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TOTAL # PAGES IN DOCUMENT 193

Analytical Data Package Prepared For

Brown and Caldwell

Radiochemical Analysis By

TAL Richland

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

Assigned Laboratory Code: STLR

Data Package Contains _____ Pages

Report No.: 36753

SDG No.	Order No.	Client Sample ID (List Order)	Lot-Sa No.	Work Order	Report DB ID	Batch No.
35630		BGS-A1-37D	J7H200134-10	J472Q1AA	9J472Q10	7232501
		BGS-A1-37S	J7H200134-9	J472P1AA	9J472P10	7232501
		BGS-A2-43D	J7H200134-2	J472C1AA	9J472C10	7232501
		BGS-A2-43S	J7H200134-1	J47172AA	9J471720	7232501
		BGS-A2-44D	J7H200134-8	J472M1AA	9J472M10	7232501
		BGS-A2-44S	J7H200134-7	J472K1AA	9J472K10	7232501
		BGS-A2-45D	J7H200134-6	J472H1AA	9J472H10	7232501
		BGS-A2-45S	J7H200134-5	J472G1AA	9J472G10	7232501
		BGS-A2-47D	J7H200134-4	J472F1AA	9J472F10	7232501
		BGS-A2-47S	J7H200134-3	J472E1AA	9J472E10	7232501

SEVERN TRENT STL

STL Richland
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Richland, WA 99354

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Certificate of Analysis

September 18, 2007

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

Attention: Penny Bassett

Date Received at Lab	:	August 16, 2007
Project Name	:	Yerington Mine Soils
Project Number	:	132039
Enfos Number	:	01KF-0109
PO Number	:	129682.001
Sample Type	:	Ten (10) Soil Samples
SDG Number	:	35630

CASE NARRATIVE

I. Introduction

On August 16, 2007, ten soil samples were received at the TestAmerica Laboratory Richland (TALR) laboratory for radiochemical analysis. Upon receipt, the samples were assigned TALR identification numbers as described on the cover page of the Analytical Data Package report form. The samples were assigned to Lot Number J7H200134.

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:

Gamma
Gamma by method STL RICH-RC-5013/5017

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

Gamma

Gamma by method STL RICH-RC-5013/5017:

In the original analysis the duplicates were out of limits. The samples were recounted with good results. Data is accepted. Except as noted, the LCS, batch blank, samples and sample duplicate 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 00-02	Gross Alpha (Coprecipitation)	RICH-RC-5021
EPA 903.0	Total Alpha Radium (Ra-226)	RICH-RC-5027
EPA 903.1	Ra-226	RICH-RC-5005
EPA 904.0	Ra-228	RICH-RC-5005
EPA 905.0	Sr-89/90	RICH-RC-5006
ASTM D5174	Uranium	RICH-RC-5058
EPA 906.0	Tritium	RICH-RC-5007

Uncertainty Estimation

Test America 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/?n), where S is the standard deviation of the derived results. The type B uncertainties are all other random or non-random components that are not included in the standard deviation.

The derivation of the general "Law of Propagation of Errors" equations and specific example are available on request.

Report Definitions

Action Lev	An agreed upon activity level used to trigger some action when the final result is greater than or equal to the Action Level. Often the Action Level is related to the Decision Limit.
Batch	The QC preparation batch number that relates laboratory samples to QC samples that were prepared and analyzed together.
Bias	Defined by the equation (Result/Expected)-1 as defined by ANSI N13.30.
COC No	Chain of Custody Number assigned by the Client or 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.

Date: 18-Sep-07

Sample Results Summary

TAL Richland STLR

Ordered by Client Sample ID, Batch No.

Report No. : 36753

SDG No: 35630

Client ID	Work Order Number	Parameter	Result +- Uncertainty (2s)	Qual	Units	Yield	MDC|MDA	RER2
BGS-A1-37D	J472Q1AA	RA-226	1.16 +- 0.152	=	pCi/g		0.0341	
		RA-228	0.896 +- 0.171	=	pCi/g		0.0725	
BGS-A1-37S	J472P1AA	RA-226	2.04 +- 0.257	=	pCi/g		0.0502	
		RA-228	1.12 +- 0.196	=	pCi/g		0.0993	
BGS-A2-43D	J472C1AA	RA-226	0.874 +- 0.115	=	pCi/g		0.0326	
		RA-228	0.863 +- 0.150	=	pCi/g		0.0656	
BGS-A2-43S	J47172AA	RA-226	1.91 +- 0.241	=	pCi/g		0.0405	
		RA-228	1.65 +- 0.276	=	pCi/g		0.0824	
BGS-A2-43S DUP	J47172AC	RA-226	1.91 +- 0.240	=	pCi/g		0.035	0.0
		RA-228	1.62 +- 0.291	=	pCi/g		0.0609	0.1
BGS-A2-44D	J472M1AA	RA-226	1.45 +- 0.188	=	pCi/g		0.0418	
		RA-228	1.47 +- 0.223	ND	pCi/g		0.185	
BGS-A2-44S	J472K1AA	RA-226	1.82 +- 0.230	=	pCi/g		0.049	
		RA-228	1.57 +- 0.254	=	pCi/g		0.0952	
BGS-A2-45D	J472H1AA	RA-226	1.85 +- 0.234	=	pCi/g		0.0439	
		RA-228	1.76 +- 0.263	=	pCi/g		0.0872	
BGS-A2-45S	J472G1AA	RA-226	1.70 +- 0.224	=	pCi/g		0.0457	
		RA-228	1.70 +- 0.268	=	pCi/g		0.0918	
BGS-A2-47D	J472F1AA	RA-226	0.853 +- 0.117	=	pCi/g		0.0404	
		RA-228	0.835 +- 0.157	=	pCi/g		0.0743	
BGS-A2-47S	J472E1AA	RA-226	0.864 +- 0.121	=	pCi/g		0.045	
		RA-228	1.03 +- 0.174	=	pCi/g		0.0878	

Number of Results: 22

TAL Richland

rptSTLRchSaSum
V5.1.4 A2002

RER2 - Replicate Error Ratio = (S-D)/[sqrt(sq(TPUs)+sq(TPUd))] as defined by ICPT BOA.
= ERPIMS - Equal To, Analyte Detected
D Qual - Result is greater than 3 times 1s Total Uncertainty

Date: 18-Sep-07

QC Results Summary
TAL Richland STLR
Ordered by QC Type, Batch No.

Report No. : 36753

SDG No.: 35630

QC Type	Work Order Number	Parameter	Result +- Uncertainty (2s)	Qual	Units	Tracer Yield	LCS Recovery	Bias	MDC|MDA
BLANK QC	J48LF1AA	RA-226	-0.0506 +- 0.0459	N	pCi/g				0.0601
		RA-228	-0.0377 +- 0.0767	N	pCi/g				0.0974
LCS	J48LF1AC	CS-137	1.21 +- 0.152	=	pCi/g		110%	0.1	0.0231

Number of Results: 3

TAL Richland
rptSTLRchQcSum
V5.1.4 A2002

Bias - (Result/Expected)-1 as defined by ANSI N13.30.
= ERPIMS - Equal To, Analyte Detected
D Qual - Result is greater than 3 times 1s Total Uncertainty

FORM I

SAMPLE RESULTS

Date: 18-Sep-07

Lab Name: TA Richland
Lot-Sample No.: J7H200134-10
Client Sample ID: BGS-A1-37D

SDG: 35630
Report No. : 36753
COC No. :

Collection Date: 8/2/2007 8:15:00 AM
Received Date: 8/16/2007 10:00:00 AM
Matrix: SOIL SO

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: 7232501	**Work Order:** J472Q1AA			**Report DB ID:** 9J472Q10								
RA-226	**1.16**	=	0.15	0.15	0.0341	pCi/g		*(34.1)*	9/11/07 06:07 a		343.7	E901.1
								(15.3)			g	GER13$1
RA-228	**0.896**	=	0.17	0.17	0.0725	pCi/g		*(12.4)*	9/11/07 06:07 a		343.7	E901.1
								(10.5)			g	GER13$1

Number of Results: 2

Comments:

TAL Richland
rptSTLRchSample
V5.1.4 A2002

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
D Qual - Result is greater than 3 times 1s Total Uncertainty

FORM I

SAMPLE RESULTS

Date: 18-Sep-07

Lab Name:	**TA Richland**	**SDG:**	35630	**Collection Date:**	8/2/2007 8:15:00 AM
Lot-Sample No.:	**J7H200134-9**	**Report No. :**	36753	**Received Date:**	8/16/2007 10:00:00 AM
Client Sample ID:	**BGS-A1-37S**	**COC No. :**		**Matrix:**	SOIL SO

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: 7232501	**Work Order:** J472P1AA			**Report DB ID:** 9J472P10								
RA-226	**2.04**	=	0.26	0.26	0.0502	pCi/g		*(40.7)*	9/11/07 06:07 a		328.7	E901.1
								(15.9)			g	GER6$1
RA-228	**1.12**	=	0.20	0.20	0.0993	pCi/g		*(11.3)*	9/11/07 06:07 a		328.7	E901.1
								(11.5)			g	GER6$1

Number of Results: 2

Comments:

TAL Richland
rptSTLRchSample
V5.1.4 A2002

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
D Qual - Result is greater than 3 times 1s Total Uncertainty

FORM I

SAMPLE RESULTS

Date: 18-Sep-07

Lab Name:	TA Richland	SDG:	35630	Collection Date:	8/1/2007 3:30:00 PM
Lot-Sample No.:	J7H200134-2	Report No. :	36753	Received Date:	8/16/2007 10:00:00 AM
Client Sample ID:	BGS-A2-43D	COC No. :		Matrix:	SOIL SO

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: 7232501	Work Order: J472C1AA			Report DB ID: 9J472C10								
RA-226	**0.874**	=	0.11	0.11	0.0326	pCi/g		(26.8) (15.2)	9/7/07 08:31 p		351.7 g	E901.1 GER10$1
RA-228	**0.863**	=	0.15	0.15	0.0656	pCi/g		(13.2) (11.5)	9/7/07 08:31 p		351.7 g	E901.1 GER10$1

Number of Results: 2

Comments:

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
D Qual - Result is greater than 3 times 1s Total Uncertainty

FORM I

SAMPLE RESULTS

Date: 18-Sep-07

Lab Name:	TA Richland	SDG:	35630	Collection Date:	8/1/2007 3:30:00 PM
Lot-Sample No.:	J7H200134-1	Report No. :	36753	Received Date:	8/16/2007 10:00:00 AM
Client Sample ID:	BGS-A2-43S	COC No. :		Matrix:	SOIL SO

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: 7232501	Work Order: J47172AA			Report DB ID: 9J471720								
RA-226	**1.91**	=	0.24	0.24	0.0405	pCi/g		*(47.2)* *(15.9)*	9/13/07 05:26 a		313.4 g	E901.1 GER13$1
RA-228	**1.65**	=	0.28	0.28	0.0824	pCi/g		*(20.)* *(12.)*	9/13/07 05:26 a		313.4 g	E901.1 GER13$1

Number of Results: 2

Comments:

TAL Richland
rptSTLRchSample
V5.1.4 A2002

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
D Qual - Result is greater than 3 times 1s Total Uncertainty

FORM I

SAMPLE RESULTS

Date: 18-Sep-07

Lab Name:	TA Richland	**SDG:**	35630	**Collection Date:**	8/2/2007 10:30:00 AM
Lot-Sample No.:	J7H200134-8	**Report No. :**	36753	**Received Date:**	8/16/2007 10:00:00 AM
Client Sample ID:	BGS-A2-44D	**COC No. :**		**Matrix:**	SOIL SO

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: 7232501	**Work Order:** J472M1AA			**Report DB ID:** 9J472M10								
RA-226	**1.45**	=	0.19	0.19	0.0418	pCi/g		*(34.7)*	9/10/07 06:42 p		354.6	E901.1
								(15.4)			g	GER8$1
RA-228	**1.47**	ND	0.22	0.22	0.185	pCi/g		*(8.)*	9/10/07 06:42 p		354.6	E901.1
								(13.2)			g	GER8$1

Number of Results: 2

Comments:

TAL Richland
rptSTLRchSample
V5.1.4 A2002

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
D Qual - Result is greater than 3 times 1s Total Uncertainty

FORM I

SAMPLE RESULTS

Date: 18-Sep-07

Lab Name: TA Richland
Lot-Sample No.: J7H200134-7
Client Sample ID: BGS-A2-44S

SDG: 35630
Report No. : 36753
COC No. :

Collection Date: 8/2/2007 10:30:00 AM
Received Date: 8/16/2007 10:00:00 AM
Matrix: SOIL SO

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: 7232501	**Work Order:** J472K1AA			**Report DB ID:** 9J472K10								
RA-226	**1.82**	=	0.23	0.23	0.049	pCi/g		*(37.2)* *(15.8)*	9/10/07 05:38 a		337.7 g	E901.1 GER6$1
RA-228	**1.57**	=	0.25	0.25	0.0952	pCi/g		*(16.5)* *(12.3)*	9/10/07 05:38 a		337.7 g	E901.1 GER6$1

Number of Results: 2

Comments:

TAL Richland
rptSTLRchSample
V5.1.4 A2002

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
D Qual - Result is greater than 3 times 1s Total Uncertainty

FORM I

SAMPLE RESULTS

Date: 18-Sep-07

Lab Name:	TA Richland	**SDG:**	35630	**Collection Date:**	8/2/2007 11:15:00 AM
Lot-Sample No.:	J7H200134-6	**Report No. :**	36753	**Received Date:**	8/16/2007 10:00:00 AM
Client Sample ID:	BGS-A2-45D	**COC No. :**		**Matrix:**	SOIL SO

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: 7232501	**Work Order:** J472H1AA			**Report DB ID:** 9J472H10								
RA-226	**1.85**	=	0.23	0.23	0.0439	pCi/g		*(42.2)*	9/10/07 05:38 a		348.8	E901.1
								(15.8)			g	GER5$1
RA-228	**1.76**	=	0.26	0.26	0.0872	pCi/g		*(20.2)*	9/10/07 05:38 a		348.8	E901.1
								(13.4)			g	GER5$1

Number of Results: 2

Comments:

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
D Qual - Result is greater than 3 times 1s Total Uncertainty

FORM I

SAMPLE RESULTS

Date: 18-Sep-07

Lab Name: TA Richland
Lot-Sample No.: J7H200134-5
Client Sample ID: BGS-A2-45S

SDG: 35630
Report No. : 36753
COC No. :

Collection Date: 8/2/2007 11:15:00 AM
Received Date: 8/16/2007 10:00:00 AM
Matrix: SOIL SO

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: 7232501	**Work Order:** J472G1AA			**Report DB ID:** 9J472G10								
RA-226	**1.70**	=	0.22	0.22	0.0457	pCi/g		*(37.2)*	9/10/07 05:38 a		341.5	E901.1
								(15.2)			g	GER4$1
RA-228	**1.70**	=	0.27	0.27	0.0918	pCi/g		*(18.5)*	9/10/07 05:38 a		341.5	E901.1
								(12.6)			g	GER4$1

Number of Results: 2

Comments:

TAL Richland
rptSTLRchSample
V5.1.4 A2002

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
D Qual - Result is greater than 3 times 1s Total Uncertainty

FORM I

SAMPLE RESULTS

Date: 18-Sep-07

Lab Name: TA Richland
Lot-Sample No.: J7H200134-4
Client Sample ID: BGS-A2-47D

SDG: 35630
Report No. : 36753
COC No. :

Collection Date: 8/2/2007 1:15:00 PM
Received Date: 8/16/2007 10:00:00 AM
Matrix: SOIL SO

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: 7232501	**Work Order:** J472F1AA			**Report DB ID:** 9J472F10								
RA-226	**0.853**	=	0.12	0.12	0.0404	pCi/g		*(21.1)*	9/10/07 05:38 a		349.7	E901.1
								(14.6)			g	GER7$1
RA-228	**0.835**	=	0.16	0.16	0.0743	pCi/g		*(11.2)*	9/10/07 05:38 a		349.7	E901.1
								(10.6)			g	GER7$1

Number of Results: 2

Comments:

TAL Richland
rptSTLRchSample
V5.1.4 A2002

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
D Qual - Result is greater than 3 times 1s Total Uncertainty

FORM I

SAMPLE RESULTS

Date: 18-Sep-07

Lab Name:	TA Richland	SDG:	35630	Collection Date:	8/2/2007 1:15:00 PM
Lot-Sample No.:	J7H200134-3	Report No. :	36753	Received Date:	8/16/2007 10:00:00 AM
Client Sample ID:	BGS-A2-47S	COC No. :		Matrix:	SOIL SO

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: 7232501	Work Order: J472E1AA			Report DB ID: 9J472E10								
RA-226	**0.864**	=	0.12	0.12	0.045	pCi/g		*(19.2)* *(14.3)*	9/7/07 08:31 p		342.0 g	E901.1 GER14$1
RA-228	**1.03**	=	0.17	0.17	0.0878	pCi/g		*(11.7)* *(11.9)*	9/7/07 08:31 p		342.0 g	E901.1 GER14$1

Number of Results: 2

Comments:

TAL Richland
rptSTLRchSample
V5.1.4 A2002

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
D Qual - Result is greater than 3 times 1s Total Uncertainty

FORM II

Date: 18-Sep-07

DUPLICATE RESULTS

Lab Name:	TA Richland	**SDG:**	35630	**Collection Date:**	8/1/2007 3:30:00 PM
Lot-Sample No.:	J7H200134-1	**Report No. :**	36753	**Received Date:**	8/16/2007 10:00:00 AM
Client Sample ID:	BGS-A2-43S DUP	**COC No. :**		**Matrix:**	SOIL SO

Parameter	Result, Orig Rst	Qual	Count Error (2 s)	Total Uncert(2 s)	MDC|MDA, Action Lev	Rpt Unit, CRDL	Yield	Rst/MDC, Rst/TotUcert	Analysis, Prep Date	Total Sa Size	Aliquot Size	Analy Method, Primary Detector
Batch: 7232501	**Work Order:** J47172AC			**Report DB ID:** J47172CR		**Orig Sa DB ID:** 9J471720						
RA-226	1.91	=	0.24	0.24	0.035	pCi/g		(54.7)	9/13/07 05:56 p		313.4	E901.1
	1.91	= RER2	0.0					(15.9)			g	GER12$1
RA-228	1.62	=	0.29	0.29	0.0609	pCi/g		(26.6)	9/13/07 05:56 p		313.4	E901.1
	1.65	= RER2	0.1					(11.2)			g	GER12$1

Number of Results: 2

Comments:

TAL Richland
rptSTLRchDupV5.1
.4 A2002

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

Date: 18-Sep-07

Lab Name: TA Richland
SDG: 35630
Lot-Sample No.: J7H200000-501
Report No. : 36753
Matrix: SOIL

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: 7232501	Work Order: J48LF1AA			Report DB ID: J48LF1AB								
RA-226	-0.0506	ND	0.046	0.046	0.0601	pCi/g		-0.84 -(2.2)	9/7/07 08:29 p		200.3 g	E901.1 GER15$1
RA-228	-0.0377	ND	0.077	0.077	0.0974	pCi/g		-0.39 -0.98	9/7/07 08:29 p		200.3 g	E901.1 GER15$1

Number of Results: 2

Comments:

TAL Richland
rptSTLRchBlank
V5.1.4 A2002

MDC|MDA,Lc - Detection, Decision Level based on instrument background or blank, adjusted by the sample Efficiency, Yield, and Volume.
D Qual - Result is greater than 3 times 1s Total Uncertainty

FORM II

LCS RESULTS

Date: 18-Sep-07

Lab Name: TA Richland

SDG: 35630

Lot-Sample No.: J7H200000-501

Report No. : 36753

Matrix: SOIL

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: 7232501	Work Order: J48LF1AC			Report DB ID: J48LF1CS									
CS-137	1.21	=	0.15	0.15	0.0231	pCi/g		1.10	0.038	110%	9/11/07 06:08 a	200.04	E901.1
							Rec Limits:	70.	130.	0.1		g	GER7$1

Number of Results: 1

Comments:

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

TAL RICHLAND

BROWN AND CALDWELL

CHAIN OF CUSTODY RECORD

COC No. _____

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602-567-4000 / FAX 602-567-4001

YERS000301

PROJECT NAME: Yerington Mine Site

PROJECT NUMBER: 132039 J7H200134 356 30 Due 09.07.07

LABORATORY NAME & ADDRESS: SEVERN TRENT LABS, RICHLAND, WA

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	BGS-A1-37S	2 AUG 2007	0815	[illegible]	1	~~8~~ 16 oz Glass	NONE	S	EPA 903.0, EPA 904.0, HASL 300 (U, TH) J472P					0.1 ---- 0.8	
02	BGS-A1-37D	2 AUG 2007	0815	[illegible]	1	~~8~~ 16 oz Glass	NONE	S	EPA 903.0, EPA 904.0, HASL 300 (U, TH) J472Q					2 ---- 3	
03														----	
04														----	
05														----	
06														----	
07														----	
08														----	
09														----	
10														----	

COLLECTED & RELEASED BY: [signature]	DATE 8/1/07	TIME 07:00	COOLER I.D.:			COMMENTS (see note on back):
RECEIVED BY: [signature]	DATE 8/16/07	TIME 10:00	RELINQUISHED BY:	DATE / /	TIME :	
RECORD RETURNED BY:	DATE / /	TIME :				
COURIER:			SHIPPING NUMBER:			

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.

TAL RICHLAND

BROWN AND CALDWELL

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COC No. _____

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☐ 201 East Washington Street / Suite 100
Phoenix, AZ 85004
602-567-4000 / FAX 602-567-4001

PROJECT NAME: Yerington Mine Site

PROJECT NUMBER: 132039 J714200134 35630 Due 09.07.07

LABORATORY NAME & ADDRESS: SEVERN TRENT LABS, RICHLAND, WA

LINE NO.	SAMPLE - I.D.	COLLECTION DATE	COLLECTION TIME	SAMPLER'S INITIALS	NUMBER OF CONTAINERS	CONTAINER SIZE AND TYPE	PRESERVATIVE	MATRIX CODE	ANALYSES REQUESTED	FIELD FILTERED	QC - REQ	TAT	SAMPLING METHOD	DEPTH (FT.) BEGIN / END	PID READING (ppm)
01	BGS-A2-44S	2 AUG 2007	1030	BB	1	~~8~~ 16 oz Glass	NONE	S	EPA 903.0, EPA 904.0, HASL 300 (U, TH) J472K					0.1 / 0.8	
02	BGS-A2-44D	2 AUG 2007	1030	BB	1	~~8~~ 16 oz Glass	NONE	S	EPA 903.0, EPA 904.0, HASL 300 (U, TH) J472M					2 / 3	
03														----	
04														----	
05														----	
06														----	
07														----	
08														----	
09														----	
10														----	

COLLECTED & RELEASED BY:	DATE 8/3/07	TIME 0900	COOLER I.D.:			COMMENTS (see note on back):
RECEIVED BY:	DATE 8/6/07	TIME 10:00	RELINQUISHED BY:	DATE / /	TIME :	
RECORD RETURNED BY:	DATE / /	TIME :				
COURIER:			SHIPPING NUMBER:			

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YERS000317

TAL RICHLAND

PROJECT NAME: Yerington Mine Site

PROJECT NUMBER: 132039 J7H200134 35630 Due 09 07 07

LABORATORY NAME & ADDRESS: SEVERN TRENT LABS, RICHLAND, WA

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	BGS-A2-45S	2AUG 2007	1115	BB	1	~~8~~ 16 oz Glass	NONE	S	EPA 903.0, EPA 904.0, HASL 300 (U, TH) J472G					0.1 - 0.8	
02	BGS-A2-45D	2AUG 2007	1115	BB	1	~~8~~ 16 oz Glass	NONE	S	EPA 903.0, EPA 904.0, HASL 300 (U, TH) J472H					2 - 3	
03														----	
04														----	
05														----	
06														----	
07														----	
08														----	
09														----	
10														----	

COLLECTED & RELEASED BY:	DATE 8/15/07	TIME 0900	COOLER I.D.:			COMMENTS (see note on back):
RECEIVED BY:	DATE 8/16/07	TIME 10:00	RELINQUISHED BY:	DATE / /	TIME :	
RECORD RETURNED BY:	DATE / /	TIME :				
COURIER:			SHIPPING NUMBER:			

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

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BROWN AND CALDWELL

CHAIN OF CUSTODY RECORD

COC No. _____

YERS000321

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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 Mine Site

PROJECT NUMBER: 132039 J7H200134

LABORATORY NAME & ADDRESS: SEVERN TRENT LABS, RICHLAND, WA

35630 Due 09-07-07

LINE NO.	SAMPLE - I.D.	COLLECTION DATE	COLLECTION TIME	SAMPLER'S INITIALS	NUMBER OF CONTAINERS	CONTAINER SIZE AND TYPE	PRESERVATIVE	MATRIX CODE	ANALYSES REQUESTED	FIELD FILTERED	QC - REQ	TAT	SAMPLING METHOD	DEPTH (FT.) BEGIN / END	PID READING (ppm)
01	BGS-A2-47S	2AUG 2007	1315	BB	1	~~8~~ 16 oz Glass	NONE	S	EPA 903.0, EPA 904.0, HASL 300 (U, TH) J472E					----0.1 / 0.5	
02	BGS-A2-47D	2AUG 2007	1315	BB	1	~~8~~ 16 oz Glass	NONE	S	EPA 903.0, EPA 904.0, HASL 300 (U, TH) J472F					----2 / 3	
03														----	
04														----	
05														----	
06														----	
07														----	
08														----	
09														----	
10														----	

COLLECTED & RELEASED BY: BB	DATE 8/1/07	TIME 0900	COOLER I.D.:			COMMENTS (see note on back):
RECEIVED BY: RJ	DATE 8/1/07	TIME 10:00	RELINQUISHED BY:	DATE / /	TIME :	
RECORD RETURNED BY:	DATE / /	TIME :				
COURIER:			SHIPPING NUMBER:			

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

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TAL RICHLAND

BROWN AND CALDWELL

CHAIN OF CUSTODY RECORD

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YERS000313

PROJECT NAME: Yerington Mine Site

PROJECT NUMBER: 132039 J7H200134 35630

LABORATORY NAME & ADDRESS: SEVERN TRENT LABS, RICHLAND, WA

Due 09 07 07

LINE NO.	SAMPLE - I.D.	COLLECTION DATE	COLLECTION TIME	SAMPLER'S INITIALS	NUMBER OF CONTAINERS	CONTAINER SIZE AND TYPE	PRESERVATIVE	MATRIX CODE	ANALYSES REQUESTED	FIELD FILTERED	QC - REQ	TAT	SAMPLING METHOD	DEPTH (FT.) BEGIN ---- END	PID READING (ppm)
01	BGS-A2-43S	1 AUG 2007	1530	BB	1	~~8~~ 16 oz Glass	NONE	S	EPA 903.0, EPA 904.0, HASL 300 (U, TH) J4717					0.1 ---- 0.8	
02	BGS-A2-43D	1 AUG 2007	1530	BB	1	~~8~~ 16 oz Glass	NONE	S	EPA 903.0, EPA 904.0, HASL 300 (U, TH) J472C					2 ---- 3	
03														----	
04														----	
05														----	
06														----	
07														----	
08														----	
09														----	
10														----	

COLLECTED & RELEASED BY:	DATE 8 1 07	TIME 0900	COOLER I.D.:			COMMENTS (see note on back):
RECEIVED BY:	DATE 8/1/07	TIME 10:00	RELINQUISHED BY:	DATE / /	TIME :	
RECORD RETURNED BY:	DATE / /	TIME :				
COURIER:			SHIPPING NUMBER:			

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

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

SEVERN TRENT STL

Sample Check-in List

Date/Time Received: 8-16-07 1000

Client: BRC SDG #: 35630 NA [ ] SAF #: _____ NA [ ]

Work Order Number: J7H200134 Chain of Custody # YERS000313,321,317,315,301

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: 10
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? SOIL NA [✓] pH<2 [ ] pH>2 [ ] pH>9 [ ]
11. Sample Location, Sample Collector Listed? * Yes [✓] No [ ]
    *For documentation only. No corrective action needed.
12. Were any anomalies identified in sample receipt? Yes [ ] No [✓]
13. Description of anomalies (include sample numbers): _____

Sample Custodian: [signature] Date: 8-16-07

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, 9/03, Rev. 5

SEVERN TRENT STL

Data Review/Verification Checklist

RADIOCHEMISTRY, First Level Review

9/14/2007 12:43:36 PM

Lot No., Due Date: J7H200134; 09/07/2007

Client, Site: 536403; BRC GW/SOIL Yerington Quarterly GW/Soil

QC Batch No., Method Test: 7232501; RGAMMA Gamma by GER

SDG, Matrix: 35630; SOIL

	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:
NCM 10-10838

First Level Review Lisa Autonson **Date** 9/14/07

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Data Review Checklist
RADIOCHEMISTRY
Second Level Review

Batch Number: 7232501

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

Comments on any "No" response: See NCM

Second Level Review: Sheryl A Adkins Date: 9-14-07

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

TAL RICHLAND

8/23/2007 1:29:39 PM

Sample Preparation/Analysis

536403, Brown and Caldwell and Caldwell , Brown

AX Gamma PrpRC5013/5017
TA Gamma by HPGE
01 STANDARD TEST SET

Balance Id:1120421763
Pipet #:

AnalyDueDate: 09/03/2007

Batch: 7232501 SOIL pCi/g
SEQ Batch, Test: None

PM, Quote: SA , 73181

Sep1 DT/Tm Tech:
Sep2 DT/Tm Tech:
Prep Tech: ,Barcotl

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 J4717-1-AA J7H200134-1-SAMP 08/01/2007 15:30		313.40g,in AmtRec: 16OZG	#Containers: 1		5200	1000	G13 9/7/07	0630	9/7/07	
							Scr:	Alpha:		Beta:
2 J4717-1-AC-X J7H200134-1-DUP 08/01/2007 15:30	*Not enough sample	AmtRec: 16OZG	#Containers: 1				G8	1537	9/10/07	
							Scr:	Alpha:		Beta:
3 J472C-1-AA J7H200134-2-SAMP 08/01/2007 15:30		351.70g,in AmtRec: 16OZG	#Containers: 1		5200		G10	0631	9/7/07	
							Scr:	Alpha:		Beta:
4 J472C-1-AC-S J7H200134-2-MS 08/01/2007 15:30	No MS for Ammonia	AmtRec: 16OZG	#Containers: 1							
							Scr:	Alpha:		Beta:
5 J472E-1-AA J7H200134-3-SAMP 08/02/2007 13:15		342.00g,in AmtRec: 16OZG	#Containers: 1		5200		G14	0631	9/7/07	
							Scr:	Alpha:		Beta:
6 J472F-1-AA J7H200134-4-SAMP 08/02/2007 13:15		349.70g,in AmtRec: 16OZG	#Containers: 1				G9	1537	9/10/07	
							Scr:	Alpha:		Beta:
7 J472G-1-AA J7H200134-5-SAMP 08/02/2007 11:15		341.50g,in AmtRec: 16OZG	#Containers: 1				G4	1537		
							Scr:	Alpha:		Beta:

TAL RICHLAND

8/23/2007 1:29:42 PM

Sample Preparation/Analysis

536403, Brown and Caldwell and Caldwell , Brown

AX Gamma PrpRC5013/5017
TA Gamma by HPGE
01 STANDARD TEST SET

Balance Id:1120421763

Pipet #:

AnalyDueDate: 09/03/2007

Sep1 DT/Tm Tech:

Batch: 7232501 SOIL pCi/g PM, Quote: SA , 73181
SEQ Batch, Test: None

Sep2 DT/Tm Tech:

Prep Tech: ,Barcotl

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 J472H-1-AA J7H200134-6-SAMP 08/02/2007 11:15		348.80g,in AmtRec: 16OZG	#Containers: 1		5200	~~1000~~ 600 9/11/07	65 Scr:	1538 Alpha:	9/10/07 Beta:	
9 J472K-1-AA J7H200134-7-SAMP 08/02/2007 10:30		337.70g,in AmtRec: 16OZG	#Containers: 1				66 Scr:	1538 Alpha:	Beta:	
10 J472M-1-AA J7H200134-8-SAMP 08/02/2007 10:30		354.60g,in AmtRec: 16OZG	#Containers: 1				68 ~~67~~ 9/10/07 Scr:	0442 Alpha:	9/10/07 Beta:	
11 J472P-1-AA J7H200134-9-SAMP 08/02/2007 08:15		328.70g,in AmtRec: 16OZG	#Containers: 1				66 Scr:	1607 Alpha:	9/11/07 Beta:	
12 J472Q-1-AA J7H200134-10-SAMP 08/02/2007 08:15		343.70g,in AmtRec: 16OZG	#Containers: 1				613 Scr:	1607 Alpha:	Beta:	
13 J48LF-1-AA-B J7H200000-501-BLK 08/01/2007 15:30		200.30g,in AmtRec:	#Containers: 1		200		615 Scr:	0630 Alpha:	9/7/07 Beta:	
14 J48LF-1-AC-C J7H200000-501-LCS 08/01/2007 15:30		200.04g,in AmtRec:	GSE1123 08/06/07,pd 07/15/00,r #Containers: 1				67 Scr:	1607 Alpha:	9/11/07 Beta:	

8/23/2007 1:29:44 PM

Sample Preparation/Analysis

AX Gamma PrpRC5013/5017
TA Gamma by HPGE
01 STANDARD TEST SET

Balance Id:1120373922

Pipet #: _____

AnalyDueDate: 09/03/2007

Sep1 DT/Tm Tech:

Batch: 7232501 pCi/g

SEQ Batch, Test: None

Sep2 DT/Tm Tech:

Prep Tech: ,WoodT

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: Not enough sample for dup please recount on a seperate detector. 10 day ingrowth started 8/23/07 JRW

All Clients for Batch:
536403, Brown and Caldwell Brown and Caldwell , SA , 73181

J47171AA-SAMP Constituent List:

Cs-137	RDL:0.2	pCi/g	LCL:70	UCL:130	RPD:35	Cs-137DA	RDL:0.2	pCi/g	LCL:70	UCL:130	RPD:35

J472C1AC-MS:

J48LF1AA-BLK:

Cs-137	RDL:0.2	pCi/g	LCL:	UCL:	RPD:	Cs-137DA	RDL:0.2	pCi/g	LCL:	UCL:	RPD:

J48LF1AC-LCS:

Cs-137	RDL:0.2	pCi/g	LCL:70	UCL:130	RPD:35	Cs-137DA	RDL:0.2	pCi/g	LCL:70	UCL:130	RPD:35

J47171AA-SAMP Calc Info:
Uncert Level (#s).: 2 Decay to SaDt: Y Blk Subt.: N Sci.Not.: Y ODRs: B
J472C1AC-MS:
Uncert Level (#s).: 2 Decay to SaDt: Y Blk Subt.: N Sci.Not.: Y ODRs: B
J48LF1AA-BLK:
Uncert Level (#s).: 2 Decay to SaDt: Y Blk Subt.: N Sci.Not.: Y ODRs: B
J48LF1AC-LCS:
Uncert Level (#s).: 2 Decay to SaDt: Y Blk Subt.: N Sci.Not.: Y ODRs: B

Approved By _____ Date: _____

9/12/2007 1:47:17 PM

Sample Preparation/Analysis

536403, Brown and Caldwell , Brown
and Caldwell

AX Gamma PrpRC5013/5017
TA Gamma by HPGE
01 STANDARD TEST SET

Balance Id:1120421763
Pipet #:

AnalyDueDate: 09/03/2007

Sep1 DT/Tm Tech:

Batch: 7232501 SOIL pCi/g PM, Quote: SA , 73181

Sep2 DT/Tm Tech:

SEQ Batch, Test: None

Prep Tech: ,Barcotl

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 J4717-1-AA J7H200134-1-SAMP 08/01/2007 15:30		313.40g,in AmtRec: 16OZG	#Containers: 1					Sc:	Alpha:	Beta:
2 J4717-1-AC-X J7H200134-1-DUP 08/01/2007 15:30		AmtRec: 16OZG	#Containers: 1					Scr:	Alpha:	Beta:
[redacted] J7H200134-1-SAMP 08/01/2007 15:30	313.40g	AmtRec: 16OZG	#Containers: 1	S200		~~1000~~ 1600 gm 9/12/07		Scr: G13	Alpha: 1524	Beta: 9/13/07
4 [redacted] J7H200134-1-DUP 08/01/2007 15:30	313.40g	AmtRec: 16OZG	#Containers: 1					Scr: G12	Alpha: 0355	Beta: 9/13/07
5 J472C-1-AA J7H200134-2-SAMP 08/01/2007 15:30		351.70g,in AmtRec: 16OZG	#Containers: 1					Scr:	Alpha:	Beta:
6 J472C-1-AC-S J7H200134-2-MS 08/01/2007 15:30		AmtRec: 16OZG	#Containers: 1					Scr:	Alpha:	Beta:
7 J472E-1-AA J7H200134-3-SAMP 08/02/2007 13:15		342.00g,in AmtRec: 16OZG	#Containers: 1					Scr:	Alpha:	Beta:

TAL RICHLAND

9/12/2007 1:47:24 PM

Sample Preparation/Analysis

Balance Id:1120421763

536403, Brown and Caldwell , Brown
and Caldwell

AX Gamma PrpRC5013/5017
TA Gamma by HPGE
01 STANDARD TEST SET

Pipet #:

AnalyDueDate: 09/03/2007

Sep1 DT/Tm Tech:

Batch: 7232501 SOIL pCi/g PM, Quote: SA , 73181

Sep2 DT/Tm Tech:

SFQ Batch, Test: None

Prep Tech: ,Barcotl

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 J472F-1-AA J7H200134-4-SAMP 08/02/2007 13:15		349.70g,in AmtRec: 16OZG	#Containers: 1						Scr: Alpha:	Beta:
9 J472G-1-AA J7H200134-5-SAMP 08/02/2007 11:15		341.50g,in AmtRec: 16OZG	#Containers: 1						Scr: Alpha:	Beta:
10 J472H-1-AA J7H200134-6-SAMP 08/02/2007 11:15		348.80g,in AmtRec: 16OZG	#Containers: 1						Scr: Alpha:	Beta:
11 J472K-1-AA J7H200134-7-SAMP 08/02/2007 10:30		337.70g,in AmtRec: 16OZG	#Containers: 1						Scr: Alpha:	Beta:
12 J472M-1-AA J7H200134-8-SAMP 08/02/2007 10:30		354.60g,in AmtRec: 16OZG	#Containers: 1						Scr: Alpha:	Beta:
13 J472P-1-AA J7H200134-9-SAMP 08/02/2007 08:15		328.70g,in AmtRec: 16OZG	#Containers: 1						Scr: Alpha:	Beta:
14 J472Q-1-AA J7H200134-10-SAMP 08/02/2007 08:15		343.70g,in AmtRec: 16OZG	#Containers: 1						Scr: Alpha:	Beta:

TAL RICHLAND

Sample Preparation/Analysis

AX Gamma PrpRC5013/5017
TA Gamma by HPGE
01 STANDARD TEST SET

Balance Id:1120421763
Pipet #:
Sep1 DT/Tm Tech:
Sep2 DT/Tm Tech:
Prep Tech: Barcotl

AnalyDueDate: 09/03/2007

Batch: 7232501 pCi/g
SEQ Batch, Test: None

Work Order, Lot, Sample DateTime	Total Amt/Unit	Initial Aliquot Amt/Unit	QC Tracer Prep Date	Dish Size	Ppt or Geometry	Count Time Min	Detector Id	Count On | Off (24hr) Circle	CR Analyst, Init/Date	Comments:
15 J48LF-1-AA-B J7H200000-501-BLK 08/01/2007 15:30		200.30g,in AmtRec:	#Containers: 1						Scr: Alpha: Beta:	
16 J48LF-1-AC-C J7H200000-501-LCS 08/01/2007 15:30		200.04g,in AmtRec:	GSE1123 08/06/07,pd 07/15/00,r #Containers: 1						Scr: Alpha: Beta:	

Comments:

All Clients for Batch:
536403, Brown and Caldwell Brown and Caldwell , SA , 73181

J47171AA-SAMP Constituent List:

Cs-137	RDL:0.2	pCi/g	LCL:70	UCL:130	RPD:35	Cs-137DA	RDL:0.2	pCi/g	LCL:70	UCL:130	RPD:35

J472C1AC-MS:

J48LF1AA-BLK:

Cs-137	RDL:0.2	pCi/g	LCL:	UCL:	RPD:	Cs-137DA	RDL:0.2	pCi/g	LCL:	UCL:	RPD:

J48LF1AC-LCS:

Cs-137	RDL:0.2	pCi/g	LCL:70	UCL:130	RPD:35	Cs-137DA	RDL:0.2	pCi/g	LCL:70	UCL:130	RPD:35

J47171AA-SAMP Calc Info:
Uncert Level (#s).: 2 Decay to SaDt: Y Blk Subt.: N Sci.Not.: Y ODRs: B
J472C1AC-MS:
Uncert Level (#s).: 2 Decay to SaDt: Y Blk Subt.: N Sci.Not.: Y ODRs: B
J48LF1AA-BLK:
Uncert Level (#s).: 2 Decay to SaDt: Y Blk Subt.: N Sci.Not.: Y ODRs: B
J48LF1AC-LCS:
Uncert Level (#s).: 2 Decay to SaDt: Y Blk Subt.: N Sci.Not.: Y ODRs: B

TAL RICHLAND

9/12/2007 1:47:25 PM

Sample Preparation/Analysis

AX Gamma PrpRC5013/5017
TA Gamma by HPGE
01 STANDARD TEST SET

Balance Id:1120373922

Pipet #:

Sep1 DT/Tm Tech:

Sep2 DT/Tm Tech:

Prep Tech: ,WoodT

AnalyDueDate: 09/03/2007

Batch: 7232501 pCi/g

SEO Batch Test: Non-

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:

Approved By _____ Date: _____

[redacted] STL

*** RECOUNT REQUEST ***

DUE DATE 91107

CUSTOMER Brown & Caldwell

ANALYSIS Cd, Cr, Ni

MATRIX Soil

JOB NUMBER JJH2091SU

SAMPLE DELIVERY GROUP

BATCH/CH NUMBER 123 2501

LAB SAMPLE ID	REASON FOR REQUEST & ANALYSIS COMMENTS
[illegible]	Q.C. out.

RC-126 10/03 REV 4

Clouseau
Nonconformance Memo

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

NCM #: **10-10838**
NCM Initiated By: Lisa Antonson
Date Opened: 09/14/2007
Date Closed:

Classification: **Anomaly**
Status: **GLREVIEW**
Production Area: Environmental - Prep
Tests: Gamma by GER
Lot #'s (Sample #'s): J7H200000 (501), J7H200134 (1,10,2,3,4,5,6,7,8,9),
QC Batches: 7232501,

Nonconformance: Other (describe in detail)
Subcategory: Other (explanation required)

Problem Description / Root Cause

Name	Date	Description
Lisa Antonson	09/14/2007	In the original count the dups for this batch were out of limits. A recount brought them within limits.

Corrective Action

Name	Date	Corrective Action
Lisa Antonson	09/14/2007	The samples were recounted.

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: 9/14/2007

9/14/2007 12:43:01 PM

ICOC Fraction Transfer/Status Report

ByDate: 9/14/2006, 9/19/2007, Batch: '7232501', User: *ALL Order By DateTimeAccepting

Q Batch	Work Ord	CurStatus	Accepting			Comments
7232501						
AC		CalcC	WoodT	8/23/2007 1:26:06 PM		
SC			Wagarr	IsBatched	8/20/2007 4:21:41 PM	ICOC_RADCALC v4.8.26
SC			WoodT	InPrep	8/23/2007 1:26:06 PM	RICH-RC-5013 REVISION 7
SC			WoodT	Prep1C	8/23/2007 1:26:25 PM	RICH-RC-5013 REVISION 7
SC			WoodT	InPrep2	8/23/2007 1:26:40 PM	RICH-RC-5017 REVISION 6
SC			WoodT	Prep2C	8/23/2007 1:26:53 PM	RICH-RC-5017 REVISION 6
SC			BlackCL	InCnt1	8/24/2007 6:49:06 AM	RICH-RD-0007 REVISION 6
SC			DAWKINSO	CalcC	9/11/2007 9:49:41 PM	RICH-RD-0007 REVISION 6
SC			BlackCL	InCnt1	9/12/2007 1:59:56 PM	RICH-RD-0007 REVISION 6
SC			BlackCL	CalcC	9/14/2007 5:57:14 AM	RICH-RD-0007 REVISION 6
AC			WoodT	8/23/2007 1:26:25 PM		
AC			WoodT	8/23/2007 1:26:40 PM		
AC			WoodT	8/23/2007 1:26:53 PM		
AC			BlackCL	8/24/2007 6:49:06		
AC			DAWKINSO	9/11/2007 9:49:41 PM		
AC			BlackCL	9/12/2007 1:59:56 PM		
AC			BlackCL	9/14/2007 5:57:14		

AC: Accepting Entry; SC: Status Change

STL Richland

Richland Wa.

Page 1

Grp Rec Cnt: 8

ICOCFractions v4.8.27

9/14/2007 12:43:00 PM

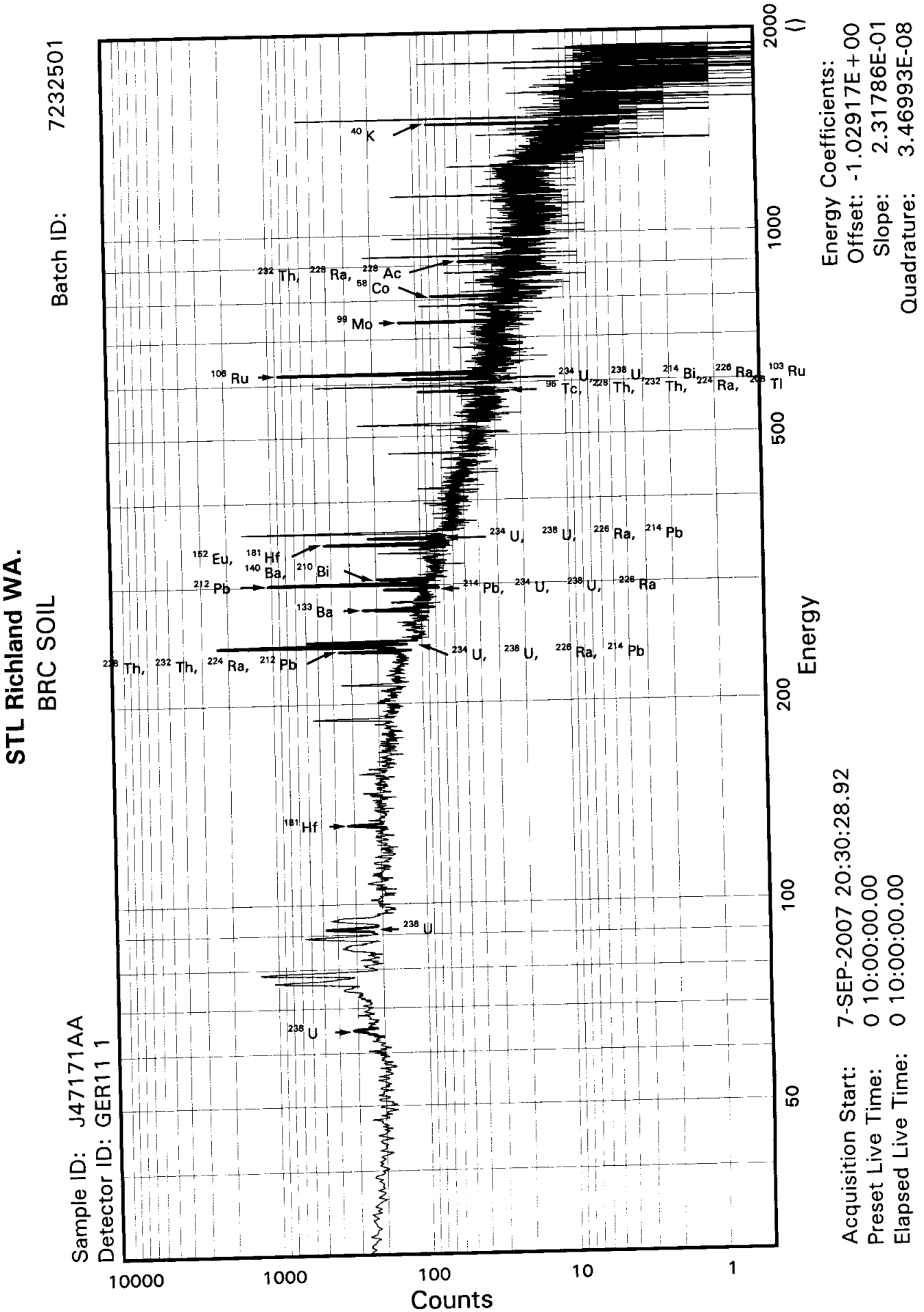
Rpt DB Transfer log (Batch Results)

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
35630	**9J471720**			**J7H2001341**	BGS-A2-43S	SOIL	8/16/2007 10:00:00		8/1/2007 3:30:00 PM			
RA-226DA	AXTA	1		9/13/2007 5:26:52 AM	**1.9104E+00**	1.205E-01	1.205E-01	4.05E-02	PCI/GRAM			3.134E+2
RA-228DA	AXTA	1		9/13/2007 5:26:52 AM	**1.6524E+00**	1.381E-01	1.381E-01	8.242E-02	PCI/GRAM			3.134E+2
35630	**9J472C10**			**J7H2001342**	BGS-A2-43D	SOIL	8/16/2007 10:00:00		8/1/2007 3:30:00 PM			
RA-226DA	AXTA	0		9/7/2007 8:31:01 PM	**8.7386E-01**	5.742E-02	5.742E-02	3.264E-02	PCI/GRAM			3.517E+2
RA-228DA	AXTA	0		9/7/2007 8:31:01 PM	**8.6334E-01**	7.502E-02	7.502E-02	6.557E-02	PCI/GRAM			3.517E+2
35630	**9J472E10**			**J7H2001343**	BGS-A2-47S	SOIL	8/16/2007 10:00:00		8/2/2007 1:15:00 PM			
RA-226DA	AXTA	0		9/7/2007 8:31:53 PM	**8.6442E-01**	6.046E-02	6.046E-02	4.499E-02	PCI/GRAM			3.42E+2
RA-228DA	AXTA	0		9/7/2007 8:31:53 PM	**1.0283E+00**	8.676E-02	8.676E-02	8.781E-02	PCI/GRAM			3.42E+2
35630	**9J472F10**			**J7H2001344**	BGS-A2-47D	SOIL	8/16/2007 10:00:00		8/2/2007 1:15:00 PM			
RA-226DA	AXTA	0		9/10/2007 5:38:17 AM	**8.5349E-01**	5.828E-02	5.828E-02	4.044E-02	PCI/GRAM			3.497E+2
RA-228DA	AXTA	0		9/10/2007 5:38:17 AM	**8.3512E-01**	7.86E-02	7.86E-02	7.426E-02	PCI/GRAM			3.497E+2
35630	**9J472G10**			**J7H2001345**	BGS-A2-45S	SOIL	8/16/2007 10:00:00		8/2/2007 11:15:00 AM			
RA-226DA	AXTA	0		9/10/2007 5:38:00 AM	**1.703E+00**	1.119E-01	1.119E-01	4.572E-02	PCI/GRAM			3.415E+2
RA-228DA	AXTA	0		9/10/2007 5:38:00 AM	**1.6953E+00**	1.341E-01	1.341E-01	9.18E-02	PCI/GRAM			3.415E+2
35630	**9J472H10**			**J7H2001346**	BGS-A2-45D	SOIL	8/16/2007 10:00:00		8/2/2007 11:15:00 AM			
RA-226DA	AXTA	0		9/10/2007 5:38:32 AM	**1.8538E+00**	1.172E-01	1.172E-01	4.391E-02	PCI/GRAM			3.488E+2
RA-228DA	AXTA	0		9/10/2007 5:38:32 AM	**1.7575E+00**	1.313E-01	1.313E-01	8.717E-02	PCI/GRAM			3.488E+2
35630	**9J472K10**			**J7H2001347**	BGS-A2-44S	SOIL	8/16/2007 10:00:00		8/2/2007 10:30:00 AM			
RA-226DA	AXTA	0		9/10/2007 5:38:56 AM	**1.8211E+00**	1.15E-01	1.15E-01	4.895E-02	PCI/GRAM			3.377E+2
RA-228DA	AXTA	0		9/10/2007 5:38:56 AM	**1.5695E+00**	1.272E-01	1.272E-01	9.519E-02	PCI/GRAM			3.377E+2
35630	**9J472M10**			**J7H2001348**	BGS-A2-44D	SOIL	8/16/2007 10:00:00		8/2/2007 10:30:00 AM			
RA-226DA	AXTA	0		9/10/2007 6:42:51 PM	**1.4482E+00**	9.399E-02	9.399E-02	4.177E-02	PCI/GRAM			3.546E+2
RA-228DA	AXTA	0		9/10/2007 6:42:51 PM	**1.4719E+00**	1.114E-01	1.114E-01	1.85E-01	PCI/GRAM			3.546E+2
35630	**9J472P10**			**J7H2001349**	BGS-A1-37S	SOIL	8/16/2007 10:00:00		8/2/2007 8:15:00 AM			
RA-226DA	AXTA	0		9/11/2007 6:07:36 AM	**2.0407E+00**	1.284E-01	1.284E-01	5.015E-02	PCI/GRAM			3.287E+2
RA-228DA	AXTA	0		9/11/2007 6:07:36 AM	**1.1234E+00**	9.802E-02	9.802E-02	9.934E-02	PCI/GRAM			3.287E+2
35630	**9J472Q10**			**J7H20013410**	BGS-A1-37D	SOIL	8/16/2007 10:00:00		8/2/2007 8:15:00 AM			
RA-226DA	AXTA	0		9/11/2007 6:07:50 AM	**1.1608E+00**	7.577E-02	7.577E-02	3.408E-02	PCI/GRAM			3.437E+2
RA-228DA	AXTA	0		9/11/2007 6:07:50 AM	**8.9552E-01**	8.528E-02	8.528E-02	7.25E-02	PCI/GRAM			3.437E+2
35630	**J47172CR**			**J7H2001341**	BGS-A2-43S DUP	SOIL	8/16/2007 10:00:00		8/1/2007 3:30:00 PM			
RA-226DA	AXTA	1	R	9/13/2007 5:56:09 PM	**1.9146E+00**	1.201E-01	1.201E-01	3.498E-02	PCI/GRAM			3.134E+2
RA-228DA	AXTA	1	R	9/13/2007 5:56:09 PM	**1.6229E+00**	1.454E-01	1.454E-01	6.092E-02	PCI/GRAM			3.134E+2
35630	**J48LF1AB**			**J7H200000501**	INTRA-LAB BLANK	SOIL	8/16/2007 10:00:00		8/1/2007 3:30:00 PM			
RA-226DA	AXTA	0	B	9/7/2007 8:29:28 PM	**-5.056E-02**	2.296E-02	2.296E-02	6.015E-02	PCI/GRAM			2.003E+2
RA-228DA	AXTA	0	B	9/7/2007 8:29:28 PM	**-3.7675E-02**	3.835E-02	3.835E-02	9.738E-02	PCI/GRAM			2.003E+2
35630	**J48LF1CS**			**J7H200000501**	INTRA-LAB CHECK	SOIL	8/16/2007 10:00:00		8/1/2007 3:30:00 PM			
CS-137DA	AXTA	0	S	9/11/2007 6:08:11 AM	**1.2075E+00**	7.6E-02	7.6E-02	2.308E-02	PCI/GRAM	1.0981E+00		2.0E+2

7232501,7232501. **Samples Inserted | Updated | NotUpdated => 13 | 0 | 0,
**Results Inserted | ReTestInserted | Updated | NotInserted => 25 | 0 | 0 | 0.
**Diff RptDb | Qtims => .

