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Analytical Data Package Prepared For

Brown and Caldwell

Yerington Air Quality - Event #75

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.: 32441

SDG No.	Order No.	Client Sample ID (List Order)	Lot-Sa No.	Work Order	Report DB ID	Batch No.
31580		000431	J6E080157-8	H4X1R1AG	9H4X1R10	6129273
		000431	J6E080157-8	H4X1R1AA	9H4X1R10	6129276
		000431	J6E080157-8	H4X1R1AE	9H4X1R10	6129281
		000431	J6E080157-8	H4X1R1AF	9H4X1R10	6129282
		000431	J6E080157-8	H4X1R1AC	9H4X1R10	6129284
		000431	J6E080157-8	H4X1R1AD	9H4X1R10	6129286
		000432	J6E080157-9	H4X1T1AG	9H4X1T10	6129273
		000432	J6E080157-9	H4X1T1AA	9H4X1T10	6129276
		000432	J6E080157-9	H4X1T1AE	9H4X1T10	6129281
		000432	J6E080157-9	H4X1T1AF	9H4X1T10	6129282
		000432	J6E080157-9	H4X1T1AC	9H4X1T10	6129284
		000432	J6E080157-9	H4X1T1AD	9H4X1T10	6129286
		000433	J6E080157-10	H4X1V1AG	9H4X1V10	6129273
		000433	J6E080157-10	H4X1V1AA	9H4X1V10	6129276
		000433	J6E080157-10	H4X1V1AE	9H4X1V10	6129281
		000433	J6E080157-10	H4X1V1AF	9H4X1V10	6129282
		000433	J6E080157-10	H4X1V1AC	9H4X1V10	6129284
		000433	J6E080157-10	H4X1V1AD	9H4X1V10	6129286
		000434	J6E080157-11	H4X1W1AG	9H4X1W10	6129273
		000434	J6E080157-11	H4X1W1AA	9H4X1W10	6129276
		000434	J6E080157-11	H4X1W1AE	9H4X1W10	6129281
		000434	J6E080157-11	H4X1W1AF	9H4X1W10	6129282
		000434	J6E080157-11	H4X1W1AC	9H4X1W10	6129284
		000434	J6E080157-11	H4X1W1AD	9H4X1W10	6129286
		000435	J6E080157-12	H4X1X1AG	9H4X1X10	6129273
		000435	J6E080157-12	H4X1X1AA	9H4X1X10	6129276

Report No.: 32441

SDG No.	Order No.	Client Sample ID (List Order)	Lot-Sa No.	Work Order	Report DB ID	Batch No.
31580		000435	J6E080157-12	H4X1X1AE	9H4X1X10	6129281
		000435	J6E080157-12	H4X1X1AF	9H4X1X10	6129282
		000435	J6E080157-12	H4X1X1AC	9H4X1X10	6129284
		000435	J6E080157-12	H4X1X1AD	9H4X1X10	6129286
		P-0598	J6E080157-1	H4XP81AG	9H4XP810	6129273
		P-0598	J6E080157-1	H4XP81AA	9H4XP810	6129276
		P-0598	J6E080157-1	H4XP81AE	9H4XP810	6129281
		P-0598	J6E080157-1	H4XP81AF	9H4XP810	6129282
		P-0598	J6E080157-1	H4XP81AC	9H4XP810	6129284
		P-0598	J6E080157-1	H4XP81AD	9H4XP810	6129286
		P-0599	J6E080157-2	H4XQH1AG	9H4XQH10	6129273
		P-0599	J6E080157-2	H4XQH1AA	9H4XQH10	6129276
		P-0599	J6E080157-2	H4XQH1AE	9H4XQH10	6129281
		P-0599	J6E080157-2	H4XQH1AF	9H4XQH10	6129282
		P-0599	J6E080157-2	H4XQH1AC	9H4XQH10	6129284
		P-0599	J6E080157-2	H4XQH1AD	9H4XQH10	6129286
		P-0600	J6E080157-3	H4XQM1AG	9H4XQM10	6129273
		P-0600	J6E080157-3	H4XQM1AA	9H4XQM10	6129276
		P-0600	J6E080157-3	H4XQM1AE	9H4XQM10	6129281
		P-0600	J6E080157-3	H4XQM1AF	9H4XQM10	6129282
		P-0600	J6E080157-3	H4XQM1AC	9H4XQM10	6129284
		P-0600	J6E080157-3	H4XQM1AD	9H4XQM10	6129286
		P-0601	J6E080157-4	H4XQN1AG	9H4XQN10	6129273
		P-0601	J6E080157-4	H4XQN1AA	9H4XQN10	6129276
		P-0601	J6E080157-4	H4XQN1AE	9H4XQN10	6129281
		P-0601	J6E080157-4	H4XQN1AF	9H4XQN10	6129282
		P-0601	J6E080157-4	H4XQN1AC	9H4XQN10	6129284
		P-0601	J6E080157-4	H4XQN1AD	9H4XQN10	6129286
		P-0602	J6E080157-5	H4XQQ1AG	9H4XQQ10	6129273
		P-0602	J6E080157-5	H4XQQ1AA	9H4XQQ10	6129276
		P-0602	J6E080157-5	H4XQQ1AE	9H4XQQ10	6129281
		P-0602	J6E080157-5	H4XQQ1AF	9H4XQQ10	6129282
		P-0602	J6E080157-5	H4XQQ1AC	9H4XQQ10	6129284
		P-0602	J6E080157-5	H4XQQ1AD	9H4XQQ10	6129286
		P-0603	J6E080157-6	H4XQR1AG	9H4XQR10	6129273
		P-0603	J6E080157-6	H4XQR1AA	9H4XQR10	6129276
		P-0603	J6E080157-6	H4XQR1AE	9H4XQR10	6129281
		P-0603	J6E080157-6	H4XQR1AF	9H4XQR10	6129282
		P-0603	J6E080157-6	H4XQR1AC	9H4XQR10	6129284

Report No.: 32441

SDG No.	Order No.	Client Sample ID (List Order)	Lot-Sa No.	Work Order	Report DB ID	Batch No.
31580		P-0603	J6E080157-6	H4XQR1AD	9H4XQR10	6129286
		P-0605	J6E080157-7	H4XQT1AG	9H4XQT10	6129273
		P-0605	J6E080157-7	H4XQT1AA	9H4XQT10	6129276
		P-0605	J6E080157-7	H4XQT1AE	9H4XQT10	6129281
		P-0605	J6E080157-7	H4XQT1AF	9H4XQT10	6129282
		P-0605	J6E080157-7	H4XQT1AC	9H4XQT10	6129284
		P-0605	J6E080157-7	H4XQT1AD	9H4XQT10	6129286

SEVERN TRENT STL

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Certificate of Analysis

June 22, 2006

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

Attention: Guy Graening

Date Received at Lab	:	May 8, 2006
Project Name	:	Air Quality Monitoring Yerington Mine
Project Number	:	121243
Event Number	:	75
PO Number	:	129682.001
Sample Type	:	Twelve (12) Filters
SDG Number	:	31580

CASE NARRATIVE

I. Introduction

On May 8, 2006, twelve 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 J6E080157.

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 P-0599, P-0602, P-0605, 000433 and 000431. 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:
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: 22-Jun-06

Report No. : 32441

SDG No: 31580

Client ID	Work Order Number	Parameter	Result +- Uncertainty (2s)	Qual	Units	Yield	MDC|MDA	RER2
000431	H4X1R1AG	U-234	0.0440 +- 0.233	ND	pCi/sample	87%	0.694	
		U-235	0.0660 +- 0.229	ND	pCi/sample	87%	0.621	
		U-238	-0.0000257 +- 0.241	ND	pCi/sample	87%	0.809	
000431	H4X1R1AA	TH-228	0.131 +- 0.141	ND	pCi/sample	100%	0.165	
		TH-230	0.0194 +- 0.0674	ND	pCi/sample	100%	0.183	
		TH-232	-0.00648 +- 0.0130	ND	pCi/sample	100%	0.155	
000431	H4X1R1AE	ALPHA	3.15 +- 3.34	ND	pCi/sample	100%	5.57	
000431	H4X1R1AF	BETA	5.82 +- 3.46	ND	pCi/sample	100%	6.52	
000431	H4X1R1AC	RA-226	0.0635 +- 0.299	ND	pCi/sample	86%	0.581	
000431	H4X1R1AD	RA-228	3.97 +- 1.31	=	pCi/sample	79%	1.91	
000432	H4X1T1AG	U-234	0.103 +- 0.379	ND	pCi/sample	90%	0.954	
		U-235	-0.0206 +- 0.0413	ND	pCi/sample	90%	0.492	
		U-238	0.123 +- 0.303	ND	pCi/sample	90%	0.706	
000432	H4X1T1AA	TH-228	-0.0324 +- 0.0329	ND	pCi/sample	78%	0.278	
		TH-230	0.243 +- 0.207	=	pCi/sample	78%	0.24	
		TH-232	0.00000 +- 0.0930	ND	pCi/sample	78%	0.103	
000432	H4X1T1AE	ALPHA	0.985 +- 3.33	ND	pCi/sample	100%	7.82	
000432	H4X1T1AF	BETA	8.25 +- 3.59	=	pCi/sample	100%	6.14	
000432	H4X1T1AC	RA-226	0.0431 +- 0.136	ND	pCi/sample	90%	0.282	
000432	H4X1T1AD	RA-228	3.18 +- 1.14	=	pCi/sample	80%	1.75	
000433	H4X1V1AG	U-234	0.099 +- 0.199	ND	pCi/sample	99%	0.268	
		U-235	-0.0396 +- 0.0564	ND	pCi/sample	99%	0.56	
		U-238	0.0792 +- 0.202	ND	pCi/sample	99%	0.474	
000433	H4X1V1AA	TH-228	0.140 +- 0.200	ND	pCi/sample	101%	0.344	
		TH-230	0.175 +- 0.178	ND	pCi/sample	101%	0.119	
		TH-232	0.0438 +- 0.0879	ND	pCi/sample	101%	0.119	
000433	H4X1V1AE	ALPHA	2.41 +- 3.05	ND	pCi/sample	100%	5.59	
000433	H4X1V1AF	BETA	6.50 +- 3.70	ND	pCi/sample	100%	6.91	
000433	H4X1V1AC	RA-226	0.0208 +- 0.313	ND	pCi/sample	94%	0.614	
000433	H4X1V1AD	RA-228	1.96 +- 0.930	=	pCi/sample	83%	1.64	

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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: 22-Jun-06

Report No. : 32441

SDG No: 31580

Client ID	Work Order Number	Parameter	Result +- Uncertainty (2s)	Qual	Units	Yield	MDC|MDA	RER2
000434	H4X1W1AG	U-234	0.398 +- 0.403	ND	pCi/sample	102%	0.27	
		U-235	0.00000 +- 0.244	ND	pCi/sample	102%	0.27	
		U-238	0.0995 +- 0.200	ND	pCi/sample	102%	0.27	
000434	H4X1W1AA	TH-228	0.310 +- 0.369	ND	pCi/sample	62%	0.571	
		TH-230	0.509 +- 0.397	=	pCi/sample	62%	0.197	
		TH-232	0.00000 +- 0.178	ND	pCi/sample	62%	0.197	
000434	H4X1W1AE	ALPHA	3.56 +- 3.51	ND	pCi/sample	100%	5.68	
000434	H4X1W1AF	BETA	10.0 +- 3.77	=	pCi/sample	100%	6.1	
000434	H4X1W1AC	RA-226	0.675 +- 0.461	=	pCi/sample	86%	0.656	
000434	H4X1W1AD	RA-228	2.45 +- 1.02	=	pCi/sample	76%	1.7	
000435	H4X1X1AG	U-234	0.130 +- 0.271	ND	pCi/sample	100%	0.585	
		U-235	-0.0185 +- 0.0372	ND	pCi/sample	100%	0.444	
		U-238	0.00000 +- 0.227	ND	pCi/sample	100%	0.251	
000435	H4X1X1AA	TH-228	0.0230 +- 0.153	ND	pCi/sample	87%	0.387	
		TH-230	0.345 +- 0.252	=	pCi/sample	87%	0.117	
		TH-232	0.0216 +- 0.0965	ND	pCi/sample	87%	0.259	
000435	H4X1X1AE	ALPHA	0.00000 +- 3.04	ND	pCi/sample	100%	7.87	
000435	H4X1X1AF	BETA	9.20 +- 3.84	=	pCi/sample	100%	6.15	
000435	H4X1X1AC	RA-226	-0.2250 +- 0.328	ND	pCi/sample	83%	0.738	
000435	H4X1X1AD	RA-228	5.49 +- 1.47	=	pCi/sample	74%	1.82	
P-0598	H4XP81AG	U-234	-0.0424 +- 0.0386	ND	pCi/sample	98%	0.599	
		U-235	-0.0170 +- 0.0242	ND	pCi/sample	98%	0.485	
		U-238	0.0721 +- 0.215	ND	pCi/sample	98%	0.566	
P-0598	H4XP81AA	TH-228	0.244 +- 0.252	ND	pCi/sample	86%	0.325	
		TH-230	0.254 +- 0.232	=	pCi/sample	86%	0.138	
		TH-232	0.0254 +- 0.114	ND	pCi/sample	86%	0.304	
P-0598	H4XP81AE	ALPHA	-2.2300 +- 2.05	ND	pCi/sample	100%	7.86	
P-0598	H4XP81AF	BETA	7.93 +- 3.63	=	pCi/sample	100%	6.32	
P-0598	H4XP81AC	RA-226	-0.0938 +- 0.187	ND	pCi/sample	97%	0.461	
P-0598	H4XP81AD	RA-228	2.00 +- 1.19	ND	pCi/sample	88%	2.41	

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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: 22-Jun-06

Report No. : 32441

SDG No: 31580

Client ID	Work Order Number	Parameter	Result +- Uncertainty (2s)	Qual	Units	Yield	MDC|MDA	RER2
P-0599	H4XQH1AG	U-234	0.0869 +- 0.231	ND	pCi/sample	91%	0.57	
		U-235	-0.0183 +- 0.0260	ND	pCi/sample	91%	0.522	
		U-238	0.114 +- 0.229	ND	pCi/sample	91%	0.31	
P-0599	H4XQH1AA	TH-228	-0.0396 +- 0.0565	ND	pCi/sample	100%	0.292	
		TH-230	0.223 +- 0.207	ND	pCi/sample	100%	0.273	
		TH-232	0.0372 +- 0.0746	ND	pCi/sample	100%	0.101	
P-0599	H4XQH1AE	ALPHA	-0.5240 +- 2.04	ND	pCi/sample	100%	6.29	
P-0599	H4XQH1AF	BETA	5.97 +- 3.41	ND	pCi/sample	100%	6.33	
P-0599	H4XQH1AC	RA-226	-0.1310 +- 0.210	ND	pCi/sample	78%	0.524	
P-0599	H4XQH1AD	RA-228	2.29 +- 1.40	ND	pCi/sample	70%	2.84	
P-0600	H4XQM1AG	U-234	-0.0616 +- 0.0561	ND	pCi/sample	91%	0.871	
		U-235	-0.0123 +- 0.0247	ND	pCi/sample	91%	0.62	
		U-238	0.00000 +- 0.377	ND	pCi/sample	91%	0.418	
P-0600	H4XQM1AA	TH-228	0.00000066 +- 0.0973	ND	pCi/sample	103%	0.292	
		TH-230	0.0186 +- 0.0833	ND	pCi/sample	103%	0.223	
		TH-232	0.0558 +- 0.112	ND	pCi/sample	103%	0.223	
P-0600	H4XQM1AE	ALPHA	0.338 +- 2.10	ND	pCi/sample	100%	5.58	
P-0600	H4XQM1AF	BETA	7.93 +- 3.58	=	pCi/sample	100%	6.21	
P-0600	H4XQM1AC	RA-226	0.159 +- 0.295	ND	pCi/sample	89%	0.531	
P-0600	H4XQM1AD	RA-228	2.84 +- 1.27	=	pCi/sample	80%	2.34	
P-0601	H4XQN1AG	U-234	-0.0483 +- 0.0688	ND	pCi/sample	88%	0.683	
		U-235	0.00000 +- 0.296	ND	pCi/sample	88%	0.327	
		U-238	0.242 +- 0.344	ND	pCi/sample	88%	0.327	
P-0601	H4XQN1AA	TH-228	0.0879 +- 0.125	ND	pCi/sample	101%	0.119	
		TH-230	0.0412 +- 0.0827	ND	pCi/sample	101%	0.112	
		TH-232	-0.0206 +- 0.0414	ND	pCi/sample	101%	0.247	
P-0601	H4XQN1AE	ALPHA	5.62 +- 4.47	ND	pCi/sample	100%	6.85	
P-0601	H4XQN1AF	BETA	7.01 +- 3.63	=	pCi/sample	100%	6.51	
P-0601	H4XQN1AC	RA-226	0.135 +- 0.172	ND	pCi/sample	92%	0.271	
P-0601	H4XQN1AD	RA-228	3.52 +- 1.23	=	pCi/sample	82%	2.05	

STL Richland

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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: 22-Jun-06

Report No. : 32441

SDG No: 31580

Client ID	Work Order Number	Parameter	Result +- Uncertainty (2s)	Qual	Units	Yield	MDC|MDA	RER2
P-0602	H4XQQ1AG	U-234	0.0591 +- 0.205	ND	pCi/sample	106%	0.557	
		U-235	0.0788 +- 0.201	ND	pCi/sample	106%	0.472	
		U-238	-0.0394 +- 0.0561	ND	pCi/sample	106%	0.557	
P-0602	H4XQQ1AA	TH-228	0.0802 +- 0.161	ND	pCi/sample	46%	0.217	
		TH-230	0.376 +- 0.344	=	pCi/sample	46%	0.204	
		TH-232	0.00000 +- 0.184	ND	pCi/sample	46%	0.204	
P-0602	H4XQQ1AE	ALPHA	-0.6430 +- 2.11	ND	pCi/sample	100%	6.56	
P-0602	H4XQQ1AF	BETA	6.15 +- 3.57	ND	pCi/sample	100%	6.56	
P-0602	H4XQQ1AC	RA-226	0.189 +- 0.287	ND	pCi/sample	84%	0.496	
P-0602	H4XQQ1AD	RA-228	4.49 +- 1.37	=	pCi/sample	77%	2.09	
P-0603	H4XQR1AG	U-234	0.00000 +- 0.277	ND	pCi/sample	89%	0.306	
		U-235	-0.0226 +- 0.0454	ND	pCi/sample	89%	0.541	
		U-238	0.113 +- 0.336	ND	pCi/sample	89%	0.832	
P-0603	H4XQR1AA	TH-228	-0.0996 +- 0.133	ND	pCi/sample	89%	0.454	
		TH-230	0.149 +- 0.152	ND	pCi/sample	89%	0.101	
		TH-232	0.00000 +- 0.0915	ND	pCi/sample	89%	0.101	
P-0603	H4XQR1AE	ALPHA	-2.2400 +- 2.06	ND	pCi/sample	100%	7.91	
P-0603	H4XQR1AF	BETA	7.76 +- 3.65	=	pCi/sample	100%	6.45	
P-0603	H4XQR1AC	RA-226	-0.1030 +- 0.319	ND	pCi/sample	86%	0.715	
P-0603	H4XQR1AD	RA-228	3.64 +- 1.24	=	pCi/sample	76%	1.81	
P-0605	H4XQT1AG	U-234	-0.1000 +- 0.0910	ND	pCi/sample	96%	0.737	
		U-235	0.0400 +- 0.212	ND	pCi/sample	96%	0.632	
		U-238	-0.0201 +- 0.223	ND	pCi/sample	96%	0.781	
P-0605	H4XQT1AA	TH-228	0.274 +- 0.516	ND	pCi/sample	33%	1.01	
		TH-230	0.128 +- 0.258	ND	pCi/sample	33%	0.348	
		TH-232	0.00000 +- 0.314	ND	pCi/sample	33%	0.348	
P-0605	H4XQT1AE	ALPHA	0.00000 +- 2.30	ND	pCi/sample	100%	6.3	
P-0605	H4XQT1AF	BETA	-1.0700 +- 2.73	ND	pCi/sample	100%	6.31	
P-0605	H4XQT1AC	RA-226	0.0417 +- 0.298	ND	pCi/sample	96%	0.581	
P-0605	H4XQT1AD	RA-228	1.62 +- 0.944	ND	pCi/sample	80%	1.82	

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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: 22-Jun-06

Report No. : 32441

SDG No: 31580

Client ID	Work Order Number	Parameter	Result +- Uncertainty (2s)	Qual	Units	Yield	MDC|MDA	RER2

Number of Results: 120

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

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QC Results Summary
STL Richland STLR

Ordered by QC Type, Batch No.

Date: 22-Jun-06

Report No. : 32441

SDG No.: 31580

QC Type	Work Order Number	Parameter	Result +- Uncertainty (2s)	Qual	Units	Yield	Recovery	Bias	MDC|MDA
BLANK QC	H402W1AA	U-234	-0.00145 +- 0.00290	N	pCi/sample	85%			0.0346
		U-235	0.00000 +- 0.0177	N	pCi/sample	85%			0.0196
		U-238	0.00000 +- 0.0177	N	pCi/sample	85%			0.0196
BLANK QC	H40211AA	TH-228	-0.0073 +- 0.00740	N	pCi/sample	88%			0.0339
		TH-230	0.0256 +- 0.0201	=	pCi/sample	88%			0.0205
		TH-232	0.00684 +- 0.00974	N	pCi/sample	88%			0.00926
BLANK QC	H403P1AA	ALPHA	-0.00934 +- 0.0453	N	pCi/sample	100%			0.137
BLANK QC	H40341AA	BETA	-0.00838 +- 0.260	N	pCi/sample	100%			0.581
BLANK QC	H40381AA	RA-226	-0.0128 +- 0.0720	N	pCi/sample	93%			0.155
BLANK QC	H404F1AA	RA-228	1.55 +- 0.361	=	pCi/sample	84%			0.385
LCS	H402W1AC	U-234	1.15 +- 0.262	=	pCi/sample	94%	118%	0.2	0.0177
		U-238	0.942 +- 0.226	=	pCi/sample	94%	93%	-0.1	0.0368
LCS	H40211AC	TH-230	1.98 +- 0.392	=	pCi/sample	87%	108%	0.1	0.0245
LCS	H403P1AC	ALPHA	1.84 +- 0.479	=	pCi/sample	100%	78%	-0.2	0.163
LCS	H40341AC	BETA	3.74 +- 0.697	=	pCi/sample	100%	80%	-0.2	0.573
LCS	H40381AC	RA-226	1.53 +- 0.396	=	pCi/sample	96%	111%	0.1	0.105
LCS	H404F1AC	RA-228	5.14 +- 0.780	=	pCi/sample	87%	100%	0.0	0.418

Number of Results: 17

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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: 22-Jun-06

Lab Name: STL Richland | **SDG:** 31580 | **Collection Date:** 4/20/2006 9:35:00 AM

Lot-Sample No.: J6E080157-8 | **Report No. :** 32441 | **Received Date:** 5/8/2006 7:30:00 AM

Client Sample ID: 000431 | **COC No. :** | **Matrix:** FILTER AIR

Yerington Air Quality - Event #75

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: 6129273	**Work Order:** H4X1R1AG			**Report DB ID:** 9H4X1R10								
U-234	0.0440	ND	0.23	0.23	0.694	pCi/sample	87%	*0.06*	6/20/06 07:05 p	1.0	0.06231	E908.0
						0.198	1.0	*0.38*		Sample	Sample	ALP4
U-235	0.0660	ND	0.23	0.23	0.621	pCi/sample	87%	*0.11*	6/20/06 07:05 p	1.0	0.06231	E908.0
						0.162	1.0	*0.58*		Sample	Sample	ALP4
U-238	-0.0000257	ND	0.24	0.24	0.809	pCi/sample	87%	*0.*	6/20/06 07:05 p	1.0	0.06231	E908.0
						0.256	1.0	*0.*		Sample	Sample	ALP4
								Ratio U-234/238 = -1713.7				
Batch: 6129276	**Work Order:** H4X1R1AA			**Report DB ID:** 9H4X1R10								
TH-228	0.131	ND	0.14	0.14	0.165	pCi/sample	100%	*0.79*	6/18/06 10:09 a	1.0	0.08298	ISOTH
						0.0359	1.0	*(1.9)*		Sample	Sample	ALP117
TH-230	0.0194	ND	0.067	0.067	0.183	pCi/sample	100%	*0.11*	6/18/06 10:09 a	1.0	0.08298	ISOTH
						0.0476	1.0	*0.58*		Sample	Sample	ALP117
TH-232	-0.00648	ND	0.013	0.013	0.155	pCi/sample	100%	*-0.04*	6/18/06 10:09 a	1.0	0.08298	ISOTH
						0.0337	1.0	*-1.*		Sample	Sample	ALP117
Batch: 6129281	**Work Order:** H4X1R1AE			**Report DB ID:** 9H4X1R10								
ALPHA	3.15	ND	3.3	3.3	5.57	pCi/sample	100%	*0.56*	6/9/06 06:54 p	1.0	0.02076	E900.0
						2.03	20.0	*(1.9)*		Sample	Sample	GPC10E
Batch: 6129282	**Work Order:** H4X1R1AF			**Report DB ID:** 9H4X1R10								
BETA	5.82	ND	3.4	3.5	6.52	pCi/sample	100%	*0.89*	6/9/06 12:14 p	1.0	0.08301	E900.0
						3.09	5.0	*(3.4)*		Sample	Sample	GPC31C
Batch: 6129284	**Work Order:** H4X1R1AC			**Report DB ID:** 9H4X1R10								

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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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: 22-Jun-06

Lab Name: STL Richland
Lot-Sample No.: J6E080157-8
Client Sample ID: 000431
Yerington Air Quality - Event #75

SDG: 31580
Report No. : 32441
COC No. :

Collection Date: 4/20/2006 9:35:00 AM
Received Date: 5/8/2006 7:30:00 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	0.0635	ND	0.30	0.30	0.581	pCi/sample	86%	*0.11*	6/17/06 07:40 p	0.833	0.25005	E903.1
						0.244	1.0	*0.42*		Sample	Sample	ASCNMA
Batch: 6129286	**Work Order:** H4X1R1AD			**Report DB ID:** 9H4X1R10								
RA-228	3.97	=	1.2	1.3	1.91	pCi/sample	79%	*(2.1)*	6/21/06 06:28 a	1.0	0.25005	E904.0
						0.825	3.1	*(6.1)*		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: 22-Jun-06

Lab Name: STL Richland | **SDG:** 31580 | **Collection Date:** 4/20/2006 9:50:00 AM

Lot-Sample No.: J6E080157-9 | **Report No. :** 32441 | **Received Date:** 5/8/2006 7:30:00 AM

Client Sample ID: 000432 | **COC No. :** | **Matrix:** FILTER AIR

Yerington Air Quality - Event #75

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: 6129273	**Work Order:** H4X1T1AG			**Report DB ID:** 9H4X1T10								
U-234	0.103	ND	0.38	0.38	0.954	pCi/sample	90%	*0.11*	6/20/06 07:05 p	1.0	0.06242	E908.0
						0.338	1.0	*0.54*		Sample	Sample	ALP5
U-235	-0.0206	ND	0.041	0.041	0.492	pCi/sample	90%	*-0.04*	6/20/06 07:05 p	1.0	0.06242	E908.0
						0.107	1.0	*-1.*		Sample	Sample	ALP5
U-238	0.123	ND	0.30	0.30	0.706	pCi/sample	90%	*0.17*	6/20/06 07:05 p	1.0	0.06242	E908.0
						0.214	1.0	*0.81*		Sample	Sample	ALP5
								Ratio U-234/238 = 0.8				
Batch: 6129276	**Work Order:** H4X1T1AA			**Report DB ID:** 9H4X1T10								
TH-228	-0.0324	ND	0.032	0.033	0.278	pCi/sample	78%	*-0.12*	6/18/06 10:09 a	1.0	0.08388	ISOTH
						0.0843	1.0	*-(2.)*		Sample	Sample	ALP118
TH-230	0.243	=	0.20	0.21	0.24	pCi/sample	78%	*(1.)*	6/18/06 10:09 a	1.0	0.08388	ISOTH
						0.0685	1.0	*(2.3)*		Sample	Sample	ALP118
TH-232	0.00000	ND	0.0000	0.093	0.103	pCi/sample	78%	*0.*	6/18/06 10:09 a	1.0	0.08388	ISOTH
							1.0	*0.*		Sample	Sample	ALP118
Batch: 6129281	**Work Order:** H4X1T1AE			**Report DB ID:** 9H4X1T10								
ALPHA	0.985	ND	3.3	3.3	7.82	pCi/sample	100%	*0.13*	6/10/06 07:04 a	1.0	0.02078	E900.0
						3.17	20.0	*0.59*		Sample	Sample	GPC10A
Batch: 6129282	**Work Order:** H4X1T1AF			**Report DB ID:** 9H4X1T10								
BETA	8.25	=	3.4	3.6	6.14	pCi/sample	100%	*(1.3)*	6/9/06 12:14 p	1.0	0.08391	E900.0
						2.91	5.0	*(4.6)*		Sample	Sample	GPC31D
Batch: 6129284	**Work Order:** H4X1T1AC			**Report DB ID:** 9H4X1T10								

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: 22-Jun-06

Lab Name: STL Richland
SDG: 31580
Collection Date: 4/20/2006 9:50:00 AM
Lot-Sample No.: J6E080157-9
Report No. : 32441
Received Date: 5/8/2006 7:30:00 AM
Client Sample ID: 000432
COC No. :
Matrix: FILTER AIR

Yerington Air Quality - Event #75

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	0.0431	ND	0.14	0.14	0.282	pCi/sample	90%	*0.15*	6/17/06 07:40 p	0.833	0.25066	E903.1
						0.097	1.0	*0.63*		Sample	Sample	ASCQMC
Batch: 6129286	**Work Order:** H4X1T1AD			**Report DB ID:** 9H4X1T10								
RA-228	3.18	=	1.1	1.1	1.75	pCi/sample	80%	*(1.8)*	6/21/06 06:28 a	1.0	0.25066	E904.0
						0.747	3.1	*(5.6)*		Sample	Sample	GPC2D

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: 22-Jun-06

Lab Name: STL Richland **SDG:** 31580 **Collection Date:** 4/20/2006 10:10:00 AM

Lot-Sample No.: J6E080157-10 **Report No. :** 32441 **Received Date:** 5/8/2006 7:30:00 AM

Client Sample ID: 000433 **COC No. :** **Matrix:** FILTER AIR

Yerington Air Quality - Event #75

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: 6129273	**Work Order:** H4X1V1AG			**Report DB ID:** 9H4X1V10								
U-234	**0.099**	ND	0.20	0.20	0.268	pCi/sample	99%	*0.37*	6/20/06 07:06 p	1.0	0.06094	E908.0
							1.0	*1.*		Sample	Sample	ALP6
U-235	**-0.0396**	ND	0.056	0.056	0.56	pCi/sample	99%	*-0.07*	6/20/06 07:06 p	1.0	0.06094	E908.0
						0.146	1.0	*-(1.4)*		Sample	Sample	ALP6
U-238	**0.0792**	ND	0.20	0.20	0.474	pCi/sample	99%	*0.17*	6/20/06 07:06 p	1.0	0.06094	E908.0
						0.103	1.0	*0.78*		Sample	Sample	ALP6
								Ratio U-234/238 = 1.3				
Batch: 6129276	**Work Order:** H4X1V1AA			**Report DB ID:** 9H4X1V10								
TH-228	**0.140**	ND	0.20	0.20	0.344	pCi/sample	101%	*0.41*	6/18/06 10:09 a	1.0	0.0818	ISOTH
						0.109	1.0	*(1.4)*		Sample	Sample	ALP119
TH-230	**0.175**	ND	0.18	0.18	0.119	pCi/sample	101%	*(1.5)*	6/18/06 10:09 a	1.0	0.0818	ISOTH
							1.0	*(2.)*		Sample	Sample	ALP119
TH-232	**0.0438**	ND	0.088	0.088	0.119	pCi/sample	101%	*0.37*	6/18/06 10:09 a	1.0	0.0818	ISOTH
							1.0	*1.*		Sample	Sample	ALP119
Batch: 6129281	**Work Order:** H4X1V1AE			**Report DB ID:** 9H4X1V10								
ALPHA	**2.41**	ND	3.0	3.0	5.59	pCi/sample	100%	*0.43*	6/10/06 07:04 a	1.0	0.02046	E900.0
						2.06	20.0	*(1.6)*		Sample	Sample	GPC10B
Batch: 6129282	**Work Order:** H4X1V1AF			**Report DB ID:** 9H4X1V10								
BETA	**6.50**	ND	3.6	3.7	6.91	pCi/sample	100%	*0.94*	6/9/06 12:15 p	1.0	0.08113	E900.0
						3.28	5.0	*(3.5)*		Sample	Sample	GPC32A
Batch: 6129284	**Work Order:** H4X1V1AC			**Report DB ID:** 9H4X1V10								

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: 22-Jun-06

Lab Name:	STL Richland	**SDG:**	31580	**Collection Date:**	4/20/2006 10:10:00 AM
Lot-Sample No.:	J6E080157-10	**Report No. :**	32441	**Received Date:**	5/8/2006 7:30:00 AM
Client Sample ID:	000433	**COC No. :**		**Matrix:**	FILTER AIR

Yerington Air Quality - Event #75

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	0.0208	ND	0.31	0.31	0.614	pCi/sample	94%	*0.03*	6/17/06 07:39 p	0.833	0.24352	E903.1
						0.265	1.0	*0.13*		Sample	Sample	ASCMMA
Batch: 6129286	**Work Order:** H4X1V1AD			**Report DB ID:** 9H4X1V10								
RA-228	1.96	=	0.89	0.93	1.64	pCi/sample	83%	*(1.2)*	6/21/06 06:28 a	1.0	0.24352	E904.0
						0.701	3.1	*(4.2)*		Sample	Sample	GPC3A

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: 22-Jun-06

Lab Name: STL Richland
Lot-Sample No.: J6E080157-11
Client Sample ID: 000434
Yerington Air Quality - Event #75

SDG: 31580
Report No. : 32441
COC No. :

Collection Date: 4/20/2006 10:30:00 AM
Received Date: 5/8/2006 7:30:00 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: 6129273	**Work Order:** H4X1W1AG			**Report DB ID:** 9H4X1W10								
U-234	0.398	ND	0.40	0.40	0.27	pCi/sample	102%	*(1.5)*	6/20/06 07:06 p	1.0	0.06231	E908.0
							1.0	*(2.)*		Sample	Sample	ALP7
U-235	0.00000	ND	0.0000	0.24	0.27	pCi/sample	102%	*0.*	6/20/06 07:06 p	1.0	0.06231	E908.0
							1.0	*0.*		Sample	Sample	ALP7
U-238	0.0995	ND	0.20	0.20	0.27	pCi/sample	102%	*0.37*	6/20/06 07:06 p	1.0	0.06231	E908.0
							1.0	*1.*		Sample	Sample	ALP7
								Ratio U-234/238 = 4.0				
Batch: 6129276	**Work Order:** H4X1W1AA			**Report DB ID:** 9H4X1W10								
TH-228	0.310	ND	0.36	0.37	0.571	pCi/sample	62%	*0.54*	6/18/06 10:09 a	1.0	0.08358	ISOTH
						0.181	1.0	*(1.7)*		Sample	Sample	ALP120
TH-230	0.509	=	0.38	0.40	0.197	pCi/sample	62%	*(2.6)*	6/18/06 10:09 a	1.0	0.08358	ISOTH
							1.0	*(2.6)*		Sample	Sample	ALP120
TH-232	0.00000	ND	0.0000	0.18	0.197	pCi/sample	62%	*0.*	6/18/06 10:09 a	1.0	0.08358	ISOTH
							1.0	*0.*		Sample	Sample	ALP120
Batch: 6129281	**Work Order:** H4X1W1AE			**Report DB ID:** 9H4X1W10								
ALPHA	3.56	ND	3.4	3.5	5.68	pCi/sample	100%	*0.63*	6/10/06 07:04 a	1.0	0.02084	E900.0
						2.09	20.0	*(2.)*		Sample	Sample	GPC10C
Batch: 6129282	**Work Order:** H4X1W1AF			**Report DB ID:** 9H4X1W10								
BETA	10.0	=	3.5	3.8	6.1	pCi/sample	100%	*(1.6)*	6/9/06 12:15 p	1.0	0.08374	E900.0
						2.88	5.0	*(5.3)*		Sample	Sample	GPC32B
Batch: 6129284	**Work Order:** H4X1W1AC			**Report DB ID:** 9H4X1W10								

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: 22-Jun-06

Lab Name: STL Richland
SDG: 31580
Collection Date: 4/20/2006 10:30:00 AM
Lot-Sample No.: J6E080157-11
Report No. : 32441
Received Date: 5/8/2006 7:30:00 AM
Client Sample ID: 000434
COC No. :
Matrix: FILTER AIR

Yerington Air Quality - Event #75

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	0.675	=	0.44	0.46	0.656	pCi/sample	86%	(1.)	6/18/06 12:52 p	0.833	0.24924	E903.1
						0.287	1.0	(2.9)		Sample	Sample	ASC1HB
Batch: 6129286	**Work Order:** H4X1W1AD			**Report DB ID:** 9H4X1W10								
RA-228	2.45	=	0.98	1.0	1.7	pCi/sample	76%	(1.4)	6/21/06 06:28 a	1.0	0.24924	E904.0
						0.726	3.1	(4.8)		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: 22-Jun-06

Lab Name:	STL Richland	**SDG:**	31580	**Collection Date:**	4/20/2006 10:45:00 AM
Lot-Sample No.:	J6E080157-12	**Report No. :**	32441	**Received Date:**	5/8/2006 7:30:00 AM
Client Sample ID:	000435	**COC No. :**		**Matrix:**	FILTER AIR

Yerington Air Quality - Event #75

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: 6129273	**Work Order:** H4X1X1AG			**Report DB ID:** 9H4X1X10								
U-234	**0.130**	ND	0.27	0.27	0.585	pCi/sample	100%	*0.22*	6/20/06 07:06 p	1.0	0.06221	E908.0
						0.167	1.0	*0.96*		Sample	Sample	ALP8
U-235	**-0.0185**	ND	0.037	0.037	0.444	pCi/sample	100%	*-0.04*	6/20/06 07:06 p	1.0	0.06221	E908.0
						0.0964	1.0	*-1.*		Sample	Sample	ALP8
U-238	**0.00000**	ND	0.0000	0.23	0.251	pCi/sample	100%	*0.*	6/20/06 07:06 p	1.0	0.06221	E908.0
							1.0	*0.*		Sample	Sample	ALP8
Batch: 6129276	**Work Order:** H4X1X1AA			**Report DB ID:** 9H4X1X10								
TH-228	**0.0230**	ND	0.15	0.15	0.387	pCi/sample	87%	*0.06*	6/18/06 06:39 p	1.0	0.08266	ISOTH
						0.131	1.0	*0.3*		Sample	Sample	ALP171
TH-230	**0.345**	=	0.24	0.25	0.117	pCi/sample	87%	*(3.)*	6/18/06 06:39 p	1.0	0.08266	ISOTH
							1.0	*(2.7)*		Sample	Sample	ALP171
TH-232	**0.0216**	ND	0.096	0.097	0.259	pCi/sample	87%	*0.08*	6/18/06 06:39 p	1.0	0.08266	ISOTH
						0.0709	1.0	*0.45*		Sample	Sample	ALP171
Batch: 6129281	**Work Order:** H4X1X1AE			**Report DB ID:** 9H4X1X10								
ALPHA	**0.00000**	ND	0.0000	3.0	7.87	pCi/sample	100%	*0.*	6/10/06 07:04 a	1.0	0.02075	E900.0
						3.23	20.0	*0.*		Sample	Sample	GPC10D
Batch: 6129282	**Work Order:** H4X1X1AF			**Report DB ID:** 9H4X1X10								
BETA	**9.20**	=	3.5	3.8	6.15	pCi/sample	100%	*(1.5)*	6/9/06 12:15 p	1.0	0.08266	E900.0
						2.91	5.0	*(4.8)*		Sample	Sample	GPC32C
Batch: 6129284	**Work Order:** H4X1X1AC			**Report DB ID:** 9H4X1X10								

STL Richland
rptSTLRchSample
V4.15.0 A97

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FORM I

SAMPLE RESULTS

Date: 22-Jun-06

Lab Name: STL Richland | **SDG:** 31580 | **Collection Date:** 4/20/2006 10:45:00 AM

Lot-Sample No.: J6E080157-12 | **Report No. :** 32441 | **Received Date:** 5/8/2006 7:30:00 AM

Client Sample ID: 000435 | **COC No. :** | **Matrix:** FILTER AIR

Yerington Air Quality - Event #75

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	-0.2250	ND	0.32	0.33	0.738	pCi/sample	83%	*-0.31*	6/18/06 12:51 p	0.833	0.24794	E903.1
						0.32	1.0	*-(1.4)*		Sample	Sample	ASC2RC
Batch: 6129286	**Work Order:** H4X1X1AD			**Report DB ID:** 9H4X1X10								
RA-228	5.49	=	1.3	1.5	1.82	pCi/sample	74%	*(3.)*	6/21/06 06:28 a	1.0	0.24794	E904.0
						0.782	3.1	*(7.5)*		Sample	Sample	GPC3C

Number of Results: 10

Comments:

STL Richland
rptSTLRchSample
V4.15.0 A97

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FORM I

SAMPLE RESULTS

Date: 22-Jun-06

Lab Name: STL Richland
Lot-Sample No.: J6E080157-1
Client Sample ID: P-0598
Yerington Air Quality - Event #75

SDG: 31580
Report No. : 32441
COC No. :

Collection Date: 4/20/2006 9:10:00 AM
Received Date: 5/8/2006 7:30:00 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: 6129273	**Work Order:** H4XP81AG			**Report DB ID:** 9H4XP810								
U-234	**-0.0424**	ND	0.038	0.039	0.599	pCi/sample	98%	*-0.07*	6/20/06 07:03 p	1.0	0.06259	E908.0
						0.156	1.0	*-(2.2)*		Sample	Sample	ALP83
U-235	**-0.0170**	ND	0.024	0.024	0.485	pCi/sample	98%	*-0.04*	6/20/06 07:03 p	1.0	0.06259	E908.0
						0.0987	1.0	*-(1.4)*		Sample	Sample	ALP83
U-238	**0.0721**	ND	0.21	0.22	0.566	pCi/sample	98%	*0.13*	6/20/06 07:03 p	1.0	0.06259	E908.0
						0.14	1.0	*0.67*		Sample	Sample	ALP83
								Ratio U-234/238 = -0.6				
Batch: 6129276	**Work Order:** H4XP81AA			**Report DB ID:** 9H4XP810								
TH-228	**0.244**	ND	0.25	0.25	0.325	pCi/sample	86%	*0.75*	6/18/06 10:09 a	1.0	0.08345	ISOTH
						0.0891	1.0	*(1.9)*		Sample	Sample	ALP174
TH-230	**0.254**	=	0.23	0.23	0.138	pCi/sample	86%	*(1.8)*	6/18/06 10:09 a	1.0	0.08345	ISOTH
							1.0	*(2.2)*		Sample	Sample	ALP174
TH-232	**0.0254**	ND	0.11	0.11	0.304	pCi/sample	86%	*0.08*	6/18/06 10:09 a	1.0	0.08345	ISOTH
						0.0835	1.0	*0.45*		Sample	Sample	ALP174
Batch: 6129281	**Work Order:** H4XP81AE			**Report DB ID:** 9H4XP810								
ALPHA	**-2.2300**	ND	2.0	2.0	7.86	pCi/sample	100%	*-0.28*	6/9/06 04:45 p	1.0	0.0208	E900.0
						3.18	20.0	*-(2.2)*		Sample	Sample	GPC10C
Batch: 6129282	**Work Order:** H4XP81AF			**Report DB ID:** 9H4XP810								
BETA	**7.93**	=	3.5	3.6	6.32	pCi/sample	100%	*(1.3)*	6/9/06 12:14 p	1.0	0.0837	E900.0
						2.99	5.0	*(4.4)*		Sample	Sample	GPC26C
Batch: 6129284	**Work Order:** H4XP81AC			**Report DB ID:** 9H4XP810								

STL Richland
rptSTLRchSample
V4.15.0 A97

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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: 22-Jun-06

Lab Name: STL Richland
Lot-Sample No.: J6E080157-1
Client Sample ID: P-0598
Yerington Air Quality - Event #75

SDG: 31580
Report No. : 32441
COC No. :

Collection Date: 4/20/2006 9:10:00 AM
Received Date: 5/8/2006 7:30:00 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	-0.0938	ND	0.19	0.19	0.461	pCi/sample	97%	*-0.2*	6/17/06 07:15 p	0.833	0.25098	E903.1
						0.186	1.0	*-(1.)*		Sample	Sample	ASCCSA
Batch: 6129286	**Work Order:** H4XP81AD			**Report DB ID:** 9H4XP810								
RA-228	2.00	ND	1.1	1.2	2.41	pCi/sample	88%	*0.83*	6/21/06 06:28 a	1.0	0.25098	E904.0
						1.1	3.1	*(3.4)*		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: 22-Jun-06

Lab Name: STL Richland **SDG:** 31580 **Collection Date:** 4/20/2006 9:30:00 AM

Lot-Sample No.: J6E080157-2 **Report No. :** 32441 **Received Date:** 5/8/2006 7:30:00 AM

Client Sample ID: P-0599 **COC No. :** **Matrix:** FILTER AIR

Yerington Air Quality - Event #75

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: 6129273	**Work Order:** H4XQH1AG			**Report DB ID:** 9H4XQH10								
U-234	**0.0869**	ND	0.23	0.23	0.57	pCi/sample	91%	*0.15*	6/20/06 07:03 p	1.0	0.06221	E908.0
						0.13	1.0	*0.75*		Sample	Sample	ALP84
U-235	**-0.0183**	ND	0.026	0.026	0.522	pCi/sample	91%	*-0.04*	6/20/06 07:03 p	1.0	0.06221	E908.0
						0.106	1.0	*-(1.4)*		Sample	Sample	ALP84
U-238	**0.114**	ND	0.23	0.23	0.31	pCi/sample	91%	*0.37*	6/20/06 07:03 p	1.0	0.06221	E908.0
							1.0	*1.*		Sample	Sample	ALP84
								Ratio U-234/238 = 0.8				
Batch: 6129276	**Work Order:** H4XQH1AA			**Report DB ID:** 9H4XQH10								
TH-228	**-0.0396**	ND	0.056	0.056	0.292	pCi/sample	100%	*-0.14*	6/18/06 10:09 a	1.0	0.08268	ISOTH
						0.0922	1.0	*-(1.4)*		Sample	Sample	ALP175
TH-230	**0.223**	ND	0.20	0.21	0.273	pCi/sample	100%	*0.82*	6/18/06 10:09 a	1.0	0.08268	ISOTH
						0.0864	1.0	*(2.2)*		Sample	Sample	ALP175
TH-232	**0.0372**	ND	0.074	0.075	0.101	pCi/sample	100%	*0.37*	6/18/06 10:09 a	1.0	0.08268	ISOTH
							1.0	*1.*		Sample	Sample	ALP175
Batch: 6129281	**Work Order:** H4XQH1AE			**Report DB ID:** 9H4XQH10								
ALPHA	**-0.5240**	ND	2.0	2.0	6.29	pCi/sample	100%	*-0.08*	6/9/06 04:45 p	1.0	0.02078	E900.0
						2.44	20.0	*-0.51*		Sample	Sample	GPC10D
Batch: 6129282	**Work Order:** H4XQH1AF			**Report DB ID:** 9H4XQH10								
BETA	**5.97**	ND	3.3	3.4	6.33	pCi/sample	100%	*0.94*	6/9/06 12:14 p	1.0	0.08349	E900.0
						3.0	5.0	*(3.5)*		Sample	Sample	GPC26D
Batch: 6129284	**Work Order:** H4XQH1AC			**Report DB ID:** 9H4XQH10								

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: 22-Jun-06

Lab Name: STL Richland
SDG: 31580
Collection Date: 4/20/2006 9:30:00 AM
Lot-Sample No.: J6E080157-2
Report No. : 32441
Received Date: 5/8/2006 7:30:00 AM
Client Sample ID: P-0599
COC No. :
Matrix: FILTER AIR

Yerington Air Quality - Event #75

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	**-0.1310**	ND	0.21	0.21	0.524	pCi/sample	78%	*-0.25*	6/17/06 07:12 p	0.833	0.24844	E903.1
						0.214	1.0	*-(1.2)*		Sample	Sample	ASCESD
Batch: 6129286	**Work Order:** H4XQH1AD			**Report DB ID:** 9H4XQH10								
RA-228	**2.29**	ND	1.3	1.4	2.84	pCi/sample	70%	*0.81*	6/21/06 06:28 a	1.0	0.24844	E904.0
						1.3	3.1	*(3.3)*		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: 22-Jun-06

Lab Name:	STL Richland	**SDG:**	31580	**Collection Date:**	4/20/2006 9:45:00 AM
Lot-Sample No.:	J6E080157-3	**Report No. :**	32441	**Received Date:**	5/8/2006 7:30:00 AM
Client Sample ID:	P-0600	**COC No. :**		**Matrix:**	FILTER AIR

Yerington Air Quality - Event #75

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: 6129273	**Work Order:** H4XQM1AG			**Report DB ID:** 9H4XQM10								
U-234	-0.0616	ND	0.055	0.056	0.871	pCi/sample	91%	-0.07	6/20/06 07:03 p	1.0	0.06209	E908.0
						0.227	1.0	-(2.2)		Sample	Sample	ALP85
U-235	-0.0123	ND	0.025	0.025	0.62	pCi/sample	91%	-0.02	6/20/06 07:03 p	1.0	0.06209	E908.0
						0.101	1.0	-1.		Sample	Sample	ALP85
U-238	0.00000	ND	0.0000	0.38	0.418	pCi/sample	91%	0.	6/20/06 07:03 p	1.0	0.06209	E908.0
							1.0	0.		Sample	Sample	ALP85
Batch: 6129276	**Work Order:** H4XQM1AA			**Report DB ID:** 9H4XQM10								
TH-228	0.00000066	ND	0.097	0.097	0.292	pCi/sample	103%	0.	6/18/06 06:39 p	1.0	0.08316	ISOTH
						0.0924	1.0	0.		Sample	Sample	ALP176
TH-230	0.0186	ND	0.083	0.083	0.223	pCi/sample	103%	0.08	6/18/06 06:39 p	1.0	0.08316	ISOTH
						0.0612	1.0	0.45		Sample	Sample	ALP176
TH-232	0.0558	ND	0.11	0.11	0.223	pCi/sample	103%	0.25	6/18/06 06:39 p	1.0	0.08316	ISOTH
						0.0612	1.0	1.		Sample	Sample	ALP176
Batch: 6129281	**Work Order:** H4XQM1AE			**Report DB ID:** 9H4XQM10								
ALPHA	0.338	ND	2.1	2.1	5.58	pCi/sample	100%	0.06	6/9/06 04:45 p	1.0	0.02074	E900.0
						2.03	20.0	0.32		Sample	Sample	GPC10E
Batch: 6129282	**Work Order:** H4XQM1AF			**Report DB ID:** 9H4XQM10								
BETA	7.93	=	3.4	3.6	6.21	pCi/sample	100%	(1.3)	6/9/06 12:14 p	1.0	0.0834	E900.0
						2.94	5.0	(4.4)		Sample	Sample	GPC28B
Batch: 6129284	**Work Order:** H4XQM1AC			**Report DB ID:** 9H4XQM10								

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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: 22-Jun-06

Lab Name: STL Richland
Lot-Sample No.: J6E080157-3
Client Sample ID: P-0600
Yerington Air Quality - Event #75

SDG: 31580
Report No. : 32441
COC No. :

Collection Date: 4/20/2006 9:45:00 AM
Received Date: 5/8/2006 7:30:00 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	0.159	ND	0.29	0.30	0.531	pCi/sample	89%	*0.3*	6/17/06 07:13 p	0.833	0.24915	E903.1
						0.214	1.0	*(1.1)*		Sample	Sample	ASCGSA
Batch: 6129286	**Work Order:** H4XQM1AD			**Report DB ID:** 9H4XQM10								
RA-228	2.84	=	1.1	1.3	2.34	pCi/sample	80%	*(1.2)*	6/21/06 06:28 a	1.0	0.24915	E904.0
						1.06	3.1	*(4.5)*		Sample	Sample	GPC1A

Number of Results: 10

Comments:

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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: 22-Jun-06

Lab Name: STL Richland
Lot-Sample No.: J6E080157-4
Client Sample ID: P-0601
Yerington Air Quality - Event #75

SDG: 31580
Report No. : 32441
COC No. :

Collection Date: 4/20/2006 10:05:00 AM
Received Date: 5/8/2006 7:30:00 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: 6129273	**Work Order:** H4XQN1AG			**Report DB ID:** 9H4XQN10								
U-234	-0.0483	ND	0.068	0.069	0.683	pCi/sample	88%	-0.07	6/20/06 07:03 p	1.0	0.06246	E908.0
						0.178	1.0	-(1.4)		Sample	Sample	ALP87
U-235	0.00000	ND	0.0000	0.30	0.327	pCi/sample	88%	0.	6/20/06 07:03 p	1.0	0.06246	E908.0
							1.0	0.		Sample	Sample	ALP87
U-238	0.242	ND	0.34	0.34	0.327	pCi/sample	88%	0.74	6/20/06 07:03 p	1.0	0.06246	E908.0
							1.0	(1.4)		Sample	Sample	ALP87
								Ratio U-234/238 = -0.2				
Batch: 6129276	**Work Order:** H4XQN1AA			**Report DB ID:** 9H4XQN10								
TH-228	0.0879	ND	0.12	0.13	0.119	pCi/sample	101%	0.74	6/18/06 10:09 a	1.0	0.08379	ISOTH
							1.0	(1.4)		Sample	Sample	ALP177
TH-230	0.0412	ND	0.082	0.083	0.112	pCi/sample	101%	0.37	6/18/06 10:09 a	1.0	0.08379	ISOTH
							1.0	1.		Sample	Sample	ALP177
TH-232	-0.0206	ND	0.041	0.041	0.247	pCi/sample	101%	-0.08	6/18/06 10:09 a	1.0	0.08379	ISOTH
						0.0678	1.0	-1.		Sample	Sample	ALP177
Batch: 6129281	**Work Order:** H4XQN1AE			**Report DB ID:** 9H4XQN10								
ALPHA	5.62	ND	4.3	4.5	6.85	pCi/sample	100%	0.82	6/9/06 06:54 p	1.0	0.02106	E900.0
						2.7	20.0	(2.5)		Sample	Sample	GPC10A
Batch: 6129282	**Work Order:** H4XQN1AF			**Report DB ID:** 9H4XQN10								
BETA	7.01	=	3.4	3.6	6.51	pCi/sample	100%	(1.1)	6/9/06 12:14 p	1.0	0.08402	E900.0
						3.09	5.0	(3.9)		Sample	Sample	GPC28C
Batch: 6129284	**Work Order:** H4XQN1AC			**Report DB ID:** 9H4XQN10								

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FORM I

SAMPLE RESULTS

Date: 22-Jun-06

Lab Name: STL Richland
SDG: 31580
Collection Date: 4/20/2006 10:05:00 AM
Lot-Sample No.: J6E080157-4
Report No. : 32441
Received Date: 5/8/2006 7:30:00 AM
Client Sample ID: P-0601
COC No. :
Matrix: FILTER AIR

Yerington Air Quality - Event #75

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	0.135	ND	0.17	0.17	0.271	pCi/sample	92%	*0.5*	6/17/06 07:13 p	0.833	0.24974	E903.1
						0.0935	1.0	*(1.6)*		Sample	Sample	ASCJMB
Batch: 6129286	**Work Order:** H4XQN1AD			**Report DB ID:** 9H4XQN10								
RA-228	3.52	=	1.1	1.2	2.05	pCi/sample	82%	*(1.7)*	6/21/06 06:28 a	1.0	0.24974	E904.0
						0.922	3.1	*(5.7)*		Sample	Sample	GPC1C

Number of Results: 10

Comments:

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FORM I

SAMPLE RESULTS

Date: 22-Jun-06

Lab Name: STL Richland
SDG: 31580
Collection Date: 4/20/2006 10:25:00 AM
Lot-Sample No.: J6E080157-5
Report No. : 32441
Received Date: 5/8/2006 7:30:00 AM
Client Sample ID: P-0602
COC No. :
Matrix: FILTER AIR

Yeringtion Air Quality - Event #75

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: 6129273	**Work Order:** H4XQQ1AG			**Report DB ID:** 9H4XQQ10								
U-234	0.0591	ND	0.20	0.20	0.557	pCi/sample	106%	*0.11*	6/20/06 07:04 p	1.0	0.0625	E908.0
						0.145	1.0	*0.58*		Sample	Sample	ALP1
U-235	0.0788	ND	0.20	0.20	0.472	pCi/sample	106%	*0.17*	6/20/06 07:04 p	1.0	0.0625	E908.0
						0.102	1.0	*0.78*		Sample	Sample	ALP1
U-238	-0.0394	ND	0.056	0.056	0.557	pCi/sample	106%	*-0.07*	6/20/06 07:04 p	1.0	0.0625	E908.0
						0.145	1.0	*-(1.4)*		Sample	Sample	ALP1
								Ratio U-234/238 = -1.5				
Batch: 6129276	**Work Order:** H4XQQ1AA			**Report DB ID:** 9H4XQQ10								
TH-228	0.0802	ND	0.16	0.16	0.217	pCi/sample	46%	*0.37*	6/18/06 10:09 a	1.0	0.08357	ISOTH
							1.0	*1.*		Sample	Sample	ALP178
TH-230	0.376	=	0.34	0.34	0.204	pCi/sample	46%	*(1.8)*	6/18/06 10:09 a	1.0	0.08357	ISOTH
							1.0	*(2.2)*		Sample	Sample	ALP178
TH-232	0.00000	ND	0.0000	0.18	0.204	pCi/sample	46%	*0.*	6/18/06 10:09 a	1.0	0.08357	ISOTH
							1.0	*0.*		Sample	Sample	ALP178
Batch: 6129281	**Work Order:** H4XQQ1AE			**Report DB ID:** 9H4XQQ10								
ALPHA	-0.6430	ND	2.1	2.1	6.56	pCi/sample	100%	*-0.1*	6/9/06 06:54 p	1.0	0.0209	E900.0
						2.56	20.0	*-0.61*		Sample	Sample	GPC10B
Batch: 6129282	**Work Order:** H4XQQ1AF			**Report DB ID:** 9H4XQQ10								
BETA	6.15	ND	3.4	3.6	6.56	pCi/sample	100%	*0.94*	6/9/06 12:14 p	1.0	0.08353	E900.0
						3.11	5.0	*(3.4)*		Sample	Sample	GPC28D
Batch: 6129284	**Work Order:** H4XQQ1AC			**Report DB ID:** 9H4XQQ10								

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FORM I

SAMPLE RESULTS

Date: 22-Jun-06

Lab Name: STL Richland **SDG:** 31580 **Collection Date:** 4/20/2006 10:25:00 AM

Lot-Sample No.: J6E080157-5 **Report No. :** 32441 **Received Date:** 5/8/2006 7:30:00 AM

Client Sample ID: P-0602 **COC No. :** **Matrix:** FILTER AIR

Yerington Air Quality - Event #75

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	**0.189**	ND	0.28	0.29	0.496	pCi/sample	84%	*0.38*	6/17/06 07:11 p	0.833	0.2496	E903.1
						0.197	1.0	*(1.3)*		Sample	Sample	ASCBMA
Batch: 6129286	**Work Order:** H4XQQ1AD			**Report DB ID:** 9H4XQQ10								
RA-228	**4.49**	=	1.2	1.4	2.09	pCi/sample	77%	*(2.1)*	6/21/06 06:28 a	1.0	0.2496	E904.0
						0.935	3.1	*(6.6)*		Sample	Sample	GPC1D

Number of Results: 10

Comments:

STL Richland
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FORM I

SAMPLE RESULTS

Date: 22-Jun-06

Lab Name: STL Richland | **SDG:** 31580 | **Collection Date:** 4/20/2006 10:40:00 AM

Lot-Sample No.: J6E080157-6 | **Report No. :** 32441 | **Received Date:** 5/8/2006 7:30:00 AM

Client Sample ID: P-0603 | **COC No. :** | **Matrix:** FILTER AIR

Yerington Air Quality - Event #75

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: 6129273	**Work Order:** H4XQR1AG			**Report DB ID:** 9H4XQR10								
U-234	0.00000	ND	0.0000	0.28	0.306	pCi/sample	89%	0.	6/20/06 07:05 p	1.0	0.06166	E908.0
							1.0	0.		Sample	Sample	ALP2
U-235	-0.0226	ND	0.045	0.045	0.541	pCi/sample	89%	-0.04	6/20/06 07:05 p	1.0	0.06166	E908.0
						0.118	1.0	-1.		Sample	Sample	ALP2
U-238	0.113	ND	0.34	0.34	0.832	pCi/sample	89%	0.14	6/20/06 07:05 p	1.0	0.06166	E908.0
						0.263	1.0	0.67		Sample	Sample	ALP2
Batch: 6129276	**Work Order:** H4XQR1AA			**Report DB ID:** 9H4XQR10								
TH-228	-0.0996	ND	0.13	0.13	0.454	pCi/sample	89%	-0.22	6/18/06 10:09 a	1.0	0.08225	ISOTH
						0.173	1.0	-(1.5)		Sample	Sample	ALP114
TH-230	0.149	ND	0.15	0.15	0.101	pCi/sample	89%	(1.5)	6/18/06 10:09 a	1.0	0.08225	ISOTH
							1.0	(2.)		Sample	Sample	ALP114
TH-232	0.00000	ND	0.0000	0.091	0.101	pCi/sample	89%	0.	6/18/06 10:09 a	1.0	0.08225	ISOTH
							1.0	0.		Sample	Sample	ALP114
Batch: 6129281	**Work Order:** H4XQR1AE			**Report DB ID:** 9H4XQR10								
ALPHA	-2.2400	ND	2.0	2.1	7.91	pCi/sample	100%	-0.28	6/9/06 06:54 p	1.0	0.02066	E900.0
						3.2	20.0	-(2.2)		Sample	Sample	GPC10C
Batch: 6129282	**Work Order:** H4XQR1AF			**Report DB ID:** 9H4XQR10								
BETA	7.76	=	3.5	3.7	6.45	pCi/sample	100%	(1.2)	6/9/06 12:14 p	1.0	0.08297	E900.0
						3.06	5.0	(4.2)		Sample	Sample	GPC31A
Batch: 6129284	**Work Order:** H4XQR1AC			**Report DB ID:** 9H4XQR10								

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FORM I

SAMPLE RESULTS

Date: 22-Jun-06

Lab Name: STL Richland
SDG: 31580
Collection Date: 4/20/2006 10:40:00 AM
Lot-Sample No.: J6E080157-6
Report No. : 32441
Received Date: 5/8/2006 7:30:00 AM
Client Sample ID: P-0603
COC No. :
Matrix: FILTER AIR

Yerington Air Quality - Event #75

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	-0.1030	ND	0.32	0.32	0.715	pCi/sample	86%	*-0.14*	6/17/06 07:37 p	0.833	0.24651	E903.1
						0.298	1.0	*-0.65*		Sample	Sample	ASCKME
Batch: 6129286	**Work Order:** H4XQR1AD			**Report DB ID:** 9H4XQR10								
RA-228	**3.64**	=	1.1	1.2	1.81	pCi/sample	76%	*(2.)*	6/21/06 06:28 a	1.0	0.24651	E904.0
						0.765	3.1	*(5.9)*		Sample	Sample	GPC2A

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: 22-Jun-06

Lab Name: STL Richland | **SDG:** 31580 | **Collection Date:** 4/20/2006 10:35:00 AM

Lot-Sample No.: J6E080157-7 | **Report No. :** 32441 | **Received Date:** 5/8/2006 7:30:00 AM

Client Sample ID: P-0605 | **COC No. :** | **Matrix:** FILTER AIR

Yerington Air Quality - Event #75

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: 6129273	**Work Order:** H4XQT1AG			**Report DB ID:** 9H4XQT10								
U-234	-0.1000	ND	0.090	0.091	0.737	pCi/sample	96%	*-0.14*	6/20/06 07:05 p	1.0	0.0623	E908.0
						0.233	1.0	*-(2.2)*		Sample	Sample	ALP3
U-235	0.0400	ND	0.21	0.21	0.632	pCi/sample	96%	*0.06*	6/20/06 07:05 p	1.0	0.0623	E908.0
						0.18	1.0	*0.38*		Sample	Sample	ALP3
U-238	-0.0201	ND	0.22	0.22	0.781	pCi/sample	96%	*-0.03*	6/20/06 07:05 p	1.0	0.0623	E908.0
						0.255	1.0	*-0.18*		Sample	Sample	ALP3
								Ratio U-234/238 = 5.0				
Batch: 6129276	**Work Order:** H4XQT1AA			**Report DB ID:** 9H4XQT10								
TH-228	0.274	ND	0.51	0.52	1.01	pCi/sample	33%	*0.27*	6/18/06 10:09 a	1.0	0.08312	ISOTH
						0.318	1.0	*(1.1)*		Sample	Sample	ALP116
TH-230	0.128	ND	0.26	0.26	0.348	pCi/sample	33%	*0.37*	6/18/06 10:09 a	1.0	0.08312	ISOTH
							1.0	*0.99*		Sample	Sample	ALP116
TH-232	0.00000	ND	0.0000	0.31	0.348	pCi/sample	33%	*0.*	6/18/06 10:09 a	1.0	0.08312	ISOTH
							1.0	*0.*		Sample	Sample	ALP116
Batch: 6129281	**Work Order:** H4XQT1AE			**Report DB ID:** 9H4XQT10								
ALPHA	0.00000	ND	0.0000	2.3	6.3	pCi/sample	100%	*0.*	6/9/06 06:54 p	1.0	0.02074	E900.0
						2.44	20.0	*0.*		Sample	Sample	GPC10D
Batch: 6129282	**Work Order:** H4XQT1AF			**Report DB ID:** 9H4XQT10								
BETA	-1.0700	ND	2.7	2.7	6.31	pCi/sample	100%	*-0.17*	6/9/06 12:14 p	1.0	0.08322	E900.0
						2.99	5.0	*-0.78*		Sample	Sample	GPC31B
Batch: 6129284	**Work Order:** H4XQT1AC			**Report DB ID:** 9H4XQT10								

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V4.15.0 A97

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= 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: 22-Jun-06

Lab Name: STL Richland
Lot-Sample No.: J6E080157-7
Client Sample ID: P-0605
Yerington Air Quality - Event #75

SDG: 31580
Report No. : 32441
COC No. :

Collection Date: 4/20/2006 10:35:00 AM
Received Date: 5/8/2006 7:30:00 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	0.0417	ND	0.30	0.30	0.581	pCi/sample	96%	*0.07*	6/17/06 07:39 p	0.833	0.25008	E903.1
						0.248	1.0	*0.28*		Sample	Sample	ASCLMC
Batch: 6129286	**Work Order:** H4XQT1AD			**Report DB ID:** 9H4XQT10								
RA-228	1.62	ND	0.90	0.94	1.82	pCi/sample	80%	*0.89*	6/21/06 06:28 a	1.0	0.25008	E904.0
						0.784	3.1	*(3.4)*		Sample	Sample	GPC2B

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: 22-Jun-06

Lab Name: STL Richland
SDG: 31580
Lot-Sample No.: J6E090000-273
Report No. : 32441
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: 6129273	Work Order: H402W1AA			Report DB ID: H402W1AB								
U-234	-0.00145	ND	0.0029	0.0029	0.0346	pCi/sample	85%	-0.04	6/20/06 07:06 p	1.0	1.0	E908.0
					0.00753	1.0		-1.		Sample	Sample	ALP9
U-235	0.00000	ND	0.0000	0.018	0.0196	pCi/sample	85%	0.	6/20/06 07:06 p	1.0	1.0	E908.0
						1.0		0.		Sample	Sample	ALP9
U-238	0.00000	ND	0.0000	0.018	0.0196	pCi/sample	85%	0.	6/20/06 07:06 p	1.0	1.0	E908.0
						1.0		0.		Sample	Sample	ALP9

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: 22-Jun-06

Lab Name: STL Richland

SDG: 31580

Lot-Sample No.: J6E090000-276

Report No. : 32441

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: 6129276	Work Order:	H40211AA		Report DB ID:	H40211AB							
TH-228	-0.0073	ND	0.0073	0.0074	0.0339	pCi/sample	88%	-0.22	6/18/06 06:39 p	1.0	1.0	ISOTH
					0.012	1.0		-(2.)		Sample	Sample	ALP172
TH-230	0.0256	=	0.020	0.020	0.0205	pCi/sample	88%	(1.3)	6/18/06 06:39 p	1.0	1.0	ISOTH
					0.00562	1.0		(2.5)		Sample	Sample	ALP172
TH-232	0.00684	ND	0.0097	0.0097	0.00926	pCi/sample	88%	0.74	6/18/06 06:39 p	1.0	1.0	ISOTH
						1.0		(1.4)		Sample	Sample	ALP172

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.
= 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: 22-Jun-06

Lab Name: STL Richland **SDG:** 31580

Lot-Sample No.: J6E090000-281 **Report No. :** 32441 **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: 6129281	Work Order: H403P1AA			Report DB ID: H403P1AB								
ALPHA	-0.00934	ND	0.045	0.045	0.137	pCi/sample	100%	-0.07	6/10/06 07:04 a	1.0	1.0	E900.0
					0.0529	20.0		-0.41		Sample	Sample	GPC10E

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: 22-Jun-06

Lab Name: STL Richland
SDG: 31580
Lot-Sample No.: J6E090000-282
Report No. : 32441
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: 6129282	Work Order:	H40341AA		Report DB ID:	H40341AB							
BETA	-0.00838	ND	0.26	0.26	0.581	pCi/sample	100%	-0.01	6/9/06 12:15 p	1.0	1.0	E900.0
					0.277	5.0		-0.06		Sample	Sample	GPC32D

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: 22-Jun-06

Lab Name: STL Richland
SDG: 31580
Lot-Sample No.: J6E090000-284
Report No. : 32441
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: 6129284	Work Order:	H40381AA		Report DB ID:	H40381AB							
RA-226	-0.0128	ND	0.072	0.072	0.155	pCi/sample	93%	-0.08	6/17/06 07:13 p	1.0	1.0	E903.1
					0.0647	1.0		-0.36		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: 22-Jun-06

Lab Name: STL Richland
SDG: 31580
Lot-Sample No.: J6E090000-286
Report No. : 32441
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: 6129286	Work Order: H404F1AA			Report DB ID: H404F1AB								
RA-228	1.55	=	0.31	0.36	0.385	pCi/sample	84%	(4.)	6/21/06 06:28 a	1.0	1.0	E904.0
					0.164	3.1		(8.6)		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: 22-Jun-06

Lab Name: STL Richland

SDG: 31580

Lot-Sample No.: J6E090000-273

Report No. : 32441

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: 6129273	Work Order: H402W1AC			Report DB ID: H402W1CS									
U-234	1.15	=	0.17	0.26	0.0177	pCi/sample	93.65%	0.968	0.0058	118%	6/20/06 07:06 p	1.0	E908.0
						Rec Limits:				0.2		Sample	ALP10
U-238	0.942	=	0.16	0.23	0.0368	pCi/sample	93.65%	1.01	0.0061	93%	6/20/06 07:06 p	1.0	E908.0
						Rec Limits:				-0.1		Sample	ALP10

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: 22-Jun-06

Lab Name: STL Richland

SDG: 31580

Lot-Sample No.: J6E090000-276

Report No. : 32441

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: 6129276	Work Order: H40211AC			Report DB ID: H40211CS									
TH-230	1.98	=	0.18	0.39	0.0245	pCi/sample	87.02%	1.82	0.06	108%	6/18/06 06:39 p	1.0	ISOTH
							Rec Limits:	70.	130.	0.1		Sample	ALP173

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: 22-Jun-06

Lab Name: STL Richland

SDG: 31580

Lot-Sample No.: J6E090000-281

Report No. : 32441

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: 6129281	Work Order: H403P1AC			Report DB ID: H403P1CS									
ALPHA	1.84	=	0.30	0.48	0.163	pCi/sample	100.00%	2.38	0.075	78%	6/10/06 08:56 a	1.0	E900.0
							Rec Limits:			-0.2		Sample	GPC10A

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: 22-Jun-06

Lab Name: STL Richland

SDG: 31580

Lot-Sample No.: J6E090000-282

Report No. : 32441

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: 6129282	Work Order: H40341AC			Report DB ID: H40341CS									
BETA	3.74	=	0.46	0.70	0.573	pCi/sample	100.00%	4.69	0.038	80%	6/9/06 02:07 p	1.0	E900.0
						Rec Limits:				-0.2		Sample	GPC26A

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: 22-Jun-06

Lab Name: STL Richland

SDG: 31580

Lot-Sample No.: J6E090000-284

Report No. : 32441

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: 6129284	Work Order: H40381AC			Report DB ID: H40381CS									
RA-226	1.53	=	0.24	0.40	0.105	pCi/sample	95.67%	1.39	0.021	111%	6/17/06 07:15 p	1.0	E903.1
							Rec Limits:	70.	130.	0.1		Sample	ASCPMA

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: 22-Jun-06

Lab Name: STL Richland

SDG: 31580

Lot-Sample No.: J6E090000-286

Report No. : 32441

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: 6129286	Work Order: H404F1AC			Report DB ID: H404F1CS									
RA-228	5.14	=	0.51	0.78	0.418	pCi/sample	87.05%	5.16	0.022	100%	6/21/06 06:28 a	1.0	E904.0
							Rec Limits:	70.	130.	0.0		Sample	GPC4A

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._____

J6E080157
31580
Due 6.6.06

☒ 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: Yerington Air Qlty

LABORATORY NAME & ADDRESS: SEVERN TRENT LABS, WEST SACRAMENTO

PROJECT NUMBER: 121345

1/6 OF THE EXPOSED FILTER WAS UTILIZED FOR THE METALS ANALYSIS. SACRAMENTO LOT # G6D260252

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	P-0598	4/20/06	9:10	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)					---- H4XP8	
02	P-0599		9:30		1	8x10 Filter	NONE	A	PM-10, Gross Alpha/Beta, Th(228,230,232), Ra(226,228), U (234,235,238), Metals(Client List)					---- H4XQH	
03	P-0600		9:45		1	8x10 Filter	NONE	A	PM-10, Gross Alpha/Beta, Th(228,230,232), Ra(226,228), U (234,235,238), Metals(Client List)					---- H4XQM	
04	P-0601		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)					---- H4XQN	
05	P-0602		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)					---- H4XQQ	
06	P-0603		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)					---- H4XQR	
07	P-0605		10:35		1	8x10 Filter	NONE	A	PM-10, Gross Alpha/Beta, Th(228,230,232), Ra(226,228), U (234,235,238), Metals(Client List)					---- H4XQT	
08					1	8x10 Filter	NONE	A	PM-10, Gross Alpha/Beta, Th(228,230,232), Ra(226,228), U (234,235,238), Metals(Client List)					----	
09														----	
10														----	

	DATE	TIME		DATE	TIME
COLLECTED & RELEASED BY: [signature]	4/28/06	1600	COOLER I.D.:		
RECEIVED BY: [signature]	4/26/06	10:20	RELINQUISHED BY:	/ /	:
			Steve Valenzuela	5/5/06	1600
S. Welch	5.8.06	0730			
RECORD RETURNED BY:	/ /	:			
COURIER: FEDEX			SHIPPING NUMBER: [illegible]		

COMMENTS (see note on back):

RECEIVED IN GOOD CONDITION UNDER COC
APR 26 2006
INIT: [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

51

BROWN AND CALDWELL

CHAIN OF CUSTODY RECORD

COC No._____

~~J6E080162~~
~~31581~~
Due

☒ 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

Event 15
NER A000150

PROJECT NAME: Vernington Air Qty
PROJECT NUMBER: 121343

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

1/6 OF THE EXPOSED FILTER WAS UTILIZED FOR THE METALS ANALYSIS. SACRAMENTO LOT # G6D260253

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	000431	4/24/02	9:35	MS	1	8x10 Filter	NONE	A	TSP, Gross Alpha/Beta, Th(228,230,232), Ra(226,228), U (234,235,238) Metals(Client List)			H4XIR		~~H4XRM~~	
02	000432		9:50		1	8x10 Filter	NONE	A	TSP, Gross Alpha/Beta, Th(228,230,232), Ra(226,228), U (234,235,238) Metals(Client List)			H4XIT		H4XRP	
03	000433		10:10		1	8x10 Filter	NONE	A	TSP, Gross Alpha/Beta, Th(228,230,232), Ra(226,228), U (234,235,238) Metals(Client List)			H4XIV		H4XRQ	
04	000434		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)			H4XIW		H4XRR	
05	000435		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)			H4XIX		H4XRT	
06					1	8x10 Filter	NONE	A	TSP, Gross Alpha/Beta, Th(228,230,232), Ra(226,228), U (234,235,238) Metals(Client List)					----	
07														----	
08														----	
09														----	
10														----	

COLLECTED & RELEASED BY: [signature]	DATE 4/24/02	TIME 16:00	COOLER I.D.:			COMMENTS (see note on back):
RECEIVED BY: [signature]	DATE 4/26/02	TIME 10:20	RELINQUISHED BY:	DATE / /	TIME :	RECEIVED IN GOOD CONDITION UNDER COC
			Steve Valmas	5/5/02	1600	APR 26 2003
S. Welch	5-8-02	0730				INI:
RECORD RETURNED BY:	DATE / /	TIME :				
COURIER: [illegible]			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

52

SEVERN TRENT STL

Sample Check-in List

Date/Time Received: 5-8-06 7:30 AM

Client: Brown Caldwell SDG #: 31580 NA [ ] SAF #: _____ NA [ ]

Work Order Number: J6E080157 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: ~~5~~ 7
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? *
    *For documentation only. No corrective action needed. Yes [✓] No [ ]
12. Were any anomalies identified in sample receipt? Yes [ ] No [✓]
13. Description of anomalies (include sample numbers): _____

Sample Custodian: S. Welch Date: 5-8-06 07:30

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

6/19/2006 1:10:59 PM

Lot No., Due Date: J6E080157; 06/06/2006

Client, Site: 536403; AIR MONITORING Yerington Mine

QC Batch No., Method Test: 6129276; RTHISO Thlso by ALP

SDG, Matrix: 31580; FILTER

1.0 COC

	Yes	No	N/A
1.1 Is the ICOC page complete; includes all applicable analysis, dates, SOP numbers, and revisions?	✓		

2.0 QC Batch

	Yes	No	N/A
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

	Yes	No	N/A
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

	Yes	No	N/A
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

	Yes	No	N/A
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 Steven E. Wheeland **Date** 6/19/06

SEVERN TRENT STL

Data Review Checklist
RADIOCHEMISTRY
Second Level Review

QC Batch Number: 612976

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: 6-20-06

6/19/2006 1:10:19 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	Mdq	Sample Date / Units	Expected	Yield	Volumes
31580	**9H4X1R10**			**J6E0801578**	000431	FILTER	5/8/2006 7:30:00		4/20/2006 9:35:00 AM			
ALPHA	BAS7		0	6/9/2006 6:54:58 PM	**3.1467E+00**	1.636E+00	1.668E+00	5.571E+00	PCI/SA	1.0	1.0E+0	2.076E-2
BETA	BDS8		0	6/9/2006 12:14:57 PM	**5.819E+00**	1.684E+00	1.73E+00	6.517E+00	PCI/SA	1.0	1.0E+0	8.301E-2
RA-226	BXTE		0	6/17/2006 7:40:00 PM	**6.3473E-02**	1.495E-01	1.496E-01	5.812E-01	PCI/SA	0.861	8.33E-1	2.501E-1
TH-228	9NS1		0	6/18/2006 10:09:38	**1.3125E-01**	6.942E-02	7.036E-02	1.654E-01	PCI/SA	0.998	1.0E+0	8.298E-2
TH-230	9NS1		0	6/18/2006 10:09:38	**1.9426E-02**	3.365E-02	3.369E-02	1.83E-01	PCI/SA	0.998	1.0E+0	8.298E-2
TH-232	9NS1		0	6/18/2006 10:09:38	**-6.4774E-03**	6.477E-03	6.502E-03	1.551E-01	PCI/SA	0.998	1.0E+0	8.298E-2
31580	**9H4X1T10**			**J6E0801579**	000432	FILTER	5/8/2006 7:30:00		4/20/2006 9:50:00 AM			
ALPHA	BAS7		0	6/10/2006 7:04:05 AM	**9.8496E-01**	1.663E+00	1.667E+00	7.819E+00	PCI/SA	1.0	1.0E+0	2.078E-2
BETA	BDS8		0	6/9/2006 12:14:57 PM	**8.2468E+00**	1.699E+00	1.796E+00	6.142E+00	PCI/SA	1.0	1.0E+0	8.391E-2
RA-226	BXTE		0	6/17/2006 7:40:00 PM	**4.3081E-02**	6.769E-02	6.786E-02	2.815E-01	PCI/SA	0.9	8.33E-1	2.507E-1
TH-228	9NS1		0	6/18/2006 10:09:46	**-3.2423E-02**	1.621E-02	1.646E-02	2.783E-01	PCI/SA	0.777	1.0E+0	8.388E-2
TH-230	9NS1		0	6/18/2006 10:09:46	**2.431E-01**	1.014E-01	1.036E-01	2.398E-01	PCI/SA	0.777	1.0E+0	8.388E-2
TH-232	9NS1		0	6/18/2006 10:09:46	**0.0E+00**	0.0E+00	4.652E-02	1.029E-01	PCI/SA	0.777	1.0E+0	8.388E-2
31580	**9H4X1V10**			**J6E08015710**	000433	FILTER	5/8/2006 7:30:00		4/20/2006 10:10:00 AM			
ALPHA	BAS7		0	6/10/2006 7:04:05 AM	**2.4116E+00**	1.503E+00	1.524E+00	5.595E+00	PCI/SA	1.0	1.0E+0	2.046E-2
BETA	BDS8		0	6/9/2006 12:15:08 PM	**6.5031E+00**	1.797E+00	1.852E+00	6.911E+00	PCI/SA	1.0	1.0E+0	8.113E-2
RA-226	BXTE		0	6/17/2006 7:39:00 PM	**2.0787E-02**	1.562E-01	1.563E-01	6.139E-01	PCI/SA	0.942	8.33E-1	2.435E-1
TH-228	9NS1		0	6/18/2006 10:09:48	**1.4006E-01**	9.904E-02	9.983E-02	3.436E-01	PCI/SA	1.005	1.0E+0	8.18E-2
TH-230	9NS1		0	6/18/2006 10:09:48	**1.7508E-01**	8.754E-02	8.894E-02	1.186E-01	PCI/SA	1.005	1.0E+0	8.18E-2
TH-232	9NS1		0	6/18/2006 10:09:48	**4.3769E-02**	4.377E-02	4.394E-02	1.186E-01	PCI/SA	1.005	1.0E+0	8.18E-2
31580	**9H4X1W10**			**J6E08015711**	000434	FILTER	5/8/2006 7:30:00		4/20/2006 10:30:00 AM			
ALPHA	BAS7		0	6/10/2006 7:04:05 AM	**3.5615E+00**	1.717E+00	1.756E+00	5.68E+00	PCI/SA	1.0	1.0E+0	2.084E-2
BETA	BDS8		0	6/9/2006 12:15:08 PM	**1.005E+01**	1.753E+00	1.886E+00	6.095E+00	PCI/SA	1.0	1.0E+0	8.374E-2
RA-226	BXTE		0	6/18/2006 12:52:00 PM	**6.7514E-01**	2.198E-01	2.307E-01	6.558E-01	PCI/SA	0.86	8.33E-1	2.492E-1
TH-228	9NS1		0	6/18/2006 10:09:51	**3.1038E-01**	1.82E-01	1.845E-01	5.711E-01	PCI/SA	0.616	1.0E+0	8.358E-2
TH-230	9NS1		0	6/18/2006 10:09:51	**5.0922E-01**	1.925E-01	1.987E-01	1.971E-01	PCI/SA	0.616	1.0E+0	8.358E-2
TH-232	9NS1		0	6/18/2006 10:09:51	**0.0E+00**	0.0E+00	8.91E-02	1.971E-01	PCI/SA	0.616	1.0E+0	8.358E-2
31580	**9H4X1X10**			**J6E08015712**	000435	FILTER	5/8/2006 7:30:00		4/20/2006 10:45:00 AM			
ALPHA	BAS7		0	6/10/2006 7:04:05 AM	**0.0E+00**	0.0E+00	1.52E+00	7.872E+00	PCI/SA	1.0	1.0E+0	2.075E-2
BETA	BDS8		0	6/9/2006 12:15:08 PM	**9.2048E+00**	1.735E+00	1.922E+00	6.153E+00	PCI/SA	1.0	1.0E+0	8.266E-2
RA-226	BXTE		0	6/18/2006 12:51:00 PM	**-2.2511E-01**	1.625E-01	1.641E-01	7.378E-01	PCI/SA	0.826	8.33E-1	2.479E-1
TH-228	9NS1		0	6/18/2006 6:39:26 PM	**2.3009E-02**	7.631E-02	7.633E-02	3.868E-01	PCI/SA	0.87	1.0E+0	8.266E-2
TH-230	9NS1		0	6/18/2006 6:39:26 PM	**3.45E-01**	1.22E-01	1.258E-01	1.169E-01	PCI/SA	0.87	1.0E+0	8.266E-2
TH-232	9NS1		0	6/18/2006 6:39:26 PM	**2.1563E-02**	4.822E-02	4.825E-02	2.587E-01	PCI/SA	0.87	1.0E+0	8.266E-2
31580	**9H4XP810**			**J6E0801571**	P-0598	FILTER	5/8/2006 7:30:00		4/20/2006 9:10:00 AM			
ALPHA	BAS7		0	6/9/2006 4:45:00 PM	**-2.2308E+00**	9.976E-01	1.024E+00	7.864E+00	PCI/SA	1.0	1.0E+0	2.08E-2
BETA	BDS8		0	6/9/2006 12:14:58 PM	**7.9307E+00**	1.732E+00	1.816E+00	6.318E+00	PCI/SA	1.0	1.0E+0	8.37E-2
RA-226	BXTE		0	6/17/2006 7:15:00 PM	**-9.379E-02**	9.281E-02	9.333E-02	4.615E-01	PCI/SA	0.974	8.33E-1	2.51E-1
TH-228	9NS1		0	6/18/2006 10:09:36	**2.4368E-01**	1.241E-01	1.261E-01	3.248E-01	PCI/SA	0.858	1.0E+0	8.345E-2
TH-230	9NS1		0	6/18/2006 10:09:36	**2.5383E-01**	1.135E-01	1.159E-01	1.376E-01	PCI/SA	0.858	1.0E+0	8.345E-2
TH-232	9NS1		0	6/18/2006 10:09:36	**2.5383E-02**	5.676E-02	5.681E-02	3.045E-01	PCI/SA	0.858	1.0E+0	8.345E-2
31580	**9H4XQH10**			**J6E0801572**	P-0599	FILTER	5/8/2006 7:30:00		4/20/2006 9:30:00 AM			
ALPHA	BAS7		0	6/9/2006 4:45:00 PM	**-5.2364E-01**	1.021E+00	1.022E+00	6.289E+00	PCI/SA	1.0	1.0E+0	2.078E-2
BETA	BDS8		0	6/9/2006 12:14:58 PM	**5.9672E+00**	1.657E+00	1.706E+00	6.332E+00	PCI/SA	1.0	1.0E+0	8.349E-2
RA-226	BXTE		0	6/17/2006 7:12:00 PM	**-1.3068E-01**	1.042E-01	1.051E-01	5.245E-01	PCI/SA	0.785	8.33E-1	2.484E-1
TH-228	9NS1		0	6/18/2006 10:09:36	**-3.963E-02**	2.802E-02	2.824E-02	2.917E-01	PCI/SA	1.0	1.0E+0	8.268E-2
TH-230	9NS1		0	6/18/2006 10:09:36	**2.2292E-01**	1.017E-01	1.036E-01	2.734E-01	PCI/SA	1.0	1.0E+0	8.268E-2
TH-232	9NS1		0	6/18/2006 10:09:36	**3.7153E-02**	3.715E-02	3.73E-02	1.007E-01	PCI/SA	1.0	1.0E+0	8.268E-2
31580	**9H4XQM10**			**J6E0801573**	P-0600	FILTER	5/8/2006 7:30:00		4/20/2006 9:45:00 AM			
ALPHA	BAS7		0	6/9/2006 4:45:00 PM	**3.3763E-01**	1.05E+00	1.05E+00	5.579E+00	PCI/SA	1.0	1.0E+0	2.074E-2
BETA	BDS8		0	6/9/2006 12:14:55 PM	**7.9287E+00**	1.702E+00	1.789E+00	6.211E+00	PCI/SA	1.0	1.0E+0	8.34E-2

6129276, **Samples Inserted | Updated | NotUpdated => 2 | 0 | 12,
**Results Inserted | ReTestInserted | Updated | NotInserted => 40 | 0 | 0 | 0.
**Diff RptDb | Qtims => *wo:H40211AA=> , mat:FILTER | Air *wo:H40211AA=> , mat:FILTER | Air *wo:H40211AA=> , mat:FILTER | Air.

STL Richland, Wa Calc Review v4.8.18

Page 1

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-226	BXTE	0		6/17/2006 7:13:01 PM	**1.586E-01**	1.467E-01	1.477E-01	5.307E-01	PCI/SA		0.889	8.33E-1	2.492E-1
TH-228	9NS1	0		6/18/2006 6:39:26 PM	**6.6245E-07**	4.863E-02	4.863E-02	2.922E-01	PCI/SA		1.035	1.0E+0	8.316E-2
TH-230	9NS1	0		6/18/2006 6:39:26 PM	**1.8606E-02**	4.16E-02	4.163E-02	2.232E-01	PCI/SA		1.035	1.0E+0	8.316E-2
TH-232	9NS1	0		6/18/2006 6:39:26 PM	**5.5816E-02**	5.582E-02	5.603E-02	2.232E-01	PCI/SA		1.035	1.0E+0	8.316E-2
31580	**9H4XQN10**			**J6E0801574**	P-0601	FILTER	5/8/2006 7:30:00	4/20/2006 10:05:00 AM					
ALPHA	BAS7	0		6/9/2006 6:54:58 PM	**5.6178E+00**	2.155E+00	2.234E+00	6.851E+00	PCI/SA		1.0	1.0E+0	2.106E-2
BETA	BDS8	0		6/9/2006 12:14:55 PM	**7.01E+00**	1.725E+00	1.816E+00	6.514E+00	PCI/SA		1.0	1.0E+0	8.402E-2
RA-226	BXTE	0		6/17/2006 7:13:03 PM	**1.3493E-01**	8.464E-02	8.576E-02	2.713E-01	PCI/SA		0.918	8.33E-1	2.497E-1
TH-228	9NS1	0		6/18/2006 10:09:36	**8.7878E-02**	6.214E-02	6.263E-02	1.191E-01	PCI/SA		1.014	1.0E+0	8.379E-2
TH-230	9NS1	0		6/18/2006 10:09:36	**4.1193E-02**	4.119E-02	4.136E-02	1.116E-01	PCI/SA		1.014	1.0E+0	8.379E-2
TH-232	9NS1	0		6/18/2006 10:09:36	**-2.0596E-02**	2.06E-02	2.068E-02	2.471E-01	PCI/SA		1.014	1.0E+0	8.379E-2
31580	**9H4XQQ10**			**J6E0801575**	P-0602	FILTER	5/8/2006 7:30:00	4/20/2006 10:25:00 AM					
ALPHA	BAS7	0		6/9/2006 6:54:58 PM	**-6.4345E-01**	1.051E+00	1.053E+00	6.563E+00	PCI/SA		1.0	1.0E+0	2.09E-2
BETA	BDS8	0		6/9/2006 12:14:55 PM	**6.1542E+00**	1.71E+00	1.785E+00	6.558E+00	PCI/SA		1.0	1.0E+0	8.353E-2
RA-226	BXTE	0		6/17/2006 7:11:00 PM	**1.8918E-01**	1.424E-01	1.436E-01	4.959E-01	PCI/SA		0.842	8.33E-1	2.496E-1
TH-228	9NS1	0		6/18/2006 10:09:36	**8.0246E-02**	8.025E-02	8.063E-02	2.175E-01	PCI/SA		0.458	1.0E+0	8.357E-2
TH-230	9NS1	0		6/18/2006 10:09:36	**3.7616E-01**	1.682E-01	1.722E-01	2.039E-01	PCI/SA		0.458	1.0E+0	8.357E-2
TH-232	9NS1	0		6/18/2006 10:09:36	**0.0E+00**	0.0E+00	9.214E-02	2.039E-01	PCI/SA		0.458	1.0E+0	8.357E-2
31580	**9H4XQR10**			**J6E0801576**	P-0603	FILTER	5/8/2006 7:30:00	4/20/2006 10:40:00 AM					
ALPHA	BAS7	0		6/9/2006 6:54:58 PM	**-2.2438E+00**	1.003E+00	1.03E+00	7.909E+00	PCI/SA		1.0	1.0E+0	2.066E-2
BETA	BDS8	0		6/9/2006 12:14:57 PM	**7.7639E+00**	1.742E+00	1.827E+00	6.452E+00	PCI/SA		1.0	1.0E+0	8.297E-2
RA-226	BXTE	0		6/17/2006 7:37:00 PM	**-1.0338E-01**	1.594E-01	1.597E-01	7.148E-01	PCI/SA		0.865	8.33E-1	2.465E-1
TH-228	9NS1	0		6/18/2006 10:09:27	**-9.9579E-02**	6.605E-02	6.663E-02	4.544E-01	PCI/SA		0.892	1.0E+0	8.225E-2
TH-230	9NS1	0		6/18/2006 10:09:27	**1.4937E-01**	7.468E-02	7.584E-02	1.012E-01	PCI/SA		0.892	1.0E+0	8.225E-2
TH-232	9NS1	0		6/18/2006 10:09:27	**0.0E+00**	0.0E+00	4.573E-02	1.012E-01	PCI/SA		0.892	1.0E+0	8.225E-2
31580	**9H4XQT10**			**J6E0801577**	P-0605	FILTER	5/8/2006 7:30:00	4/20/2006 10:35:00 AM					
ALPHA	BAS7	0		6/9/2006 6:54:58 PM	**0.0E+00**	0.0E+00	1.149E+00	6.3E+00	PCI/SA		1.0	1.0E+0	2.074E-2
BETA	BDS8	0		6/9/2006 12:14:57 PM	**-1.0654E+00**	1.362E+00	1.365E+00	6.307E+00	PCI/SA		1.0	1.0E+0	8.322E-2
RA-226	BXTE	0		6/17/2006 7:39:00 PM	**4.1653E-02**	1.489E-01	1.49E-01	5.808E-01	PCI/SA		0.957	8.33E-1	2.501E-1
TH-228	9NS1	0		6/18/2006 10:09:30	**2.7368E-01**	2.56E-01	2.578E-01	1.007E+00	PCI/SA		0.331	1.0E+0	8.312E-2
TH-230	9NS1	0		6/18/2006 10:09:30	**1.2829E-01**	1.283E-01	1.291E-01	3.477E-01	PCI/SA		0.331	1.0E+0	8.312E-2
TH-232	9NS1	0		6/18/2006 10:09:30	**0.0E+00**	0.0E+00	1.571E-01	3.477E-01	PCI/SA		0.331	1.0E+0	8.312E-2
31580	**H40211AB**			**J6E090000276**	INTRA-LAB BLANK	FILTER	5/8/2006 7:30:00	4/20/2006 9:10:00 AM					
TH-228	9NS1	0	B	6/18/2006 6:39:26 PM	**-7.2961E-03**	3.648E-03	3.702E-03	3.388E-02	PCI/SA		0.881	1.0E+0	1.0E+0
TH-230	9NS1	0	B	6/18/2006 6:39:26 PM	**2.5641E-02**	9.82E-03	1.007E-02	2.051E-02	PCI/SA		0.881	1.0E+0	1.0E+0
TH-232	9NS1	0	B	6/18/2006 6:39:26 PM	**6.8376E-03**	4.835E-03	4.871E-03	9.265E-03	PCI/SA		0.881	1.0E+0	1.0E+0
31580	**H40211CS**			**J6E090000276**	INTRA-LAB CHECK	FILTER	5/8/2006 7:30:00	4/20/2006 9:10:00 AM					
TH-230	9NS1	0	S	6/18/2006 6:39:26 PM	**1.9789E+00**	8.997E-02	1.959E-01	2.45E-02	PCI/SA	1.8248E+00	0.87	1.0E+0	1.0E+0

6129276, **Samples Inserted | Updated | NotUpdated => 2 | 0 | 12,
**Results Inserted | ReTestInserted | Updated | NotInserted => 40 | 0 | 0 | 0.
**Diff RptDb | Qtims => *wo:H40211AA=> , mat:FILTER | Air *wo:H40211AA=> , mat:FILTER | Air *wo:H40211AA=> , mat:FILTER | Air.

6/19/2006 1:10:22 PM

ICOC Fraction Transfer/Status Report

ByDate: 6/19/2005, 6/24/2006, Batch: '6129276', User: *ALL Order By DateTimeAccepting

Q Batch	Work Ord	CurStatus	Accepting			Comments
6129276						
AC		**CalcC**	**HansenM**	6/5/2006 3:55:23 PM		
SC			antonsonl	IsBatched	5/9/2006 1:11:28 PM	ICOC_RADCALC v4.8.24
SC			HansenM	InPrep2	6/5/2006 3:55:23 PM	RICH-RC-5016 REVISION 5
SC			HansenM	Prep2C	6/5/2006 3:57:00 PM	RICH-RC-5016 REVISION 5
SC			AndersonE	Sep1C	6/14/2006 8:52:54 AM	RICH-RC-5087 REV 0
SC			FABREM	Sep2C	6/17/2006 2:58:34 PM	RICH-RC-5039 REV 6
SC			DAWKINSO	InCnt1	6/17/2006 3:12:31 PM	RICH-RD-0008 REVISION 4
SC			BlackCL	CalcC	6/19/2006 6:43:38 AM	RICH-RD-0008 REVISION 4
AC			**HansenM**	6/5/2006 3:57:00 PM		
AC			**AndersonE**	6/14/2006 8:52:54		
AC			**FABREM**	6/17/2006 2:58:34 PM		
AC			**DAWKINSO**	6/17/2006 3:12:31 PM		
AC			**BlackCL**	6/19/2006 6:43:38		

AC: Accepting Entry; SC: Status Change

STL Richland

Richland Wa.

