229E-01	-0.122
ZN-65	-7.554E+00		5.617E+00	1.882E+01	3.926E-01	-0.401
SE-75	3.439E-01		9.173E+00	3.528E+01	7.076E-01	0.010
SR-85	-2.552E+01		8.106E+00	2.162E+01	4.342E-01	-1.180
Y-88	-1.203E+00		1.205E+00	3.305E+00	7.207E-02	-0.364
NB-94	-1.030E+00		3.626E+00	1.440E+01	2.956E-01	-0.072
NB-95	3.507E-01		3.794E+00	1.616E+01	3.294E-01	0.022
TC-95M	6.673E-01		1.291E+01	4.806E+01	9.708E-01	0.014
ZR-95	-1.152E+01		7.313E+00	2.266E+01	4.616E-01	-0.508
ZRNB-95	6.642E-01		7.186E+00	3.061E+01	6.238E-01	0.022
MO-99	-1.392E+01		3.926E+01	1.476E+02	3.035E+00	-0.094
RH-101	7.054E+00		1.233E+01	4.766E+01	9.639E-01	0.148
RH-102M	3.399E+00		4.776E+00	1.994E+01	3.999E-01	0.170
RU-103	-1.005E+01		5.052E+00	1.445E+01	2.901E-01	-0.695
RU-106DA	2.285E+01		3.518E+01	1.574E+02	3.180E+00	0.145
AG-108M	-9.434E+00		5.892E+00	1.905E+01	3.814E-01	-0.495
AG-110M	-3.037E+00		4.862E+00	1.850E+01	3.800E-01	-0.164
SN-113DA	9.860E+00		7.126E+00	3.172E+01	6.346E-01	0.311

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (DPM/SAMPL)	K.L. Ided	Act error	MDA (DPM/SAMPL)	MDA error	Act/MDA
SB-124	2.498E+00		4.067E+00	1.777E+01	3.585E-01	0.141
SB-125	1.503E+01		1.562E+01	6.675E+01	1.336E+00	0.225
SN-126DA	-1.207E+00		4.506E+00	1.721E+01	3.486E-01	-0.070
I-131	-1.918E+01		1.147E+01	3.762E+01	7.525E-01	-0.510
CS-134	3.791E-01		4.719E+00	1.933E+01	3.947E-01	0.020
CS-137DA	-3.736E+00		4.998E+00	1.816E+01	3.678E-01	-0.206
LA-138	3.479E+00		6.308E+00	2.695E+01	5.739E-01	0.129
CE-139	6.266E+00		1.055E+01	3.936E+01	8.021E-01	0.159
BA-140	-8.810E+00		2.167E+01	8.454E+01	1.700E+00	-0.104
BALA-140	-1.020E+01		5.917E+00	9.046E+00	1.945E-01	-1.128
LA-140	-4.473E+01		2.594E+01	3.966E+01	8.527E-01	-1.128
CE-141	4.683E+00		1.655E+01	6.231E+01	1.279E+00	0.075
CE-144	-5.193E+01		7.558E+01	2.644E+02	5.455E+00	-0.196
CEPR-144	-1.039E+02		1.512E+02	5.289E+02	1.091E+01	-0.196
PM-144	3.403E+00		4.258E+00	1.839E+01	3.714E-01	0.185
PM-146	-3.555E+00		6.675E+00	2.479E+01	4.968E-01	-0.143
EU-152	-1.282E+01		2.119E+01	7.790E+01	1.558E+00	-0.165
EU-154	-5.287E+00		9.408E+00	3.617E+01	7.623E-01	-0.146
EU-155	9.529E+00		3.290E+01	1.269E+02	2.662E+00	0.075
HF-181	-4.949E+00		4.830E+00	1.686E+01	3.383E-01	-0.293
BI-207	4.732E+00		4.620E+00	2.002E+01	4.033E-01	0.236
TL-208	-1.547E+00		5.695E+00	2.178E+01	4.390E-01	-0.071
BI-210M	-8.782E+00		1.181E+01	4.183E+01	8.389E-01	-0.210
BI-212	-6.039E+01		6.074E+01	2.116E+02	6.465E+00	-0.285
PB-212	7.329E+00		1.482E+01	5.744E+01	1.155E+00	0.128
BI-214	1.331E+01		1.029E+01	4.482E+01	9.047E-01	0.297
PB-214	2.191E+01		1.674E+01	6.373E+01	1.275E+00	0.344
RA-223	1.319E+00		4.649E+01	1.743E+02	3.494E+00	0.008
RA-224DA	7.373E+00		1.491E+01	5.778E+01	1.162E+00	0.128
RA-226DA	1.340E+01		1.030E+01	4.488E+01	9.060E-01	0.299
AC-227DA	-2.406E+01		5.681E+01	2.072E+02	4.167E+00	-0.116
AC-228	-3.363E+00		1.070E+01	4.374E+01	9.000E-01	-0.077
RA-228DA	-3.370E+00		1.072E+01	4.383E+01	9.018E-01	-0.077
TH-228DA	-4.333E+00		1.595E+01	6.099E+01	1.229E+00	-0.071
TH-232DA	4.722E+01		5.415E+01	2.104E+02	4.209E+00	0.224
TH-234DA	7.668E+02		6.163E+02	2.795E+03	5.786E+01	0.274
U-234DA	-2.238E+01		2.941E+01	1.034E+02	2.069E+00	-0.217
U-235HP	-2.620E+01		6.846E+01	2.456E+02	5.044E+00	-0.107
NP-237DA	4.153E+00		1.677E+01	6.370E+01	1.275E+00	0.065
U-238DA	2.191E+01		1.674E+01	6.373E+01	1.275E+00	0.344
U-238DHP	-2.080E+02		2.455E+02	8.335E+02	1.835E+01	-0.250
AM-241HP	-2.538E+01		2.232E+01	7.477E+01	1.658E+00	-0.339