STL Richland, Wa Calc Review v4.8.27

Page 1


STL Richland WA.
BRC SOIL
Batch ID: 7232501
Sample ID: J47171AA
Detector ID: GER11 1
Acquisition Start: 7-SEP-2007 20:30:28.92
Preset Live Time: 0 10:00:00.00
Elapsed Live Time: 0 10:00:00.00
Energy Coefficients:
Offset: -1.02917E+00
Slope: 2.31786E-01
Quadrature: 3.46993E-08
Counts
Energy
10000
1000
100
10
1
50
100
200
500
1000
2000
40 K
232 Th, 228 Ra, 228 Ac
58 Co
99 Mo
106 Ru
234 U, 238 U, 214 Bi, 226 Ra, 103 Ru
95 Tc, 228 Th, 232 Th, 224 Ra, 208 Tl
234 U, 238 U, 226 Ra, 214 Pb
152 Eu, 181 Hf
140 Ba, 210 Bi
212 Pb
214 Pb, 234 U, 238 U, 226 Ra
133 Ba
228 Th, 232 Th, 224 Ra, 212 Pb
234 U, 238 U, 226 Ra, 214 Pb
181 Hf
238 U
238 U

SAMPLE IDENTIFICATION: J47171AA

CONFIGURATION ID: GER11:J47171AA_070972030
TITLE : BRC SOIL
SAMPLE ID : J47171AA

REPORT DATE: 10-SEP-07
ACQUIRE DATE: 07-SEP-07 20:30:28
ELAPSED LIVE TIME: 36000.0 Sec
PRESET LIVE TIME: 0 10:00:00

SAMPLE DATE: 1-AUG-2007 15:30:00.00
CALIB DATE: 7-SEP-2007 06:28:26.59
ELAPSED LIVE TIME: 0 10:00:00
ELAPSED REAL TIME: 0 10:00:37

SAMPLE QUANTITY: 3.1340E+02
SAMPLE GEOMETRY: S200

UNITS: GRAMS
SAMPLE TYPE:

ENERGY OFFSET: -.1029E+01 keV
ENERGY SLOPE: 2.3179E-01 keV/C
ENERGY Q COEFF: 3.4699E-08 keV/C^^2
PEAK SENSITIVITY: 5.000

FWHM OFFSET: 1.9155E-01 keV
FWHM SLOPE: 4.1329E-02 sqr keV
ITERATIONS: 10
GAUSSIAN SENSITIVITY: 30.00 %

ABUNDANCE LIMIT: 80.00 %
ENERGY TOLERANCE: 1.500 keV
VARIABLE PEAK WIDTH: 3.00

HALF-LIFE RATIO: 8.00
ACTIVITY MULTIPLIER: 1.0000E+06
LIBRARY: [NUC_LIBR]QRL.NLB

VMS Peak Search Report V1.9 Generated 10-SEP-2007 22:12:01

Configuration : $DISK1:[GER11.SAMPLE]J47171AA_070972030.CNF;1
Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6
Sample title : BRC SOIL
Sample date : 1-AUG-2007 15:30:00 Acquisition date : 7-SEP-2007 20:30:28
Sample ID : J47171AA Sample quantity : 313.40 GRAMS
Sample type : Sample geometry : S200
Elapsed live time: 0 10:00:00.00 Elapsed real time: 0 10:00:37.54 0.1%
Start energy : 1.29 End energy : 1900.09
Sensitivity : 5.00 Gaussian : 30.00
Critical level : No

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	64.56	285	2027	0.67	282.98	278	9	7.91E-03	29.1	
2	5	76.41*	2593	3166	0.89	334.06	321	29	7.20E-02	4.9	7.96E+00
3	5	78.63	3767	2166	0.73	343.65	321	29	1.05E-01	2.8	
4	0	88.92*	1536	2758	0.84	388.04	383	12	4.27E-02	7.4	
5	0	91.65	828	2439	0.72	399.84	395	11	2.30E-02	12.1	
6	0	94.69	1382	3047	1.50	412.94	406	14	3.84E-02	8.9	
7	0	131.55	432	1987	0.75	571.96	567	10	1.20E-02	19.9	
8	0	157.14	184	1751	0.68	682.33	678	9	5.11E-03	41.7	
9	0	189.55	1811	2174	1.10	822.10	815	13	5.03E-02	5.8	
10	0	213.23	888	1855	0.92	924.24	918	13	2.47E-02	10.5	
11	0	238.61	674	1762	0.75	1033.74	1028	12	1.87E-02	13.1	
12	6	243.17	9253	1697	0.92	1053.38	1044	31	2.57E-01	1.4	5.27E+00
13	6	246.34	2820	1992	1.49	1067.06	1044	31	7.83E-02	4.3	
14	0	275.33	900	1819	1.09	1192.08	1183	19	2.50E-02	11.8	
15	0	282.45	367	1179	1.35	1222.80	1217	13	1.02E-02	20.0	
16	0	295.29	424	1178	0.94	1278.15	1272	13	1.18E-02	17.5	
17	0	300.80	4498	1505	1.03	1301.93	1294	17	1.25E-01	2.5	
18	0	305.78	489	1021	0.98	1323.40	1317	12	1.36E-02	13.8	
19	0	334.13	561	1097	0.91	1445.66	1439	15	1.56E-02	13.5	
20	0	344.67	1892	1052	1.11	1491.10	1484	15	5.26E-02	4.4	
21	0	351.78*	503	900	0.90	1521.80	1516	12	1.40E-02	13.7	
22	0	358.55	7658	1246	1.10	1550.99	1542	19	2.13E-01	1.6	
23	0	395.91	83	784	0.71	1712.10	1708	13	2.30E-03	70.8	
24	0	417.00	180	778	1.40	1803.03	1797	13	5.00E-03	32.8	
25	0	471.49	690	787	1.10	2037.97	2027	21	1.92E-02	10.9	
26	0	520.36	1829	1085	1.64	2248.69	2236	27	5.08E-02	5.5	
27	0	583.25	199	663	1.10	2519.80	2508	17	5.52E-03	30.6	
28	0	594.12	3019	938	1.41	2566.66	2554	24	8.39E-02	3.2	
29	0	609.12	518	746	1.28	2631.34	2621	21	1.44E-02	13.9	
30	0	620.71	5773	773	1.45	2681.32	2670	25	1.60E-01	1.9	
31	0	740.92	753	543	1.43	3199.46	3187	24	2.09E-02	9.0	
32	0	782.36	390	579	1.45	3378.10	3368	19	1.08E-02	15.6	
33	0	810.00	448	425	1.63	3497.22	3487	23	1.25E-02	12.9	
34	0	876.94	503	437	2.70	3785.67	3772	28	1.40E-02	10.9	
35	0	910.71	203	366	1.29	3931.22	3921	19	5.63E-03	20.5	
36	0	928.11	2037	560	2.23	4006.19	3991	28	5.66E-02	3.5	
37	0	986.10	1584	855	2.11	4256.10	4232	48	4.40E-02	6.1	
38	0	1141.18	1413	545	2.12	4924.24	4908	38	3.93E-02	5.2	
39	0	1261.03	483	605	2.34	5440.50	5423	33	1.34E-02	13.8	
40	0	1459.99*	342	183	1.75	6297.36	6284	28	9.51E-03	13.1	
41	0	1488.03	7244	318	2.35	6418.12	6398	43	2.01E-01	1.4	
42	0	1797.51	996	149	2.45	7750.49	7733	40	2.77E-02	4.3	

Flag: "*" = Peak area was modified by background subtraction

VMS Nuclide Identification Report V3.0 Generated 10-SEP-2007 22:12:02

Configuration : $DISK1:[GER11.SAMPLE]J47171AA_070972030.CNF;1
Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.3
Sample title : BRC SOIL
Sample date : 1-AUG-2007 15:30:00
Sample ID : J47171AA
Sample type :
Elapsed live time: 0 10:00:00.00
Energy tolerance : 1.50
Errors propagated: Yes
Efficiency type : Empirical
Abundance limit : 80.00

Acquisition date : 7-SEP-2007 20:30:28
Sample quantity : 313.40 GRAMS
Sample geometry : S200
Elapsed real time: 0 10:00:37.54 0.1%
Half life ratio : 8.00
Systematic Error : 5.00 %
Efficiencies at : Peak Energy

Nuclide Line Activity Report

Nuclide Type: NP

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected PCI/GRAM	Decay Corr PCI/GRAM	1-Sigma %Error
K-40	1460.81	342	10.67*	8.391E-01	9.157E-01	9.157E-01	14.53
PB-212	238.63	674	44.60*	3.226E+00	1.122E-01	1.122E-01	14.48
	300.09	4498	3.41	2.814E+00	1.123E+01	1.123E+01	6.76
PB-214	241.98	9253	7.49	3.192E+00	9.271E+00	9.271E+00	6.39
	295.21	424	19.20	2.846E+00	1.857E-01	1.857E-01	18.57
	351.92	503	37.20*	2.553E+00	1.269E-01	1.269E-01	15.04
	785.91	------	1.10	1.435E+00	------ Line Not Found		------
RA-224DA	238.63	674	44.60*	3.226E+00	1.122E-01	1.164E-01	14.48
	240.98	------	3.95	3.209E+00	------ Line Not Found		------
	583.14	199	30.25	1.815E+00	8.663E-02	8.991E-02	31.14
	860.37	------	4.48	1.328E+00	------ Line Not Found		------
TH-228DA	238.63	674	44.60	3.226E+00	1.122E-01	1.164E-01	14.48
	240.98	------	3.95	3.209E+00	------ Line Not Found		------
	583.14	199	30.25*	1.815E+00	8.663E-02	8.991E-02	31.14
	860.37	------	4.48	1.328E+00	------ Line Not Found		------
U-234DA	241.98	9253	7.49	3.192E+00	9.271E+00	9.271E+00	6.39
	295.22	424	19.20*	2.846E+00	1.857E-01	1.857E-01	18.57
	351.92	503	37.20	2.553E+00	1.269E-01	1.269E-01	15.04
	609.31	518	46.30	1.757E+00	1.526E-01	1.526E-01	15.13
U-238DA	241.98	9253	7.49	3.192E+00	9.271E+00	9.271E+00	6.39
	295.22	424	19.20	2.846E+00	1.857E-01	1.857E-01	18.57
	351.92	503	37.20*	2.553E+00	1.269E-01	1.269E-01	15.04
	609.31	518	46.30	1.757E+00	1.526E-01	1.526E-01	15.13
U-238DHP	63.28	285	3.80*	1.253E+00	1.433E+00	1.433E+00	29.79
	92.59	828	5.41	3.069E+00	1.194E+00	1.194E+00	13.78

Nuclide Type: AP

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected PCI/GRAM	Decay Corr PCI/GRAM	1-Sigma %Error
CO-58	810.76	448	99.40*	1.399E+00	7.728E-02	1.115E-01	14.55

Flag: "*" = Keyline

Sample ID : J47171AA Acquisition date : 7-SEP-2007 20:30:28

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
5	76.41	2593	3166	0.89	334.06	321	29	7.20E-02	4.9	2.15E+00	
5	78.63	3767	2166	0.73	343.65	321	29	1.05E-01	2.8	2.31E+00	
0	88.92	1536	2758	0.84	388.04	383	12	4.27E-02	7.4	2.93E+00	
0	94.69	1382	3047	1.50	412.94	406	14	3.84E-02	8.9	3.21E+00	
0	131.55	432	1987	0.75	571.96	567	10	1.20E-02	19.9	3.92E+00	T
0	157.14	184	1751	0.68	682.33	678	9	5.11E-03	41.7	3.87E+00	
0	189.55	1811	2174	1.10	822.10	815	13	5.03E-02	5.8	3.63E+00	
0	213.23	888	1855	0.92	924.24	918	13	2.47E-02	10.5	3.43E+00	
6	246.34	2820	1992	1.49	1067.06	1044	31	7.83E-02	4.3	3.17E+00	
0	275.33	900	1819	1.09	1192.08	1183	19	2.50E-02	11.8	2.97E+00	T
0	282.45	367	1179	1.35	1222.80	1217	13	1.02E-02	20.0	2.92E+00	
0	305.78	489	1021	0.98	1323.40	1317	12	1.36E-02	13.8	2.79E+00	T
0	334.13	561	1097	0.91	1445.66	1439	15	1.56E-02	13.5	2.64E+00	
0	344.67	1892	1052	1.11	1491.10	1484	15	5.26E-02	4.4	2.59E+00	T
0	358.55	7658	1246	1.10	1550.99	1542	19	2.13E-01	1.6	2.52E+00	
0	395.91	83	784	0.71	1712.10	1708	13	2.30E-03	70.8	2.37E+00	
0	417.00	180	778	1.40	1803.03	1797	13	5.00E-03	32.8	2.29E+00	
0	471.49	690	787	1.10	2037.97	2027	21	1.92E-02	10.9	2.11E+00	
0	520.36	1829	1085	1.64	2248.69	2236	27	5.08E-02	5.5	1.97E+00	
0	594.12	3019	938	1.41	2566.66	2554	24	8.39E-02	3.2	1.79E+00	
0	620.71	5773	773	1.45	2681.32	2670	25	1.60E-01	1.9	1.73E+00	T
0	740.92	753	543	1.43	3199.46	3187	24	2.09E-02	9.0	1.51E+00	T
0	782.36	390	579	1.45	3378.10	3368	19	1.08E-02	15.6	1.44E+00	
0	876.94	503	437	2.70	3785.67	3772	28	1.40E-02	10.9	1.31E+00	
0	910.71	203	366	1.29	3931.22	3921	19	5.63E-03	20.5	1.26E+00	T
0	928.11	2037	560	2.23	4006.19	3991	28	5.66E-02	3.5	1.24E+00	
0	986.10	1584	855	2.11	4256.10	4232	48	4.40E-02	6.1	1.18E+00	
0	1141.18	1413	545	2.12	4924.24	4908	38	3.93E-02	5.2	1.03E+00	
0	1261.03	483	605	2.34	5440.50	5423	33	1.34E-02	13.8	9.46E-01	
0	1488.03	7244	318	2.35	6418.12	6398	43	2.01E-01	1.4	8.27E-01	
0	1797.51	996	149	2.45	7750.49	7733	40	2.77E-02	4.3	7.36E-01	

Flags: "T" = Tentatively associated

Sample ID : J47171AA Acquisition date : 7-SEP-2007 20:30:28

Nuclide	Half-life	Half-Life Ratio	Energy	%Abund	Activity (PCI/GRAM)	1-Sigma %Error	Rejected by
TC-95M	61.00D	0.61	204.12*	66.20	--- Not Found ---		Abun.
			582.07	29.30	1.368E-01	31.14	
			835.13	26.10	--- Not Found ---		
		% Abundances Found =		24.10			
MO-99	66.02H	13.60	140.50*	90.70	--- Not Found ---		Decay,Abun.
			181.07	6.20	--- Not Found ---		
			739.58	12.80	1.162E+04	11.00	
		% Abundances Found =		11.67	(Abn. Limit = 94.00%)		
RU-103	39.35D	0.95	497.08*	89.00	--- Not Found ---		Abun.
			610.33	5.60	2.438E+00	15.13	
		% Abundances Found =		5.92			
RU-106DA	368.20D	0.10	511.85	20.60	--- Not Found ---		Abun.
			621.84*	9.80	8.741E+00	6.28	
		% Abundances Found =		32.24			
BA-133	10.50Y	0.01	81.00	33.00	--- Not Found ---		Abun.
			276.40	6.90	1.060E+00	13.40	
			302.84	17.80	--- Not Found ---		
			356.00*	62.05	--- Not Found ---		
			383.85	8.70	--- Not Found ---		
		% Abundances Found =		5.37			
BA-140	12.79D	2.93	162.64	6.70	--- Not Found ---		Abun.
			304.84	4.50	7.105E+00	15.19	
			423.70	3.20	--- Not Found ---		
			537.32*	25.00	--- Not Found ---		
		% Abundances Found =		11.42			
EU-152	13.60Y	0.01	121.78	28.40	--- Not Found ---		Abun.
			244.67	7.49	--- Not Found ---		
			344.27*	26.50	6.648E-01	7.59	
			778.89	12.74	--- Not Found ---		
			964.01	14.40	--- Not Found ---		
			1085.78	10.00	--- Not Found ---		
			1112.02	13.30	--- Not Found ---		
			1407.95	20.70	--- Not Found ---		
		% Abundances Found =		19.85			
HF-181	42.39D	0.88	133.02	41.70	1.167E-01	20.84	Abun.
			345.85	17.20	1.879E+00	7.59	
			482.03*	82.80	--- Not Found ---		
		% Abundances Found =		41.57			
TL-208	1.41E+10Y	0.00	277.35	6.80	--- Not Found ---		Abun.
			510.84	21.60	--- Not Found ---		
			583.14*	84.20	3.112E-02	31.14	
			860.37	12.46	--- Not Found ---		
		% Abundances Found =		67.33			

Sample ID : J47171AA Acquisition date : 7-SEP-2007 20:30:28

Nuclide	Half-life	Half-Life Ratio	Energy	%Abund	Activity (PCI/GRAM)	1-Sigma %Error	Rejected by
BI-210M	3.00E+06Y	0.00	266.15*	50.00	--- Not Found ---		Abun.
			305.25	28.00	1.503E-01	15.19	
		% Abundances Found =		35.90			
BI-214	4.47E+09Y	0.00	609.31*	46.30	1.526E-01	15.13	Abun.
			768.36	5.04	--- Not Found ---		
			1120.29	15.10	--- Not Found ---		
			1764.49	15.80	--- Not Found ---		
		% Abundances Found =		56.30			
RA-226DA	1600.00Y	0.00	186.21	3.50	--- Not Found ---		Abun.
			241.98	7.49	9.271E+00	6.39	
			295.22	19.20	1.857E-01	18.57	
			351.92	37.20	1.269E-01	15.04	
			609.32*	46.30	1.526E-01	15.13	
			1120.28	15.10	--- Not Found ---		
			1238.11	5.94	--- Not Found ---		
			1764.49	15.80	--- Not Found ---		
		% Abundances Found =		73.20			
AC-228	1.41E+10Y	0.00	209.28	4.40	--- Not Found ---		Abun.
			270.23	3.60	--- Not Found ---		
			338.32	11.40	--- Not Found ---		
			911.07*	27.70	1.386E-01	21.77	
			969.11	16.60	--- Not Found ---		
		% Abundances Found =		43.49			
RA-228DA	5.75Y	0.02	209.28	4.40	--- Not Found ---		Abun.
			338.32	11.40	--- Not Found ---		
			911.07*	27.70	1.403E-01	21.77	
			964.60	5.20	--- Not Found ---		
			969.11	16.60	--- Not Found ---		
		% Abundances Found =		42.42			
TH-232DA	1.41E+10Y	0.00	238.63	44.60	1.122E-01	14.48	Abun.
			338.32*	12.40	--- Not Found ---		
			583.14	30.25	8.663E-02	31.14	
			911.07	27.70	1.386E-01	21.77	
			964.60	5.20	--- Not Found ---		
			969.11	16.60	--- Not Found ---		
		% Abundances Found =		74.99			

Flag: "*" = Keyline

VMS Nuclide Identification Report V3.0 Generated 10-SEP-2007 22:12:04

Configuration : $DISK1:[GER11.SAMPLE]J47171AA_070972030.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 : BRC SOIL
Sample date : 1-AUG-2007 15:30:00 Acquisition date : 7-SEP-2007 20:30:28
Sample ID : J47171AA Sample quantity : 313.40 GRAMS
Sample type : Sample geometry : S200
Elapsed live time: 0 10:00:00.00 Elapsed real time: 0 10:00:37.54 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 (PCI/GRAM)	Act error	MDA (PCI/GRAM)	MDA error	Act/MDA
K-40	9.157E-01	1.331E-01	1.713E-01	6.769E-03	5.344
CO-58	1.115E-01	1.621E-02	2.373E-02	1.060E-03	4.696
PB-212	1.122E-01	1.624E-02	3.173E-02	1.184E-03	3.535
PB-214	1.269E-01	1.909E-02	3.690E-02	1.333E-03	3.440
RA-224DA	1.164E-01	1.685E-02	3.293E-02	1.228E-03	3.535
TH-228DA	8.991E-02	2.800E-02	5.002E-02	1.656E-03	1.797
U-234DA	1.857E-01	3.448E-02	7.000E-02	2.670E-03	2.652
U-238DA	1.269E-01	1.909E-02	3.690E-02	1.333E-03	3.440
U-238DHP	1.433E+00	4.268E-01	9.673E-01	4.010E-02	1.481

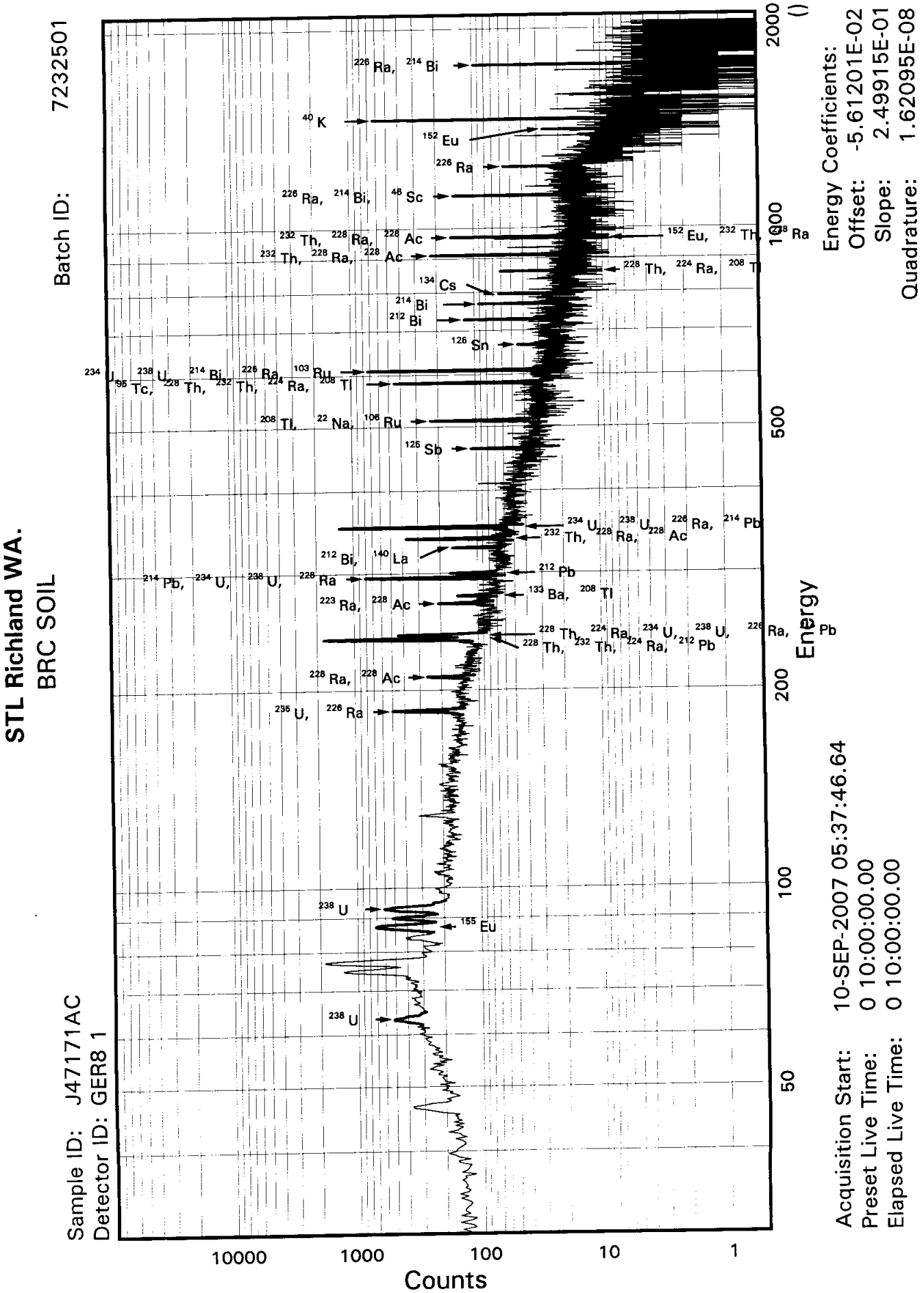
---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (PCI/GRAM)	K.L. Ided	Act error	MDA (PCI/GRAM)	MDA error	Act/MDA
BE-7	2.328E-02		6.133E-02	2.069E-01	6.811E-03	0.112
NA-22	-1.130E-02		7.050E-03	2.319E-02	8.862E-04	-0.487
SC-46	1.870E-02		9.110E-03	3.145E-02	1.223E-03	0.595
CR-51	9.523E-02		9.943E-02	3.358E-01	1.282E-02	0.284
MN-54	4.353E-03		5.385E-03	1.846E-02	8.620E-04	0.236
CO-57	-5.285E-02		3.765E-02	1.208E-01	4.432E-03	-0.438
FE-59	4.171E-02		1.959E-02	6.803E-02	2.759E-03	0.613
CO-60	1.402E-02		6.293E-03	2.217E-02	8.964E-04	0.632
ZN-65	-5.985E-03		1.455E-02	4.863E-02	1.911E-03	-0.123
SE-75	1.276E-02		8.010E-03	2.751E-02	1.040E-03	0.464
SR-85	-1.481E-02		6.954E-03	2.179E-02	7.106E-04	-0.680
Y-88	-1.414E-04		5.523E-03	1.939E-02	6.195E-04	-0.007
NB-94	2.565E-04		5.864E-03	1.673E-02	8.340E-04	0.015
NB-95	-1.547E-02		1.090E-02	3.619E-02	1.483E-03	-0.427
TC-95M	-3.020E-03		9.127E-03	3.025E-02	1.101E-03	-0.100
ZR-95	3.665E-02		1.345E-02	4.711E-02	1.897E-03	0.778
ZRNB-95	-2.151E-02		1.557E-02	5.174E-02	2.120E-03	-0.416
RH-101	-1.505E-02		5.873E-03	1.749E-02	6.334E-04	-0.861
RH-102M	1.130E-03		4.894E-03	1.408E-02	4.637E-04	0.080

Sample ID : J47171AA Acquisition date : 7-SEP-2007 20:30:28

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (PCI/GRAM)	K.L. Ided	Act error	MDA (PCI/GRAM)	MDA error	Act/MDA
RU-103	3.600E-04		9.012E-03	3.013E-02	9.874E-04	0.012
RU-106DA	8.741E+00	+	5.491E-01	5.180E-01	1.720E-02	16.875
AG-108M	4.725E-03		4.580E-03	1.566E-02	5.169E-04	0.302
AG-110M	1.309E-02		7.751E-03	2.672E-02	1.364E-03	0.490
SN-113DA	-1.942E-02		7.703E-03	2.521E-02	8.277E-04	-0.770
SB-124	-9.789E-03		6.765E-03	2.236E-02	7.419E-04	-0.438
SB-125	-2.754E-03		1.410E-02	4.762E-02	1.572E-03	-0.058
SN-126DA	7.755E-03		4.510E-03	1.549E-02	5.192E-04	0.501
I-131	6.159E-02		1.212E-01	4.032E-01	1.418E-02	0.153
BA-133	1.988E-02		8.013E-03	2.338E-02	8.377E-04	0.850
CS-134	-2.579E-04		6.303E-03	2.139E-02	9.285E-04	-0.012
CS-137DA	8.204E-04		5.396E-03	1.818E-02	6.033E-04	0.045
LA-138	4.398E-02		9.853E-03	3.509E-02	1.395E-03	1.253
CE-139	3.777E-03		5.374E-03	1.830E-02	6.500E-04	0.206
BA-140	1.080E-01		1.295E-01	4.343E-01	1.425E-02	0.249
BALA-140	-3.347E-02		7.789E-02	2.661E-01	1.000E-02	-0.126
CE-141	-2.348E-02		1.757E-02	5.605E-02	2.020E-03	-0.419
CE-144	3.942E-02		4.264E-02	1.228E-01	4.542E-03	0.321
CEPR-144	7.842E-02		8.528E-02	2.456E-01	9.083E-03	0.319
PM-144	1.003E-01		9.317E-03	2.497E-02	8.289E-04	4.019
PM-146	2.491E-03		6.224E-03	2.108E-02	6.958E-04	0.118
EU-152	6.648E-01	+	5.048E-02	8.632E-02	3.166E-03	7.701
EU-154	-2.979E-02		1.949E-02	6.421E-02	2.454E-03	-0.464
EU-155	-6.389E-03		1.839E-02	6.120E-02	2.418E-03	-0.104
HF-181	7.709E-03		9.114E-03	3.086E-02	1.015E-03	0.250
BI-207	-1.530E-02		4.482E-03	1.420E-02	4.692E-04	-1.077
TL-208	3.112E-02	+	9.691E-03	2.089E-02	6.915E-04	1.490
BI-210M	-2.181E-02		7.678E-03	2.497E-02	9.448E-04	-0.874
BI-212	1.710E-01		7.732E-02	2.634E-01	1.167E-02	0.649
BI-214	1.526E-01	+	2.308E-02	4.587E-02	1.522E-03	3.326
RA-223	1.028E-02		2.791E-02	9.512E-02	3.604E-03	0.108
RA-226DA	1.526E-01	+	2.308E-02	4.588E-02	1.523E-03	3.325
AC-227DA	1.350E-02		4.180E-02	1.188E-01	4.423E-03	0.114
AC-228	1.386E-01	+	3.018E-02	7.714E-02	3.991E-03	1.797
RA-228DA	1.403E-01	+	3.055E-02	7.810E-02	4.041E-03	1.797
TH-232DA	1.377E-01		3.676E-02	1.186E-01	4.397E-03	1.161
TH-234DA	4.706E-01		8.541E-01	2.941E+00	1.388E-01	0.160
U-235HP	-5.087E-03		3.535E-02	1.145E-01	4.140E-03	-0.044
NP-237DA	-3.455E-03		1.066E-02	3.563E-02	1.361E-03	-0.097
AM-241HP	4.662E-02		4.022E-02	1.323E-01	5.255E-03	0.352


STL Richland WA.
BRC SOIL
Batch ID: 7232501
Sample ID: J47171AC
Detector ID: GER8 1
Energy Coefficients:
Offset: -5.61201E-02
Slope: 2.49915E-01
Quadrature: 1.62095E-08
Acquisition Start: 10-SEP-2007 05:37:46.64
Preset Live Time: 0 10:00:00.00
Elapsed Live Time: 0 10:00:00.00
Counts
Energy
10000
1000
100
10
1
50
100
200
500
1000
2000
226 Ra, 214 Bi
40 K
152 Eu
226 Ra
226 Ra, 214 Bi, 48 Sc
232 Th, 228 Ra, 228 Ac
232 Th, 228 Ra, 228 Ac
152 Eu, 232 Th, 228 Ra
228 Th, 224 Ra, 208 Tl
134 Cs
214 Bi
212 Bi
126 Sn
234 U, 238 U, 214 Bi, 226 Ra, 103 Ru
95 Tc, 228 Th, 232 Th, 224 Ra, 208 Tl
208 Tl, 22 Na, 106 Ru
125 Sb
234 U, 238 U, 226 Ra, 214 Pb
232 Th, 228 Ra, 228 Ac
212 Bi, 140 La
212 Pb
214 Pb, 234 U, 238 U, 228 Ra
133 Ba, 208 Tl
223 Ra, 228 Ac
228 Th, 224 Ra, 234 U, 238 U, 226 Ra, 214 Pb
228 Th, 232 Th, 224 Ra, 212 Pb
228 Ra, 228 Ac
235 U, 226 Ra
238 U
155 Eu
238 U

SAMPLE IDENTIFICATION: J47171AC

CONFIGURATION ID: GER8:J47171AC_100970537
TITLE : BRC SOIL
SAMPLE ID : J47171AC

REPORT DATE: 10-SEP-07
ACQUIRE DATE: 10-SEP-07 05:37:46
ELAPSED LIVE TIME: 36000.0 Sec
PRESET LIVE TIME: 0 10:00:00

SAMPLE DATE: 1-AUG-2007 15:30:00.00
CALIB DATE: 10-SEP-2007 05:26:08.25
ELAPSED LIVE TIME: 0 10:00:00
ELAPSED REAL TIME: 0 10:00:14

SAMPLE QUANTITY: 3.1340E+02
SAMPLE GEOMETRY: ES200

UNITS: GRAMS
SAMPLE TYPE:

ENERGY OFFSET: -.5612E-01 keV
ENERGY SLOPE: 2.4992E-01 keV/C
ENERGY Q COEFF: 1.6210E-08 keV/C^^2
PEAK SENSITIVITY: 5.000

FWHM OFFSET: 9.9614E-01 keV
FWHM SLOPE: 2.0633E-02 sqr keV
ITERATIONS: 10
GAUSSIAN SENSITIVITY: 80.00 %

ABUNDANCE LIMIT: 80.00 %
ENERGY TOLERANCE: 1.500 keV
VARIABLE PEAK WIDTH: 3.00

HALF-LIFE RATIO: 8.00
ACTIVITY MULTIPLIER: 1.0000E+06
LIBRARY: [NUC_LIBR]QRL.NLB

VMS Peak Search Report V1.9 Generated 10-SEP-2007 22:14:28

Configuration : $DISK1:[GER8.SAMPLE]J47171AC_100970537.CNF;1
Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6
Sample title : BRC SOIL
Sample date : 1-AUG-2007 15:30:00 Acquisition date : 10-SEP-2007 05:37:46
Sample ID : J47171AC Sample quantity : 313.40 GRAMS
Sample type : Sample geometry : ES200
Elapsed live time: 0 10:00:00.00 Elapsed real time: 0 10:00:14.09 0.0%
Start energy : 19.94 End energy : 2048.34
Sensitivity : 5.00 Gaussian : 80.00
Critical level : No

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	46.64*	643	2459	1.09	186.83	180	15	1.79E-02	18.2	
2	0	63.41*	622	4004	1.10	253.96	248	13	1.73E-02	22.0	
3	1	74.83*	4615	4653	1.19	299.63	289	27	1.28E-01	3.5	2.39E+00
4	1	77.10*	7324	3936	1.12	308.73	289	27	2.03E-01	2.2	
5	0	84.44	660	3889	1.25	338.10	328	15	1.83E-02	20.9	
6	3	87.23	2644	3255	1.27	349.26	343	23	7.34E-02	4.8	1.23E+00
7	3	89.95	1232	2868	1.02	360.13	343	23	3.42E-02	9.3	
8	0	93.06*	2166	3799	1.56	372.57	366	18	6.02E-02	7.2	
9	0	129.08	756	1930	0.95	516.72	511	12	2.10E-02	12.2	
10	0	185.94*	1722	2378	1.26	744.19	735	17	4.78E-02	7.1	
11	0	209.32	730	1510	1.06	837.73	831	13	2.03E-02	11.6	
12	3	238.66	8217	1526	1.18	955.14	947	29	2.28E-01	1.5	1.87E+00
13	3	241.76	2589	1578	1.75	967.55	947	29	7.19E-02	4.2	
14	0	270.11	698	1343	1.33	1080.95	1072	17	1.94E-02	12.6	
15	0	277.55	445	1611	1.34	1110.71	1100	21	1.24E-02	23.1	
16	0	295.22*	3722	1312	1.19	1181.43	1172	19	1.03E-01	3.0	
17	0	299.94	468	1229	1.02	1200.29	1191	18	1.30E-02	18.2	
18	0	327.90	356	863	1.05	1312.16	1306	13	9.90E-03	17.8	
19	0	338.31	1643	1445	1.20	1353.80	1343	24	4.57E-02	6.6	
20	0	351.91*	6268	1095	1.24	1408.23	1399	20	1.74E-01	1.9	
21	0	409.17	266	678	1.35	1637.29	1631	15	7.38E-03	22.2	
22	0	463.25	476	566	1.44	1853.62	1846	17	1.32E-02	12.5	
23	0	510.71*	591	982	1.71	2043.48	2030	28	1.64E-02	17.2	
24	0	583.20	2518	630	1.32	2333.46	2323	24	6.99E-02	3.3	
25	0	609.28*	4634	612	1.52	2437.79	2424	27	1.29E-01	2.0	
26	0	665.70	147	470	1.62	2663.47	2652	21	4.10E-03	32.3	
27	0	727.32	536	492	1.08	2909.95	2899	23	1.49E-02	10.1	
28	0	768.20	419	480	1.16	3073.45	3060	24	1.16E-02	12.7	
29	0	794.99	265	330	1.35	3180.62	3170	20	7.36E-03	15.5	
30	0	860.42	304	244	1.29	3442.31	3434	18	8.43E-03	11.8	
31	0	911.14	1538	297	1.78	3645.17	3634	22	4.27E-02	3.5	
32	0	934.21	227	240	1.89	3737.44	3729	16	6.31E-03	14.6	
33	1	964.66	384	243	1.80	3859.20	3844	43	1.07E-02	10.5	1.10E+00
34	1	968.87	1022	270	1.72	3876.03	3844	43	2.84E-02	4.6	
35	0	1120.38	942	413	1.69	4481.97	4468	26	2.62E-02	5.9	
36	0	1238.28	354	341	1.81	4953.42	4943	22	9.84E-03	12.5	
37	0	1377.96	257	143	1.48	5511.98	5499	24	7.14E-03	12.3	
38	0	1408.27	151	98	1.74	5633.16	5621	21	4.18E-03	16.2	
39	0	1460.80*	4922	190	1.79	5843.18	5827	34	1.37E-01	1.6	
40	0	1509.35	172	88	1.99	6037.31	6025	26	4.79E-03	14.6	
41	0	1729.83	171	56	1.68	6918.78	6905	29	4.75E-03	13.2	
42	0	1764.51*	801	0	1.79	7057.44	7044	27	2.23E-02	3.7	

Flag: "*" = Peak area was modified by background subtraction

VMS Nuclide Identification Report V3.0 Generated 10-SEP-2007 22:14:29

Configuration : $DISK1:[GER8.SAMPLE]J47171AC_100970537.CNF;1
Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.3
Sample title : BRC SOIL
Sample date : 1-AUG-2007 15:30:00 Acquisition date : 10-SEP-2007 05:37:46
Sample ID : J47171AC Sample quantity : 313.40 GRAMS
Sample type : Sample geometry : ES200
Elapsed live time: 0 10:00:00.00 Elapsed real time: 0 10:00:14.09 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 PCI/GRAM	Decay Corr PCI/GRAM	1-Sigma %Error
K-40	1460.81	4922	10.67*	5.801E-01	1.905E+01	1.905E+01	6.33
TL-208	277.35	445	6.80	2.334E+00	6.711E-01	6.711E-01	23.96
	510.84	591	21.60	1.414E+00	4.633E-01	4.633E-01	18.15
	583.14	2518	84.20*	1.263E+00	5.671E-01	5.671E-01	6.90
	860.37	304	12.46	9.072E-01	6.433E-01	6.433E-01	13.49
PB-212	238.63	8217	44.60*	2.617E+00	1.686E+00	1.686E+00	6.48
	300.09	468	3.41	2.196E+00	1.495E+00	1.495E+00	19.21
BI-214	609.31	4634	46.30*	1.217E+00	1.970E+00	1.970E+00	6.42
	768.36	419	5.04	9.990E-01	1.992E+00	1.992E+00	14.21
	1120.29	942	15.10	7.255E-01	2.060E+00	2.060E+00	8.53
	1764.49	801	15.80	4.950E-01	2.454E+00	2.454E+00	7.02
PB-214	241.98	2589	7.49	2.592E+00	3.194E+00	3.194E+00	7.60
	295.21	3722	19.20	2.224E+00	2.088E+00	2.088E+00	6.89
	351.92	6268	37.20*	1.930E+00	2.091E+00	2.091E+00	6.34
	785.91	------	1.10	9.798E-01	------ Line Not Found		------
RA-224DA	238.63	8217	44.60*	2.617E+00	1.686E+00	1.755E+00	6.48
	240.98	2589	3.95	2.592E+00	6.057E+00	6.301E+00	7.60
	583.14	2518	30.25	1.263E+00	1.579E+00	1.642E+00	6.90
	860.37	304	4.48	9.072E-01	1.789E+00	1.861E+00	13.49
RA-226DA	186.21	1722	3.50	3.109E+00	3.792E+00	3.792E+00	9.50
	241.98	2589	7.49	2.592E+00	3.194E+00	3.194E+00	7.60
	295.22	3722	19.20	2.224E+00	2.088E+00	2.088E+00	6.89
	351.92	6268	37.20	1.930E+00	2.091E+00	2.091E+00	6.34
	609.32	4634	46.30*	1.217E+00	1.970E+00	1.970E+00	6.42
	1120.28	942	15.10	7.255E-01	2.060E+00	2.061E+00	8.53
	1238.11	354	5.94	6.667E-01	2.142E+00	2.143E+00	13.83
	1764.49	801	15.80	4.950E-01	2.454E+00	2.454E+00	7.02
AC-228	209.28	730	4.40	2.874E+00	1.383E+00	1.383E+00	13.19
	270.23	698	3.60	2.384E+00	1.949E+00	1.949E+00	14.08
	338.32	1643	11.40	1.994E+00	1.732E+00	1.732E+00	8.98
	911.07	1538	27.70*	8.642E-01	1.539E+00	1.539E+00	7.51
	969.11	1022	16.60	8.204E-01	1.798E+00	1.798E+00	7.96
RA-228DA	209.28	730	4.40	2.874E+00	1.383E+00	1.401E+00	13.19
	338.32	1643	11.40	1.994E+00	1.732E+00	1.755E+00	8.98
	911.07	1538	27.70*	8.642E-01	1.539E+00	1.559E+00	7.51
	964.60	384	5.20	8.234E-01	2.150E+00	2.179E+00	12.38

Sample ID : J47171AC Acquisition date : 10-SEP-2007 05:37:46

Nuclide Type: NP

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected PCI/GRAM	Decay Corr PCI/GRAM	1-Sigma %Error
	969.11	1022	16.60	8.204E-01	1.798E+00	1.822E+00	7.96
TH-228DA	238.63	8217	44.60	2.617E+00	1.686E+00	1.755E+00	6.48
	240.98	2589	3.95	2.592E+00	6.057E+00	6.301E+00	7.60
	583.14	2518	30.25*	1.263E+00	1.579E+00	1.642E+00	6.90
	860.37	304	4.48	9.072E-01	1.789E+00	1.861E+00	13.49
TH-232DA	238.63	8217	44.60	2.617E+00	1.686E+00	1.686E+00	6.48
	338.32	1643	12.40*	1.994E+00	1.593E+00	1.593E+00	8.98
	583.14	2518	30.25	1.263E+00	1.579E+00	1.579E+00	6.90
	911.07	1538	27.70	8.642E-01	1.539E+00	1.539E+00	7.51
	964.60	384	5.20	8.234E-01	2.150E+00	2.150E+00	12.38
	969.11	1022	16.60	8.204E-01	1.798E+00	1.798E+00	7.96
U-234DA	241.98	2589	7.49	2.592E+00	3.194E+00	3.194E+00	7.60
	295.22	3722	19.20*	2.224E+00	2.088E+00	2.088E+00	6.89
	351.92	6268	37.20	1.930E+00	2.091E+00	2.091E+00	6.34
	609.31	4634	46.30	1.217E+00	1.970E+00	1.970E+00	6.42
U-238DA	241.98	2589	7.49	2.592E+00	3.194E+00	3.194E+00	7.60
	295.22	3722	19.20	2.224E+00	2.088E+00	2.088E+00	6.89
	351.92	6268	37.20*	1.930E+00	2.091E+00	2.091E+00	6.34
	609.31	4634	46.30	1.217E+00	1.970E+00	1.970E+00	6.42
U-238DHP	63.28	622	3.80*	3.729E+00	1.052E+00	1.052E+00	22.83
	92.59	2166	5.41	4.071E+00	2.356E+00	2.356E+00	9.41

Flag: "*" = Keyline

Unidentified Energy Lines
Sample ID : J47171AC

Acquisition date : 10-SEP-2007 05:37:46

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
0	46.64	643	2459	1.09	186.83	180	15	1.79E-02	18.2	2.85E+00	
1	74.83	4615	4653	1.19	299.63	289	27	1.28E-01	3.5	3.99E+00	
1	77.10	7324	3936	1.12	308.73	289	27	2.03E-01	2.2	4.01E+00	
0	84.44	660	3889	1.25	338.10	328	15	1.83E-02	20.9	4.07E+00	
3	87.23	2644	3255	1.27	349.26	343	23	7.34E-02	4.8	4.07E+00	T
3	89.95	1232	2868	1.02	360.13	343	23	3.42E-02	9.3	4.08E+00	
0	129.08	756	1930	0.95	516.72	511	12	2.10E-02	12.2	3.77E+00	
0	327.90	356	863	1.05	1312.16	1306	13	9.90E-03	17.8	2.04E+00	T
0	409.17	266	678	1.35	1637.29	1631	15	7.38E-03	22.2	1.70E+00	
0	463.25	476	566	1.44	1853.62	1846	17	1.32E-02	12.5	1.54E+00	T
0	665.70	147	470	1.62	2663.47	2652	21	4.10E-03	32.3	1.13E+00	T
0	727.32	536	492	1.08	2909.95	2899	23	1.49E-02	10.1	1.05E+00	T
0	794.99	265	330	1.35	3180.62	3170	20	7.36E-03	15.5	9.70E-01	T
0	934.21	227	240	1.89	3737.44	3729	16	6.31E-03	14.6	8.46E-01	
0	1377.96	257	143	1.48	5511.98	5499	24	7.14E-03	12.3	6.09E-01	
0	1408.27	151	98	1.74	5633.16	5621	21	4.18E-03	16.2	5.98E-01	T
0	1509.35	172	88	1.99	6037.31	6025	26	4.79E-03	14.6	5.64E-01	
0	1729.83	171	56	1.68	6918.78	6905	29	4.75E-03	13.2	5.03E-01	

Flags: "T" = Tentatively associated

Nuclide	Half-life	Half-Life Ratio	Energy	%Abund	Activity (PCI/GRAM)	1-Sigma %Error	Rejected by
NA-22	2.60Y	0.04	511.00	179.68	5.734E-02	18.15	Abun.
			1274.54*	99.94	--- Not Found ---		
		% Abundances Found =		64.26			
SC-46	83.85D	0.47	889.25	99.98	--- Not Found ---		Abun.
			1120.51*	99.99	4.324E-01	8.53	
		% Abundances Found =		50.00			
TC-95M	61.00D	0.65	204.12*	66.20	--- Not Found ---		Abun.
			582.07	29.30	2.562E+00	6.90	
			835.13	26.10	--- Not Found ---		
		% Abundances Found =		24.10			
RU-103	39.35D	1.01	497.08*	89.00	--- Not Found ---		Abun.
			610.33	5.60	3.284E+01	6.42	
		% Abundances Found =		5.92			
RU-106DA	368.20D	0.11	511.85	20.60	5.236E-01	18.15	Abun.
			621.84*	9.80	--- Not Found ---		
		% Abundances Found =		67.76			
SB-125	2.77Y	0.04	176.33	6.89	--- Not Found ---		Abun.
			427.89*	29.33	--- Not Found ---		
			463.38	10.35	7.377E-01	13.85	
			600.56	17.80	--- Not Found ---		
			635.90	11.32	--- Not Found ---		
		% Abundances Found =		13.67			
SN-126DA	1.00E+05Y	0.00	414.70	97.66	--- Not Found ---		Abun.
			666.33*	99.95	3.131E-02	32.91	
			695.00	99.95	--- Not Found ---		
		% Abundances Found =		33.59			
BA-133	10.50Y	0.01	81.00	33.00	--- Not Found ---		Abun.
			276.40	6.90	6.661E-01	23.96	
			302.84	17.80	--- Not Found ---		
			356.00*	62.05	--- Not Found ---		
			383.85	8.70	--- Not Found ---		
		% Abundances Found =		5.37			
CS-134	2.06Y	0.05	569.31	15.43	--- Not Found ---		Abun.
			604.70	97.60	--- Not Found ---		
			795.84*	85.40	7.949E-02	16.83	
			801.93	8.73	--- Not Found ---		
		% Abundances Found =		41.22			
LA-140	40.22H	23.75	328.77	20.50	2.864E+06	18.81	Decay,Abun.
			487.03	45.50	--- Not Found ---		
			815.85	23.50	--- Not Found ---		
			1596.49*	95.49	--- Not Found ---		
		% Abundances Found =		11.08			

Sample ID : J47171AC Acquisition date : 10-SEP-2007 05:37:46

Nuclide	Half-life	Half-Life Ratio	Energy	%Abund	Activity (PCI/GRAM)	1-Sigma %Error	Rejected by
EU-152	13.60Y	0.01	121.78	28.40	--- Not Found ---		Abun.
			244.67	7.49	--- Not Found ---		
			344.27*	26.50	--- Not Found ---		
			778.89	12.74	--- Not Found ---		
			964.01	14.40	7.809E-01	12.38	
			1085.78	10.00	--- Not Found ---		
			1112.02	13.30	--- Not Found ---		
			1407.95	20.70	2.929E-01	17.28	
		% Abundances Found =		26.29			
EU-155	4.96Y	0.02	42.90	21.16	--- Not Found ---		Abun.
			86.54	30.90	5.108E-01	7.73	
			105.31*	20.70	--- Not Found ---		
		% Abundances Found =		42.47			
BI-212	1.41E+10Y	0.00	288.07	0.31	--- Not Found ---		Abun.
			327.96	0.14	3.003E+01	20.41	
			452.83	0.31	--- Not Found ---		
			727.33*	6.58	1.865E+00	12.12	
			785.37	1.10	--- Not Found ---		
			893.41	0.38	--- Not Found ---		
			952.12	0.17	--- Not Found ---		
			1078.62	0.56	--- Not Found ---		
			1512.70	0.29	--- Not Found ---		
			1620.50	1.49	--- Not Found ---		
			1806.00	0.09	--- Not Found ---		
		% Abundances Found =		58.84			
RA-223	21.77Y	0.01	154.21	5.58	--- Not Found ---		Abun.
			269.46*	13.60	5.178E-01	14.08	
			323.87	3.88	--- Not Found ---		
		% Abundances Found =		58.98			
U-235HP	7.04E+08Y	0.00	143.76*	10.50	--- Not Found ---		Abun.
			185.71	54.00	2.458E-01	9.50	
			205.31	4.70	--- Not Found ---		
		% Abundances Found =		78.03			

Flag: "*" = Keyline

VMS Nuclide Identification Report V3.0 Generated 10-SEP-2007 22:14:31

Configuration : $DISK1:[GER8.SAMPLE]J47171AC_100970537.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 : BRC SOIL
Sample date : 1-AUG-2007 15:30:00
Sample ID : J47171AC
Sample type :
Elapsed live time: 0 10:00:00.00
Peak Width (FWHM): 3.00
Energy tolerance : 1.50
Errors propagated: Yes
Efficiency type : Empirical
Abundance limit : 80.00

Acquisition date : 10-SEP-2007 05:37:46
Sample quantity : 313.40 GRAMS
Sample geometry : ES200
Elapsed real time: 0 10:00:14.09 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 ----

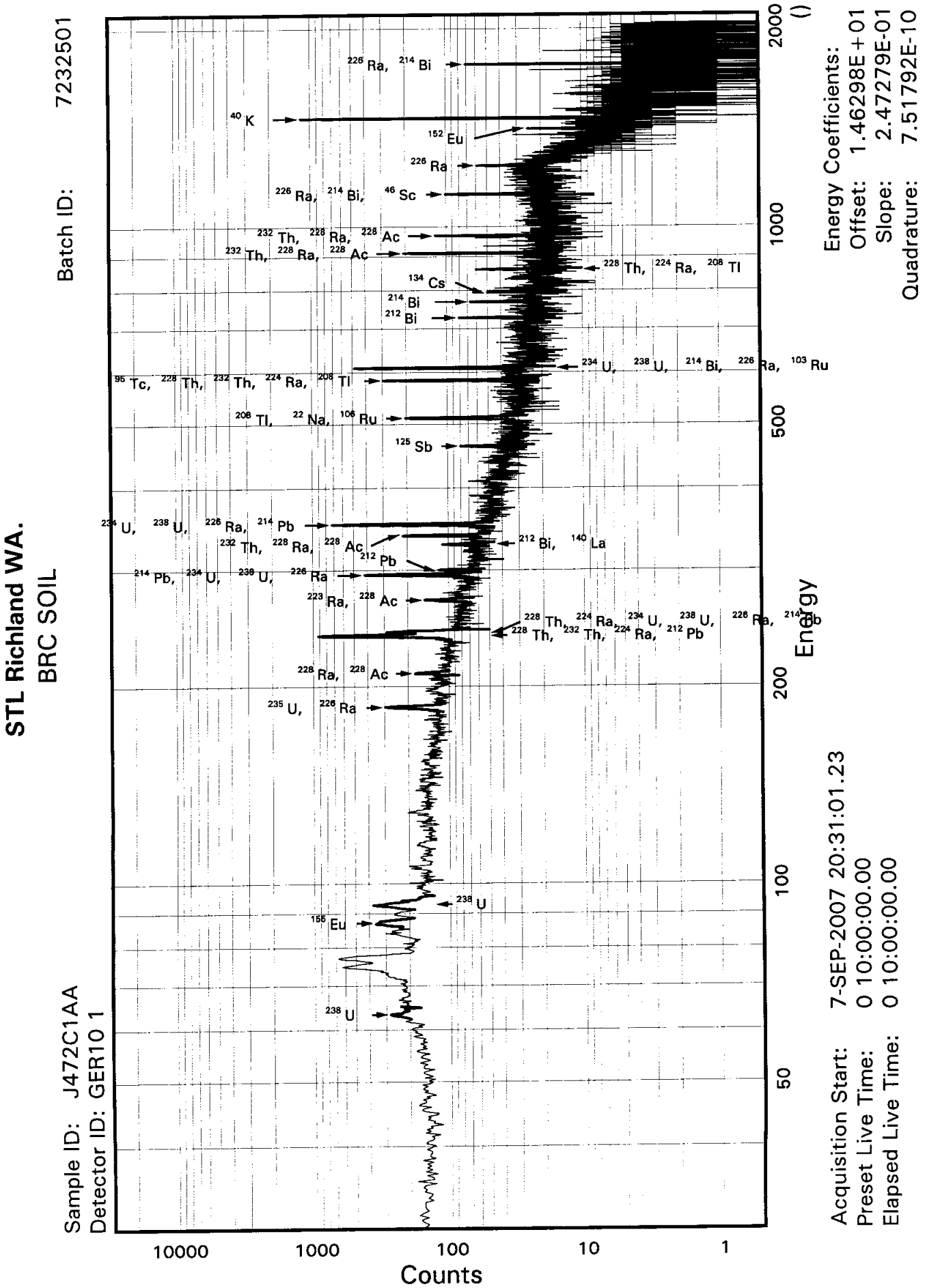
Nuclide	Activity (PCI/GRAM)	Act error	MDA (PCI/GRAM)	MDA error	Act/MDA
K-40	1.905E+01	1.206E+00	2.168E-01	7.651E-03	87.856
TL-208	5.671E-01	3.915E-02	2.517E-02	8.596E-04	22.528
PB-212	1.686E+00	1.093E-01	3.991E-02	1.534E-03	42.260
BI-214	1.970E+00	1.266E-01	4.433E-02	1.551E-03	44.450
PB-214	2.091E+00	1.325E-01	4.833E-02	1.653E-03	43.259
RA-224DA	1.755E+00	1.137E-01	4.152E-02	1.596E-03	42.260
RA-226DA	1.970E+00	1.266E-01	4.433E-02	1.552E-03	44.450
AC-228	1.539E+00	1.156E-01	8.628E-02	3.771E-03	17.838
RA-228DA	1.559E+00	1.172E-01	8.742E-02	3.821E-03	17.838
TH-228DA	1.642E+00	1.134E-01	7.290E-02	2.489E-03	22.528
TH-232DA	1.593E+00	1.430E-01	1.426E-01	4.975E-03	11.168
U-234DA	2.088E+00	1.438E-01	8.820E-02	3.266E-03	23.670
U-238DA	2.091E+00	1.325E-01	4.833E-02	1.653E-03	43.259
U-238DHP	1.052E+00	2.402E-01	5.215E-01	1.662E-02	2.018