Grp Rec Cnt: 6

ICOCFractions v4.8.18

STL RICHLAND

6/5/2006 11:34:51 AM

Sample Preparation/Analysis

Balance Id:1120373922

536403, Brown and Caldwell , Brown & Caldwell

9N Thlso PrpRc5016, SepRC~~5004~~ 5087 (5003) JC 6/6/06

S1 Thorium-228,230,232 by Alpha Spec

01 STANDARD TEST SET

Pipet #: _____

AnalyDueDate: 06/05/2006

Sep1 DT/Tm Tech:

Batch: 6129276 FILTER pCi/sampl PM, Quote: SA , 63174

Sep2 DT/Tm Tech: 6-17-06 gmf

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 H4XP8-1-AA J6E080157-1-SAMP 04/20/2006 09:10	0.833sa,g	500.51sa,g	50.14g,in	0.0834g	THTF0560 06/02/06,pd 05/23/05,r					
		AmtRec: FILTER	#Containers: 1				Scr:	Alpha:	Beta:	
2 H4XQH-1-AA J6E080157-2-SAMP 04/20/2006 09:30	0.833sa,g	504.27sa,g	50.05g,in	0.0827g	THTF0561 06/02/06,pd 05/23/05,r					
		AmtRec: FILTER	#Containers: 1				Scr:	Alpha:	Beta:	
3 H4XQM-1-AA J6E080157-3-SAMP 04/20/2006 09:45	0.833sa,g	503.67sa,g	50.28g,in	0.0832g	THTF0562 06/02/06,pd 05/23/05,r					
		AmtRec: FILTER	#Containers: 1				Scr:	Alpha:	Beta:	
4 H4XQN-1-AA J6E080157-4-SAMP 04/20/2006 10:05	0.833sa,g	500.38sa,g	50.33g,in	0.0838g	THTF0563 06/02/06,pd 05/23/05,r					
		AmtRec: FILTER	#Containers: 1				Scr:	Alpha:	Beta:	
5 H4XQQ-1-AA J6E080157-5-SAMP 04/20/2006 10:25	0.833sa,g	501.40sa,g	50.30g,in	0.0836g	THTF0564 06/02/06,pd 05/23/05,r					
		AmtRec: FILTER	#Containers: 1				Scr:	Alpha:	Beta:	
6 H4XQR-1-AA J6E080157-6-SAMP 04/20/2006 10:40	0.833sa	508.50sa	50.21g,in	0.0823g	THTF0565 06/02/06,pd 05/23/05,r					
		AmtRec: FILTER	#Containers: 1				Scr:	Alpha:	Beta:	
7 H4XQT-1-AA J6E080157-7-SAMP 04/20/2006 10:35	0.833sa,g	501.97sa,g	50.09g,in	0.0831g	THTF0566 06/02/06,pd 05/23/05,r					
		AmtRec: FILTER	#Containers: 1				Scr:	Alpha:	Beta:	

STL RICHLAND

6/5/2006 11:34:51 AM

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: 06/05/2006

Sep1 DT/Tm Tech:

Batch: 6129276 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 H4X1R-1-AA J6E080157-8-SAMP 04/20/2006 09:35	0.833sa,g	502.76sa,g	50.08g,in	0.083g	THTF0567 06/02/06,pd 05/23/05,r					
		AmtRec: FILTER		#Containers: 1				Scr:	Alpha:	Beta:
9 H4X1T-1-AA J6E080157-9-SAMP 04/20/2006 09:50	0.833sa,g	500.74sa,g	50.42g,in	0.0839g	THTF0568 06/02/06,pd 05/23/05,r					
		AmtRec: FILTER		#Containers: 1				Scr:	Alpha:	Beta:
10H4X1V-1-AA J6E080157-10-SAMP 04/20/2006 10:10	0.833sa,g	515.15sa,g	50.59g,in	0.0818g	THTF0569 06/02/06,pd 05/23/05,r					
		AmtRec: FILTER		#Containers: 1				Scr:	Alpha:	Beta:
11H4X1W-1-AA J6E080157-11-SAMP 04/20/2006 10:30	0.833sa,g	501.63sa,g	50.33g,in	0.0836g	THTF0570 06/02/06,pd 05/23/05,r					
		AmtRec: FILTER		#Containers: 1				Scr:	Alpha:	Beta:
12H4X1X-1-AA J6E080157-12-SAMP 04/20/2006 10:45	0.833sa,g	504.16sa,g	50.03g,in	0.0827g	THTF0571 06/02/06,pd 05/23/05,r					
		AmtRec: FILTER		#Containers: 1				Scr:	Alpha:	Beta:
13H4021-1-AA-B J6E090000-276-BLK 04/20/2006 09:10			1.00sa,in	1.00sa	THTF0572 06/02/06,pd 05/23/05,r					
		AmtRec:		#Containers: 1				Scr:	Alpha:	Beta:
14H4021-1-AC-C J6E090000-276-LCS 04/20/2006 09:10			1.00sa,in	1.00sa	THSO0073 06/02/06,pd 01/28/04,r					
		AmtRec:		#Containers: 1				Scr:	Alpha:	Beta:

Batch Nbr: 6129276

Alpha Spec, ThIso by ALP , Results Summary Report

6/19/2006 6:43:21 AM

Status	Meth	Matrix	Wrk Ord	Parameter	Sa Act	Uncert	Q	Units	Av	ILcC	IDC	QC	Yield	RYld
ThIso by ALP			Richland Standard AlpIso Wo Blk Subt.											
Calc	S1	FILTER	H4XP81AA	TH-228	2.44E-01	(1.26E-01)		PCI/SA	R	8.91E-02	3.25E-01		86%	
Calc	S1	FILTER	H4XP81AA	TH-230	2.54E-01	(1.16E-01)		PCI/SA	R		1.38E-01		86%	
Calc	S1	FILTER	H4XP81AA	TH-232	2.54E-02	(5.68E-02)	U4	PCI/SA	R	8.35E-02	3.04E-01		86%	
Calc	S1	FILTER	H4XQH1AA	TH-228	-3.96E-02	(2.82E-02)	U4	PCI/SA	R	9.22E-02	2.92E-01		100%	
Calc	S1	FILTER	H4XQH1AA	TH-230	2.23E-01	(1.04E-01)		PCI/SA	R	8.64E-02	2.73E-01		100%	
Calc	S1	FILTER	H4XQH1AA	TH-232	3.72E-02	(3.73E-02)	U4	PCI/SA	R		1.01E-01		100%	
Calc	S1	FILTER	H4XQM1AA	TH-228	6.62E-07	(4.86E-02)	U4	PCI/SA	R	9.24E-02	2.92E-01		103%	
Calc	S1	FILTER	H4XQM1AA	TH-230	1.86E-02	(4.16E-02)	U4	PCI/SA	R	6.12E-02	2.23E-01		103%	
Calc	S1	FILTER	H4XQM1AA	TH-232	5.58E-02	(5.60E-02)	U4	PCI/SA	R	6.12E-02	2.23E-01		103%	
Calc	S1	FILTER	H4XQN1AA	TH-228	8.79E-02	(6.26E-02)	U4	PCI/SA	R		1.19E-01		101%	
Calc	S1	FILTER	H4XQN1AA	TH-230	4.12E-02	(4.14E-02)	U4	PCI/SA	R		1.12E-01		101%	
Calc	S1	FILTER	H4XQN1AA	TH-232	-2.06E-02	(2.07E-02)	U4	PCI/SA	R	6.78E-02	2.47E-01		101%	
Calc	S1	FILTER	H4XQQ1AA	TH-228	8.02E-02	(8.06E-02)	U4	PCI/SA	R		2.17E-01		46%	
Calc	S1	FILTER	H4XQQ1AA	TH-230	3.76E-01	(1.72E-01)		PCI/SA	R		2.04E-01		46%	
Calc	S1	FILTER	H4XQQ1AA	TH-232	0.00E+00	(9.21E-02)	U4	PCI/SA	R		2.04E-01		46%	
Calc	S1	FILTER	H4XQR1AA	TH-228	-9.96E-02	(6.66E-02)	U4	PCI/SA	R	1.73E-01	4.54E-01		89%	
Calc	S1	FILTER	H4XQR1AA	TH-230	1.49E-01	(7.58E-02)		PCI/SA	R		1.01E-01		89%	
Calc	S1	FILTER	H4XQR1AA	TH-232	0.00E+00	(4.57E-02)	U4	PCI/SA	R		1.01E-01		89%	
Calc	S1	FILTER	H4XQT1AA	TH-228	2.74E-01	(2.58E-01)	U4	PCI/SA	R	3.18E-01	1.01E+00		33%	
Calc	S1	FILTER	H4XQT1AA	TH-230	1.28E-01	(1.29E-01)	U4	PCI/SA	R		3.48E-01		33%	
Calc	S1	FILTER	H4XQT1AA	TH-232	0.00E+00	(1.57E-01)	U4	PCI/SA	R		3.48E-01		33%	
Calc	S1	FILTER	H4X1R1AA	TH-228	1.31E-01	(7.04E-02)		PCI/SA	R	3.59E-02	1.65E-01		100%	
Calc	S1	FILTER	H4X1R1AA	TH-230	1.94E-02	(3.37E-02)	U4	PCI/SA	R	4.76E-02	1.83E-01		100%	
Calc	S1	FILTER	H4X1R1AA	TH-232	-6.48E-03	(6.50E-03)	U4	PCI/SA	R	3.37E-02	1.55E-01		100%	
Calc	S1	FILTER	H4X1T1AA	TH-228	-3.24E-02	(1.65E-02)	U4	PCI/SA	R	8.43E-02	2.78E-01		78%	
Calc	S1	FILTER	H4X1T1AA	TH-230	2.43E-01	(1.04E-01)		PCI/SA	R	6.85E-02	2.40E-01		78%	
Calc	S1	FILTER	H4X1T1AA	TH-232	0.00E+00	(4.65E-02)	U4	PCI/SA	R		1.03E-01		78%	
Calc	S1	FILTER	H4X1V1AA	TH-228	1.40E-01	(9.98E-02)	U4	PCI/SA	R	1.09E-01	3.44E-01		101%	
Calc	S1	FILTER	H4X1V1AA	TH-230	1.75E-01	(8.89E-02)		PCI/SA	R		1.19E-01		101%	
Calc	S1	FILTER	H4X1V1AA	TH-232	4.38E-02	(4.39E-02)	U4	PCI/SA	R		1.19E-01		101%	
Calc	S1	FILTER	H4X1W1AA	TH-228	3.10E-01	(1.84E-01)		PCI/SA	R	1.81E-01	5.71E-01		62%	
Calc	S1	FILTER	H4X1W1AA	TH-230	5.09E-01	(1.99E-01)		PCI/SA	R		1.97E-01		62%	
Calc	S1	FILTER	H4X1W1AA	TH-232	0.00E+00	(8.91E-02)	U4	PCI/SA	R		1.97E-01		62%	
Calc	S1	FILTER	H4X1X1AA	TH-228	2.30E-02	(7.63E-02)	U4	PCI/SA	R	1.31E-01	3.87E-01		87%	
Calc	S1	FILTER	H4X1X1AA	TH-230	3.45E-01	(1.26E-01)		PCI/SA	R		1.17E-01		87%	
Calc	S1	FILTER	H4X1X1AA	TH-232	2.16E-02	(4.83E-02)	U4	PCI/SA	R	7.09E-02	2.59E-01		87%	
Calc	S1	FILTER	H40211AA	TH-228	-7.30E-03	(3.70E-03)	U4	PCI/SA	R	1.20E-02	3.39E-02	B	88%	

() - (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: 6129276

Alpha Spec, ThIso by ALP , Results

6/19/2006 6:43:21 AM

Summary Report

Status	Meth	Matrix	Wrk Ord	Parameter	Sa Act	Uncert	Q	Units	Av	ILcC	IDC	QC	Yield	RYld
Calc	S1	FILTER	**H40211AA**	TH-230	**2.56E-02**	**(1.01E-02)**		PCI/SA	R	5.62E-03	2.05E-02	**B**	88%	
Calc	S1	FILTER	**H40211AA**	TH-232	**6.84E-03**	**(4.87E-03)**	**U4**	PCI/SA	R		9.26E-03	**B**	88%	
Calc	S1	FILTER	**H40211AC**	TH-230	**1.98E+00**	**(1.96E-01)**		PCI/SA	R	6.72E-03	2.45E-02	**S**	87%	108%

CW
GEW
6/14/06

() - (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:54
RADCALC v4.8.18
STL Richland

Batch Nbr: 6129276

Alpha Spec, ThIso by ALP , Calculated Results

Detailed Report

6/19/2006 6:43:22 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	S1	FILTER	*STLE	AlpIsoWoBS	**H4XP81AA**	**PCI/SA**		04/20/06 09:10	06/18/06 10:09			1	1.00 SA	
536403,P-0598					,J6E080157-1 v4.8.18		FILTER					THTF0560 Alq		0.083448 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	06/18/06 05:59	TH-228	5	1	ALP174	ED	N	N	2.4814E-01		N	86%	N		1.0000E+00	4.5045E-01	1.0603E+00	
			499.4666666	998.95			Y		(7.444E-03)			6%			(0.000E+00)	11.983493		
1	06/18/06 05:59	TH-229	428	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)	11.983493		
2	06/18/06 05:59	TH-230	5	0	ALP174	ED	N	N	2.4814E-01		N	86%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			499.4666666	998.95			Y		(7.444E-03)			6%			(0.000E+00)	11.983493		
3	06/18/06 05:59	TH-232	1	1	ALP174	ED	N	N	2.4814E-01		N	86%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			499.4666666	998.95			Y		(7.444E-03)			6%			(0.000E+00)	11.983493		

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
	06/19/06	TH-228	R	**0.243683**		9.00963E-03	0.042576	0.042576	1.00 SA	86%		0.324802		
				(0.126063)		(4.5875E-03)	(0.021892)	(0.021892)	(0.027064)			0.089079		
	06/19/06	TH-229	R	**18.619357**		8.55913E-01	3.449329	3.449329	1.00 SA	86%				
				(1.498338)		(4.1433E-02)	(0.196439)	(0.196439)	(0.027064)					
	06/19/06	TH-230	R	**0.253829**		1.00107E-02	0.047023	0.047023	1.00 SA	86%		0.137575		
				(0.115866)		(4.4769E-03)	(0.021298)	(0.021298)	(0.027064)					
	06/19/06	TH-232	R	**0.025383**	**U4**	1.00108E-03	0.004702	0.004702	1.00 SA	86%		0.304494		
				(0.056805)		(2.2384E-03)	(0.01052)	(0.01052)	(0.027064)			0.083509		

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	**H4XQH1AA**	**PCI/SA**		04/20/06 09:30	06/18/06 10:09			1	1.00 SA	
536403,P-0599					,J6E080157-2 v4.8.18		FILTER					THTF0561 Alq		0.082677 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	06/18/06 05:59	TH-228	0	2	ALP175	ED	N	N	2.9360E-01		N	100%	N		1.0000E+00	4.5045E-01	1.0603E+00	
			499.4666666	998.95			Y		(8.808E-03)			6%			(0.000E+00)	12.095228		
1	06/18/06 05:59	TH-229	590	1	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)	12.095228		
2	06/18/06 05:59	TH-230	7	2	ALP175	ED	N	N	2.9360E-01		N	100%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			499.4666666	998.95			Y		(8.808E-03)			6%			(0.000E+00)	12.095228		
3	06/18/06 05:59	TH-232	1	0	ALP175	ED	N	N	2.9360E-01		N	100%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			499.4666666	998.95			Y		(8.808E-03)			6%			(0.000E+00)	12.095228		

() - (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: 6129276 — Alpha Spec, ThIso by ALP , Calculated Results — 6/19/2006 6:43:22 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
	06/19/06	TH-228	R	**-0.03963**	U4	-2.00210E-03	-0.00686	-0.00686	1.00 SA	100%		0.291681		
				(0.02824)		(1.4157E-03)	(0.004873)	(0.004873)	(0.028284)			0.092196		
	06/19/06	TH-229	R	**21.90194**		1.18026E+00	4.019962	4.019962	1.00 SA	100%				
				(1.682108)		(4.8642E-02)	(0.20492)	(0.20492)	(0.028284)					
	06/19/06	TH-230	R	**0.222921**		1.20128E-02	0.040916	0.040916	1.00 SA	100%		0.273448		
				(0.103633)		(5.4831E-03)	(0.018875)	(0.018875)	(0.028284)			0.086432		
	06/19/06	TH-232	R	**0.037153**	U4	2.00214E-03	0.006819	0.006819	1.00 SA	100%		0.100686		
				(0.037298)		(2.0021E-03)	(0.006835)	(0.006835)	(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	**H4XQM1AA**	**PCI/SA**		04/20/06 09:45	06/18/06 18:39			1	1.00 SA	
536403,P-0600					,J6E080157-3 v4.8.18		FILTER					THTF0562 Alq		0.083156 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	06/18/06 14:29	TH-228	1	2	ALP176	ED	N	N	2.9146E-01		N	103%	N		1.0000E+00	4.5045E-01	1.0606E+00	
			499.4666666	998.95			Y		(8.744E-03)			6%			(0.000E+00)	12.025574		
1	06/18/06 14:29	TH-229	611	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)	12.025574		
2	06/18/06 14:29	TH-230	1	1	ALP176	ED	N	N	2.9146E-01		N	103%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			499.4666666	998.95			Y		(8.744E-03)			6%			(0.000E+00)	12.025574		
3	06/18/06 14:29	TH-232	2	1	ALP176	ED	N	N	2.9146E-01		N	103%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			499.4666666	998.95			Y		(8.744E-03)			6%			(0.000E+00)	12.025574		

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
	06/19/06	TH-228	R	**6.6245E-07**	U4	3.34040E-08	1.153E-07	1.153E-07	1.00 SA	103%		0.29223		
				(0.048629)		(2.4521E-03)	(0.008464)	(0.008464)	(0.028284)			0.092369		
	06/19/06	TH-229	R	**22.679859**		1.22030E+00	4.186855	4.186855	1.00 SA	103%				
				(1.734193)		(4.9520E-02)	(0.211291)	(0.211291)	(0.028284)					
	06/19/06	TH-230	R	**0.018606**	U4	1.00108E-03	0.003435	0.003435	1.00 SA	103%		0.22319		
				(0.041635)		(2.2384E-03)	(0.007684)	(0.007684)	(0.028284)			0.061211		
	06/19/06	TH-232	R	**0.055816**	U4	3.00322E-03	0.010304	0.010304	1.00 SA	103%		0.22319		
				(0.056031)		(3.0032E-03)	(0.010327)	(0.010327)	(0.028284)			0.061211		

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	**H4XQN1AA**	**PCI/SA**		04/20/06 10:05	06/18/06 10:09			1	1.00 SA	
536403,P-0601					,J6E080157-4 v4.8.18		FILTER					THTF0563 Alq		0.083786 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	06/18/06 05:59	TH-228	2	0	ALP177	ED	N	N	2.6130E-01		N	101%	N		1.0000E+00	4.5045E-01	1.0603E+00	
			499.4666666	998.95			Y		(7.839E-03)			6%			(0.000E+00)	11.935154		

() - (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: 6129276 Alpha Spec, ThIso by ALP , Calculated Results 6/19/2006 6:43:22 AM

1	06/18/06 05:59	TH-229	534	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)	11.935154	
2	06/18/06 05:59	TH-230	1	0	ALP177	ED	N	N	2.6130E-01	N	101%	N	1.0000E+00	4.5045E-01	1.0000E+00
			499.4666666	998.95			Y		(7.839E-03)		6%		(0.000E+00)	11.935154	
3	06/18/06 05:59	TH-232	0	1	ALP177	ED	N	N	2.6130E-01	N	101%	N	1.0000E+00	4.5045E-01	1.0000E+00
			499.4666666	998.95			Y		(7.839E-03)		6%		(0.000E+00)	11.935154	

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
	06/19/06	TH-228	R	**0.087878**	U4	4.00427E-03	0.015417	0.015417	1.00 SA	101%		0.119075		
				(0.062632)		(2.8314E-03)	(0.010952)	(0.010952)	(0.028284)					
	06/19/06	TH-229	R	**21.997221**		1.06914E+00	4.0916	4.0916	1.00 SA	101%				
				(1.714183)		(4.6266E-02)	(0.215447)	(0.215447)	(0.028284)					
	06/19/06	TH-230	R	**0.041193**	U4	2.00214E-03	0.007662	0.007662	1.00 SA	101%		0.111634		
				(0.041357)		(2.0021E-03)	(0.00768)	(0.00768)	(0.028284)					
	06/19/06	TH-232	R	**-0.020596**	U4	-1.00105E-03	-0.003831	-0.003831	1.00 SA	101%		0.247078		
				(0.020678)		(1.0011E-03)	(0.00384)	(0.00384)	(0.028284)			0.067762		

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	**H4XQQ1AA**	**PCI/SA**		04/20/06 10:25	06/18/06 10:09			1	1.00 SA	
536403,P-0602					,J6E080157-5 v4.8.18		FILTER					THTF0564 Alq		0.083566 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	06/18/06 05:59	TH-228	1	0	ALP178	ED	N	N	3.1338E-01		N	46%	N		1.0000E+00	4.5045E-01	1.0602E+00	
			499.4666666	998.95			Y		(9.401E-03)			3%			(0.000E+00)	11.966616		
1	06/18/06 05:59	TH-229	289	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)	11.966616		
2	06/18/06 05:59	TH-230	5	0	ALP178	ED	N	N	3.1338E-01		N	46%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			499.4666666	998.95			Y		(9.401E-03)			3%			(0.000E+00)	11.966616		
3	06/18/06 05:59	TH-232	0	0	ALP178	ED	N	N	3.1338E-01		N	46%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			499.4666666	998.95			Y		(9.401E-03)			3%			(0.000E+00)	11.966616		

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
	06/19/06	TH-228	R	**0.080246**	U4	2.00214E-03	0.014041	0.014041	1.00 SA	46%		0.217468		
				(0.080629)		(2.0021E-03)	(0.014085)	(0.014085)	(0.028284)					
	06/19/06	TH-229	R	**9.952589**		5.78617E-01	1.846367	1.846367	1.00 SA	46%				
				(0.871077)		(3.4036E-02)	(0.121919)	(0.121919)	(0.028284)					
	06/19/06	TH-230	R	**0.376165**		1.00107E-02	0.069785	0.069785	1.00 SA	46%		0.203881		
				(0.172196)		(4.4769E-03)	(0.031693)	(0.031693)	(0.028284)					
	06/19/06	TH-232	R	**0.00E00**	U4	0.00000E+00	0.00E00	0.00E00	1.00 SA	46%		0.203881		
				(0.092141)		(0.0000E+00)	(0.017094)	(0.017094)	(0.028284)					

() - (1s Uncertainities), Q - Qualifier, U Result is Less Than Lc = 1.645 * TPU
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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: 6129276

Alpha Spec, ThIso by ALP , Calculated Results

6/19/2006 6:43:22 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
6	Calc	S1	FILTER	*STLE	AlpIsoWoBS	**H4XQR1AA**	**PCI/SA**		04/20/06 10:40	06/18/06 10:09			1	1.00 SA	
536403,P-0603					,J6E080157-6 v4.8.18		FILTER					THTF0565 Alq		0.082252 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	06/18/06 05:59	TH-228	1	7	ALP114	ED	N	N	3.2873E-01		N	89%	N		1.0000E+00	4.5045E-01	1.0602E+00	
			500.1166666	1000.2			Y		(9.862E-03)			5%			(0.000E+00)	12.157821		
1	06/18/06 05:59	TH-229	589	0	ALP114	ED	Y	N	3.2873E-01		N	100%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			500.1166666	1000.2			Y		(9.862E-03)						(0.000E+00)	12.157821		
2	06/18/06 05:59	TH-230	4	0	ALP114	ED	N	N	3.2873E-01		N	89%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			500.1166666	1000.2			Y		(9.862E-03)			5%			(0.000E+00)	12.157821		
3	06/18/06 05:59	TH-232	0	0	ALP114	ED	N	N	3.2873E-01		N	89%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			500.1166666	1000.2			Y		(9.862E-03)			5%			(0.000E+00)	12.157821		

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
	06/19/06	TH-228	R	**-0.099579**	U4	-4.99907E-03	-0.01715	-0.01715	1.00 SA	89%		0.454436		
				(0.066633)		(3.3159E-03)	(0.011434)	(0.011434)	(0.028284)			0.173352		
	06/19/06	TH-229	R	**19.620294**		1.17773E+00	3.58264	3.58264	1.00 SA	89%				
				(1.506781)		(4.8527E-02)	(0.182602)	(0.182602)	(0.028284)					
	06/19/06	TH-230	R	**0.149366**		7.99813E-03	0.027274	0.027274	1.00 SA	89%		0.101196		
				(0.075838)		(3.9991E-03)	(0.013759)	(0.013759)	(0.028284)					
	06/19/06	TH-232	R	**0.00E00**	U4	0.00000E+00	0.00E00	0.00E00	1.00 SA	89%		0.101196		
				(0.045734)		(0.0000E+00)	(0.008351)	(0.008351)	(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
7	Calc	S1	FILTER	*STLE	AlpIsoWoBS	**H4XQT1AA**	**PCI/SA**		04/20/06 10:35	06/18/06 10:09			1	1.00 SA	
536403,P-0605					,J6E080157-7 v4.8.18		FILTER					THTF0566 Alq		0.083122 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	06/18/06 05:59	TH-228	3	2	ALP116	ED	N	N	2.5523E-01		N	33%	N		1.0000E+00	4.5045E-01	1.0602E+00	
			500.0333333	1000.1166			Y		(7.657E-03)			3%			(0.000E+00)	12.030446		
1	06/18/06 05:59	TH-229	170	2	ALP116	ED	Y	N	2.5523E-01		N	100%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			500.0333333	1000.1166			Y		(7.657E-03)						(0.000E+00)	12.030446		
2	06/18/06 05:59	TH-230	1	0	ALP116	ED	N	N	2.5523E-01		N	33%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			500.0333333	1000.1166			Y		(7.657E-03)			3%			(0.000E+00)	12.030446		
3	06/18/06 05:59	TH-232	0	0	ALP116	ED	N	N	2.5523E-01		N	33%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			500.0333333	1000.1166			Y		(7.657E-03)			3%			(0.000E+00)	12.030446		

() - (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: 6129276 — Alpha Spec, ThIso by ALP , Calculated Results — 6/19/2006 6:43:22 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
	06/19/06	TH-228	R	**0.273684**	U4	3.99983E-03	0.047634	0.047634	1.00 SA	33%		1.007116		
				(0.257758)		(3.7414E-03)	(0.044779)	(0.044779)	(0.028284)			0.318331		
	06/19/06	TH-229	R	**7.17597**		3.37978E-01	1.324196	1.324196	1.00 SA	33%				
				(0.723659)		(2.6113E-02)	(0.109754)	(0.109754)	(0.028284)					
	06/19/06	TH-230	R	**0.12829**	U4	1.99987E-03	0.023674	0.023674	1.00 SA	33%		0.347667		
				(0.129062)		(1.9999E-03)	(0.023777)	(0.023777)	(0.028284)					
	06/19/06	TH-232	R	**0.00E00**	U4	0.00000E+00	0.00E00	0.00E00	1.00 SA	33%		0.347667		
				(0.157123)		(0.0000E+00)	(0.028994)	(0.028994)	(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	S1	FILTER	*STLE	AlpIsoWoBS	**H4X1R1AA**	**PCI/SA**		04/20/06 09:35	06/18/06 10:09			1	1.00 SA	
536403,000431					,J6E080157-8 v4.8.18		FILTER					THTF0567 Alq		0.082975 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	06/18/06 05:59	TH-228	4	1	ALP117	ED	N	N	3.3591E-01		N	100%	N		1.0000E+00	4.5045E-01	1.0603E+00	
			500.1166666	2500.1			Y		(1.008E-02)			6%			(0.000E+00)	12.051786		
1	06/18/06 05:59	TH-229	677	2	ALP117	ED	Y	N	3.3591E-01		N	100%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			500.1166666	2500.1			Y		(1.008E-02)						(0.000E+00)	12.051786		
2	06/18/06 05:59	TH-230	1	2	ALP117	ED	N	N	3.3591E-01		N	100%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			500.1166666	2500.1			Y		(1.008E-02)			6%			(0.000E+00)	12.051786		
3	06/18/06 05:59	TH-232	0	1	ALP117	ED	N	N	3.3591E-01		N	100%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			500.1166666	2500.1			Y		(1.008E-02)			6%			(0.000E+00)	12.051786		

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
	06/19/06	TH-228	R	**0.13125**		7.59815E-03	0.022803	0.022803	1.00 SA	100%		0.165437		
				(0.070357)		(4.0190E-03)	(0.012153)	(0.012153)	(0.028284)			0.035938		
	06/19/06	TH-229	R	**21.864394**		1.35288E+00	4.027536	4.027536	1.00 SA	100%				
				(1.647686)		(5.2029E-02)	(0.196444)	(0.196444)	(0.028284)					
	06/19/06	TH-230	R	**0.019426**	U4	1.19957E-03	0.003578	0.003578	1.00 SA	100%		0.182991		
				(0.033694)		(2.0780E-03)	(0.006203)	(0.006203)	(0.028284)			0.047648		
	06/19/06	TH-232	R	**-0.006477**	U4	-3.99984E-04	-0.001193	-0.001193	1.00 SA	100%		0.155096		
				(0.006502)		(3.9998E-04)	(0.001196)	(0.001196)	(0.028284)			0.033692		

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	**H4X1T1AA**	**PCI/SA**		04/20/06 09:50	06/18/06 10:09			1	1.00 SA	
536403,000432					,J6E080157-9 v4.8.18		FILTER					THTF0568 Alq		0.083876 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	06/18/06 05:59	TH-228	0	4	ALP118	ED	N	N	3.6403E-01		N	78%	N		1.0000E+00	4.5045E-01	1.0603E+00	
			500.15	2500.0166			Y		(1.092E-02)			5%			(0.000E+00)	11.922421		

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RecCnt:9 RADCALC v4.8.18 STL Richland

Batch Nbr: 6129276 Alpha Spec, ThIso by ALP , Calculated Results 6/19/2006 6:43:23 AM

1	06/18/06 05:59	TH-229	569	9	ALP118	ED	Y	N	3.6403E-01	N	100%	N	1.0000E+00	4.5045E-01	1.0000E+00
			500.15	2500.0166			Y		(1.092E-02)				(0.000E+00)	11.922421	
2	06/18/06 05:59	TH-230	7	3	ALP118	ED	N	N	3.6403E-01	N	78%	N	1.0000E+00	4.5045E-01	1.0000E+00
			500.15	2500.0166			Y		(1.092E-02)		5%		(0.000E+00)	11.922421	
3	06/18/06 05:59	TH-232	0	0	ALP118	ED	N	N	3.6403E-01	N	78%	N	1.0000E+00	4.5045E-01	1.0000E+00
			500.15	2500.0166			Y		(1.092E-02)		5%		(0.000E+00)	11.922421	

Sq	Calc Date	Parameter	Avg	Sa Act	Q	Net Cnt Rt	Dpm Wo Blk	Dpm-Blk	Vol Used	Yield,EnFct	Chem Yld,EFctU	IDC/lLcC	BlkLcC/MDC	StdDvMdC/LcC
	06/19/06	TH-228	R	**-0.032423**	U4	-1.59999E-03	-0.005694	-0.005694	1.00 SA	78%		0.27834		
				(0.016464)		(7.9999E-04)	(0.002873)	(0.002873)	(0.028284)			0.084319		
	06/19/06	TH-229	R	**16.730358**		1.13406E+00	3.115259	3.115259	1.00 SA	78%				
				(1.292659)		(4.7708E-02)	(0.160965)	(0.160965)	(0.028284)					
	06/19/06	TH-230	R	**0.243096**		1.27958E-02	0.045265	0.045265	1.00 SA	78%		0.239775		
				(0.103622)		(5.3351E-03)	(0.019119)	(0.019119)	(0.028284)			0.068459		
	06/19/06	TH-232	R	**0.00E00**	U4	0.00000E+00	0.00E00	0.00E00	1.00 SA	78%		0.102939		
				(0.046522)		(0.0000E+00)	(0.008663)	(0.008663)	(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	S1	FILTER	*STLE	AlpIsoWoBS	**H4X1V1AA**	**PCI/SA**		04/20/06 10:10	06/18/06 10:09			1	1.00 SA	
536403,000433					,J6E080157-10 v4.8.18		FILTER					THTF0569 Alq		0.081804 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	06/18/06 05:59	TH-228	4	2	ALP119	ED	N	N	2.5157E-01		N	101%	N		1.0000E+00	4.5045E-01	1.0603E+00	
			500.0833333	1000.2			Y		(7.547E-03)			6%			(0.000E+00)	12.224301		
1	06/18/06 05:59	TH-229	509	0	ALP119	ED	Y	N	2.5157E-01		N	100%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			500.0833333	1000.2			Y		(7.547E-03)						(0.000E+00)	12.224301		
2	06/18/06 05:59	TH-230	4	0	ALP119	ED	N	N	2.5157E-01		N	101%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			500.0833333	1000.2			Y		(7.547E-03)			6%			(0.000E+00)	12.224301		
3	06/18/06 05:59	TH-232	1	0	ALP119	ED	N	N	2.5157E-01		N	101%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			500.0833333	1000.2			Y		(7.547E-03)			6%			(0.000E+00)	12.224301		

Sq	Calc Date	Parameter	Avg	Sa Act	Q	Net Cnt Rt	Dpm Wo Blk	Dpm-Blk	Vol Used	Yield,EnFct	Chem Yld,EFctU	IDC/lLcC	BlkLcC/MDC	StdDvMdC/LcC
	06/19/06	TH-228	R	**0.14006**	U4	5.99907E-03	0.02399	0.02399	1.00 SA	101%		0.343606		
				(0.09983)		(4.2419E-03)	(0.017044)	(0.017044)	(0.028284)			0.108608		
	06/19/06	TH-229	R	**22.278356**		1.01783E+00	4.045876	4.045876	1.00 SA	101%				
				(1.74919)		(4.5115E-02)	(0.216545)	(0.216545)	(0.028284)					
	06/19/06	TH-230	R	**0.175075**		7.99867E-03	0.031795	0.031795	1.00 SA	101%		0.118614		
				(0.088937)		(3.9993E-03)	(0.016048)	(0.016048)	(0.028284)					
	06/19/06	TH-232	R	**0.043769**	U4	1.99967E-03	0.007949	0.007949	1.00 SA	101%		0.118614		
				(0.043945)		(1.9997E-03)	(0.007968)	(0.007968)	(0.028284)					

() - (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: 6129276 — Alpha Spec, ThIso by ALP , Calculated Results — 6/19/2006 6:43:23 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
11	Calc	S1	FILTER	*STLE	AlpIsoWoBS	**H4X1W1AA**	**PCI/SA**		04/20/06 10:30	06/18/06 10:09			1	1.00 SA	
536403,000434					,J6E080157-11 v4.8.18		FILTER					THTF0570 Alq		0.083577 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	06/18/06 05:59	TH-228	5	2	ALP120	ED	N	N	2.4073E-01		N	62%	N		1.0000E+00	4.5045E-01	1.0602E+00	
			500.0166666	1000.1666			Y		(7.222E-03)			4%			(0.000E+00)	11.964969		
1	06/18/06 05:59	TH-229	299	0	ALP120	ED	Y	N	2.4073E-01		N	100%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			500.0166666	1000.1666			Y		(7.222E-03)						(0.000E+00)	11.964969		
2	06/18/06 05:59	TH-230	7	0	ALP120	ED	N	N	2.4073E-01		N	62%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			500.0166666	1000.1666			Y		(7.222E-03)			4%			(0.000E+00)	11.964969		
3	06/18/06 05:59	TH-232	0	0	ALP120	ED	N	N	2.4073E-01		N	62%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			500.0166666	1000.1666			Y		(7.222E-03)			4%			(0.000E+00)	11.964969		

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
	06/19/06	TH-228	R	**0.310385**		8.00000E-03	0.054317	0.054317	1.00 SA	62%		0.571065		
				(0.184451)		(4.6902E-03)	(0.032128)	(0.032128)	(0.028284)			0.1805		
	06/19/06	TH-229	R	**13.387866**		5.97980E-01	2.484009	2.484009	1.00 SA	62%				
				(1.162856)		(3.4582E-02)	(0.161832)	(0.161832)	(0.028284)					
	06/19/06	TH-230	R	**0.509223**		1.39995E-02	0.094482	0.094482	1.00 SA	62%		0.197142		
				(0.198722)		(5.2913E-03)	(0.03647)	(0.03647)	(0.028284)					
	06/19/06	TH-232	R	**0.00E00**	U4	0.00000E+00	0.00E00	0.00E00	1.00 SA	62%		0.197142		
				(0.089095)		(0.0000E+00)	(0.016531)	(0.016531)	(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	**H4X1X1AA**	**PCI/SA**		04/20/06 10:45	06/18/06 18:39			1	1.00 SA	
536403,000435					,J6E080157-12 v4.8.18		FILTER					THTF0571 Alq		0.082662 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	06/18/06 14:29	TH-228	2	3	ALP171	ED	N	N	2.9087E-01		N	87%	N		1.0000E+00	4.5045E-01	1.0606E+00	
			499.4666666	998.95			Y		(8.726E-03)			5%			(0.000E+00)	12.097423		
1	06/18/06 14:29	TH-229	511	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)	12.097423		
2	06/18/06 14:29	TH-230	8	0	ALP171	ED	N	N	2.9087E-01		N	87%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			499.4666666	998.95			Y		(8.726E-03)			5%			(0.000E+00)	12.097423		
3	06/18/06 14:29	TH-232	1	1	ALP171	ED	N	N	2.9087E-01		N	87%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			499.4666666	998.95			Y		(8.726E-03)			5%			(0.000E+00)	12.097423		

() - (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 v4.8.18 STL Richland

Batch Nbr: 6129276 — Alpha Spec, ThIso by ALP , Calculated Results — 6/19/2006 6:43:23 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
	06/19/06	TH-228	R	**0.023009**	U4	1.00112E-03	0.003981	0.003981	1.00 SA	87%		0.386757		
				(0.076335)		(3.3202E-03)	(0.013206)	(0.013206)	(0.028284)			0.131106		
	06/19/06	TH-229	R	**19.148492**		1.02209E+00	3.513946	3.513946	1.00 SA	87%				
				(1.503095)		(4.5270E-02)	(0.187979)	(0.187979)	(0.028284)					
	06/19/06	TH-230	R	**0.345005**		1.60171E-02	0.063312	0.063312	1.00 SA	87%		0.11687		
				(0.125845)		(5.6629E-03)	(0.022806)	(0.022806)	(0.028284)					
	06/19/06	TH-232	R	**0.021563**	U4	1.00108E-03	0.003957	0.003957	1.00 SA	87%		0.258668		
				(0.048255)		(2.2384E-03)	(0.008852)	(0.008852)	(0.028284)			0.070941		

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	**H40211AA**	**PCI/SA**	**B**	04/20/06 09:10	06/18/06 18:39			1	1.00 SA	
0,INTRA-LAB BLANK					,J6E090000-276		FILTER					THTF0572 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	06/18/06 14:29	TH-228	0	4	ALP172	ED	N	N	2.9949E-01		N	88%	N		1.0000E+00	4.5045E-01	1.0607E+00	
			499.4666666	998.95			Y		(8.985E-03)			5%			(0.000E+00)	1.00		
1	06/18/06 14:29	TH-229	530	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)	1.00		
2	06/18/06 14:29	TH-230	8	1	ALP172	ED	N	N	2.9949E-01		N	88%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			499.4666666	998.95			Y		(8.985E-03)			5%			(0.000E+00)	1.00		
3	06/18/06 14:29	TH-232	2	0	ALP172	ED	N	N	2.9949E-01		N	88%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			499.4666666	998.95			Y		(8.985E-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
	06/19/06	TH-228	R	**-0.007296**	U4	-4.00420E-03	-0.015271	-0.015271	1.00 SA	88%		0.033876		
				(0.003702)		(2.0021E-03)	(0.007707)	(0.007707)	(0.017321)			0.012002		
	06/19/06	TH-229	R	**1.589976**		1.05713E+00	3.529749	3.529749	1.00 SA	88%				
				(0.119033)		(4.6136E-02)	(0.186933)	(0.186933)	(0.017321)					
	06/19/06	TH-230	R	**0.025641**		1.50160E-02	0.056923	0.056923	1.00 SA	88%		0.020506		
				(0.010068)		(5.7507E-03)	(0.022146)	(0.022146)	(0.017321)			0.005624		
	06/19/06	TH-232	R	**0.006838**	U4	4.00427E-03	0.01518	0.01518	1.00 SA	88%		0.009265		
				(0.004871)		(2.8314E-03)	(0.010784)	(0.010784)	(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
14	Calc	S1	FILTER	*STLE	AlpIsoWoBS	**H40211AC**	**PCI/SA**	**S**	04/20/06 09:10	06/18/06 18:39		THSO0073	1	1.00 SA	
0,INTRA-LAB CHECK					,J6E090000-276		FILTER					THSO0073 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	06/18/06 14:29	TH-229	466	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)	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: 6129276 Alpha Spec, ThIso by ALP , Calculated Results 6/19/2006 6:43:23 AM

2	06/18/06 14:29	TH-230	485	1	ALP173	ED	N	N	2.5374E-01	N	87%	N		1.0000E+00	4.5045E-01	1.0000E+00
			499.4666666	998.95			Y		(7.612E-03)		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
	06/19/06	TH-229	R	**1.656275**		9.32995E-01	3.676934	3.676934	1.00	SA	87%				
				(0.126637)		(4.3220E-02)	(0.20293)	(0.20293)	(0.017321)						
	06/19/06	TH-230	R	**1.978903**		9.70035E-01	4.393169	4.393169	1.00	SA	87%	108%	0.024498		
				(0.195931)		(4.4104E-02)	(0.367638)	(0.367638)	(0.017321)				0.006719		

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

RecCnt:14 RADCALC v4.8.18

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

STL Richland

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

2249

C.R. Technician: CO
Date Counted: 6/18/06
C.R. Analyst: CO
Date Analyzed: 6/19/06

Counting Time
Sample: 500 Minutes

Background: See Alpha Analysis Report
BRC 4/20/06

SOP's
Operating: RICHRD008
Review: RICHRD0016
6129276

1419
6/18/06

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)		
H4XP81AA		10		0	See Alpha Analysis Report for ROI Information			174	
H4XQH1AA		10		0	See Alpha Analysis Report for ROI Information			175	
H4XQM1AA		10		0	See Alpha Analysis Report for ROI Information			176	
H4XQN1AA		10		0	See Alpha Analysis Report for ROI Information			177	
H4XQQ1AA		10		0	See Alpha Analysis Report for ROI Information			178	
		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: H4XQM1AA- Recounted- Disc not seated in holder. 6/18/06

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

Approved by: S

Date: 6/19/06

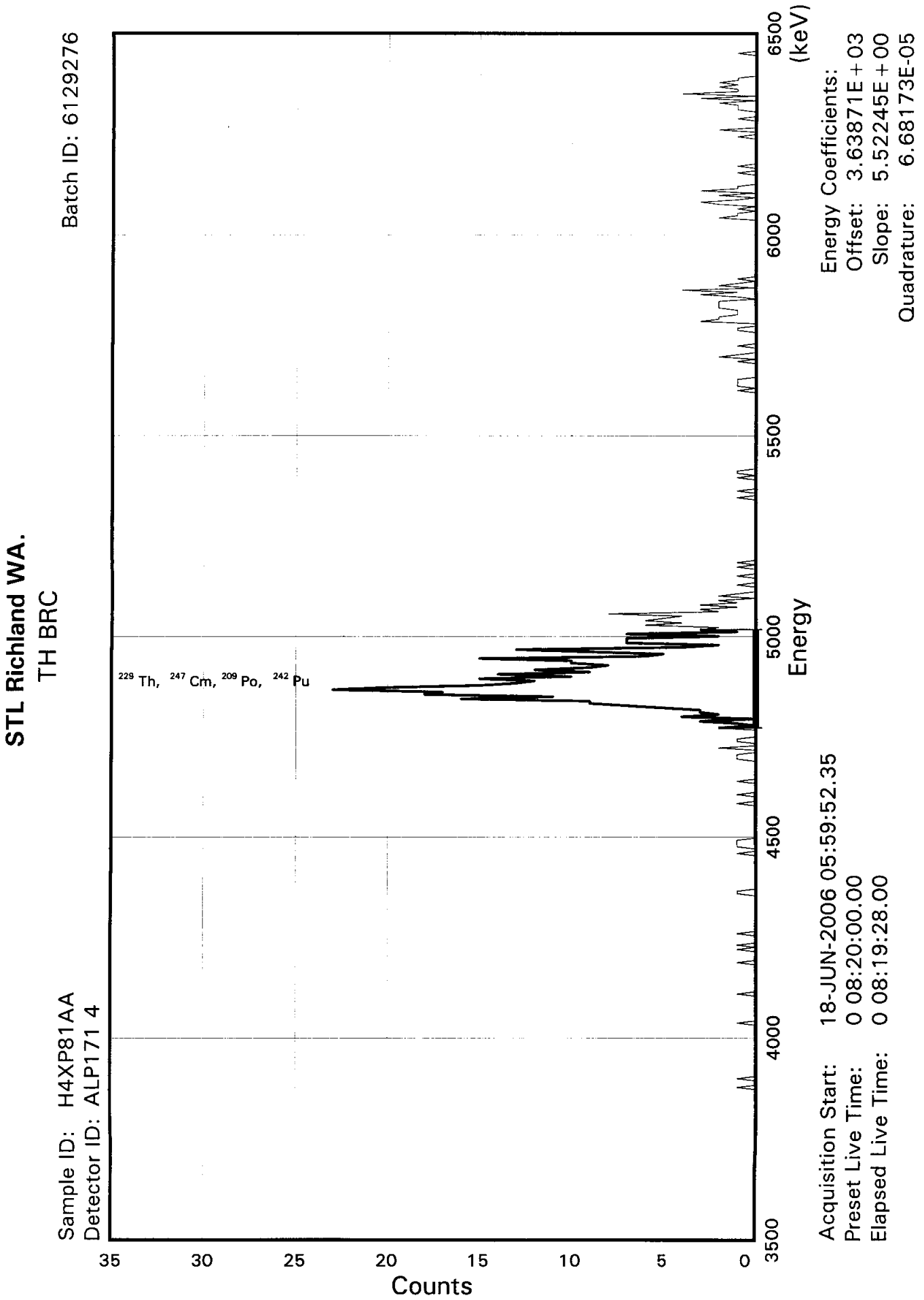
Alpha Analysis Report
(Version: 7-Feb-98)

Sample Identity: H4XP81AA

Detector: ALP171 4
Report Date: 19-Jun-06 05:58 AM
Acquire Date: 18-JUN-2006 05:59:52.35
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	5	1	0.009	5423.2	111.3	307	327
TH-229	428	1	0.856	4845.3	349.9	203	266
TH-230	5	0	0.010	4687.7	110.9	175	195
TH-232	1	1	0.001	4013.0	110.6	53	73

End of Alpha Region Report
(Produced by ANAL Report)


STL Richland WA.
TH BRC
Batch ID: 6129276
Sample ID: H4XP81AA
Detector ID: ALP171 4
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: 18-JUN-2006 05:59:52.35
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: H4XP81AA

TITLE : TH BRC

DETECTOR : ALP171 4
CONFIGURATION NAME : $DISK1:[ALP171.SAMPLE]H4XP81AA_180660559D.CN
F;1
ACQUIRE DATE of BACKGROUND: 09-JUN-2006 06:58:01

REPORT DATE : 18-Jun-06 SAMPLE DATE: 20-APR-2006 12:00:00
ACQUIRE DATE: 18-JUN-2006 05:59:52 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 CONSTANT FWHM : 11.00000 Channels
SLOPE : 5.52245 keV/C SENSITIVITY : 3.00000 Std Dev's
QUAD COEFF : 6.681730E-05 keV/C^2 SUM SENSITIVITY: 1.00000 %

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

Sample Identity: H4XP81AA

Detector: ALP171 4
Report Date: 18-Jun-06 02:20 PM
Acquire Date: 18-JUN-2006 05:59:52.35
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	5159.6	239.0	254	297	0.00	0.00	M
PO-209	379	0	0	0.759	4927.9	244.3	205	249	0.00	0.00	P
PO-210	-9999	-9999	0	-10.010	5349.0	244.8	288	332	0.00	0.00	M
AC-227	-9999	-9999	0	-10.010	6082.7	245.6	419	463	0.00	0.00	M
TH-227	-9999	-9999	0	-10.010	6082.7	245.6	419	463	0.00	0.00	M
TH-228	-9999	-9999	0	-10.010	5467.9	244.9	309	353	0.00	0.00	M
TH-229	379	0	0	0.759	4890.0	244.3	205	249	0.00	0.00	P
TH-230	-9999	-9999	0	-10.010	4732.4	244.2	177	221	0.00	0.00	M I
TH-232	3	1	1	0.004	4057.7	243.4	55	99	0.00	0.00	S
U-232	-9999	-9999	0	-10.010	5364.8	244.8	290	334	0.00	0.00	M
U-234	-9999	-9999	0	-10.010	4819.3	244.2	192	236	0.00	0.00	M I
U-235	6	3	2	0.009	4442.5	243.8	124	168	0.00	0.00	S
PU-236	21	24	33	0.018	5812.3	245.3	371	415	0.00	0.00	S
NP-237	-9999	-9999	0	-10.010	4832.7	244.3	195	239	0.00	0.00	M I
PU-238	-9999	-9999	0	-10.010	5543.7	245.0	323	367	0.00	0.00	M
U-238	-9999	-9999	0	-10.010	4242.7	243.6	88	132	0.00	0.00	M
PU-239	-9999	-9999	0	-10.010	5201.3	244.7	261	305	0.00	0.00	M
AM-241	-9999	-9999	0	-10.010	5530.3	245.0	320	364	0.00	0.00	M
AM-242M	-9999	-9999	0	-10.010	5251.5	244.7	270	314	0.00	0.00	M
CM-242	-9999	-9999	0	-10.010	6157.4	245.7	433	477	0.00	0.00	M
PU-242	379	0	0	0.759	4945.2	244.3	205	249	0.00	0.00	P
AM-243	-9999	-9999	0	-10.010	5320.0	244.8	282	326	0.00	0.00	M
CM-244	-9999	-9999	0	-10.010	5849.5	239.8	378	421	0.00	0.00	M
CM-246	-9999	-9999	0	-10.010	5431.2	244.9	302	346	0.00	0.00	M
CM-247	379	0	0	0.759	4915.1	244.3	205	249	0.00	0.00	P
CM-248	-9999	-9999	0	-10.010	5123.3	244.6	247	291	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: H4XP81AA
Detector: ALP171 4
Report Date: 18-Jun-06 02:20 PM
Acquire Date: 18-JUN-2006 05:59:52.35

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

VMS Peak Search Report V1.9 Generated 18-JUN-2006 14:20:45

```
Configuration     : $DISK1:[ALP171.SAMPLE]H4XP81AA_180660559D.CNF;1
Analyses by       : ALPHA V1.8
Sample title      : TH BRC
Sample date       : 20-APR-2006 12:00:00 Acquisition date : 18-JUN-2006 05:59:52
Sample ID         : H4XP81AA             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	4889.97	379	0	115.97	225.96	205	44	1.26E-02	5.1	

VMS Nuclide Identification Report V3.0 Generated 18-JUN-2006 14:20:47

```
Configuration     : $DISK1:[ALP171.SAMPLE]H4XP81AA_180660559D.CNF;1
Analyses by       : ALPHA V1.8,PEAKEFF V2.2,NID V3.3
Sample title      : TH BRC
Sample date       : 20-APR-2006 12:00:00 Acquisition date : 18-JUN-2006 05:59:52
Sample ID         : H4XP81AA             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]H4XP81AA_180660559D.CNF;1

Peak Energy	Left Chan	Rght Chan	Peak Area	Total Counts	Diff/ StDev	Overlap Counts	Multiplet Diff/StDev
4889.96	205	249	379	378	0.05		

End of Report

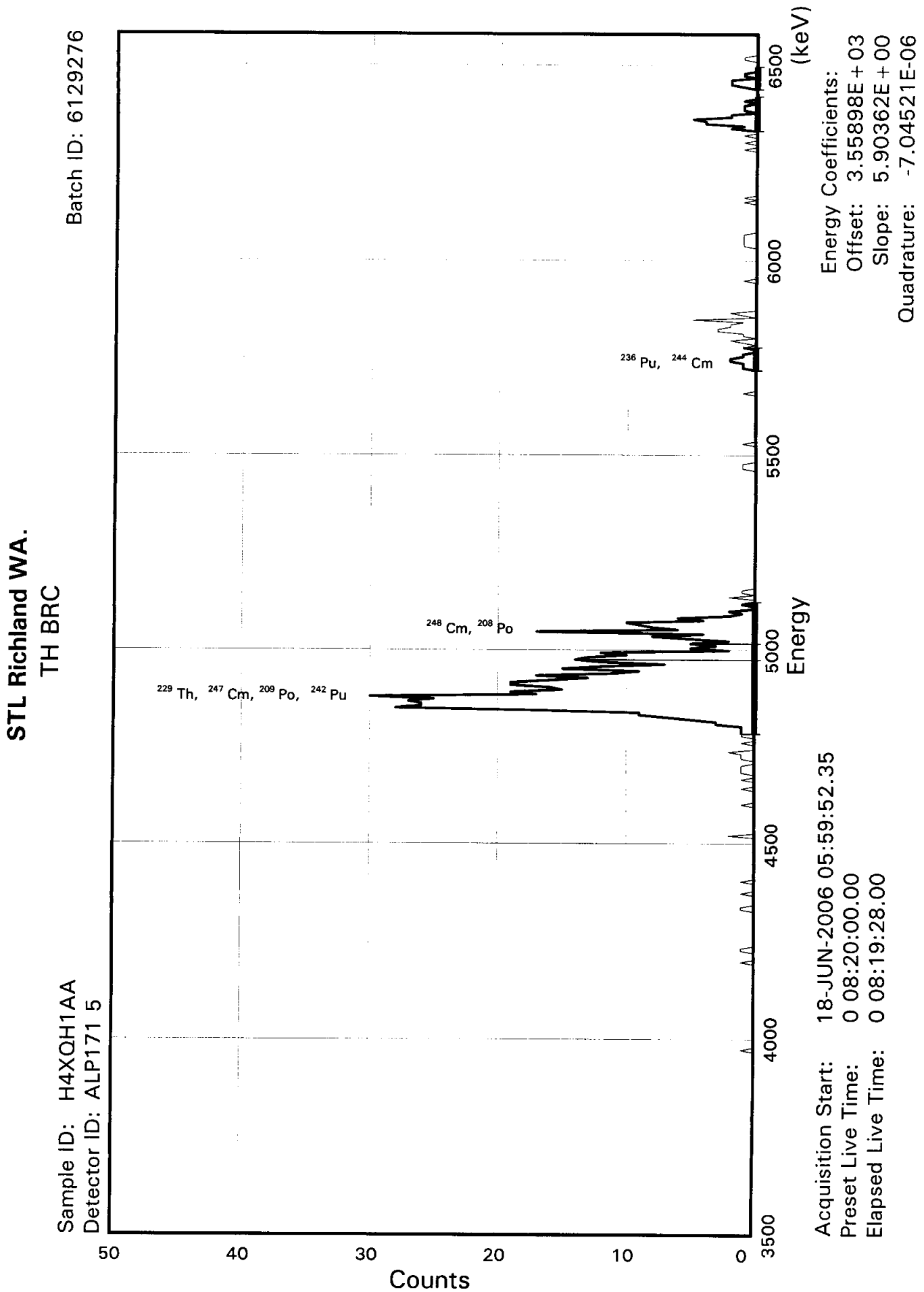
Alpha Analysis Report
(Version: 7-Feb-98)

Sample Identity: H4XQH1AA

Detector: ALP171 5
Report Date: 19-Jun-06 05:58 AM
Acquire Date: 18-JUN-2006 05:59:52.35
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	0	2	-0.002	5423.2	118.0	301	321
TH-229	590	1	1.180	4845.3	389.4	205	271
TH-230	7	2	0.012	4687.7	118.0	176	196
TH-232	1	0	0.002	4013.0	118.1	62	82

End of Alpha Region Report
(Produced by ANAL Report)


STL Richland WA.
TH BRC
Batch ID: 6129276
Sample ID: H4XQH1AA
Detector ID: ALP171 5
^{229}Th, ^{247}Cm, ^{209}Po, ^{242}Pu
^{248}Cm, ^{208}Po
^{236}Pu, ^{244}Cm
Counts
50
40
30
20
10
0
Energy
3500
4000
4500
5000
5500
6000
6500
(keV)
Acquisition Start: 18-JUN-2006 05:59:52.35
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: H4XQH1AA

TITLE : TH BRC

DETECTOR : ALP171 5
CONFIGURATION NAME : $DISK1:[ALP171.SAMPLE]H4XQH1AA_180660559E.CN
F;1
ACQUIRE DATE of BACKGROUND: 09-JUN-2006 06:58:01

REPORT DATE : 18-Jun-06 SAMPLE DATE: 20-APR-2006 12:00:00
ACQUIRE DATE: 18-JUN-2006 05:59:52 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: H4XQH1AA

Detector: ALP171 5
Report Date: 18-Jun-06 02:20 PM
Acquire Date: 18-JUN-2006 05:59:52.35
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	88	0	0	0.176	5152.7	147.5	240	265	0.00	0.00	P
PO-209	492	0	0	0.985	4921.0	230.1	208	247	0.00	0.00	P
PO-210	-9999	-9999	0	-10.010	5342.2	230.1	286	325	0.00	0.00	M
AC-227	6	2	5	0.010	6075.8	230.0	410	449	0.00	0.00	S
TH-227	6	2	5	0.010	6075.8	230.0	410	449	0.00	0.00	S
TH-228	-9999	-9999	0	-10.010	5461.0	230.1	306	345	0.00	0.00	M
TH-229	492	0	0	0.985	4883.1	230.1	208	247	0.00	0.00	P
TH-230	-9999	-9999	0	-10.010	4725.5	230.1	181	220	0.00	0.00	M I
TH-232	1	1	0	0.001	4050.8	230.2	67	106	0.00	0.00	S
U-232	-9999	-9999	0	-10.010	5358.0	230.1	288	327	0.00	0.00	M
U-234	-9999	-9999	0	-10.010	4812.4	230.1	196	235	0.00	0.00	M I
U-235	5	1	1	0.008	4435.6	230.2	132	171	0.00	0.00	S
PU-236	10	4	0	0.016	5805.5	59.0	366	376	0.00	0.00	P
NP-237	-9999	-9999	0	-10.010	4825.8	230.1	198	237	0.00	0.00	M I
PU-238	-9999	-9999	0	-10.010	5536.8	230.1	319	358	0.00	0.00	M
U-238	-9999	-9999	0	-10.010	4235.8	230.2	98	137	0.00	0.00	M
PU-239	-9999	-9999	0	-10.010	5194.4	230.1	261	300	0.00	0.00	M I
AM-241	-9999	-9999	0	-10.010	5523.4	230.1	317	356	0.00	0.00	M
AM-242M	-9999	-9999	0	-10.010	5244.6	230.1	269	308	0.00	0.00	M
CM-242	-9999	-9999	0	-10.010	6150.5	230.0	423	462	0.00	0.00	M
PU-242	492	0	0	0.985	4938.3	230.1	208	247	0.00	0.00	P
AM-243	-9999	-9999	0	-10.010	5313.1	230.1	281	320	0.00	0.00	M
CM-244	10	4	0	0.016	5842.6	59.0	366	376	0.00	0.00	P
CM-246	-9999	-9999	0	-10.010	5424.3	230.1	300	339	0.00	0.00	M
CM-247	492	0	0	0.985	4908.2	230.1	208	247	0.00	0.00	P
CM-248	88	0	0	0.176	5116.4	147.5	240	265	0.00	0.00	P

End of Alpha Region Report
(Produced by Alp_rgn_cnts)

Alpha Spectrum Listing
(Version: 29-Jun 92)

Sample Identity: H4XQH1AA
Detector: ALP171 5
Report Date: 18-Jun-06 02:20 PM
Acquire Date: 18-JUN-2006 05:59:52.35

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

VMS Peak Search Report V1.9 Generated 18-JUN-2006 14:20:50

Configuration : $DISK1:[ALP171.SAMPLE]H4XQH1AA_180660559E.CNF;1
Analyses by : ALPHA V1.8
Sample title : TH BRC
Sample date : 20-APR-2006 12:00:00 Acquisition date : 18-JUN-2006 05:59:52
Sample ID : H4XQH1AA 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	4883.10	492	0	88.55	224.35	208	39	1.64E-02	4.5	
2	0	5054.65	88	0	47.23	253.42	240	25	2.94E-03	10.7	
3	0	5738.67	10	0	29.52	369.37	366	10	3.34E-04	31.6	
4	0	6356.41	25	0	29.52	474.12	470	15	8.34E-04	20.0	
5	0	6451.24	8	0	17.71	490.20	488	10	2.67E-04	35.4	

VMS Nuclide Identification Report V3.0 Generated 18-JUN-2006 14:20:52

```
Configuration     : $DISK1:[ALP171.SAMPLE]H4XQH1AA_180660559E.CNF;1
Analyses by       : ALPHA V1.8,PEAKEFF V2.2,NID V3.3
Sample title      : TH BRC
Sample date       : 20-APR-2006 12:00:00 Acquisition date : 18-JUN-2006 05:59:52
Sample ID         : H4XQH1AA             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                5
 Number of unidentified lines                     2
 Number of lines tentatively identified by NID    3       60.00%
```

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	1.04	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	1.04	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	1.01	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]H4XQH1AA_180660559E.CNF;1

Peak Energy	Left Chan	Rght Chan	Peak Area	Total Counts	Diff/ StDev	Overlap Counts	Multiplet Diff/StDev
4883.10	208	247	492	500	-0.36		
5054.64	240	265	88	149	-6.50	64	-0.21
5738.66	366	376	10	10	0.00		
6356.40	470	485	25	24	0.20		
6451.23	488	498	8	9	-0.35		

End of Report

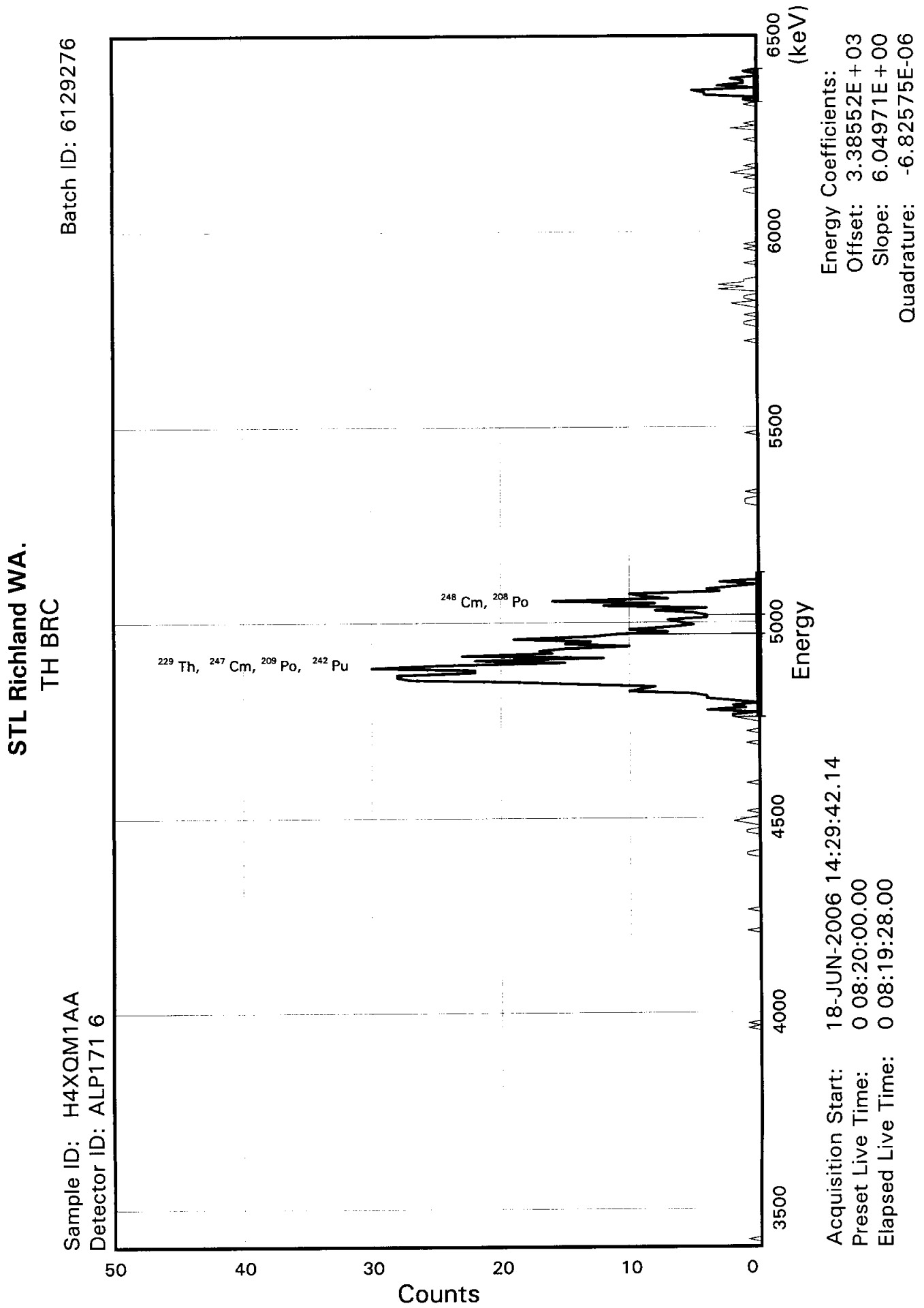
Alpha Analysis Report
(Version: 7-Feb-98)

Sample Identity: H4XQM1AA

Detector: ALP171 6
Report Date: 19-Jun-06 05:58 AM
Acquire Date: 18-JUN-2006 14:29:42.14
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	2	0.000	5423.2	120.9	322	342
TH-229	611	3	1.220	4845.3	356.7	226	285
TH-230	1	1	0.001	4687.7	120.9	200	220
TH-232	2	1	0.003	4013.0	121.0	89	109

End of Alpha Region Report
(Produced by ANAL Report)


STL Richland WA.
TH BRC
Batch ID: 6129276
Sample ID: H4XQM1AA
Detector ID: ALP171 6
^{248} Cm, ^{208} Po
^{229} Th, ^{247} Cm, ^{209} Po, ^{242} Pu
Counts
50
40
30
20
10
0
Energy
3500
4000
4500
5000
5500
6000
6500
(keV)
Acquisition Start: 18-JUN-2006 14:29:42.14
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: H4XQM1AA

TITLE : TH BRC

DETECTOR : ALP171 6
CONFIGURATION NAME : $DISK1:[ALP171.SAMPLE]H4XQM1AA_180661429F.CN
F;1
ACQUIRE DATE of BACKGROUND: 09-JUN-2006 06:58:01

REPORT DATE : 18-Jun-06 SAMPLE DATE: 20-APR-2006 12:00:00
ACQUIRE DATE: 18-JUN-2006 14:29:42 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: H4XQM1AA

Detector: ALP171 6
Report Date: 18-Jun-06 10:50 PM
Acquire Date: 18-JUN-2006 14:29:42.14
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	94	2	0	0.186	5164.6	157.2	262	288	0.00	0.00	P
PO-209	520	1	0	1.040	4932.9	260.0	227	270	0.00	0.00	P
PO-210	-9999	-9999	0	-10.010	5354.1	259.9	303	346	0.00	0.00	M
AC-227	-9999	-9999	0	-10.010	6087.7	259.9	424	467	0.00	0.00	M
TH-227	-9999	-9999	0	-10.010	6087.7	259.9	424	467	0.00	0.00	M
TH-228	-9999	-9999	0	-10.010	5472.9	259.9	323	366	0.00	0.00	M
TH-229	520	1	0	1.040	4895.0	260.0	227	270	0.00	0.00	P
TH-230	-9999	-9999	0	-10.010	4737.4	260.0	201	244	0.00	0.00	M I
TH-232	2	3	0	0.002	4062.7	260.1	89	132	0.00	0.00	S
U-232	-9999	-9999	0	-10.010	5369.8	259.9	306	349	0.00	0.00	M
U-234	-9999	-9999	0	-10.010	4824.3	260.0	215	258	0.00	0.00	M I
U-235	9	1	0	0.018	4447.5	260.0	153	196	0.00	0.00	S
PU-236	10	17	19	0.003	5817.3	259.9	380	423	0.00	0.00	S
NP-237	-9999	-9999	0	-10.010	4837.7	260.0	218	261	0.00	0.00	M I
PU-238	-9999	-9999	0	-10.010	5548.7	259.9	335	378	0.00	0.00	M
U-238	-9999	-9999	0	-10.010	4247.7	260.1	120	163	0.00	0.00	M
PU-239	-9999	-9999	0	-10.010	5206.3	260.0	278	321	0.00	0.00	M I
AM-241	-9999	-9999	0	-10.010	5535.3	259.9	333	376	0.00	0.00	M
AM-242M	-9999	-9999	0	-10.010	5256.5	260.0	287	330	0.00	0.00	M
CM-242	-9999	-9999	0	-10.010	6162.4	259.9	437	480	0.00	0.00	M
PU-242	520	1	0	1.040	4950.2	260.0	227	270	0.00	0.00	P
AM-243	-9999	-9999	0	-10.010	5325.0	259.9	298	341	0.00	0.00	M
CM-244	-9999	-9999	0	-10.010	5854.5	259.9	386	429	0.00	0.00	M
CM-246	-9999	-9999	0	-10.010	5436.2	259.9	317	360	0.00	0.00	M
CM-247	520	1	0	1.040	4920.1	260.0	227	270	0.00	0.00	P
CM-248	94	2	0	0.186	5128.3	157.2	262	288	0.00	0.00	P

End of Alpha Region Report
(Produced by Alp_rgn_cnts)

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

Sample Identity: H4XQM1AA
Detector: ALP171 6
Report Date: 18-Jun-06 10:50 PM
Acquire Date: 18-JUN-2006 14:29:42.14

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

VMS Peak Search Report V1.9 Generated 18-JUN-2006 22:50:32

```
Configuration     : $DISK1:[ALP171.SAMPLE]H4XQM1AA_180661429F.CNF;1
Analyses by       : ALPHA V1.8
Sample title      : TH BRC
Sample date       : 20-APR-2006 12:00:00 Acquisition date : 18-JUN-2006 14:29:42
Sample ID         : H4XQM1AA             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	4894.98	520	0120.99		249.58	227	43	1.74E-02	4.4	
2	0	5054.57	94	0 54.45		275.97	262	26	3.14E-03	10.3	
3	0	6357.31	23	0 24.20		491.50	487	14	7.67E-04	20.9	

VMS Nuclide Identification Report V3.0 Generated 18-JUN-2006 22:50:34

```
Configuration     : $DISK1:[ALP171.SAMPLE]H4XQM1AA_180661429F.CNF;1
Analyses by       : ALPHA V1.8,PEAKEFF V2.2,NID V3.3
Sample title      : TH BRC
Sample date       : 20-APR-2006 12:00:00 Acquisition date : 18-JUN-2006 14:29:42
Sample ID         : H4XQM1AA             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                      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-208	2.90Y	1.04	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-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]H4XQM1AA_180661429F.CNF;1

Peak Energy	Left Chan	Rght Chan	Peak Area	Total Counts	Diff/ StDev	Overlap Counts	Multiplet Diff/StDev
4894.97	227	270	520	519	0.04		
5054.56	262	288	94	152	-5.98	61	0.16
6357.30	487	501	23	22	0.21		

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

End of Report

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

Sample Identity: H4XQN1AA

Detector: ALP171 7
Report Date: 19-Jun-06 05:59 AM
Acquire Date: 18-JUN-2006 05:59:52.35
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	0	0.004	5423.2	112.7	311	331
TH-229	534	0	1.069	4845.3	349.6	208	270
TH-230	1	0	0.002	4687.7	112.8	180	200
TH-232	0	1	-0.001	4013.0	112.9	60	80

End of Alpha Region Report
(Produced by ANAL Report)

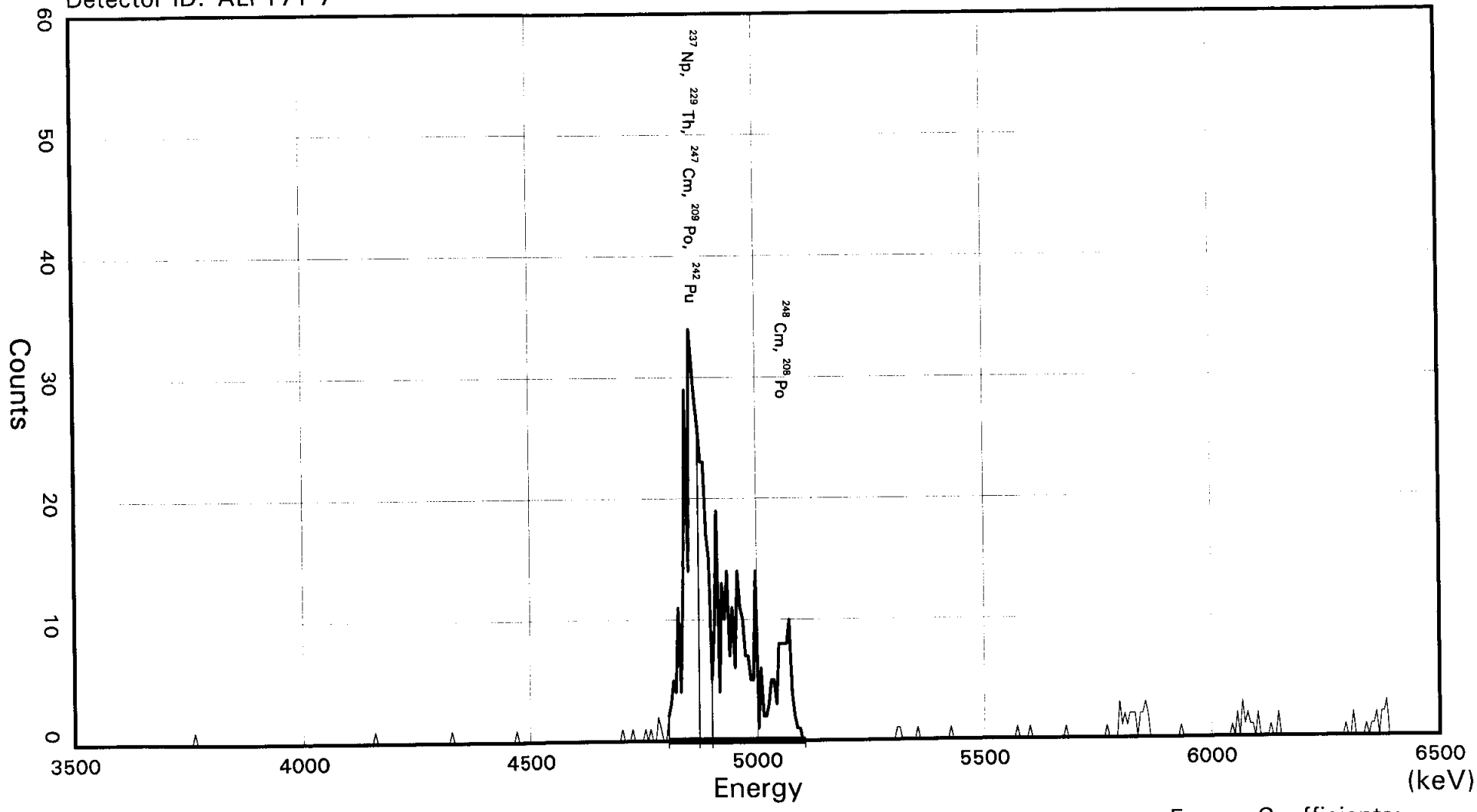
STL Richland WA.

TH BRC

Sample ID: H4XQN1AA

Detector ID: ALP171 7

Batch ID: 6129276



Acquisition Start: 18-JUN-2006 05:59:52.35

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: H4XQN1AA

TITLE : TH BRC

DETECTOR : ALP171 7
CONFIGURATION NAME : $DISK1:[ALP171.SAMPLE]H4XQN1AA_180660559G.CN
F;1
ACQUIRE DATE of BACKGROUND: 09-JUN-2006 06:58:01

REPORT DATE : 18-Jun-06 SAMPLE DATE: 20-APR-2006 12:00:00
ACQUIRE DATE: 18-JUN-2006 05:59:52 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: H4XQN1AA

Detector: ALP171 7
Report Date: 18-Jun-06 02:21 PM
Acquire Date: 18-JUN-2006 05:59:52.35
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	207	0	0	0.414	5133.5	231.2	228	269	0.00	0.00	P
PO-209	323	0	0	0.647	4901.8	95.9	216	233	0.00	0.00	P
PO-210	-9999	-9999	0	-10.010	5323.0	95.8	297	314	0.00	0.00	M
AC-227	9	1	5	0.017	6056.6	95.7	428	445	0.00	0.00	S
TH-227	9	1	5	0.017	6056.6	95.7	428	445	0.00	0.00	S
TH-228	-9999	-9999	0	-10.010	5441.8	95.8	319	336	0.00	0.00	M
TH-229	323	0	0	0.647	4863.9	95.9	216	233	0.00	0.00	P
TH-230	2	0	0	0.004	4706.3	95.9	188	205	0.00	0.00	S
TH-232	0	1	0	-0.001	4031.6	95.9	68	85	0.00	0.00	
U-232	-9999	-9999	0	-10.010	5338.8	95.8	300	317	0.00	0.00	M
U-234	-9999	-9999	0	-10.010	4793.2	95.9	203	220	0.00	0.00	S I
U-235	0	1	0	-0.001	4416.4	95.9	137	154	0.00	0.00	
PU-236	6	6	12	0.006	5786.3	95.8	380	397	0.00	0.00	S
NP-237	323	0	0	0.647	4806.6	95.9	216	233	0.00	0.00	P
PU-238	-9999	-9999	0	-10.010	5517.7	95.8	332	349	0.00	0.00	M
U-238	1	0	0	0.002	4216.6	95.9	101	118	0.00	0.00	
PU-239	0	2	0	-0.002	5175.2	95.8	271	288	0.00	0.00	S
AM-241	-9999	-9999	0	-10.010	5504.2	95.8	330	347	0.00	0.00	M
AM-242M	-9999	-9999	0	-10.010	5225.4	95.8	280	297	0.00	0.00	M
CM-242	-9999	-9999	0	-10.010	6131.4	95.7	441	458	0.00	0.00	M
PU-242	323	0	0	0.647	4919.1	95.9	216	233	0.00	0.00	P
AM-243	-9999	-9999	0	-10.010	5293.9	95.8	292	309	0.00	0.00	M
CM-244	17	14	12	0.020	5823.5	95.8	386	403	0.00	0.00	S
CM-246	-9999	-9999	0	-10.010	5405.1	95.8	312	329	0.00	0.00	M
CM-247	323	0	0	0.647	4889.0	95.9	216	233	0.00	0.00	P
CM-248	207	0	0	0.414	5097.2	231.2	228	269	0.00	0.00	P

End of Alpha Region Report
(Produced by Alp_rgn_cnts)

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

Sample Identity: H4XQN1AA
Detector: ALP171 7
Report Date: 18-Jun-06 02:21 PM
Acquire Date: 18-JUN-2006 05:59:52.35

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

VMS Peak Search Report V1.9 Generated 18-JUN-2006 14:20:58

Configuration : $DISK1:[ALP171.SAMPLE]H4XQN1AA_180660559G.CNF;1
Analyses by : ALPHA V1.8
Sample title : TH BRC
Sample date : 20-APR-2006 12:00:00 Acquisition date : 18-JUN-2006 05:59:52
Sample ID : H4XQN1AA 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	4863.94	323	0	45.16	226.34	216	17	1.08E-02	5.6	
2	0	5059.71	207	0	39.52	261.06	228	41	6.91E-03	7.0	

VMS Nuclide Identification Report V3.0 Generated 18-JUN-2006 14:21:00

```
Configuration     : $DISK1:[ALP171.SAMPLE]H4XQN1AA_180660559G.CNF;1
Analyses by       : ALPHA V1.8,PEAKEFF V2.2,NID V3.3
Sample title      : TH BRC
Sample date       : 20-APR-2006 12:00:00 Acquisition date : 18-JUN-2006 05:59:52
Sample ID         : H4XQN1AA             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-208	2.90Y	1.04	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	
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	
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]H4XQN1AA_180660559G.CNF;1

Peak Energy	Left Chan	Rght Chan	Peak Area	Total Counts	Diff/ StDev	Overlap Counts	Multiplet Diff/StDev
4863.93	216	233	323	287	2.00		
5059.70	228	269	207	352	-10.08	109	0.00

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

End of Report

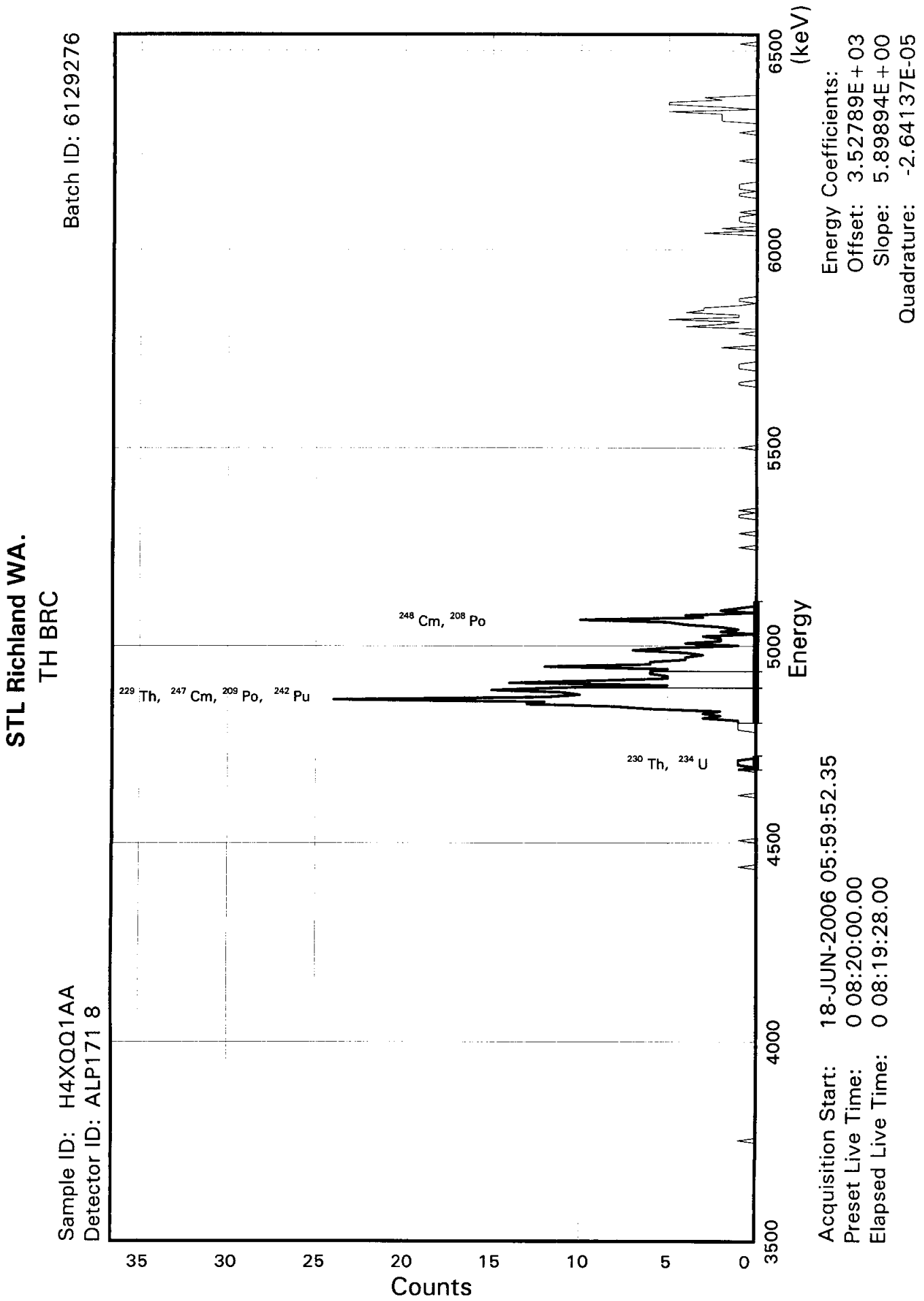
Alpha Analysis Report
(Version: 7-Feb-98)

Sample Identity: H4XQQ1AA

Detector: ALP171 8
Report Date: 19-Jun-06 05:59 AM
Acquire Date: 18-JUN-2006 05:59:52.35
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	289	0	0.579	4845.3	323.7	214	269
TH-230	5	0	0.010	4687.7	117.8	182	202
TH-232	0	0	0.000	4013.0	117.9	67	87

End of Alpha Region Report
(Produced by ANAL Report)


STL Richland WA.
TH BRC
Batch ID: 6129276
Sample ID: H4XQQ1AA
Detector ID: ALP171 8
^{248}Cm, ^{208}Po
^{229}Th, ^{247}Cm, ^{209}Po, ^{242}Pu
^{230}Th, ^{234}U
Counts
35
30
25
20
15
10
5
0
Energy
3500
4000
4500
5000
5500
6000
6500
(keV)
Acquisition Start: 18-JUN-2006 05:59:52.35
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: H4XQQ1AA

TITLE : TH BRC

DETECTOR : ALP171 8
CONFIGURATION NAME : $DISK1:[ALP171.SAMPLE]H4XQQ1AA_180660559H.CN
F;1
ACQUIRE DATE of BACKGROUND: 09-JUN-2006 06:58:01

REPORT DATE : 18-Jun-06 SAMPLE DATE: 20-APR-2006 12:00:00
ACQUIRE DATE: 18-JUN-2006 05:59:52 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: H4XQQ1AA

Detector: ALP171 8
Report Date: 18-Jun-06 02:21 PM
Acquire Date: 18-JUN-2006 05:59:52.35
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	86	0	0	0.172	5142.7	217.8	232	269	0.00	0.00	P
PO-209	199	0	0	0.398	4911.0	129.5	217	239	0.00	0.00	P
PO-210	-9999	-9999	0	-10.010	5332.2	129.4	295	317	0.00	0.00	M
AC-227	7	1	4	0.013	6065.8	129.3	420	442	0.00	0.00	S
TH-227	7	1	4	0.013	6065.8	129.3	420	442	0.00	0.00	S
TH-228	-9999	-9999	0	-10.010	5451.0	129.4	315	337	0.00	0.00	M
TH-229	199	0	0	0.398	4873.1	129.5	217	239	0.00	0.00	P
TH-230	4	0	0	0.008	4715.5	35.3	197	203	0.00	0.00	P
TH-232	0	0	0	0.000	4040.8	129.7	76	98	0.00	0.00	
U-232	-9999	-9999	0	-10.010	5348.0	129.4	298	320	0.00	0.00	M
U-234	4	0	0	0.008	4802.4	35.3	197	203	0.00	0.00	P
U-235	1	1	0	0.001	4425.6	129.6	141	163	0.00	0.00	
PU-236	15	15	26	0.015	5795.5	129.3	374	396	0.00	0.00	S
NP-237	-9999	-9999	0	-10.010	4815.8	129.5	207	229	0.00	0.00	I
PU-238	-9999	-9999	0	-10.010	5526.9	129.4	328	350	0.00	0.00	M
U-238	0	0	0	0.000	4225.8	129.6	107	129	0.00	0.00	
PU-239	-9999	-9999	0	-10.010	5184.4	129.5	270	292	0.00	0.00	M
AM-241	-9999	-9999	0	-10.010	5513.4	129.4	326	348	0.00	0.00	M
AM-242M	-9999	-9999	0	-10.010	5234.6	129.4	278	300	0.00	0.00	M
CM-242	-9999	-9999	0	-10.010	6140.5	135.1	432	455	0.00	0.00	M
PU-242	199	0	0	0.398	4928.3	129.5	217	239	0.00	0.00	P
AM-243	-9999	-9999	0	-10.010	5303.1	129.4	290	312	0.00	0.00	M
CM-244	15	17	26	0.013	5832.6	129.3	380	402	0.00	0.00	S
CM-246	-9999	-9999	0	-10.010	5414.3	129.4	309	331	0.00	0.00	M
CM-247	199	0	0	0.398	4898.2	129.5	217	239	0.00	0.00	P
CM-248	86	0	0	0.172	5106.4	217.8	232	269	0.00	0.00	P

End of Alpha Region Report
(Produced by Alp_rgn_cnts)

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

Sample Identity: H4XQQ1AA
Detector: ALP171 8
Report Date: 18-Jun-06 02:21 PM
Acquire Date: 18-JUN-2006 05:59:52.35

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

VMS Peak Search Report V1.9 Generated 18-JUN-2006 14:21:04

Configuration	: $DISK1:[ALP171.SAMPLE]H4XQQ1AA_180660559H.CNF;1		
Analyses by	: ALPHA V1.8		
Sample title	: TH BRC		
Sample date	: 20-APR-2006 12:00:00	Acquisition date	: 18-JUN-2006 05:59:52
Sample ID	: H4XQQ1AA	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	4703.68	4	0	23.60	199.50	197	6	1.33E-04	50.0	
2	0	4873.13	199	0	58.99	228.28	217	22	6.64E-03	7.1	
3	0	5063.30	86	0	23.60	260.59	232	37	2.87E-03	10.8	

VMS Nuclide Identification Report V3.0 Generated 18-JUN-2006 14:21:06

```
Configuration     : $DISK1:[ALP171.SAMPLE]H4XQQ1AA_180660559H.CNF;1
Analyses by       : ALPHA V1.8,PEAKEFF V2.2,NID V3.3
Sample title      : TH BRC
Sample date       : 20-APR-2006 12:00:00 Acquisition date : 18-JUN-2006 05:59:52
Sample ID         : H4XQQ1AA             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	1.04	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	
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			

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	
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]H4XQQ1AA_180660559H.CNF;1

Peak Energy	Left Chan	Rght Chan	Peak Area	Total Counts	Diff/ StDev	Overlap Counts	Multiplet Diff/StDev
4703.67	197	203	4	4	0.00		
4873.12	217	239	199	184	1.06		
5063.30	232	269	86	163	-8.30	61	-0.06

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

End of Report

STL RICHLAND

SEVERN TRENT **STL**

THORIUM ISOTOPIC COUNTING REQUEST 1419

C.R. Technician CB
Date Counted 6/1/06

C.R. Analyst S
Date Analyzed 6/19/06

Counting Time
Sample 50 Minutes

Background **See Alpha Analysis Report** BRC

SOP's
Operating: RICHRD008
Review: 4/20 RICHRD0016 6/29/06

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)		
H4XQRIAA		10		0	See Alpha Analysis Report for ROI Information			114	
H4XQTIAA		10		0	See Alpha Analysis Report for ROI Information			116	
H4XIRIAA		10		0	See Alpha Analysis Report for ROI Information			117	
H4XITIAA		10		0	See Alpha Analysis Report for ROI Information			118	
H4XIVIAA		10		0	See Alpha Analysis Report for ROI Information			119	
H4XIWIAA		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				

Comments:

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

Approved by: S

Date: 6/19/06

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

Sample Identity: H4XQR1AA

Detector: ALP114 1
Report Date: 19-Jun-06 06:04 AM
Acquire Date: 18-JUN-2006 05:59:23.55
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	7	-0.005	5423.2	149.8	321	341
TH-229	589	0	1.178	4845.3	345.1	244	290
TH-230	4	0	0.008	4687.7	150.2	223	243
TH-232	0	0	0.000	4013.0	150.5	133	153

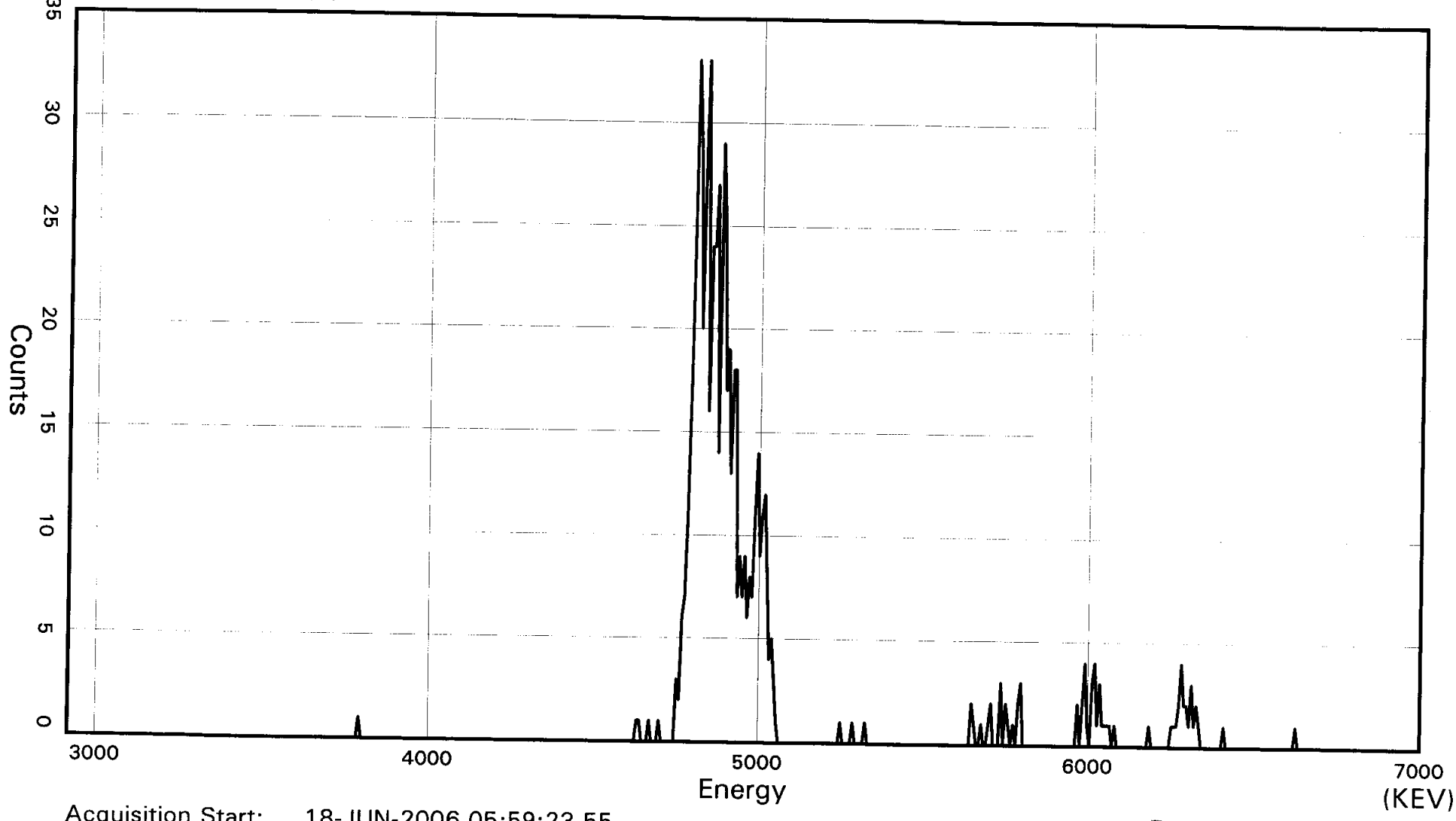
End of Alpha Region Report
(Produced by ANAL Report)

STL Richland WA.

TH BRC

Sample ID: H4XQR1AA
Detector ID: ALP114 1

Batch ID: 6129276



Acquisition Start: 18-JUN-2006 05:59:23.55
Preset Live Time: 0 08:20:00.00
Elapsed Live Time: 0 08:20:07.00

Energy Coefficients:
Offset: 2.89411E+03
Slope: 7.54967E+00
Quadrature: -8.69294E-05

SAMPLE IDENTIITY: H4XQR1AA

TITLE : TH BRC

DETECTOR : ALP114 1
CONFIGURATION NAME : RDND06$DKA100:[ALP114.SAMPLE]H4XQR1AA_180660
559.CNF;1
ACQUIRE DATE of BACKGROUND: 15-MAY-2006 08:40:49

REPORT DATE : 18-Jun-06 SAMPLE DATE: 20-APR-2006 12:00:00
ACQUIRE DATE: 18-JUN-2006 05:59:23 CALIB DATE : 15-MAY-2006 02:21:17

PRESET LIVE TIME: 0 08:20:00 ELAPSED LIVE TIME: 0 08:20:07

OFFSET : 2894.11 keV CONSTANT FWHM : 7.00000 Channels
SLOPE : 7.54967 keV/C SENSITIVITY : 6.00000 Std Dev's
QUAD COEFF : -.869294E-04 keV/C^2 SUM SENSITIVITY: 0.10000 %

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

Sample Identity: H4XQR1AA
Detector: ALP114 1
Report Date: 18-Jun-06 02:19 PM
Acquire Date: 18-JUN-2006 05:59:23.55

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	11		251	0		301	0		351	0		401	4		451	0		501
		2	0		52	0		102	0		152	0		202	17		252	0		302	0		352	0		402	2		452	0		502
	0	3	0		53	0		103	0		153	0		203	25		253	0		303	0		353	0		403	2		453	0		503
	0	4	0		54	0		104	0		154	0		204	33		254	0		304	0		354	0		404	1		454	0		504
	0	5	0		55	0		105	0		155	0		205	29		255	0		305	0		355	0		405	3		455	0		505
	0	6	0		56	0		106	0		156	0		206	20		256	0		306	0		356	0		406	1		456	0		506
	0	7	0		57	0		107	0		157	0		207	28		257	0		307	0		357	0		407	2		457	0		507
	0	8	0		58	0		108	0		158	0		208	33		258	0		308	0		358	0		408	1		458	0		508
	0	9	0		59	0		109	0		159	0		209	16		259	0		309	0		359	2		409	0		459	0		509
	0	10	0		60	0		110	0		160	0		210	24		260	0		310	0		360	0		410	0		460	0		510
	0	11	0		61	0		111	0		161	0		211	24		261	0		311	0		361	2		411	0		461	0		511
	0	12	0		62	0		112	0		162	0		212	27		262	0		312	0		362	4		412	0		462	0		512
	0	13	0		63	0		113	0		163	0		213	14		263	1		313	0		363	1		413	0		463			
	0	14	0		64	0		114	0		164	0		214	29		264	0		314	0		364	0		414	0		464			
	0	15	0		65	0		115	0		165	0		215	25		265	0		315	0		365	3		415	0		465			
	0	16	0		66	0		116	0		166	0		216	17		266	0		316	2		366	4		416	0		466			
	0	17	0		67	0		117	0		167	0		217	19		267	0		317	1		367	1		417	0		467			
	0	18	0		68	0		118	0		168	0		218	13		268	1		318	0		368	3		418	1		468			
	0	19	0		69	1		119	0		169	0		219	18		269	0		319	0		369	1		419	0		469			
	0	20	0		70	0		120	0		170	0		220	18		270	0		320	1		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	9		272	0		322	0		372	1		422	0		472			
	0	23	0		73	0		123	0		173	0		223	7		273	1		323	1		373	0		423	0		473			
	0	24	0		74	0		124	0		174	0		224	9		274	0		324	2		374	1		424	0		474			
	0	25	0		75	0		125	0		175	0		225	6		275	0		325	0		375	0		425	0		475			
	0	26	0		76	0		126	0		176	0		226	8		276	0		326	0		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	11		278	0		328	3		378	0		428	0		478			
	0	29	0		79	0		129	0		179	0		229	14		279	0		329	0		379	0		429	0		479			
	0	30	0		80	0		130	0		180	0		230	9		280	0		330	2		380	0		430	0		480			
	0	31	0		81	0		131	0		181	1		231	11		281	0		331	1		381	0		431	0		481			
	0	32	0		82	0		132	0		182	1		232	12		282	0		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	4		284	0		334	0		384	0		434	0		484			
	0	35	0		85	0		135	0		185	0		235	5		285	0		335	2		385	0		435	0		485			
	0	36	0		86	0		136	0		186	1		236	3		286	0		336	3		386	0		436	0		486			
	0	37	0		87	0		137	0		187	0		237	1		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	0		289	0		339	0		389	0		439	0		489			
	0	40	0		90	0		140	0		190	1		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	0		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	0		446	0		496			
	0	47	0		97	0		147	0		197	3		247	0		297	0		347	0		397	1		447	1		497			
	0	48	0		98	0		148	0		198	2		248	0		298	0		348	0		398	1		448	0		498			
	0	49	0		99	0		149	0		199	6		249	0		299	0		349	0		399	1		449	0		499			

0	50	0	100	0	150	0	200	7	250	0	300	0	350	0	400	2	450	0	500

VMS Peak Search Report V1.9 Generated 18-JUN-2006 14:19:34

```
Configuration     : RDND06$DKA100:[ALP114.SAMPLE]H4XQR1AA_180660559.CNF;1
Analyses by       : ALPHA V1.8
Sample title      : TH BRC
Sample date       : 20-APR-2006 12:00:00 Acquisition date : 18-JUN-2006 05:59:23
Sample ID         : H4XQR1AA             Sample quantity  : 0.00000E+00 SAMPLE
Sample type       : disk                 Sample geometry  :
Detector name     : ALP114               Detector geometry:
Elapsed live time: 0 08:20:07.00         Elapsed real time: 0 08:20:07.00   0.0%
Start energy      :  2916.76 KEV         End energy       :  6736.75 KEV
Sensitivity       :     6.00             Sum Sensitivity  :     0.10
No peaks were found
```

VMS Nuclide Identification Report V3.1 Generated 18-JUN-2006 14:19:35

```
Configuration     : RDND06$DKA100:[ALP114.SAMPLE]H4XQR1AA_180660559.CNF;1
Analyses by       : ALPHA V1.8,PEAKEFF V2.2,NID V3.4
Sample title      : TH BRC
Sample date       : 20-APR-2006 12:00:00 Acquisition date : 18-JUN-2006 05:59:23
Sample ID         : H4XQR1AA             Sample quantity  : 0.00000E+00 SAMPLE
Sample type       : disk                 Sample geometry  :
Detector name     : ALP114               Detector geometry:
Elapsed live time: 0 08:20:07.00         Elapsed real time: 0 08:20:07.00   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: 18-Jun-06  02:19 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: H4XQT1AA

Detector: ALP116 1
Report Date: 19-Jun-06 06:05 AM
Acquire Date: 18-JUN-2006 05:59:28.82
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	2	0.004	5423.2	150.4	327	347
TH-229	170	2	0.338	4845.3	384.4	250	301
TH-230	1	0	0.002	4687.7	151.0	229	249
TH-232	0	0	0.000	4013.0	151.5	140	160

End of Alpha Region Report
(Produced by ANAL Report)

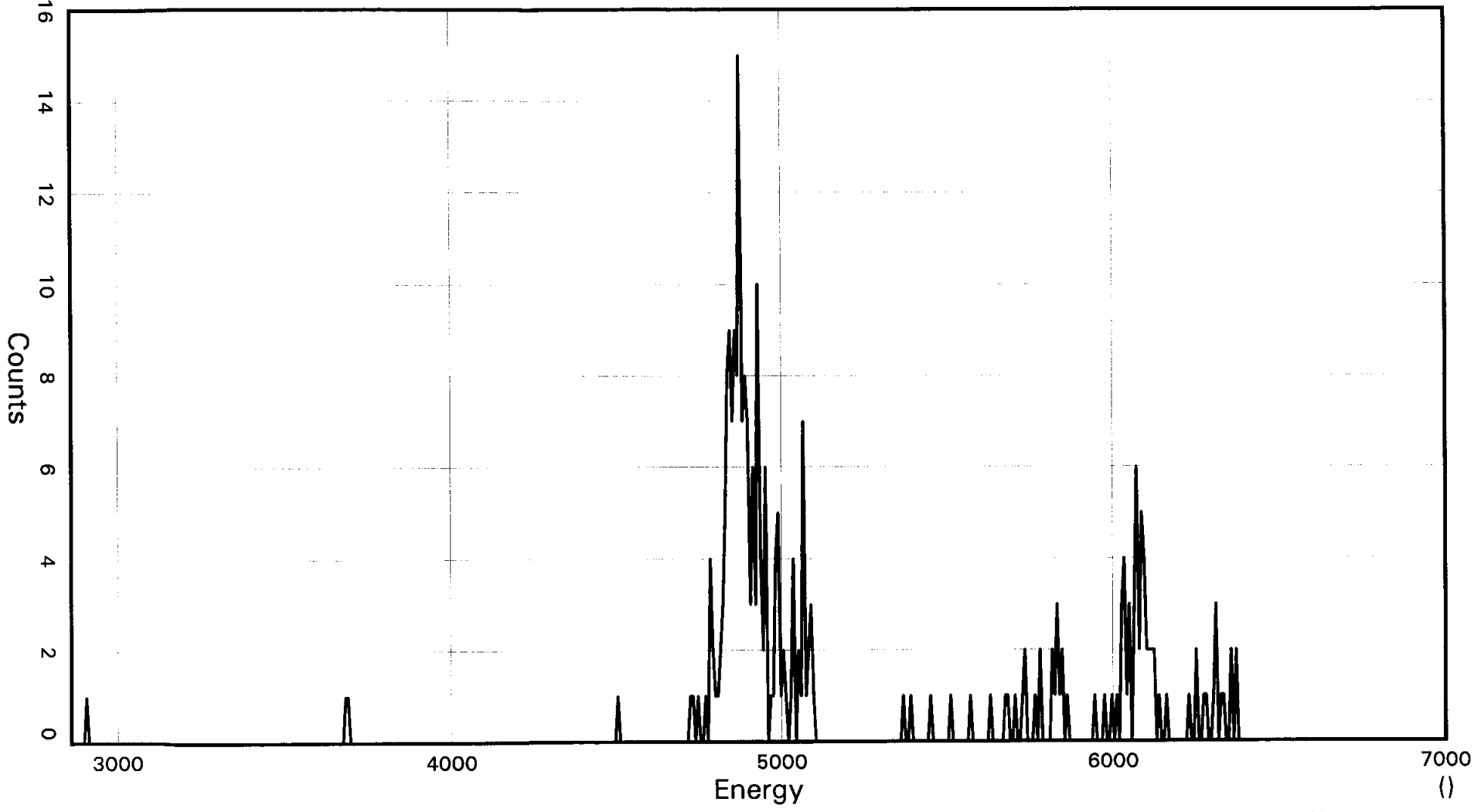
STL Richland WA.

TH BRC

Sample ID: H4XQT1AA

Detector ID: ALP116 1

Batch ID: 6129276



Acquisition Start: 18-JUN-2006 05:59:28.82

Preset Live Time: 0 08:20:00.00

Elapsed Live Time: 0 08:20:02.00

Energy Coefficients:

Offset: 2.83815E+03

Slope: 7.61998E+00

Quadrature: -1.51265E-04

SAMPLE IDENTIITY: H4XQT1AA

TITLE : TH BRC

DETECTOR : ALP116 1
CONFIGURATION NAME : RDND06$DKA100:[ALP116.SAMPLE]H4XQT1AA_180660
559.CNF;1
ACQUIRE DATE of BACKGROUND: 15-MAY-2006 08:40:55

REPORT DATE : 18-Jun-06 SAMPLE DATE: 20-APR-2006 12:00:00
ACQUIRE DATE: 18-JUN-2006 05:59:28 CALIB DATE : 15-MAY-2006 02:21:38

PRESET LIVE TIME: 0 08:20:00 ELAPSED LIVE TIME: 0 08:20:02

OFFSET : 2838.15 keV CONSTANT FWHM : 9.00000 Channels
SLOPE : 7.61998 keV/C SENSITIVITY : 6.00000 Std Dev's
QUAD COEFF : -.151265E-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: H4XQT1AA
Detector: ALP116 1
Report Date: 18-Jun-06 02:19 PM
Acquire Date: 18-JUN-2006 05:59:28.82

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	1		252	0		302	0		352	0		402	2		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	1		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	1		456	0		506
0		7	0		57	0		107	0		157	0		207	4		257	0		307	0		357	0		407	0		457	0		507
0		8	0		58	0		108	0		158	0		208	2		258	0		308	0		358	0		408	0		458	0		508
1		9	0		59	0		109	0		159	0		209	1		259	0		309	0		359	0		409	1		459	0		509
0		10	0		60	0		110	0		160	0		210	1		260	0		310	0		360	0		410	3		460	0		510
0		11	0		61	1		111	0		161	0		211	2		261	0		311	1		361	1		411	0		461	0		511
0		12	0		62	1		112	0		162	0		212	3		262	0		312	0		362	0		412	1		462	0		512
0		13	0		63	0		113	0		163	0		213	5		263	0		313	0		363	0		413	1		463			
0		14	0		64	0		114	0		164	0		214	8		264	0		314	0		364	0		414	0		464			
0		15	0		65	0		115	0		165	0		215	9		265	0		315	0		365	1		415	0		465			
0		16	0		66	0		116	0		166	0		216	7		266	0		316	0		366	0		416	2		466			
0		17	0		67	0		117	0		167	0		217	9		267	0		317	0		367	0		417	0		467			
0		18	0		68	0		118	0		168	0		218	8		268	0		318	0		368	1		418	2		468			
0		19	0		69	0		119	0		169	0		219	15		269	0		319	1		369	0		419	0		469			
0		20	0		70	0		120	0		170	1		220	7		270	0		320	0		370	1		420	0		470			
0		21	0		71	0		121	0		171	0		221	8		271	0		321	0		371	0		421	0		471			
0		22	0		72	0		122	0		172	0		222	7		272	0		322	0		372	3		422	0		472			
0		23	0		73	0		123	0		173	0		223	3		273	0		323	0		373	4		423	0		473			
0		24	0		74	0		124	0		174	0		224	6		274	0		324	0		374	1		424	0		474			
0		25	0		75	0		125	0		175	0		225	3		275	0		325	1		375	3		425	0		475			
0		26	0		76	0		126	0		176	0		226	10		276	0		326	1		376	0		426	0		476			
0		27	0		77	0		127	0		177	0		227	4		277	0		327	0		377	3		427	0		477			
0		28	0		78	0		128	0		178	0		228	2		278	0		328	0		378	6		428	0		478			
0		29	0		79	0		129	0		179	0		229	6		279	0		329	1		379	2		429	0		479			
0		30	0		80	0		130	0		180	0		230	0		280	0		330	0		380	5		430	0		480			
0		31	0		81	0		131	0		181	0		231	1		281	0		331	0		381	4		431	0		481			
0		32	0		82	0		132	0		182	0		232	1		282	0		332	1		382	2		432	0		482			
0		33	0		83	0		133	0		183	0		233	4		283	0		333	2		383	2		433	0		483			
0		34	0		84	0		134	0		184	0		234	5		284	1		334	0		384	2		434	0		484			
0		35	0		85	0		135	0		185	0		235	1		285	0		335	0		385	2		435	0		485			
0		36	0		86	0		136	0		186	0		236	2		286	0		336	0		386	0		436	0		486			
0		37	0		87	0		137	0		187	0		237	1		287	1		337	1		387	1		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	1		289	0		339	2		389	0		439	0		489			
0		40	0		90	0		140	0		190	0		240	4		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	2		292	0		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	0		244	7		294	0		344	2		394	0		444	0		494			
0		45	0		95	0		145	0		195	0		245	1		295	1		345	1		395	0		445	0		495			
0		46	0		96	0		146	0		196	0		246	2		296	0		346	3		396	0		446	0		496			
0		47	0		97	0		147	0		197	0		247	3		297	0		347	1		397	0		447	0		497			
0		48	0		98	0		148	0		198	0		248	1		298	0		348	2		398	0		448	0		498			
0		49	0		99	0		149	0		199	1		249	0		299	0		349	0		399	1		449	0		499			

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

VMS Peak Search Report V1.9 Generated 18-JUN-2006 14:19:36

```
Configuration     : RDND06$DKA100:[ALP116.SAMPLE]H4XQT1AA_180660559.CNF;1
Analyses by       : ALPHA V1.8
Sample title      : TH BRC
Sample date       : 20-APR-2006 12:00:00 Acquisition date : 18-JUN-2006 05:59:28
Sample ID         : H4XQT1AA             Sample quantity  : 0.00000E+00 SAMPLE
Sample type       : disk                 Sample geometry  :
Detector name     : ALP116               Detector geometry:
Elapsed live time: 0 08:20:02.00         Elapsed real time: 0 08:20:02.00   0.0%
Start energy      :  2861.01             End energy       :  6699.93
Sensitivity       :     6.00             Sum Sensitivity  :     0.10
No peaks were found
```

VMS Nuclide Identification Report V3.1 Generated 18-JUN-2006 14:19:37

```
Configuration     : RDND06$DKA100:[ALP116.SAMPLE]H4XQT1AA_180660559.CNF;1
Analyses by       : ALPHA V1.8,PEAKEFF V2.2,NID V3.4
Sample title      : TH BRC
Sample date       : 20-APR-2006 12:00:00 Acquisition date : 18-JUN-2006 05:59:28
Sample ID         : H4XQT1AA             Sample quantity  : 0.00000E+00 SAMPLE
Sample type       : disk                 Sample geometry  :
Detector name     : ALP116               Detector geometry:
Elapsed live time: 0 08:20:02.00         Elapsed real time: 0 08:20:02.00   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: 18-Jun-06  02:19 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: H4X1R1AA

Detector: ALP117 1
Report Date: 19-Jun-06 06:05 AM
Acquire Date: 18-JUN-2006 05:59:34.08
Tracer Nuclide: TH-229
Sample Live Time: 500 minutes
Bkgrnd Live Time: 2500 minutes

Nuclide Name	Smpl Count	Bkg Count	Count Rate C/Min	Centrd Energy keV	Region Width keV	Left Chnl	Rght Chnl
TH-228	4	1	0.008	5423.2	149.3	338	358
TH-229	677	2	1.353	4845.3	387.8	260	312
TH-230	1	2	0.001	4687.7	149.1	239	259
TH-232	0	1	0.000	4013.0	148.9	148	168

End of Alpha Region Report
(Produced by ANAL Report)

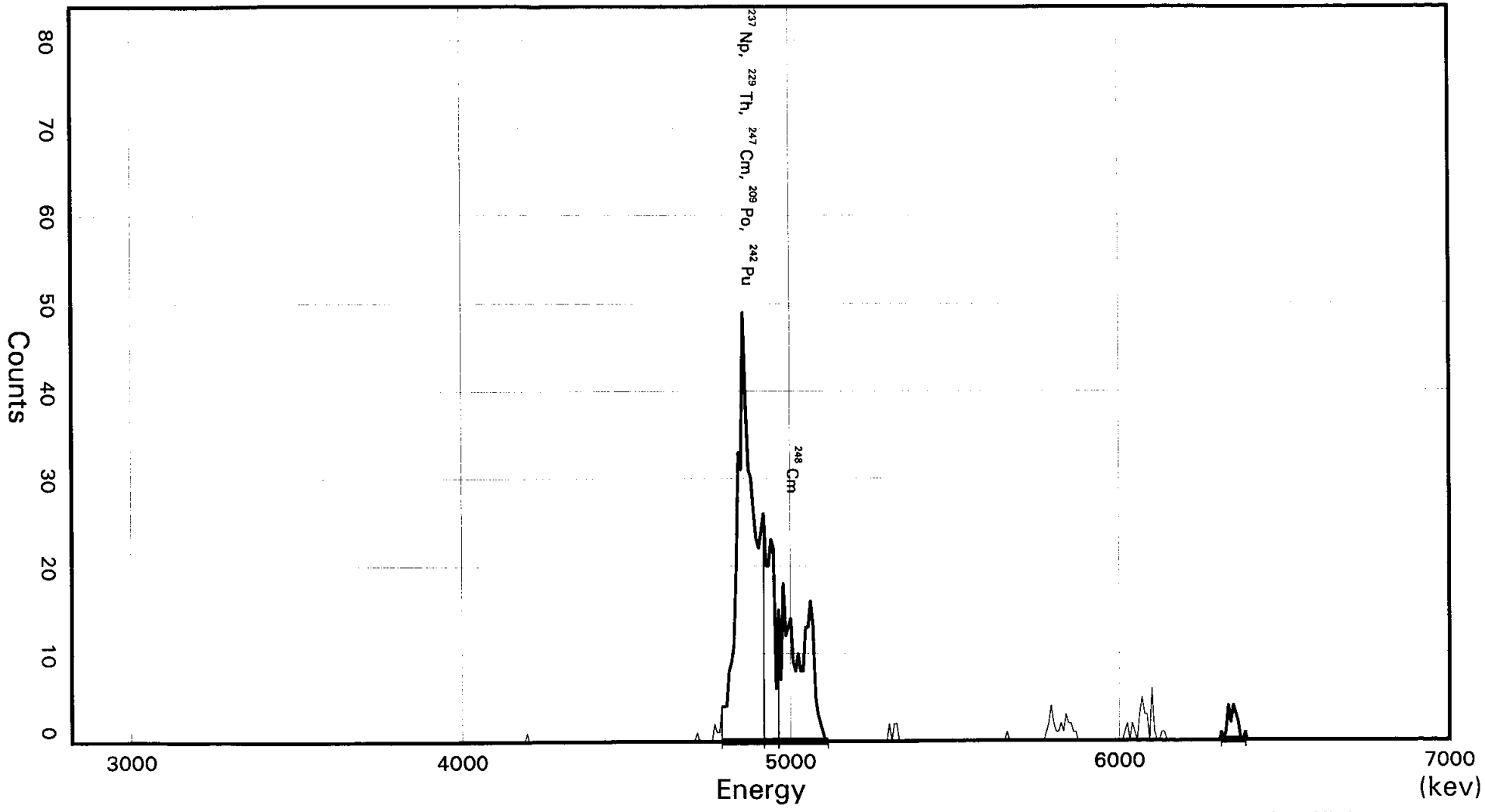
STL Richland WA.