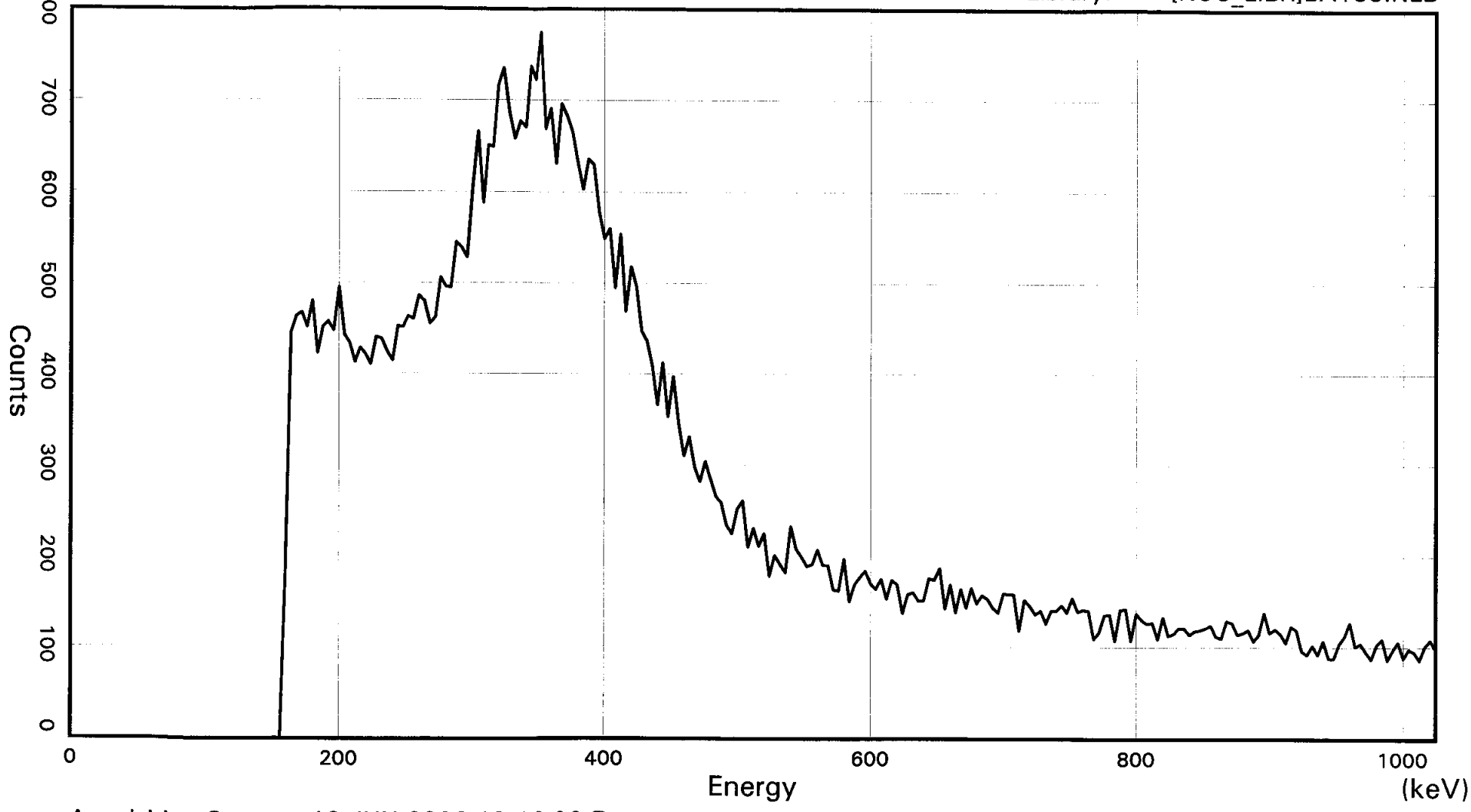
STL Richland WA.

BA133

Sample ID: H61A71AC

Detector ID: NAI1 1

Library: [NUC_LIBR]BA133.NLB



Acquisition Start:	19-JUN-2006 13:16:02.7
Preset Live Time:	0 00:30:00
Elapsed Live Time:	0 00:30:00
Weighting:	DERIVED

Start Channel:	80
End Channel:	113
Iterations:	5
Gain shift:	Iter

SAMPLE IDENTIFICATION: H61A71AC

CONFIGURATION ID: NAI1:H61A71AC_190661316
TITLE : BA133
SAMPLE ID : H61A71AC

REPORT DATE: 19-JUN-06
ACQUIRE DATE: 19-JUN-06 13:16:02
ELAPSED LIVE TIME: 1800.0 Sec
PRESET LIVE TIME: 0 00:30:00

SAMPLE DATE: 13-JUN-2006 12:00:00.00
CALIB DATE: 17-NOV-1993 10:39:59.60
ELAPSED LIVE TIME: 0 00:30:00
ELAPSED REAL TIME: 0 00:30:00

SAMPLE QUANTITY: 1.0000E+00
SAMPLE GEOMETRY:

UNITS: SAMPL
SAMPLE TYPE:

ENERGY OFFSET: 0.0000E+00 keV
ENERGY SLOPE: 4.0000E+00 keV/C
ENERGY Q COEFF: 0.0000E+00 keV/C^^2
PEAK SENSITIVITY: 5.000

FWHM OFFSET: -.2302E+02 keV
FWHM SLOPE: 5.7163E+00 sqr keV
ITERATIONS: 5
GAUSSIAN SENSITIVITY: 35.00 %

ABUNDANCE LIMIT: 75.00 %
ENERGY TOLERANCE: 20.000 keV
VARIABLE PEAK WIDTH: 3.00

HALF-LIFE RATIO: 8.00
ACTIVITY MULTIPLIER: 2.2200E+06
LIBRARY: [NUC_LIBR]BA133.NLB

VMS NAI Report V1.2 Generated 19-JUN-2006 13:46:07

Configuration	: RDND06$DKA100:[NAI1.SAMPLE]H61A71AC_190661316.CNF;1		
Analyses by	: NAI V3.0		
Sample title	: BA133		
Sample date	: 13-JUN-2006 12:00:00	Acquisition date	: 19-JUN-2006 13:16:02
Sample ID	: H61A71AC	Sample quantity	: 1.0000 sampl
Elapsed live time	: 0 00:30:00.00	Elapsed real time	: 0 00:30:00.65 0.0%
Sample Multiplier	: 1.00	Rejection Coeff.	: 0.00
Gain shift type	: ITER	Threshold Shift	: No
Weighting type	: DERIVED	Calculated counts	: No
Iterations	: 5		