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (PCI/GRAM)	K.L. Ided	Act error	MDA (PCI/GRAM)	MDA error	Act/MDA
BE-7	-4.179E-02		9.087E-02	3.064E-01	9.801E-03	-0.136
NA-22	-8.443E-03		8.144E-03	2.681E-02	9.223E-04	-0.315
SC-46	4.324E-01	+	3.687E-02	7.710E-02	2.711E-03	5.608
CR-51	6.671E-02		1.480E-01	4.944E-01	1.762E-02	0.135
MN-54	5.728E-03		8.015E-03	2.770E-02	1.170E-03	0.207
CO-57	6.759E-03		4.920E-02	1.614E-01	5.516E-03	0.042
CO-58	-3.146E-02		1.011E-02	3.205E-02	1.331E-03	-0.982
FE-59	-3.733E-02		2.630E-02	8.630E-02	3.132E-03	-0.433
CO-60	6.801E-03		6.936E-03	2.417E-02	8.625E-04	0.281
ZN-65	3.186E-02		2.148E-02	6.368E-02	2.256E-03	0.500
SE-75	-6.427E-05		1.137E-02	3.519E-02	1.340E-03	-0.002
SR-85	6.120E-02		1.141E-02	3.446E-02	1.092E-03	1.776
Y-88	2.344E-04		6.920E-03	2.441E-02	7.621E-04	0.010
NB-94	-1.552E-03		6.585E-03	2.247E-02	9.729E-04	-0.069

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (PCI/GRAM)	K.L. Ided	Act error	MDA (PCI/GRAM)	MDA error	Act/MDA
NB-95	1.159E-01		1.946E-02	5.878E-02	2.359E-03	1.971
TC-95M	5.755E-03		1.307E-02	4.171E-02	1.595E-03	0.138
ZR-95	6.342E-02		1.908E-02	6.613E-02	2.634E-03	0.959
ZRNB-95	1.521E-01		2.737E-02	8.254E-02	3.312E-03	1.842
RH-101	1.099E-02		7.390E-03	2.498E-02	9.521E-04	0.440
RH-102M	-5.910E-03		5.963E-03	1.994E-02	6.381E-04	-0.296
RU-103	-1.097E-02		1.228E-02	4.110E-02	1.310E-03	-0.267
RU-106DA	-5.599E-02		6.364E-02	2.113E-01	7.478E-03	-0.265
AG-108M	-5.016E-03		6.226E-03	2.094E-02	6.688E-04	-0.240
AG-110M	1.822E-03		1.040E-02	3.573E-02	1.561E-03	0.051
SN-113DA	-3.107E-02		1.146E-02	3.617E-02	1.139E-03	-0.859
SB-124	-1.815E-03		1.146E-02	3.354E-02	1.167E-03	-0.054
SB-125	-9.294E-03		1.952E-02	6.598E-02	2.105E-03	-0.141
SN-126DA	3.131E-02	+	1.031E-02	2.366E-02	8.697E-04	1.323
I-131	-2.709E-01		2.039E-01	6.634E-01	2.219E-02	-0.408
BA-133	8.359E-03		1.005E-02	2.863E-02	9.724E-04	0.292
CS-134	7.949E-02	+	1.337E-02	3.433E-02	1.410E-03	2.316
CS-137DA	-3.215E-03		8.866E-03	2.493E-02	9.121E-04	-0.129
LA-138	-2.603E-02		9.628E-03	3.029E-02	1.072E-03	-0.859
CE-139	-1.981E-02		7.347E-03	2.396E-02	8.927E-04	-0.827
BA-140	9.793E-02		1.977E-01	6.739E-01	2.194E-02	0.145
BALA-140	-5.045E-01		1.377E-01	4.114E-01	1.412E-02	-1.226
CE-141	1.420E-02		2.406E-02	7.895E-02	2.785E-03	0.180
CE-144	-7.708E-02		5.117E-02	1.544E-01	5.226E-03	-0.499
CEPR-144	-1.550E-01		1.023E-01	3.088E-01	1.045E-02	-0.502
PM-144	4.118E-04		6.489E-03	2.191E-02	7.729E-04	0.019
PM-146	6.225E-04		8.447E-03	2.875E-02	9.205E-04	0.022
EU-152	-2.483E-02		2.338E-02	6.664E-02	2.306E-03	-0.373
EU-154	-1.029E-02		2.226E-02	7.445E-02	2.561E-03	-0.138
EU-155	4.456E-02		2.244E-02	7.438E-02	2.449E-03	0.599
HF-181	7.386E-03		1.312E-02	4.483E-02	1.433E-03	0.165
BI-207	-3.683E-04		6.296E-03	2.124E-02	7.155E-04	-0.017
BI-210M	2.255E-03		1.183E-02	3.362E-02	1.279E-03	0.067
BI-212	1.865E+00	+	2.261E-01	5.054E-01	2.277E-02	3.690
RA-223	5.178E-01	+	7.291E-02	1.545E-01	5.866E-03	3.351
AC-227DA	7.269E-01		7.506E-02	1.914E-01	7.359E-03	3.799
TH-234DA	2.971E+00		1.146E+00	4.041E+00	1.646E-01	0.735
U-235HP	1.046E-01		4.753E-02	1.565E-01	5.487E-03	0.668
NP-237DA	6.236E-03		1.428E-02	4.777E-02	1.726E-03	0.131
AM-241HP	9.399E-02		1.892E-02	5.535E-02	1.786E-03	1.698


STL Richland WA.
BRC SOIL
Batch ID: 7232501
Sample ID: J472C1AA
Detector ID: GER10 1
Energy Coefficients:
Offset: 1.46298E+01
Slope: 2.47279E-01
Quadrature: 7.51792E-10
Acquisition Start: 7-SEP-2007 20:31:01.23
Preset Live Time: 0 10:00:00.00
Elapsed Live Time: 0 10:00:00.00
Counts
Energy
10000
1000
100
10
1
50
100
200
500
1000
2000
226 Ra, 214 Bi
40 K
152 Eu
226 Ra
226 Ra, 214 Bi, 46 Sc
232 Th, 228 Ra, 228 Ac
232 Th, 228 Ra, 228 Ac
228 Th, 224 Ra, 208 Tl
134 Cs
214 Bi
212 Bi
234 U, 238 U, 214 Bi, 226 Ra, 103 Ru
95 Tc, 228 Th, 232 Th, 224 Ra, 208 Tl
208 Tl, 22 Na, 106 Ru
125 Sb
234 U, 238 U, 226 Ra, 214 Pb
232 Th, 228 Ra, 228 Ac
212 Pb
212 Bi, 140 La
214 Pb, 234 U, 238 U, 226 Ra
223 Ra, 228 Ac
228 Th, 224 Ra, 234 U, 238 U, 226 Ra, 214 Pb
228 Th, 232 Th, 224 Ra, 212 Pb
228 Ra, 228 Ac
235 U, 226 Ra
238 U
155 Eu
238 U

SAMPLE IDENTIFICATION: J472C1AA

CONFIGURATION ID: GER10:J472C1AA_070972031
TITLE : BRC SOIL
SAMPLE ID : J472C1AA

REPORT DATE: 10-SEP-07
ACQUIRE DATE: 07-SEP-07 20:31:01
ELAPSED LIVE TIME: 36000.0 Sec
PRESET LIVE TIME: 0 10:00:00

SAMPLE DATE: 1-AUG-2007 15:30:00.00
CALIB DATE: 7-SEP-2007 06:28:12.44
ELAPSED LIVE TIME: 0 10:00:00
ELAPSED REAL TIME: 0 10:00:14

SAMPLE QUANTITY: 3.5170E+02
SAMPLE GEOMETRY: S200

UNITS: GRAMS
SAMPLE TYPE:

ENERGY OFFSET: 1.4630E+01 keV
ENERGY SLOPE: 2.4728E-01 keV/C
ENERGY Q COEFF: 7.5179E-10 keV/C^^2
PEAK SENSITIVITY: 5.000

FWHM OFFSET: 1.1307E+00 keV
FWHM SLOPE: 2.5749E-02 sqr keV
ITERATIONS: 10
GAUSSIAN SENSITIVITY: 40.00 %

ABUNDANCE LIMIT: 80.00 %
ENERGY TOLERANCE: 1.500 keV
VARIABLE PEAK WIDTH: 3.00

HALF-LIFE RATIO: 8.00
ACTIVITY MULTIPLIER: 1.0000E+06
LIBRARY: [NUC_LIBR]QRL.NLB

VMS Peak Search Report V1.9 Generated 10-SEP-2007 22:15:55

Configuration : $DISK1:[GER10.SAMPLE]J472C1AA_070972031.CNF;1
Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6
Sample title : BRC SOIL
Sample date : 1-AUG-2007 15:30:00 Acquisition date : 7-SEP-2007 20:31:01
Sample ID : J472C1AA Sample quantity : 351.70 GRAMS
Sample type : Sample geometry : S200
Elapsed live time: 0 10:00:00.00 Elapsed real time: 0 10:00:14.82 0.0%
Start energy : 17.10 End energy : 2040.39
Sensitivity : 5.00 Gaussian : 40.00
Critical level : No

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	63.31	200	2454	0.59	196.86	192	12	5.56E-03	50.0	
2	3	74.81*	2432	4538	1.80	243.36	229	32	6.76E-02	7.7	4.85E+00
3	3	77.06	2621	3128	1.31	252.48	229	32	7.28E-02	5.4	
4	0	87.10	944	2629	1.57	293.08	287	13	2.62E-02	11.7	
5	0	93.08	1380	3207	1.38	317.24	310	20	3.83E-02	10.5	
6	0	185.86	1210	2618	1.60	692.45	681	22	3.36E-02	11.2	
7	0	209.26	499	1849	1.25	787.09	778	18	1.39E-02	17.8	
8	3	238.64	5347	1664	1.51	905.91	891	37	1.49E-01	2.1	1.70E+00
9	3	241.67	1675	1465	2.04	918.16	891	37	4.65E-02	5.8	
10	0	270.18	586	1518	1.80	1033.45	1022	22	1.63E-02	15.0	
11	0	295.07	2465	1639	1.63	1134.12	1120	27	6.85E-02	4.3	
12	0	300.22	315	806	1.45	1154.92	1148	13	8.76E-03	17.0	
13	0	328.48	389	1141	1.85	1269.22	1258	21	1.08E-02	19.1	
14	0	338.37	966	1191	1.50	1309.20	1299	20	2.68E-02	8.1	
15	0	351.86*	4160	1271	1.38	1363.77	1351	26	1.16E-01	2.6	
16	0	463.11	307	616	1.89	1813.66	1805	18	8.52E-03	17.2	
17	0	510.86*	526	1211	2.02	2006.76	1993	34	1.46E-02	20.4	
18	0	583.15	1814	823	1.67	2299.10	2285	27	5.04E-02	4.4	
19	0	609.25*	3131	644	1.67	2404.65	2392	24	8.70E-02	2.7	
20	0	727.03	416	572	1.69	2880.94	2870	26	1.16E-02	14.2	
21	0	768.30	271	502	1.68	3047.83	3035	23	7.53E-03	19.2	
22	0	795.02	193	309	1.80	3155.89	3146	17	5.36E-03	19.2	
23	0	860.39	230	401	1.25	3420.23	3412	22	6.39E-03	19.9	
24	0	911.12	1346	530	1.65	3625.36	3610	30	3.74E-02	5.0	
25	0	968.38	850	772	1.62	3856.93	3838	33	2.36E-02	9.0	
26	0	1120.24	740	628	2.23	4471.04	4457	34	2.06E-02	8.6	
27	0	1238.18	277	567	1.84	4947.97	4937	24	7.70E-03	18.2	
28	0	1378.29	197	185	2.15	5514.57	5502	24	5.48E-03	15.6	
29	0	1408.03	134	129	1.53	5634.82	5623	23	3.71E-03	18.8	
30	0	1460.70*	10779	188	2.17	5847.82	5829	36	2.99E-01	1.0	
31	0	1729.68	166	66	1.81	6935.56	6917	29	4.60E-03	13.1	
32	0	1764.38	617	78	2.29	7075.87	7060	31	1.71E-02	5.1	
33	0	1847.56	107	68	1.29	7412.23	7396	30	2.98E-03	19.3	

Flag: "*" = Peak area was modified by background subtraction

VMS Nuclide Identification Report V3.0 Generated 10-SEP-2007 22:15:55

Configuration : $DISK1:[GER10.SAMPLE]J472C1AA_070972031.CNF;1
Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.3
Sample title : BRC SOIL
Sample date : 1-AUG-2007 15:30:00 Acquisition date : 7-SEP-2007 20:31:01
Sample ID : J472C1AA Sample quantity : 351.70 GRAMS
Sample type : Sample geometry : S200
Elapsed live time: 0 10:00:00.00 Elapsed real time: 0 10:00:14.82 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 PCI/GRAM	Decay Corr PCI/GRAM	1-Sigma %Error
K-40	1460.81	10779	10.67*	8.324E-01	2.591E+01	2.591E+01	6.33
TL-208	277.35	------	6.80	2.752E+00	------	Line Not Found	------
	510.84	526	21.60	1.867E+00	2.782E-01	2.782E-01	21.21
	583.14	1814	84.20*	1.704E+00	2.698E-01	2.698E-01	7.42
	860.37	230	12.46	1.273E+00	3.096E-01	3.096E-01	21.08
PB-212	238.63	5347	44.60*	3.006E+00	8.513E-01	8.513E-01	6.74
	300.09	315	3.41	2.623E+00	7.522E-01	7.522E-01	18.13
BI-214	609.31	3131	46.30*	1.652E+00	8.738E-01	8.738E-01	6.57
	768.36	271	5.04	1.391E+00	8.252E-01	8.252E-01	20.23
	1120.29	740	15.10	1.028E+00	1.018E+00	1.018E+00	10.63
	1764.49	617	15.80	7.322E-01	1.138E+00	1.138E+00	7.88
PB-214	241.98	1675	7.49	2.984E+00	1.599E+00	1.599E+00	8.64
	295.21	2465	19.20	2.651E+00	1.034E+00	1.034E+00	7.66
	351.92	4160	37.20*	2.378E+00	1.004E+00	1.004E+00	6.62
	785.91	------	1.10	1.367E+00	------	Line Not Found	------
RA-224DA	238.63	5347	44.60*	3.006E+00	8.513E-01	8.836E-01	6.74
	240.98	1675	3.95	2.984E+00	3.033E+00	3.148E+00	8.64
	583.14	1814	30.25	1.704E+00	7.510E-01	7.795E-01	7.42
	860.37	230	4.48	1.273E+00	8.609E-01	8.936E-01	21.08
RA-226DA	186.21	1210	3.50	3.434E+00	2.150E+00	2.150E+00	12.88
	241.98	1675	7.49	2.984E+00	1.599E+00	1.599E+00	8.64
	295.22	2465	19.20	2.651E+00	1.034E+00	1.034E+00	7.66
	351.92	4160	37.20	2.378E+00	1.004E+00	1.004E+00	6.62
	609.32	3131	46.30*	1.652E+00	8.738E-01	8.739E-01	6.57
	1120.28	740	15.10	1.028E+00	1.018E+00	1.018E+00	10.63
	1238.11	277	5.94	9.474E-01	1.051E+00	1.051E+00	19.24
	1764.49	617	15.80	7.322E-01	1.138E+00	1.138E+00	7.88
AC-228	209.28	499	4.40	3.233E+00	7.485E-01	7.485E-01	18.95
	270.23	586	3.60	2.795E+00	1.243E+00	1.243E+00	16.25
	338.32	966	11.40	2.437E+00	7.426E-01	7.426E-01	10.18
	911.07	1346	27.70*	1.216E+00	8.527E-01	8.527E-01	8.69
	969.11	850	16.60	1.158E+00	9.440E-01	9.440E-01	11.35
RA-228DA	209.28	499	4.40	3.233E+00	7.485E-01	7.578E-01	18.95
	338.32	966	11.40	2.437E+00	7.426E-01	7.519E-01	10.18
	911.07	1346	27.70*	1.216E+00	8.527E-01	8.633E-01	8.69
	964.60	------	5.20	1.162E+00	------	Line Not Found	------

Sample ID : J472C1AA Acquisition date : 7-SEP-2007 20:31:01

Nuclide Type: NP

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected PCI/GRAM	Decay Corr PCI/GRAM	1-Sigma %Error
	969.11	850	16.60	1.158E+00	9.440E-01	9.558E-01	11.35
TH-228DA	238.63	5347	44.60	3.006E+00	8.513E-01	8.836E-01	6.74
	240.98	1675	3.95	2.984E+00	3.033E+00	3.148E+00	8.64
	583.14	1814	30.25*	1.704E+00	7.510E-01	7.795E-01	7.42
	860.37	230	4.48	1.273E+00	8.609E-01	8.936E-01	21.08
TH-232DA	238.63	5347	44.60	3.006E+00	8.513E-01	8.513E-01	6.74
	338.32	966	12.40*	2.437E+00	6.827E-01	6.827E-01	10.18
	583.14	1814	30.25	1.704E+00	7.510E-01	7.510E-01	7.42
	911.07	1346	27.70	1.216E+00	8.527E-01	8.527E-01	8.69
	964.60	------	5.20	1.162E+00	------ Line Not Found		------
	969.11	850	16.60	1.158E+00	9.440E-01	9.440E-01	11.35
U-234DA	241.98	1675	7.49	2.984E+00	1.599E+00	1.599E+00	8.64
	295.22	2465	19.20*	2.651E+00	1.034E+00	1.034E+00	7.66
	351.92	4160	37.20	2.378E+00	1.004E+00	1.004E+00	6.62
	609.31	3131	46.30	1.652E+00	8.738E-01	8.738E-01	6.57
U-238DA	241.98	1675	7.49	2.984E+00	1.599E+00	1.599E+00	8.64
	295.22	2465	19.20	2.651E+00	1.034E+00	1.034E+00	7.66
	351.92	4160	37.20*	2.378E+00	1.004E+00	1.004E+00	6.62
	609.31	3131	46.30	1.652E+00	8.738E-01	8.738E-01	6.57
U-238DHP	63.28	200	3.80*	2.085E+00	5.393E-01	5.393E-01	50.40
	92.59	1380	5.41	3.600E+00	1.513E+00	1.513E+00	12.18

Flag: "*" = Keyline

Sample ID : J472C1AA Acquisition date : 7-SEP-2007 20:31:01

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
3	74.81	2432	4538	1.80	243.36	229	32	6.76E-02	7.7	2.87E+00	
3	77.06	2621	3128	1.31	252.48	229	32	7.28E-02	5.4	2.99E+00	
0	87.10	944	2629	1.57	293.08	287	13	2.62E-02	11.7	3.43E+00	T
0	328.48	389	1141	1.85	1269.22	1258	21	1.08E-02	19.1	2.48E+00	T
0	463.11	307	616	1.89	1813.66	1805	18	8.52E-03	17.2	1.99E+00	T
0	727.03	416	572	1.69	2880.94	2870	26	1.16E-02	14.2	1.45E+00	T
0	795.02	193	309	1.80	3155.89	3146	17	5.36E-03	19.2	1.35E+00	T
0	1378.29	197	185	2.15	5514.57	5502	24	5.48E-03	15.6	8.70E-01	
0	1408.03	134	129	1.53	5634.82	5623	23	3.71E-03	18.8	8.56E-01	T
0	1729.68	166	66	1.81	6935.56	6917	29	4.60E-03	13.1	7.41E-01	
0	1847.56	107	68	1.29	7412.23	7396	30	2.98E-03	19.3	7.13E-01	

Flags: "T" = Tentatively associated

Nuclide	Half-life	Half-Life Ratio	Energy	%Abund	Activity (PCI/GRAM)	1-Sigma %Error	Rejected by
NA-22	2.60Y	0.04	511.00	179.68	3.437E-02	21.21	Abun.
			1274.54*	99.94	--- Not Found ---		
		% Abundances Found =		64.26			
SC-46	83.85D	0.45	889.25	99.98	--- Not Found ---		Abun.
			1120.51*	99.99	2.095E-01	10.63	
		% Abundances Found =		50.00			
TC-95M	61.00D	0.61	204.12*	66.20	--- Not Found ---		Abun.
			582.07	29.30	1.186E+00	7.42	
			835.13	26.10	--- Not Found ---		
		% Abundances Found =		24.10			
RU-103	39.35D	0.95	497.08*	89.00	--- Not Found ---		Abun.
			610.33	5.60	1.397E+01	6.57	
		% Abundances Found =		5.92			
RU-106DA	368.20D	0.10	511.85	20.60	3.130E-01	21.21	Abun.
			621.84*	9.80	--- Not Found ---		
		% Abundances Found =		67.76			
SB-125	2.77Y	0.04	176.33	6.89	--- Not Found ---		Abun.
			427.89*	29.33	--- Not Found ---		
			463.38	10.35	3.256E-01	18.22	
			600.56	17.80	--- Not Found ---		
			635.90	11.32	--- Not Found ---		
		% Abundances Found =		13.67			
CS-134	2.06Y	0.05	569.31	15.43	--- Not Found ---		Abun.
			604.70	97.60	--- Not Found ---		
			795.84*	85.40	3.684E-02	20.34	
			801.93	8.73	--- Not Found ---		
		% Abundances Found =		41.22			
LA-140	40.22H	22.33	328.77	20.50	8.584E+05	20.12	Decay,Abun.
			487.03	45.50	--- Not Found ---		
			815.85	23.50	--- Not Found ---		
			1596.49*	95.49	--- Not Found ---		
		% Abundances Found =		11.08			
EU-152	13.60Y	0.01	121.78	28.40	--- Not Found ---		Abun.
			244.67	7.49	--- Not Found ---		
			344.27*	26.50	--- Not Found ---		
			778.89	12.74	--- Not Found ---		
			964.01	14.40	--- Not Found ---		
			1085.78	10.00	--- Not Found ---		
			1112.02	13.30	--- Not Found ---		
			1407.95	20.70	1.620E-01	19.86	
		% Abundances Found =		15.50			
EU-155	4.96Y	0.02	42.90	21.16	--- Not Found ---		Abun.
			86.54	30.90	1.930E-01	13.27	

Sample ID : J472C1AA Acquisition date : 7-SEP-2007 20:31:01

Nuclide	Half-life	Half-Life Ratio	Energy	%Abund	Activity (PCI/GRAM)	1-Sigma %Error	Rejected by
EU-155	4.96Y	0.02	105.31*	20.70	--- Not Found ---		Abun.
		% Abundances Found =		42.47			
BI-212	1.41E+10Y	0.00	288.07	0.31	--- Not Found ---		Abun.
			327.96	0.14	2.408E+01	21.62	
			452.83	0.31	--- Not Found ---		
			727.33*	6.58	9.301E-01	15.66	
			785.37	1.10	--- Not Found ---		
			893.41	0.38	--- Not Found ---		
			952.12	0.17	--- Not Found ---		
			1078.62	0.56	--- Not Found ---		
			1512.70	0.29	--- Not Found ---		
			1620.50	1.49	--- Not Found ---		
			1806.00	0.09	--- Not Found ---		
		% Abundances Found =		58.84			
RA-223	21.77Y	0.00	154.21	5.58	--- Not Found ---		Abun.
			269.46*	13.60	3.300E-01	16.25	
			323.87	3.88	--- Not Found ---		
		% Abundances Found =		58.98			
U-235HP	7.04E+08Y	0.00	143.76*	10.50	--- Not Found ---		Abun.
			185.71	54.00	1.393E-01	12.88	
			205.31	4.70	--- Not Found ---		
		% Abundances Found =		78.03			

Flag: "*" = Keyline

VMS Nuclide Identification Report V3.0 Generated 10-SEP-2007 22:15:57

Configuration : $DISK1:[GER10.SAMPLE]J472C1AA_070972031.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 : BRC SOIL
Sample date : 1-AUG-2007 15:30:00
Sample ID : J472C1AA
Sample type :
Elapsed live time: 0 10:00:00.00
Peak Width (FWHM): 3.00
Energy tolerance : 1.50
Errors propagated: Yes
Efficiency type : Empirical
Abundance limit : 80.00

Acquisition date : 7-SEP-2007 20:31:01
Sample quantity : 351.70 GRAMS
Sample geometry : S200
Elapsed real time: 0 10:00:14.82 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 (PCI/GRAM)	Act error	MDA (PCI/GRAM)	MDA error	Act/MDA
K-40	2.591E+01	1.640E+00	1.443E-01	5.401E-03	179.569
TL-208	2.698E-01	2.001E-02	1.744E-02	5.711E-04	15.469
PB-212	8.513E-01	5.741E-02	3.079E-02	1.240E-03	27.653
BI-214	8.738E-01	5.741E-02	3.264E-02	1.084E-03	26.775
PB-214	1.004E+00	6.651E-02	3.643E-02	1.271E-03	27.562
RA-224DA	8.836E-01	5.958E-02	3.195E-02	1.287E-03	27.653
RA-226DA	8.739E-01	5.742E-02	3.264E-02	1.084E-03	26.775
AC-228	8.527E-01	7.410E-02	6.476E-02	3.272E-03	13.167
RA-228DA	8.633E-01	7.502E-02	6.557E-02	3.312E-03	13.167
TH-228DA	7.795E-01	5.781E-02	5.039E-02	1.650E-03	15.469
TH-232DA	6.827E-01	6.948E-02	1.120E-01	4.018E-03	6.096
U-234DA	1.034E+00	7.921E-02	7.216E-02	2.773E-03	14.326
U-238DA	1.004E+00	6.651E-02	3.643E-02	1.271E-03	27.562
U-238DHP	5.393E-01	2.718E-01	7.196E-01	2.577E-02	0.749

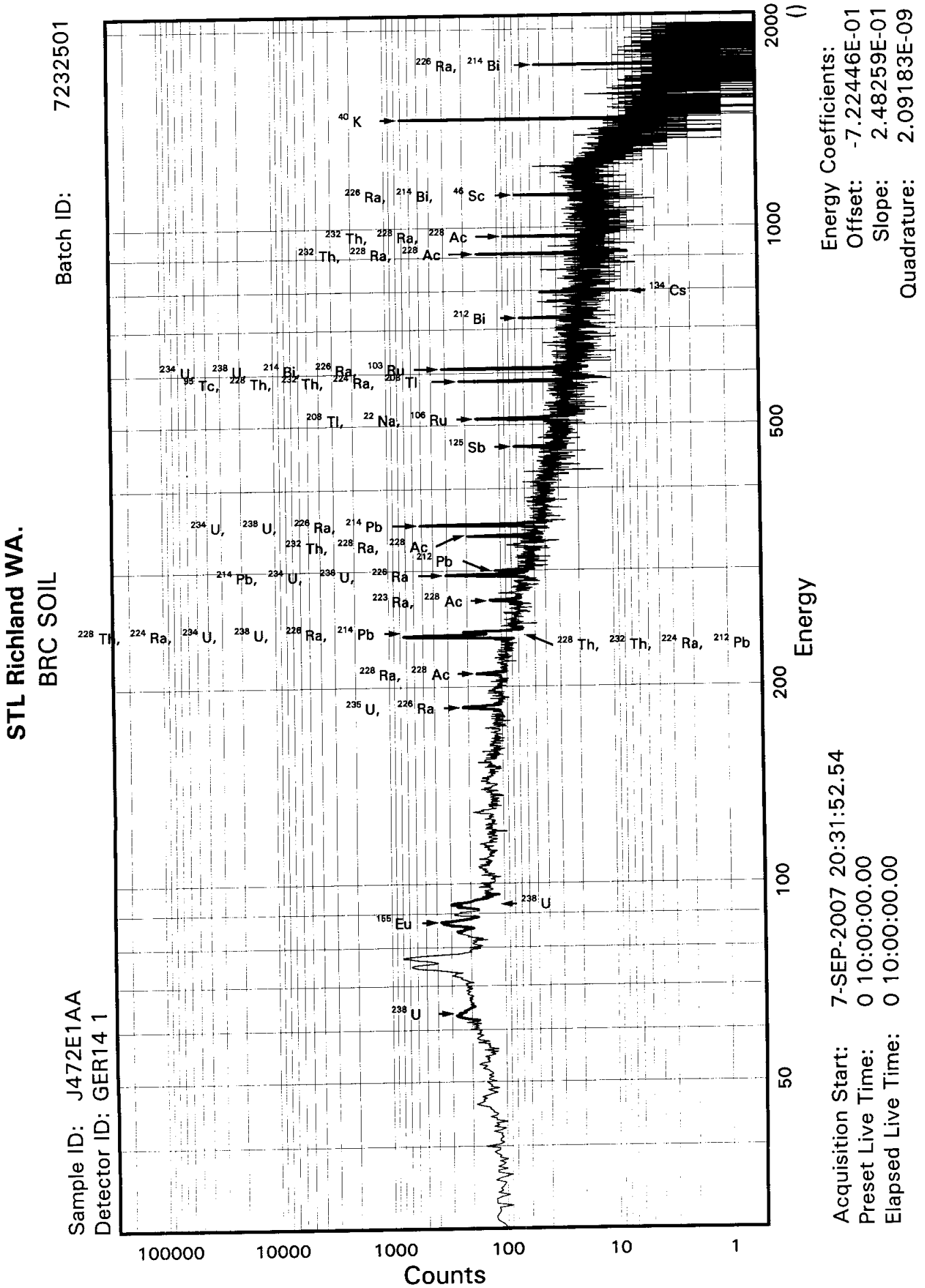
---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (PCI/GRAM)	K.L. Ided	Act error	MDA (PCI/GRAM)	MDA error	Act/MDA
BE-7	-5.235E-02		6.330E-02	2.087E-01	6.594E-03	-0.251
NA-22	-1.383E-02		6.791E-03	2.176E-02	7.970E-04	-0.636
SC-46	2.095E-01	+	2.227E-02	4.588E-02	1.749E-03	4.566
CR-51	1.024E-01		1.063E-01	3.613E-01	1.338E-02	0.284
MN-54	-8.670E-03		5.916E-03	1.923E-02	8.879E-04	-0.451
CO-57	-4.772E-02		4.096E-02	1.360E-01	4.810E-03	-0.351
CO-58	-1.663E-02		7.286E-03	2.322E-02	1.031E-03	-0.716
FE-59	1.866E-02		1.967E-02	6.728E-02	2.671E-03	0.277
CO-60	5.767E-03		5.451E-03	1.910E-02	7.288E-04	0.302
ZN-65	-2.395E-03		1.748E-02	4.916E-02	1.893E-03	-0.049
SE-75	9.343E-03		1.002E-02	2.820E-02	1.119E-03	0.331
SR-85	7.700E-02		9.549E-03	2.722E-02	8.520E-04	2.829
Y-88	1.023E-03		4.678E-03	1.667E-02	5.260E-04	0.061
NB-94	3.227E-03		5.062E-03	1.709E-02	8.367E-04	0.189

Sample ID : J472C1AA Acquisition date : 7-SEP-2007 20:31:01

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (PCI/GRAM)	K.L. Ided	Act error	MDA (PCI/GRAM)	MDA error	Act/MDA
NB-95	6.270E-02		1.321E-02	3.928E-02	1.616E-03	1.596
TC-95M	8.718E-03		1.117E-02	3.252E-02	1.318E-03	0.268
ZR-95	3.625E-02		1.306E-02	4.511E-02	1.826E-03	0.804
ZRNB-95	8.974E-02		1.889E-02	5.619E-02	2.311E-03	1.597
RH-101	6.142E-04		7.150E-03	2.051E-02	8.312E-04	0.030
RH-102M	4.917E-03		4.369E-03	1.478E-02	4.671E-04	0.333
RU-103	-1.111E-02		8.915E-03	2.913E-02	9.164E-04	-0.381
RU-106DA	7.402E-02		4.822E-02	1.662E-01	5.558E-03	0.445
AG-108M	-9.017E-03		4.536E-03	1.470E-02	4.657E-04	-0.614
AG-110M	-2.620E-03		7.536E-03	2.559E-02	1.280E-03	-0.102
SN-113DA	-8.652E-03		8.104E-03	2.680E-02	8.444E-04	-0.323
SB-124	8.673E-03		8.413E-03	2.504E-02	8.289E-04	0.346
SB-125	2.310E-02		1.413E-02	4.805E-02	1.522E-03	0.481
SN-126DA	1.459E-02		4.753E-03	1.645E-02	5.659E-04	0.887
I-131	-1.612E-01		1.225E-01	4.046E-01	1.372E-02	-0.398
BA-133	1.307E-03		7.829E-03	2.228E-02	7.708E-04	0.059
CS-134	3.684E-02	+	7.493E-03	2.288E-02	9.905E-04	1.610
CS-137DA	-1.025E-02		5.545E-03	1.811E-02	6.175E-04	-0.566
LA-138	-3.803E-03		7.247E-03	2.462E-02	9.263E-04	-0.154
CE-139	3.883E-03		5.926E-03	1.987E-02	8.024E-04	0.195
BA-140	-1.108E-01		1.249E-01	4.095E-01	1.303E-02	-0.271
BALA-140	-1.142E-01		7.197E-02	2.350E-01	8.447E-03	-0.486
CE-141	2.656E-02		1.823E-02	6.143E-02	2.286E-03	0.432
CE-144	-8.221E-02		4.024E-02	1.322E-01	4.601E-03	-0.622
CEPR-144	-1.808E-01		8.072E-02	2.644E-01	9.201E-03	-0.684
PM-144	1.136E-02		4.924E-03	1.704E-02	5.687E-04	0.667
PM-146	1.018E-02		6.324E-03	2.149E-02	6.808E-04	0.474
EU-152	-1.492E-02		1.835E-02	5.140E-02	1.823E-03	-0.290
EU-154	-3.565E-02		1.866E-02	5.997E-02	2.197E-03	-0.594
EU-155	6.077E-02		2.033E-02	6.697E-02	2.284E-03	0.908
HF-181	1.299E-03		8.967E-03	2.999E-02	9.469E-04	0.043
BI-207	1.187E-02		4.543E-03	1.576E-02	5.119E-04	0.753
BI-210M	-3.003E-04		9.663E-03	2.687E-02	1.064E-03	-0.011
BI-212	9.301E-01	+	1.457E-01	3.198E-01	1.430E-02	2.908
RA-223	3.300E-01	+	5.363E-02	1.141E-01	4.507E-03	2.892
AC-227DA	1.062E+00		8.548E-02	1.732E-01	6.983E-03	6.135
TH-234DA	2.694E+00		8.581E-01	2.995E+00	1.379E-01	0.900
U-235HP	1.820E-02		3.793E-02	1.275E-01	4.699E-03	0.143
NP-237DA	-1.845E-02		1.107E-02	3.656E-02	1.372E-03	-0.505
AM-241HP	2.766E-02		2.938E-02	8.332E-02	3.082E-03	0.332


STL Richland WA.
BRC SOIL
Batch ID: 7232501
Sample ID: J472E1AA
Detector ID: GER14 1
Energy Coefficients:
Offset: -7.22446E-01
Slope: 2.48259E-01
Quadrature: 2.09183E-09
Acquisition Start: 7-SEP-2007 20:31:52.54
Preset Live Time: 0 10:00:00.00
Elapsed Live Time: 0 10:00:00.00
Counts
Energy
100000
10000
1000
100
10
1
50
100
200
500
1000
2000
226 Ra, 214 Bi
40 K
226 Ra, 214 Bi, 46 Sc
232 Th, 228 Ra, 228 Ac
232 Th, 228 Ra, 228 Ac
134 Cs
212 Bi
234 U, 238 U, 214 Bi, 226 Ra, 103 Ru
95 Tc, 228 Th, 232 Th, 224 Ra, 208 Tl
208 Tl, 22 Na, 106 Ru
125 Sb
234 U, 238 U, 226 Ra, 214 Pb
232 Th, 228 Ra, 228 Ac
212 Pb
214 Pb, 234 U, 238 U, 226 Ra
223 Ra, 228 Ac
228 Th, 224 Ra, 234 U, 238 U, 226 Ra, 214 Pb
228 Th, 232 Th, 224 Ra, 212 Pb
228 Ra, 228 Ac
235 U, 226 Ra
238 U
155 Eu
238 U

SAMPLE IDENTIFICATION: J472E1AA

CONFIGURATION ID: GER14:J472E1AA_070972031
TITLE : BRC SOIL
SAMPLE ID : J472E1AA

REPORT DATE: 08-SEP-07
ACQUIRE DATE: 07-SEP-07 20:31:52
ELAPSED LIVE TIME: 36000.0 Sec
PRESET LIVE TIME: 0 10:00:00

SAMPLE DATE: 2-AUG-2007 13:15:00.00
CALIB DATE: 7-SEP-2007 06:28:54.52
ELAPSED LIVE TIME: 0 10:00:00
ELAPSED REAL TIME: 0 10:00:14

SAMPLE QUANTITY: 3.4200E+02
SAMPLE GEOMETRY: S200

UNITS: GRAMS
SAMPLE TYPE:

ENERGY OFFSET: -.7224E+00 keV
ENERGY SLOPE: 2.4826E-01 keV/C
ENERGY Q COEFF: 2.0918E-09 keV/C^^2
PEAK SENSITIVITY: 5.000

FWHM OFFSET: 1.0002E+00 keV
FWHM SLOPE: 2.9314E-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: 1.0000E+06
LIBRARY: [NUC_LIBR]QRL.NLB

VMS Peak Search Report V1.9 Generated 8-SEP-2007 06:32:17

Configuration : $DISK1:[GER14.SAMPLE]J472E1AA_070972031.CNF;1
Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6
Sample title : BRC SOIL
Sample date : 2-AUG-2007 13:15:00 Acquisition date : 7-SEP-2007 20:31:52
Sample ID : J472E1AA Sample quantity : 342.00 GRAMS
Sample type : Sample geometry : S200
Elapsed live time: 0 10:00:00.00 Elapsed real time: 0 10:00:14.71 0.0%
Start energy : 19.14 End energy : 2033.16
Sensitivity : 5.00 Gaussian : 10.00
Critical level : No

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	63.56	363	2764	1.19	258.95	252	14	1.01E-02	31.2	
2	2	74.79*	1895	3360	1.27	304.18	297	24	5.26E-02	7.0	1.68E+00
3	2	77.05	3185	3589	1.30	313.26	297	24	8.85E-02	4.8	
4	0	87.37	754	4063	1.21	354.83	343	19	2.09E-02	20.7	
5	0	89.90	478	1746	1.26	365.03	361	10	1.33E-02	17.0	
6	0	93.12	1062	3066	1.62	378.00	371	21	2.95E-02	13.5	
7	0	185.98	801	2039	1.48	752.06	744	19	2.23E-02	14.0	
8	0	209.35	302	1243	1.09	846.18	840	12	8.39E-03	24.1	
9	3	238.66	4407	1505	1.51	964.22	952	35	1.22E-01	2.5	1.21E+00
10	3	241.71	1191	1578	1.93	976.50	952	35	3.31E-02	9.6	
11	0	270.03	402	1421	1.47	1090.60	1081	21	1.12E-02	23.9	
12	0	295.17	1692	1343	1.56	1191.85	1180	22	4.70E-02	5.3	
13	0	300.49	199	884	1.33	1213.29	1205	14	5.53E-03	28.2	
14	0	338.48	845	1048	1.42	1366.29	1356	20	2.35E-02	8.7	
15	0	351.99*	2913	1152	1.50	1420.75	1408	25	8.09E-02	3.4	
16	0	463.09	313	584	1.74	1868.23	1859	20	8.69E-03	17.1	
17	0	510.75*	582	894	2.29	2060.20	2045	34	1.62E-02	16.3	
18	0	583.21	1324	658	1.63	2352.05	2340	25	3.68E-02	5.2	
19	0	609.36*	2038	501	1.71	2457.39	2445	22	5.66E-02	3.5	
20	0	727.30	356	416	1.90	2932.42	2921	24	9.90E-03	13.8	
21	0	795.33	134	305	2.15	3206.44	3196	19	3.71E-03	28.1	
22	0	911.24	1032	368	1.68	3673.33	3661	27	2.87E-02	5.4	
23	0	969.17	461	509	1.53	3906.63	3894	28	1.28E-02	12.7	
24	0	1120.24	471	405	1.96	4515.12	4499	30	1.31E-02	11.4	
25	0	1460.81*	6224	215	2.16	5886.83	5869	39	1.73E-01	1.5	
26	0	1729.95	80	72	2.09	6970.82	6955	25	2.22E-03	24.3	
27	0	1764.58*	305	57	2.15	7110.31	7095	31	8.47E-03	9.2	

Flag: "*" = Peak area was modified by background subtraction

VMS Nuclide Identification Report V3.0 Generated 8-SEP-2007 06:32:17

Configuration : $DISK1:[GER14.SAMPLE]J472E1AA_070972031.CNF;1
Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.3
Sample title : BRC SOIL
Sample date : 2-AUG-2007 13:15:00 Acquisition date : 7-SEP-2007 20:31:52
Sample ID : J472E1AA Sample quantity : 342.00 GRAMS
Sample type : Sample geometry : S200
Elapsed live time: 0 10:00:00.00 Elapsed real time: 0 10:00:14.71 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 PCI/GRAM	Decay Corr PCI/GRAM	1-Sigma %Error
K-40	1460.81	6224	10.67*	5.513E-01	2.323E+01	2.323E+01	6.15
TL-208	277.35	------	6.80	2.084E+00	------ Line Not Found		------
	510.84	582	21.60	1.292E+00	4.581E-01	4.581E-01	17.36
	583.14	1324	84.20*	1.159E+00	2.979E-01	2.979E-01	7.95
	860.37	------	12.46	8.432E-01	------ Line Not Found		------
PB-212	238.63	4407	44.60*	2.316E+00	9.366E-01	9.366E-01	6.74
	300.09	199	3.41	1.965E+00	6.518E-01	6.518E-01	28.88
BI-214	609.31	2038	46.30*	1.118E+00	8.644E-01	8.644E-01	6.99
	768.36	------	5.04	9.246E-01	------ Line Not Found		------
	1120.29	471	15.10	6.816E-01	1.006E+00	1.006E+00	12.96
	1764.49	305	15.80	4.738E-01	8.940E-01	8.940E-01	10.90
PB-214	241.98	1191	7.49	2.296E+00	1.521E+00	1.521E+00	11.44
	295.21	1692	19.20	1.991E+00	9.715E-01	9.715E-01	8.04
	351.92	2913	37.20*	1.741E+00	9.871E-01	9.871E-01	6.88
	785.91	------	1.10	9.077E-01	------ Line Not Found		------
RA-224DA	238.63	4407	44.60*	2.316E+00	9.366E-01	9.712E-01	6.74
	240.98	1191	3.95	2.296E+00	2.884E+00	2.990E+00	11.44
	583.14	1324	30.25	1.159E+00	8.292E-01	8.599E-01	7.95
	860.37	------	4.48	8.432E-01	------ Line Not Found		------
RA-226DA	186.21	801	3.50	2.708E+00	1.856E+00	1.856E+00	15.30
	241.98	1191	7.49	2.296E+00	1.521E+00	1.521E+00	11.44
	295.22	1692	19.20	1.991E+00	9.715E-01	9.715E-01	8.04
	351.92	2913	37.20	1.741E+00	9.871E-01	9.871E-01	6.88
	609.32	2038	46.30*	1.118E+00	8.644E-01	8.644E-01	6.99
	1120.28	471	15.10	6.816E-01	1.006E+00	1.006E+00	12.96
	1238.11	------	5.94	6.292E-01	------ Line Not Found		------
	1764.49	305	15.80	4.738E-01	8.940E-01	8.940E-01	10.90
AC-228	209.28	302	4.40	2.522E+00	5.974E-01	5.974E-01	24.88
	270.23	402	3.60	2.125E+00	1.154E+00	1.154E+00	24.73
	338.32	845	11.40	1.795E+00	9.059E-01	9.059E-01	10.55
	911.07	1032	27.70*	8.049E-01	1.016E+00	1.016E+00	8.44
	969.11	461	16.60	7.658E-01	7.968E-01	7.968E-01	14.19
RA-228DA	209.28	302	4.40	2.522E+00	5.974E-01	6.047E-01	24.88
	338.32	845	11.40	1.795E+00	9.059E-01	9.169E-01	10.55
	911.07	1032	27.70*	8.049E-01	1.016E+00	1.028E+00	8.44
	964.60	------	5.20	7.687E-01	------ Line Not Found		------

Sample ID : J472E1AA Acquisition date : 7-SEP-2007 20:31:52

Nuclide Type: NP

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected PCI/GRAM	Decay Corr PCI/GRAM	1-Sigma %Error
	969.11	461	16.60	7.658E-01	7.968E-01	8.065E-01	14.19
TH-228DA	238.63	4407	44.60	2.316E+00	9.366E-01	9.712E-01	6.74
	240.98	1191	3.95	2.296E+00	2.884E+00	2.990E+00	11.44
	583.14	1324	30.25*	1.159E+00	8.292E-01	8.599E-01	7.95
	860.37	------	4.48	8.432E-01	------ Line Not Found		------
TH-232DA	238.63	4407	44.60	2.316E+00	9.366E-01	9.366E-01	6.74
	338.32	845	12.40*	1.795E+00	8.328E-01	8.328E-01	10.55
	583.14	1324	30.25	1.159E+00	8.292E-01	8.292E-01	7.95
	911.07	1032	27.70	8.049E-01	1.016E+00	1.016E+00	8.44
	964.60	------	5.20	7.687E-01	------ Line Not Found		------
	969.11	461	16.60	7.658E-01	7.968E-01	7.968E-01	14.19
U-234DA	241.98	1191	7.49	2.296E+00	1.521E+00	1.521E+00	11.44
	295.22	1692	19.20*	1.991E+00	9.715E-01	9.715E-01	8.04
	351.92	2913	37.20	1.741E+00	9.871E-01	9.871E-01	6.88
	609.31	2038	46.30	1.118E+00	8.644E-01	8.644E-01	6.99
U-238DA	241.98	1191	7.49	2.296E+00	1.521E+00	1.521E+00	11.44
	295.22	1692	19.20	1.991E+00	9.715E-01	9.715E-01	8.04
	351.92	2913	37.20*	1.741E+00	9.871E-01	9.871E-01	6.88
	609.31	2038	46.30	1.118E+00	8.644E-01	8.644E-01	6.99
U-238DHP	63.28	363	3.80*	3.316E+00	6.328E-01	6.328E-01	31.73
	92.59	1062	5.41	3.454E+00	1.248E+00	1.248E+00	14.79

Flag: "*" = Keyline

Unidentified Energy Lines
Sample ID : J472E1AA Acquisition date : 7-SEP-2007 20:31:52

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
2	74.79	1895	3360	1.27	304.18	297	24	5.26E-02	7.0	3.44E+00	
2	77.05	3185	3589	1.30	313.26	297	24	8.85E-02	4.8	3.45E+00	
0	87.37	754	4063	1.21	354.83	343	19	2.09E-02	20.7	3.47E+00	T
0	89.90	478	1746	1.26	365.03	361	10	1.33E-02	17.0	3.46E+00	
0	463.09	313	584	1.74	1868.23	1859	20	8.69E-03	17.1	1.40E+00	T
0	727.30	356	416	1.90	2932.42	2921	24	9.90E-03	13.8	9.67E-01	T
0	795.33	134	305	2.15	3206.44	3196	19	3.71E-03	28.1	8.99E-01	T
0	1729.95	80	72	2.09	6970.82	6955	25	2.22E-03	24.3	4.81E-01	

Flags: "T" = Tentatively associated

Rejected Report
Sample ID : J472E1AA
Acquisition date : 7-SEP-2007 20:31:52

Nuclide	Half-life	Half-Life Ratio	Energy	%Abund	Activity (PCI/GRAM)	1-Sigma %Error	Rejected by
NA-22	2.60Y	0.04	511.00	179.68	5.656E-02	17.36	Abun.
			1274.54*	99.94	--- Not Found ---		
		% Abundances Found =		64.26			
SC-46	83.85D	0.44	889.25	99.98	--- Not Found ---		Abun.
			1120.51*	99.99	2.054E-01	12.96	
		% Abundances Found =		50.00			
TC-95M	61.00D	0.60	204.12*	66.20	--- Not Found ---		Abun.
			582.07	29.30	1.296E+00	7.95	
			835.13	26.10	--- Not Found ---		
		% Abundances Found =		24.10			
RU-103	39.35D	0.93	497.08*	89.00	--- Not Found ---		Abun.
			610.33	5.60	1.360E+01	6.99	
		% Abundances Found =		5.92			
RU-106DA	368.20D	0.10	511.85	20.60	5.145E-01	17.36	Abun.
			621.84*	9.80	--- Not Found ---		
		% Abundances Found =		67.76			
SB-125	2.77Y	0.04	176.33	6.89	--- Not Found ---		Abun.
			427.89*	29.33	--- Not Found ---		
			463.38	10.35	4.861E-01	18.09	
			600.56	17.80	--- Not Found ---		
			635.90	11.32	--- Not Found ---		
		% Abundances Found =		13.67			
CS-134	2.06Y	0.05	569.31	15.43	--- Not Found ---		Abun.
			604.70	97.60	--- Not Found ---		
			795.84*	85.40	3.950E-02	28.84	
			801.93	8.73	--- Not Found ---		
		% Abundances Found =		41.22			
EU-155	4.96Y	0.02	42.90	21.16	--- Not Found ---		Abun.
			86.54	30.90	1.566E-01	21.54	
			105.31*	20.70	--- Not Found ---		
		% Abundances Found =		42.47			
BI-212	1.41E+10Y	0.00	288.07	0.31	--- Not Found ---		Abun.
			327.96	0.14	--- Not Found ---		
			452.83	0.31	--- Not Found ---		
			727.33*	6.58	1.230E+00	15.37	
			785.37	1.10	--- Not Found ---		
			893.41	0.38	--- Not Found ---		
			952.12	0.17	--- Not Found ---		
			1078.62	0.56	--- Not Found ---		
			1512.70	0.29	--- Not Found ---		
			1620.50	1.49	--- Not Found ---		
			1806.00	0.09	--- Not Found ---		
		% Abundances Found =		57.62			

Sample ID : J472E1AA Acquisition date : 7-SEP-2007 20:31:52

Nuclide	Half-life	Half-Life Ratio	Energy	%Abund	Activity (PCI/GRAM)	1-Sigma %Error	Rejected by
RA-223	21.77Y	0.00	154.21	5.58	--- Not Found ---		Abun.
			269.46*	13.60	3.063E-01	24.73	
			323.87	3.88	--- Not Found ---		
		% Abundances Found =		58.98			
U-235HP	7.04E+08Y	0.00	143.76*	10.50	--- Not Found ---		Abun.
			185.71	54.00	1.203E-01	15.30	
			205.31	4.70	--- Not Found ---		
		% Abundances Found =		78.03			

Flag: "*" = Keyline

VMS Nuclide Identification Report V3.0 Generated 8-SEP-2007 06:32:19

Configuration : $DISK1:[GER14.SAMPLE]J472E1AA_070972031.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 : BRC SOIL
Sample date : 2-AUG-2007 13:15:00 Acquisition date : 7-SEP-2007 20:31:52
Sample ID : J472E1AA Sample quantity : 342.00 GRAMS
Sample type : Sample geometry : S200
Elapsed live time: 0 10:00:00.00 Elapsed real time: 0 10:00:14.71 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 (PCI/GRAM)	Act error	MDA (PCI/GRAM)	MDA error	Act/MDA
K-40	2.323E+01	1.429E+00	2.095E-01	6.855E-03	110.866
TL-208	2.979E-01	2.370E-02	2.362E-02	7.951E-04	12.613
PB-212	9.366E-01	6.309E-02	3.863E-02	1.439E-03	24.247
BI-214	8.644E-01	6.046E-02	4.498E-02	1.549E-03	19.215
PB-214	9.871E-01	6.789E-02	4.710E-02	1.541E-03	20.956
RA-224DA	9.712E-01	6.542E-02	4.005E-02	1.492E-03	24.247
RA-226DA	8.644E-01	6.046E-02	4.499E-02	1.549E-03	19.215
AC-228	1.016E+00	8.572E-02	8.676E-02	3.604E-03	11.710
RA-228DA	1.028E+00	8.676E-02	8.781E-02	3.648E-03	11.710
TH-228DA	8.599E-01	6.840E-02	6.817E-02	2.295E-03	12.613
TH-232DA	8.328E-01	8.784E-02	1.444E-01	4.710E-03	5.768
U-234DA	9.715E-01	7.814E-02	8.887E-02	3.059E-03	10.932
U-238DA	9.871E-01	6.789E-02	4.710E-02	1.541E-03	20.956
U-238DHP	6.328E-01	2.008E-01	4.391E-01	1.437E-02	1.441

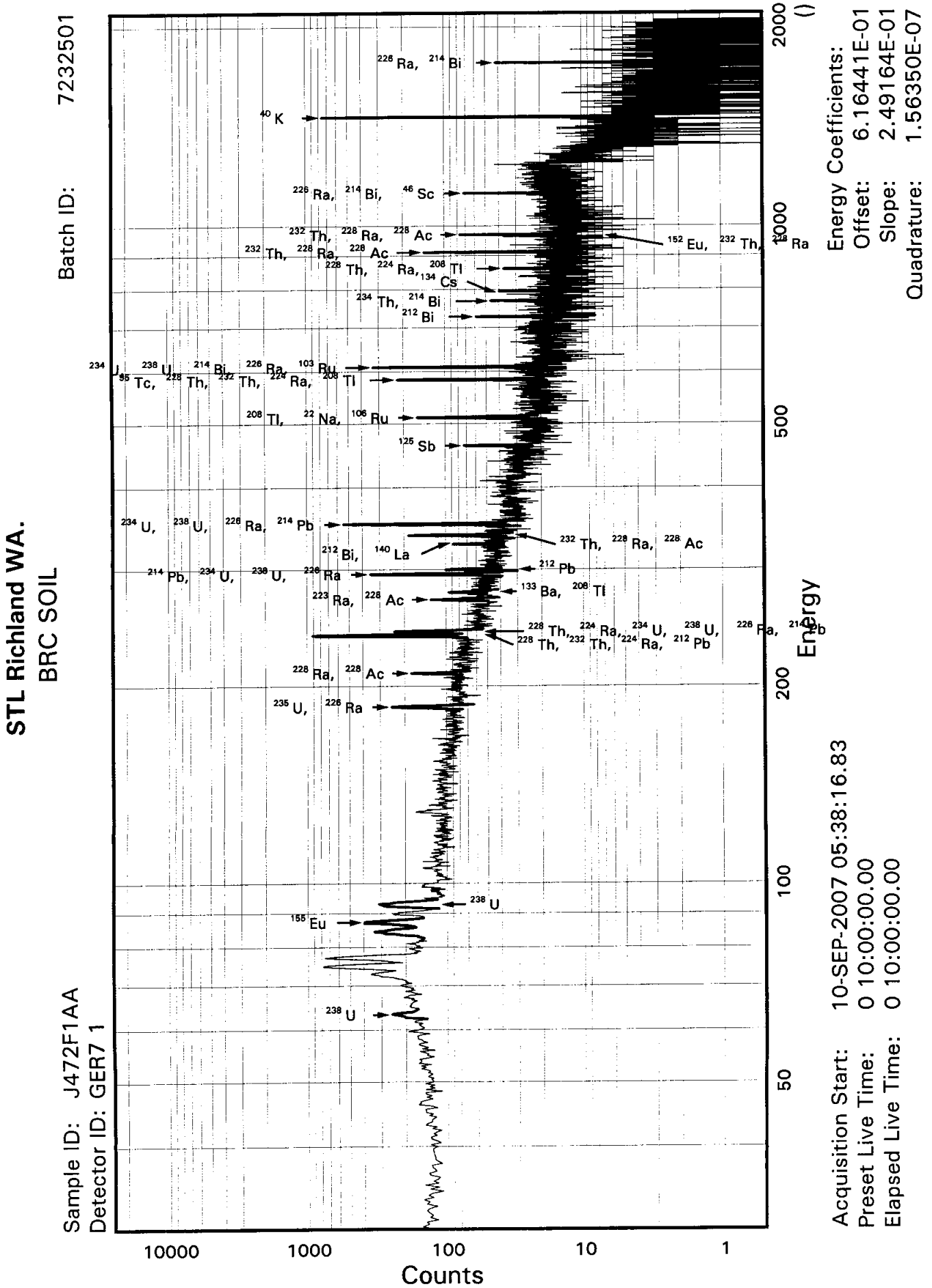
---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (PCI/GRAM)	K.L. Ided	Act error	MDA (PCI/GRAM)	MDA error	Act/MDA
BE-7	9.447E-02		8.636E-02	2.951E-01	9.503E-03	0.320
NA-22	-5.526E-03		8.725E-03	2.905E-02	9.530E-04	-0.190
SC-46	2.054E-01	+	2.661E-02	5.843E-02	2.057E-03	3.515
CR-51	4.080E-02		1.335E-01	4.460E-01	1.446E-02	0.091
MN-54	-8.590E-03		7.825E-03	2.581E-02	1.043E-03	-0.333
CO-57	-6.524E-02		4.640E-02	1.517E-01	5.641E-03	-0.430
CO-58	5.155E-03		9.940E-03	3.387E-02	1.350E-03	0.152
FE-59	-1.433E-02		2.646E-02	8.890E-02	3.205E-03	-0.161
CO-60	3.421E-03		7.535E-03	2.629E-02	8.571E-04	0.130
ZN-65	-5.220E-02		2.317E-02	6.102E-02	2.160E-03	-0.855
SE-75	2.150E-02		1.203E-02	3.577E-02	1.296E-03	0.601
SR-85	1.064E-01		1.268E-02	3.682E-02	1.158E-03	2.891
Y-88	9.828E-03		6.815E-03	2.551E-02	7.910E-04	0.385
NB-94	-8.810E-04		7.039E-03	2.366E-02	9.753E-04	-0.037