TH BRC

Sample ID: H4X1R1AA

Detector ID: ALP117 1

Batch ID: 6129276



Acquisition Start: 18-JUN-2006 05:59:34.08

Preset Live Time: 0 08:20:00.00

Elapsed Live Time: 0 08:20:07.00

Energy Coefficients:

Offset: 2.79766E+03

Slope: 7.43061E+00

Quadrature: 4.65511E-05

SAMPLE IDENTIITY: H4X1R1AA

TITLE : TH BRC

DETECTOR : ALP117 1
CONFIGURATION NAME : RDND06$DKA100:[ALP117.SAMPLE]H4X1R1AA_180660
559.CNF;1
ACQUIRE DATE of BACKGROUND: 15-MAY-2006 08:40:57

REPORT DATE : 18-Jun-06 SAMPLE DATE: 20-APR-2006 12:00:00
ACQUIRE DATE: 18-JUN-2006 05:59:34 CALIB DATE : 15-MAY-2006 02:21:42

PRESET LIVE TIME: 0 08:20:00 ELAPSED LIVE TIME: 0 08:20:07

OFFSET : 2797.66 keV CONSTANT FWHM : 6.66667 Channels
SLOPE : 7.43061 keV/C SENSITIVITY : 3.00000 Std Dev's
QUAD COEFF : 4.655110E-05 keV/C^2 SUM SENSITIVITY: 1.00000 %

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

Sample Identity: H4X1R1AA

Detector: ALP117 1
Report Date: 18-Jun-06 02:19 PM
Acquire Date: 18-JUN-2006 05:59:34.08
Tracer Nuclide: TH-229
High Counts Limit: 36
Sample Live Time: 500 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
PO-208	-9999	-9999	0	-15.994	5147.1	171.6	304	327	0.00	0.00	M I
PO-209	515	1	0	1.029	4915.4	171.5	268	291	0.00	0.00	P
PO-210	-9999	-9999	0	-15.994	5336.5	171.6	330	353	0.00	0.00	M
AC-227	18	3	23	0.034	6070.2	171.8	428	451	0.00	0.00	S
TH-227	18	3	23	0.034	6070.2	171.8	428	451	0.00	0.00	S
TH-228	-9999	-9999	0	-15.994	5455.4	171.7	345	368	0.00	0.00	M
TH-229	515	1	0	1.029	4877.5	171.5	268	291	0.00	0.00	P
TH-230	-9999	-9999	0	-15.994	4719.9	171.5	247	270	0.00	0.00	S I
TH-232	0	2	0	-0.001	4045.2	171.3	156	179	0.00	0.00	
U-232	-9999	-9999	0	-15.994	5352.3	171.6	332	355	0.00	0.00	M
U-234	-9999	-9999	0	-15.994	4806.8	171.5	259	282	0.00	0.00	S I
U-235	0	0	0	0.000	4430.0	171.4	208	231	0.00	0.00	
PU-236	12	17	23	0.016	5799.8	171.8	392	415	0.00	0.00	S
NP-237	515	1	0	1.029	4820.2	171.5	268	291	0.00	0.00	P
PU-238	-9999	-9999	0	-15.994	5531.2	171.7	356	379	0.00	0.00	M
U-238	1	1	0	0.002	4230.2	171.3	181	204	0.00	0.00	
PU-239	-9999	-9999	0	-15.994	5188.7	171.6	310	333	0.00	0.00	M
AM-241	-9999	-9999	0	-15.994	5517.8	171.7	354	377	0.00	0.00	M
AM-242M	-9999	-9999	0	-15.994	5239.0	171.6	316	339	0.00	0.00	M
CM-242	-9999	-9999	0	-15.994	6144.9	171.9	438	461	0.00	0.00	M
PU-242	515	1	0	1.029	4932.7	171.5	268	291	0.00	0.00	P
AM-243	-9999	-9999	0	-15.994	5307.5	171.6	326	349	0.00	0.00	M
CM-244	12	16	23	0.017	5837.0	171.8	397	420	0.00	0.00	S
CM-246	-9999	-9999	0	-15.994	5418.7	171.7	341	364	0.00	0.00	M
CM-247	515	1	0	1.029	4902.6	171.5	268	291	0.00	0.00	P
CM-248	155	1	0	0.310	5110.8	193.9	285	311	0.00	0.00	P

End of Alpha Region Report
(Produced by Alp_rgn_cnts)

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

Sample Identity: H4X1R1AA
Detector: ALP117 1
Report Date: 18-Jun-06 02:19 PM
Acquire Date: 18-JUN-2006 05:59:34.08

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

VMS Peak Search Report V1.9 Generated 18-JUN-2006 14:19:44

```
Configuration     : RDND06$DKA100:[ALP117.SAMPLE]H4X1R1AA_180660559.CNF;1
Analyses by       : ALPHA V1.8
Sample title      : TH BRC
Sample date       : 20-APR-2006 12:00:00 Acquisition date : 18-JUN-2006 05:59:34
Sample ID         : H4X1R1AA             Sample quantity  : 0.00000E+00 SAMPLE
Sample type       : disk                 Sample geometry  :
Detector name     : ALP117               Detector geometry:
Elapsed live time: 0 08:20:07.00         Elapsed real time: 0 08:20:07.00   0.0%
Start energy      :  2819.95 kev         End energy       :  6614.33 kev
Sensitivity       :     3.00             Sum Sensitivity  :     1.00
```

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4877.46	515	0	81.74	279.41	268	23	1.72E-02	4.4	
2	0	5009.97	155	0	111.46	297.18	285	26	5.17E-03	8.0	
3	0	6339.84	18	0	37.15	475.29	471	10	6.00E-04	23.6	

VMS Nuclide Identification Report V3.1 Generated 18-JUN-2006 14:19:45

Configuration : RDND06$DKA100:[ALP117.SAMPLE]H4X1R1AA_180660559.CNF;1
Analyses by : ALPHA V1.8,PEAKEFF V2.2,NID V3.4
Sample title : TH BRC
Sample date : 20-APR-2006 12:00:00 Acquisition date : 18-JUN-2006 05:59:34
Sample ID : H4X1R1AA Sample quantity : 0.00000E+00 SAMPLE
Sample type : disk Sample geometry :
Detector name : ALP117 Detector geometry:
Elapsed live time: 0 08:20:07.00 Elapsed real time: 0 08:20:07.00 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	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	
			---	---			
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	
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:[ALP117.SAMPLE]H4X1R1AA_180660559.CNF;1

Peak Energy	Left Chan	Rght Chan	Peak Area	Total Counts	Diff/ StDev	Overlap Counts	Multiplet Diff/StDev
4877.45	268	291	515	500	0.66		
5009.97	285	311	155	305	-12.05	132	-0.12
6339.83	471	481	18	18	0.00		

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

End of Report

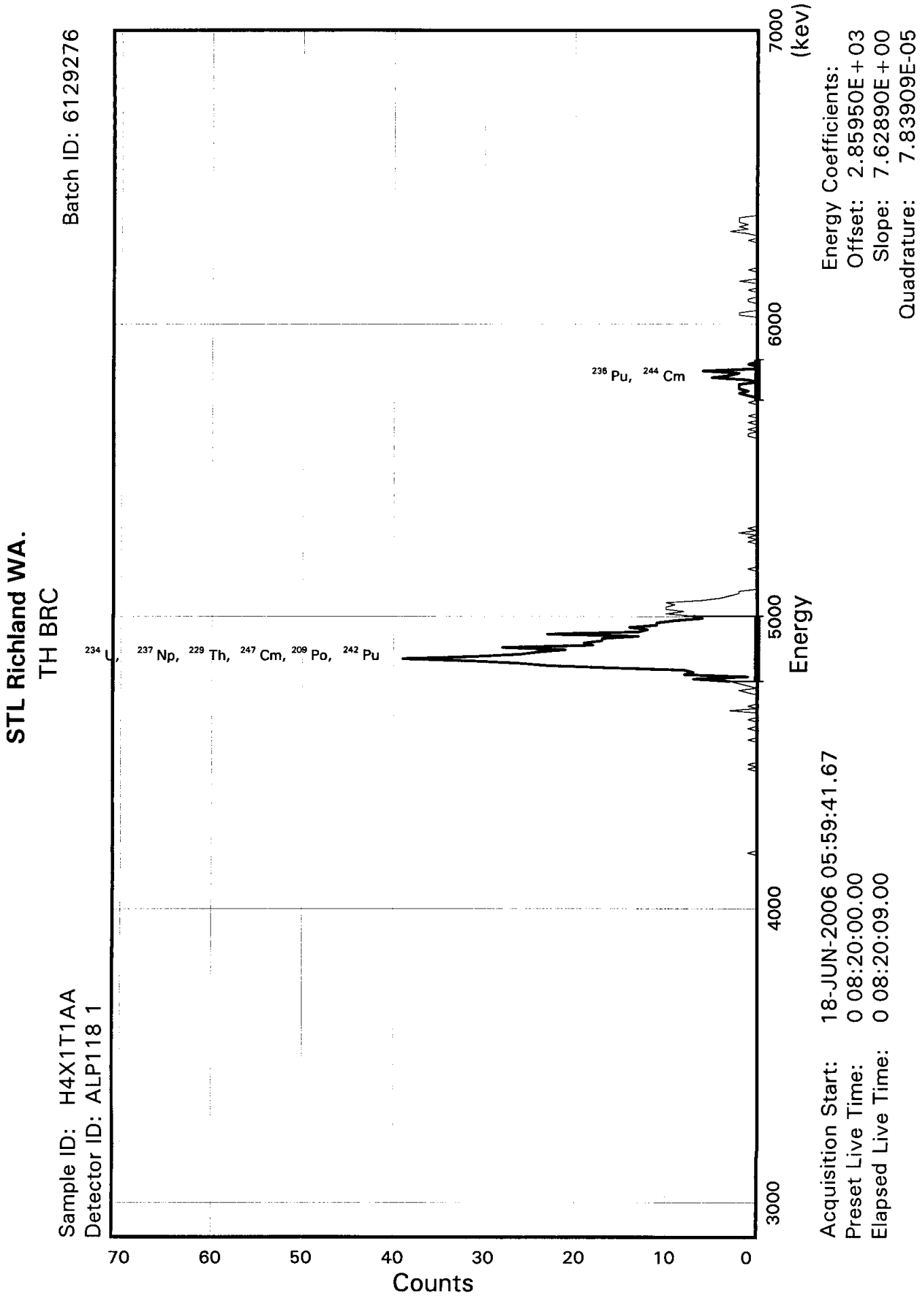
Alpha Analysis Report
(Version: 7-Feb-98)

Sample Identity: H4X1T1AA

Detector: ALP118 1
Report Date: 19-Jun-06 06:05 AM
Acquire Date: 18-JUN-2006 05:59:41.67
Tracer Nuclide: TH-229
Sample Live Time: 500 minutes
Bkgrnd Live Time: 2500 minutes

Nuclide Name	Smpl Count	Bkg Count	Count Rate C/Min	Centrd Energy keV	Region Width keV	Left Chnl	Rght Chnl
TH-228	0	4	-0.002	5423.2	153.6	320	340
TH-229	569	9	1.134	4845.3	383.6	245	295
TH-230	7	3	0.013	4687.7	153.3	224	244
TH-232	0	0	0.000	4013.0	153.0	136	156

End of Alpha Region Report
(Produced by ANAL Report)


STL Richland WA.
TH BRC
Batch ID: 6129276
Sample ID: H4X1T1AA
Detector ID: ALP118 1
234 U, 237 Np, 229 Th, 247 Cm, 209 Po, 242 Pu
236 Pu, 244 Cm
Counts
70
60
50
40
30
20
10
0
Energy
3000
4000
5000
6000
7000
(kev)
Acquisition Start: 18-JUN-2006 05:59:41.67
Preset Live Time: 0 08:20:00.00
Elapsed Live Time: 0 08:20:09.00
Energy Coefficients:
Offset: 2.85950E+03
Slope: 7.62890E+00
Quadrature: 7.83909E-05

SAMPLE IDENTIITY: H4X1T1AA

TITLE : TH BRC

DETECTOR : ALP118 1
CONFIGURATION NAME : RDND06$DKA100:[ALP118.SAMPLE]H4X1T1AA_180660
559.CNF;1
ACQUIRE DATE of BACKGROUND: 15-MAY-2006 08:41:02

REPORT DATE : 18-Jun-06 SAMPLE DATE: 20-APR-2006 12:00:00
ACQUIRE DATE: 18-JUN-2006 05:59:41 CALIB DATE : 15-MAY-2006 02:21:48

PRESET LIVE TIME: 0 08:20:00 ELAPSED LIVE TIME: 0 08:20:09

OFFSET : 2859.50 keV CONSTANT FWHM : 7.50000 Channels
SLOPE : 7.62890 keV/C SENSITIVITY : 3.00000 Std Dev's
QUAD COEFF : 7.839090E-05 keV/C^2 SUM SENSITIVITY: 1.00000 %

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

Sample Identity: H4X1T1AA

Detector: ALP118 1
Report Date: 18-Jun-06 02:26 PM
Acquire Date: 18-JUN-2006 05:59:41.67
Tracer Nuclide: TH-229
High Counts Limit: 36
Sample Live Time: 500 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
PO-208	-9999	-9999	0	-15.992	5138.4	222.6	286	315	0.00	0.00	M
PO-209	516	7	0	1.029	4906.7	222.4	251	280	0.00	0.00	P
PO-210	-9999	-9999	0	-15.992	5327.9	222.7	311	340	0.00	0.00	M
AC-227	7	6	6	0.012	6061.5	223.1	406	435	0.00	0.00	S
TH-227	7	6	6	0.012	6061.5	223.1	406	435	0.00	0.00	S
TH-228	-9999	-9999	0	-15.992	5446.7	222.8	326	355	0.00	0.00	M
TH-229	516	7	0	1.029	4868.8	222.4	251	280	0.00	0.00	P
TH-230	-9999	-9999	0	-15.992	4711.2	222.3	230	259	0.00	0.00	I
TH-232	0	1	0	0.000	4036.5	221.9	142	171	0.00	0.00	S
U-232	-9999	-9999	0	-15.992	5343.7	222.7	313	342	0.00	0.00	M
U-234	516	7	0	1.029	4798.1	222.4	251	280	0.00	0.00	P
U-235	2	1	0	0.004	4421.3	222.2	193	222	0.00	0.00	S
PU-236	28	48	0	0.037	5791.2	138.4	376	394	0.00	0.00	P
NP-237	516	7	0	1.029	4811.5	222.4	251	280	0.00	0.00	P
PU-238	-9999	-9999	0	-15.992	5522.6	222.8	336	365	0.00	0.00	M
U-238	-9999	-9999	0	-15.992	4221.5	222.1	167	196	0.00	0.00	M
PU-239	-9999	-9999	0	-15.992	5180.1	222.6	292	321	0.00	0.00	M
AM-241	-9999	-9999	0	-15.992	5509.1	222.8	334	363	0.00	0.00	M
AM-242M	-9999	-9999	0	-15.992	5230.3	222.7	298	327	0.00	0.00	M
CM-242	-9999	-9999	0	-15.992	6136.3	223.2	416	445	0.00	0.00	M
PU-242	516	7	0	1.029	4924.0	222.4	251	280	0.00	0.00	P
AM-243	-9999	-9999	0	-15.992	5298.8	222.7	307	336	0.00	0.00	M
CM-244	28	48	0	0.037	5828.4	138.4	376	394	0.00	0.00	P
CM-246	-9999	-9999	0	-15.992	5410.0	215.1	322	350	0.00	0.00	M
CM-247	516	7	0	1.029	4893.9	222.4	251	280	0.00	0.00	P
CM-248	-9999	-9999	0	-15.992	5102.1	222.6	281	310	0.00	0.00	M

End of Alpha Region Report
(Produced by Alp_rgn_cnts)

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

Sample Identity: H4X1T1AA
Detector: ALP118 1
Report Date: 18-Jun-06 02:26 PM
Acquire Date: 18-JUN-2006 05:59:41.67

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

VMS Peak Search Report V1.9 Generated 18-JUN-2006 14:26:51

```
Configuration     : RDND06$DKA100:[ALP118.SAMPLE]H4X1T1AA_180660559.CNF;1
Analyses by       : ALPHA V1.8
Sample title      : TH BRC
Sample date       : 20-APR-2006 12:00:00 Acquisition date : 18-JUN-2006 05:59:41
Sample ID         : H4X1T1AA             Sample quantity  : 0.00000E+00 SAMPLE
Sample type       : disk                 Sample geometry  :
Detector name     : ALP118               Detector geometry:
Elapsed live time: 0 08:20:09.00         Elapsed real time: 0 08:20:09.00   0.0%
Start energy      :  2882.39 kev         End energy       :  6786.05 kev
Sensitivity       :     3.00             Sum Sensitivity  :     1.00
```

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4868.83	516	0	83.92	262.67	251	29	1.72E-02	4.4	
2	0	5822.35	28	0	30.52	386.83	376	18	9.33E-04	18.9	

VMS Nuclide Identification Report V3.1 Generated 18-JUN-2006 14:26:53

```
Configuration     : RDND06$DKA100:[ALP118.SAMPLE]H4X1T1AA_180660559.CNF;1
Analyses by       : ALPHA V1.8,PEAKEFF V2.2,NID V3.4
Sample title      : TH BRC
Sample date       : 20-APR-2006 12:00:00 Acquisition date : 18-JUN-2006 05:59:41
Sample ID         : H4X1T1AA             Sample quantity  : 0.00000E+00 SAMPLE
Sample type       : disk                 Sample geometry  :
Detector name     : ALP118               Detector geometry:
Elapsed live time: 0 08:20:09.00         Elapsed real time: 0 08:20:09.00   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-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	
PU-236	2.86Y	1.04	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	1.01	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:[ALP118.SAMPLE]H4X1T1AA_180660559.CNF;1

Peak Energy	Left Chan	Rght Chan	Peak Area	Total Counts	Diff/ StDev	Overlap Counts	Multiplet Diff/StDev
4868.83	251	280	516	489	1.19		
5822.34	376	394	28	28	0.00		

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

End of Report

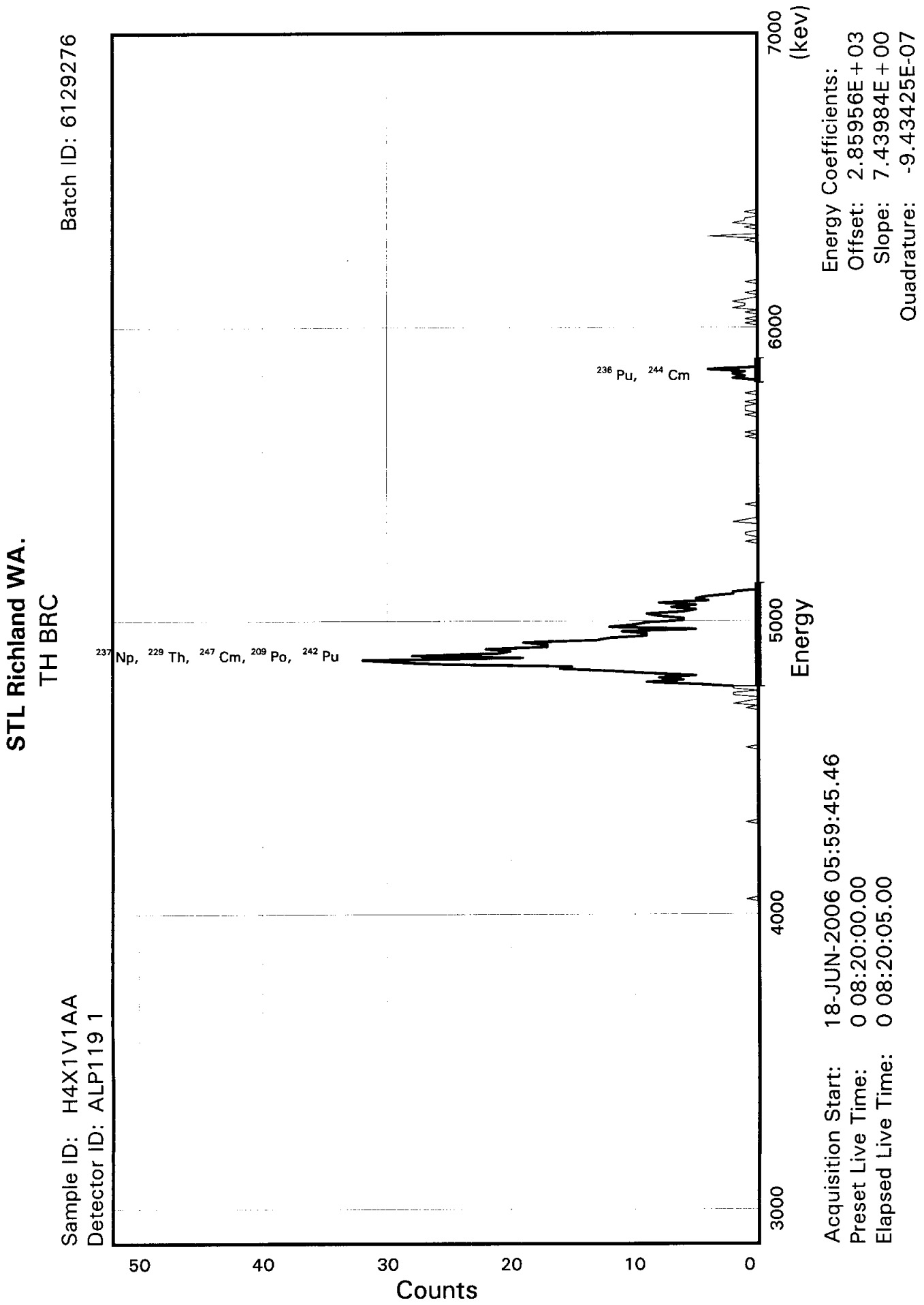
Alpha Analysis Report
(Version: 7-Feb-98)

Sample Identity: H4X1V1AA

Detector: ALP119 1
Report Date: 19-Jun-06 06:05 AM
Acquire Date: 18-JUN-2006 05:59:45.46
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	148.8	330	350
TH-229	509	0	1.018	4845.3	379.4	252	303
TH-230	4	0	0.008	4687.7	148.8	231	251
TH-232	1	0	0.002	4013.0	148.8	140	160

End of Alpha Region Report
(Produced by ANAL Report)


STL Richland WA.
TH BRC
Batch ID: 6129276
Sample ID: H4X1V1AA
Detector ID: ALP119 1
237Np, 229Th, 247Cm, 209Po, 242Pu
236Pu, 244Cm
Counts
50
40
30
20
10
0
3000
4000
5000
6000
7000
(kev)
Energy
Acquisition Start: 18-JUN-2006 05:59:45.46
Preset Live Time: 0 08:20:00.00
Elapsed Live Time: 0 08:20:05.00
Energy Coefficients:
Offset: 2.85956E+03
Slope: 7.43984E+00
Quadrature: -9.43425E-07

SAMPLE IDENTIITY: H4X1V1AA

TITLE : TH BRC

DETECTOR : ALP119 1
CONFIGURATION NAME : RDND06$DKA100:[ALP119.SAMPLE]H4X1V1AA_180660
559.CNF;1
ACQUIRE DATE of BACKGROUND: 15-MAY-2006 08:41:04

REPORT DATE : 18-Jun-06 SAMPLE DATE: 20-APR-2006 12:00:00
ACQUIRE DATE: 18-JUN-2006 05:59:45 CALIB DATE : 15-MAY-2006 02:21:53

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

OFFSET : 2859.56 keV CONSTANT FWHM : 8.83333 Channels
SLOPE : 7.43984 keV/C SENSITIVITY : 3.00000 Std Dev's
QUAD COEFF : -.943425E-06 keV/C^2 SUM SENSITIVITY: 1.00000 %

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

Sample Identity: H4X1V1AA

Detector: ALP119 1
Report Date: 18-Jun-06 02:19 PM
Acquire Date: 18-JUN-2006 05:59:45.46
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	5153.6	349.6	294	341	0.00	0.00	M I
PO-209	505	0	0	1.010	4921.9	349.6	258	305	0.00	0.00	P
PO-210	-9999	-9999	0	-9.998	5343.1	349.6	320	367	0.00	0.00	M
AC-227	10	1	15	0.018	6076.7	349.6	418	465	0.00	0.00	S
TH-227	10	1	15	0.018	6076.7	349.6	418	465	0.00	0.00	S
TH-228	-9999	-9999	0	-9.998	5461.9	349.6	336	383	0.00	0.00	M
TH-229	505	0	0	1.010	4884.0	349.6	258	305	0.00	0.00	P
TH-230	-9999	-9999	0	-9.998	4726.4	349.6	237	284	0.00	0.00	M I
TH-232	1	1	0	0.001	4051.7	349.7	146	193	0.00	0.00	S
U-232	-9999	-9999	0	-9.998	5358.9	349.6	322	369	0.00	0.00	M
U-234	-9999	-9999	0	-9.998	4813.3	349.6	248	295	0.00	0.00	M I
U-235	-9999	-9999	0	-9.998	4436.5	349.7	198	245	0.00	0.00	M
PU-236	11	0	0	0.022	5806.4	81.8	397	408	0.00	0.00	P
NP-237	505	0	0	1.010	4826.7	349.6	258	305	0.00	0.00	P
PU-238	-9999	-9999	0	-9.998	5537.7	349.6	346	393	0.00	0.00	M
U-238	-9999	-9999	0	-9.998	4236.7	349.7	171	218	0.00	0.00	M
PU-239	-9999	-9999	0	-9.998	5195.3	349.6	300	347	0.00	0.00	M I
AM-241	-9999	-9999	0	-9.998	5524.3	349.6	344	391	0.00	0.00	M
AM-242M	-9999	-9999	0	-9.998	5245.5	349.6	307	354	0.00	0.00	M
CM-242	-9999	-9999	0	-9.998	6151.4	349.6	428	475	0.00	0.00	M
PU-242	505	0	0	1.010	4939.2	349.6	258	305	0.00	0.00	P
AM-243	-9999	-9999	0	-9.998	5314.0	349.6	316	363	0.00	0.00	M
CM-244	11	0	0	0.022	5843.5	81.8	397	408	0.00	0.00	P
CM-246	-9999	-9999	0	-9.998	5425.2	349.6	331	378	0.00	0.00	M
CM-247	505	0	0	1.010	4909.1	349.6	258	305	0.00	0.00	P
CM-248	-9999	-9999	0	-9.998	5117.3	349.6	289	336	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: H4X1V1AA
Detector: ALP119 1
Report Date: 18-Jun-06 02:19 PM
Acquire Date: 18-JUN-2006 05:59:45.46

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

VMS Peak Search Report V1.9 Generated 18-JUN-2006 14:19:55

```
Configuration     : RDND06$DKA100:[ALP119.SAMPLE]H4X1V1AA_180660559.CNF;1
Analyses by       : ALPHA V1.8
Sample title      : TH BRC
Sample date       : 20-APR-2006 12:00:00 Acquisition date : 18-JUN-2006 05:59:45
Sample ID         : H4X1V1AA             Sample quantity  : 0.00000E+00 SAMPLE
Sample type       : disk                 Sample geometry  :
Detector name     : ALP119               Detector geometry:
Elapsed live time: 0 08:20:05.00         Elapsed real time: 0 08:20:05.00   0.0%
Start energy      :  2881.88 kev         End energy       :  6668.51 kev
Sensitivity       :     3.00             Sum Sensitivity  :     1.00
```

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4884.02	505	0	104.16	272.12	258	47	1.68E-02	4.4	
2	0	5838.14	11	0	37.20	400.38	397	11	3.67E-04	30.2	

VMS Nuclide Identification Report V3.1 Generated 18-JUN-2006 14:19:56

```
Configuration     : RDND06$DKA100:[ALP119.SAMPLE]H4X1V1AA_180660559.CNF;1
Analyses by       : ALPHA V1.8,PEAKEFF V2.2,NID V3.4
Sample title      : TH BRC
Sample date       : 20-APR-2006 12:00:00 Acquisition date : 18-JUN-2006 05:59:45
Sample ID         : H4X1V1AA             Sample quantity  : 0.00000E+00 SAMPLE
Sample type       : disk                 Sample geometry  :
Detector name     : ALP119               Detector geometry:
Elapsed live time: 0 08:20:05.00         Elapsed real time: 0 08:20:05.00   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-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	1.04	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	1.01	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]H4X1V1AA_180660559.CNF;1

Peak Energy	Left Chan	Rght Chan	Peak Area	Total Counts	Diff/ StDev	Overlap Counts	Multiplet Diff/StDev
4884.01	258	305	505	503	0.09		
5838.13	397	408	11	10	0.30		

End of Report

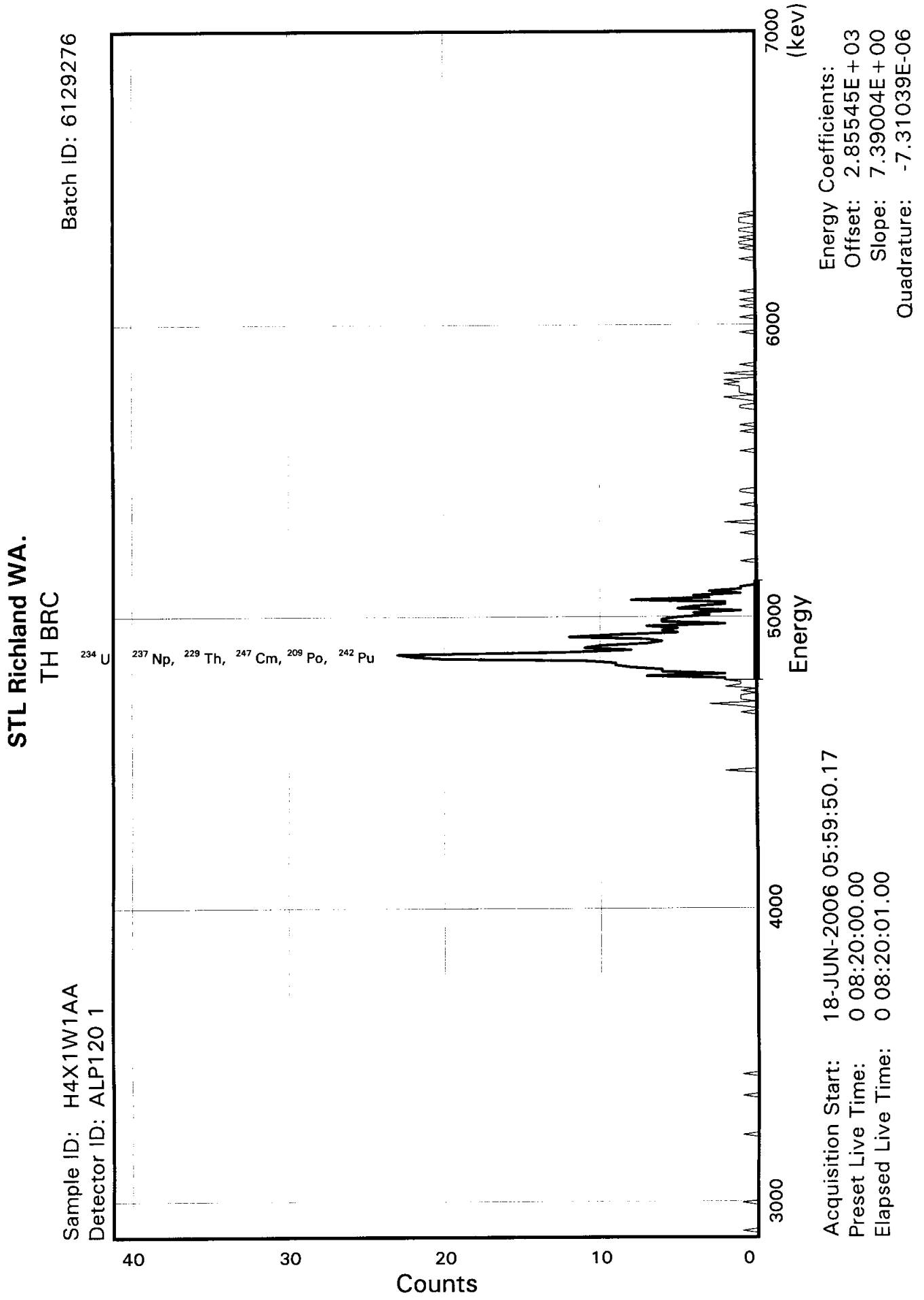
Alpha Analysis Report
(Version: 7-Feb-98)

Sample Identity: H4X1W1AA

Detector: ALP120 1
Report Date: 19-Jun-06 06:06 AM
Acquire Date: 18-JUN-2006 05:59:50.17
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	147.7	333	353
TH-229	299	0	0.598	4845.3	391.5	254	307
TH-230	7	0	0.014	4687.7	147.7	233	253
TH-232	0	0	0.000	4013.0	147.8	142	162

End of Alpha Region Report
(Produced by ANAL Report)


STL Richland WA.
TH BRC
Batch ID: 6129276
Sample ID: H4X1W1AA
Detector ID: ALP120 1
234 U
237 Np, 229 Th, 247 Cm, 209 Po, 242 Pu
Counts
40
30
20
10
0
3000
4000
5000
6000
7000
(kev)
Energy
Energy Coefficients:
Offset: 2.85545E+03
Slope: 7.39004E+00
Quadrature: -7.31039E-06
Acquisition Start: 18-JUN-2006 05:59:50.17
Preset Live Time: 0 08:20:00.00
Elapsed Live Time: 0 08:20:01.00

SAMPLE IDENTIITY: H4X1W1AA

TITLE : TH BRC

DETECTOR : ALP120 1
CONFIGURATION NAME : RDND06$DKA100:[ALP120.SAMPLE]H4X1W1AA_180660
559.CNF;1
ACQUIRE DATE of BACKGROUND: 15-MAY-2006 08:41:06

REPORT DATE : 18-Jun-06 SAMPLE DATE: 20-APR-2006 12:00:00
ACQUIRE DATE: 18-JUN-2006 05:59:50 CALIB DATE : 15-MAY-2006 02:22:03

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

OFFSET : 2855.45 keV CONSTANT FWHM : 9.50000 Channels
SLOPE : 7.39004 keV/C SENSITIVITY : 3.00000 Std Dev's
QUAD COEFF : -.731039E-05 keV/C^2 SUM SENSITIVITY: 1.00000 %

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

Sample Identity: H4X1W1AA

Detector: ALP120 1
Report Date: 18-Jun-06 02:20 PM
Acquire Date: 18-JUN-2006 05:59:50.17
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	-10.000	5134.9	339.7	298	344	0.00	0.00	M I
PO-209	294	0	0	0.588	4903.2	339.8	261	307	0.00	0.00	P
PO-210	-9999	-9999	0	-10.000	5324.4	339.7	323	369	0.00	0.00	M
AC-227	-9999	-9999	0	-10.000	6058.1	339.6	423	469	0.00	0.00	M
TH-227	-9999	-9999	0	-10.000	6058.1	339.6	423	469	0.00	0.00	M
TH-228	-9999	-9999	0	-10.000	5443.2	339.7	339	385	0.00	0.00	M
TH-229	294	0	0	0.588	4865.3	339.8	261	307	0.00	0.00	P
TH-230	-9999	-9999	0	-10.000	4707.7	339.8	240	286	0.00	0.00	S I
TH-232	0	0	0	0.000	4033.0	339.8	148	194	0.00	0.00	S
U-232	-9999	-9999	0	-10.000	5340.2	339.7	325	371	0.00	0.00	M
U-234	294	0	0	0.588	4794.6	339.8	261	307	0.00	0.00	P
U-235	-9999	-9999	0	-10.000	4417.8	339.8	200	246	0.00	0.00	M
PU-236	-9999	-9999	0	-10.000	5787.7	339.7	386	432	0.00	0.00	M
NP-237	294	0	0	0.588	4808.0	339.8	261	307	0.00	0.00	P
PU-238	-9999	-9999	0	-10.000	5519.1	339.7	350	396	0.00	0.00	M
U-238	-9999	-9999	0	-10.000	4218.0	339.8	173	219	0.00	0.00	M
PU-239	-9999	-9999	0	-10.000	5176.6	339.7	303	349	0.00	0.00	M I
AM-241	-9999	-9999	0	-10.000	5505.6	339.7	348	394	0.00	0.00	M
AM-242M	-9999	-9999	0	-10.000	5226.8	339.7	310	356	0.00	0.00	M
CM-242	-9999	-9999	0	-10.000	6132.8	339.6	433	479	0.00	0.00	M
PU-242	294	0	0	0.588	4920.5	339.8	261	307	0.00	0.00	P
AM-243	-9999	-9999	0	-10.000	5295.3	339.7	319	365	0.00	0.00	M
CM-244	-9999	-9999	0	-10.000	5824.9	339.7	391	437	0.00	0.00	M
CM-246	-9999	-9999	0	-10.000	5406.5	339.7	334	380	0.00	0.00	M
CM-247	294	0	0	0.588	4890.4	339.8	261	307	0.00	0.00	P
CM-248	-9999	-9999	0	-10.000	5098.6	339.7	293	339	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: H4X1W1AA
Detector: ALP120 1
Report Date: 18-Jun-06 02:20 PM
Acquire Date: 18-JUN-2006 05:59:50.17

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	1	@	301	0	@	351	0	@	401	0	@	451
		2	0		52	0		102	0	+	152	0	@	202	1	+	252	3	@	302	0	@	352	0	@	402	0	@	452
0		3	0		53	0		103	0	+	153	0	@	203	1	+	253	1	@	303	0	@	353	2	@	403	0	@	453
0		4	0		54	0		104	0	+	154	0	@	204	1	+	254	1	@	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
1		6	0		56	0		106	0	+	156	0	@	206	1	+	256	0	@	306	0	@	356	0	@	406	1	@	456
0		7	0		57	0		107	0	+	157	0	@	207	0	+	257	0	@	307	0	@	357	1	@	407	0	@	457
0		8	0		58	0		108	0	+	158	0	@	208	2	+	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	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	2	@	261	0	@	311	0	@	361	0	@	411	1	@	461
0		12	0		62	0		112	0	+	162	0	@	212	2	@	262	0	@	312	0	@	362	0	@	412	0	@	462
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	2	@	264	0	@	314	0	@	364	0	@	414	1	@	464
0		15	0		65	0		115	0	+	165	0	@	215	6	@	265	0	@	315	0	@	365	0	@	415	0	@	465
0		16	0		66	0		116	0	+	166	0	@	216	6	@	266	1	@	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	0	@	467
0		18	1		68	0		118	0	+	168	0	@	218	9	@	268	0	@	318	0	@	368	0	@	418	0	@	468
1		19	0		69	0		119	0	+	169	2	@	219	9	@	269	0	@	319	0	@	369	0	@	419	1	@	469
0		20	0		70	0		120	0	+	170	0	+	220	11	@	270	0	@	320	0	@	370	0	@	420	1	-	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	22	@	272	0	@	322	0	@	372	1	@	422	0	-	472
0		23	0		73	0		123	0	@	173	0	+	223	23	@	273	0	@	323	0	@	373	0	@	423	1	-	473
0		24	0		74	0		124	0	@	174	0	+	224	12	@	274	0	@	324	0	@	374	0	@	424	1	-	474
0		25	0		75	0		125	0	@	175	0	+	225	8	@	275	0	@	325	0	@	375	0	@	425	1	-	475
0		26	0		76	0		126	0	@	176	0	+	226	11	@	276	0	@	326	1	@	376	0	@	426	0	-	476
0		27	0		77	0		127	0	@	177	0	+	227	10	@	277	0	@	327	0	@	377	0	@	427	1	-	477
0		28	1		78	0		128	0	@	178	0	+	228	7	@	278	0	@	328	0	@	378	0	@	428	0	-	478
0		29	0		79	0		129	0	@	179	0	+	229	6	@	279	1	@	329	1	@	379	1	@	429	0	-	479
0		30	0		80	0		130	0	@	180	0	+	230	7	@	280	0	@	330	0	@	380	0	@	430	0		480
0		31	0		81	0		131	0	@	181	0	+	231	12	@	281	0	@	331	0	@	381	0	@	431	0		481
0		32	0		82	0		132	0	@	182	0	+	232	9	@	282	0	@	332	0	@	382	0	@	432	0		482
0		33	0		83	0		133	0	@	183	0	+	233	5	@	283	0	@	333	0	@	383	0	@	433	0		483
0		34	0		84	0		134	0	@	184	0	+	234	6	@	284	2	@	334	0	@	384	1	@	434	0		484
0		35	0		85	0		135	0	@	185	0	+	235	5	@	285	0	@	335	0	@	385	0	@	435	0		485
0		36	0		86	0		136	0	@	186	0	+	236	7	@	286	0	@	336	0	@	386	0	@	436	0		486
0		37	0		87	0		137	0	@	187	0	+	237	2	@	287	0	@	337	1	@	387	1	@	437	0		487
0		38	0		88	0		138	0	@	188	0	+	238	6	@	288	0	@	338	1	@	388	0	@	438	0		488
0		39	0		89	0		139	0	@	189	0	+	239	6	@	289	0	@	339	0	@	389	0	@	439	0		489
0		40	0		90	0		140	0	@	190	0	@	240	5	@	290	0	@	340	0	@	390	0	@	440	0		490
0		41	0		91	0		141	0	@	191	0	@	241	3	@	291	0	@	341	1	-	391	1	@	441	0		491
0		42	0		92	0		142	0	@	192	0	@	242	4	@	292	1	@	342	2	@	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	0	@	244	5	@	294	0	@	344	1	@	394	0	@	444	0		494
0		45	0		95	0		145	0	-	195	0	@	245	4	@	295	0	@	345	1	@	395	0	@	445	0		495
0		46	0		96	0		146	0	-	196	1	@	246	2	@	296	0	@	346	1	@	396	0	@	446	0		496
0		47	0		97	0		147	0	-	197	0	+	247	2	@	297	0	@	347	1	@	397	0	@	447	0		497
0		48	0		98	0	+	148	0	-	198	0	+	248	8	@	298	1	@	348	2	@	398	0	@	448	0		498
0		49	0		99	0	+	149	0	-	199	1	+	249	3	@	299	1	@	349	1	@	399	0	@	449	0		499
1		50	0		100	0	+	150	0	@	200	3	+	250	4	@	300	0	@	350	2	@	400	0	@	450	0		500

VMS Peak Search Report V1.9 Generated 18-JUN-2006 14:19:58

```
Configuration     : RDND06$DKA100:[ALP120.SAMPLE]H4X1W1AA_180660559.CNF;1
Analyses by       : ALPHA V1.8
Sample title      : TH BRC
Sample date       : 20-APR-2006 12:00:00 Acquisition date : 18-JUN-2006 05:59:50
Sample ID         : H4X1W1AA             Sample quantity  : 0.00000E+00 SAMPLE
Sample type       : disk                 Sample geometry  :
Detector name     : ALP120               Detector geometry:
Elapsed live time: 0 08:20:01.00         Elapsed real time: 0 08:20:01.00   0.0%
Start energy      :  2877.62 kev         End energy       :  6637.24 kev
Sensitivity       :     3.00             Sum Sensitivity  :     1.00
```

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4865.34	294	0	51.73	272.05	261	46	9.80E-03	5.8	

VMS Nuclide Identification Report V3.1 Generated 18-JUN-2006 14:19:59

```
Configuration     : RDND06$DKA100:[ALP120.SAMPLE]H4X1W1AA_180660559.CNF;1
Analyses by       : ALPHA V1.8,PEAKEFF V2.2,NID V3.4
Sample title      : TH BRC
Sample date       : 20-APR-2006 12:00:00 Acquisition date : 18-JUN-2006 05:59:50
Sample ID         : H4X1W1AA             Sample quantity  : 0.00000E+00 SAMPLE
Sample type       : disk                 Sample geometry  :
Detector name     : ALP120               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	
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]H4X1W1AA_180660559.CNF;1

Peak Energy	Left Chan	Rght Chan	Peak Area	Total Counts	Diff/ StDev	Overlap Counts	Multiplet Diff/StDev
4865.34	261	307	294	293	0.06		

End of Report

STL RICHLAND

SEVERN TRENT **STL**

THORIUM ISOTOPIC COUNTING REQUEST

8049

C.R. Technician S
Date Counted 6/18/04

C.R. Analyst CB
Date Analyzed 6/18/04

Counting Time
Sample SW Minutes

Background **See Alpha Analysis Report** BRC

SOP's
Operating: RICHRD008
Review: 4/20 RICHRD0016 6/28/04

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)		
H4X1X1AA		10		0	See Alpha Analysis Report for ROI Information			171	
H4U21AA		10		0	See Alpha Analysis Report for ROI Information			172	
H4U21AC		10		0	See Alpha Analysis Report for ROI Information			173	
		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:

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

Approved by: S

Date: 6/18/04

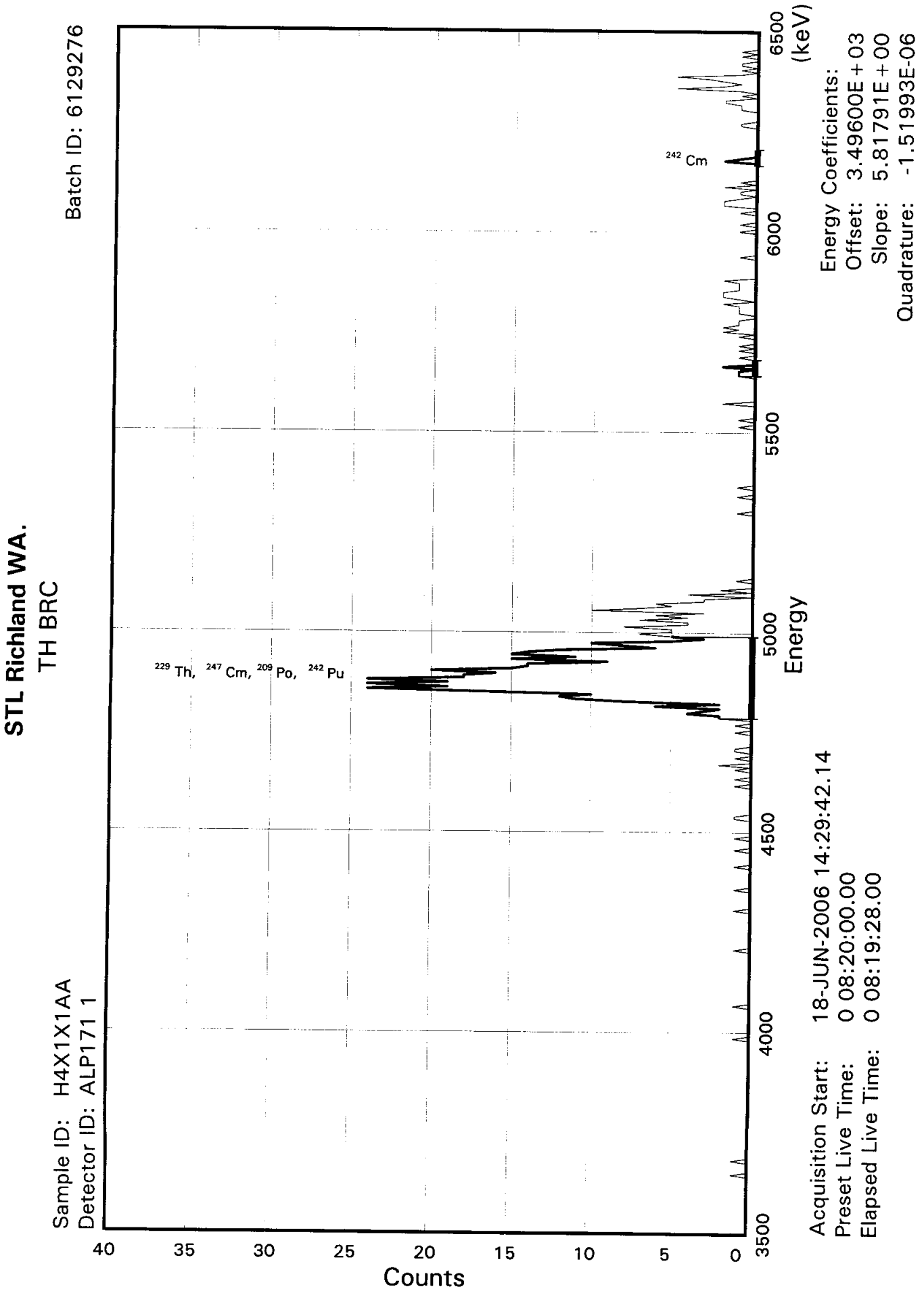
Alpha Analysis Report
(Version: 7-Feb-98)

Sample Identity: H4X1X1AA

Detector: ALP171 1
Report Date: 19-Jun-06 05:59 AM
Acquire Date: 18-JUN-2006 14:29:42.14
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	3	0.001	5423.2	116.3	316	336
TH-229	511	1	1.022	4845.3	366.5	217	280
TH-230	8	0	0.016	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: 6129276
Sample ID: H4X1X1AA
Detector ID: ALP171 1
229 Th, 247 Cm, 209 Po, 242 Pu
242 Cm
Counts
Energy
(keV)
Energy Coefficients:
Offset: 3.49600E+03
Slope: 5.81791E+00
Quadrature: -1.51993E-06
Acquisition Start: 18-JUN-2006 14:29:42.14
Preset Live Time: 0 08:20:00.00
Elapsed Live Time: 0 08:19:28.00

SAMPLE IDENTIITY: H4X1X1AA

TITLE : TH BRC

DETECTOR : ALP171 1
CONFIGURATION NAME : $DISK1:[ALP171.SAMPLE]H4X1X1AA_180661429A.CN
F;1
ACQUIRE DATE of BACKGROUND: 10-JUN-2006 06:49:56

REPORT DATE : 18-Jun-06 SAMPLE DATE: 20-APR-2006 12:00:00
ACQUIRE DATE: 18-JUN-2006 14:29:42 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 Regions Report
(Version: 8-Oct-91)

Sample Identity: H4X1X1AA

Detector: ALP171 1
Report Date: 18-Jun-06 10:50 PM
Acquire Date: 18-JUN-2006 14:29:42.14
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	5162.7	203.6	268	303	0.00	0.00	M
PO-209	422	1	0	0.844	4931.0	203.6	222	257	0.00	0.00	P
PO-210	-9999	-9999	0	-10.010	5352.1	203.6	301	336	0.00	0.00	M
AC-227	-9999	-9999	0	-10.010	6085.8	203.6	427	462	0.00	0.00	I
TH-227	-9999	-9999	0	-10.010	6085.8	203.6	427	462	0.00	0.00	I
TH-228	-9999	-9999	0	-10.010	5471.0	203.6	321	356	0.00	0.00	M
TH-229	422	1	0	0.844	4893.1	203.6	222	257	0.00	0.00	P
TH-230	-9999	-9999	0	-10.010	4735.5	203.6	195	230	0.00	0.00	M I
TH-232	2	2	0	0.002	4060.8	203.6	79	114	0.00	0.00	S
U-232	-9999	-9999	0	-10.010	5367.9	203.6	304	339	0.00	0.00	M
U-234	-9999	-9999	0	-10.010	4822.4	203.6	210	245	0.00	0.00	M I
U-235	6	1	0	0.011	4445.6	203.6	145	180	0.00	0.00	S
PU-236	16	28	27	0.004	5815.4	203.6	381	416	0.00	0.00	S
NP-237	-9999	-9999	0	-10.010	4835.8	203.6	212	247	0.00	0.00	M I
PU-238	-9999	-9999	0	-10.010	5546.8	203.6	334	369	0.00	0.00	M
U-238	-9999	-9999	0	-10.010	4245.8	203.6	111	146	0.00	0.00	M
PU-239	-9999	-9999	0	-10.010	5204.3	203.6	276	311	0.00	0.00	M
AM-241	-9999	-9999	0	-10.010	5533.4	203.6	332	367	0.00	0.00	M
AM-242M	-9999	-9999	0	-10.010	5254.6	203.6	284	319	0.00	0.00	M
CM-242	4	2	0	0.006	6160.5	40.7	459	466	0.00	0.00	P
PU-242	422	1	0	0.844	4948.3	203.6	222	257	0.00	0.00	P
AM-243	-9999	-9999	0	-10.010	5323.1	203.6	296	331	0.00	0.00	M
CM-244	15	27	27	0.003	5852.6	203.6	387	422	0.00	0.00	S
CM-246	-9999	-9999	0	-10.010	5434.3	203.6	315	350	0.00	0.00	M
CM-247	422	1	0	0.844	4918.2	203.6	222	257	0.00	0.00	P
CM-248	-9999	-9999	0	-10.010	5126.4	203.6	262	297	0.00	0.00	M

End of Alpha Region Report
(Produced by Alp_rgn_cnts)

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

Sample Identity: H4X1X1AA
Detector: ALP171 1
Report Date: 18-Jun-06 10:50 PM
Acquire Date: 18-JUN-2006 14:29:42.14

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

VMS Peak Search Report V1.9 Generated 18-JUN-2006 22:50:15

```
Configuration     : $DISK1:[ALP171.SAMPLE]H4X1X1AA_180661429A.CNF;1
Analyses by       : ALPHA V1.8
Sample title      : TH BRC
Sample date       : 20-APR-2006 12:00:00 Acquisition date : 18-JUN-2006 14:29:42
Sample ID         : H4X1X1AA             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	4893.06	422	0	110.54	240.15	222	35	1.41E-02	4.9	
2	0	5657.14	4	0	23.27	371.50	369	7	1.33E-04	50.0	
3	0	6180.64	4	0	23.27	461.50	459	7	1.33E-04	50.0	

VMS Nuclide Identification Report V3.0 Generated 18-JUN-2006 22:50:19

```
Configuration     : $DISK1:[ALP171.SAMPLE]H4X1X1AA_180661429A.CNF;1
Analyses by       : ALPHA V1.8,PEAKEFF V2.2,NID V3.3
Sample title      : TH BRC
Sample date       : 20-APR-2006 12:00:00 Acquisition date : 18-JUN-2006 14:29:42
Sample ID         : H4X1X1AA             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	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	
			---	---			
	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	
CM-242	162.80D	1.29	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]H4X1X1AA_180661429A.CNF;1

Peak Energy	Left Chan	Rght Chan	Peak Area	Total Counts	Diff/ StDev	Overlap Counts	Multiplet Diff/StDev
4893.05	222	257	422	417	0.24		
5657.14	369	376	4	5	-0.50		
6180.63	459	466	4	3	0.50		

End of Report

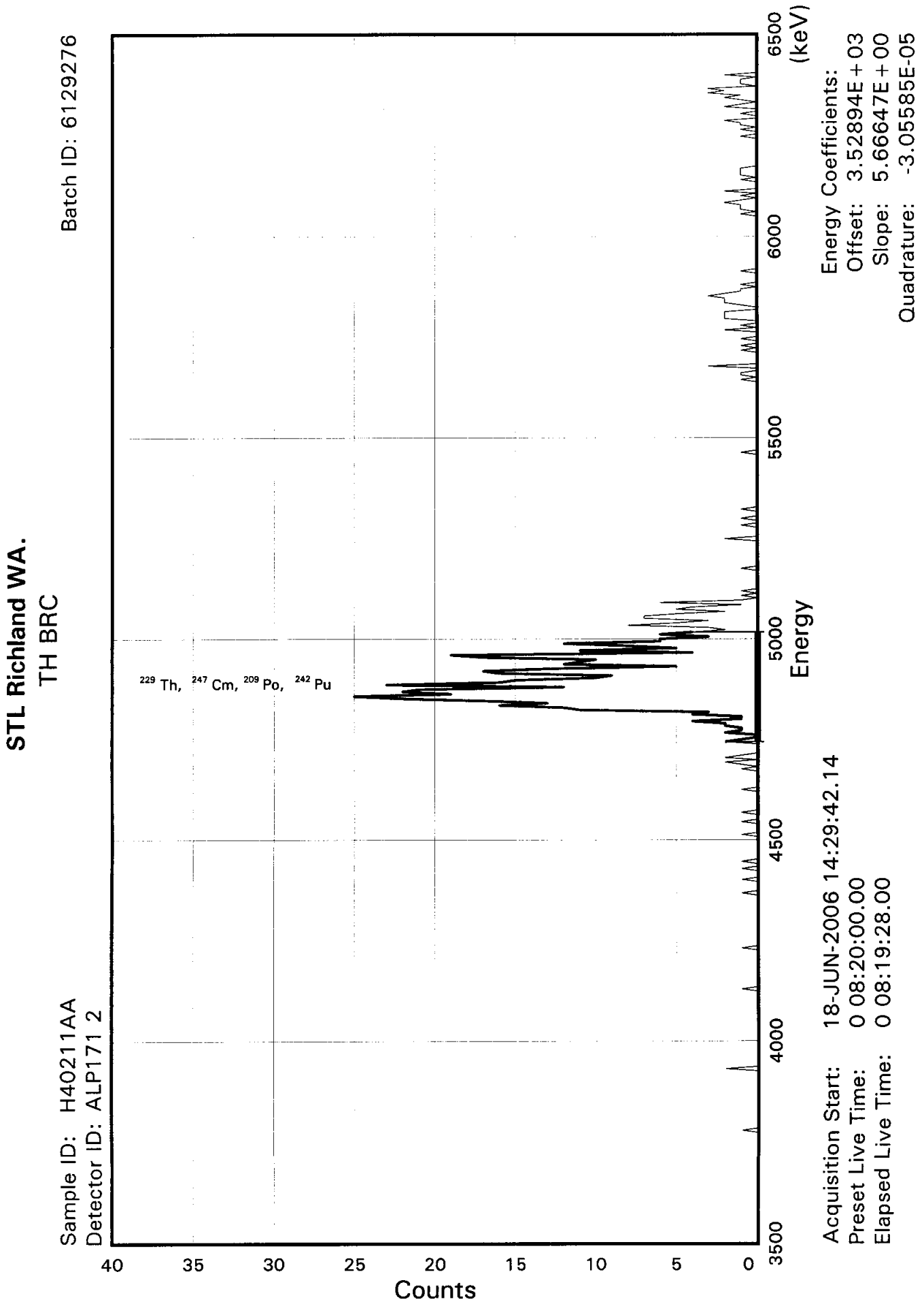
Alpha Analysis Report
(Version: 7-Feb-98)

Sample Identity: H40211AA

Detector: ALP171 2
Report Date: 19-Jun-06 06:00 AM
Acquire Date: 18-JUN-2006 14:29:42.14
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	0	4	-0.004	5423.2	112.9	320	340
TH-229	530	4	1.057	4845.3	361.7	218	282
TH-230	8	1	0.015	4687.7	113.1	190	210
TH-232	2	0	0.004	4013.0	113.2	70	90

End of Alpha Region Report
(Produced by ANAL Report)


STL Richland WA.
TH BRC
Batch ID: 6129276
Sample ID: H40211AA
Detector ID: ALP171 2
229 Th, 247 Cm, 209 Po, 242 Pu
Counts
40
35
30
25
20
15
10
5
0
Energy
3500
4000
4500
5000
5500
6000
6500
(keV)
Acquisition Start: 18-JUN-2006 14:29:42.14
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 IDENTITY: H40211AA

TITLE : TH BRC

DETECTOR : ALP171 2
CONFIGURATION NAME : $DISK1:[ALP171.SAMPLE]H40211AA_180661429B.CN
F;1
ACQUIRE DATE of BACKGROUND: 09-JUN-2006 06:58:01

REPORT DATE : 18-Jun-06 SAMPLE DATE: 20-APR-2006 12:00:00
ACQUIRE DATE: 18-JUN-2006 14:29:42 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 CONSTANT FWHM : 10.00000 Channels
SLOPE : 5.66647 keV/C SENSITIVITY : 3.00000 Std Dev's
QUAD COEFF : -.305585E-04 keV/C^2 SUM SENSITIVITY: 1.00000 %

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

Sample Identity: H40211AA

Detector: ALP171 2
Report Date: 18-Jun-06 10:50 PM
Acquire Date: 18-JUN-2006 14:29:42.14
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	5159.7	271.1	263	311	0.00	0.00	M
PO-209	474	3	0	0.946	4928.0	271.3	215	263	0.00	0.00	P
PO-210	-9999	-9999	0	-10.010	5349.2	271.1	296	344	0.00	0.00	M
AC-227	-9999	-9999	0	-10.010	6082.8	270.7	426	474	0.00	0.00	M
TH-227	-9999	-9999	0	-10.010	6082.8	270.7	426	474	0.00	0.00	M
TH-228	-9999	-9999	0	-10.010	5468.0	271.0	317	365	0.00	0.00	M
TH-229	474	3	0	0.946	4890.1	271.3	215	263	0.00	0.00	P
TH-230	-9999	-9999	0	-10.010	4732.5	271.4	187	235	0.00	0.00	M I
TH-232	3	3	1	0.002	4057.8	271.7	68	116	0.00	0.00	S
U-232	-9999	-9999	0	-10.010	5364.9	271.0	299	347	0.00	0.00	M
U-234	-9999	-9999	0	-10.010	4819.4	271.3	202	250	0.00	0.00	M I
U-235	7	2	1	0.011	4442.6	271.5	136	184	0.00	0.00	S
PU-236	-9999	-9999	0	-10.010	5812.4	270.8	378	426	0.00	0.00	M
NP-237	-9999	-9999	0	-10.010	4832.8	271.3	205	253	0.00	0.00	M I
PU-238	-9999	-9999	0	-10.010	5543.8	270.9	331	379	0.00	0.00	M
U-238	-9999	-9999	0	-10.010	4242.8	271.6	101	149	0.00	0.00	M
PU-239	-9999	-9999	0	-10.010	5201.4	271.1	270	318	0.00	0.00	M
AM-241	-9999	-9999	0	-10.010	5530.4	271.0	328	376	0.00	0.00	M
AM-242M	-9999	-9999	0	-10.010	5251.6	271.1	279	327	0.00	0.00	M
CM-242	-9999	-9999	0	-10.010	6157.5	276.3	439	488	0.00	0.00	M
PU-242	474	3	0	0.946	4945.3	271.3	215	263	0.00	0.00	P
AM-243	-9999	-9999	0	-10.010	5320.1	271.1	291	339	0.00	0.00	M
CM-244	-9999	-9999	0	-10.010	5849.6	270.8	385	433	0.00	0.00	M
CM-246	-9999	-9999	0	-10.010	5431.3	271.0	311	359	0.00	0.00	M
CM-247	474	3	0	0.946	4915.2	271.3	215	263	0.00	0.00	P
CM-248	-9999	-9999	0	-10.010	5123.4	271.2	256	304	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: H40211AA
Detector: ALP171 2
Report Date: 18-Jun-06 10:50 PM
Acquire Date: 18-JUN-2006 14:29:42.14

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

VMS Peak Search Report V1.9 Generated 18-JUN-2006 22:50:22

```
Configuration     : $DISK1:[ALP171.SAMPLE]H40211AA_180661429B.CNF;1
Analyses by       : ALPHA V1.8
Sample title      : TH BRC
Sample date       : 20-APR-2006 12:00:00 Acquisition date : 18-JUN-2006 14:29:42
Sample ID         : H40211AA             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	4890.08	474	0136.00		240.52	215	48	1.58E-02	4.6	

VMS Nuclide Identification Report V3.0 Generated 18-JUN-2006 22:50:24

```
Configuration     : $DISK1:[ALP171.SAMPLE]H40211AA_180661429B.CNF;1
Analyses by       : ALPHA V1.8,PEAKEFF V2.2,NID V3.3
Sample title      : TH BRC
Sample date       : 20-APR-2006 12:00:00 Acquisition date : 18-JUN-2006 14:29:42
Sample ID         : H40211AA             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]H40211AA_180661429B.CNF;1

Peak Energy	Left Chan	Rght Chan	Peak Area	Total Counts	Diff/ StDev	Overlap Counts	Multiplet Diff/StDev
4890.07	215	263	474	472	0.09		

End of Report

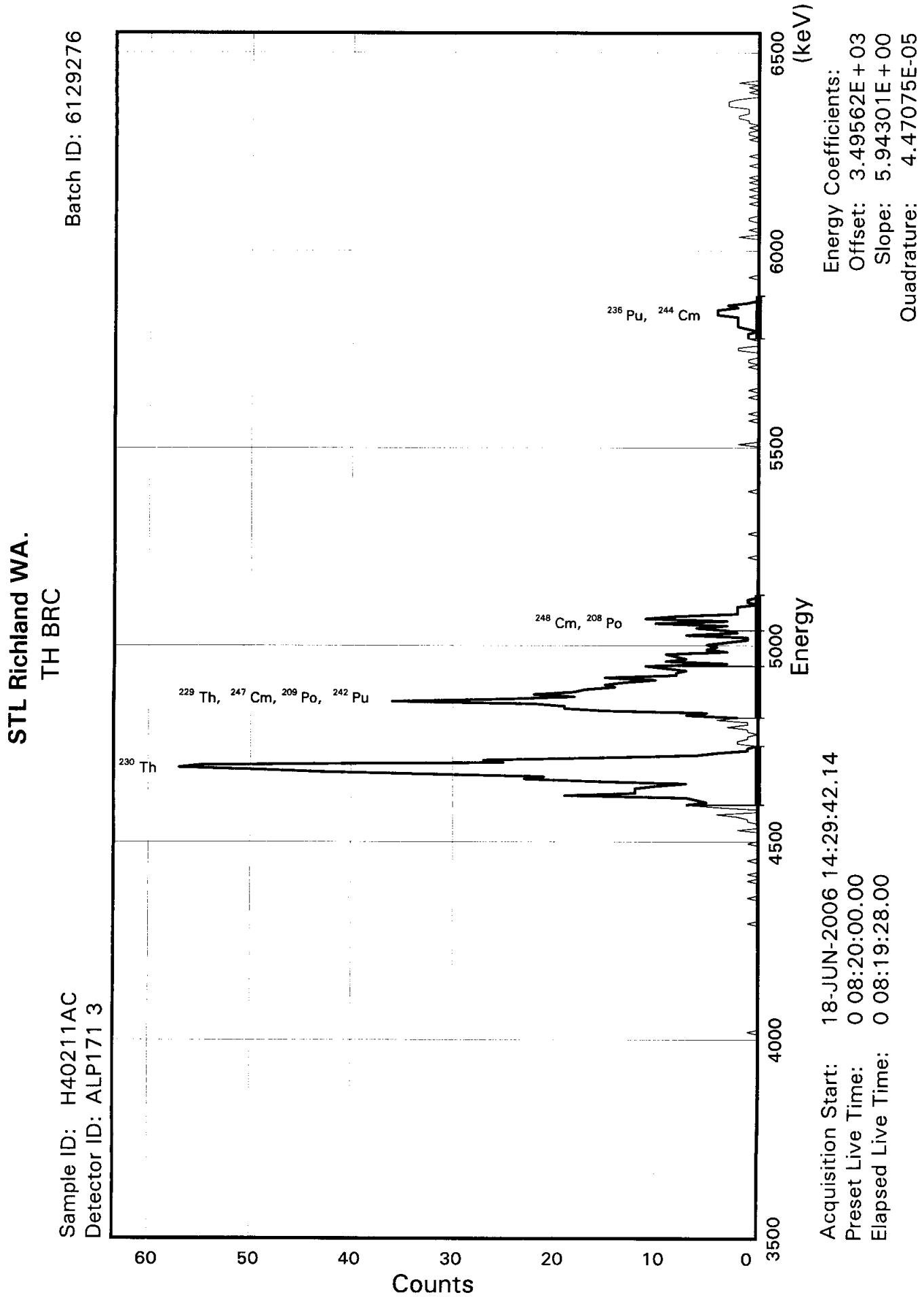
Alpha Analysis Report
(Version: 7-Feb-98)

Sample Identity: H40211AC

Detector: ALP171 3
Report Date: 19-Jun-06 06:00 AM
Acquire Date: 18-JUN-2006 14:29:42.14
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	466	0	0.933	4845.3	357.9	217	277
TH-230	485	1	0.970	4687.7	190.7	178	210
TH-232	1	1	0.001	4013.0	119.0	72	92

End of Alpha Region Report
(Produced by ANAL Report)


STL Richland WA.
TH BRC
Batch ID: 6129276
Sample ID: H40211AC
Detector ID: ALP171 3
230 Th
229 Th, 247 Cm, 209 Po, 242 Pu
248 Cm, 208 Po
236 Pu, 244 Cm
Counts
60
50
40
30
20
10
0
Energy
3500
4000
4500
5000
5500
6000
6500
(keV)
Acquisition Start: 18-JUN-2006 14:29:42.14
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: H40211AC

TITLE : TH BRC

DETECTOR : ALP171 3
CONFIGURATION NAME : $DISK1:[ALP171.SAMPLE]H40211AC_180661429C.CN
F;1
ACQUIRE DATE of BACKGROUND: 09-JUN-2006 06:58:01

REPORT DATE : 18-Jun-06 SAMPLE DATE: 20-APR-2006 12:00:00
ACQUIRE DATE: 18-JUN-2006 14:29:42 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: H40211AC

Detector: ALP171 3
Report Date: 18-Jun-06 10:50 PM
Acquire Date: 18-JUN-2006 14:29:42.14
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	71	0	0	0.142	5137.8	179.0	244	274	0.00	0.00	P
PO-209	384	0	0	0.769	4906.1	220.7	222	259	0.00	0.00	P
PO-210	-9999	-9999	0	-10.010	5327.3	220.9	299	336	0.00	0.00	M
AC-227	8	3	7	0.013	6061.0	221.3	422	459	0.00	0.00	S
TH-227	8	3	7	0.013	6061.0	221.3	422	459	0.00	0.00	S
TH-228	-9999	-9999	0	-10.010	5446.1	221.0	319	356	0.00	0.00	M
TH-229	384	0	0	0.769	4868.2	220.7	222	259	0.00	0.00	P
TH-230	473	1	0	0.946	4710.6	149.0	185	210	0.00	0.00	P
TH-232	1	0	0	0.002	4035.9	220.2	82	119	0.00	0.00	S
U-232	-9999	-9999	0	-10.010	5343.1	221.0	302	339	0.00	0.00	M
U-234	-9999	-9999	0	-10.010	4797.5	220.6	210	247	0.00	0.00	S I
U-235	18	0	0	0.036	4420.7	220.4	147	184	0.00	0.00	S
PU-236	31	31	0	0.031	5790.6	107.6	383	401	0.00	0.00	P
NP-237	-9999	-9999	0	-10.010	4810.9	220.7	212	249	0.00	0.00	S I
PU-238	-9999	-9999	0	-10.010	5522.0	215.1	332	368	0.00	0.00	M
U-238	-9999	-9999	0	-10.010	4220.9	220.3	113	150	0.00	0.00	M
PU-239	-9999	-9999	0	-10.010	5179.5	220.9	274	311	0.00	0.00	M
AM-241	-9999	-9999	0	-10.010	5508.5	221.0	329	366	0.00	0.00	M
AM-242M	-9999	-9999	0	-10.010	5229.7	220.9	283	320	0.00	0.00	M
CM-242	-9999	-9999	0	-10.010	6135.7	221.4	434	471	0.00	0.00	M
PU-242	384	0	0	0.769	4923.4	220.7	222	259	0.00	0.00	P
AM-243	-9999	-9999	0	-10.010	5298.2	220.9	294	331	0.00	0.00	M
CM-244	31	31	0	0.031	5827.8	107.6	383	401	0.00	0.00	P
CM-246	-9999	-9999	0	-10.010	5409.4	221.0	313	350	0.00	0.00	M
CM-247	384	0	0	0.769	4893.3	220.7	222	259	0.00	0.00	P
CM-248	71	0	0	0.142	5101.5	179.0	244	274	0.00	0.00	P

End of Alpha Region Report
(Produced by Alp_rgn_cnts)

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

Sample Identity: H40211AC
Detector: ALP171 3
Report Date: 18-Jun 06 10:50 PM
Acquire Date: 18-JUN-2006 14:29:42.14

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

VMS Peak Search Report V1.9 Generated 18-JUN-2006 22:50:26

```
Configuration     : $DISK1:[ALP171.SAMPLE]H40211AC_180661429C.CNF;1
Analyses by       : ALPHA V1.8
Sample title      : TH BRC
Sample date       : 20-APR-2006 12:00:00 Acquisition date : 18-JUN-2006 14:29:42
Sample ID         : H40211AC             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	4691.12	473	0	41.60	200.86	185	25	1.58E-02	4.6	
2	0	4868.24	384	0	65.37	230.56	222	37	1.28E-02	5.1	
3	0	5057.46	71	0	41.60	262.29	244	30	2.37E-03	11.9	
4	0	5838.13	31	0	47.54	393.00	383	18	1.03E-03	18.0	

VMS Nuclide Identification Report V3.0 Generated 18-JUN-2006 22:50:29

```
Configuration     : $DISK1:[ALP171.SAMPLE]H40211AC_180661429C.CNF;1
Analyses by       : ALPHA V1.8,PEAKEFF V2.2,NID V3.3
Sample title      : TH BRC
Sample date       : 20-APR-2006 12:00:00 Acquisition date : 18-JUN-2006 14:29:42
Sample ID         : H40211AC             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	4	
Number of unidentified lines	0	
Number of lines tentatively identified by NID	4	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	1.04	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	
TH-230	7.54E+04Y	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	1.04	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	1.01	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]H40211AC_180661429C.CNF;1

Peak Energy	Left Chan	Rght Chan	Peak Area	Total Counts	Diff/ StDev	Overlap Counts	Multiplet Diff/StDev
4691.11	185	210	473	473	0.00		
4868.24	222	259	384	405	-1.07		
5057.45	244	274	71	132	-7.24	81	-0.05
5838.12	383	401	31	32	-0.18		

End of Report

URANIUM ISOTOPIC

SAMPLE AND QC DATA

SEVERN TRENT STL

Data Review/Verification Checklist

RADIOCHEMISTRY, First Level Review

6/21/2006 4:28:28 PM

Lot No., Due Date: J6E080157; 06/06/2006

Client, Site: 536403; AIR MONITORING Yerington Mine

QC Batch No., Method Test: 6129273; RUSIO Uiso by ALP

SDG, Matrix: 31580; FILTER

1.0 COC

	Yes	No	N/A
1.1 Is the ICOC page complete; includes all applicable analysis, dates, SOP numbers, and revisions?	✓		

2.0 QC Batch

	Yes	No	N/A
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

	Yes	No	N/A
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

	Yes	No	N/A
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

	Yes	No	N/A
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** 6-21-06

SEVERN TRENT STL

Data Review Checklist
RADIOCHEMISTRY
Second Level Review

QC Batch Number: 6129273

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: 6-22-06

STL RICHLAND

6/5/2006 11:34:49 AM

Sample Preparation/Analysis

536403, Brown and Caldwell , Brown & Caldwell

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

Balance Id:1120373922

Pipet #: _____

AnalyDueDate: 06/05/2006

Sep1 DT/Tm Tech:

Batch: 6129273 FILTER pCi/sampl PM, Quote: SA , 63174

SEQ Batch, Test: None

Sep2 DT/Tm Tech: 6-20-06 MJ

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 H4XP8-1-AG J6E080157-1-SAMP 04/20/2006 09:10	0.833sa,g	500.51sa,g	37.61g,in	0.0626g	UITC15676 05/22/06,pd 01/20/04,r	200				
		AmtRec: FILTER		#Containers: 1			Scr:	Alpha:		Beta:
2 H4XQH-1-AG J6E080157-2-SAMP 04/20/2006 09:30	0.833sa,g	504.27sa,g	37.66g,in	0.0622g	UITC15677 05/22/06,pd 01/20/04,r					
		AmtRec: FILTER		#Containers: 1			Scr:	Alpha:		Beta:
3 H4XQM-1-AG J6E080157-3-SAMP 04/20/2006 09:45	0.833sa,g	503.67sa,g	37.54g,in	0.0621g	UITC15678 05/22/06,pd 01/20/04,r					
		AmtRec: FILTER		#Containers: 1			Scr:	Alpha:		Beta:
4 H4XQN-1-AG J6E080157-4-SAMP 04/20/2006 10:05	0.833sa,g	500.38sa,g	37.52g,in	0.0625g	UITC15679 05/22/06,pd 01/20/04,r					
		AmtRec: FILTER		#Containers: 1			Scr:	Alpha:		Beta:
5 H4XQQ-1-AG J6E080157-5-SAMP 04/20/2006 10:25	0.833sa,g	501.40sa,g	37.62g,in	0.0625g	UITC15680 05/22/06,pd 01/20/04,r					
		AmtRec: FILTER		#Containers: 1			Scr:	Alpha:		Beta:
6 H4XQR-1-AG J6E080157-6-SAMP 04/20/2006 10:40	0.833sa	508.50sa	37.64g,in	0.0617g	UITC15681 05/22/06,pd 01/20/04,r					
		AmtRec: FILTER		#Containers: 1			Scr:	Alpha:		Beta:
7 H4XQT-1-AG J6E080157-7-SAMP 04/20/2006 10:35	0.833sa,g	501.97sa,g	37.54g,in	0.0623g	UITC15682 05/22/06,pd 01/20/04,r					
		AmtRec: FILTER		#Containers: 1			Scr:	Alpha:		Beta:

197

STL RICHLAND

6/5/2006 11:34:50 AM

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: 06/05/2006

Sep1 DT/Tm Tech:

Batch: 6129273 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:
4 **8 H4X1R-1-AG** J6E080157-8-SAMP 04/20/2006 09:35	0.833sa,g	502.76sa,g	37.61g,in	0.0623g	UITC15683 05/22/06,pd 01/20/04,r					
		AmtRec: FILTER		#Containers: 1			Scr:	Alpha:		Beta:
5 **9 H4X1T-1-AG** J6E080157-9-SAMP 04/20/2006 09:50	0.833sa,g	500.74sa,g	37.52g,in	0.0624g	UITC15684 05/22/06,pd 01/20/04,r					
		AmtRec: FILTER		#Containers: 1			Scr:	Alpha:		Beta:
6 **10H4X1V-1-AG** J6E080157-10-SAMP 04/20/2006 10:10	0.833sa,g	515.15sa,g	37.69g,in	0.0609g	UITC15685 05/22/06,pd 01/20/04,r					
		AmtRec: FILTER		#Containers: 1			Scr:	Alpha:		Beta:
7 **11H4X1W-1-AG** J6E080157-11-SAMP 04/20/2006 10:30	0.833sa,g	501.63sa,g	37.52g,in	0.0623g	UITC15686 05/22/06,pd 01/20/04,r					
		AmtRec: FILTER		#Containers: 1			Scr:	Alpha:		Beta:
8 **12H4X1X-1-AG** J6E080157-12-SAMP 04/20/2006 10:45	0.833sa,g	504.16sa,g	37.65g,in	0.0622g	UITC15687 05/22/06,pd 01/20/04,r					
		AmtRec: FILTER		#Containers: 1			Scr:	Alpha:		Beta:
9 **13H402W-1-AA-B** J6E090000-273-BLK 04/20/2006 09:10			1.00sa,in	1.00sa	UITC15688 05/22/06,pd 01/20/04,r					
		AmtRec:		#Containers: 1			Scr:	Alpha:		Beta:
10 **14H402W-1-AC-C** J6E090000-273-LCS 04/20/2006 09:10			1.00sa,in	1.00sa	UISF0370 10/09/05,pd 08/18/05,r					
		AmtRec:		#Containers: 1			Scr:	Alpha:		Beta:

6/21/2006 4:09:51 PM

ICOC Fraction Transfer/Status Report

ByDate: 6/21/2005, 6/26/2006, Batch: '6129273', User: *ALL Order By DateTimeAccepting

Q Batch	Work Ord	CurStatus	Accepting			Comments
6129273						
AC		**CalcC**	**HansenM**	6/5/2006 3:55:17 PM		
SC			antonsonl	IsBatched	5/9/2006 1:11:28 PM	ICOC_RADCALC v4.8.24
SC			HansenM	InPrep2	6/5/2006 3:55:17 PM	RICH-RC-5016 REVISION 5
SC			HansenM	Prep2C	6/5/2006 3:56:55 PM	RICH-RC-5016 REVISION 5
SC			AndersonE	Sep1C	6/14/2006 1:24:15 PM	RICH-RC-5067 REV 6
SC			FABREM	Sep2C	6/20/2006 4:35:04 PM	RICH-RC-5039 REV 6
SC			DAWKINSO	InCnt1	6/20/2006 6:23:00 PM	RICH-RD-0008 REVISION 4
SC			DAWKINSO	CalcC	6/20/2006 9:30:07 PM	RICH-RD-0008 REVISION 4
AC			**HansenM**	6/5/2006 3:56:55 PM		
AC			**AndersonE**	6/14/2006 1:24:15 PM		
AC			**FABREM**	6/20/2006 4:35:04 PM		
AC			**DAWKINSO**	6/20/2006 6:23:00 PM		
AC			**DAWKINSO**	6/20/2006 9:30:07 PM		

AC: Accepting Entry; SC: Status Change

STL Richland

Richland Wa.

Grp Rec Cnt: 6

ICOCFractions v4.8.18

6/21/2006 4:09:50 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	Mdl	Sample Date / Units	Expected	Yield	Volumes
31580	**9H4X1R10**			**J6E0801578**	000431	FILTER	5/8/2006 7:30:00		4/20/2006 9:35:00 AM			
ALPHA	BAS7		0	6/9/2006 6:54:58 PM	**3.1467E+00**	1.636E+00	1.668E+00	5.571E+00	PCI/SA	1.0	1.0E+0	2.076E-2
BETA	BDS8		0	6/9/2006 12:14:57 PM	**5.819E+00**	1.684E+00	1.73E+00	6.517E+00	PCI/SA	1.0	1.0E+0	3.301E-2
RA-226	BXTE		0	6/17/2006 7:40:00 PM	**6.3473E-02**	1.495E-01	1.496E-01	5.812E-01	PCI/SA	0.861	8.33E-1	2.501E-1
RA-228	BXTF		0	6/21/2006 6:28:48 AM	**3.9701E+00**	5.993E-01	6.55E-01	1.915E+00	PCI/SA	0.793	1.0E+0	2.501E-1
TH-228	9NS1		0	6/18/2006 10:09:38	**1.3125E-01**	6.942E-02	7.036E-02	1.654E-01	PCI/SA	0.998	1.0E+0	3.298E-2
TH-230	9NS1		0	6/18/2006 10:09:38	**1.9426E-02**	3.365E-02	3.369E-02	1.83E-01	PCI/SA	0.998	1.0E+0	3.298E-2
TH-232	9NS1		0	6/18/2006 10:09:38	**-6.4774E-03**	6.477E-03	6.502E-03	1.551E-01	PCI/SA	0.998	1.0E+0	3.298E-2
U-234	7YSR		0	6/20/2006 7:05:39 PM	**4.3971E-02**	1.164E-01	1.164E-01	6.941E-01	PCI/SA	0.866	1.0E+0	3.231E-2
U-235	7YSR		0	6/20/2006 7:05:39 PM	**6.5969E-02**	1.143E-01	1.144E-01	6.214E-01	PCI/SA	0.866	1.0E+0	3.231E-2
U-238	7YSR		0	6/20/2006 7:05:39 PM	**-2.5658E-05**	1.205E-01	1.205E-01	8.094E-01	PCI/SA	0.866	1.0E+0	3.231E-2
31580	**9H4X1T10**			**J6E0801579**	000432	FILTER	5/8/2006 7:30:00		4/20/2006 9:50:00 AM			
ALPHA	BAS7		0	6/10/2006 7:04:05 AM	**9.8496E-01**	1.663E+00	1.667E+00	7.819E+00	PCI/SA	1.0	1.0E+0	2.078E-2
BETA	BDS8		0	6/9/2006 12:14:57 PM	**8.2468E+00**	1.699E+00	1.796E+00	6.142E+00	PCI/SA	1.0	1.0E+0	3.391E-2
RA-226	BXTE		0	6/17/2006 7:40:00 PM	**4.3081E-02**	6.769E-02	6.786E-02	2.815E-01	PCI/SA	0.9	8.33E-1	2.507E-1
RA-228	BXTF		0	6/21/2006 6:28:48 AM	**3.175E+00**	5.291E-01	5.698E-01	1.75E+00	PCI/SA	0.803	1.0E+0	2.507E-1
TH-228	9NS1		0	6/18/2006 10:09:46	**-3.2423E-02**	1.621E-02	1.646E-02	2.783E-01	PCI/SA	0.777	1.0E+0	3.388E-2
TH-230	9NS1		0	6/18/2006 10:09:46	**2.431E-01**	1.014E-01	1.036E-01	2.398E-01	PCI/SA	0.777	1.0E+0	3.388E-2
TH-232	9NS1		0	6/18/2006 10:09:46	**0.0E+00**	0.0E+00	4.652E-02	1.029E-01	PCI/SA	0.777	1.0E+0	3.388E-2
U-234	7YSR		0	6/20/2006 7:05:51 PM	**1.0276E-01**	1.895E-01	1.897E-01	9.545E-01	PCI/SA	0.895	1.0E+0	3.242E-2
U-235	7YSR		0	6/20/2006 7:05:51 PM	**-2.0559E-02**	2.056E-02	2.063E-02	4.923E-01	PCI/SA	0.895	1.0E+0	3.242E-2
U-238	7YSR		0	6/20/2006 7:05:51 PM	**1.2333E-01**	1.511E-01	1.514E-01	7.06E-01	PCI/SA	0.895	1.0E+0	3.242E-2
31580	**9H4X1V10**			**J6E08015710**	000433	FILTER	5/8/2006 7:30:00		4/20/2006 10:10:00 AM			
ALPHA	BAS7		0	6/10/2006 7:04:05 AM	**2.4116E+00**	1.503E+00	1.524E+00	5.595E+00	PCI/SA	1.0	1.0E+0	2.046E-2
BETA	BDS8		0	6/9/2006 12:15:08 PM	**6.5031E+00**	1.797E+00	1.852E+00	6.911E+00	PCI/SA	1.0	1.0E+0	3.113E-2
RA-226	BXTE		0	6/17/2006 7:39:00 PM	**2.0787E-02**	1.562E-01	1.563E-01	6.139E-01	PCI/SA	0.942	8.33E-1	2.435E-1
RA-228	BXTF		0	6/21/2006 6:28:48 AM	**1.9564E+00**	4.426E-01	4.649E-01	1.642E+00	PCI/SA	0.829	1.0E+0	2.435E-1
TH-228	9NS1		0	6/18/2006 10:09:48	**1.4006E-01**	9.904E-02	9.983E-02	3.436E-01	PCI/SA	1.005	1.0E+0	3.18E-2
TH-230	9NS1		0	6/18/2006 10:09:48	**1.7508E-01**	8.754E-02	8.894E-02	1.186E-01	PCI/SA	1.005	1.0E+0	3.18E-2
TH-232	9NS1		0	6/18/2006 10:09:48	**4.3769E-02**	4.377E-02	4.394E-02	1.186E-01	PCI/SA	1.005	1.0E+0	3.18E-2
U-234	7YSR		0	6/20/2006 7:06:00 PM	**9.9034E-02**	9.903E-02	9.935E-02	2.684E-01	PCI/SA	0.992	1.0E+0	3.094E-2
U-235	7YSR		0	6/20/2006 7:06:00 PM	**-3.9631E-02**	2.802E-02	2.82E-02	5.597E-01	PCI/SA	0.992	1.0E+0	3.094E-2
U-238	7YSR		0	6/20/2006 7:06:00 PM	**7.9218E-02**	1.01E-01	1.012E-01	4.744E-01	PCI/SA	0.992	1.0E+0	3.094E-2
31580	**9H4X1W10**			**J6E08015711**	000434	FILTER	5/8/2006 7:30:00		4/20/2006 10:30:00 AM			
ALPHA	BAS7		0	6/10/2006 7:04:05 AM	**3.5615E+00**	1.717E+00	1.756E+00	5.68E+00	PCI/SA	1.0	1.0E+0	2.084E-2
BETA	BDS8		0	6/9/2006 12:15:08 PM	**1.005E+01**	1.753E+00	1.886E+00	6.095E+00	PCI/SA	1.0	1.0E+0	3.374E-2
RA-226	BXTE		0	6/18/2006 12:52:00 PM	**6.7514E-01**	2.198E-01	2.307E-01	6.558E-01	PCI/SA	0.86	8.33E-1	2.492E-1
RA-228	BXTF		0	6/21/2006 6:28:59 AM	**2.4465E+00**	4.9E-01	5.122E-01	1.699E+00	PCI/SA	0.765	1.0E+0	2.492E-1
TH-228	9NS1		0	6/18/2006 10:09:51	**3.1038E-01**	1.82E-01	1.845E-01	5.711E-01	PCI/SA	0.616	1.0E+0	3.358E-2
TH-230	9NS1		0	6/18/2006 10:09:51	**5.0922E-01**	1.925E-01	1.987E-01	1.971E-01	PCI/SA	0.616	1.0E+0	3.358E-2
TH-232	9NS1		0	6/18/2006 10:09:51	**0.0E+00**	0.0E+00	8.91E-02	1.971E-01	PCI/SA	0.616	1.0E+0	3.358E-2
U-234	7YSR		0	6/20/2006 7:06:12 PM	**3.979E-01**	1.99E-01	2.015E-01	2.696E-01	PCI/SA	1.025	1.0E+0	3.231E-2
U-235	7YSR		0	6/20/2006 7:06:12 PM	**0.0E+00**	0.0E+00	1.218E-01	2.696E-01	PCI/SA	1.025	1.0E+0	3.231E-2
U-238	7YSR		0	6/20/2006 7:06:12 PM	**9.9476E-02**	9.948E-02	9.98E-02	2.696E-01	PCI/SA	1.025	1.0E+0	3.231E-2
31580	**9H4X1X10**			**J6E08015712**	000435	FILTER	5/8/2006 7:30:00		4/20/2006 10:45:00 AM			
ALPHA	BAS7		0	6/10/2006 7:04:05 AM	**0.0E+00**	0.0E+00	1.52E+00	7.872E+00	PCI/SA	1.0	1.0E+0	2.075E-2
BETA	BDS8		0	6/9/2006 12:15:08 PM	**9.2048E+00**	1.735E+00	1.922E+00	6.153E+00	PCI/SA	1.0	1.0E+0	3.266E-2
RA-226	BXTE		0	6/18/2006 12:51:00 PM	**-2.2511E-01**	1.625E-01	1.641E-01	7.378E-01	PCI/SA	0.826	8.33E-1	2.479E-1
RA-228	BXTF		0	6/21/2006 6:28:59 AM	**5.4862E+00**	6.445E-01	7.336E-01	1.825E+00	PCI/SA	0.742	1.0E+0	2.479E-1
TH-228	9NS1		0	6/18/2006 6:39:26 PM	**2.3009E-02**	7.631E-02	7.633E-02	3.868E-01	PCI/SA	0.87	1.0E+0	3.266E-2
TH-230	9NS1		0	6/18/2006 6:39:26 PM	**3.45E-01**	1.22E-01	1.258E-01	1.169E-01	PCI/SA	0.87	1.0E+0	3.266E-2
TH-232	9NS1		0	6/18/2006 6:39:26 PM	**2.1563E-02**	4.822E-02	4.825E-02	2.587E-01	PCI/SA	0.87	1.0E+0	3.266E-2

6129273, **Samples Inserted | Updated | NotUpdated => 2 | 0 | 12,
**Results Inserted | ReTestInserted | Updated | NotInserted => 41 | 0 | 0 | 0.
**Diff RptDb | Qtims => *wo:H402W1AA=> , mat:FILTER | Air *wo:H402W1AA=> , mat:FILTER | Air *wo:H402W1AC=> , mat:FILTER | Air *wo:H402W1AC=> , 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
U-234	7YSR	0		6/20/2006 7:06:22 PM	**1.2969E-01**	1.349E-01	1.353E-01	5.85E-01	PCI/SA	1.002	1.0E+0	3.221E-2
U-235	7YSR	0		6/20/2006 7:06:22 PM	**-1.8544E-02**	1.854E-02	1.86E-02	4.439E-01	PCI/SA	1.002	1.0E+0	3.221E-2
U-238	7YSR	0		6/20/2006 7:06:22 PM	**0.0E+00**	0.0E+00	1.135E-01	2.511E-01	PCI/SA	1.002	1.0E+0	3.221E-2
31580	**9H4XP810**			**J6E0801571**	P-0598	FILTER	5/8/2006 7:30:00	4/20/2006 9:10:00 AM				
ALPHA	BAS7	0		6/9/2006 4:45:00 PM	**-2.2308E+00**	9.976E-01	1.024E+00	7.864E+00	PCI/SA	1.0	1.0E+0	2.08E-2
BETA	BDS8	0		6/9/2006 12:14:58 PM	**7.9307E+00**	1.732E+00	1.816E+00	6.318E+00	PCI/SA	1.0	1.0E+0	3.37E-2
RA-226	BXTE	0		6/17/2006 7:15:00 PM	**-9.379E-02**	9.281E-02	9.333E-02	4.615E-01	PCI/SA	0.974	8.33E-1	2.51E-1
RA-228	BXTF	0		6/21/2006 6:28:24 AM	**1.9966E+00**	5.69E-01	5.933E-01	2.405E+00	PCI/SA	0.883	1.0E+0	2.51E-1
TH-228	9NS1	0		6/18/2006 10:09:36	**2.4368E-01**	1.241E-01	1.261E-01	3.248E-01	PCI/SA	0.858	1.0E+0	3.345E-2
TH-230	9NS1	0		6/18/2006 10:09:36	**2.5383E-01**	1.135E-01	1.159E-01	1.376E-01	PCI/SA	0.858	1.0E+0	3.345E-2
TH-232	9NS1	0		6/18/2006 10:09:36	**2.5383E-02**	5.676E-02	5.681E-02	3.045E-01	PCI/SA	0.858	1.0E+0	3.345E-2
U-234	7YSR	0		6/20/2006 7:03:21 PM	**-4.2428E-02**	1.897E-02	1.928E-02	5.993E-01	PCI/SA	0.976	1.0E+0	3.259E-2
U-235	7YSR	0		6/20/2006 7:03:21 PM	**-1.6971E-02**	1.2E-02	1.208E-02	4.847E-01	PCI/SA	0.976	1.0E+0	3.259E-2
U-238	7YSR	0		6/20/2006 7:03:21 PM	**7.2103E-02**	1.074E-01	1.076E-01	5.664E-01	PCI/SA	0.976	1.0E+0	3.259E-2
31580	**9H4XQH10**			**J6E0801572**	P-0599	FILTER	5/8/2006 7:30:00	4/20/2006 9:30:00 AM				
ALPHA	BAS7	0		6/9/2006 4:45:00 PM	**-5.2364E-01**	1.021E+00	1.022E+00	6.289E+00	PCI/SA	1.0	1.0E+0	2.078E-2
BETA	BDS8	0		6/9/2006 12:14:58 PM	**5.9672E+00**	1.657E+00	1.706E+00	6.332E+00	PCI/SA	1.0	1.0E+0	3.349E-2
RA-226	BXTE	0		6/17/2006 7:12:00 PM	**-1.3068E-01**	1.042E-01	1.051E-01	5.245E-01	PCI/SA	0.785	8.33E-1	2.484E-1
RA-228	BXTF	0		6/21/2006 6:28:24 AM	**2.2873E+00**	6.698E-01	7.018E-01	2.84E+00	PCI/SA	0.705	1.0E+0	2.484E-1
TH-228	9NS1	0		6/18/2006 10:09:36	**-3.963E-02**	2.802E-02	2.824E-02	2.917E-01	PCI/SA	1.0	1.0E+0	3.268E-2
TH-230	9NS1	0		6/18/2006 10:09:36	**2.2292E-01**	1.017E-01	1.036E-01	2.734E-01	PCI/SA	1.0	1.0E+0	3.268E-2
TH-232	9NS1	0		6/18/2006 10:09:36	**3.7153E-02**	3.715E-02	3.73E-02	1.007E-01	PCI/SA	1.0	1.0E+0	3.268E-2
U-234	7YSR	0		6/20/2006 7:03:28 PM	**8.6881E-02**	1.154E-01	1.156E-01	5.702E-01	PCI/SA	0.909	1.0E+0	3.221E-2
U-235	7YSR	0		6/20/2006 7:03:28 PM	**-1.8291E-02**	1.293E-02	1.302E-02	5.224E-01	PCI/SA	0.909	1.0E+0	3.221E-2
U-238	7YSR	0		6/20/2006 7:03:28 PM	**1.1432E-01**	1.143E-01	1.147E-01	3.098E-01	PCI/SA	0.909	1.0E+0	3.221E-2
31580	**9H4XQM10**			**J6E0801573**	P-0600	FILTER	5/8/2006 7:30:00	4/20/2006 9:45:00 AM				
ALPHA	BAS7	0		6/9/2006 4:45:00 PM	**3.3763E-01**	1.05E+00	1.05E+00	5.579E+00	PCI/SA	1.0	1.0E+0	2.074E-2
BETA	BDS8	0		6/9/2006 12:14:55 PM	**7.9287E+00**	1.702E+00	1.789E+00	6.211E+00	PCI/SA	1.0	1.0E+0	3.34E-2
RA-226	BXTE	0		6/17/2006 7:13:01 PM	**1.586E-01**	1.467E-01	1.477E-01	5.307E-01	PCI/SA	0.889	8.33E-1	2.492E-1
RA-228	BXTF	0		6/21/2006 6:28:24 AM	**2.8432E+00**	5.7E-01	6.372E-01	2.34E+00	PCI/SA	0.796	1.0E+0	2.492E-1
TH-228	9NS1	0		6/18/2006 6:39:26 PM	**6.6245E-07**	4.863E-02	4.863E-02	2.922E-01	PCI/SA	1.035	1.0E+0	3.316E-2
TH-230	9NS1	0		6/18/2006 6:39:26 PM	**1.8606E-02**	4.16E-02	4.163E-02	2.232E-01	PCI/SA	1.035	1.0E+0	3.316E-2
TH-232	9NS1	0		6/18/2006 6:39:26 PM	**5.5816E-02**	5.582E-02	5.603E-02	2.232E-01	PCI/SA	1.035	1.0E+0	3.316E-2
U-234	7YSR	0		6/20/2006 7:03:41 PM	**-6.1646E-02**	2.757E-02	2.806E-02	8.707E-01	PCI/SA	0.911	1.0E+0	3.209E-2
U-235	7YSR	0		6/20/2006 7:03:41 PM	**-1.2329E-02**	1.233E-02	1.237E-02	6.202E-01	PCI/SA	0.911	1.0E+0	3.209E-2
U-238	7YSR	0		6/20/2006 7:03:41 PM	**0.0E+00**	0.0E+00	1.887E-01	4.175E-01	PCI/SA	0.911	1.0E+0	3.209E-2
31580	**9H4XQN10**			**J6E0801574**	P-0601	FILTER	5/8/2006 7:30:00	4/20/2006 10:05:00 AM				
ALPHA	BAS7	0		6/9/2006 6:54:58 PM	**5.6178E+00**	2.155E+00	2.234E+00	6.851E+00	PCI/SA	1.0	1.0E+0	2.106E-2
BETA	BDS8	0		6/9/2006 12:14:55 PM	**7.01E+00**	1.725E+00	1.816E+00	6.514E+00	PCI/SA	1.0	1.0E+0	3.402E-2
RA-226	BXTE	0		6/17/2006 7:13:03 PM	**1.3493E-01**	8.464E-02	8.576E-02	2.713E-01	PCI/SA	0.918	8.33E-1	2.497E-1
RA-228	BXTF	0		6/21/2006 6:28:33 AM	**3.5168E+00**	5.613E-01	6.168E-01	2.054E+00	PCI/SA	0.822	1.0E+0	2.497E-1
TH-228	9NS1	0		6/18/2006 10:09:36	**8.7878E-02**	6.214E-02	6.263E-02	1.191E-01	PCI/SA	1.014	1.0E+0	3.379E-2
TH-230	9NS1	0		6/18/2006 10:09:36	**4.1193E-02**	4.119E-02	4.136E-02	1.116E-01	PCI/SA	1.014	1.0E+0	3.379E-2
TH-232	9NS1	0		6/18/2006 10:09:36	**-2.0596E-02**	2.06E-02	2.068E-02	2.471E-01	PCI/SA	1.014	1.0E+0	3.379E-2
U-234	7YSR	0		6/20/2006 7:03:57 PM	**-4.832E-02**	3.417E-02	3.44E-02	6.825E-01	PCI/SA	0.875	1.0E+0	3.246E-2
U-235	7YSR	0		6/20/2006 7:03:57 PM	**0.0E+00**	0.0E+00	1.479E-01	3.273E-01	PCI/SA	0.875	1.0E+0	3.246E-2
U-238	7YSR	0		6/20/2006 7:03:57 PM	**2.4155E-01**	1.708E-01	1.72E-01	3.273E-01	PCI/SA	0.875	1.0E+0	3.246E-2
31580	**9H4XQQ10**			**J6E0801575**	P-0602	FILTER	5/8/2006 7:30:00	4/20/2006 10:25:00 AM				
ALPHA	BAS7	0		6/9/2006 6:54:58 PM	**-6.4345E-01**	1.051E+00	1.053E+00	6.563E+00	PCI/SA	1.0	1.0E+0	2.09E-2
BETA	BDS8	0		6/9/2006 12:14:55 PM	**6.1542E+00**	1.71E+00	1.785E+00	6.558E+00	PCI/SA	1.0	1.0E+0	3.353E-2
RA-226	BXTE	0		6/17/2006 7:11:00 PM	**1.8918E-01**	1.424E-01	1.436E-01	4.959E-01	PCI/SA	0.842	8.33E-1	2.496E-1
RA-228	BXTF	0		6/21/2006 6:28:33 AM	**4.4919E+00**	6.178E-01	6.838E-01	2.09E+00	PCI/SA	0.768	1.0E+0	2.496E-1
TH-228	9NS1	0		6/18/2006 10:09:36	**8.0246E-02**	8.025E-02	8.063E-02	2.175E-01	PCI/SA	0.458	1.0E+0	3.357E-2
TH-230	9NS1	0		6/18/2006 10:09:36	**3.7616E-01**	1.682E-01	1.722E-01	2.039E-01	PCI/SA	0.458	1.0E+0	3.357E-2

6129273, **Samples Inserted | Updated | NotUpdated => 2 | 0 | 12,
**Results Inserted | ReTestInserted | Updated | NotInserted => 41 | 0 | 0 | 0.
**Diff RptDb | Qtims => *wo:H402W1AA=> , mat:FILTER | Air *wo:H402W1AA=> , mat:FILTER | Air *wo:H402W1AC=> , mat:FILTER | Air *wo:H402W1AC=> , 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		6/18/2006 10:09:36	**0.0E+00**	0.0E+00	9.214E-02	2.039E-01	PCI/SA		0.458	1.0E+0	3.357E-2
U-234	7YSR	0		6/20/2006 7:04:59 PM	**5.9097E-02**	1.024E-01	1.025E-01	5.566E-01	PCI/SA		1.063	1.0E+0	3.25E-2
U-235	7YSR	0		6/20/2006 7:04:59 PM	**7.8798E-02**	1.004E-01	1.006E-01	4.718E-01	PCI/SA		1.063	1.0E+0	3.25E-2
U-238	7YSR	0		6/20/2006 7:04:59 PM	**-3.94E-02**	2.786E-02	2.804E-02	5.566E-01	PCI/SA		1.063	1.0E+0	3.25E-2
31580	**9H4XQR10**			**J6E0801576**	P-0603	FILTER	5/8/2006 7:30:00	4/20/2006 10:40:00 AM					
ALPHA	BAS7	0		6/9/2006 6:54:58 PM	**-2.2438E+00**	1.003E+00	1.03E+00	7.909E+00	PCI/SA		1.0	1.0E+0	2.066E-2
BETA	BDS8	0		6/9/2006 12:14:57 PM	**7.7639E+00**	1.742E+00	1.827E+00	6.452E+00	PCI/SA		1.0	1.0E+0	3.297E-2
RA-226	BXTE	0		6/17/2006 7:37:00 PM	**-1.0338E-01**	1.594E-01	1.597E-01	7.148E-01	PCI/SA		0.865	8.33E-1	2.465E-1
RA-228	BXTF	0		6/21/2006 6:28:33 AM	**3.641E+00**	5.72E-01	6.207E-01	1.81E+00	PCI/SA		0.764	1.0E+0	2.465E-1
TH-228	9NS1	0		6/18/2006 10:09:27	**-9.9579E-02**	6.605E-02	6.663E-02	4.544E-01	PCI/SA		0.892	1.0E+0	3.225E-2
TH-230	9NS1	0		6/18/2006 10:09:27	**1.4937E-01**	7.468E-02	7.584E-02	1.012E-01	PCI/SA		0.892	1.0E+0	3.225E-2
TH-232	9NS1	0		6/18/2006 10:09:27	**0.0E+00**	0.0E+00	4.573E-02	1.012E-01	PCI/SA		0.892	1.0E+0	3.225E-2
U-234	7YSR	0		6/20/2006 7:05:13 PM	**0.0E+00**	0.0E+00	1.384E-01	3.063E-01	PCI/SA		0.892	1.0E+0	3.166E-2
U-235	7YSR	0		6/20/2006 7:05:13 PM	**-2.2606E-02**	2.261E-02	2.268E-02	5.414E-01	PCI/SA		0.892	1.0E+0	3.166E-2
U-238	7YSR	0		6/20/2006 7:05:13 PM	**1.1303E-01**	1.676E-01	1.679E-01	8.319E-01	PCI/SA		0.892	1.0E+0	3.166E-2
31580	**9H4XQT10**			**J6E0801577**	P-0605	FILTER	5/8/2006 7:30:00	4/20/2006 10:35:00 AM					
ALPHA	BAS7	0		6/9/2006 6:54:58 PM	**0.0E+00**	0.0E+00	1.149E+00	6.3E+00	PCI/SA		1.0	1.0E+0	2.074E-2
BETA	BDS8	0		6/9/2006 12:14:57 PM	**-1.0654E+00**	1.362E+00	1.365E+00	6.307E+00	PCI/SA		1.0	1.0E+0	3.322E-2
RA-226	BXTE	0		6/17/2006 7:39:00 PM	**4.1653E-02**	1.489E-01	1.49E-01	5.808E-01	PCI/SA		0.957	8.33E-1	2.501E-1
RA-228	BXTF	0		6/21/2006 6:28:48 AM	**1.6155E+00**	4.506E-01	4.72E-01	1.818E+00	PCI/SA		0.804	1.0E+0	2.501E-1
TH-228	9NS1	0		6/18/2006 10:09:30	**2.7368E-01**	2.56E-01	2.578E-01	1.007E+00	PCI/SA		0.331	1.0E+0	3.312E-2
TH-230	9NS1	0		6/18/2006 10:09:30	**1.2829E-01**	1.283E-01	1.291E-01	3.477E-01	PCI/SA		0.331	1.0E+0	3.312E-2
TH-232	9NS1	0		6/18/2006 10:09:30	**0.0E+00**	0.0E+00	1.571E-01	3.477E-01	PCI/SA		0.331	1.0E+0	3.312E-2
U-234	7YSR	0		6/20/2006 7:05:26 PM	**-1.0012E-01**	4.477E-02	4.549E-02	7.367E-01	PCI/SA		0.959	1.0E+0	3.23E-2
U-235	7YSR	0		6/20/2006 7:05:26 PM	**4.0006E-02**	1.059E-01	1.06E-01	6.317E-01	PCI/SA		0.959	1.0E+0	3.23E-2
U-238	7YSR	0		6/20/2006 7:05:26 PM	**-2.0065E-02**	1.114E-01	1.115E-01	7.811E-01	PCI/SA		0.959	1.0E+0	3.23E-2
31580	**H402W1AB**			**J6E090000273**	INTRA-LAB BLANK	FILTER	5/8/2006 7:30:00	4/20/2006 9:10:00 AM					
U-234	7YSR	0	B	6/20/2006 7:06:35 PM	**-1.4472E-03**	1.447E-03	1.452E-03	3.464E-02	PCI/SA		0.849	1.0E+0	1.0E+0
U-235	7YSR	0	B	6/20/2006 7:06:35 PM	**0.0E+00**	0.0E+00	8.858E-03	1.96E-02	PCI/SA		0.849	1.0E+0	1.0E+0
U-238	7YSR	0	B	6/20/2006 7:06:35 PM	**0.0E+00**	0.0E+00	8.858E-03	1.96E-02	PCI/SA		0.849	1.0E+0	1.0E+0
31580	**H402W1CS**			**J6E090000273**	INTRA-LAB CHECK	FILTER	5/8/2006 7:30:00	4/20/2006 9:10:00 AM					
U-234	7YSR	0	S	6/20/2006 7:06:39 PM	**1.1466E+00**	8.643E-02	1.312E-01	1.766E-02	PCI/SA	9.6761E-01	0.937	1.0E+0	1.0E+0
U-238	7YSR	0	S	6/20/2006 7:06:39 PM	**9.4204E-01**	7.847E-02	1.129E-01	3.681E-02	PCI/SA	1.0134E+00	0.937	1.0E+0	1.0E+0

6129273, **Samples Inserted | Updated | NotUpdated => 2 | 0 | 12,
**Results Inserted | ReTestInserted | Updated | NotInserted => 41 | 0 | 0 | 0.
**Diff RptDb | Qtims => *wo:H402W1AA=> , mat:FILTER | Air *wo:H402W1AA=> , mat:FILTER | Air *wo:H402W1AC=> , mat:FILTER | Air *wo:H402W1AC=> , mat:FILTER | Air.

Batch Nbr: 6129273

Alpha Spec, Ulso by ALP , Results

6/20/2006 9:28:25 PM

Summary Report

Status	Meth	Matrix	Wrk Ord	Parameter	Sa Act	Uncert	Q	Units	Av	MLcC	MDC	QC	Yield	RYld
Ulso by ALP				Richland Standard AlpIso Wo Blk Subt.										
Calc	SR	FILTER	H4XP81AG	U-234	-4.24E-02	(1.93E-02)	U4	PCI/SA	R	1.56E-01	5.99E-01		98%	
Calc	SR	FILTER	H4XP81AG	U-235	-1.70E-02	(1.21E-02)	U4	PCI/SA	R	9.87E-02	4.85E-01		98%	
Calc	SR	FILTER	H4XP81AG	U-238	7.21E-02	(1.08E-01)	U4	PCI/SA	R	1.40E-01	5.66E-01		98%	
Calc	SR	FILTER	H4XQH1AG	U-234	8.69E-02	(1.16E-01)	U4	PCI/SA	R	1.30E-01	5.70E-01		91%	
Calc	SR	FILTER	H4XQH1AG	U-235	-1.83E-02	(1.30E-02)	U4	PCI/SA	R	1.06E-01	5.22E-01		91%	
Calc	SR	FILTER	H4XQH1AG	U-238	1.14E-01	(1.15E-01)	U4	PCI/SA	R		3.10E-01		91%	
Calc	SR	FILTER	H4XQM1AG	U-234	-6.16E-02	(2.81E-02)	U4	PCI/SA	R	2.27E-01	8.71E-01		91%	
Calc	SR	FILTER	H4XQM1AG	U-235	-1.23E-02	(1.24E-02)	U4	PCI/SA	R	1.01E-01	6.20E-01		91%	
Calc	SR	FILTER	H4XQM1AG	U-238	0.00E+00	(1.89E-01)	U4	PCI/SA	R		4.18E-01		91%	
Calc	SR	FILTER	H4XQN1AG	U-234	-4.83E-02	(3.44E-02)	U4	PCI/SA	R	1.78E-01	6.83E-01		88%	
Calc	SR	FILTER	H4XQN1AG	U-235	0.00E+00	(1.48E-01)	U4	PCI/SA	R		3.27E-01		88%	
Calc	SR	FILTER	H4XQN1AG	U-238	2.42E-01	(1.72E-01)	U4	PCI/SA	R		3.27E-01		88%	
Calc	SR	FILTER	H4XQQ1AG	U-234	5.91E-02	(1.02E-01)	U4	PCI/SA	R	1.45E-01	5.57E-01		106%	
Calc	SR	FILTER	H4XQQ1AG	U-235	7.88E-02	(1.01E-01)	U4	PCI/SA	R	1.02E-01	4.72E-01		106%	
Calc	SR	FILTER	H4XQQ1AG	U-238	-3.94E-02	(2.80E-02)	U4	PCI/SA	R	1.45E-01	5.57E-01		106%	
Calc	SR	FILTER	H4XQR1AG	U-234	0.00E+00	(1.38E-01)	U4	PCI/SA	R		3.06E-01		89%	
Calc	SR	FILTER	H4XQR1AG	U-235	-2.26E-02	(2.27E-02)	U4	PCI/SA	R	1.18E-01	5.41E-01		89%	
Calc	SR	FILTER	H4XQR1AG	U-238	1.13E-01	(1.68E-01)	U4	PCI/SA	R	2.63E-01	8.32E-01		89%	
Calc	SR	FILTER	H4XQT1AG	U-234	-1.00E-01	(4.55E-02)	U4	PCI/SA	R	2.33E-01	7.37E-01		96%	
Calc	SR	FILTER	H4XQT1AG	U-235	4.00E-02	(1.06E-01)	U4	PCI/SA	R	1.80E-01	6.32E-01		96%	
Calc	SR	FILTER	H4XQT1AG	U-238	-2.01E-02	(1.11E-01)	U4	PCI/SA	R	2.55E-01	7.81E-01		96%	
Calc	SR	FILTER	H4X1R1AG	U-234	4.40E-02	(1.16E-01)	U4	PCI/SA	R	1.98E-01	6.94E-01		87%	
Calc	SR	FILTER	H4X1R1AG	U-235	6.60E-02	(1.14E-01)	U4	PCI/SA	R	1.62E-01	6.21E-01		87%	
Calc	SR	FILTER	H4X1R1AG	U-238	-2.57E-05	(1.20E-01)	U4	PCI/SA	R	2.56E-01	8.09E-01		87%	
Calc	SR	FILTER	H4X1T1AG	U-234	1.03E-01	(1.90E-01)	U4	PCI/SA	R	3.38E-01	9.54E-01		90%	
Calc	SR	FILTER	H4X1T1AG	U-235	-2.06E-02	(2.06E-02)	U4	PCI/SA	R	1.07E-01	4.92E-01		90%	
Calc	SR	FILTER	H4X1T1AG	U-238	1.23E-01	(1.51E-01)	U4	PCI/SA	R	2.14E-01	7.06E-01		90%	
Calc	SR	FILTER	H4X1V1AG	U-234	9.90E-02	(9.94E-02)	U4	PCI/SA	R		2.68E-01		99%	
Calc	SR	FILTER	H4X1V1AG	U-235	-3.96E-02	(2.82E-02)	U4	PCI/SA	R	1.46E-01	5.60E-01		99%	
Calc	SR	FILTER	H4X1V1AG	U-238	7.92E-02	(1.01E-01)	U4	PCI/SA	R	1.03E-01	4.74E-01		99%	
Calc	SR	FILTER	H4X1W1AG	U-234	3.98E-01	(2.01E-01)		PCI/SA	R		2.70E-01		102%	
Calc	SR	FILTER	H4X1W1AG	U-235	0.00E+00	(1.22E-01)	U4	PCI/SA	R		2.70E-01		102%	
Calc	SR	FILTER	H4X1W1AG	U-238	9.95E-02	(9.98E-02)	U4	PCI/SA	R		2.70E-01		102%	
Calc	SR	FILTER	H4X1X1AG	U-234	1.30E-01	(1.35E-01)	U4	PCI/SA	R	1.67E-01	5.85E-01		100%	
Calc	SR	FILTER	H4X1X1AG	U-235	-1.85E-02	(1.86E-02)	U4	PCI/SA	R	9.64E-02	4.44E-01		100%	
Calc	SR	FILTER	H4X1X1AG	U-238	0.00E+00	(1.13E-01)	U4	PCI/SA	R		2.51E-01		100%	
Calc	SR	FILTER	H402W1AA	U-234	-1.45E-03	(1.45E-03)	U4	PCI/SA	R	7.53E-03	3.46E-02	B	85%	

() - (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: 6129273

Alpha Spec, Uiso by ALP , Results

6/20/2006 9:28:26 PM

Summary Report

Status	Meth	Matrix	Wrk Ord	Parameter	Sa Act	Uncert	Q	Units	Av	ILcC	IDC	QC	Yield	RYld
Calc	SR	FILTER	**H402W1AA**	U-235	**0.00E+00**	**(8.86E-03)**	**U4**	PCI/SA	R		1.96E-02	**B**	85%	
Calc	SR	FILTER	**H402W1AA**	U-238	**0.00E+00**	**(8.86E-03)**	**U4**	PCI/SA	R		1.96E-02	**B**	85%	
Calc	SR	FILTER	**H402W1AC**	U-234	**1.15E+00**	**(1.31E-01)**		PCI/SA	R		1.77E-02	**S**	94%	118%
Calc	SR	FILTER	**H402W1AC**	U-235	**4.56E-02**	**(1.77E-02)**		PCI/SA	R		1.77E-02	**S**	94%	103%
Calc	SR	FILTER	**H402W1AC**	U-238	**9.42E-01**	**(1.13E-01)**		PCI/SA	R	9.58E-03	3.68E-02	**S**	94%	93%

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:56
RADCALC v4.8.18
STL Richland

Batch Nbr: 6129273

Alpha Spec, Ulso by ALP , Calculated Results

Detailed Report

6/20/2006 9:28:26 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	SR	FILTER	*STLE	AlpIsoWoBS	**H4XP81AG**	**PCI/SA**		04/20/06 09:10	06/20/06 19:03			1	1.00 Sa	
536403,P-0598					,J6E080157-1 v4.8.18		FILTER					UITC15676 Alq		0.062594 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	06/20/06 17:23	U-232	685	20	ALP83	ED	Y	N	3.4771E-01		N	100%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			200.05	2500.0333			Y		(1.043E-02)						(0.000E+00)	15.975867		
1	06/20/06 17:23	U-234	0	5	ALP83	ED	N	N	3.4771E-01		N	98%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			200.05	2500.0333			Y		(1.043E-02)			5%			(0.000E+00)	15.975867		
2	06/20/06 17:23	U-235	0	2	ALP83	ED	N	N	3.4771E-01		N	98%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			200.05	2500.0333			Y		(1.043E-02)			5%			(0.000E+00)	15.975867		
3	06/20/06 17:23	U-238	1	4	ALP83	ED	N	N	3.4771E-01		N	98%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			200.05	2500.0333			Y		(1.043E-02)			5%			(0.000E+00)	15.975867		

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	U-232	R	**70.702712**		3.41614E+00	9.82483	9.82483	1.00 Sa	98%				
				(5.290686)		(1.3084E-01)	(0.477993)	(0.477993)	(0.027066)					
	06/20/06	U-234	R	**-0.042428**	**U4**	-1.99997E-03	-0.005896	-0.005896	1.00 Sa	98%		0.59929		
				(0.01928)		(8.9442E-04)	(0.002658)	(0.002658)	(0.027066)			0.156046		
	06/20/06	U-235	R	**-0.016971**	**U4**	-7.99989E-04	-0.002358	-0.002358	1.00 Sa	98%		0.48465		
				(0.012078)		(5.6568E-04)	(0.001673)	(0.001673)	(0.027066)			0.098692		
	06/20/06	U-238	R	**0.072103**	**U4**	3.39877E-03	0.010019	0.010019	1.00 Sa	98%		0.566361		
				(0.107552)		(5.0624E-03)	(0.014935)	(0.014935)	(0.027066)			0.139572		

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	**H4XQH1AG**	**PCI/SA**		04/20/06 09:30	06/20/06 19:03			1	1.00 Sa	
536403,P-0599					,J6E080157-2 v4.8.18		FILTER					UITC15677 Alq		0.06221 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	06/20/06 17:23	U-232	639	22	ALP84	ED	Y	N	3.4843E-01		N	100%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			200.0166666	2500.15			Y		(1.045E-02)						(0.000E+00)	16.074513		
1	06/20/06 17:23	U-234	1	3	ALP84	ED	N	N	3.4843E-01		N	91%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			200.0166666	2500.15			Y		(1.045E-02)			5%			(0.000E+00)	16.074513		
2	06/20/06 17:23	U-235	0	2	ALP84	ED	N	N	3.4843E-01		N	91%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			200.0166666	2500.15			Y		(1.045E-02)			5%			(0.000E+00)	16.074513		
3	06/20/06 17:23	U-238	1	0	ALP84	ED	N	N	3.4843E-01		N	91%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			200.0166666	2500.15			Y		(1.045E-02)			5%			(0.000E+00)	16.074513		

() - (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: 6129273 — Alpha Spec, UIso by ALP , Calculated Results — 6/20/2006 9:28:26 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	U-232	R	**66.206879**		3.18593E+00	9.143631	9.143631	1.00 Sa	91%				
				(5.030829)		(1.2640E-01)	(0.454793)	(0.454793)	(0.028284)					
	06/20/06	U-234	R	**0.086881**	U4	3.79966E-03	0.011999	0.011999	1.00 Sa	91%		0.570223		
				(0.115628)		(5.0474E-03)	(0.015954)	(0.015954)	(0.028284)			0.130288		
	06/20/06	U-235	R	**-0.018291**	U4	-7.99952E-04	-0.002526	-0.002526	1.00 Sa	91%		0.522434		
				(0.01302)		(5.6565E-04)	(0.001792)	(0.001792)	(0.028284)			0.10638		
	06/20/06	U-238	R	**0.114318**	U4	4.99958E-03	0.015788	0.015788	1.00 Sa	91%		0.309801		
				(0.114699)		(4.9996E-03)	(0.015815)	(0.015815)	(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	SR	FILTER	*STLE	AlpIsoWoBS	**H4XQM1AG**	**PCI/SA**		04/20/06 09:45	06/20/06 19:03			1	1.00 Sa	
536403,P-0600					,J6E080157-3 v4.8.18		FILTER					UITC15678 Alq		0.062086 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	06/20/06 17:23	U-232	477	45	ALP85	ED	Y	N	2.5840E-01		N	100%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			200.0666666	2500.1166			Y		(7.752E-03)						(0.000E+00)	16.106709		
1	06/20/06 17:23	U-234	0	5	ALP85	ED	N	N	2.5840E-01		N	91%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			200.0666666	2500.1166			Y		(7.752E-03)			5%			(0.000E+00)	16.106709		
2	06/20/06 17:23	U-235	0	1	ALP85	ED	N	N	2.5840E-01		N	91%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			200.0666666	2500.1166			Y		(7.752E-03)			5%			(0.000E+00)	16.106709		
3	06/20/06 17:23	U-238	0	0	ALP85	ED	N	N	2.5840E-01		N	91%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			200.0666666	2500.1166			Y		(7.752E-03)			5%			(0.000E+00)	16.106709		

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	U-232	R	**66.43806**		2.36621E+00	9.157218	9.157218	1.00 Sa	91%				
				(5.285789)		(1.0920E-01)	(0.504041)	(0.504041)	(0.028284)					
	06/20/06	U-234	R	**-0.061646**	U4	-1.99991E-03	-0.008497	-0.008497	1.00 Sa	91%		0.870705		
				(0.028063)		(8.9439E-04)	(0.003837)	(0.003837)	(0.028284)			0.226721		
	06/20/06	U-235	R	**-0.012329**	U4	-3.99981E-04	-0.001699	-0.001699	1.00 Sa	91%		0.620196		
				(0.012374)		(3.9998E-04)	(0.001703)	(0.001703)	(0.028284)			0.101393		
	06/20/06	U-238	R	**0.00E00**	U4	0.00000E+00	0.00E00	0.00E00	1.00 Sa	91%		0.417531		
				(0.188697)		(0.0000E+00)	(0.026008)	(0.026008)	(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	SR	FILTER	*STLE	AlpIsoWoBS	**H4XQN1AG**	**PCI/SA**		04/20/06 10:05	06/20/06 19:03			1	1.00 Sa	
536403,P-0601					,J6E080157-4 v4.8.18		FILTER					UITC15679 Alq		0.062461 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	06/20/06 17:23	U-232	604	8	ALP87	ED	Y	N	3.4106E-01		N	100%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			200.05	1000.0166			Y		(1.023E-02)						(0.000E+00)	16.010029		

() - (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: 6129273 Alpha Spec, Uiso by ALP , Calculated Results 6/20/2006 9:28:27 PM

1	06/20/06 17:23	U-234	0	2	ALP87	ED	N	N	3.4106E-01	N	88%	N	1.0000E+00	4.5045E-01	1.0000E+00
			200.05	1000.0166			Y		(1.023E-02)		4%		(0.000E+00)	16.010029	
2	06/20/06 17:23	U-235	0	0	ALP87	ED	N	N	3.4106E-01	N	88%	N	1.0000E+00	4.5045E-01	1.0000E+00
			200.05	1000.0166			Y		(1.023E-02)		4%		(0.000E+00)	16.010029	
3	06/20/06 17:23	U-238	2	0	ALP87	ED	N	N	3.4106E-01	N	88%	N	1.0000E+00	4.5045E-01	1.0000E+00
			200.05	1000.0166			Y		(1.023E-02)		4%		(0.000E+00)	16.010029	

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	U-232	R	**63.672046**		3.01125E+00	8.828971	8.828971	1.00 Sa	88%				
				(4.876348)		(1.2288E-01)	(0.447178)	(0.447178)	(0.028284)					
	06/20/06	U-234	R	**-0.04832**	U4	-1.99997E-03	-0.0067	-0.0067	1.00 Sa	88%		0.68252		
				(0.034398)		(1.4142E-03)	(0.004754)	(0.004754)	(0.028284)			0.177718		
	06/20/06	U-235	R	**0.00E00**	U4	0.00000E+00	0.00E00	0.00E00	1.00 Sa	88%		0.327295		
				(0.147916)		(0.0000E+00)	(0.020511)	(0.020511)	(0.028284)					
	06/20/06	U-238	R	**0.241546**	U4	9.99750E-03	0.033494	0.033494	1.00 Sa	88%		0.327295		
				(0.17195)		(7.0693E-03)	(0.023765)	(0.023765)	(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
5	Calc	SR	FILTER	*STLE	AlpIsoWoBS	**H4XQQ1AG**	**PCI/SA**		04/20/06 10:25	06/20/06 19:04			1	1.00 Sa	
536403,P-0602					,J6E080157-5 v4.8.18		FILTER					UITC15680 Alq		0.0625 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	06/20/06 17:24	U-232	785	8	ALP1	ED	Y	N	3.6576E-01		N	100%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			200.05	1000.2166			Y		(1.097E-02)						(0.000E+00)	16.00002		
1	06/20/06 17:24	U-234	1	2	ALP1	ED	N	N	3.6576E-01		N	106%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			200.05	1000.2166			Y		(1.097E-02)			5%			(0.000E+00)	16.00002		
2	06/20/06 17:24	U-235	1	1	ALP1	ED	N	N	3.6576E-01		N	106%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			200.05	1000.2166			Y		(1.097E-02)			5%			(0.000E+00)	16.00002		
3	06/20/06 17:24	U-238	0	2	ALP1	ED	N	N	3.6576E-01		N	106%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			200.05	1000.2166			Y		(1.097E-02)			5%			(0.000E+00)	16.00002		

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	U-232	R	**77.163269**		3.91602E+00	10.706401	10.706401	1.00 Sa	106%				
				(5.711967)		(1.4008E-01)	(0.499843)	(0.499843)	(0.028284)					
	06/20/06	U-234	R	**0.059097**	U4	2.99918E-03	0.0082	0.0082	1.00 Sa	106%		0.556609		
				(0.102471)		(5.1949E-03)	(0.01421)	(0.01421)	(0.028284)			0.144926		
	06/20/06	U-235	R	**0.078798**	U4	3.99897E-03	0.010933	0.010933	1.00 Sa	106%		0.471763		
				(0.100646)		(5.0978E-03)	(0.01395)	(0.01395)	(0.028284)			0.102478		
	06/20/06	U-238	R	**-0.0394**	U4	-1.99957E-03	-0.005467	-0.005467	1.00 Sa	106%		0.556609		
				(0.028038)		(1.4139E-03)	(0.003878)	(0.003878)	(0.028284)			0.144926		

() - (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:6 RADCALC v4.8.18 STL Richland

Batch Nbr: 6129273 — Alpha Spec, Uiso by ALP , Calculated Results — 6/20/2006 9:28:27 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	**H4XQR1AG**	**PCI/SA**		04/20/06 10:40	06/20/06 19:05			1	1.00 Sa	
536403,P-0603					,J6E080157-6 v4.8.18		FILTER					UITC15681 Alq		0.06166 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	06/20/06 17:25	U-232	653	15	ALP2	ED	Y	N	3.6206E-01		N	100%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			200.0333333	1000.1666			Y		(1.086E-02)						(0.000E+00)	16.217964		
1	06/20/06 17:25	U-234	0	0	ALP2	ED	N	N	3.6206E-01		N	89%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			200.0333333	1000.1666			Y		(1.086E-02)			4%			(0.000E+00)	16.217964		
2	06/20/06 17:25	U-235	0	1	ALP2	ED	N	N	3.6206E-01		N	89%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			200.0333333	1000.1666			Y		(1.086E-02)			4%			(0.000E+00)	16.217964		
3	06/20/06 17:25	U-238	2	5	ALP2	ED	N	N	3.6206E-01		N	89%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			200.0333333	1000.1666			Y		(1.086E-02)			4%			(0.000E+00)	16.217964		

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	U-232	R	**65.565834**		3.24946E+00	8.975004	8.975004	1.00 Sa	89%				
				(4.970471)		(1.2781E-01)	(0.443966)	(0.443966)	(0.028284)					
	06/20/06	U-234	R	**0.00E00**	**U4**	0.00000E+00	0.00E00	0.00E00	1.00 Sa	89%		0.30631		
				(0.138432)		(0.0000E+00)	(0.018949)	(0.018949)	(0.028284)					
	06/20/06	U-235	R	**-0.022606**	**U4**	-9.99833E-04	-0.003094	-0.003094	1.00 Sa	89%		0.54136		
				(0.022681)		(9.9983E-04)	(0.0031)	(0.0031)	(0.028284)			0.117595		
	06/20/06	U-238	R	**0.11303**	**U4**	4.99917E-03	0.015472	0.015472	1.00 Sa	89%		0.831898		
				(0.167903)		(7.4150E-03)	(0.022966)	(0.022966)	(0.028284)			0.26295		

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	**H4XQT1AG**	**PCI/SA**		04/20/06 10:35	06/20/06 19:05			1	1.00 Sa	
536403,P-0605					,J6E080157-7 v4.8.18		FILTER					UITC15682 Alq		0.062296 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	06/20/06 17:25	U-232	731	19	ALP3	ED	Y	N	3.7651E-01		N	100%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			200.1	1000.0833			Y		(1.130E-02)						(0.000E+00)	16.052345		
1	06/20/06 17:25	U-234	0	5	ALP3	ED	N	N	3.7651E-01		N	96%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			200.1	1000.0833			Y		(1.130E-02)			5%			(0.000E+00)	16.052345		
2	06/20/06 17:25	U-235	1	3	ALP3	ED	N	N	3.7651E-01		N	96%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			200.1	1000.0833			Y		(1.130E-02)			5%			(0.000E+00)	16.052345		
3	06/20/06 17:25	U-238	1	6	ALP3	ED	N	N	3.7651E-01		N	96%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			200.1	1000.0833			Y		(1.130E-02)			5%			(0.000E+00)	16.052345		

() - (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: 6129273 — Alpha Spec, Uiso by ALP , Calculated Results — 6/20/2006 9:28:27 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	U-232	R	**69.794145**		3.63417E+00	9.652369	9.652369	1.00 Sa	96%				
				(5.21534)		(1.3519E-01)	(0.461275)	(0.461275)	(0.028284)					
	06/20/06	U-234	R	**-0.100119**	U4	-4.99958E-03	-0.013846	-0.013846	1.00 Sa	96%		0.736663		
				(0.045494)		(2.2359E-03)	(0.006241)	(0.006241)	(0.028284)			0.232865		
	06/20/06	U-235	R	**0.040006**	U4	1.99775E-03	0.005533	0.005533	1.00 Sa	96%		0.631747		
				(0.105965)		(5.2891E-03)	(0.014651)	(0.014651)	(0.028284)			0.180377		
	06/20/06	U-238	R	**-0.020065**	U4	-1.00200E-03	-0.002775	-0.002775	1.00 Sa	96%		0.781088		
				(0.111462)		(5.5654E-03)	(0.015414)	(0.015414)	(0.028284)			0.255091		

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	**H4X1R1AG**	**PCI/SA**		04/20/06 09:35	06/20/06 19:05			1	1.00 Sa	
536403,000431					,J6E080157-8 v4.8.18		FILTER					UITC15683 Alq		0.062314 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	06/20/06 17:25	U-232	665	6	ALP4	ED	Y	N	3.7951E-01		N	100%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			200.05	1000.0166			Y		(1.139E-02)						(0.000E+00)	16.047685		
1	06/20/06 17:25	U-234	1	3	ALP4	ED	N	N	3.7951E-01		N	87%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			200.05	1000.0166			Y		(1.139E-02)			4%			(0.000E+00)	16.047685		
2	06/20/06 17:25	U-235	1	2	ALP4	ED	N	N	3.7951E-01		N	87%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			200.05	1000.0166			Y		(1.139E-02)			4%			(0.000E+00)	16.047685		
3	06/20/06 17:25	U-238	1	5	ALP4	ED	N	N	3.7951E-01		N	87%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			200.05	1000.0166			Y		(1.139E-02)			4%			(0.000E+00)	16.047685		

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	U-232	R	**63.20306**		3.31817E+00	8.743375	8.743375	1.00 Sa	87%				
				(4.775805)		(1.2893E-01)	(0.429205)	(0.429205)	(0.028284)					
	06/20/06	U-234	R	**0.043971**	U4	1.99880E-03	0.006083	0.006083	1.00 Sa	87%		0.69414		
				(0.116435)		(5.2903E-03)	(0.016104)	(0.016104)	(0.028284)			0.198183		
	06/20/06	U-235	R	**0.065969**	U4	2.99878E-03	0.009126	0.009126	1.00 Sa	87%		0.621448		
				(0.114408)		(5.1949E-03)	(0.015818)	(0.015818)	(0.028284)			0.161816		
	06/20/06	U-238	R	**-2.5658E-05**	U4	-1.16636E-06	-3.5495E-06	-3.5495E-06	1.00 Sa	87%		0.809411		
				(0.120467)		(5.4761E-03)	(0.016665)	(0.016665)	(0.028284)			0.255853		

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	**H4X1T1AG**	**PCI/SA**		04/20/06 09:50	06/20/06 19:05			1	1.00 Sa	
536403,000432					,J6E080157-9 v4.8.18		FILTER					UITC15684 Alq		0.062416 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	06/20/06 17:25	U-232	711	5	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)	16.021547		

() - (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: 6129273 Alpha Spec, UIso by ALP , Calculated Results 6/20/2006 9:28:27 PM

1	06/20/06 17:25	U-234	3	10	ALP5	ED	N	N	3.9200E-01	N	90%	N	1.0000E+00	4.5045E-01	1.0000E+00
			200.0666666	1000.2333			Y		(1.176E-02)		4%		(0.000E+00)	16.021547	
2	06/20/06 17:25	U-235	0	1	ALP5	ED	N	N	3.9200E-01	N	90%	N	1.0000E+00	4.5045E-01	1.0000E+00
			200.0666666	1000.2333			Y		(1.176E-02)		4%		(0.000E+00)	16.021547	
3	06/20/06 17:25	U-238	2	4	ALP5	ED	N	N	3.9200E-01	N	90%	N	1.0000E+00	4.5045E-01	1.0000E+00
			200.0666666	1000.2333			Y		(1.176E-02)		4%		(0.000E+00)	16.021547	

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	U-232	R	**65.334874**		3.54882E+00	9.053031	9.053031	1.00 Sa	90%				
				(4.89394)		(1.3330E-01)	(0.435189)	(0.435189)	(0.028284)					
	06/20/06	U-234	R	**0.102762**	**U4**	4.99733E-03	0.014239	0.014239	1.00 Sa	90%		0.954485		
				(0.189706)		(9.2166E-03)	(0.026274)	(0.026274)	(0.028284)			0.338172		
	06/20/06	U-235	R	**-0.020559**	**U4**	-9.99767E-04	-0.002849	-0.002849	1.00 Sa	90%		0.492293		
				(0.020625)		(9.9977E-04)	(0.002853)	(0.002853)	(0.028284)			0.106939		
	06/20/06	U-238	R	**0.123331**	**U4**	5.99760E-03	0.017089	0.017089	1.00 Sa	90%		0.706045		
				(0.151388)		(7.3461E-03)	(0.020954)	(0.020954)	(0.028284)			0.213879		

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	**H4X1V1AG**	**PCI/SA**		04/20/06 10:10	06/20/06 19:05			1	1.00 Sa	
536403,000433					,J6E080157-10 v4.8.18		FILTER					UITC15685 Alq		0.060945 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	06/20/06 17:25	U-232	754	4	ALP6	ED	Y	N	3.7594E-01		N	100%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			200.1	1000.0666			Y		(1.128E-02)						(0.000E+00)	16.408261		
1	06/20/06 17:25	U-234	1	0	ALP6	ED	N	N	3.7594E-01		N	99%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			200.1	1000.0666			Y		(1.128E-02)			5%			(0.000E+00)	16.408261		
2	06/20/06 17:25	U-235	0	2	ALP6	ED	N	N	3.7594E-01		N	99%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			200.1	1000.0666			Y		(1.128E-02)			5%			(0.000E+00)	16.408261		
3	06/20/06 17:25	U-238	1	1	ALP6	ED	N	N	3.7594E-01		N	99%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			200.1	1000.0666			Y		(1.128E-02)			5%			(0.000E+00)	16.408261		

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	U-232	R	**74.003765**		3.76412E+00	10.012549	10.012549	1.00 Sa	99%				
				(5.502896)		(1.3724E-01)	(0.472754)	(0.472754)	(0.028284)					
	06/20/06	U-234	R	**0.099034**	**U4**	4.99750E-03	0.013399	0.013399	1.00 Sa	99%		0.268382		
				(0.099352)		(4.9975E-03)	(0.01342)	(0.01342)	(0.028284)					
	06/20/06	U-235	R	**-0.039631**	**U4**	-1.99987E-03	-0.005362	-0.005362	1.00 Sa	99%		0.559695		
				(0.028203)		(1.4141E-03)	(0.003803)	(0.003803)	(0.028284)			0.145743		
	06/20/06	U-238	R	**0.079218**	**U4**	3.99757E-03	0.010718	0.010718	1.00 Sa	99%		0.474371		
				(0.101196)		(5.0966E-03)	(0.013678)	(0.013678)	(0.028284)			0.103056		

() - (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: 6129273 — Alpha Spec, UIso by ALP , Calculated Results — 6/20/2006 9:28:28 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	**H4X1W1AG**	**PCI/SA**		04/20/06 10:30	06/20/06 19:06			1	1.00 Sa	
536403,000434					,J6E080157-11 v4.8.18		FILTER					UITC15686 Alq		0.062305 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	06/20/06 17:26	U-232	752	3	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)	16.050023		
1	06/20/06 17:26	U-234	4	0	ALP7	ED	N	N	3.6324E-01		N	102%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			200.0833333	1000.05			Y		(1.090E-02)			5%			(0.000E+00)	16.050023		
2	06/20/06 17:26	U-235	0	0	ALP7	ED	N	N	3.6324E-01		N	102%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			200.0833333	1000.05			Y		(1.090E-02)			5%			(0.000E+00)	16.050023		
3	06/20/06 17:26	U-238	1	0	ALP7	ED	N	N	3.6324E-01		N	102%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			200.0833333	1000.05			Y		(1.090E-02)			5%			(0.000E+00)	16.050023		

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	U-232	R	**74.746115**		3.75543E+00	10.33871	10.33871	1.00 Sa	102%				
				(5.559486)		(1.3707E-01)	(0.488456)	(0.488456)	(0.028284)					
	06/20/06	U-234	R	**0.397903**		1.99917E-02	0.055037	0.055037	1.00 Sa	102%		0.26958		
				(0.201495)		(9.9958E-03)	(0.02769)	(0.02769)	(0.028284)					
	06/20/06	U-235	R	**0.00E00**	**U4**	0.00000E+00	0.00E00	0.00E00	1.00 Sa	102%		0.269579		
				(0.121833)		(0.0000E+00)	(0.016852)	(0.016852)	(0.028284)					
	06/20/06	U-238	R	**0.099476**	**U4**	4.99792E-03	0.013759	0.013759	1.00 Sa	102%		0.269579		
				(0.099795)		(4.9979E-03)	(0.013781)	(0.013781)	(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	SR	FILTER	*STLE	AlpIsoWoBS	**H4X1X1AG**	**PCI/SA**		04/20/06 10:45	06/20/06 19:06			1	1.00 Sa	
536403,000435					,J6E080157-12 v4.8.18		FILTER					UITC15687 Alq		0.062207 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	06/20/06 17:26	U-232	787	9	ALP8	ED	Y	N	3.9047E-01		N	100%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			200.1333333	1000.0166			Y		(1.171E-02)						(0.000E+00)	16.075275		
1	06/20/06 17:26	U-234	2	3	ALP8	ED	N	N	3.9047E-01		N	100%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			200.1333333	1000.0166			Y		(1.171E-02)			5%			(0.000E+00)	16.075275		
2	06/20/06 17:26	U-235	0	1	ALP8	ED	N	N	3.9047E-01		N	100%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			200.1333333	1000.0166			Y		(1.171E-02)			5%			(0.000E+00)	16.075275		
3	06/20/06 17:26	U-238	0	0	ALP8	ED	N	N	3.9047E-01		N	100%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			200.1333333	1000.0166			Y		(1.171E-02)			5%			(0.000E+00)	16.075275		

() - (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 v4.8.18 STL Richland

Batch Nbr: 6129273 Alpha Spec, Uiso by ALP , Calculated Results 6/20/2006 9:28:28 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	U-232	R	**72.757001**		3.92338E+00	10.047773	10.047773	1.00 Sa	100%				
				(5.384543)		(1.4021E-01)	(0.46882)	(0.46882)	(0.028284)					
	06/20/06	U-234	R	**0.129689**	U4	6.99339E-03	0.01791	0.01791	1.00 Sa	100%		0.584971		
				(0.135318)		(7.2755E-03)	(0.018659)	(0.018659)	(0.028284)			0.167029		
	06/20/06	U-235	R	**-0.018544**	U4	-9.99983E-04	-0.002561	-0.002561	1.00 Sa	100%		0.443865		
				(0.018603)		(9.9998E-04)	(0.002565)	(0.002565)	(0.028284)			0.096434		
	06/20/06	U-238	R	**0.00E00**	U4	0.00000E+00	0.00E00	0.00E00	1.00 Sa	100%		0.25111		
				(0.113486)		(0.0000E+00)	(0.015672)	(0.015672)	(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	**H402W1AA**	**PCI/SA**	**B**	04/20/06 09:10	06/20/06 19:06			1	1.00 Sa	
0,INTRA-LAB BLANK					,J6E090000-273		FILTER					UITC15688 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	06/20/06 17:26	U-232	628	2	ALP9	ED	Y	N	3.6670E-01		N	100%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			200.1166666	1000.0333			Y		(1.100E-02)						(0.000E+00)	1.00		
1	06/20/06 17:26	U-234	0	1	ALP9	ED	N	N	3.6670E-01		N	85%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			200.1166666	1000.0333			Y		(1.100E-02)			4%			(0.000E+00)	1.00		
2	06/20/06 17:26	U-235	0	0	ALP9	ED	N	N	3.6670E-01		N	85%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			200.1166666	1000.0333			Y		(1.100E-02)			4%			(0.000E+00)	1.00		
3	06/20/06 17:26	U-238	0	0	ALP9	ED	N	N	3.6670E-01		N	85%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			200.1166666	1000.0333			Y		(1.100E-02)			4%			(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	U-232	R	**3.852399**		3.13617E+00	8.552334	8.552334	1.00 Sa	85%				
				(0.280316)		(1.2523E-01)	(0.427154)	(0.427154)	(0.017321)					
	06/20/06	U-234	R	**-0.001447**	U4	-9.99967E-04	-0.003213	-0.003213	1.00 Sa	85%		0.034643		
				(0.001452)		(9.9997E-04)	(0.003218)	(0.003218)	(0.017321)			0.007526		
	06/20/06	U-235	R	**0.00E00**	U4	0.00000E+00	0.00E00	0.00E00	1.00 Sa	85%		0.019599		
				(0.008858)		(0.0000E+00)	(0.019664)	(0.019664)	(0.017321)					
	06/20/06	U-238	R	**0.00E00**	U4	0.00000E+00	0.00E00	0.00E00	1.00 Sa	85%		0.019599		
				(0.008858)		(0.0000E+00)	(0.019664)	(0.019664)	(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
14	Calc	SR	FILTER	*STLE	AlpIsoWoBS	**H402W1AC**	**PCI/SA**	**S**	04/20/06 09:10	06/20/06 19:06		UISF0370	1	1.00 Sa	
0,INTRA-LAB CHECK					,J6E090000-273		FILTER					UISF0370 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	06/20/06 17:26	U-232	693	6	ALP10	ED	Y	N	3.6914E-01		N	100%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			200	1000.25			Y		(1.107E-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
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: 6129273 Alpha Spec, UIso by ALP , Calculated Results 6/20/2006 9:28:28 PM

1	06/20/06 17:26	U-234	176	0	ALP10	ED	N	N	3.6914E-01	N	94%	N		1.0000E+00	4.5045E-01	1.0000E+00
			200	1000.25			Y		(1.107E-02)		6%			(0.000E+00)	1.00	
2	06/20/06 17:26	U-235	7	0	ALP10	ED	N	N	3.6914E-01	N	94%	N		1.0000E+00	4.5045E-01	1.0000E+00
			200	1000.25			Y		(1.107E-02)		6%			(0.000E+00)	1.00	
3	06/20/06 17:26	U-238	145	2	ALP10	ED	N	N	3.6914E-01	N	94%	N		1.0000E+00	4.5045E-01	1.0000E+00
			200	1000.25			Y		(1.107E-02)		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
	06/20/06	U-232	R	**4.220912**		3.45900E+00	9.370435	9.370435	1.00	Sa	94%				
				(0.302864)		(1.3165E-01)	(0.454105)	(0.454105)	(0.017321)						
	06/20/06	U-234	R	**1.146599**		8.80000E-01	2.545452	2.545452	1.00	Sa	94%	118%	0.017655		
				(0.131219)		(6.6332E-02)	(0.258296)	(0.258296)	(0.017321)						
	06/20/06	U-235	R	**0.045603**		3.50000E-02	0.10124	0.10124	1.00	Sa	94%	103%	0.017655		
				(0.017678)		(1.3229E-02)	(0.038878)	(0.038878)	(0.017321)						
	06/20/06	U-238	R	**0.942036**		7.23000E-01	2.091322	2.091322	1.00	Sa	94%	93%	0.036812		
				(0.112862)		(6.0225E-02)	(0.224792)	(0.224792)	(0.017321)				0.009584		

() - (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

STL RICHLAND

SEVERN TRENT STL

URANIUM ISOTOPIC COUNTING REQUEST

2043

C.R. Technician: OP

Date Counted: 6/21/06

Counting Time
Sample: 200 Minutes
Background: See Alpha Regions Report
BRC 4/20/06

SOP's
Operating: RICHRD008
Review: RICHRD0016
6129273

WorkOrder #	U-232 (5320 KeV) Tracer	TOTAL COUNTS U-238 (4196 KeV)	U-235 (4396 KeV)	U-234 (4776 KeV)	Det #	Comments/Edits
H4XP81AG	See Counting Room Printout for ROI information				83	
H4XQH1AG	See Counting Room Printout for ROI information				84	
H4XQM1AG	See Counting Room Printout for ROI information				85	
H4XQN1AG	See Counting Room Printout for ROI information				87	
H4XQQ1AG	See Counting Room Printout for ROI information				1	
H4XQR1AG	See Counting Room Printout for ROI information				2	
H4XQT1AG	See Counting Room Printout for ROI information				3	
H4X1R1AG	See Counting Room Printout for ROI information				4	
	See Counting Room Printout for ROI information					

Comments:

Form No: RC-011, 7/02, Rev 8

Approved by: OP

Date: 6/20/06

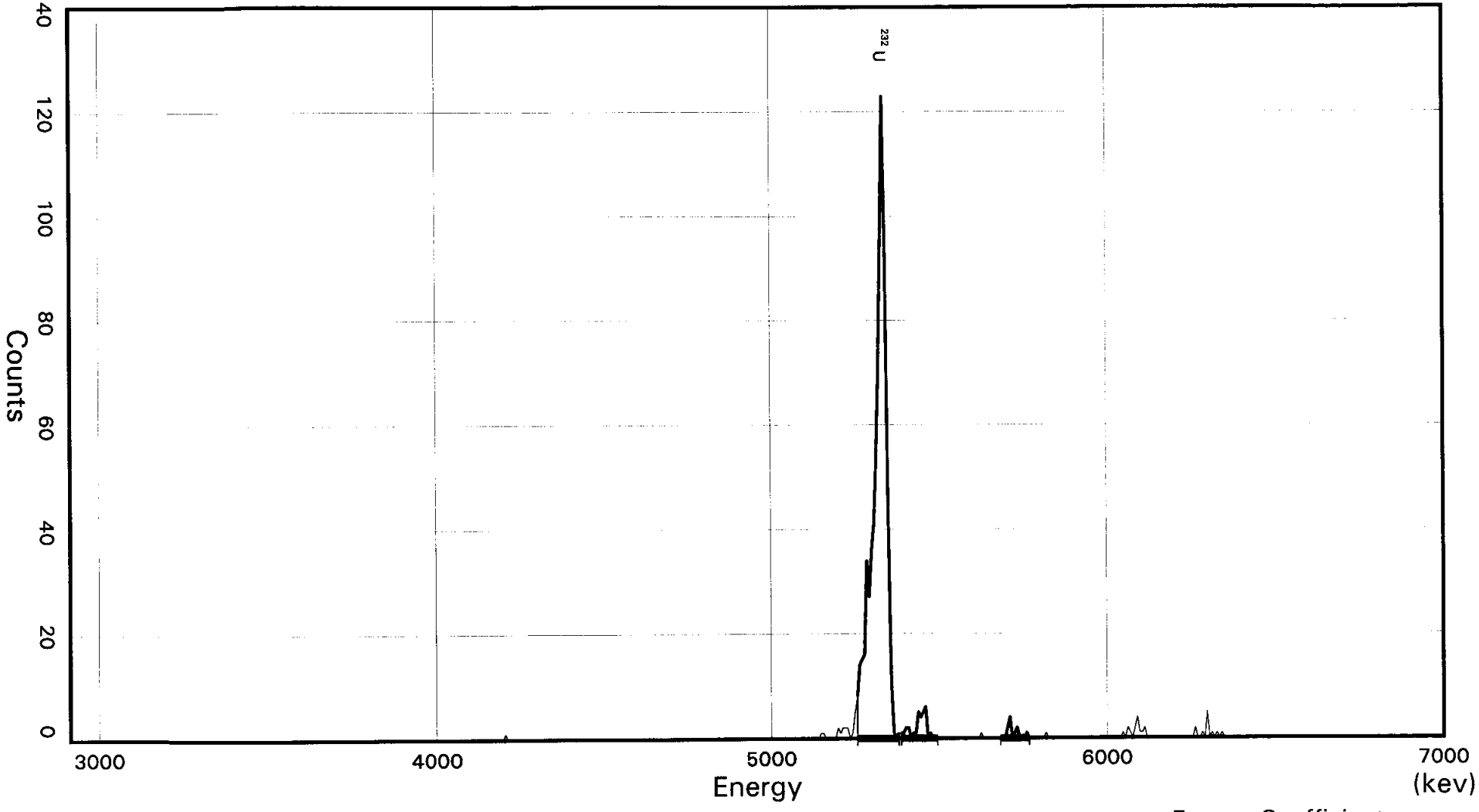
STL Richland WA.

U BRC

Sample ID: H4XP81AG

Detector ID: ALP83 1

Batch ID: 6129273



Acquisition Start: 20-JUN-2006 17:23:19.02

Preset Live Time: 0 03:20:00.00

Elapsed Live Time: 0 03:20:03.00

Energy Coefficients:

Offset: 2.89305E+03

Slope: 7.36477E+00

Quadrature: -2.22552E-04

SAMPLE IDENTIITY: H4XP81AG

TITLE : U BRC

DETECTOR : ALP83 1
CONFIGURATION NAME : RDND06$DKA100:[ALP83.SAMPLE]H4XP81AG_2006617
23.CNF;1
ACQUIRE DATE of BACKGROUND: 09-JUN-2006 06:58:07

REPORT DATE : 20-Jun-06 SAMPLE DATE: 20-APR-2006 12:00:00
ACQUIRE DATE: 20-JUN-2006 17:23:19 CALIB DATE : 09-JUN-2006 06:21:49

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

OFFSET : 2893.05 keV CONSTANT FWHM : 9.00000 Channels
SLOPE : 7.36477 keV/C SENSITIVITY : 3.00000 Std Dev's
QUAD COEFF : -.222552E-03 keV/C^2 SUM SENSITIVITY: 1.00000 %

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

Sample Identity: H4XP81AG

Detector: ALP83 1
Report Date: 20-Jun-06 08:43 PM
Acquire Date: 20-JUN-2006 17:23:19.02
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	685	20	0	3.416	5331.4	122.7	324	341	0.00	0.00	P
U-234	0	5	0	-0.002	4785.9	123.3	249	266	0.00	0.00	
U-235	0	2	0	-0.001	4409.1	123.6	197	214	0.00	0.00	
U-238	1	4	0	0.003	4209.3	123.9	169	186	0.00	0.00	

End of Alpha Region Report
(Produced by Alp_rgn_cnts)

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

Sample Identity: H4XP81AG
Detector: ALP83 1
Report Date: 20-Jun-06 08:43 PM
Acquire Date: 20-JUN-2006 17:23:19.02

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	5		351	0		401	0		451	0		501
		2	0		52	0		102	0		152	0	+	202	0	+	252	0		302	6		352	1		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	1		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	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	0		359	0		409	0		459	0		509
0		10	0		60	0		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	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	0		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	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	2		318	0		368	0		418	0		468			
0		19	0		69	0		119	0	+	169	0		219	0		269	2		319	0		369	0		419	5		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	1		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	5		323	0		373	0		423	1		473			
0		24	0		74	0		124	0	+	174	0		224	0		274	8	+	324	0		374	0		424	0		474			
0		25	0		75	0		125	0	+	175	0		225	0		275	14	+	325	1		375	0		425	1		475			
0		26	0		76	0		126	0	+	176	0		226	0		276	15	+	326	0		376	0		426	0		476			
0		27	0		77	0		127	0	+	177	0		227	0		277	16	+	327	0		377	0		427	0		477			
0		28	0		78	0		128	0	+	178	0		228	0		278	34	+	328	0		378	0		428	0		478			
0		29	0		79	0		129	1	+	179	0		229	0		279	27	+	329	0		379	0		429	0		479			
0		30	0		80	0		130	0	+	180	0		230	0		280	36	+	330	0		380	0		430	0		480			
0		31	0		81	0		131	0	+	181	0		231	0		281	41	+	331	0		381	0		431	0		481			
0		32	0		82	0		132	0	+	182	0		232	0		282	53	+	332	0		382	0		432	0		482			
0		33	0		83	0		133	0	+	183	0		233	0		283	70	+	333	0		383	0		433	0		483			
0		34	0		84	0		134	0	+	184	0		234	0		284	96	+	334	0		384	1		434	0		484			
0		35	0		85	0		135	0	+	185	0		235	0		285	123	+	335	0		385	0		435	0		485			
0		36	0		86	0		136	0	+	186	0		236	0		286	92	+	336	2		386	2		436	0		486			
0		37	0		87	0		137	0		187	0		237	0		287	42	+	337	4		387	1		437	0		487			
0		38	0		88	0		138	0		188	0		238	0		288	11	+	338	0		388	0		438	0		488			
0		39	0		89	0		139	0		189	0		239	0		289	1	+	339	1		389	2		439	0		489			
0		40	0		90	0		140	0		190	0		240	0		290	0	+	340	2		390	4		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	1		342	0		392	1		442	0		492			
0		43	0		93	0		143	0		193	0		243	0		293	1		343	0		393	2		443	0		493			
0		44	0		94	0		144	0		194	0		244	0		294	2		344	1		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	1		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	5		349	0		399	0		449	0		499			
0		50	0		100	0		150	0	+	200	0	+	250	0		300	4		350	0		400	0		450	0		500			

VMS Peak Search Report V1.9 Generated 20-JUN-2006 20:43:23

Configuration : RDND06$DKA100:[ALP83.SAMPLE]H4XP81AG_200661723.CNF;1
Analyses by : ALPHA V1.8
Sample title : U BRC
Sample date : 20-APR-2006 12:00:00 Acquisition date : 20-JUN-2006 17:23:19
Sample ID : H4XP81AG Sample quantity : 0.00000E+00 SAMPLE
Sample type : disk Sample geometry :
Detector name : ALP83 Detector geometry:
Elapsed live time: 0 03:20:03.00 Elapsed real time: 0 03:20:03.00 0.0%
Start energy : 2915.14 kev End energy : 6605.47 kev
Sensitivity : 3.00 Sum Sensitivity : 1.00

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	5331.45	685	0	44.19	334.47	324	17	5.71E-02	3.8	
2	0	5446.84	27	0	29.46	350.47	342	15	2.25E-03	19.2	
3	0	5709.88	11	0	44.19	387.00	383	12	9.16E-04	30.2	

VMS Nuclide Identification Report V3.1 Generated 20-JUN-2006 20:43:25