NAI Residuals Report

Ratio of Residuals Over Standard Deviation Per Channel

80:	7.4	7.9	5.5	3.1	3.1	1.6	4.6	3.6
88:	5.1	0.5	0.0	-3.0	0.8	-1.2	0.4	-0.4
96:	-1.9	-1.8	-1.2	-2.8	-4.4	-1.7	-4.9	-2.1
104:	-6.1	-3.2	-2.8	-3.9	-4.1	-5.0	-6.2	-3.8
112:	-5.1	-2.8						

List of Suspicious Channels

81 82 83 87

Iteration	Chi-Squared	Threshold Shift	Gain Shift
1	1.60E+01	0.00E+00	1.01E+00
2	8.95E+00	0.00E+00	1.04E+00
3	3.95E+00	0.00E+00	1.06E+00
4	1.94E+00	0.00E+00	1.07E+00
5	1.22E+00	0.00E+00	1.08E+00

Brief Report

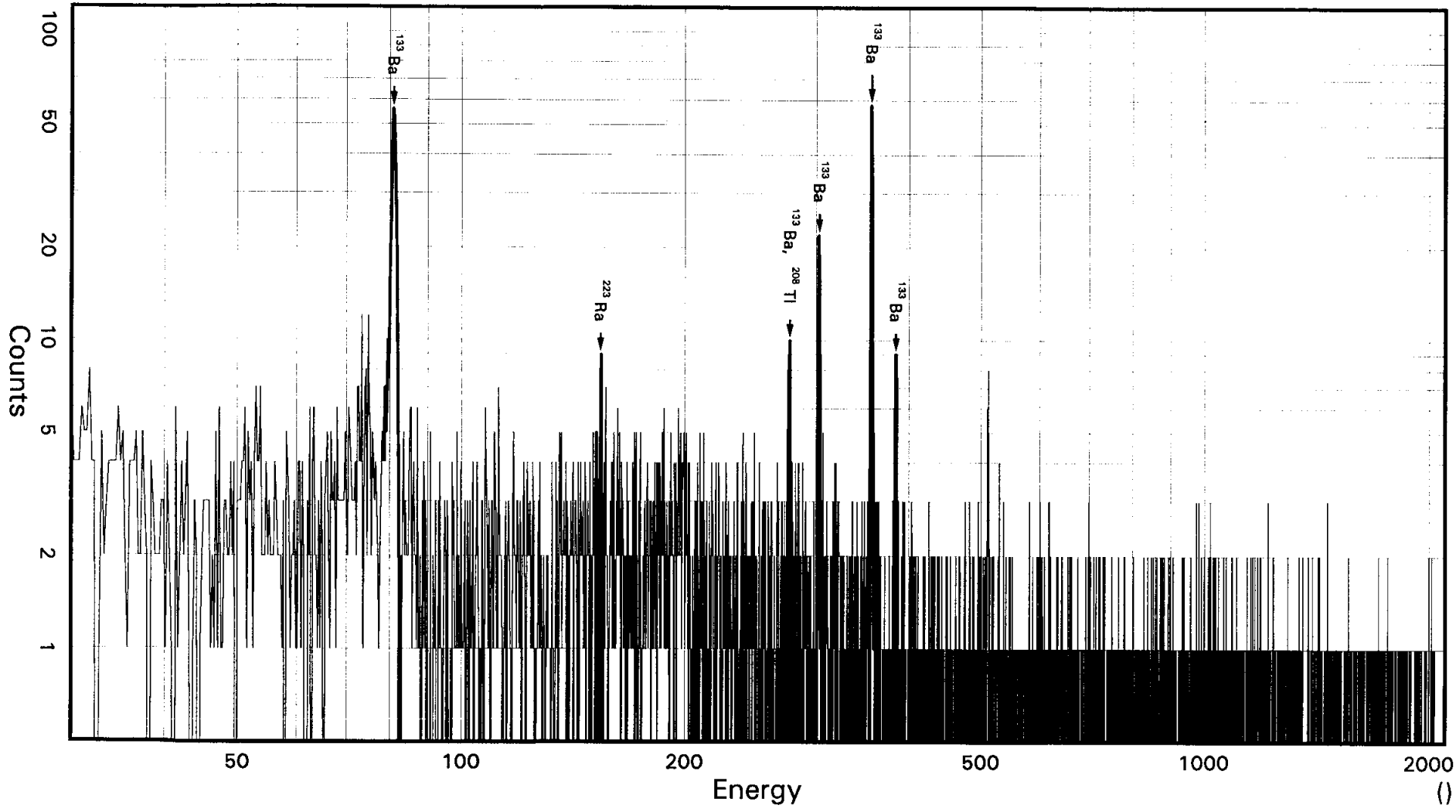
Nuclide	Activity DPM/sampl	1-Sigma Error
BA-133	679.	9.30
Total Activity :	679.	

STL Richland WA.

BA133

Sample ID: H67QT1AA
Detector ID: GER10 1

Batch ID: 6163137



Acquisition Start: 19-JUN-2006 13:16:45.32
Preset Live Time: 0 00:30:00.00
Elapsed Live Time: 0 00:30:00.00

Energy Coefficients:
Offset: 1.56759E+01
Slope: 2.46944E-01
Quadrature: 3.15282E-09

SAMPLE IDENTIFICATION: H67QT1AA

CONFIGURATION ID: GER10:H67QT1AA_190661316
TITLE : BA133
SAMPLE ID : H67QT1AA

REPORT DATE: 19-JUN-06
ACQUIRE DATE: 19-JUN-06 13:16:45
ELAPSED LIVE TIME: 1800.0 Sec
PRESET LIVE TIME: 0 00:30:00

SAMPLE DATE: 13-JUN-2006 12:00:00.00
CALIB DATE: 19-JUN-2006 05:29:08.65
ELAPSED LIVE TIME: 0 00:30:00
ELAPSED REAL TIME: 0 00:30:00

SAMPLE QUANTITY: 1.0000E+00
SAMPLE GEOMETRY: BA133T15

UNITS: SAMPL
SAMPLE TYPE:

ENERGY OFFSET: 1.5676E+01 keV
ENERGY SLOPE: 2.4694E-01 keV/C
ENERGY Q COEFF: 3.1528E-09 keV/C^^2
PEAK SENSITIVITY: 5.000

FWHM OFFSET: 8.9758E-01 keV
FWHM SLOPE: 2.6348E-02 sqr keV
ITERATIONS: 10
GAUSSIAN SENSITIVITY: 10.00 %

ABUNDANCE LIMIT: 80.00 %
ENERGY TOLERANCE: 1.500 keV
VARIABLE PEAK WIDTH: 3.00

HALF-LIFE RATIO: 8.00
ACTIVITY MULTIPLIER: 2.2200E+06
LIBRARY: [NUC_LIBR]QRL.NLB

VMS Peak Search Report V1.9 Generated 19-JUN-2006 13:47:02

```
Configuration     : $DISK1:[GER10.SAMPLE]H67QT1AA_190661316.CNF;1
Analyses by       : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6
Sample title      : BA133
Sample date       : 13-JUN-2006 12:00:00 Acquisition date : 19-JUN-2006 13:16:45
Sample ID         : H67QT1AA             Sample quantity  : 1.0000 SAMPL
Sample type       :                      Sample geometry  : BA133T15
Elapsed live time: 0 00:30:00.00         Elapsed real time: 0 00:30:00.22   0.0%
Start energy      :    18.15             End energy       :  2038.85
Sensitivity       :     5.00             Gaussian         :    10.00
Critical level    : No
```

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	80.95	282	48	1.13	264.34	255	17	1.57E-01	8.1	
2	0	154.10	22	19	2.39	560.55	551	15	1.25E-02	47.0	
3	0	276.60	50	7	1.35	1056.58	1049	21	2.80E-02	18.2	
4	0	302.91	116	4	1.07	1163.15	1154	21	6.42E-02	10.5	
5	0	356.07	305	27	1.36	1378.41	1368	22	1.69E-01	7.2	
6	0	383.90	69	6	1.91	1491.11	1479	22	3.85E-02	14.8	

Flag: "*" = Peak area was modified by background subtraction

VMS Nuclide Identification Report V3.0 Generated 19-JUN-2006 13:47:02

Configuration : $DISK1:[GER10.SAMPLE]H67QT1AA_190661316.CNF;1
Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.3
Sample title : BA133
Sample date : 13-JUN-2006 12:00:00
Sample ID : H67QT1AA
Sample type :
Elapsed live time: 0 00:30:00.00
Energy tolerance : 1.50
Errors propagated: Yes
Efficiency type : Empirical
Abundance limit : 80.00

Acquisition date : 19-JUN-2006 13:16:45
Sample quantity : 1.0000 SAMPL
Sample geometry : BA133T15
Elapsed real time: 0 00:30:00.22 0.0%
Half life ratio : 8.00
Systematic Error : 5.00 %
Efficiencies at : Peak Energy

Nuclide Line Activity Report

Nuclide Type: FP

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected DPM/SAMPL	Decay Corr DPM/SAMPL	1-Sigma %Error
BA-133	81.00	282	33.00	2.399E+00	1.189E+03	1.190E+03	9.80
	276.40	50	6.90	2.578E+00	9.453E+02	9.464E+02	19.00
	302.84	116	17.80	2.582E+00	8.378E+02	8.388E+02	11.82
	356.00	305	62.05*	2.584E+00	6.338E+02	6.345E+02	9.00
	383.85	69	8.70	2.584E+00	1.027E+03	1.028E+03	15.77

Flag: "*" = Keyline

Unidentified Energy Lines
Sample ID : H67QT1AA

Acquisition date : 19-JUN-2006 13:16:45

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
0	154.10	22	19	2.39	560.55	551	15	1.25E-02	47.0	2.52E+00	T

Flags: "T" = Tentatively associated

Rejected Report
Sample ID : H67QT1AA

Acquisition date : 19-JUN-2006 13:16:45

Nuclide	Half-life	Half-Life Ratio	Energy	%Abund	Activity (DPM/SAMPL)	1-Sigma %Error	Rejected by
TL-208	1.41E+10Y	0.00	277.35	6.80	9.592E+02	19.00	Abun.
			510.84	21.60	--- Not Found ---		
			583.14*	84.20	--- Not Found ---		
			860.37	12.46	--- Not Found ---		
		% Abundances Found =		5.44			
RA-223	21.77Y	0.00	154.21	5.58	5.318E+02	47.30	Abun.
			269.46*	13.60	--- Not Found ---		
			323.87	3.88	--- Not Found ---		
		% Abundances Found =		24.20			

Flag: "*" = Keyline

VMS Nuclide Identification Report V3.0 Generated 19-JUN-2006 13:47:04

Configuration	: $DISK1:[GER10.SAMPLE]H67QT1AA_190661316.CNF;1		
Analyses by	: PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.3,WTMEAN/KEY V1.8		
Analyses by	: MINACT V2.8		
Sample title	: BA133		
Sample date	: 13-JUN-2006 12:00:00	Acquisition date	: 19-JUN-2006 13:16:45
Sample ID	: H67QT1AA	Sample quantity	: 1.0000 SAMPL
Sample type	:	Sample geometry	: BA133T15
Elapsed live time	: 0 00:30:00.00	Elapsed real time	: 0 00:30:00.22 0.0%
Peak Width (FWHM)	: 3.00	Confidence level	: 5.00 %
Energy tolerance	: 1.50	Half life ratio	: 8.00
Errors propagated	: Yes	Systematic Error	: 5.00 %
Efficiency type	: Empirical	Efficiencies at	: Peak Energy
Abundance limit	: 80.00	WTM error limit	: 3.00

Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Activity (DPM/SAMPL)	Act error	MDA (DPM/SAMPL)	MDA error	Act/MDA
BA-133	6.345E+02	5.710E+01	5.641E+01	1.128E+00	11.248