Sample ID : J472E1AA Acquisition date : 7-SEP-2007 20:31:52

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (PCI/GRAM)	K.L. Ided	Act error	MDA (PCI/GRAM)	MDA error	Act/MDA
NB-95	2.138E-02		1.538E-02	5.286E-02	2.049E-03	0.404
TC-95M	-2.055E-02		1.229E-02	3.801E-02	1.441E-03	-0.541
ZR-95	2.473E-02		1.846E-02	6.368E-02	2.453E-03	0.388
ZRNB-95	5.012E-02		2.201E-02	7.622E-02	2.954E-03	0.658
RH-101	1.454E-02		7.166E-03	2.437E-02	9.247E-04	0.596
RH-102M	-6.248E-03		5.894E-03	1.955E-02	6.304E-04	-0.320
RU-103	-4.445E-03		1.223E-02	4.095E-02	1.304E-03	-0.109
RU-106DA	6.589E-02		6.770E-02	2.292E-01	7.970E-03	0.288
AG-108M	-7.784E-03		5.962E-03	1.977E-02	6.460E-04	-0.394
AG-110M	6.255E-03		1.038E-02	3.538E-02	1.469E-03	0.177
SN-113DA	-4.214E-03		1.030E-02	3.478E-02	1.136E-03	-0.121
SB-124	1.671E-02		1.143E-02	3.466E-02	1.187E-03	0.482
SB-125	-3.631E-02		1.935E-02	6.349E-02	2.076E-03	-0.572
SN-126DA	1.595E-02		6.614E-03	2.308E-02	8.300E-04	0.691
I-131	-3.144E-01		1.524E-01	4.883E-01	1.599E-02	-0.644
BA-133	-5.812E-03		1.017E-02	2.813E-02	9.205E-04	-0.207
CS-134	3.950E-02	+	1.139E-02	3.108E-02	1.228E-03	1.271
CS-137DA	-2.054E-02		7.602E-03	2.444E-02	8.753E-04	-0.840
LA-138	-2.593E-03		9.529E-03	3.281E-02	1.074E-03	-0.079
CE-139	-5.018E-03		7.082E-03	2.320E-02	8.787E-04	-0.216
BA-140	-2.202E-01		1.684E-01	5.526E-01	1.781E-02	-0.398
BALA-140	-1.485E-01		9.654E-02	3.158E-01	1.025E-02	-0.470
CE-141	6.599E-02		2.157E-02	7.177E-02	2.686E-03	0.919
CE-144	-7.875E-02		4.471E-02	1.455E-01	5.401E-03	-0.541
CEPR-144	-1.568E-01		8.943E-02	2.911E-01	1.080E-02	-0.539
PM-144	7.203E-04		6.792E-03	2.271E-02	7.873E-04	0.032
PM-146	1.625E-02		8.623E-03	2.968E-02	9.652E-04	0.548
EU-152	1.255E-02		2.282E-02	6.819E-02	2.228E-03	0.184
EU-154	-1.453E-02		2.412E-02	8.036E-02	2.636E-03	-0.181
EU-155	6.840E-02		2.148E-02	7.210E-02	2.519E-03	0.949
HF-181	-5.104E-03		1.228E-02	4.114E-02	1.322E-03	-0.124
BI-207	4.670E-03		6.158E-03	2.085E-02	6.933E-04	0.224
BI-210M	4.922E-04		1.212E-02	3.433E-02	1.242E-03	0.014
BI-212	1.230E+00	+	1.890E-01	4.444E-01	1.959E-02	2.767
RA-223	3.063E-01	+	7.574E-02	1.430E-01	5.150E-03	2.141
AC-227DA	9.132E-01		8.315E-02	2.004E-01	7.481E-03	4.557
TH-234DA	1.184E+00		1.137E+00	3.957E+00	1.558E-01	0.299
U-235HP	8.481E-02		4.514E-02	1.506E-01	5.629E-03	0.563
NP-237DA	-1.314E-02		1.429E-02	4.706E-02	1.559E-03	-0.279
AM-241HP	6.106E-02		1.607E-02	4.543E-02	1.502E-03	1.344


STL Richland WA.
BRC SOIL
Batch ID: 7232501
Sample ID: J472F1AA
Detector ID: GER7 1
Energy Coefficients:
Offset: 6.16441E-01
Slope: 2.49164E-01
Quadrature: 1.56350E-07
Acquisition Start: 10-SEP-2007 05:38:16.83
Preset Live Time: 0 10:00:00.00
Elapsed Live Time: 0 10:00:00.00
Counts
Energy
10000
1000
100
10
1
2000
1000
500
200
100
50
40 K
226 Ra, 214 Bi
226 Ra, 214 Bi, 46 Sc
232 Th, 228 Ra, 228 Ac
232 Th, 228 Ra, 228 Ac
228 Th, 224 Ra, 208 Tl
134 Cs
234 Th, 214 Bi
212 Bi
152 Eu, 232 Th,
228 Ra
234 U, 238 U, 214 Bi, 226 Ra, 103 Ru
95 Tc, 228 Th, 232 Th, 224 Ra, 208 Tl
208 Tl, 22 Na, 106 Ru
125 Sb
234 U, 238 U, 226 Ra, 214 Pb
212 Bi, 140 La
232 Th, 228 Ra, 228 Ac
214 Pb, 234 U, 238 U, 226 Ra
212 Pb
133 Ba, 208 Tl
223 Ra, 228 Ac
228 Th, 224 Ra, 234 U, 238 U, 226 Ra, 214 Pb
228 Th, 232 Th, 224 Ra, 212 Pb
228 Ra, 228 Ac
235 U, 226 Ra
238 U
155 Eu
238 U

SAMPLE IDENTIFICATION: J472F1AA

CONFIGURATION ID: GER7:J472F1AA_100970538
TITLE : BRC SOIL
SAMPLE ID : J472F1AA

REPORT DATE: 10-SEP-07
ACQUIRE DATE: 10-SEP-07 05:38:16
ELAPSED LIVE TIME: 36000.0 Sec
PRESET LIVE TIME: 0 10:00:00

SAMPLE DATE: 2-AUG-2007 13:15:00.00
CALIB DATE: 10-SEP-2007 05:10:10.43
ELAPSED LIVE TIME: 0 10:00:00
ELAPSED REAL TIME: 0 10:00:09

SAMPLE QUANTITY: 3.4970E+02
SAMPLE GEOMETRY: S200

UNITS: GRAMS
SAMPLE TYPE:

ENERGY OFFSET: 6.1644E-01 keV
ENERGY SLOPE: 2.4916E-01 keV/C
ENERGY Q COEFF: 1.5635E-07 keV/C^^2
PEAK SENSITIVITY: 5.000

FWHM OFFSET: 5.0317E-01 keV
FWHM SLOPE: 3.8495E-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: 1.0000E+06
LIBRARY: [NUC_LIBR]QRL.NLB

VMS Peak Search Report V1.9 Generated 10-SEP-2007 15:38:51

Configuration : $DISK1:[GER7.SAMPLE]J472F1AA_100970538.CNF;1
Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6
Sample title : BRC SOIL
Sample date : 2-AUG-2007 13:15:00 Acquisition date : 10-SEP-2007 05:38:16
Sample ID : J472F1AA Sample quantity : 349.70 GRAMS
Sample type : Sample geometry : S200
Elapsed live time: 0 10:00:00.00 Elapsed real time: 0 10:00:09.77 0.0%
Start energy : 20.55 End energy : 2052.26
Sensitivity : 5.00 Gaussian : 10.00
Critical level : No

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	63.30*	264	1400	1.11	251.55	248	9	7.35E-03	29.0	
2	3	72.91*	400	2430	1.11	290.08	282	32	1.11E-02	27.6	1.77E+00
3	3	74.92*	2124	2325	1.10	298.16	282	32	5.90E-02	5.6	
4	3	77.16	2421	2038	1.02	307.13	282	32	6.72E-02	4.3	
5	7	84.57*	658	2361	1.51	336.88	329	25	1.83E-02	17.9	6.47E-01
6	7	87.26*	892	1790	1.02	347.66	329	25	2.48E-02	10.8	
7	0	90.03	478	1401	1.11	358.77	354	10	1.33E-02	15.4	
8	0	92.93*	923	1583	1.60	370.40	365	13	2.56E-02	10.0	
9	0	129.11	346	1182	1.50	515.54	511	12	9.61E-03	20.6	
10	0	186.01*	703	1121	1.24	743.73	737	14	1.95E-02	11.5	
11	0	209.27	371	995	0.72	836.96	831	13	1.03E-02	18.3	
12	4	238.60*	3784	1002	1.10	954.55	946	29	1.05E-01	2.4	1.26E+00
13	4	241.66	1090	990	1.54	966.83	946	29	3.03E-02	7.2	
14	0	270.31	415	740	1.11	1081.66	1075	15	1.15E-02	15.1	
15	0	277.63	197	865	0.80	1111.01	1102	17	5.46E-03	35.1	
16	0	295.14	1624	705	1.20	1181.18	1173	17	4.51E-02	4.5	
17	0	300.31	222	717	1.09	1201.90	1192	15	6.18E-03	27.1	
18	0	328.01	156	675	0.63	1312.88	1307	16	4.34E-03	38.0	
19	0	338.23	790	676	1.28	1353.83	1346	18	2.19E-02	8.5	
20	0	351.78*	2511	735	1.23	1408.11	1398	20	6.98E-02	3.4	
21	0	462.77	200	413	1.10	1852.65	1844	15	5.54E-03	23.3	
22	0	510.53*	453	615	1.88	2043.87	2033	26	1.26E-02	18.4	
23	0	583.03	1261	443	1.48	2334.07	2324	22	3.50E-02	5.1	
24	0	609.17	2014	360	1.48	2438.64	2430	19	5.60E-02	3.2	
25	0	727.18	337	268	1.70	2910.68	2900	21	9.37E-03	11.7	
26	0	767.74	126	278	1.52	3072.87	3065	17	3.49E-03	27.4	
27	0	795.21	121	314	1.88	3182.67	3170	20	3.37E-03	31.7	
28	0	860.27	151	273	1.18	3442.71	3432	20	4.19E-03	24.3	
29	0	911.16	852	336	1.52	3646.05	3635	27	2.37E-02	6.1	
30	0	964.00	154	283	1.15	3857.15	3845	23	4.28E-03	25.4	
31	0	968.88*	429	278	1.71	3876.63	3867	20	1.19E-02	9.8	
32	0	1120.23	361	298	1.74	4480.90	4471	19	1.00E-02	11.1	
33	0	1460.65*	6434	205	2.09	5838.35	5820	34	1.79E-01	1.4	
34	0	1588.25	65	76	1.49	6346.56	6331	23	1.81E-03	29.0	
35	0	1764.47	331	44	2.01	7047.93	7032	29	9.18E-03	7.0	
36	0	1847.81	48	34	2.71	7379.41	7369	19	1.33E-03	27.0	

Flag: "*" = Peak area was modified by background subtraction

VMS Nuclide Identification Report V3.0 Generated 10-SEP-2007 15:38:52

Configuration : $DISK1:[GER7.SAMPLE]J472F1AA_100970538.CNF;1
Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.3
Sample title : BRC SOIL
Sample date : 2-AUG-2007 13:15:00
Sample ID : J472F1AA
Sample type :
Elapsed live time: 0 10:00:00.00
Energy tolerance : 1.50
Errors propagated: Yes
Efficiency type : Empirical
Abundance limit : 80.00

Acquisition date : 10-SEP-2007 05:38:16
Sample quantity : 349.70 GRAMS
Sample geometry : S200
Elapsed real time: 0 10:00:09.77 0.0%
Half life ratio : 8.00
Systematic Error : 5.00 %
Efficiencies at : Peak Energy

Nuclide Line Activity Report

Nuclide Type: NP

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected PCI/GRAM	Decay Corr PCI/GRAM	1-Sigma %Error
K-40	1460.81	6434	10.67*	5.447E-01	2.377E+01	2.377E+01	8.18
TL-208	277.35	197	6.80	1.991E+00	3.118E-01	3.118E-01	35.75
	510.84	453	21.60	1.253E+00	3.593E-01	3.593E-01	19.35
	583.14	1261	84.20*	1.132E+00	2.841E-01	2.841E-01	7.89
	860.37	151	12.46	8.377E-01	3.099E-01	3.099E-01	25.23
PB-212	238.63	3784	44.60*	2.224E+00	8.190E-01	8.190E-01	7.58
	300.09	222	3.41	1.878E+00	7.459E-01	7.459E-01	27.83
BI-214	609.31	2014	46.30*	1.094E+00	8.534E-01	8.534E-01	6.83
	768.36	126	5.04	9.157E-01	5.851E-01	5.851E-01	28.20
	1120.29	361	15.10	6.780E-01	7.578E-01	7.578E-01	12.85
	1764.49	331	15.80	4.658E-01	9.640E-01	9.640E-01	9.49
PB-214	241.98	1090	7.49	2.204E+00	1.418E+00	1.418E+00	10.18
	295.21	1624	19.20	1.902E+00	9.545E-01	9.545E-01	7.94
	351.92	2511	37.20*	1.665E+00	8.704E-01	8.704E-01	7.08
	785.91	------	1.10	8.992E-01	------ Line Not Found		------
RA-224DA	238.63	3784	44.60*	2.224E+00	8.190E-01	8.513E-01	7.58
	240.98	1090	3.95	2.204E+00	2.689E+00	2.795E+00	10.18
	583.14	1261	30.25	1.132E+00	7.909E-01	8.220E-01	7.89
	860.37	151	4.48	8.377E-01	8.619E-01	8.959E-01	25.23
RA-226DA	186.21	703	3.50	2.621E+00	1.645E+00	1.645E+00	13.70
	241.98	1090	7.49	2.204E+00	1.418E+00	1.418E+00	10.18
	295.22	1624	19.20	1.902E+00	9.545E-01	9.546E-01	7.94
	351.92	2511	37.20	1.665E+00	8.704E-01	8.704E-01	7.08
	609.32	2014	46.30*	1.094E+00	8.534E-01	8.535E-01	6.83
	1120.28	361	15.10	6.780E-01	7.578E-01	7.578E-01	12.85
	1238.11	------	5.94	6.246E-01	------ Line Not Found		------
	1764.49	331	15.80	4.658E-01	9.640E-01	9.641E-01	9.49
AC-228	209.28	371	4.40	2.434E+00	7.443E-01	7.443E-01	19.74
	270.23	415	3.60	2.031E+00	1.219E+00	1.219E+00	16.62
	338.32	790	11.40	1.716E+00	8.669E-01	8.669E-01	10.53
	911.07	852	27.70*	8.005E-01	8.245E-01	8.245E-01	9.41
	969.11	429	16.60	7.623E-01	7.287E-01	7.287E-01	12.05
RA-228DA	209.28	371	4.40	2.434E+00	7.443E-01	7.539E-01	19.74
	338.32	790	11.40	1.716E+00	8.669E-01	8.781E-01	10.53
	911.07	852	27.70*	8.005E-01	8.245E-01	8.351E-01	9.41
	964.60	154	5.20	7.653E-01	8.318E-01	8.426E-01	26.39

Sample ID : J472F1AA Acquisition date : 10-SEP-2007 05:38:16

Nuclide Type: NP

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected PCI/GRAM	Decay Corr PCI/GRAM	1-Sigma %Error
	969.11	429	16.60	7.623E-01	7.287E-01	7.381E-01	12.05
TH-228DA	238.63	3784	44.60	2.224E+00	8.190E-01	8.513E-01	7.58
	240.98	1090	3.95	2.204E+00	2.689E+00	2.795E+00	10.18
	583.14	1261	30.25*	1.132E+00	7.909E-01	8.220E-01	7.89
	860.37	151	4.48	8.377E-01	8.619E-01	8.959E-01	25.23
TH-232DA	238.63	3784	44.60	2.224E+00	8.190E-01	8.190E-01	7.58
	338.32	790	12.40*	1.716E+00	7.970E-01	7.970E-01	10.53
	583.14	1261	30.25	1.132E+00	7.909E-01	7.909E-01	7.89
	911.07	852	27.70	8.005E-01	8.245E-01	8.245E-01	9.41
	964.60	154	5.20	7.653E-01	8.318E-01	8.318E-01	26.39
	969.11	429	16.60	7.623E-01	7.287E-01	7.287E-01	12.05
U-234DA	241.98	1090	7.49	2.204E+00	1.418E+00	1.418E+00	10.18
	295.22	1624	19.20*	1.902E+00	9.545E-01	9.545E-01	7.94
	351.92	2511	37.20	1.665E+00	8.704E-01	8.704E-01	7.08
	609.31	2014	46.30	1.094E+00	8.534E-01	8.534E-01	6.83
U-238DA	241.98	1090	7.49	2.204E+00	1.418E+00	1.418E+00	10.18
	295.22	1624	19.20	1.902E+00	9.545E-01	9.545E-01	7.94
	351.92	2511	37.20*	1.665E+00	8.704E-01	8.704E-01	7.08
	609.31	2014	46.30	1.094E+00	8.534E-01	8.534E-01	6.83
U-238DHP	63.28	264	3.80*	1.814E+00	8.236E-01	8.236E-01	29.65
	92.59	923	5.41	2.917E+00	1.256E+00	1.256E+00	11.73

Flag: "*" = Keyline

Unidentified Energy Lines
Sample ID : J472F1AA

Acquisition date : 10-SEP-2007 05:38:16

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
3	72.91	400	2430	1.11	290.08	282	32	1.11E-02	27.6	2.32E+00	
3	74.92	2124	2325	1.10	298.16	282	32	5.90E-02	5.6	2.40E+00	
3	77.16	2421	2038	1.02	307.13	282	32	6.72E-02	4.3	2.49E+00	
7	84.57	658	2361	1.51	336.88	329	25	1.83E-02	17.9	2.73E+00	
7	87.26	892	1790	1.02	347.66	329	25	2.48E-02	10.8	2.80E+00	T
0	90.03	478	1401	1.11	358.77	354	10	1.33E-02	15.4	2.86E+00	
0	129.11	346	1182	1.50	515.54	511	12	9.61E-03	20.6	3.05E+00	
0	328.01	156	675	0.63	1312.88	1307	16	4.34E-03	38.0	1.76E+00	T
0	462.77	200	413	1.10	1852.65	1844	15	5.54E-03	23.3	1.35E+00	T
0	727.18	337	268	1.70	2910.68	2900	21	9.37E-03	11.7	9.55E-01	T
0	795.21	121	314	1.88	3182.67	3170	20	3.37E-03	31.7	8.91E-01	T
0	1588.25	65	76	1.49	6346.56	6331	23	1.81E-03	29.0	5.08E-01	
0	1847.81	48	34	2.71	7379.41	7369	19	1.33E-03	27.0	4.49E-01	

Flags: "T" = Tentatively associated

Sample ID : J472F1AA Acquisition date : 10-SEP-2007 05:38:16

Nuclide	Half-life	Half-Life Ratio	Energy	%Abund	Activity (PCI/GRAM)	1-Sigma %Error	Rejected by
NA-22	2.60Y	0.04	511.00	179.68	4.443E-02	19.35	Abun.
			1274.54*	99.94	--- Not Found ---		
		% Abundances Found =		64.26			
SC-46	83.85D	0.46	889.25	99.98	--- Not Found ---		Abun.
			1120.51*	99.99	1.578E-01	12.85	
		% Abundances Found =		50.00			
TC-95M	61.00D	0.64	204.12*	66.20	--- Not Found ---		Abun.
			582.07	29.30	1.270E+00	7.89	
			835.13	26.10	--- Not Found ---		
		% Abundances Found =		24.10			
RU-103	39.35D	0.99	497.08*	89.00	--- Not Found ---		Abun.
			610.33	5.60	1.400E+01	6.83	
		% Abundances Found =		5.92			
RU-106DA	368.20D	0.11	511.85	20.60	4.053E-01	19.35	Abun.
			621.84*	9.80	--- Not Found ---		
		% Abundances Found =		67.76			
SB-125	2.77Y	0.04	176.33	6.89	--- Not Found ---		Abun.
			427.89*	29.33	--- Not Found ---		
			463.38	10.35	3.148E-01	24.07	
			600.56	17.80	--- Not Found ---		
			635.90	11.32	--- Not Found ---		
		% Abundances Found =		13.67			
BA-133	10.50Y	0.01	81.00	33.00	--- Not Found ---		Abun.
			276.40	6.90	3.094E-01	35.75	
			302.84	17.80	--- Not Found ---		
			356.00*	62.05	--- Not Found ---		
			383.85	8.70	--- Not Found ---		
		% Abundances Found =		5.37			
CS-134	2.06Y	0.05	569.31	15.43	--- Not Found ---		Abun.
			604.70	97.60	--- Not Found ---		
			795.84*	85.40	3.548E-02	32.40	
			801.93	8.73	--- Not Found ---		
		% Abundances Found =		41.22			
LA-140	40.22H	23.21	328.77	20.50	9.012E+05	38.55	Decay,Abun.
			487.03	45.50	--- Not Found ---		
			815.85	23.50	--- Not Found ---		
			1596.49*	95.49	--- Not Found ---		
		% Abundances Found =		11.08			
EU-152	13.60Y	0.01	121.78	28.40	--- Not Found ---		Abun.
			244.67	7.49	--- Not Found ---		
			344.27*	26.50	--- Not Found ---		
			778.89	12.74	--- Not Found ---		
			964.01	14.40	3.020E-01	26.39	

Sample ID : J472F1AA
Acquisition date : 10-SEP-2007 05:38:16

Nuclide	Half-life	Half-Life Ratio	Energy	%Abund	Activity (PCI/GRAM)	1-Sigma %Error	Rejected by
EU-152	13.60Y	0.01	1085.78	10.00	--- Not Found ---		Abun.
			1112.02	13.30	--- Not Found ---		
			1407.95	20.70	--- Not Found ---		
		% Abundances Found =		10.78			
EU-155	4.96Y	0.02	42.90	21.16	--- Not Found ---		Abun.
			86.54	30.90	2.246E-01	12.41	
			105.31*	20.70	--- Not Found ---		
		% Abundances Found =		42.47			
BI-212	1.41E+10Y	0.00	288.07	0.31	--- Not Found ---		Abun.
			327.96	0.14	1.374E+01	39.35	
			452.83	0.31	--- Not Found ---		
			727.33*	6.58	1.153E+00	13.47	
			785.37	1.10	--- Not Found ---		
			893.41	0.38	--- Not Found ---		
			952.12	0.17	--- Not Found ---		
			1078.62	0.56	--- Not Found ---		
			1512.70	0.29	--- Not Found ---		
			1620.50	1.49	--- Not Found ---		
			1806.00	0.09	--- Not Found ---		
		% Abundances Found =		58.84			
RA-223	21.77Y	0.00	154.21	5.58	--- Not Found ---		Abun.
			269.46*	13.60	3.239E-01	16.62	
			323.87	3.88	--- Not Found ---		
		% Abundances Found =		58.98			
TH-234DA	4.47E+09Y	0.00	766.41	0.21	1.404E+01	28.20	Abun.
			1001.03*	0.65	--- Not Found ---		
		% Abundances Found =		24.42			
U-235HP	7.04E+08Y	0.00	143.76*	10.50	--- Not Found ---		Abun.
			185.71	54.00	1.066E-01	13.70	
			205.31	4.70	--- Not Found ---		
		% Abundances Found =		78.03			

Flag: "*" = Keyline

VMS Nuclide Identification Report V3.0 Generated 10-SEP-2007 15:38:54

Configuration : $DISK1:[GER7.SAMPLE]J472F1AA_100970538.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 : BRC SOIL
Sample date : 2-AUG-2007 13:15:00 Acquisition date : 10-SEP-2007 05:38:16
Sample ID : J472F1AA Sample quantity : 349.70 GRAMS
Sample type : Sample geometry : S200
Elapsed live time: 0 10:00:00.00 Elapsed real time: 0 10:00:09.77 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 ----

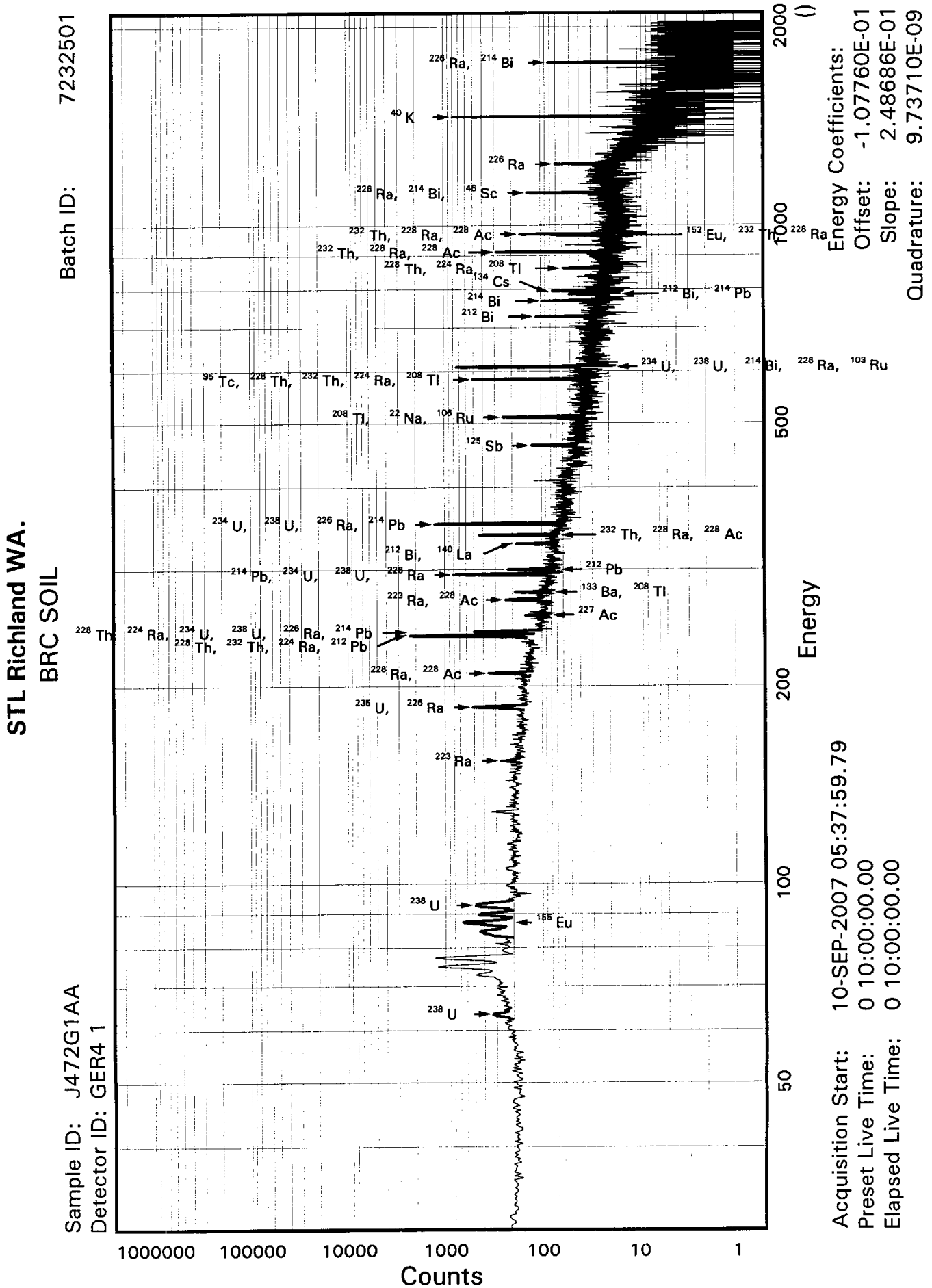
Nuclide	Activity (PCI/GRAM)	Act error	MDA (PCI/GRAM)	MDA error	Act/MDA
K-40	2.377E+01	1.944E+00	1.949E-01	1.231E-02	121.928
TL-208	2.841E-01	2.241E-02	1.991E-02	6.690E-04	14.273
PB-212	8.190E-01	6.206E-02	3.073E-02	1.581E-03	26.653
BI-214	8.534E-01	5.828E-02	4.044E-02	1.378E-03	21.106
PB-214	8.704E-01	6.163E-02	3.853E-02	1.405E-03	22.588
RA-224DA	8.513E-01	6.450E-02	3.194E-02	1.643E-03	26.653
RA-226DA	8.535E-01	5.828E-02	4.044E-02	1.378E-03	21.106
AC-228	8.245E-01	7.760E-02	7.331E-02	3.736E-03	11.246
RA-228DA	8.351E-01	7.860E-02	7.426E-02	3.785E-03	11.246
TH-228DA	8.220E-01	6.484E-02	5.759E-02	1.936E-03	14.273
TH-232DA	7.970E-01	8.392E-02	1.159E-01	4.233E-03	6.878
U-234DA	9.545E-01	7.578E-02	7.227E-02	3.051E-03	13.208
U-238DA	8.704E-01	6.163E-02	3.853E-02	1.405E-03	22.588
U-238DHP	8.236E-01	2.442E-01	6.009E-01	2.105E-02	1.371

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (PCI/GRAM)	K.L. Ided	Act error	MDA (PCI/GRAM)	MDA error	Act/MDA
BE-7	2.108E-03		7.325E-02	2.473E-01	8.334E-03	0.009
NA-22	-8.201E-04		8.152E-03	2.754E-02	1.589E-03	-0.030
SC-46	1.578E-01	+	2.027E-02	5.495E-02	2.289E-03	2.872
CR-51	1.064E-01		1.138E-01	3.850E-01	1.405E-02	0.276
MN-54	2.614E-03		6.837E-03	2.353E-02	1.099E-03	0.111
CO-57	-2.262E-02		3.577E-02	1.201E-01	5.421E-03	-0.188
CO-58	-2.286E-02		8.490E-03	2.706E-02	1.217E-03	-0.845
FE-59	-2.741E-02		2.553E-02	8.523E-02	3.653E-03	-0.322
CO-60	-5.421E-03		6.446E-03	2.137E-02	1.490E-03	-0.254
ZN-65	2.206E-02		2.041E-02	6.034E-02	2.531E-03	0.366
SE-75	1.531E-02		8.236E-03	2.829E-02	1.354E-03	0.541
SR-85	4.186E-02		9.385E-03	2.860E-02	9.173E-04	1.464
Y-88	1.474E-02		5.906E-03	2.328E-02	7.831E-04	0.633
NB-94	-2.911E-03		6.221E-03	2.101E-02	1.037E-03	-0.139

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (PCI/GRAM)	K.L. Ided	Act error	MDA (PCI/GRAM)	MDA error	Act/MDA
NB-95	4.275E-02		1.567E-02	4.704E-02	1.967E-03	0.909
TC-95M	-7.247E-03		9.531E-03	3.114E-02	1.702E-03	-0.233
ZR-95	-1.420E-02		1.613E-02	5.313E-02	2.188E-03	-0.267
ZRNB-95	6.101E-02		2.211E-02	6.638E-02	2.775E-03	0.919
RH-101	1.507E-02		5.610E-03	1.873E-02	1.031E-03	0.805
RH-102M	1.487E-04		4.938E-03	1.668E-02	5.637E-04	0.009
RU-103	-1.115E-02		1.046E-02	3.444E-02	1.133E-03	-0.324
RU-106DA	-4.957E-02		5.525E-02	1.851E-01	6.346E-03	-0.268
AG-108M	1.951E-03		4.993E-03	1.705E-02	5.982E-04	0.114
AG-110M	-7.351E-04		9.271E-03	3.158E-02	1.590E-03	-0.023
SN-113DA	-1.865E-03		8.702E-03	2.961E-02	1.060E-03	-0.063
SB-124	-4.095E-03		8.926E-03	2.929E-02	9.950E-04	-0.140
SB-125	-1.648E-02		1.591E-02	5.302E-02	1.868E-03	-0.311
SN-126DA	2.335E-02		5.571E-03	1.971E-02	6.933E-04	1.185
I-131	5.850E-02		1.475E-01	4.930E-01	1.791E-02	0.119
BA-133	1.073E-02		7.873E-03	2.290E-02	8.341E-04	0.469
CS-134	3.548E-02	+	1.149E-02	2.927E-02	1.285E-03	1.212
CS-137DA	-2.007E-02		6.605E-03	2.073E-02	7.229E-04	-0.968
LA-138	-1.836E-02		8.739E-03	2.790E-02	1.802E-03	-0.658
CE-139	-3.279E-03		5.480E-03	1.819E-02	1.031E-03	-0.180
BA-140	-3.745E-02		1.578E-01	5.259E-01	1.716E-02	-0.071
BALA-140	-5.321E-02		8.910E-02	3.033E-01	1.646E-02	-0.175
CE-141	-4.317E-03		1.688E-02	5.668E-02	2.812E-03	-0.076
CE-144	-2.086E-03		3.586E-02	1.187E-01	5.193E-03	-0.018
CEPR-144	-2.672E-03		7.173E-02	2.375E-01	1.039E-02	-0.011
PM-144	4.444E-03		5.727E-03	1.977E-02	6.767E-04	0.225
PM-146	5.025E-03		7.131E-03	2.439E-02	8.423E-04	0.206
EU-152	-1.806E-02		1.658E-02	5.417E-02	1.978E-03	-0.333
EU-154	5.887E-03		2.240E-02	7.628E-02	4.401E-03	0.077
EU-155	4.239E-02		1.790E-02	5.943E-02	2.171E-03	0.713
HF-181	4.752E-04		1.051E-02	3.546E-02	1.189E-03	0.013
BI-207	4.993E-03		5.275E-03	1.833E-02	6.112E-04	0.272
BI-210M	-1.392E-02		9.049E-03	2.623E-02	1.249E-03	-0.531
BI-212	1.153E+00	+	1.553E-01	3.913E-01	1.774E-02	2.946
RA-223	3.239E-01	+	5.382E-02	1.196E-01	5.629E-03	2.708
AC-227DA	6.879E-02		4.422E-02	1.310E-01	6.778E-03	0.525
TH-234DA	3.153E+00		1.060E+00	3.720E+00	1.774E-01	0.848
U-235HP	2.583E-02		3.419E-02	1.159E-01	5.648E-03	0.223
NP-237DA	-7.467E-03		1.160E-02	3.846E-02	1.480E-03	-0.194
AM-241HP	5.578E-03		2.077E-02	7.010E-02	2.545E-03	0.080


STL Richland WA.
BRC SOIL
Batch ID: 7232501
Sample ID: J472G1AA
Detector ID: GER4 1
Energy Coefficients:
Offset: -1.07760E-01
Slope: 2.48686E-01
Quadrature: 9.73710E-09
Acquisition Start: 10-SEP-2007 05:37:59.79
Preset Live Time: 0 10:00:00.00
Elapsed Live Time: 0 10:00:00.00
Counts
Energy
1000000
100000
10000
1000
100
10
1
50
100
200
500
1000
2000
226 Ra, 214 Bi
40 K
226 Ra
226 Ra, 214 Bi, 46 Sc
232 Th, 228 Ra, 228 Ac
152 Eu, 232 Th, 228 Ra
232 Th, 228 Ra, 228 Ac
228 Th, 224 Ra, 208 Tl
134 Cs
212 Bi, 214 Pb
214 Bi
212 Bi
234 U, 238 U, 214 Bi, 226 Ra, 103 Ru
95 Tc, 228 Th, 232 Th, 224 Ra, 208 Tl
208 Tl, 22 Na, 106 Ru
125 Sb
234 U, 238 U, 226 Ra, 214 Pb
232 Th, 228 Ra, 228 Ac
212 Bi, 140 La
214 Pb, 234 U, 238 U, 226 Ra
212 Pb
133 Ba, 208 Tl
223 Ra, 228 Ac
227 Ac
228 Th, 224 Ra, 234 U, 228 Th, 238 U, 232 Th, 226 Ra, 224 Ra, 214 Pb, 212 Pb
228 Ra, 228 Ac
235 U, 226 Ra
223 Ra
238 U
155 Eu
238 U

SAMPLE IDENTIFICATION: J472G1AA

CONFIGURATION ID: GER4:J472G1AA_100970537
TITLE : BRC SOIL
SAMPLE ID : J472G1AA

REPORT DATE: 10-SEP-07
ACQUIRE DATE: 10-SEP-07 05:37:59
ELAPSED LIVE TIME: 36000.0 Sec
PRESET LIVE TIME: 0 10:00:00

SAMPLE DATE: 2-AUG-2007 11:15:00.00
CALIB DATE: 10-SEP-2007 05:25:37.97
ELAPSED LIVE TIME: 0 10:00:00
ELAPSED REAL TIME: 0 10:00:20

SAMPLE QUANTITY: 3.4150E+02
SAMPLE GEOMETRY: S200

UNITS: GRAMS
SAMPLE TYPE:

ENERGY OFFSET: -.1078E+00 keV
ENERGY SLOPE: 2.4869E-01 keV/C
ENERGY Q COEFF: 9.7371E-09 keV/C^^2
PEAK SENSITIVITY: 5.000

FWHM OFFSET: 3.0658E-01 keV
FWHM SLOPE: 4.1636E-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: 1.0000E+06
LIBRARY: [NUC_LIBR]QRL.NLB

VMS Peak Search Report V1.9 Generated 10-SEP-2007 15:38:35

Configuration : $DISK1:[GER4.SAMPLE]J472G1AA_100970537.CNF;1
Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6
Sample title : BRC SOIL
Sample date : 2-AUG-2007 11:15:00 Acquisition date : 10-SEP-2007 05:37:59
Sample ID : J472G1AA Sample quantity : 341.50 GRAMS
Sample type : Sample geometry : S200
Elapsed live time: 0 10:00:00.00 Elapsed real time: 0 10:00:20.73 0.1%
Start energy : 19.79 End energy : 2037.78
Sensitivity : 5.00 Gaussian : 10.00
Critical level : No

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	63.54*	258	2435	0.78	255.92	251	11	7.16E-03	39.4	
2	5	72.87*	658	3436	1.07	293.43	286	30	1.83E-02	19.3	3.31E+00
3	5	74.91*	2948	2746	0.87	301.67	286	30	8.19E-02	4.1	
4	5	77.15	4039	2524	0.93	310.65	286	30	1.12E-01	2.9	
5	9	84.49*	1085	2419	1.61	340.16	334	34	3.01E-02	9.9	1.74E+00
6	9	87.24*	1713	2624	1.02	351.22	334	34	4.76E-02	6.7	
7	9	89.91	998	2392	0.89	361.99	334	34	2.77E-02	10.0	
8	0	92.89*	1393	3053	1.51	373.94	368	14	3.87E-02	9.1	
9	0	128.99	622	2003	0.88	519.11	514	11	1.73E-02	14.5	
10	0	154.23	355	2041	0.55	620.61	615	12	9.86E-03	26.0	
11	0	185.97*	1519	2532	1.11	748.22	740	16	4.22E-02	8.1	
12	0	209.21	953	1967	0.88	841.65	834	15	2.65E-02	10.7	
13	6	238.60*	8413	1632	0.96	959.85	951	28	2.34E-01	1.5	6.12E+00
14	6	241.61	2507	1601	1.62	971.96	951	28	6.96E-02	4.1	
15	0	256.14	163	867	0.51	1030.37	1027	10	4.54E-03	34.5	
16	0	270.24	797	1692	1.29	1087.04	1079	18	2.21E-02	12.6	
17	0	277.45	474	1037	0.88	1116.06	1111	13	1.32E-02	14.7	
18	0	295.20*	3422	1456	1.05	1187.41	1177	20	9.51E-02	3.3	
19	0	299.99	622	1118	0.93	1206.65	1199	15	1.73E-02	12.4	
20	0	328.02	475	1112	0.93	1319.36	1312	15	1.32E-02	16.0	
21	0	338.27*	1640	935	1.17	1360.59	1354	13	4.56E-02	4.8	
22	0	351.85*	5765	1089	1.11	1415.18	1406	18	1.60E-01	1.9	
23	0	409.64	260	838	0.69	1647.53	1640	16	7.21E-03	25.7	
24	0	462.78	458	704	1.27	1861.18	1853	16	1.27E-02	13.8	
25	0	510.68*	957	942	1.78	2053.78	2043	23	2.66E-02	10.1	
26	0	583.14*	2605	824	1.38	2345.11	2333	25	7.24E-02	3.8	
27	0	609.31*	4074	641	1.39	2450.33	2440	20	1.13E-01	2.3	
28	0	727.35	611	556	1.57	2924.86	2913	22	1.70E-02	10.6	
29	0	768.14	391	493	1.38	3088.87	3078	21	1.09E-02	15.1	
30	0	786.17	236	420	1.74	3161.32	3151	21	6.55E-03	22.8	
31	0	794.85	266	340	1.47	3196.23	3188	16	7.38E-03	16.7	
32	0	860.53	261	386	1.73	3460.28	3450	19	7.24E-03	16.6	
33	0	911.16*	1718	433	1.59	3663.80	3654	24	4.77E-02	3.8	
34	0	934.18	303	412	1.53	3756.34	3743	27	8.41E-03	16.8	
35	0	964.42	329	339	1.61	3877.91	3869	18	9.15E-03	12.5	
36	0	968.90	987	487	1.61	3895.91	3887	26	2.74E-02	6.1	
37	0	1120.23	913	545	1.87	4504.22	4492	28	2.54E-02	6.9	
38	0	1238.14	404	481	1.80	4978.18	4965	26	1.12E-02	13.5	
39	0	1377.74	261	134	1.70	5539.32	5525	25	7.25E-03	11.8	
40	0	1460.69*	7138	229	2.20	5872.69	5855	34	1.98E-01	1.4	
41	0	1587.75	122	106	1.20	6383.40	6374	18	3.38E-03	19.3	
42	0	1729.33	136	67	1.55	6952.40	6942	23	3.78E-03	14.6	
43	0	1764.37*	670	80	2.29	7093.22	7077	32	1.86E-02	5.3	

Sample ID : J472G1AA Acquisition date : 10-SEP-2007 05:37:59

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit

Flag: "*" = Peak area was modified by background subtraction

VMS Nuclide Identification Report V3.0 Generated 10-SEP-2007 15:38:36

Configuration : $DISK1:[GER4.SAMPLE]J472G1AA_100970537.CNF;1
Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.3
Sample title : BRC SOIL
Sample date : 2-AUG-2007 11:15:00
Sample ID : J472G1AA
Sample type :
Elapsed live time: 0 10:00:00.00
Energy tolerance : 1.50
Errors propagated: Yes
Efficiency type : Empirical
Abundance limit : 80.00

Acquisition date : 10-SEP-2007 05:37:59
Sample quantity : 341.50 GRAMS
Sample geometry : S200
Elapsed real time: 0 10:00:20.73 0.1%
Half life ratio : 8.00
Systematic Error : 5.00 %
Efficiencies at : Peak Energy

Nuclide Line Activity Report

Nuclide Type: NP

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected PCI/GRAM	Decay Corr PCI/GRAM	1-Sigma %Error
K-40	1460.81	7138	10.67*	5.415E-01	2.716E+01	2.716E+01	6.42
TL-208	277.35	474	6.80	2.028E+00	7.552E-01	7.552E-01	16.14
	510.84	957	21.60	1.302E+00	7.479E-01	7.479E-01	11.86
	583.14	2605	84.20*	1.176E+00	5.785E-01	5.785E-01	7.25
	860.37	261	12.46	8.555E-01	5.377E-01	5.377E-01	17.93
PB-212	238.63	8413	44.60*	2.244E+00	1.848E+00	1.848E+00	6.63
	300.09	622	3.41	1.921E+00	2.086E+00	2.086E+00	14.08
BI-214	609.31	4074	46.30*	1.136E+00	1.703E+00	1.703E+00	6.57
	768.36	391	5.04	9.416E-01	1.810E+00	1.810E+00	16.43
	1120.29	913	15.10	6.798E-01	1.956E+00	1.956E+00	9.35
	1764.49	670	15.80	4.701E-01	1.983E+00	1.983E+00	8.00
PB-214	241.98	2507	7.49	2.226E+00	3.306E+00	3.306E+00	7.64
	295.21	3422	19.20	1.943E+00	2.017E+00	2.017E+00	7.45
	351.92	5765	37.20*	1.714E+00	1.987E+00	1.987E+00	6.71
	785.91	236	1.10	9.235E-01	5.104E+00	5.104E+00	23.71
RA-223	154.21	355	5.58	2.793E+00	5.008E-01	5.025E-01	26.72
	269.46	797	13.60*	2.065E+00	6.240E-01	6.262E-01	14.21
	323.87	------	3.88	1.819E+00	------	Line Not Found	------
RA-224DA	238.63	8413	44.60*	2.244E+00	1.848E+00	1.921E+00	6.63
	240.98	2507	3.95	2.226E+00	6.269E+00	6.517E+00	7.64
	583.14	2605	30.25	1.176E+00	1.610E+00	1.674E+00	7.25
	860.37	261	4.48	8.555E-01	1.496E+00	1.555E+00	17.93
RA-226DA	186.21	1519	3.50	2.594E+00	3.679E+00	3.679E+00	10.26
	241.98	2507	7.49	2.226E+00	3.306E+00	3.306E+00	7.64
	295.22	3422	19.20	1.943E+00	2.017E+00	2.017E+00	7.45
	351.92	5765	37.20	1.714E+00	1.987E+00	1.987E+00	6.71
	609.32	4074	46.30*	1.136E+00	1.703E+00	1.703E+00	6.57
	1120.28	913	15.10	6.798E-01	1.956E+00	1.956E+00	9.35
	1238.11	404	5.94	6.228E-01	2.401E+00	2.401E+00	14.82
	1764.49	670	15.80	4.701E-01	1.983E+00	1.983E+00	8.00
AC-228	209.28	953	4.40	2.434E+00	1.957E+00	1.957E+00	12.39
	270.23	797	3.60	2.065E+00	2.357E+00	2.357E+00	14.21
	338.32	1640	11.40	1.764E+00	1.793E+00	1.793E+00	8.13
	911.07	1718	27.70*	8.145E-01	1.674E+00	1.674E+00	7.91
	969.11	987	16.60	7.722E-01	1.693E+00	1.693E+00	9.14
RA-228DA	209.28	953	4.40	2.434E+00	1.957E+00	1.983E+00	12.39

Sample ID : J472G1AA Acquisition date : 10-SEP-2007 05:37:59

Nuclide Type: NP

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected PCI/GRAM	Decay Corr PCI/GRAM	1-Sigma %Error
	338.32	1640	11.40	1.764E+00	1.793E+00	1.816E+00	8.13
	911.07	1718	27.70*	8.145E-01	1.674E+00	1.695E+00	7.91
	964.60	329	5.20	7.753E-01	1.797E+00	1.820E+00	14.19
	969.11	987	16.60	7.722E-01	1.693E+00	1.715E+00	9.14
TH-228DA	238.63	8413	44.60	2.244E+00	1.848E+00	1.921E+00	6.63
	240.98	2507	3.95	2.226E+00	6.269E+00	6.517E+00	7.64
	583.14	2605	30.25*	1.176E+00	1.610E+00	1.674E+00	7.25
	860.37	261	4.48	8.555E-01	1.496E+00	1.555E+00	17.93
TH-232DA	238.63	8413	44.60	2.244E+00	1.848E+00	1.848E+00	6.63
	338.32	1640	12.40*	1.764E+00	1.649E+00	1.649E+00	8.13
	583.14	2605	30.25	1.176E+00	1.610E+00	1.610E+00	7.25
	911.07	1718	27.70	8.145E-01	1.674E+00	1.674E+00	7.91
	964.60	329	5.20	7.753E-01	1.797E+00	1.797E+00	14.19
	969.11	987	16.60	7.722E-01	1.693E+00	1.693E+00	9.14
U-234DA	241.98	2507	7.49	2.226E+00	3.306E+00	3.306E+00	7.64
	295.22	3422	19.20*	1.943E+00	2.017E+00	2.017E+00	7.45
	351.92	5765	37.20	1.714E+00	1.987E+00	1.987E+00	6.71
	609.31	4074	46.30	1.136E+00	1.703E+00	1.703E+00	6.57
U-238DA	241.98	2507	7.49	2.226E+00	3.306E+00	3.306E+00	7.64
	295.22	3422	19.20	1.943E+00	2.017E+00	2.017E+00	7.45
	351.92	5765	37.20*	1.714E+00	1.987E+00	1.987E+00	6.71
	609.31	4074	46.30	1.136E+00	1.703E+00	1.703E+00	6.57
U-238DHP	63.28	258	3.80*	1.045E+00	1.428E+00	1.428E+00	39.97
	92.59	1393	5.41	2.393E+00	2.366E+00	2.366E+00	11.37

Flag: "*" = Keyline

Unidentified Energy Lines
Sample ID : J472G1AA

Acquisition date : 10-SEP-2007 05:37:59

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
5	72.87	658	3436	1.07	293.43	286	30	1.83E-02	19.3	1.56E+00	
5	74.91	2948	2746	0.87	301.67	286	30	8.19E-02	4.1	1.67E+00	
5	77.15	4039	2524	0.93	310.65	286	30	1.12E-01	2.9	1.78E+00	
9	84.49	1085	2419	1.61	340.16	334	34	3.01E-02	9.9	2.10E+00	
9	87.24	1713	2624	1.02	351.22	334	34	4.76E-02	6.7	2.21E+00	T
9	89.91	998	2392	0.89	361.99	334	34	2.77E-02	10.0	2.30E+00	
0	128.99	622	2003	0.88	519.11	514	11	1.73E-02	14.5	2.85E+00	
0	256.14	163	867	0.51	1030.37	1027	10	4.54E-03	34.5	2.14E+00	T
0	328.02	475	1112	0.93	1319.36	1312	15	1.32E-02	16.0	1.80E+00	T
0	409.64	260	838	0.69	1647.53	1640	16	7.21E-03	25.7	1.53E+00	
0	462.78	458	704	1.27	1861.18	1853	16	1.27E-02	13.8	1.40E+00	T
0	727.35	611	556	1.57	2924.86	2913	22	1.70E-02	10.6	9.85E-01	T
0	794.85	266	340	1.47	3196.23	3188	16	7.38E-03	16.7	9.15E-01	T
0	934.18	303	412	1.53	3756.34	3743	27	8.41E-03	16.8	7.97E-01	
0	1377.74	261	134	1.70	5539.32	5525	25	7.25E-03	11.8	5.68E-01	
0	1587.75	122	106	1.20	6383.40	6374	18	3.38E-03	19.3	5.07E-01	
0	1729.33	136	67	1.55	6952.40	6942	23	3.78E-03	14.6	4.77E-01	

Flags: "T" = Tentatively associated

Sample ID : J472G1AA
Acquisition date : 10-SEP-2007 05:37:59

Nuclide	Half-life	Half-Life Ratio	Energy	%Abund	Activity (PCI/GRAM)	1-Sigma %Error	Rejected by
NA-22	2.60Y	0.04	511.00	179.68	9.250E-02	11.86	Abun.
			1274.54*	99.94	--- Not Found ---		
		% Abundances Found =		64.26			
SC-46	83.85D	0.46	889.25	99.98	--- Not Found ---		Abun.
			1120.51*	99.99	4.077E-01	9.35	
		% Abundances Found =		50.00			
TC-95M	61.00D	0.64	204.12*	66.20	--- Not Found ---		Abun.
			582.07	29.30	2.589E+00	7.25	
			835.13	26.10	--- Not Found ---		
		% Abundances Found =		24.10			
RU-103	39.35D	0.99	497.08*	89.00	--- Not Found ---		Abun.
			610.33	5.60	2.797E+01	6.57	
		% Abundances Found =		5.92			
RU-106DA	368.20D	0.11	511.85	20.60	8.439E-01	11.86	Abun.
			621.84*	9.80	--- Not Found ---		
		% Abundances Found =		67.76			
SB-125	2.77Y	0.04	176.33	6.89	--- Not Found ---		Abun.
			427.89*	29.33	--- Not Found ---		
			463.38	10.35	7.121E-01	15.06	
			600.56	17.80	--- Not Found ---		
			635.90	11.32	--- Not Found ---		
		% Abundances Found =		13.67			
BA-133	10.50Y	0.01	81.00	33.00	--- Not Found ---		Abun.
			276.40	6.90	7.495E-01	16.14	
			302.84	17.80	--- Not Found ---		
			356.00*	62.05	--- Not Found ---		
			383.85	8.70	--- Not Found ---		
		% Abundances Found =		5.37			
CS-134	2.06Y	0.05	569.31	15.43	--- Not Found ---		Abun.
			604.70	97.60	--- Not Found ---		
			795.84*	85.40	7.752E-02	17.93	
			801.93	8.73	--- Not Found ---		
		% Abundances Found =		41.22			
LA-140	40.22H	23.26	328.77	20.50	2.830E+06	17.29	Decay,Abun.
			487.03	45.50	--- Not Found ---		
			815.85	23.50	--- Not Found ---		
			1596.49*	95.49	--- Not Found ---		
		% Abundances Found =		11.08			
EU-152	13.60Y	0.01	121.78	28.40	--- Not Found ---		Abun.
			244.67	7.49	--- Not Found ---		
			344.27*	26.50	--- Not Found ---		
			778.89	12.74	--- Not Found ---		
			964.01	14.40	6.524E-01	14.19	

Sample ID : J472G1AA Acquisition date : 10-SEP-2007 05:37:59

Nuclide	Half-life	Half-Life Ratio	Energy	%Abund	Activity (PCI/GRAM)	1-Sigma %Error	Rejected by
EU-152	13.60Y	0.01	1085.78	10.00	--- Not Found ---		Abun.
			1112.02	13.30	--- Not Found ---		
			1407.95	20.70	--- Not Found ---		
		% Abundances Found =		10.78			
EU-155	4.96Y	0.02	42.90	21.16	--- Not Found ---		Abun.
			86.54	30.90	5.601E-01	9.66	
			105.31*	20.70	--- Not Found ---		
		% Abundances Found =		42.47			
BI-212	1.41E+10Y	0.00	288.07	0.31	--- Not Found ---		Abun.
			327.96	0.14	4.170E+01	19.02	
			452.83	0.31	--- Not Found ---		
			727.33*	6.58	2.073E+00	12.59	
			785.37	1.10	5.104E+00	23.87	
			893.41	0.38	--- Not Found ---		
			952.12	0.17	--- Not Found ---		
			1078.62	0.56	--- Not Found ---		
			1512.70	0.29	--- Not Found ---		
			1620.50	1.49	--- Not Found ---		
			1806.00	0.09	--- Not Found ---		
		% Abundances Found =		68.47			
AC-227DA	21.77Y	0.00	236.00*	11.34	--- Not Found ---		Abun.
			256.20	6.21	2.711E-01	35.15	
		% Abundances Found =		35.38			
U-235HP	7.04E+08Y	0.00	143.76*	10.50	--- Not Found ---		Abun.
			185.71	54.00	2.384E-01	10.26	
			205.31	4.70	--- Not Found ---		
		% Abundances Found =		78.03			