```
Configuration     : RDND06$DKA100:[ALP83.SAMPLE]H4XP81AG_200661723.CNF;1
Analyses by       : ALPHA V1.8,PEAKEFF V2.2,NID V3.4
Sample title      : U BRC
Sample date       : 20-APR-2006 12:00:00 Acquisition date : 20-JUN-2006 17:23:19
Sample ID         : H4XP81AG             Sample quantity  : 0.00000E+00 SAMPLE
Sample type       : disk                 Sample geometry  :
Detector name     : ALP83                Detector geometry:
Elapsed live time: 0 03:20:03.00         Elapsed real time: 0 03:20:03.00   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                     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:[ALP83.SAMPLE]H4XP81AG_200661723.CNF;1

Peak Energy	Left Chan	Rght Chan	Peak Area	Total Counts	Diff/ StDev	Overlap Counts	Multiplet Diff/StDev
5331.44	324	341	685	680	0.19		
5446.84	342	357	27	29	-0.38		
5709.87	383	395	11	10	0.30		

End of Report

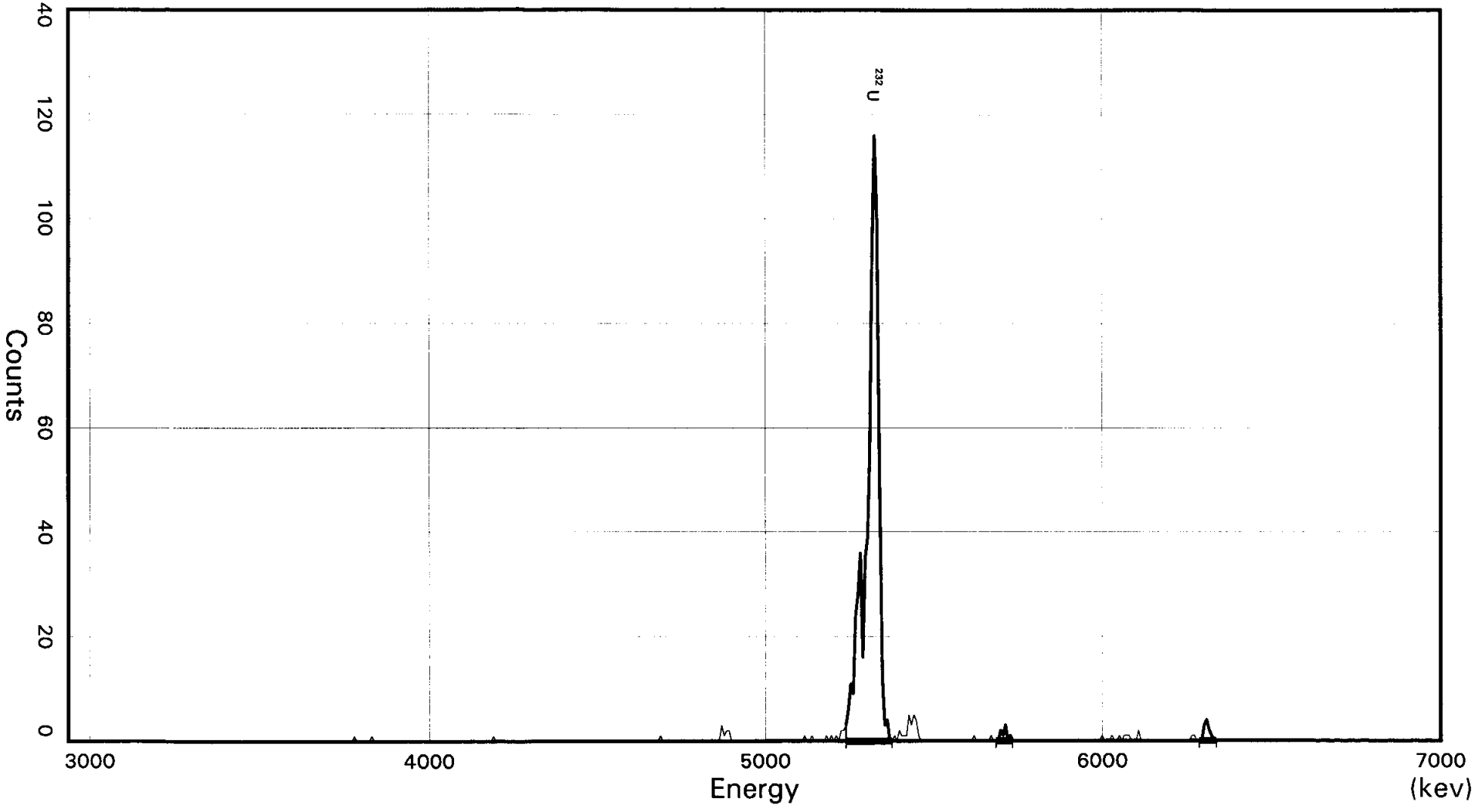
STL Richland WA.

U BRC

Sample ID: H4XQH1AG

Detector ID: ALP84 1

Batch ID: 6129273



Acquisition Start: 20-JUN-2006 17:23:27.61

Preset Live Time: 0 03:20:00.00

Elapsed Live Time: 0 03:20:01.00

Energy Coefficients:

Offset: 2.91475E+03

Slope: 7.27474E+00

Quadrature: -1.17694E-04

SAMPLE IDENTIITY: H4XQH1AG

TITLE : U BRC

DETECTOR : ALP84 1
CONFIGURATION NAME : RDND06$DKA100:[ALP84.SAMPLE]H4XQH1AG_2006617
23.CNF;1
ACQUIRE DATE of BACKGROUND: 09-JUN-2006 06:58:10

REPORT DATE : 20-Jun-06 SAMPLE DATE: 20-APR-2006 12:00:00
ACQUIRE DATE: 20-JUN-2006 17:23:27 CALIB DATE : 09-JUN-2006 06:21:40

PRESET LIVE TIME: 0 03:20:00 ELAPSED LIVE TIME: 0 03:20:01

OFFSET : 2914.75 keV CONSTANT FWHM : 5.00000 Channels
SLOPE : 7.27474 keV/C SENSITIVITY : 3.00000 Std Dev's
QUAD COEFF : -.117694E-03 keV/C^2 SUM SENSITIVITY: 1.00000 %

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

Sample Identity: H4XQH1AG

Detector: ALP84 1
Report Date: 20-Jun-06 08:43 PM
Acquire Date: 20-JUN-2006 17:23:27.61
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	639	22	0	3.186	5321.8	136.7	321	340	0.00	0.00	P
U-234	1	3	0	0.004	4776.3	137.1	245	264	0.00	0.00	
U-235	0	2	0	-0.001	4399.5	137.3	193	212	0.00	0.00	
U-238	1	0	0	0.005	4199.7	130.2	166	184	0.00	0.00	

End of Alpha Region Report
(Produced by Alp_rgn_cnts)

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

Sample Identity: H4XQH1AG
Detector: ALP84 1
Report Date: 20-Jun-06 08:43 PM
Acquire Date: 20-JUN-2006 17:23:27.61

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	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	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	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	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	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	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	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	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	1		119	0	+	169	0		219	0		269	2		319	0		369	0		419	3		469			
0		20	0		70	0		120	0	+	170	0		220	3		270	2		320	0		370	0		420	4		470			
0		21	0		71	0		121	0	+	171	0		221	1		271	3	+	321	0		371	0		421	2		471			
0		22	0		72	0		122	0	+	172	0		222	2		272	6	+	322	0		372	0		422	1		472			
0		23	0		73	0		123	0	+	173	0		223	2		273	11	+	323	0		373	0		423	0		473			
0		24	0		74	0		124	0	+	174	0		224	0		274	9	+	324	1		374	0		424	0		474			
0		25	0		75	0		125	0	+	175	0		225	0		275	24	+	325	0		375	0		425	0		475			
0		26	0		76	1		126	1	+	176	0		226	0		276	28	+	326	0		376	0		426	0		476			
0		27	0		77	0		127	0	+	177	0		227	0		277	36	+	327	0		377	1		427	0		477			
0		28	0		78	0		128	0	+	178	0		228	0		278	16	+	328	0		378	0		428	0		478			
0		29	0		79	0		129	0	+	179	0		229	0		279	35	+	329	0		379	0		429	0		479			
0		30	0		80	0		130	0	+	180	0		230	0		280	39	+	330	0		380	0		430	0		480			
0		31	0		81	0		131	0	+	181	0		231	0		281	56	+	331	1		381	1		431	0		481			
0		32	0		82	0		132	0	+	182	0		232	0		282	94	+	332	0		382	0		432	0		482			
0		33	0		83	0		133	0	+	183	0		233	0		283	116	+	333	0		383	0		433	0		483			
0		34	0		84	0		134	0	+	184	0		234	0		284	99	+	334	0		384	1		434	0		484			
0		35	0		85	0		135	0		185	0		235	0		285	48	+	335	2		385	0		435	0		485			
0		36	0		86	0		136	0		186	0		236	0		286	12	+	336	1		386	1		436	0		486			
0		37	0		87	0		137	0		187	0		237	0		287	3	+	337	3		387	1		437	0		487			
0		38	0		88	0		138	0		188	0		238	0		288	4	+	338	0		388	1		438	0		488			
0		39	0		89	0		139	0		189	0		239	0		289	0	+	339	1		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	0		342	0		392	2		442	0		492			
0		43	0		93	0		143	0	+	193	0		243	0		293	2		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	1	+	245	0		295	1		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	5		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	5		349	0		399	0		449	0		499			
0		50	0		100	0		150	0	+	200	0	+	250	0		300	4		350	0		400	0		450	0		500			

VMS Peak Search Report V1.9 Generated 20-JUN-2006 20:43:34

```
Configuration     : RDND06$DKA100:[ALP84.SAMPLE]H4XQH1AG_200661723.CNF;1
Analyses by       : ALPHA V1.8
Sample title      : U BRC
Sample date       : 20-APR-2006 12:00:00 Acquisition date : 20-JUN-2006 17:23:27
Sample ID         : H4XQH1AG             Sample quantity  : 0.00000E+00 SAMPLE
Sample type       : disk                 Sample geometry  :
Detector name     : ALP84                Detector geometry:
Elapsed live time: 0 03:20:01.00         Elapsed real time: 0 03:20:01.00   0.0%
Start energy      :  2936.57 kev         End energy       :  6608.56 kev
Sensitivity       :     3.00             Sum Sensitivity  :     1.00
```

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	5321.84	639	0	29.10	332.67	321	19	5.32E-02	4.0	
2	0	5704.06	7	0	29.10	385.83	383	7	5.83E-04	37.8	
3	0	6304.80	11	0	14.55	469.57	467	7	9.17E-04	30.2	

VMS Nuclide Identification Report V3.1 Generated 20-JUN-2006 20:43:35

```
Configuration     : RDND06$DKA100:[ALP84.SAMPLE]H4XQH1AG_200661723.CNF;1
Analyses by       : ALPHA V1.8,PEAKEFF V2.2,NID V3.4
Sample title      : U BRC
Sample date       : 20-APR-2006 12:00:00 Acquisition date : 20-JUN-2006 17:23:27
Sample ID         : H4XQH1AG             Sample quantity  : 0.00000E+00 SAMPLE
Sample type       : disk                 Sample geometry  :
Detector name     : ALP84                Detector geometry:
Elapsed live time: 0 03:20:01.00         Elapsed real time: 0 03:20:01.00   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                     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:[ALP84.SAMPLE]H4XQH1AG_200661723.CNF;1

Peak Energy	Left Chan	Rght Chan	Peak Area	Total Counts	Diff/ StDev	Overlap Counts	Multiplet Diff/StDev
5321.83	321	340	639	639	0.00		
5704.06	383	390	7	7	0.00		
6304.80	467	474	11	10	0.30		

End of Report

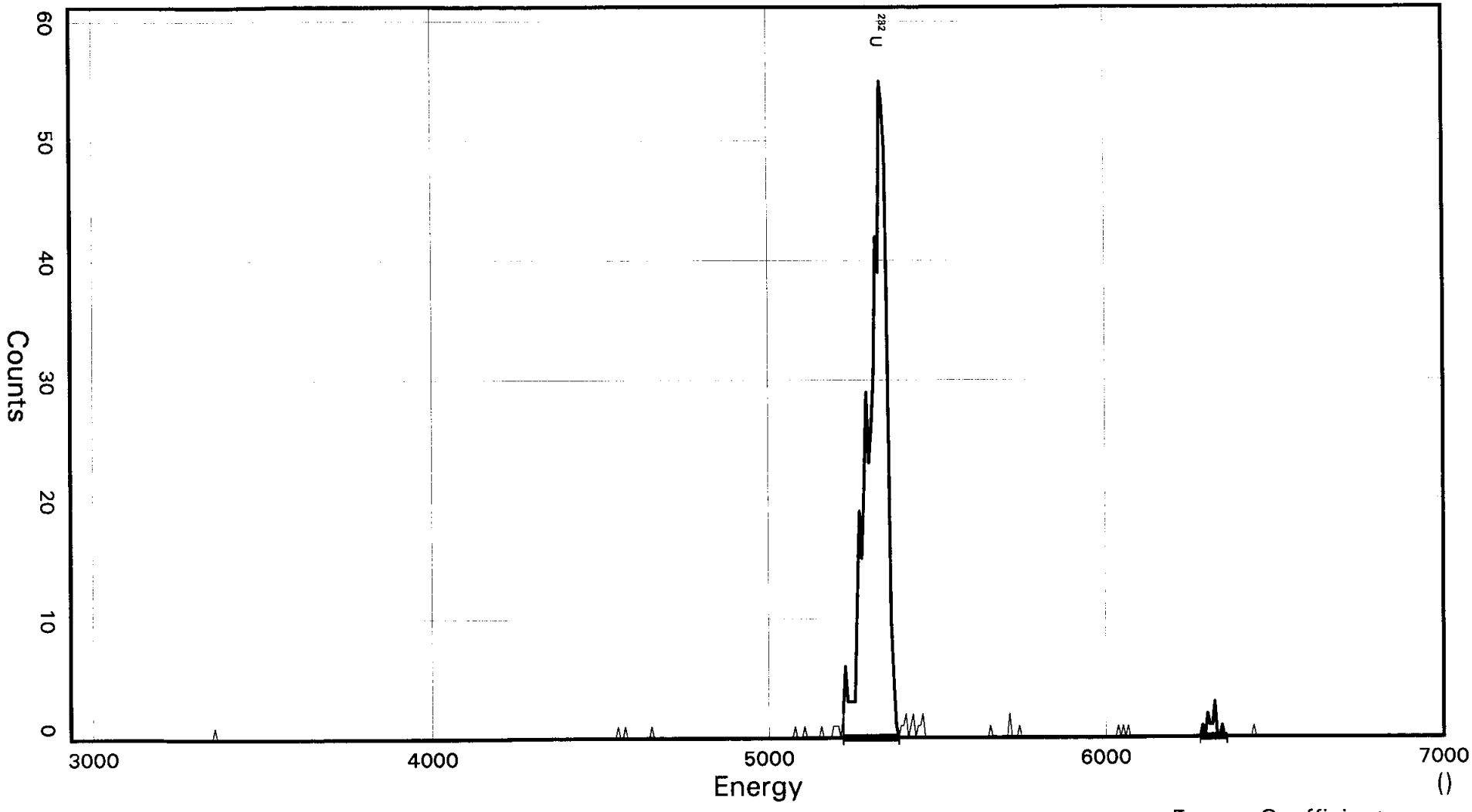
STL Richland WA.

U BRC

Sample ID: H4XQM1AG

Detector ID: ALP85 1

Batch ID: 6129273



Acquisition Start: 20-JUN-2006 17:23:39.17

Preset Live Time: 0 03:20:00.00

Elapsed Live Time: 0 03:20:04.00

Energy Coefficients:

Offset: 2.91304E+03

Slope: 7.16241E+00

Quadrature: 6.93387E-06

SAMPLE IDENTIITY: H4XQM1AG

TITLE : U BRC

DETECTOR : ALP85 1
CONFIGURATION NAME : RDND06$DKA100:[ALP85.SAMPLE]H4XQM1AG_2006617
23.CNF;1
ACQUIRE DATE of BACKGROUND: 09-JUN-2006 06:58:12

REPORT DATE : 20-Jun-06 SAMPLE DATE: 20-APR-2006 12:00:00
ACQUIRE DATE: 20-JUN-2006 17:23:39 CALIB DATE : 09-JUN-2006 06:21:45

PRESET LIVE TIME: 0 03:20:00 ELAPSED LIVE TIME: 0 03:20:04

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: H4XQM1AG

Detector: ALP85 1
Report Date: 20-Jun-06 08:43 PM
Acquire Date: 20-JUN-2006 17:23:39.17
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	477	45	0	2.366	5329.8	164.8	322	345	0.00	0.00	P
U-234	0	5	0	-0.002	4784.2	164.8	246	269	0.00	0.00	
U-235	0	1	0	0.000	4407.4	164.8	193	216	0.00	0.00	
U-238	0	0	0	0.000	4207.6	164.8	165	188	0.00	0.00	

End of Alpha Region Report
(Produced by Alp_rgn_cnts)

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

Sample Identity: H4XQM1AG
Detector: ALP85 1
Report Date: 20-Jun-06 08:43 PM
Acquire Date: 20-JUN-2006 17:23:39.17

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	1		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	1		354	0		404	0		454	0		504
0		5	0		55	0		105	0		155	0	+	205	0	+	255	0		305	2		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	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	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	1		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	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	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	1		319	0		369	0		419	0		469			
0		20	0		70	0		120	0	+	170	0		220	0		270	1		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	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	6	+	323	0		373	0		423	2		473			
0		24	0		74	0		124	0	+	174	0		224	0		274	3	+	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	0		126	0	+	176	0		226	0		276	3	+	326	0		376	0		426	3		476			
0		27	0		77	0		127	0	+	177	0		227	0		277	3	+	327	0		377	0		427	0		477			
0		28	0		78	0		128	0	+	178	0		228	0		278	11	+	328	0		378	0		428	0		478			
0		29	0		79	0		129	0	+	179	1		229	0		279	19	+	329	0		379	0		429	1		479			
0		30	0		80	0		130	0	+	180	0		230	0		280	15	+	330	0		380	0		430	0		480			
0		31	0		81	0		131	0	+	181	0		231	0		281	21	+	331	0		381	0		431	0		481			
0		32	0		82	0		132	0	+	182	1		232	0		282	29	+	332	0		382	0		432	0		482			
0		33	0		83	0		133	0	+	183	0		233	0		283	23	+	333	1		383	0		433	0		483			
0		34	0		84	0		134	0	+	184	0		234	0		284	26	+	334	0		384	0		434	0		484			
0		35	0		85	0		135	0	+	185	0		235	0		285	30	+	335	0		385	0		435	0		485			
0		36	0		86	0		136	0	+	186	0		236	0		286	42	+	336	0		386	1		436	0		486			
0		37	0		87	0		137	0	+	187	0		237	0		287	39	+	337	0		387	0		437	0		487			
0		38	0		88	0		138	0	+	188	0		238	0		288	55	+	338	0		388	1		438	0		488			
0		39	0		89	0		139	0		189	0		239	0		289	53	+	339	0		389	0		439	0		489			
0		40	0		90	0		140	0		190	0		240	0		290	49	+	340	0		390	1		440	0		490			
0		41	0		91	0		141	0		191	0		241	0		291	29	+	341	2		391	0		441	0		491			
0		42	0		92	0		142	0		192	0		242	0		292	10	+	342	0		392	0		442	1		492			
0		43	0		93	0		143	0	+	193	1		243	0		293	5	+	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	0		345	1		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	1		347	0		397	0		447	0		497			
0		48	0		98	0		148	0	+	198	0	+	248	0		298	2		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 20-JUN-2006 20:43:48

```
Configuration     : RDND06$DKA100:[ALP85.SAMPLE]H4XQM1AG_200661723.CNF;1
Analyses by       : ALPHA V1.8
Sample title      : U BRC
Sample date       : 20-APR-2006 12:00:00 Acquisition date : 20-JUN-2006 17:23:39
Sample ID         : H4XQM1AG             Sample quantity  : 0.00000E+00 SAMPLE
Sample type       : disk                 Sample geometry  :
Detector name     : ALP85                Detector geometry:
Elapsed live time: 0 03:20:04.00         Elapsed real time: 0 03:20:04.00   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	5329.78	477	0	64.46	337.31	322	23	3.97E-02	4.6	
2	0	6300.97	9	0	28.65	472.80	470	11	7.50E-04	33.3	

VMS Nuclide Identification Report V3.1 Generated 20-JUN-2006 20:43:49

```
Configuration     : RDND06$DKA100:[ALP85.SAMPLE]H4XQM1AG_200661723.CNF;1
Analyses by       : ALPHA V1.8,PEAKEFF V2.2,NID V3.4
Sample title      : U BRC
Sample date       : 20-APR-2006 12:00:00 Acquisition date : 20-JUN-2006 17:23:39
Sample ID         : H4XQM1AG             Sample quantity  : 0.00000E+00 SAMPLE
Sample type       : disk                 Sample geometry  :
Detector name     : ALP85                Detector geometry:
Elapsed live time: 0 03:20:04.00         Elapsed real time: 0 03:20:04.00   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                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:[ALP85.SAMPLE]H4XQM1AG_200661723.CNF;1

Peak Energy	Left Chan	Rght Chan	Peak Area	Total Counts	Diff/ StDev	Overlap Counts	Multiplet Diff/StDev
5329.77	322	345	477	477	0.00		
6300.97	470	481	9	9	0.00		

End of Report

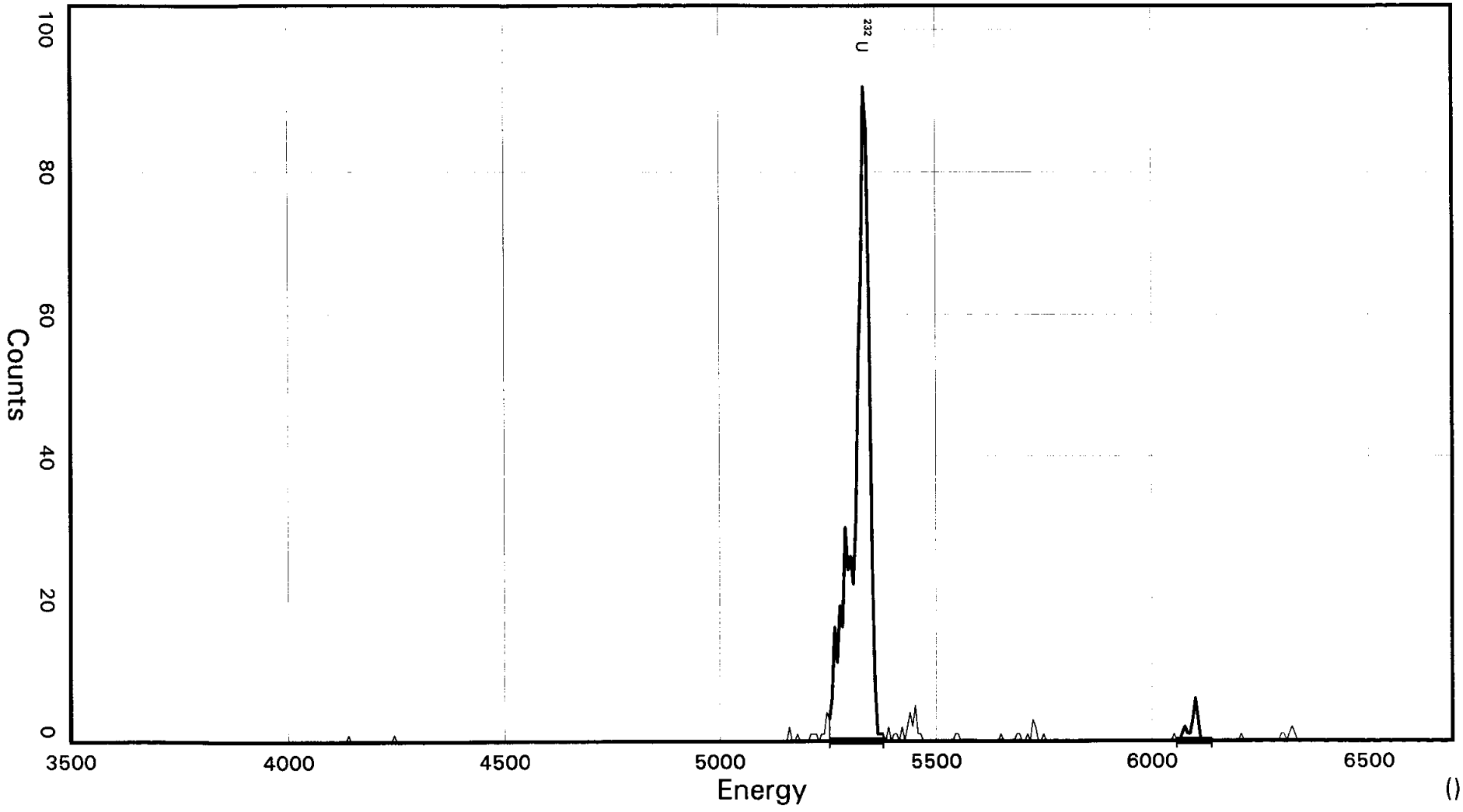
STL Richland WA.

U BRC

Sample ID: H4XQN1AG

Detector ID: ALP87 1

Batch ID: 6129273



Acquisition Start: 20-JUN-2006 17:23:55.05

Preset Live Time: 0 03:20:00.00

Elapsed Live Time: 0 03:20:03.00

Energy Coefficients:

Offset: 3.52509E+03

Slope: 6.19894E+00

Quadrature: -2.09215E-05

SAMPLE IDENTIITY: H4XQN1AG

TITLE : U BRC

DETECTOR : ALP87 1
CONFIGURATION NAME : RDND06$DKA100:[ALP87.SAMPLE]H4XQN1AG_2006617
23.CNF;1
ACQUIRE DATE of BACKGROUND: 09-JUN-2006 06:58:13

REPORT DATE : 20-Jun-06 SAMPLE DATE: 20-APR-2006 12:00:00
ACQUIRE DATE: 20-JUN-2006 17:23:55 CALIB DATE : 09-JUN-2006 06:21:54

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

OFFSET : 3525.09 keV CONSTANT FWHM : 9.33333 Channels
SLOPE : 6.19894 keV/C SENSITIVITY : 4.00000 Std Dev's
QUAD COEFF : -.209215E-04 keV/C^2 SUM SENSITIVITY: 1.00000 %

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

Sample Identity: H4XQN1AG

Detector: ALP87 1
Report Date: 20-Jun-06 08:44 PM
Acquire Date: 20-JUN-2006 17:23:55.05
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	604	8	0	3.011	5333.6	123.7	279	299	0.00	0.00	P
U-234	0	2	0	-0.002	4788.0	123.8	191	211	0.00	0.00	
U-235	0	0	0	0.000	4411.2	123.9	130	150	0.00	0.00	
U-238	2	0	0	0.010	4211.4	123.9	98	118	0.00	0.00	

End of Alpha Region Report
(Produced by Alp_rgn_cnts)

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

Sample Identity: H4XQN1AG
Detector: ALP87 1
Report Date: 20-Jun-06 08:44 PM
Acquire Date: 20-JUN-2006 17:23:55.05

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	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	2		452	0		502
0		3	0		53	0	+	103	0		153	0	+	203	0		253	1		303	1		353	0		403	1		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	3		355	0		405	0		455	0		505
0		6	0		56	0	+	106	0		156	0	+	206	0		256	2		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	2		308	0		358	1		408	0		458	0		508
0		9	0		59	0	+	109	0		159	0	+	209	0		259	4		309	1		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	5		311	0		361	1		411	0		461	0		511
0		12	0		62	0	+	112	0		162	0		212	0		262	1		312	0		362	2		412	0		462	0		512
0		13	0		63	0	+	113	0		163	0		213	0		263	1		313	0		363	1		413	0		463			
0		14	0		64	0	+	114	0		164	0		214	2		264	0		314	0		364	1		414	0		464			
0		15	0		65	0	+	115	0		165	0		215	0		265	0		315	0		365	3		415	0		465			
0		16	0		66	1	+	116	0		166	0		216	0		266	0		316	0		366	6		416	0		466			
0		17	0		67	0	+	117	0		167	0		217	1		267	0		317	0		367	3		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	0		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	0		471			
0		22	0		72	0		122	0		172	0		222	1		272	0		322	0		372	0		422	0		472			
0		23	0		73	0		123	0		173	0		223	1		273	0		323	0		373	0		423	0		473			
0		24	0		74	0		124	0		174	0		224	1		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	0		425	0		475			
0		26	0		76	0		126	0		176	0		226	1		276	1		326	0		376	0		426	0		476			
0		27	0		77	0		127	0		177	0		227	1		277	1		327	0		377	0		427	0		477			
0		28	0		78	0		128	0		178	0		228	4		278	0		328	0		378	0		428	0		478			
0		29	0		79	0		129	0		179	0		229	3	+	279	0		329	0		379	0		429	0		479			
0		30	0		80	0	+	130	0		180	0		230	6	+	280	0		330	0		380	0		430	0		480			
0		31	0		81	0	+	131	0		181	0		231	16	+	281	0		331	0		381	0		431	0		481			
0		32	0		82	0	+	132	0		182	0		232	11	+	282	0		332	0		382	0		432	0		482			
0		33	0		83	0	+	133	0		183	0		233	19	+	283	0		333	0		383	1		433	0		483			
0		34	0		84	0	+	134	0		184	0		234	16	+	284	0		334	0		384	0		434	0		484			
0		35	0		85	0	+	135	0		185	0		235	30	+	285	0		335	0		385	0		435	0		485			
0		36	0		86	0	+	136	0		186	0		236	24	+	286	0		336	0		386	0		436	0		486			
0		37	0		87	0	+	137	0		187	0		237	26	+	287	0		337	0		387	0		437	0		487			
0		38	0		88	0	+	138	0		188	0		238	22	+	288	0		338	0		388	0		438	0		488			
0		39	0		89	0	+	139	0		189	0		239	31	+	289	0		339	0		389	0		439	0		489			
0		40	0		90	0	+	140	0		190	0		240	54	+	290	0		340	0		390	0		440	0		490			
0		41	0		91	0	+	141	0	+	191	0		241	66	+	291	0		341	0		391	0		441	0		491			
0		42	0		92	0	+	142	0	+	192	0		242	92	+	292	0		342	0		392	0		442	0		492			
0		43	0		93	0	+	143	0	+	193	0		243	86	+	293	1		343	0		393	0		443	0		493			
0		44	0		94	0	+	144	0	+	194	0		244	61	+	294	0		344	0		394	0		444	0		494			
0		45	0		95	0	+	145	0	+	195	0		245	27	+	295	0		345	0		395	0		445	0		495			
0		46	0		96	0	+	146	0	+	196	0		246	8	+	296	0		346	0		396	0		446	0		496			
0		47	0		97	0	+	147	0	+	197	0		247	1	+	297	0		347	0		397	0		447	0		497			
0		48	0	+	98	0	+	148	0	+	198	0		248	1	+	298	0		348	0		398	1		448	0		498			
0		49	1	+	99	0	+	149	0	+	199	0		249	1		299	1		349	0		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 20-JUN-2006 20:44:00

```
Configuration     : RDND06$DKA100:[ALP87.SAMPLE]H4XQN1AG_200661723.CNF;1
Analyses by       : ALPHA V1.8
Sample title      : U BRC
Sample date       : 20-APR-2006 12:00:00 Acquisition date : 20-JUN-2006 17:23:55
Sample ID         : H4XQN1AG             Sample quantity  : 0.00000E+00 SAMPLE
Sample type       : disk                 Sample geometry  :
Detector name     : ALP87                Detector geometry:
Elapsed live time: 0 03:20:03.00         Elapsed real time: 0 03:20:03.00   0.0%
Start energy      :  3543.68             End energy       :  6693.46
Sensitivity       :     4.00             Sum Sensitivity  :     1.00
```

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	5333.56	604	0	30.99	292.03	279	20	5.03E-02	4.1	
2	0	6097.13	20	0	37.19	415.50	409	13	1.67E-03	22.4	

VMS Nuclide Identification Report V3.1 Generated 20-JUN-2006 20:44:02

```
Configuration     : RDND06$DKA100:[ALP87.SAMPLE]H4XQN1AG_200661723.CNF;1
Analyses by       : ALPHA V1.8,PEAKEFF V2.2,NID V3.4
Sample title      : U BRC
Sample date       : 20-APR-2006 12:00:00 Acquisition date : 20-JUN-2006 17:23:55
Sample ID         : H4XQN1AG             Sample quantity  : 0.00000E+00 SAMPLE
Sample type       : disk                 Sample geometry  :
Detector name     : ALP87                Detector geometry:
Elapsed live time: 0 03:20:03.00         Elapsed real time: 0 03:20:03.00   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:[ALP87.SAMPLE]H4XQN1AG_200661723.CNF;1

Peak Energy	Left Chan	Rght Chan	Peak Area	Total Counts	Diff/ StDev	Overlap Counts	Multiplet Diff/StDev
5333.55	279	299	604	601	0.12		
6097.13	409	422	20	17	0.67		

End of Report

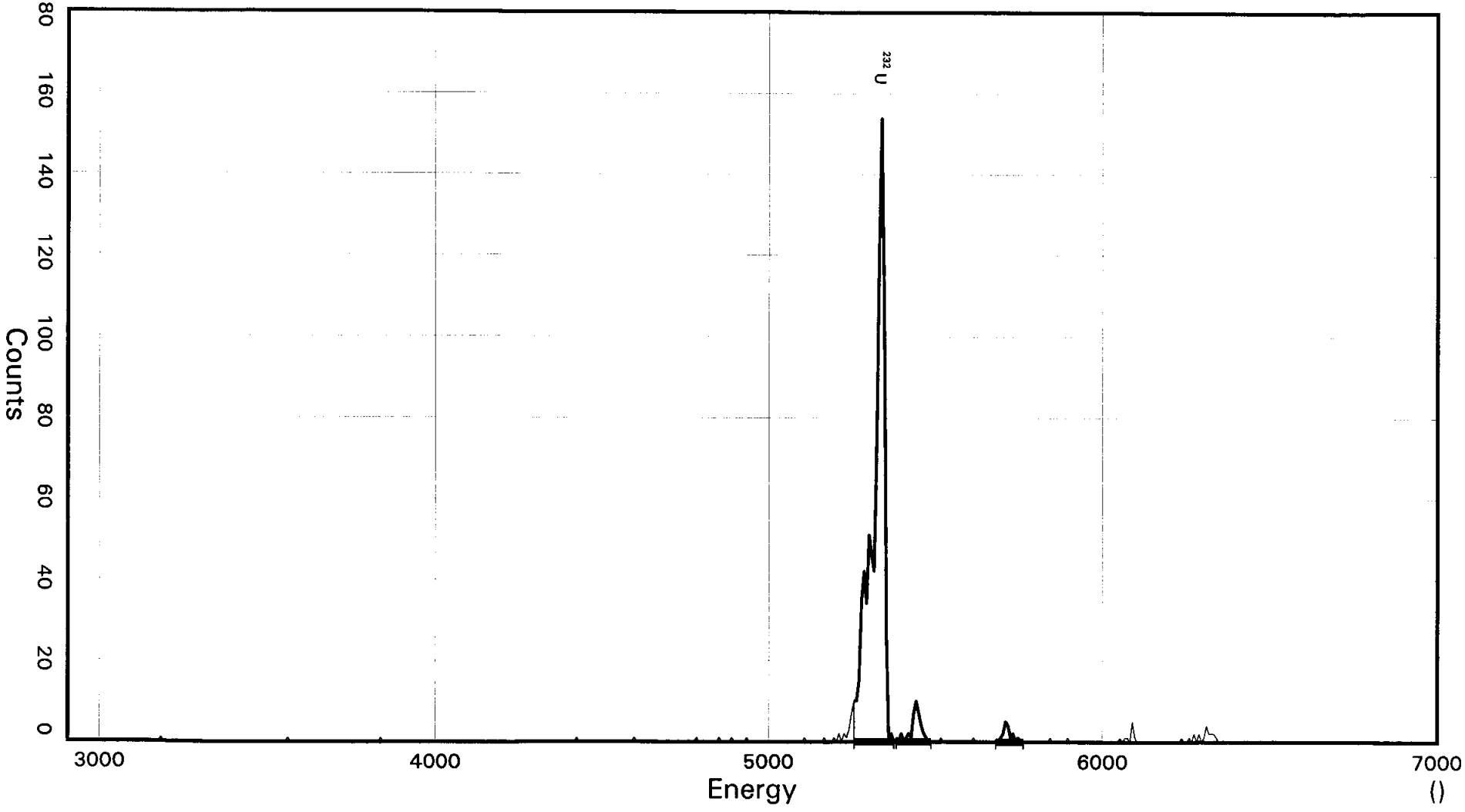
STL Richland WA.

U BRC

Sample ID: H4XQQ1AG

Detector ID: ALP1 1

Batch ID: 6129273



Acquisition Start: 20-JUN-2006 17:24:57.49

Preset Live Time: 0 03:20:00.00

Elapsed Live Time: 0 03:20:03.00

Energy Coefficients:

Offset: 2.88299E+03

Slope: 7.51639E+00

Quadrature: -9.96225E-05

SAMPLE IDENTIITY: H4XQQ1AG

TITLE : U BRC

DETECTOR : ALP1 1
CONFIGURATION NAME : $DISK1:[ALP1.SAMPLE]H4XQQ1AG_200661724.CNF;1

ACQUIRE DATE of BACKGROUND: 02-JUN-2006 07:26:49

REPORT DATE : 20-Jun-06 SAMPLE DATE: 20-APR-2006 12:00:00
ACQUIRE DATE: 20-JUN-2006 17:24:57 CALIB DATE : 01-JUN-2006 23:52:47

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

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: H4XQQ1AG

Detector: ALP1 1
Report Date: 20-Jun-06 08:45 PM
Acquire Date: 20-JUN-2006 17:24:57.49
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	785	8	0	3.916	5333.6	119.2	317	333	0.00	0.00	P
U-234	1	2	0	0.003	4788.0	119.5	244	260	0.00	0.00	
U-235	1	1	0	0.004	4411.2	119.6	193	209	0.00	0.00	
U-238	0	2	0	-0.002	4211.4	119.7	167	183	0.00	0.00	

End of Alpha Region Report
(Produced by Alp_rgn_cnts)

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

Sample Identity: H4XQQ1AG
Detector: ALP1 1
Report Date: 20-Jun-06 08:45 PM
Acquire Date: 20-JUN-2006 17:24:57.49

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	1		352	0		402	1		452	0		502
0		3	0		53	0		103	0		153	0	+	203	0	+	253	0		303	0		353	1		403	0		453	0		503
0		4	0		54	0		104	0		154	0	+	204	1	+	254	0		304	0		354	0		404	2		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	1	+	206	0	+	256	0		306	0		356	0		406	2		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	1		458	0		508
0		9	0		59	0		109	0		159	0	+	209	0	+	259	1		309	0		359	0		409	4		459	0		509
0		10	0		60	0		110	0		160	0		210	0	+	260	0		310	0		360	0		410	2		460	0		510
0		11	0		61	0		111	0		161	0		211	0		261	2		311	0		361	0		411	2		461	0		511
0		12	0		62	0		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	1		263	2		313	0		363	0		413	1		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	3		315	1		365	0		415	0		465			
0		16	0		66	0		116	0		166	0		216	0		266	7		316	0		366	0		416	0		466			
0		17	0		67	0		117	0	+	167	0		217	0		267	10	+	317	0		367	0		417	0		467			
0		18	0		68	0		118	0	+	168	0		218	1		268	10	+	318	0		368	0		418	0		468			
0		19	0		69	0		119	0	+	169	0		219	0		269	15	+	319	0		369	0		419	0		469			
0		20	0		70	0		120	0	+	170	0		220	0		270	35	+	320	0		370	0		420	0		470			
0		21	0		71	0		121	0	+	171	0		221	0		271	42	+	321	0		371	0		421	0		471			
0		22	0		72	0		122	0	+	172	0		222	0		272	34	+	322	0		372	0		422	0		472			
0		23	0		73	0		123	0	+	173	0		223	0		273	51	+	323	0		373	0		423	0		473			
0		24	0		74	0		124	0	+	174	0		224	1		274	46	+	324	0		374	1		424	0		474			
0		25	0		75	0		125	0	+	175	0		225	0		275	42	+	325	0		375	0		425	0		475			
0		26	0		76	0		126	0	+	176	0		226	0		276	74	+	326	1		376	1		426	0		476			
0		27	0		77	1		127	0	+	177	0		227	0		277	121	+	327	2		377	1		427	0		477			
0		28	0		78	0		128	0	+	178	0		228	0		278	154	+	328	5		378	0		428	0		478			
0		29	0		79	0		129	0	+	179	1		229	0		279	108	+	329	4		379	5		429	0		479			
0		30	0		80	0		130	0	+	180	0		230	0		280	27	+	330	1		380	1		430	0		480			
0		31	0		81	0		131	0	+	181	0		231	0		281	0	+	331	2		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	1		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	2		336	0		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	0		238	0		288	1		338	0		388	0		438	0		488			
0		39	0		89	0		139	0		189	0		239	0		289	2		339	0		389	0		439	0		489			
1		40	1		90	0		140	0		190	0		240	0		290	1		340	0		390	0		440	0		490			
0		41	0		91	0		141	0		191	0		241	0		291	7		341	0		391	0		441	0		491			
0		42	0		92	0		142	0		192	0		242	0		292	10		342	0		392	0		442	0		492			
0		43	0		93	0		143	0	+	193	0		243	0		293	7		343	0		393	0		443	0		493			
0		44	0		94	0		144	0	+	194	0	+	244	0		294	4		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	1		346	1		396	0		446	0		496			
0		47	0		97	0		147	0	+	197	0	+	247	1		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	1		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 20-JUN-2006 20:45:17

```
Configuration     : $DISK1:[ALP1.SAMPLE]H4XQQ1AG_200661724.CNF;1
Analyses by       : ALPHA V1.8
Sample title      : U BRC
Sample date       : 20-APR-2006 12:00:00 Acquisition date : 20-JUN-2006 17:24:57
Sample ID         : H4XQQ1AG             Sample quantity  : 0.00000E+00 SAMPLE
Sample type       : disk                 Sample geometry  :
Detector name     : ALP1                 Detector geometry:
Elapsed live time: 0 03:20:03.00         Elapsed real time: 0 03:20:03.00   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	5333.58	785	0	45.10	327.45	317	16	6.54E-02	3.6	
2	0	5442.71	39	0	37.58	342.10	334	14	3.25E-03	16.0	
3	0	5714.41	17	0	45.10	378.60	374	11	1.42E-03	24.3	

VMS Nuclide Identification Report V3.0 Generated 20-JUN-2006 20:45:20

```
Configuration     : $DISK1:[ALP1.SAMPLE]H4XQQ1AG_200661724.CNF;1
Analyses by       : ALPHA V1.8,PEAKEFF V2.2,NID V3.3
Sample title      : U BRC
Sample date       : 20-APR-2006 12:00:00 Acquisition date : 20-JUN-2006 17:24:57
Sample ID         : H4XQQ1AG             Sample quantity  : 0.00000E+00 SAMPLE
Sample type       : disk                 Sample geometry  :
Detector name     : ALP1                 Detector geometry:
Elapsed live time: 0 03:20:03.00         Elapsed real time: 0 03:20:03.00   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:[ALP1.SAMPLE]H4XQQ1AG_200661724.CNF;1

Peak Energy	Left Chan	Rght Chan	Peak Area	Total Counts	Diff/ StDev	Overlap Counts	Multiplet Diff/StDev
5333.58	317	333	785	771	0.50		
5442.71	334	348	39	38	0.16		
5714.41	374	385	17	16	0.24		

End of Report

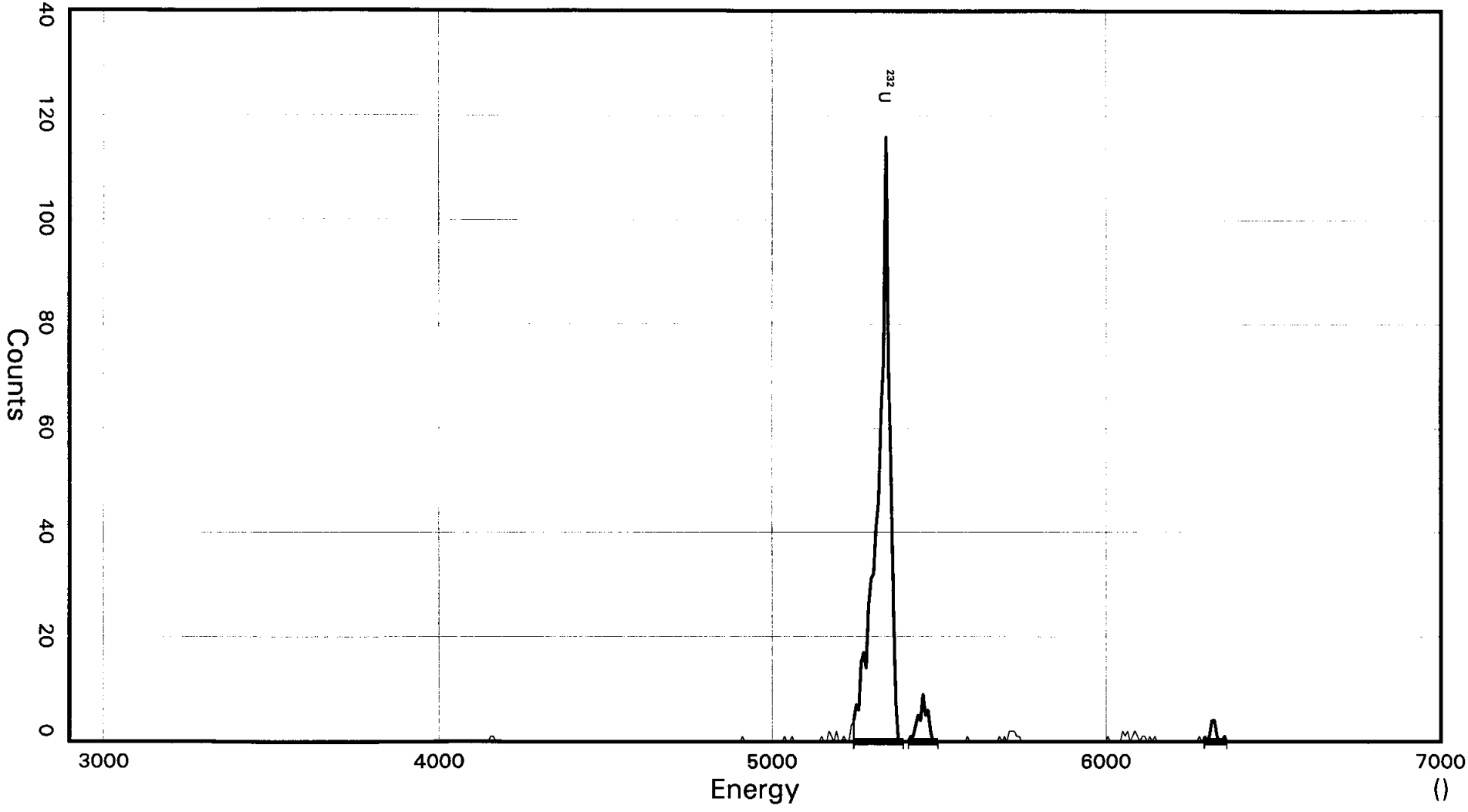
STL Richland WA.

U BRC

Sample ID: H4XQR1AG

Detector ID: ALP2 1

Batch ID: 6129273



Acquisition Start: 20-JUN-2006 17:25:11.69

Preset Live Time: 0 03:20:00.00

Elapsed Live Time: 0 03:20:02.00

Energy Coefficients:

Offset: 2.87588E+03

Slope: 7.40145E+00

Quadrature: -4.99304E-06

SAMPLE IDENTIITY: H4XQR1AG

TITLE : U BRC

DETECTOR : ALP2 1
CONFIGURATION NAME : $DISK1:[ALP2.SAMPLE]H4XQR1AG_200661725.CNF;1

ACQUIRE DATE of BACKGROUND: 03-JUN-2006 09:55:02

REPORT DATE : 20-Jun-06 SAMPLE DATE: 20-APR-2006 12:00:00
ACQUIRE DATE: 20-JUN-2006 17:25:11 CALIB DATE : 02-JUN-2006 00:12:34

PRESET LIVE TIME: 0 03:20:00 ELAPSED LIVE TIME: 0 03:20:02

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: H4XQR1AG

Detector: ALP2 1
Report Date: 20-Jun-06 09:02 PM
Acquire Date: 20-JUN-2006 17:25:11.69
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	653	15	0	3.249	5336.6	148.0	320	340	0.00	0.00	P
U-234	0	0	0	0.000	4791.0	148.0	246	266	0.00	0.00	
U-235	0	1	0	-0.001	4414.2	148.0	195	215	0.00	0.00	
U-238	2	5	0	0.005	4214.4	148.0	168	188	0.00	0.00	

End of Alpha Region Report
(Produced by Alp_rgn_cnts)

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

Sample Identity: H4XQR1AG
Detector: ALP2 1
Report Date: 20-Jun-06 09:02 PM
Acquire Date: 20-JUN-2006 17:25:11.69

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	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	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	2		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	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	2		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	4		465			
0		16	0		66	0		116	0		166	0		216	0	+	266	1		316	1		366	0		416	4		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	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	3		319	0		369	0		419	0		469			
0		20	0		70	0		120	0	+	170	0		220	0		270	4	+	320	0		370	0		420	1		470			
0		21	0		71	0		121	0	+	171	0		221	0		271	7	+	321	0		371	0		421	0		471			
0		22	0		72	0		122	0	+	172	0		222	0		272	6	+	322	0		372	0		422	0		472			
0		23	0		73	0		123	1	+	173	0		223	0		273	15	+	323	0		373	1		423	0		473			
0		24	0		74	0		124	1	+	174	0		224	0		274	17	+	324	0		374	0		424	0		474			
0		25	0		75	0		125	0	+	175	0		225	1		275	14	+	325	0		375	0		425	0		475			
0		26	0		76	0		126	0	+	176	0		226	0		276	26	+	326	0		376	0		426	0		476			
0		27	0		77	0		127	0	+	177	0		227	0		277	31	+	327	0		377	0		427	0		477			
0		28	0		78	0		128	0	+	178	0		228	0		278	32	+	328	0		378	0		428	0		478			
0		29	0		79	0		129	0	+	179	0		229	0		279	41	+	329	1		379	2		429	0		479			
0		30	0		80	0		130	0	+	180	0		230	0		280	46	+	330	0		380	1		430	0		480			
0		31	0		81	0		131	0	+	181	0		231	0		281	63	+	331	1		381	2		431	0		481			
0		32	0		82	0		132	0	+	182	0		232	0		282	73	+	332	0		382	0		432	0		482			
0		33	0		83	0		133	0	+	183	0		233	0		283	116	+	333	2		383	1		433	0		483			
0		34	0		84	0		134	0	+	184	0		234	0		284	72	+	334	2		384	2		434	0		484			
0		35	0		85	0		135	0	+	185	0		235	0		285	52	+	335	2		385	1		435	0		485			
0		36	0		86	0		136	0	+	186	0		236	0		286	26	+	336	1		386	0		436	0		486			
0		37	0		87	0		137	0	+	187	0		237	0		287	7	+	337	1		387	1		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	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	1		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	1		344	0		394	0		444	0		494			
0		45	0		95	0		145	0	+	195	0		245	1		295	3		345	0		395	0		445	0		495			
0		46	0		96	0		146	0	+	196	0	+	246	0		296	5		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	9		348	0		398	0		448	0		498			
0		49	0		99	0		149	0	+	199	0	+	249	0		299	5		349	0		399	0		449	0		499			
0		50	0		100	0		150	0	+	200	0	+	250	0		300	6		350	0		400	0		450	0		500			

VMS Peak Search Report V1.9 Generated 20-JUN-2006 21:02:16

```
Configuration     : $DISK1:[ALP2.SAMPLE]H4XQR1AG_200661725.CNF;1
Analyses by       : ALPHA V1.8
Sample title      : U BRC
Sample date       : 20-APR-2006 12:00:00 Acquisition date : 20-JUN-2006 17:25:11
Sample ID         : H4XQR1AG             Sample quantity  : 0.00000E+00 SAMPLE
Sample type       : disk                 Sample geometry  :
Detector name     : ALP2                 Detector geometry:
Elapsed live time: 0 03:20:02.00         Elapsed real time: 0 03:36:44.00   7.7%
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	5336.55	653	0	44.41	332.53	320	20	5.44E-02	3.9	
2	0	5448.69	35	0	44.41	347.69	342	12	2.92E-03	16.9	
3	0	6318.12	10	0	37.01	465.22	462	9	8.33E-04	31.6	

VMS Nuclide Identification Report V3.0 Generated 20-JUN-2006 21:02:18

```
Configuration     : $DISK1:[ALP2.SAMPLE]H4XQR1AG_200661725.CNF;1
Analyses by       : ALPHA V1.8,PEAKEFF V2.2,NID V3.3
Sample title      : U BRC
Sample date       : 20-APR-2006 12:00:00 Acquisition date : 20-JUN-2006 17:25:11
Sample ID         : H4XQR1AG             Sample quantity  : 0.00000E+00 SAMPLE
Sample type       : disk                 Sample geometry  :
Detector name     : ALP2                 Detector geometry:
Elapsed live time: 0 03:20:02.00         Elapsed real time: 0 03:36:44.00   7.7%
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:[ALP2.SAMPLE]H4XQR1AG_200661725.CNF;1

Peak Energy	Left Chan	Rght Chan	Peak Area	Total Counts	Diff/ StDev	Overlap Counts	Multiplet Diff/StDev
5336.55	320	340	653	648	0.20		
5448.68	342	354	35	36	-0.17		
6318.12	462	471	10	12	-0.63		

End of Report

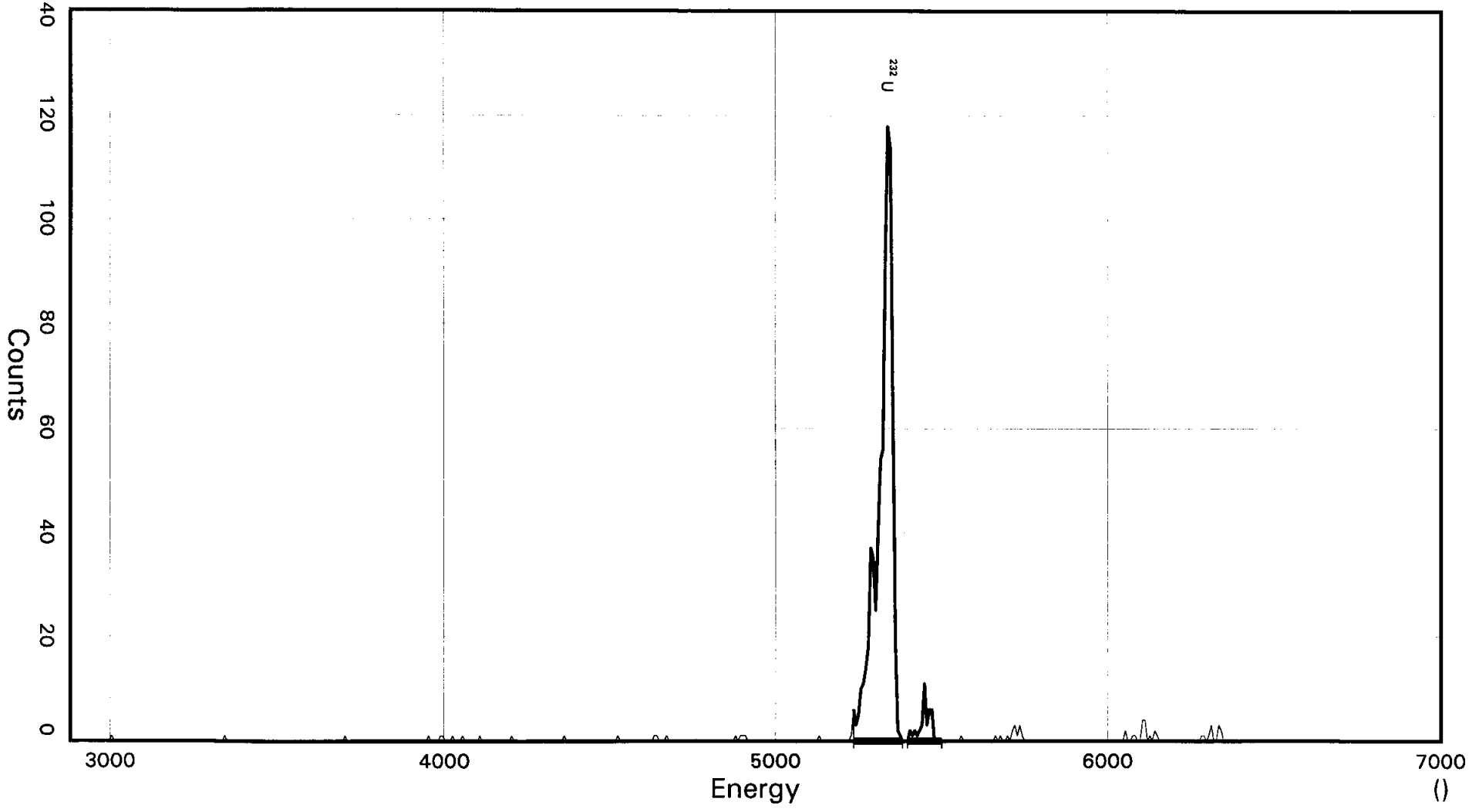
STL Richland WA.

U BRC

Sample ID: H4XQT1AG

Detector ID: ALP3 1

Batch ID: 6129273



Acquisition Start: 20-JUN-2006 17:25:22.92

Preset Live Time: 0 03:20:00.00

Elapsed Live Time: 0 03:20:06.00

Energy Coefficients:

Offset: 2.85788E+03

Slope: 7.33691E+00

Quadrature: 5.98118E-05

SAMPLE IDENTIITY: H4XQT1AG

TITLE : U BRC

DETECTOR : ALP3 1
CONFIGURATION NAME : $DISK1:[ALP3.SAMPLE]H4XQT1AG_200661725.CNF;1

ACQUIRE DATE of BACKGROUND: 02-JUN-2006 07:26:57

REPORT DATE : 20-Jun-06 SAMPLE DATE: 20-APR-2006 12:00:00
ACQUIRE DATE: 20-JUN-2006 17:25:22 CALIB DATE : 01-JUN-2006 23:53:16

PRESET LIVE TIME: 0 03:20:00 ELAPSED LIVE TIME: 0 03:20:06

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: H4XQT1AG

Detector: ALP3 1
Report Date: 20-Jun-06 08:45 PM
Acquire Date: 20-JUN-2006 17:25:22.92
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	731	19	0	3.634	5337.2	147.5	323	343	0.00	0.00	P
U-234	0	5	0	-0.005	4791.7	147.4	249	269	0.00	0.00	
U-235	1	3	0	0.002	4414.9	147.2	198	218	0.00	0.00	
U-238	1	6	0	-0.001	4215.1	147.2	171	191	0.00	0.00	

End of Alpha Region Report
(Produced by Alp_rgn_cnts)

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

Sample Identity: H4XQT1AG
Detector: ALP3 1
Report Date: 20-Jun-06 08:45 PM
Acquire Date: 20-JUN-2006 17:25:22.92

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	3		351	0		401	0		451	0		501
		2	0		52	0		102	0		152	0	+	202	0	+	252	0		302	11		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	1		154	0	+	204	0	+	254	0		304	6		354	0		404	0		454	0		504
0		5	0		55	0		105	1		155	1	+	205	0	+	255	0		305	6		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	1		159	0	+	209	0	+	259	1		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	1		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	1		115	0		165	0	+	215	0	+	265	0		315	0		365	0		415	1		465			
0		16	1		66	0		116	0		166	0	+	216	0	+	266	0		316	0		366	0		416	1		466			
0		17	0		67	0		117	0		167	0	+	217	0	+	267	0		317	1		367	0		417	0		467			
0		18	0		68	0		118	0		168	0	+	218	0	+	268	0		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	3		469			
1		20	0		70	0		120	1		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	0		471			
0		22	0		72	0		122	0	+	172	0		222	0		272	1		322	0		372	0		422	3		472			
0		23	0		73	0		123	0	+	173	0		223	0		273	6	+	323	0		373	0		423	2		473			
0		24	0		74	0		124	0	+	174	0		224	0		274	3	+	324	0		374	0		424	0		474			
0		25	0		75	0		125	0	+	175	0		225	1		275	5	+	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	1		227	1		277	11	+	327	0		377	0		427	0		477			
0		28	0		78	0		128	0	+	178	0		228	1		278	14	+	328	0		378	0		428	0		478			
0		29	0		79	0		129	0	+	179	0		229	1		279	18	+	329	0		379	0		429	0		479			
0		30	0		80	0		130	0	+	180	0		230	0		280	37	+	330	0		380	0		430	0		480			
0		31	0		81	0		131	0	+	181	0		231	0		281	35	+	331	1		381	0		431	0		481			
0		32	0		82	0		132	0	+	182	0		232	0		282	25	+	332	0		382	0		432	0		482			
0		33	0		83	0		133	1	+	183	0		233	0		283	41	+	333	1		383	0		433	0		483			
0		34	0		84	0		134	0	+	184	0		234	0		284	54	+	334	0		384	2		434	0		484			
0		35	0		85	0		135	0	+	185	0		235	0		285	56	+	335	0		385	0		435	0		485			
0		36	0		86	0		136	0	+	186	0		236	0		286	94	+	336	1		386	0		436	0		486			
0		37	0		87	0		137	0	+	187	0		237	0		287	118	+	337	0		387	1		437	0		487			
0		38	0		88	0		138	0	+	188	0		238	0		288	114	+	338	2		388	1		438	0		488			
0		39	0		89	0		139	0	+	189	0		239	0		289	65	+	339	3		389	0		439	0		489			
0		40	0		90	0		140	0	+	190	0		240	0		290	19	+	340	1		390	0		440	0		490			
0		41	0		91	0		141	0	+	191	0		241	0		291	2	+	341	3		391	4		441	0		491			
0		42	0		92	0		142	0		192	1		242	0		292	1	+	342	1		392	4		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	0		244	0		294	0		344	0		394	1		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	2		346	0		396	2		446	0		496			
0		47	0		97	0		147	0		197	1		247	0		297	1		347	0		397	1		447	0		497			
0		48	0		98	0		148	0	+	198	0		248	0		298	2		348	0		398	0		448	0		498			
0		49	0		99	1		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	2		350	0		400	0		450	0		500			

VMS Peak Search Report V1.9 Generated 20-JUN-2006 20:45:47

```
Configuration     : $DISK1:[ALP3.SAMPLE]H4XQT1AG_200661725.CNF;1
Analyses by       : ALPHA V1.8
Sample title      : U BRC
Sample date       : 20-APR-2006 12:00:00 Acquisition date : 20-JUN-2006 17:25:22
Sample ID         : H4XQT1AG             Sample quantity  : 0.00000E+00 SAMPLE
Sample type       : disk                 Sample geometry  :
Detector name     : ALP3                 Detector geometry:
Elapsed live time: 0 03:20:06.00         Elapsed real time: 0 03:20:08.00   0.0%
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	5337.25	731	0	36.68	337.00	323	20	6.09E-02	3.7	
2	0	5452.19	37	0	29.35	352.58	345	14	3.08E-03	16.4	

VMS Nuclide Identification Report V3.0 Generated 20-JUN-2006 20:45:50

```
Configuration     : $DISK1:[ALP3.SAMPLE]H4XQT1AG_200661725.CNF;1
Analyses by       : ALPHA V1.8,PEAKEFF V2.2,NID V3.3
Sample title      : U BRC
Sample date       : 20-APR-2006 12:00:00 Acquisition date : 20-JUN-2006 17:25:22
Sample ID         : H4XQT1AG             Sample quantity  : 0.00000E+00 SAMPLE
Sample type       : disk                 Sample geometry  :
Detector name     : ALP3                 Detector geometry:
Elapsed live time: 0 03:20:06.00         Elapsed real time: 0 03:20:08.00   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                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]H4XQT1AG_200661725.CNF;1

Peak Energy	Left Chan	Rght Chan	Peak Area	Total Counts	Diff/ StDev	Overlap Counts	Multiplet Diff/StDev
5337.24	323	343	731	728	0.11		
5452.18	345	359	37	37	0.00		

End of Report

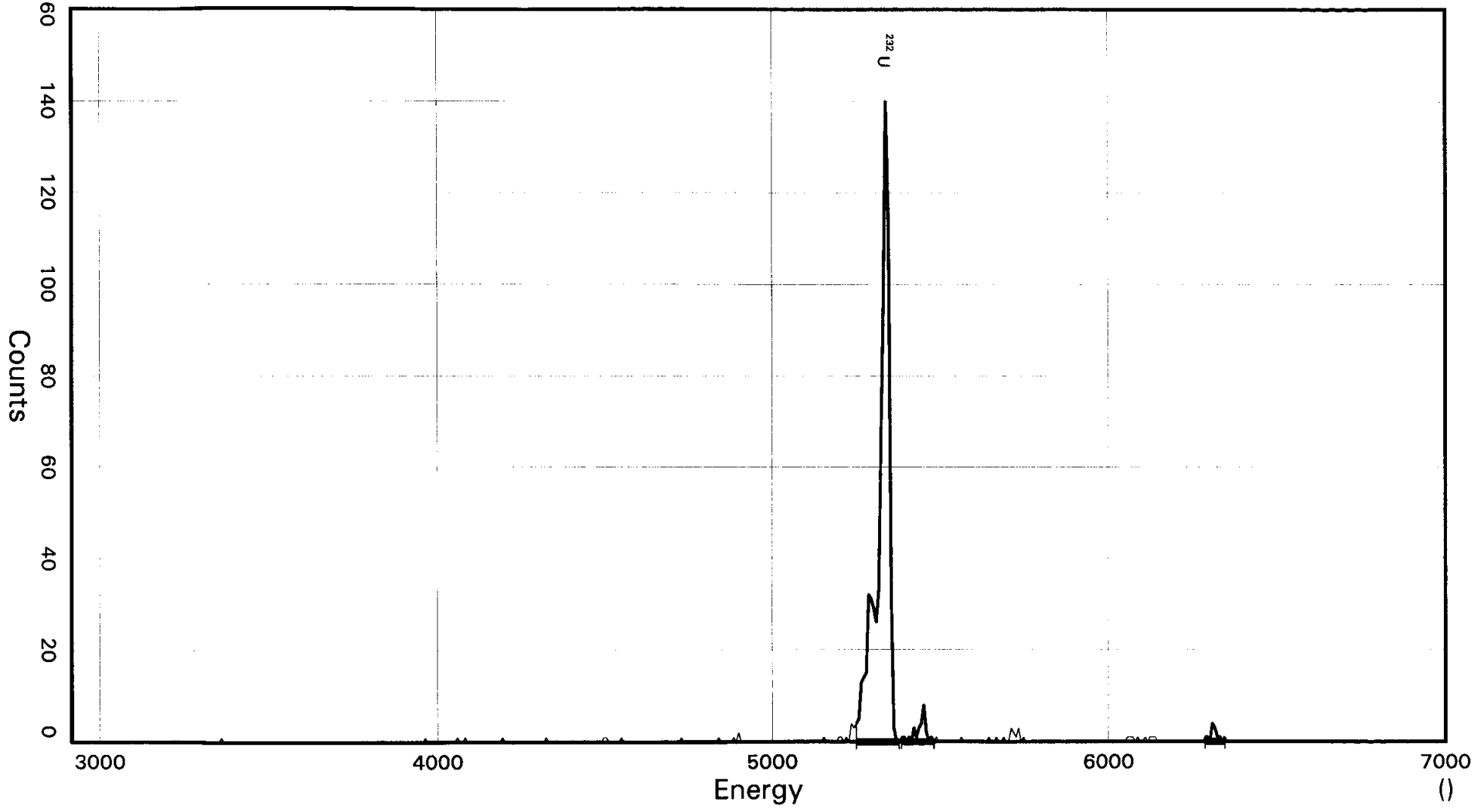
STL Richland WA.

U BRC

Sample ID: H4X1R1AG

Detector ID: ALP4 1

Batch ID: 6129273



Acquisition Start: 20-JUN-2006 17:25:37.76

Preset Live Time: 0 03:20:00.00

Elapsed Live Time: 0 03:20:03.00

Energy Coefficients:

Offset: 2.89454E+03

Slope: 7.47977E+00

Quadrature: -9.32582E-05

SAMPLE IDENTIITY: H4X1R1AG

TITLE : U BRC

DETECTOR : ALP4 1
CONFIGURATION NAME : $DISK1:[ALP4.SAMPLE]H4X1R1AG_200661725.CNF;1

ACQUIRE DATE of BACKGROUND: 02-JUN-2006 07:27:01

REPORT DATE : 20-Jun-06 SAMPLE DATE: 20-APR-2006 12:00:00
ACQUIRE DATE: 20-JUN-2006 17:25:37 CALIB DATE : 01-JUN-2006 23:53:05

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

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: H4X1R1AG

Detector: ALP4 1
Report Date: 20-Jun-06 08:46 PM
Acquire Date: 20-JUN-2006 17:25:37.76
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	665	6	0	3.318	5335.0	126.1	316	333	0.00	0.00	P
U-234	1	3	0	0.002	4789.5	126.4	243	260	0.00	0.00	
U-235	1	2	0	0.003	4412.7	126.5	192	209	0.00	0.00	
U-238	1	5	0	0.000	4212.9	126.6	165	182	0.00	0.00	

End of Alpha Region Report
(Produced by Alp_rgn_cnts)

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

Sample Identity: H4X1R1AG
Detector: ALP4 1
Report Date: 20-Jun-06 08:46 PM
Acquire Date: 20-JUN-2006 17:25:37.76

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		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		1	156		0+	206		0+	256		0	306		0	356		0	406		1	456		0	506
	0	7		0	57		0	107		0	157		0+	207		0+	257		0	307		0	357		0	407		1	457		0	507
	0	8		0	58		0	108		0	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		0+	259		1	309		0	359		0	409		4	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		1	261		0	311		0	361		0	411		1	461		0	511
	0	12		1	62		0	112		0	162		0	212		0	262		1	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		4	314		0	364		0	414		1	464			
	0	15		0	65		0	115		0+	165		1	215		0	265		3	315		0	365		0	415		0	465			
	0	16		0	66		0	116		0+	166		1	216		0	266		4+	316		0	366		0	416		0	466			
	0	17		0	67		0	117		0+	167		0	217		1	267		5+	317		0	367		0	417		0	467			
	0	18		0	68		0	118		0+	168		0	218		0	268		13+	318		0	368		0	418		0	468			
	0	19		0	69		0	119		0+	169		0	219		2	269		14+	319		1	369		0	419		0	469			
	0	20		0	70		0	120		0+	170		0	220		0	270		15+	320		0	370		0	420		0	470			
	0	21		0	71		0	121		0+	171		0	221		0	271		32+	321		0	371		0	421		0	471			
	0	22		0	72		0	122		0+	172		1	222		0	272		31+	322		1	372		0	422		0	472			
	0	23		0	73		0	123		0+	173		0	223		0	273		29+	323		0	373		0	423		0	473			
	0	24		0	74		0	124		1+	174		0	224		0	274		26+	324		0	374		0	424		0	474			
	0	25		0	75		0	125		0+	175		0	225		0	275		33+	325		1	375		1	425		0	475			
	0	26		0	76		0	126		0+	176		0	226		0	276		67+	326		0	376		1	426		0	476			
	0	27		0	77		0	127		0+	177		0	227		0	277		96+	327		0	377		1	427		0	477			
	0	28		0	78		0	128		0+	178		0	228		0	278		140+	328		3	378		0	428		0	478			
	0	29		0	79		0	129		0+	179		0	229		0	279		115+	329		2	379		1	429		0	479			
	0	30		0	80		0	130		0+	180		0	230		0	280		33+	330		1	380		0	430		0	480			
	0	31		0	81		0	131		0+	181		0	231		0	281		3+	331		3	381		0	431		0	481			
	0	32		0	82		0	132		0+	182		0	232		0	282		0+	332		0	382		1	432		0	482			
	0	33		0	83		0	133		0	183		0	233		0	283		0	333		1	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		0	285		1	335		0	385		1	435		0	485			
	0	36		0	86		0	136		0	186		0	236		0	286		0	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		0	338		0	388		0	438		0	488			
	0	39		0	89		0	139		0	189		0	239		0	289		3	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		0	141		0	191		0	241		0	291		3	341		0	391		0	441		0	491			
	0	42		0	92		0	142		1+	192		0	242		0	292		4	342		0	392		0	442		0	492			
	0	43		0	93		1	143		0+	193		0+	243		0	293		8	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		0	345		0	395		0	445		0	495			
	0	46		0	96		0	146		0+	196		1+	246		0	296		1	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		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		0	350		0	400		0	450		0	500			

VMS Peak Search Report V1.9 Generated 20-JUN-2006 20:45:58

```
Configuration     : $DISK1:[ALP4.SAMPLE]H4X1R1AG_200661725.CNF;1
Analyses by       : ALPHA V1.8
Sample title      : U BRC
Sample date       : 20-APR-2006 12:00:00 Acquisition date : 20-JUN-2006 17:25:37
Sample ID         : H4X1R1AG             Sample quantity  : 0.00000E+00 SAMPLE
Sample type       : disk                 Sample geometry  :
Detector name     : ALP4                 Detector geometry:
Elapsed live time: 0 03:20:03.00         Elapsed real time: 0 03:20:03.00   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	5335.04	665	0	29.92	327.62	316	17	5.54E-02	3.9	
2	0	5444.77	25	0	29.92	342.41	334	13	2.08E-03	20.0	
3	0	6309.75	10	0	37.40	459.22	456	8	8.33E-04	31.6	

VMS Nuclide Identification Report V3.0 Generated 20-JUN-2006 20:46:00

Configuration	: $DISK1:[ALP4.SAMPLE]H4X1R1AG_200661725.CNF;1		
Analyses by	: ALPHA V1.8,PEAKEFF V2.2,NID V3.3		
Sample title	: U BRC		
Sample date	: 20-APR-2006 12:00:00	Acquisition date	: 20-JUN-2006 17:25:37
Sample ID	: H4X1R1AG	Sample quantity	: 0.00000E+00 SAMPLE
Sample type	: disk	Sample geometry	:
Detector name	: ALP4	Detector geometry	:
Elapsed live time	: 0 03:20:03.00	Elapsed real time	: 0 03:20:03.00 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:[ALP4.SAMPLE]H4X1R1AG_200661725.CNF;1

Peak Energy	Left Chan	Rght Chan	Peak Area	Total Counts	Diff/ StDev	Overlap Counts	Multiplet Diff/StDev
5335.03	316	333	665	656	0.35		
5444.76	334	347	25	25	0.00		
6309.74	456	464	10	12	-0.63		

End of Report

SEVERN TRENT STL

URANIUM ISOTOPIC COUNTING REQUEST

2043

C.R. Technician: OP

Date Counted: 6/20/06

Counting Time
Sample: 200 Minutes
Background: See Alpha Regions Report
BRC 4/20/06

SOP's
Operating: RICHRD008
Review: RICHRD0016
6/29/23

WorkOrder #	U-232 (5320 KeV) Tracer	TOTAL COUNTS U-238 (4196 KeV)	U-235 (4396 KeV)	U-234 (4776 KeV)	Det #	Comments/Edits
H4X1T1AG	See Counting Room Printout for ROI information				5	
H4X1V1AG	See Counting Room Printout for ROI information				6	
H4X1W1AG	See Counting Room Printout for ROI information				7	
H4X1X1AG	See Counting Room Printout for ROI information				8	
H402W1AA	See Counting Room Printout for ROI information				9	
H402W1AC	See Counting Room Printout for ROI information				10	
	See Counting Room Printout for ROI information					
	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: OP

Date: 6/20/06

STL RICHLAND

275

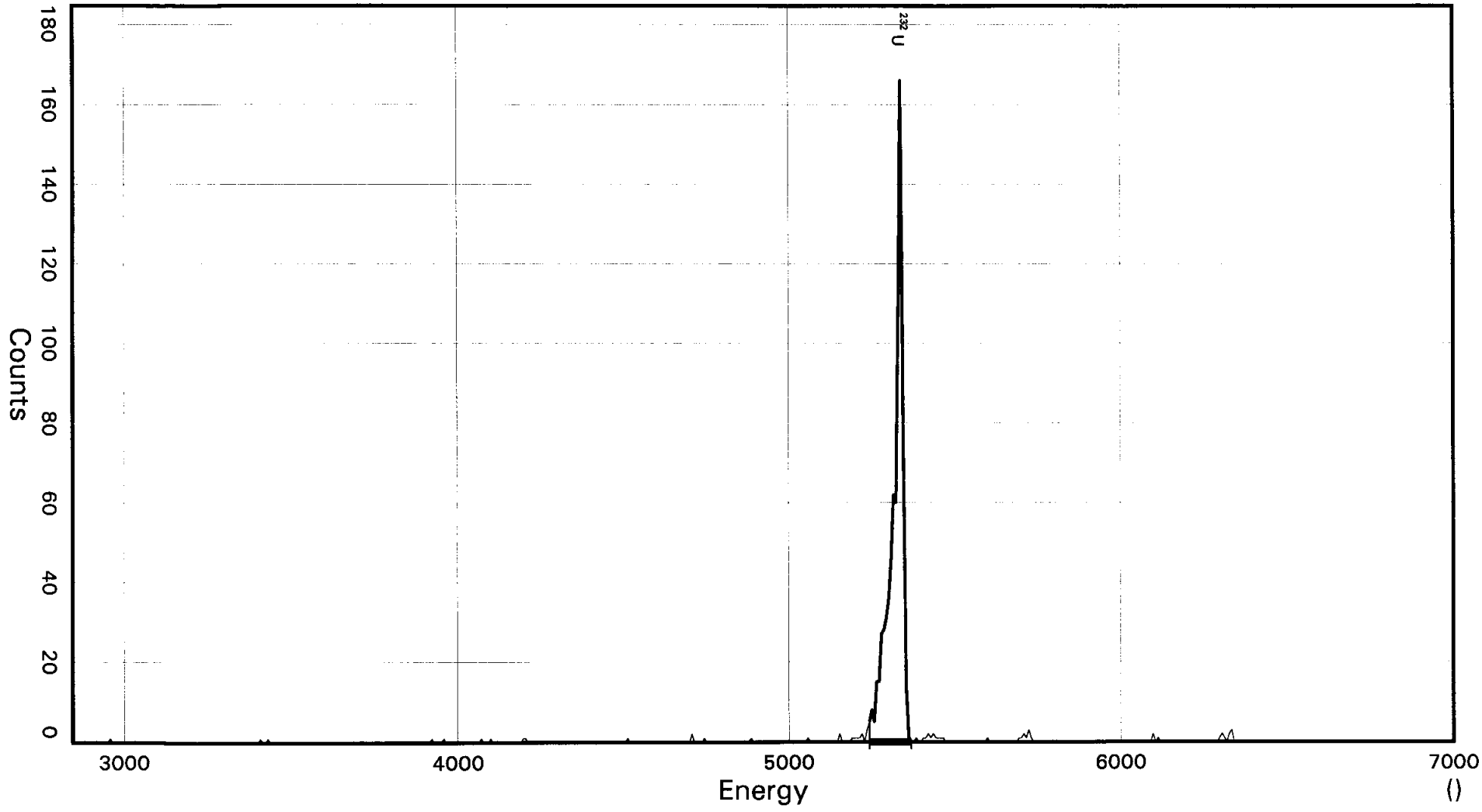
STL Richland WA.

U BRC

Sample ID: H4X1T1AG

Detector ID: ALP5 1

Batch ID: 6129273



Acquisition Start: 20-JUN-2006 17:25:48.71

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 IDENTIITY: H4X1T1AG

TITLE : U BRC

DETECTOR : ALP5 1
CONFIGURATION NAME : $DISK1:[ALP5.SAMPLE]H4X1T1AG_200661725.CNF;1

ACQUIRE DATE of BACKGROUND: 02-JUN-2006 07:27:06

REPORT DATE : 20-Jun-06 SAMPLE DATE: 20-APR-2006 12:00:00
ACQUIRE DATE: 20-JUN-2006 17:25:48 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: H4X1T1AG

Detector: ALP5 1
Report Date: 20-Jun-06 08:46 PM
Acquire Date: 20-JUN-2006 17:25:48.71
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	711	5	0	3.549	5333.7	125.7	325	342	0.00	0.00	P
U-234	3	10	0	0.005	4788.2	126.0	251	268	0.00	0.00	
U-235	0	1	0	-0.001	4411.4	118.8	201	217	0.00	0.00	
U-238	2	4	0	0.006	4211.6	126.4	174	191	0.00	0.00	

End of Alpha Region Report
(Produced by Alp_rgn_cnts)

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

Sample Identity: H4X1T1AG
Detector: ALP5 1
Report Date: 20-Jun-06 08:46 PM
Acquire Date: 20-JUN-2006 17:25:48.71

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	2		351	0		401	0		451	0		501
		2	0		52	0		102	1		152	0	+	202	0	+	252	0		302	1		352	0		402	0		452	0		502
1		3	0		53	0		103	0		153	0	+	203	2	+	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	1		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	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	1	+	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	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	2		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	1		167	0	+	217	0	+	267	0		317	0		367	0		417	0		467			
1		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	1		319	0		369	0		419	2		469			
0		20	0		70	0		120	0		170	0		220	0		270	1		320	0		370	0		420	1		470			
0		21	0		71	0		121	1		171	0		221	0		271	1		321	0		371	0		421	0		471			
0		22	0		72	0		122	0		172	0		222	0		272	2		322	0		372	0		422	2		472			
0		23	0		73	0		123	0		173	0		223	0		273	0		323	1		373	0		423	3		473			
0		24	0		74	0		124	0	+	174	0		224	0		274	3		324	0		374	0		424	0		474			
0		25	0		75	0		125	0	+	175	0		225	0		275	5	+	325	0		375	0		425	0		475			
0		26	0		76	0		126	0	+	176	0		226	0		276	8	+	326	0		376	0		426	0		476			
0		27	0		77	0		127	0	+	177	1		227	1		277	5	+	327	0		377	0		427	0		477			
0		28	1		78	0		128	0	+	178	0		228	0		278	15	+	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	27	+	330	0		380	0		430	0		480			
0		31	1		81	0		131	0	+	181	0		231	0		281	28	+	331	0		381	0		431	0		481			
0		32	0		82	0		132	0	+	182	0		232	0		282	31	+	332	0		382	0		432	0		482			
0		33	0		83	0		133	0	+	183	0		233	0		283	36	+	333	0		383	0		433	0		483			
0		34	0		84	0		134	1	+	184	0		234	0		284	46	+	334	0		384	0		434	0		484			
0		35	0		85	0		135	1	+	185	0		235	0		285	62	+	335	0		385	0		435	0		485			
0		36	0		86	0		136	0	+	186	0		236	0		286	60	+	336	1		386	0		436	0		486			
0		37	0		87	0		137	0	+	187	0		237	0		287	108	+	337	1		387	0		437	0		487			
0		38	0		88	0		138	0	+	188	0		238	0		288	166	+	338	2		388	0		438	0		488			
0		39	0		89	0		139	0	+	189	0		239	0		289	77	+	339	1		389	0		439	0		489			
0		40	0		90	0		140	0	+	190	0		240	0		290	14	+	340	3		390	0		440	0		490			
0		41	0		91	0		141	0	+	191	0		241	0		291	1	+	341	1		391	2		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	0		343	0		393	1		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	0		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	1		147	0		197	0		247	0		297	1		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	2		349	0		399	0		449	0		499			
0		50	0		100	0		150	0		200	0		250	1		300	1		350	0		400	0		450	0		500			

VMS Peak Search Report V1.9 Generated 20-JUN-2006 20:46:08

```
Configuration     : $DISK1:[ALP5.SAMPLE]H4X1T1AG_200661725.CNF;1
Analyses by       : ALPHA V1.8
Sample title      : U BRC
Sample date       : 20-APR-2006 12:00:00 Acquisition date : 20-JUN-2006 17:25:48
Sample ID         : H4X1T1AG             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	5333.74	711	0	29.94	337.49	325	17	5.92E-02	3.8	

VMS Nuclide Identification Report V3.0 Generated 20-JUN-2006 20:46:10

```
Configuration     : $DISK1:[ALP5.SAMPLE]H4X1T1AG_200661725.CNF;1
Analyses by       : ALPHA V1.8,PEAKEFF V2.2,NID V3.3
Sample title      : U BRC
Sample date       : 20-APR-2006 12:00:00 Acquisition date : 20-JUN-2006 17:25:48
Sample ID         : H4X1T1AG             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]H4X1T1AG_200661725.CNF;1

Peak Energy	Left Chan	Rght Chan	Peak Area	Total Counts	Diff/ StDev	Overlap Counts	Multiplet Diff/StDev
5333.73	325	342	711	704	0.26		

End of Report

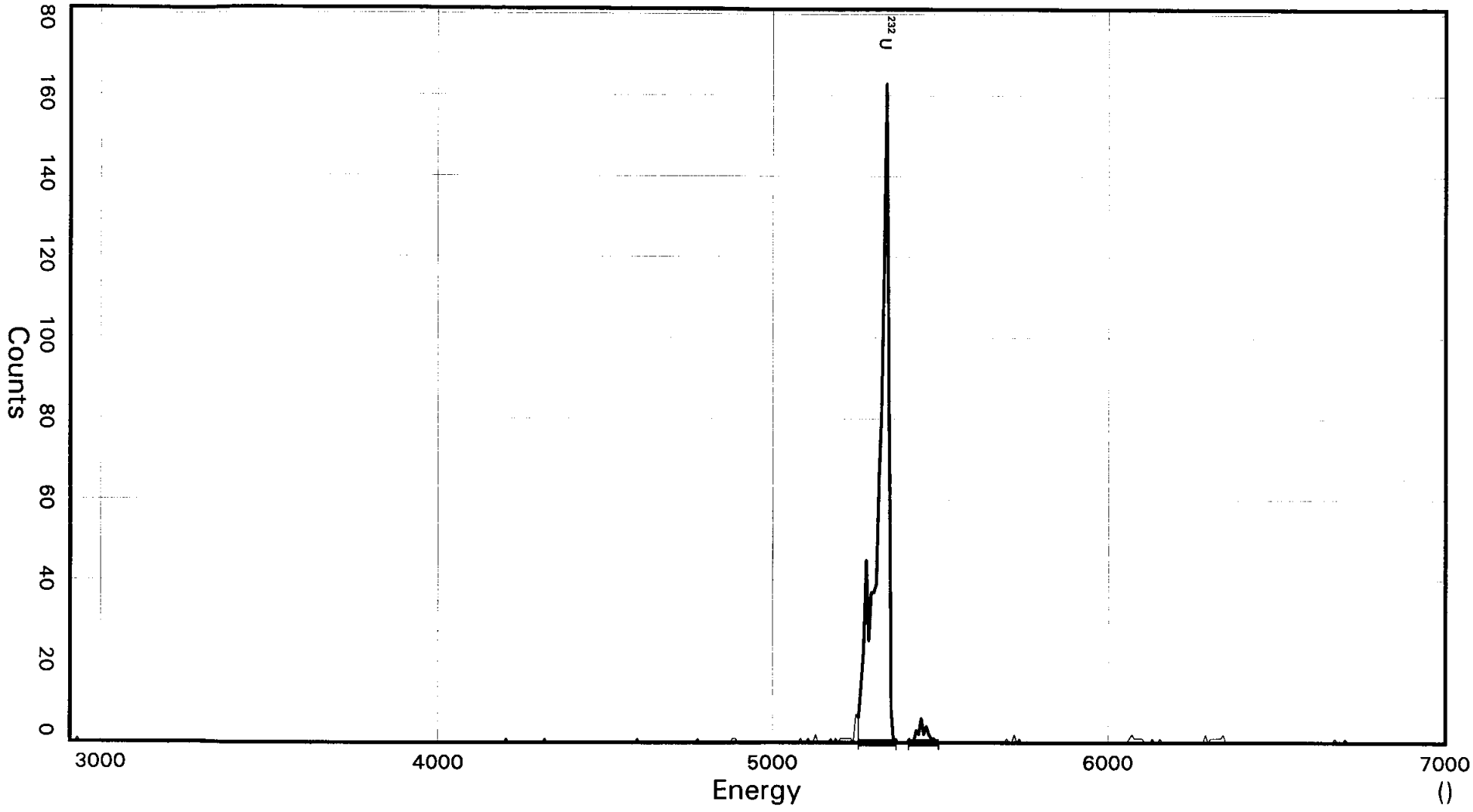
STL Richland WA.

U BRC

Sample ID: H4X1V1AG

Detector ID: ALP6 1

Batch ID: 6129273



Acquisition Start: 20-JUN-2006 17:25:56.74

Preset Live Time: 0 03:20:00.00

Elapsed Live Time: 0 03:20:06.00

Energy Coefficients:

Offset: 2.88682E+03

Slope: 7.41670E+00

Quadrature: 9.64089E-05

SAMPLE IDENTIITY: H4X1V1AG

TITLE : U BRC

DETECTOR : ALP6 1
CONFIGURATION NAME : $DISK1:[ALP6.SAMPLE]H4X1V1AG_200661725.CNF;1

ACQUIRE DATE of BACKGROUND: 03-JUN-2006 09:55:25

REPORT DATE : 20-Jun-06 SAMPLE DATE: 20-APR-2006 12:00:00
ACQUIRE DATE: 20-JUN-2006 17:25:56 CALIB DATE : 01-JUN-2006 23:53:37

PRESET LIVE TIME: 0 03:20:00 ELAPSED LIVE TIME: 0 03:20:06

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: H4X1V1AG

Detector: ALP6 1
Report Date: 20-Jun-06 08:46 PM
Acquire Date: 20-JUN-2006 17:25:56.74
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	754	4	0	3.764	5333.2	112.2	318	333	0.00	0.00	P
U-234	1	0	0	0.005	4787.7	112.0	245	260	0.00	0.00	
U-235	0	2	0	-0.002	4410.9	119.3	194	210	0.00	0.00	
U-238	1	1	0	0.004	4211.1	111.8	168	183	0.00	0.00	

End of Alpha Region Report
(Produced by Alp_rgn_cnts)

Alpha Spectrum Listing
(Version: 29 Jun-92)

Sample Identity: H4X1V1AG
Detector: ALP6 1
Report Date: 20-Jun-06 08:46 PM
Acquire Date: 20-JUN-2006 17:25:56.74

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	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	0		353	0		403	0		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	0	+	255	0		305	0		355	0		405	0		455	0		505
1		6	0		56	0		106	0		156	0	+	206	0	+	256	0		306	0		356	0		406	2		456	0		506
0		7	0		57	0		107	0		157	0	+	207	0	+	257	1		307	0		357	0		407	0		457	1		507
0		8	0		58	0		108	0		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
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	1		511
0		12	0		62	0		112	0		162	0		212	0		262	1		312	0		362	0		412	1		462	0		512
0		13	0		63	0		113	0		163	0		213	0		263	1		313	0		363	0		413	2		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	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	7		317	0		367	0		417	0		467			
0		18	0		68	0		118	0	+	168	0		218	1		268	6	+	318	0		368	0		418	0		468			
0		19	0		69	0		119	0	+	169	0		219	1		269	14	+	319	0		369	0		419	0		469			
0		20	0		70	0		120	0	+	170	0		220	0		270	23	+	320	0		370	0		420	0		470			
0		21	0		71	0		121	0	+	171	0		221	0		271	45	+	321	0		371	0		421	0		471			
0		22	0		72	0		122	0	+	172	0		222	0		272	25	+	322	0		372	0		422	0		472			
0		23	0		73	0		123	0	+	173	0		223	0		273	37	+	323	0		373	0		423	0		473			
0		24	0		74	0		124	0	+	174	0		224	0		274	37	+	324	0		374	0		424	0		474			
0		25	0		75	0		125	0	+	175	0		225	0		275	39	+	325	0		375	0		425	0		475			
0		26	0		76	0		126	0	+	176	0		226	0		276	65	+	326	0		376	1		426	0		476			
0		27	0		77	0		127	1	+	177	0		227	0		277	81	+	327	1		377	2		427	0		477			
0		28	0		78	0		128	0	+	178	0		228	0		278	118	+	328	0		378	1		428	0		478			
0		29	0		79	0		129	0	+	179	0		229	0		279	163	+	329	0		379	1		429	0		479			
0		30	0		80	0		130	0	+	180	1		230	0		280	82	+	330	2		380	1		430	0		480			
0		31	0		81	0		131	0	+	181	0		231	0		281	8	+	331	0		381	1		431	0		481			
0		32	0		82	0		132	0	+	182	0		232	0		282	0	+	332	1		382	0		432	0		482			
0		33	0		83	0		133	0	+	183	0		233	0		283	1		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	0		235	0		285	0		335	0		385	1		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	0		337	0		387	0		437	0		487			
0		38	0		88	0		138	0		188	0		238	0		288	1		338	0		388	1		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	3		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	1		193	0		243	0		293	6		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	1		295	4		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	1		347	0		397	0		447	0		497			
0		48	0		98	0		148	0	+	198	0	+	248	1		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	0		350	0		400	0		450	0		500			

VMS Peak Search Report V1.9 Generated 20-JUN-2006 20:46:19