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (DPM/SAMPL)	K.L. Ided	Act error	MDA (DPM/SAMPL)	MDA error	Act/MDA
BE-7	5.298E+01		5.985E+01	2.518E+02	5.050E+00	0.210
NA-22	-6.203E-02		3.381E+00	1.474E+01	3.115E-01	-0.004
K-40	2.454E+01		4.729E+01	2.345E+02	5.017E+00	0.105
SC-46	2.886E+00		3.458E+00	1.702E+01	3.560E-01	0.170
CR-51	-6.636E+01		1.019E+02	3.555E+02	7.114E+00	-0.187
MN-54	-5.443E+00		4.676E+00	1.609E+01	3.298E-01	-0.338
CO-57	1.619E+02		9.720E+01	3.835E+02	7.914E+00	0.422
CO-58	-4.237E+00		4.682E+00	1.691E+01	3.461E-01	-0.250
FE-59	-2.331E+00		7.763E+00	3.144E+01	6.564E-01	-0.074
CO-60	-1.518E+00		3.685E+00	1.475E+01	3.130E-01	-0.103
ZN-65	-2.880E+00		7.006E+00	2.856E+01	5.971E-01	-0.101
SE-75	-6.238E+00		1.338E+01	4.819E+01	9.667E-01	-0.129
SR-85	-3.994E+01		1.087E+01	2.861E+01	5.747E-01	-1.396
Y-88	1.403E+00		3.343E+00	1.591E+01	3.486E-01	0.088
NB-94	2.558E+00		4.223E+00	1.868E+01	3.839E-01	0.137
NB-95	-1.491E+00		5.307E+00	2.082E+01	4.248E-01	-0.072
TC-95M	-2.963E+01		1.538E+01	4.937E+01	9.978E-01	-0.600
ZR-95	-2.355E+00		7.558E+00	3.048E+01	6.215E-01	-0.077
ZRNB-95	-3.167E+00		1.000E+01	3.911E+01	7.978E-01	-0.081
MO-99	-1.549E+01		5.234E+01	1.848E+02	3.805E+00	-0.084
RH-101	1.642E+01		1.759E+01	6.784E+01	1.373E+00	0.242
RH-102M	9.689E+00		5.977E+00	2.666E+01	5.347E-01	0.363
RU-103	6.647E+00		7.278E+00	3.059E+01	6.141E-01	0.217
RU-106DA	-4.699E+01		5.716E+01	2.019E+02	4.081E+00	-0.233
AG-108M	-3.535E+00		7.122E+00	2.625E+01	5.257E-01	-0.135
AG-110M	-1.184E-01		4.601E+00	1.999E+01	4.112E-01	-0.006
SN-113DA	1.266E+01		9.916E+00	4.241E+01	8.485E-01	0.298

---- Non-Identified Nuclides ----

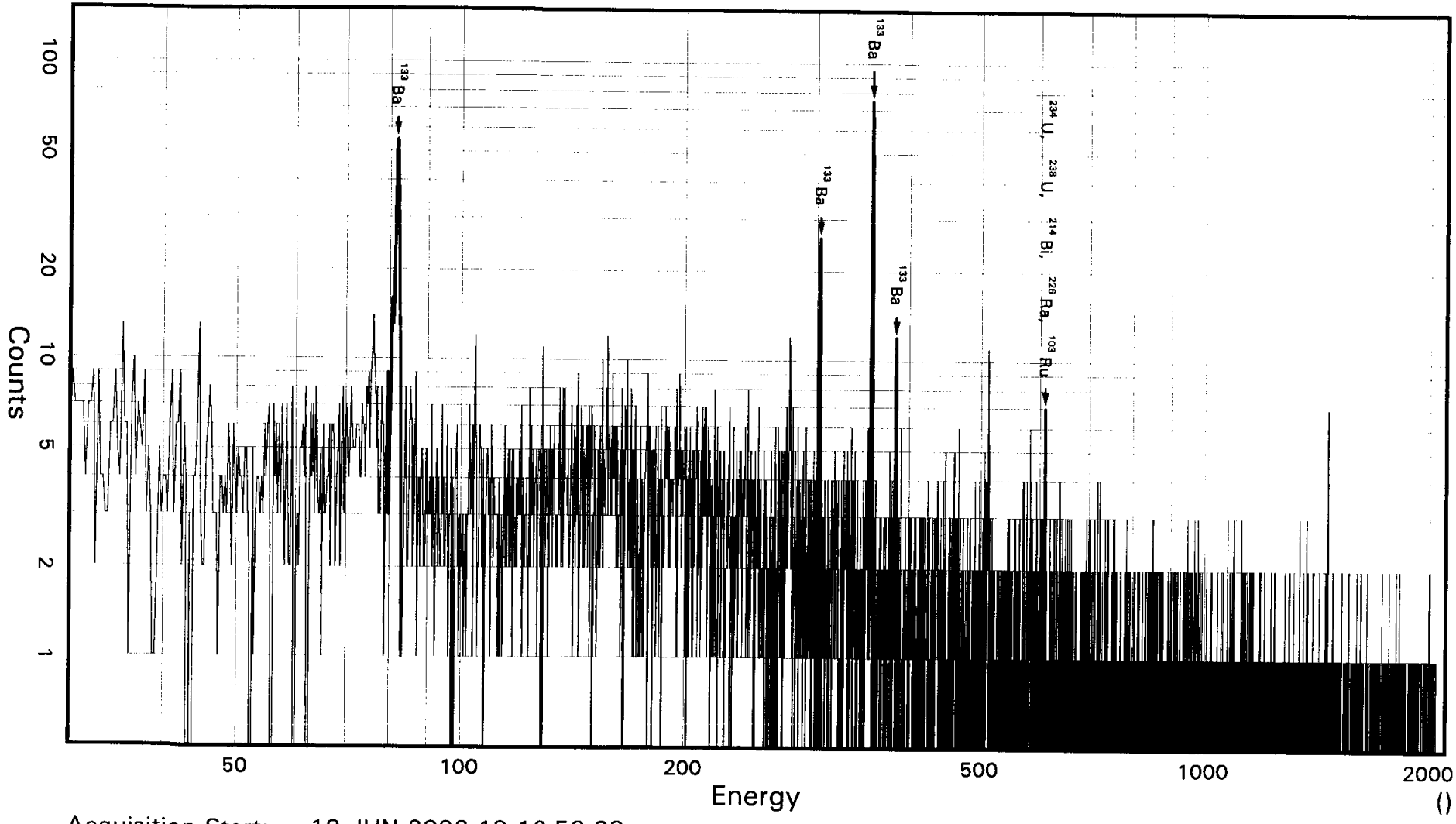
Nuclide	Key-Line Activity (DPM/SAMPL)	K.L. Ided	Act error	MDA (DPM/SAMPL)	MDA error	Act/MDA
SB-124	6.129E+00		7.224E+00	2.931E+01	5.917E-01	0.209
SB-125	6.040E+00		2.098E+01	8.340E+01	1.670E+00	0.072
SN-126DA	3.269E-01		4.438E+00	1.843E+01	3.736E-01	0.018
I-131	4.919E+00		1.454E+01	5.711E+01	1.142E+00	0.086
CS-134	-3.075E+00		4.903E+00	1.864E+01	3.810E-01	-0.165
CS-137DA	-2.410E+00		6.365E+00	2.436E+01	4.936E-01	-0.099
LA-138	8.322E-02		2.863E+00	1.519E+01	3.245E-01	0.005
CE-139	-1.935E+01		1.307E+01	4.395E+01	8.966E-01	-0.440
BA-140	-8.506E+00		3.172E+01	1.200E+02	2.415E+00	-0.071
BALA-140	-7.946E+00		8.035E+00	2.978E+01	6.429E-01	-0.267
LA-140	-1.158E+01		3.242E+01	1.443E+02	3.116E+00	-0.080
CE-141	2.420E+01		2.413E+01	9.177E+01	1.886E+00	0.264
CE-144	-1.345E+02		8.979E+01	2.911E+02	6.015E+00	-0.462
CEPR-144	-2.679E+02		1.797E+02	5.828E+02	1.204E+01	-0.460
PM-144	8.534E+00		5.528E+00	2.472E+01	4.995E-01	0.345
PM-146	2.203E+00		7.652E+00	3.155E+01	6.322E-01	0.070
EU-152	4.231E+00		2.718E+01	1.027E+02	2.053E+00	0.041
EU-154	-1.736E-01		9.489E+00	4.136E+01	8.741E-01	-0.004
EU-155	-6.529E+01		4.900E+01	1.626E+02	3.420E+00	-0.402
HF-181	1.386E+01		7.354E+00	3.361E+01	6.743E-01	0.412
BI-207	3.820E-01		4.361E+00	1.802E+01	3.632E-01	0.021
TL-208	2.034E+00		6.957E+00	2.760E+01	5.566E-01	0.074
BI-210M	-2.226E+00		1.543E+01	5.701E+01	1.143E+00	-0.039
BI-212	-4.553E+01		7.243E+01	2.721E+02	8.314E+00	-0.167
PB-212	4.342E+00		2.032E+01	7.583E+01	1.525E+00	0.057
BI-214	6.728E+00		1.242E+01	5.050E+01	1.020E+00	0.133
PB-214	2.650E+01		2.606E+01	8.927E+01	1.785E+00	0.297
RA-223	1.192E+01		5.850E+01	2.208E+02	4.427E+00	0.054
RA-224DA	4.368E+00		2.044E+01	7.629E+01	1.534E+00	0.057
RA-226DA	6.842E+00		1.244E+01	5.058E+01	1.022E+00	0.135
AC-227DA	-9.709E+01		7.830E+01	2.642E+02	5.314E+00	-0.368
AC-228	-1.002E+01		1.387E+01	5.196E+01	1.071E+00	-0.193
RA-228DA	-1.004E+01		1.390E+01	5.207E+01	1.073E+00	-0.193
TH-228DA	5.697E+00		1.948E+01	7.729E+01	1.559E+00	0.074
TH-232DA	-4.316E+01		6.309E+01	2.204E+02	4.408E+00	-0.196
TH-234DA	2.541E+02		6.076E+02	2.708E+03	5.617E+01	0.094
U-234DA	-2.691E+01		3.639E+01	1.283E+02	2.570E+00	-0.210
U-235HP	-4.626E+01		1.040E+02	3.617E+02	7.438E+00	-0.128
NP-237DA	1.634E+01		2.219E+01	8.630E+01	1.727E+00	0.189
U-238DA	2.650E+01		2.606E+01	8.927E+01	1.785E+00	0.297
U-238DHP	4.975E+01		3.037E+02	1.120E+03	2.478E+01	0.044
AM-241HP	2.242E+01		3.147E+01	1.198E+02	2.671E+00	0.187