Flag: "*" = Keyline

VMS Nuclide Identification Report V3.0 Generated 10-SEP-2007 15:38:38

Configuration : $DISK1:[GER4.SAMPLE]J472G1AA_100970537.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 : BRC SOIL
Sample date : 2-AUG-2007 11:15:00
Sample ID : J472G1AA
Sample type :
Elapsed live time: 0 10:00:00.00
Peak Width (FWHM): 3.00
Energy tolerance : 1.50
Errors propagated: Yes
Efficiency type : Empirical
Abundance limit : 80.00

Acquisition date : 10-SEP-2007 05:37:59
Sample quantity : 341.50 GRAMS
Sample geometry : S200
Elapsed real time: 0 10:00:20.73 0.1%
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 ----

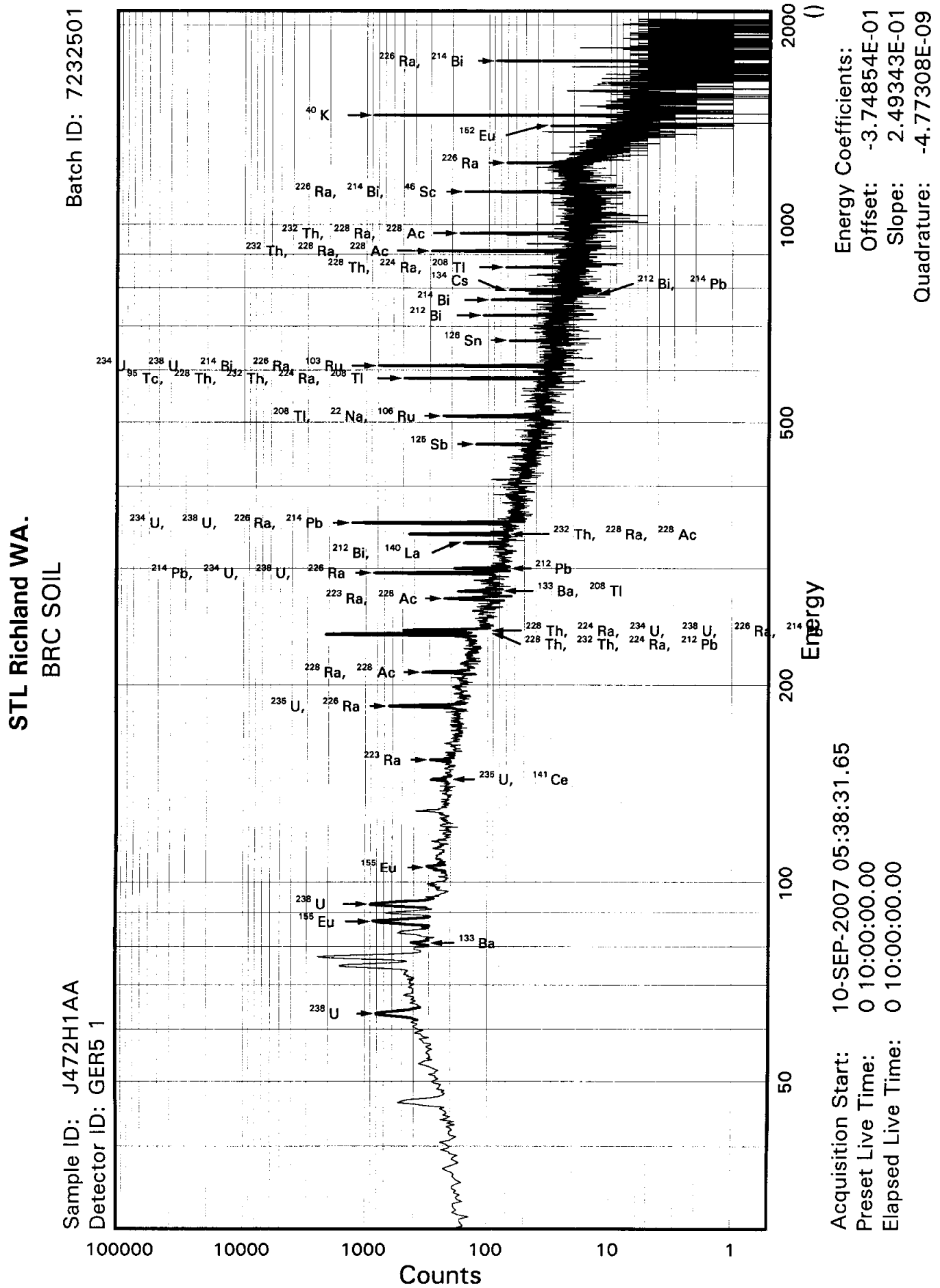
Nuclide	Activity (PCI/GRAM)	Act error	MDA (PCI/GRAM)	MDA error	Act/MDA
K-40	2.716E+01	1.745E+00	2.314E-01	8.778E-03	117.394
TL-208	5.785E-01	4.194E-02	2.525E-02	9.122E-04	22.910
PB-212	1.848E+00	1.224E-01	3.922E-02	1.602E-03	47.111
BI-214	1.703E+00	1.119E-01	4.572E-02	1.652E-03	37.248
PB-214	1.987E+00	1.333E-01	4.772E-02	1.923E-03	41.641
RA-223	6.262E-01	8.898E-02	1.213E-01	5.191E-03	5.161
RA-224DA	1.921E+00	1.273E-01	4.077E-02	1.665E-03	47.111
RA-226DA	1.703E+00	1.119E-01	4.572E-02	1.653E-03	37.248
AC-228	1.674E+00	1.323E-01	9.062E-02	4.343E-03	18.468
RA-228DA	1.695E+00	1.341E-01	9.180E-02	4.399E-03	18.468
TH-228DA	1.674E+00	1.214E-01	7.307E-02	2.639E-03	22.910
TH-232DA	1.649E+00	1.340E-01	1.503E-01	6.409E-03	10.972
U-234DA	2.017E+00	1.502E-01	8.658E-02	3.831E-03	23.296
U-238DA	1.987E+00	1.333E-01	4.772E-02	1.923E-03	41.641
U-238DHP	1.428E+00	5.707E-01	1.131E+00	4.800E-02	1.262

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (PCI/GRAM)	K.L. Ided	Act error	MDA (PCI/GRAM)	MDA error	Act/MDA
BE-7	-2.094E-01		9.032E-02	2.871E-01	9.986E-03	-0.729
NA-22	-1.944E-03		9.211E-03	3.129E-02	1.154E-03	-0.062
SC-46	4.077E-01	+	3.811E-02	7.634E-02	2.866E-03	5.341
CR-51	4.413E-03		1.391E-01	4.599E-01	2.092E-02	0.010
MN-54	1.021E-02		8.619E-03	2.944E-02	1.322E-03	0.347
CO-57	7.551E-03		4.807E-02	1.622E-01	6.472E-03	0.047
CO-58	-1.347E-02		1.031E-02	3.397E-02	1.482E-03	-0.397
FE-59	-4.205E-02		2.911E-02	9.518E-02	3.702E-03	-0.442
CO-60	-1.011E-02		7.975E-03	2.635E-02	1.017E-03	-0.384
ZN-65	-1.352E-02		2.458E-02	6.844E-02	2.592E-03	-0.197
SE-75	-1.234E-03		1.014E-02	3.397E-02	1.444E-03	-0.036
SR-85	5.380E-02		1.104E-02	3.366E-02	1.200E-03	1.598
Y-88	1.316E-02		7.684E-03	2.867E-02	9.150E-04	0.459

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (PCI/GRAM)	K.L. Ided	Act error	MDA (PCI/GRAM)	MDA error	Act/MDA
NB-94	-3.999E-03		7.061E-03	2.349E-02	1.101E-03	-0.170
NB-95	6.398E-02		1.912E-02	5.770E-02	2.381E-03	1.109
TC-95M	6.632E-03		1.233E-02	4.042E-02	1.557E-03	0.164
ZR-95	4.341E-03		1.918E-02	6.542E-02	2.669E-03	0.066
ZRNB-95	9.368E-02		2.702E-02	8.159E-02	3.367E-03	1.148
RH-101	5.445E-03		7.227E-03	2.379E-02	9.066E-04	0.229
RH-102M	-1.998E-03		6.042E-03	2.001E-02	6.946E-04	-0.100
RU-103	9.176E-03		1.293E-02	4.327E-02	1.526E-03	0.212
RU-106DA	1.830E-01		6.676E-02	2.312E-01	8.352E-03	0.792
AG-108M	9.050E-03		5.899E-03	2.013E-02	6.756E-04	0.450
AG-110M	1.703E-03		1.112E-02	3.745E-02	1.783E-03	0.045
SN-113DA	-1.386E-02		1.042E-02	3.453E-02	1.111E-03	-0.401
SB-124	-2.977E-03		1.061E-02	3.498E-02	1.264E-03	-0.085
SB-125	1.020E-02		1.917E-02	6.476E-02	2.161E-03	0.158
SN-126DA	2.000E-02		7.064E-03	2.419E-02	8.749E-04	0.827
I-131	-2.370E-01		1.798E-01	5.995E-01	2.273E-02	-0.395
BA-133	1.801E-03		9.571E-03	2.801E-02	1.108E-03	0.064
CS-134	7.752E-02	+	1.390E-02	3.552E-02	1.522E-03	2.182
CS-137DA	-1.380E-02		8.085E-03	2.613E-02	9.390E-04	-0.528
LA-138	-8.510E-04		1.059E-02	3.609E-02	1.376E-03	-0.024
CE-139	-7.779E-03		7.297E-03	2.395E-02	8.686E-04	-0.325
BA-140	-1.624E-02		1.880E-01	6.395E-01	2.294E-02	-0.025
BALA-140	-3.613E-01		1.372E-01	4.324E-01	1.576E-02	-0.835
CE-141	-6.854E-03		2.260E-02	7.556E-02	2.888E-03	-0.091
CE-144	-1.838E-02		4.723E-02	1.589E-01	6.439E-03	-0.116
CEPR-144	-3.676E-02		9.446E-02	3.177E-01	1.288E-02	-0.116
PM-144	-8.882E-03		6.662E-03	2.187E-02	7.900E-04	-0.406
PM-146	1.647E-02		8.562E-03	2.919E-02	9.966E-04	0.564
EU-152	-2.350E-03		1.999E-02	6.810E-02	2.836E-03	-0.035
EU-154	-5.818E-03		2.545E-02	8.641E-02	3.187E-03	-0.067
EU-155	1.024E-01		2.583E-02	8.381E-02	3.649E-03	1.222
HF-181	3.441E-03		1.280E-02	4.271E-02	1.490E-03	0.081
BI-207	-4.463E-03		6.226E-03	2.084E-02	7.520E-04	-0.214
BI-210M	-1.208E-03		1.138E-02	3.274E-02	1.394E-03	-0.037
BI-212	2.073E+00	+	2.611E-01	5.211E-01	2.366E-02	3.979
AC-227DA	1.657E-01		5.656E-02	1.675E-01	6.809E-03	0.989
TH-234DA	2.817E+00		1.248E+00	4.361E+00	1.931E-01	0.646
U-235HP	9.844E-02		4.523E-02	1.529E-01	5.890E-03	0.644
NP-237DA	-2.040E-03		1.457E-02	4.816E-02	2.173E-03	-0.042
AM-241HP	-4.025E-02		4.210E-02	1.409E-01	5.812E-03	-0.286


STL Richland WA.
BRC SOIL
Batch ID: 7232501
Sample ID: J472H1AA
Detector ID: GER5 1
Energy Coefficients:
Offset: -3.74854E-01
Slope: 2.49343E-01
Quadrature: -4.77308E-09
Acquisition Start: 10-SEP-2007 05:38:31.65
Preset Live Time: 0 10:00:00.00
Elapsed Live Time: 0 10:00:00.00
Counts
Energy
100000
10000
1000
100
10
1
50
100
200
500
1000
2000
226 Ra, 214 Bi
40 K
152 Eu
226 Ra
226 Ra, 214 Bi, 46 Sc
232 Th, 228 Ra, 228 Ac
232 Th, 228 Ra, 228 Ac
228 Th, 224 Ra, 208 Tl
134 Cs
212 Bi, 214 Pb
214 Bi
212 Bi
126 Sn
234 U, 238 U, 214 Bi, 226 Ra, 103 Ru
95 Tc, 228 Th, 232 Th, 224 Ra, 208 Tl
208 Tl, 22 Na, 106 Ru
125 Sb
234 U, 238 U, 226 Ra, 214 Pb
232 Th, 228 Ra, 228 Ac
212 Bi, 140 La
214 Pb, 234 U, 238 U, 226 Ra
212 Pb
223 Ra, 228 Ac
133 Ba, 208 Tl
228 Th, 224 Ra, 234 U, 238 U, 226 Ra, 214 Pb
228 Th, 232 Th, 224 Ra, 212 Pb
228 Ra, 228 Ac
235 U, 226 Ra
223 Ra
235 U, 141 Ce
155 Eu
238 U
155 Eu
133 Ba
238 U

SAMPLE IDENTIFICATION: J472H1AA

CONFIGURATION ID: GER5:J472H1AA_100970538
TITLE : BRC SOIL
SAMPLE ID : J472H1AA

REPORT DATE: 10-SEP-07
ACQUIRE DATE: 10-SEP-07 05:38:31
ELAPSED LIVE TIME: 36000.0 Sec
PRESET LIVE TIME: 0 10:00:00

SAMPLE DATE: 2-AUG-2007 11:15:00.00
CALIB DATE: 10-SEP-2007 05:09:50.22
ELAPSED LIVE TIME: 0 10:00:00
ELAPSED REAL TIME: 0 10:00:16

SAMPLE QUANTITY: 3.4880E+02
SAMPLE GEOMETRY: ES200

UNITS: GRAMS
SAMPLE TYPE:

ENERGY OFFSET: -.3749E+00 keV
ENERGY SLOPE: 2.4934E-01 keV/C
ENERGY Q COEFF: -.4773E-08 keV/C^^2
PEAK SENSITIVITY: 5.000

FWHM OFFSET: 7.1620E-01 keV
FWHM SLOPE: 2.8268E-02 sqr keV
ITERATIONS: 10
GAUSSIAN SENSITIVITY: 50.00 %

ABUNDANCE LIMIT: 80.00 %
ENERGY TOLERANCE: 1.500 keV
VARIABLE PEAK WIDTH: 3.00

HALF-LIFE RATIO: 8.00
ACTIVITY MULTIPLIER: 1.0000E+06
LIBRARY: [NUC_LIBR]QRL.NLB

VMS Peak Search Report V1.9 Generated 10-SEP-2007 22:18:17

Configuration : RDND06$DKA100:[GER5.SAMPLE]J472H1AA_100970538.CNF;1
Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6
Sample title : BRC SOIL
Sample date : 2-AUG-2007 11:15:00 Acquisition date : 10-SEP-2007 05:38:31
Sample ID : J472H1AA Sample quantity : 348.80 GRAMS
Sample type : Sample geometry : ES200
Elapsed live time: 0 10:00:00.00 Elapsed real time: 0 10:00:16.01 0.0%
Start energy : 19.57 End energy : 2041.92
Sensitivity : 5.00 Gaussian : 50.00
Critical level : No

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	46.61*	773	2703	0.85	188.43	183	12	2.15E-02	15.0	
2	0	63.40*	1562	4457	1.00	255.79	250	12	4.34E-02	9.3	
3	2	74.85*	4684	4766	0.89	301.70	296	22	1.30E-01	3.2	5.78E-01
4	2	77.13*	7628	4157	0.88	310.84	296	22	2.12E-01	2.1	
5	0	79.38	237	2256	0.72	319.86	317	7	6.57E-03	34.0	
6	0	81.03	269	2789	0.73	326.47	323	9	7.47E-03	35.9	
7	0	84.11	954	3824	1.06	338.83	332	12	2.65E-02	13.4	
8	0	87.19	2578	3617	1.04	351.17	346	12	7.16E-02	5.1	
9	0	89.91	1450	3036	0.89	362.08	358	10	4.03E-02	7.6	
10	0	92.82*	2830	4072	1.31	373.75	368	14	7.86E-02	5.4	
11	0	105.36	400	3260	1.81	424.06	417	14	1.11E-02	30.7	
12	0	129.19	412	3093	0.72	519.62	515	13	1.14E-02	28.3	
13	0	143.95	353	2708	0.81	578.84	573	13	9.81E-03	30.8	
14	0	154.17	341	1970	0.69	619.81	615	10	9.47E-03	25.0	
15	0	185.88*	2096	2899	1.20	747.00	737	18	5.82E-02	6.7	
16	0	209.14	856	1859	1.00	840.29	834	13	2.38E-02	10.9	
17	3	238.61*	8647	1453	1.04	958.47	952	28	2.40E-01	1.4	3.04E+00
18	3	241.69	2411	1834	1.54	970.82	952	28	6.70E-02	4.7	
19	0	270.31	978	1385	1.33	1085.62	1078	17	2.72E-02	9.3	
20	0	277.63	388	1520	0.94	1114.96	1105	17	1.08E-02	23.7	
21	0	295.21	3759	1384	1.12	1185.49	1177	18	1.04E-01	2.8	
22	0	300.04	606	1033	1.18	1204.87	1199	14	1.68E-02	12.0	
23	0	327.92	521	1187	1.22	1316.68	1308	17	1.45E-02	15.8	
24	0	338.31	1821	951	1.16	1358.34	1352	14	5.06E-02	4.3	
25	0	351.87	6185	1100	1.16	1412.72	1402	19	1.72E-01	1.8	
26	0	409.30	263	819	1.37	1643.08	1635	16	7.29E-03	25.2	
27	0	463.00	497	507	1.18	1858.44	1851	14	1.38E-02	10.6	
28	0	510.93*	958	963	1.70	2050.69	2038	27	2.66E-02	10.8	
29	0	583.17*	2547	515	1.43	2340.43	2332	17	7.07E-02	3.1	
30	0	609.30*	4553	592	1.39	2445.23	2431	24	1.26E-01	2.1	
31	0	666.38	185	557	0.50	2674.18	2664	21	5.15E-03	33.0	
32	0	727.39	577	449	1.62	2918.89	2909	19	1.60E-02	9.8	
33	0	768.06	525	546	1.32	3082.03	3068	25	1.46E-02	11.0	
34	0	785.65	162	298	1.83	3152.57	3145	15	4.49E-03	21.5	
35	0	794.70	283	418	1.39	3188.86	3178	22	7.85E-03	16.7	
36	0	860.71	393	400	1.57	3453.63	3440	26	1.09E-02	12.8	
37	0	911.32*	1812	486	1.59	3656.66	3646	28	5.03E-02	3.9	
38	0	934.01	213	353	1.68	3747.65	3738	21	5.91E-03	20.0	
39	0	968.98*	799	931	1.39	3887.91	3869	30	2.22E-02	10.2	
40	0	1120.28*	797	556	1.37	4494.83	4482	28	2.21E-02	8.1	
41	0	1238.03	399	438	2.19	4967.15	4957	22	1.11E-02	12.4	
42	0	1377.65	250	182	2.05	5527.23	5513	26	6.94E-03	14.0	
43	0	1408.15	178	100	1.55	5649.58	5637	24	4.95E-03	14.6	

Sample ID : J472H1AA Acquisition date : 10-SEP-2007 05:38:31

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
44	0	1460.71*	7072	201	1.99	5860.41	5845	31	1.96E-01	1.3	
45	0	1590.16	332	179	7.64	6379.68	6358	51	9.21E-03	13.6	
46	0	1729.52	156	63	2.64	6938.75	6926	25	4.35E-03	14.0	
47	0	1764.23	733	75	1.88	7077.99	7063	30	2.04E-02	4.7	
48	0	1847.26	121	59	1.99	7411.06	7398	27	3.37E-03	17.4	

Flag: "*" = Peak area was modified by background subtraction

VMS Nuclide Identification Report V3.1 Generated 10-SEP-2007 22:18:18

Configuration : RDND06$DKA100:[GER5.SAMPLE]J472H1AA_100970538.CNF;1
Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.4
Sample title : BRC SOIL
Sample date : 2-AUG-2007 11:15:00 Acquisition date : 10-SEP-2007 05:38:31
Sample ID : J472H1AA Sample quantity : 348.80 GRAMS
Sample type : Sample geometry : ES200
Elapsed live time: 0 10:00:00.00 Elapsed real time: 0 10:00:16.01 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 PCI/GRAM	Decay Corr PCI/GRAM	1-Sigma %Error
K-40	1460.81	7072	10.67*	5.413E-01	2.635E+01	2.635E+01	6.20
TL-208	277.35	388	6.80	2.159E+00	5.681E-01	5.681E-01	24.46
	510.84	958	21.60	1.323E+00	7.215E-01	7.215E-01	12.35
	583.14	2547	84.20*	1.185E+00	5.496E-01	5.496E-01	6.71
	860.37	393	12.46	8.520E-01	7.968E-01	7.968E-01	14.30
PB-212	238.63	8647	44.60*	2.420E+00	1.724E+00	1.724E+00	6.33
	300.09	606	3.41	2.034E+00	1.881E+00	1.881E+00	13.40
BI-214	609.31	4553	46.30*	1.142E+00	1.854E+00	1.854E+00	6.32
	768.36	525	5.04	9.389E-01	2.389E+00	2.389E+00	12.61
	1120.29	797	15.10	6.795E-01	1.673E+00	1.673E+00	10.15
	1764.49	733	15.80	4.621E-01	2.161E+00	2.161E+00	7.57
PB-214	241.98	2411	7.49	2.397E+00	2.890E+00	2.890E+00	7.75
	295.21	3759	19.20	2.059E+00	2.046E+00	2.046E+00	6.67
	351.92	6185	37.20*	1.793E+00	1.996E+00	1.996E+00	6.22
	785.91	162	1.10	9.210E-01	3.431E+00	3.431E+00	22.41
RA-223	154.21	341	5.58	3.231E+00	4.070E-01	4.084E-01	25.72
	269.46	978	13.60*	2.204E+00	7.023E-01	7.047E-01	11.12
	323.87	------	3.88	1.915E+00	------	Line Not Found	------
RA-224DA	238.63	8647	44.60*	2.420E+00	1.724E+00	1.792E+00	6.33
	240.98	2411	3.95	2.397E+00	5.480E+00	5.697E+00	7.75
	583.14	2547	30.25	1.185E+00	1.530E+00	1.590E+00	6.71
	860.37	393	4.48	8.520E-01	2.216E+00	2.303E+00	14.30
RA-226DA	186.21	2096	3.50	2.882E+00	4.472E+00	4.472E+00	9.07
	241.98	2411	7.49	2.397E+00	2.890E+00	2.890E+00	7.75
	295.22	3759	19.20	2.059E+00	2.046E+00	2.046E+00	6.67
	351.92	6185	37.20	1.793E+00	1.996E+00	1.996E+00	6.22
	609.32	4553	46.30*	1.142E+00	1.854E+00	1.854E+00	6.32
	1120.28	797	15.10	6.795E-01	1.673E+00	1.673E+00	10.15
	1238.11	399	5.94	6.235E-01	2.321E+00	2.321E+00	13.74
	1764.49	733	15.80	4.621E-01	2.161E+00	2.161E+00	7.57
AC-228	209.28	856	4.40	2.660E+00	1.575E+00	1.575E+00	12.54
	270.23	978	3.60	2.204E+00	2.653E+00	2.653E+00	11.12
	338.32	1821	11.40	1.850E+00	1.859E+00	1.859E+00	7.33
	911.07	1812	27.70*	8.113E-01	1.735E+00	1.735E+00	7.47
	969.11	799	16.60	7.697E-01	1.346E+00	1.346E+00	12.03
RA-228DA	209.28	856	4.40	2.660E+00	1.575E+00	1.595E+00	12.54

Sample ID : J472H1AA Acquisition date : 10-SEP-2007 05:38:31

Nuclide Type: NP

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected PCI/GRAM	Decay Corr PCI/GRAM	1-Sigma %Error
	338.32	1821	11.40	1.850E+00	1.859E+00	1.883E+00	7.33
	911.07	1812	27.70*	8.113E-01	1.735E+00	1.758E+00	7.47
	964.60	------	5.20	7.727E-01	------ Line Not Found		------
	969.11	799	16.60	7.697E-01	1.346E+00	1.364E+00	12.03
TH-228DA	238.63	8647	44.60	2.420E+00	1.724E+00	1.792E+00	6.33
	240.98	2411	3.95	2.397E+00	5.480E+00	5.697E+00	7.75
	583.14	2547	30.25*	1.185E+00	1.530E+00	1.590E+00	6.71
	860.37	393	4.48	8.520E-01	2.216E+00	2.303E+00	14.30
TH-232DA	238.63	8647	44.60	2.420E+00	1.724E+00	1.724E+00	6.33
	338.32	1821	12.40*	1.850E+00	1.709E+00	1.709E+00	7.33
	583.14	2547	30.25	1.185E+00	1.530E+00	1.530E+00	6.71
	911.07	1812	27.70	8.113E-01	1.735E+00	1.735E+00	7.47
	964.60	------	5.20	7.727E-01	------ Line Not Found		------
	969.11	799	16.60	7.697E-01	1.346E+00	1.346E+00	12.03
U-234DA	241.98	2411	7.49	2.397E+00	2.890E+00	2.890E+00	7.75
	295.22	3759	19.20*	2.059E+00	2.046E+00	2.046E+00	6.67
	351.92	6185	37.20	1.793E+00	1.996E+00	1.996E+00	6.22
	609.31	4553	46.30	1.142E+00	1.854E+00	1.854E+00	6.32
U-235HP	143.76	353	10.50*	3.354E+00	2.159E-01	2.159E-01	31.43
	185.71	2096	54.00	2.882E+00	2.898E-01	2.898E-01	9.07
	205.31	------	4.70	2.695E+00	------ Line Not Found		------
U-238DA	241.98	2411	7.49	2.397E+00	2.890E+00	2.890E+00	7.75
	295.22	3759	19.20	2.059E+00	2.046E+00	2.046E+00	6.67
	351.92	6185	37.20*	1.793E+00	1.996E+00	1.996E+00	6.22
	609.31	4553	46.30	1.142E+00	1.854E+00	1.854E+00	6.32
U-238DHP	63.28	1562	3.80*	3.565E+00	2.482E+00	2.482E+00	10.97
	92.59	2830	5.41	3.877E+00	2.904E+00	2.904E+00	8.06

Nuclide Type: FP

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected PCI/GRAM	Decay Corr PCI/GRAM	1-Sigma %Error
CE-141	145.44	353	48.40*	3.354E+00	4.683E-02	1.075E-01	31.43

Flag: "*" = Keyline

Sample ID : J472H1AA Acquisition date : 10-SEP-2007 05:38:31

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
0	46.61	773	2703	0.85	188.43	183	12	2.15E-02	15.0	2.63E+00	
2	74.85	4684	4766	0.89	301.70	296	22	1.30E-01	3.2	3.82E+00	
2	77.13	7628	4157	0.88	310.84	296	22	2.12E-01	2.1	3.84E+00	
0	79.38	237	2256	0.72	319.86	317	7	6.57E-03	34.0	3.86E+00	
0	81.03	269	2789	0.73	326.47	323	9	7.47E-03	35.9	3.87E+00	T
0	84.11	954	3824	1.06	338.83	332	12	2.65E-02	13.4	3.88E+00	
0	87.19	2578	3617	1.04	351.17	346	12	7.16E-02	5.1	3.89E+00	T
0	89.91	1450	3036	0.89	362.08	358	10	4.03E-02	7.6	3.89E+00	
0	105.36	400	3260	1.81	424.06	417	14	1.11E-02	30.7	3.79E+00	T
0	129.19	412	3093	0.72	519.62	515	13	1.14E-02	28.3	3.53E+00	
0	327.92	521	1187	1.22	1316.68	1308	17	1.45E-02	15.8	1.90E+00	T
0	409.30	263	819	1.37	1643.08	1635	16	7.29E-03	25.2	1.59E+00	
0	463.00	497	507	1.18	1858.44	1851	14	1.38E-02	10.6	1.43E+00	T
0	666.38	185	557	0.50	2674.18	2664	21	5.15E-03	33.0	1.06E+00	T
0	727.39	577	449	1.62	2918.89	2909	19	1.60E-02	9.8	9.83E-01	T
0	794.70	283	418	1.39	3188.86	3178	22	7.85E-03	16.7	9.12E-01	T
0	934.01	213	353	1.68	3747.65	3738	21	5.91E-03	20.0	7.94E-01	
0	1377.65	250	182	2.05	5527.23	5513	26	6.94E-03	14.0	5.69E-01	
0	1408.15	178	100	1.55	5649.58	5637	24	4.95E-03	14.6	5.58E-01	T
0	1590.16	332	179	7.64	6379.68	6358	51	9.21E-03	13.6	5.04E-01	
0	1729.52	156	63	2.64	6938.75	6926	25	4.35E-03	14.0	4.70E-01	
0	1847.26	121	59	1.99	7411.06	7398	27	3.37E-03	17.4	4.45E-01	

Flags: "T" = Tentatively associated

Sample ID : J472H1AA Acquisition date : 10-SEP-2007 05:38:31

Nuclide	Half-life	Half-Life Ratio	Energy	%Abund	Activity (PCI/GRAM)	1-Sigma %Error	Rejected by
NA-22	2.60Y	0.04	511.00	179.68	8.924E-02	12.35	Abun.
			1274.54*	99.94	--- Not Found ---		
		% Abundances Found =		64.26			
SC-46	83.85D	0.46	889.25	99.98	--- Not Found ---		Abun.
			1120.51*	99.99	3.486E-01	10.15	
		% Abundances Found =		50.00			
TC-95M	61.00D	0.64	204.12*	66.20	--- Not Found ---		Abun.
			582.07	29.30	2.459E+00	6.71	
			835.13	26.10	--- Not Found ---		
		% Abundances Found =		24.10			
RU-103	39.35D	0.99	497.08*	89.00	--- Not Found ---		Abun.
			610.33	5.60	3.045E+01	6.32	
		% Abundances Found =		5.92			
RU-106DA	368.20D	0.11	511.85	20.60	8.142E-01	12.35	Abun.
			621.84*	9.80	--- Not Found ---		
		% Abundances Found =		67.76			
SB-125	2.77Y	0.04	176.33	6.89	--- Not Found ---		Abun.
			427.89*	29.33	--- Not Found ---		
			463.38	10.35	7.395E-01	12.18	
			600.56	17.80	--- Not Found ---		
			635.90	11.32	--- Not Found ---		
		% Abundances Found =		13.67			
SN-126DA	1.00E+05Y	0.00	414.70	97.66	--- Not Found ---		Abun.
			666.33*	99.95	3.769E-02	33.55	
			695.00	99.95	--- Not Found ---		
		% Abundances Found =		33.59			
BA-133	10.50Y	0.01	81.00	33.00	4.559E-02	36.42	Abun.
			276.40	6.90	5.638E-01	24.46	
			302.84	17.80	--- Not Found ---		
			356.00*	62.05	--- Not Found ---		
			383.85	8.70	--- Not Found ---		
		% Abundances Found =		31.06			
CS-134	2.06Y	0.05	569.31	15.43	--- Not Found ---		Abun.
			604.70	97.60	--- Not Found ---		
			795.84*	85.40	8.094E-02	17.84	
			801.93	8.73	--- Not Found ---		
		% Abundances Found =		41.22			
LA-140	40.22H	23.26	328.77	20.50	2.889E+06	16.84	Decay,Abun.
			487.03	45.50	--- Not Found ---		
			815.85	23.50	--- Not Found ---		
			1596.49*	95.49	--- Not Found ---		
		% Abundances Found =		11.08			

Sample ID : J472H1AA Acquisition date : 10-SEP-2007 05:38:31

Nuclide	Half-life	Half-Life Ratio	Energy	%Abund	Activity (PCI/GRAM)	1-Sigma %Error	Rejected by
EU-152	13.60Y	0.01	121.78	28.40	--- Not Found ---		Abun.
			244.67	7.49	--- Not Found ---		
			344.27*	26.50	--- Not Found ---		
			778.89	12.74	--- Not Found ---		
			964.01	14.40	--- Not Found ---		
			1085.78	10.00	--- Not Found ---		
			1112.02	13.30	--- Not Found ---		
			1407.95	20.70	3.339E-01	15.81	
		% Abundances Found =		15.50			
EU-155	4.96Y	0.02	42.90	21.16	--- Not Found ---		Abun.
			86.54	30.90	4.689E-01	7.84	
			105.31*	20.70	1.112E-01	31.26	
		% Abundances Found =		70.92			
BI-212	1.41E+10Y	0.00	288.07	0.31	--- Not Found ---		Abun.
			327.96	0.14	4.256E+01	18.61	
			452.83	0.31	--- Not Found ---		
			727.33*	6.58	1.920E+00	11.71	
			785.37	1.10	3.431E+00	22.57	
			893.41	0.38	--- Not Found ---		
			952.12	0.17	--- Not Found ---		
			1078.62	0.56	--- Not Found ---		
			1512.70	0.29	--- Not Found ---		
			1620.50	1.49	--- Not Found ---		
			1806.00	0.09	--- Not Found ---		
		% Abundances Found =		68.47			

Flag: "*" = Keyline

VMS Nuclide Identification Report V3.1 Generated 10-SEP-2007 22:18:19

Configuration : RDND06$DKA100:[GER5.SAMPLE]J472H1AA_100970538.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 : BRC SOIL
Sample date : 2-AUG-2007 11:15:00 Acquisition date : 10-SEP-2007 05:38:31
Sample ID : J472H1AA Sample quantity : 348.80 GRAMS
Sample type : Sample geometry : ES200
Elapsed live time: 0 10:00:00.00 Elapsed real time: 0 10:00:16.01 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 (PCI/GRAM)	Act error	MDA (PCI/GRAM)	MDA error	Act/MDA
K-40	2.635E+01	1.633E+00	2.176E-01	7.417E-03	121.088
CE-141	1.075E-01	3.380E-02	7.399E-02	2.526E-03	1.453
TL-208	5.496E-01	3.685E-02	2.382E-02	7.737E-04	23.069
PB-212	1.724E+00	1.091E-01	3.966E-02	1.426E-03	43.479
BI-214	1.854E+00	1.172E-01	4.391E-02	1.425E-03	42.218
PB-214	1.996E+00	1.242E-01	4.637E-02	1.499E-03	43.044
RA-223	7.047E-01	7.838E-02	1.206E-01	4.230E-03	5.843
RA-224DA	1.792E+00	1.134E-01	4.122E-02	1.482E-03	43.478
RA-226DA	1.854E+00	1.172E-01	4.391E-02	1.425E-03	42.217
AC-228	1.735E+00	1.296E-01	8.605E-02	3.423E-03	20.163
RA-228DA	1.758E+00	1.313E-01	8.717E-02	3.467E-03	20.163
TH-228DA	1.590E+00	1.066E-01	6.893E-02	2.239E-03	23.069
TH-232DA	1.709E+00	1.253E-01	1.483E-01	4.781E-03	11.522
U-234DA	2.046E+00	1.365E-01	8.926E-02	3.014E-03	22.926
U-235HP	2.159E-01	6.786E-02	1.494E-01	5.082E-03	1.445
U-238DA	1.996E+00	1.242E-01	4.637E-02	1.499E-03	43.044
U-238DHP	2.482E+00	2.724E-01	4.966E-01	1.558E-02	4.998

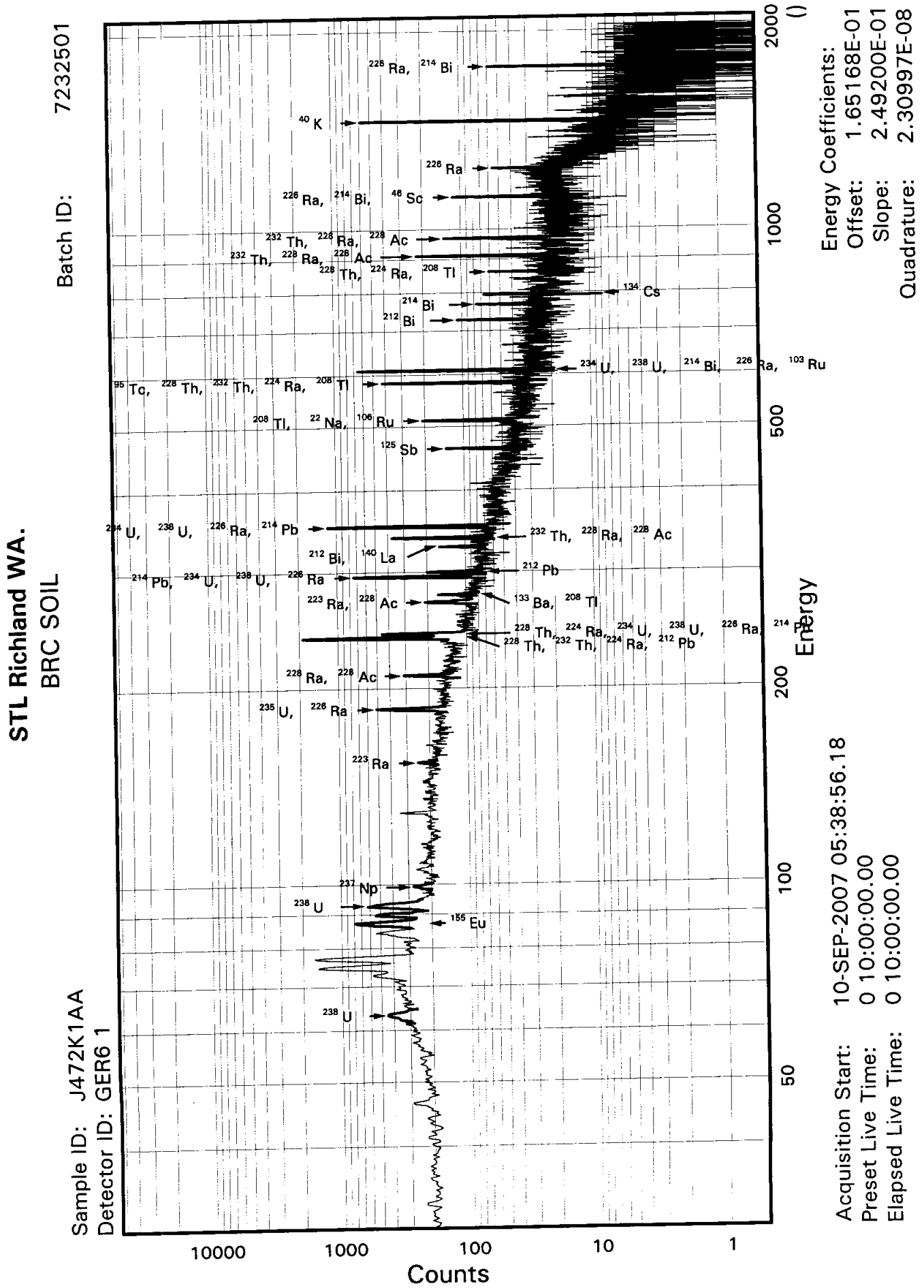
---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (PCI/GRAM)	K.L. Ided	Act error	MDA (PCI/GRAM)	MDA error	Act/MDA
BE-7	-1.262E-01		8.904E-02	2.923E-01	9.497E-03	-0.432
NA-22	2.988E-03		8.977E-03	3.042E-02	1.021E-03	0.098
NA-24	-6.243E+10		4.009E+10	Half-Life too short		
SC-46	3.486E-01	+	3.538E-02	7.370E-02	2.535E-03	4.730
CR-51	-1.627E-01		1.416E-01	4.609E-01	1.475E-02	-0.353
MN-54	9.073E-03		8.358E-03	2.846E-02	1.081E-03	0.319
CO-57	-4.265E-02		4.868E-02	1.587E-01	5.317E-03	-0.269
CO-58	-2.563E-02		1.015E-02	3.223E-02	1.199E-03	-0.795
FE-59	3.492E-02		2.592E-02	8.999E-02	3.162E-03	0.388
CO-60	-3.175E-03		7.675E-03	2.627E-02	8.969E-04	-0.121
ZN-65	-3.424E-02		2.298E-02	6.264E-02	2.165E-03	-0.547

Sample ID : J472H1AA Acquisition date : 10-SEP-2007 05:38:31

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (PCI/GRAM)	K.L. Ided	Act error	MDA (PCI/GRAM)	MDA error	Act/MDA
SE-75	4.046E-03		1.053E-02	3.519E-02	1.241E-03	0.115
SR-85	5.537E-02		1.111E-02	3.321E-02	1.065E-03	1.667
Y-88	-7.297E-03		7.452E-03	2.536E-02	7.905E-04	-0.288
NB-94	-4.450E-03		6.890E-03	2.284E-02	8.937E-04	-0.195
NB-95	6.801E-02		1.919E-02	5.768E-02	2.060E-03	1.179
TC-95M	4.157E-02		1.258E-02	4.170E-02	1.505E-03	0.997
ZR-95	2.844E-02		1.945E-02	6.691E-02	2.370E-03	0.425
ZRNB-95	9.963E-02		2.712E-02	8.157E-02	2.914E-03	1.221
MO-99	-5.028E-05		1.128E-04	Half-Life too short		
RH-101	2.274E-02		7.363E-03	2.486E-02	8.957E-04	0.915
RH-102M	-1.395E-03		5.942E-03	1.991E-02	6.472E-04	-0.070
RU-103	-1.002E-02		1.216E-02	4.029E-02	1.301E-03	-0.249
RU-106DA	6.537E-02		6.601E-02	2.284E-01	7.405E-03	0.286
AG-108M	1.548E-03		6.075E-03	2.056E-02	6.701E-04	0.075
AG-110M	-1.027E-02		1.092E-02	3.590E-02	1.420E-03	-0.286
SN-113DA	-2.524E-02		1.069E-02	3.486E-02	1.125E-03	-0.724
SB-124	6.124E-03		1.093E-02	3.303E-02	1.073E-03	0.185
SB-125	-5.716E-03		1.957E-02	6.580E-02	2.143E-03	-0.087
SN-126DA	3.769E-02	+	1.265E-02	2.462E-02	7.955E-04	1.531
I-131	-2.197E-01		1.812E-01	6.060E-01	1.961E-02	-0.363
BA-133	3.316E-04		9.700E-03	2.815E-02	9.106E-04	0.012
CS-134	8.094E-02	+	1.444E-02	3.412E-02	1.252E-03	2.373
CS-137DA	-8.338E-03		8.904E-03	2.508E-02	8.063E-04	-0.332
LA-138	-3.742E-03		9.482E-03	3.256E-02	1.111E-03	-0.115
CE-139	-1.661E-02		7.567E-03	2.403E-02	8.495E-04	-0.691
BA-140	1.634E-01		1.910E-01	6.457E-01	2.084E-02	0.253
BALA-140	1.663E-01		1.271E-01	3.929E-01	1.316E-02	0.423
LA-140	8.408E-02		7.569E-02	Half-Life too short		
CE-144	6.680E-02		5.071E-02	1.553E-01	5.174E-03	0.430
CEPR-144	1.345E-01		1.014E-01	3.107E-01	1.035E-02	0.433
PM-144	-8.082E-04		6.514E-03	2.222E-02	7.207E-04	-0.036
PM-146	8.260E-03		8.606E-03	2.929E-02	9.549E-04	0.282
EU-152	-3.502E-02		2.093E-02	6.727E-02	2.172E-03	-0.521
EU-154	8.970E-03		2.478E-02	8.404E-02	2.819E-03	0.107
EU-155	1.112E-01	+	3.477E-02	7.437E-02	2.418E-03	1.495
HF-181	8.571E-03		1.288E-02	4.362E-02	1.415E-03	0.197
BI-207	8.453E-03		6.155E-03	2.086E-02	6.769E-04	0.405
BI-210M	-3.473E-02		1.227E-02	3.289E-02	1.158E-03	-1.056
BI-212	1.920E+00	+	2.249E-01	4.969E-01	2.052E-02	3.864
AC-227DA	2.170E-01		5.916E-02	1.713E-01	6.165E-03	1.267
TH-234DA	3.793E+00		1.254E+00	4.412E+00	1.677E-01	0.860
NP-237DA	1.335E-04		1.446E-02	4.784E-02	1.562E-03	0.003
AM-241HP	2.569E-02		1.667E-02	5.247E-02	1.673E-03	0.490


STL Richland WA.
BRC SOIL
Batch ID: 7232501
Sample ID: J472K1AA
Detector ID: GER6 1
Energy Coefficients:
Offset: 1.65168E-01
Slope: 2.49200E-01
Quadrature: 2.30997E-08
Acquisition Start: 10-SEP-2007 05:38:56.18
Preset Live Time: 0 10:00:00.00
Elapsed Live Time: 0 10:00:00.00
Counts
Energy
10000
1000
100
10
1
50
100
200
500
1000
2000
226 Ra, 214 Bi
40 K
226 Ra
226 Ra, 214 Bi, 46 Sc
232 Th, 228 Ra, 228 Ac
232 Th, 228 Ra, 228 Ac
228 Th, 224 Ra, 208 Tl
134 Cs
214 Bi
212 Bi
234 U, 238 U, 214 Bi, 226 Ra, 103 Ru
95 Tc, 228 Th, 232 Th, 224 Ra, 208 Tl
208 Tl, 22 Na, 106 Ru
125 Sb
234 U, 238 U, 226 Ra, 214 Pb
232 Th, 228 Ra, 228 Ac
212 Bi, 140 La
212 Pb
214 Pb, 234 U, 238 U, 226 Ra
223 Ra, 228 Ac
133 Ba, 208 Tl
228 Th, 224 Ra, 234 U, 238 U, 226 Ra, 214 Pb
228 Th, 232 Th, 224 Ra, 212 Pb
228 Ra, 228 Ac
235 U, 226 Ra
223 Ra
237 Np
238 U
155 Eu
238 U

SAMPLE IDENTIFICATION: J472K1AA

CONFIGURATION ID: GER6:J472K1AA_100970538
TITLE : BRC SOIL
SAMPLE ID : J472K1AA

REPORT DATE: 10-SEP-07
ACQUIRE DATE: 10-SEP-07 05:38:56
ELAPSED LIVE TIME: 36000.0 Sec
PRESET LIVE TIME: 0 10:00:00

SAMPLE DATE: 2-AUG-2007 10:30:00.00
CALIB DATE: 10-SEP-2007 05:10:29.73
ELAPSED LIVE TIME: 0 10:00:00
ELAPSED REAL TIME: 0 10:00:17

SAMPLE QUANTITY: 3.3770E+02
SAMPLE GEOMETRY: S200

UNITS: GRAMS
SAMPLE TYPE:

ENERGY OFFSET: 1.6517E-01 keV
ENERGY SLOPE: 2.4920E-01 keV/C
ENERGY Q COEFF: 2.3100E-08 keV/C^^2
PEAK SENSITIVITY: 5.000

FWHM OFFSET: 2.4211E-01 keV
FWHM SLOPE: 6.3903E-02 sqr keV
ITERATIONS: 10
GAUSSIAN SENSITIVITY: 50.00 %

ABUNDANCE LIMIT: 80.00 %
ENERGY TOLERANCE: 1.500 keV
VARIABLE PEAK WIDTH: 3.00

HALF-LIFE RATIO: 8.00
ACTIVITY MULTIPLIER: 1.0000E+06
LIBRARY: [NUC_LIBR]QRL.NLB

VMS Peak Search Report V1.9 Generated 10-SEP-2007 22:19:37

Configuration : $DISK1:[GER6.SAMPLE]J472K1AA_100970538.CNF;1
Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6
Sample title : BRC SOIL
Sample date : 2-AUG-2007 10:30:00 Acquisition date : 10-SEP-2007 05:38:56
Sample ID : J472K1AA Sample quantity : 337.70 GRAMS
Sample type : Sample geometry : S200
Elapsed live time: 0 10:00:00.00 Elapsed real time: 0 10:00:17.36 0.0%
Start energy : 20.10 End energy : 2043.16
Sensitivity : 5.00 Gaussian : 50.00
Critical level : No

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	46.36	379	2337	0.65	185.38	180	12	1.05E-02	26.0	
2	0	63.25	854	3826	1.14	253.15	246	13	2.37E-02	15.3	
3	7	72.75*	842	4210	1.06	291.25	282	34	2.34E-02	17.0	3.28E+00
4	7	74.82*	4854	4106	1.08	299.55	282	34	1.35E-01	3.2	
5	7	77.10	5987	3957	1.06	308.73	282	34	1.66E-01	2.6	
6	0	84.32*	1154	3565	1.40	337.68	331	13	3.21E-02	11.5	
7	4	87.21*	2324	2657	1.14	349.30	344	22	6.45E-02	4.7	1.34E+00
8	4	89.87	1458	2627	1.06	359.96	344	22	4.05E-02	7.4	
9	0	92.88*	2006	3556	1.44	372.04	366	15	5.57E-02	7.1	
10	0	99.10	248	2279	1.06	396.98	392	11	6.89E-03	37.8	
11	0	129.02	570	2537	0.86	517.04	511	13	1.58E-02	18.7	
12	0	153.90	208	1842	0.93	616.87	613	10	5.79E-03	39.1	
13	0	185.94*	1756	2424	1.32	745.42	737	16	4.88E-02	6.9	
14	0	209.12	943	2332	1.13	838.43	831	18	2.62E-02	12.4	
15	3	238.65*	8781	1809	1.17	956.94	949	29	2.44E-01	1.5	3.23E+00
16	3	241.75	2390	1993	1.65	969.36	949	29	6.64E-02	5.2	
17	0	270.22	956	1745	1.55	1083.58	1075	20	2.66E-02	11.2	
18	0	277.37	359	1186	0.96	1112.25	1106	14	9.99E-03	21.0	
19	0	295.21	3894	1516	1.34	1183.86	1174	21	1.08E-01	3.0	
20	0	300.14	521	1085	0.91	1203.64	1197	14	1.45E-02	14.1	
21	0	327.97	458	948	1.14	1315.28	1309	14	1.27E-02	15.0	
22	0	338.28	1856	1016	1.43	1356.63	1348	16	5.15E-02	4.5	
23	0	351.90*	6492	1233	1.40	1411.26	1400	22	1.80E-01	1.9	
24	0	409.41	200	849	1.14	1642.00	1634	16	5.54E-03	28.8	
25	0	462.65	541	775	1.17	1855.57	1844	20	1.50E-02	11.5	
26	0	510.88*	1198	1048	1.86	2049.05	2036	29	3.33E-02	7.6	
27	0	583.09	2586	920	1.63	2338.68	2326	25	7.18E-02	3.3	
28	0	609.12*	4542	641	1.69	2443.08	2430	25	1.26E-01	2.0	
29	0	726.96	622	566	1.56	2915.72	2903	25	1.73E-02	9.6	
30	0	768.03	348	636	1.53	3080.43	3069	23	9.67E-03	15.2	
31	0	795.14	266	568	1.55	3189.16	3173	25	7.39E-03	19.2	
32	0	860.03	357	545	1.19	3449.41	3434	33	9.91E-03	15.7	
33	0	911.01*	1688	599	1.99	3653.84	3639	28	4.69E-02	4.0	
34	0	967.74	1434	661	2.16	3881.33	3858	41	3.98E-02	5.2	
35	0	1119.96	1034	508	2.03	4491.71	4476	32	2.87E-02	5.8	
36	0	1237.92	490	660	2.82	4964.64	4946	36	1.36E-02	13.1	
37	0	1377.64	235	248	3.35	5524.78	5508	35	6.53E-03	15.6	
38	0	1460.65*	7320	276	3.21	5857.52	5833	47	2.03E-01	1.3	
39	0	1764.63	779	115	3.87	7075.88	7055	39	2.16E-02	4.7	

Flag: "*" = Peak area was modified by background subtraction

VMS Nuclide Identification Report V3.0 Generated 10-SEP-2007 22:19:37

Configuration : $DISK1:[GER6.SAMPLE]J472K1AA_100970538.CNF;1
Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.3
Sample title : BRC SOIL
Sample date : 2-AUG-2007 10:30:00 Acquisition date : 10-SEP-2007 05:38:56
Sample ID : J472K1AA Sample quantity : 337.70 GRAMS
Sample type : Sample geometry : S200
Elapsed live time: 0 10:00:00.00 Elapsed real time: 0 10:00:17.36 0.0%
Energy tolerance : 1.50 Half life ratio : 8.00
Errors propagated: Yes Systematic Error : 5.00 %
Efficiency type : Empirical Efficiencies at : Peak Energy
Abundance limit : 80.00

Nuclide Line Activity Report

Nuclide Type: NP

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected PCI/GRAM	Decay Corr PCI/GRAM	1-Sigma %Error
K-40	1460.81	7320	10.67*	5.924E-01	2.574E+01	2.574E+01	8.39
TL-208	277.35	359	6.80	2.285E+00	5.143E-01	5.143E-01	21.87
	510.84	1198	21.60	1.379E+00	8.939E-01	8.939E-01	9.64
	583.14	2586	84.20*	1.240E+00	5.507E-01	5.507E-01	6.82
	860.37	357	12.46	9.143E-01	6.962E-01	6.962E-01	17.16
PB-212	238.63	8781	44.60*	2.572E+00	1.702E+00	1.702E+00	6.41
	300.09	521	3.41	2.143E+00	1.584E+00	1.584E+00	15.40
BI-214	609.31	4542	46.30*	1.198E+00	1.821E+00	1.821E+00	6.31
	768.36	348	5.04	9.985E-01	1.538E+00	1.538E+00	16.53
	1120.29	1034	15.10	7.421E-01	2.051E+00	2.051E+00	8.77
	1764.49	779	15.80	4.955E-01	2.213E+00	2.213E+00	8.01
PB-214	241.98	2390	7.49	2.547E+00	2.786E+00	2.786E+00	8.11
	295.21	3894	19.20	2.172E+00	2.076E+00	2.076E+00	6.85
	351.92	6492	37.20*	1.878E+00	2.066E+00	2.066E+00	6.35
	785.91	------	1.10	9.808E-01	------ Line Not Found		------
RA-223	154.21	208	5.58	3.374E+00	2.460E-01	2.469E-01	39.58
	269.46	956	13.60*	2.334E+00	6.696E-01	6.719E-01	12.78
	323.87	------	3.88	2.012E+00	------ Line Not Found		------
RA-224DA	238.63	8781	44.60*	2.572E+00	1.702E+00	1.769E+00	6.41
	240.98	2390	3.95	2.547E+00	5.283E+00	5.491E+00	8.11
	583.14	2586	30.25	1.240E+00	1.533E+00	1.593E+00	6.82
	860.37	357	4.48	9.143E-01	1.936E+00	2.013E+00	17.16
RA-226DA	186.21	1756	3.50	3.058E+00	3.646E+00	3.647E+00	9.28
	241.98	2390	7.49	2.547E+00	2.786E+00	2.786E+00	8.11
	295.22	3894	19.20	2.172E+00	2.076E+00	2.076E+00	6.85
	351.92	6492	37.20	1.878E+00	2.066E+00	2.066E+00	6.35
	609.32	4542	46.30*	1.198E+00	1.821E+00	1.821E+00	6.31
	1120.28	1034	15.10	7.421E-01	2.051E+00	2.051E+00	8.77
	1238.11	490	5.94	6.835E-01	2.682E+00	2.682E+00	15.01
	1764.49	779	15.80	4.955E-01	2.213E+00	2.213E+00	8.01
AC-228	209.28	943	4.40	2.832E+00	1.682E+00	1.682E+00	13.88
	270.23	956	3.60	2.334E+00	2.530E+00	2.530E+00	12.78
	338.32	1856	11.40	1.941E+00	1.865E+00	1.865E+00	7.56
	911.07	1688	27.70*	8.742E-01	1.549E+00	1.549E+00	8.10
	969.11	1434	16.60	8.337E-01	2.304E+00	2.304E+00	8.65
RA-228DA	209.28	943	4.40	2.832E+00	1.682E+00	1.704E+00	13.88