```
Configuration     : $DISK1:[ALP6.SAMPLE]H4X1V1AG_200661725.CNF;1
Analyses by       : ALPHA V1.8
Sample title      : U BRC
Sample date       : 20-APR-2006 12:00:00 Acquisition date : 20-JUN-2006 17:25:56
Sample ID         : H4X1V1AG             Sample quantity  : 0.00000E+00 SAMPLE
Sample type       : disk                 Sample geometry  :
Detector name     : ALP6                 Detector geometry:
Elapsed live time: 0 03:20:06.00         Elapsed real time: 0 03:20:06.00   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	5333.22	754	0	29.67	328.45	318	15	6.28E-02	3.6	
2	0	5443.49	23	0	37.08	343.19	338	12	1.92E-03	20.9	

VMS Nuclide Identification Report V3.0 Generated 20-JUN-2006 20:46:21

```
Configuration     : $DISK1:[ALP6.SAMPLE]H4X1V1AG_200661725.CNF;1
Analyses by       : ALPHA V1.8,PEAKEFF V2.2,NID V3.3
Sample title      : U BRC
Sample date       : 20-APR-2006 12:00:00 Acquisition date : 20-JUN-2006 17:25:56
Sample ID         : H4X1V1AG             Sample quantity  : 0.00000E+00 SAMPLE
Sample type       : disk                 Sample geometry  :
Detector name     : ALP6                 Detector geometry:
Elapsed live time: 0 03:20:06.00         Elapsed real time: 0 03:20:06.00   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                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:[ALP6.SAMPLE]H4X1V1AG_200661725.CNF;1

Peak Energy	Left Chan	Rght Chan	Peak Area	Total Counts	Diff/ StDev	Overlap Counts	Multiplet Diff/StDev
5333.22	318	333	754	744	0.36		
5443.49	338	350	23	22	0.21		

End of Report

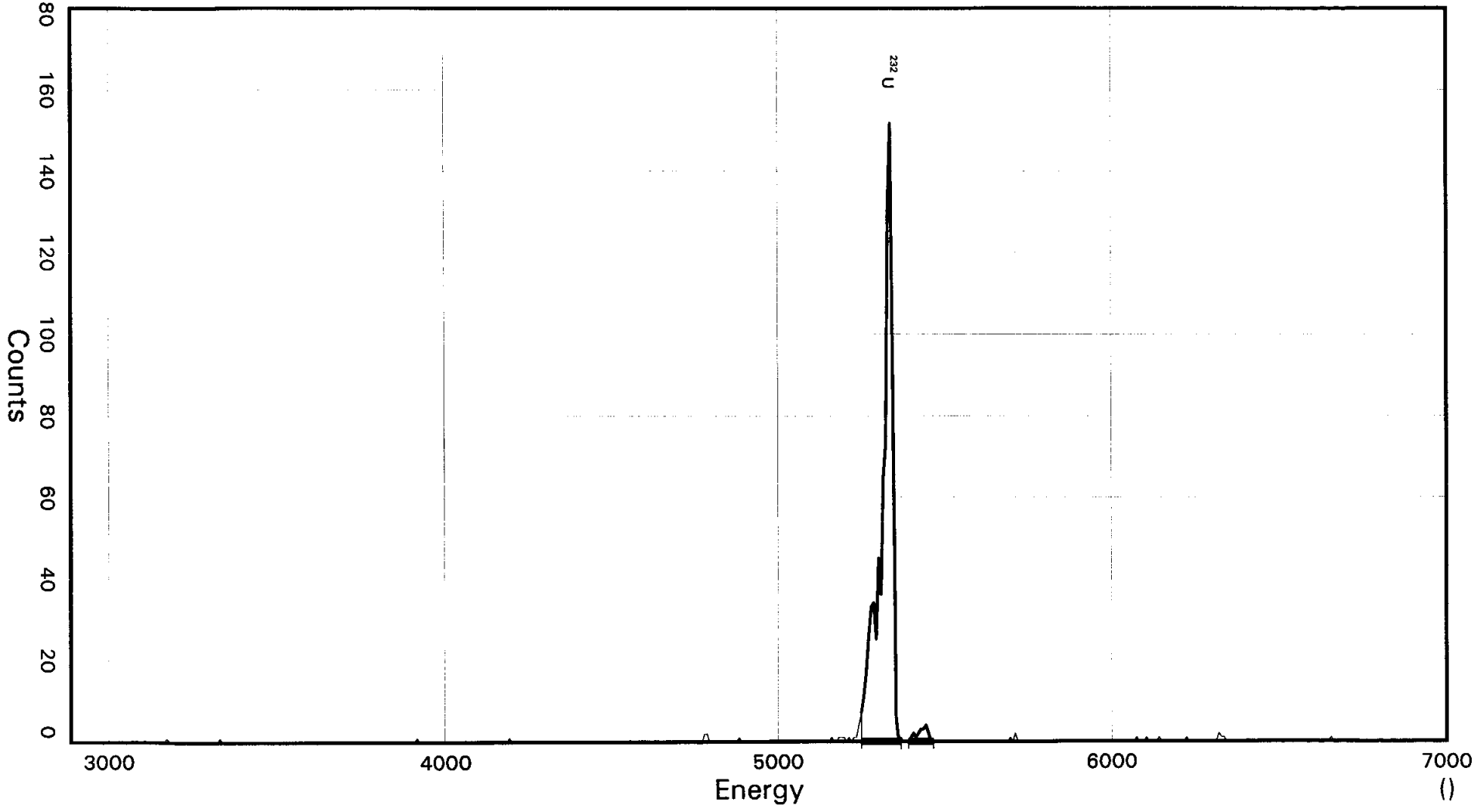
STL Richland WA.

U BRC

Sample ID: H4X1W1AG

Detector ID: ALP7 1

Batch ID: 6129273



Acquisition Start: 20-JUN-2006 17:26:09.64

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: H4X1W1AG

TITLE : U BRC

DETECTOR : ALP7 1
CONFIGURATION NAME : $DISK1:[ALP7.SAMPLE]H4X1W1AG_200661726.CNF;1

ACQUIRE DATE of BACKGROUND: 02-JUN-2006 07:27:16

REPORT DATE : 20-Jun-06 SAMPLE DATE: 20-APR-2006 12:00:00
ACQUIRE DATE: 20-JUN-2006 17:26:09 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: H4X1W1AG

Detector: ALP7 1
Report Date: 20-Jun-06 08:46 PM
Acquire Date: 20-JUN-2006 17:26:09.64
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	752	3	0	3.755	5333.7	119.0	320	336	0.00	0.00	P
U-234	4	0	0	0.020	4788.1	119.1	247	263	0.00	0.00	
U-235	0	0	0	0.000	4411.3	119.1	196	212	0.00	0.00	
U-238	1	0	0	0.005	4211.5	119.2	169	185	0.00	0.00	

End of Alpha Region Report
(Produced by Alp_rgn_cnts)

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

Sample Identity: H4X1W1AG
Detector: ALP7 1
Report Date: 20-Jun-06 08:46 PM
Acquire Date: 20-JUN-2006 17:26:09.64

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	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	2	+	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	0	+	259	0		309	0		359	0		409	0		459	1		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	1		311	0		361	0		411	0		461	0		511
0		12	1		62	0		112	0		162	0	+	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	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	1		465			
0		16	0		66	0		116	0		166	0		216	0		266	0		316	0		366	0		416	1		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	1		318	0		368	0		418	0		468			
0		19	0		69	0		119	0	+	169	0		219	0		269	4		319	0		369	0		419	0		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	1		271	11	+	321	0		371	0		421	0		471			
0		22	0		72	0		122	0	+	172	0		222	0		272	17	+	322	0		372	0		422	0		472			
0		23	0		73	0		123	0	+	173	0		223	0		273	26	+	323	0		373	0		423	0		473			
0		24	0		74	0		124	0	+	174	0		224	0		274	33	+	324	0		374	0		424	0		474			
0		25	0		75	0		125	0	+	175	0		225	0		275	34	+	325	0		375	0		425	0		475			
0		26	0		76	0		126	0	+	176	0		226	0		276	25	+	326	0		376	0		426	0		476			
0		27	0		77	0		127	0	+	177	0		227	0		277	45	+	327	0		377	0		427	0		477			
0		28	0		78	0		128	1	+	178	0		228	0		278	36	+	328	0		378	0		428	0		478			
0		29	0		79	0		129	0	+	179	0		229	0		279	65	+	329	0		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	132	+	331	0		381	1		431	0		481			
0		32	0		82	0		132	0	+	182	0		232	0		282	152	+	332	2		382	0		432	0		482			
0		33	0		83	0		133	0	+	183	0		233	0		283	84	+	333	0		383	0		433	0		483			
0		34	0		84	0		134	0	+	184	0		234	0		284	6	+	334	0		384	0		434	0		484			
0		35	0		85	0		135	0	+	185	0		235	0		285	0	+	335	0		385	1		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	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	1		340	0		390	1		440	0		490			
1		41	0		91	1		141	0		191	0		241	0		291	2		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	2		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	3		345	0		395	0		445	0		495			
0		46	0		96	0		146	0	+	196	0		246	0		296	4		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	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 20-JUN-2006 20:46:30

Configuration : $DISK1:[ALP7.SAMPLE]H4X1W1AG_200661726.CNF;1
Analyses by : ALPHA V1.8
Sample title : U BRC
Sample date : 20-APR-2006 12:00:00 Acquisition date : 20-JUN-2006 17:26:09
Sample ID : H4X1W1AG 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 03:20:06.00 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	5333.71	752	0	29.83	331.50	320	16	6.26E-02	3.6	
2	0	5428.79	18	0	37.28	344.29	339	10	1.50E-03	23.6	

VMS Nuclide Identification Report V3.0 Generated 20-JUN-2006 20:46:31

```
Configuration     : $DISK1:[ALP7.SAMPLE]H4X1W1AG_200661726.CNF;1
Analyses by       : ALPHA V1.8,PEAKEFF V2.2,NID V3.3
Sample title      : U BRC
Sample date       : 20-APR-2006 12:00:00 Acquisition date : 20-JUN-2006 17:26:09
Sample ID         : H4X1W1AG             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 03:20:06.00   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                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:[ALP7.SAMPLE]H4X1W1AG_200661726.CNF;1

Peak Energy	Left Chan	Rght Chan	Peak Area	Total Counts	Diff/ StDev	Overlap Counts	Multiplet Diff/StDev
5333.70	320	336	752	747	0.18		
5428.78	339	349	18	18	0.00		

End of Report

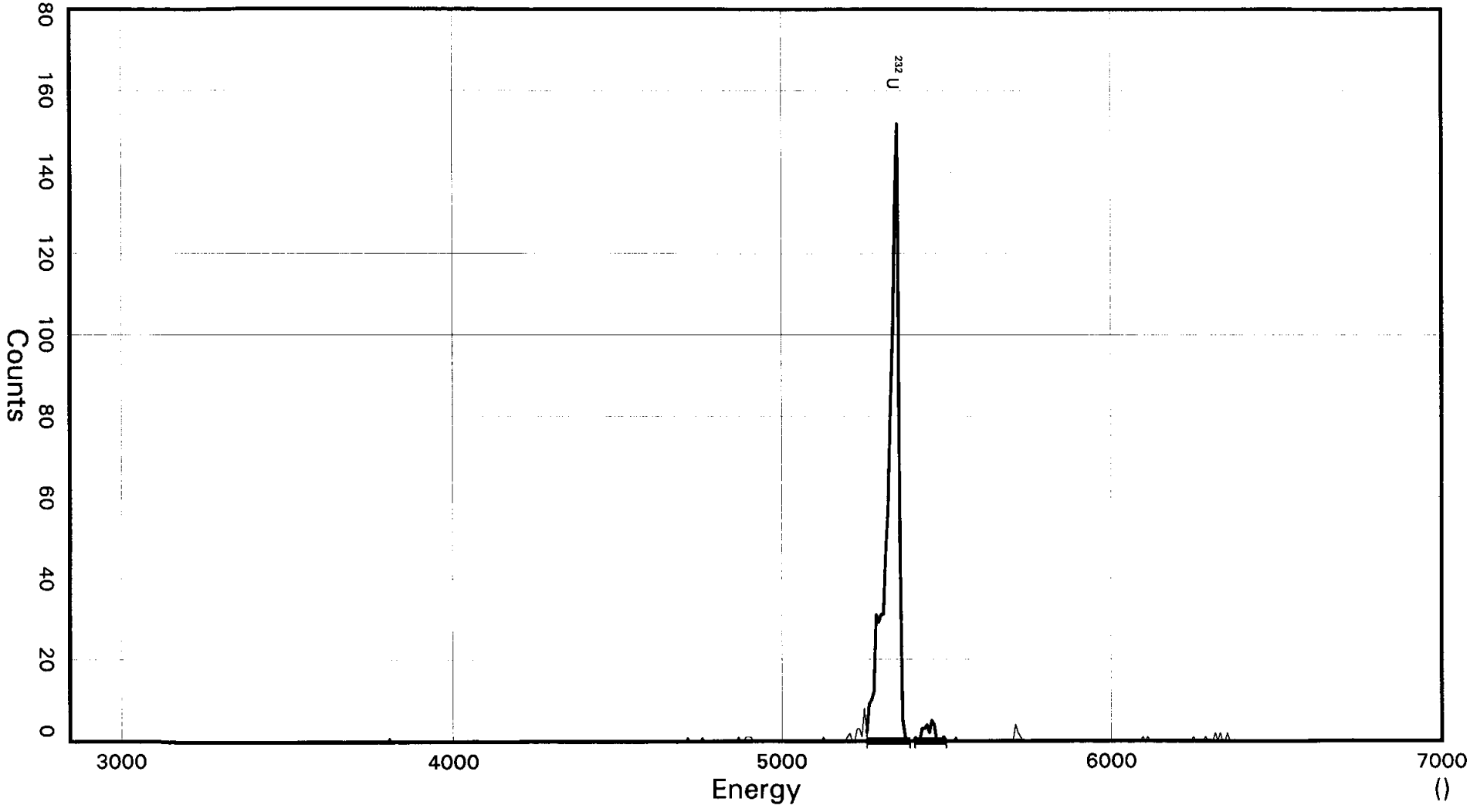
STL Richland WA.

U BRC

Sample ID: H4X1X1AG

Detector ID: ALP8 1

Batch ID: 6129273



Acquisition Start: 20-JUN-2006 17:26:18.46

Preset Live Time: 0 03:20:00.00

Elapsed Live Time: 0 03:20:08.00

Energy Coefficients:

Offset: 2.82327E+03

Slope: 7.35189E+00

Quadrature: -6.84520E-05

SAMPLE IDENTIITY: H4X1X1AG

TITLE : U BRC

DETECTOR : ALP8 1
CONFIGURATION NAME : $DISK1:[ALP8.SAMPLE]H4X1X1AG_200661726.CNF;1

ACQUIRE DATE of BACKGROUND: 02-JUN-2006 07:27:19

REPORT DATE : 20-Jun-06 SAMPLE DATE: 20-APR-2006 12:00:00
ACQUIRE DATE: 20-JUN-2006 17:26:18 CALIB DATE : 01-JUN-2006 23:53:23

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

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: H4X1X1AG

Detector: ALP8 1
Report Date: 20-Jun-06 08:46 PM
Acquire Date: 20-JUN-2006 17:26:18.46
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	787	9	0	3.923	5341.0	131.5	332	350	0.00	0.00	P
U-234	2	3	0	0.007	4795.4	131.7	257	275	0.00	0.00	
U-235	0	1	0	-0.001	4418.6	131.8	206	224	0.00	0.00	
U-238	0	0	0	0.000	4218.8	131.9	179	197	0.00	0.00	

End of Alpha Region Report
(Produced by Alp_rgn_cnts)

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

Sample Identity: H4X1X1AG
Detector: ALP8 1
Report Date: 20-Jun-06 08:46 PM
Acquire Date: 20-JUN-2006 17:26:18.46

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	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	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	3		355	0		405	0		455	0		505
0		6	0		56	0		106	0		156	0	+	206	0		256	0		306	3		356	0		406	0		456	0		506
0		7	0		57	0		107	0		157	0	+	207	0	+	257	0		307	4		357	0		407	0		457	0		507
0		8	0		58	0		108	0		158	0	+	208	1	+	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	4		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	1	+	264	1		314	1		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	0		318	0		368	0		418	1		468			
0		19	0		69	0		119	0		169	0	+	219	0	+	269	0		319	1		369	0		419	0		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	0		471			
0		22	0		72	0		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	0		323	0		373	0		423	1		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	2		325	0		375	0		425	0		475			
0		26	0		76	0		126	0		176	0		226	0		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	0		427	2		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	1		279	3		329	0		379	0		429	2		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	8		331	0		381	0		431	0		481			
0		32	0		82	0		132	0	+	182	0		232	1		282	2	+	332	0		382	0		432	2		482			
0		33	0		83	0		133	0	+	183	0		233	1		283	9	+	333	0		383	0		433	0		483			
0		34	0		84	1		134	0	+	184	0		234	1		284	10	+	334	0		384	0		434	0		484			
0		35	0		85	0		135	0	+	185	0		235	0		285	12	+	335	0		385	0		435	0		485			
0		36	0		86	0		136	0	+	186	0		236	0		286	31	+	336	0		386	0		436	0		486			
0		37	0		87	0		137	0	+	187	0		237	0		287	29	+	337	0		387	0		437	0		487			
0		38	0		88	0		138	0	+	188	0		238	0		288	31	+	338	0		388	0		438	0		488			
0		39	0		89	0		139	0	+	189	0		239	0		289	31	+	339	0		389	0		439	0		489			
0		40	0		90	0		140	0	+	190	0		240	0		290	47	+	340	0		390	0		440	0		490			
0		41	0		91	0		141	0	+	191	0		241	0		291	57	+	341	0		391	0		441	0		491			
0		42	0		92	0		142	0	+	192	0		242	0		292	80	+	342	0		392	0		442	0		492			
0		43	0		93	0		143	0	+	193	0		243	0		293	99	+	343	0		393	0		443	0		493			
0		44	0		94	0		144	0	+	194	0		244	0		294	132	+	344	4		394	0		444	0		494			
0		45	0		95	0		145	0	+	195	0		245	0		295	152	+	345	2		395	0		445	0		495			
0		46	0		96	0		146	0	+	196	0		246	0		296	44	+	346	1		396	0		446	0		496			
0		47	0		97	0		147	0	+	197	0		247	0		297	5	+	347	0		397	1		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	0	+	349	0		399	1		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 20-JUN-2006 20:46:40

```
Configuration     : $DISK1:[ALP8.SAMPLE]H4X1X1AG_200661726.CNF;1
Analyses by       : ALPHA V1.8
Sample title      : U BRC
Sample date       : 20-APR-2006 12:00:00 Acquisition date : 20-JUN-2006 17:26:18
Sample ID         : H4X1X1AG             Sample quantity  : 0.00000E+00 SAMPLE
Sample type       : disk                 Sample geometry  :
Detector name     : ALP8                 Detector geometry:
Elapsed live time: 0 03:20:08.00         Elapsed real time: 0 03:20:08.00   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	5341.00	787	0	44.11	343.56	332	18	6.55E-02	3.6	
2	0	5440.54	23	0	36.76	357.19	352	13	1.92E-03	20.9	

VMS Nuclide Identification Report V3.0 Generated 20-JUN-2006 20:46:42

```
Configuration     : $DISK1:[ALP8.SAMPLE]H4X1X1AG_200661726.CNF;1
Analyses by       : ALPHA V1.8,PEAKEFF V2.2,NID V3.3
Sample title      : U BRC
Sample date       : 20-APR-2006 12:00:00 Acquisition date : 20-JUN-2006 17:26:18
Sample ID         : H4X1X1AG             Sample quantity  : 0.00000E+00 SAMPLE
Sample type       : disk                 Sample geometry  :
Detector name     : ALP8                 Detector geometry:
Elapsed live time: 0 03:20:08.00         Elapsed real time: 0 03:20:08.00   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                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:[ALP8.SAMPLE]H4X1X1AG_200661726.CNF;1

Peak Energy	Left Chan	Rght Chan	Peak Area	Total Counts	Diff/ StDev	Overlap Counts	Multiplet Diff/StDev
5341.00	332	350	787	772	0.53		
5440.54	352	365	23	23	0.00		

End of Report

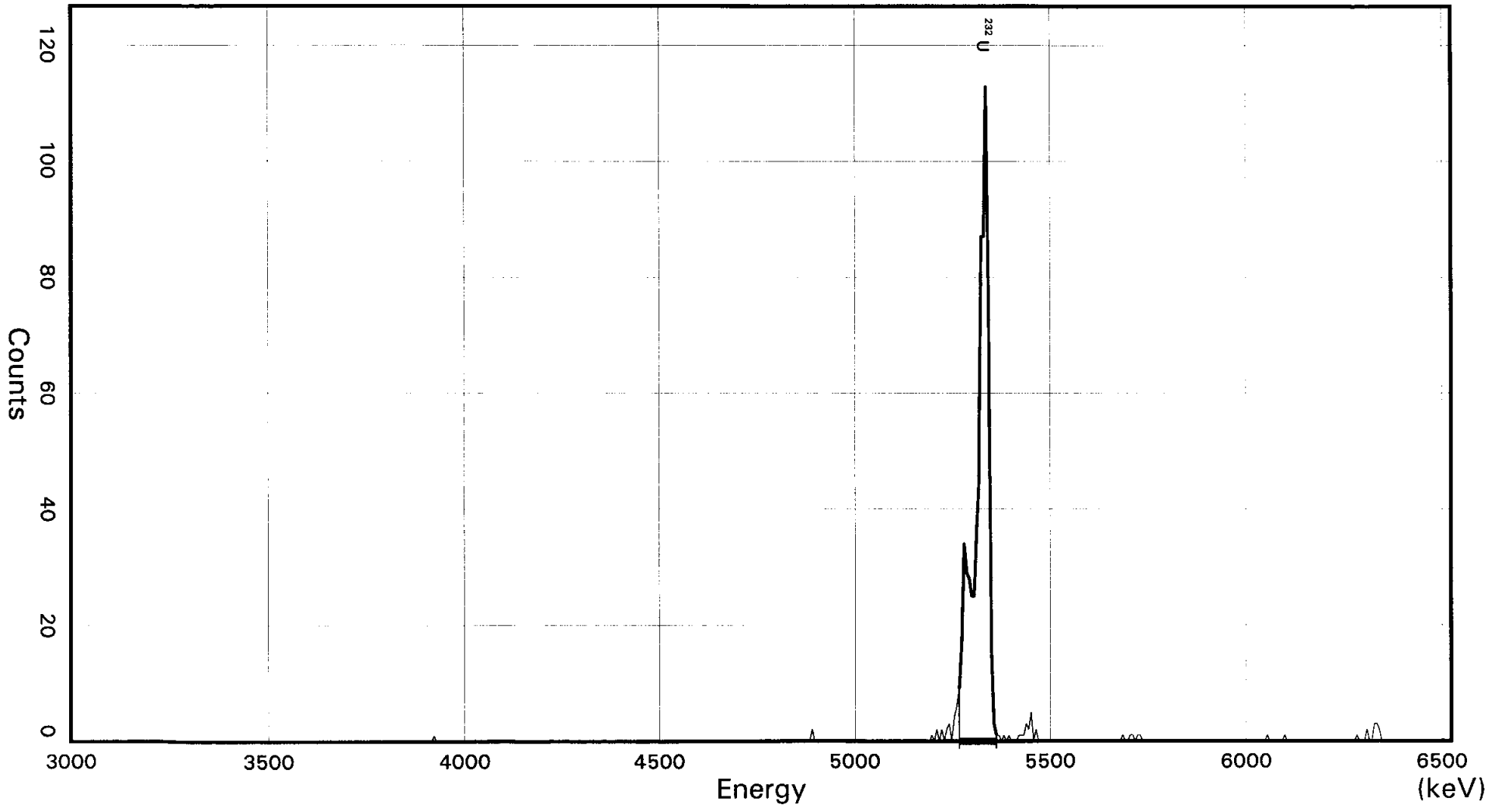
STL Richland WA.

U BRC

Sample ID: H402W1AA

Detector ID: ALP9 1

Batch ID: 6129273



Acquisition Start: 20-JUN-2006 17:26:31.67

Preset Live Time: 0 03:20:00.00

Elapsed Live Time: 0 03:20:07.00

Energy Coefficients:

Offset: 3.26308E+03

Slope: 6.39526E+00

Quadrature: -5.61482E-05

SAMPLE IDENTIITY: H402W1AA

TITLE : U BRC

DETECTOR : ALP9 1
CONFIGURATION NAME : $DISK1:[ALP9.SAMPLE]H402W1AA_200661726.CNF;1

ACQUIRE DATE of BACKGROUND: 02-JUN-2006 07:27:21

REPORT DATE : 20-Jun-06 SAMPLE DATE: 20-APR-2006 12:00:00
ACQUIRE DATE: 20-JUN-2006 17:26:31 CALIB DATE : 01-JUN-2006 23:54:19

PRESET LIVE TIME: 0 03:20:00 ELAPSED LIVE TIME: 0 03:20:07

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: H402W1AA

Detector: ALP9 1
Report Date: 20-Jun-06 08:46 PM
Acquire Date: 20-JUN-2006 17:26:31.67
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	628	2	0	3.136	5330.2	95.4	314	329	0.00	0.00	P
U-234	0	1	0	-0.001	4784.7	95.5	228	243	0.00	0.00	
U-235	0	0	0	0.000	4407.9	95.6	169	184	0.00	0.00	
U-238	0	0	0	0.000	4208.1	95.7	138	153	0.00	0.00	

End of Alpha Region Report
(Produced by Alp_rgn_cnts)

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

Sample Identity: H402W1AA
Detector: ALP9 1
Report Date: 20-Jun-06 08:46 PM
Acquire Date: 20-JUN-2006 17:26:31.67

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	1		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	0		205	2		255	2		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	2		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	3		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	4		312	0		362	0		412	0		462	0		512
0		13	0		63	0		113	0		163	0		213	0		263	6		313	0		363	0		413	0		463			
0		14	0		64	0		114	0		164	0		214	0		264	9	+	314	0		364	0		414	0		464			
0		15	0		65	0		115	0		165	0		215	0		265	17	+	315	0		365	0		415	0		465			
0		16	0		66	0		116	0		166	0		216	0		266	34	+	316	0		366	0		416	0		466			
0		17	0		67	0		117	0		167	0		217	0		267	29	+	317	0		367	0		417	0		467			
0		18	0		68	0		118	0		168	0		218	0		268	28	+	318	0		368	0		418	0		468			
0		19	0		69	0		119	0	+	169	0		219	0		269	25	+	319	0		369	0		419	0		469			
0		20	0		70	0		120	0	+	170	0		220	0		270	25	+	320	0		370	0		420	0		470			
0		21	0		71	0		121	0	+	171	0		221	0		271	36	+	321	0		371	0		421	0		471			
0		22	0		72	0		122	0	+	172	0		222	0		272	44	+	322	0		372	0		422	0		472			
0		23	0		73	0		123	0	+	173	0		223	0		273	87	+	323	0		373	0		423	0		473			
0		24	0		74	0		124	0	+	174	0		224	0		274	87	+	324	0		374	0		424	1		474			
0		25	0		75	0		125	0	+	175	0		225	0		275	113	+	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	16	+	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	2		478			
0		29	0		79	0		129	0	+	179	0	+	229	0		279	1		329	0		379	0		429	0		479			
0		30	0		80	0		130	0	+	180	0	+	230	0		280	1		330	1		380	0		430	0		480			
0		31	0		81	0		131	0	+	181	0	+	231	0		281	0		331	0		381	0		431	3		481			
0		32	0		82	0		132	0	+	182	0	+	232	0		282	1		332	0		382	0		432	3		482			
0		33	0		83	0		133	0	+	183	0	+	233	0		283	0		333	1		383	0		433	2		483			
0		34	0		84	0		134	0	+	184	0	+	234	0		284	1		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	0		136	0		186	0	+	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	1		387	0		437	0		487			
0		38	0		88	0	+	138	0		188	0	+	238	0		288	1		338	0		388	1		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	0	+	141	0		191	0	+	241	0		291	3		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	5		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	1		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 20-JUN-2006 20:46:54

Configuration : $DISK1:[ALP9.SAMPLE]H402W1AA_200661726.CNF;1
Analyses by : ALPHA V1.8
Sample title : U BRC
Sample date : 20-APR-2006 12:00:00 Acquisition date : 20-JUN-2006 17:26:31
Sample ID : H402W1AA Sample quantity : 0.00000E+00 SAMPLE
Sample type : disk Sample geometry :
Detector name : ALP9 Detector geometry:
Elapsed live time: 0 03:20:07.00 Elapsed real time: 0 03:20:07.00 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	5330.25	628	0	31.98	324.16	314	15	5.23E-02	4.0	

VMS Nuclide Identification Report V3.0 Generated 20-JUN-2006 20:46:57

```
Configuration     : $DISK1:[ALP9.SAMPLE]H402W1AA_200661726.CNF;1
Analyses by       : ALPHA V1.8,PEAKEFF V2.2,NID V3.3
Sample title      : U BRC
Sample date       : 20-APR-2006 12:00:00 Acquisition date : 20-JUN-2006 17:26:31
Sample ID         : H402W1AA             Sample quantity  : 0.00000E+00 SAMPLE
Sample type       : disk                 Sample geometry  :
Detector name     : ALP9                 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:[ALP9.SAMPLE]H402W1AA_200661726.CNF;1

Peak Energy	Left Chan	Rght Chan	Peak Area	Total Counts	Diff/ StDev	Overlap Counts	Multiplet Diff/StDev
5330.24	314	329	628	628	0.00		

End of Report

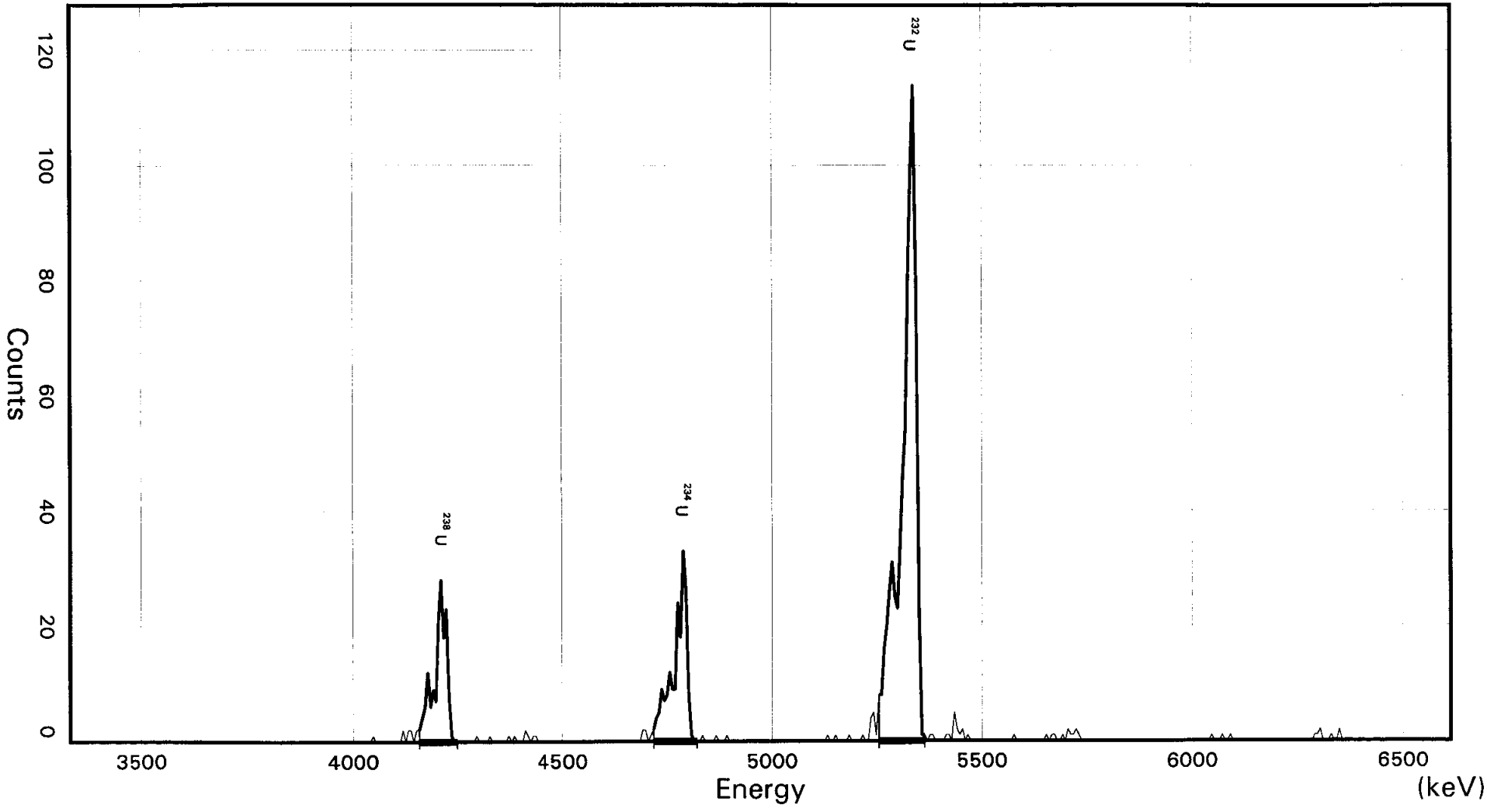
STL Richland WA.

U BRC

Sample ID: H402W1AC

Detector ID: ALP10 1

Batch ID: 6129273



Acquisition Start: 20-JUN-2006 17:26:38.51

Preset Live Time: 0 03:20:00.00

Elapsed Live Time: 0 03:20:00.00

Energy Coefficients:

Offset: 3.31262E+03

Slope: 6.45058E+00

Quadrature: -8.95822E-06

SAMPLE IDENTIITY: H402W1AC

TITLE : U BRC

DETECTOR : ALP10 1
CONFIGURATION NAME : $DISK1:[ALP10.SAMPLE]H402W1AC_200661726.CNF;
1
ACQUIRE DATE of BACKGROUND: 02-JUN-2006 07:27:26

REPORT DATE : 20-Jun-06 SAMPLE DATE: 20-APR-2006 12:00:00
ACQUIRE DATE: 20-JUN-2006 17:26:38 CALIB DATE : 01-JUN-2006 23:53:52

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

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: H402W1AC

Detector: ALP10 1
Report Date: 20-Jun-06 08:47 PM
Acquire Date: 20-JUN-2006 17:26:38.51
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	693	6	0	3.459	5331.4	109.6	301	318	0.00	0.00	P
U-234	176	0	0	0.880	4785.8	103.1	218	234	0.00	0.00	P
U-235	7	0	0	0.035	4409.0	109.6	158	175	0.00	0.00	
U-238	145	2	0	0.723	4209.2	90.3	131	145	0.00	0.00	P

End of Alpha Region Report
(Produced by Alp_rgn_cnts)

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

Sample Identity: H402W1AC
Detector: ALP10 1
Report Date: 20-Jun-06 08:47 PM
Acquire Date: 20-JUN-2006 17:26:38.51

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

VMS Peak Search Report V1.9 Generated 20-JUN-2006 20:46:59

Configuration : $DISK1:[ALP10.SAMPLE]H402W1AC_200661726.CNF;1
Analyses by : ALPHA V1.8
Sample title : U BRC
Sample date : 20-APR-2006 12:00:00 Acquisition date : 20-JUN-2006 17:26:38
Sample ID : H402W1AC Sample quantity : 0.00000E+00 SAMPLE
Sample type : disk Sample geometry :
Detector name : ALP10 Detector geometry:
Elapsed live time: 0 03:20:00.00 Elapsed real time: 0 03:20:00.00 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	4210.02	145	0	32.25	139.15	131	14	1.21E-02	8.3	
2	0	4786.46	176	0	25.80	228.55	218	16	1.47E-02	7.5	
3	0	5331.39	693	0	32.25	313.10	301	17	5.78E-02	3.8	

VMS Nuclide Identification Report V3.0 Generated 20-JUN-2006 20:47:01

```
Configuration     : $DISK1:[ALP10.SAMPLE]H402W1AC_200661726.CNF;1
Analyses by       : ALPHA V1.8,PEAKEFF V2.2,NID V3.3
Sample title      : U BRC
Sample date       : 20-APR-2006 12:00:00 Acquisition date : 20-JUN-2006 17:26:38
Sample ID         : H402W1AC             Sample quantity  : 0.00000E+00 SAMPLE
Sample type       : disk                 Sample geometry  :
Detector name     : ALP10                Detector geometry:
Elapsed live time: 0 03:20:00.00         Elapsed real time: 0 03:20:00.00   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                3
 Number of unidentified lines                     0
 Number of lines tentatively identified by NID    3      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			

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: $DISK1:[ALP10.SAMPLE]H402W1AC_200661726.CNF;1

Peak Energy	Left Chan	Rght Chan	Peak Area	Total Counts	Diff/ StDev	Overlap Counts	Multiplet Diff/StDev
4210.02	131	145	145	145	0.00		
4786.45	218	234	176	175	0.08		
5331.39	301	318	693	689	0.15		

End of Report

ALPHA

SAMPLE AND QC DATA

SEVERN TRENT STL

Data Review/Verification Checklist

RADIOCHEMISTRY, First Level Review

6/13/2006 9:11:55 AM

Lot No., Due Date: J6E080157; 06/06/2006

Client, Site: 536403; AIR MONITORING Yerington Mine

QC Batch No., Method Test: 6129281; RALPHA-A Alpha by GPC-Am

SDG, Matrix: 31580; 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** 6-13-06

SEVERN TRENT **STL**

Data Review Checklist
RADIOCHEMISTRY
Second Level Review

QC Batch Number: 6129281

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 A Adam Date: 6-13-06

6/5/2006 3:17:56 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: 06/05/2006

Sep1 DT/Tm Tech:

Batch: 6129281 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:
1 H4XP8-1-AE J6E080157-1-SAMP 04/20/2006 09:10	0.833sa,g	12.50g,in AmtRec: FILTER	#Containers: 1	1.5	0.4	100	C	1735	6/9/06	
2 H4XQH-1-AE J6E080157-2-SAMP 04/20/2006 09:30	0.833sa,g	12.58g,in AmtRec: FILTER	#Containers: 1		0.3		10D			
3 H4XQM-1-AE J6E080157-3-SAMP 04/20/2006 09:45	0.833sa,g	12.54g,in AmtRec: FILTER	#Containers: 1		0.2		10E			
4 H4XQN-1-AE J6E080157-4-SAMP 04/20/2006 10:05	0.833sa,g	12.65g,in AmtRec: FILTER	#Containers: 1		0.2		10A	1945		
5 H4XQQ-1-AE J6E080157-5-SAMP 04/20/2006 10:25	0.833sa,g	12.58g,in AmtRec: FILTER	#Containers: 1		0.2		10B			
6 H4XQR-1-AE J6E080157-6-SAMP 04/20/2006 10:40	0.833sa	12.61g,in AmtRec: FILTER	#Containers: 1		0.1		10C			
7 H4XQT-1-AE J6E080157-7-SAMP 04/20/2006 10:35	0.833sa,g	12.50g,in AmtRec: FILTER	#Containers: 1		0.3		10D			

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: 7

Richland Wa. pd - Prep Dt, r - Reference Dt, ec-Enrichment Cell, ct-Cocktailed Added Prep_SamplePrep v4.8.24

STL RICHLAND

6/5/2006 3:17:57 PM

Sample Preparation/Analysis

536403, Brown and Caldwell , Brown & Caldwell

BA Gross Alpha PrpRC5016/5014
S7 Gross Alpha by GPC using Am-241 curve
01 STANDARD TEST SET

Balance Id:1120373922

Pipet #: _____

AnalyDueDate: 06/05/2006

Sep1 DT/Tm Tech:

Batch: 6129281 FILTER pCi/sampl PM, Quote: SA , 63174

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:
8 H4X1R-1-AE J6E080157-8-SAMP 04/20/2006 09:35	0.833sa,g	12.53g,in	AmtRec: FILTER #Containers: 1	1.5	0.1	100	10E	1945	Scr: Alpha: Beta:	
9 H4X1T-1-AE J6E080157-9-SAMP 04/20/2006 09:50	0.833sa,g	12.49g,in	AmtRec: FILTER #Containers: 1		0.1		11A	0759	6/10/06 Scr: Alpha: Beta:	
10 H4X1V-1-AE J6E080157-10-SAMP 04/20/2006 10:10	0.833sa,g	12.65g,in	AmtRec: FILTER #Containers: 1		0.3		10D		Scr: Alpha: Beta:	
11 H4X1W-1-AE J6E080157-11-SAMP 04/20/2006 10:30	0.833sa,g	12.55g,in	AmtRec: FILTER #Containers: 1		0.3		10C		Scr: Alpha: Beta:	
12 H4X1X-1-AE J6E080157-12-SAMP 04/20/2006 10:45	0.833sa,g	12.56g,in	AmtRec: FILTER #Containers: 1		0.3		10D		Scr: Alpha: Beta:	
13 H403P-1-AA-B J6E090000-281-BLK 04/20/2006 09:10		1.00sa,in	AmtRec: #Containers: 1		0.2		10E		Scr: Alpha: Beta:	
14 H403P-1-AC-C J6E090000-281-LCS 04/20/2006 09:10		1.00sa,in	ASC0354 04/06/06,pd 02/09/06,r AmtRec: #Containers: 1		0.5		10A	0947	6/10/06 Scr: Alpha: Beta:	

6/5/2006 3:17:58 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: 06/05/2006

Sep1 DT/Tm Tech:

Batch: 6129281 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:

Comments:

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

H4XP81AE-SAMP Constituent List:
ALPHA RDL:20 pCi/sam LCL: UCL: RPD:
H403P1AA-BLK:
ALPHA RDL:20 pCi/sam LCL: UCL: RPD:
H403P1AC-LCS:

H4XP81AE-SAMP Calc Info:
Uncert Level (#s).: 2 Decay to SaDt: Y Blk Subt.: N Sci.Not.: Y ODRs: B
H403P1AA-BLK:
Uncert Level (#s).: 2 Decay to SaDt: Y Blk Subt.: N Sci.Not.: Y ODRs: B
H403P1AC-LCS:
Uncert Level (#s).: 2 Decay to SaDt: Y Blk Subt.: N Sci.Not.: Y ODRs: B

Approved By _____ Date: _____

6/13/2006 8:39:03 AM

ICOC Fraction Transfer/Status Report

ByDate: 6/13/2005, 6/18/2006, Batch: '6129281', User: *ALL Order By DateTimeAccepting

Q Batch	Work Ord	CurStatus	Accepting			Comments
6129281						
AC		**CalcC**	**HansenM**	6/5/2006 3:56:03 PM		
SC			antonsonl	IsBatched	5/9/2006 1:11:28 PM	ICOC_RADCALC v4.8.24
SC			HansenM	InPrep2	6/5/2006 3:56:03 PM	RICH-RC-5016 REVISION 5
SC			ScottM	Prep2C	6/9/2006 9:53:17 AM	RICH-RC-5014 REVISION 6
SC			BlackCL	InCnt1	6/9/2006 10:00:13 AM	RICH-RD-0003 REVISION 4
SC			BlackCL	CalcC	6/10/2006 10:02:41 AM	RICH-RD-0003 REVISION 4
AC			**ScottM**	6/9/2006 9:53:17 AM		
AC			**BlackCL**	6/9/2006 10:00:13		
AC			**BlackCL**	6/10/2006 10:02:41		

AC: Accepting Entry; SC: Status Change

STL Richland

Richland Wa.

Grp Rec Cnt: 4

ICOCFractions v4.8.18

6/13/2006 8:39:02 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	
31580	**9H4X1R10**			**J6E0801578**	000431	FILTER	5/8/2006 7:30:00	4/20/2006 9:35:00 AM					
ALPHA	BAS7	0		6/9/2006 6:54:58 PM	**3.1467E+00**	1.636E+00	1.668E+00	5.571E+00	PCI/SA		1.0	1.0E+0	2.076E-2
BETA	BDS8	0		6/9/2006 12:14:57 PM	**5.819E+00**	1.684E+00	1.73E+00	6.517E+00	PCI/SA		1.0	1.0E+0	3.301E-2
31580	**9H4X1T10**			**J6E0801579**	000432	FILTER	5/8/2006 7:30:00	4/20/2006 9:50:00 AM					
ALPHA	BAS7	0		6/10/2006 7:04:05 AM	**9.8496E-01**	1.663E+00	1.667E+00	7.819E+00	PCI/SA		1.0	1.0E+0	2.078E-2
BETA	BDS8	0		6/9/2006 12:14:57 PM	**8.2468E+00**	1.699E+00	1.796E+00	6.142E+00	PCI/SA		1.0	1.0E+0	3.391E-2
31580	**9H4X1V10**			**J6E08015710**	000433	FILTER	5/8/2006 7:30:00	4/20/2006 10:10:00 AM					
ALPHA	BAS7	0		6/10/2006 7:04:05 AM	**2.4116E+00**	1.503E+00	1.524E+00	5.595E+00	PCI/SA		1.0	1.0E+0	2.046E-2
BETA	BDS8	0		6/9/2006 12:15:08 PM	**6.5031E+00**	1.797E+00	1.852E+00	6.911E+00	PCI/SA		1.0	1.0E+0	3.113E-2
31580	**9H4X1W10**			**J6E08015711**	000434	FILTER	5/8/2006 7:30:00	4/20/2006 10:30:00 AM					
ALPHA	BAS7	0		6/10/2006 7:04:05 AM	**3.5615E+00**	1.717E+00	1.756E+00	5.68E+00	PCI/SA		1.0	1.0E+0	2.084E-2
BETA	BDS8	0		6/9/2006 12:15:08 PM	**1.005E+01**	1.753E+00	1.886E+00	6.095E+00	PCI/SA		1.0	1.0E+0	3.374E-2
31580	**9H4X1X10**			**J6E08015712**	000435	FILTER	5/8/2006 7:30:00	4/20/2006 10:45:00 AM					
ALPHA	BAS7	0		6/10/2006 7:04:05 AM	**0.0E+00**	0.0E+00	1.52E+00	7.872E+00	PCI/SA		1.0	1.0E+0	2.075E-2
BETA	BDS8	0		6/9/2006 12:15:08 PM	**9.2048E+00**	1.735E+00	1.922E+00	6.153E+00	PCI/SA		1.0	1.0E+0	3.266E-2
31580	**9H4XP810**			**J6E0801571**	P-0598	FILTER	5/8/2006 7:30:00	4/20/2006 9:10:00 AM					
ALPHA	BAS7	0		6/9/2006 4:45:00 PM	**-2.2308E+00**	9.976E-01	1.024E+00	7.864E+00	PCI/SA		1.0	1.0E+0	2.08E-2
BETA	BDS8	0		6/9/2006 12:14:58 PM	**7.9307E+00**	1.732E+00	1.816E+00	6.318E+00	PCI/SA		1.0	1.0E+0	3.37E-2
31580	**9H4XQH10**			**J6E0801572**	P-0599	FILTER	5/8/2006 7:30:00	4/20/2006 9:30:00 AM					
ALPHA	BAS7	0		6/9/2006 4:45:00 PM	**-5.2364E-01**	1.021E+00	1.022E+00	6.289E+00	PCI/SA		1.0	1.0E+0	2.078E-2
BETA	BDS8	0		6/9/2006 12:14:58 PM	**5.9672E+00**	1.657E+00	1.706E+00	6.332E+00	PCI/SA		1.0	1.0E+0	3.349E-2
31580	**9H4XQM10**			**J6E0801573**	P-0600	FILTER	5/8/2006 7:30:00	4/20/2006 9:45:00 AM					
ALPHA	BAS7	0		6/9/2006 4:45:00 PM	**3.3763E-01**	1.05E+00	1.05E+00	5.579E+00	PCI/SA		1.0	1.0E+0	2.074E-2
BETA	BDS8	0		6/9/2006 12:14:55 PM	**7.9287E+00**	1.702E+00	1.789E+00	6.211E+00	PCI/SA		1.0	1.0E+0	3.34E-2
31580	**9H4XQN10**			**J6E0801574**	P-0601	FILTER	5/8/2006 7:30:00	4/20/2006 10:05:00 AM					
ALPHA	BAS7	0		6/9/2006 6:54:58 PM	**5.6178E+00**	2.155E+00	2.234E+00	6.851E+00	PCI/SA		1.0	1.0E+0	2.106E-2
BETA	BDS8	0		6/9/2006 12:14:55 PM	**7.01E+00**	1.725E+00	1.816E+00	6.514E+00	PCI/SA		1.0	1.0E+0	3.402E-2
31580	**9H4XQQ10**			**J6E0801575**	P-0602	FILTER	5/8/2006 7:30:00	4/20/2006 10:25:00 AM					
ALPHA	BAS7	0		6/9/2006 6:54:58 PM	**-6.4345E-01**	1.051E+00	1.053E+00	6.563E+00	PCI/SA		1.0	1.0E+0	2.09E-2
BETA	BDS8	0		6/9/2006 12:14:55 PM	**6.1542E+00**	1.71E+00	1.785E+00	6.558E+00	PCI/SA		1.0	1.0E+0	3.353E-2
31580	**9H4XQR10**			**J6E0801576**	P-0603	FILTER	5/8/2006 7:30:00	4/20/2006 10:40:00 AM					
ALPHA	BAS7	0		6/9/2006 6:54:58 PM	**-2.2438E+00**	1.003E+00	1.03E+00	7.909E+00	PCI/SA		1.0	1.0E+0	2.066E-2
BETA	BDS8	0		6/9/2006 12:14:57 PM	**7.7639E+00**	1.742E+00	1.827E+00	6.452E+00	PCI/SA		1.0	1.0E+0	3.297E-2
31580	**9H4XQT10**			**J6E0801577**	P-0605	FILTER	5/8/2006 7:30:00	4/20/2006 10:35:00 AM					
ALPHA	BAS7	0		6/9/2006 6:54:58 PM	**0.0E+00**	0.0E+00	1.149E+00	6.3E+00	PCI/SA		1.0	1.0E+0	2.074E-2
BETA	BDS8	0		6/9/2006 12:14:57 PM	**-1.0654E+00**	1.362E+00	1.365E+00	6.307E+00	PCI/SA		1.0	1.0E+0	3.322E-2
31580	**H403P1AB**			**J6E090000281**	INTRA-LAB BLANK	FILTER	5/8/2006 7:30:00	4/20/2006 9:10:00 AM					
ALPHA	BAS7	0	B	6/10/2006 7:04:05 AM	**-9.3363E-03**	2.263E-02	2.265E-02	1.374E-01	PCI/SA		1.0	1.0E+0	1.0E+0
31580	**H403P1CS**			**J6E090000281**	INTRA-LAB CHECK	FILTER	5/8/2006 7:30:00	4/20/2006 9:10:00 AM					
ALPHA	BAS7	0	S	6/10/2006 8:56:31 AM	**1.8435E+00**	1.482E-01	2.394E-01	1.628E-01	PCI/SA	2.3787E+00	1.0	1.0E+0	1.0E+0

6129281, **Samples Inserted | Updated | NotUpdated => 2 | 0 | 12,
**Results Inserted | ReTestInserted | Updated | NotInserted => 14 | 0 | 0 | 0.
**Diff RptDb | Qtims => .

Batch Nbr: 6129281

Alpha Beta, Alpha by GPC-Am , Results
Summary Report

6/10/2006 10:02:35 AM

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	**H4XP81AE**	ALPHA	**-2.23E+00**	**(1.02E+00)**	**U4**	PCI/SA	R	3.18E+00	7.86E+00	CRDL	100%	
Calc	S7	FILTER	**H4XQH1AE**	ALPHA	**-5.24E-01**	**(1.02E+00)**	**U4**	PCI/SA	R	2.44E+00	6.29E+00		100%	
Calc	S7	FILTER	**H4XQM1AE**	ALPHA	**3.38E-01**	**(1.05E+00)**	**U4**	PCI/SA	R	2.03E+00	5.58E+00		100%	
Calc	S7	FILTER	**H4XQN1AE**	ALPHA	**5.62E+00**	**(2.23E+00)**		PCI/SA	R	2.70E+00	6.85E+00		100%	
Calc	S7	FILTER	**H4XQQ1AE**	ALPHA	**-6.43E-01**	**(1.05E+00)**	**U4**	PCI/SA	R	2.56E+00	6.56E+00		100%	
Calc	S7	FILTER	**H4XQR1AE**	ALPHA	**-2.24E+00**	**(1.03E+00)**	**U4**	PCI/SA	R	3.20E+00	7.91E+00		100%	
Calc	S7	FILTER	**H4XQT1AE**	ALPHA	**0.00E+00**	**(1.15E+00)**	**U4**	PCI/SA	R	2.44E+00	6.30E+00		100%	
Calc	S7	FILTER	**H4X1R1AE**	ALPHA	**3.15E+00**	**(1.67E+00)**		PCI/SA	R	2.03E+00	5.57E+00		100%	
Calc	S7	FILTER	**H4X1T1AE**	ALPHA	**9.85E-01**	**(1.67E+00)**	**U4**	PCI/SA	R	3.17E+00	7.82E+00		100%	
Calc	S7	FILTER	**H4X1V1AE**	ALPHA	**2.41E+00**	**(1.52E+00)**	**U4**	PCI/SA	R	2.06E+00	5.59E+00		100%	
Calc	S7	FILTER	**H4X1W1AE**	ALPHA	**3.56E+00**	**(1.76E+00)**		PCI/SA	R	2.09E+00	5.68E+00		100%	
Calc	S7	FILTER	**H4X1X1AE**	ALPHA	**0.00E+00**	**(1.52E+00)**	**U4**	PCI/SA	R	3.23E+00	7.87E+00		100%	
Calc	S7	FILTER	**H403P1AA**	ALPHA	**-9.34E-03**	**(2.26E-02)**	**U4**	PCI/SA	R	5.29E-02	1.37E-01	**B**	100%	
Calc	S7	FILTER	**H403P1AC**	ALPHA	**1.84E+00**	**(2.39E-01)**		PCI/SA	R	6.60E-02	1.63E-01	**S**	100%	78%

P Anderson
6·12·06

() - (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:14
RADCALC v4.8.24
STL Richland

Batch Nbr: 6129281

Alpha Beta, Alpha by GPC-Am , Calculated Results
Detailed Report

6/10/2006 10:02:36 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	S7	FILTER	*STLE	GabWoBS	**H4XP81AE**	**PCI/SA**		04/20/06 09:10	06/09/06 16:45			1	1.00 SA	
536403,P-0598					,J6E080157-1 v4.8.24		FILTER			00.4				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	06/09/06 17:35	ALPHA	2	30	GPC10C	1.5	N	N	3.8825E-01	1.0000E+00	N	100%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			100	500			Y		(1.293E-02)	(0.000E+00)		8%			(0.000E+00)	48.068187		

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
	06/10/06	ALPHA	R	**-2.230785**	**U4**	-4.00000E-02	-0.103028	-0.103028	1.00 SA	100%		7.863587		
				(1.024081)		(1.7889E-02)	(0.046932)	(0.046932)	(0.027097)			3.178002		

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	**H4XQH1AE**	**PCI/SA**		04/20/06 09:30	06/09/06 16:45			1	1.00 SA	
536403,P-0599					,J6E080157-2 v4.8.24		FILTER			00.3				0.020781 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	06/09/06 17:35	ALPHA	3	20	GPC10D	1.5	N	N	4.1395E-01	1.0000E+00	N	100%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			100	500			Y		(1.204E-02)	(0.000E+00)		8%			(0.000E+00)	48.121315		

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
	06/10/06	ALPHA	R	**-0.523642**	**U4**	-1.00000E-02	-0.024157	-0.024157	1.00 SA	100%		6.288945		
				(1.022182)		(1.9494E-02)	(0.047136)	(0.047136)	(0.028284)			2.436384		

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	**H4XQM1AE**	**PCI/SA**		04/20/06 09:45	06/09/06 16:45			1	1.00 SA	
536403,P-0600					,J6E080157-3 v4.8.24		FILTER			00.2				0.020739 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	06/09/06 17:35	ALPHA	3	12	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)	48.217373		

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
	06/10/06	ALPHA	R	**0.337628**	**U4**	6.00000E-03	0.015545	0.015545	1.00 SA	100%		5.578592		
				(1.050301)		(1.8655E-02)	(0.048349)	(0.048349)	(0.028284)			2.028025		

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	**H4XQN1AE**	**PCI/SA**		04/20/06 10:05	06/09/06 18:54			1	1.00 SA	
536403,P-0601					,J6E080157-4 v4.8.24		FILTER			00.2				0.021059 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	06/09/06 19:44	ALPHA	15	23	GPC10A	1.5	N	N	3.9598E-01	1.0000E+00	N	100%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			100	500			Y		(1.368E-02)	(0.000E+00)		8%			(0.000E+00)	47.485872		

() - (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: 6129281

Alpha Beta, Alpha by GPC-Am , Calculated Results

6/10/2006 10:02:36 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
	06/10/06	ALPHA	R	**5.617822**		1.04000E-01	0.262638	0.262638	1.00 SA	100%		6.851117		
				(2.233622)		(3.9900E-02)	(0.103328)	(0.103328)	(0.028284)			2.695221		

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	**H4XQQ1AE**	**PCI/SA**		04/20/06 10:25	06/09/06 18:54			1	1.00 SA	
536403,P-0602					,J6E080157-5 v4.8.24		FILTER			00.2				0.0209 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	06/09/06 19:44	ALPHA	3	21	GPC10B	1.5	N	N	4.0195E-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)	47.847438		

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
	06/10/06	ALPHA	R	**-0.643446**	**U4**	-1.20000E-02	-0.029854	-0.029854	1.00 SA	100%		6.562971		
				(1.052874)		(1.9596E-02)	(0.048821)	(0.048821)	(0.028284)			2.556446		

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	**H4XQR1AE**	**PCI/SA**		04/20/06 10:40	06/09/06 18:54			1	1.00 SA	
536403,P-0603					,J6E080157-6 v4.8.24		FILTER			00.1				0.020657 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	06/09/06 19:44	ALPHA	2	30	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)	48.40953		

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
	06/10/06	ALPHA	R	**-2.243776**	**U4**	-4.00000E-02	-0.102897	-0.102897	1.00 SA	100%		7.909381		
				(1.030206)		(1.7889E-02)	(0.046873)	(0.046873)	(0.028284)			3.19651		

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	**H4XQT1AE**	**PCI/SA**		04/20/06 10:35	06/09/06 18:54			1	1.00 SA	
536403,P-0605					,J6E080157-7 v4.8.24		FILTER			00.3 /				0.020743 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	06/09/06 19:44	ALPHA	4	20	GPC10D	1.5	N	N	4.1395E-01	1.0000E+00	N	100%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			100	500			Y		(1.204E-02)	(0.000E+00)		8%			(0.000E+00)	48.208403		

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
	06/10/06	ALPHA	R	**0.00E00**	**U4**	0.00000E+00	0.00E00	0.00E00	1.00 SA	100%		6.300326		
				(1.149319)		(2.1909E-02)	(0.052926)	(0.052926)	(0.028284)			2.440793		

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	**H4X1R1AE**	**PCI/SA**		04/20/06 09:35	06/09/06 18:54			1	1.00 SA	
536403,000431					,J6E080157-8 v4.8.24		FILTER			00.1 /				0.02076 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: 6129281

Alpha Beta, Alpha by GPC-Am , Calculated Results

6/10/2006 10:02:37 AM

0	06/09/06 19:44	ALPHA	8	12	GPC10E	1.5	N	N	3.8614E-01	1.0000E+00	N	100%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			100	500			Y		(1.143E-02)	(0.000E+00)		8%			(0.000E+00)	48.168669		

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
	06/10/06	ALPHA	R	**3.146692**		5.60000E-02	0.145025	0.145025	1.00 SA	100%		5.570628		
				(1.667995)		(2.9120E-02)	(0.076422)	(0.076422)	(0.028284)			2.025129		

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	**H4X1T1AE**	**PCI/SA**		04/20/06 09:50	06/10/06 07:04			1	1.00 SA	
536403,000432					,J6E080157-9 v4.8.24		FILTER			00.1				0.020778 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	06/10/06 07:54	ALPHA	8	31	GPC10A	1.5	N	N	3.9619E-01	1.0000E+00	N	100%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			100	500			Y		(1.368E-02)	(0.000E+00)		8%			(0.000E+00)	48.128779		

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
	06/10/06	ALPHA	R	**0.984959**	**U4**	1.80000E-02	0.045433	0.045433	1.00 SA	100%		7.818608		
				(1.666516)		(3.0397E-02)	(0.076826)	(0.076826)	(0.028284)			3.169731		

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	**H4X1V1AE**	**PCI/SA**		04/20/06 10:10	06/10/06 07:04			1	1.00 SA	
536403,000433					,J6E080157-10 v4.8.24		FILTER			00.3				0.020455 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	06/10/06 07:54	ALPHA	7	13	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)	48.887539		

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
	06/10/06	ALPHA	R	**2.411647**	**U4**	4.40000E-02	0.109514	0.109514	1.00 SA	100%		5.594966		
				(1.523842)		(2.7423E-02)	(0.068912)	(0.068912)	(0.028284)			2.056026		

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	**H4X1W1AE**	**PCI/SA**		04/20/06 10:30	06/10/06 07:04			1	1.00 SA	
536403,000434					,J6E080157-11 v4.8.24		FILTER			00.3				0.02084 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	06/10/06 07:54	ALPHA	9	13	GPC10C	1.5	N	N	3.8841E-01	1.0000E+00	N	100%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			100	500			Y		(1.293E-02)	(0.000E+00)		8%			(0.000E+00)	47.983815		

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
	06/10/06	ALPHA	R	**3.561468**		6.40000E-02	0.164774	0.164774	1.00 SA	100%		5.680485		
				(1.75646)		(3.0854E-02)	(0.080711)	(0.080711)	(0.028284)			2.087453		

() - (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: 6129281

Alpha Beta, Alpha by GPC-Am , Calculated Results

6/10/2006 10:02:37 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
12	Calc	S7	FILTER	*STLE	GabWoBS	**H4X1X1AE**	**PCI/SA**		04/20/06 10:45	06/10/06 07:04			1	1.00 SA	
536403,000435					,J6E080157-12 v4.8.24		FILTER			00.3				0.020752 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	06/10/06 07:54	ALPHA	7	35	GPC10D	1.5	N	N	4.1395E-01	1.0000E+00	N	100%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			100	500			Y		(1.204E-02)	(0.000E+00)		8%			(0.000E+00)	48.187428		

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
	06/10/06	ALPHA	R	**0.00E00**	**U4**	0.00000E+00	0.00E00	0.00E00	1.00 SA	100%		7.872109		
				(1.519745)		(2.8983E-02)	(0.070015)	(0.070015)	(0.028284)			3.227461		

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	**H403P1AA**	**PCI/SA**	**B**	04/20/06 09:10	06/10/06 07:04			1	1.00 SA	
0,INTRA-LAB BLANK					,J6E090000-281		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
0	06/10/06 07:54	ALPHA	3	19	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)	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
	06/10/06	ALPHA	R	**-0.009336**	**U4**	-8.00000E-03	-0.020727	-0.020727	1.00 SA	100%		0.137413		
				(0.022649)		(1.9391E-02)	(0.050269)	(0.050269)	(0.017321)			0.052924		

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	**H403P1AC**	**PCI/SA**	**S**	04/20/06 09:10	06/10/06 08:56		ASC0354	1	1.00 SA	
0,INTRA-LAB CHECK					,J6E090000-281		FILTER			00.5		ASC0354 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	06/10/06 09:46	ALPHA	168	31	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)	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
	06/10/06	ALPHA	R	**1.843512**		1.61800E+00	4.0926	4.0926	1.00 SA	100%	78%	0.162799		
				(0.239356)		(1.3009E-01)	(0.485239)	(0.485239)	(0.017321)			0.066		

() - (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

UST Number: H4XP81AE Isotope: 112 (QREPORT Rev 11-OCT-98)

Detector: 10-C File: [quad10.sample.C]H4XP81AE.112
Dish Size: 15 Bkg File: $DISK1:[QUAD10.BKGRND]CURRENT.C_15;4221

Cycle	Alpha	Beta	Min	Guard	Volts	Finish Date/Time
1	00002	00000	0100	00000	1000	9-JUN-2006 17:35:00.77

Bkg File: [quad10.bkgrnd]2006-06-09_0318.C_15 (QREPORT Rev 11-OCT-98)

Cycle	Count	Min	CPM	Guard	Volts	Date/Time
Bkg	00030	0500	0.06	00000	1000	9-JUN-2006 03:18:40.76

UST Number: H4XQH1AE Isotope: 112 (QREPORT Rev 11-OCT-98)

Detector: 10-D File: [quad10.sample.D]H4XQH1AE.112
Dish Size: 15 Bkg File: $DISK1:[QUAD10.BKGRND]CURRENT.D_15;4215

Cycle	Alpha	Beta	Min	Guard	Volts	Finish Date/Time
1	00003	00000	0100	00000	1000	9-JUN-2006 17:35:00.77

Bkg File: [quad10.bkgrnd]2006-06-09_0318.D_15 (QREPORT Rev 11-OCT-98)

Cycle	Count	Min	CPM	Guard	Volts	Date/Time
Bkg	00020	0500	0.04	00000	1000	9-JUN-2006 03:18:40.76

UST Number: H4XQM1AE Isotope: 112 (QREPORT Rev 11-OCT-98)

Detector: 10-E File: [quad10.sample.E]H4XQM1AE.112
Dish Size: 15 Bkg File: $DISK1:[QUAD10.BKGRND]CURRENT.E_15;4210

Cycle	Alpha	Beta	Min	Guard	Volts	Finish Date/Time
1	00003	00000	0100	00000	1000	9-JUN-2006 17:35:00.77

Bkg File: [quad10.bkgrnd]2006-06-09_0318.E_15 (QREPORT Rev 11-OCT-98)

Cycle	Count	Min	CPM	Guard	Volts	Date/Time
Bkg	00012	0500	0.02	00000	1000	9-JUN-2006 03:18:40.76

UST Number: H4XQN1AE Isotope: 112 (QREPORT Rev 11-OCT-98)

Detector: 10-A File: [quad10.sample.A]H4XQN1AE.112
Dish Size: 15 Bkg File: $DISK1:[QUAD10.BKGRND]CURRENT.A_15;4215

Cycle	Alpha	Beta	Min	Guard	Volts	Finish Date/Time
1	00015	00000	0100	00000	1000	9-JUN-2006 19:44:58.91

Bkg File: [quad10.bkgrnd]2006-06-09_0318.A_15 (QREPORT Rev 11-OCT-98)

Cycle	Count	Min	CPM	Guard	Volts	Date/Time
Bkg	00023	0500	0.05	00000	1000	9-JUN-2006 03:18:40.76

UST Number: H4XQQ1AE Isotope: 112 (QREPORT Rev 11-OCT-98)

Detector: 10-B File: [quad10.sample.B]H4XQQ1AE.112
Dish Size: 15 Bkg File: $DISK1:[QUAD10.BKGRND]CURRENT.B_15;4212

Cycle	Alpha	Beta	Min	Guard	Volts	Finish Date/Time
1	00003	00000	0100	00000	1000	9-JUN-2006 19:44:58.91

Bkg File: [quad10.bkgrnd]2006-06-09_0318.B_15 (QREPORT Rev 11-OCT-98)

Cycle	Count	Min	CPM	Guard	Volts	Date/Time
Bkg	00021	0500	0.04	00000	1000	9-JUN-2006 03:18:40.76

UST Number: H4XQR1AE Isotope: 112 (QREPORT Rev 11-OCT-98)

Detector: 10-C File: [quad10.sample.C]H4XQR1AE.112
Dish Size: 15 Bkg File: $DISK1:[QUAD10.BKGRND]CURRENT.C_15;4221

Cycle	Alpha	Beta	Min	Guard	Volts	Finish Date/Time
1	00002	00000	0100	00000	1000	9-JUN-2006 19:44:58.91

Bkg File: [quad10.bkgrnd]2006-06-09_0318.C_15 (QREPORT Rev 11-OCT-98)

Cycle	Count	Min	CPM	Guard	Volts	Date/Time
Bkg	00030	0500	0.06	00000	1000	9-JUN-2006 03:18:40.76

UST Number: H4XQT1AE Isotope: 112 (QREPORT Rev 11-OCT-98)

Detector: 10-D File: [quad10.sample.D]H4XQT1AE.112
Dish Size: 15 Bkg File: $DISK1:[QUAD10.BKGRND]CURRENT.D_15;4215

Cycle	Alpha	Beta	Min	Guard	Volts	Finish Date/Time
1	00004	00000	0100	00000	1000	9-JUN-2006 19:44:58.91

Bkg File: [quad10.bkgrnd]2006-06-09_0318.D_15 (QREPORT Rev 11-OCT-98)

Cycle	Count	Min	CPM	Guard	Volts	Date/Time
Bkg	00020	0500	0.04	00000	1000	9-JUN-2006 03:18:40.76

UST Number: H4X1R1AE Isotope: 112 (QREPORT Rev 11-OCT-98)

Detector: 10-E File: [quad10.sample.E]H4X1R1AE.112
Dish Size: 15 Bkg File: $DISK1:[QUAD10.BKGRND]CURRENT.E_15;4210

Cycle	Alpha	Beta	Min	Guard	Volts	Finish Date/Time
1	00008	00000	0100	00000	1000	9-JUN-2006 19:44:58.91

Bkg File: [quad10.bkgrnd]2006-06-09_0318.E_15 (QREPORT Rev 11-OCT-98)

Cycle	Count	Min	CPM	Guard	Volts	Date/Time
Bkg	00012	0500	0.02	00000	1000	9-JUN-2006 03:18:40.76

```
UST Number: H4X1T1AE   Isotope: 112       (QREPORT Rev 11-OCT-98)

  Detector: 10-A          File: [quad10.sample.A]H4X1T1AE.112
 Dish Size: 15        Bkg File: $DISK1:[QUAD10.BKGRND]CURRENT.A_15;4216

Cycle  Alpha   Beta     Min   Guard   Volts      Finish Date/Time
   1   00008   00000   0100   00000   1000   10-JUN-2006 07:54:05.69

   Bkg File: [quad10.bkgrnd]2006-06-10_0456.A_15        (QREPORT Rev 11-OCT-98)

Cycle  Count    Min      CPM     Guard   Volts         Date/Time
 Bkg   00031   0500       0.06   00000   1000   10-JUN-2006 04:56:12.18
```

UST Number: H4X1V1AE Isotope: 112 (QREPORT Rev 11-OCT-98)

Detector: 10-B File: [quad10.sample.B]H4X1V1AE.112
Dish Size: 15 Bkg File: $DISK1:[QUAD10.BKGRND]CURRENT.B_15;4213

Cycle	Alpha	Beta	Min	Guard	Volts	Finish Date/Time
1	00007	00000	0100	00000	1000	10-JUN-2006 07:54:05.69

Bkg File: [quad10.bkgrnd]2006-06-10_0456.B_15 (QREPORT Rev 11-OCT-98)

Cycle	Count	Min	CPM	Guard	Volts	Date/Time
Bkg	00013	0500	0.03	00000	1000	10-JUN-2006 04:56:12.18

UST Number: H4X1W1AE Isotope: 112 (QREPORT Rev 11-OCT-98)

Detector: 10-C File: [quad10.sample.C]H4X1W1AE.112
Dish Size: 15 Bkg File: $DISK1:[QUAD10.BKGRND]CURRENT.C_15;4222

Cycle	Alpha	Beta	Min	Guard	Volts	Finish Date/Time
1	00009	00000	0100	00000	1000	10-JUN-2006 07:54:05.69

Bkg File: [quad10.bkgrnd]2006-06-10_0456.C_15 (QREPORT Rev 11-OCT-98)

Cycle	Count	Min	CPM	Guard	Volts	Date/Time
Bkg	00013	0500	0.03	00000	1000	10-JUN-2006 04:56:12.18

UST Number: H4X1X1AE Isotope: 112 (QREPORT Rev 11-OCT-98)

Detector: 10-D File: [quad10.sample.D]H4X1X1AE.112
Dish Size: 15 Bkg File: $DISK1:[QUAD10.BKGRND]CURRENT.D_15;4216

Cycle	Alpha	Beta	Min	Guard	Volts	Finish Date/Time
1	00007	00000	0100	00000	1000	10-JUN-2006 07:54:05.69

Bkg File: [quad10.bkgrnd]2006-06-10_0456.D_15 (QREPORT Rev 11-OCT-98)

Cycle	Count	Min	CPM	Guard	Volts	Date/Time
Bkg	00035	0500	0.07	00000	1000	10-JUN-2006 04:56:12.18

UST Number: H403P1AA Isotope: 112 (QREPORT Rev 11-OCT-98)

Detector: 10-E File: [quad10.sample.E]H403P1AA.112
Dish Size: 15 Bkg File: $DISK1:[QUAD10.BKGRND]CURRENT.E_15;4211

Cycle	Alpha	Beta	Min	Guard	Volts	Finish Date/Time
1	00003	00000	0100	00000	1000	10-JUN-2006 07:54:05.69

Bkg File: [quad10.bkgrnd]2006-06-10_0456.E_15 (QREPORT Rev 11-OCT-98)

Cycle	Count	Min	CPM	Guard	Volts	Date/Time
Bkg	00019	0500	0.04	00000	1000	10-JUN-2006 04:56:12.18

UST Number: H403P1AC Isotope: 112 (QREPORT Rev 11-OCT-98)

Detector: 10-A File: [quad10.sample.A]H403P1AC.112
Dish Size: 15 Bkg File: $DISK1:[QUAD10.BKGRND]CURRENT.A_15;4216

Cycle	Alpha	Beta	Min	Guard	Volts	Finish Date/Time
1	00168	00000	0100	00000	1000	10-JUN-2006 09:46:31.81

Bkg File: [quad10.bkgrnd]2006-06-10_0456.A_15 (QREPORT Rev 11-OCT-98)

Cycle	Count	Min	CPM	Guard	Volts	Date/Time
Bkg	00031	0500	0.06	00000	1000	10-JUN-2006 04:56:12.18

BETA

SAMPLE AND QC DATA

SEVERN TRENT STL

Data Review/Verification Checklist

RADIOCHEMISTRY, First Level Review

6/13/2006 9:11:20 AM

Lot No., Due Date: J6E080157; 06/06/2006

Client, Site: 536403; AIR MONITORING Yerington Mine

QC Batch No., Method Test: 6129282; RBETA-SR Beta by GPC-Sr/Y

SDG, Matrix: 31580; 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. 10-08176

First Level Review Pam Anderson **Date** 6-13-06

SEVERN TRENT STL

Data Review Checklist
RADIOCHEMISTRY
Second Level Review

QC Batch Number: 612928R

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 Allen Date: 6-13-06

STL RICHLAND

6/5/2006 3:17:59 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: 06/05/2006

Sep1 DT/Tm Tech:

Batch: 6129282 **FILTER** **pCi/sampl** **PM, Quote: SA , 63174**

Sep2 DT/Tm Tech:

SEQ Batch, Test: None

Prep Tech: HansenM Scott

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 H4XP8-1-AF J6E080157-1-SAMP 04/20/2006 09:10	0.833sa,g	500.51sa,g	50.29g,in	0.0837g	Dish PST 1.5 0.7	100	26C	1302	6/9/06 B	
			AmtRec: FILTER	#Containers: 1			Scr:	Alpha:		Beta:
2 H4XQH-1-AF J6E080157-2-SAMP 04/20/2006 09:30	0.833sa,g	504.27sa,g	50.54g,in	0.0835g	0.6		26D			
			AmtRec: FILTER	#Containers: 1			Scr:	Alpha:		Beta:
3 H4XQM-1-AF J6E080157-3-SAMP 04/20/2006 09:45	0.833sa,g	503.67sa,g	50.43g,in	0.0834g	0.5		28B			
			AmtRec: FILTER	#Containers: 1			Scr:	Alpha:		Beta:
4 H4XQN-1-AF J6E080157-4-SAMP 04/20/2006 10:05	0.833sa,g	500.38sa,g	50.47g,in	0.084g	1.0		28C			
			AmtRec: FILTER	#Containers: 1			Scr:	Alpha:		Beta:
5 H4XQQ-1-AF J6E080157-5-SAMP 04/20/2006 10:25	0.833sa,g	501.40sa,g	50.28g,in	0.0835g	0.4		28D			
			AmtRec: FILTER	#Containers: 1			Scr:	Alpha:		Beta:
6 H4XQR-1-AF J6E080157-6-SAMP 04/20/2006 10:40	0.833sa	508.50sa	50.65g,in	0.083g	0.7		31A			
			AmtRec: FILTER	#Containers: 1			Scr:	Alpha:		Beta:
7 H4XQT-1-AF J6E080157-7-SAMP 04/20/2006 10:35	0.833sa,g	501.97sa,g	50.15g,in	0.0832g	0.4		31B			
			AmtRec: FILTER	#Containers: 1			Scr:	Alpha:		Beta:

6/5/2006 3:17:59 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: 06/05/2006

Sep1 DT/Tm Tech:

Batch: 6129282 FILTER pCi/sampl PM, Quote: SA , 63174

SEQ Batch, Test: None

Sep2 DT/Tm Tech:

Prep Tech: HansenM Scott

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 H4X1R-1-AF J6E080157-8-SAMP 04/20/2006 09:35	0.833sa,g	502.76sa,g	50.10g,in	0.083g	Dish 1.5 PPT 0.5	100	31C	1302	6/9/06	
			AmtRec: FILTER	#Containers: 1			Scr:	Alpha:		Beta:
9 H4X1T-1-AF J6E080157-9-SAMP 04/20/2006 09:50	0.833sa,g	500.74sa,g	50.44g,in	0.0839g	1.7		31D			
			AmtRec: FILTER	#Containers: 1			Scr:	Alpha:		Beta:
10 H4X1V-1-AF J6E080157-10-SAMP 04/20/2006 10:10	0.833sa,g	515.15sa,g	50.17g,in	0.0811g	1.0		32A			
			AmtRec: FILTER	#Containers: 1			Scr:	Alpha:		Beta:
11 H4X1W-1-AF J6E080157-11-SAMP 04/20/2006 10:30	0.833sa,g	501.63sa,g	50.43g,in	0.0837g	1.0		32B			
			AmtRec: FILTER	#Containers: 1			Scr:	Alpha:		Beta:
12 H4X1X-1-AF J6E080157-12-SAMP 04/20/2006 10:45	0.833sa,g	504.16sa,g	50.03g,in	0.0827g	1.0		32C			
			AmtRec: FILTER	#Containers: 1			Scr:	Alpha:		Beta:
13 H4034-1-AA-B J6E090000-282-BLK 04/20/2006 09:10			1.00sa,in	1.00sa	0.1		32D			
			AmtRec:	#Containers: 1			Scr:	Alpha:		Beta:
14 H4034-1-AC-C J6E090000-282-LCS 04/20/2006 09:10			1.00sa,in	1.00sa	BESB2809 05/16/06,pd 12/28/05,r 0.5		26A	1455	6/9/06	
			AmtRec:	#Containers: 1			Scr:	Alpha:		Beta:

Clouseau
Nonconformance Memo

SEVERN TRENT SERVICES

NCM #: **10-08176**
NCM Initiated By: Pam Anderson
Date Opened: 06/13/2006
Date Closed:

Classification: **Anomaly**
Status: **GLREVIEW**
Production Area: Environmental - Sep
Tests: Beta by GPC-Sr/Y
Lot #'s (Sample #'s): J6E080157 (1,10,11,12,2,3,4,5,6,7,8,9),
QC Batches: 6129282

Nonconformance: MDA not met
Subcategory: Data accepted

Problem Description / Root Cause

Name	Date	Description
Pam Anderson	06/13/2006	Except for the QC all sample MDAs are just over CRDL. Most sample results are >MDA>CRDL except the following: H4XQH1AF H4XQQ1AF H4XQT1AF H4X1V1AF H4X1R1AF.

Corrective Action

Name	Date	Corrective Action
Pam Anderson	06/13/2006	Report with MDAs achieved.

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: 6/13/2006

6/13/2006 8:38:34 AM

ICOC Fraction Transfer/Status Report

ByDate: 6/13/2005, 6/18/2006, Batch: '6129282', User: *ALL Order By DateTimeAccepting

Q Batch	Work Ord	CurStatus	Accepting			Comments
6129282						
AC		**CalcC**	**HansenM**	6/5/2006 3:56:08 PM		
SC			antonsonl	IsBatched	5/9/2006 1:09:52 PM	ICOC_RADCALC v4.8.24
SC			HansenM	InPrep2	6/5/2006 3:56:08 PM	RICH-RC-5016 REVISION 5
SC			ScottM	Prep2C	6/9/2006 9:20:23 AM	RICH-RC-5014 REVISION 6
SC			BlackCL	InCnt1	6/9/2006 9:31:40 AM	RICH-RD-0003 REVISION 4
SC			DAWKINSO	CalcC	6/9/2006 8:08:21 PM	RICH-RD-0003 REVISION 4
AC			**ScottM**	6/9/2006 9:20:23 AM		
AC			**BlackCL**	6/9/2006 9:31:40 AM		
AC			**DAWKINSO**	6/9/2006 8:08:21 PM		

AC: Accepting Entry; SC: Status Change

STL Richland

Richland Wa.

Grp Rec Cnt: 4

ICOCFractions v4.8.18

6/13/2006 8:38:33 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
31580	**9H4X1R10**			**J6E0801578**	000431	FILTER	5/8/2006 7:30:00	4/20/2006 9:35:00 AM				
BETA	BDS8	0		6/9/2006 12:14:57 PM	**5.819E+00**	1.684E+00	1.73E+00	6.517E+00	PCI/SA	1.0	1.0E+0	3.301E-2
31580	**9H4X1T10**			**J6E0801579**	000432	FILTER	5/8/2006 7:30:00	4/20/2006 9:50:00 AM				
BETA	BDS8	0		6/9/2006 12:14:57 PM	**8.2468E+00**	1.699E+00	1.796E+00	6.142E+00	PCI/SA	1.0	1.0E+0	3.391E-2
31580	**9H4X1V10**			**J6E08015710**	000433	FILTER	5/8/2006 7:30:00	4/20/2006 10:10:00 AM				
BETA	BDS8	0		6/9/2006 12:15:08 PM	**6.5031E+00**	1.797E+00	1.852E+00	6.911E+00	PCI/SA	1.0	1.0E+0	3.113E-2
31580	**9H4X1W10**			**J6E08015711**	000434	FILTER	5/8/2006 7:30:00	4/20/2006 10:30:00 AM				
BETA	BDS8	0		6/9/2006 12:15:08 PM	**1.005E+01**	1.753E+00	1.886E+00	6.095E+00	PCI/SA	1.0	1.0E+0	3.374E-2
31580	**9H4X1X10**			**J6E08015712**	000435	FILTER	5/8/2006 7:30:00	4/20/2006 10:45:00 AM				
BETA	BDS8	0		6/9/2006 12:15:08 PM	**9.2048E+00**	1.735E+00	1.922E+00	6.153E+00	PCI/SA	1.0	1.0E+0	3.266E-2
31580	**9H4XP810**			**J6E0801571**	P-0598	FILTER	5/8/2006 7:30:00	4/20/2006 9:10:00 AM				
BETA	BDS8	0		6/9/2006 12:14:58 PM	**7.9307E+00**	1.732E+00	1.816E+00	6.318E+00	PCI/SA	1.0	1.0E+0	3.37E-2
31580	**9H4XQH10**			**J6E0801572**	P-0599	FILTER	5/8/2006 7:30:00	4/20/2006 9:30:00 AM				
BETA	BDS8	0		6/9/2006 12:14:58 PM	**5.9672E+00**	1.657E+00	1.706E+00	6.332E+00	PCI/SA	1.0	1.0E+0	3.349E-2
31580	**9H4XQM10**			**J6E0801573**	P-0600	FILTER	5/8/2006 7:30:00	4/20/2006 9:45:00 AM				
BETA	BDS8	0		6/9/2006 12:14:55 PM	**7.9287E+00**	1.702E+00	1.789E+00	6.211E+00	PCI/SA	1.0	1.0E+0	3.34E-2
31580	**9H4XQN10**			**J6E0801574**	P-0601	FILTER	5/8/2006 7:30:00	4/20/2006 10:05:00 AM				
BETA	BDS8	0		6/9/2006 12:14:55 PM	**7.01E+00**	1.725E+00	1.816E+00	6.514E+00	PCI/SA	1.0	1.0E+0	3.402E-2
31580	**9H4XQQ10**			**J6E0801575**	P-0602	FILTER	5/8/2006 7:30:00	4/20/2006 10:25:00 AM				
BETA	BDS8	0		6/9/2006 12:14:55 PM	**6.1542E+00**	1.71E+00	1.785E+00	6.558E+00	PCI/SA	1.0	1.0E+0	3.353E-2
31580	**9H4XQR10**			**J6E0801576**	P-0603	FILTER	5/8/2006 7:30:00	4/20/2006 10:40:00 AM				
BETA	BDS8	0		6/9/2006 12:14:57 PM	**7.7639E+00**	1.742E+00	1.827E+00	6.452E+00	PCI/SA	1.0	1.0E+0	3.297E-2
31580	**9H4XQT10**			**J6E0801577**	P-0605	FILTER	5/8/2006 7:30:00	4/20/2006 10:35:00 AM				
BETA	BDS8	0		6/9/2006 12:14:57 PM	**-1.0654E+00**	1.362E+00	1.365E+00	6.307E+00	PCI/SA	1.0	1.0E+0	3.322E-2
31580	**H40341AB**			**J6E090000282**	INTRA-LAB BLANK	FILTER	5/8/2006 7:30:00	4/20/2006 9:10:00 AM				
BETA	BDS8	0	B	6/9/2006 12:15:08 PM	**-8.3791E-03**	1.299E-01	1.299E-01	5.811E-01	PCI/SA	1.0	1.0E+0	1.0E+0
31580	**H40341CS**			**J6E090000282**	INTRA-LAB CHECK	FILTER	5/8/2006 7:30:00	4/20/2006 9:10:00 AM				
BETA	BDS8	0	S	6/9/2006 2:07:59 PM	**3.7375E+00**	2.311E-01	3.484E-01	5.732E-01	PCI/SA	4.6906E+00 1.0	1.0E+0	1.0E+0

6129282, **Samples Inserted | Updated | NotUpdated => 14 | 0 | 0,
**Results Inserted | ReTestInserted | Updated | NotInserted => 14 | 0 | 0 | 0.
**Diff RptDb | Qtims => .

Batch Nbr: 6129282

Alpha Beta, Beta by GPC-Sr/Y , Results

Summary Report

6/9/2006 7:45:21 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	**H4XP81AF**	BETA	**7.93E+00**	**(1.82E+00)**		PCI/SA	R	2.99E+00	6.32E+00		100%	
Calc	S8	FILTER	**H4XQH1AF**	BETA	**5.97E+00**	**(1.71E+00)**		PCI/SA	R	3.00E+00	6.33E+00	N	100%	
Calc	S8	FILTER	**H4XQM1AF**	BETA	**7.93E+00**	**(1.79E+00)**		PCI/SA	R	2.94E+00	6.21E+00		100%	
Calc	S8	FILTER	**H4XQN1AF**	BETA	**7.01E+00**	**(1.82E+00)**		PCI/SA	R	3.09E+00	6.51E+00		100%	
Calc	S8	FILTER	**H4XQQ1AF**	BETA	**6.15E+00**	**(1.78E+00)**		PCI/SA	R	3.11E+00	6.56E+00	N	100%	
Calc	S8	FILTER	**H4XQR1AF**	BETA	**7.76E+00**	**(1.83E+00)**		PCI/SA	R	3.06E+00	6.45E+00		100%	
Calc	S8	FILTER	**H4XQT1AF**	BETA	**-1.07E+00**	**(1.36E+00)**	**U4**	PCI/SA	R	2.99E+00	6.31E+00	N	100%	
Calc	S8	FILTER	**H4X1R1AF**	BETA	**5.82E+00**	**(1.73E+00)**		PCI/SA	R	3.09E+00	6.52E+00	N	100%	
Calc	S8	FILTER	**H4X1T1AF**	BETA	**8.25E+00**	**(1.80E+00)**		PCI/SA	R	2.91E+00	6.14E+00		100%	
Calc	S8	FILTER	**H4X1V1AF**	BETA	**6.50E+00**	**(1.85E+00)**		PCI/SA	R	3.28E+00	6.91E+00	N	100%	
Calc	S8	FILTER	**H4X1W1AF**	BETA	**1.00E+01**	**(1.89E+00)**		PCI/SA	R	2.88E+00	6.10E+00		100%	
Calc	S8	FILTER	**H4X1X1AF**	BETA	**9.20E+00**	**(1.92E+00)**		PCI/SA	R	2.91E+00	6.15E+00		100%	
Calc	S8	FILTER	**H40341AA**	BETA	**-8.38E-03**	**(1.30E-01)**	**U4**	PCI/SA	R	2.77E-01	5.81E-01	**B**	100%	
Calc	S8	FILTER	**H40341AC**	BETA	**3.74E+00**	**(3.48E-01)**		PCI/SA	R	2.73E-01	5.73E-01	**S**	100%	80%

P Anderson
6-12-06

() - (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:14
RADCALC v4.8.24
STL Richland

Batch Nbr: 6129282

Alpha Beta, Beta by GPC-Sr/Y , Calculated Results
Detailed Report

6/9/2006 7:45:22 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	S8	FILTER	*STLE	GabWoBS	**H4XP81AF**	**PCI/SA**		04/20/06 09:10	06/09/06 12:14			1	1.00 Sa	
536403,P-0598					,J6E080157-1 v4.8.24		FILTER			00.7				0.083698 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	06/09/06 13:04	BETA	161	497	GPC26C	1.5	N	N	4.1803E-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)	11.94775		

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
	06/09/06	BETA	R	**7.930658**		6.16000E-01	1.473589	1.473589	1.00 Sa	100%		6.317527		
				(1.815598)		(1.3449E-01)	(0.332059)	(0.332059)	(0.027064)			2.986088		

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	**H4XQH1AF**	**PCI/SA**		04/20/06 09:30	06/09/06 12:14			1	1.00 Sa	
536403,P-0599					,J6E080157-2 v4.8.24		FILTER			00.6				0.083487 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	06/09/06 13:04	BETA	151	519	GPC26D	1.5	N	N	4.2678E-01	1.0000E+00	N	100%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			100	500			Y		(8.766E-03)	(0.000E+00)		5%			(0.000E+00)	11.977961		

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
	06/09/06	BETA	R	**5.967173**		4.72000E-01	1.105959	1.105959	1.00 Sa	100%		6.331937		
				(1.705808)		(1.3106E-01)	(0.31285)	(0.31285)	(0.028284)			2.996444		

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	**H4XQM1AF**	**PCI/SA**		04/20/06 09:45	06/09/06 12:14			1	1.00 Sa	
536403,P-0600					,J6E080157-3 v4.8.24		FILTER			00.5				0.083404 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	06/09/06 13:04	BETA	168	520	GPC28B	1.5	N	N	4.3595E-01	1.0000E+00	N	100%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			100	500			Y		(1.085E-02)	(0.000E+00)		5%			(0.000E+00)	11.989805		

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
	06/09/06	BETA	R	**7.928694**		6.40000E-01	1.468057	1.468057	1.00 Sa	100%		6.210507		
				(1.789028)		(1.3740E-01)	(0.325675)	(0.325675)	(0.028284)			2.939133		

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	**H4XQN1AF**	**PCI/SA**		04/20/06 10:05	06/09/06 12:14			1	1.00 Sa	
536403,P-0601					,J6E080157-4 v4.8.24		FILTER			01.0				0.084019 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	06/09/06 13:04	BETA	177	597	GPC28C	1.5	N	N	4.4053E-01	1.0000E+00	N	100%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			100	500			Y		(2.155E-02)	(0.000E+00)		5%			(0.000E+00)	11.902046		

() - (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: 6129282

Alpha Beta, Beta by GPC-Sr/Y , Calculated Results

6/9/2006 7:45:22 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
	06/09/06	BETA	R	**7.009997**		5.76000E-01	1.307524	1.307524	1.00 Sa	100%		6.51354		
				(1.816388)		(1.4173E-01)	(0.334481)	(0.334481)	(0.028284)			3.093701		

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	**H4XQQ1AF**	**PCI/SA**		04/20/06 10:25	06/09/06 12:14			1	1.00 Sa	
536403,P-0602					,J6E080157-5 v4.8.24		FILTER			00.4				0.083533 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	06/09/06 13:04	BETA	160	557	GPC28D	1.5	N	N	4.2585E-01	1.0000E+00	N	100%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			100	500			Y		(2.225E-02)	(0.000E+00)		5%			(0.000E+00)	11.971376		

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
	06/09/06	BETA	R	**6.154183**		4.86000E-01	1.141247	1.141247	1.00 Sa	100%		6.558002		
				(1.784759)		(1.3501E-01)	(0.327608)	(0.327608)	(0.028284)			3.109264		

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	**H4XQR1AF**	**PCI/SA**		04/20/06 10:40	06/09/06 12:14			1	1.00 Sa	
536403,P-0603					,J6E080157-6 v4.8.24		FILTER			00.7				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	06/09/06 13:04	BETA	177	570	GPC31A	1.5	N	N	4.4053E-01	1.0000E+00	N	100%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			100	500			Y		(1.296E-02)	(0.000E+00)		5%			(0.000E+00)	12.052205		

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
	06/09/06	BETA	R	**7.763935**		6.30000E-01	1.430108	1.430108	1.00 Sa	100%		6.452497		
				(1.827497)		(1.4135E-01)	(0.331418)	(0.331418)	(0.028284)			3.06108		

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	**H4XQT1AF**	**PCI/SA**		04/20/06 10:35	06/09/06 12:14			1	1.00 Sa	
536403,P-0605					,J6E080157-7 v4.8.24		FILTER			00.4				0.083222 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	06/09/06 13:04	BETA	104	564	GPC31B	1.5	N	N	4.4708E-01	1.0000E+00	N	100%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			100	500			Y		(2.468E-02)	(0.000E+00)		5%			(0.000E+00)	12.016053		

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
	06/09/06	BETA	R	**-1.06538**	**U4**	-8.80000E-02	-0.196832	-0.196832	1.00 Sa	100%		6.307102		
				(1.364995)		(1.1250E-01)	(0.252056)	(0.252056)	(0.028284)			2.991283		

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	**H4X1R1AF**	**PCI/SA**		04/20/06 09:35	06/09/06 12:14			1	1.00 Sa	
536403,000431					,J6E080157-8 v4.8.24		FILTER			00.5				0.083008 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: 6129282

Alpha Beta, Beta by GPC-Sr/Y , Calculated Results

6/9/2006 7:45:22 PM

1	06/09/06 13:04	BETA	166	592	GPC31C	1.5	N	N	4.4390E-01	1.0000E+00	N	100%	N		1.0000E+00	4.5045E-01	1.0000E+00
			100	500				Y	(9.872E-03)	(0.000E+00)		5%			(0.000E+00)	12.046974	

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
	06/09/06	BETA	R	**5.819029**		4.76000E-01	1.072324	1.072324	1.00 Sa	100%		6.516759		
				(1.730224)		(1.3772E-01)	(0.315763)	(0.315763)	(0.028284)			3.09457		

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	**H4X1T1AF**	**PCI/SA**		04/20/06 09:50	06/09/06 12:14			1	1.00 Sa	
536403,000432					,J6E080157-9 v4.8.24		FILTER			01.7				0.083909 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	06/09/06 13:04	BETA	170	515	GPC31D	1.5	N	N	4.3614E-01	1.0000E+00	N	100%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			100	500			Y		(1.191E-02)	(0.000E+00)		5%			(0.000E+00)	11.917693		

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
	06/09/06	BETA	R	**8.246783**		6.70000E-01	1.536193	1.536193	1.00 Sa	100%		6.142296		
				(1.79554)		(1.3806E-01)	(0.328417)	(0.328417)	(0.028284)			2.906092		

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	**H4X1V1AF**	**PCI/SA**		04/20/06 10:10	06/09/06 12:15			1	1.00 Sa	
536403,000433					,J6E080157-10 v4.8.24		FILTER			01.0				0.081125 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	06/09/06 13:05	BETA	170	598	GPC32A	1.5	N	N	4.3033E-01	1.0000E+00	N	100%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			100	500			Y		(1.035E-02)	(0.000E+00)		5%			(0.000E+00)	12.326637		

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
	06/09/06	BETA	R	**6.503143**		5.04000E-01	1.171203	1.171203	1.00 Sa	100%		6.911296		
				(1.852198)		(1.3926E-01)	(0.330063)	(0.330063)	(0.028284)			3.282761		

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	**H4X1W1AF**	**PCI/SA**		04/20/06 10:30	06/09/06 12:15			1	1.00 Sa	
536403,000434					,J6E080157-11 v4.8.24		FILTER			01.0				0.083743 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	06/09/06 13:05	BETA	185	514	GPC32B	1.5	N	N	4.3997E-01	1.0000E+00	N	100%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			100	500			Y		(1.069E-02)	(0.000E+00)		5%			(0.000E+00)	11.941243		

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
	06/09/06	BETA	R	**10.049538**		8.22000E-01	1.868315	1.868315	1.00 Sa	100%		6.095315		
				(1.885809)		(1.4337E-01)	(0.342024)	(0.342024)	(0.028284)			2.883711		

() - (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: 6129282

Alpha Beta, Beta by GPC-Sr/Y , Calculated Results

6/9/2006 7:45:23 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	**H4X1X1AF**	**PCI/SA**		04/20/06 10:45	06/09/06 12:15			1	1.00 Sa	
536403,000435					,J6E080157-12 v4.8.24		FILTER			01.0				0.082662 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	06/09/06 13:05	BETA	179	520	GPC32C	1.5	N	N	4.4400E-01	1.0000E+00	N	100%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			100	500			Y		(2.770E-02)	(0.000E+00)		5%			(0.000E+00)	12.097423		

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
	06/09/06	BETA	R	**9.204841**		7.50000E-01	1.689183	1.689183	1.00 Sa	100%		6.152624		
				(1.922275)		(1.4135E-01)	(0.345814)	(0.345814)	(0.028284)			2.91174		

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	**H40341AA**	**PCI/SA**	**B**	04/20/06 09:10	06/09/06 12:15			1	1.00 Sa	
0,INTRA-LAB BLANK					,J6E090000-282		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
1	06/09/06 13:05	BETA	128	644	GPC32D	1.5	N	N	4.3007E-01	1.0000E+00	N	100%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			100	500			Y		(1.332E-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
	06/09/06	BETA	R	**-0.008379**	**U4**	-8.00000E-03	-0.018602	-0.018602	1.00 Sa	100%		0.581118		
				(0.129877)		(1.2400E-01)	(0.288326)	(0.288326)	(0.017321)			0.276531		

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	**H40341AC**	**PCI/SA**	**S**	04/20/06 09:10	06/09/06 14:07		BESB2809	1	1.00 Sa	
0,INTRA-LAB CHECK					,J6E090000-282		FILTER			00.5		BESB2809 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	06/09/06 14:57	BETA	521	710	GPC26A	1.5	N	N	4.5678E-01	1.0000E+00	N	100%	N		1.0000E+00	4.5045E-01	1.0000E+00	
			100	500			Y		(1.559E-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
	06/09/06	BETA	R	**3.737517**		3.79000E+00	8.297295	8.297295	1.00 Sa	100%	80%	0.573163		
				(0.348405)		(2.3439E-01)	(0.718072)	(0.718072)	(0.017321)			0.273381		

() - (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

STL RICHLAND
Richland, WA

GPC Report
09-JUN-2006 13:04:58.00

LBPRINT - Rev#: 2.4

Sample ID	Isotope	Geometry
H4XP81AF	111	15

Sample Count Date/Time	Beta Counts	Count Duration*	Beta Bkg Counts	Bkg Count Duration*	Instr ID
09-JUN-2006 13:04:58.00	161	100.00	497	500.00	26C

Alpha Counts	Alpha Bkg Counts	Guard Counts	HV
1	15	3274	1500

Bkg Count Date/Time
09-JUN-2006 04:39:32.00

Count Date/Times are the Count Completion Date and Time.

* Count Durations in Minutes.

STL RICHLAND
Richland, WA

GPC Report
09-JUN-2006 13:04:58.00

LBPRINT - Rev#: 2.4

Sample ID	Isotope	Geometry
H4XQH1AF	111	15

Sample Count Date/Time	Beta Counts	Count Duration*	Beta Bkg Counts	Bkg Count Duration*	Instr ID
09-JUN-2006 13:04:58.00	151	100.00	519	500.00	26D

Alpha Counts	Alpha Bkg Counts	Guard Counts	HV
9	22	3274	1500

Bkg Count Date/Time
09-JUN-2006 04:39:32.00

Count Date/Times are the Count Completion Date and Time.

* Count Durations in Minutes.

STL RICHLAND
Richland, WA

GPC Report
09-JUN-2006 13:04:55.00

LBPRINT - Rev#: 2.4

Sample ID	Isotope	Geometry
H4XQM1AF	111	15

Sample Count Date/Time	Beta Counts	Count Duration*	Beta Bkg Counts	Bkg Count Duration*	Instr ID
09-JUN-2006 13:04:55.00	168	100.00	520	500.00	28B

Alpha Counts	Alpha Bkg Counts	Guard Counts	HV
0	35	2133	1500

Bkg Count Date/Time
09-JUN-2006 04:39:33.00

Count Date/Times are the Count Completion Date and Time.

* Count Durations in Minutes.

STL RICHLAND
Richland, WA

GPC Report
09-JUN-2006 13:04:55.00

LBPRINT - Rev#: 2.4

Sample ID	Isotope	Geometry
H4XQN1AF	111	15

Sample Count Date/Time	Beta Counts	Count Duration*	Beta Bkg Counts	Bkg Count Duration*	Instr ID
09-JUN-2006 13:04:55.00	177	100.00	597	500.00	28C

Alpha Counts	Alpha Bkg Counts	Guard Counts	HV
4	19	2133	1500

Bkg Count Date/Time
09-JUN-2006 04:39:33.00

Count Date/Times are the Count Completion Date and Time.

* Count Durations in Minutes.

STL RICHLAND
Richland, WA

GPC Report
09-JUN-2006 13:04:55.00

LBPRINT - Rev#: 2.4

Sample ID	Isotope	Geometry
H4XQQ1AF	111	15

Sample Count Date/Time	Beta Counts	Count Duration*	Beta Bkg Counts	Bkg Count Duration*	Instr ID
09-JUN-2006 13:04:55.00	160	100.00	557	500.00	28D

Alpha Counts	Alpha Bkg Counts	Guard Counts	HV
3	26	2133	1500

Bkg Count Date/Time
09-JUN-2006 04:39:33.00

Count Date/Times are the Count Completion Date and Time.

* Count Durations in Minutes.

STL RICHLAND
Richland, WA

GPC Report
09-JUN-2006 13:04:57.00

LBPRINT - Rev#: 2.4

Sample ID	Isotope	Geometry
H4XQR1AF	111	15

Sample Count Date/Time	Beta Counts	Count Duration*	Beta Bkg Counts	Bkg Count Duration*	Instr ID
09-JUN-2006 13:04:57.00	177	100.00	570	500.00	31A

Alpha Counts	Alpha Bkg Counts	Guard Counts	HV
2	23	3303	1492

Bkg Count Date/Time
09-JUN-2006 05:57:52.00

Count Date/Times are the Count Completion Date and Time.

* Count Durations in Minutes.

STL RICHLAND
Richland, WA

GPC Report
09-JUN-2006 13:04:57.00

LBPRINT - Rev#: 2.4

Sample ID	Isotope	Geometry
H4XQT1AF	111	15

Sample Count Date/Time	Beta Counts	Count Duration*	Beta Bkg Counts	Bkg Count Duration*	Instr ID
09-JUN-2006 13:04:57.00	104	100.00	564	500.00	31B

Alpha Counts	Alpha Bkg Counts	Guard Counts	HV
0	21	3303	1492

Bkg Count Date/Time
09-JUN-2006 05:57:52.00

Count Date/Times are the Count Completion Date and Time.

* Count Durations in Minutes.

STL RICHLAND
Richland, WA

GPC Report
09-JUN-2006 13:04:57.00

LBPRINT - Rev#: 2.4

Sample ID	Isotope	Geometry
H4X1R1AF	111	15

Sample Count Date/Time	Beta Counts	Count Duration*	Beta Bkg Counts	Bkg Count Duration*	Instr ID
09-JUN-2006 13:04:57.00	166	100.00	592	500.00	31C

Alpha Counts	Alpha Bkg Counts	Guard Counts	HV
1	12	3303	1492

Bkg Count Date/Time
09-JUN-2006 05:57:52.00

Count Date/Times are the Count Completion Date and Time.

* Count Durations in Minutes.

STL RICHLAND
Richland, WA

GPC Report
09-JUN-2006 13:04:57.00

LBPRINT - Rev#: 2.4

Sample ID	Isotope	Geometry
H4X1T1AF	111	15

Sample Count Date/Time	Beta Counts	Count Duration*	Beta Bkg Counts	Bkg Count Duration*	Instr ID
09-JUN-2006 13:04:57.00	170	100.00	515	500.00	31D

Alpha Counts	Alpha Bkg Counts	Guard Counts	HV
1	16	3303	1492

Bkg Count Date/Time
09-JUN-2006 05:57:52.00

Count Date/Times are the Count Completion Date and Time.

* Count Durations in Minutes.

STL RICHLAND
Richland, WA

GPC Report
09-JUN-2006 13:05:08.00

LBPRINT - Rev#: 2.4

Sample ID	Isotope	Geometry
H4X1V1AF	111	15

Sample Count Date/Time	Beta Counts	Count Duration*	Beta Bkg Counts	Bkg Count Duration*	Instr ID
09-JUN-2006 13:05:08.00	170	100.00	598	500.00	32A

Alpha Counts	Alpha Bkg Counts	Guard Counts	HV
8	19	3112	1492

Bkg Count Date/Time
09-JUN-2006 05:58:23.00

Count Date/Times are the Count Completion Date and Time.

* Count Durations in Minutes.

STL RICHLAND
Richland, WA

GPC Report
09-JUN-2006 13:05:08.00

LBPRINT - Rev#: 2.4

Sample ID	Isotope	Geometry
H4X1W1AF	111	15

Sample Count Date/Time	Beta Counts	Count Duration*	Beta Bkg Counts	Bkg Count Duration*	Instr ID
09-JUN-2006 13:05:08.00	185	100.00	514	500.00	32B

Alpha Counts	Alpha Bkg Counts	Guard Counts	HV	Bkg Count Date/Time
1	16	3112	1492	09-JUN-2006 05:58:23.00

Count Date/Times are the Count Completion Date and Time.

* Count Durations in Minutes.

STL RICHLAND
Richland, WA

GPC Report
09-JUN-2006 13:05:08.00

LBPRINT - Rev#: 2.4

Sample ID	Isotope	Geometry
H4X1X1AF	111	15

Sample Count Date/Time	Beta Counts	Count Duration*	Beta Bkg Counts	Bkg Count Duration*	Instr ID
09-JUN-2006 13:05:08.00	179	100.00	520	500.00	32C

Alpha Counts	Alpha Bkg Counts	Guard Counts	HV
2	10	3112	1492

Bkg Count Date/Time
09-JUN-2006 05:58:23.00

Count Date/Times are the Count Completion Date and Time.

* Count Durations in Minutes.

STL RICHLAND
Richland, WA

GPC Report
09-JUN-2006 13:05:08.00

LBPRINT - Rev#: 2.4

Sample ID	Isotope	Geometry
H40341AA	111	15

Sample Count Date/Time	Beta Counts	Count Duration*	Beta Bkg Counts	Bkg Count Duration*	Instr ID
09-JUN-2006 13:05:08.00	128	100.00	644	500.00	32D

Alpha Counts	Alpha Bkg Counts	Guard Counts	HV
1	11	3112	1492

Bkg Count Date/Time
09-JUN-2006 05:58:23.00

Count Date/Times are the Count Completion Date and Time.

* Count Durations in Minutes.