STL Richland WA.

BA133

Sample ID: H67QT1AC
Detector ID: GER13 1

Batch ID: 6163137



Acquisition Start: 19-JUN-2006 13:16:53.83
Preset Live Time: 0 00:30:00.00
Elapsed Live Time: 0 00:30:00.00

Energy Coefficients:
Offset: -6.10701E-01
Slope: 2.50772E-01
Quadrature: -1.04651E-07

SAMPLE IDENTIFICATION: H67QT1AC

CONFIGURATION ID: GER13:H67QT1AC_190661316
TITLE : BA133
SAMPLE ID : H67QT1AC

REPORT DATE: 19-JUN-06
ACQUIRE DATE: 19-JUN-06 13:16:53
ELAPSED LIVE TIME: 1800.0 Sec
PRESET LIVE TIME: 0 00:30:00

SAMPLE DATE: 9-JUN-2006 12:00:00.00
CALIB DATE: 19-JUN-2006 05:44:45.22
ELAPSED LIVE TIME: 0 00:30:00
ELAPSED REAL TIME: 0 00:30:00

SAMPLE QUANTITY: 1.0000E+00
SAMPLE GEOMETRY: BA133T15

UNITS: SAMPL
SAMPLE TYPE:

ENERGY OFFSET: -.6107E+00 keV
ENERGY SLOPE: 2.5077E-01 keV/C
ENERGY Q COEFF: -.1047E-06 keV/C^^2
PEAK SENSITIVITY: 5.000

FWHM OFFSET: 4.1661E-01 keV
FWHM SLOPE: 4.3284E-02 sqr keV
ITERATIONS: 10
GAUSSIAN SENSITIVITY: 10.00 %

ABUNDANCE LIMIT: 80.00 %
ENERGY TOLERANCE: 1.500 keV
VARIABLE PEAK WIDTH: 3.00

HALF-LIFE RATIO: 8.00
ACTIVITY MULTIPLIER: 2.2200E+06
LIBRARY: [NUC_LIBR]QRL.NLB

VMS Peak Search Report V1.9 Generated 19-JUN-2006 13:47:18

Configuration : $DISK1:[GER13.SAMPLE]H67QT1AC_190661316.CNF;1
Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6
Sample title : BA133
Sample date : 9-JUN-2006 12:00:00 Acquisition date : 19-JUN-2006 13:16:53
Sample ID : H67QT1AC Sample quantity : 1.0000 SAMPL
Sample type : Sample geometry : BA133T15
Elapsed live time: 0 00:30:00.00 Elapsed real time: 0 00:30:00.39 0.0%
Start energy : 19.45 End energy : 2046.69
Sensitivity : 5.00 Gaussian : 10.00
Critical level : No