Sample ID : J472K1AA Acquisition date : 10-SEP-2007 05:38:56

Nuclide Type: NP

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected PCI/GRAM	Decay Corr PCI/GRAM	1-Sigma %Error
	338.32	1856	11.40	1.941E+00	1.865E+00	1.889E+00	7.56
	911.07	1688	27.70*	8.742E-01	1.549E+00	1.570E+00	8.10
	964.60	------	5.20	8.359E-01	------ Line Not Found		------
	969.11	1434	16.60	8.337E-01	2.304E+00	2.334E+00	8.65
TH-228DA	238.63	8781	44.60	2.572E+00	1.702E+00	1.769E+00	6.41
	240.98	2390	3.95	2.547E+00	5.283E+00	5.491E+00	8.11
	583.14	2586	30.25*	1.240E+00	1.533E+00	1.593E+00	6.82
	860.37	357	4.48	9.143E-01	1.936E+00	2.013E+00	17.16
TH-232DA	238.63	8781	44.60	2.572E+00	1.702E+00	1.702E+00	6.41
	338.32	1856	12.40*	1.941E+00	1.715E+00	1.715E+00	7.56
	583.14	2586	30.25	1.240E+00	1.533E+00	1.533E+00	6.82
	911.07	1688	27.70	8.742E-01	1.549E+00	1.549E+00	8.10
	964.60	------	5.20	8.359E-01	------ Line Not Found		------
	969.11	1434	16.60	8.337E-01	2.304E+00	2.304E+00	8.65
U-234DA	241.98	2390	7.49	2.547E+00	2.786E+00	2.786E+00	8.11
	295.22	3894	19.20*	2.172E+00	2.076E+00	2.076E+00	6.85
	351.92	6492	37.20	1.878E+00	2.066E+00	2.066E+00	6.35
	609.31	4542	46.30	1.198E+00	1.821E+00	1.821E+00	6.31
U-238DA	241.98	2390	7.49	2.547E+00	2.786E+00	2.786E+00	8.11
	295.22	3894	19.20	2.172E+00	2.076E+00	2.076E+00	6.85
	351.92	6492	37.20*	1.878E+00	2.066E+00	2.066E+00	6.35
	609.31	4542	46.30	1.198E+00	1.821E+00	1.821E+00	6.31
U-238DHP	63.28	854	3.80*	2.148E+00	2.325E+00	2.325E+00	16.52
	92.59	2006	5.41	3.370E+00	2.446E+00	2.446E+00	9.72

Flag: "*" = Keyline

Unidentified Energy Lines
Sample ID : J472K1AA

Acquisition date : 10-SEP-2007 05:38:56

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
0	46.36	379	2337	0.65	185.38	180	12	1.05E-02	26.0	9.42E-01	
7	72.75	842	4210	1.06	291.25	282	34	2.34E-02	17.0	2.69E+00	
7	74.82	4854	4106	1.08	299.55	282	34	1.35E-01	3.2	2.79E+00	
7	77.10	5987	3957	1.06	308.73	282	34	1.66E-01	2.6	2.89E+00	
0	84.32	1154	3565	1.40	337.68	331	13	3.21E-02	11.5	3.15E+00	
4	87.21	2324	2657	1.14	349.30	344	22	6.45E-02	4.7	3.24E+00	T
4	89.87	1458	2627	1.06	359.96	344	22	4.05E-02	7.4	3.30E+00	
0	99.10	248	2279	1.06	396.98	392	11	6.89E-03	37.8	3.47E+00	T
0	129.02	570	2537	0.86	517.04	511	13	1.58E-02	18.7	3.56E+00	
0	327.97	458	948	1.14	1315.28	1309	14	1.27E-02	15.0	1.99E+00	T
0	409.41	200	849	1.14	1642.00	1634	16	5.54E-03	28.8	1.65E+00	
0	462.65	541	775	1.17	1855.57	1844	20	1.50E-02	11.5	1.50E+00	T
0	726.96	622	566	1.56	2915.72	2903	25	1.73E-02	9.6	1.04E+00	T
0	795.14	266	568	1.55	3189.16	3173	25	7.39E-03	19.2	9.72E-01	T
0	1377.64	235	248	3.35	5524.78	5508	35	6.53E-03	15.6	6.24E-01	

Flags: "T" = Tentatively associated

Sample ID : J472K1AA
Acquisition date : 10-SEP-2007 05:38:56

Nuclide	Half-life	Half-Life Ratio	Energy	%Abund	Activity (PCI/GRAM)	1-Sigma %Error	Rejected by
NA-22	2.60Y	0.04	511.00	179.68	1.106E-01	9.64	Abun.
			1274.54*	99.94	--- Not Found ---		
		% Abundances Found =		64.26			
SC-46	83.85D	0.47	889.25	99.98	--- Not Found ---		Abun.
			1120.51*	99.99	4.275E-01	8.77	
		% Abundances Found =		50.00			
TC-95M	61.00D	0.64	204.12*	66.20	--- Not Found ---		Abun.
			582.07	29.30	2.465E+00	6.82	
			835.13	26.10	--- Not Found ---		
		% Abundances Found =		24.10			
RU-103	39.35D	0.99	497.08*	89.00	--- Not Found ---		Abun.
			610.33	5.60	2.993E+01	6.31	
		% Abundances Found =		5.92			
RU-106DA	368.20D	0.11	511.85	20.60	1.009E+00	9.64	Abun.
			621.84*	9.80	--- Not Found ---		
		% Abundances Found =		67.76			
SB-125	2.77Y	0.04	176.33	6.89	--- Not Found ---		Abun.
			427.89*	29.33	--- Not Found ---		
			463.38	10.35	7.985E-01	12.99	
			600.56	17.80	--- Not Found ---		
			635.90	11.32	--- Not Found ---		
		% Abundances Found =		13.67			
BA-133	10.50Y	0.01	81.00	33.00	--- Not Found ---		Abun.
			276.40	6.90	5.105E-01	21.87	
			302.84	17.80	--- Not Found ---		
			356.00*	62.05	--- Not Found ---		
			383.85	8.70	--- Not Found ---		
		% Abundances Found =		5.37			
CS-134	2.06Y	0.05	569.31	15.43	--- Not Found ---		Abun.
			604.70	97.60	--- Not Found ---		
			795.84*	85.40	7.386E-02	20.26	
			801.93	8.73	--- Not Found ---		
		% Abundances Found =		41.22			
LA-140	40.22H	23.28	328.77	20.50	2.532E+06	16.19	Decay,Abun.
			487.03	45.50	--- Not Found ---		
			815.85	23.50	--- Not Found ---		
			1596.49*	95.49	--- Not Found ---		
		% Abundances Found =		11.08			
EU-155	4.96Y	0.02	42.90	21.16	--- Not Found ---		Abun.
			86.54	30.90	5.243E-01	8.23	
			105.31*	20.70	--- Not Found ---		
		% Abundances Found =		42.47			

Sample ID : J472K1AA
Acquisition date : 10-SEP-2007 05:38:56

Nuclide	Half-life	Half-Life Ratio	Energy	%Abund	Activity (PCI/GRAM)	1-Sigma %Error	Rejected by
BI-212	1.41E+10Y	0.00	288.07	0.31	--- Not Found ---		Abun.
			327.96	0.14	3.682E+01	18.02	
			452.83	0.31	--- Not Found ---		
			727.33*	6.58	2.017E+00	11.66	
			785.37	1.10	--- Not Found ---		
			893.41	0.38	--- Not Found ---		
			952.12	0.17	--- Not Found ---		
			1078.62	0.56	--- Not Found ---		
			1512.70	0.29	--- Not Found ---		
			1620.50	1.49	--- Not Found ---		
			1806.00	0.09	--- Not Found ---		
		% Abundances Found =		58.84			
U-235HP	7.04E+08Y	0.00	143.76*	10.50	--- Not Found ---		Abun.
			185.71	54.00	2.363E-01	9.28	
			205.31	4.70	--- Not Found ---		
		% Abundances Found =		78.03			
NP-237DA	2.14E+06Y	0.00	98.44	17.60	9.018E-02	38.35	Abun.
			311.98*	36.00	--- Not Found ---		
		% Abundances Found =		32.84			

Flag: "*" = Keyline

VMS Nuclide Identification Report V3.0 Generated 10-SEP-2007 22:19:39

Configuration : $DISK1:[GER6.SAMPLE]J472K1AA_100970538.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 : BRC SOIL
Sample date : 2-AUG-2007 10:30:00
Sample ID : J472K1AA
Sample type :
Elapsed live time: 0 10:00:00.00
Peak Width (FWHM): 3.00
Energy tolerance : 1.50
Errors propagated: Yes
Efficiency type : Empirical
Abundance limit : 80.00

Acquisition date : 10-SEP-2007 05:38:56
Sample quantity : 337.70 GRAMS
Sample geometry : S200
Elapsed real time: 0 10:00:17.36 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 (PCI/GRAM)	Act error	MDA (PCI/GRAM)	MDA error	Act/MDA
K-40	2.574E+01	2.160E+00	2.499E-01	1.651E-02	103.002
TL-208	5.507E-01	3.758E-02	2.747E-02	8.943E-04	20.049
PB-212	1.702E+00	1.090E-01	3.903E-02	1.449E-03	43.610
BI-214	1.821E+00	1.150E-01	4.895E-02	1.606E-03	37.201
PB-214	2.066E+00	1.313E-01	4.905E-02	1.685E-03	42.127
RA-223	6.719E-01	8.587E-02	1.251E-01	4.612E-03	5.369
RA-224DA	1.769E+00	1.133E-01	4.057E-02	1.506E-03	43.610
RA-226DA	1.821E+00	1.150E-01	4.895E-02	1.607E-03	37.201
AC-228	1.549E+00	1.256E-01	9.397E-02	4.660E-03	16.488
RA-228DA	1.570E+00	1.272E-01	9.519E-02	4.720E-03	16.488
TH-228DA	1.593E+00	1.087E-01	7.947E-02	2.587E-03	20.049
TH-232DA	1.715E+00	1.296E-01	1.541E-01	5.341E-03	11.127
U-234DA	2.076E+00	1.421E-01	8.870E-02	3.204E-03	23.402
U-238DA	2.066E+00	1.313E-01	4.905E-02	1.685E-03	42.127
U-238DHP	2.325E+00	3.841E-01	6.649E-01	2.377E-02	3.496

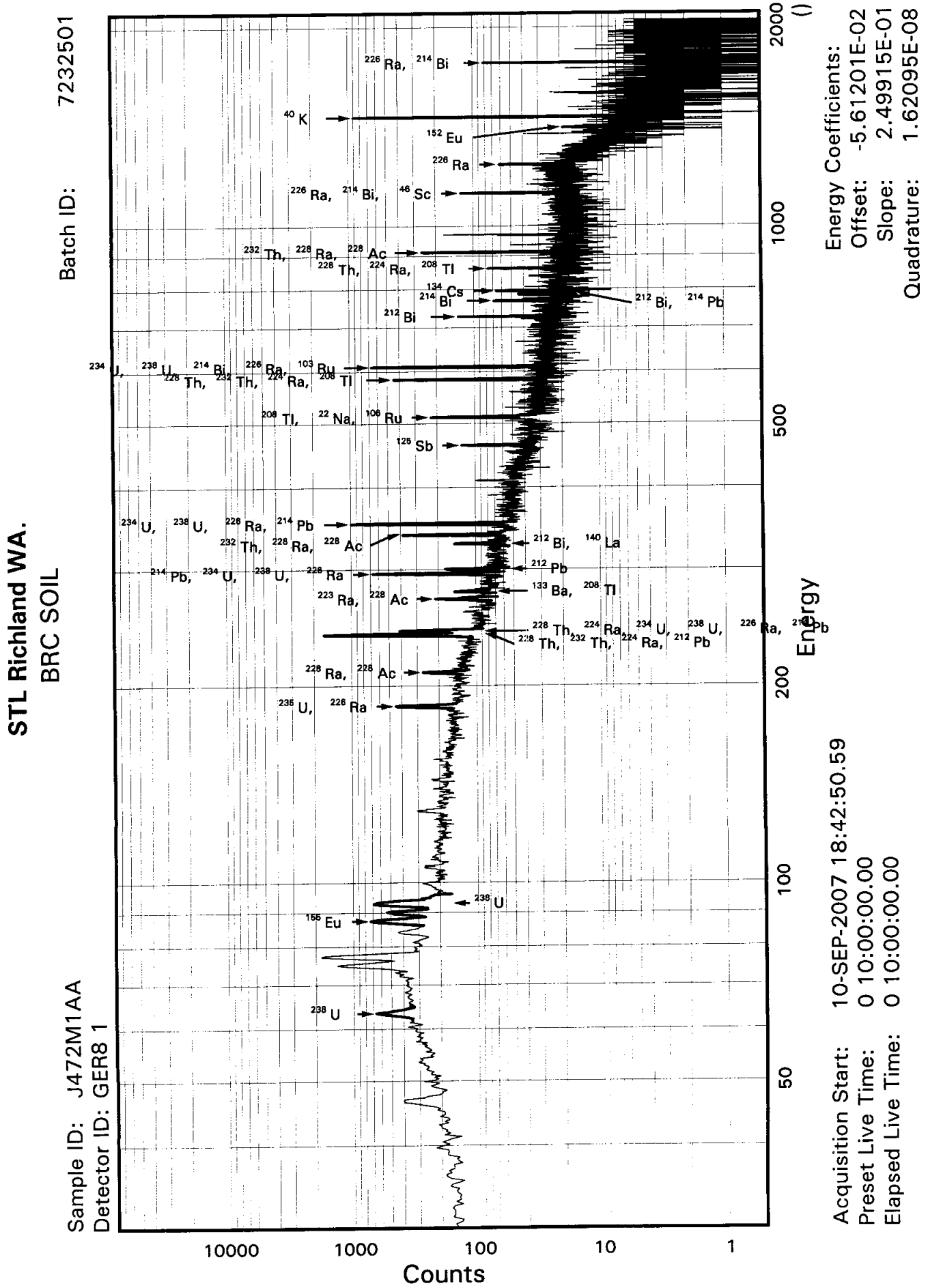
---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (PCI/GRAM)	K.L. Ided	Act error	MDA (PCI/GRAM)	MDA error	Act/MDA
BE-7	-1.880E-01		9.592E-02	3.130E-01	1.012E-02	-0.601
NA-22	-2.183E-02		1.068E-02	3.427E-02	2.077E-03	-0.637
SC-46	4.275E-01	+	3.749E-02	7.525E-02	3.229E-03	5.681
CR-51	-9.945E-02		1.458E-01	4.785E-01	1.671E-02	-0.208
MN-54	-9.827E-03		9.307E-03	3.104E-02	1.400E-03	-0.317
CO-57	-3.539E-02		4.512E-02	1.494E-01	5.598E-03	-0.237
CO-58	-1.788E-02		1.182E-02	3.838E-02	1.664E-03	-0.466
FE-59	2.611E-02		3.109E-02	1.056E-01	4.627E-03	0.247
CO-60	-9.215E-03		8.637E-03	2.835E-02	2.074E-03	-0.325
ZN-65	1.114E-01		2.752E-02	8.095E-02	3.491E-03	1.376
SE-75	-2.156E-03		1.090E-02	3.473E-02	1.283E-03	-0.062
SR-85	9.604E-02		1.328E-02	3.844E-02	1.210E-03	2.498
Y-88	1.346E-02		8.880E-03	3.221E-02	1.091E-03	0.418

Sample ID : J472K1AA Acquisition date : 10-SEP-2007 05:38:56

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (PCI/GRAM)	K.L. Ided	Act error	MDA (PCI/GRAM)	MDA error	Act/MDA
NB-94	-1.059E-02		7.867E-03	2.597E-02	1.241E-03	-0.408
NB-95	1.944E-01		2.473E-02	7.032E-02	2.824E-03	2.764
TC-95M	2.202E-02		1.208E-02	3.909E-02	1.437E-03	0.563
ZR-95	8.542E-03		2.079E-02	7.033E-02	2.780E-03	0.121
ZRNB-95	2.754E-01		3.489E-02	9.912E-02	3.981E-03	2.779
RH-101	1.373E-02		6.876E-03	2.317E-02	8.492E-04	0.593
RH-102M	-7.247E-03		6.414E-03	2.126E-02	6.888E-04	-0.341
RU-103	-1.851E-02		1.376E-02	4.522E-02	1.444E-03	-0.409
RU-106DA	5.698E-02		7.280E-02	2.471E-01	8.133E-03	0.231
AG-108M	-1.841E-02		6.697E-03	2.110E-02	6.937E-04	-0.872
AG-110M	-2.217E-02		1.208E-02	3.931E-02	1.919E-03	-0.564
SN-113DA	1.379E-02		1.169E-02	3.945E-02	1.296E-03	0.350
SB-124	2.208E-02		1.321E-02	3.844E-02	1.259E-03	0.574
SB-125	9.014E-03		2.075E-02	6.912E-02	2.274E-03	0.130
SN-126DA	2.462E-02		7.649E-03	2.608E-02	8.714E-04	0.944
I-131	-7.905E-02		1.937E-01	6.490E-01	2.204E-02	-0.122
BA-133	-1.067E-02		1.022E-02	2.865E-02	9.807E-04	-0.372
CS-134	7.386E-02	+	1.496E-02	3.814E-02	1.613E-03	1.937
CS-137DA	-6.756E-03		8.934E-03	2.945E-02	9.749E-04	-0.229
LA-138	1.833E-02		1.201E-02	4.203E-02	2.840E-03	0.436
CE-139	-7.635E-03		6.981E-03	2.260E-02	8.138E-04	-0.338
BA-140	-2.599E-01		2.144E-01	7.003E-01	2.235E-02	-0.371
BALA-140	-6.431E-01		1.603E-01	4.716E-01	2.662E-02	-1.364
CE-141	1.575E-02		2.143E-02	7.132E-02	2.623E-03	0.221
CE-144	-6.533E-02		4.469E-02	1.438E-01	5.425E-03	-0.454
CEPR-144	-1.303E-01		8.938E-02	2.877E-01	1.085E-02	-0.453
PM-144	8.558E-03		7.227E-03	2.464E-02	8.104E-04	0.347
PM-146	1.289E-02		9.295E-03	3.184E-02	1.041E-03	0.405
EU-152	-1.085E-02		2.132E-02	7.069E-02	2.442E-03	-0.153
EU-154	-6.760E-02		2.966E-02	9.448E-02	5.724E-03	-0.716
EU-155	8.429E-02		2.213E-02	7.206E-02	2.936E-03	1.170
HF-181	1.909E-02		1.381E-02	4.710E-02	1.519E-03	0.405
BI-207	-2.399E-03		6.778E-03	2.285E-02	7.402E-04	-0.105
BI-210M	6.763E-03		1.155E-02	3.332E-02	1.230E-03	0.203
BI-212	2.017E+00	+	2.352E-01	5.230E-01	2.295E-02	3.856
AC-227DA	4.333E-01		6.435E-02	1.769E-01	6.566E-03	2.449
TH-234DA	3.903E+00		1.369E+00	4.749E+00	2.247E-01	0.822
U-235HP	1.209E-01		4.348E-02	1.449E-01	5.346E-03	0.835
NP-237DA	-1.330E-02		1.470E-02	4.822E-02	1.705E-03	-0.276
AM-241HP	-8.195E-03		2.544E-02	7.583E-02	2.633E-03	-0.108


STL Richland WA.
BRC SOIL
Batch ID: 7232501
Sample ID: J472M1AA
Detector ID: GER8 1
Energy Coefficients:
Offset: -5.61201E-02
Slope: 2.49915E-01
Quadrature: 1.62095E-08
Acquisition Start: 10-SEP-2007 18:42:50.59
Preset Live Time: 0 10:00:00.00
Elapsed Live Time: 0 10:00:00.00
Counts
Energy
10000
1000
100
10
1
50
100
200
500
1000
2000
226 Ra, 214 Bi
40 K
152 Eu
226 Ra
226 Ra, 214 Bi, 46 Sc
232 Th, 228 Ra, 228 Ac
228 Th, 224 Ra, 208 Tl
134 Cs
214 Bi
212 Bi
212 Bi, 214 Pb
234 U, 238 U, 214 Bi, 226 Ra, 103 Ru
228 Th, 232 Th, 224 Ra, 208 Tl
208 Tl, 22 Na, 106 Ru
125 Sb
234 U, 238 U, 226 Ra, 214 Pb
232 Th, 228 Ra, 228 Ac
212 Bi, 140 La
214 Pb, 234 U, 238 U, 226 Ra
212 Pb
133 Ba, 208 Tl
223 Ra, 228 Ac
228 Th, 224 Ra, 234 U, 238 U, 226 Ra, 214 Pb
228 Th, 232 Th, 224 Ra, 212 Pb
228 Ra, 228 Ac
235 U, 226 Ra
238 U
155 Eu
238 U

SAMPLE IDENTIFICATION: J472M1AA

CONFIGURATION ID: GER8:J472M1AA_100971842
TITLE : BRC SOIL
SAMPLE ID : J472M1AA

REPORT DATE: 11-SEP-07
ACQUIRE DATE: 10-SEP-07 18:42:50
ELAPSED LIVE TIME: 36000.0 Sec
PRESET LIVE TIME: 0 10:00:00

SAMPLE DATE: 2-AUG-2007 10:30:00.00
CALIB DATE: 10-SEP-2007 05:26:08.25
ELAPSED LIVE TIME: 0 10:00:00
ELAPSED REAL TIME: 0 10:00:15

SAMPLE QUANTITY: 3.5460E+02
SAMPLE GEOMETRY: ES200

UNITS: GRAMS
SAMPLE TYPE:

ENERGY OFFSET: -.5612E-01 keV
ENERGY SLOPE: 2.4992E-01 keV/C
ENERGY Q COEFF: 1.6210E-08 keV/C^^2
PEAK SENSITIVITY: 5.000

FWHM OFFSET: 9.9614E-01 keV
FWHM SLOPE: 2.0633E-02 sqr keV
ITERATIONS: 10
GAUSSIAN SENSITIVITY: 60.00 %

ABUNDANCE LIMIT: 80.00 %
ENERGY TOLERANCE: 1.500 keV
VARIABLE PEAK WIDTH: 3.00

HALF-LIFE RATIO: 8.00
ACTIVITY MULTIPLIER: 1.0000E+06
LIBRARY: [NUC_LIBR]QRL.NLB

VMS Peak Search Report V1.9 Generated 11-SEP-2007 21:45:11

Configuration : $DISK1:[GER8.SAMPLE]J472M1AA_100971842.CNF;1
Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6
Sample title : BRC SOIL
Sample date : 2-AUG-2007 10:30:00 Acquisition date : 10-SEP-2007 18:42:50
Sample ID : J472M1AA Sample quantity : 354.60 GRAMS
Sample type : Sample geometry : ES200
Elapsed live time: 0 10:00:00.00 Elapsed real time: 0 10:00:15.06 0.0%
Start energy : 19.94 End energy : 2048.34
Sensitivity : 5.00 Gaussian : 60.00
Critical level : No

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	46.59*	722	2660	1.07	186.66	180	14	2.01E-02	16.5	
2	0	63.40*	922	4118	0.85	253.89	249	12	2.56E-02	14.8	
3	2	74.97*	4116	5103	1.09	300.22	294	22	1.14E-01	3.9	1.44E+00
4	2	77.27*	6555	4463	1.05	309.40	294	22	1.82E-01	2.6	
5	0	84.24	902	3236	1.26	337.29	332	12	2.51E-02	13.0	
6	0	87.41	2180	3345	1.19	349.97	344	12	6.06E-02	5.7	
7	4	90.06	1374	2316	1.11	360.56	356	30	3.82E-02	6.6	3.86E+00
8	4	93.10*	2891	4510	1.75	372.75	356	30	8.03E-02	6.4	
9	0	129.19	660	2400	1.39	517.13	511	13	1.83E-02	15.8	
10	0	186.30*	1419	2406	1.32	745.62	739	15	3.94E-02	8.3	
11	0	209.69	702	1836	1.17	839.22	832	14	1.95E-02	13.5	
12	3	238.95	8207	1697	1.21	956.29	948	29	2.28E-01	1.5	2.44E+00
13	3	241.98	2280	1745	1.75	968.42	948	29	6.33E-02	5.0	
14	0	270.66	838	1395	1.21	1083.15	1073	18	2.33E-02	11.0	
15	0	277.70	370	1466	1.31	1111.33	1101	18	1.03E-02	24.8	
16	0	295.54*	3240	1218	1.25	1182.71	1174	19	9.00E-02	3.2	
17	0	300.49	529	914	0.97	1202.48	1196	14	1.47E-02	12.9	
18	0	328.14	658	1192	1.43	1313.13	1302	21	1.83E-02	13.7	
19	0	338.66	1559	1278	1.18	1355.22	1346	20	4.33E-02	6.2	
20	0	352.24*	5195	1153	1.34	1409.55	1398	21	1.44E-01	2.2	
21	0	409.68	292	613	1.32	1639.31	1633	13	8.11E-03	18.5	
22	0	463.36	479	783	1.22	1854.06	1845	21	1.33E-02	15.3	
23	0	511.31*	619	1066	1.55	2045.90	2033	29	1.72E-02	17.2	
24	0	583.74	2581	565	1.39	2335.63	2325	22	7.17E-02	3.1	
25	0	609.84*	3851	585	1.40	2440.04	2430	22	1.07E-01	2.2	
26	0	727.83	586	492	1.02	2911.98	2901	22	1.63E-02	9.2	
27	0	769.69	417	716	1.70	3079.42	3065	33	1.16E-02	17.1	
28	0	786.27	159	318	1.39	3145.72	3138	17	4.42E-03	23.3	
29	0	795.61	273	348	1.40	3183.08	3171	19	7.60E-03	15.1	
30	0	861.36	382	409	1.37	3446.05	3435	26	1.06E-02	13.2	
31	0	912.00	1641	381	1.70	3648.59	3637	24	4.56E-02	3.6	
32	0	934.92	227	279	1.92	3740.27	3729	21	6.30E-03	17.0	
33	0	970.83	663	856	1.34	3883.87	3864	26	1.84E-02	10.7	
34	0	1121.15	773	532	1.68	4485.03	4471	29	2.15E-02	8.1	
35	0	1239.15	313	499	1.75	4956.90	4946	23	8.69E-03	16.7	
36	0	1379.02	223	160	1.52	5516.19	5504	23	6.20E-03	14.2	
37	0	1409.38	86	128	3.32	5637.59	5627	23	2.38E-03	31.2	
38	0	1462.00*	7425	192	1.99	5848.00	5832	32	2.06E-01	1.3	
39	0	1592.14	234	180	6.14	6368.31	6345	45	6.51E-03	17.9	
40	0	1731.14	125	89	2.29	6924.01	6909	31	3.48E-03	20.6	
41	0	1765.96*	642	37	1.88	7063.23	7050	25	1.78E-02	4.7	

Flag: "*" = Peak area was modified by background subtraction

VMS Nuclide Identification Report V3.0 Generated 11-SEP-2007 21:45:11

Configuration : $DISK1:[GER8.SAMPLE]J472M1AA_100971842.CNF;1
Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.3
Sample title : BRC SOIL
Sample date : 2-AUG-2007 10:30:00 Acquisition date : 10-SEP-2007 18:42:50
Sample ID : J472M1AA Sample quantity : 354.60 GRAMS
Sample type : Sample geometry : ES200
Elapsed live time: 0 10:00:00.00 Elapsed real time: 0 10:00:15.06 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 PCI/GRAM	Decay Corr PCI/GRAM	1-Sigma %Error
K-40	1460.81	7425	10.67*	5.797E-01	2.542E+01	2.542E+01	6.25
TL-208	277.35	370	6.80	2.333E+00	4.934E-01	4.934E-01	25.62
	510.84	619	21.60	1.412E+00	4.296E-01	4.296E-01	18.20
	583.14	2581	84.20*	1.262E+00	5.143E-01	5.143E-01	6.79
	860.37	382	12.46	9.064E-01	7.154E-01	7.154E-01	14.80
PB-212	238.63	8207	44.60*	2.615E+00	1.490E+00	1.490E+00	6.49
	300.09	529	3.41	2.193E+00	1.498E+00	1.498E+00	14.32
BI-214	609.31	3851	46.30*	1.216E+00	1.448E+00	1.448E+00	6.49
	768.36	417	5.04	9.973E-01	1.758E+00	1.758E+00	18.22
	1120.29	773	15.10	7.250E-01	1.494E+00	1.494E+00	10.11
	1764.49	642	15.80	4.946E-01	1.739E+00	1.739E+00	7.61
PB-214	241.98	2280	7.49	2.591E+00	2.488E+00	2.488E+00	8.02
	295.21	3240	19.20	2.222E+00	1.608E+00	1.608E+00	7.01
	351.92	5195	37.20*	1.929E+00	1.533E+00	1.533E+00	6.45
	785.91	159	1.10	9.794E-01	3.124E+00	3.124E+00	24.21
RA-224DA	238.63	8207	44.60*	2.615E+00	1.490E+00	1.550E+00	6.49
	240.98	2280	3.95	2.591E+00	4.718E+00	4.907E+00	8.02
	583.14	2581	30.25	1.262E+00	1.432E+00	1.489E+00	6.79
	860.37	382	4.48	9.064E-01	1.990E+00	2.069E+00	14.80
RA-226DA	186.21	1419	3.50	3.105E+00	2.764E+00	2.764E+00	10.40
	241.98	2280	7.49	2.591E+00	2.488E+00	2.488E+00	8.02
	295.22	3240	19.20	2.222E+00	1.608E+00	1.608E+00	7.01
	351.92	5195	37.20	1.929E+00	1.533E+00	1.533E+00	6.45
	609.32	3851	46.30*	1.216E+00	1.448E+00	1.448E+00	6.49
	1120.28	773	15.10	7.250E-01	1.494E+00	1.494E+00	10.11
	1238.11	313	5.94	6.663E-01	1.673E+00	1.673E+00	17.74
	1764.49	642	15.80	4.946E-01	1.739E+00	1.739E+00	7.61
TH-228DA	238.63	8207	44.60	2.615E+00	1.490E+00	1.550E+00	6.49
	240.98	2280	3.95	2.591E+00	4.718E+00	4.907E+00	8.02
	583.14	2581	30.25*	1.262E+00	1.432E+00	1.489E+00	6.79
	860.37	382	4.48	9.064E-01	1.990E+00	2.069E+00	14.80
TH-232DA	238.63	8207	44.60	2.615E+00	1.490E+00	1.490E+00	6.49
	338.32	1559	12.40*	1.992E+00	1.337E+00	1.337E+00	8.66
	583.14	2581	30.25	1.262E+00	1.432E+00	1.432E+00	6.79
	911.07	1641	27.70	8.635E-01	1.453E+00	1.453E+00	7.56
	964.60	------	5.20	8.234E-01	------ Line Not Found		------

Sample ID : J472M1AA Acquisition date : 10-SEP-2007 18:42:50

Nuclide Type: NP

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected PCI/GRAM	Decay Corr PCI/GRAM	1-Sigma %Error
	969.11	------	16.60	8.202E-01	------ Line Not Found		------
U-234DA	241.98	2280	7.49	2.591E+00	2.488E+00	2.488E+00	8.02
	295.22	3240	19.20*	2.222E+00	1.608E+00	1.608E+00	7.01
	351.92	5195	37.20	1.929E+00	1.533E+00	1.533E+00	6.45
	609.31	3851	46.30	1.216E+00	1.448E+00	1.448E+00	6.49
U-238DA	241.98	2280	7.49	2.591E+00	2.488E+00	2.488E+00	8.02
	295.22	3240	19.20	2.222E+00	1.608E+00	1.608E+00	7.01
	351.92	5195	37.20*	1.929E+00	1.533E+00	1.533E+00	6.45
	609.31	3851	46.30	1.216E+00	1.448E+00	1.448E+00	6.49
U-238DHP	63.28	922	3.80*	3.728E+00	1.377E+00	1.377E+00	15.91
	92.59	2891	5.41	4.071E+00	2.779E+00	2.779E+00	8.78

Flag: "*" = Keyline

Unidentified Energy Lines
Sample ID : J472M1AA
Acquisition date : 10-SEP-2007 18:42:50

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
0	46.59	722	2660	1.07	186.66	180	14	2.01E-02	16.5	2.84E+00	
2	74.97	4116	5103	1.09	300.22	294	22	1.14E-01	3.9	3.99E+00	
2	77.27	6555	4463	1.05	309.40	294	22	1.82E-01	2.6	4.02E+00	
0	84.24	902	3236	1.26	337.29	332	12	2.51E-02	13.0	4.07E+00	
0	87.41	2180	3345	1.19	349.97	344	12	6.06E-02	5.7	4.07E+00	T
4	90.06	1374	2316	1.11	360.56	356	30	3.82E-02	6.6	4.08E+00	
0	129.19	660	2400	1.39	517.13	511	13	1.83E-02	15.8	3.77E+00	
0	209.69	702	1836	1.17	839.22	832	14	1.95E-02	13.5	2.87E+00	T
0	270.66	838	1395	1.21	1083.15	1073	18	2.33E-02	11.0	2.38E+00	T
0	328.14	658	1192	1.43	1313.13	1302	21	1.83E-02	13.7	2.04E+00	T
0	409.68	292	613	1.32	1639.31	1633	13	8.11E-03	18.5	1.70E+00	
0	463.36	479	783	1.22	1854.06	1845	21	1.33E-02	15.3	1.53E+00	T
0	727.83	586	492	1.02	2911.98	2901	22	1.63E-02	9.2	1.05E+00	T
0	795.61	273	348	1.40	3183.08	3171	19	7.60E-03	15.1	9.70E-01	T
0	934.92	227	279	1.92	3740.27	3729	21	6.30E-03	17.0	8.46E-01	
0	970.83	663	856	1.34	3883.87	3864	26	1.84E-02	10.7	8.19E-01	
0	1379.02	223	160	1.52	5516.19	5504	23	6.20E-03	14.2	6.09E-01	
0	1409.38	86	128	3.32	5637.59	5627	23	2.38E-03	31.2	5.98E-01	T
0	1592.14	234	180	6.14	6368.31	6345	45	6.51E-03	17.9	5.40E-01	
0	1731.14	125	89	2.29	6924.01	6909	31	3.48E-03	20.6	5.03E-01	

Flags: "T" = Tentatively associated

Nuclide	Half-life	Half-Life Ratio	Energy	%Abund	Activity (PCI/GRAM)	1-Sigma %Error	Rejected by
NA-22	2.60Y	0.04	511.00	179.68	5.316E-02	18.20	Abun.
			1274.54*	99.94	--- Not Found ---		
		% Abundances Found =		64.26			
SC-46	83.85D	0.47	889.25	99.98	--- Not Found ---		Abun.
			1120.51*	99.99	3.129E-01	10.11	
		% Abundances Found =		50.00			
RU-103	39.35D	1.01	497.08*	89.00	--- Not Found ---		Abun.
			610.33	5.60	2.403E+01	6.49	
		% Abundances Found =		5.92			
RU-106DA	368.20D	0.11	511.85	20.60	4.853E-01	18.20	Abun.
			621.84*	9.80	--- Not Found ---		
		% Abundances Found =		67.76			
SB-125	2.77Y	0.04	176.33	6.89	--- Not Found ---		Abun.
			427.89*	29.33	--- Not Found ---		
			463.38	10.35	6.563E-01	16.40	
			600.56	17.80	--- Not Found ---		
			635.90	11.32	--- Not Found ---		
		% Abundances Found =		13.67			
BA-133	10.50Y	0.01	81.00	33.00	--- Not Found ---		Abun.
			276.40	6.90	4.898E-01	25.62	
			302.84	17.80	--- Not Found ---		
			356.00*	62.05	--- Not Found ---		
			383.85	8.70	--- Not Found ---		
		% Abundances Found =		5.37			
CS-134	2.06Y	0.05	569.31	15.43	--- Not Found ---		Abun.
			604.70	97.60	--- Not Found ---		
			795.84*	85.40	7.251E-02	16.47	
			801.93	8.73	--- Not Found ---		
		% Abundances Found =		41.22			
LA-140	40.22H	23.60	328.77	20.50	4.227E+06	14.98	Decay,Abun.
			487.03	45.50	--- Not Found ---		
			815.85	23.50	--- Not Found ---		
			1596.49*	95.49	--- Not Found ---		
		% Abundances Found =		11.08			
EU-152	13.60Y	0.01	121.78	28.40	--- Not Found ---		Abun.
			244.67	7.49	--- Not Found ---		
			344.27*	26.50	--- Not Found ---		
			778.89	12.74	--- Not Found ---		
			964.01	14.40	--- Not Found ---		
			1085.78	10.00	--- Not Found ---		
			1112.02	13.30	--- Not Found ---		
			1407.95	20.70	1.472E-01	31.81	
		% Abundances Found =		15.50			

Sample ID : J472M1AA Acquisition date : 10-SEP-2007 18:42:50

Nuclide	Half-life	Half-Life Ratio	Energy	%Abund	Activity (PCI/GRAM)	1-Sigma %Error	Rejected by
EU-155	4.96Y	0.02	42.90	21.16	--- Not Found ---		Abun.
			86.54	30.90	3.723E-01	8.32	
			105.31*	20.70	--- Not Found ---		
		% Abundances Found =		42.47			
BI-212	1.41E+10Y	0.00	288.07	0.31	--- Not Found ---		Abun.
			327.96	0.14	4.907E+01	16.95	
			452.83	0.31	--- Not Found ---		
			727.33*	6.58	1.804E+00	11.36	
			785.37	1.10	3.124E+00	24.36	
			893.41	0.38	--- Not Found ---		
			952.12	0.17	--- Not Found ---		
			1078.62	0.56	--- Not Found ---		
			1512.70	0.29	--- Not Found ---		
			1620.50	1.49	--- Not Found ---		
			1806.00	0.09	--- Not Found ---		
		% Abundances Found =		68.47			
RA-223	21.77Y	0.00	154.21	5.58	--- Not Found ---		Abun.
			269.46*	13.60	5.499E-01	12.67	
			323.87	3.88	--- Not Found ---		
		% Abundances Found =		58.98			
AC-228	1.41E+10Y	0.00	209.28	4.40	1.177E+00	14.90	Abun.
			270.23	3.60	2.070E+00	12.67	
			338.32	11.40	1.454E+00	8.66	
			911.07*	27.70	1.453E+00	7.56	
			969.11	16.60	--- Not Found ---		
		% Abundances Found =		73.94			
RA-228DA	5.75Y	0.02	209.28	4.40	1.192E+00	14.90	Abun.
			338.32	11.40	1.473E+00	8.66	
			911.07*	27.70	1.472E+00	7.56	
			964.60	5.20	--- Not Found ---		
			969.11	16.60	--- Not Found ---		
		% Abundances Found =		66.62			
U-235HP	7.04E+08Y	0.00	143.76*	10.50	--- Not Found ---		Abun.
			185.71	54.00	1.791E-01	10.40	
			205.31	4.70	--- Not Found ---		
		% Abundances Found =		78.03			

Flag: "*" = Keyline

VMS Nuclide Identification Report V3.0 Generated 11-SEP-2007 21:45:13

Configuration : $DISK1:[GER8.SAMPLE]J472M1AA_100971842.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 : BRC SOIL
Sample date : 2-AUG-2007 10:30:00 Acquisition date : 10-SEP-2007 18:42:50
Sample ID : J472M1AA Sample quantity : 354.60 GRAMS
Sample type : Sample geometry : ES200
Elapsed live time: 0 10:00:00.00 Elapsed real time: 0 10:00:15.06 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 (PCI/GRAM)	Act error	MDA (PCI/GRAM)	MDA error	Act/MDA
K-40	2.542E+01	1.588E+00	1.819E-01	6.420E-03	139.722
TL-208	5.143E-01	3.492E-02	2.337E-02	7.978E-04	22.011
PB-212	1.490E+00	9.667E-02	3.690E-02	1.419E-03	40.376
BI-214	1.448E+00	9.399E-02	4.177E-02	1.462E-03	34.667
PB-214	1.533E+00	9.880E-02	4.329E-02	1.481E-03	35.402
RA-224DA	1.550E+00	1.005E-01	3.838E-02	1.476E-03	40.376
RA-226DA	1.448E+00	9.400E-02	4.177E-02	1.462E-03	34.667
TH-228DA	1.489E+00	1.011E-01	6.764E-02	2.310E-03	22.011
TH-232DA	1.337E+00	1.158E-01	1.320E-01	4.607E-03	10.123
U-234DA	1.608E+00	1.128E-01	8.029E-02	2.973E-03	20.026
U-238DA	1.533E+00	9.880E-02	4.329E-02	1.481E-03	35.402
U-238DHP	1.377E+00	2.191E-01	4.802E-01	1.531E-02	2.868

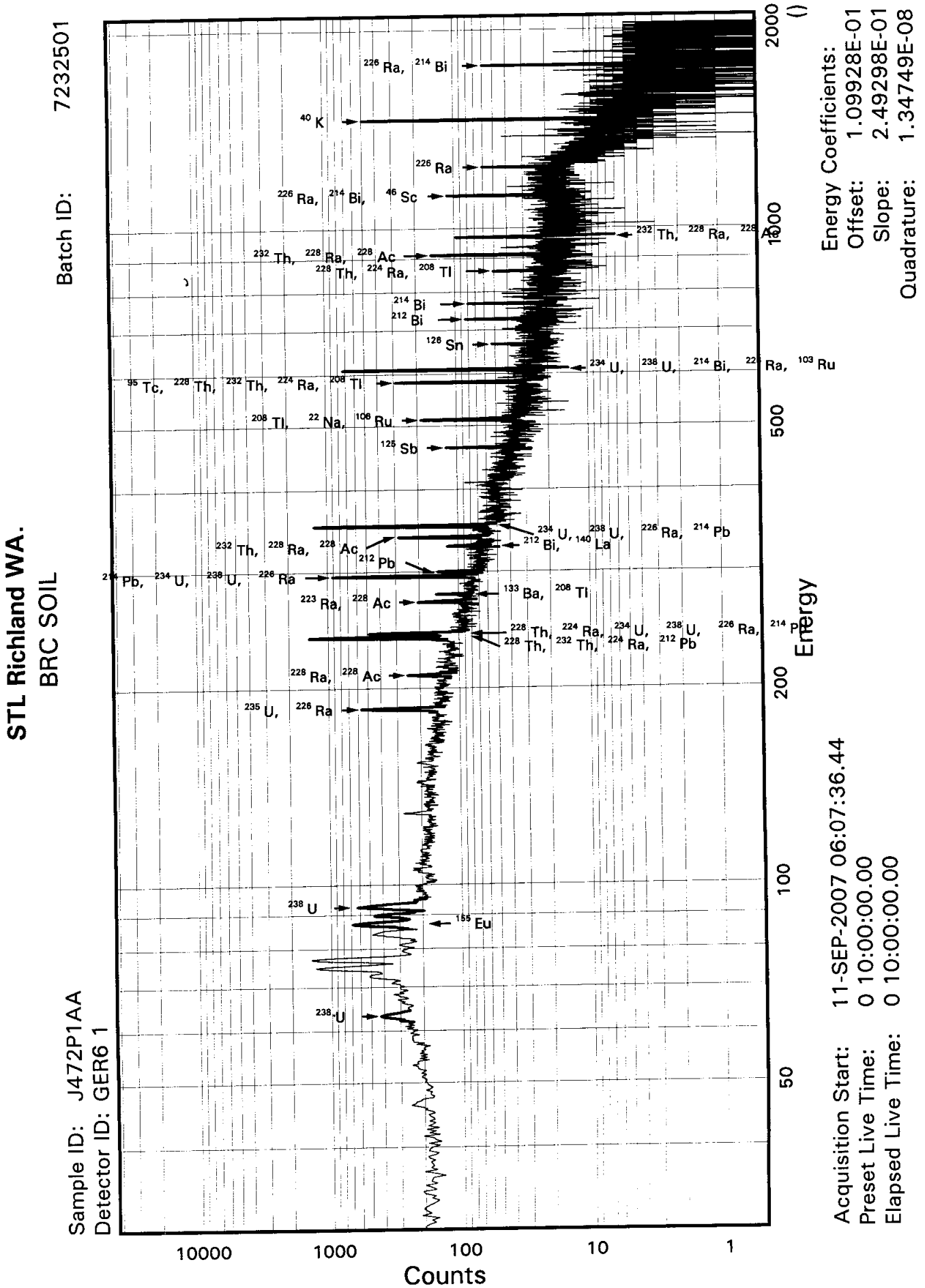
---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (PCI/GRAM)	K.L. Ided	Act error	MDA (PCI/GRAM)	MDA error	Act/MDA
BE-7	-1.567E-01		7.996E-02	2.623E-01	8.391E-03	-0.598
NA-22	-1.104E-02		8.026E-03	2.615E-02	8.995E-04	-0.422
SC-46	3.129E-01	+	3.164E-02	6.469E-02	2.275E-03	4.837
CR-51	4.863E-02		1.315E-01	4.389E-01	1.564E-02	0.111
MN-54	9.376E-03		7.411E-03	2.573E-02	1.087E-03	0.364
CO-57	-1.056E-01		4.582E-02	1.462E-01	4.997E-03	-0.722
CO-58	-3.202E-02		9.528E-03	3.000E-02	1.246E-03	-1.067
FE-59	-1.853E-02		2.432E-02	8.107E-02	2.942E-03	-0.229
CO-60	-7.953E-03		6.895E-03	2.258E-02	8.055E-04	-0.352
ZN-65	-3.314E-02		2.112E-02	5.714E-02	2.025E-03	-0.580
SE-75	-4.075E-03		1.002E-02	3.154E-02	1.201E-03	-0.129
SR-85	9.552E-02		1.178E-02	3.442E-02	1.091E-03	2.775
Y-88	-2.408E-03		5.926E-03	2.051E-02	6.405E-04	-0.117
NB-94	5.753E-03		6.156E-03	2.138E-02	9.256E-04	0.269
NB-95	7.403E-02		1.652E-02	4.985E-02	2.000E-03	1.485
TC-95M	-4.298E-03		1.148E-02	3.711E-02	1.419E-03	-0.116

Sample ID : J472M1AA Acquisition date : 10-SEP-2007 18:42:50

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (PCI/GRAM)	K.L. Ided	Act error	MDA (PCI/GRAM)	MDA error	Act/MDA
ZR-95	2.496E-02		1.779E-02	6.059E-02	2.413E-03	0.412
ZRNB-95	1.092E-01		2.317E-02	7.001E-02	2.809E-03	1.560
RH-101	4.423E-03		6.518E-03	2.198E-02	8.378E-04	0.201
RH-102M	-1.880E-03		5.214E-03	1.762E-02	5.637E-04	-0.107
RU-103	-3.543E-03		1.125E-02	3.797E-02	1.210E-03	-0.093
RU-106DA	-6.346E-02		6.069E-02	2.006E-01	7.101E-03	-0.316
AG-108M	-1.008E-02		5.518E-03	1.823E-02	5.823E-04	-0.553
AG-110M	-7.612E-03		9.566E-03	3.220E-02	1.406E-03	-0.236
SN-113DA	-4.086E-03		9.913E-03	3.262E-02	1.027E-03	-0.125
SB-124	-7.383E-03		8.990E-03	2.944E-02	1.024E-03	-0.251
SB-125	7.751E-03		1.764E-02	6.026E-02	1.923E-03	0.129
SN-126DA	1.916E-02		6.147E-03	2.121E-02	7.796E-04	0.903
I-131	2.708E-01		1.804E-01	6.065E-01	2.029E-02	0.447
BA-133	1.064E-02		8.906E-03	2.550E-02	8.663E-04	0.417
CS-134	7.251E-02	+	1.194E-02	3.145E-02	1.292E-03	2.306
CS-137DA	-2.110E-02		6.931E-03	2.171E-02	7.941E-04	-0.972
LA-138	3.845E-03		8.397E-03	2.966E-02	1.050E-03	0.130
CE-139	3.490E-03		6.551E-03	2.216E-02	8.258E-04	0.157
BA-140	-1.831E-01		1.790E-01	5.954E-01	1.938E-02	-0.308
BALA-140	6.094E-01		1.372E-01	4.589E-01	1.575E-02	1.328
CE-141	3.833E-02		2.137E-02	7.034E-02	2.481E-03	0.545
CE-144	-2.567E-02		4.819E-02	1.430E-01	4.842E-03	-0.179
CEPR-144	-5.107E-02		9.638E-02	2.861E-01	9.684E-03	-0.178
PM-144	1.407E-03		5.915E-03	2.001E-02	7.059E-04	0.070
PM-146	2.739E-02		7.939E-03	2.756E-02	8.823E-04	0.994
EU-152	-1.557E-02		2.022E-02	5.975E-02	2.068E-03	-0.261
EU-154	-2.757E-02		2.210E-02	7.226E-02	2.486E-03	-0.381
EU-155	7.325E-02		2.087E-02	6.876E-02	2.264E-03	1.065
HF-181	3.468E-02		1.170E-02	4.063E-02	1.299E-03	0.853
BI-207	-5.219E-04		5.637E-03	1.900E-02	6.400E-04	-0.027
BI-210M	-1.590E-02		1.083E-02	2.991E-02	1.138E-03	-0.532
BI-212	1.804E+00	+	2.049E-01	4.607E-01	2.076E-02	3.916
RA-223	5.499E-01	+	6.969E-02	1.366E-01	5.186E-03	4.025
AC-227DA	1.895E-01		5.320E-02	1.535E-01	5.902E-03	1.235
AC-228	1.453E+00	+	1.099E-01	1.826E-01	7.980E-03	7.958
RA-228DA	1.472E+00	+	1.114E-01	1.850E-01	8.085E-03	7.958
TH-234DA	1.869E+00		1.077E+00	3.754E+00	1.529E-01	0.498
U-235HP	1.083E-01		4.268E-02	1.404E-01	4.922E-03	0.772
NP-237DA	-7.587E-03		1.309E-02	4.327E-02	1.564E-03	-0.175
AM-241HP	2.418E-02		1.656E-02	5.059E-02	1.632E-03	0.478


STL Richland WA.
BRC SOIL
Batch ID: 7232501
Sample ID: J472P1AA
Detector ID: GER6 1
Energy Coefficients:
Offset: 1.09928E-01
Slope: 2.49298E-01
Quadrature: 1.34749E-08
Acquisition Start: 11-SEP-2007 06:07:36.44
Preset Live Time: 0 10:00:00.00
Elapsed Live Time: 0 10:00:00.00
Counts
Energy
10000
1000
100
10
1
50
100
200
500
1000
2000
238 U
155 Eu
235 U, 226 Ra
228 Ra, 228 Ac
223 Ra, 228 Ac
214 Pb, 234 U, 238 U, 226 Ra
232 Th, 228 Ra, 228 Ac, 212 Pb
212 Bi, 140 La
234 U, 238 U, 226 Ra, 214 Pb
133 Ba, 208 Tl
228 Th, 224 Ra, 234 U, 238 U, 226 Ra, 214 Pb
228 Th, 232 Th, 224 Ra, 212 Pb
95 Tc, 228 Th, 232 Th, 224 Ra, 208 Tl
208 Tl, 22 Na, 106 Ru
125 Sb
234 U, 238 U, 214 Bi, 226 Ra, 103 Ru
128 Sn
214 Bi
212 Bi
232 Th, 228 Ra, 228 Ac
228 Th, 224 Ra, 208 Tl
40 K
226 Ra
226 Ra, 214 Bi, 46 Sc
226 Ra, 214 Bi

SAMPLE IDENTIFICATION: J472P1AA

CONFIGURATION ID: GER6:J472P1AA_110970607
TITLE : BRC SOIL
SAMPLE ID : J472P1AA

REPORT DATE: 11-SEP-07
ACQUIRE DATE: 11-SEP-07 06:07:36
ELAPSED LIVE TIME: 36000.0 Sec
PRESET LIVE TIME: 0 10:00:00

SAMPLE DATE: 2-AUG-2007 08:15:00.00
CALIB DATE: 11-SEP-2007 04:51:23.33
ELAPSED LIVE TIME: 0 10:00:00
ELAPSED REAL TIME: 0 10:00:15

SAMPLE QUANTITY: 3.2870E+02
SAMPLE GEOMETRY: S200

UNITS: GRAMS
SAMPLE TYPE:

ENERGY OFFSET: 1.0993E-01 keV
ENERGY SLOPE: 2.4930E-01 keV/C
ENERGY Q COEFF: 1.3475E-08 keV/C^^2
PEAK SENSITIVITY: 5.000

FWHM OFFSET: 2.3450E-01 keV
FWHM SLOPE: 6.4137E-02 sqr keV
ITERATIONS: 10
GAUSSIAN SENSITIVITY: 40.00 %

ABUNDANCE LIMIT: 80.00 %
ENERGY TOLERANCE: 1.500 keV
VARIABLE PEAK WIDTH: 3.00

HALF-LIFE RATIO: 8.00
ACTIVITY MULTIPLIER: 1.0000E+06
LIBRARY: [NUC_LIBR]QRL.NLB

VMS Peak Search Report V1.9 Generated 11-SEP-2007 21:36:58

Configuration : $DISK1:[GER6.SAMPLE]J472P1AA_110970607.CNF;1
Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6
Sample title : BRC SOIL
Sample date : 2-AUG-2007 08:15:00 Acquisition date : 11-SEP-2007 06:07:36
Sample ID : J472P1AA Sample quantity : 328.70 GRAMS
Sample type : Sample geometry : S200
Elapsed live time: 0 10:00:00.00 Elapsed real time: 0 10:00:15.68 0.0%
Start energy : 20.05 End energy : 2043.26
Sensitivity : 5.00 Gaussian : 40.00
Critical level : No

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	46.39	361	1907	1.03	185.65	181	11	1.00E-02	24.0	
2	0	63.25	735	3095	1.03	253.25	247	12	2.04E-02	15.6	
3	4	72.89*	617	3859	1.14	291.94	286	29	1.71E-02	21.1	1.23E+00
4	4	74.83*	3618	3588	1.02	299.70	286	29	1.01E-01	3.9	
5	4	77.04	4994	3211	0.98	308.58	286	29	1.39E-01	2.8	
6	0	84.34*	1115	3113	1.63	337.88	331	13	3.10E-02	11.2	
7	4	87.16*	2034	2326	1.20	349.16	344	39	5.65E-02	5.0	5.18E+00
8	4	89.79	1209	3320	1.23	359.72	344	39	3.36E-02	10.8	
9	4	92.60*	1499	2724	1.05	371.01	344	39	4.17E-02	8.3	
10	0	129.03	394	1876	0.80	517.12	512	11	1.09E-02	21.9	
11	0	185.99*	1951	2034	1.26	745.58	738	14	5.42E-02	5.6	
12	0	209.34	686	1601	1.23	839.22	832	14	1.91E-02	12.9	
13	2	238.66*	5970	1827	1.14	956.84	947	35	1.66E-01	2.0	2.47E+00
14	2	241.84	2361	1804	1.49	969.58	947	35	6.56E-02	5.0	
15	0	270.09	874	1512	1.52	1082.92	1073	20	2.43E-02	11.4	
16	0	277.08	228	1235	0.70	1110.93	1104	15	6.32E-03	34.3	
17	0	295.22	4064	1406	1.13	1183.69	1175	17	1.13E-01	2.6	
18	0	300.04	391	1041	1.30	1203.02	1196	15	1.08E-02	18.7	
19	0	327.82	340	796	1.33	1314.42	1309	13	9.43E-03	17.9	
20	0	338.33	1119	1012	1.26	1356.58	1350	15	3.11E-02	6.9	
21	0	351.92*	6804	1219	1.34	1411.11	1401	20	1.89E-01	1.8	
22	0	409.96	202	804	0.89	1643.87	1634	17	5.61E-03	28.4	
23	0	462.84	549	780	1.17	1855.96	1844	24	1.52E-02	12.2	
24	0	510.61*	1003	1088	1.91	2047.53	2033	31	2.79E-02	9.3	
25	0	583.11	1903	782	1.70	2338.26	2327	26	5.29E-02	4.1	
26	0	609.23*	4954	736	1.72	2443.00	2430	25	1.38E-01	1.9	
27	0	665.42	152	378	1.07	2668.34	2660	16	4.22E-03	25.9	
28	0	727.00	473	579	1.70	2915.30	2900	28	1.31E-02	12.9	
29	0	768.05	404	508	1.52	3079.91	3068	22	1.12E-02	11.9	
30	0	860.58	203	410	1.67	3450.91	3441	22	5.63E-03	20.7	
31	0	911.05*	1175	523	2.30	3653.29	3639	27	3.26E-02	5.2	
32	0	934.09	225	329	2.01	3745.67	3733	21	6.24E-03	16.7	
33	0	968.93	595	542	2.11	3885.38	3876	29	1.65E-02	9.6	
34	0	1120.11	1068	522	2.64	4491.53	4473	30	2.97E-02	5.6	
35	0	1237.71	407	522	2.19	4963.03	4949	30	1.13E-02	13.2	
36	0	1377.58	323	176	1.87	5523.76	5504	35	8.96E-03	10.3	
37	0	1460.67*	5938	298	3.14	5856.85	5834	50	1.65E-01	1.5	
38	0	1764.37	840	65	3.55	7074.20	7050	40	2.33E-02	4.1	