STL RICHLAND
Richland, WA

GPC Report
09-JUN-2006 14:57:59.00

LBPRINT - Rev#: 2.4

Sample ID	Isotope	Geometry
H40341AC	111	15

Sample Count Date/Time	Beta Counts	Count Duration*	Beta Bkg Counts	Bkg Count Duration*	Instr ID
09-JUN-2006 14:57:59.00	521	100.00	710	500.00	26A

Alpha Counts	Alpha Bkg Counts	Guard Counts	HV
1	16	3269	1500

Bkg Count Date/Time
09-JUN-2006 04:39:32.00

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

6/21/2006 4:25:26 PM

Lot No., Due Date: J6E080157; 06/06/2006

Client, Site: 536403; AIR MONITORING Yerington Mine

QC Batch No., Method Test: 6129286; RRA228 Ra-228 by GPC

SDG, Matrix: 31580; 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** 6-21-06

SEVERN TRENT STL

Data Review Checklist
RADIOCHEMISTRY
Second Level Review

QC Batch Number: 612928G

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: 6-22-06

STL RICHLAND

5/9/2006 1:09:27 PM

Sample Preparation/Analysis

536403, Brown and Caldwell , Brown & Caldwell

BX Ra-226/228 PrpRC5016, SepRC5005
TF Radium-228 by GPC
01 STANDARD TEST SET

AnalyDueDate: 06/05/2006

Batch: 6129286 FILTER pCi/sampl PM, Quote: SA , 63174
SEQ Batch, Test: 6129284, BXTE

Balance Id:
Pipet #:
Sep1 DT/Tm Tech: 6-14-06 M 11:45
Sep2 DT/Tm Tech: 6-20-06 M 10:11
Prep Tech:

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 H4XP8-1-AD J6E080157-1-SAMP		0.251	RATA 22502 ~~6-6-06~~ MT 6-13	6-05-06	0.9738	In	31.2	3x50	7A 1515 6/20/06	
									7A 0624 6/21/06	
04/20/2006 09:10		AmtRec: FILTER	#Containers: 1				Scr:	Alpha:	Beta:	
2 H4XQH-1-AD J6E080157-2-SAMP		0.2484	22503		0.7845		30.9		7B 1515 6/20/06	
									7B 0624 6/21/06	
04/20/2006 09:30		AmtRec: FILTER	#Containers: 1				Scr:	Alpha:	Beta:	
3 H4XQM-1-AD J6E080157-3-SAMP		0.2492	22504		0.8893		30.8		1A 1515 6/20/06	
									7C 0624 6/21/06	
04/20/2006 09:45		AmtRec: FILTER	#Containers: 1				Scr:	Alpha:	Beta:	
4 H4XQN-1-AD J6E080157-4-SAMP		0.2497	22505		0.9185		30.8		1C 1515 6/20/06	
									1A 0624 6/21/06	
04/20/2006 10:05		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

375

5/9/2006 1:09:27 PM

536403, Brown and Caldwell , Brown & Caldwell

AnalyDueDate: 06/05/2006

Sample Preparation/Analysis

BX Ra-226/228 PrpRC5016, SepRC5005
TF Radium-228 by GPC
01 STANDARD TEST SET

Batch: 6129286 FILTER pCi/sampl PM, Quote: SA , 63174
SEQ Batch, Test: 6129284, BXTE

Balance Id:
Pipet #:
Sep1 DT/Tm Tech:
Sep2 DT/Tm Tech:
Prep Tech:

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 H4XQQ-1-AD J6E080157-5-SAMP		0.2496	RATA 22506	0.8419	In	31.4		3x50 1D	1515 6/20/06	
								1C	0624 6/21/06	
04/20/2006 10:25		AmtRec: FILTER	#Containers: 1				Scr:	Alpha:		Beta:
6 H4XQR-1-AD J6E080157-6-SAMP		0.2465	22512	0.8646		30.4		2A	1515 6/20/06	
								1D	0624 6/21/06	
04/20/2006 10:40		AmtRec: FILTER	#Containers: 1				Scr:	Alpha:		Beta:
7 H4XQT-1-AD J6E080157-7-SAMP		0.2501	22513	0.9572		28.9		2B	1515 6/20/06	
								2A	0624 6/21/06	
04/20/2006 10:35		AmtRec: FILTER	#Containers: 1				Scr:	Alpha:		Beta:
8 H4X1R-1-AD J6E080157-8-SAMP		0.2501	22514	0.8605		31.7		2C	1515 6/20/06	
								2B	0624 6/21/06	
04/20/2006 09:35		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

376

STL RICHLAND

5/9/2006 1:09:27 PM

536403, Brown and Caldwell , Brown & Caldwell

AnalyDueDate: 06/05/2006

Sample Preparation/Analysis

BX Ra-226/228 PrpRC5016, SepRC5005
TF Radium-228 by GPC
01 STANDARD TEST SET

Batch: 6129286 FILTER pCi/sampl PM, Quote: SA , 63174
SEQ Batch, Test: 6129284, BXTE

Balance Id:
Pipet #:
Sep1 DT/Tm Tech:
Sep2 DT/Tm Tech:
Prep Tech:

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 H4X1T-1-AD J6E080157-9-SAMP	0.2507		22515		lin	30.7	3x50	2D	1515	4/27/06
				0.8997				2C	0624	4/27/06
04/20/2006 09:50	AmtRec: FILTER	#Containers: 1					Scr:	Alpha:		Beta:
10 H4X1V-1-AD J6E080157-10-SAMP	0.2435		22516			30.3		3A	1515	4/27/06
				0.9417				2D	0624	4/27/06
04/20/2006 10:10	AmtRec: FILTER	#Containers: 1					Scr:	Alpha:		Beta:
11 H4X1W-1-AD J6E080157-11-SAMP	0.2492		22517			30.6		3B	1515	4/27/06
				0.8597				3A	0624	4/27/06
04/20/2006 10:30	AmtRec: FILTER	#Containers: 1					Scr:	Alpha:		Beta:
12 H4X1X-1-AD J6E080157-12-SAMP	0.2479		22518			30.9		3C	1515	4/27/06
				0.8257				3B	0624	4/27/06
04/20/2006 10:45	AmtRec: FILTER	#Containers: 1					Scr:	Alpha:		Beta:

5/9/2006 1:09:27 PM

Sample Preparation/Analysis

BX Ra-226/228 PrpRC5016, SepRC5005
TF Radium-228 by GPC
01 STANDARD TEST SET

AnalyDueDate: 06/05/2006

Batch: 6129286 pCi/sampl
SEQ Batch, Test: None

Balance Id:
Pipet #:
Sep1 DT/Tm Tech:
Sep2 DT/Tm Tech:
Prep Tech:

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:
13H404F-1-AA-B J6E090000-286-BLK		1.0	RATA 22519	0.9265			in 31.1	3x50	3D 1515	6/20/06
									3C 1624	6/21/06
04/20/2006 09:10		AmtRec:	#Containers: 1				Scr:	Alpha:		Beta:
14H404F-1-AC-C J6E090000-286-LCS		1.0	RASC 4132	0.9567			31.3		4A 1515	6/20/06
			6-9-06						3D 1624	6/21/06
04/20/2006 09:10		AmtRec:	#Containers: 1				Scr:	Alpha:		Beta:

Comments:

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

H4XP81AD-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:
RA-228DA	RDL:3.10E+00	pCi/sam	LCL:	UCL:	RPD:						

H404F1AA-BLK:

Ba-133	RDL:	pCi/sam	LCL:70	UCL:130	RPD:20	RA-228	RDL:3.10E+00	pCi/sam	LCL:	UCL:	RPD:
RA-228DA	RDL:3.10E+00	pCi/sam	LCL:	UCL:	RPD:						

H404F1AC-LCS:

Ba-133	RDL:	pCi/sam	LCL:70	UCL:130	RPD:20	Ra-226	RDL:	pCi/sam	LCL:70	UCL:130	RPD:20
RA-228	RDL:1	pCi/sam	LCL:70	UCL:130	RPD:20	RA-228DA	RDL:1	pCi/sam	LCL:70	UCL:130	RPD:20

H4XP81AD-SAMP Calc Info:
Uncert Level (#s).: 2 Decay to SaDt: Y Blk Subt.: N Sci.Not.: Y ODRs: B

6/21/2006 4:04:13 PM

ICOC Fraction Transfer/Status Report

ByDate: 6/21/2005, 6/26/2006, Batch: '6129286', User: *ALL Order By DateTimeAccepting

Q Batch	Work Ord	CurStatus	Accepting			Comments
6129286						
AC		**CalcC**	**HansenM**	6/12/2006 3:26:37 PM		
SC			antonsonl	IsBatched	5/9/2006 1:09:52 PM	ICOC_RADCALC v4.8.24
SC			HansenM	InPrep2	6/12/2006 3:26:37 PM	RICH-RC-5016 REVISION 5
SC			HansenM	Prep2C	6/12/2006 3:27:35 PM	RICH-RC-5016 REVISION 5
SC			TamosaitisM	Sep2C	6/20/2006 11:56:28 AM	RICH-RC-5005 REVISION 4
SC			BlackCL	InCnt2	6/20/2006 12:41:43 PM	RICH-RD-0003 REVISION 4
SC			BlackCL	CalcC	6/21/2006 7:11:10 AM	RICH-RD-0003 REVISION 4
AC			**HansenM**	6/12/2006 3:27:35 PM		
AC			**TamosaitisM**	6/20/2006 11:56:28		
AC			**BlackCL**	6/20/2006 12:41:43		
AC			**BlackCL**	6/21/2006 7:11:10		

AC: Accepting Entry; SC: Status Change

STL Richland

Richland Wa.

Grp Rec Cnt: 5

ICOCFractions v4.8.18

6/21/2006 4:04:12 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
31580	**9H4X1R10**			**J6E0801578**	000431	FILTER	5/8/2006 7:30:00	4/20/2006 9:35:00 AM				
ALPHA	BAS7		0	6/9/2006 6:54:58 PM	**3.1467E+00**	1.636E+00	1.668E+00	5.571E+00	PCI/SA	1.0	1.0E+0	2.076E-2
BETA	BDS8		0	6/9/2006 12:14:57 PM	**5.819E+00**	1.684E+00	1.73E+00	6.517E+00	PCI/SA	1.0	1.0E+0	3.301E-2
RA-226	BXTE		0	6/17/2006 7:40:00 PM	**6.3473E-02**	1.495E-01	1.496E-01	5.812E-01	PCI/SA	0.861	8.33E-1	2.501E-1
RA-228	BXTF		0	6/21/2006 6:28:48 AM	**3.9701E+00**	5.993E-01	6.55E-01	1.915E+00	PCI/SA	0.793	1.0E+0	2.501E-1
TH-228	9NS1		0	6/18/2006 10:09:38	**1.3125E-01**	6.942E-02	7.036E-02	1.654E-01	PCI/SA	0.998	1.0E+0	3.298E-2
TH-230	9NS1		0	6/18/2006 10:09:38	**1.9426E-02**	3.365E-02	3.369E-02	1.83E-01	PCI/SA	0.998	1.0E+0	3.298E-2
TH-232	9NS1		0	6/18/2006 10:09:38	**-6.4774E-03**	6.477E-03	6.502E-03	1.551E-01	PCI/SA	0.998	1.0E+0	3.298E-2
31580	**9H4X1T10**			**J6E0801579**	000432	FILTER	5/8/2006 7:30:00	4/20/2006 9:50:00 AM				
ALPHA	BAS7		0	6/10/2006 7:04:05 AM	**9.8496E-01**	1.663E+00	1.667E+00	7.819E+00	PCI/SA	1.0	1.0E+0	2.078E-2
BETA	BDS8		0	6/9/2006 12:14:57 PM	**8.2468E+00**	1.699E+00	1.796E+00	6.142E+00	PCI/SA	1.0	1.0E+0	3.391E-2
RA-226	BXTE		0	6/17/2006 7:40:00 PM	**4.3081E-02**	6.769E-02	6.786E-02	2.815E-01	PCI/SA	0.9	8.33E-1	2.507E-1
RA-228	BXTF		0	6/21/2006 6:28:48 AM	**3.175E+00**	5.291E-01	5.698E-01	1.75E+00	PCI/SA	0.803	1.0E+0	2.507E-1
TH-228	9NS1		0	6/18/2006 10:09:46	**-3.2423E-02**	1.621E-02	1.646E-02	2.783E-01	PCI/SA	0.777	1.0E+0	3.388E-2
TH-230	9NS1		0	6/18/2006 10:09:46	**2.431E-01**	1.014E-01	1.036E-01	2.398E-01	PCI/SA	0.777	1.0E+0	3.388E-2
TH-232	9NS1		0	6/18/2006 10:09:46	**0.0E+00**	0.0E+00	4.652E-02	1.029E-01	PCI/SA	0.777	1.0E+0	3.388E-2
31580	**9H4X1V10**			**J6E08015710**	000433	FILTER	5/8/2006 7:30:00	4/20/2006 10:10:00 AM				
ALPHA	BAS7		0	6/10/2006 7:04:05 AM	**2.4116E+00**	1.503E+00	1.524E+00	5.595E+00	PCI/SA	1.0	1.0E+0	2.046E-2
BETA	BDS8		0	6/9/2006 12:15:08 PM	**6.5031E+00**	1.797E+00	1.852E+00	6.911E+00	PCI/SA	1.0	1.0E+0	3.113E-2
RA-226	BXTE		0	6/17/2006 7:39:00 PM	**2.0787E-02**	1.562E-01	1.563E-01	6.139E-01	PCI/SA	0.942	8.33E-1	2.435E-1
RA-228	BXTF		0	6/21/2006 6:28:48 AM	**1.9564E+00**	4.426E-01	4.649E-01	1.642E+00	PCI/SA	0.829	1.0E+0	2.435E-1
TH-228	9NS1		0	6/18/2006 10:09:48	**1.4006E-01**	9.904E-02	9.983E-02	3.436E-01	PCI/SA	1.005	1.0E+0	3.18E-2
TH-230	9NS1		0	6/18/2006 10:09:48	**1.7508E-01**	8.754E-02	8.894E-02	1.186E-01	PCI/SA	1.005	1.0E+0	3.18E-2
TH-232	9NS1		0	6/18/2006 10:09:48	**4.3769E-02**	4.377E-02	4.394E-02	1.186E-01	PCI/SA	1.005	1.0E+0	3.18E-2
31580	**9H4X1W10**			**J6E08015711**	000434	FILTER	5/8/2006 7:30:00	4/20/2006 10:30:00 AM				
ALPHA	BAS7		0	6/10/2006 7:04:05 AM	**3.5615E+00**	1.717E+00	1.756E+00	5.68E+00	PCI/SA	1.0	1.0E+0	2.084E-2
BETA	BDS8		0	6/9/2006 12:15:08 PM	**1.005E+01**	1.753E+00	1.886E+00	6.095E+00	PCI/SA	1.0	1.0E+0	3.374E-2
RA-226	BXTE		0	6/18/2006 12:52:00 PM	**6.7514E-01**	2.198E-01	2.307E-01	6.558E-01	PCI/SA	0.86	8.33E-1	2.492E-1
RA-228	BXTF		0	6/21/2006 6:28:59 AM	**2.4465E+00**	4.9E-01	5.122E-01	1.699E+00	PCI/SA	0.765	1.0E+0	2.492E-1
TH-228	9NS1		0	6/18/2006 10:09:51	**3.1038E-01**	1.82E-01	1.845E-01	5.711E-01	PCI/SA	0.616	1.0E+0	3.358E-2
TH-230	9NS1		0	6/18/2006 10:09:51	**5.0922E-01**	1.925E-01	1.987E-01	1.971E-01	PCI/SA	0.616	1.0E+0	3.358E-2
TH-232	9NS1		0	6/18/2006 10:09:51	**0.0E+00**	0.0E+00	8.91E-02	1.971E-01	PCI/SA	0.616	1.0E+0	3.358E-2
31580	**9H4X1X10**			**J6E08015712**	000435	FILTER	5/8/2006 7:30:00	4/20/2006 10:45:00 AM				
ALPHA	BAS7		0	6/10/2006 7:04:05 AM	**0.0E+00**	0.0E+00	1.52E+00	7.872E+00	PCI/SA	1.0	1.0E+0	2.075E-2
BETA	BDS8		0	6/9/2006 12:15:08 PM	**9.2048E+00**	1.735E+00	1.922E+00	6.153E+00	PCI/SA	1.0	1.0E+0	3.266E-2
RA-226	BXTE		0	6/18/2006 12:51:00 PM	**-2.2511E-01**	1.625E-01	1.641E-01	7.378E-01	PCI/SA	0.826	8.33E-1	2.479E-1
RA-228	BXTF		0	6/21/2006 6:28:59 AM	**5.4862E+00**	6.445E-01	7.336E-01	1.825E+00	PCI/SA	0.742	1.0E+0	2.479E-1
TH-228	9NS1		0	6/18/2006 6:39:26 PM	**2.3009E-02**	7.631E-02	7.633E-02	3.868E-01	PCI/SA	0.87	1.0E+0	3.266E-2
TH-230	9NS1		0	6/18/2006 6:39:26 PM	**3.45E-01**	1.22E-01	1.258E-01	1.169E-01	PCI/SA	0.87	1.0E+0	3.266E-2
TH-232	9NS1		0	6/18/2006 6:39:26 PM	**2.1563E-02**	4.822E-02	4.825E-02	2.587E-01	PCI/SA	0.87	1.0E+0	3.266E-2
31580	**9H4XP810**			**J6E0801571**	P-0598	FILTER	5/8/2006 7:30:00	4/20/2006 9:10:00 AM				
ALPHA	BAS7		0	6/9/2006 4:45:00 PM	**-2.2308E+00**	9.976E-01	1.024E+00	7.864E+00	PCI/SA	1.0	1.0E+0	2.08E-2
BETA	BDS8		0	6/9/2006 12:14:58 PM	**7.9307E+00**	1.732E+00	1.816E+00	6.318E+00	PCI/SA	1.0	1.0E+0	3.37E-2
RA-226	BXTE		0	6/17/2006 7:15:00 PM	**-9.379E-02**	9.281E-02	9.333E-02	4.615E-01	PCI/SA	0.974	8.33E-1	2.51E-1
RA-228	BXTF		0	6/21/2006 6:28:24 AM	**1.9966E+00**	5.69E-01	5.933E-01	2.405E+00	PCI/SA	0.883	1.0E+0	2.51E-1
TH-228	9NS1		0	6/18/2006 10:09:36	**2.4368E-01**	1.241E-01	1.261E-01	3.248E-01	PCI/SA	0.858	1.0E+0	3.345E-2
TH-230	9NS1		0	6/18/2006 10:09:36	**2.5383E-01**	1.135E-01	1.159E-01	1.376E-01	PCI/SA	0.858	1.0E+0	3.345E-2
TH-232	9NS1		0	6/18/2006 10:09:36	**2.5383E-02**	5.676E-02	5.681E-02	3.045E-01	PCI/SA	0.858	1.0E+0	3.345E-2
31580	**9H4XQH10**			**J6E0801572**	P-0599	FILTER	5/8/2006 7:30:00	4/20/2006 9:30:00 AM				
ALPHA	BAS7		0	6/9/2006 4:45:00 PM	**-5.2364E-01**	1.021E+00	1.022E+00	6.289E+00	PCI/SA	1.0	1.0E+0	2.078E-2
BETA	BDS8		0	6/9/2006 12:14:58 PM	**5.9672E+00**	1.657E+00	1.706E+00	6.332E+00	PCI/SA	1.0	1.0E+0	3.349E-2
RA-226	BXTE		0	6/17/2006 7:12:00 PM	**-1.3068E-01**	1.042E-01	1.051E-01	5.245E-01	PCI/SA	0.785	8.33E-1	2.484E-1

6129286, **Samples Inserted | Updated | NotUpdated => 2 | 0 | 12,
**Results Inserted | ReTestInserted | Updated | NotInserted => 14 | 0 | 0 | 0.
**Diff RptDb | Qtims => *wo:H404F1AA=> , mat:FILTER | Air *wo:H404F1AC=> , 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		6/21/2006 6:28:24 AM	**2.2873E+00**	6.698E-01	7.018E-01	2.84E+00	PCI/SA		0.705	1.0E+0	2.484E-1
TH-228	9NS1	0		6/18/2006 10:09:36	**-3.963E-02**	2.802E-02	2.824E-02	2.917E-01	PCI/SA		1.0	1.0E+0	3.268E-2
TH-230	9NS1	0		6/18/2006 10:09:36	**2.2292E-01**	1.017E-01	1.036E-01	2.734E-01	PCI/SA		1.0	1.0E+0	3.268E-2
TH-232	9NS1	0		6/18/2006 10:09:36	**3.7153E-02**	3.715E-02	3.73E-02	1.007E-01	PCI/SA		1.0	1.0E+0	3.268E-2
31580	**9H4XQM10**			**J6E0801573**	P-0600	FILTER	5/8/2006 7:30:00	4/20/2006 9:45:00 AM					
ALPHA	BAS7	0		6/9/2006 4:45:00 PM	**3.3763E-01**	1.05E+00	1.05E+00	5.579E+00	PCI/SA		1.0	1.0E+0	2.074E-2
BETA	BDS8	0		6/9/2006 12:14:55 PM	**7.9287E+00**	1.702E+00	1.789E+00	6.211E+00	PCI/SA		1.0	1.0E+0	3.34E-2
RA-226	BXTE	0		6/17/2006 7:13:01 PM	**1.586E-01**	1.467E-01	1.477E-01	5.307E-01	PCI/SA		0.889	8.33E-1	2.492E-1
RA-228	BXTF	0		6/21/2006 6:28:24 AM	**2.8432E+00**	5.7E-01	6.372E-01	2.34E+00	PCI/SA		0.796	1.0E+0	2.492E-1
TH-228	9NS1	0		6/18/2006 6:39:26 PM	**6.6245E-07**	4.863E-02	4.863E-02	2.922E-01	PCI/SA		1.035	1.0E+0	3.316E-2
TH-230	9NS1	0		6/18/2006 6:39:26 PM	**1.8606E-02**	4.16E-02	4.163E-02	2.232E-01	PCI/SA		1.035	1.0E+0	3.316E-2
TH-232	9NS1	0		6/18/2006 6:39:26 PM	**5.5816E-02**	5.582E-02	5.603E-02	2.232E-01	PCI/SA		1.035	1.0E+0	3.316E-2
31580	**9H4XQN10**			**J6E0801574**	P-0601	FILTER	5/8/2006 7:30:00	4/20/2006 10:05:00 AM					
ALPHA	BAS7	0		6/9/2006 6:54:58 PM	**5.6178E+00**	2.155E+00	2.234E+00	6.851E+00	PCI/SA		1.0	1.0E+0	2.106E-2
BETA	BDS8	0		6/9/2006 12:14:55 PM	**7.01E+00**	1.725E+00	1.816E+00	6.514E+00	PCI/SA		1.0	1.0E+0	3.402E-2
RA-226	BXTE	0		6/17/2006 7:13:03 PM	**1.3493E-01**	8.464E-02	8.576E-02	2.713E-01	PCI/SA		0.918	8.33E-1	2.497E-1
RA-228	BXTF	0		6/21/2006 6:28:33 AM	**3.5168E+00**	5.613E-01	6.168E-01	2.054E+00	PCI/SA		0.822	1.0E+0	2.497E-1
TH-228	9NS1	0		6/18/2006 10:09:36	**8.7878E-02**	6.214E-02	6.263E-02	1.191E-01	PCI/SA		1.014	1.0E+0	3.379E-2
TH-230	9NS1	0		6/18/2006 10:09:36	**4.1193E-02**	4.119E-02	4.136E-02	1.116E-01	PCI/SA		1.014	1.0E+0	3.379E-2
TH-232	9NS1	0		6/18/2006 10:09:36	**-2.0596E-02**	2.06E-02	2.068E-02	2.471E-01	PCI/SA		1.014	1.0E+0	3.379E-2
31580	**9H4XQQ10**			**J6E0801575**	P-0602	FILTER	5/8/2006 7:30:00	4/20/2006 10:25:00 AM					
ALPHA	BAS7	0		6/9/2006 6:54:58 PM	**-6.4345E-01**	1.051E+00	1.053E+00	6.563E+00	PCI/SA		1.0	1.0E+0	2.09E-2
BETA	BDS8	0		6/9/2006 12:14:55 PM	**6.1542E+00**	1.71E+00	1.785E+00	6.558E+00	PCI/SA		1.0	1.0E+0	3.353E-2
RA-226	BXTE	0		6/17/2006 7:11:00 PM	**1.8918E-01**	1.424E-01	1.436E-01	4.959E-01	PCI/SA		0.842	8.33E-1	2.496E-1
RA-228	BXTF	0		6/21/2006 6:28:33 AM	**4.4919E+00**	6.178E-01	6.838E-01	2.09E+00	PCI/SA		0.768	1.0E+0	2.496E-1
TH-228	9NS1	0		6/18/2006 10:09:36	**8.0246E-02**	8.025E-02	8.063E-02	2.175E-01	PCI/SA		0.458	1.0E+0	3.357E-2
TH-230	9NS1	0		6/18/2006 10:09:36	**3.7616E-01**	1.682E-01	1.722E-01	2.039E-01	PCI/SA		0.458	1.0E+0	3.357E-2
TH-232	9NS1	0		6/18/2006 10:09:36	**0.0E+00**	0.0E+00	9.214E-02	2.039E-01	PCI/SA		0.458	1.0E+0	3.357E-2
31580	**9H4XQR10**			**J6E0801576**	P-0603	FILTER	5/8/2006 7:30:00	4/20/2006 10:40:00 AM					
ALPHA	BAS7	0		6/9/2006 6:54:58 PM	**-2.2438E+00**	1.003E+00	1.03E+00	7.909E+00	PCI/SA		1.0	1.0E+0	2.066E-2
BETA	BDS8	0		6/9/2006 12:14:57 PM	**7.7639E+00**	1.742E+00	1.827E+00	6.452E+00	PCI/SA		1.0	1.0E+0	3.297E-2
RA-226	BXTE	0		6/17/2006 7:37:00 PM	**-1.0338E-01**	1.594E-01	1.597E-01	7.148E-01	PCI/SA		0.865	8.33E-1	2.465E-1
RA-228	BXTF	0		6/21/2006 6:28:33 AM	**3.641E+00**	5.72E-01	6.207E-01	1.81E+00	PCI/SA		0.764	1.0E+0	2.465E-1
TH-228	9NS1	0		6/18/2006 10:09:27	**-9.9579E-02**	6.605E-02	6.663E-02	4.544E-01	PCI/SA		0.892	1.0E+0	3.225E-2
TH-230	9NS1	0		6/18/2006 10:09:27	**1.4937E-01**	7.468E-02	7.584E-02	1.012E-01	PCI/SA		0.892	1.0E+0	3.225E-2
TH-232	9NS1	0		6/18/2006 10:09:27	**0.0E+00**	0.0E+00	4.573E-02	1.012E-01	PCI/SA		0.892	1.0E+0	3.225E-2
31580	**9H4XQT10**			**J6E0801577**	P-0605	FILTER	5/8/2006 7:30:00	4/20/2006 10:35:00 AM					
ALPHA	BAS7	0		6/9/2006 6:54:58 PM	**0.0E+00**	0.0E+00	1.149E+00	6.3E+00	PCI/SA		1.0	1.0E+0	2.074E-2
BETA	BDS8	0		6/9/2006 12:14:57 PM	**-1.0654E+00**	1.362E+00	1.365E+00	6.307E+00	PCI/SA		1.0	1.0E+0	3.322E-2
RA-226	BXTE	0		6/17/2006 7:39:00 PM	**4.1653E-02**	1.489E-01	1.49E-01	5.808E-01	PCI/SA		0.957	8.33E-1	2.501E-1
RA-228	BXTF	0		6/21/2006 6:28:48 AM	**1.6155E+00**	4.506E-01	4.72E-01	1.818E+00	PCI/SA		0.804	1.0E+0	2.501E-1
TH-228	9NS1	0		6/18/2006 10:09:30	**2.7368E-01**	2.56E-01	2.578E-01	1.007E+00	PCI/SA		0.331	1.0E+0	3.312E-2
TH-230	9NS1	0		6/18/2006 10:09:30	**1.2829E-01**	1.283E-01	1.291E-01	3.477E-01	PCI/SA		0.331	1.0E+0	3.312E-2
TH-232	9NS1	0		6/18/2006 10:09:30	**0.0E+00**	0.0E+00	1.571E-01	3.477E-01	PCI/SA		0.331	1.0E+0	3.312E-2
31580	**H404F1AB**			**J6E090000286**	INTRA-LAB BLANK	FILTER	5/8/2006 7:30:00	4/20/2006 9:10:00 AM					
RA-228	BXTF	0	B	6/21/2006 6:28:59 AM	**1.5509E+00**	1.56E-01	1.803E-01	3.85E-01	PCI/SA		0.838	1.0E+0	1.0E+0
31580	**H404F1CS**			**J6E090000286**	INTRA-LAB CHECK	FILTER	5/8/2006 7:30:00	4/20/2006 9:10:00 AM					
RA-228	BXTF	0	S	6/21/2006 6:28:59 AM	**5.1407E+00**	2.545E-01	3.902E-01	4.181E-01	PCI/SA	5.1565E+00	0.87	1.0E+0	1.0E+0

6129286, **Samples Inserted | Updated | NotUpdated => 2 | 0 | 12,
**Results Inserted | ReTestInserted | Updated | NotInserted => 14 | 0 | 0 | 0.
**Diff RptDb | Qtims => *wo:H404F1AA=> , mat:FILTER | Air *wo:H404F1AC=> , mat:FILTER | Air.

Batch Nbr: 6129286

Alpha Beta, Ra-228 by GPC , Results

6/21/2006 7:08:26 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	H4XP81AD	RA-228	2.40E+00	(9.72E-01)		PCI/SA	R	1.72E+00	3.74E+00	CRDL nut	88%	
Calc	TF	FILTER	H4XP81AD	RA-228	2.16E+00	(1.04E+00)		PCI/SA	R	1.91E+00	4.15E+00		88%	
Calc	TF	FILTER	H4XP81AD	RA-228	1.43E+00	(1.07E+00)	U4	PCI/SA	R	2.12E+00	4.61E+00		88%	
Calc	TF	FILTER	H4XP81AD	RA-228	2.00E+00	(5.93E-01)		PCI/SA	A	1.10E+00	2.41E+00		88%	
Calc	TF	FILTER	H4XP81AD	RA-228	9.59E+00	(5.70E+00)		PCI/SA	R	1.08E+01	2.37E+01		88%	
Calc	TF	FILTER	H4XQH1AD	RA-228	3.59E+00	(1.22E+00)		PCI/SA	R	2.02E+00	4.42E+00		70%	
Calc	TF	FILTER	H4XQH1AD	RA-228	9.70E-01	(1.10E+00)	U4	PCI/SA	R	2.24E+00	4.90E+00		70%	
Calc	TF	FILTER	H4XQH1AD	RA-228	2.31E+00	(1.32E+00)		PCI/SA	R	2.48E+00	5.44E+00		70%	
Calc	TF	FILTER	H4XQH1AD	RA-228	2.29E+00	(7.02E-01)		PCI/SA	A	1.30E+00	2.84E+00		70%	
Calc	TF	FILTER	H4XQH1AD	RA-228	8.67E+00	(6.81E+00)	U4	PCI/SA	R	1.34E+01	2.94E+01		70%	
Calc	TF	FILTER	H4XQM1AD	RA-228	5.05E+00	(1.21E+00)		PCI/SA	R	1.65E+00	3.64E+00		80%	
Calc	TF	FILTER	H4XQM1AD	RA-228	3.96E+00	(1.19E+00)		PCI/SA	R	1.83E+00	4.04E+00		80%	
Calc	TF	FILTER	H4XQM1AD	RA-228	-4.75E-01	(8.89E-01)	U4	PCI/SA	R	2.04E+00	4.48E+00		80%	
Calc	TF	FILTER	H4XQM1AD	RA-228	2.84E+00	(6.37E-01)		PCI/SA	A	1.06E+00	2.34E+00		80%	
Calc	TF	FILTER	H4XQM1AD	RA-228	1.99E+01	(7.08E+00)		PCI/SA	R	1.18E+01	2.59E+01		80%	
Calc	TF	FILTER	H4XQN1AD	RA-228	5.59E+00	(1.19E+00)		PCI/SA	R	1.43E+00	3.19E+00		82%	
Calc	TF	FILTER	H4XQN1AD	RA-228	2.71E+00	(9.82E-01)		PCI/SA	R	1.59E+00	3.54E+00		82%	
Calc	TF	FILTER	H4XQN1AD	RA-228	2.26E+00	(1.02E+00)		PCI/SA	R	1.76E+00	3.93E+00		82%	
Calc	TF	FILTER	H4XQN1AD	RA-228	3.52E+00	(6.17E-01)		PCI/SA	A	9.22E-01	2.05E+00		82%	
Calc	TF	FILTER	H4XQN1AD	RA-228	9.62E+00	(5.52E+00)		PCI/SA	R	1.03E+01	2.27E+01		82%	
Calc	TF	FILTER	H4XQQ1AD	RA-228	6.12E+00	(1.27E+00)		PCI/SA	R	1.45E+00	3.25E+00		77%	
Calc	TF	FILTER	H4XQQ1AD	RA-228	3.11E+00	(1.04E+00)		PCI/SA	R	1.61E+00	3.61E+00		77%	
Calc	TF	FILTER	H4XQQ1AD	RA-228	4.24E+00	(1.23E+00)		PCI/SA	R	1.79E+00	4.00E+00		77%	
Calc	TF	FILTER	H4XQQ1AD	RA-228	4.49E+00	(6.84E-01)		PCI/SA	A	9.35E-01	2.09E+00		77%	
Calc	TF	FILTER	H4XQQ1AD	RA-228	6.59E+00	(5.56E+00)	U4	PCI/SA	R	1.09E+01	2.41E+01		77%	
Calc	TF	FILTER	H4XQR1AD	RA-228	4.97E+00	(1.16E+00)		PCI/SA	R	1.19E+00	2.82E+00		76%	
Calc	TF	FILTER	H4XQR1AD	RA-228	3.01E+00	(9.98E-01)		PCI/SA	R	1.32E+00	3.12E+00		76%	
Calc	TF	FILTER	H4XQR1AD	RA-228	2.94E+00	(1.06E+00)		PCI/SA	R	1.47E+00	3.47E+00		76%	
Calc	TF	FILTER	H4XQR1AD	RA-228	3.64E+00	(6.21E-01)		PCI/SA	A	7.65E-01	1.81E+00		76%	
Calc	TF	FILTER	H4XQR1AD	RA-228	6.79E+00	(5.98E+00)	U4	PCI/SA	R	1.19E+01	2.61E+01		76%	
Calc	TF	FILTER	H4XQT1AD	RA-228	2.41E+00	(8.46E-01)		PCI/SA	R	1.22E+00	2.83E+00		80%	
Calc	TF	FILTER	H4XQT1AD	RA-228	1.24E+00	(7.71E-01)	U4	PCI/SA	R	1.35E+00	3.14E+00		80%	
Calc	TF	FILTER	H4XQT1AD	RA-228	1.20E+00	(8.34E-01)	U4	PCI/SA	R	1.50E+00	3.48E+00		80%	
Calc	TF	FILTER	H4XQT1AD	RA-228	1.62E+00	(4.72E-01)		PCI/SA	A	7.84E-01	1.82E+00		80%	
Calc	TF	FILTER	H4XQT1AD	RA-228	-3.35E+00	(3.24E+00)	U4	PCI/SA	R	8.12E+00	1.89E+01		80%	
Calc	TF	FILTER	H4X1R1AD	RA-228	5.51E+00	(1.22E+00)		PCI/SA	R	1.28E+00	2.98E+00		79%	
Calc	TF	FILTER	H4X1R1AD	RA-228	1.70E+00	(8.59E-01)		PCI/SA	R	1.42E+00	3.30E+00		79%	
Calc	TF	FILTER	H4X1R1AD	RA-228	4.71E+00	(1.28E+00)		PCI/SA	R	1.58E+00	3.67E+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

Alpha Beta, Ra-228 by GPC , Results

Summary Report

Status	Meth	Matrix	Wrk Ord	Parameter	Sa Act	Uncert	Q	Units	Av	ILcC	IDC	QC	Yield	RYld
Calc	TF	FILTER	H4X1R1AD	RA-228	3.97E+00	(6.55E-01)		PCI/SA	A	8.25E-01	1.91E+00		79%	
Calc	TF	FILTER	H4X1R1AD	RA-228	1.18E+01	(5.11E+00)		PCI/SA	R	7.92E+00	1.85E+01		79%	
Calc	TF	FILTER	H4X1T1AD	RA-228	4.05E+00	(1.03E+00)		PCI/SA	R	1.16E+00	2.72E+00		80%	
Calc	TF	FILTER	H4X1T1AD	RA-228	3.02E+00	(9.68E-01)		PCI/SA	R	1.29E+00	3.02E+00		80%	
Calc	TF	FILTER	H4X1T1AD	RA-228	2.45E+00	(9.66E-01)		PCI/SA	R	1.43E+00	3.35E+00		80%	
Calc	TF	FILTER	H4X1T1AD	RA-228	3.18E+00	(5.70E-01)		PCI/SA	A	7.47E-01	1.75E+00		80%	
Calc	TF	FILTER	H4X1T1AD	RA-228	1.36E+01	(5.19E+00)		PCI/SA	R	7.47E+00	1.76E+01		80%	
Calc	TF	FILTER	H4X1V1AD	RA-228	2.67E+00	(8.30E-01)		PCI/SA	R	1.09E+00	2.55E+00		83%	
Calc	TF	FILTER	H4X1V1AD	RA-228	1.28E+00	(7.19E-01)		PCI/SA	R	1.21E+00	2.83E+00		83%	
Calc	TF	FILTER	H4X1V1AD	RA-228	1.93E+00	(8.60E-01)		PCI/SA	R	1.34E+00	3.14E+00		83%	
Calc	TF	FILTER	H4X1V1AD	RA-228	1.96E+00	(4.65E-01)		PCI/SA	A	7.01E-01	1.64E+00		83%	
Calc	TF	FILTER	H4X1V1AD	RA-228	7.32E-01	(3.42E+00)	U4	PCI/SA	R	7.27E+00	1.72E+01		83%	
Calc	TF	FILTER	H4X1W1AD	RA-228	1.76E+00	(7.40E-01)		PCI/SA	R	1.13E+00	2.64E+00		76%	
Calc	TF	FILTER	H4X1W1AD	RA-228	3.06E+00	(9.52E-01)		PCI/SA	R	1.25E+00	2.93E+00		76%	
Calc	TF	FILTER	H4X1W1AD	RA-228	2.52E+00	(9.53E-01)		PCI/SA	R	1.39E+00	3.25E+00		76%	
Calc	TF	FILTER	H4X1W1AD	RA-228	2.45E+00	(5.12E-01)		PCI/SA	A	7.26E-01	1.70E+00		76%	
Calc	TF	FILTER	H4X1W1AD	RA-228	-4.24E+00	(3.20E+00)	U4	PCI/SA	R	8.25E+00	1.91E+01		76%	
Calc	TF	FILTER	H4X1X1AD	RA-228	7.64E+00	(1.43E+00)		PCI/SA	R	1.22E+00	2.84E+00		74%	
Calc	TF	FILTER	H4X1X1AD	RA-228	5.14E+00	(1.23E+00)		PCI/SA	R	1.35E+00	3.15E+00		74%	
Calc	TF	FILTER	H4X1X1AD	RA-228	3.67E+00	(1.13E+00)		PCI/SA	R	1.50E+00	3.49E+00		74%	
Calc	TF	FILTER	H4X1X1AD	RA-228	5.49E+00	(7.34E-01)		PCI/SA	A	7.82E-01	1.82E+00		74%	
Calc	TF	FILTER	H4X1X1AD	RA-228	2.04E+01	(6.21E+00)		PCI/SA	R	8.31E+00	1.93E+01		74%	
Calc	TF	FILTER	H404F1AA	RA-228	1.60E+00	(3.02E-01)		PCI/SA	R	2.55E-01	5.99E-01	B	84%	
Calc	TF	FILTER	H404F1AA	RA-228	1.66E+00	(3.24E-01)		PCI/SA	R	2.82E-01	6.64E-01	B	84%	
Calc	TF	FILTER	H404F1AA	RA-228	1.39E+00	(3.10E-01)		PCI/SA	R	3.13E-01	7.37E-01	B	84%	
Calc	TF	FILTER	H404F1AA	RA-228	1.55E+00	(1.80E-01)		PCI/SA	A	1.64E-01	3.85E-01	B	84%	
Calc	TF	FILTER	H404F1AA	RA-228	2.63E+00	(1.14E+00)		PCI/SA	R	1.77E+00	4.13E+00	B	84%	
Calc	TF	FILTER	H404F1AC	RA-228	5.82E+00	(7.24E-01)		PCI/SA	R	2.84E-01	6.50E-01	S	87%	113%
Calc	TF	FILTER	H404F1AC	RA-228	4.34E+00	(5.93E-01)		PCI/SA	R	3.15E-01	7.22E-01	S	87%	84%
Calc	TF	FILTER	H404F1AC	RA-228	5.27E+00	(7.03E-01)		PCI/SA	R	3.49E-01	8.01E-01	S	87%	102%
Calc	TF	FILTER	H404F1AC	RA-228	5.14E+00	(3.90E-01)		PCI/SA	A	1.82E-01	4.18E-01	S	87%	100%
Calc	TF	FILTER	H404F1AC	RA-228	5.90E+00	(1.49E+00)		PCI/SA	R	1.73E+00	4.03E+00	S	87%	114%

() - (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:70
RADCALC v4.8.24
STL Richland

Batch Nbr: 6129286

Alpha Beta, Ra-228 by GPC , Calculated Results

Detailed Report

6/21/2006 7:08:27 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	**H4XP81AD**	**PCI/SA**		04/20/06 09:10	06/21/06 06:28	06/14/06 11:45		1	1.00 SA	
536403,P-0598					,J6E080157-1 v4.8.24		FILTER			31.2	06/20/06 10:11		97%	0.250977 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	06/20/06 13:39	RA-228	64	342	GPC7A	1	N	N	5.1841E-01	1.0000E+00	N	88%	N		1.4156E+00	4.5045E-01	1.0183E+00	
			50	400			Y		(1.198E-02)	(0.000E+00)		7%			(0.000E+00)	3.984432		
1	06/20/06 14:34	RA-228	60	342	GPC7A	1	N	N	5.1841E-01	1.0000E+00	N	88%	N		1.5704E+00	4.5045E-01	1.0183E+00	
			50	400			Y		(1.198E-02)	(0.000E+00)		7%			(0.000E+00)	3.984432		
2	06/20/06 15:30	RA-228	53	342	GPC7A	1	N	N	5.1841E-01	1.0000E+00	N	88%	N		1.7422E+00	4.5045E-01	1.0183E+00	
			50	400			Y		(1.198E-02)	(0.000E+00)		7%			(0.000E+00)	3.984432		
3	06/21/06 06:28	RA-228	51	306	GPC7A	1	N	N	5.1841E-01	1.0000E+00	N	88%	N		9.4192E+00	4.5045E-01	1.0183E+00	
			50	400			N		(1.198E-02)	(0.000E+00)		7%			(0.000E+00)	3.984432		

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
	06/21/06	RA-228	R	**2.401439**		4.25000E-01	1.313934	1.313934	1.00 SA	88%		3.7421		
				(0.971709)		(1.6655E-01)	(0.526391)	(0.526391)	(0.027062)			1.718944		
	06/21/06	RA-228	R	**2.16266**		3.45000E-01	1.183287	1.183287	1.00 SA	88%		4.15147		
				(1.036641)		(1.6167E-01)	(0.563189)	(0.563189)	(0.027062)			1.906989		
	06/21/06	RA-228	R	**1.425639**	U4	2.05000E-01	0.78003	0.78003	1.00 SA	88%		4.605624		
				(1.072068)		(1.5277E-01)	(0.584897)	(0.584897)	(0.027062)			2.115605		
	06/21/06	RA-228	A	**1.99658**		3.25000E-01	1.092417	1.092417	1.00 SA	88%		2.405471		
				(0.593312)		(9.2624E-02)	(0.322555)	(0.322555)	(0.015624)			1.104959		
	06/21/06	RA-228	R	**9.587605**		2.55000E-01	5.245803	5.245803	1.00 SA	88%		23.663458		
				(5.69881)		(1.4937E-01)	(3.103775)	(3.103775)	(0.027062)			10.819235		

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	**H4XQH1AD**	**PCI/SA**		04/20/06 09:30	06/21/06 06:28	06/14/06 11:45		1	1.00 SA	
536403,P-0599					,J6E080157-2 v4.8.24		FILTER			30.9	06/20/06 10:11		78%	0.248445 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	06/20/06 13:39	RA-228	62	295	GPC7B	1	N	N	5.1966E-01	1.0000E+00	N	70%	N		1.4156E+00	4.5045E-01	1.0183E+00	
			50	400			Y		(1.258E-02)	(0.000E+00)		6%			(0.000E+00)	4.025041		
1	06/20/06 14:34	RA-228	43	295	GPC7B	1	N	N	5.1966E-01	1.0000E+00	N	70%	N		1.5704E+00	4.5045E-01	1.0183E+00	
			50	400			Y		(1.258E-02)	(0.000E+00)		6%			(0.000E+00)	4.025041		
2	06/20/06 15:30	RA-228	50	295	GPC7B	1	N	N	5.1966E-01	1.0000E+00	N	70%	N		1.7422E+00	4.5045E-01	1.0183E+00	
			50	400			Y		(1.258E-02)	(0.000E+00)		6%			(0.000E+00)	4.025041		

() - (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: 6129286

Alpha Beta, Ra-228 by GPC , Calculated Results

6/21/2006 7:08:27 AM

3	06/21/06 06:28	RA-228	46	295	GPC7B	1	N	N	5.1966E-01	1.0000E+00	N	70%	N		9.4192E+00	4.5045E-01	1.0183E+00
			50	400			N		(1.258E-02)	(0.000E+00)		6%			(0.000E+00)	4.025041	

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
	06/21/06	RA-228	R	**3.586332**		5.02500E-01	1.942453	1.942453	1.00 SA	70%		4.417365		
				(1.220422)		(1.6323E-01)	(0.651527)	(0.651527)	(0.028284)			2.016468		
	06/21/06	RA-228	R	**0.969922**	U4	1.22500E-01	0.525336	0.525336	1.00 SA	70%		4.900607		
				(1.097059)		(1.3800E-01)	(0.59343)	(0.59343)	(0.028284)			2.237061		
	06/21/06	RA-228	R	**2.305774**		2.62500E-01	1.248868	1.248868	1.00 SA	70%		5.436712		
				(1.319121)		(1.4780E-01)	(0.71086)	(0.71086)	(0.028284)			2.481786		
	06/21/06	RA-228	A	**2.287343**		2.95833E-01	1.238886	1.238886	1.00 SA	70%		2.83954		
				(0.701827)		(8.6623E-02)	(0.377413)	(0.377413)	(0.01633)			1.296212		
	06/21/06	RA-228	R	**8.666915**	U4	1.82500E-01	4.694231	4.694231	1.00 SA	70%		29.393451		
				(6.813827)		(1.4228E-01)	(3.680684)	(3.680684)	(0.028284)			13.417715		

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	**H4XQM1AD**	**PCI/SA**		04/20/06 09:45	06/21/06 06:28	06/14/06 11:45		1	1.00 SA	
536403,P-0600					,J6E080157-3 v4.8.24		FILTER			30.8	06/20/06 10:11		89%	0.249154 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	06/20/06 13:39	RA-228	74	265	GPC1A	1	N	N	5.3028E-01	1.0000E+00	N	80%	N		1.4162E+00	4.5045E-01	1.0183E+00	
			50	400			Y		(1.447E-02)	(0.000E+00)		6%			(0.000E+00)	4.01358		
1	06/20/06 14:34	RA-228	62	265	GPC1A	1	N	N	5.3028E-01	1.0000E+00	N	80%	N		1.5711E+00	4.5045E-01	1.0183E+00	
			50	400			Y		(1.447E-02)	(0.000E+00)		6%			(0.000E+00)	4.01358		
2	06/20/06 15:30	RA-228	30	265	GPC1A	1	N	N	5.3028E-01	1.0000E+00	N	80%	N		1.7430E+00	4.5045E-01	1.0183E+00	
			50	400			Y		(1.447E-02)	(0.000E+00)		6%			(0.000E+00)	4.01358		
3	06/21/06 06:28	RA-228	58	279	GPC7C	1	N	N	5.0682E-01	1.0000E+00	N	80%	N		9.4192E+00	4.5045E-01	1.0183E+00	
			50	400			N		(1.091E-02)	(0.000E+00)		6%			(0.000E+00)	4.01358		

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
	06/21/06	RA-228	R	**5.048208**		8.17500E-01	2.74206	2.74206	1.00 SA	80%		3.63999		
				(1.207504)		(1.7679E-01)	(0.63669)	(0.63669)	(0.028284)			1.65363		
	06/21/06	RA-228	R	**3.956288**		5.77500E-01	2.148957	2.148957	1.00 SA	80%		4.03819		
				(1.185384)		(1.6265E-01)	(0.631926)	(0.631926)	(0.028284)			1.83453		
	06/21/06	RA-228	R	**-0.474995**	U4	-6.25000E-02	-0.258005	-0.258005	1.00 SA	80%		4.479811		
				(0.889452)		(1.1686E-01)	(0.482901)	(0.482901)	(0.028284)			2.035156		
	06/21/06	RA-228	A	**2.843167**		4.44167E-01	1.544337	1.544337	1.00 SA	80%		2.339807		
				(0.63721)		(8.9050E-02)	(0.339591)	(0.339591)	(0.01633)			1.062963		
	06/21/06	RA-228	R	**19.874333**		4.62500E-01	10.795242	10.795242	1.00 SA	80%		25.929539		
				(7.076317)		(1.5794E-01)	(3.793322)	(3.793322)	(0.028284)			11.807252		

() - (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: 6129286

Alpha Beta, Ra-228 by GPC , Calculated Results

6/21/2006 7:08:27 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	**H4XQN1AD**	**PCI/SA**		04/20/06 10:05	06/21/06 06:28	06/14/06 11:45		1	1.00 SA	
536403,P-0601					,J6E080157-4 v4.8.24		FILTER			30.8	06/20/06 10:11		92%	0.249744 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	06/20/06 13:39	RA-228	72	207	GPC1C	1	N	N	5.2204E-01	1.0000E+00	N	82%	N		1.4162E+00	4.5045E-01	1.0183E+00	
			50	400			Y		(1.168E-02)	(0.000E+00)		7%			(0.000E+00)	4.004108		
1	06/20/06 14:34	RA-228	46	207	GPC1C	1	N	N	5.2204E-01	1.0000E+00	N	82%	N		1.5711E+00	4.5045E-01	1.0183E+00	
			50	400			Y		(1.168E-02)	(0.000E+00)		7%			(0.000E+00)	4.004108		
2	06/20/06 15:30	RA-228	41	207	GPC1C	1	N	N	5.2204E-01	1.0000E+00	N	82%	N		1.7430E+00	4.5045E-01	1.0183E+00	
			50	400			Y		(1.168E-02)	(0.000E+00)		7%			(0.000E+00)	4.004108		
3	06/21/06 06:28	RA-228	43	247	GPC1A	1	N	N	5.3028E-01	1.0000E+00	N	82%	N		9.4219E+00	4.5045E-01	1.0183E+00	
			50	400			N		(1.447E-02)	(0.000E+00)		7%			(0.000E+00)	4.004108		

Sq	Calc Date	Parameter	Avg	Sa Act	Q	Net Cnt Rt	Dpm Wo Blk	Dpm-Blk	Vol Used	Yield,EnFct	Chem Yld,EFctU	IDC/LcC	BlkLcC/MDC	StdDvMdC/LcC
	06/21/06	RA-228	R	**5.589255**		9.22500E-01	3.04314	3.04314	1.00 SA	82%		3.194615		
				(1.193059)		(1.7348E-01)	(0.625611)	(0.625611)	(0.028284)			1.433965		
	06/21/06	RA-228	R	**2.705453**		4.02500E-01	1.473017	1.473017	1.00 SA	82%		3.544093		
				(0.982055)		(1.4033E-01)	(0.527954)	(0.527954)	(0.028284)			1.590835		
	06/21/06	RA-228	R	**2.255653**		3.02500E-01	1.228119	1.228119	1.00 SA	82%		3.931678		
				(1.017702)		(1.3302E-01)	(0.549591)	(0.549591)	(0.028284)			1.76481		
	06/21/06	RA-228	A	**3.516787**		5.42500E-01	1.914759	1.914759	1.00 SA	82%		2.053517		
				(0.61676)		(8.6591E-02)	(0.328663)	(0.328663)	(0.01633)			0.921761		
	06/21/06	RA-228	R	**9.622941**		2.42500E-01	5.239331	5.239331	1.00 SA	82%		22.656851		
				(5.521104)		(1.3691E-01)	(2.990929)	(2.990929)	(0.028284)			10.259129		

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	**H4XQQ1AD**	**PCI/SA**		04/20/06 10:25	06/21/06 06:28	06/14/06 11:45		1	1.00 SA	
536403,P-0602					,J6E080157-5 v4.8.24		FILTER			31.4	06/20/06 10:11		84%	0.249601 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	06/20/06 13:39	RA-228	72	192	GPC1D	1	N	N	5.3097E-01	1.0000E+00	N	77%	N		1.4162E+00	4.5045E-01	1.0183E+00	
			50	400			Y		(1.366E-02)	(0.000E+00)		6%			(0.000E+00)	4.006395		
1	06/20/06 14:34	RA-228	46	192	GPC1D	1	N	N	5.3097E-01	1.0000E+00	N	77%	N		1.5711E+00	4.5045E-01	1.0183E+00	
			50	400			Y		(1.366E-02)	(0.000E+00)		6%			(0.000E+00)	4.006395		
2	06/20/06 15:30	RA-228	51	192	GPC1D	1	N	N	5.3097E-01	1.0000E+00	N	77%	N		1.7430E+00	4.5045E-01	1.0183E+00	
			50	400			Y		(1.366E-02)	(0.000E+00)		6%			(0.000E+00)	4.006395		
3	06/21/06 06:28	RA-228	37	235	GPC1C	1	N	N	5.2100E-01	1.0000E+00	N	77%	N		9.4219E+00	4.5045E-01	1.0183E+00	
			50	400			N		(1.166E-02)	(0.000E+00)		6%			(0.000E+00)	4.006395		

() - (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: 6129286

Alpha Beta, Ra-228 by GPC , Calculated Results

6/21/2006 7:08:28 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
	06/21/06	RA-228	R	**6.123157**		9.60000E-01	3.331941	3.331941	1.00 SA	77%		3.251684		
				(1.268456)		(1.7321E-01)	(0.663166)	(0.663166)	(0.028284)			1.453854		
	06/21/06	RA-228	R	**3.11346**		4.40000E-01	1.694202	1.694202	1.00 SA	77%		3.607404		
				(1.040109)		(1.4000E-01)	(0.557549)	(0.557549)	(0.028284)			1.612899		
	06/21/06	RA-228	R	**4.238941**		5.40000E-01	2.306637	2.306637	1.00 SA	77%		4.001914		
				(1.231747)		(1.4697E-01)	(0.657032)	(0.657032)	(0.028284)			1.789287		
	06/21/06	RA-228	A	**4.491853**		6.46667E-01	2.44426	2.44426	1.00 SA	77%		2.090201		
				(0.683781)		(8.8944E-02)	(0.362452)	(0.362452)	(0.01633)			0.934545		
	06/21/06	RA-228	R	**6.594962**	U4	1.52500E-01	3.588676	3.588676	1.00 SA	77%		24.141797		
				(5.556011)		(1.2755E-01)	(3.01629)	(3.01629)	(0.028284)			10.905416		

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	**H4XQR1AD**	**PCI/SA**		04/20/06 10:40	06/21/06 06:28	06/14/06 11:45		1	1.00 SA	
536403,P-0603					,J6E080157-6 v4.8.24		FILTER			30.4	06/20/06 10:11		86%	0.246509 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	06/20/06 13:39	RA-228	41	81	GPC2A	1	N	N	4.2898E-01	1.0000E+00	N	76%	N		1.4168E+00	4.5045E-01	1.0183E+00	
			50	400			Y		(1.187E-02)	(0.000E+00)		6%			(0.000E+00)	4.056647		
1	06/20/06 14:35	RA-228	27	81	GPC2A	1	N	N	4.2898E-01	1.0000E+00	N	76%	N		1.5717E+00	4.5045E-01	1.0183E+00	
			50	400			Y		(1.187E-02)	(0.000E+00)		6%			(0.000E+00)	4.056647		
2	06/20/06 15:30	RA-228	25	81	GPC2A	1	N	N	4.2898E-01	1.0000E+00	N	76%	N		1.7437E+00	4.5045E-01	1.0183E+00	
			50	400			Y		(1.187E-02)	(0.000E+00)		6%			(0.000E+00)	4.056647		
3	06/21/06 06:28	RA-228	43	281	GPC1D	1	N	N	5.3195E-01	1.0000E+00	N	76%	N		9.4219E+00	4.5045E-01	1.0183E+00	
			50	400			N		(1.369E-02)	(0.000E+00)		6%			(0.000E+00)	4.056647		

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
	06/21/06	RA-228	R	**4.966533**		6.17500E-01	2.669091	2.669091	1.00 SA	76%		2.816038		
				(1.162677)		(1.3002E-01)	(0.605736)	(0.605736)	(0.028284)			1.190762		
	06/21/06	RA-228	R	**3.011457**		3.37500E-01	1.618403	1.618403	1.00 SA	76%		3.124101		
				(0.99754)		(1.0633E-01)	(0.52797)	(0.52797)	(0.028284)			1.321026		
	06/21/06	RA-228	R	**2.944939**		2.97500E-01	1.582656	1.582656	1.00 SA	76%		3.465864		
				(1.058428)		(1.0250E-01)	(0.561503)	(0.561503)	(0.028284)			1.46554		
	06/21/06	RA-228	A	**3.640977**		4.17500E-01	1.956717	1.956717	1.00 SA	76%		1.810186		
				(0.620678)		(6.5590E-02)	(0.326761)	(0.326761)	(0.01633)			0.765437		
	06/21/06	RA-228	R	**6.793755**	U4	1.57500E-01	3.651068	3.651068	1.00 SA	76%		26.112911		
				(5.979023)		(1.3768E-01)	(3.206366)	(3.206366)	(0.028284)			11.894561		

() - (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: 6129286

Alpha Beta, Ra-228 by GPC , Calculated Results

6/21/2006 7:08:28 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	**H4XQT1AD**	**PCI/SA**		04/20/06 10:35	06/21/06 06:28	06/14/06 11:45		1	1.00 SA	
536403,P-0605					,J6E080157-7 v4.8.24		FILTER			28.9	06/20/06 10:11		96%	0.250081 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	06/20/06 13:39	RA-228	30	106	GPC2B	1	N	N	4.4881E-01	1.0000E+00	N	80%	N		1.4168E+00	4.5045E-01	1.0183E+00	
			50	400			Y		(1.059E-02)	(0.000E+00)		6%			(0.000E+00)	3.998706		
1	06/20/06 14:35	RA-228	21	106	GPC2B	1	N	N	4.4881E-01	1.0000E+00	N	80%	N		1.5717E+00	4.5045E-01	1.0183E+00	
			50	400			Y		(1.059E-02)	(0.000E+00)		6%			(0.000E+00)	3.998706		
2	06/20/06 15:30	RA-228	20	106	GPC2B	1	N	N	4.4881E-01	1.0000E+00	N	80%	N		1.7437E+00	4.5045E-01	1.0183E+00	
			50	400			Y		(1.059E-02)	(0.000E+00)		6%			(0.000E+00)	3.998706		
3	06/21/06 06:28	RA-228	9	99	GPC2A	1	N	N	4.3325E-01	1.0000E+00	N	80%	N		9.4263E+00	4.5045E-01	1.0183E+00	
			50	400			N		(1.199E-02)	(0.000E+00)		6%			(0.000E+00)	3.998706		

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
	06/21/06	RA-228	R	**2.412005**		3.35000E-01	1.315029	1.315029	1.00 SA	80%		2.827627		
				(0.846225)		(1.1253E-01)	(0.455137)	(0.455137)	(0.028284)			1.219417		
	06/21/06	RA-228	R	**1.238088**	**U4**	1.55000E-01	0.675008	0.675008	1.00 SA	80%		3.136957		
				(0.770672)		(9.5197E-02)	(0.418378)	(0.418378)	(0.028284)			1.352816		
	06/21/06	RA-228	R	**1.1963**	**U4**	1.35000E-01	0.652225	0.652225	1.00 SA	80%		3.480127		
				(0.833612)		(9.3073E-02)	(0.45294)	(0.45294)	(0.028284)			1.500809		
	06/21/06	RA-228	A	**1.615465**		2.08333E-01	0.880754	0.880754	1.00 SA	80%		1.817636		
				(0.471986)		(5.8107E-02)	(0.255461)	(0.255461)	(0.01633)			0.783857		
	06/21/06	RA-228	R	**-3.349675**	**U4**	-6.75000E-02	-1.826248	-1.826248	1.00 SA	80%		18.924744		
				(3.241392)		(6.4952E-02)	(1.764096)	(1.764096)	(0.028284)			8.122362		

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	**H4X1R1AD**	**PCI/SA**		04/20/06 09:35	06/21/06 06:28	06/14/06 11:45		1	1.00 SA	
536403,000431					,J6E080157-8 v4.8.24		FILTER			31.7	06/20/06 10:11		86%	0.250052 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	06/20/06 13:39	RA-228	49	104	GPC2C	1	N	N	4.2853E-01	1.0000E+00	N	79%	N		1.4168E+00	4.5045E-01	1.0183E+00	
			50	400			Y		(9.321E-03)	(0.000E+00)		6%			(0.000E+00)	3.999161		
1	06/20/06 14:35	RA-228	23	104	GPC2C	1	N	N	4.2853E-01	1.0000E+00	N	79%	N		1.5717E+00	4.5045E-01	1.0183E+00	
			50	400			Y		(9.321E-03)	(0.000E+00)		6%			(0.000E+00)	3.999161		
2	06/20/06 15:30	RA-228	38	104	GPC2C	1	N	N	4.2853E-01	1.0000E+00	N	79%	N		1.7437E+00	4.5045E-01	1.0183E+00	
			50	400			Y		(9.321E-03)	(0.000E+00)		6%			(0.000E+00)	3.999161		
3	06/21/06 06:28	RA-228	24	96	GPC2B	1	N	N	4.4363E-01	1.0000E+00	N	79%	N		9.4263E+00	4.5045E-01	1.0183E+00	
			50	400			N		(1.047E-02)	(0.000E+00)		6%			(0.000E+00)	3.999161		

() - (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: 6129286

Alpha Beta, Ra-228 by GPC , Calculated Results

6/21/2006 7:08:28 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
	06/21/06	RA-228	R	**5.50667**		7.20000E-01	3.001863	3.001863	1.00 SA	79%		2.97908		
				(1.22188)		(1.4230E-01)	(0.643377)	(0.643377)	(0.028284)			1.283037		
	06/21/06	RA-228	R	**1.696966**		2.00000E-01	0.925071	0.925071	1.00 SA	79%		3.304979		
				(0.859313)		(9.9247E-02)	(0.465415)	(0.465415)	(0.028284)			1.423396		
	06/21/06	RA-228	R	**4.706517**		5.00000E-01	2.565674	2.565674	1.00 SA	79%		3.66653		
				(1.276612)		(1.2590E-01)	(0.680136)	(0.680136)	(0.028284)			1.579109		
	06/21/06	RA-228	A	**3.970051**		4.73333E-01	2.164203	2.164203	1.00 SA	79%		1.914992		
				(0.654994)		(7.1453E-02)	(0.34851)	(0.34851)	(0.01633)			0.824753		
	06/21/06	RA-228	R	**11.797227**		2.40000E-01	6.431048	6.431048	1.00 SA	79%		18.50009		
				(5.106167)		(1.0100E-01)	(2.758911)	(2.758911)	(0.028284)			7.922645		

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	**H4X1T1AD**	**PCI/SA**		04/20/06 09:50	06/21/06 06:28	06/14/06 11:45		1	1.00 SA	
536403,000432					,J6E080157-9 v4.8.24		FILTER			30.7	06/20/06 10:11		90%	0.250662 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	06/20/06 13:39	RA-228	39	92	GPC2D	1	N	N	4.3824E-01	1.0000E+00	N	80%	N		1.4168E+00	4.5045E-01	1.0183E+00	
			50	400			Y		(1.310E-02)	(0.000E+00)		6%			(0.000E+00)	3.989438		
1	06/20/06 14:35	RA-228	30	92	GPC2D	1	N	N	4.3824E-01	1.0000E+00	N	80%	N		1.5717E+00	4.5045E-01	1.0183E+00	
			50	400			Y		(1.310E-02)	(0.000E+00)		6%			(0.000E+00)	3.989438		
2	06/20/06 15:30	RA-228	25	92	GPC2D	1	N	N	4.3824E-01	1.0000E+00	N	80%	N		1.7437E+00	4.5045E-01	1.0183E+00	
			50	400			Y		(1.310E-02)	(0.000E+00)		6%			(0.000E+00)	3.989438		
3	06/21/06 06:28	RA-228	24	83	GPC2C	1	N	N	4.3128E-01	1.0000E+00	N	80%	N		9.4263E+00	4.5045E-01	1.0183E+00	
			50	400			N		(9.380E-03)	(0.000E+00)		6%			(0.000E+00)	3.989438		

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
	06/21/06	RA-228	R	**4.052352**		5.50000E-01	2.21446	2.21446	1.00 SA	80%		2.723021		
				(1.025689)		(1.2718E-01)	(0.545874)	(0.545874)	(0.028284)			1.16253		
	06/21/06	RA-228	R	**3.024355**		3.70000E-01	1.652697	1.652697	1.00 SA	80%		3.020908		
				(0.968024)		(1.1214E-01)	(0.5204)	(0.5204)	(0.028284)			1.289706		
	06/21/06	RA-228	R	**2.448394**		2.70000E-01	1.337956	1.337956	1.00 SA	80%		3.351383		
				(0.965969)		(1.0283E-01)	(0.52224)	(0.52224)	(0.028284)			1.430795		
	06/21/06	RA-228	A	**3.175034**		3.96667E-01	1.735038	1.735038	1.00 SA	80%		1.750394		
				(0.569815)		(6.6102E-02)	(0.305783)	(0.305783)	(0.01633)			0.74729		
	06/21/06	RA-228	R	**13.573968**		2.72500E-01	7.417668	7.417668	1.00 SA	80%		17.621516		
				(5.194434)		(1.0059E-01)	(2.8064)	(2.8064)	(0.028284)			7.465266		

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

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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: 6129286

Alpha Beta, Ra-228 by GPC , Calculated Results

6/21/2006 7:08:28 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	**H4X1V1AD**	**PCI/SA**		04/20/06 10:10	06/21/06 06:28	06/14/06 11:45		1	1.00 SA	
536403,000433					,J6E080157-10 v4.8.24		FILTER			30.3	06/20/06 10:11		94%	0.243521 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	06/20/06 13:40	RA-228	31	93	GPC3A	1	N	N	4.6800E-01	1.0000E+00	N	83%	N		1.4175E+00	4.5045E-01	1.0183E+00	
			50	400			Y		(1.324E-02)	(0.000E+00)		7%			(0.000E+00)	4.106423		
1	06/20/06 14:35	RA-228	20	93	GPC3A	1	N	N	4.6800E-01	1.0000E+00	N	83%	N		1.5725E+00	4.5045E-01	1.0183E+00	
			50	400			Y		(1.324E-02)	(0.000E+00)		7%			(0.000E+00)	4.106423		
2	06/20/06 15:30	RA-228	23	93	GPC3A	1	N	N	4.6800E-01	1.0000E+00	N	83%	N		1.7446E+00	4.5045E-01	1.0183E+00	
			50	400			Y		(1.324E-02)	(0.000E+00)		7%			(0.000E+00)	4.106423		
3	06/21/06 06:28	RA-228	11	82	GPC2D	1	N	N	4.3869E-01	1.0000E+00	N	83%	N		9.4263E+00	4.5045E-01	1.0183E+00	
			50	400			N		(1.311E-02)	(0.000E+00)		7%			(0.000E+00)	4.106423		

Sq	Calc Date	Parameter	Avg	Sa Act	Q	Net Cnt Rt	Dpm Wo Blk	Dpm-Blk	Vol Used	Yield,EnFct	Chem Yld,EFctU	IDC/lLcC	BlkLcC/MDC	StdDvMdC/LcC
	06/21/06	RA-228	R	**2.665287**		3.87500E-01	1.414993	1.414993	1.00 SA	83%		2.553776		
				(0.829896)		(1.1394E-01)	(0.433026)	(0.433026)	(0.028284)			1.091138		
	06/21/06	RA-228	R	**1.278086**		1.67500E-01	0.678532	0.678532	1.00 SA	83%		2.83306		
				(0.71887)		(9.2635E-02)	(0.379651)	(0.379651)	(0.028284)			1.210466		
	06/21/06	RA-228	R	**1.925808**		2.27500E-01	1.022406	1.022406	1.00 SA	83%		3.142985		
				(0.860144)		(9.8900E-02)	(0.452855)	(0.452855)	(0.028284)			1.342886		
	06/21/06	RA-228	A	**1.956394**		2.60833E-01	1.038644	1.038644	1.00 SA	83%		1.641565		
				(0.464919)		(5.9014E-02)	(0.244205)	(0.244205)	(0.01633)			0.701382		
	06/21/06	RA-228	R	**0.731931**	**U4**	1.50000E-02	0.38858	0.38858	1.00 SA	83%		17.173311		
				(3.420862)		(7.0089E-02)	(1.815989)	(1.815989)	(0.028284)			7.268616		

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	**H4X1W1AD**	**PCI/SA**		04/20/06 10:30	06/21/06 06:28	06/14/06 11:45		1	1.00 SA	
536403,000434					,J6E080157-11 v4.8.24		FILTER			30.6	06/20/06 10:11		86%	0.249237 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	06/20/06 13:40	RA-228	24	93	GPC3B	1	N	N	4.7930E-01	1.0000E+00	N	76%	N		1.4175E+00	4.5045E-01	1.0183E+00	
			50	400			Y		(1.181E-02)	(0.000E+00)		6%			(0.000E+00)	4.012239		
1	06/20/06 14:35	RA-228	31	93	GPC3B	1	N	N	4.7930E-01	1.0000E+00	N	76%	N		1.5725E+00	4.5045E-01	1.0183E+00	
			50	400			Y		(1.181E-02)	(0.000E+00)		6%			(0.000E+00)	4.012239		
2	06/20/06 15:30	RA-228	26	93	GPC3B	1	N	N	4.7930E-01	1.0000E+00	N	76%	N		1.7446E+00	4.5045E-01	1.0183E+00	
			50	400			Y		(1.181E-02)	(0.000E+00)		6%			(0.000E+00)	4.012239		
3	06/21/06 06:28	RA-228	9	107	GPC3A	1	N	N	4.6800E-01	1.0000E+00	N	76%	N		9.4295E+00	4.5045E-01	1.0183E+00	
			50	400			N		(1.324E-02)	(0.000E+00)		6%			(0.000E+00)	4.012239		

() - (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: 6129286

Alpha Beta, Ra-228 by GPC , Calculated Results

6/21/2006 7:08:29 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
	06/21/06	RA-228	R	**1.761545**		2.47500E-01	0.957157	0.957157	1.00 SA	76%		2.642586		
				(0.740088)		(1.0090E-01)	(0.398359)	(0.398359)	(0.028284)			1.129083		
	06/21/06	RA-228	R	**3.059589**		3.87500E-01	1.662465	1.662465	1.00 SA	76%		2.931582		
				(0.951715)		(1.1394E-01)	(0.508231)	(0.508231)	(0.028284)			1.252561		
	06/21/06	RA-228	R	**2.518348**		2.87500E-01	1.368375	1.368375	1.00 SA	76%		3.252285		
				(0.952858)		(1.0479E-01)	(0.511745)	(0.511745)	(0.028284)			1.389586		
	06/21/06	RA-228	A	**2.446494**		3.07500E-01	1.329333	1.329333	1.00 SA	76%		1.698652		
				(0.512232)		(6.1593E-02)	(0.274646)	(0.274646)	(0.01633)			0.725773		
	06/21/06	RA-228	R	**-4.242805**	U4	-8.75000E-02	-2.30538	-2.30538	1.00 SA	76%		19.120171		
				(3.197769)		(6.5336E-02)	(1.732493)	(1.732493)	(0.028284)			8.250927		

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	**H4X1X1AD**	**PCI/SA**		04/20/06 10:45	06/21/06 06:28	06/14/06 11:45		1	1.00 SA	
536403,000435					,J6E080157-12 v4.8.24		FILTER			30.9	06/20/06 10:11		83%	0.247937 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	06/20/06 13:40	RA-228	63	97	GPC3C	1	N	N	4.7085E-01	1.0000E+00	N	74%	N		1.4175E+00	4.5045E-01	1.0183E+00	
			50	400			Y		(1.100E-02)	(0.000E+00)		6%			(0.000E+00)	4.033281		
1	06/20/06 14:35	RA-228	43	97	GPC3C	1	N	N	4.7085E-01	1.0000E+00	N	74%	N		1.5725E+00	4.5045E-01	1.0183E+00	
			50	400			Y		(1.100E-02)	(0.000E+00)		6%			(0.000E+00)	4.033281		
2	06/20/06 15:30	RA-228	32	97	GPC3C	1	N	N	4.7085E-01	1.0000E+00	N	74%	N		1.7446E+00	4.5045E-01	1.0183E+00	
			50	400			Y		(1.100E-02)	(0.000E+00)		6%			(0.000E+00)	4.033281		
3	06/21/06 06:28	RA-228	34	106	GPC3B	1	N	N	4.7930E-01	1.0000E+00	N	74%	N		9.4295E+00	4.5045E-01	1.0183E+00	
			50	400			N		(1.181E-02)	(0.000E+00)		6%			(0.000E+00)	4.033281		

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
	06/21/06	RA-228	R	**7.6408**		1.01750E+00	4.130077	4.130077	1.00 SA	74%		2.838811		
				(1.432969)		(1.6064E-01)	(0.73733)	(0.73733)	(0.028284)			1.216623		
	06/21/06	RA-228	R	**5.144158**		6.17500E-01	2.780568	2.780568	1.00 SA	74%		3.149266		
				(1.227544)		(1.3344E-01)	(0.644011)	(0.644011)	(0.028284)			1.349675		
	06/21/06	RA-228	R	**3.673677**		3.97500E-01	1.98573	1.98573	1.00 SA	74%		3.493783		
				(1.132852)		(1.1579E-01)	(0.601621)	(0.601621)	(0.028284)			1.497323		
	06/21/06	RA-228	A	**5.486212**		6.77500E-01	2.965459	2.965459	1.00 SA	74%		1.824785		
				(0.733607)		(7.9595E-02)	(0.383022)	(0.383022)	(0.01633)			0.782044		
	06/21/06	RA-228	R	**20.365229**		4.15000E-01	11.008004	11.008004	1.00 SA	74%		19.272137		
				(6.214559)		(1.1943E-01)	(3.299094)	(3.299094)	(0.028284)			8.311129		

() - (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: 6129286

Alpha Beta, Ra-228 by GPC , Calculated Results

6/21/2006 7:08:29 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	**H404F1AA**	**PCI/SA**	**B**	04/20/06 09:10	06/21/06 06:28	06/14/06 11:45		1	1.00 Sa	
0,INTRA-LAB BLANK					,J6E090000-286		FILTER			31.1	06/20/06 10:11		93%	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	06/20/06 13:40	RA-228	59	87	GPC3D	1	N	N	4.6776E-01	1.0000E+00	N	84%	N		1.4175E+00	4.5045E-01	1.0183E+00	
			50	400			Y		(1.145E-02)	(0.000E+00)		7%			(0.000E+00)	1.00		
1	06/20/06 14:35	RA-228	56	87	GPC3D	1	N	N	4.6776E-01	1.0000E+00	N	84%	N		1.5725E+00	4.5045E-01	1.0183E+00	
			50	400			Y		(1.145E-02)	(0.000E+00)		7%			(0.000E+00)	1.00		
2	06/20/06 15:30	RA-228	45	87	GPC3D	1	N	N	4.6776E-01	1.0000E+00	N	84%	N		1.7446E+00	4.5045E-01	1.0183E+00	
			50	400			Y		(1.145E-02)	(0.000E+00)		7%			(0.000E+00)	1.00		
3	06/21/06 06:28	RA-228	24	96	GPC3C	1	N	N	4.7074E-01	1.0000E+00	N	84%	N		9.4295E+00	4.5045E-01	1.0183E+00	
			50	400			N		(1.100E-02)	(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
	06/21/06	RA-228	R	**1.597318**		9.62500E-01	3.482248	3.482248	1.00 SA	84%		0.598913		
				(0.302482)		(1.5538E-01)	(0.633162)	(0.633162)	(0.017321)			0.254634		
	06/21/06	RA-228	R	**1.66154**		9.02500E-01	3.622256	3.622256	1.00 SA	84%		0.664411		
				(0.323756)		(1.5147E-01)	(0.679283)	(0.679283)	(0.017321)			0.282481		
	06/21/06	RA-228	R	**1.393968**		6.82500E-01	3.038933	3.038933	1.00 SA	84%		0.737095		
				(0.310479)		(1.3618E-01)	(0.657483)	(0.657483)	(0.017321)			0.313383		
	06/21/06	RA-228	A	**1.550942**		8.49167E-01	3.381146	3.381146	1.00 SA	84%		0.384981		
				(0.180342)		(8.5395E-02)	(0.379269)	(0.379269)	(0.01)			0.163678		
	06/21/06	RA-228	R	**2.632746**		2.40000E-01	5.739542	5.739542	1.00 SA	84%		4.1286		
				(1.137971)		(1.0100E-01)	(2.462183)	(2.462183)	(0.017321)			1.768069		

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	**H404F1AC**	**PCI/SA**	**S**	04/20/06 09:10	06/21/06 06:28	06/14/06 11:45	RASC4132	1	1.00 SA	
0,INTRA-LAB CHECK					,J6E090000-286		FILTER			31.3	06/20/06 10:11		96%	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	06/20/06 13:35	RA-228	205	126	GPC4A	1	N	N	4.8160E-01	1.0000E+00	N	87%	N		1.4044E+00	4.5045E-01	1.0183E+00	
			50	400			Y		(1.103E-02)	(0.000E+00)		7%			(0.000E+00)	1.00		
1	06/20/06 14:30	RA-228	143	126	GPC4A	1	N	N	4.8160E-01	1.0000E+00	N	87%	N		1.5581E+00	4.5045E-01	1.0183E+00	
			50	400			Y		(1.103E-02)	(0.000E+00)		7%			(0.000E+00)	1.00		
2	06/20/06 15:25	RA-228	155	126	GPC4A	1	N	N	4.8160E-01	1.0000E+00	N	87%	N		1.7285E+00	4.5045E-01	1.0183E+00	
			50	400			Y		(1.103E-02)	(0.000E+00)		7%			(0.000E+00)	1.00		
3	06/21/06 06:28	RA-228	40	98	GPC3D	1	N	N	4.6770E-01	1.0000E+00	N	87%	N		9.4295E+00	4.5045E-01	1.0183E+00	
			50	400			N		(1.144E-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:14

RADCALC v4.8.24
STL Richland

Batch Nbr: 6129286

Alpha Beta, Ra-228 by GPC , Calculated Results

6/21/2006 7:08:29 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
	06/21/06	RA-228	R	**5.816345**		3.78500E+00	12.679977	12.679977	1.00 SA	87%	113%	0.650451		
				(0.724203)		(2.8773E-01)	(1.429138)	(1.429138)	(0.017321)			0.28375		
	06/21/06	RA-228	R	**4.33869**		2.54500E+00	9.458601	9.458601	1.00 SA	87%	84%	0.721607		
				(0.592945)		(2.4081E-01)	(1.191829)	(1.191829)	(0.017321)			0.314791		
	06/21/06	RA-228	R	**5.267068**		2.78500E+00	11.48252	11.48252	1.00 SA	87%	102%	0.800523		
				(0.7031)		(2.5057E-01)	(1.407231)	(1.407231)	(0.017321)			0.349217		
	06/21/06	RA-228	A	**5.140701**		3.03833E+00	11.207033	11.207033	1.00 SA	87%	100%	0.418113		
				(0.390214)		(1.5039E-01)	(0.777688)	(0.777688)	(0.01)			0.182396		
	06/21/06	RA-228	R	**5.896446**		5.55000E-01	12.854601	12.854601	1.00 SA	87%	114%	4.034019		
				(1.488559)		(1.2889E-01)	(3.173059)	(3.173059)	(0.017321)			1.73012		

() - (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

UST Number: H4XP81AD Isotope: 180 (QREPORT Rev 11-OCT-98)

Detector: 7-A File: [quad7.sample.A]H4XP81AD.180
Dish Size: 1 Bkg File: $DISK1:[QUAD7.BKGRND]CURRENT.A_1;2923

Cycle	Alpha	Beta	Min	Guard	Volts	Finish Date/Time
1	00000	00064	0050	01153	1700	20-JUN-2006 13:39:28.79
2	00000	00060	0050	01149	1700	20-JUN-2006 14:34:44.51
3	00000	00053	0050	01142	1700	20-JUN-2006 15:30:00.18

Bkg File: [quad7.bkgrnd]2006-06-20_0337.A_1 (QREPORT Rev 11-OCT-98)

Cycle	Count	Min	CPM	Guard	Volts	Date/Time
Bkg	00342	0400	0.86	09148	1700	20-JUN-2006 03:37:02.48

UST Number: H4XP81AD Isotope: 430 (QREPORT Rev 11-OCT-98)

Detector: 7-A File: [quad7.sample.A]H4XP81AD.430
Dish Size: 1 Bkg File: $DISK1:[QUAD7.BKGRND]CURRENT.A_1;2924

Cycle	Alpha	Beta	Min	Guard	Volts	Finish Date/Time
1	00000	00051	0050	01146	1700	21-JUN-2006 06:28:24.82

Bkg File: [quad7.bkgrnd]2006-06-21_0333.A_1 (QREPORT Rev 11-OCT-98)

Cycle	Count	Min	CPM	Guard	Volts	Date/Time
Bkg	00306	0400	0.77	09163	1700	21-JUN-2006 03:33:24.46

UST Number: H4XQH1AD Isotope: 180 (QREPORT Rev 11-OCT-98)

Detector: 7-B File: [quad7.sample.B]H4XQH1AD.180
Dish Size: 1 Bkg File: $DISK1:[QUAD7.BKGRND]CURRENT.B_1;2910

Cycle	Alpha	Beta	Min	Guard	Volts	Finish Date/Time
1	00000	00062	0050	01153	1700	20-JUN-2006 13:39:28.79
2	00000	00043	0050	01149	1700	20-JUN-2006 14:34:44.51
3	00000	00050	0050	01142	1700	20-JUN-2006 15:30:00.18

Bkg File: [quad7.bkgrnd]2006-06-20_0337.B_1 (QREPORT Rev 11-OCT-98)

Cycle	Count	Min	CPM	Guard	Volts	Date/Time
Bkg	00295	0400	0.74	09148	1700	20-JUN-2006 03:37:02.48

UST Number: H4XQH1AD Isotope: 430 (QREPORT Rev 11-OCT-98)

Detector: 7-B File: [quad7.sample.B]H4XQH1AD.430
Dish Size: 1 Bkg File: $DISK1:[QUAD7.BKGRND]CURRENT.B_1;2911

Cycle	Alpha	Beta	Min	Guard	Volts	Finish Date/Time
1	00000	00046	0050	01146	1700	21-JUN-2006 06:28:24.82

Bkg File: [quad7.bkgrnd]2006-06-21_0333.B_1 (QREPORT Rev 11-OCT-98)

Cycle	Count	Min	CPM	Guard	Volts	Date/Time
Bkg	00295	0400	0.74	09163	1700	21-JUN-2006 03:33:24.46

UST Number: H4XQM1AD Isotope: 180 (QREPORT Rev 11-OCT-98)

Detector: 1-A File: [quad1.sample.A]H4XQM1AD.180
Dish Size: 1 Bkg File: $DISK1:[QUAD1.BKGRND]CURRENT.A_1;2972

Cycle	Alpha	Beta	Min	Guard	Volts	Finish Date/Time
1	00000	00074	0050	01156	1650	20-JUN-2006 13:39:43.56
2	00000	00062	0050	01152	1650	20-JUN-2006 14:34:59.18
3	00000	00030	0050	01159	1650	20-JUN-2006 15:30:14.79

Bkg File: [quad1.bkgrnd]2006-06-20_0341.A_1 (QREPORT Rev 11-OCT-98)

Cycle	Count	Min	CPM	Guard	Volts	Date/Time
Bkg	00265	0400	0.66	09217	1650	20-JUN-2006 03:41:21.96

UST Number: H4XQM1AD Isotope: 430 (QREPORT Rev 11-OCT-98)

Detector: 7-C File: [quad7.sample.C]H4XQM1AD.430
Dish Size: 1 Bkg File: $DISK1:[QUAD7.BKGRND]CURRENT.C_1;2916

Cycle	Alpha	Beta	Min	Guard	Volts	Finish Date/Time
1	00000	00058	0050	01146	1700	21-JUN-2006 06:28:24.82

Bkg File: [quad7.bkgrnd]2006-06-21_0333.C_1 (QREPORT Rev 11-OCT-98)

Cycle	Count	Min	CPM	Guard	Volts	Date/Time
Bkg	00279	0400	0.70	09163	1700	21-JUN-2006 03:33:24.46

UST Number: H4XQN1AD Isotope: 180 (QREPORT Rev 11-OCT-98)

Detector: 1-C File: [quad1.sample.C]H4XQN1AD.180
Dish Size: 1 Bkg File: $DISK1:[QUAD1.BKGRND]CURRENT.C_1;2968

Cycle	Alpha	Beta	Min	Guard	Volts	Finish Date/Time
1	00000	00072	0050	01156	1650	20-JUN-2006 13:39:43.56
2	00000	00046	0050	01152	1650	20-JUN-2006 14:34:59.18
3	00000	00041	0050	01159	1650	20-JUN-2006 15:30:14.79

Bkg File: [quad1.bkgrnd]2006-06-20_0341.C_1 (QREPORT Rev 11-OCT-98)

Cycle	Count	Min	CPM	Guard	Volts	Date/Time
Bkg	00207	0400	0.52	09217	1650	20-JUN-2006 03:41:21.96

UST Number: H4XQN1AD Isotope: 430 (QREPORT Rev 11-OCT-98)

Detector: 1-A File: [quad1.sample.A]H4XQN1AD.430
Dish Size: 1 Bkg File: $DISK1:[QUAD1.BKGRND]CURRENT.A_1;2973

Cycle	Alpha	Beta	Min	Guard	Volts	Finish Date/Time
1	00000	00043	0050	01143	1650	21-JUN-2006 06:28:33.69

Bkg File: [quad1.bkgrnd]2006-06-21_0337.A_1 (QREPORT Rev 11-OCT-98)

Cycle	Count	Min	CPM	Guard	Volts	Date/Time
Bkg	00247	0400	0.62	09226	1650	21-JUN-2006 03:37:20.68

UST Number: H4XQQ1AD Isotope: 180 (QREPORT Rev 11-OCT-98)

Detector: 1-D File: [quad1.sample.D]H4XQQ1AD.180
Dish Size: 1 Bkg File: $DISK1:[QUAD1.BKGRND]CURRENT.D_1;2971

Cycle	Alpha	Beta	Min	Guard	Volts	Finish Date/Time
1	00000	00072	0050	01156	1650	20-JUN-2006 13:39:43.56
2	00000	00046	0050	01152	1650	20-JUN-2006 14:34:59.18
3	00000	00051	0050	01159	1650	20-JUN-2006 15:30:14.79

Bkg File: [quad1.bkgrnd]2006-06-20_0341.D_1 (QREPORT Rev 11-OCT-98)

Cycle	Count	Min	CPM	Guard	Volts	Date/Time
Bkg	00192	0400	0.48	09217	1650	20-JUN-2006 03:41:21.96

UST Number: H4XQQ1AD Isotope: 430 (QREPORT Rev 11-OCT-98)

Detector: 1-C File: [quad1.sample.C]H4XQQ1AD.430
Dish Size: 1 Bkg File: $DISK1:[QUAD1.BKGRND]CURRENT.C_1;2969

Cycle	Alpha	Beta	Min	Guard	Volts	Finish Date/Time
1	00000	00037	0050	01143	1650	21-JUN-2006 06:28:33.69

Bkg File: [quad1.bkgrnd]2006-06-21_0337.C_1 (QREPORT Rev 11-OCT-98)

Cycle	Count	Min	CPM	Guard	Volts	Date/Time
Bkg	00235	0400	0.59	09226	1650	21-JUN-2006 03:37:20.68

UST Number: H4XQR1AD Isotope: 180 (QREPORT Rev 11-OCT-98)

Detector: 2-A File: [quad2.sample.A]H4XQR1AD.180
Dish Size: 1 Bkg File: $DISK1:[QUAD2.BKGRND]CURRENT.A_1;3513

Cycle	Alpha	Beta	Min	Guard	Volts	Finish Date/Time
1	00000	00041	0050	01137	1810	20-JUN-2006 13:39:55.70
2	00000	00027	0050	01162	1810	20-JUN-2006 14:35:11.42
3	00000	00025	0050	01161	1810	20-JUN-2006 15:30:27.02

Bkg File: [quad2.bkgrnd]2006-06-20_0341.A_1 (QREPORT Rev 11-OCT-98)

Cycle	Count	Min	CPM	Guard	Volts	Date/Time
Bkg	00081	0400	0.20	09284	1810	20-JUN-2006 03:41:26.06

UST Number: H4XQR1AD Isotope: 430 (QREPORT Rev 11-OCT-98)

Detector: 1-D File: [quad1.sample.D]H4XQR1AD.430
Dish Size: 1 Bkg File: $DISK1:[QUAD1.BKGRND]CURRENT.D_1;2972

Cycle	Alpha	Beta	Min	Guard	Volts	Finish Date/Time
1	00000	00043	0050	01143	1650	21-JUN-2006 06:28:33.69

Bkg File: [quad1.bkgrnd]2006-06-21_0337.D_1 (QREPORT Rev 11-OCT-98)

Cycle	Count	Min	CPM	Guard	Volts	Date/Time
Bkg	00281	0400	0.70	09226	1650	21-JUN-2006 03:37:20.68

UST Number: H4XQT1AD Isotope: 180 (QREPORT Rev 11-OCT-98)

Detector: 2-B File: [quad2.sample.B]H4XQT1AD.180
Dish Size: 1 Bkg File: $DISK1:[QUAD2.BKGRND]CURRENT.B_1;3510

Cycle	Alpha	Beta	Min	Guard	Volts	Finish Date/Time
1	00000	00030	0050	01137	1810	20-JUN-2006 13:39:55.70
2	00000	00021	0050	01162	1810	20-JUN-2006 14:35:11.42
3	00000	00020	0050	01161	1810	20-JUN-2006 15:30:27.02

Bkg File: [quad2.bkgrnd]2006-06-20_0341.B_1 (QREPORT Rev 11-OCT-98)

Cycle	Count	Min	CPM	Guard	Volts	Date/Time
Bkg	00106	0400	0.27	09284	1810	20-JUN-2006 03:41:26.06

UST Number: H4XQT1AD Isotope: 430 (QREPORT Rev 11-OCT-98)

Detector: 2-A File: [quad2.sample.A]H4XQT1AD.430
Dish Size: 1 Bkg File: $DISK1:[QUAD2.BKGRND]CURRENT.A_1;3514

Cycle	Alpha	Beta	Min	Guard	Volts	Finish Date/Time
1	00000	00009	0050	01159	1810	21-JUN-2006 06:28:48.36

Bkg File: [quad2.bkgrnd]2006-06-21_0337.A_1 (QREPORT Rev 11-OCT-98)

Cycle	Count	Min	CPM	Guard	Volts	Date/Time
Bkg	00099	0400	0.25	09309	1810	21-JUN-2006 03:37:23.52

UST Number: H4X1R1AD Isotope: 180 (QREPORT Rev 11-OCT-98)

Detector: 2-C File: [quad2.sample.C]H4X1R1AD.180
Dish Size: 1 Bkg File: $DISK1:[QUAD2.BKGRND]CURRENT.C_1;3511

Cycle	Alpha	Beta	Min	Guard	Volts	Finish Date/Time
1	00000	00049	0050	01137	1810	20-JUN-2006 13:39:55.70
2	00000	00023	0050	01162	1810	20-JUN-2006 14:35:11.42
3	00000	00038	0050	01161	1810	20-JUN-2006 15:30:27.02

Bkg File: [quad2.bkgrnd]2006-06-20_0341.C_1 (QREPORT Rev 11-OCT-98)

Cycle	Count	Min	CPM	Guard	Volts	Date/Time
Bkg	00104	0400	0.26	09284	1810	20-JUN-2006 03:41:26.06

UST Number: H4X1R1AD Isotope: 430 (QREPORT Rev 11-OCT-98)

Detector: 2-B File: [quad2.sample.B]H4X1R1AD.430
Dish Size: 1 Bkg File: $DISK1:[QUAD2.BKGRND]CURRENT.B_1;3511

Cycle	Alpha	Beta	Min	Guard	Volts	Finish Date/Time
1	00000	00024	0050	01159	1810	21-JUN-2006 06:28:48.36

Bkg File: [quad2.bkgrnd]2006-06-21_0337.B_1 (QREPORT Rev 11-OCT-98)

Cycle	Count	Min	CPM	Guard	Volts	Date/Time
Bkg	00096	0400	0.24	09309	1810	21-JUN-2006 03:37:23.52

UST Number: H4X1T1AD Isotope: 180 (QREPORT Rev 11-OCT-98)

Detector: 2-D File: [quad2.sample.D]H4X1T1AD.180
Dish Size: 1 Bkg File: $DISK1:[QUAD2.BKGRND]CURRENT.D_1;3510

Cycle	Alpha	Beta	Min	Guard	Volts	Finish Date/Time
1	00000	00039	0050	01137	1810	20-JUN-2006 13:39:55.70
2	00000	00030	0050	01162	1810	20-JUN-2006 14:35:11.42
3	00000	00025	0050	01161	1810	20-JUN-2006 15:30:27.02

Bkg File: [quad2.bkgrnd]2006-06-20_0341.D_1 (QREPORT Rev 11-OCT-98)

Cycle	Count	Min	CPM	Guard	Volts	Date/Time
Bkg	00092	0400	0.23	09284	1810	20-JUN-2006 03:41:26.06

UST Number: H4X1T1AD Isotope: 430 (QREPORT Rev 11-OCT-98)

Detector: 2-C File: [quad2.sample.C]H4X1T1AD.430
Dish Size: 1 Bkg File: $DISK1:[QUAD2.BKGRND]CURRENT.C_1;3512

Cycle	Alpha	Beta	Min	Guard	Volts	Finish Date/Time
1	00000	00024	0050	01159	1810	21-JUN-2006 06:28:48.36

Bkg File: [quad2.bkgrnd]2006-06-21_0337.C_1 (QREPORT Rev 11-OCT-98)

Cycle	Count	Min	CPM	Guard	Volts	Date/Time
Bkg	00083	0400	0.21	09309	1810	21-JUN-2006 03:37:23.52

UST Number: H4X1V1AD Isotope: 180 (QREPORT Rev 11-OCT-98)

Detector: 3-A File: [quad3.sample.A]H4X1V1AD.180
Dish Size: 1 Bkg File: $DISK1:[QUAD3.BKGRND]CURRENT.A_1;5427

Cycle	Alpha	Beta	Min	Guard	Volts	Finish Date/Time
1	00000	00031	0050	01221	1920	20-JUN-2006 13:40:12.01
2	00000	00020	0050	01248	1920	20-JUN-2006 14:35:27.64
3	00000	00023	0050	01238	1920	20-JUN-2006 15:30:43.23

Bkg File: [quad3.bkgrnd]2006-06-20_0341.A_1 (QREPORT Rev 11-OCT-98)

Cycle	Count	Min	CPM	Guard	Volts	Date/Time
Bkg	00093	0400	0.23	09878	1920	20-JUN-2006 03:41:36.03

UST Number: H4X1V1AD Isotope: 430 (QREPORT Rev 11-OCT-98)

Detector: 2-D File: [quad2.sample.D]H4X1V1AD.430
Dish Size: 1 Bkg File: $DISK1:[QUAD2.BKGRND]CURRENT.D_1;3511

Cycle	Alpha	Beta	Min	Guard	Volts	Finish Date/Time
1	00000	00011	0050	01159	1810	21-JUN-2006 06:28:48.36

Bkg File: [quad2.bkgrnd]2006-06-21_0337.D_1 (QREPORT Rev 11-OCT-98)

Cycle	Count	Min	CPM	Guard	Volts	Date/Time
Bkg	00082	0400	0.21	09309	1810	21-JUN-2006 03:37:23.52

UST Number: H4X1W1AD Isotope: 180 (QREPORT Rev 11-OCT-98)

Detector: 3-B File: [quad3.sample.B]H4X1W1AD.180
Dish Size: 1 Bkg File: $DISK1:[QUAD3.BKGRND]CURRENT.B_1;5436

Cycle	Alpha	Beta	Min	Guard	Volts	Finish Date/Time
1	00000	00024	0050	01221	1920	20-JUN-2006 13:40:12.01
2	00000	00031	0050	01248	1920	20-JUN-2006 14:35:27.64
3	00000	00026	0050	01238	1920	20-JUN-2006 15:30:43.23

Bkg File: [quad3.bkgrnd]2006-06-20_0341.B_1 (QREPORT Rev 11-OCT-98)

Cycle	Count	Min	CPM	Guard	Volts	Date/Time
Bkg	00093	0400	0.23	09878	1920	20-JUN-2006 03:41:36.03

UST Number: H4X1W1AD Isotope: 430 (QREPORT Rev 11-OCT-98)

Detector: 3-A File: [quad3.sample.A]H4X1W1AD.430
Dish Size: 1 Bkg File: $DISK1:[QUAD3.BKGRND]CURRENT.A_1;5428

Cycle	Alpha	Beta	Min	Guard	Volts	Finish Date/Time
1	00000	00009	0050	01253	1920	21-JUN-2006 06:28:59.29

Bkg File: [quad3.bkgrnd]2006-06-21_0337.A_1 (QREPORT Rev 11-OCT-98)

Cycle	Count	Min	CPM	Guard	Volts	Date/Time
Bkg	00107	0400	0.27	10055	1920	21-JUN-2006 03:37:28.96

UST Number: H4X1X1AD Isotope: 180 (QREPORT Rev 11-OCT-98)

Detector: 3-C File: [quad3.sample.C]H4X1X1AD.180
Dish Size: 1 Bkg File: $DISK1:[QUAD3.BKGRND]CURRENT.C_1;5441

Cycle	Alpha	Beta	Min	Guard	Volts	Finish Date/Time
1	00000	00063	0050	01221	1920	20-JUN-2006 13:40:12.01
2	00000	00043	0050	01248	1920	20-JUN-2006 14:35:27.64
3	00000	00032	0050	01238	1920	20-JUN-2006 15:30:43.23

Bkg File: [quad3.bkgrnd]2006-06-20_0341.C_1 (QREPORT Rev 11-OCT-98)

Cycle	Count	Min	CPM	Guard	Volts	Date/Time
Bkg	00097	0400	0.24	09878	1920	20-JUN-2006 03:41:36.03

UST Number: H4X1X1AD Isotope: 430 (QREPORT Rev 11-OCT-98)

Detector: 3-B File: [quad3.sample.B]H4X1X1AD.430
Dish Size: 1 Bkg File: $DISK1:[QUAD3.BKGRND]CURRENT.B_1;5437

Cycle	Alpha	Beta	Min	Guard	Volts	Finish Date/Time
1	00000	00034	0050	01253	1920	21-JUN-2006 06:28:59.29

Bkg File: [quad3.bkgrnd]2006-06-21_0337.B_1 (QREPORT Rev 11-OCT-98)

Cycle	Count	Min	CPM	Guard	Volts	Date/Time
Bkg	00106	0400	0.27	10055	1920	21-JUN-2006 03:37:28.96

UST Number: H404F1AA Isotope: 180 (QREPORT Rev 11-OCT-98)

Detector: 3-D File: [quad3.sample.D]H404F1AA.180
Dish Size: 1 Bkg File: $DISK1:[QUAD3.BKGRND]CURRENT.D_1;5421

Cycle	Alpha	Beta	Min	Guard	Volts	Finish Date/Time
1	00000	00059	0050	01221	1920	20-JUN-2006 13:40:12.01
2	00000	00056	0050	01248	1920	20-JUN-2006 14:35:27.64
3	00000	00045	0050	01238	1920	20-JUN-2006 15:30:43.23

Bkg File: [quad3.bkgrnd]2006-06-20_0341.D_1 (QREPORT Rev 11-OCT-98)

Cycle	Count	Min	CPM	Guard	Volts	Date/Time
Bkg	00087	0400	0.22	09878	1920	20-JUN-2006 03:41:36.03

UST Number: H404F1AA Isotope: 430 (QREPORT Rev 11-OCT-98)

Detector: 3-C File: [quad3.sample.C]H404F1AA.430
Dish Size: 1 Bkg File: $DISK1:[QUAD3.BKGRND]CURRENT.C_1;5442

Cycle	Alpha	Beta	Min	Guard	Volts	Finish Date/Time
1	00000	00024	0050	01253	1920	21-JUN-2006 06:28:59.29

Bkg File: [quad3.bkgrnd]2006-06-21_0337.C_1 (QREPORT Rev 11-OCT-98)

Cycle	Count	Min	CPM	Guard	Volts	Date/Time
Bkg	00096	0400	0.24	10055	1920	21-JUN-2006 03:37:28.96

UST Number: H404F1AC Isotope: 180 (QREPORT Rev 11-OCT-98)

Detector: 4-A File: [quad4.sample.A]H404F1AC.180
Dish Size: 1 Bkg File: $DISK1:[QUAD4.BKGRND]CURRENT.A_1;5445

Cycle	Alpha	Beta	Min	Guard	Volts	Finish Date/Time
1	00000	00205	0050	01188	1850	20-JUN-2006 13:35:16.37
2	00000	00143	0050	01215	1850	20-JUN-2006 14:30:32.14
3	00000	00155	0050	01195	1850	20-JUN-2006 15:25:47.79

Bkg File: [quad4.bkgrnd]2006-06-20_0341.A_1 (QREPORT Rev 11-OCT-98)

Cycle	Count	Min	CPM	Guard	Volts	Date/Time
Bkg	00126	0400	0.32	09523	1850	20-JUN-2006 03:41:40.91

UST Number: H404F1AC Isotope: 430 (QREPORT Rev 11-OCT-98)

Detector: 3-D File: [quad3.sample.D]H404F1AC.430
Dish Size: 1 Bkg File: $DISK1:[QUAD3.BKGRND]CURRENT.D_1;5422

Cycle	Alpha	Beta	Min	Guard	Volts	Finish Date/Time
1	00000	00040	0050	01253	1920	21-JUN-2006 06:28:59.29

Bkg File: [quad3.bkgrnd]2006-06-21_0337.D_1 (QREPORT Rev 11-OCT-98)

Cycle	Count	Min	CPM	Guard	Volts	Date/Time
Bkg	00098	0400	0.25	10055	1920	21-JUN-2006 03:37:28.96

RADIUM 226

SAMPLE AND QC DATA

SEVERN TRENT STL

Data Review/Verification Checklist

RADIOCHEMISTRY, First Level Review

6/19/2006 11:30:22 AM

Lot No., Due Date: J6E080157; 06/06/2006

Client, Site: 536403; AIR MONITORING Yerington Mine

QC Batch No., Method Test: 6129284; RRA2267 Ra-226 by ASC-7

SDG, Matrix: 31580; 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 Steven E. Mitchell **Date** 6/19/06

SEVERN TRENT STL

Data Review Checklist
RADIOCHEMISTRY
Second Level Review

QC Batch Number: 6129284

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: 6-20-06

6/19/2006 11:29:38 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	
31580	**9H4X1R10**			**J6E0801578**	000431	FILTER	5/8/2006 7:30:00		4/20/2006 9:35:00 AM				
ALPHA	BAS7	0		6/9/2006 6:54:58 PM	**3.1467E+00**	1.636E+00	1.668E+00	5.571E+00	PCI/SA		1.0	1.0E+0	2.076E-2
BETA	BDS8	0		6/9/2006 12:14:57 PM	**5.819E+00**	1.684E+00	1.73E+00	6.517E+00	PCI/SA		1.0	1.0E+0	8.301E-2
RA-226	BXTE	0		6/17/2006 7:40:00 PM	**6.3473E-02**	1.495E-01	1.496E-01	5.812E-01	PCI/SA		0.861	8.33E-1	2.501E-1
31580	**9H4X1T10**			**J6E0801579**	000432	FILTER	5/8/2006 7:30:00		4/20/2006 9:50:00 AM				
ALPHA	BAS7	0		6/10/2006 7:04:05 AM	**9.8496E-01**	1.663E+00	1.667E+00	7.819E+00	PCI/SA		1.0	1.0E+0	2.078E-2
BETA	BDS8	0		6/9/2006 12:14:57 PM	**8.2468E+00**	1.699E+00	1.796E+00	6.142E+00	PCI/SA		1.0	1.0E+0	8.391E-2
RA-226	BXTE	0		6/17/2006 7:40:00 PM	**4.3081E-02**	6.769E-02	6.786E-02	2.815E-01	PCI/SA		0.9	8.33E-1	2.507E-1
31580	**9H4X1V10**			**J6E08015710**	000433	FILTER	5/8/2006 7:30:00		4/20/2006 10:10:00 AM				
ALPHA	BAS7	0		6/10/2006 7:04:05 AM	**2.4116E+00**	1.503E+00	1.524E+00	5.595E+00	PCI/SA		1.0	1.0E+0	2.046E-2
BETA	BDS8	0		6/9/2006 12:15:08 PM	**6.5031E+00**	1.797E+00	1.852E+00	6.911E+00	PCI/SA		1.0	1.0E+0	8.113E-2
RA-226	BXTE	0		6/17/2006 7:39:00 PM	**2.0787E-02**	1.562E-01	1.563E-01	6.139E-01	PCI/SA		0.942	8.33E-1	2.435E-1
31580	**9H4X1W10**			**J6E08015711**	000434	FILTER	5/8/2006 7:30:00		4/20/2006 10:30:00 AM				
ALPHA	BAS7	0		6/10/2006 7:04:05 AM	**3.5615E+00**	1.717E+00	1.756E+00	5.68E+00	PCI/SA		1.0	1.0E+0	2.084E-2
BETA	BDS8	0		6/9/2006 12:15:08 PM	**1.005E+01**	1.753E+00	1.886E+00	6.095E+00	PCI/SA		1.0	1.0E+0	8.374E-2
RA-226	BXTE	0		6/18/2006 12:52:00 PM	**6.7514E-01**	2.198E-01	2.307E-01	6.558E-01	PCI/SA		0.86	8.33E-1	2.492E-1
31580	**9H4X1X10**			**J6E08015712**	000435	FILTER	5/8/2006 7:30:00		4/20/2006 10:45:00 AM				
ALPHA	BAS7	0		6/10/2006 7:04:05 AM	**0.0E+00**	0.0E+00	1.52E+00	7.872E+00	PCI/SA		1.0	1.0E+0	2.075E-2
BETA	BDS8	0		6/9/2006 12:15:08 PM	**9.2048E+00**	1.735E+00	1.922E+00	6.153E+00	PCI/SA		1.0	1.0E+0	8.266E-2
RA-226	BXTE	0		6/18/2006 12:51:00 PM	**-2.2511E-01**	1.625E-01	1.641E-01	7.378E-01	PCI/SA		0.826	8.33E-1	2.479E-1
31580	**9H4XP810**			**J6E0801571**	P-0598	FILTER	5/8/2006 7:30:00		4/20/2006 9:10:00 AM				
ALPHA	BAS7	0		6/9/2006 4:45:00 PM	**-2.2308E+00**	9.976E-01	1.024E+00	7.864E+00	PCI/SA		1.0	1.0E+0	2.08E-2
BETA	BDS8	0		6/9/2006 12:14:58 PM	**7.9307E+00**	1.732E+00	1.816E+00	6.318E+00	PCI/SA		1.0	1.0E+0	8.37E-2
RA-226	BXTE	0		6/17/2006 7:15:00 PM	**-9.379E-02**	9.281E-02	9.333E-02	4.615E-01	PCI/SA		0.974	8.33E-1	2.51E-1
31580	**9H4XQH10**			**J6E0801572**	P-0599	FILTER	5/8/2006 7:30:00		4/20/2006 9:30:00 AM				
ALPHA	BAS7	0		6/9/2006 4:45:00 PM	**-5.2364E-01**	1.021E+00	1.022E+00	6.289E+00	PCI/SA		1.0	1.0E+0	2.078E-2
BETA	BDS8	0		6/9/2006 12:14:58 PM	**5.9672E+00**	1.657E+00	1.706E+00	6.332E+00	PCI/SA		1.0	1.0E+0	8.349E-2
RA-226	BXTE	0		6/17/2006 7:12:00 PM	**-1.3068E-01**	1.042E-01	1.051E-01	5.245E-01	PCI/SA		0.785	8.33E-1	2.484E-1
31580	**9H4XQM10**			**J6E0801573**	P-0600	FILTER	5/8/2006 7:30:00		4/20/2006 9:45:00 AM				
ALPHA	BAS7	0		6/9/2006 4:45:00 PM	**3.3763E-01**	1.05E+00	1.05E+00	5.579E+00	PCI/SA		1.0	1.0E+0	2.074E-2
BETA	BDS8	0		6/9/2006 12:14:55 PM	**7.9287E+00**	1.702E+00	1.789E+00	6.211E+00	PCI/SA		1.0	1.0E+0	8.34E-2
RA-226	BXTE	0		6/17/2006 7:13:01 PM	**1.586E-01**	1.467E-01	1.477E-01	5.307E-01	PCI/SA		0.889	8.33E-1	2.492E-1
31580	**9H4XQN10**			**J6E0801574**	P-0601	FILTER	5/8/2006 7:30:00		4/20/2006 10:05:00 AM				
ALPHA	BAS7	0		6/9/2006 6:54:58 PM	**5.6178E+00**	2.155E+00	2.234E+00	6.851E+00	PCI/SA		1.0	1.0E+0	2.106E-2
BETA	BDS8	0		6/9/2006 12:14:55 PM	**7.01E+00**	1.725E+00	1.816E+00	6.514E+00	PCI/SA		1.0	1.0E+0	8.402E-2
RA-226	BXTE	0		6/17/2006 7:13:03 PM	**1.3493E-01**	8.464E-02	8.576E-02	2.713E-01	PCI/SA		0.918	8.33E-1	2.497E-1
31580	**9H4XQQ10**			**J6E0801575**	P-0602	FILTER	5/8/2006 7:30:00		4/20/2006 10:25:00 AM				
ALPHA	BAS7	0		6/9/2006 6:54:58 PM	**-6.4345E-01**	1.051E+00	1.053E+00	6.563E+00	PCI/SA		1.0	1.0E+0	2.09E-2
BETA	BDS8	0		6/9/2006 12:14:55 PM	**6.1542E+00**	1.71E+00	1.785E+00	6.558E+00	PCI/SA		1.0	1.0E+0	8.353E-2
RA-226	BXTE	0		6/17/2006 7:11:00 PM	**1.8918E-01**	1.424E-01	1.436E-01	4.959E-01	PCI/SA		0.842	8.33E-1	2.496E-1
31580	**9H4XQR10**			**J6E0801576**	P-0603	FILTER	5/8/2006 7:30:00		4/20/2006 10:40:00 AM				
ALPHA	BAS7	0		6/9/2006 6:54:58 PM	**-2.2438E+00**	1.003E+00	1.03E+00	7.909E+00	PCI/SA		1.0	1.0E+0	2.066E-2
BETA	BDS8	0		6/9/2006 12:14:57 PM	**7.7639E+00**	1.742E+00	1.827E+00	6.452E+00	PCI/SA		1.0	1.0E+0	8.297E-2
RA-226	BXTE	0		6/17/2006 7:37:00 PM	**-1.0338E-01**	1.594E-01	1.597E-01	7.148E-01	PCI/SA		0.865	8.33E-1	2.465E-1
31580	**9H4XQT10**			**J6E0801577**	P-0605	FILTER	5/8/2006 7:30:00		4/20/2006 10:35:00 AM				
ALPHA	BAS7	0		6/9/2006 6:54:58 PM	**0.0E+00**	0.0E+00	1.149E+00	6.3E+00	PCI/SA		1.0	1.0E+0	2.074E-2
BETA	BDS8	0		6/9/2006 12:14:57 PM	**-1.0654E+00**	1.362E+00	1.365E+00	6.307E+00	PCI/SA		1.0	1.0E+0	8.322E-2
RA-226	BXTE	0		6/17/2006 7:39:00 PM	**4.1653E-02**	1.489E-01	1.49E-01	5.808E-01	PCI/SA		0.957	8.33E-1	2.501E-1
31580	**H40381AB**			**J6E090000284**	INTRA-LAB BLANK	FILTER	5/8/2006 7:30:00		4/20/2006 9:10:00 AM				
RA-226	BXTE	0	B	6/17/2006 7:13:01 PM	**-1.2847E-02**	3.598E-02	3.601E-02	1.554E-01	PCI/SA		0.927	1.0E+0	1.0E+0
31580	**H40381CS**			**J6E090000284**	INTRA-LAB CHECK	FILTER	5/8/2006 7:30:00		4/20/2006 9:10:00 AM				
RA-226	BXTE	0	S	6/17/2006 7:15:00 PM	**1.5339E+00**	1.221E-01	1.98E-01	1.05E-01	PCI/SA	1.3852E+00	0.957	1.0E+0	1.0E+0

6129284, **Samples Inserted | Updated | NotUpdated => 2 | 0 | 12,
**Results Inserted | ReTestInserted | Updated | NotInserted => 14 | 0 | 0 | 0.
**Diff RptDb | Qtims => .

6/19/2006 11:29:41 AM

ICOC Fraction Transfer/Status Report

ByDate: 6/19/2005, 6/24/2006, Batch: '6129284', User: *ALL Order By DateTimeAccepting

Q Batch	Work Ord	CurStatus	Accepting			Comments
6129284						
AC		**CalcC**	**HansenM**	6/12/2006 3:26:28 PM		
SC			antonsonl	IsBatched	5/9/2006 1:09:52 PM	ICOC_RADCALC v4.8.24
SC			HansenM	InPrep2	6/12/2006 3:26:28 PM	RICH-RC-5016 REVISION 5
SC			HansenM	Prep2C	6/12/2006 3:27:29 PM	RICH-RC-5016 REVISION 5
SC			TamosaitisM	InPrep	6/12/2006 4:32:07 PM	RICH-RC-5005 Revision 5
SC			TamosaitisM	Sep1C	6/14/2006 12:05:17 PM	RICH-RC-5005 REVISION 4
SC			BlackCL	InCnt1	6/14/2006 12:32:57 PM	RICH-RD-0007 REVISION 5
SC			DAWKINSO	Cnt1C	6/14/2006 2:58:23 PM	RICH-RD-0007 REVISION 5
SC			TamosaitisM	InSep2	6/14/2006 3:45:48 PM	RICH-RC-5005 REVISION 4
SC			StringerR	CalcC	6/18/2006 3:09:54 PM	RICH-RC-5005 REVISION 5
AC			**HansenM**	6/12/2006 3:27:29 PM		
AC			**TamosaitisM**	6/12/2006 4:32:07 PM		
AC			**TamosaitisM**	6/14/2006 12:05:17		
AC			**BlackCL**	6/14/2006 12:32:57		
AC			**DAWKINSO**	6/14/2006 2:58:23 PM		
AC			**TamosaitisM**	6/14/2006 3:45:48 PM		
AC			**StringerR**	6/18/2006 3:09:54 PM		

AC: Accepting Entry; SC: Status Change

STL Richland

Richland Wa.