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	81.73	232	51	0.86	328.38	319	16	1.29E-01	9.4	
2	0	303.01	104	35	1.33	1211.35	1200	16	5.75E-02	15.8	
3	0	355.85	356	36	1.13	1422.30	1411	20	1.98E-01	6.7	
4	0	383.55	42	13	0.94	1532.88	1526	13	2.33E-02	23.5	
5	0	609.08*	14	4	0.91	2433.74	2424	16	7.69E-03	50.8	

Flag: "*" = Peak area was modified by background subtraction

VMS Nuclide Identification Report V3.0 Generated 19-JUN-2006 13:47:18

Configuration	: $DISK1:[GER13.SAMPLE]H67QT1AC_190661316.CNF;1		
Analyses by	: PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.3		
Sample title	: BA133		
Sample date	: 9-JUN-2006 12:00:00	Acquisition date	: 19-JUN-2006 13:16:53
Sample ID	: H67QT1AC	Sample quantity	: 1.0000 SAMPL
Sample type	:	Sample geometry	: BA133T15
Elapsed live time	: 0 00:30:00.00	Elapsed real time	: 0 00:30:00.39 0.0%
Energy tolerance	: 1.50	Half life ratio	: 8.00
Errors propagated	: Yes	Systematic Error	: 5.00 %
Efficiency type	: Empirical	Efficiencies at	: Peak Energy
Abundance limit	: 80.00		

Nuclide Line Activity Report

Nuclide Type: FP

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected DPM/SAMPL	Decay Corr DPM/SAMPL	1-Sigma %Error
BA-133	81.00	232	33.00	2.704E+00	8.683E+02	8.699E+02	10.84
	276.40	------	6.90	2.897E+00	------	Line Not Found	------
	302.84	104	17.80	2.900E+00	6.686E+02	6.698E+02	16.67
	356.00	356	62.05*	2.903E+00	6.581E+02	6.593E+02	8.59
	383.85	42	8.70	2.902E+00	5.544E+02	5.554E+02	24.09

Flag: "*" = Keyline

Unidentified Energy Lines
Page : 2
Sample ID : H67QT1AC
Acquisition date : 19-JUN-2006 13:16:53

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
0	609.08	14	4	0.91	2433.74	2424	16	7.69E-03	50.8	2.88E+00	T

Flags: "T" = Tentatively associated

Rejected Report
Sample ID : H67QT1AC

Acquisition date : 19-JUN-2006 13:16:53

Nuclide	Half-life	Half-Life Ratio	Energy	%Abund	Activity (DPM/SAMPL)	1-Sigma %Error	Rejected by
RU-103	39.35D	0.26	497.08*	89.00	--- Not Found ---		Abun.
			610.33	5.60	3.422E+02	51.11	
		% Abundances Found =		5.92			
BI-214	4.47E+09Y	0.00	609.31*	46.30	3.466E+01	51.11	Abun.
			768.36	5.04	--- Not Found ---		
			1120.29	15.10	--- Not Found ---		
			1764.49	15.80	--- Not Found ---		
		% Abundances Found =		56.30			
RA-226DA	1600.00Y	0.00	186.21	3.50	--- Not Found ---		Abun.
			241.98	7.49	--- Not Found ---		
			295.22	19.20	--- Not Found ---		
			351.92	37.20	--- Not Found ---		
			609.32*	46.30	3.466E+01	51.11	
			1120.28	15.10	--- Not Found ---		
			1238.11	5.94	--- Not Found ---		
			1764.49	15.80	--- Not Found ---		
		% Abundances Found =		30.76			
U-234DA	4.47E+09Y	0.00	241.98	7.49	--- Not Found ---		Abun.
			295.22*	19.20	--- Not Found ---		
			351.92	37.20	--- Not Found ---		
			609.31	46.30	3.466E+01	51.11	
		% Abundances Found =		42.02			
U-238DA	4.47E+09Y	0.00	241.98	7.49	--- Not Found ---		Abun.
			295.22	19.20	--- Not Found ---		
			351.92*	37.20	--- Not Found ---		
			609.31	46.30	3.466E+01	51.11	
		% Abundances Found =		42.02			

Flag: "*" = Keyline

VMS Nuclide Identification Report V3.0 Generated 19-JUN-2006 13:47:20

Configuration : $DISK1:[GER13.SAMPLE]H67QT1AC_190661316.CNF;1
Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.3,WTMEAN/KEY V1.8
Analyses by : MINACT V2.8
Sample title : BA133
Sample date : 9-JUN-2006 12:00:00
Sample ID : H67QT1AC
Sample type :
Elapsed live time: 0 00:30:00.00
Peak Width (FWHM): 3.00
Energy tolerance : 1.50
Errors propagated: Yes
Efficiency type : Empirical
Abundance limit : 80.00

Acquisition date : 19-JUN-2006 13:16:53
Sample quantity : 1.0000 SAMPL
Sample geometry : BA133T15
Elapsed real time: 0 00:30:00.39 0.0%
Confidence level : 5.00 %
Half life ratio : 8.00
Systematic Error : 5.00 %
Efficiencies at : Peak Energy
WTM error limit : 3.00

Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Activity (DPM/SAMPL)	Act error	MDA (DPM/SAMPL)	MDA error	Act/MDA
BA-133	6.593E+02	5.665E+01	6.098E+01	1.220E+00	10.812