Flag: "*" = Peak area was modified by background subtraction

VMS Nuclide Identification Report V3.0 Generated 11-SEP-2007 21:36:58

Configuration : $DISK1:[GER6.SAMPLE]J472P1AA_110970607.CNF;1
Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.3
Sample title : BRC SOIL
Sample date : 2-AUG-2007 08:15:00
Sample ID : J472P1AA
Sample type :
Elapsed live time: 0 10:00:00.00
Energy tolerance : 1.50
Errors propagated: Yes
Efficiency type : Empirical
Abundance limit : 80.00

Acquisition date : 11-SEP-2007 06:07:36
Sample quantity : 328.70 GRAMS
Sample geometry : S200
Elapsed real time: 0 10:00:15.68 0.0%
Half life ratio : 8.00
Systematic Error : 5.00 %
Efficiencies at : Peak Energy

Nuclide Line Activity Report

Nuclide Type: NP

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected PCI/GRAM	Decay Corr PCI/GRAM	1-Sigma %Error
K-40	1460.81	5938	10.67*	5.924E-01	2.146E+01	2.146E+01	8.43
TL-208	277.35	228	6.80	2.287E+00	3.343E-01	3.343E-01	34.84
	510.84	1003	21.60	1.380E+00	7.688E-01	7.688E-01	10.99
	583.14	1903	84.20*	1.240E+00	4.163E-01	4.163E-01	7.25
	860.37	203	12.46	9.139E-01	4.066E-01	4.066E-01	21.78
PB-212	238.63	5970	44.60*	2.572E+00	1.189E+00	1.189E+00	6.54
	300.09	391	3.41	2.143E+00	1.220E+00	1.220E+00	19.70
BI-214	609.31	4954	46.30*	1.197E+00	2.041E+00	2.041E+00	6.29
	768.36	404	5.04	9.985E-01	1.832E+00	1.832E+00	13.53
	1120.29	1068	15.10	7.420E-01	2.178E+00	2.178E+00	8.63
	1764.49	840	15.80	4.956E-01	2.449E+00	2.449E+00	7.66
PB-214	241.98	2361	7.49	2.546E+00	2.828E+00	2.828E+00	8.01
	295.21	4064	19.20	2.172E+00	2.226E+00	2.226E+00	6.71
	351.92	6804	37.20*	1.878E+00	2.225E+00	2.225E+00	6.32
	785.91	------	1.10	9.808E-01	------	Line Not Found	------
RA-224DA	238.63	5970	44.60*	2.572E+00	1.189E+00	1.237E+00	6.54
	240.98	2361	3.95	2.546E+00	5.363E+00	5.581E+00	8.01
	583.14	1903	30.25	1.240E+00	1.159E+00	1.206E+00	7.25
	860.37	203	4.48	9.139E-01	1.131E+00	1.177E+00	21.78
RA-226DA	186.21	1951	3.50	3.057E+00	4.165E+00	4.165E+00	8.35
	241.98	2361	7.49	2.546E+00	2.828E+00	2.828E+00	8.01
	295.22	4064	19.20	2.172E+00	2.226E+00	2.226E+00	6.71
	351.92	6804	37.20	1.878E+00	2.225E+00	2.225E+00	6.32
	609.32	4954	46.30*	1.197E+00	2.041E+00	2.041E+00	6.29
	1120.28	1068	15.10	7.420E-01	2.178E+00	2.178E+00	8.63
	1238.11	407	5.94	6.836E-01	2.290E+00	2.290E+00	15.07
	1764.49	840	15.80	4.956E-01	2.449E+00	2.449E+00	7.66
AC-228	209.28	686	4.40	2.830E+00	1.259E+00	1.259E+00	14.36
	270.23	874	3.60	2.335E+00	2.377E+00	2.377E+00	12.98
	338.32	1119	11.40	1.940E+00	1.155E+00	1.155E+00	9.19
	911.07	1175	27.70*	8.741E-01	1.109E+00	1.109E+00	8.73
	969.11	595	16.60	8.329E-01	9.824E-01	9.824E-01	11.86
RA-228DA	209.28	686	4.40	2.830E+00	1.259E+00	1.276E+00	14.36
	338.32	1119	11.40	1.940E+00	1.155E+00	1.171E+00	9.19
	911.07	1175	27.70*	8.741E-01	1.109E+00	1.123E+00	8.73
	964.60	------	5.20	8.359E-01	------	Line Not Found	------

Sample ID : J472P1AA Acquisition date : 11-SEP-2007 06:07:36

Nuclide Type: NP

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected PCI/GRAM	Decay Corr PCI/GRAM	1-Sigma %Error
	969.11	595	16.60	8.329E-01	9.824E-01	9.955E-01	11.86
TH-228DA	238.63	5970	44.60	2.572E+00	1.189E+00	1.237E+00	6.54
	240.98	2361	3.95	2.546E+00	5.363E+00	5.581E+00	8.01
	583.14	1903	30.25*	1.240E+00	1.159E+00	1.206E+00	7.25
	860.37	203	4.48	9.139E-01	1.131E+00	1.177E+00	21.78
TH-232DA	238.63	5970	44.60	2.572E+00	1.189E+00	1.189E+00	6.54
	338.32	1119	12.40*	1.940E+00	1.062E+00	1.062E+00	9.19
	583.14	1903	30.25	1.240E+00	1.159E+00	1.159E+00	7.25
	911.07	1175	27.70	8.741E-01	1.109E+00	1.109E+00	8.73
	964.60	------	5.20	8.359E-01	------ Line Not Found		------
	969.11	595	16.60	8.329E-01	9.824E-01	9.824E-01	11.86
U-234DA	241.98	2361	7.49	2.546E+00	2.828E+00	2.828E+00	8.01
	295.22	4064	19.20*	2.172E+00	2.226E+00	2.226E+00	6.71
	351.92	6804	37.20	1.878E+00	2.225E+00	2.225E+00	6.32
	609.31	4954	46.30	1.197E+00	2.041E+00	2.041E+00	6.29
U-238DA	241.98	2361	7.49	2.546E+00	2.828E+00	2.828E+00	8.01
	295.22	4064	19.20	2.172E+00	2.226E+00	2.226E+00	6.71
	351.92	6804	37.20*	1.878E+00	2.225E+00	2.225E+00	6.32
	609.31	4954	46.30	1.197E+00	2.041E+00	2.041E+00	6.29
U-238DHP	63.28	735	3.80*	2.148E+00	2.057E+00	2.057E+00	16.75
	92.59	1499	5.41	3.364E+00	1.882E+00	1.882E+00	10.60

Flag: "*" = Keyline

Unidentified Energy Lines
Sample ID : J472P1AA Acquisition date : 11-SEP-2007 06:07:36

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
0	46.39	361	1907	1.03	185.65	181	11	1.00E-02	24.0	9.44E-01	
4	72.89	617	3859	1.14	291.94	286	29	1.71E-02	21.1	2.70E+00	
4	74.83	3618	3588	1.02	299.70	286	29	1.01E-01	3.9	2.79E+00	
4	77.04	4994	3211	0.98	308.58	286	29	1.39E-01	2.8	2.89E+00	
0	84.34	1115	3113	1.63	337.88	331	13	3.10E-02	11.2	3.15E+00	
4	87.16	2034	2326	1.20	349.16	344	39	5.65E-02	5.0	3.24E+00	T
4	89.79	1209	3320	1.23	359.72	344	39	3.36E-02	10.8	3.30E+00	
0	129.03	394	1876	0.80	517.12	512	11	1.09E-02	21.9	3.56E+00	
0	327.82	340	796	1.33	1314.42	1309	13	9.43E-03	17.9	1.99E+00	T
0	409.96	202	804	0.89	1643.87	1634	17	5.61E-03	28.4	1.65E+00	
0	462.84	549	780	1.17	1855.96	1844	24	1.52E-02	12.2	1.50E+00	T
0	665.42	152	378	1.07	2668.34	2660	16	4.22E-03	25.9	1.12E+00	T
0	727.00	473	579	1.70	2915.30	2900	28	1.31E-02	12.9	1.04E+00	T
0	934.09	225	329	2.01	3745.67	3733	21	6.24E-03	16.7	8.57E-01	
0	1377.58	323	176	1.87	5523.76	5504	35	8.96E-03	10.3	6.24E-01	

Flags: "T" = Tentatively associated

Nuclide	Half-life	Half-Life Ratio	Energy	%Abund	Activity (PCI/GRAM)	1-Sigma %Error	Rejected by
NA-22	2.60Y	0.04	511.00	179.68	9.516E-02	10.99	Abun.
			1274.54*	99.94	--- Not Found ---		
		% Abundances Found =		64.26			
SC-46	83.85D	0.48	889.25	99.98	--- Not Found ---		Abun.
			1120.51*	99.99	4.582E-01	8.63	
		% Abundances Found =		50.00			
TC-95M	61.00D	0.66	204.12*	66.20	--- Not Found ---		Abun.
			582.07	29.30	1.887E+00	7.25	
			835.13	26.10	--- Not Found ---		
		% Abundances Found =		24.10			
RU-103	39.35D	1.02	497.08*	89.00	--- Not Found ---		Abun.
			610.33	5.60	3.420E+01	6.29	
		% Abundances Found =		5.92			
RU-106DA	368.20D	0.11	511.85	20.60	8.693E-01	10.99	Abun.
			621.84*	9.80	--- Not Found ---		
		% Abundances Found =		67.76			
SB-125	2.77Y	0.04	176.33	6.89	--- Not Found ---		Abun.
			427.89*	29.33	--- Not Found ---		
			463.38	10.35	8.327E-01	13.54	
			600.56	17.80	--- Not Found ---		
			635.90	11.32	--- Not Found ---		
		% Abundances Found =		13.67			
SN-126DA	1.00E+05Y	0.00	414.70	97.66	--- Not Found ---		Abun.
			666.33*	99.95	3.105E-02	26.55	
			695.00	99.95	--- Not Found ---		
		% Abundances Found =		33.59			
BA-133	10.50Y	0.01	81.00	33.00	--- Not Found ---		Abun.
			276.40	6.90	3.319E-01	34.84	
			302.84	17.80	--- Not Found ---		
			356.00*	62.05	--- Not Found ---		
			383.85	8.70	--- Not Found ---		
		% Abundances Found =		5.37			
LA-140	40.22H	23.94	328.77	20.50	3.054E+06	18.92	Decay,Abun.
			487.03	45.50	--- Not Found ---		
			815.85	23.50	--- Not Found ---		
			1596.49*	95.49	--- Not Found ---		
		% Abundances Found =		11.08			
EU-155	4.96Y	0.02	42.90	21.16	--- Not Found ---		Abun.
			86.54	30.90	4.718E-01	8.42	
			105.31*	20.70	--- Not Found ---		
		% Abundances Found =		42.47			
BI-212	1.41E+10Y	0.00	288.07	0.31	--- Not Found ---		Abun.

Sample ID : J472P1AA Acquisition date : 11-SEP-2007 06:07:36

Nuclide	Half-life	Half-Life Ratio	Energy	%Abund	Activity (PCI/GRAM)	1-Sigma %Error	Rejected by
BI-212	1.41E+10Y	0.00	327.96	0.14	2.802E+01	20.51	Abun.
			452.83	0.31	--- Not Found ---		
			727.33*	6.58	1.576E+00	14.56	
			785.37	1.10	--- Not Found ---		
			893.41	0.38	--- Not Found ---		
			952.12	0.17	--- Not Found ---		
			1078.62	0.56	--- Not Found ---		
			1512.70	0.29	--- Not Found ---		
			1620.50	1.49	--- Not Found ---		
			1806.00	0.09	--- Not Found ---		
		% Abundances Found =		58.84			
RA-223	21.77Y	0.01	154.21	5.58	--- Not Found ---		Abun.
			269.46*	13.60	6.313E-01	12.98	
			323.87	3.88	--- Not Found ---		
		% Abundances Found =		58.98			
U-235HP	7.04E+08Y	0.00	143.76*	10.50	--- Not Found ---		Abun.
			185.71	54.00	2.699E-01	8.35	
			205.31	4.70	--- Not Found ---		
		% Abundances Found =		78.03			

Flag: "*" = Keyline

VMS Nuclide Identification Report V3.0 Generated 11-SEP-2007 21:37:00

Configuration : $DISK1:[GER6.SAMPLE]J472P1AA_110970607.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 : BRC SOIL
Sample date : 2-AUG-2007 08:15:00
Sample ID : J472P1AA
Sample type :
Elapsed live time: 0 10:00:00.00
Peak Width (FWHM): 3.00
Energy tolerance : 1.50
Errors propagated: Yes
Efficiency type : Empirical
Abundance limit : 80.00

Acquisition date : 11-SEP-2007 06:07:36
Sample quantity : 328.70 GRAMS
Sample geometry : S200
Elapsed real time: 0 10:00:15.68 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 (PCI/GRAM)	Act error	MDA (PCI/GRAM)	MDA error	Act/MDA
K-40	2.146E+01	1.808E+00	2.444E-01	1.614E-02	87.800
TL-208	4.163E-01	3.018E-02	2.693E-02	8.766E-04	15.460
PB-212	1.189E+00	7.779E-02	3.779E-02	1.403E-03	31.461
BI-214	2.041E+00	1.283E-01	5.015E-02	1.646E-03	40.689
PB-214	2.225E+00	1.407E-01	5.028E-02	1.727E-03	44.249
RA-224DA	1.237E+00	8.095E-02	3.932E-02	1.460E-03	31.461
RA-226DA	2.041E+00	1.284E-01	5.015E-02	1.646E-03	40.688
AC-228	1.109E+00	9.673E-02	9.803E-02	4.861E-03	11.309
RA-228DA	1.123E+00	9.802E-02	9.934E-02	4.926E-03	11.309
TH-228DA	1.206E+00	8.742E-02	7.799E-02	2.539E-03	15.460
TH-232DA	1.062E+00	9.763E-02	1.463E-01	5.072E-03	7.259
U-234DA	2.226E+00	1.493E-01	9.154E-02	3.306E-03	24.314
U-238DA	2.225E+00	1.407E-01	5.028E-02	1.727E-03	44.249
U-238DHP	2.057E+00	3.446E-01	6.299E-01	2.252E-02	3.266

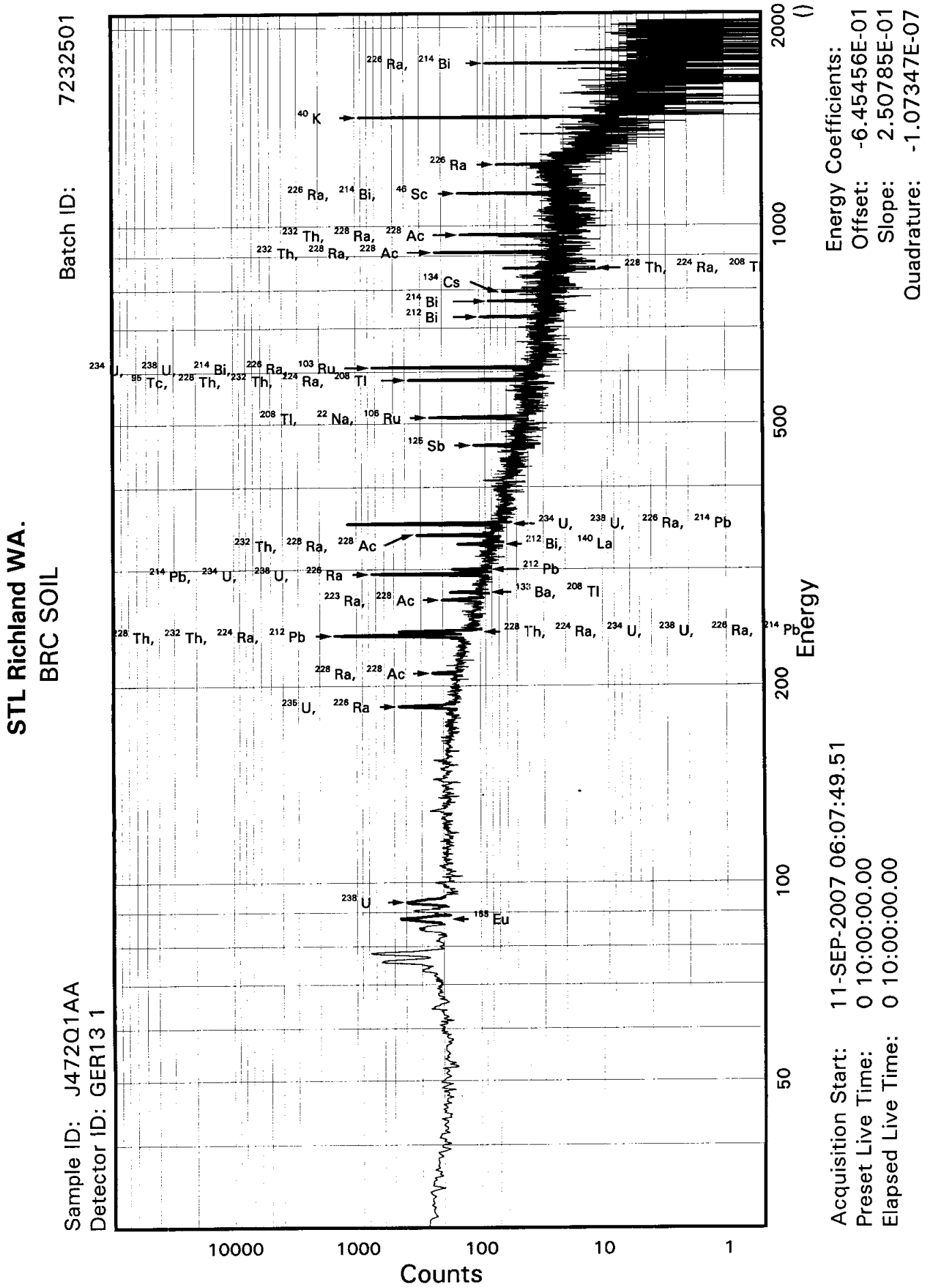
---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (PCI/GRAM)	K.L. Ided	Act error	MDA (PCI/GRAM)	MDA error	Act/MDA
BE-7	-1.513E-01		9.642E-02	3.172E-01	1.026E-02	-0.477
NA-22	-4.971E-02		1.124E-02	3.262E-02	1.977E-03	-1.524
SC-46	4.582E-01	+	3.954E-02	8.034E-02	3.447E-03	5.703
CR-51	-1.553E-01		1.509E-01	4.933E-01	1.723E-02	-0.315
MN-54	-1.120E-02		8.790E-03	2.921E-02	1.318E-03	-0.383
CO-57	-1.821E-02		4.312E-02	1.436E-01	5.379E-03	-0.127
CO-58	-6.548E-02		1.234E-02	3.506E-02	1.520E-03	-1.868
FE-59	-4.093E-02		3.043E-02	9.974E-02	4.369E-03	-0.410
CO-60	-4.722E-03		8.569E-03	2.855E-02	2.089E-03	-0.165
ZN-65	1.485E-01		2.836E-02	8.366E-02	3.608E-03	1.775
SE-75	6.552E-03		1.146E-02	3.517E-02	1.299E-03	0.186
SR-85	7.204E-02		1.302E-02	3.824E-02	1.204E-03	1.884
Y-88	-1.075E-03		8.534E-03	2.964E-02	1.004E-03	-0.036
NB-94	1.919E-02		7.623E-03	2.649E-02	1.266E-03	0.725

Sample ID : J472P1AA Acquisition date : 11-SEP-2007 06:07:36

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (PCI/GRAM)	K.L. Ided	Act error	MDA (PCI/GRAM)	MDA error	Act/MDA
NB-95	1.730E-01		2.423E-02	7.019E-02	2.819E-03	2.464
TC-95M	1.394E-02		1.169E-02	3.862E-02	1.420E-03	0.361
ZR-95	2.526E-02		2.100E-02	7.175E-02	2.836E-03	0.352
ZRNB-95	2.449E-01		3.391E-02	9.811E-02	3.940E-03	2.496
RH-101	3.849E-03		6.726E-03	2.262E-02	8.291E-04	0.170
RH-102M	2.458E-03		6.301E-03	2.137E-02	6.921E-04	0.115
RU-103	5.332E-03		1.333E-02	4.505E-02	1.438E-03	0.118
RU-106DA	4.657E-02		7.312E-02	2.481E-01	8.165E-03	0.188
AG-108M	-4.596E-03		6.533E-03	2.144E-02	7.048E-04	-0.214
AG-110M	8.568E-03		1.172E-02	4.010E-02	1.958E-03	0.214
SN-113DA	-7.618E-03		1.144E-02	3.795E-02	1.246E-03	-0.201
SB-124	-6.554E-03		1.328E-02	3.723E-02	1.220E-03	-0.176
SB-125	2.598E-02		2.061E-02	6.926E-02	2.279E-03	0.375
SN-126DA	3.105E-02	+	8.242E-03	2.586E-02	8.641E-04	1.201
I-131	-1.272E-01		2.074E-01	6.940E-01	2.357E-02	-0.183
BA-133	5.065E-03		9.966E-03	2.878E-02	9.851E-04	0.176
CS-134	4.670E-02		1.017E-02	3.468E-02	1.466E-03	1.347
CS-137DA	2.480E-03		9.770E-03	2.753E-02	9.115E-04	0.090
LA-138	-7.028E-03		1.197E-02	4.027E-02	2.721E-03	-0.175
CE-139	-1.331E-02		6.932E-03	2.221E-02	7.998E-04	-0.599
BA-140	-1.518E-02		2.213E-01	7.370E-01	2.352E-02	-0.021
BALA-140	-1.981E-01		1.563E-01	5.174E-01	2.920E-02	-0.383
CE-141	-1.511E-02		2.142E-02	7.065E-02	2.598E-03	-0.214
CE-144	2.012E-02		4.188E-02	1.407E-01	5.308E-03	0.143
CEPR-144	4.099E-02		8.377E-02	2.814E-01	1.062E-02	0.146
PM-144	8.218E-03		7.254E-03	2.475E-02	8.140E-04	0.332
PM-146	2.205E-02		9.109E-03	3.145E-02	1.028E-03	0.701
EU-152	-5.969E-03		2.129E-02	6.978E-02	2.410E-03	-0.086
EU-154	-1.279E-01		3.058E-02	8.987E-02	5.444E-03	-1.424
EU-155	8.983E-02		2.154E-02	7.017E-02	2.859E-03	1.280
HF-181	-7.499E-03		1.395E-02	4.666E-02	1.505E-03	-0.161
BI-207	5.951E-04		6.631E-03	2.252E-02	7.295E-04	0.026
BI-210M	5.425E-03		1.155E-02	3.333E-02	1.230E-03	0.163
BI-212	1.576E+00	+	2.294E-01	4.908E-01	2.154E-02	3.211
RA-223	6.313E-01	+	8.195E-02	1.509E-01	5.561E-03	4.184
AC-227DA	2.785E-01		5.960E-02	1.690E-01	6.271E-03	1.648
TH-234DA	3.750E+00		1.318E+00	4.592E+00	2.172E-01	0.817
U-235HP	1.146E-01		4.250E-02	1.421E-01	5.241E-03	0.807
NP-237DA	-1.829E-02		1.461E-02	4.773E-02	1.688E-03	-0.383
AM-241HP	-7.409E-03		2.325E-02	7.270E-02	2.524E-03	-0.102


STL Richland WA.
BRC SOIL
Batch ID: 7232501
Sample ID: J472Q1AA
Detector ID: GER13 1
Energy Coefficients:
Offset: -6.45456E-01
Slope: 2.50785E-01
Quadrature: -1.07347E-07
Acquisition Start: 11-SEP-2007 06:07:49.51
Preset Live Time: 0 10:00:00.00
Elapsed Live Time: 0 10:00:00.00
Counts
Energy
10000
1000
100
10
1
50
100
200
500
1000
2000
40 K
226 Ra, 214 Bi
226 Ra
226 Ra, 214 Bi, 46 Sc
232 Th, 228 Ra, 228 Ac
134 Cs
214 Bi
212 Bi
103 Ru
208 Tl
22 Na, 106 Ru
125 Sb
234 U, 238 U, 226 Ra, 214 Pb
212 Bi, 140 La
212 Pb
133 Ba, 208 Tl
223 Ra, 228 Ac
228 Th, 224 Ra, 212 Pb
228 Th, 224 Ra, 234 U, 238 U, 226 Ra, 214 Pb
228 Ra, 228 Ac
235 U, 226 Ra
238 U
155 Eu

SAMPLE IDENTIFICATION: J472Q1AA

CONFIGURATION ID: GER13:J472Q1AA_110970607
TITLE : BRC SOIL
SAMPLE ID : J472Q1AA

REPORT DATE: 11-SEP-07
ACQUIRE DATE: 11-SEP-07 06:07:49
ELAPSED LIVE TIME: 36000.0 Sec
PRESET LIVE TIME: 0 10:00:00

SAMPLE DATE: 2-AUG-2007 08:15:00.00
CALIB DATE: 11-SEP-2007 04:52:35.24
ELAPSED LIVE TIME: 0 10:00:00
ELAPSED REAL TIME: 0 10:00:18

SAMPLE QUANTITY: 3.4370E+02
SAMPLE GEOMETRY: S200

UNITS: GRAMS
SAMPLE TYPE:

ENERGY OFFSET: -.6455E+00 keV
ENERGY SLOPE: 2.5079E-01 keV/C
ENERGY Q COEFF: -.1073E-06 keV/C^^2
PEAK SENSITIVITY: 5.000

FWHM OFFSET: 4.7499E-01 keV
FWHM SLOPE: 4.0031E-02 sqr keV
ITERATIONS: 10
GAUSSIAN SENSITIVITY: 60.00 %

ABUNDANCE LIMIT: 80.00 %
ENERGY TOLERANCE: 1.500 keV
VARIABLE PEAK WIDTH: 3.00

HALF-LIFE RATIO: 8.00
ACTIVITY MULTIPLIER: 1.0000E+06
LIBRARY: [NUC_LIBR]QRL.NLB

VMS Peak Search Report V1.9 Generated 11-SEP-2007 21:38:25

Configuration : $DISK1:[GER13.SAMPLE]J472Q1AA_110970607.CNF;1
Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6
Sample title : BRC SOIL
Sample date : 2-AUG-2007 08:15:00 Acquisition date : 11-SEP-2007 06:07:49
Sample ID : J472Q1AA Sample quantity : 343.70 GRAMS
Sample type : Sample geometry : S200
Elapsed live time: 0 10:00:00.00 Elapsed real time: 0 10:00:18.34 0.1%
Start energy : 19.42 End energy : 2046.58
Sensitivity : 5.00 Gaussian : 60.00
Critical level : No

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	2	75.81*	1493	2691	1.00	304.92	292	29	4.15E-02	7.8	3.39E+00
2	2	78.01	2201	2377	0.92	313.69	292	29	6.11E-02	4.9	
3	0	85.01*	419	2757	1.66	341.61	334	14	1.16E-02	29.0	
4	0	87.92*	1020	2135	0.88	353.19	348	11	2.83E-02	9.7	
5	0	90.51	690	1919	0.90	363.55	359	10	1.92E-02	12.5	
6	0	93.42	1161	2499	1.36	375.15	370	13	3.22E-02	9.3	
7	0	129.15	284	2056	0.74	517.68	513	11	7.89E-03	31.4	
8	0	185.88	1593	2497	1.34	744.00	737	15	4.42E-02	7.3	
9	0	209.05	541	2176	1.16	836.45	829	15	1.50E-02	19.3	
10	4	238.47*	6050	1655	1.12	953.87	944	31	1.68E-01	2.0	3.36E+00
11	4	241.58	2095	1883	1.61	966.25	944	31	5.82E-02	5.4	
12	0	269.88	587	1872	1.26	1079.22	1071	18	1.63E-02	17.7	
13	0	277.30	265	1091	0.81	1108.83	1104	11	7.35E-03	25.0	
14	0	295.05*	3204	1643	1.17	1179.66	1171	19	8.90E-02	3.7	
15	0	300.07	380	1220	1.05	1199.70	1193	14	1.06E-02	20.2	
16	0	327.79	549	1259	1.16	1310.35	1302	18	1.53E-02	15.7	
17	0	338.00	1187	1584	1.13	1351.11	1344	19	3.30E-02	8.5	
18	0	351.67*	5563	1346	1.22	1405.71	1395	20	1.55E-01	2.2	
19	0	463.06	449	823	1.62	1850.47	1841	19	1.25E-02	16.1	
20	0	510.61*	787	1182	1.84	2040.41	2028	25	2.19E-02	14.4	
21	0	583.10*	1786	882	1.37	2329.98	2321	21	4.96E-02	5.2	
22	0	609.20*	4095	848	1.41	2434.30	2421	25	1.14E-01	2.6	
23	0	727.11	477	666	1.49	2905.54	2891	24	1.33E-02	12.9	
24	0	767.99	368	512	1.12	3068.94	3059	19	1.02E-02	13.6	
25	0	795.14	190	435	1.16	3177.52	3170	18	5.29E-03	23.1	
26	0	860.51	279	387	1.71	3438.88	3429	20	7.75E-03	15.9	
27	0	911.24*	1327	647	1.60	3641.80	3626	29	3.69E-02	5.8	
28	0	934.42	207	443	1.53	3734.51	3724	20	5.74E-03	22.3	
29	0	968.52*	881	793	1.64	3870.93	3854	30	2.45E-02	8.9	
30	0	1120.41*	848	572	1.66	4478.75	4465	28	2.36E-02	8.0	
31	0	1238.36	398	619	2.27	4951.00	4939	27	1.11E-02	15.5	
32	0	1378.00	265	281	1.75	5510.33	5493	29	7.35E-03	16.5	
33	0	1460.65*	7564	684	2.15	5841.49	5824	33	2.10E-01	1.6	
34	0	1729.26	159	85	2.91	6918.43	6901	31	4.41E-03	15.1	
35	0	1764.03*	563	167	2.09	7057.92	7044	27	1.56E-02	7.4	

Flag: "*" = Peak area was modified by background subtraction

VMS Nuclide Identification Report V3.0 Generated 11-SEP-2007 21:38:25

Configuration : $DISK1:[GER13.SAMPLE]J472Q1AA_110970607.CNF;1
Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.3
Sample title : BRC SOIL
Sample date : 2-AUG-2007 08:15:00 Acquisition date : 11-SEP-2007 06:07:49
Sample ID : J472Q1AA Sample quantity : 343.70 GRAMS
Sample type : Sample geometry : S200
Elapsed live time: 0 10:00:00.00 Elapsed real time: 0 10:00:18.34 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: NP

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected PCI/GRAM	Decay Corr PCI/GRAM	1-Sigma %Error
K-40	1460.81	7564	10.67*	7.698E-01	2.011E+01	2.011E+01	6.63
TL-208	277.35	265	6.80	2.834E+00	2.998E-01	2.998E-01	25.76
	510.84	787	21.60	1.898E+00	4.193E-01	4.193E-01	15.52
	583.14	1786	84.20*	1.721E+00	2.692E-01	2.692E-01	7.90
	860.37	279	12.46	1.247E+00	3.921E-01	3.921E-01	17.44
PB-212	238.63	6050	44.60*	3.095E+00	9.574E-01	9.574E-01	6.69
	300.09	380	3.41	2.701E+00	9.012E-01	9.012E-01	21.17
BI-214	609.31	4095	46.30*	1.665E+00	1.161E+00	1.161E+00	6.53
	768.36	368	5.04	1.378E+00	1.158E+00	1.158E+00	15.11
	1120.29	848	15.10	9.769E-01	1.255E+00	1.255E+00	10.30
	1764.49	563	15.80	6.730E-01	1.157E+00	1.157E+00	9.54
PB-214	241.98	2095	7.49	3.072E+00	1.988E+00	1.988E+00	8.39
	295.21	3204	19.20	2.729E+00	1.336E+00	1.336E+00	7.35
	351.92	5563	37.20*	2.443E+00	1.337E+00	1.337E+00	6.56
	785.91	------	1.10	1.351E+00	------	Line Not Found	------
RA-224DA	238.63	6050	44.60*	3.095E+00	9.574E-01	9.964E-01	6.69
	240.98	2095	3.95	3.072E+00	3.771E+00	3.924E+00	8.39
	583.14	1786	30.25	1.721E+00	7.493E-01	7.798E-01	7.90
	860.37	279	4.48	1.247E+00	1.090E+00	1.135E+00	17.44
RA-226DA	186.21	1593	3.50	3.493E+00	2.846E+00	2.846E+00	9.65
	241.98	2095	7.49	3.072E+00	1.988E+00	1.989E+00	8.39
	295.22	3204	19.20	2.729E+00	1.336E+00	1.336E+00	7.35
	351.92	5563	37.20	2.443E+00	1.337E+00	1.337E+00	6.56
	609.32	4095	46.30*	1.665E+00	1.161E+00	1.161E+00	6.53
	1120.28	848	15.10	9.769E-01	1.255E+00	1.256E+00	10.30
	1238.11	398	5.94	8.900E-01	1.645E+00	1.645E+00	16.73
	1764.49	563	15.80	6.730E-01	1.157E+00	1.157E+00	9.54
AC-228	209.28	541	4.40	3.316E+00	8.096E-01	8.096E-01	20.30
	270.23	587	3.60	2.881E+00	1.237E+00	1.237E+00	18.86
	338.32	1187	11.40	2.506E+00	9.074E-01	9.074E-01	10.56
	911.07	1327	27.70*	1.184E+00	8.837E-01	8.837E-01	9.52
	969.11	881	16.60	1.119E+00	1.036E+00	1.036E+00	11.51
RA-228DA	209.28	541	4.40	3.316E+00	8.096E-01	8.204E-01	20.30
	338.32	1187	11.40	2.506E+00	9.074E-01	9.195E-01	10.56
	911.07	1327	27.70*	1.184E+00	8.837E-01	8.955E-01	9.52
	964.60	------	5.20	1.124E+00	------	Line Not Found	------

Sample ID : J472Q1AA Acquisition date : 11-SEP-2007 06:07:49

Nuclide Type: NP

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected PCI/GRAM	Decay Corr PCI/GRAM	1-Sigma %Error
	969.11	881	16.60	1.119E+00	1.036E+00	1.050E+00	11.51
TH-228DA	238.63	6050	44.60	3.095E+00	9.574E-01	9.964E-01	6.69
	240.98	2095	3.95	3.072E+00	3.771E+00	3.924E+00	8.39
	583.14	1786	30.25*	1.721E+00	7.493E-01	7.798E-01	7.90
	860.37	279	4.48	1.247E+00	1.090E+00	1.135E+00	17.44
TH-232DA	238.63	6050	44.60	3.095E+00	9.574E-01	9.574E-01	6.69
	338.32	1187	12.40*	2.506E+00	8.342E-01	8.342E-01	10.56
	583.14	1786	30.25	1.721E+00	7.493E-01	7.493E-01	7.90
	911.07	1327	27.70	1.184E+00	8.837E-01	8.837E-01	9.52
	964.60	------	5.20	1.124E+00	------ Line Not Found		------
	969.11	881	16.60	1.119E+00	1.036E+00	1.036E+00	11.51
U-234DA	241.98	2095	7.49	3.072E+00	1.988E+00	1.988E+00	8.39
	295.22	3204	19.20*	2.729E+00	1.336E+00	1.336E+00	7.35
	351.92	5563	37.20	2.443E+00	1.337E+00	1.337E+00	6.56
	609.31	4095	46.30	1.665E+00	1.161E+00	1.161E+00	6.53
U-238DA	241.98	2095	7.49	3.072E+00	1.988E+00	1.988E+00	8.39
	295.22	3204	19.20	2.729E+00	1.336E+00	1.336E+00	7.35
	351.92	5563	37.20*	2.443E+00	1.337E+00	1.337E+00	6.56
	609.31	4095	46.30	1.665E+00	1.161E+00	1.161E+00	6.53

Flag: "*" = Keyline

Sample ID : J472Q1AA Acquisition date : 11-SEP-2007 06:07:49

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
2	75.81	1493	2691	1.00	304.92	292	29	4.15E-02	7.8	1.75E+00	
2	78.01	2201	2377	0.92	313.69	292	29	6.11E-02	4.9	1.90E+00	
0	85.01	419	2757	1.66	341.61	334	14	1.16E-02	29.0	2.34E+00	
0	87.92	1020	2135	0.88	353.19	348	11	2.83E-02	9.7	2.50E+00	T
0	90.51	690	1919	0.90	363.55	359	10	1.92E-02	12.5	2.64E+00	
0	93.42	1161	2499	1.36	375.15	370	13	3.22E-02	9.3	2.78E+00	T
0	129.15	284	2056	0.74	517.68	513	11	7.89E-03	31.4	3.65E+00	
0	327.79	549	1259	1.16	1310.35	1302	18	1.53E-02	15.7	2.56E+00	T
0	463.06	449	823	1.62	1850.47	1841	19	1.25E-02	16.1	2.03E+00	T
0	727.11	477	666	1.49	2905.54	2891	24	1.33E-02	12.9	1.44E+00	T
0	795.14	190	435	1.16	3177.52	3170	18	5.29E-03	23.1	1.34E+00	T
0	934.42	207	443	1.53	3734.51	3724	20	5.74E-03	22.3	1.16E+00	
0	1378.00	265	281	1.75	5510.33	5493	29	7.35E-03	16.5	8.09E-01	
0	1729.26	159	85	2.91	6918.43	6901	31	4.41E-03	15.1	6.81E-01	

Flags: "T" = Tentatively associated

Sample ID : J472Q1AA Acquisition date : 11-SEP-2007 06:07:49

Nuclide	Half-life	Half-Life Ratio	Energy	%Abund	Activity (PCI/GRAM)	1-Sigma %Error	Rejected by
NA-22	2.60Y	0.04	511.00	179.68	5.190E-02	15.52	Abun.
			1274.54*	99.94	--- Not Found ---		
		% Abundances Found =		64.26			
SC-46	83.85D	0.48	889.25	99.98	--- Not Found ---		Abun.
			1120.51*	99.99	2.642E-01	10.30	
		% Abundances Found =		50.00			
TC-95M	61.00D	0.66	204.12*	66.20	--- Not Found ---		Abun.
			582.07	29.30	1.220E+00	7.90	
			835.13	26.10	--- Not Found ---		
		% Abundances Found =		24.10			
RU-103	39.35D	1.02	497.08*	89.00	--- Not Found ---		Abun.
			610.33	5.60	1.946E+01	6.53	
		% Abundances Found =		5.92			
RU-106DA	368.20D	0.11	511.85	20.60	4.741E-01	15.52	Abun.
			621.84*	9.80	--- Not Found ---		
		% Abundances Found =		67.76			
SB-125	2.77Y	0.04	176.33	6.89	--- Not Found ---		Abun.
			427.89*	29.33	--- Not Found ---		
			463.38	10.35	4.791E-01	17.11	
			600.56	17.80	--- Not Found ---		
			635.90	11.32	--- Not Found ---		
		% Abundances Found =		13.67			
BA-133	10.50Y	0.01	81.00	33.00	--- Not Found ---		Abun.
			276.40	6.90	2.976E-01	25.76	
			302.84	17.80	--- Not Found ---		
			356.00*	62.05	--- Not Found ---		
			383.85	8.70	--- Not Found ---		
		% Abundances Found =		5.37			
CS-134	2.06Y	0.05	569.31	15.43	--- Not Found ---		Abun.
			604.70	97.60	--- Not Found ---		
			795.84*	85.40	3.776E-02	24.07	
			801.93	8.73	--- Not Found ---		
		% Abundances Found =		41.22			
LA-140	40.22H	23.94	328.77	20.50	3.682E+06	16.96	Decay,Abun.
			487.03	45.50	--- Not Found ---		
			815.85	23.50	--- Not Found ---		
			1596.49*	95.49	--- Not Found ---		
		% Abundances Found =		11.08			
EU-155	4.96Y	0.02	42.90	21.16	--- Not Found ---		Abun.
			86.54	30.90	2.930E-01	11.94	
			105.31*	20.70	--- Not Found ---		
		% Abundances Found =		42.47			

Sample ID : J472Q1AA Acquisition date : 11-SEP-2007 06:07:49

Nuclide	Half-life	Half-Life Ratio	Energy	%Abund	Activity (PCI/GRAM)	1-Sigma %Error	Rejected by
BI-212	1.41E+10Y	0.00	288.07	0.31	--- Not Found ---		Abun.
			327.96	0.14	3.377E+01	18.72	
			452.83	0.31	--- Not Found ---		
			727.33*	6.58	1.098E+00	14.58	
			785.37	1.10	--- Not Found ---		
			893.41	0.38	--- Not Found ---		
			952.12	0.17	--- Not Found ---		
			1078.62	0.56	--- Not Found ---		
			1512.70	0.29	--- Not Found ---		
			1620.50	1.49	--- Not Found ---		
			1806.00	0.09	--- Not Found ---		
		% Abundances Found =		58.84			
RA-223	21.77Y	0.01	154.21	5.58	--- Not Found ---		Abun.
			269.46*	13.60	3.285E-01	18.86	
			323.87	3.88	--- Not Found ---		
		% Abundances Found =		58.98			
U-235HP	7.04E+08Y	0.00	143.76*	10.50	--- Not Found ---		Abun.
			185.71	54.00	1.844E-01	9.65	
			205.31	4.70	--- Not Found ---		
		% Abundances Found =		78.03			
U-238DHP	4.47E+09Y	0.00	63.28*	3.80	--- Not Found ---		Abun.
			92.59	5.41	1.687E+00	11.46	
		% Abundances Found =		58.74			

Flag: "*" = Keyline

VMS Nuclide Identification Report V3.0 Generated 11-SEP-2007 21:38:27

Configuration : $DISK1:[GER13.SAMPLE]J472Q1AA_110970607.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 : BRC SOIL
Sample date : 2-AUG-2007 08:15:00
Sample ID : J472Q1AA
Sample type :
Elapsed live time: 0 10:00:00.00
Peak Width (FWHM): 3.00
Energy tolerance : 1.50
Errors propagated: Yes
Efficiency type : Empirical
Abundance limit : 80.00

Acquisition date : 11-SEP-2007 06:07:49
Sample quantity : 343.70 GRAMS
Sample geometry : S200
Elapsed real time: 0 10:00:18.34 0.1%
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 (PCI/GRAM)	Act error	MDA (PCI/GRAM)	MDA error	Act/MDA
K-40	2.011E+01	1.333E+00	2.088E-01	8.465E-03	96.324
TL-208	2.692E-01	2.126E-02	1.840E-02	5.994E-04	14.629
PB-212	9.574E-01	6.405E-02	3.067E-02	1.214E-03	31.221
BI-214	1.161E+00	7.576E-02	3.408E-02	1.123E-03	34.058
PB-214	1.337E+00	8.772E-02	3.715E-02	1.346E-03	35.993
RA-224DA	9.964E-01	6.665E-02	3.191E-02	1.264E-03	31.221
RA-226DA	1.161E+00	7.577E-02	3.408E-02	1.123E-03	34.057
AC-228	8.837E-01	8.416E-02	7.155E-02	4.033E-03	12.351
RA-228DA	8.955E-01	8.528E-02	7.250E-02	4.087E-03	12.351
TH-228DA	7.798E-01	6.160E-02	5.330E-02	1.736E-03	14.629
TH-232DA	8.342E-01	8.813E-02	1.115E-01	4.178E-03	7.481
U-234DA	1.336E+00	9.813E-02	7.042E-02	2.777E-03	18.968
U-238DA	1.337E+00	8.772E-02	3.715E-02	1.346E-03	35.993

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (PCI/GRAM)	K.L. Ided	Act error	MDA (PCI/GRAM)	MDA error	Act/MDA
BE-7	-7.433E-02		6.890E-02	2.272E-01	7.233E-03	-0.327
NA-22	-4.340E-03		7.352E-03	2.439E-02	9.597E-04	-0.178
SC-46	2.642E-01	+	2.720E-02	5.461E-02	2.236E-03	4.837
CR-51	1.130E-01		1.147E-01	3.847E-01	1.498E-02	0.294
MN-54	1.189E-03		6.363E-03	2.161E-02	1.081E-03	0.055
CO-57	-3.152E-04		3.924E-02	1.327E-01	4.840E-03	-0.002
CO-58	-2.971E-02		7.992E-03	2.472E-02	1.174E-03	-1.202
FE-59	-2.009E-03		2.100E-02	7.124E-02	3.059E-03	-0.028
CO-60	-1.732E-02		6.326E-03	2.015E-02	8.371E-04	-0.860
ZN-65	2.694E-02		1.765E-02	5.194E-02	2.151E-03	0.519
SE-75	1.152E-02		8.633E-03	2.826E-02	1.121E-03	0.408
SR-85	5.062E-02		9.030E-03	2.656E-02	8.345E-04	1.906
Y-88	1.000E-02		5.556E-03	2.055E-02	6.631E-04	0.487
NB-94	-3.679E-03		5.327E-03	1.781E-02	9.613E-04	-0.207
NB-95	5.685E-02		1.492E-02	4.385E-02	1.886E-03	1.296

Sample ID : J472Q1AA Acquisition date : 11-SEP-2007 06:07:49

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (PCI/GRAM)	K.L. Ided	Act error	MDA (PCI/GRAM)	MDA error	Act/MDA
TC-95M	-3.204E-03		1.005E-02	3.228E-02	1.267E-03	-0.099
ZR-95	1.818E-02		1.418E-02	4.804E-02	2.024E-03	0.378
ZRNB-95	8.075E-02		2.084E-02	6.125E-02	2.634E-03	1.318
RH-101	-8.435E-03		6.267E-03	1.891E-02	7.407E-04	-0.446
RH-102M	-5.295E-05		4.524E-03	1.517E-02	4.832E-04	-0.003
RU-103	4.377E-03		9.548E-03	3.210E-02	1.016E-03	0.136
RU-106DA	2.702E-02		4.903E-02	1.672E-01	5.535E-03	0.162
AG-108M	-1.922E-03		4.542E-03	1.524E-02	4.887E-04	-0.126
AG-110M	-5.033E-03		8.158E-03	2.729E-02	1.514E-03	-0.184
SN-113DA	-4.638E-03		8.075E-03	2.723E-02	8.711E-04	-0.170
SB-124	1.069E-02		8.601E-03	2.660E-02	8.736E-04	0.402
SB-125	-3.482E-03		1.431E-02	4.818E-02	1.545E-03	-0.072
SN-126DA	8.290E-03		4.933E-03	1.690E-02	5.734E-04	0.491
I-131	-1.500E-01		1.600E-01	5.216E-01	1.826E-02	-0.288
BA-133	-3.972E-03		7.751E-03	2.158E-02	7.737E-04	-0.184
CS-134	3.776E-02	+	9.088E-03	2.429E-02	1.117E-03	1.555
CS-137DA	-6.616E-03		5.729E-03	1.892E-02	6.347E-04	-0.350
LA-138	3.371E-04		8.516E-03	2.921E-02	1.192E-03	0.012
CE-139	5.255E-03		6.013E-03	2.018E-02	7.890E-04	0.260
BA-140	-2.011E-01		1.557E-01	5.064E-01	1.612E-02	-0.397
BALA-140	-1.666E-01		1.051E-01	3.408E-01	1.310E-02	-0.489
CE-141	2.692E-02		1.906E-02	6.457E-02	2.412E-03	0.417
CE-144	-3.556E-02		3.855E-02	1.294E-01	4.695E-03	-0.275
CEPR-144	-7.283E-02		7.710E-02	2.588E-01	9.387E-03	-0.281
PM-144	7.247E-03		4.863E-03	1.675E-02	5.537E-04	0.433
PM-146	2.086E-02		6.707E-03	2.300E-02	7.360E-04	0.907
EU-152	-2.283E-02		1.634E-02	5.203E-02	1.922E-03	-0.439
EU-154	-1.145E-02		2.028E-02	6.731E-02	2.648E-03	-0.170
EU-155	4.095E-02		2.131E-02	7.052E-02	2.711E-03	0.581
HF-181	1.868E-03		1.010E-02	3.388E-02	1.077E-03	0.055
BI-207	1.205E-02		4.701E-03	1.633E-02	5.286E-04	0.738
BI-210M	-5.878E-03		9.278E-03	2.648E-02	1.050E-03	-0.222
BI-212	1.098E+00	+	1.600E-01	3.396E-01	1.545E-02	3.232
RA-223	3.285E-01	+	6.196E-02	1.171E-01	4.643E-03	2.806
AC-227DA	2.528E-01		4.706E-02	1.365E-01	5.402E-03	1.852
TH-234DA	1.928E+00		9.443E-01	3.230E+00	1.644E-01	0.597
U-235HP	9.104E-02		3.771E-02	1.278E-01	4.749E-03	0.713
NP-237DA	-2.146E-02		1.135E-02	3.686E-02	1.442E-03	-0.582
U-238DHP	1.023E-01		3.984E-01	1.347E+00	6.540E-02	0.076
AM-241HP	1.230E-01		5.552E-02	1.890E-01	9.069E-03	0.651

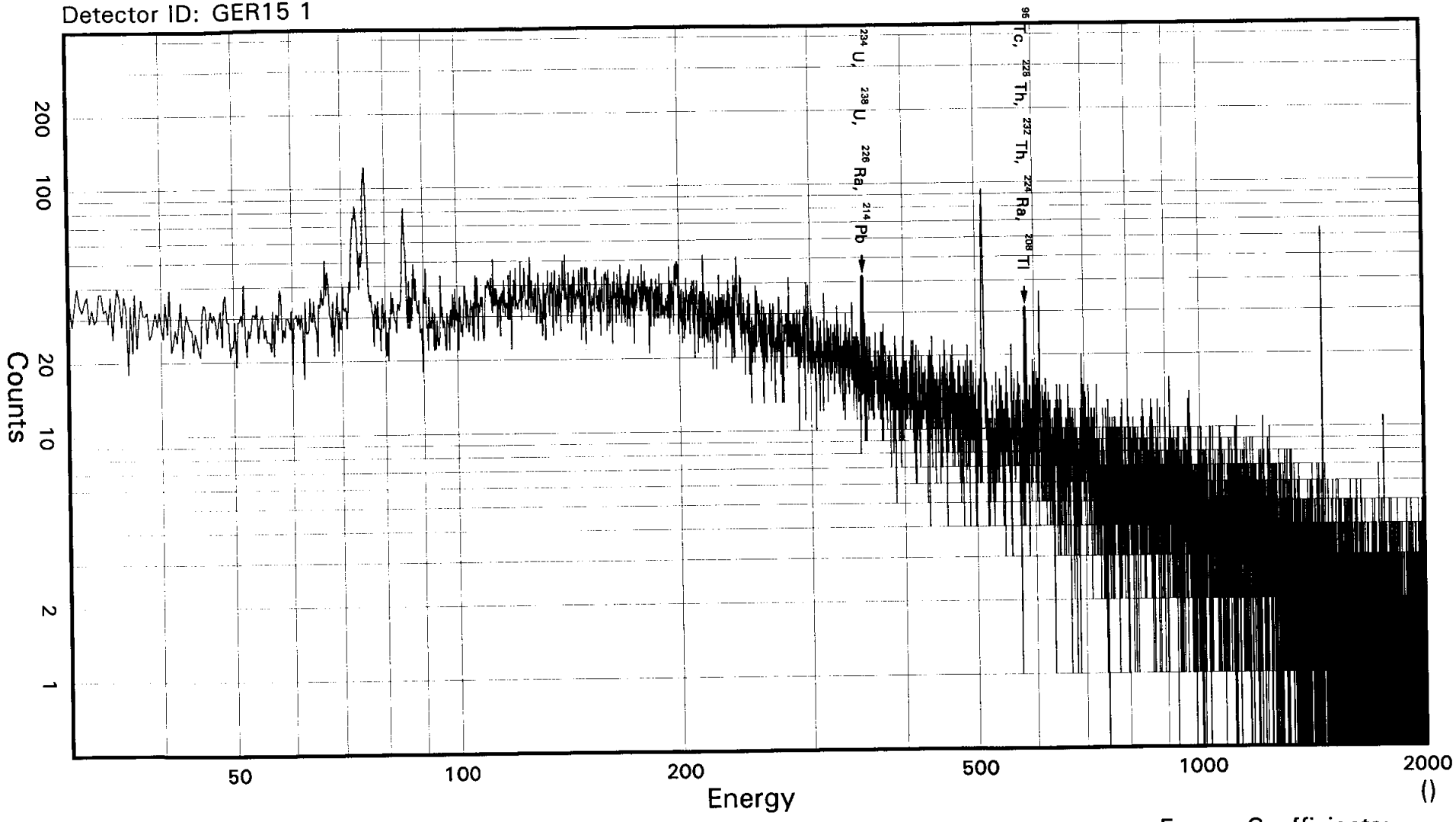
STL Richland WA.