Grp Rec Cnt: 8

ICOCFractions v4.8.18

Batch Nbr: 6129284

Alpha Beta, Ra-226 by ASC-7 , Results
Summary Report

6/18/2006 3:23:03 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	**H4XP81AC**	RA-226	**-9.38E-02**	**(9.33E-02)**	**U4**	PCI/SA	R	1.86E-01	4.61E-01		97%	
Calc	TE	FILTER	**H4XQH1AC**	RA-226	**-1.31E-01**	**(1.05E-01)**	**U4**	PCI/SA	R	2.14E-01	5.24E-01		78%	
Calc	TE	FILTER	**H4XQM1AC**	RA-226	**1.59E-01**	**(1.48E-01)**	**U4**	PCI/SA	R	2.14E-01	5.31E-01		89%	
Calc	TE	FILTER	**H4XQN1AC**	RA-226	**1.35E-01**	**(8.58E-02)**	**U4**	PCI/SA	R	9.35E-02	2.71E-01		92%	
Calc	TE	FILTER	**H4XQQ1AC**	RA-226	**1.89E-01**	**(1.44E-01)**	**U4**	PCI/SA	R	1.97E-01	4.96E-01		84%	
Calc	TE	FILTER	**H4XQR1AC**	RA-226	**-1.03E-01**	**(1.60E-01)**	**U4**	PCI/SA	R	2.98E-01	7.15E-01		86%	
Calc	TE	FILTER	**H4XQT1AC**	RA-226	**4.17E-02**	**(1.49E-01)**	**U4**	PCI/SA	R	2.48E-01	5.81E-01		96%	
Calc	TE	FILTER	**H4X1R1AC**	RA-226	**6.35E-02**	**(1.50E-01)**	**U4**	PCI/SA	R	2.44E-01	5.81E-01		86%	
Calc	TE	FILTER	**H4X1T1AC**	RA-226	**4.31E-02**	**(6.79E-02)**	**U4**	PCI/SA	R	9.70E-02	2.82E-01		90%	
Calc	TE	FILTER	**H4X1V1AC**	RA-226	**2.08E-02**	**(1.56E-01)**	**U4**	PCI/SA	R	2.65E-01	6.14E-01		94%	
Calc	TE	FILTER	**H40381AA**	RA-226	**-1.28E-02**	**(3.60E-02)**	**U4**	PCI/SA	R	6.47E-02	1.55E-01	**B**	93%	
Calc	TE	FILTER	**H40381AC**	RA-226	**1.53E+00**	**(1.98E-01)**		PCI/SA	R	3.98E-02	1.05E-01	**S**	96%	111%
Calc	TE	FILTER	**H4X1W1AC**	RA-226	**6.75E-01**	**(2.31E-01)**		PCI/SA	R	2.87E-01	6.56E-01		86%	
Calc	TE	FILTER	**H4X1X1AC**	RA-226	**-2.25E-01**	**(1.64E-01)**	**U4**	PCI/SA	R	3.20E-01	7.38E-01		83%	

alc
6/14/06

() - (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:14
RADCALC v4.8.24
STL Richland

Batch Nbr: 6129284

Alpha Beta, Ra-226 by ASC-7 , Calculated Results

6/18/2006 3:23:03 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	TE	FILTER	*STLE	Ra226WoBS	**H4XP81AC**	**PCI/SA**		04/20/06 09:10	06/17/06 19:15	06/14/06 15:51	RATA22502	1	0.833 Sa	
CID:P-0598LOT:J6E0801571 v4.8.24							FILTER				06/17/06 16:15	RATA22502 Alq	97%	0.250977 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	06/17/06 19:15	RA-226	3	7	ASCCSA	ASC		N	2.2567E+00	1.0000E+00	N	97%	N		2.4327E+00	4.5045E-01	1.0001E+00	
			50	60			Y		(7.628E-02)	(0.000E+00)		8%			(0.000E+00)	3.319032		

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
	06/17/06	RA-226	R	**-0.09379**	**U4**	-5.66667E-02	-0.062729	-0.062729	0.833 Sa	97%		0.461474		
				(0.093327)		(5.6075E-02)	(0.062313)	(0.062313)	(0.024495)			0.185994		

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	**H4XQH1AC**	**PCI/SA**		04/20/06 09:30	06/17/06 19:12	06/14/06 15:51	TA22503	1	0.833 Sa	
CID:P-0599LOT:J6E0801572 v4.8.24							FILTER				06/17/06 16:12	TA22503 Alq	78%	0.248445 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	06/17/06 19:12	RA-226	3	8	ASCESD	ASC		N	2.6294E+00	1.0000E+00	N	78%	N		2.4339E+00	4.5045E-01	1.0001E+00	
			50	60			Y		(6.179E-02)	(0.000E+00)		6%			(0.000E+00)	3.352859		

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
	06/17/06	RA-226	R	**-0.130681**	**U4**	-7.33333E-02	-0.086521	-0.086521	0.833 Sa	78%		0.524491		
				(0.105084)		(5.8500E-02)	(0.069396)	(0.069396)	(0.023561)			0.21408		

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	**H4XQM1AC**	**PCI/SA**		04/20/06 09:45	06/17/06 19:13	06/14/06 15:51	RATA22504	1	0.833 Sa	
CID:P-0600LOT:J6E0801573 v4.8.24							FILTER				06/17/06 16:13	RATA22504 Alq	89%	0.249154 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	06/17/06 19:13	RA-226	10	7	ASCGSA	ASC		N	2.1653E+00	1.0000E+00	N	89%	N		2.4335E+00	4.5045E-01	1.0001E+00	
			50	60			Y		(7.622E-02)	(0.000E+00)		7%			(0.000E+00)	3.343312		

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
	06/17/06	RA-226	R	**0.158605**	**U4**	8.33333E-02	0.105309	0.105309	0.833 Sa	89%		0.53066		
				(0.147676)		(7.7100E-02)	(0.097866)	(0.097866)	(0.023561)			0.213879		

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	**H4XQN1AC**	**PCI/SA**		04/20/06 10:05	06/17/06 19:13	06/14/06 15:51	RATA22505	1	0.833 Sa	
CID:P-0601LOT:J6E0801574 v4.8.24							FILTER				06/17/06 16:13	RATA22505 Alq	92%	0.249744 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	06/17/06 19:13	RA-226	6	2	ASCJMB	ASC		N	2.5572E+00	1.0000E+00	N	92%	N		2.4335E+00	4.5045E-01	1.0001E+00	
			50	60			Y		(6.981E-02)	(0.000E+00)		7%			(0.000E+00)	3.335422		

() - (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: 6129284

Alpha Beta, Ra-226 by ASC-7 , Calculated Results

6/18/2006 3:23:04 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/lLcC	BlkLcC/MDC	StdDvMdC/LcC
	06/17/06	RA-226	R	**0.134929**	**U4**	8.66667E-02	0.089801	0.089801	0.833 Sa	92%		0.271304		
				(0.085755)		(5.4365E-02)	(0.05684)	(0.05684)	(0.023561)			0.093517		

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	**H4XQQ1AC**	**PCI/SA**		04/20/06 10:25	06/17/06 19:11	06/14/06 15:51	RATA22506	1	0.833 Sa	
CID:P-0602LOT:J6E0801575 v4.8.24							FILTER				06/17/06 16:11	RATA22506 Alq	84%	0.249601 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	06/17/06 19:11	RA-226	10	6	ASCBMA	ASC		N	2.2978E+00	1.0000E+00	N	84%	N		2.4344E+00	4.5045E-01	1.0001E+00	
			50	60			Y		(2.895E-02)	(0.000E+00)		7%			(0.000E+00)	3.337327		

Sq	Calc Date	Parameter	Avg	Sa Act	Q	Net Cnt Rt	Dpm Wo Blk	Dpm-Blk	Vol Used	Yield,EnFct	Chem Yld,EFctU	IDC/lLcC	BlkLcC/MDC	StdDvMdC/LcC
	06/17/06	RA-226	R	**0.189182**	**U4**	1.00000E-01	0.125836	0.125836	0.833 Sa	84%		0.495949		
				(0.143645)		(7.5277E-02)	(0.095273)	(0.095273)	(0.023561)			0.196823		

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	**H4XQR1AC**	**PCI/SA**		04/20/06 10:40	06/17/06 19:37	06/14/06 15:51	RATA22512	1	0.833 Sa	
CID:P-0603LOT:J6E0801576 v4.8.24							FILTER				06/17/06 16:37	RATA22512 Alq	86%	0.246509 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	06/17/06 19:37	RA-226	6	10	ASCKME	ASC		N	1.9262E+00	1.0000E+00	N	86%	N		2.4235E+00	4.5045E-01	1.0001E+00	
			50	60			Y		(2.562E-02)	(0.000E+00)		7%			(0.000E+00)	3.379187		

Sq	Calc Date	Parameter	Avg	Sa Act	Q	Net Cnt Rt	Dpm Wo Blk	Dpm-Blk	Vol Used	Yield,EnFct	Chem Yld,EFctU	IDC/lLcC	BlkLcC/MDC	StdDvMdC/LcC
	06/17/06	RA-226	R	**-0.103377**	**U4**	-4.66667E-02	-0.06791	-0.06791	0.833 Sa	86%		0.714779		
				(0.159731)		(7.1957E-02)	(0.104858)	(0.104858)	(0.023561)			0.297534		

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	**H4XQT1AC**	**PCI/SA**		04/20/06 10:35	06/17/06 19:39	06/14/06 15:51	RATA22513	1	0.833 Sa	
CID:P-0605LOT:J6E0801577 v4.8.24							FILTER				06/17/06 16:39	RATA22513 Alq	96%	0.250081 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	06/17/06 19:39	RA-226	13	14	ASCLMC	ASC		N	2.4313E+00	1.0000E+00	N	96%	N		2.4226E+00	4.5045E-01	1.0001E+00	
			50	60			Y		(1.218E-01)	(0.000E+00)		8%			(0.000E+00)	3.330922		

Sq	Calc Date	Parameter	Avg	Sa Act	Q	Net Cnt Rt	Dpm Wo Blk	Dpm-Blk	Vol Used	Yield,EnFct	Chem Yld,EFctU	IDC/lLcC	BlkLcC/MDC	StdDvMdC/LcC
	06/17/06	RA-226	R	**0.041653**	**U4**	2.66667E-02	0.027759	0.027759	0.833 Sa	96%		0.580832		
				(0.148984)		(9.5336E-02)	(0.099276)	(0.099276)	(0.023561)			0.248234		

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	**H4X1R1AC**	**PCI/SA**		04/20/06 09:35	06/17/06 19:40	06/14/06 16:10	RATA22514	1	0.833 Sa	
CID:000431LOT:J6E0801578 v4.8.24							FILTER				06/17/06 16:40	RATA22514 Alq	86%	0.250052 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: 6129284

Alpha Beta, Ra-226 by ASC-7 , Calculated Results

6/18/2006 3:23:04 PM

1	06/17/06 19:40	RA-226	11	11	ASCNMA	ASC		N	2.4482E+00	1.0000E+00	N	86%	N		2.4301E+00	4.5045E-01	1.0001E+00
			50	60				Y	(6.292E-02)	(0.000E+00)		7%			(0.000E+00)	3.331301	

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
	06/17/06	RA-226	R	**0.063473**	**U4**	3.66667E-02	0.042296	0.042296	0.833 Sa	86%		0.581244		
				(0.14961)		(8.6346E-02)	(0.099665)	(0.099665)	(0.023561)			0.243855		

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	**H4X1T1AC**	**PCI/SA**		04/20/06 09:50	06/17/06 19:40	06/14/06 16:10	RATA22515	1	0.833 Sa	
CID:000432LOT:J6E0801579 v4.8.24							FILTER				06/17/06 16:40	RATA22515 Alq	90%	0.250662 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	06/17/06 19:40	RA-226	3	2	ASCQMC	ASC		N	2.5030E+00	1.0000E+00	N	90%	N		2.4301E+00	4.5045E-01	1.0001E+00	
			50	60			Y		(1.307E-01)	(0.000E+00)		7%			(0.000E+00)	3.323201		

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
	06/17/06	RA-226	R	**0.043081**	**U4**	2.66667E-02	0.028777	0.028777	0.833 Sa	90%		0.281525		
				(0.067859)		(4.1899E-02)	(0.045299)	(0.045299)	(0.023561)			0.097039		

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	**H4X1V1AC**	**PCI/SA**		04/20/06 10:10	06/17/06 19:39	06/14/06 16:10	RATA22516	1	0.833 Sa	
CID:000433LOT:J6E08015710 v4.8.24							FILTER				06/17/06 16:39	RATA22516 Alq	94%	0.243521 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	06/17/06 19:39	RA-226	14	16	ASCMMA	ASC		N	2.5511E+00	1.0000E+00	N	94%	N		2.4306E+00	4.5045E-01	1.0001E+00	
			50	60			Y		(7.398E-02)	(0.000E+00)		8%			(0.000E+00)	3.420651		

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
	06/17/06	RA-226	R	**0.020787**	**U4**	1.33333E-02	0.01349	0.01349	0.833 Sa	94%		0.613922		
				(0.156262)		(1.0022E-01)	(0.101405)	(0.101405)	(0.023561)			0.264869		

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	**H40381AA**	**PCI/SA**	**B**	04/20/06 09:10	06/17/06 19:13	06/14/06 16:10	RATA22519	1	1.00 Sa	
CID:INTRA-LAB BLANKLOT:J6E090000284 v4.8.24							FILTER				06/17/06 16:13	RATA22519 Alq	93%	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	06/17/06 19:13	RA-226	7	10	ASCHMA	ASC		N	2.4641E+00	1.0000E+00	N	93%	N		2.4416E+00	4.5045E-01	1.0001E+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
	06/17/06	RA-226	R	**-0.012847**	**U4**	-2.66667E-02	-0.028517	-0.028517	1.00 Sa	93%		0.155443		
				(0.036006)		(7.4685E-02)	(0.079914)	(0.079914)	(0.017321)			0.064705		

() - (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: 6129284

Alpha Beta, Ra-226 by ASC-7 , Calculated Results

6/18/2006 3:23:04 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	**H40381AC**	**PCI/SA**	**S**	04/20/06 09:10	06/17/06 19:15	06/14/06 16:10	RASC4132	1	1.00 Sa	
CID:INTRA-LAB CHECKLOT:J6E090000284 v4.8.24							FILTER				06/17/06 16:15	RASC4132 Alq	96%	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	06/17/06 19:15	RA-226	167	4	ASCPMA	ASC		N	2.4525E+00	1.0000E+00	N	96%	N		2.4407E+00	4.5045E-01	1.0001E+00	
			50	60			Y		(8.241E-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
	06/17/06	RA-226	R	**1.533926**		3.27333E+00	3.405095	3.405095	1.00 Sa	96%	111%	0.104966		
				(0.198031)		(2.6060E-01)	(0.400979)	(0.400979)	(0.017321)			0.039807		

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	**H4X1W1AC**	**PCI/SA**		04/20/06 10:30	06/18/06 12:52	06/14/06 16:10	RATA22517	1	0.833 Sa	
CID:000434LOT:J6E08015711 v4.8.24							FILTER				06/18/06 09:52	RATA22517 Alq	86%	0.249237 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	06/18/06 12:52	RA-226	39	20	ASC1HB	ASC		N	2.4125E+00	1.0000E+00	N	86%	N		2.0822E+00	4.5045E-01	1.0001E+00	
			50	60			Y		(7.648E-02)	(0.000E+00)		7%			(0.000E+00)	3.342195		

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
	06/18/06	RA-226	R	**0.675141**		4.46667E-01	0.448423	0.448423	0.833 Sa	86%		0.6558		
				(0.230679)		(1.4545E-01)	(0.151034)	(0.151034)	(0.023561)			0.287109		

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	**H4X1X1AC**	**PCI/SA**		04/20/06 10:45	06/18/06 12:51	06/14/06 16:10	RATA22518	1	0.833 Sa	
CID:000435LOT:J6E08015712 v4.8.24							FILTER				06/18/06 09:51	RATA22518 Alq	83%	0.247937 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	06/18/06 12:51	RA-226	8	17	ASC2RC	ASC		N	2.0913E+00	1.0000E+00	N	83%	N		2.0825E+00	4.5045E-01	1.0001E+00	
			50	60			Y		(6.818E-02)	(0.000E+00)		7%			(0.000E+00)	3.359723		

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
	06/18/06	RA-226	R	**-0.225114**	**U4**	-1.23333E-01	-0.148739	-0.148739	0.833 Sa	83%		0.737838		
				(0.16413)		(8.9007E-02)	(0.108108)	(0.108108)	(0.023561)			0.319645		

() - (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

ALPHA SCINTILLATION REPORT
(Version: 17-Oct-1998)

Sample ID: H4XP81AC Isotope: RA-226

Client: STL Matrix Code: 103

Batch Nbr: 6129284 Activity Unit: PCI/SA Multiplier: 1.0269
Technician: RS

Analysis Size: 0.251 Analysis Unit: SA

Report Date: 17-JUN-2006 20:05:00.87
First Separation Date: 14-JUN-2006 15:51:00.00
Second Separation Date: 17-JUN-2006 16:15:00.00

Detector ID: 12 Cell ID: CSA

Bkg Date: 17-JUN-2006 08:38:55.84
Bkg Counts: 000007 Bkg Duration: 000060.0

Count Date: 17-JUN-2006 19:15:00.39
Counts: 000003 Count Duration: 000050.0

End of Report

ALPHA SCINTILLATION REPORT
(Version: 17-Oct-1998)

Sample ID: H4XQH1AC Isotope: RA-226

Client: STL Matrix Code: 103

Batch Nbr: 6129284 Activity Unit: PCI/SA Multiplier: 1.2746
Technician: RS

Analysis Size: 0.2484 Analysis Unit: SA

Report Date: 17-JUN-2006 20:02:00.59
First Separation Date: 14-JUN-2006 15:51:00.00
Second Separation Date: 17-JUN-2006 16:12:00.00

Detector ID: 14 Cell ID: ESD

Bkg Date: 16-JUN-2006 19:10:51.08
Bkg Counts: 000008 Bkg Duration: 000060.0

Count Date: 17-JUN-2006 19:12:00.27
Counts: 000003 Count Duration: 000050.0

End of Report

ALPHA SCINTILLATION REPORT
(Version: 17-Oct-1998)

Sample ID: H4XQM1AC Isotope: RA-226

Client: STL Matrix Code: 103

Batch Nbr: 6129284 Activity Unit: PCI/SA Multiplier: 1.1244
Technician: RS

Analysis Size: 0.2492 Analysis Unit: SA

Report Date: 17-JUN-2006 20:03:00.95
First Separation Date: 14-JUN-2006 15:51:00.00
Second Separation Date: 17-JUN-2006 16:13:00.00

Detector ID: 16 Cell ID: GSA

Bkg Date: 16-JUN-2006 19:11:01.88
Bkg Counts: 000007 Bkg Duration: 000060.0

Count Date: 17-JUN-2006 19:13:00.53
Counts: 000010 Count Duration: 000050.0

End of Report

ALPHA SCINTILLATION REPORT
(Version: 17-Oct-1998)

Sample ID: H4XQN1AC Isotope: RA-226

Client: STL Matrix Code: 103

Batch Nbr: 6129284 Activity Unit: PCI/SA Multiplier: 1.0888
Technician: RS

Analysis Size: 0.2497 Analysis Unit: SA

Report Date: 17-JUN-2006 20:03:03.14
First Separation Date: 14-JUN-2006 15:51:00.00
Second Separation Date: 17-JUN-2006 16:13:00.00

Detector ID: 18 Cell ID: JMB

Bkg Date: 16-JUN-2006 19:11:13.27
Bkg Counts: 000002 Bkg Duration: 000060.0

Count Date: 17-JUN-2006 19:13:02.66
Counts: 000006 Count Duration: 000050.0

End of Report

ALPHA SCINTILLATION REPORT
(Version: 17-Oct-1998)

Sample ID: H4XQQ1AC Isotope: RA-226

Client: STL Matrix Code: 103

Batch Nbr: 6129284 Activity Unit: PCI/SA Multiplier: 1.1878
Technician: RS

Analysis Size: 0.2496 Analysis Unit: SA

Report Date: 17-JUN-2006 20:01:00.63
First Separation Date: 14-JUN-2006 15:51:00.00
Second Separation Date: 17-JUN-2006 16:11:00.00

Detector ID: 11 Cell ID: BMA

Bkg Date: 16-JUN-2006 19:10:31.16
Bkg Counts: 000006 Bkg Duration: 000060.0

Count Date: 17-JUN-2006 19:11:00.29
Counts: 000010 Count Duration: 000050.0

End of Report

ALPHA SCINTILLATION REPORT
(Version: 17-Oct-1998)

Sample ID: H4XQR1AC Isotope: RA-226

Client: STL Matrix Code: 103

Batch Nbr: 6129284 Activity Unit: PCI/SA Multiplier: 1.1566
Technician: RS

Analysis Size: 0.2465 Analysis Unit: SA

Report Date: 17-JUN-2006 20:27:00.67
First Separation Date: 14-JUN-2006 15:51:00.00
Second Separation Date: 17-JUN-2006 16:37:00.00

Detector ID: 19 Cell ID: KME

Bkg Date: 17-JUN-2006 08:39:43.82
Bkg Counts: 000010 Bkg Duration: 000060.0

Count Date: 17-JUN-2006 19:37:00.35
Counts: 000006 Count Duration: 000050.0

End of Report

ALPHA SCINTILLATION REPORT
(Version: 17-Oct-1998)

Sample ID: H4XQT1AC Isotope: RA-226

Client: STL Matrix Code: 103

Batch Nbr: 6129284 Activity Unit: PCI/SA Multiplier: 1.0447
Technician: RS

Analysis Size: 0.2501 Analysis Unit: SA

Report Date: 17-JUN-2006 20:29:00.90
First Separation Date: 14-JUN-2006 15:51:00.00
Second Separation Date: 17-JUN-2006 16:39:00.00

Detector ID: 20 Cell ID: LMC

Bkg Date: 16-JUN-2006 15:28:25.86
Bkg Counts: 000014 Bkg Duration: 000060.0

Count Date: 17-JUN-2006 19:39:00.39
Counts: 000013 Count Duration: 000050.0

End of Report

ALPHA SCINTILLATION REPORT
(Version: 17-Oct-1998)

Sample ID: H4X1R1AC Isotope: RA-226

Client: STL Matrix Code: 103

Batch Nbr: 6129284 Activity Unit: PCI/SA Multiplier: 1.1621
Technician: RS

Analysis Size: 0.2501 Analysis Unit: SA

Report Date: 17-JUN-2006 20:30:00.85
First Separation Date: 14-JUN-2006 16:10:00.00
Second Separation Date: 17-JUN-2006 16:40:00.00

Detector ID: 22 Cell ID: NMA

Bkg Date: 17-JUN-2006 08:39:53.33
Bkg Counts: 000011 Bkg Duration: 000060.0

Count Date: 17-JUN-2006 19:40:00.37
Counts: 000011 Count Duration: 000050.0

End of Report

ALPHA SCINTILLATION REPORT
(Version: 17-Oct-1998)

Sample ID: H4X1T1AC Isotope: RA-226

Client: STL Matrix Code: 103

Batch Nbr: 6129284 Activity Unit: PCI/SA Multiplier: 1.1115
Technician: RS

Analysis Size: 0.2507 Analysis Unit: SA

Report Date: 17-JUN-2006 20:30:01.01
First Separation Date: 14-JUN-2006 16:10:00.00
Second Separation Date: 17-JUN-2006 16:40:00.00

Detector ID: 24 Cell ID: QMC

Bkg Date: 17-JUN-2006 08:40:26.44
Bkg Counts: 000002 Bkg Duration: 000060.0

Count Date: 17-JUN-2006 19:40:00.44
Counts: 000003 Count Duration: 000050.0

End of Report

ALPHA SCINTILLATION REPORT
(Version: 17-Oct-1998)

Sample ID: H4X1V1AC Isotope: RA-226

Client: STL Matrix Code: 103

Batch Nbr: 6129284 Activity Unit: PCI/SA Multiplier: 1.0619
Technician: RS

Analysis Size: 0.2435 Analysis Unit: SA

Report Date: 17-JUN-2006 20:29:00.99
First Separation Date: 14-JUN-2006 16:10:00.00
Second Separation Date: 17-JUN-2006 16:39:00.00

Detector ID: 21 Cell ID: MMA

Bkg Date: 16-JUN-2006 19:11:49.42
Bkg Counts: 000016 Bkg Duration: 000060.0

Count Date: 17-JUN-2006 19:39:00.46
Counts: 000014 Count Duration: 000050.0

End of Report

ALPHA SCINTILLATION REPORT
(Version: 17-Oct-1998)

Sample ID: H4X1W1AC Isotope: RA-226

Client: STL Matrix Code: 103

Batch Nbr: 6129284 Activity Unit: PCI/SA Multiplier: 1.1632
Technician: RS

Analysis Size: 0.2492 Analysis Unit: SA

Report Date: 18-JUN-2006 13:42:00.89
First Separation Date: 14-JUN-2006 16:10:00.00
Second Separation Date: 18-JUN-2006 09:52:00.00

Detector ID: 1 Cell ID: 1HB

Bkg Date: 18-JUN-2006 07:34:53.54
Bkg Counts: 000020 Bkg Duration: 000060.0

Count Date: 18-JUN-2006 12:52:00.39
Counts: 000039 Count Duration: 000050.0

End of Report

ALPHA SCINTILLATION REPORT
(Version: 17-Oct-1998)

Sample ID: H4X1X1AC Isotope: RA-226

Client: STL Matrix Code: 103

Batch Nbr: 6129284 Activity Unit: PCI/SA Multiplier: 1.2111
Technician: RS

Analysis Size: 0.2479 Analysis Unit: SA

Report Date: 18-JUN-2006 13:41:00.88
First Separation Date: 14-JUN-2006 16:10:00.00
Second Separation Date: 18-JUN-2006 09:51:00.00

Detector ID: 2 Cell ID: 2RC

Bkg Date: 18-JUN-2006 07:35:04.91
Bkg Counts: 000017 Bkg Duration: 000060.0

Count Date: 18-JUN-2006 12:51:00.37
Counts: 000008 Count Duration: 000050.0

End of Report

ALPHA SCINTILLATION REPORT
(Version: 17-Oct-1998)

Sample ID: H40381AA Isotope: RA-226

Client: STL Matrix Code: 103

Batch Nbr: 6129284 Activity Unit: PCI/SA Multiplier: 1.0793
Technician: RS

Analysis Size: 1.0 Analysis Unit: SA

Report Date: 17-JUN-2006 20:03:01.17
First Separation Date: 14-JUN-2006 16:10:00.00
Second Separation Date: 17-JUN-2006 16:13:00.00

Detector ID: 17 Cell ID: HMA

Bkg Date: 14-JUN-2006 14:43:36.47
Bkg Counts: 000010 Bkg Duration: 000060.0

Count Date: 17-JUN-2006 19:13:00.63
Counts: 000007 Count Duration: 000050.0

End of Report

ALPHA SCINTILLATION REPORT
(Version: 17-Oct-1998)

Sample ID: H40381AC Isotope: RA-226

Client: STL Matrix Code: 103

Batch Nbr: 6129284 Activity Unit: PCI/SA Multiplier: 1.0453
Technician: RS

Analysis Size: 1.0 Analysis Unit: SA

Report Date: 17-JUN-2006 20:05:00.98
First Separation Date: 14-JUN-2006 16:10:00.00
Second Separation Date: 17-JUN-2006 16:15:00.00

Detector ID: 23 Cell ID: PMA

Bkg Date: 17-JUN-2006 08:40:09.68
Bkg Counts: 000004 Bkg Duration: 000060.0

Count Date: 17-JUN-2006 19:15:00.49
Counts: 000167 Count Duration: 000050.0

End of Report

STL RICHLAND

6/12/2006 4:37:27 PM

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 #:

Sep1 DT/Tm Tech: 6-14-06 M 11:45

AnalyDueDate: 06/05/2006

Batch: 6129284 FILTER pCi/sampl PM, Quote: SA , 63174

Sep2 DT/Tm Tech:

SEQ Batch, Test: 6129286, 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:
1 H4XP8-1-AC J6E080157-1-SAMP	0.833sa,g	500.51sa,g	150.80g,in 7.5275 7.33 = 1.0269	0.251g	RATA22502 06/05/06		9"	1349 6/14/06 CSA 6/17/06 1615 R	6/14/06 1551 R	
04/20/2006 09:10		AmtRec: FILTER	#Containers: 1				Scr:	Alpha:	Beta:	
2 H4XQH-1-AC J6E080157-2-SAMP	0.833sa,g	504.27sa,g	150.40g,in 7.5573 5.929 = 1.2746	0.2484g	TA22503		65	1349 6/14/06 ESD 6/17/06 1612 R	6/14/06 1551 R	
04/20/2006 09:30		AmtRec: FILTER	#Containers: 1				Scr:	Alpha:	Beta:	
3 H4XQM-1-AC J6E080157-3-SAMP	0.833sa,g	503.67sa,g	150.65g,in 7.5473 6.712 = 1.1244	0.2492g	RATA22504 06/05/06		64	1349 6/14/06 GSA 6/17/06 1613 R	6/14/06 1551 R	
04/20/2006 09:45		AmtRec: FILTER	#Containers: 1				Scr:	Alpha:	Beta:	
4 H4XQN-1-AC J6E080157-4-SAMP	0.833sa,g	500.38sa,g	150.02g,in 7.5473 ~~7.4581~~ RS 6/14/06 6.932 = 1.0888	0.2497g	RATA22505 06/05/06		67	1345 6/14/06 JMB 6/17/06 1613 R	6/14/06 1551 R	
04/20/2006 10:05		AmtRec: FILTER	#Containers: 1				Scr:	Alpha:	Beta:	

STL RICHLAND

6/12/2006 4:37:28 PM

Sample Preparation/Analysis

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

Balance Id:1120373922,1120373922,1120

Pipet #: _____

AnalyDueDate: 06/05/2006

Sep1 DT/Tm Tech:

Batch: 6129284 FILTER pCi/sampl PM, Quote: SA , 63174
SEQ Batch, Test: 6129286, BXTF

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:
5 H4XQQ-1-AC J6E080157-5-SAMP	0.833sa,g	501.40sa,g	150.24g,in	0.2496g	RATA22506 06/05/06		610	1350	6/14/06 6/14/06 1551 R	
				7.4581 / 6.279 = 1.1878					BMA 6/17/06 1611 R	
04/20/2006 10:25		AmtRec: FILTER		#Containers: 1			Scr:	Alpha:		Beta:
6 H4XQR-1-AC J6E080157-6-SAMP	0.833sa	508.50sa	150.48g,in	0.2465g	RATA22512 06/05/06		66	1350	6/14/06 6/14/06 1551 R	
				7.5572 / 6.534 = 1.1566					KME 6/17/06 1637 R	
04/20/2006 10:40		AmtRec: FILTER		#Containers: 1			Scr:	Alpha:		Beta:
7 H4XQT-1-AC J6E080157-7-SAMP	0.833sa,g	501.97sa,g	150.70g,in	0.2501g	RATA22513 06/05/06		6Y	1350	6/14/06 6/14/06 1551 R	
				7.5374 / 7.215 = 1.0447					LMC 6/17/06 1639 R	
04/20/2006 10:35		AmtRec: FILTER		#Containers: 1			Scr:	Alpha:		Beta:
8 H4X1R-1-AC J6E080157-8-SAMP	0.833sa,g	502.76sa,g	150.92g,in	0.2501g	RATA22514 06/05/06		613	1350	6/14/06 6/14/06 1610 R	
				7.5176 / 6.469 = 1.1621					NMA 6/17/06 1640 R	
04/20/2006 09:35		AmtRec: FILTER		#Containers: 1			Scr:	Alpha:		Beta:

STL RICHLAND

6/12/2006 4:37:29 PM

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: 06/05/2006

Sep1 DT/Tm Tech:

Batch: 6129284 FILTER pCi/sampl PM, Quote: SA , 63174

SEQ Batch, Test: 6129286, BXTF

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 H4X1T-1-AC J6E080157-9-SAMP	0.833sa,g	500.74sa,g	150.68g,in 7.5572	0.2507g 6.799 = 1.1115	RATA22515 06/05/06		611	1350	6/14/06 6/14/06 1610 R QMC 6/17/06 1640 R	
04/20/2006 09:50			AmtRec: FILTER	#Containers: 1			Scr:	Alpha:		Beta:
10H4X1V-1-AC J6E080157-10-SAMP	0.833sa,g	515.15sa,g	150.60g,in 7.5374	0.2435g 7.098 = 1.0619	RATA22516 06/05/06		612	1351	6/14/06 6/14/06 1610 R MMA 6/17/06 1639 R	
04/20/2006 10:10			AmtRec: FILTER	#Containers: 1			Scr:	Alpha:		Beta:
11H4X1W-1-AC J6E080157-11-SAMP	0.833sa,g	501.63sa,g	150.09g,in 7.5374	0.2492g 6.48 = ~~6~~ 1.1632 6/14/06 ec	RATA22517 06/05/06		9	1424	6/14/06 6/14/06 1610 R IHB 6/18/06 0952 R	
04/20/2006 10:30			AmtRec: FILTER	#Containers: 1			Scr:	Alpha:		Beta:
12H4X1X-1-AC J6E080157-12-SAMP	0.833sa,g	504.16sa,g	150.06g,in 7.5672	0.2479g 6.248 = 1.2111	RATA22518 06/05/06		65	1424	6/14/06 6/14/06 1610 R 2RG 6/18/06 0951 R	
04/20/2006 10:45			AmtRec: FILTER	#Containers: 1			Scr:	Alpha:		Beta:

STL RICHLAND

6/12/2006 4:37:29 PM

Sample Preparation/Analysis

BX Ra-226/228 PrpRC5016, SepRC5005
TE Ba-133 by NaI & Ra-226 by Alpha Scint 7 day ingrow
01 STANDARD TEST SET

Balance Id:1120373922,1120373922,1120
Pipet #:

AnalyDueDate: 06/05/2006

Sep1 DT/Tm Tech:

Batch: 6129284 pCi/sampl
SEQ Batch, Test: None

Sep2 DT/Tm Tech:

Prep Tech: ,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:
13H4038-1-AA-B J6E090000-284-BLK			1.00sa,in	1.00sa 7.5572 7.002 = 1.0793	RATA22519 06/05/06		64	1424	6/14/06 6/14/06 1610 R HMA 6/17/06 1613 R	
04/20/2006 09:10	AmtRec:		#Containers: 1				Scr:	Alpha:	Beta:	
14H4038-1-AC-C J6E090000-284-LCS			1.00sa,in	1.00sa 7.5123 7.187 = 1.0453	RASC4132 06/09/06		67	1425	6/14/06 6/14/06 1610 R PMA 6/17/06 1615 R	
04/20/2006 09:10	AmtRec:		#Containers: 1				Scr:	Alpha:	Beta:	

Comments: RATA's are not in order. MT 6-13-06

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

H4XP81AC-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:

H40381AA-BLK:
Ba-133 RDL: pCi/sam LCL:20 UCL:115 RPD:20 Ra-226 RDL:1.00E+00 pCi/sam LCL: UCL: RPD:

H40381AC-LCS:
Ba-133 RDL: pCi/sam LCL:20 UCL:115 RPD:20 Ra-226 RDL:1 pCi/sam LCL:70 UCL:130 RPD:20

H4XP81AC-SAMP Calc Info:
Uncert Level (#s).: 2 Decay to SaDt: Y Blk Subt.: N Sci.Not.: Y ODRs: B
H40381AA-BLK:

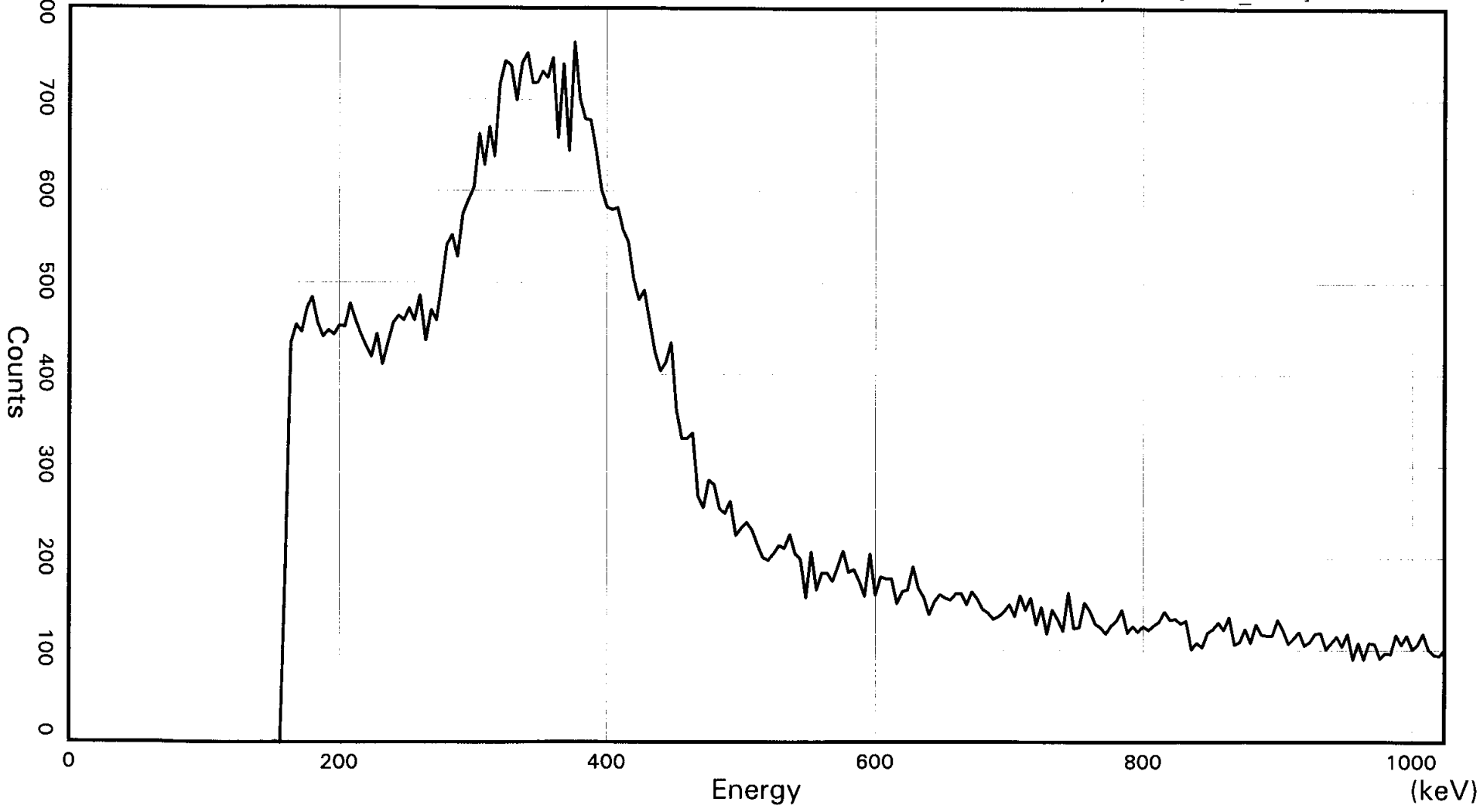
STL Richland WA.

BA133

Sample ID: H4XP81AC

Detector ID: NAI1 1

Library: [NUC_LIBR]BA133.NLB



Acquisition Start:	14-JUN-2006 13:19:02.77	Start Channel:	80
Preset Live Time:	0 00:30:00	End Channel:	113
Elapsed Live Time:	0 00:30:00	Iterations:	5
Weighting:	DERIVED	Gain shift:	Iter

SAMPLE IDENTIFICATION: H4XP81AC

CONFIGURATION ID: NAI1:H4XP81AC_140661319
TITLE : BA133
SAMPLE ID : H4XP81AC

REPORT DATE: 14-JUN-06
ACQUIRE DATE: 14-JUN-06 13:19:02
ELAPSED LIVE TIME: 1800.0 Sec
PRESET LIVE TIME: 0 00:30:00

SAMPLE DATE: 5-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 14-JUN-2006 13:49:07

Configuration	: RDND06$DKA100:[NAI1.SAMPLE]H4XP81AC_140661319.CNF;1		
Analyses by	: NAI V3.0		
Sample title	: BA133		
Sample date	: 5-JUN-2006 12:00:00	Acquisition date	: 14-JUN-2006 13:19:02
Sample ID	: H4XP81AC	Sample quantity	: 1.0000 sampl
Elapsed live time	: 0 00:30:00.00	Elapsed real time	: 0 00:30:00.66 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:	6.7	7.0	5.6	2.6	3.5	3.3	3.1	2.2
88:	1.3	0.6	1.4	-2.1	1.2	-3.8	2.7	1.2
96:	0.0	-1.1	-2.4	-3.8	-4.6	-1.7	-2.0	-1.9
104:	-2.5	-4.6	-4.8	-3.4	-4.0	-4.5	-4.5	-3.4
112:	-2.2	-4.6						

List of Suspicious Channels

81	82	83	84	85	86

Iteration	Chi-Squared	Threshold Shift	Gain Shift
1	1.24E+01	0.00E+00	1.02E+00
2	5.89E+00	0.00E+00	1.04E+00
3	2.70E+00	0.00E+00	1.06E+00
4	1.12E+00	0.00E+00	1.07E+00

Sample ID : H4XP81AC
Acquisition date : 14-JUN-2006 13:19:02

Brief Report

Nuclide	Activity DPM/sampl	1-Sigma Error
BA-133	733.	9.67

Total Activity :	733.	

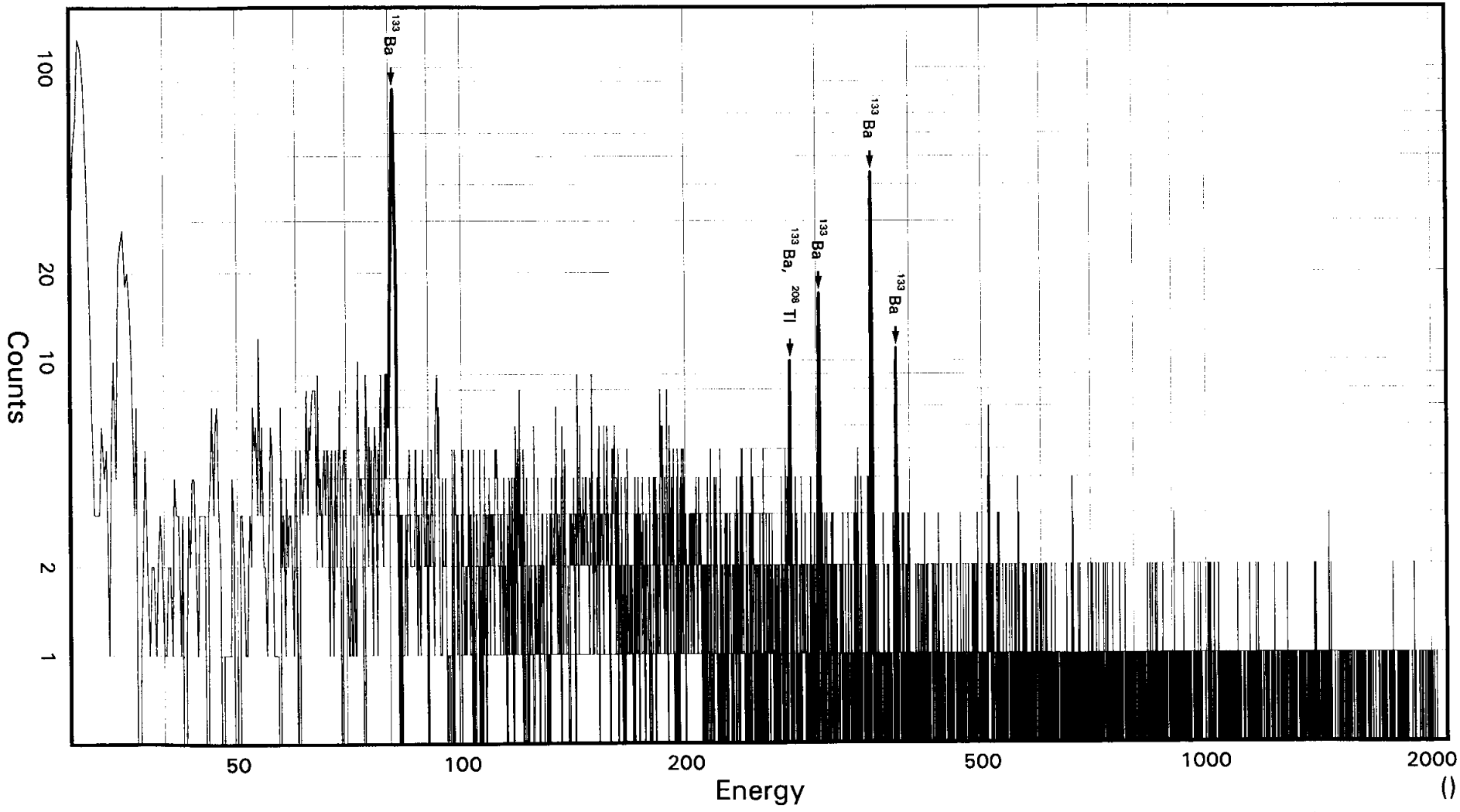
STL Richland WA.

BA133

Sample ID: H4XQH1AC

Detector ID: GER5 1

Batch ID: 6129284



Acquisition Start: 14-JUN-2006 13:19:11.75

Preset Live Time: 0 00:30:00.00

Elapsed Live Time: 0 00:30:00.00

Energy Coefficients:

Offset: -3.90595E-01

Slope: 2.49428E-01

Quadrature: -2.97805E-09

SAMPLE IDENTIFICATION: H4XQH1AC

CONFIGURATION ID: GER5:H4XQH1AC_140661319
TITLE : BA133
SAMPLE ID : H4XQH1AC

REPORT DATE: 14-JUN-06
ACQUIRE DATE: 14-JUN-06 13:19:11
ELAPSED LIVE TIME: 1800.0 Sec
PRESET LIVE TIME: 0 00:30:00

SAMPLE DATE: 5-JUN-2006 12:00:00.00
CALIB DATE: 14-JUN-2006 05:22:50.27
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: -.3906E+00 keV
ENERGY SLOPE: 2.4943E-01 keV/C
ENERGY Q COEFF: -.2978E-08 keV/C^^2
PEAK SENSITIVITY: 5.000

FWHM OFFSET: 8.0617E-01 keV
FWHM SLOPE: 2.2993E-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 14-JUN-2006 13:49:27

Configuration : RDND06$DKA100:[GER5.SAMPLE]H4XQH1AC_140661319.CNF;1
Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6
Sample title : BA133
Sample date : 5-JUN-2006 12:00:00 Acquisition date : 14-JUN-2006 13:19:11
Sample ID : H4XQH1AC 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 : 19.56 End energy : 2042.73
Sensitivity : 5.00 Gaussian : 10.00
Critical level : No

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	30.92	493	122	0.86	125.55	116	20	2.74E-01	7.1	
2	0	35.49	135	36	1.35	143.86	136	15	7.51E-02	13.1	
3	0	80.95	301	47	0.68	326.12	318	16	1.67E-01	7.7	
4	0	277.18	10	22	0.31	1112.85	1106	9	5.61E-03	92.8	
5	0	302.93	82	4	0.89	1216.09	1208	16	4.56E-02	12.3	
6	0	355.97	229	5	1.04	1428.75	1419	19	1.27E-01	7.0	
7	0	384.23	24	12	0.74	1542.05	1532	14	1.35E-02	35.1	

Flag: "*" = Peak area was modified by background subtraction

VMS Nuclide Identification Report V3.1 Generated 14-JUN-2006 13:49:28

Configuration : RDND06$DKA100:[GER5.SAMPLE]H4XQH1AC_140661319.CNF;1
Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.4
Sample title : BA133
Sample date : 5-JUN-2006 12:00:00 Acquisition date : 14-JUN-2006 13:19:11
Sample ID : H4XQH1AC 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	301	33.00	1.924E+00	1.579E+03	1.582E+03	9.45
	276.40	10	6.90	2.077E+00	2.348E+02	2.352E+02	92.93
	302.84	82	17.80	2.080E+00	7.388E+02	7.400E+02	13.44
	356.00	229	62.05*	2.082E+00	5.920E+02	5.929E+02	8.82
	383.85	24	8.70	2.081E+00	4.472E+02	4.479E+02	35.52

Flag: "*" = Keyline

Unidentified Energy Lines
Sample ID : H4XQH1AC

Acquisition date : 14-JUN-2006 13:19:11

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
0	30.92	493	122	0.86	125.55	116	20	2.74E-01	7.1	1.68E+00	
0	35.49	135	36	1.35	143.86	136	15	7.51E-02	13.1	1.72E+00	

Flags: "T" = Tentatively associated

Sample ID : H4XQH1AC Acquisition date : 14-JUN-2006 13:19:11

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	2.382E+02	92.93	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 V3.1 Generated 14-JUN-2006 13:49:29

Configuration : RDND06$DKA100:[GER5.SAMPLE]H4XQH1AC_140661319.CNF;1
Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.4,WTMEAN/KEY V1.8
Analyses by : MINACT V2.8
Sample title : BA133
Sample date : 5-JUN-2006 12:00:00
Sample ID : H4XQH1AC
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 : 14-JUN-2006 13:19:11
Sample quantity : 1.0000 SAMPL
Sample geometry : BA133T15
Elapsed real time: 0 00:30:00.21 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	5.929E+02	5.229E+01	4.996E+01	9.992E-01	11.868

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (DPM/SAMPL)	K.L. Ided	Act error	MDA (DPM/SAMPL)	MDA error	Act/MDA
BE-7	3.623E+01		4.891E+01	2.279E+02	4.572E+00	0.159
NA-22	-1.599E+00		3.775E+00	1.587E+01	3.364E-01	-0.101
NA-24	5.375E-02		4.009E-02	Half-Life too short		
K-40	8.164E+01		6.577E+01	3.434E+02	7.378E+00	0.238
SC-46	1.714E+00		3.192E+00	1.679E+01	3.520E-01	0.102
CR-51	-1.366E+02		9.892E+01	3.235E+02	6.473E+00	-0.422
MN-54	8.445E+00		5.033E+00	2.517E+01	5.167E-01	0.336
CO-57	9.044E+01		1.300E+02	4.812E+02	9.947E+00	0.188
CO-58	7.428E+00		3.682E+00	2.190E+01	4.487E-01	0.339
FE-59	2.687E-01		7.140E+00	3.265E+01	6.835E-01	0.008
CO-60	1.728E+00		2.953E+00	1.587E+01	3.379E-01	0.109
ZN-65	-3.568E+00		3.574E+00	9.170E+00	1.922E-01	-0.389
SE-75	3.945E-02		1.459E+01	5.547E+01	1.113E+00	0.001
SR-85	-2.678E+01		1.281E+01	3.999E+01	8.037E-01	-0.670
Y-88	-3.687E+00		2.615E+00	5.088E+00	1.121E-01	-0.725
NB-94	3.348E+00		5.198E+00	2.323E+01	4.781E-01	0.144
NB-95	4.817E+00		5.597E+00	2.638E+01	5.388E-01	0.183
TC-95M	8.128E-01		2.066E+01	7.586E+01	1.534E+00	0.011
ZR-95	-6.016E+00		7.788E+00	3.025E+01	6.175E-01	-0.199
ZRNB-95	8.879E+00		1.032E+01	4.862E+01	9.931E-01	0.183
MO-99	-1.929E+02		1.453E+02	4.721E+02	9.739E+00	-0.409
RH-101	2.066E+01		1.690E+01	6.613E+01	1.339E+00	0.312
RH-102M	-6.568E+00		5.834E+00	2.041E+01	4.095E-01	-0.322
RU-103	-1.476E+01		9.198E+00	2.971E+01	5.966E-01	-0.497
RU-106DA	-1.897E+01		5.712E+01	2.218E+02	4.486E+00	-0.086
AG-108M	-1.497E+01		9.097E+00	2.971E+01	5.950E-01	-0.504
AG-110M	-6.929E+00		6.980E+00	2.506E+01	5.164E-01	-0.276

Sample ID : H4XQH1AC Acquisition date : 14-JUN-2006 13:19:11

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (DPM/SAMPL)	K.L. Ided	Act error	MDA (DPM/SAMPL)	MDA error	Act/MDA
SN-113DA	1.489E+00		1.191E+01	4.725E+01	9.452E-01	0.032
SB-124	-2.335E+00		7.686E+00	2.908E+01	5.875E-01	-0.080
SB-125	-3.380E+01		2.245E+01	7.439E+01	1.490E+00	-0.454
SN-126DA	-3.843E+00		5.805E+00	2.129E+01	4.318E-01	-0.181
I-131	1.250E+01		1.333E+01	6.117E+01	1.223E+00	0.204
CS-134	-2.551E-02		4.636E+00	2.056E+01	4.209E-01	-0.001
CS-137DA	1.097E+01		7.781E+00	3.460E+01	7.016E-01	0.317
LA-138	2.552E+00		4.474E+00	2.389E+01	5.123E-01	0.107
CE-139	8.829E+00		1.396E+01	5.432E+01	1.109E+00	0.163
BA-140	3.118E+01		4.094E+01	1.754E+02	3.529E+00	0.178
BALA-140	-3.997E+00		7.137E+00	3.275E+01	7.102E-01	-0.122
LA-140	-2.883E+00		1.113E+02	5.682E+02	1.232E+01	-0.005
CE-141	1.500E+01		3.461E+01	1.297E+02	2.670E+00	0.116
CE-144	2.383E+02		1.220E+02	4.843E+02	1.003E+01	0.492
CEPR-144	5.104E+02		2.418E+02	9.685E+02	2.005E+01	0.527
PM-144	6.411E+00		5.837E+00	2.635E+01	5.328E-01	0.243
PM-146	5.371E+00		1.037E+01	4.298E+01	8.614E-01	0.125
EU-152	2.832E+00		2.712E+01	1.053E+02	2.107E+00	0.027
EU-154	-4.481E+00		1.058E+01	4.446E+01	9.427E-01	-0.101
EU-155	-6.309E+01		5.919E+01	1.988E+02	4.194E+00	-0.317
HF-181	-1.037E+01		9.272E+00	3.221E+01	6.463E-01	-0.322
BI-207	-1.362E+00		7.342E+00	2.798E+01	5.640E-01	-0.049
TL-208	1.649E+00		6.993E+00	2.879E+01	5.808E-01	0.057
BI-210M	-1.942E+01		1.725E+01	5.869E+01	1.177E+00	-0.331
BI-212	5.689E+01		6.965E+01	3.287E+02	1.005E+01	0.173
PB-212	1.180E+01		2.518E+01	1.023E+02	2.058E+00	0.115
BI-214	6.304E+00		1.326E+01	5.541E+01	1.120E+00	0.114
PB-214	1.841E+01		2.592E+01	9.028E+01	1.806E+00	0.204
RA-223	-1.559E+01		7.250E+01	2.651E+02	5.316E+00	-0.059
RA-224DA	1.191E+01		2.541E+01	1.032E+02	2.076E+00	0.115
RA-226DA	6.305E+00		1.326E+01	5.541E+01	1.120E+00	0.114
AC-227DA	1.550E+01		1.013E+02	3.755E+02	7.555E+00	0.041
AC-228	-5.134E+01		2.206E+01	7.162E+01	1.479E+00	-0.717
RA-228DA	-5.150E+01		2.212E+01	7.184E+01	1.483E+00	-0.717
TH-228DA	4.633E+00		1.964E+01	8.086E+01	1.631E+00	0.057
TH-232DA	1.076E+02		7.595E+01	3.101E+02	6.203E+00	0.347
TH-234DA	-2.687E+02		4.510E+02	1.882E+03	3.912E+01	-0.143
U-234DA	4.574E+01		4.784E+01	1.914E+02	3.832E+00	0.239
U-235HP	7.380E+01		1.358E+02	5.098E+02	1.050E+01	0.145
NP-237DA	-3.000E+01		2.504E+01	8.374E+01	1.676E+00	-0.358
U-238DA	1.841E+01		2.592E+01	9.028E+01	1.806E+00	0.204
U-238DHP	5.771E+02		5.010E+02	1.959E+03	4.362E+01	0.295
AM-241HP	-4.759E+01		4.275E+01	1.449E+02	3.251E+00	-0.328

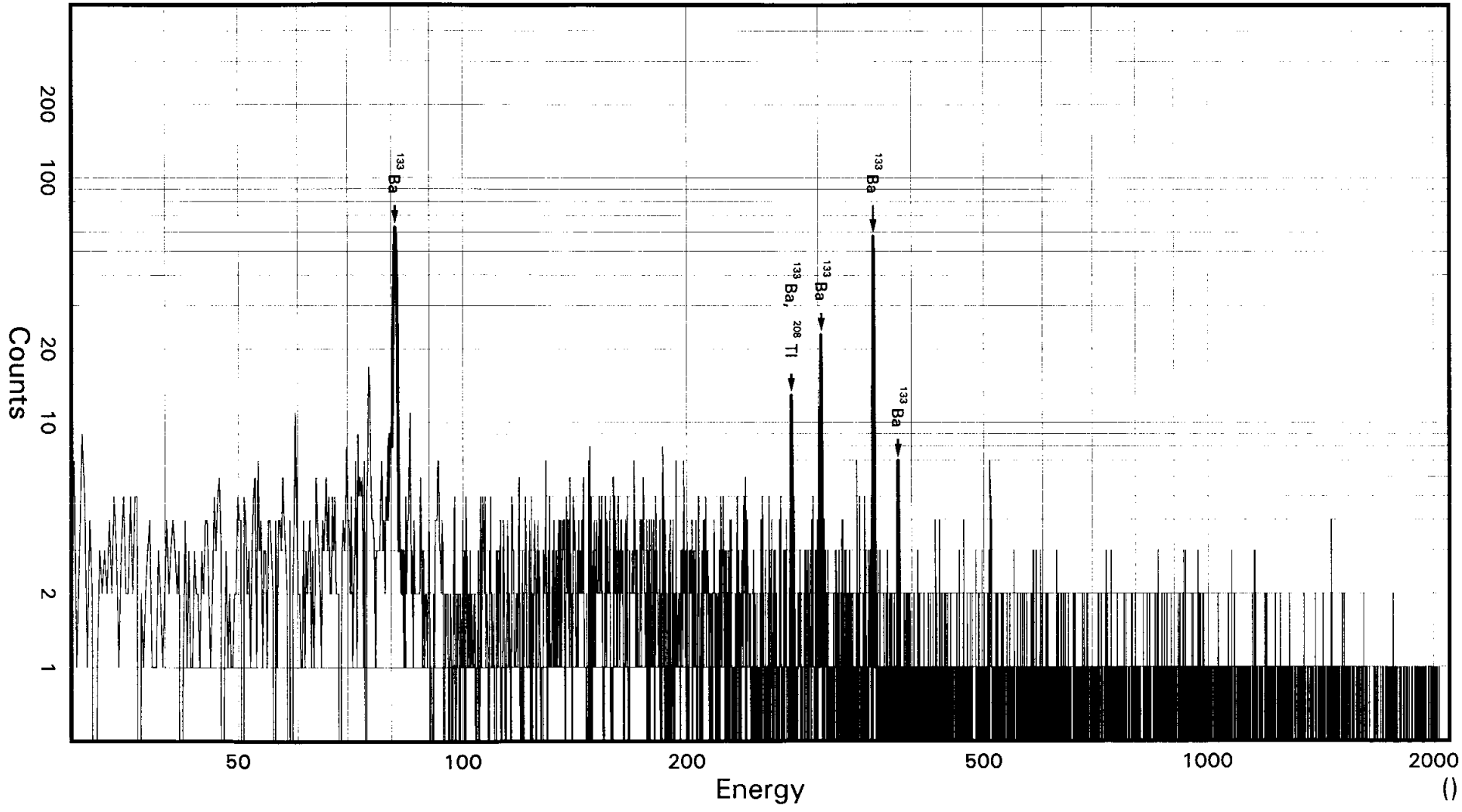
STL Richland WA.

BA133

Sample ID: H4XQM1AC

Detector ID: GER4 1

Batch ID: 6129284



Acquisition Start: 14-JUN-2006 13:19:53.01

Preset Live Time: 0 00:30:00.00

Elapsed Live Time: 0 00:30:00.00

Energy Coefficients:

Offset: -1.20822E-01

Slope: 2.48870E-01

Quadrature: 1.07398E-08

SAMPLE IDENTIFICATION: H4XQM1AC

CONFIGURATION ID: GER4:H4XQM1AC_140661319
TITLE : BA133
SAMPLE ID : H4XQM1AC

REPORT DATE: 14-JUN-06
ACQUIRE DATE: 14-JUN-06 13:19:53
ELAPSED LIVE TIME: 1800.0 Sec
PRESET LIVE TIME: 0 00:30:00

SAMPLE DATE: 5-JUN-2006 12:00:00.00
CALIB DATE: 14-JUN-2006 05:23:11.01
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: -.1208E+00 keV
ENERGY SLOPE: 2.4887E-01 keV/C
ENERGY Q COEFF: 1.0740E-08 keV/C^^2
PEAK SENSITIVITY: 5.000

FWHM OFFSET: 3.0346E-01 keV
FWHM SLOPE: 4.4942E-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 14-JUN-2006 13:50:10

Configuration : $DISK1:[GER4.SAMPLE]H4XQM1AC_140661319.CNF;1
Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6
Sample title : BA133
Sample date : 5-JUN-2006 12:00:00 Acquisition date : 14-JUN-2006 13:19:53
Sample ID : H4XQM1AC Sample quantity : 1.0000 SAMPL
Sample type : Sample geometry : BA133T15
Elapsed live time: 0 00:30:00.00 Elapsed real time: 0 00:30:00.41 0.0%
Start energy : 19.79 End energy : 2039.34
Sensitivity : 5.00 Gaussian : 10.00
Critical level : No

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	75.09*	5	30	0.53	302.22	296	11	2.68E-03	256.0	
2	0	81.05	242	51	0.89	326.15	318	18	1.35E-01	9.5	
3	0	276.51	43	9	0.70	1111.47	1105	12	2.40E-02	20.6	
4	0	303.30	79	34	0.93	1219.12	1209	18	4.37E-02	21.1	
5	0	355.91	275	13	0.97	1430.50	1422	17	1.53E-01	6.7	
6	0	383.76	33	7	1.15	1542.39	1534	14	1.83E-02	24.3	

Flag: "*" = Peak area was modified by background subtraction

VMS Nuclide Identification Report V3.0 Generated 14-JUN-2006 13:50:10

Configuration : $DISK1:[GER4.SAMPLE]H4XQM1AC_140661319.CNF;1
Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.3
Sample title : BA133
Sample date : 5-JUN-2006 12:00:00 Acquisition date : 14-JUN-2006 13:19:53
Sample ID : H4XQM1AC Sample quantity : 1.0000 SAMPL
Sample type : Sample geometry : BA133T15
Elapsed live time: 0 00:30:00.00 Elapsed real time: 0 00:30:00.41 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	2.043E+00	1.199E+03	1.201E+03	11.07
	276.40	43	6.90	2.202E+00	9.459E+02	9.474E+02	21.34
	302.84	79	17.80	2.205E+00	6.682E+02	6.693E+02	21.78
	356.00	275	62.05*	2.207E+00	6.701E+02	6.712E+02	9.49
	383.85	33	8.70	2.207E+00	5.729E+02	5.738E+02	25.11

Flag: "*" = Keyline

Unidentified Energy Lines
Page : 2
Sample ID : H4XQM1AC
Acquisition date : 14-JUN-2006 13:19:53

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
0	75.09	5	30	0.53	302.22	296	11	2.68E-03	****	2.03E+00	

Flags: "T" = Tentatively associated

Sample ID : H4XQM1AC
Acquisition date : 14-JUN-2006 13:19:53

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	9.598E+02	21.34	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 14-JUN-2006 13:50:13

Configuration : $DISK1:[GER4.SAMPLE]H4XQM1AC_140661319.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 : 5-JUN-2006 12:00:00 Acquisition date : 14-JUN-2006 13:19:53
Sample ID : H4XQM1AC Sample quantity : 1.0000 SAMPL
Sample type : Sample geometry : BA133T15
Elapsed live time: 0 00:30:00.00 Elapsed real time: 0 00:30:00.41 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	6.712E+02	6.373E+01	5.030E+01	2.358E+00	13.345

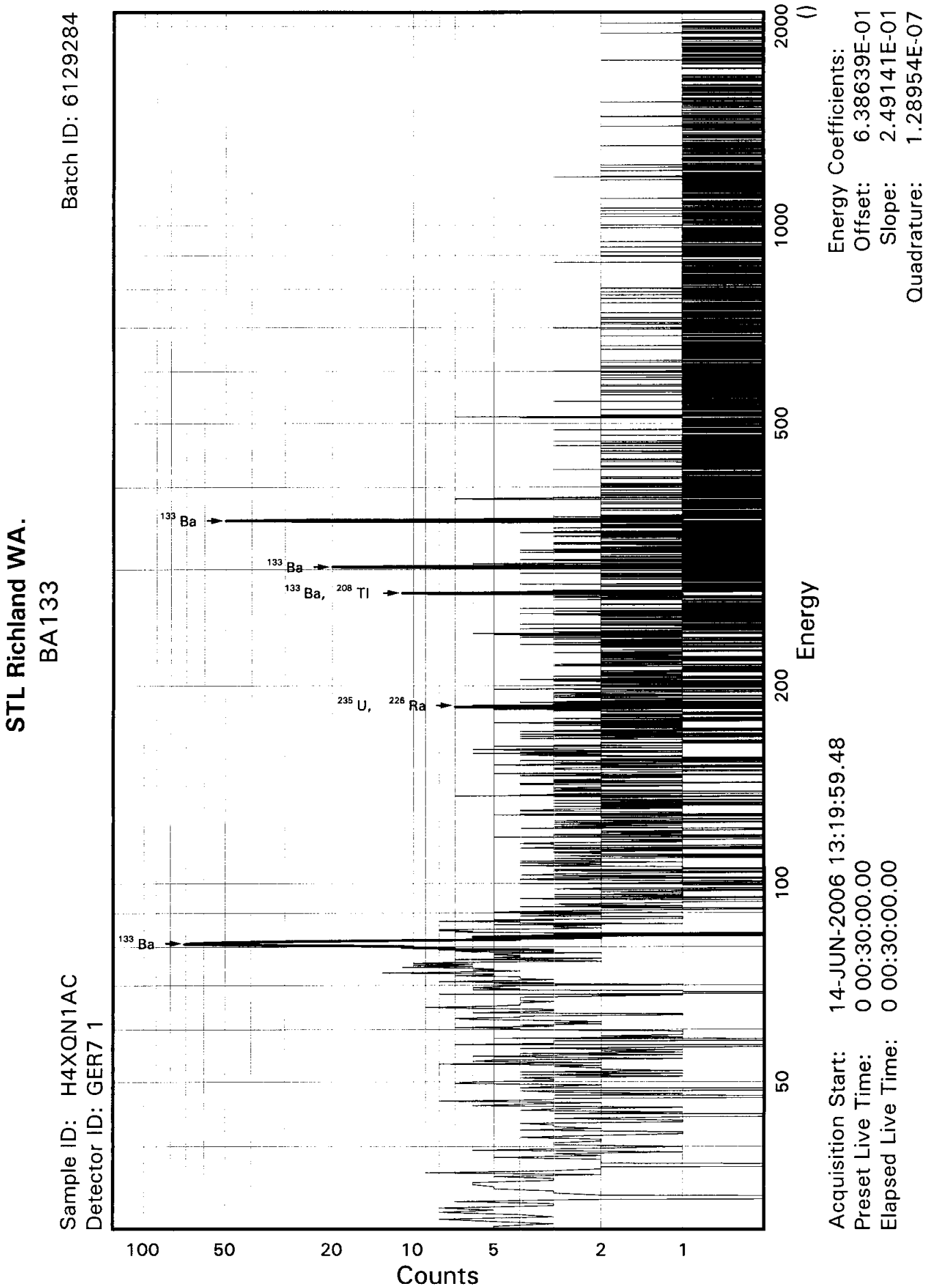
---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (DPM/SAMPL)	K.L. Ided	Act error	MDA (DPM/SAMPL)	MDA error	Act/MDA
BE-7	5.032E+01		6.238E+01	2.709E+02	9.889E+00	0.186
NA-22	1.465E+00		3.670E+00	1.733E+01	6.681E-01	0.085
K-40	5.339E+01		7.443E+01	3.797E+02	1.483E+01	0.141
SC-46	2.460E+00		5.735E+00	2.466E+01	9.404E-01	0.100
CR-51	-6.996E+01		1.119E+02	4.044E+02	9.388E+00	-0.173
MN-54	6.979E+00		5.046E+00	2.415E+01	9.020E-01	0.289
CO-57	-3.176E+01		1.105E+02	3.968E+02	9.512E+00	-0.080
CO-58	3.634E+00		4.733E+00	2.228E+01	8.305E-01	0.163
FE-59	-6.213E+00		7.802E+00	2.986E+01	1.137E+00	-0.208
CO-60	-4.682E+00		3.547E+00	1.185E+01	4.586E-01	-0.395
ZN-65	-6.142E+00		1.101E+01	4.188E+01	1.597E+00	-0.147
SE-75	-3.916E+01		1.666E+01	4.896E+01	1.140E+00	-0.800
SR-85	-2.183E+01		1.030E+01	3.161E+01	1.156E+00	-0.691
Y-88	1.713E+00		3.107E+00	1.645E+01	6.585E-01	0.104
NB-94	-2.944E+00		4.864E+00	1.864E+01	6.981E-01	-0.158
NB-95	-2.002E-01		4.609E+00	1.988E+01	7.387E-01	-0.010
TC-95M	4.728E+00		1.632E+01	6.240E+01	1.464E+00	0.076
ZR-95	1.508E+01		1.032E+01	4.873E+01	1.810E+00	0.309
ZRNB-95	-3.898E+00		9.202E+00	3.664E+01	1.362E+00	-0.106
MO-99	8.452E+01		1.235E+02	4.691E+02	1.122E+01	0.180
RH-101	2.877E+01		1.444E+01	5.982E+01	1.405E+00	0.481
RH-102M	-2.976E+00		5.863E+00	2.241E+01	8.182E-01	-0.133
RU-103	-4.218E+00		8.794E+00	3.282E+01	1.199E+00	-0.129
RU-106DA	-7.337E+01		5.101E+01	1.705E+02	6.273E+00	-0.430
AG-108M	-1.740E+01		9.181E+00	2.784E+01	1.015E+00	-0.625
AG-110M	-6.413E+00		7.243E+00	2.636E+01	9.881E-01	-0.243
SN-113DA	1.767E+01		1.152E+01	4.999E+01	1.820E+00	0.354

Sample ID : H4XQM1AC Acquisition date : 14-JUN-2006 13:19:53

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (DPM/SAMPL)	K.L. Ided	Act error	MDA (DPM/SAMPL)	MDA error	Act/MDA
SB-124	-9.787E+00		7.435E+00	2.437E+01	8.959E-01	-0.402
SB-125	-3.535E+01		2.166E+01	6.721E+01	2.449E+00	-0.526
SN-126DA	5.671E+00		4.741E+00	2.250E+01	8.304E-01	0.252
I-131	-4.062E+00		1.676E+01	6.443E+01	2.345E+00	-0.063
CS-134	-9.789E+00		5.729E+00	1.693E+01	6.304E-01	-0.578
CS-137DA	2.006E+00		5.910E+00	2.537E+01	9.359E-01	0.079
LA-138	-9.776E+00		4.927E+00	6.555E+00	2.556E-01	-1.491
CE-139	-5.298E+00		1.324E+01	4.687E+01	1.110E+00	-0.113
BA-140	-1.074E+01		3.319E+01	1.301E+02	4.764E+00	-0.083
BALA-140	-2.164E+01		1.348E+01	4.116E+01	1.622E+00	-0.526
LA-140	-1.513E+02		1.726E+02	6.527E+02	2.573E+01	-0.232
CE-141	6.816E+00		2.671E+01	9.955E+01	2.376E+00	0.068
CE-144	-8.222E+00		9.462E+01	3.496E+02	8.392E+00	-0.024
CEPR-144	-1.764E+01		1.891E+02	6.986E+02	1.677E+01	-0.025
PM-144	-4.169E+00		5.045E+00	1.881E+01	6.921E-01	-0.222
PM-146	-6.049E+00		8.756E+00	3.276E+01	1.195E+00	-0.185
EU-152	-2.384E+01		3.165E+01	1.127E+02	2.615E+00	-0.212
EU-154	4.105E+00		1.028E+01	4.856E+01	1.872E+00	0.085
EU-155	4.709E+01		4.762E+01	1.917E+02	4.689E+00	0.246
HF-181	-3.720E+00		6.629E+00	2.566E+01	9.372E-01	-0.145
BI-207	-1.959E+00		5.732E+00	2.196E+01	8.056E-01	-0.089
TL-208	7.395E+00		7.785E+00	3.522E+01	1.293E+00	0.210
BI-210M	3.685E+01		1.649E+01	7.196E+01	1.675E+00	0.512
BI-212	1.152E+02		8.495E+01	3.889E+02	1.692E+01	0.296
PB-212	2.745E+01		2.587E+01	1.056E+02	2.465E+00	0.260
BI-214	-5.484E+00		1.493E+01	6.415E+01	2.359E+00	-0.085
PB-214	3.617E+01		2.478E+01	9.747E+01	2.262E+00	0.371
RA-223	-1.132E+02		6.799E+01	2.159E+02	5.023E+00	-0.524
RA-224DA	2.770E+01		2.611E+01	1.066E+02	2.487E+00	0.260
RA-226DA	-5.484E+00		1.493E+01	6.415E+01	2.359E+00	-0.085
AC-227DA	-1.944E+02		9.848E+01	3.111E+02	7.262E+00	-0.625
AC-228	-1.681E+01		1.921E+01	8.052E+01	3.024E+00	-0.209
RA-228DA	-1.687E+01		1.927E+01	8.076E+01	3.033E+00	-0.209
TH-228DA	2.077E+01		2.187E+01	9.891E+01	3.631E+00	0.210
TH-232DA	3.548E+01		7.065E+01	2.764E+02	6.413E+00	0.128
TH-234DA	-5.307E+02		7.003E+02	2.595E+03	9.810E+01	-0.204
U-234DA	4.332E+00		5.043E+01	1.850E+02	4.299E+00	0.023
U-235HP	6.928E+00		1.064E+02	3.901E+02	9.318E+00	0.018
NP-237DA	-1.401E+01		1.817E+01	6.654E+01	1.545E+00	-0.210
U-238DA	3.617E+01		2.478E+01	9.747E+01	2.262E+00	0.371
U-238DHP	-6.941E+01		2.977E+02	1.113E+03	2.869E+01	-0.062
AM-241HP	4.845E+01		3.178E+01	1.285E+02	3.338E+00	0.377


STL Richland WA.
BA133
Batch ID: 6129284
Sample ID: H4XQN1AC
Detector ID: GER7 1
133 Ba
133 Ba
133 Ba, 208 Tl
235 U, 226 Ra
133 Ba
Counts
100
50
20
10
5
2
1
Energy
50
100
200
500
1000
2000
()
Acquisition Start: 14-JUN-2006 13:19:59.48
Preset Live Time: 0 00:30:00.00
Elapsed Live Time: 0 00:30:00.00
Energy Coefficients:
Offset: 6.38639E-01
Slope: 2.49141E-01
Quadrature: 1.28954E-07

SAMPLE IDENTIFICATION: H4XQN1AC

CONFIGURATION ID: GER7:H4XQN1AC_140661319
TITLE : BA133
SAMPLE ID : H4XQN1AC

REPORT DATE: 14-JUN-06
ACQUIRE DATE: 14-JUN-06 13:19:59
ELAPSED LIVE TIME: 1800.0 Sec
PRESET LIVE TIME: 0 00:30:00

SAMPLE DATE: 5-JUN-2006 12:00:00.00
CALIB DATE: 14-JUN-2006 05:23:46.43
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: 6.3864E-01 keV
ENERGY SLOPE: 2.4914E-01 keV/C
ENERGY Q COEFF: 1.2895E-07 keV/C^^2
PEAK SENSITIVITY: 5.000

FWHM OFFSET: 4.5734E-01 keV
FWHM SLOPE: 4.2090E-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 14-JUN-2006 13:50:26

```
Configuration     : $DISK1:[GER7.SAMPLE]H4XQN1AC_140661319.CNF;1
Analyses by       : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6
Sample title      : BA133
Sample date       : 5-JUN-2006 12:00:00  Acquisition date : 14-JUN-2006 13:19:59
Sample ID         : H4XQN1AC             Sample quantity  : 1.0000 SAMPL
Sample type       :                      Sample geometry  : BA133T15
Elapsed live time: 0 00:30:00.00         Elapsed real time: 0 00:30:00.18   0.0%
Start energy      :    20.57             End energy       :  2050.25
Sensitivity       :     5.00             Gaussian         :    10.00
Critical level    : No
```

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	81.09	296	55	0.95	322.86	315	19	1.64E-01	8.6	
2	0	186.86*	4	21	1.59	747.15	738	13	2.04E-03	282.1	
3	0	276.50	50	8	0.76	1106.63	1098	17	2.78E-02	19.4	
4	0	302.73	94	7	1.02	1211.78	1205	13	5.25E-02	11.7	
5	0	355.98	268	0	1.32	1425.24	1417	22	1.49E-01	6.1	

Flag: "*" = Peak area was modified by background subtraction

VMS Nuclide Identification Report V3.0 Generated 14-JUN-2006 13:50:26

Configuration : $DISK1:[GER7.SAMPLE]H4XQN1AC_140661319.CNF;1
Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.3
Sample title : BA133
Sample date : 5-JUN-2006 12:00:00 Acquisition date : 14-JUN-2006 13:19:59
Sample ID : H4XQN1AC Sample quantity : 1.0000 SAMPL
Sample type : Sample geometry : BA133T15
Elapsed live time: 0 00:30:00.00 Elapsed real time: 0 00:30:00.18 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	296	33.00	1.923E+00	1.555E+03	1.557E+03	10.16
	276.40	50	6.90	2.076E+00	1.163E+03	1.165E+03	20.14
	302.84	94	17.80	2.078E+00	8.510E+02	8.524E+02	12.88
	356.00	268	62.05*	2.080E+00	6.920E+02	6.932E+02	8.14
	383.85	------	8.70	2.080E+00	------	Line Not Found	------

Flag: "*" = Keyline

Unidentified Energy Lines
Sample ID : H4XQN1AC

Acquisition date : 14-JUN-2006 13:19:59

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
0	186.86	4	21	1.59	747.15	738	13	2.04E-03	****	2.05E+00	T

Flags: "T" = Tentatively associated

Sample ID : H4XQN1AC Acquisition date : 14-JUN-2006 13:19:59

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	1.180E+03	20.14	Abun.
			510.84	21.60	--- Not Found ---		
			583.14*	84.20	--- Not Found ---		
			860.37	12.46	--- Not Found ---		
		% Abundances Found =		5.44			
RA-226DA	1600.00Y	0.00	186.21	3.50	1.706E+02	282.17	Abun.
			241.98	7.49	--- Not Found ---		
			295.22	19.20	--- Not Found ---		
			351.92	37.20	--- Not Found ---		
			609.32*	46.30	--- Not Found ---		
			1120.28	15.10	--- Not Found ---		
			1238.11	5.94	--- Not Found ---		
			1764.49	15.80	--- Not Found ---		
		% Abundances Found =		2.33			
U-235HP	7.04E+08Y	0.00	143.76*	10.50	--- Not Found ---		Abun.
			185.71	54.00	1.105E+01	282.17	
			205.31	4.70	--- Not Found ---		
		% Abundances Found =		78.03			

Flag: "*" = Keyline

VMS Nuclide Identification Report V3.0 Generated 14-JUN-2006 13:50:28

Configuration : $DISK1:[GER7.SAMPLE]H4XQN1AC_140661319.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 : 5-JUN-2006 12:00:00 Acquisition date : 14-JUN-2006 13:19:59
Sample ID : H4XQN1AC Sample quantity : 1.0000 SAMPL
Sample type : Sample geometry : BA133T15
Elapsed live time: 0 00:30:00.00 Elapsed real time: 0 00:30:00.18 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	6.932E+02	5.645E+01	4.742E+01	9.485E-01	14.616

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (DPM/SAMPL)	K.L. Ided	Act error	MDA (DPM/SAMPL)	MDA error	Act/MDA
BE-7	-2.868E+01		5.759E+01	2.193E+02	4.399E+00	-0.131
NA-22	-1.654E+00		2.932E+00	1.258E+01	2.667E-01	-0.131
K-40	-3.392E+01		5.962E+01	2.808E+02	6.033E+00	-0.121
SC-46	1.733E+00		4.085E+00	1.948E+01	4.084E-01	0.089
CR-51	1.191E+02		1.024E+02	4.261E+02	8.525E+00	0.279
MN-54	-3.407E+00		4.136E+00	1.557E+01	3.197E-01	-0.219
CO-57	2.164E+01		1.062E+02	4.018E+02	8.306E+00	0.054
CO-58	-5.387E+00		4.774E+00	1.675E+01	3.432E-01	-0.322
FE-59	2.050E+01		8.444E+00	4.816E+01	1.008E+00	0.426
CO-60	1.711E+00		2.966E+00	1.588E+01	3.381E-01	0.108
ZN-65	-1.059E+01		1.033E+01	3.652E+01	7.654E-01	-0.290
SE-75	-1.567E+00		1.232E+01	4.776E+01	9.582E-01	-0.033
SR-85	-2.205E+01		1.257E+01	3.950E+01	7.938E-01	-0.558
Y-88	5.719E+00		3.297E+00	2.035E+01	4.484E-01	0.281
NB-94	4.832E+00		4.993E+00	2.324E+01	4.783E-01	0.208
NB-95	-3.792E+00		4.723E+00	1.811E+01	3.699E-01	-0.209
TC-95M	2.862E+01		1.604E+01	6.682E+01	1.351E+00	0.428
ZR-95	-6.075E+00		9.075E+00	3.509E+01	7.163E-01	-0.173
ZRNB-95	-7.424E+00		8.616E+00	3.265E+01	6.670E-01	-0.227
MO-99	1.228E+02		1.220E+02	4.808E+02	9.920E+00	0.255
RH-101	5.145E+00		1.435E+01	5.393E+01	1.092E+00	0.095
RH-102M	8.332E+00		5.716E+00	2.698E+01	5.412E-01	0.309
RU-103	2.309E+00		7.303E+00	3.056E+01	6.137E-01	0.076
RU-106DA	9.781E+01		4.090E+01	2.341E+02	4.734E+00	0.418
AG-108M	-1.489E-01		7.579E+00	2.966E+01	5.940E-01	-0.005
AG-110M	-9.597E+00		4.827E+00	6.302E+00	1.298E-01	-1.523
SN-113DA	-2.355E+01		1.164E+01	3.559E+01	7.120E-01	-0.662

Sample ID : H4XQN1AC Acquisition date : 14-JUN-2006 13:19:59

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (DPM/SAMPL)	K.L. Ided	Act error	MDA (DPM/SAMPL)	MDA error	Act/MDA
SB-124	-9.126E+00		7.112E+00	2.405E+01	4.857E-01	-0.380
SB-125	-1.172E+01		2.050E+01	7.686E+01	1.539E+00	-0.152
SN-126DA	-4.279E+00		4.565E+00	1.642E+01	3.332E-01	-0.261
I-131	-9.724E+00		1.834E+01	6.900E+01	1.380E+00	-0.141
CS-134	1.916E+00		7.446E+00	3.058E+01	6.259E-01	0.063
CS-137DA	4.166E+00		6.207E+00	2.746E+01	5.568E-01	0.152
LA-138	-1.061E+01		5.336E+00	6.962E+00	1.493E-01	-1.524
CE-139	-1.373E+01		1.312E+01	4.494E+01	9.178E-01	-0.306
BA-140	-1.803E+01		3.565E+01	1.381E+02	2.778E+00	-0.131
BALA-140	-5.780E+00		1.323E+01	5.518E+01	1.197E+00	-0.105
LA-140	-7.518E+01		1.720E+02	7.177E+02	1.556E+01	-0.105
CE-141	-5.708E+00		2.753E+01	1.010E+02	2.080E+00	-0.056
CE-144	-6.363E+01		9.729E+01	3.498E+02	7.242E+00	-0.182
CEPR-144	-1.273E+02		1.946E+02	6.996E+02	1.448E+01	-0.182
PM-144	1.633E+00		4.412E+00	1.996E+01	4.036E-01	0.082
PM-146	-2.686E+00		1.092E+01	4.140E+01	8.298E-01	-0.065
EU-152	-5.935E+01		3.067E+01	9.210E+01	1.842E+00	-0.644
EU-154	-4.635E+00		8.216E+00	3.525E+01	7.474E-01	-0.131
EU-155	-4.120E+01		5.559E+01	1.908E+02	4.025E+00	-0.216
HF-181	-9.543E+00		6.579E+00	2.089E+01	4.193E-01	-0.457
BI-207	-2.090E+00		5.319E+00	2.097E+01	4.227E-01	-0.100
TL-208	-9.361E+00		7.068E+00	2.705E+01	5.458E-01	-0.346
BI-210M	1.219E+00		1.205E+01	4.898E+01	9.826E-01	0.025
BI-212	-4.245E+01		8.390E+01	3.249E+02	9.933E+00	-0.131
PB-212	2.331E+01		2.532E+01	1.040E+02	2.092E+00	0.224
BI-214	3.324E+01		1.389E+01	6.696E+01	1.353E+00	0.496
PB-214	-6.249E+00		2.449E+01	8.121E+01	1.624E+00	-0.077
RA-223	3.266E+01		5.838E+01	2.349E+02	4.711E+00	0.139
RA-224DA	2.352E+01		2.555E+01	1.049E+02	2.111E+00	0.224
RA-226DA	3.310E+01		1.387E+01	6.687E+01	1.351E+00	0.495
AC-227DA	-8.535E+01		9.641E+01	3.386E+02	6.813E+00	-0.252
AC-228	-7.413E+00		2.025E+01	7.822E+01	1.615E+00	-0.095
RA-228DA	-7.435E+00		2.031E+01	7.845E+01	1.620E+00	-0.095
TH-228DA	-2.629E+01		1.985E+01	7.598E+01	1.533E+00	-0.346
TH-232DA	4.250E+01		7.018E+01	2.753E+02	5.506E+00	0.154
TH-234DA	7.738E+02		5.719E+02	3.074E+03	6.390E+01	0.252
U-234DA	-4.952E+01		3.809E+01	1.274E+02	2.551E+00	-0.389
U-235HP	-3.883E+01		1.098E+02	3.975E+02	8.188E+00	-0.098
NP-237DA	1.621E+01		2.304E+01	9.224E+01	1.846E+00	0.176
U-238DA	-6.249E+00		2.449E+01	8.121E+01	1.624E+00	-0.077
U-238DHP	-4.179E+02		4.148E+02	1.459E+03	3.247E+01	-0.286
AM-241HP	-1.380E+01		3.486E+01	1.267E+02	2.842E+00	-0.109

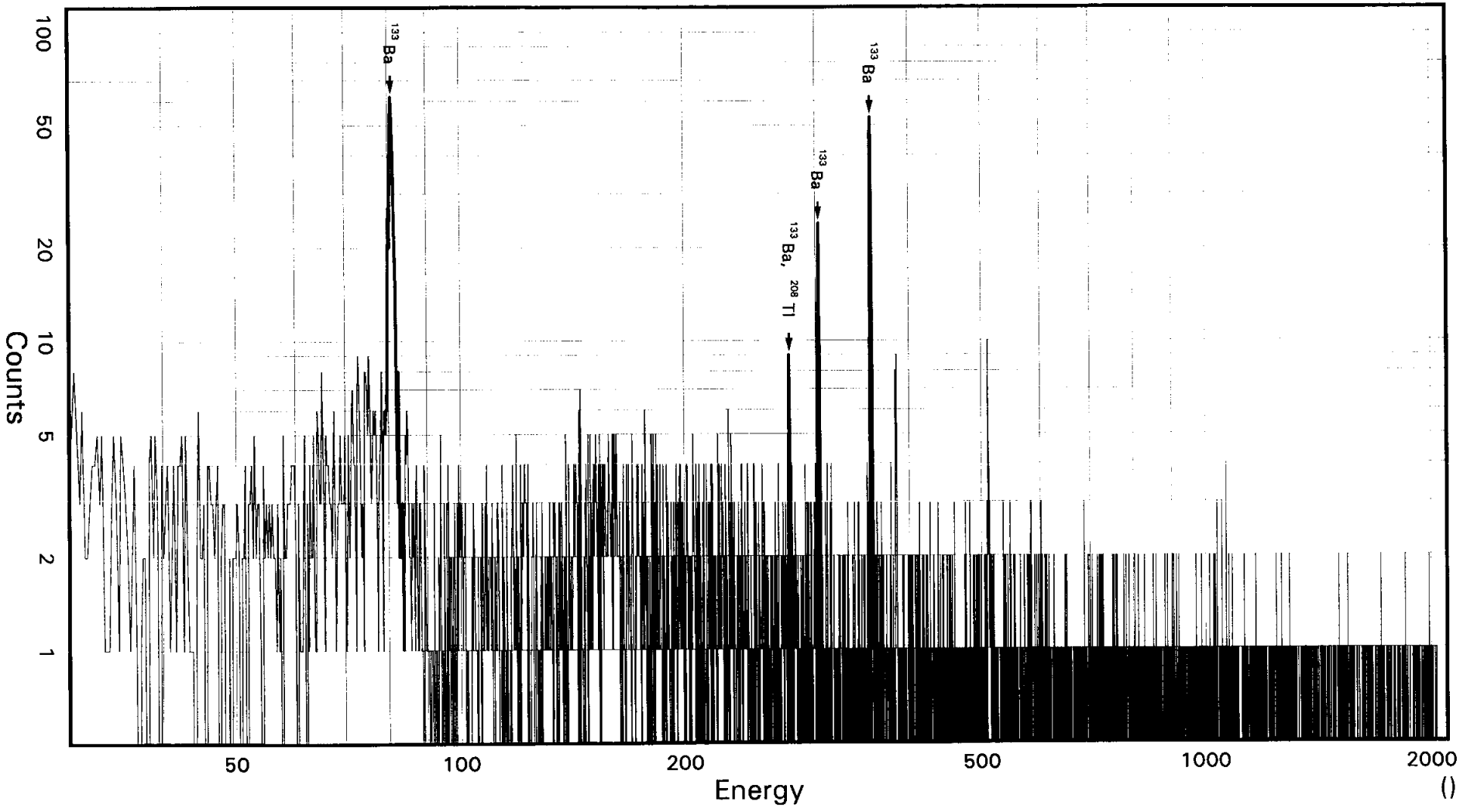
STL Richland WA.

BA133

Sample ID: H4XQQ1AC

Detector ID: GER10 1

Batch ID: 6129284



Acquisition Start: 14-JUN-2006 13:20:16.14

Preset Live Time: 0 00:30:00.00

Elapsed Live Time: 0 00:30:00.00

Energy Coefficients:

Offset: 1.56336E+01

Slope: 2.46974E-01

Quadrature: -1.79881E-09

SAMPLE IDENTIFICATION: H4XQQ1AC

CONFIGURATION ID: GER10:H4XQQ1AC_140661320
TITLE : BA133
SAMPLE ID : H4XQQ1AC

REPORT DATE: 14-JUN-06
ACQUIRE DATE: 14-JUN-06 13:20:16
ELAPSED LIVE TIME: 1800.0 Sec
PRESET LIVE TIME: 0 00:30:00

SAMPLE DATE: 5-JUN-2006 12:00:00.00
CALIB DATE: 14-JUN-2006 05:24:19.75
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: 1.5634E+01 keV
ENERGY SLOPE: 2.4697E-01 keV/C
ENERGY Q COEFF: -.1799E-08 keV/C^^2
PEAK SENSITIVITY: 5.000

FWHM OFFSET: 8.5150E-01 keV
FWHM SLOPE: 2.7421E-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 14-JUN-2006 13:50:42

```
Configuration     : $DISK1:[GER10.SAMPLE]H4XQQ1AC_140661320.CNF;1
Analyses by       : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6
Sample title      : BA133
Sample date       : 5-JUN-2006 12:00:00  Acquisition date : 14-JUN-2006 13:20:16
Sample ID         : H4XQQ1AC             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      :    18.10             End energy       :  2038.73
Sensitivity       :     5.00             Gaussian         :    10.00
Critical level    : No
```

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	80.97	276	64	0.96	264.54	257	19	1.53E-01	9.4	
2	0	276.76	25	19	0.65	1057.30	1052	12	1.40E-02	41.1	
3	0	303.03	100	27	0.94	1163.69	1155	15	5.56E-02	15.0	
4	0	355.95	302	16	1.22	1377.95	1369	21	1.68E-01	6.6	

Flag: "*" = Peak area was modified by background subtraction

VMS Nuclide Identification Report V3.0 Generated 14-JUN-2006 13:50:42

Configuration : $DISK1:[GER10.SAMPLE]H4XQQ1AC_140661320.CNF;1
Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.3
Sample title : BA133
Sample date : 5-JUN-2006 12:00:00 Acquisition date : 14-JUN-2006 13:20:16
Sample ID : H4XQQ1AC 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	276	33.00	2.399E+00	1.162E+03	1.164E+03	10.89
	276.40	25	6.90	2.578E+00	4.712E+02	4.719E+02	41.48
	302.84	100	17.80	2.582E+00	7.264E+02	7.276E+02	15.93
	356.00	302	62.05*	2.584E+00	6.268E+02	6.279E+02	8.55
	383.85	------	8.70	2.584E+00	------	Line Not Found	------

Flag: "*" = Keyline

Sample ID : H4XQQ1AC Acquisition date : 14-JUN-2006 13:20:16

None

Flags: "T" = Tentatively associated

Sample ID : H4XQQ1AC
Acquisition date : 14-JUN-2006 13:20:16

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	4.781E+02	41.48	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 14-JUN-2006 13:50:45

Configuration : $DISK1:[GER10.SAMPLE]H4XQQ1AC_140661320.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 : 5-JUN-2006 12:00:00 Acquisition date : 14-JUN-2006 13:20:16
Sample ID : H4XQQ1AC 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	6.279E+02	5.367E+01	4.256E+01	8.512E-01	14.751

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (DPM/SAMPL)	K.L. Ided	Act error	MDA (DPM/SAMPL)	MDA error	Act/MDA
BE-7	-1.074E+01		6.330E+01	2.431E+02	4.876E+00	-0.044
NA-22	4.104E+00		3.085E+00	1.648E+01	3.483E-01	0.249
K-40	-5.188E+01		3.777E+01	1.823E+02	3.901E+00	-0.285
SC-46	-4.135E+00		3.802E+00	1.359E+01	2.842E-01	-0.304
CR-51	-3.805E+01		8.144E+01	2.978E+02	5.958E+00	-0.128
MN-54	2.002E+00		4.950E+00	2.080E+01	4.264E-01	0.096
CO-57	-9.786E+01		9.083E+01	3.076E+02	6.346E+00	-0.318
CO-58	-2.874E+00		4.996E+00	1.895E+01	3.878E-01	-0.152
FE-59	-7.926E+00		6.015E+00	2.018E+01	4.213E-01	-0.393
CO-60	2.179E+00		1.734E+00	1.175E+01	2.494E-01	0.185
ZN-65	2.792E+00		4.686E+00	2.529E+01	5.288E-01	0.110
SE-75	-8.475E+00		1.319E+01	4.723E+01	9.474E-01	-0.179
SR-85	-2.451E+01		1.178E+01	3.713E+01	7.461E-01	-0.660
Y-88	-3.584E+00		2.969E+00	9.950E+00	2.180E-01	-0.360
NB-94	9.104E-01		3.448E+00	1.546E+01	3.177E-01	0.059
NB-95	-1.473E+00		3.481E+00	1.463E+01	2.986E-01	-0.101
TC-95M	8.119E+00		1.594E+01	6.075E+01	1.228E+00	0.134
ZR-95	3.012E+00		9.353E+00	3.937E+01	8.026E-01	0.077
ZRNB-95	-2.715E+00		6.417E+00	2.697E+01	5.503E-01	-0.101
MO-99	-4.854E+00		1.070E+02	3.878E+02	7.987E+00	-0.013
RH-101	4.186E+00		1.420E+01	5.310E+01	1.075E+00	0.079
RH-102M	1.342E+01		5.781E+00	2.729E+01	5.473E-01	0.492
RU-103	4.588E+00		8.065E+00	3.274E+01	6.573E-01	0.140
RU-106DA	-5.706E+01		3.943E+01	1.256E+02	2.538E+00	-0.454
AG-108M	-2.116E+01		7.246E+00	1.946E+01	3.898E-01	-1.087
AG-110M	-3.912E+00		6.543E+00	2.455E+01	5.050E-01	-0.159
SN-113DA	2.359E-01		9.325E+00	3.599E+01	7.200E-01	0.007

Sample ID : H4XQQ1AC Acquisition date : 14-JUN-2006 13:20:16

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (DPM/SAMPL)	K.L. Ided	Act error	MDA (DPM/SAMPL)	MDA error	Act/MDA
SB-124	1.081E+01		6.941E+00	3.016E+01	6.089E-01	0.358
SB-125	-2.837E+01		1.979E+01	6.648E+01	1.331E+00	-0.427
SN-126DA	1.358E+00		4.069E+00	1.747E+01	3.540E-01	0.078
I-131	-7.840E+00		1.825E+01	6.612E+01	1.322E+00	-0.119
CS-134	-3.039E-01		4.827E+00	1.997E+01	4.083E-01	-0.015
CS-137DA	-3.599E+00		4.466E+00	1.634E+01	3.312E-01	-0.220
LA-138	-1.233E+00		3.958E+00	1.731E+01	3.698E-01	-0.071
CE-139	-3.416E+00		1.204E+01	4.294E+01	8.760E-01	-0.080
BA-140	8.272E+00		3.291E+01	1.345E+02	2.705E+00	0.062
BALA-140	-2.349E+01		1.058E+01	1.288E+01	2.781E-01	-1.823
LA-140	-2.444E+02		1.229E+02	1.676E+02	3.617E+00	-1.459
CE-141	-2.705E+01		2.759E+01	9.335E+01	1.918E+00	-0.290
CE-144	-1.196E+01		8.745E+01	3.178E+02	6.566E+00	-0.038
CEPR-144	2.929E+01		1.713E+02	6.365E+02	1.315E+01	0.046
PM-144	2.603E+00		4.311E+00	1.896E+01	3.832E-01	0.137
PM-146	6.677E+00		8.148E+00	3.487E+01	6.987E-01	0.191
EU-152	-2.644E+01		2.591E+01	8.868E+01	1.774E+00	-0.298
EU-154	1.150E+01		8.644E+00	4.618E+01	9.759E-01	0.249
EU-155	3.333E+01		4.171E+01	1.637E+02	3.442E+00	0.204
HF-181	1.283E+01		7.019E+00	3.285E+01	6.591E-01	0.390
BI-207	4.346E+00		4.089E+00	1.915E+01	3.858E-01	0.227
TL-208	1.676E+01		7.823E+00	3.465E+01	6.988E-01	0.484
BI-210M	-5.204E+00		1.492E+01	5.472E+01	1.098E+00	-0.095
BI-212	-5.245E+01		8.532E+01	3.163E+02	9.664E+00	-0.166
PB-212	6.757E+00		1.892E+01	7.222E+01	1.452E+00	0.094
BI-214	7.749E+00		1.102E+01	4.673E+01	9.438E-01	0.166
PB-214	2.219E+01		2.137E+01	7.675E+01	1.535E+00	0.289
RA-223	-1.375E+01		5.702E+01	2.100E+02	4.210E+00	-0.065
RA-224DA	6.818E+00		1.910E+01	7.287E+01	1.465E+00	0.094
RA-226DA	7.635E+00		1.101E+01	4.664E+01	9.420E-01	0.164
AC-227DA	-6.514E+01		7.241E+01	2.537E+02	5.102E+00	-0.257
AC-228	-3.810E-01		1.371E+01	5.760E+01	1.187E+00	-0.007
RA-228DA	-3.821E-01		1.375E+01	5.777E+01	1.190E+00	-0.007
TH-228DA	4.707E+01		2.197E+01	9.732E+01	1.963E+00	0.484
TH-232DA	-8.934E+01		6.013E+01	1.957E+02	3.915E+00	-0.456
TH-234DA	3.701E+02		5.897E+02	2.681E+03	5.560E+01	0.138
U-234DA	-6.749E+01		4.177E+01	1.355E+02	2.713E+00	-0.498
U-235HP	3.354E+02		1.026E+02	4.281E+02	8.805E+00	0.783
NP-237DA	1.274E+01		1.757E+01	7.139E+01	1.429E+00	0.178
U-238DA	2.219E+01		2.137E+01	7.675E+01	1.535E+00	0.289
U-238DHP	8.445E+01		3.289E+02	1.178E+03	2.607E+01	0.072
AM-241HP	3.587E+01		3.059E+01	1.172E+02	2.613E+00	0.306

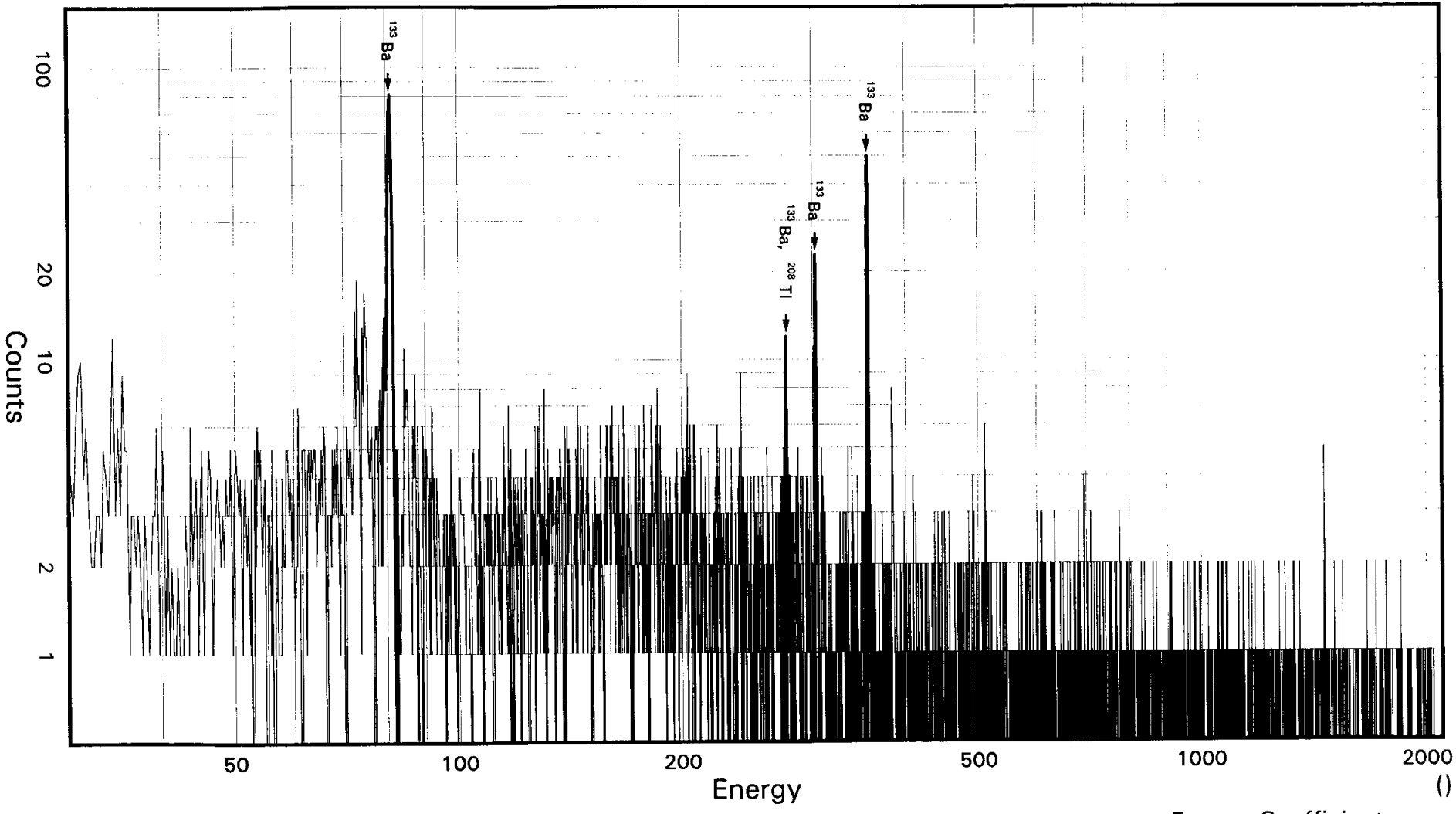
STL Richland WA.

BA133

Sample ID: H4XQR1AC

Detector ID: GER6 1

Batch ID: 6129284



Acquisition Start: 14-JUN-2006 13:20:25.26

Preset Live Time: 0 00:30:00.00

Elapsed Live Time: 0 00:30:00.00

Energy Coefficients:

Offset: -6.63443E-03

Slope: 2.49415E-01

Quadrature: 6.44103E-09

SAMPLE IDENTIFICATION: H4XQR1AC

CONFIGURATION ID: GER6:H4XQR1AC_140661320
TITLE : BA133
SAMPLE ID : H4XQR1AC

REPORT DATE: 14-JUN-06
ACQUIRE DATE: 14-JUN-06 13:20:25
ELAPSED LIVE TIME: 1800.0 Sec
PRESET LIVE TIME: 0 00:30:00

SAMPLE DATE: 5-JUN-2006 12:00:00.00
CALIB DATE: 14-JUN-2006 05:23:30.78
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: -.6634E-02 keV
ENERGY SLOPE: 2.4941E-01 keV/C
ENERGY Q COEFF: 6.4410E-09 keV/C^^2
PEAK SENSITIVITY: 5.000

FWHM OFFSET: 3.6340E-01 keV
FWHM SLOPE: 5.3905E-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 14-JUN-2006 13:50:58

```
Configuration     : $DISK1:[GER6.SAMPLE]H4XQR1AC_140661320.CNF;1
Analyses by       : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6
Sample title      : BA133
Sample date       : 5-JUN-2006 12:00:00  Acquisition date : 14-JUN-2006 13:20:25
Sample ID         : H4XQR1AC             Sample quantity  : 1.0000 SAMPL
Sample type       :                      Sample geometry  : BA133T15
Elapsed live time: 0 00:30:00.00         Elapsed real time: 0 00:30:00.27   0.0%
Start energy      :    19.95             End energy       :  2043.63
Sensitivity       :     5.00             Gaussian         :    10.00
Critical level    : No
```

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	74.46*	52	66	2.90	298.56	287	21	2.91E-02	43.8	
2	0	80.87	312	62	0.88	324.28	315	16	1.74E-01	7.9	
3	0	276.77	53	8	0.87	1109.68	1104	16	2.94E-02	18.2	
4	0	302.91	108	13	1.01	1214.47	1206	17	6.02E-02	12.2	
5	0	355.99	284	10	1.41	1427.27	1418	20	1.58E-01	6.5	

Flag: "*" = Peak area was modified by background subtraction

VMS Nuclide Identification Report V3.0 Generated 14-JUN-2006 13:50:59

Configuration : $DISK1:[GER6.SAMPLE]H4XQR1AC_140661320.CNF;1
Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.3
Sample title : BA133
Sample date : 5-JUN-2006 12:00:00 Acquisition date : 14-JUN-2006 13:20:25
Sample ID : H4XQR1AC Sample quantity : 1.0000 SAMPL
Sample type : Sample geometry : BA133T15
Elapsed live time: 0 00:30:00.00 Elapsed real time: 0 00:30:00.27 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	312	33.00	2.166E+00	1.457E+03	1.459E+03	9.62
	276.40	53	6.90	2.334E+00	1.097E+03	1.099E+03	18.98
	302.84	108	17.80	2.337E+00	8.687E+02	8.701E+02	13.35
	356.00	284	62.05*	2.339E+00	6.523E+02	6.534E+02	8.46
	383.85	------	8.70	2.338E+00	------	Line Not Found	------

Flag: "*" = Keyline

Unidentified Energy Lines
Sample ID : H4XQR1AC
Acquisition date : 14-JUN-2006 13:20:25

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
0	74.46	52	66	2.90	298.56	287	21	2.91E-02	43.8	2.15E+00	

Flags: "T" = Tentatively associated

Sample ID : H4XQR1AC
Acquisition date : 14-JUN-2006 13:20:25

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	1.113E+03	18.98	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 14-JUN-2006 13:51:02

Configuration : $DISK1:[GER6.SAMPLE]H4XQR1AC_140661320.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 : 5-JUN-2006 12:00:00 Acquisition date : 14-JUN-2006 13:20:25
Sample ID : H4XQR1AC Sample quantity : 1.0000 SAMPL
Sample type : Sample geometry : BA133T15
Elapsed live time: 0 00:30:00.00 Elapsed real time: 0 00:30:00.27 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	6.534E+02	5.531E+01	5.616E+01	1.123E+00	11.634

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (DPM/SAMPL)	K.L. Ided	Act error	MDA (DPM/SAMPL)	MDA error	Act/MDA
BE-7	-1.473E+02		8.217E+01	2.569E+02	5.154E+00	-0.573
NA-22	-5.947E+00		3.682E+00	1.117E+01	2.364E-01	-0.532
K-40	5.183E+01		9.584E+01	4.491E+02	9.628E+00	0.115
SC-46	4.172E+00		4.727E+00	2.205E+01	4.616E-01	0.189
CR-51	-5.473E+01		8.331E+01	3.027E+02	6.055E+00	-0.181
MN-54	3.452E+00		5.884E+00	2.490E+01	5.108E-01	0.139
CO-57	1.593E+02		1.182E+02	4.567E+02	9.431E+00	0.349
CO-58	4.692E+00		4.299E+00	2.102E+01	4.304E-01	0.223
FE-59	3.562E+00		8.106E+00	3.699E+01	7.732E-01	0.096
CO-60	-4.567E+00		3.410E+00	1.117E+01	2.374E-01	-0.409
ZN-65	-1.812E+01		9.594E+00	2.798E+01	5.856E-01	-0.648
SE-75	-2.718E+01		1.723E+01	5.500E+01	1.103E+00	-0.494
SR-85	-1.939E+01		1.056E+01	3.423E+01	6.878E-01	-0.567
Y-88	-3.381E+00		4.743E+00	1.797E+01	3.948E-01	-0.188
NB-94	2.106E-01		5.428E+00	2.199E+01	4.523E-01	0.010
NB-95	6.533E+00		5.491E+00	2.584E+01	5.274E-01	0.253
TC-95M	3.732E+01		2.204E+01	8.549E+01	1.728E+00	0.437
ZR-95	5.116E+00		1.159E+01	4.791E+01	9.774E-01	0.107
ZRNB-95	1.243E+01		1.018E+01	4.797E+01	9.792E-01	0.259
MO-99	1.537E+02		1.255E+02	4.854E+02	1.000E+01	0.317
RH-101	5.821E-01		1.597E+01	5.848E+01	1.184E+00	0.010
RH-102M	2.747E-01		7.906E+00	2.999E+01	6.016E-01	0.009
RU-103	-6.524E+00		7.996E+00	2.830E+01	5.682E-01	-0.231
RU-106DA	-3.683E+01		6.763E+01	2.471E+02	4.996E+00	-0.149
AG-108M	-8.616E-01		8.277E+00	3.128E+01	6.264E-01	-0.028
AG-110M	8.407E+00		7.158E+00	3.285E+01	6.763E-01	0.256
SN-113DA	-3.510E+00		1.013E+01	3.864E+01	7.730E-01	-0.091

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (DPM/SAMPL)	K.L. Ided	Act error	MDA (DPM/SAMPL)	MDA error	Act/MDA
SB-124	-1.915E+00		7.888E+00	2.958E+01	5.974E-01	-0.065
SB-125	-2.861E+01		2.178E+01	7.346E+01	1.471E+00	-0.389
SN-126DA	-9.181E-01		5.834E+00	2.292E+01	4.647E-01	-0.040
I-131	-1.312E+01		1.897E+01	6.729E+01	1.346E+00	-0.195
CS-134	-1.679E+00		6.363E+00	2.464E+01	5.040E-01	-0.068
CS-137DA	4.527E+00		6.749E+00	2.875E+01	5.828E-01	0.157
LA-138	-2.517E+00		5.218E+00	2.122E+01	4.541E-01	-0.119
CE-139	1.998E+01		1.584E+01	6.027E+01	1.230E+00	0.331
BA-140	-7.149E+00		4.015E+01	1.556E+02	3.131E+00	-0.046
BALA-140	-2.130E+01		1.071E+01	1.426E+01	3.085E-01	-1.494
LA-140	-2.771E+02		1.394E+02	1.855E+02	4.013E+00	-1.494
CE-141	3.190E+01		3.170E+01	1.196E+02	2.459E+00	0.267
CE-144	-8.480E+00		1.152E+02	4.160E+02	8.602E+00	-0.020
CEPR-144	-1.569E+01		2.305E+02	8.324E+02	1.722E+01	-0.019
PM-144	-8.074E+00		6.534E+00	2.198E+01	4.442E-01	-0.367
PM-146	-1.356E+01		1.132E+01	3.831E+01	7.677E-01	-0.354
EU-152	3.234E-01		2.906E+01	1.096E+02	2.193E+00	0.003
EU-154	-1.666E+01		1.032E+01	3.130E+01	6.625E-01	-0.532
EU-155	1.063E+02		4.987E+01	2.085E+02	4.391E+00	0.510
HF-181	-4.882E+00		9.996E+00	3.630E+01	7.283E-01	-0.134
BI-207	-2.828E+00		6.214E+00	2.332E+01	4.699E-01	-0.121
TL-208	1.584E+00		8.440E+00	3.477E+01	7.014E-01	0.046
BI-210M	4.610E-01		1.950E+01	7.090E+01	1.422E+00	0.007
BI-212	8.906E+01		8.814E+01	3.838E+02	1.173E+01	0.232
PB-212	7.795E+00		2.554E+01	9.758E+01	1.962E+00	0.080
BI-214	-1.006E+01		1.604E+01	6.250E+01	1.263E+00	-0.161
PB-214	-2.761E+01		3.130E+01	9.355E+01	1.871E+00	-0.295
RA-223	-3.299E+01		7.544E+01	2.730E+02	5.475E+00	-0.121
RA-224DA	7.865E+00		2.577E+01	9.846E+01	1.980E+00	0.080
RA-226DA	-1.006E+01		1.604E+01	6.251E+01	1.263E+00	-0.161
AC-227DA	-2.026E+02		9.219E+01	2.822E+02	5.677E+00	-0.718
AC-228	4.319E+00		2.340E+01	9.944E+01	2.051E+00	0.043
RA-228DA	4.332E+00		2.347E+01	9.974E+01	2.057E+00	0.043
TH-228DA	4.449E+00		2.370E+01	9.767E+01	1.970E+00	0.046
TH-232DA	5.599E+01		7.071E+01	2.770E+02	5.540E+00	0.202
TH-234DA	-7.415E+02		7.737E+02	2.732E+03	5.671E+01	-0.271
U-234DA	5.324E+01		4.798E+01	1.915E+02	3.836E+00	0.278
U-235HP	-9.003E+01		1.194E+02	4.110E+02	8.460E+00	-0.219
NP-237DA	-5.792E+01		2.539E+01	7.730E+01	1.547E+00	-0.749
U-238DA	-2.761E+01		3.130E+01	9.355E+01	1.871E+00	-0.295
U-238DHP	-6.151E+01		3.555E+02	1.284E+03	2.849E+01	-0.048
AM-241HP	1.110E+01		3.242E+01	1.226E+02	2.742E+00	0.090

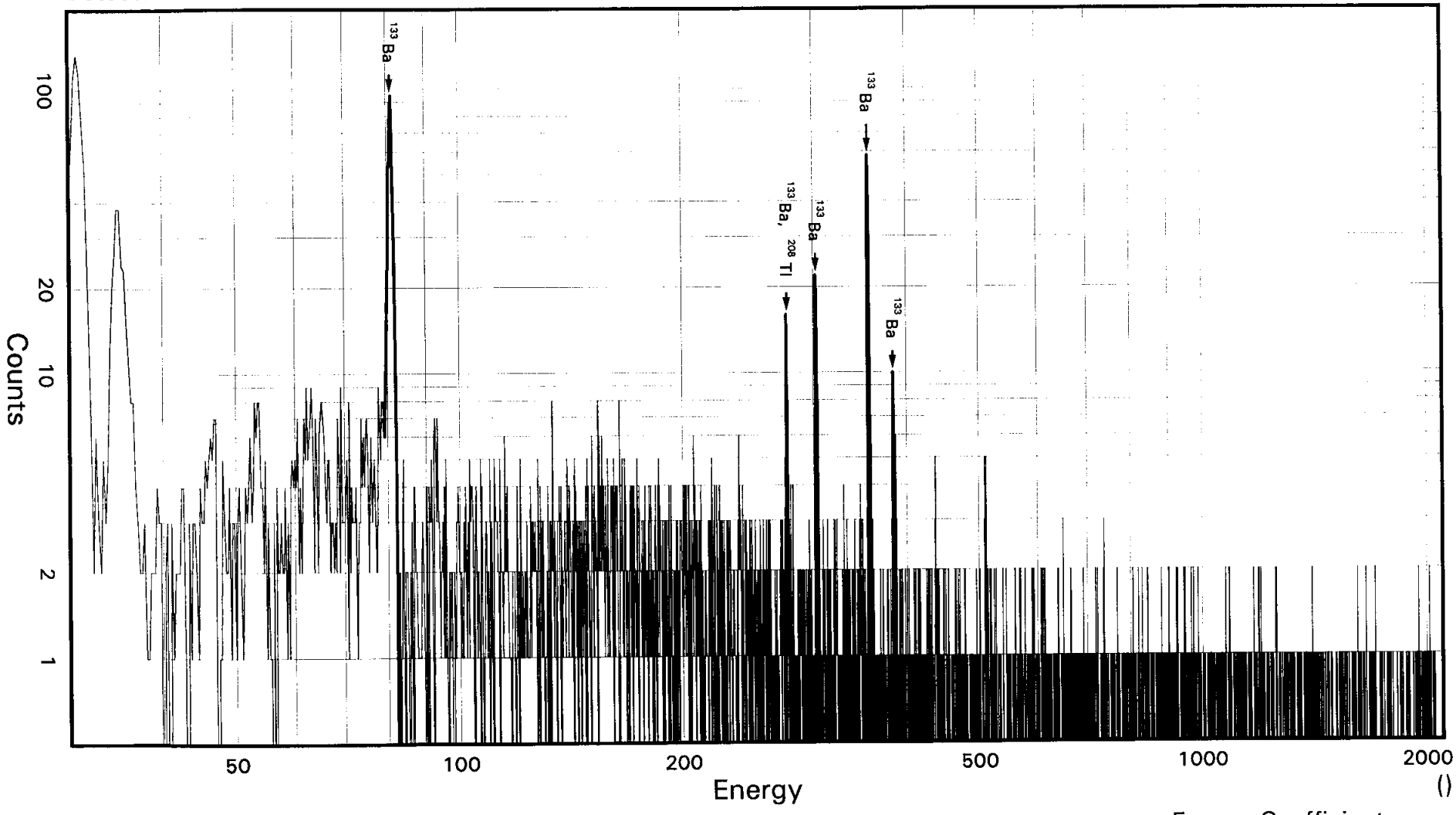
STL Richland WA.