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (DPM/SAMPL)	K.L. Ided	Act error	MDA (DPM/SAMPL)	MDA error	Act/MDA
BE-7	-6.389E+01		6.893E+01	2.389E+02	4.792E+00	-0.267
NA-22	-2.295E+00		4.171E+00	1.595E+01	3.365E-01	-0.144
K-40	-5.666E+01		1.021E+02	4.677E+02	9.987E+00	-0.121
SC-46	-3.860E+00		6.694E+00	2.563E+01	5.353E-01	-0.151
CR-51	1.329E+02		1.128E+02	4.376E+02	8.755E+00	0.304
MN-54	2.435E+00		5.374E+00	2.180E+01	4.465E-01	0.112
CO-57	1.792E+01		1.064E+02	3.911E+02	8.061E+00	0.046
CO-58	-4.663E+00		6.371E+00	2.291E+01	4.685E-01	-0.204
FE-59	-1.500E+01		7.919E+00	2.299E+01	4.793E-01	-0.653
CO-60	-1.185E+00		4.037E+00	1.599E+01	3.385E-01	-0.074
ZN-65	-1.360E+01		1.113E+01	3.765E+01	7.860E-01	-0.361
SE-75	-2.088E+01		1.497E+01	5.037E+01	1.010E+00	-0.415
SR-85	-3.791E+01		1.142E+01	3.166E+01	6.360E-01	-1.197
Y-88	-1.268E+00		2.289E+00	9.908E+00	2.165E-01	-0.128
NB-94	7.035E+00		5.318E+00	2.300E+01	4.722E-01	0.306
NB-95	-1.081E+01		5.950E+00	1.875E+01	3.822E-01	-0.577
TC-95M	1.044E+01		1.744E+01	6.411E+01	1.295E+00	0.163
ZR-95	-5.465E-01		1.116E+01	4.326E+01	8.815E-01	-0.013
ZRNB-95	-1.478E+01		1.023E+01	3.416E+01	6.964E-01	-0.433
MO-99	-2.168E+02		1.521E+02	5.146E+02	1.059E+01	-0.421
RH-101	8.000E+00		1.634E+01	5.904E+01	1.194E+00	0.136
RH-102M	2.912E-02		6.302E+00	2.394E+01	4.802E-01	0.001
RU-103	1.532E+00		8.813E+00	3.337E+01	6.698E-01	0.046
RU-106DA	-5.053E+01		5.612E+01	1.984E+02	4.009E+00	-0.255
AG-108M	-1.537E+01		8.961E+00	2.907E+01	5.821E-01	-0.529
AG-110M	-4.531E+00		4.608E+00	1.652E+01	3.395E-01	-0.274
SN-113DA	-1.603E+00		1.133E+01	4.237E+01	8.477E-01	-0.038

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (DPM/SAMPL)	K.L. Ided	Act error	MDA (DPM/SAMPL)	MDA error	Act/MDA
SB-124	3.988E+00		8.575E+00	3.172E+01	6.401E-01	0.126
SB-125	-1.533E+01		2.462E+01	8.786E+01	1.759E+00	-0.175
SN-126DA	3.650E+00		5.912E+00	2.364E+01	4.790E-01	0.154
I-131	-9.469E+00		2.098E+01	7.436E+01	1.487E+00	-0.127
CS-134	4.385E+00		5.995E+00	2.513E+01	5.133E-01	0.175
CS-137DA	-5.172E+00		6.832E+00	2.425E+01	4.912E-01	-0.213
LA-138	-1.387E-01		4.552E+00	1.974E+01	4.208E-01	-0.007
CE-139	2.070E+01		1.443E+01	5.523E+01	1.126E+00	0.375
BA-140	-1.485E+01		4.276E+01	1.551E+02	3.120E+00	-0.096
BALA-140	9.161E+00		1.407E+01	6.296E+01	1.356E+00	0.145
LA-140	3.426E+02		2.638E+02	1.254E+03	2.700E+01	0.273
CE-141	-3.005E+01		2.834E+01	9.757E+01	2.004E+00	-0.308
CE-144	-4.522E+01		1.055E+02	3.605E+02	7.441E+00	-0.125
CEPR-144	-8.954E+01		2.110E+02	7.213E+02	1.489E+01	-0.124
PM-144	3.452E+00		5.428E+00	2.230E+01	4.505E-01	0.155
PM-146	1.647E+01		1.087E+01	4.460E+01	8.937E-01	0.369
EU-152	-5.015E+00		2.864E+01	1.036E+02	2.072E+00	-0.048
EU-154	-7.662E+00		1.150E+01	4.336E+01	9.148E-01	-0.177
EU-155	7.719E+01		5.316E+01	2.025E+02	4.253E+00	0.381
HF-181	6.125E+00		9.077E+00	3.589E+01	7.200E-01	0.171
BI-207	9.562E+00		6.590E+00	2.760E+01	5.561E-01	0.346
TL-208	-5.707E+00		1.002E+01	3.742E+01	7.545E-01	-0.152
BI-210M	-1.037E+01		1.719E+01	6.103E+01	1.224E+00	-0.170
BI-212	-1.736E+01		8.865E+01	3.297E+02	1.007E+01	-0.053
PB-212	-3.638E+01		2.532E+01	8.530E+01	1.715E+00	-0.426
BI-214	3.466E+01	+	1.772E+01	7.140E+01	1.442E+00	0.485
PB-214	2.084E+01		2.951E+01	1.012E+02	2.025E+00	0.206
RA-223	4.422E+01		6.872E+01	2.594E+02	5.201E+00	0.170
RA-224DA	-3.674E+01		2.558E+01	8.616E+01	1.732E+00	-0.426
RA-226DA	3.466E+01	+	1.772E+01	7.148E+01	1.443E+00	0.485
AC-227DA	4.332E+01		8.884E+01	3.225E+02	6.486E+00	0.134
AC-228	-1.660E+01		2.133E+01	8.578E+01	1.766E+00	-0.193
RA-228DA	-1.665E+01		2.140E+01	8.606E+01	1.772E+00	-0.193
TH-228DA	-1.604E+01		2.817E+01	1.052E+02	2.121E+00	-0.152
TH-232DA	-3.580E+00		7.010E+01	2.565E+02	5.131E+00	-0.014
TH-234DA	-6.333E+02		6.798E+02	2.449E+03	5.074E+01	-0.259
U-234DA	-5.351E+01		4.825E+01	1.658E+02	3.320E+00	-0.323
U-235HP	5.079E+00		1.059E+02	3.853E+02	7.917E+00	0.013
NP-237DA	-1.953E+01		2.228E+01	7.684E+01	1.538E+00	-0.254
U-238DA	2.084E+01		2.951E+01	1.012E+02	2.025E+00	0.206
U-238DHP	-1.021E+02		2.924E+02	1.056E+03	2.328E+01	-0.097
AM-241HP	-5.304E+01		3.004E+01	9.299E+01	2.066E+00	-0.570