BA133

Sample ID: H4XQT1AC

Detector ID: GER8 1

Batch ID: 6129284



Acquisition Start: 14-JUN-2006 13:20:29.99

Preset Live Time: 0 00:30:00.00

Elapsed Live Time: 0 00:30:00.00

Energy Coefficients:

Offset: 2.75706E-01

Slope: 2.49832E-01

Quadrature: 1.80037E-08

SAMPLE IDENTIFICATION: H4XQT1AC

CONFIGURATION ID: GER8:H4XQT1AC_140661320
TITLE : BA133
SAMPLE ID : H4XQT1AC

REPORT DATE: 14-JUN-06
ACQUIRE DATE: 14-JUN-06 13:20:29
ELAPSED LIVE TIME: 1800.0 Sec
PRESET LIVE TIME: 0 00:30:00

SAMPLE DATE: 5-JUN-2006 12:00:00.00
CALIB DATE: 14-JUN-2006 05:24:04.34
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: 2.7571E-01 keV
ENERGY SLOPE: 2.4983E-01 keV/C
ENERGY Q COEFF: 1.8004E-08 keV/C^^2
PEAK SENSITIVITY: 5.000

FWHM OFFSET: 9.8969E-01 keV
FWHM SLOPE: 1.8029E-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 14-JUN-2006 13:51:17

Configuration : $DISK1:[GER8.SAMPLE]H4XQT1AC_140661320.CNF;1
Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6
Sample title : BA133
Sample date : 5-JUN-2006 12:00:00 Acquisition date : 14-JUN-2006 13:20:29
Sample ID : H4XQT1AC 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 : 20.26 End energy : 2048.11
Sensitivity : 5.00 Gaussian : 10.00
Critical level : No

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	30.69	646	89	1.07	121.73	112	20	3.59E-01	5.3	
2	0	35.03	207	40	1.27	139.11	131	18	1.15E-01	10.0	
3	0	81.01	398	64	0.95	323.15	315	15	2.21E-01	6.7	
4	0	276.76	36	20	0.30	1106.61	1094	19	2.02E-02	33.3	
5	0	302.83	112	4	1.07	1210.94	1203	17	6.23E-02	10.3	
6	0	356.05	319	4	1.39	1423.90	1415	18	1.77E-01	5.8	
7	0	383.88	46	0	1.12	1535.26	1528	14	2.56E-02	14.7	

Flag: "*" = Peak area was modified by background subtraction

VMS Nuclide Identification Report V3.0 Generated 14-JUN-2006 13:51:17

Configuration : $DISK1:[GER8.SAMPLE]H4XQT1AC_140661320.CNF;1
Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.3
Sample title : BA133
Sample date : 5-JUN-2006 12:00:00 Acquisition date : 14-JUN-2006 13:20:29
Sample ID : H4XQT1AC 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	398	33.00	2.202E+00	1.824E+03	1.827E+03	8.60
	276.40	36	6.90	2.371E+00	7.402E+02	7.414E+02	33.73
	302.84	112	17.80	2.374E+00	8.845E+02	8.859E+02	11.65
	356.00	319	62.05*	2.376E+00	7.204E+02	7.215E+02	7.93
	383.85	46	8.70	2.375E+00	7.420E+02	7.432E+02	15.70

Flag: "*" = Keyline

Unidentified Energy Lines
Sample ID : H4XQT1AC Acquisition date : 14-JUN-2006 13:20:29

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
0	30.69	646	89	1.07	121.73	112	20	3.59E-01	5.3	1.93E+00	
0	35.03	207	40	1.27	139.11	131	18	1.15E-01	10.0	1.97E+00	

Flags: "T" = Tentatively associated

Sample ID : H4XQT1AC Acquisition date : 14-JUN-2006 13:20:29

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	7.511E+02	33.73	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 14-JUN-2006 13:51:19

Configuration : $DISK1:[GER8.SAMPLE]H4XQT1AC_140661320.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 : 5-JUN-2006 12:00:00
Sample ID : H4XQT1AC
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 : 14-JUN-2006 13:20:29
Sample quantity : 1.0000 SAMPL
Sample geometry : BA133T15
Elapsed real time: 0 00:30:00.21 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	7.215E+02	5.719E+01	4.102E+01	8.203E-01	17.591

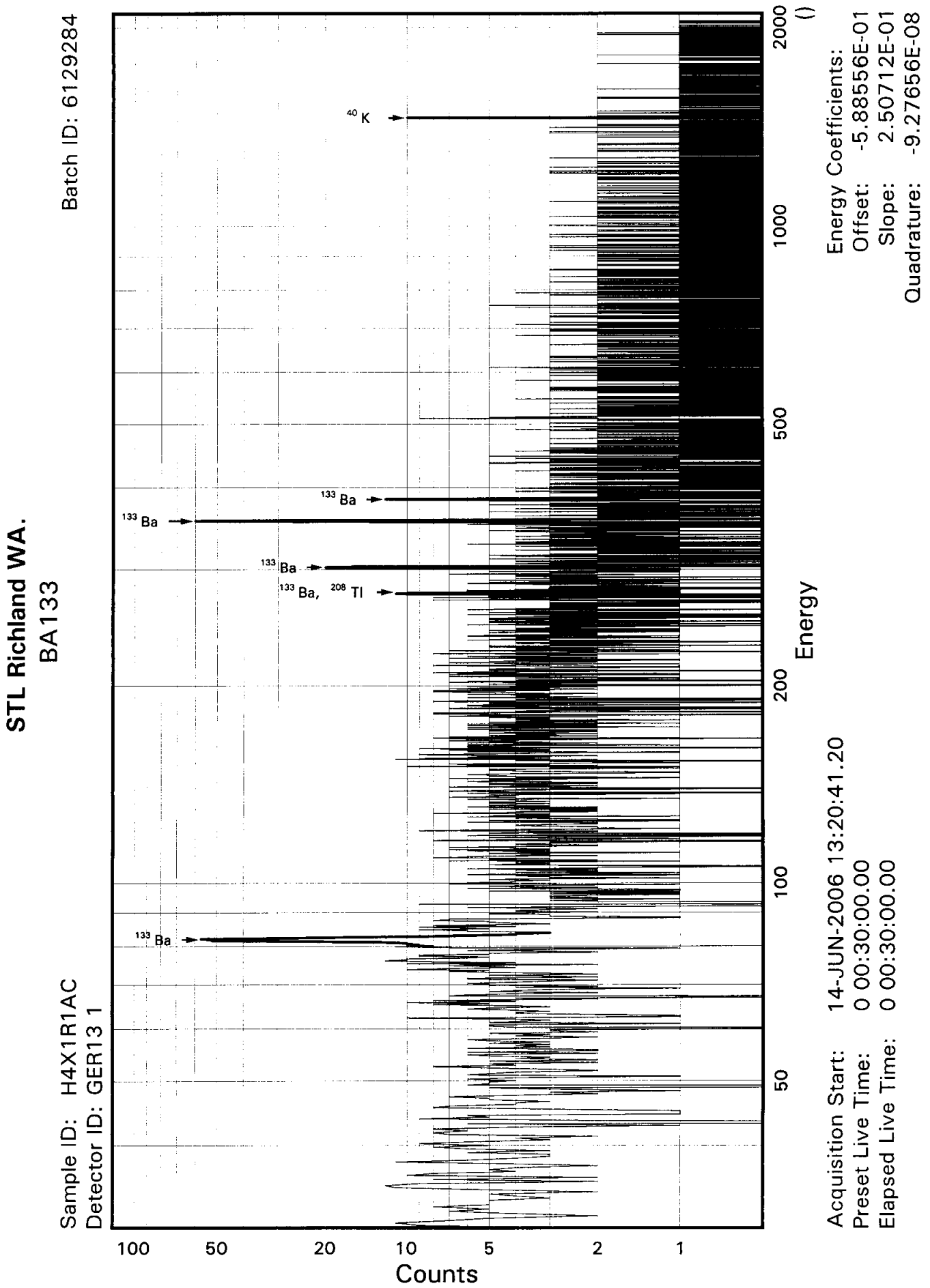
---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (DPM/SAMPL)	K.L. Ided	Act error	MDA (DPM/SAMPL)	MDA error	Act/MDA
BE-7	3.608E+01		5.006E+01	2.215E+02	4.444E+00	0.163
NA-22	-2.933E+00		2.080E+00	4.041E+00	8.552E-02	-0.726
K-40	2.760E+01		3.549E+01	1.986E+02	4.256E+00	0.139
SC-46	2.064E-01		3.794E+00	1.703E+01	3.564E-01	0.012
CR-51	1.645E+02		9.963E+01	4.211E+02	8.426E+00	0.391
MN-54	-1.514E+00		3.903E+00	1.579E+01	3.240E-01	-0.096
CO-57	-1.728E+02		1.184E+02	3.870E+02	7.990E+00	-0.447
CO-58	1.389E+00		3.495E+00	1.674E+01	3.428E-01	0.083
FE-59	2.988E+00		2.992E+00	2.197E+01	4.591E-01	0.136
CO-60	-2.959E+00		2.098E+00	4.042E+00	8.587E-02	-0.732
ZN-65	-6.595E+00		6.813E+00	2.548E+01	5.333E-01	-0.259
SE-75	-2.205E+01		1.295E+01	4.207E+01	8.440E-01	-0.524
SR-85	-8.113E+00		9.633E+00	3.315E+01	6.661E-01	-0.245
Y-88	-1.519E+00		2.777E+00	1.209E+01	2.654E-01	-0.126
NB-94	1.399E+00		3.246E+00	1.552E+01	3.191E-01	0.090
NB-95	1.010E+01		4.844E+00	2.557E+01	5.219E-01	0.395
TC-95M	-2.302E+01		1.991E+01	6.570E+01	1.328E+00	-0.350
ZR-95	8.640E+00		8.551E+00	4.023E+01	8.206E-01	0.215
ZRNB-95	1.900E+01		8.998E+00	4.746E+01	9.688E-01	0.400
MO-99	6.005E+00		1.288E+02	4.689E+02	9.664E+00	0.013
RH-101	-5.600E+00		1.472E+01	5.158E+01	1.044E+00	-0.109
RH-102M	-4.863E+00		5.068E+00	1.788E+01	3.587E-01	-0.272
RU-103	1.444E+00		6.284E+00	2.616E+01	5.253E-01	0.055
RU-106DA	-1.237E+01		3.808E+01	1.584E+02	3.201E+00	-0.078
AG-108M	-2.663E+01		8.775E+00	2.279E+01	4.565E-01	-1.168
AG-110M	-1.461E+01		6.909E+00	1.892E+01	3.895E-01	-0.772
SN-113DA	-2.170E-01		9.741E+00	3.803E+01	7.609E-01	-0.006

Sample ID : H4XQT1AC Acquisition date : 14-JUN-2006 13:20:29

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (DPM/SAMPL)	K.L. Ided	Act error	MDA (DPM/SAMPL)	MDA error	Act/MDA
SB-124	-9.140E+00		4.396E+00	1.181E+01	2.386E-01	-0.774
SB-125	1.396E+01		2.126E+01	8.761E+01	1.754E+00	0.159
SN-126DA	5.817E+00		4.472E+00	2.135E+01	4.329E-01	0.272
I-131	-7.588E+00		1.512E+01	5.665E+01	1.133E+00	-0.134
CS-134	1.974E+00		3.851E+00	1.859E+01	3.803E-01	0.106
CS-137DA	-5.522E+00		5.793E+00	2.092E+01	4.241E-01	-0.264
LA-138	-4.520E+00		3.206E+00	6.082E+00	1.301E-01	-0.743
CE-139	1.433E+01		1.586E+01	5.930E+01	1.210E+00	0.242
BA-140	1.741E+01		2.305E+01	1.108E+02	2.228E+00	0.157
BALA-140	-1.080E+01		1.061E+01	3.819E+01	8.257E-01	-0.283
LA-140	-4.895E+00		1.366E+02	6.247E+02	1.351E+01	-0.008
CE-141	-2.204E+01		2.835E+01	9.721E+01	1.999E+00	-0.227
CE-144	7.714E+01		1.025E+02	3.885E+02	8.033E+00	0.199
CEPR-144	1.576E+02		2.052E+02	7.784E+02	1.610E+01	0.202
PM-144	1.305E+00		3.722E+00	1.709E+01	3.453E-01	0.076
PM-146	3.997E+00		7.605E+00	3.251E+01	6.515E-01	0.123
EU-152	1.395E+01		2.826E+01	1.115E+02	2.231E+00	0.125
EU-154	-1.233E+01		7.148E+00	1.132E+01	2.396E-01	-1.088
EU-155	2.289E+01		5.725E+01	2.119E+02	4.461E+00	0.108
HF-181	-6.755E+00		5.295E+00	1.754E+01	3.518E-01	-0.385
BI-207	2.931E+00		4.857E+00	2.141E+01	4.316E-01	0.137
TL-208	-4.734E-01		5.534E+00	2.274E+01	4.586E-01	-0.021
BI-210M	-1.160E+00		1.437E+01	5.493E+01	1.102E+00	-0.021
BI-212	2.204E+01		3.742E+01	2.014E+02	6.155E+00	0.109
PB-212	3.083E+01		2.258E+01	9.075E+01	1.825E+00	0.340
BI-214	5.203E+00		1.446E+01	5.804E+01	1.173E+00	0.090
PB-214	-3.176E+01		2.410E+01	6.846E+01	1.369E+00	-0.464
RA-223	-4.785E+01		6.310E+01	2.241E+02	4.495E+00	-0.213
RA-224DA	3.110E+01		2.279E+01	9.157E+01	1.842E+00	0.340
RA-226DA	5.203E+00		1.446E+01	5.804E+01	1.173E+00	0.090
AC-227DA	-1.015E+02		8.430E+01	2.889E+02	5.811E+00	-0.351
AC-228	-1.429E+01		1.443E+01	5.159E+01	1.064E+00	-0.277
RA-228DA	-1.433E+01		1.448E+01	5.174E+01	1.067E+00	-0.277
TH-228DA	-1.330E+00		1.554E+01	6.386E+01	1.288E+00	-0.021
TH-232DA	4.498E+01		6.166E+01	2.467E+02	4.934E+00	0.182
TH-234DA	2.240E+02		2.243E+02	1.647E+03	3.419E+01	0.136
U-234DA	7.744E+00		4.221E+01	1.665E+02	3.334E+00	0.047
U-235HP	2.594E+01		1.091E+02	3.981E+02	8.193E+00	0.065
NP-237DA	-8.072E+00		2.172E+01	7.988E+01	1.598E+00	-0.101
U-238DA	-3.176E+01		2.410E+01	6.846E+01	1.369E+00	-0.464
U-238DHP	5.608E+01		4.910E+02	1.813E+03	4.020E+01	0.031
AM-241HP	-3.527E+01		4.383E+01	1.512E+02	3.378E+00	-0.233


STL Richland WA.
BA133
Batch ID: 6129284
Sample ID: H4X1R1AC
Detector ID: GER13 1
^{40}K
^{133}Ba
^{133}Ba
^{133}Ba
^{133}Ba, ^{208}Tl
^{133}Ba
Counts
100
50
20
10
5
2
1
Energy
50
100
200
500
1000
2000
()
Acquisition Start: 14-JUN-2006 13:20:41.20
Preset Live Time: 0 00:30:00.00
Elapsed Live Time: 0 00:30:00.00
Energy Coefficients:
Offset: -5.88556E-01
Slope: 2.50712E-01
Quadrature: -9.27656E-08

SAMPLE IDENTIFICATION: H4X1R1AC

CONFIGURATION ID: GER13:H4X1R1AC_140661320
TITLE : BA133
SAMPLE ID : H4X1R1AC

REPORT DATE: 14-JUN-06
ACQUIRE DATE: 14-JUN-06 13:20:41
ELAPSED LIVE TIME: 1800.0 Sec
PRESET LIVE TIME: 0 00:30:00

SAMPLE DATE: 5-JUN-2006 12:00:00.00
CALIB DATE: 14-JUN-2006 05:43:45.07
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: -.5886E+00 keV
ENERGY SLOPE: 2.5071E-01 keV/C
ENERGY Q COEFF: -.9277E-07 keV/C^^2
PEAK SENSITIVITY: 5.000

FWHM OFFSET: 4.0477E-01 keV
FWHM SLOPE: 4.4272E-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 14-JUN-2006 13:51:32

Configuration : $DISK1:[GER13.SAMPLE]H4X1R1AC_140661320.CNF;1
Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6
Sample title : BA133
Sample date : 5-JUN-2006 12:00:00 Acquisition date : 14-JUN-2006 13:20:41
Sample ID : H4X1R1AC 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 : 19.47 End energy : 2047.02
Sensitivity : 5.00 Gaussian : 10.00
Critical level : No

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	81.97	213	78	0.88	329.32	323	15	1.18E-01	11.7	
2	0	277.44	84	27	2.82	1109.40	1094	31	4.66E-02	22.3	
3	0	302.58	106	26	1.64	1209.78	1197	20	5.89E-02	15.1	
4	0	355.75	349	0	1.21	1422.03	1412	20	1.94E-01	5.4	
5	0	383.65	37	20	0.78	1533.47	1527	13	2.03E-02	29.9	
6	0	1460.83*	0	5	1.46	5841.71	5830	21	2.59E-04	*****	

Flag: "*" = Peak area was modified by background subtraction

VMS Nuclide Identification Report V3.0 Generated 14-JUN-2006 13:51:32

Configuration : $DISK1:[GER13.SAMPLE]H4X1R1AC_140661320.CNF;1
Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.3
Sample title : BA133
Sample date : 5-JUN-2006 12:00:00 Acquisition date : 14-JUN-2006 13:20:41
Sample ID : H4X1R1AC 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	0	10.67*	2.719E+00	5.355E+00	5.355E+00	1945.22

Nuclide Type: FP

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected DPM/SAMPL	Decay Corr DPM/SAMPL	1-Sigma %Error
BA-133	81.00	213	33.00	2.704E+00	7.943E+02	7.956E+02	12.86
	276.40	84	6.90	2.897E+00	1.400E+03	1.402E+03	22.96
	302.84	106	17.80	2.900E+00	6.850E+02	6.861E+02	16.04
	356.00	349	62.05*	2.903E+00	6.458E+02	6.469E+02	7.59
	383.85	37	8.70	2.902E+00	4.818E+02	4.826E+02	30.41

Flag: "*" = Keyline

None

Flags: "T" = Tentatively associated

Sample ID : H4X1R1AC Acquisition date : 14-JUN-2006 13:20:41

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	1.421E+03	22.96	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 14-JUN-2006 13:51:34

Configuration : $DISK1:[GER13.SAMPLE]H4X1R1AC_140661320.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 : 5-JUN-2006 12:00:00 Acquisition date : 14-JUN-2006 13:20:41
Sample ID : H4X1R1AC 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	5.355E+00	1.042E+02	1.699E+02	3.628E+00	0.032
BA-133	6.469E+02	4.912E+01	5.361E+01	1.072E+00	12.066

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (DPM/SAMPL)	K.L. Ided	Act error	MDA (DPM/SAMPL)	MDA error	Act/MDA
BE-7	-1.387E+02		6.661E+01	2.005E+02	4.022E+00	-0.692
NA-22	-6.013E+00		3.646E+00	1.132E+01	2.388E-01	-0.531
SC-46	2.395E+00		5.477E+00	2.431E+01	5.076E-01	0.099
CR-51	-9.132E+01		9.903E+01	3.395E+02	6.792E+00	-0.269
MN-54	-1.094E+01		5.816E+00	1.801E+01	3.688E-01	-0.608
CO-57	-2.372E+01		1.050E+02	3.792E+02	7.816E+00	-0.063
CO-58	-7.164E+00		5.830E+00	1.982E+01	4.053E-01	-0.361
FE-59	-1.757E+01		9.623E+00	2.928E+01	6.105E-01	-0.600
CO-60	1.174E+00		4.060E+00	1.719E+01	3.641E-01	0.068
ZN-65	-2.246E+01		9.000E+00	2.248E+01	4.693E-01	-0.999
SE-75	-6.616E+00		1.534E+01	5.498E+01	1.103E+00	-0.120
SR-85	-2.246E+01		1.103E+01	3.421E+01	6.873E-01	-0.657
Y-88	1.404E+00		3.518E+00	1.607E+01	3.511E-01	0.087
NB-94	4.433E+00		5.838E+00	2.370E+01	4.866E-01	0.187
NB-95	-7.259E+00		6.266E+00	2.166E+01	4.417E-01	-0.335
TC-95M	-1.134E+01		1.697E+01	5.830E+01	1.178E+00	-0.195
ZR-95	-3.714E+00		1.172E+01	4.390E+01	8.945E-01	-0.085
ZRNB-95	-1.338E+01		1.155E+01	3.993E+01	8.141E-01	-0.335
MO-99	-9.421E+01		1.146E+02	4.015E+02	8.261E+00	-0.235
RH-101	5.512E-01		1.648E+01	5.826E+01	1.178E+00	0.009
RH-102M	2.111E+00		6.041E+00	2.374E+01	4.760E-01	0.089
RU-103	6.201E+00		8.841E+00	3.462E+01	6.949E-01	0.179
RU-106DA	7.261E+01		5.674E+01	2.424E+02	4.899E+00	0.299
AG-108M	9.149E+00		8.377E+00	3.321E+01	6.650E-01	0.276
AG-110M	6.366E+00		6.751E+00	2.901E+01	5.962E-01	0.219
SN-113DA	-5.649E+00		1.238E+01	4.481E+01	8.965E-01	-0.126

Sample ID : H4X1R1AC Acquisition date : 14-JUN-2006 13:20:41

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (DPM/SAMPL)	K.L. Ided	Act error	MDA (DPM/SAMPL)	MDA error	Act/MDA
SB-124	-3.755E+00		7.287E+00	2.642E+01	5.332E-01	-0.142
SB-125	2.050E+01		2.389E+01	9.470E+01	1.896E+00	0.216
SN-126DA	-5.046E+00		5.563E+00	1.941E+01	3.933E-01	-0.260
I-131	-4.986E+00		2.119E+01	7.558E+01	1.512E+00	-0.066
CS-134	2.594E+00		5.815E+00	2.389E+01	4.881E-01	0.109
CS-137DA	7.472E+00		7.289E+00	2.972E+01	6.019E-01	0.251
LA-138	-6.919E+00		3.993E+00	1.024E+01	2.182E-01	-0.676
CE-139	1.706E+01		1.448E+01	5.479E+01	1.117E+00	0.311
BA-140	3.591E+01		4.062E+01	1.657E+02	3.332E+00	0.217
BALA-140	-1.271E+01		1.406E+01	5.080E+01	1.094E+00	-0.250
LA-140	-1.102E+02		1.742E+02	6.608E+02	1.423E+01	-0.167
CE-141	3.702E+01		2.644E+01	1.024E+02	2.102E+00	0.362
CE-144	-7.272E+01		1.105E+02	3.718E+02	7.675E+00	-0.196
CEPR-144	-1.454E+02		2.211E+02	7.437E+02	1.535E+01	-0.196
PM-144	-7.537E+00		6.503E+00	2.214E+01	4.473E-01	-0.340
PM-146	3.704E+00		1.184E+01	4.455E+01	8.927E-01	0.083
EU-152	6.256E+00		3.283E+01	1.198E+02	2.396E+00	0.052
EU-154	-1.685E+01		1.022E+01	3.172E+01	6.692E-01	-0.531
EU-155	-3.662E+01		4.626E+01	1.587E+02	3.333E+00	-0.231
HF-181	7.588E+00		8.173E+00	3.341E+01	6.703E-01	0.227
BI-207	4.718E-01		6.178E+00	2.380E+01	4.796E-01	0.020
TL-208	1.003E+01		8.900E+00	3.756E+01	7.571E-01	0.267
BI-210M	8.793E+00		1.647E+01	6.279E+01	1.259E+00	0.140
BI-212	1.191E+02		8.641E+01	3.709E+02	1.133E+01	0.321
PB-212	-9.414E+00		2.412E+01	8.869E+01	1.783E+00	-0.106
BI-214	-1.041E+01		1.580E+01	6.418E+01	1.296E+00	-0.162
PB-214	9.353E+00		2.634E+01	9.394E+01	1.879E+00	0.100
RA-223	-9.731E+00		6.952E+01	2.515E+02	5.042E+00	-0.039
RA-224DA	-9.499E+00		2.434E+01	8.949E+01	1.799E+00	-0.106
RA-226DA	-1.031E+01		1.581E+01	6.423E+01	1.297E+00	-0.161
AC-227DA	7.527E+00		9.589E+01	3.380E+02	6.797E+00	0.022
AC-228	5.029E+00		1.893E+01	8.796E+01	1.811E+00	0.057
RA-228DA	5.044E+00		1.899E+01	8.822E+01	1.816E+00	0.057
TH-228DA	2.816E+01		2.500E+01	1.055E+02	2.127E+00	0.267
TH-232DA	1.857E+01		7.012E+01	2.573E+02	5.147E+00	0.072
TH-234DA	-6.535E+02		6.348E+02	2.256E+03	4.672E+01	-0.290
U-234DA	5.874E+01		5.561E+01	2.089E+02	4.183E+00	0.281
U-235HP	-2.743E+01		1.031E+02	3.703E+02	7.609E+00	-0.074
NP-237DA	-3.150E+01		2.427E+01	8.072E+01	1.615E+00	-0.390
U-238DA	9.353E+00		2.634E+01	9.394E+01	1.879E+00	0.100
U-238DHP	-1.371E+02		2.792E+02	1.005E+03	2.216E+01	-0.136
AM-241HP	-2.632E+01		2.937E+01	9.751E+01	2.166E+00	-0.270

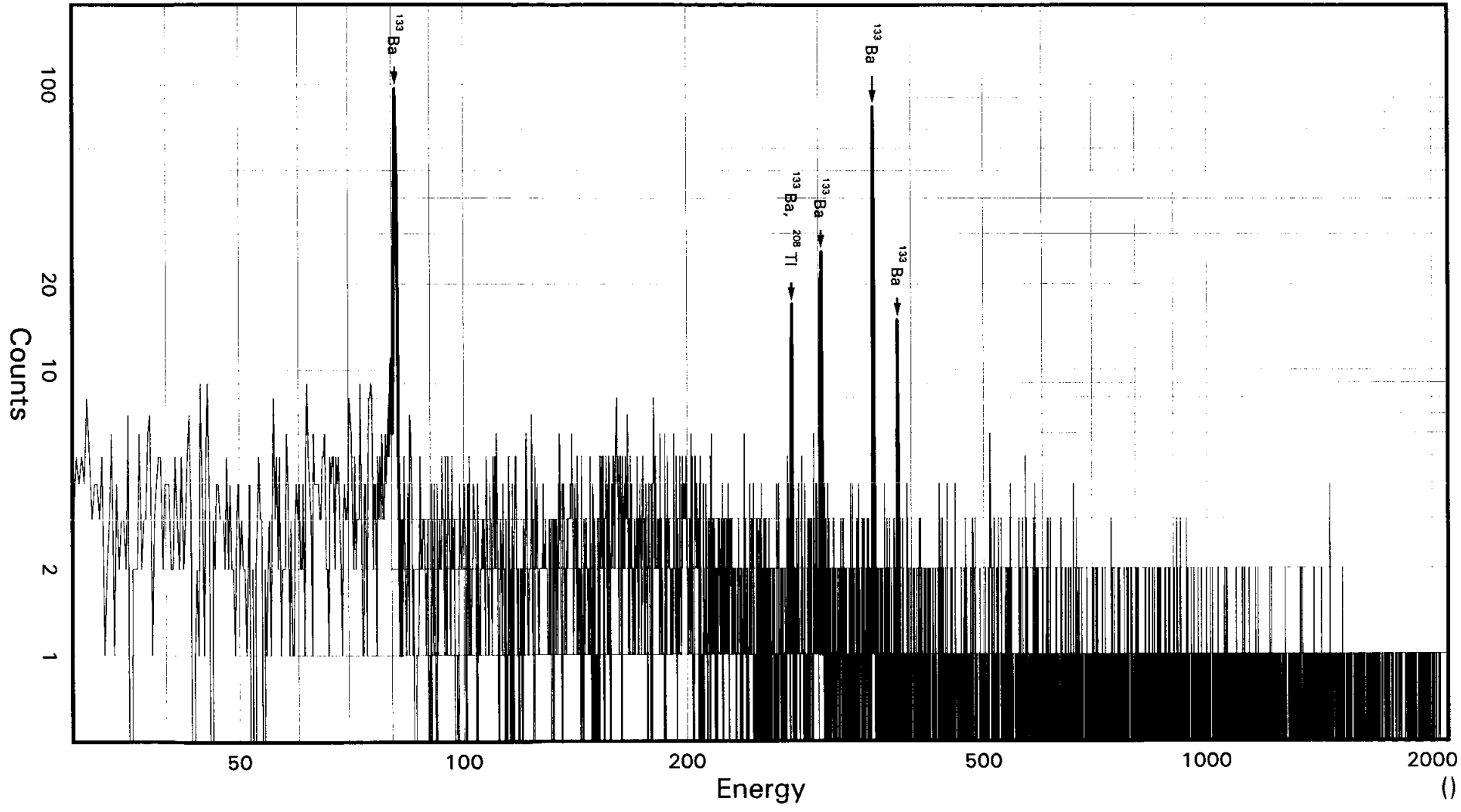
STL Richland WA.

BA133

Sample ID: H4X1T1AC

Detector ID: GER11 1

Batch ID: 6129284



Acquisition Start: 14-JUN-2006 13:20:58.00

Preset Live Time: 0 00:30:00.00

Elapsed Live Time: 0 00:30:00.00

Energy Coefficients:

Offset: -1.94186E+00

Slope: 2.50342E-01

Quadrature: 3.76880E-08

SAMPLE IDENTIFICATION: H4X1T1AC

CONFIGURATION ID: GER11:H4X1T1AC_140661320
TITLE : BA133
SAMPLE ID : H4X1T1AC

REPORT DATE: 14-JUN-06
ACQUIRE DATE: 14-JUN-06 13:20:58
ELAPSED LIVE TIME: 1800.0 Sec
PRESET LIVE TIME: 0 00:30:00

SAMPLE DATE: 5-JUN-2006 12:00:00.00
CALIB DATE: 14-JUN-2006 05:24:34.34
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: -.1942E+01 keV
ENERGY SLOPE: 2.5034E-01 keV/C
ENERGY Q COEFF: 3.7688E-08 keV/C^^2
PEAK SENSITIVITY: 5.000

FWHM OFFSET: 2.1872E-01 keV
FWHM SLOPE: 4.0499E-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 14-JUN-2006 13:51:47

Configuration : $DISK1:[GER11.SAMPLE]H4X1T1AC_140661320.CNF;1
Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6
Sample title : BA133
Sample date : 5-JUN-2006 12:00:00 Acquisition date : 14-JUN-2006 13:20:58
Sample ID : H4X1T1AC Sample quantity : 1.0000 SAMPL
Sample type : Sample geometry : BA133T15
Elapsed live time: 0 00:30:00.00 Elapsed real time: 0 00:30:00.95 0.1%
Start energy : 0.56 End energy : 2051.39
Sensitivity : 5.00 Gaussian : 10.00
Critical level : No

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	81.01	240	52	0.58	331.32	324	14	1.33E-01	9.1	
2	0	276.27	61	10	0.99	1111.13	1106	13	3.37E-02	16.7	
3	0	302.76	117	14	1.10	1216.93	1210	14	6.50E-02	11.5	
4	0	355.81	364	16	1.08	1428.74	1422	19	2.02E-01	6.0	
5	0	383.67	63	2	0.74	1539.97	1535	11	3.48E-02	13.6	

Flag: "*" = Peak area was modified by background subtraction

VMS Nuclide Identification Report V3.0 Generated 14-JUN-2006 13:51:48

Configuration : $DISK1:[GER11.SAMPLE]H4X1T1AC_140661320.CNF;1
Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.3
Sample title : BA133
Sample date : 5-JUN-2006 12:00:00 Acquisition date : 14-JUN-2006 13:20:58
Sample ID : H4X1T1AC Sample quantity : 1.0000 SAMPL
Sample type : Sample geometry : BA133T15
Elapsed live time: 0 00:30:00.00 Elapsed real time: 0 00:30:00.95 0.1%
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	240	33.00	2.679E+00	9.054E+02	9.069E+02	10.59
	276.40	61	6.90	2.873E+00	1.019E+03	1.021E+03	17.57
	302.84	117	17.80	2.876E+00	7.617E+02	7.629E+02	12.67
	356.00	364	62.05*	2.879E+00	6.788E+02	6.799E+02	8.03
	383.85	63	8.70	2.878E+00	8.327E+02	8.341E+02	14.64

Flag: "*" = Keyline

Unidentified Energy Lines
Sample ID : H4X1T1AC
Acquisition date : 14-JUN-2006 13:20:58

None

Flags: "T" = Tentatively associated

Rejected Report
Sample ID : H4X1T1AC
Acquisition date : 14-JUN-2006 13:20:58

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	1.034E+03	17.57	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 14-JUN-2006 13:51:50

Configuration : $DISK1:[GER11.SAMPLE]H4X1T1AC_140661320.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 : 5-JUN-2006 12:00:00 Acquisition date : 14-JUN-2006 13:20:58
Sample ID : H4X1T1AC Sample quantity : 1.0000 SAMPL
Sample type : Sample geometry : BA133T15
Elapsed live time: 0 00:30:00.00 Elapsed real time: 0 00:30:00.95 0.1%
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	6.799E+02	5.462E+01	3.361E+01	6.722E-01	20.231

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (DPM/SAMPL)	K.L. Ided	Act error	MDA (DPM/SAMPL)	MDA error	Act/MDA
BE-7	-1.884E+01		4.861E+01	1.881E+02	3.772E+00	-0.100
NA-22	2.299E+00		2.421E+00	1.301E+01	2.745E-01	0.177
K-40	-2.531E+01		5.100E+01	2.400E+02	5.125E+00	-0.105
SC-46	5.146E+00		5.684E+00	2.388E+01	4.987E-01	0.215
CR-51	7.890E+00		7.010E+01	2.765E+02	5.532E+00	0.029
MN-54	1.015E+00		3.696E+00	1.585E+01	3.247E-01	0.064
CO-57	-1.079E+02		7.795E+01	2.558E+02	5.273E+00	-0.422
CO-58	-2.746E+00		3.250E+00	1.208E+01	2.470E-01	-0.227
FE-59	-1.052E+01		8.016E+00	2.646E+01	5.518E-01	-0.398
CO-60	7.754E+00		3.990E+00	1.984E+01	4.202E-01	0.391
ZN-65	-6.761E-01		8.662E+00	3.444E+01	7.189E-01	-0.020
SE-75	1.030E+01		1.013E+01	4.176E+01	8.377E-01	0.247
SR-85	-2.274E+01		8.254E+00	2.391E+01	4.804E-01	-0.951
Y-88	-2.635E+00		1.869E+00	3.649E+00	7.974E-02	-0.722
NB-94	4.614E+00		3.422E+00	1.675E+01	3.440E-01	0.275
NB-95	1.694E+00		4.301E+00	1.884E+01	3.842E-01	0.090
TC-95M	-1.796E+01		1.397E+01	4.743E+01	9.583E-01	-0.379
ZR-95	-2.328E+00		7.798E+00	3.083E+01	6.282E-01	-0.076
ZRNB-95	2.811E+00		7.875E+00	3.441E+01	7.016E-01	0.082
MO-99	1.605E+01		9.550E+01	3.551E+02	7.306E+00	0.045
RH-101	6.278E+00		1.205E+01	4.680E+01	9.466E-01	0.134
RH-102M	-5.967E-01		4.918E+00	1.949E+01	3.909E-01	-0.031
RU-103	-2.758E+00		4.228E+00	1.648E+01	3.308E-01	-0.167
RU-106DA	-7.121E+00		4.269E+01	1.679E+02	3.392E+00	-0.042
AG-108M	-1.013E+01		6.177E+00	1.935E+01	3.876E-01	-0.523
AG-110M	2.934E+00		5.569E+00	2.444E+01	5.023E-01	0.120
SN-113DA	-1.700E+01		7.986E+00	2.311E+01	4.623E-01	-0.736

Sample ID : H4X1T1AC Acquisition date : 14-JUN-2006 13:20:58

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (DPM/SAMPL)	K.L. Ided	Act error	MDA (DPM/SAMPL)	MDA error	Act/MDA
SB-124	2.866E-03		4.723E+00	1.897E+01	3.828E-01	0.000
SB-125	7.819E+00		1.539E+01	6.401E+01	1.282E+00	0.122
SN-126DA	9.700E+00		4.934E+00	2.285E+01	4.629E-01	0.425
I-131	1.880E+01		1.391E+01	6.059E+01	1.212E+00	0.310
CS-134	-8.674E-01		2.612E+00	1.151E+01	2.351E-01	-0.075
CS-137DA	-1.902E+01		6.579E+00	2.603E+01	5.272E-01	-0.731
LA-138	1.664E-01		3.619E+00	1.717E+01	3.661E-01	0.010
CE-139	1.038E+01		1.221E+01	4.546E+01	9.268E-01	0.228
BA-140	-1.584E+01		3.015E+01	1.131E+02	2.275E+00	-0.140
BALA-140	4.264E+00		9.549E+00	4.592E+01	9.889E-01	0.093
LA-140	5.546E+01		1.242E+02	5.973E+02	1.286E+01	0.093
CE-141	5.501E+00		1.578E+01	6.093E+01	1.251E+00	0.090
CE-144	-4.042E+01		7.180E+01	2.539E+02	5.242E+00	-0.159
CEPR-144	-8.445E+01		1.433E+02	5.059E+02	1.044E+01	-0.167
PM-144	-7.205E+00		5.058E+00	1.638E+01	3.310E-01	-0.440
PM-146	8.645E+00		7.664E+00	3.279E+01	6.571E-01	0.264
EU-152	2.880E+01		2.221E+01	9.389E+01	1.878E+00	0.307
EU-154	8.921E+00		7.394E+00	3.967E+01	8.370E-01	0.225
EU-155	-2.980E+01		3.433E+01	1.217E+02	2.556E+00	-0.245
HF-181	6.119E+00		6.277E+00	2.765E+01	5.547E-01	0.221
BI-207	-5.730E+00		6.080E+00	2.115E+01	4.261E-01	-0.271
TL-208	1.150E+00		5.430E+00	2.198E+01	4.431E-01	0.052
BI-210M	-1.540E+00		1.217E+01	4.526E+01	9.078E-01	-0.034
BI-212	1.297E+00		5.016E+01	2.148E+02	6.562E+00	0.006
PB-212	2.417E+01		1.474E+01	6.185E+01	1.244E+00	0.391
BI-214	1.392E+01		1.082E+01	4.710E+01	9.510E-01	0.296
PB-214	-9.802E-01		1.766E+01	6.035E+01	1.207E+00	-0.016
RA-223	-8.711E-01		3.774E+01	1.450E+02	2.908E+00	-0.006
RA-224DA	2.439E+01		1.487E+01	6.241E+01	1.255E+00	0.391
RA-226DA	8.795E+00		1.145E+01	4.720E+01	9.529E-01	0.186
AC-227DA	-8.454E+00		5.388E+01	2.019E+02	4.060E+00	-0.042
AC-228	1.082E+01		1.599E+01	6.917E+01	1.424E+00	0.156
RA-228DA	1.085E+01		1.604E+01	6.938E+01	1.428E+00	0.156
TH-228DA	3.230E+00		1.525E+01	6.173E+01	1.244E+00	0.052
TH-232DA	3.872E+01		4.666E+01	1.919E+02	3.838E+00	0.202
TH-234DA	-3.683E+02		5.832E+02	2.214E+03	4.586E+01	-0.166
U-234DA	-2.848E+01		3.986E+01	1.364E+02	2.731E+00	-0.209
U-235HP	-2.827E+01		6.643E+01	2.376E+02	4.883E+00	-0.119
NP-237DA	-2.916E+01		1.623E+01	5.274E+01	1.055E+00	-0.553
U-238DA	-9.802E-01		1.766E+01	6.035E+01	1.207E+00	-0.016
U-238DHP	-3.040E+02		2.622E+02	8.636E+02	1.905E+01	-0.352
AM-241HP	-8.117E+00		2.183E+01	7.804E+01	1.734E+00	-0.104

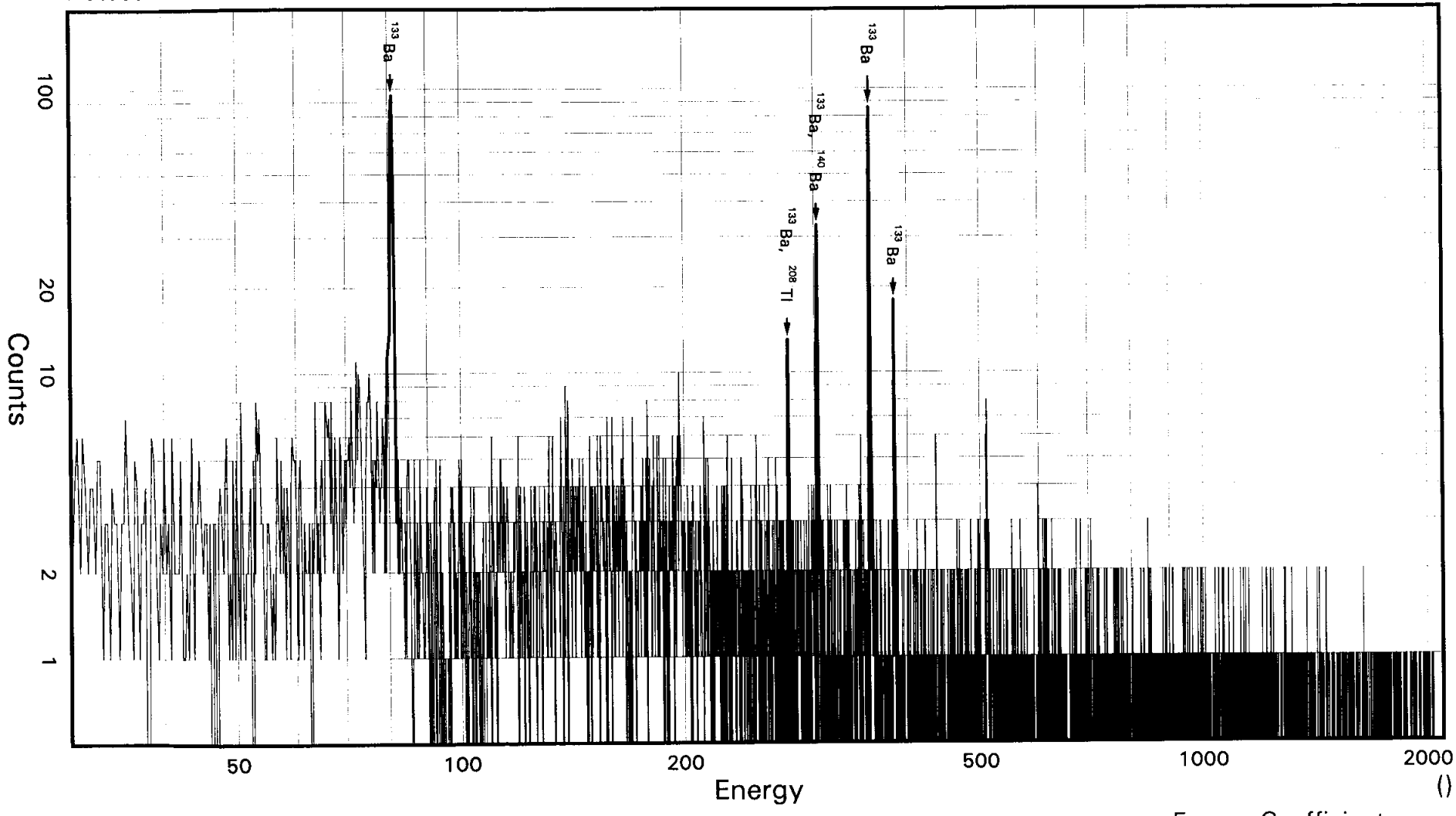
STL Richland WA.

BA133

Sample ID: H4X1V1AC

Detector ID: GER12 1

Batch ID: 6129284



Acquisition Start: 14-JUN-2006 13:21:02.71

Preset Live Time: 0 00:30:00.00

Elapsed Live Time: 0 00:30:00.00

Energy Coefficients:

Offset: 1.25125E+01

Slope: 2.47553E-01

Quadrature: -1.23727E-08

SAMPLE IDENTIFICATION: H4X1V1AC

CONFIGURATION ID: GER12:H4X1V1AC_140661321
TITLE : BA133
SAMPLE ID : H4X1V1AC

REPORT DATE: 14-JUN-06
ACQUIRE DATE: 14-JUN-06 13:21:02
ELAPSED LIVE TIME: 1800.0 Sec
PRESET LIVE TIME: 0 00:30:00

SAMPLE DATE: 5-JUN-2006 12:00:00.00
CALIB DATE: 14-JUN-2006 05:25:05.00
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: 1.2512E+01 keV
ENERGY SLOPE: 2.4755E-01 keV/C
ENERGY Q COEFF: -.1237E-07 keV/C^^2
PEAK SENSITIVITY: 5.000

FWHM OFFSET: 3.6475E-01 keV
FWHM SLOPE: 3.7941E-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 14-JUN-2006 13:52:04

Configuration : $DISK1:[GER12.SAMPLE]H4X1V1AC_140661321.CNF;1
Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6
Sample title : BA133
Sample date : 5-JUN-2006 12:00:00 Acquisition date : 14-JUN-2006 13:21:02
Sample ID : H4X1V1AC 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 : 12.76 End energy : 2039.64
Sensitivity : 5.00 Gaussian : 10.00
Critical level : No

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	80.89	338	46	0.78	276.23	268	15	1.88E-01	7.0	
2	0	276.46	46	13	0.90	1066.27	1061	14	2.57E-02	21.2	
3	0	302.88	147	10	0.98	1173.01	1166	17	8.18E-02	9.4	
4	0	356.02	410	17	1.09	1387.73	1379	21	2.28E-01	5.5	
5	0	383.98	56	11	0.53	1500.67	1489	19	3.13E-02	18.8	

Flag: "*" = Peak area was modified by background subtraction

VMS Nuclide Identification Report V3.0 Generated 14-JUN-2006 13:52:05

Configuration : $DISK1:[GER12.SAMPLE]H4X1V1AC_140661321.CNF;1
Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.3
Sample title : BA133
Sample date : 5-JUN-2006 12:00:00 Acquisition date : 14-JUN-2006 13:21:02
Sample ID : H4X1V1AC 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%
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	338	33.00	2.899E+00	1.178E+03	1.180E+03	8.83
	276.40	46	6.90	3.105E+00	7.194E+02	7.206E+02	21.84
	302.84	147	17.80	3.109E+00	8.866E+02	8.881E+02	10.87
	356.00	410	62.05*	3.111E+00	7.086E+02	7.098E+02	7.70
	383.85	56	8.70	3.111E+00	6.938E+02	6.949E+02	19.55

Flag: "*" = Keyline

Sample ID : H4X1V1AC
Acquisition date : 14-JUN-2006 13:21:02

None

Flags: "T" = Tentatively associated

Sample ID : H4X1V1AC
Acquisition date : 14-JUN-2006 13:21:02

Nuclide	Half-life	Half-Life Ratio	Energy	%Abund	Activity (DPM/SAMPL)	1-Sigma %Error	Rejected by
BA-140	12.79D	0.71	162.64	6.70	--- Not Found ---		Abun.
			304.84	4.50	5.732E+03	10.87	
			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	7.300E+02	21.84	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 14-JUN-2006 13:52:07

Configuration : $DISK1:[GER12.SAMPLE]H4X1V1AC_140661321.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 : 5-JUN-2006 12:00:00 Acquisition date : 14-JUN-2006 13:21:02
Sample ID : H4X1V1AC 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%
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	7.098E+02	5.464E+01	3.579E+01	7.157E-01	19.835

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (DPM/SAMPL)	K.L. Ided	Act error	MDA (DPM/SAMPL)	MDA error	Act/MDA
BE-7	1.133E+01		4.594E+01	1.859E+02	3.728E+00	0.061
NA-22	-9.495E-02		2.322E+00	1.055E+01	2.224E-01	-0.009
K-40	-7.956E+01		4.143E+01	2.014E+02	4.295E+00	-0.395
SC-46	5.677E-02		3.792E+00	1.578E+01	3.293E-01	0.004
CR-51	2.375E+01		6.915E+01	2.692E+02	5.386E+00	0.088
MN-54	-2.084E+00		3.846E+00	1.469E+01	3.007E-01	-0.142
CO-57	-2.615E+01		7.813E+01	2.812E+02	5.792E+00	-0.093
CO-58	1.367E+00		3.945E+00	1.697E+01	3.468E-01	0.081
FE-59	-6.631E+00		5.956E+00	2.110E+01	4.396E-01	-0.314
CO-60	1.219E+00		2.507E+00	1.223E+01	2.587E-01	0.100
ZN-65	1.773E+00		4.908E+00	2.356E+01	4.915E-01	0.075
SE-75	-3.713E+00		1.129E+01	4.129E+01	8.282E-01	-0.090
SR-85	-2.299E+01		9.453E+00	2.805E+01	5.635E-01	-0.819
Y-88	-1.258E-02		2.500E+00	1.157E+01	2.523E-01	-0.001
NB-94	-6.709E-01		2.987E+00	1.238E+01	2.541E-01	-0.054
NB-95	1.682E+00		4.617E+00	1.964E+01	4.002E-01	0.086
TC-95M	3.340E-02		1.231E+01	4.441E+01	8.972E-01	0.001
ZR-95	-3.452E+00		7.908E+00	3.068E+01	6.248E-01	-0.113
ZRNB-95	3.100E+00		8.510E+00	3.619E+01	7.377E-01	0.086
MO-99	-1.568E+01		9.418E+01	3.479E+02	7.153E+00	-0.045
RH-101	1.338E+01		1.373E+01	5.176E+01	1.047E+00	0.259
RH-102M	7.834E-01		4.458E+00	1.795E+01	3.600E-01	0.044
RU-103	2.865E+00		6.549E+00	2.613E+01	5.246E-01	0.110
RU-106DA	-1.187E+01		4.318E+01	1.674E+02	3.382E+00	-0.071
AG-108M	-1.674E+01		5.912E+00	1.560E+01	3.124E-01	-1.073
AG-110M	-6.291E+00		5.845E+00	2.036E+01	4.182E-01	-0.309
SN-113DA	5.724E+00		6.687E+00	2.915E+01	5.831E-01	0.196

Sample ID : H4X1V1AC Acquisition date : 14-JUN-2006 13:21:02

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (DPM/SAMPL)	K.L. Ided	Act error	MDA (DPM/SAMPL)	MDA error	Act/MDA
SB-124	4.815E+00		5.142E+00	2.205E+01	4.449E-01	0.218
SB-125	-1.310E+01		1.394E+01	4.968E+01	9.948E-01	-0.264
SN-126DA	2.053E+00		4.095E+00	1.721E+01	3.486E-01	0.119
I-131	-3.051E+01		1.531E+01	4.849E+01	9.698E-01	-0.629
CS-134	2.758E+00		4.033E+00	1.820E+01	3.717E-01	0.152
CS-137DA	2.646E+00		4.088E+00	1.814E+01	3.673E-01	0.146
LA-138	3.469E+00		5.395E+00	2.410E+01	5.131E-01	0.144
CE-139	1.329E+01		1.022E+01	4.008E+01	8.169E-01	0.331
BA-140	3.529E+01		2.290E+01	1.107E+02	2.227E+00	0.319
BALA-140	-4.085E+00		4.091E+00	1.066E+01	2.292E-01	-0.383
LA-140	2.412E+01		3.520E+01	3.022E+02	6.499E+00	0.080
CE-141	9.827E+00		2.050E+01	7.702E+01	1.581E+00	0.128
CE-144	3.703E+01		7.229E+01	2.760E+02	5.692E+00	0.134
CEPR-144	7.491E+01		1.446E+02	5.523E+02	1.139E+01	0.136
PM-144	3.241E+00		4.546E+00	1.922E+01	3.881E-01	0.169
PM-146	-1.527E+00		6.919E+00	2.652E+01	5.313E-01	-0.058
EU-152	3.285E+01		2.551E+01	1.017E+02	2.033E+00	0.323
EU-154	-2.657E-01		6.507E+00	2.957E+01	6.231E-01	-0.009
EU-155	-2.009E+01		2.687E+01	9.849E+01	2.066E+00	-0.204
HF-181	-3.644E+00		6.511E+00	2.380E+01	4.774E-01	-0.153
BI-207	-1.800E+00		3.762E+00	1.459E+01	2.940E-01	-0.123
TL-208	1.512E+00		4.562E+00	1.924E+01	3.879E-01	0.079
BI-210M	6.309E+00		1.265E+01	4.916E+01	9.859E-01	0.128
BI-212	1.089E+01		6.104E+01	2.479E+02	7.571E+00	0.044
PB-212	3.354E+01		1.542E+01	6.523E+01	1.311E+00	0.514
BI-214	5.605E-01		1.090E+01	4.247E+01	8.572E-01	0.013
PB-214	-5.038E+00		1.749E+01	5.593E+01	1.119E+00	-0.090
RA-223	-3.153E+01		5.114E+01	1.813E+02	3.636E+00	-0.174
RA-224DA	3.384E+01		1.556E+01	6.582E+01	1.323E+00	0.514
RA-226DA	4.668E-01		1.089E+01	4.240E+01	8.559E-01	0.011
AC-227DA	-3.684E+01		5.955E+01	2.139E+02	4.302E+00	-0.172
AC-228	-2.405E+00		1.236E+01	4.991E+01	1.027E+00	-0.048
RA-228DA	-2.412E+00		1.240E+01	5.006E+01	1.030E+00	-0.048
TH-228DA	4.246E+00		1.281E+01	5.405E+01	1.089E+00	0.079
TH-232DA	-1.675E+01		4.489E+01	1.626E+02	3.253E+00	-0.103
TH-234DA	-5.510E+02		4.710E+02	1.594E+03	3.299E+01	-0.346
U-234DA	-8.430E+00		3.629E+01	1.314E+02	2.631E+00	-0.064
U-235HP	1.521E+01		8.173E+01	3.007E+02	6.175E+00	0.051
NP-237DA	1.947E+01		1.577E+01	6.512E+01	1.303E+00	0.299
U-238DA	-5.038E+00		1.749E+01	5.593E+01	1.119E+00	-0.090
U-238DHP	7.974E+01		2.087E+02	7.875E+02	1.734E+01	0.101
AM-241HP	2.133E+01		2.346E+01	9.086E+01	2.014E+00	0.235

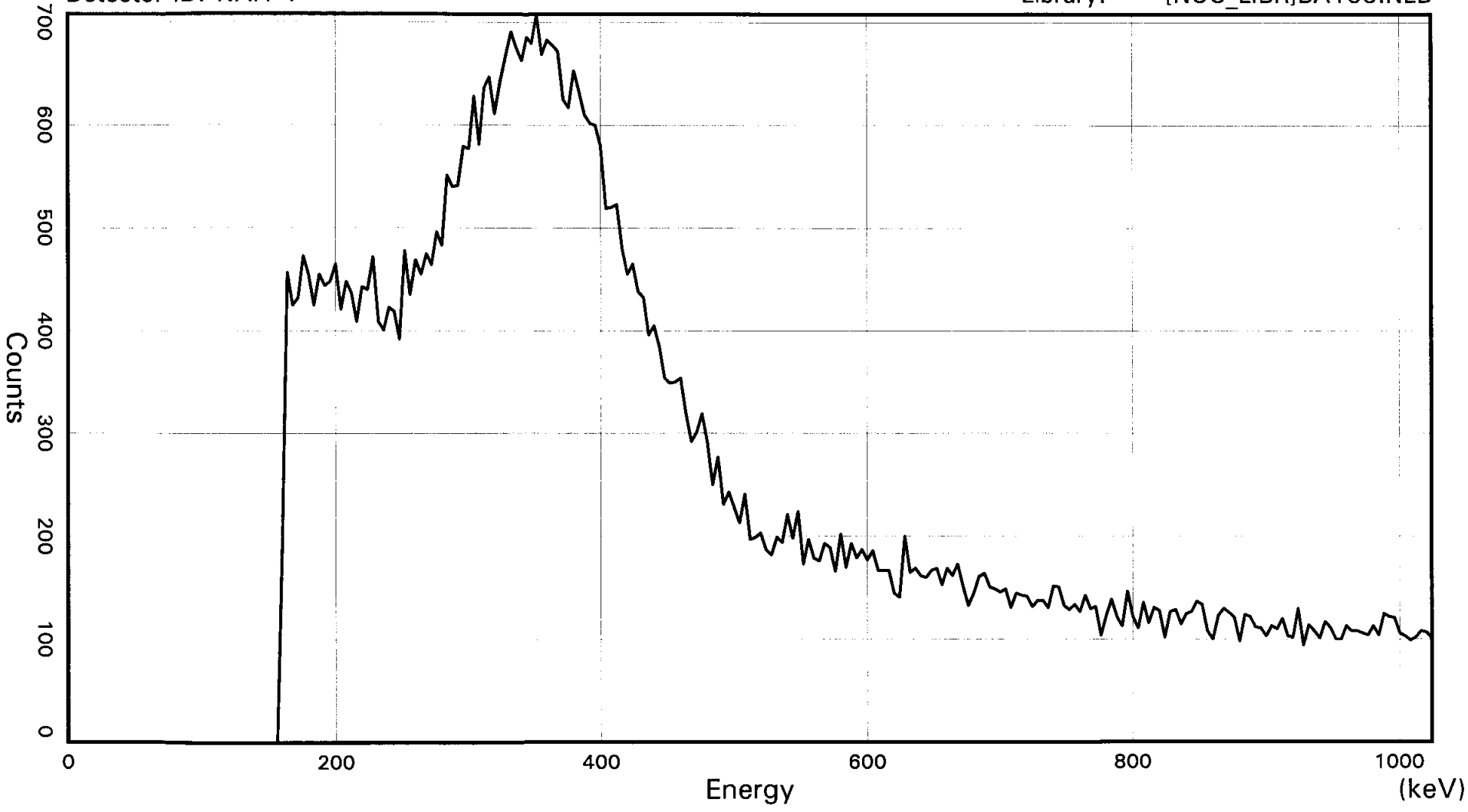
STL Richland WA.

BA133

Sample ID: H4X1W1AC

Detector ID: NAI1 1

Library: [NUC_LIBR]BA133.NLB



Acquisition Start:	14-JUN-2006 13:54:04.36	Start Channel:	80
Preset Live Time:	0 00:30:00	End Channel:	113
Elapsed Live Time:	0 00:30:00	Iterations:	5
Weighting:	DERIVED	Gain shift:	Iter

SAMPLE IDENTIFICATION: H4X1W1AC

CONFIGURATION ID: NAI1:H4X1W1AC_140661354
TITLE : BA133
SAMPLE ID : H4X1W1AC

REPORT DATE: 14-JUN-06
ACQUIRE DATE: 14-JUN-06 13:54:04
ELAPSED LIVE TIME: 1800.0 Sec
PRESET LIVE TIME: 0 00:30:00

SAMPLE DATE: 5-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 14-JUN-2006 14:24:09

Configuration	: RDND06$DKA100:[NAI1.SAMPLE]H4X1W1AC_140661354.CNF;1		
Analyses by	: NAI V3.0		
Sample title	: BA133		
Sample date	: 5-JUN-2006 12:00:00	Acquisition date	: 14-JUN-2006 13:54:04
Sample ID	: H4X1W1AC	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:	3.9	4.7	4.1	4.1	4.3	2.3	2.6	1.5
88:	2.6	1.2	0.5	0.0	0.3	-2.3	-0.7	0.5
96:	-0.2	-1.1	-0.7	-1.3	-3.8	-3.1	-2.8	-2.4
104:	-4.5	-5.0	-2.7	-3.4	-3.8	-4.5	-3.2	-3.7
112:	-4.8	-4.1						

List of Suspicious Channels

81 82 83 84 85

Iteration	Chi-Squared	Threshold Shift	Gain Shift
1	7.77E+00	0.00E+00	1.03E+00
2	2.56E+00	0.00E+00	1.06E+00
3	8.90E-01	0.00E+00	1.07E+00

Sample ID : H4X1W1AC
Acquisition date : 14-JUN-2006 13:54:04

Brief Report

Nuclide	Activity DPM/sampl	1-Sigma Error
BA-133	648.	8.48

Total Activity :	648.	

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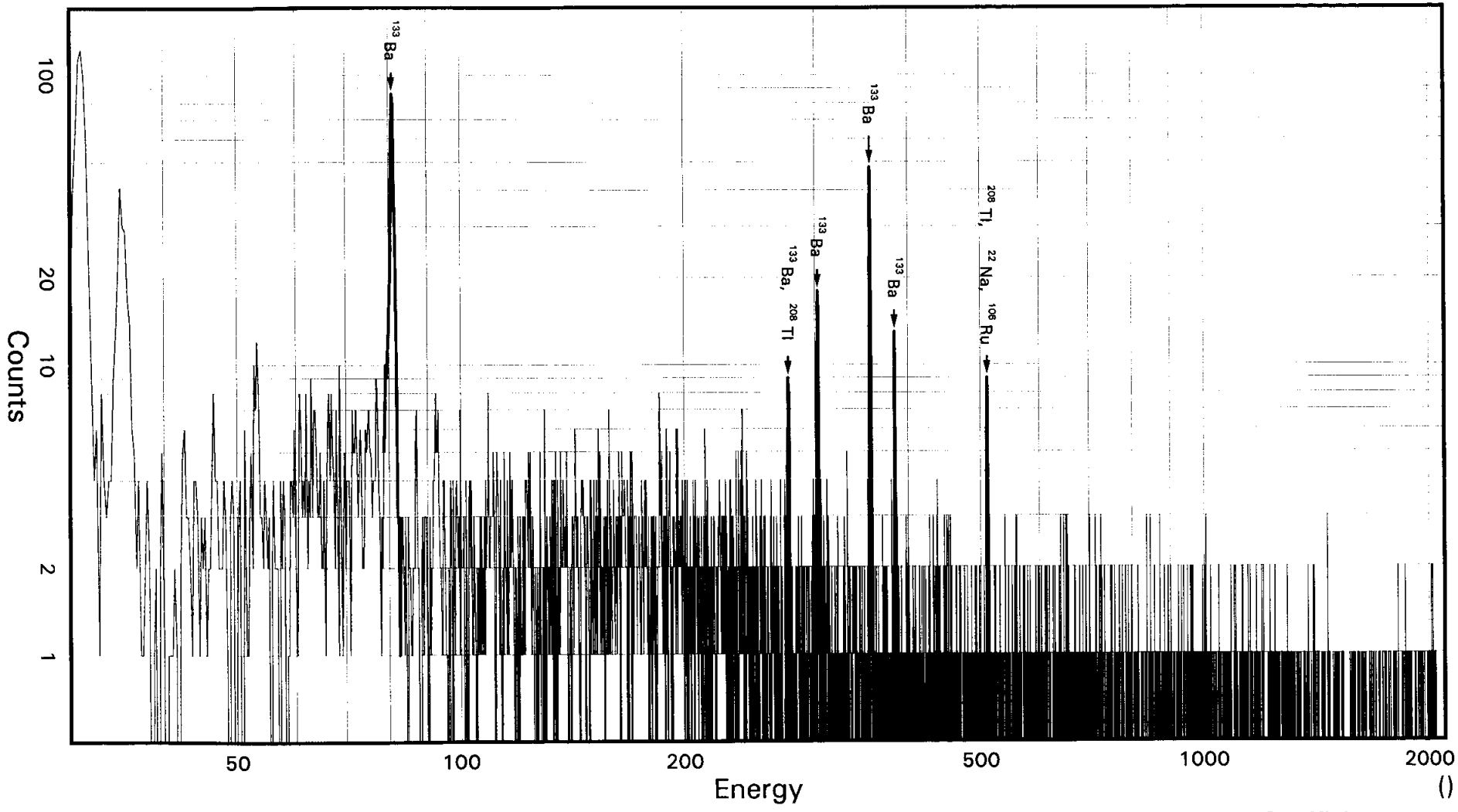
BA133

Sample ID: H4X1X1AC

Detector ID: GER5 1

Batch ID: 6129284



Acquisition Start: 14-JUN-2006 13:54:10.29

Preset Live Time: 0 00:30:00.00

Elapsed Live Time: 0 00:30:00.00

Energy Coefficients:

Offset: -3.90595E-01

Slope: 2.49428E-01

Quadrature: -2.97805E-09

SAMPLE IDENTIFICATION: H4X1X1AC

CONFIGURATION ID: GER5:H4X1X1AC_140661354
TITLE : BA133
SAMPLE ID : H4X1X1AC

REPORT DATE: 14-JUN-06
ACQUIRE DATE: 14-JUN-06 13:54:10
ELAPSED LIVE TIME: 1800.0 Sec
PRESET LIVE TIME: 0 00:30:00

SAMPLE DATE: 5-JUN-2006 12:00:00.00
CALIB DATE: 14-JUN-2006 05:22:50.27
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: -.3906E+00 keV
ENERGY SLOPE: 2.4943E-01 keV/C
ENERGY Q COEFF: -.2978E-08 keV/C^^2
PEAK SENSITIVITY: 5.000

FWHM OFFSET: 8.0617E-01 keV
FWHM SLOPE: 2.2993E-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 14-JUN-2006 14:24:27

Configuration : RDND06$DKA100:[GER5.SAMPLE]H4X1X1AC_140661354.CNF;1
Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6
Sample title : BA133
Sample date : 5-JUN-2006 12:00:00 Acquisition date : 14-JUN-2006 13:54:10
Sample ID : H4X1X1AC 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 : 19.56 End energy : 2042.73
Sensitivity : 5.00 Gaussian : 10.00
Critical level : No

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	3	31.01	487	80	0.97	125.90	119	38	2.71E-01	5.7	8.51E-01
2	3	35.31	164	27	1.25	143.13	119	38	9.12E-02	13.8	
3	0	52.97*	30	23	0.89	213.95	209	11	1.67E-02	36.0	
4	0	80.88	338	54	0.76	325.84	317	18	1.88E-01	7.4	
5	0	276.35	38	9	1.09	1109.51	1102	12	2.09E-02	22.9	
6	0	302.67	77	15	1.20	1215.04	1206	16	4.27E-02	16.3	
7	0	355.89	242	4	1.04	1428.43	1419	18	1.34E-01	6.8	
8	0	383.85	39	6	0.42	1540.52	1534	13	2.14E-02	21.1	
9	4	510.92*	11	4	1.33	2050.00	2042	18	6.03E-03	78.0	1.87E+00

Flag: "*" = Peak area was modified by background subtraction

VMS Nuclide Identification Report V3.1 Generated 14-JUN-2006 14:24:27

Configuration : RDND06$DKA100:[GER5.SAMPLE]H4X1X1AC_140661354.CNF;1
Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.4
Sample title : BA133
Sample date : 5-JUN-2006 12:00:00 Acquisition date : 14-JUN-2006 13:54:10
Sample ID : H4X1X1AC 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	338	33.00	1.924E+00	1.777E+03	1.780E+03	9.23
	276.40	38	6.90	2.077E+00	8.750E+02	8.764E+02	23.49
	302.84	77	17.80	2.080E+00	6.920E+02	6.931E+02	17.12
	356.00	242	62.05*	2.082E+00	6.238E+02	6.248E+02	8.64
	383.85	39	8.70	2.081E+00	7.106E+02	7.118E+02	21.74

Flag: "*" = Keyline

Sample ID : H4X1X1AC Acquisition date : 14-JUN-2006 13:54:10

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
3	31.01	487	80	0.97	125.90	119	38	2.71E-01	5.7	1.68E+00	
3	35.31	164	27	1.25	143.13	119	38	9.12E-02	13.8	1.72E+00	
0	52.97	30	23	0.89	213.95	209	11	1.67E-02	36.0	1.83E+00	
4	510.92	11	4	1.33	2050.00	2042	18	6.03E-03	78.0	2.07E+00	T

Flags: "T" = Tentatively associated

Sample ID : H4X1X1AC Acquisition date : 14-JUN-2006 13:54:10

Nuclide	Half-life	Half-Life Ratio	Energy	%Abund	Activity (DPM/SAMPL)	1-Sigma %Error	Rejected by
NA-22	2.60Y	0.01	511.00	179.68	9.786E+00	78.14	Abun.
			1274.54*	99.94	--- Not Found ---		
		% Abundances Found =		64.26			
RU-106DA	368.20D	0.02	511.85	20.60	8.625E+01	78.14	Abun.
			621.84*	9.80	--- Not Found ---		
		% Abundances Found =		67.76			
TL-208	1.41E+10Y	0.00	277.35	6.80	8.879E+02	23.49	Abun.
			510.84	21.60	8.087E+01	78.14	
			583.14*	84.20	--- Not Found ---		
			860.37	12.46	--- Not Found ---		
		% Abundances Found =		22.71			

Flag: "*" = Keyline

VMS Nuclide Identification Report V3.1 Generated 14-JUN-2006 14:24:29

Configuration : RDND06$DKA100:[GER5.SAMPLE]H4X1X1AC_140661354.CNF;1
Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.4,WTMEAN/KEY V1.8
Analyses by : MINACT V2.8
Sample title : BA133
Sample date : 5-JUN-2006 12:00:00 Acquisition date : 14-JUN-2006 13:54:10
Sample ID : H4X1X1AC 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	6.248E+02	5.396E+01	5.341E+01	1.068E+00	11.700

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (DPM/SAMPL)	K.L. Ided	Act error	MDA (DPM/SAMPL)	MDA error	Act/MDA
BE-7	-8.905E+01		6.133E+01	2.024E+02	4.061E+00	-0.440
NA-22	3.494E+00		4.163E+00	2.052E+01	4.352E-01	0.170
NA-24	-1.825E-02		3.178E-02	Half-Life too short		
K-40	-4.775E+01		5.734E+01	2.806E+02	6.029E+00	-0.170
SC-46	8.954E+00		4.850E+00	2.551E+01	5.348E-01	0.351
CR-51	1.563E+02		9.767E+01	4.233E+02	8.469E+00	0.369
MN-54	1.530E-01		3.350E+00	1.572E+01	3.227E-01	0.010
CO-57	3.937E+00		1.267E+02	4.530E+02	9.364E+00	0.009
CO-58	-3.307E+00		6.166E+00	2.364E+01	4.844E-01	-0.140
FE-59	-1.481E+01		1.120E+01	3.675E+01	7.693E-01	-0.403
CO-60	-3.367E+00		3.399E+00	1.258E+01	2.677E-01	-0.268
ZN-65	-3.516E-01		6.964E+00	3.148E+01	6.599E-01	-0.011
SE-75	-8.795E+00		1.786E+01	6.380E+01	1.280E+00	-0.138
SR-85	1.337E+01		9.338E+00	3.654E+01	7.344E-01	0.366
Y-88	-1.805E+00		3.218E+00	1.384E+01	3.050E-01	-0.130
NB-94	6.618E+00		4.666E+00	2.323E+01	4.781E-01	0.285
NB-95	2.127E-01		4.718E+00	2.109E+01	4.309E-01	0.010
TC-95M	-7.650E+00		1.902E+01	6.846E+01	1.385E+00	-0.112
ZR-95	1.004E+01		8.551E+00	4.272E+01	8.720E-01	0.235
ZRNB-95	3.920E-01		8.693E+00	3.887E+01	7.940E-01	0.010
MO-99	-2.679E+02		1.445E+02	4.494E+02	9.271E+00	-0.596
RH-101	9.669E+00		1.727E+01	6.519E+01	1.320E+00	0.148
RH-102M	8.585E+00		5.632E+00	2.696E+01	5.408E-01	0.318
RU-103	9.155E-02		6.675E+00	2.777E+01	5.577E-01	0.003
RU-106DA	-1.226E+02		5.251E+01	1.236E+02	2.500E+00	-0.992
AG-108M	-1.497E+01		9.738E+00	3.224E+01	6.458E-01	-0.464
AG-110M	4.681E+00		5.705E+00	2.797E+01	5.763E-01	0.167

Sample ID : H4X1X1AC Acquisition date : 14-JUN-2006 13:54:10

---- Non-Identified Nuclides ----

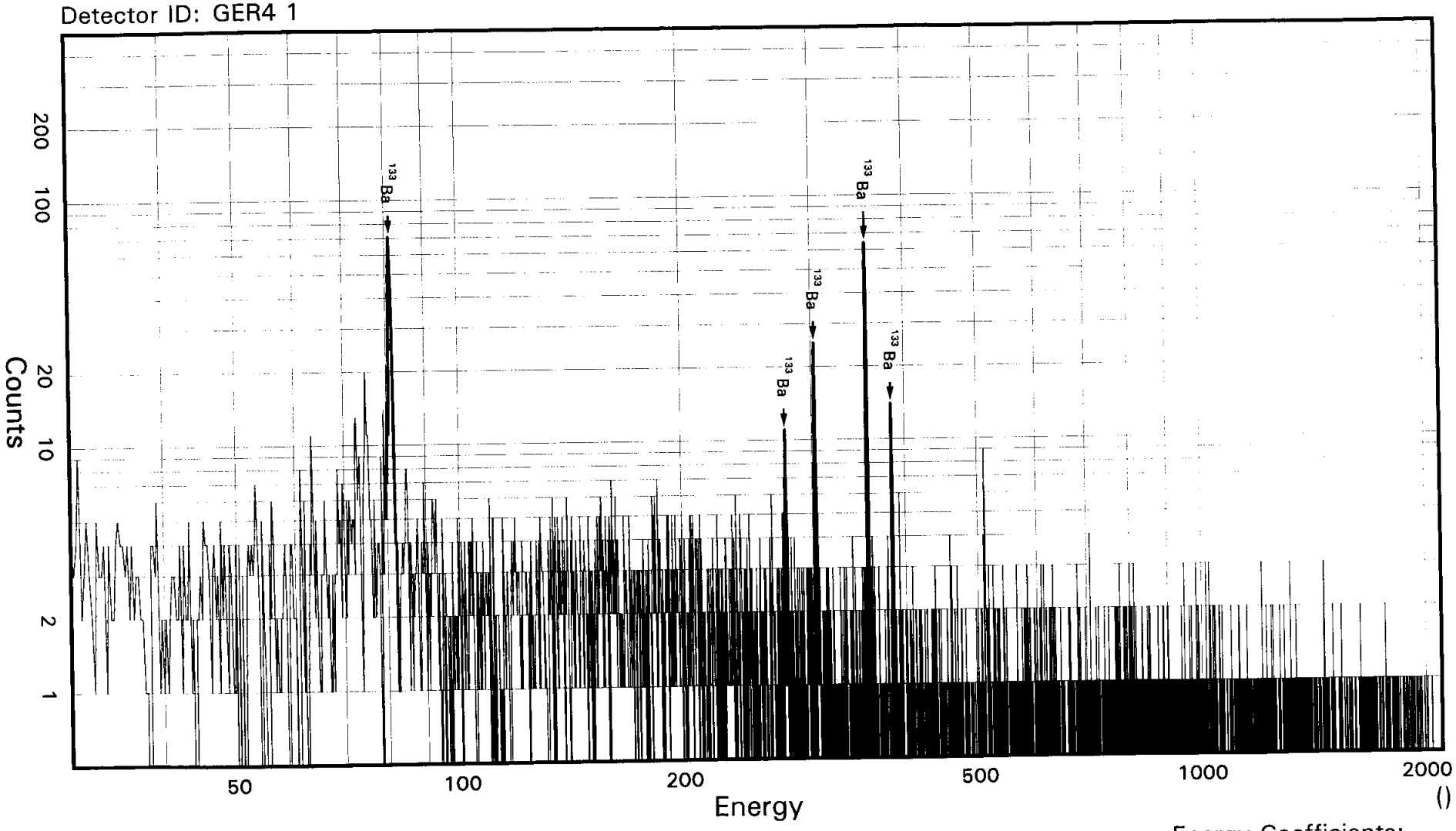
Nuclide	Key-Line Activity (DPM/SAMPL)	K.L. Ided	Act error	MDA (DPM/SAMPL)	MDA error	Act/MDA
SN-113DA	1.420E+01		1.175E+01	5.081E+01	1.016E+00	0.280
SB-124	5.282E+00		6.160E+00	2.753E+01	5.562E-01	0.192
SB-125	-1.429E+01		2.349E+01	8.721E+01	1.746E+00	-0.164
SN-126DA	1.028E+00		6.448E+00	2.576E+01	5.225E-01	0.040
I-131	-6.529E+00		1.615E+01	6.075E+01	1.215E+00	-0.107
CS-134	-5.687E-01		5.255E+00	2.229E+01	4.563E-01	-0.026
CS-137DA	-3.863E-01		5.537E+00	2.291E+01	4.646E-01	-0.017
LA-138	2.552E+00		4.474E+00	2.389E+01	5.123E-01	0.107
CE-139	1.206E+01		1.739E+01	6.595E+01	1.347E+00	0.183
BA-140	3.143E+01		3.176E+01	1.486E+02	2.991E+00	0.211
BALA-140	-6.173E+00		6.182E+00	1.608E+01	3.488E-01	-0.384
LA-140	-8.097E+01		8.109E+01	2.110E+02	4.575E+00	-0.384
CE-141	5.693E+00		3.220E+01	1.201E+02	2.471E+00	0.047
CE-144	-8.862E-01		1.194E+02	4.277E+02	8.854E+00	-0.002
CEPR-144	3.245E+01		2.364E+02	8.555E+02	1.771E+01	0.038
PM-144	1.365E+00		5.604E+00	2.343E+01	4.737E-01	0.058
PM-146	2.238E+00		1.161E+01	4.588E+01	9.195E-01	0.049
EU-152	2.599E+01		2.963E+01	1.210E+02	2.420E+00	0.215
EU-154	8.107E+00		1.131E+01	5.551E+01	1.177E+00	0.146
EU-155	-7.557E+01		5.958E+01	1.969E+02	4.153E+00	-0.384
HF-181	-4.241E+00		8.357E+00	3.173E+01	6.366E-01	-0.134
BI-207	-8.508E+00		5.574E+00	1.778E+01	3.584E-01	-0.479
TL-208	7.450E+00		7.250E+00	3.195E+01	6.446E-01	0.233
BI-210M	2.402E+00		1.914E+01	7.206E+01	1.446E+00	0.033
BI-212	2.750E+02		9.676E+01	4.825E+02	1.475E+01	0.570
PB-212	2.998E+01		2.698E+01	1.111E+02	2.234E+00	0.270
BI-214	2.582E+00		1.463E+01	5.819E+01	1.176E+00	0.044
PB-214	4.892E+00		2.268E+01	7.631E+01	1.526E+00	0.064
RA-223	-9.334E+01		6.819E+01	2.257E+02	4.527E+00	-0.414
RA-224DA	3.025E+01		2.723E+01	1.121E+02	2.254E+00	0.270
RA-226DA	2.582E+00		1.463E+01	5.820E+01	1.176E+00	0.044
AC-227DA	-2.081E+02		1.097E+02	3.500E+02	7.043E+00	-0.595
AC-228	-3.522E+00		1.831E+01	8.409E+01	1.736E+00	-0.042
RA-228DA	-3.532E+00		1.837E+01	8.435E+01	1.741E+00	-0.042
TH-228DA	2.092E+01		2.036E+01	8.973E+01	1.810E+00	0.233
TH-232DA	9.329E+01		6.965E+01	2.882E+02	5.764E+00	0.324
TH-234DA	-9.410E+01		8.898E+02	3.554E+03	7.386E+01	-0.026
U-234DA	-7.302E+01		4.827E+01	1.565E+02	3.134E+00	-0.467
U-235HP	-2.469E+01		1.229E+02	4.488E+02	9.246E+00	-0.055
NP-237DA	2.726E+01		2.422E+01	9.881E+01	1.977E+00	0.276
U-238DA	4.892E+00		2.268E+01	7.631E+01	1.526E+00	0.064
U-238DHP	-1.006E+02		4.763E+02	1.790E+03	3.984E+01	-0.056
AM-241HP	4.570E-01		4.318E+01	1.561E+02	3.502E+00	0.003

STL Richland WA.

BA133

Sample ID: H40381AA
Detector ID: GER4 1

Batch ID: 6129284



Acquisition Start: 14-JUN-2006 13:54:55.60
Preset Live Time: 0 00:30:00.00
Elapsed Live Time: 0 00:30:00.00

Energy Coefficients:
Offset: -1.20822E-01
Slope: 2.48870E-01
Quadrature: 1.07398E-08

SAMPLE IDENTIFICATION: H40381AA

CONFIGURATION ID: GER4:H40381AA_140661354
TITLE : BA133
SAMPLE ID : H40381AA

REPORT DATE: 14-JUN-06
ACQUIRE DATE: 14-JUN-06 13:54:55
ELAPSED LIVE TIME: 1800.0 Sec
PRESET LIVE TIME: 0 00:30:00

SAMPLE DATE: 5-JUN-2006 12:00:00.00
CALIB DATE: 14-JUN-2006 05:23:11.01
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: -.1208E+00 keV
ENERGY SLOPE: 2.4887E-01 keV/C
ENERGY Q COEFF: 1.0740E-08 keV/C^^2
PEAK SENSITIVITY: 5.000

FWHM OFFSET: 3.0346E-01 keV
FWHM SLOPE: 4.4942E-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 14-JUN-2006 14:25:13

Configuration : $DISK1:[GER4.SAMPLE]H40381AA_140661354.CNF;1
Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6
Sample title : BA133
Sample date : 5-JUN-2006 12:00:00 Acquisition date : 14-JUN-2006 13:54:55
Sample ID : H40381AA Sample quantity : 1.0000 SAMPL
Sample type : Sample geometry : BA133T15
Elapsed live time: 0 00:30:00.00 Elapsed real time: 0 00:30:00.40 0.0%
Start energy : 19.79 End energy : 2039.34
Sensitivity : 5.00 Gaussian : 10.00
Critical level : No

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	75.09*	30	18	0.61	302.19	298	10	1.66E-02	37.6	
2	0	81.20	212	64	0.80	326.77	320	13	1.18E-01	10.5	
3	0	275.81	53	9	0.89	1108.70	1099	17	2.92E-02	18.8	
4	0	302.88	103	23	0.98	1217.45	1212	16	5.72E-02	13.9	
5	0	356.00	287	8	1.03	1430.86	1423	18	1.60E-01	6.4	
6	0	383.67	52	3	1.01	1542.03	1535	12	2.87E-02	15.5	

Flag: "*" = Peak area was modified by background subtraction

VMS Nuclide Identification Report V3.0 Generated 14-JUN-2006 14:25:13

Configuration : $DISK1:[GER4.SAMPLE]H40381AA_140661354.CNF;1
Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.3
Sample title : BA133
Sample date : 5-JUN-2006 12:00:00
Sample ID : H40381AA
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 : 14-JUN-2006 13:54:55
Sample quantity : 1.0000 SAMPL
Sample geometry : BA133T15
Elapsed real time: 0 00:30:00.40 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	212	33.00	2.043E+00	1.048E+03	1.050E+03	11.92
	276.40	53	6.90	2.202E+00	1.152E+03	1.153E+03	19.57
	302.84	103	17.80	2.205E+00	8.740E+02	8.754E+02	14.99
	356.00	287	62.05*	2.207E+00	6.990E+02	7.002E+02	9.36
	383.85	52	8.70	2.207E+00	8.958E+02	8.972E+02	16.69

Flag: "*" = Keyline

Unidentified Energy Lines
Sample ID : H40381AA
Acquisition date : 14-JUN-2006 13:54:55

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
0	75.09	30	18	0.61	302.19	298	10	1.66E-02	37.6	2.03E+00	

Flags: "T" = Tentatively associated

Flag: "*" = Keyline

VMS Nuclide Identification Report V3.0 Generated 14-JUN-2006 14:25:15

Configuration : $DISK1:[GER4.SAMPLE]H40381AA_140661354.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 : 5-JUN-2006 12:00:00
Sample ID : H40381AA
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 : 14-JUN-2006 13:54:55
Sample quantity : 1.0000 SAMPL
Sample geometry : BA133T15
Elapsed real time: 0 00:30:00.40 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	7.002E+02	6.555E+01	4.568E+01	2.141E+00	15.327

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (DPM/SAMPL)	K.L. Ided	Act error	MDA (DPM/SAMPL)	MDA error	Act/MDA
BE-7	-1.480E+02		5.722E+01	1.406E+02	5.135E+00	-1.052
NA-22	1.538E+00		2.835E+00	1.495E+01	5.763E-01	0.103
K-40	6.834E+01		7.903E+01	3.941E+02	1.539E+01	0.173
SC-46	3.443E+00		4.170E+00	2.047E+01	7.806E-01	0.168
CR-51	1.027E+02		8.287E+01	3.629E+02	8.424E+00	0.283
MN-54	-1.363E+01		5.600E+00	1.467E+01	5.479E-01	-0.929
CO-57	-8.467E+01		1.131E+02	3.933E+02	9.427E+00	-0.215
CO-58	-9.348E+00		6.616E+00	2.228E+01	8.307E-01	-0.420
FE-59	-6.726E+00		8.916E+00	3.386E+01	1.289E+00	-0.199
CO-60	-1.459E+00		4.207E+00	1.733E+01	6.710E-01	-0.084
ZN-65	-3.017E+00		9.534E+00	3.838E+01	1.463E+00	-0.079
SE-75	1.929E+01		1.759E+01	6.916E+01	1.610E+00	0.279
SR-85	-4.562E+01		1.339E+01	3.661E+01	1.339E+00	-1.246
Y-88	7.092E+00		3.575E+00	2.128E+01	8.519E-01	0.333
NB-94	3.242E+00		5.345E+00	2.331E+01	8.728E-01	0.139
NB-95	1.084E+01		5.909E+00	2.921E+01	1.086E+00	0.371
TC-95M	2.557E+00		1.724E+01	6.491E+01	1.523E+00	0.039
ZR-95	-3.457E+00		8.282E+00	3.307E+01	1.228E+00	-0.105
ZRNB-95	2.019E+01		1.092E+01	5.401E+01	2.007E+00	0.374
MO-99	-1.763E+01		1.194E+02	4.335E+02	1.037E+01	-0.041
RH-101	6.368E+00		1.522E+01	5.786E+01	1.359E+00	0.110
RH-102M	3.421E+00		5.009E+00	2.260E+01	8.251E-01	0.151
RU-103	-3.735E+00		7.414E+00	2.817E+01	1.030E+00	-0.133
RU-106DA	-3.754E+01		6.019E+01	2.265E+02	8.337E+00	-0.166
AG-108M	-5.076E+00		8.887E+00	3.156E+01	1.150E+00	-0.161
AG-110M	6.690E+00		7.267E+00	3.296E+01	1.235E+00	0.203
SN-113DA	1.495E+01		1.327E+01	5.430E+01	1.977E+00	0.275

Sample ID : H40381AA Acquisition date : 14-JUN-2006 13:54:55

---- Non-Identified Nuclides ----

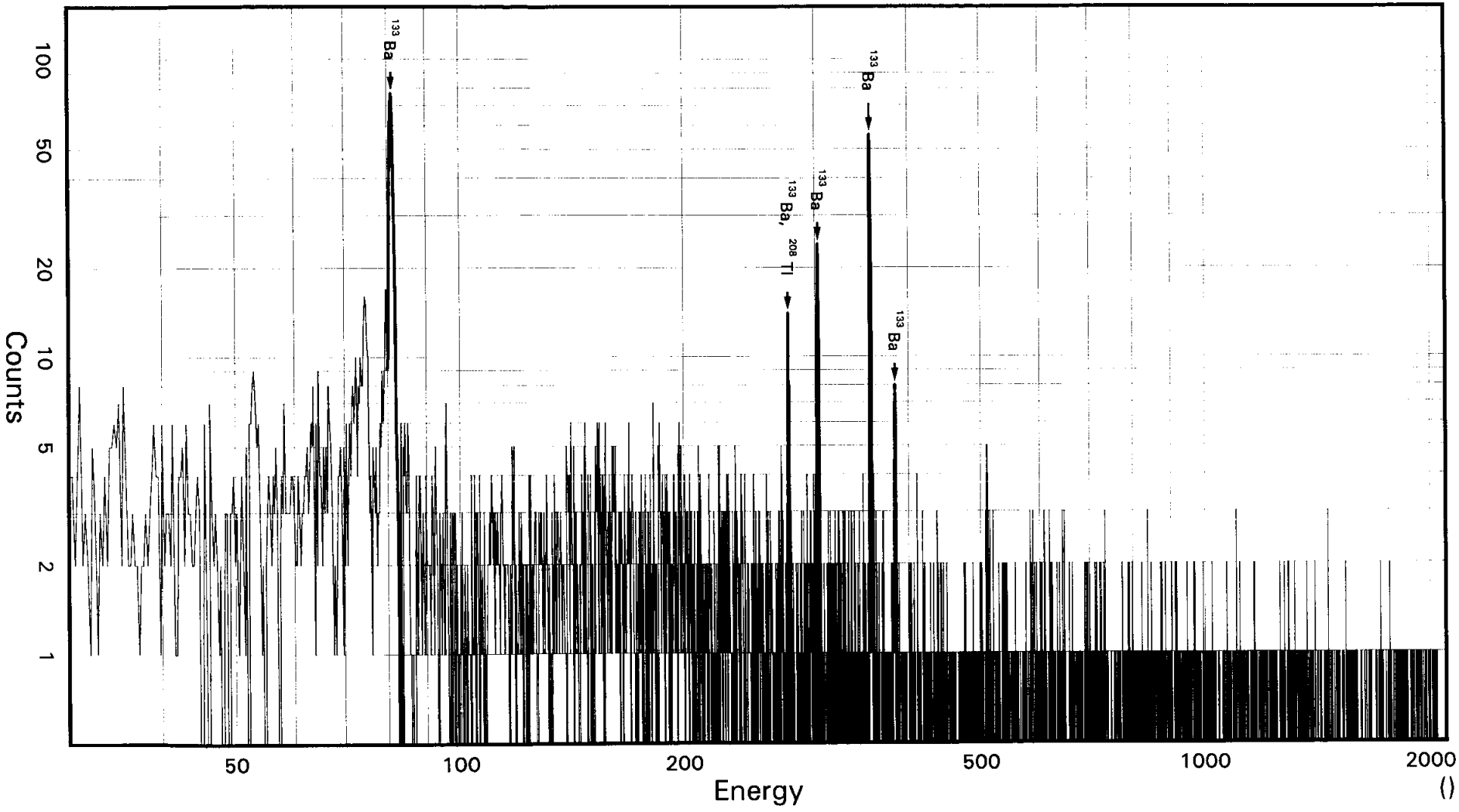
Nuclide	Key-Line Activity (DPM/SAMPL)	K.L. Ided	Act error	MDA (DPM/SAMPL)	MDA error	Act/MDA
SB-124	-1.512E+01		7.724E+00	2.273E+01	8.355E-01	-0.665
SB-125	-1.173E+01		1.712E+01	6.291E+01	2.292E+00	-0.187
SN-126DA	-2.881E+00		4.790E+00	1.839E+01	6.787E-01	-0.157
I-131	-4.887E+01		1.846E+01	4.887E+01	1.779E+00	-1.000
CS-134	-1.190E+01		7.122E+00	2.190E+01	8.155E-01	-0.543
CS-137DA	3.929E+00		5.672E+00	2.552E+01	9.416E-01	0.154
LA-138	4.831E+00		4.869E+00	2.609E+01	1.017E+00	0.185
CE-139	-1.330E+01		1.397E+01	4.716E+01	1.117E+00	-0.282
BA-140	-6.894E+01		3.940E+01	1.218E+02	4.461E+00	-0.566
BALA-140	-1.091E+01		7.745E+00	1.515E+01	5.971E-01	-0.720
LA-140	-1.431E+02		1.016E+02	1.987E+02	7.834E+00	-0.720
CE-141	-1.403E+01		2.810E+01	9.913E+01	2.366E+00	-0.142
CE-144	1.112E+02		1.016E+02	3.997E+02	9.594E+00	0.278
CEPR-144	2.212E+02		2.031E+02	7.988E+02	1.918E+01	0.277
PM-144	3.713E+00		5.355E+00	2.369E+01	8.716E-01	0.157
PM-146	7.345E+00		6.895E+00	3.286E+01	1.199E+00	0.224
EU-152	8.498E+00		2.839E+01	1.120E+02	2.598E+00	0.076
EU-154	4.309E+00		7.944E+00	4.189E+01	1.615E+00	0.103
EU-155	-8.574E+01		4.810E+01	1.584E+02	3.873E+00	-0.541
HF-181	5.488E+00		6.806E+00	3.085E+01	1.127E+00	0.178
BI-207	-1.787E+00		4.211E+00	1.676E+01	6.149E-01	-0.107
TL-208	-1.090E+01		8.764E+00	3.177E+01	1.166E+00	-0.343
BI-210M	-4.137E+01		1.917E+01	5.774E+01	1.344E+00	-0.717
BI-212	6.845E+01		7.802E+01	3.504E+02	1.525E+01	0.195
PB-212	-1.084E+01		2.416E+01	9.274E+01	2.164E+00	-0.117
BI-214	-3.230E+01		1.668E+01	6.082E+01	2.237E+00	-0.531
PB-214	-2.374E+01		2.751E+01	8.378E+01	1.944E+00	-0.283
RA-223	8.018E+01		6.193E+01	2.542E+02	5.914E+00	0.315
RA-224DA	-1.094E+01		2.438E+01	9.358E+01	2.184E+00	-0.117
RA-226DA	-3.244E+01		1.667E+01	6.073E+01	2.233E+00	-0.534
AC-227DA	-1.014E+01		9.395E+01	3.429E+02	8.004E+00	-0.030
AC-228	-1.252E+01		1.424E+01	6.751E+01	2.535E+00	-0.185
RA-228DA	-1.255E+01		1.429E+01	6.771E+01	2.543E+00	-0.185
TH-228DA	-3.060E+01		2.461E+01	8.923E+01	3.276E+00	-0.343
TH-232DA	3.522E+01		5.727E+01	2.341E+02	5.433E+00	0.150
TH-234DA	4.632E+02		5.996E+02	2.896E+03	1.095E+02	0.160
U-234DA	3.236E+01		4.847E+01	1.863E+02	4.329E+00	0.174
U-235HP	-1.080E+02		1.070E+02	3.641E+02	8.697E+00	-0.297
NP-237DA	-2.576E-01		2.201E+01	8.466E+01	1.965E+00	-0.003
U-238DA	-2.374E+01		2.751E+01	8.378E+01	1.944E+00	-0.283
U-238DHP	4.955E+02		3.205E+02	1.303E+03	3.359E+01	0.380
AM-241HP	-4.463E+01		3.025E+01	1.003E+02	2.607E+00	-0.445

STL Richland WA.

BA133

Sample ID: H40381AC
Detector ID: GER7 1

Batch ID: 6129284



Acquisition Start: 14-JUN-2006 13:55:03.02
Preset Live Time: 0 00:30:00.00
Elapsed Live Time: 0 00:30:00.00

Energy Coefficients:
Offset: 6.38639E-01
Slope: 2.49141E-01
Quadrature: 1.28954E-07

SAMPLE IDENTIFICATION: H40381AC

CONFIGURATION ID: GER7:H40381AC_140661355
TITLE : BA133
SAMPLE ID : H40381AC

REPORT DATE: 14-JUN-06
ACQUIRE DATE: 14-JUN-06 13:55:03
ELAPSED LIVE TIME: 1800.0 Sec
PRESET LIVE TIME: 0 00:30:00

SAMPLE DATE: 9-JUN-2006 12:00:00.00
CALIB DATE: 14-JUN-2006 05:23:46.43
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: 6.3864E-01 keV
ENERGY SLOPE: 2.4914E-01 keV/C
ENERGY Q COEFF: 1.2895E-07 keV/C^^2
PEAK SENSITIVITY: 5.000

FWHM OFFSET: 4.5734E-01 keV
FWHM SLOPE: 4.2090E-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 14-JUN-2006 14:25:28

Configuration : $DISK1:[GER7.SAMPLE]H40381AC_140661355.CNF;1
Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6
Sample title : BA133
Sample date : 9-JUN-2006 12:00:00
Sample ID : H40381AC
Sample type :
Elapsed live time: 0 00:30:00.00
Start energy : 20.57
Sensitivity : 5.00
Critical level : No

Acquisition date : 14-JUN-2006 13:55:03
Sample quantity : 1.0000 SAMPL
Sample geometry : BA133T15
Elapsed real time: 0 00:30:00.19 0.0%
End energy : 2050.25
Gaussian : 10.00

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	81.19	288	75	0.97	323.27	318	13	1.60E-01	9.0	
2	0	276.13	50	8	0.95	1105.13	1097	16	2.80E-02	18.9	
3	0	303.03	104	31	1.14	1212.97	1202	17	5.75E-02	15.6	
4	0	355.96	278	31	1.29	1425.12	1417	19	1.54E-01	7.8	
5	0	383.72	31	16	1.37	1536.39	1525	16	1.72E-02	34.0	

Flag: "*" = Peak area was modified by background subtraction

VMS Nuclide Identification Report V3.0 Generated 14-JUN-2006 14:25:29

Configuration : $DISK1:[GER7.SAMPLE]H40381AC_140661355.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
Sample ID : H40381AC
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 : 14-JUN-2006 13:55:03
Sample quantity : 1.0000 SAMPL
Sample geometry : BA133T15
Elapsed real time: 0 00:30:00.19 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	288	33.00	1.923E+00	1.513E+03	1.515E+03	10.50
	276.40	50	6.90	2.076E+00	1.171E+03	1.172E+03	19.60
	302.84	104	17.80	2.078E+00	9.330E+02	9.339E+02	16.52
	356.00	278	62.05*	2.080E+00	7.180E+02	7.187E+02	9.45
	383.85	31	8.70	2.080E+00	5.710E+02	5.716E+02	34.41

Flag: "*" = Keyline

Unidentified Energy Lines
Sample ID : H40381AC

Acquisition date : 14-JUN-2006 13:55:03

None

Flags: "T" = Tentatively associated

Rejected Report
Sample ID : H40381AC
Acquisition date : 14-JUN-2006 13:55:03

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	1.189E+03	19.60	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 14-JUN-2006 14:25:31

Configuration : $DISK1:[GER7.SAMPLE]H40381AC_140661355.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 : H40381AC
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 : 14-JUN-2006 13:55:03
Sample quantity : 1.0000 SAMPL
Sample geometry : BA133T15
Elapsed real time: 0 00:30:00.19 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	7.187E+02	6.795E+01	4.904E+01	9.808E-01	14.655

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (DPM/SAMPL)	K.L. Ided	Act error	MDA (DPM/SAMPL)	MDA error	Act/MDA
BE-7	9.586E+01		6.687E+01	2.987E+02	5.992E+00	0.321
NA-22	1.135E-01		4.150E+00	1.839E+01	3.899E-01	0.006
K-40	-8.231E+01		5.282E+01	2.421E+02	5.200E+00	-0.340
SC-46	-1.978E+00		5.880E+00	2.295E+01	4.813E-01	-0.086
CR-51	-1.140E+01		1.035E+02	3.836E+02	7.675E+00	-0.030
MN-54	-6.250E+00		4.208E+00	1.325E+01	2.720E-01	-0.472
CO-57	2.962E+01		1.079E+02	4.088E+02	8.450E+00	0.072
CO-58	-3.445E+00		4.904E+00	1.867E+01	3.827E-01	-0.184
FE-59	1.276E+01		9.145E+00	4.527E+01	9.478E-01	0.282
CO-60	6.835E+00		4.202E+00	2.239E+01	4.766E-01	0.305
ZN-65	-7.111E+00		1.075E+01	4.029E+01	8.445E-01	-0.177
SE-75	-2.809E+01		1.542E+01	4.916E+01	9.863E-01	-0.571
SR-85	-2.434E+01		1.127E+01	3.379E+01	6.791E-01	-0.720
Y-88	1.527E-01		4.434E+00	1.975E+01	4.350E-01	0.008
NB-94	-1.920E-01		5.276E+00	2.160E+01	4.447E-01	-0.009
NB-95	2.018E+00		6.461E+00	2.716E+01	5.548E-01	0.074
TC-95M	3.825E+00		1.745E+01	6.449E+01	1.304E+00	0.059
ZR-95	1.562E+01		7.038E+00	4.094E+01	8.356E-01	0.382
ZRNB-95	3.440E+00		1.228E+01	5.152E+01	1.052E+00	0.067
MO-99	1.108E+02		5.130E+01	2.084E+02	4.300E+00	0.532
RH-101	2.683E+01		1.758E+01	6.843E+01	1.386E+00	0.392
RH-102M	-5.680E+00		7.148E+00	2.547E+01	5.109E-01	-0.223
RU-103	2.253E+00		6.176E+00	2.659E+01	5.339E-01	0.085
RU-106DA	3.217E+01		7.494E+01	3.026E+02	6.119E+00	0.106
AG-108M	-1.437E+01		7.634E+00	2.338E+01	4.683E-01	-0.615
AG-110M	6.851E+00		5.200E+00	2.768E+01	5.703E-01	0.248
SN-113DA	-2.989E+00		9.577E+00	3.729E+01	7.461E-01	-0.080

Sample ID : H40381AC Acquisition date : 14-JUN-2006 13:55:03

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (DPM/SAMPL)	K.L. Ided	Act error	MDA (DPM/SAMPL)	MDA error	Act/MDA
SB-124	1.783E+00		6.314E+00	2.631E+01	5.315E-01	0.068
SB-125	1.859E-02		1.901E+01	7.735E+01	1.549E+00	0.000
SN-126DA	-2.131E-01		4.675E+00	1.951E+01	3.958E-01	-0.011
I-131	-2.727E+01		1.270E+01	3.803E+01	7.607E-01	-0.717
CS-134	5.353E+00		6.862E+00	3.015E+01	6.172E-01	0.178
CS-137DA	-2.256E+00		6.440E+00	2.502E+01	5.073E-01	-0.090
LA-138	-5.305E+00		3.762E+00	6.962E+00	1.493E-01	-0.762
CE-139	-1.664E+00		1.469E+01	5.352E+01	1.093E+00	-0.031
BA-140	-3.047E+01		3.316E+01	1.197E+02	2.409E+00	-0.254
BALA-140	4.502E-02		6.748E+00	3.525E+01	7.644E-01	0.001
LA-140	1.391E-01		2.103E+01	1.098E+02	2.382E+00	0.001
CE-141	-3.106E+01		2.612E+01	8.905E+01	1.833E+00	-0.349
CE-144	-1.129E+02		9.936E+01	3.433E+02	7.107E+00	-0.329
CEPR-144	-2.257E+02		1.987E+02	6.866E+02	1.422E+01	-0.329
PM-144	8.969E-01		6.322E+00	2.560E+01	5.176E-01	0.035
PM-146	-2.753E+00		8.281E+00	3.237E+01	6.487E-01	-0.085
EU-152	-2.986E+01		2.947E+01	1.003E+02	2.007E+00	-0.298
EU-154	-4.471E+00		1.256E+01	5.153E+01	1.093E+00	-0.087
EU-155	3.858E+01		4.896E+01	1.910E+02	4.028E+00	0.202
HF-181	-2.581E+00		8.373E+00	3.184E+01	6.388E-01	-0.081
BI-207	3.415E+00		4.641E+00	2.166E+01	4.366E-01	0.158
TL-208	1.351E+01		7.131E+00	3.611E+01	7.285E-01	0.374
BI-210M	6.379E+00		1.621E+01	6.419E+01	1.288E+00	0.099
BI-212	-9.875E+01		8.262E+01	2.885E+02	8.821E+00	-0.342
PB-212	-2.788E+01		2.454E+01	9.034E+01	1.817E+00	-0.309
BI-214	3.845E+01		1.457E+01	7.029E+01	1.420E+00	0.547
PB-214	-8.248E+00		2.255E+01	7.476E+01	1.495E+00	-0.110
RA-223	1.677E+02		7.502E+01	3.177E+02	6.371E+00	0.528
RA-224DA	-2.802E+01		2.467E+01	9.080E+01	1.826E+00	-0.309
RA-226DA	3.845E+01		1.457E+01	7.029E+01	1.420E+00	0.547
AC-227DA	7.768E+00		9.536E+01	3.579E+02	7.201E+00	0.022
AC-228	3.510E+01		2.098E+01	9.943E+01	2.053E+00	0.353
RA-228DA	3.516E+01		2.102E+01	9.960E+01	2.056E+00	0.353
TH-228DA	3.780E+01		1.995E+01	1.010E+02	2.038E+00	0.374
TH-232DA	-7.141E+01		7.269E+01	2.472E+02	4.945E+00	-0.289
TH-234DA	-2.348E+02		6.698E+02	2.755E+03	5.726E+01	-0.085
U-234DA	4.430E+01		5.159E+01	2.029E+02	4.064E+00	0.218
U-235HP	-1.924E+02		1.141E+02	3.740E+02	7.705E+00	-0.514
NP-237DA	1.840E+01		2.235E+01	9.078E+01	1.817E+00	0.203
U-238DA	-8.248E+00		2.255E+01	7.476E+01	1.495E+00	-0.110
U-238DHP	-2.127E+01		4.217E+02	1.555E+03	3.462E+01	-0.014
AM-241HP	-1.722E+00		3.758E+01	1.386E+02	3.109E+00	-0.012

Vial Identifier	Constituent	Prep Activity/Concentration			Std Wt Used		Prep,Decayed To Date		Prep by	Std Decayed Activity/Concentration		
	Parent Standard:	BA13306A000			Ref: 10/4/2004		1.1069E+04	±		DPM/G		
RATA22512	BA-133	**7.5572E+02**	± **1.403E+00**	DPM	0.0762	g	6/5/2006	6/5/2006	Armstron	9.9177E+03	± 0.000E+00	DPM/G
RATA22513	BA-133	**7.5374E+02**	± **1.403E+00**	DPM	0.076	g	6/5/2006	6/5/2006	Armstron	9.9176E+03	± 0.000E+00	DPM/G
RATA22514	BA-133	**7.5176E+02**	± **1.403E+00**	DPM	0.0758	g	6/5/2006	6/5/2006	Armstron	9.9176E+03	± 0.000E+00	DPM/G
RATA22515	BA-133	**7.5572E+02**	± **1.403E+00**	DPM	0.0762	g	6/5/2006	6/5/2006	Armstron	9.9176E+03	± 0.000E+00	DPM/G
RATA22516	BA-133	**7.5374E+02**	± **1.403E+00**	DPM	0.076	g	6/5/2006	6/5/2006	Armstron	9.9176E+03	± 0.000E+00	DPM/G
RATA22517	BA-133	**7.5374E+02**	± **1.403E+00**	DPM	0.076	g	6/5/2006	6/5/2006	Armstron	9.9176E+03	± 0.000E+00	DPM/G
RATA22518	BA-133	**7.5672E+02**	± **1.403E+00**	DPM	0.0763	g	6/5/2006	6/5/2006	Armstron	9.9176E+03	± 0.000E+00	DPM/G
RATA22519	BA-133	**7.5572E+02**	± **1.403E+00**	DPM	0.0762	g	6/5/2006	6/5/2006	Armstron	9.9176E+03	± 0.000E+00	DPM/G
		7.5461E+002	± 1.628E+000	(8)		0.216%	7.5176E+002 , 7.5672E+002					

* - Isotope is an Impurity

Vial Identifier	Constituent	Prep Activity/Concentration			Std Wt Used		Prep,Decayed To Date		Prep by	Std Decayed Activity/Concentration		
	Parent Standard:	BA13306A000		Ref:	10/4/2004		1.1069E+04	±		DPM/G		
RASC4132	BA-133	**7.5123E+02**	± **1.402E+00**	DPM	0.0758	g	6/9/2006	6/9/2006	Armstron	9.9107E+03	± 0.000E+00	DPM/G
		7.5123E+002 ± 7.512E+002 (1)					7.5123E+002 , 7.5123E+002					

* - Isotope is an Impurity

Vial Identifier	Constituent	Prep Activity/Concentration			Std Wt Used		Prep,Decayed To Date		Prep by	Std Decayed Activity/Concentration		
	Parent Standard:	BA13306A000		Ref:	10/4/2004		1.1069E+04	±		DPM/G		
RATA22502	BA-133	**7.5275E+02**	**± 1.403E+00**	DPM	0.0759	g	6/5/2006	6/5/2006	Armstron	9.9177E+03	± 0.000E+00	DPM/G
RATA22503	BA-133	**7.5573E+02**	**± 1.403E+00**	DPM	0.0762	g	6/5/2006	6/5/2006	Armstron	9.9177E+03	± 0.000E+00	DPM/G
RATA22504	BA-133	**7.5473E+02**	**± 1.403E+00**	DPM	0.0761	g	6/5/2006	6/5/2006	Armstron	9.9177E+03	± 0.000E+00	DPM/G
RATA22505	BA-133	**7.5374E+02**	**± 1.403E+00**	DPM	0.076	g	6/5/2006	6/5/2006	Armstron	9.9177E+03	± 0.000E+00	DPM/G
RATA22506	BA-133	**7.4581E+02**	**± 1.403E+00**	DPM	0.0752	g	6/5/2006	6/5/2006	Armstron	9.9177E+03	± 0.000E+00	DPM/G
		7.5255E+002 ± 3.930E+000 (5)			0.522%		7.4581E+002 , 7.5573E+002					

6/12/2006 4:37:30 PM

Sample Preparation/Analysis

BX Ra-226/228 PrpRC5016, SepRC5005
TE Ba-133 by NaI & Ra-226 by Alpha Scint 7 day ingrow
01 STANDARD TEST SET

Balance Id:1120373922,1120373922,1120

Pipet #: _____

Sep1 DT/Tm Tech:

Sep2 DT/Tm Tech:

Prep Tech: ,TamosaitisM

AnalyDueDate: 06/05/2006

Batch: 6129284 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:

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

H40381AC-LCS:
Uncert Level (#s).: 2 Decay to SaDt: Y Blk Subt.: N Sci.Not.: Y ODRs: B

Approved By _____ Date: _____

6/14/2006 12:33:42 PM

Standard Material Fractions (Vials)

Vial Prep: 6/13/05 to 6/15/06,SMFractionIdentifier Between RATA22502 and RATA22506, Order by

Vial Identifier	Constituent	Prep Activity/Concentration			Std Wt Used		Prep,Decayed To Date		Prep by	Std Decayed Activity/Concentration		
	Parent Standard:	BA-30-6092		Ref:			2.9100E+01	± 1.920E-01	mg/g			
RATA22502	BA	**3.0221E+01**	± **1.994E-01**	mg	1.0385	g	6/5/2006	6/5/2006	Armstron		±	mg/g
RATA22503	BA	**3.0229E+01**	± **1.995E-01**	mg	1.0388	g	6/5/2006	6/5/2006	Armstron		±	mg/g
RATA22504	BA	**3.0232E+01**	± **1.995E-01**	mg	1.0389	g	6/5/2006	6/5/2006	Armstron		±	mg/g
RATA22505	BA	**3.0258E+01**	± **1.997E-01**	mg	1.0398	g	6/5/2006	6/5/2006	Armstron		±	mg/g
RATA22506	BA	**3.0398E+01**	± **2.006E-01**	mg	1.0446	g	6/5/2006	6/5/2006	Armstron		±	mg/g
		3.0268E+001	± 7.423E-002	(5)		0.245%	3.0221E+001 , 3.0398E+001					

STL Richland, SMFractions v4.8.12

Page 1

Record Count: 6

* - Isotope is an Impurity

6/14/2006 12:41:27 PM

Standard Material Fractions (Vials)

Vial Prep: 6/13/05 to 6/15/06,SMFractionIdentifier Between RATA22512 and RATA22519, Order by

Vial Identifier	Constituent	Prep Activity/Concentration			Std Wt Used		Prep,Decayed To Date		Prep by	Std Decayed Activity/Concentration		
	Parent Standard:	BA-30-6092		Ref:			2.9100E+01	± 1.920E-01	mg/g			
RATA22512	BA	**3.0203E+01**	± **1.993E-01**	mg	1.0379	g	6/5/2006	6/5/2006	Armstron		±	mg/g
RATA22513	BA	**3.0311E+01**	± **2.000E-01**	mg	1.0416	g	6/5/2006	6/5/2006	Armstron		±	mg/g
RATA22514	BA	**3.0282E+01**	± **1.998E-01**	mg	1.0406	g	6/5/2006	6/5/2006	Armstron		±	mg/g
RATA22515	BA	**3.0349E+01**	± **2.003E-01**	mg	1.0429	g	6/5/2006	6/5/2006	Armstron		±	mg/g
RATA22516	BA	**3.0221E+01**	± **1.994E-01**	mg	1.0385	g	6/5/2006	6/5/2006	Armstron		±	mg/g
RATA22517	BA	**3.0256E+01**	± **1.997E-01**	mg	1.0397	g	6/5/2006	6/5/2006	Armstron		±	mg/g
RATA22518	BA	**3.0215E+01**	± **1.994E-01**	mg	1.0383	g	6/5/2006	6/5/2006	Armstron		±	mg/g
RATA22519	BA	**3.0229E+01**	± **1.995E-01**	mg	1.0388	g	6/5/2006	6/5/2006	Armstron		±	mg/g
		3.0258E+001	± 5.165E-002	(8)		0.171%	3.0203E+001 , 3.0349E+001					

* - Isotope is an Impurity

6/14/2006 12:34:01 PM

Standard Material Fractions (Vials)

Vial Prep: 6/13/05 to 6/15/06,SMFractionIdentifier Like: RASC4132%, Order by SMIdentifier,ConstituentCode,SMFractionIdentifier

Vial Identifier	Constituent	Prep Activity/Concentration			Std Wt Used		Prep,Decayed To Date		Prep by	Std Decayed Activity/Concentration		
	Parent Standard:	BA-30-6092		Ref:			2.9100E+01	± 1.920E-01	mg/g			
RASC4132	BA	**3.0279E+01**	± **1.998E-01**	mg	1.0405	g	6/9/2006	6/9/2006	Armstron		±	mg/g
		1.5139E+001	± 2.141E+001	(2)			3.0279E+001 , 3.0279E+001					

* - Isotope is an Impurity

Vial Identifier	Constituent	Prep Activity/Concentration			Std Wt Used		Prep,Decayed To Date		Prep by	Std Decayed Activity/Concentration		
	Parent Standard:	Ra22606A100		Ref:	11/1/2001		2.1060E+01	± 3.234E-01		DPM/G		
RASC4132	RA-226	**3.0749E+00**	**± 4.731E-02**	DPM	0.1463	g	6/9/2006	6/9/2006	Armstron	2.1018E+01	± 3.228E-01	DPM/G
		3.0749E+000	± 3.075E+000	(1)			3.0749E+000 , 3.0749E+000					

* - Isotope is an Impurity

Vial Identifier	Constituent	Prep Activity/Concentration			Std Wt Used		Prep,Decayed To Date		Prep by	Std Decayed Activity/Concentration		
	Parent Standard:	RA22806A000		Ref:	12/15/2003		4.4881E+02	±		DPM/G		
RASC4132	RA-228	**1.1284E+01**	**± 4.707E-02**	DPM	0.0339	g	6/9/2006	6/9/2006	Armstron	3.3285E+02	± 0.000E+00	DPM/G
		1.1284E+001	± 1.128E+001	(1)			1.1284E+001 , 1.1284E+001					

* - Isotope is an Impurity