BRC SOIL

Sample ID: J48LF1AA

Detector ID: GER15 1

Batch ID: 7232501



Acquisition Start: 7-SEP-2007 20:29:28.19

Preset Live Time: 0 10:00:00.00

Elapsed Live Time: 0 10:00:00.00

Energy Coefficients:

Offset: 1.17793E+01

Slope: 2.41305E-01

Quadrature: 8.79036E-09

SAMPLE IDENTIFICATION: J48LF1AA

CONFIGURATION ID: GER15:J48LF1AA_070972029
TITLE : BRC SOIL
SAMPLE ID : J48LF1AA

REPORT DATE: 08-SEP-07
ACQUIRE DATE: 07-SEP-07 20:29:28
ELAPSED LIVE TIME: 36000.0 Sec
PRESET LIVE TIME: 0 10:00:00

SAMPLE DATE: 1-AUG-2007 15:30:00.00
CALIB DATE: 7-SEP-2007 06:45:29.64
ELAPSED LIVE TIME: 0 10:00:00
ELAPSED REAL TIME: 0 10:00:13

SAMPLE QUANTITY: 2.0030E+02
SAMPLE GEOMETRY: 200ML

UNITS: GRAMS
SAMPLE TYPE:

ENERGY OFFSET: 1.1779E+01 keV
ENERGY SLOPE: 2.4130E-01 keV/C
ENERGY Q COEFF: 8.7904E-09 keV/C^^2
PEAK SENSITIVITY: 5.000

FWHM OFFSET: 6.7244E-01 keV
FWHM SLOPE: 3.1047E-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: 1.0000E+06
LIBRARY: [NUC_LIBR]QRL.NLB

VMS Peak Search Report V1.9 Generated 8-SEP-2007 06:29:59

```
Configuration     : RDND06$DKA100:[GER15.SAMPLE]J48LF1AA_070972029.CNF;1
Analyses by       : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6
Sample title      : BRC SOIL
Sample date       : 1-AUG-2007 15:30:00  Acquisition date : 7-SEP-2007 20:29:28
Sample ID         : J48LF1AA             Sample quantity  : 200.30 GRAMS
Sample type       :                      Sample geometry  : 200ML
Elapsed live time: 0 10:00:00.00         Elapsed real time: 0 10:00:13.33   0.0%
Start energy      :    12.02             End energy       :  1989.14
Sensitivity       :     5.00             Gaussian         :    10.00
Critical level    : No
```

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	4	72.89*	11	444	1.37	253.25	246	26	3.19E-04	520.3	1.08E+00
2	0	352.67*	13	267	1.93	1412.63	1403	19	3.54E-04	390.9	
3	0	583.44*	2	116	0.76	2368.84	2361	15	6.16E-05	*****	0.00E+00

Flag: "*" = Peak area was modified by background subtraction

VMS Nuclide Identification Report V3.1 Generated 8-SEP-2007 06:29:59

Configuration	: RDND06$DKA100:[GER15.SAMPLE]J48LF1AA_070972029.CNF;1		
Analyses by	: PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.4		
Sample title	: BRC SOIL		
Sample date	: 1-AUG-2007 15:30:00	Acquisition date	: 7-SEP-2007 20:29:28
Sample ID	: J48LF1AA	Sample quantity	: 200.30 GRAMS
Sample type	:	Sample geometry	: 200ML
Elapsed live time	: 0 10:00:00.00	Elapsed real time	: 0 10:00:13.33 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

Flag: "*" = Keyline

Unidentified Energy Lines

Sample ID : J48LF1AA
Acquisition date : 7-SEP-2007 20:29:28

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
4	72.89	11	444	1.37	253.25	246	26	3.19E-04	****	3.55E+00	
0	352.67	13	267	1.93	1412.63	1403	19	3.54E-04	****	1.73E+00	T
0	583.44	2	116	0.76	2368.84	2361	15	6.16E-05	****	1.18E+00	T

Flags: "T" = Tentatively associated

Sample ID : J48LF1AA Acquisition date : 7-SEP-2007 20:29:28

Nuclide	Half-life	Half-Life Ratio	Energy	%Abund	Activity (PCI/GRAM)	1-Sigma %Error	Rejected by
TC-95M	61.00D	0.61	204.12*	66.20	--- Not Found ---		Abun.
			582.07	29.30	3.670E-03	1517.29	
			835.13	26.10	--- Not Found ---		
		% Abundances Found =		24.10			
TL-208	1.41E+10Y	0.00	277.35	6.80	--- Not Found ---		Abun.
			510.84	21.60	--- Not Found ---		
			583.14*	84.20	8.348E-04	1517.29	
			860.37	12.46	--- Not Found ---		
		% Abundances Found =		67.33			
PB-214	4.47E+09Y	0.00	241.98	7.49	--- Not Found ---		Abun.
			295.21	19.20	--- Not Found ---		
			351.92*	37.20	7.402E-03	391.00	
			785.91	1.10	--- Not Found ---		
		% Abundances Found =		57.24			
RA-224DA	1.91Y	0.05	238.63*	44.60	--- Not Found ---		Abun.
			240.98	3.95	--- Not Found ---		
			583.14	30.25	2.412E-03	1517.29	
			860.37	4.48	--- Not Found ---		
		% Abundances Found =		36.32			
RA-226DA	1600.00Y	0.00	186.21	3.50	--- Not Found ---		Abun.
			241.98	7.49	--- Not Found ---		
			295.22	19.20	--- Not Found ---		
			351.92	37.20	7.402E-03	391.00	
			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 =		24.71			
TH-228DA	1.91Y	0.05	238.63	44.60	--- Not Found ---		Abun.
			240.98	3.95	--- Not Found ---		
			583.14*	30.25	2.412E-03	1517.29	
			860.37	4.48	--- Not Found ---		
		% Abundances Found =		36.32			
TH-232DA	1.41E+10Y	0.00	238.63	44.60	--- Not Found ---		Abun.
			338.32*	12.40	--- Not Found ---		
			583.14	30.25	2.324E-03	1517.29	
			911.07	27.70	--- Not Found ---		
			964.60	5.20	--- Not Found ---		
			969.11	16.60	--- Not Found ---		
		% Abundances Found =		22.12			
U-234DA	4.47E+09Y	0.00	241.98	7.49	--- Not Found ---		Abun.
			295.22*	19.20	--- Not Found ---		
			351.92	37.20	7.402E-03	391.00	
			609.31	46.30	--- Not Found ---		
		% Abundances Found =		33.76			

Sample ID : J48LF1AA Acquisition date : 7-SEP-2007 20:29:28

Nuclide	Half-life	Half-Life Ratio	Energy	%Abund	Activity (PCI/GRAM)	1-Sigma %Error	Rejected by
U-238DA	4.47E+09Y	0.00	241.98	7.49	--- Not Found ---		Abun.
			295.22	19.20	--- Not Found ---		
			351.92*	37.20	7.402E-03	391.00	
			609.31	46.30	--- Not Found ---		
		% Abundances Found =		33.76			

Flag: "*" = Keyline

VMS Nuclide Identification Report V3.1 Generated 8-SEP-2007 06:30:00

Configuration : RDND06$DKA100:[GER15.SAMPLE]J48LF1AA_070972029.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 : BRC SOIL
Sample date : 1-AUG-2007 15:30:00 Acquisition date : 7-SEP-2007 20:29:28
Sample ID : J48LF1AA Sample quantity : 200.30 GRAMS
Sample type : Sample geometry : 200ML
Elapsed live time: 0 10:00:00.00 Elapsed real time: 0 10:00:13.33 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

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (PCI/GRAM)	K.L. Ided	Act error	MDA (PCI/GRAM)	MDA error	Act/MDA
BE-7	1.624E-04		8.373E-02	2.834E-01	1.151E-02	0.001
NA-22	-5.206E-04		6.683E-03	2.352E-02	7.550E-04	-0.022
NA-24	3.912E+09		6.242E+09	Half-Life too short		
K-40	-5.748E-01		2.166E-01	7.196E-01	2.347E-02	-0.799
SC-46	-1.435E-02		1.461E-02	3.990E-02	1.266E-03	-0.360
CR-51	-1.270E-01		1.306E-01	4.396E-01	1.648E-02	-0.289
MN-54	-2.475E-04		6.973E-03	2.428E-02	7.908E-04	-0.010
CO-57	-2.977E-02		3.865E-02	1.264E-01	4.848E-03	-0.236
CO-58	-4.343E-03		8.633E-03	2.974E-02	9.670E-04	-0.146
FE-59	2.036E-02		2.239E-02	8.115E-02	2.591E-03	0.251
CO-60	7.716E-03		6.701E-03	2.475E-02	8.051E-04	0.312
ZN-65	-3.013E-02		1.679E-02	5.503E-02	1.749E-03	-0.548
SE-75	9.643E-03		1.008E-02	3.429E-02	1.462E-03	0.281
SR-85	-1.493E-01		1.738E-02	4.136E-02	1.737E-03	-3.609
Y-88	1.204E-02		7.984E-03	3.117E-02	9.508E-04	0.386
NB-94	1.005E-02		6.117E-03	2.240E-02	7.296E-04	0.449
NB-95	5.058E-03		1.345E-02	4.747E-02	1.535E-03	0.107
TC-95M	1.950E-03		1.031E-02	3.502E-02	1.577E-03	0.056
ZR-95	-2.213E-02		1.712E-02	5.585E-02	1.803E-03	-0.396
ZRNB-95	7.222E-03		1.920E-02	6.778E-02	2.192E-03	0.107
MO-99	9.230E-05		5.285E-05	Half-Life too short		
RH-101	1.865E-02		6.715E-03	2.324E-02	1.048E-03	0.803
RH-102M	-6.139E-04		5.733E-03	1.936E-02	7.843E-04	-0.032
RU-103	-7.731E-04		1.203E-02	4.056E-02	1.678E-03	-0.019
RU-106DA	4.582E-03		6.372E-02	2.199E-01	7.690E-03	0.021
AG-108M	-3.589E-03		6.084E-03	2.035E-02	7.892E-04	-0.176
AG-110M	-1.369E-03		9.794E-03	3.394E-02	1.105E-03	-0.040
SN-113DA	1.551E-02		9.492E-03	3.346E-02	1.233E-03	0.463
SB-124	-9.071E-03		9.676E-03	3.242E-02	1.184E-03	-0.280
SB-125	-1.210E-02		1.843E-02	6.161E-02	2.373E-03	-0.196
SN-126DA	-6.342E-03		5.884E-03	1.953E-02	6.143E-04	-0.325
I-131	-6.701E-02		1.541E-01	5.223E-01	1.949E-02	-0.128
BA-133	9.179E-03		9.282E-03	2.783E-02	1.041E-03	0.330

Sample ID : J48LF1AA Acquisition date : 7-SEP-2007 20:29:28

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (PCI/GRAM)	K.L. Ided	Act error	MDA (PCI/GRAM)	MDA error	Act/MDA
CS-134	-4.654E-03		7.510E-03	2.575E-02	8.362E-04	-0.181
CS-137DA	-7.741E-04		6.733E-03	2.308E-02	7.249E-04	-0.034
LA-138	2.645E-03		1.033E-02	3.667E-02	1.197E-03	0.072
CE-139	3.152E-03		6.042E-03	2.079E-02	9.340E-04	0.152
BA-140	1.229E-01		1.658E-01	5.847E-01	2.386E-02	0.210
BALA-140	1.770E-02		1.106E-01	3.983E-01	1.285E-02	0.044
LA-140	-1.874E-02		3.860E-02	Half-Life too short		
CE-141	1.622E-02		1.718E-02	5.975E-02	2.439E-03	0.271
CE-144	4.782E-02		3.663E-02	1.240E-01	4.658E-03	0.386
CEPR-144	9.624E-02		7.327E-02	2.480E-01	9.317E-03	0.388
PM-144	-9.451E-03		6.441E-03	2.119E-02	7.478E-04	-0.446
PM-146	-1.178E-04		8.789E-03	2.973E-02	1.179E-03	-0.004
EU-152	2.162E-03		1.951E-02	6.695E-02	2.510E-03	0.032
EU-154	-2.704E-03		1.840E-02	6.457E-02	2.072E-03	-0.042
EU-155	3.801E-03		1.538E-02	5.188E-02	1.721E-03	0.073
HF-181	2.787E-02		1.187E-02	4.213E-02	1.718E-03	0.662
BI-207	8.291E-03		5.959E-03	2.120E-02	8.240E-04	0.391
TL-208	8.348E-04	+	1.267E-02	2.759E-02	1.047E-03	0.030
BI-210M	1.327E-02		9.666E-03	3.306E-02	1.407E-03	0.401
BI-212	1.143E-01		8.911E-02	3.167E-01	1.246E-02	0.361
PB-212	-4.573E-02		1.724E-02	3.946E-02	1.740E-03	-1.159
BI-214	-5.059E-02		2.296E-02	6.014E-02	2.165E-03	-0.841
PB-214	7.402E-03	+	2.894E-02	5.318E-02	1.991E-03	0.139
RA-223	-6.179E-02		3.615E-02	1.163E-01	4.922E-03	-0.531
RA-224DA	-4.747E-02		1.789E-02	4.096E-02	1.806E-03	-1.159
RA-226DA	-5.056E-02		2.296E-02	6.015E-02	2.165E-03	-0.841
AC-227DA	-1.686E-01		4.546E-02	1.384E-01	6.119E-03	-1.218
AC-228	-3.721E-02		3.788E-02	9.619E-02	3.130E-03	-0.387
RA-228DA	-3.767E-02		3.835E-02	9.738E-02	3.169E-03	-0.387
TH-228DA	2.412E-03	+	3.659E-02	7.970E-02	3.024E-03	0.030
TH-232DA	-1.305E-03		4.196E-02	1.436E-01	5.387E-03	-0.009
TH-234DA	1.720E+00		1.044E+00	3.798E+00	1.234E-01	0.453
U-234DA	-5.543E-02		4.044E-02	9.478E-02	3.806E-03	-0.585
U-235HP	-2.833E-03		3.670E-02	1.212E-01	4.893E-03	-0.023
NP-237DA	-2.234E-03		1.362E-02	4.671E-02	1.795E-03	-0.048
U-238DA	7.402E-03	+	2.894E-02	5.318E-02	1.991E-03	0.139
U-238DHP	-8.057E-02		7.472E-02	2.509E-01	7.827E-03	-0.321
AM-241HP	-5.638E-03		7.928E-03	2.691E-02	8.519E-04	-0.210

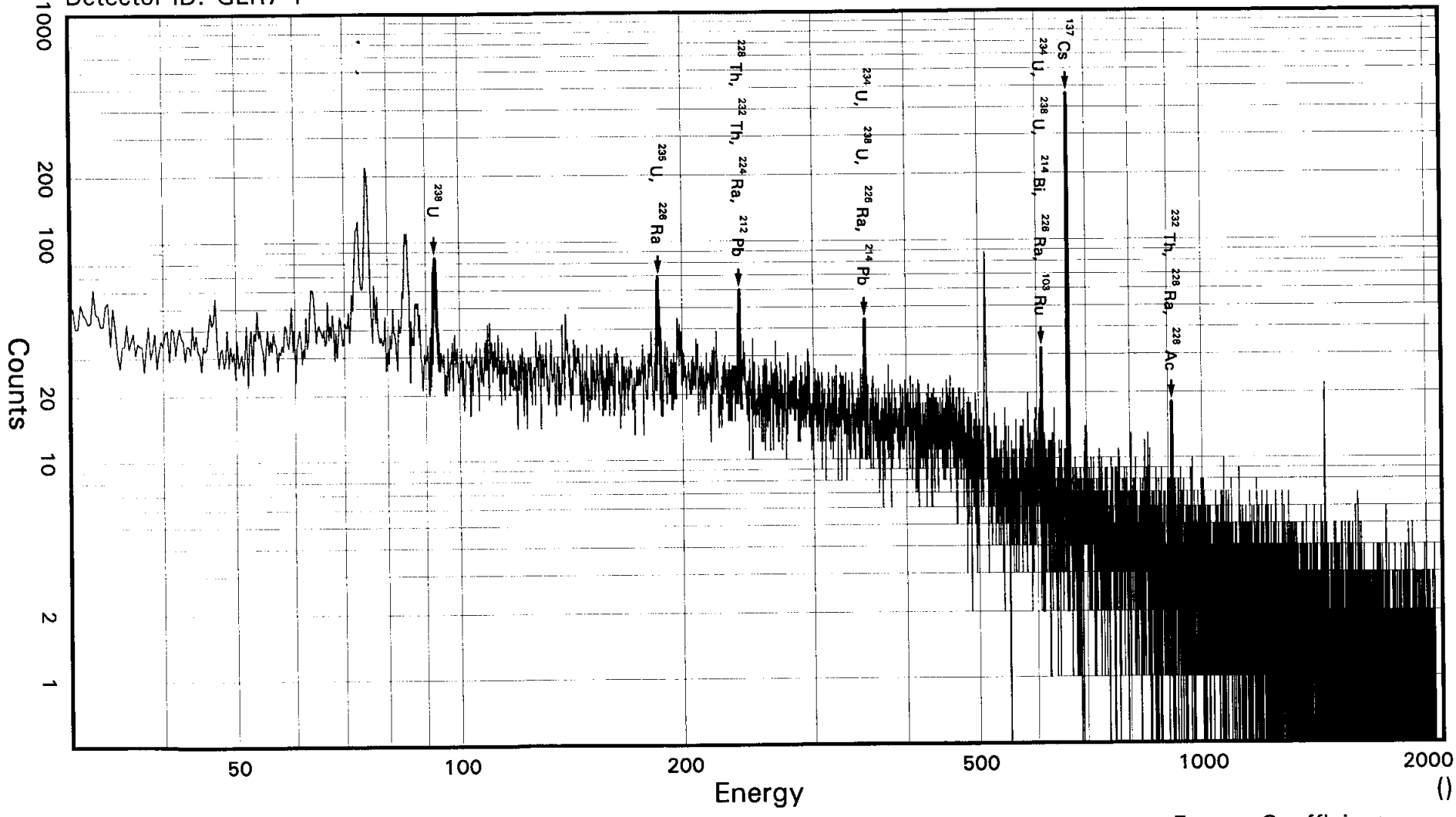
STL Richland WA.

BRC SOIL

Sample ID: J48LF1AC

Detector ID: GER7 1

Batch ID: 7232501



Acquisition Start: 11-SEP-2007 06:08:10.55

Preset Live Time: 0 10:00:00.00

Elapsed Live Time: 0 10:00:00.00

Energy Coefficients:

Offset: 5.76576E-01

Slope: 2.49237E-01

Quadrature: 1.47706E-07

SAMPLE IDENTIFICATION: J48LF1AC

CONFIGURATION ID: GER7:J48LF1AC_110970608
TITLE : BRC SOIL
SAMPLE ID : J48LF1AC

REPORT DATE: 11-SEP-07
ACQUIRE DATE: 11-SEP-07 06:08:10
ELAPSED LIVE TIME: 36000.0 Sec
PRESET LIVE TIME: 0 10:00:00

SAMPLE DATE: 11-SEP-2007 12:00:00.00
CALIB DATE: 11-SEP-2007 04:52:04.02
ELAPSED LIVE TIME: 0 10:00:00
ELAPSED REAL TIME: 0 10:00:03

SAMPLE QUANTITY: 2.0004E+02
SAMPLE GEOMETRY: 200ML

UNITS: GRAMS
SAMPLE TYPE:

ENERGY OFFSET: 5.7658E-01 keV
ENERGY SLOPE: 2.4924E-01 keV/C
ENERGY Q COEFF: 1.4771E-07 keV/C^^2
PEAK SENSITIVITY: 5.000

FWHM OFFSET: 5.5566E-01 keV
FWHM SLOPE: 3.6872E-02 sqr keV
ITERATIONS: 10
GAUSSIAN SENSITIVITY: 20.00 %

ABUNDANCE LIMIT: 80.00 %
ENERGY TOLERANCE: 1.500 keV
VARIABLE PEAK WIDTH: 3.00

HALF-LIFE RATIO: 8.00
ACTIVITY MULTIPLIER: 1.0000E+06
LIBRARY: [NUC_LIBR]QRL.NLB

VMS Peak Search Report V1.9 Generated 11-SEP-2007 21:39:34

Configuration : $DISK1:[GER7.SAMPLE]J48LF1AC_110970608.CNF;1
Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6
Sample title : BRC SOIL
Sample date : 11-SEP-2007 12:00:00 Acquisition date : 11-SEP-2007 06:08:10
Sample ID : J48LF1AC Sample quantity : 200.04 GRAMS
Sample type : Sample geometry : 200ML
Elapsed live time: 0 10:00:00.00 Elapsed real time: 0 10:00:03.30 0.0%
Start energy : 20.52 End energy : 2052.24
Sensitivity : 5.00 Gaussian : 20.00
Critical level : No

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	3	72.82*	1	609	1.16	289.82	281	24	3.84E-05	*****	1.25E+00
2	0	84.54*	27	425	1.13	336.80	329	14	7.42E-04	215.8	
3	0	92.56*	7	345	0.95	368.98	364	13	1.88E-04	708.5	
4	0	185.94*	87	289	1.06	743.39	737	15	2.43E-03	53.6	
5	0	238.72*	24	222	1.12	954.95	949	12	6.66E-04	161.8	
6	0	351.75*	73	209	0.64	1407.83	1400	14	2.01E-03	54.6	
7	0	584.86	145	142	4.55	2341.02	2324	35	4.02E-03	27.5	
8	0	609.13	169	69	1.08	2438.13	2429	20	4.69E-03	14.3	
9	0	661.60	2723	154	1.48	2648.05	2637	24	7.56E-02	2.2	
10	0	911.37	57	63	1.16	3646.43	3633	20	1.57E-03	32.2	

Flag: "*" = Peak area was modified by background subtraction

VMS Nuclide Identification Report V3.0 Generated 11-SEP-2007 21:39:35

Configuration : $DISK1:[GER7.SAMPLE]J48LF1AC_110970608.CNF;1
Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.3
Sample title : BRC SOIL
Sample date : 11-SEP-2007 12:00:00 Acquisition date : 11-SEP-2007 06:08:10
Sample ID : J48LF1AC Sample quantity : 200.04 GRAMS
Sample type : Sample geometry : 200ML
Elapsed live time: 0 10:00:00.00 Elapsed real time: 0 10:00:03.30 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 PCI/GRAM	Decay Corr PCI/GRAM	1-Sigma %Error
CS-137DA	661.65	2723	85.10*	9.945E-01	1.207E+00	1.207E+00	6.29

Nuclide Type: NP

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected PCI/GRAM	Decay Corr PCI/GRAM	1-Sigma %Error
PB-212	238.63	24	44.60*	2.149E+00	9.385E-03	9.385E-03	161.90
	300.09	------	3.41	1.816E+00	------	Line Not Found	------

Flag: "*" = Keyline

Unidentified Energy Lines
Sample ID : J48LF1AC Acquisition date : 11-SEP-2007 06:08:10

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
3	72.82	1	609	1.16	289.82	281	24	3.84E-05	****	2.41E+00	
0	84.54	27	425	1.13	336.80	329	14	7.42E-04	****	2.84E+00	
0	92.56	7	345	0.95	368.98	364	13	1.88E-04	****	3.01E+00	T
0	185.94	87	289	1.06	743.39	737	15	2.43E-03	53.6	2.55E+00	T
0	351.75	73	209	0.64	1407.83	1400	14	2.01E-03	54.6	1.61E+00	T
0	584.86	145	142	4.55	2341.02	2324	35	4.02E-03	27.5	1.10E+00	
0	609.13	169	69	1.08	2438.13	2429	20	4.69E-03	14.3	1.06E+00	T
0	911.37	57	63	1.16	3646.43	3633	20	1.57E-03	32.2	7.62E-01	T

Flags: "T" = Tentatively associated

Sample ID : J48LF1AC
Acquisition date : 11-SEP-2007 06:08:10

Nuclide	Half-life	Half-Life Ratio	Energy	%Abund	Activity (PCI/GRAM)	1-Sigma %Error	Rejected by
RU-103	39.35D	0.01	497.08*	89.00	--- Not Found ---		Abun.
			610.33	5.60	1.066E+00	15.64	
		% Abundances Found =		5.92			
BI-214	4.47E+09Y	0.00	609.31*	46.30	1.290E-01	15.64	Abun.
			768.36	5.04	--- Not Found ---		
			1120.29	15.10	--- Not Found ---		
			1764.49	15.80	--- Not Found ---		
		% Abundances Found =		56.30			
PB-214	4.47E+09Y	0.00	241.98	7.49	--- Not Found ---		Abun.
			295.21	19.20	--- Not Found ---		
			351.92*	37.20	4.537E-02	54.95	
			785.91	1.10	--- Not Found ---		
		% Abundances Found =		57.24			
RA-224DA	1.91Y	0.00	238.63*	44.60	9.384E-03	161.90	Abun.
			240.98	3.95	--- Not Found ---		
			583.14	30.25	--- Not Found ---		
			860.37	4.48	--- Not Found ---		
		% Abundances Found =		53.55			
RA-226DA	1600.00Y	0.00	186.21	3.50	3.674E-01	54.02	Abun.
			241.98	7.49	--- Not Found ---		
			295.22	19.20	--- Not Found ---		
			351.92	37.20	4.537E-02	54.95	
			609.32*	46.30	1.290E-01	15.64	
			1120.28	15.10	--- Not Found ---		
			1238.11	5.94	--- Not Found ---		
			1764.49	15.80	--- Not Found ---		
		% Abundances Found =		57.80			
AC-228	1.41E+10Y	0.00	209.28	4.40	--- Not Found ---		Abun.
			270.23	3.60	--- Not Found ---		
			338.32	11.40	--- Not Found ---		
			911.07*	27.70	1.005E-01	32.82	
			969.11	16.60	--- Not Found ---		
		% Abundances Found =		43.49			
RA-228DA	5.75Y	0.00	209.28	4.40	--- Not Found ---		Abun.
			338.32	11.40	--- Not Found ---		
			911.07*	27.70	1.005E-01	32.82	
			964.60	5.20	--- Not Found ---		
			969.11	16.60	--- Not Found ---		
		% Abundances Found =		42.42			
TH-228DA	1.91Y	0.00	238.63	44.60	9.384E-03	161.90	Abun.
			240.98	3.95	--- Not Found ---		
			583.14*	30.25	--- Not Found ---		
			860.37	4.48	--- Not Found ---		
		% Abundances Found =		53.55			

Sample ID : J48LF1AC Acquisition date : 11-SEP-2007 06:08:10

Nuclide	Half-life	Half-Life Ratio	Energy	%Abund	Activity (PCI/GRAM)	1-Sigma %Error	Rejected by
TH-232DA	1.41E+10Y	0.00	238.63	44.60	9.385E-03	161.90	Abun.
			338.32*	12.40	--- Not Found ---		
			583.14	30.25	--- Not Found ---		
			911.07	27.70	1.005E-01	32.82	
			964.60	5.20	--- Not Found ---		
			969.11	16.60	--- Not Found ---		
		% Abundances Found =		52.87			
U-234DA	4.47E+09Y	0.00	241.98	7.49	--- Not Found ---		Abun.
			295.22*	19.20	--- Not Found ---		
			351.92	37.20	4.537E-02	54.95	
			609.31	46.30	1.290E-01	15.64	
		% Abundances Found =		75.78			
U-235HP	7.04E+08Y	0.00	143.76*	10.50	--- Not Found ---		Abun.
			185.71	54.00	2.381E-02	54.02	
			205.31	4.70	--- Not Found ---		
		% Abundances Found =		78.03			
U-238DA	4.47E+09Y	0.00	241.98	7.49	--- Not Found ---		Abun.
			295.22	19.20	--- Not Found ---		
			351.92*	37.20	4.537E-02	54.95	
			609.31	46.30	1.290E-01	15.64	
		% Abundances Found =		75.78			
U-238DHP	4.47E+09Y	0.00	63.28*	3.80	--- Not Found ---		Abun.
			92.59	5.41	1.557E-02	708.55	
		% Abundances Found =		58.74			

Flag: "*" = Keyline

VMS Nuclide Identification Report V3.0 Generated 11-SEP-2007 21:39:36

Configuration : $DISK1:[GER7.SAMPLE]J48LF1AC_110970608.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 : BRC SOIL
Sample date : 11-SEP-2007 12:00:00 Acquisition date : 11-SEP-2007 06:08:10
Sample ID : J48LF1AC Sample quantity : 200.04 GRAMS
Sample type : Sample geometry : 200ML
Elapsed live time: 0 10:00:00.00 Elapsed real time: 0 10:00:03.30 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 (PCI/GRAM)	Act error	MDA (PCI/GRAM)	MDA error	Act/MDA
CS-137DA	1.207E+00	7.600E-02	2.308E-02	7.267E-04	52.307
PB-212	9.385E-03	1.519E-02	3.455E-02	1.471E-03	0.272

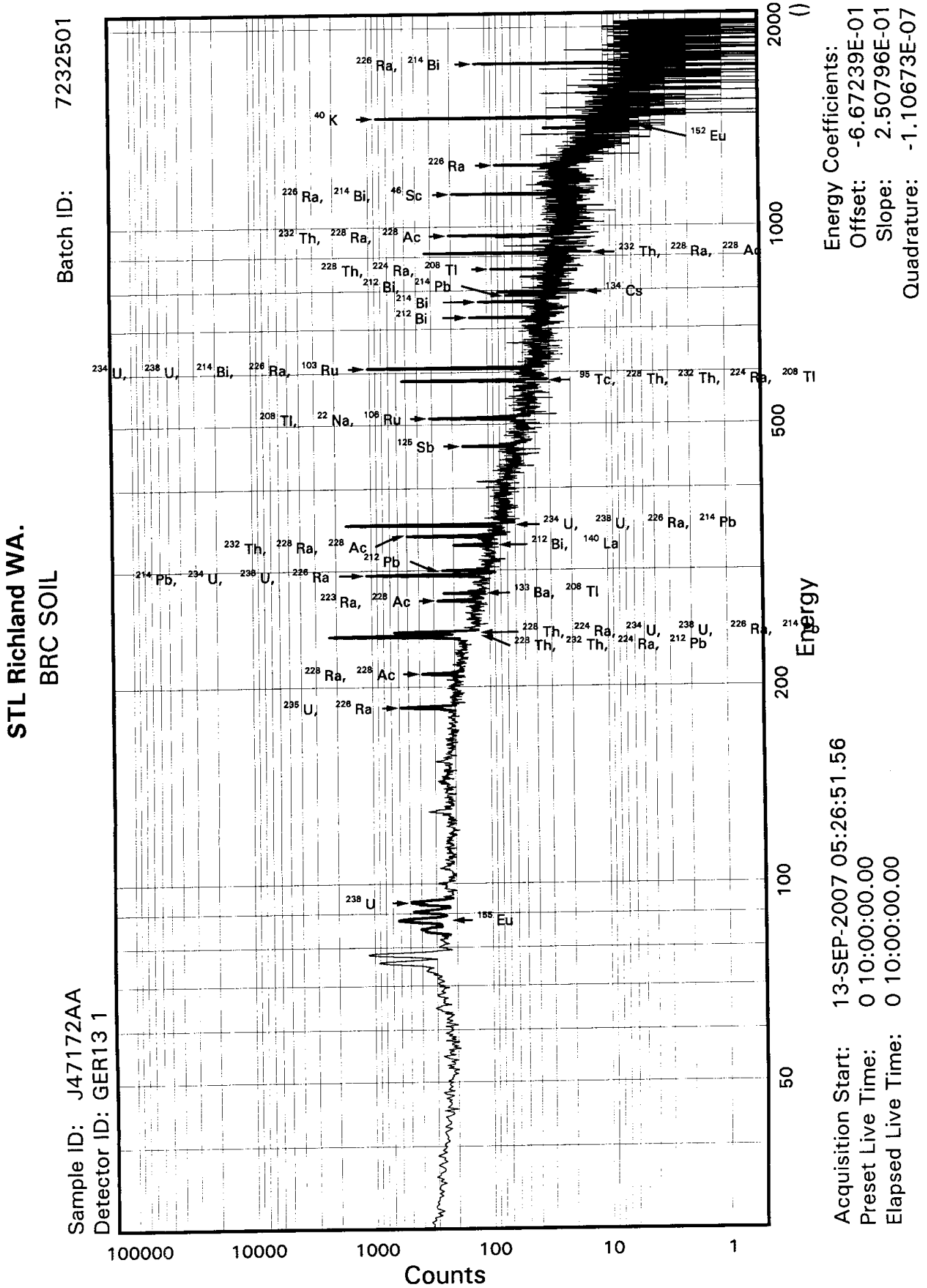
---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (PCI/GRAM)	K.L. Ided	Act error	MDA (PCI/GRAM)	MDA error	Act/MDA
BE-7	4.050E-02		5.507E-02	1.908E-01	8.169E-03	0.212
NA-22	-9.384E-03		6.481E-03	2.121E-02	7.455E-04	-0.442
NA-24	-1.669E-02		5.950E-03	1.794E-02	6.190E-04	-0.930
K-40	-2.067E-01		1.365E-01	4.474E-01	1.540E-02	-0.462
SC-46	1.176E-02		6.918E-03	2.591E-02	9.630E-04	0.454
CR-51	1.391E-02		4.929E-02	1.673E-01	7.066E-03	0.083
MN-54	-7.645E-03		6.278E-03	2.102E-02	7.918E-04	-0.364
CO-57	-7.043E-02		2.938E-02	9.415E-02	3.695E-03	-0.748
CO-58	-8.777E-03		6.195E-03	2.063E-02	7.593E-04	-0.425
FE-59	-4.351E-03		1.052E-02	3.689E-02	1.387E-03	-0.118
CO-60	-4.916E-03		6.898E-03	2.344E-02	8.077E-04	-0.210
ZN-65	-3.655E-02		1.294E-02	3.947E-02	1.471E-03	-0.926
SE-75	5.036E-03		7.342E-03	2.536E-02	1.090E-03	0.199
SR-85	-1.085E-01		1.215E-02	2.600E-02	1.147E-03	-4.174
Y-88	2.709E-03		7.098E-03	2.634E-02	8.222E-04	0.103
NB-94	-1.027E-04		5.904E-03	2.073E-02	8.075E-04	-0.005
NB-95	8.686E-03		5.429E-03	1.981E-02	6.975E-04	0.438
TC-95M	-8.901E-03		5.881E-03	1.966E-02	8.135E-04	-0.453
ZR-95	1.868E-02		1.014E-02	3.709E-02	1.294E-03	0.504
ZRNB-95	1.738E-02		1.086E-02	3.964E-02	1.396E-03	0.438
MO-99	4.533E-03		3.574E-03	1.238E-02	4.852E-04	0.366
RH-101	1.992E-02		6.106E-03	2.100E-02	8.632E-04	0.948
RH-102M	-8.954E-03		6.332E-03	2.070E-02	8.845E-04	-0.433
RU-103	-6.065E-04		6.213E-03	2.110E-02	9.187E-04	-0.029
RU-106DA	1.020E-01		5.729E-02	2.082E-01	7.427E-03	0.490
AG-108M	4.877E-03		6.154E-03	2.144E-02	8.803E-04	0.227

Sample ID : J48LF1AC Acquisition date : 11-SEP-2007 06:08:10

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (PCI/GRAM)	K.L. Ided	Act error	MDA (PCI/GRAM)	MDA error	Act/MDA
AG-110M	-5.438E-03		8.063E-03	2.757E-02	1.087E-03	-0.197
SN-113DA	-3.280E-03		8.138E-03	2.777E-02	1.087E-03	-0.118
SB-124	1.060E-02		6.620E-03	2.310E-02	8.660E-04	0.459
SB-125	2.102E-02		1.829E-02	6.430E-02	2.623E-03	0.327
SN-126DA	-3.105E-03		6.389E-03	1.826E-02	5.777E-04	-0.170
I-131	1.826E-03		6.167E-03	2.147E-02	8.735E-04	0.085
BA-133	-1.171E-02		9.008E-03	2.710E-02	1.113E-03	-0.432
CS-134	3.964E-03		6.035E-03	2.195E-02	7.962E-04	0.181
LA-138	-5.406E-03		8.823E-03	3.099E-02	1.069E-03	-0.174
CE-139	-8.099E-03		4.232E-03	1.359E-02	5.361E-04	-0.596
BA-140	-2.339E-02		2.066E-02	6.766E-02	2.886E-03	-0.346
BALA-140	3.467E-03		1.508E-02	5.449E-02	1.842E-03	0.064
LA-140	-4.165E-03		7.486E-03	2.594E-02	8.767E-04	-0.161
CE-141	5.508E-03		6.566E-03	2.262E-02	8.853E-04	0.244
CE-144	-8.078E-03		2.767E-02	9.388E-02	3.691E-03	-0.086
CEPR-144	-1.551E-02		5.536E-02	1.878E-01	7.385E-03	-0.083
PM-144	-9.165E-03		5.820E-03	1.914E-02	6.900E-04	-0.479
PM-146	7.047E-03		9.110E-03	3.157E-02	1.323E-03	0.223
EU-152	1.519E-04		1.898E-02	6.375E-02	2.648E-03	0.002
EU-154	-2.821E-02		1.836E-02	5.975E-02	2.100E-03	-0.472
EU-155	3.781E-03		1.389E-02	4.823E-02	2.053E-03	0.078
HF-181	-3.354E-03		6.865E-03	2.308E-02	9.919E-04	-0.145
BI-207	5.659E-03		5.596E-03	2.002E-02	8.068E-04	0.283
TL-208	2.026E-02		7.021E-03	2.581E-02	1.012E-03	0.785
BI-210M	-6.904E-03		8.940E-03	2.993E-02	1.287E-03	-0.231
BI-212	5.457E-02		8.408E-02	2.972E-01	1.212E-02	0.184
BI-214	1.290E-01	+	2.017E-02	5.562E-02	2.051E-03	2.319
PB-214	4.537E-02	+	2.493E-02	5.653E-02	2.332E-03	0.803
RA-223	-7.048E-03		3.301E-02	1.119E-01	4.810E-03	-0.063
RA-224DA	9.384E-03	+	1.519E-02	3.843E-02	1.636E-03	0.244
RA-226DA	1.290E-01	+	2.017E-02	5.561E-02	2.051E-03	2.320
AC-227DA	1.714E-02		4.249E-02	1.261E-01	5.360E-03	0.136
AC-228	1.005E-01	+	3.298E-02	9.378E-02	3.738E-03	1.072
RA-228DA	1.005E-01	+	3.298E-02	9.378E-02	3.738E-03	1.072
TH-228DA	5.639E-02		1.954E-02	7.185E-02	2.816E-03	0.785
TH-232DA	2.808E-02		3.965E-02	1.354E-01	5.655E-03	0.207
TH-234DA	-1.022E+00		1.002E+00	3.334E+00	1.305E-01	-0.307
U-234DA	9.248E-02		2.617E-02	9.233E-02	3.955E-03	1.002
U-235HP	8.056E-02		3.065E-02	1.078E-01	4.221E-03	0.747
NP-237DA	-1.634E-02		1.327E-02	4.343E-02	1.845E-03	-0.376
U-238DA	4.537E-02	+	2.493E-02	5.653E-02	2.332E-03	0.803
U-238DHP	1.163E-02		2.269E-01	5.456E-01	1.997E-02	0.021
AM-241HP	2.378E-02		1.722E-02	5.947E-02	2.104E-03	0.400


STL Richland WA.
BRC SOIL
Batch ID: 7232501
Sample ID: J47172AA
Detector ID: GER13 1
Energy Coefficients:
Offset: -6.67239E-01
Slope: 2.50796E-01
Quadrature: -1.10673E-07
Acquisition Start: 13-SEP-2007 05:26:51.56
Preset Live Time: 0 10:00:00.00
Elapsed Live Time: 0 10:00:00.00
Counts
Energy
100000
10000
1000
100
10
1
50
100
200
500
1000
2000
226 Ra, 214 Bi
40 K
152 Eu
226 Ra
226 Ra, 214 Bi, 46 Sc
232 Th, 228 Ra, 228 Ac
232 Th, 228 Ra, 228 Ac
228 Th, 224 Ra, 208 Tl
212 Bi, 214 Pb
134 Cs
214 Bi
212 Bi
234 U, 238 U, 214 Bi, 226 Ra, 103 Ru
95 Tc, 228 Th, 232 Th, 224 Ra, 208 Tl
208 Tl, 22 Na, 106 Ru
125 Sb
234 U, 238 U, 226 Ra, 214 Pb
232 Th, 228 Ra, 228 Ac
212 Bi, 140 La
212 Pb
214 Pb, 234 U, 238 U, 226 Ra
133 Ba, 208 Tl
223 Ra, 228 Ac
228 Th, 224 Ra, 234 U, 238 U, 226 Ra, 214 Pb
228 Th, 232 Th, 224 Ra, 212 Pb
228 Ra, 228 Ac
235 U, 226 Ra
238 U
155 Eu

SAMPLE IDENTIFICATION: J47172AA

CONFIGURATION ID: GER13:J47172AA_130970526
TITLE : BRC SOIL
SAMPLE ID : J47172AA

REPORT DATE: 14-SEP-07
ACQUIRE DATE: 13-SEP-07 05:26:51
ELAPSED LIVE TIME: 36000.0 Sec
PRESET LIVE TIME: 0 10:00:00

SAMPLE DATE: 1-AUG-2007 15:30:00.00
CALIB DATE: 13-SEP-2007 05:01:09.58
ELAPSED LIVE TIME: 0 10:00:00
ELAPSED REAL TIME: 0 10:00:22

SAMPLE QUANTITY: 3.1340E+02
SAMPLE GEOMETRY: S200

UNITS: GRAMS
SAMPLE TYPE:

ENERGY OFFSET: -.6672E+00 keV
ENERGY SLOPE: 2.5080E-01 keV/C
ENERGY Q COEFF: -.1107E-06 keV/C^^2
PEAK SENSITIVITY: 5.000

FWHM OFFSET: 4.8671E-01 keV
FWHM SLOPE: 3.9494E-02 sqr keV
ITERATIONS: 10
GAUSSIAN SENSITIVITY: 60.00 %

ABUNDANCE LIMIT: 80.00 %
ENERGY TOLERANCE: 1.500 keV
VARIABLE PEAK WIDTH: 3.00

HALF-LIFE RATIO: 8.00
ACTIVITY MULTIPLIER: 1.0000E+06
LIBRARY: [NUC_LIBR]QRL.NLB

VMS Peak Search Report V1.9 Generated 14-SEP-2007 05:52:44

Configuration : $DISK1:[GER13.SAMPLE]J47172AA_130970526.CNF;1
Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6
Sample title : BRC SOIL
Sample date : 1-AUG-2007 15:30:00
Sample ID : J47172AA
Sample type :
Elapsed live time: 0 10:00:00.00
Start energy : 19.40
Sensitivity : 5.00
Critical level : No

Acquisition date : 13-SEP-2007 05:26:51
Sample quantity : 313.40 GRAMS
Sample geometry : S200
Elapsed real time: 0 10:00:22.03 0.1%
End energy : 2046.43
Gaussian : 60.00

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	1	75.85*	2053	3477	0.88	305.13	299	21	5.70E-02	6.1	1.33E+00
2	1	78.01	3562	2917	0.92	313.77	299	21	9.89E-02	3.5	
3	4	87.91*	1792	3357	1.18	353.24	336	34	4.98E-02	7.4	1.04E+01
4	4	90.57	1009	2796	1.04	363.85	336	34	2.80E-02	11.1	
5	0	93.55	1435	3011	1.52	375.72	370	13	3.99E-02	8.3	
6	0	129.45	345	2646	1.22	518.93	513	11	9.57E-03	29.4	
7	0	185.94	2027	3053	1.26	744.31	736	15	5.63E-02	6.3	
8	0	209.29	893	2957	1.04	837.47	830	16	2.48E-02	14.0	
9	5	238.47*	9805	2193	1.12	953.92	946	29	2.72E-01	1.5	3.36E+00
10	5	241.57	3281	2515	1.65	966.28	946	29	9.11E-02	4.3	
11	0	269.98	828	1965	1.19	1079.65	1073	16	2.30E-02	12.5	
12	0	277.11	437	1255	0.67	1108.14	1104	11	1.21E-02	16.4	
13	0	295.02*	5042	2361	1.19	1179.59	1169	23	1.40E-01	3.0	
14	0	299.83	726	1479	1.04	1198.83	1192	15	2.02E-02	12.1	
15	0	327.86	447	1325	1.23	1310.71	1304	13	1.24E-02	17.5	
16	0	338.14	2268	1394	1.27	1351.75	1344	16	6.30E-02	4.2	
17	0	351.69*	8093	1907	1.28	1405.82	1397	23	2.25E-01	1.9	
18	0	409.26	368	1044	1.03	1635.68	1628	16	1.02E-02	20.3	
19	0	462.91	555	1013	1.28	1849.93	1842	16	1.54E-02	13.5	
20	0	510.89*	1181	1427	1.63	2041.56	2031	27	3.28E-02	10.7	
21	0	583.07*	3085	961	1.58	2329.95	2319	21	8.57E-02	3.3	
22	0	609.17*	6146	1014	1.46	2434.24	2420	26	1.71E-01	2.0	
23	0	727.41	785	838	1.54	2906.78	2894	26	2.18E-02	9.3	
24	0	768.40	496	766	1.55	3070.68	3060	21	1.38E-02	12.7	
25	0	785.84	211	549	1.51	3140.41	3132	17	5.86E-03	22.9	
26	0	795.03	406	709	1.76	3177.14	3162	26	1.13E-02	15.9	
27	0	860.39	421	477	1.50	3438.51	3429	20	1.17E-02	11.9	
28	0	911.20*	2231	621	1.72	3641.74	3626	27	6.20E-02	3.6	
29	0	934.09	413	498	2.20	3733.32	3720	26	1.15E-02	13.4	
30	0	968.60*	1349	1083	1.53	3871.36	3853	34	3.75E-02	7.1	
31	0	1120.29*	1318	593	1.70	4478.44	4464	31	3.66E-02	5.6	
32	0	1238.14	573	669	2.12	4950.32	4935	30	1.59E-02	11.8	
33	0	1377.85	350	409	2.26	5509.95	5495	38	9.72E-03	16.9	
34	0	1407.70	221	238	1.82	5629.56	5616	28	6.13E-03	17.9	
35	0	1460.56*	6567	636	2.10	5841.44	5824	35	1.82E-01	1.7	
36	0	1509.24	147	189	1.73	6036.54	6024	23	4.07E-03	20.3	
37	0	1589.47	264	260	2.01	6358.22	6341	38	7.33E-03	15.9	
38	0	1729.07	247	117	2.38	6918.12	6904	25	6.87E-03	10.9	
39	0	1763.72*	997	148	2.18	7057.13	7040	34	2.77E-02	4.7	

Flag: "*" = Peak area was modified by background subtraction

VMS Nuclide Identification Report V3.0 Generated 14-SEP-2007 05:52:44

Configuration : $DISK1:[GER13.SAMPLE]J47172AA_130970526.CNF;1
Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.3
Sample title : BRC SOIL
Sample date : 1-AUG-2007 15:30:00 Acquisition date : 13-SEP-2007 05:26:51
Sample ID : J47172AA Sample quantity : 313.40 GRAMS
Sample type : Sample geometry : S200
Elapsed live time: 0 10:00:00.00 Elapsed real time: 0 10:00:22.03 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: NP

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected PCI/GRAM	Decay Corr PCI/GRAM	1-Sigma %Error
K-40	1460.81	6567	10.67*	7.699E-01	1.915E+01	1.915E+01	6.67
TL-208	277.35	437	6.80	2.835E+00	5.431E-01	5.431E-01	17.56
	510.84	1181	21.60	1.897E+00	6.903E-01	6.903E-01	12.20
	583.14	3085	84.20*	1.721E+00	5.098E-01	5.098E-01	6.81
	860.37	421	12.46	1.247E+00	6.484E-01	6.484E-01	13.91
PB-212	238.63	9805	44.60*	3.095E+00	1.702E+00	1.702E+00	6.55
	300.09	726	3.41	2.702E+00	1.889E+00	1.889E+00	13.67
BI-214	609.31	6146	46.30*	1.665E+00	1.910E+00	1.910E+00	6.31
	768.36	496	5.04	1.377E+00	1.710E+00	1.710E+00	14.29
	1120.29	1318	15.10	9.770E-01	2.141E+00	2.141E+00	8.57
	1764.49	997	15.80	6.731E-01	2.245E+00	2.245E+00	7.68
PB-214	241.98	3281	7.49	3.072E+00	3.416E+00	3.416E+00	7.67
	295.21	5042	19.20	2.729E+00	2.305E+00	2.305E+00	7.02
	351.92	8093	37.20*	2.443E+00	2.134E+00	2.134E+00	6.45
	785.91	211	1.10	1.351E+00	3.398E+00	3.398E+00	23.84
RA-224DA	238.63	9805	44.60*	3.095E+00	1.702E+00	1.776E+00	6.55
	240.98	3281	3.95	3.072E+00	6.477E+00	6.758E+00	7.67
	583.14	3085	30.25	1.721E+00	1.419E+00	1.481E+00	6.81
	860.37	421	4.48	1.247E+00	1.803E+00	1.882E+00	13.91
RA-226DA	186.21	2027	3.50	3.493E+00	3.973E+00	3.973E+00	8.97
	241.98	3281	7.49	3.072E+00	3.416E+00	3.416E+00	7.67
	295.22	5042	19.20	2.729E+00	2.305E+00	2.305E+00	7.02
	351.92	8093	37.20	2.443E+00	2.134E+00	2.134E+00	6.45
	609.32	6146	46.30*	1.665E+00	1.910E+00	1.910E+00	6.31
	1120.28	1318	15.10	9.770E-01	2.141E+00	2.141E+00	8.57
	1238.11	573	5.94	8.902E-01	2.597E+00	2.597E+00	13.39
	1764.49	997	15.80	6.731E-01	2.245E+00	2.245E+00	7.68
AC-228	209.28	893	4.40	3.314E+00	1.467E+00	1.467E+00	15.40
	270.23	828	3.60	2.880E+00	1.913E+00	1.913E+00	13.99
	338.32	2268	11.40	2.505E+00	1.903E+00	1.903E+00	7.55
	911.07	2231	27.70*	1.184E+00	1.629E+00	1.629E+00	8.36
	969.11	1349	16.60	1.119E+00	1.739E+00	1.739E+00	10.17
RA-228DA	209.28	893	4.40	3.314E+00	1.467E+00	1.488E+00	15.40
	338.32	2268	11.40	2.505E+00	1.903E+00	1.930E+00	7.55
	911.07	2231	27.70*	1.184E+00	1.629E+00	1.652E+00	8.36
	964.60	------	5.20	1.124E+00	------ Line Not Found		------

Sample ID : J47172AA Acquisition date : 13-SEP-2007 05:26:51

Nuclide Type: NP

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected PCI/GRAM	Decay Corr PCI/GRAM	1-Sigma %Error
	969.11	1349	16.60	1.119E+00	1.739E+00	1.764E+00	10.17
TH-228DA	238.63	9805	44.60	3.095E+00	1.702E+00	1.776E+00	6.55
	240.98	3281	3.95	3.072E+00	6.477E+00	6.758E+00	7.67
	583.14	3085	30.25*	1.721E+00	1.419E+00	1.481E+00	6.81
	860.37	421	4.48	1.247E+00	1.803E+00	1.882E+00	13.91
TH-232DA	238.63	9805	44.60	3.095E+00	1.702E+00	1.702E+00	6.55
	338.32	2268	12.40*	2.505E+00	1.749E+00	1.749E+00	7.55
	583.14	3085	30.25	1.721E+00	1.419E+00	1.419E+00	6.81
	911.07	2231	27.70	1.184E+00	1.629E+00	1.629E+00	8.36
	964.60	------	5.20	1.124E+00	------ Line Not Found		------
	969.11	1349	16.60	1.119E+00	1.739E+00	1.739E+00	10.17
U-234DA	241.98	3281	7.49	3.072E+00	3.416E+00	3.416E+00	7.67
	295.22	5042	19.20*	2.729E+00	2.305E+00	2.305E+00	7.02
	351.92	8093	37.20	2.443E+00	2.134E+00	2.134E+00	6.45
	609.31	6146	46.30	1.665E+00	1.910E+00	1.910E+00	6.31
U-238DA	241.98	3281	7.49	3.072E+00	3.416E+00	3.416E+00	7.67
	295.22	5042	19.20	2.729E+00	2.305E+00	2.305E+00	7.02
	351.92	8093	37.20*	2.443E+00	2.134E+00	2.134E+00	6.45
	609.31	6146	46.30	1.665E+00	1.910E+00	1.910E+00	6.31

Flag: "*" = Keyline

Sample ID : J47172AA Acquisition date : 13-SEP-2007 05:26:51

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
1	75.85	2053	3477	0.88	305.13	299	21	5.70E-02	6.1	1.75E+00	
1	78.01	3562	2917	0.92	313.77	299	21	9.89E-02	3.5	1.90E+00	
4	87.91	1792	3357	1.18	353.24	336	34	4.98E-02	7.4	2.50E+00	T
4	90.57	1009	2796	1.04	363.85	336	34	2.80E-02	11.1	2.64E+00	
0	93.55	1435	3011	1.52	375.72	370	13	3.99E-02	8.3	2.78E+00	T
0	129.45	345	2646	1.22	518.93	513	11	9.57E-03	29.4	3.65E+00	
0	327.86	447	1325	1.23	1310.71	1304	13	1.24E-02	17.5	2.55E+00	T
0	409.26	368	1044	1.03	1635.68	1628	16	1.02E-02	20.3	2.21E+00	
0	462.91	555	1013	1.28	1849.93	1842	16	1.54E-02	13.5	2.03E+00	T
0	727.41	785	838	1.54	2906.78	2894	26	2.18E-02	9.3	1.44E+00	T
0	795.03	406	709	1.76	3177.14	3162	26	1.13E-02	15.9	1.34E+00	T
0	934.09	413	498	2.20	3733.32	3720	26	1.15E-02	13.4	1.16E+00	
0	1377.85	350	409	2.26	5509.95	5495	38	9.72E-03	16.9	8.09E-01	
0	1407.70	221	238	1.82	5629.56	5616	28	6.13E-03	17.9	7.94E-01	T
0	1509.24	147	189	1.73	6036.54	6024	23	4.07E-03	20.3	7.50E-01	
0	1589.47	264	260	2.01	6358.22	6341	38	7.33E-03	15.9	7.21E-01	
0	1729.07	247	117	2.38	6918.12	6904	25	6.87E-03	10.9	6.81E-01	

Flags: "T" = Tentatively associated

Sample ID : J47172AA Acquisition date : 13-SEP-2007 05:26:51

Nuclide	Half-life	Half-Life Ratio	Energy	%Abund	Activity (PCI/GRAM)	1-Sigma %Error	Rejected by
NA-22	2.60Y	0.05	511.00	179.68	8.562E-02	12.20	Abun.
			1274.54*	99.94	--- Not Found ---		
		% Abundances Found =		64.26			
SC-46	83.85D	0.51	889.25	99.98	--- Not Found ---		Abun.
			1120.51*	99.99	4.605E-01	8.57	
		% Abundances Found =		50.00			
TC-95M	61.00D	0.70	204.12*	66.20	--- Not Found ---		Abun.
			582.07	29.30	2.382E+00	6.81	
			835.13	26.10	--- Not Found ---		
		% Abundances Found =		24.10			
RU-103	39.35D	1.09	497.08*	89.00	--- Not Found ---		Abun.
			610.33	5.60	3.356E+01	6.31	
		% Abundances Found =		5.92			
RU-106DA	368.20D	0.12	511.85	20.60	7.845E-01	12.20	Abun.
			621.84*	9.80	--- Not Found ---		
		% Abundances Found =		67.76			
SB-125	2.77Y	0.04	176.33	6.89	--- Not Found ---		Abun.
			427.89*	29.33	--- Not Found ---		
			463.38	10.35	6.499E-01	14.77	
			600.56	17.80	--- Not Found ---		
			635.90	11.32	--- Not Found ---		
		% Abundances Found =		13.67			
BA-133	10.50Y	0.01	81.00	33.00	--- Not Found ---		Abun.
			276.40	6.90	5.394E-01	17.56	
			302.84	17.80	--- Not Found ---		
			356.00*	62.05	--- Not Found ---		
			383.85	8.70	--- Not Found ---		
		% Abundances Found =		5.37			
CS-134	2.06Y	0.06	569.31	15.43	--- Not Found ---		Abun.
			604.70	97.60	--- Not Found ---		
			795.84*	85.40	8.868E-02	17.32	
			801.93	8.73	--- Not Found ---		
		% Abundances Found =		41.22			
LA-140	40.22H	25.53	328.77	20.50	9.919E+06	18.59	Decay,Abun.
			487.03	45.50	--- Not Found ---		
			815.85	23.50	--- Not Found ---		
			1596.49*	95.49	--- Not Found ---		
		% Abundances Found =		11.08			
EU-152	13.60Y	0.01	121.78	28.40	--- Not Found ---		Abun.
			244.67	7.49	--- Not Found ---		
			344.27*	26.50	--- Not Found ---		
			778.89	12.74	--- Not Found ---		
			964.01	14.40	--- Not Found ---		

Sample ID : J47172AA Acquisition date : 13-SEP-2007 05:26:51

Nuclide	Half-life	Half-Life Ratio	Energy	%Abund	Activity (PCI/GRAM)	1-Sigma %Error	Rejected by
EU-152	13.60Y	0.01	1085.78	10.00	--- Not Found ---		Abun.
			1112.02	13.30	--- Not Found ---		
			1407.95	20.70	3.237E-01	19.08	
		% Abundances Found =		15.50			
EU-155	4.96Y	0.02	42.90	21.16	--- Not Found ---		Abun.
			86.54	30.90	5.650E-01	10.16	
			105.31*	20.70	--- Not Found ---		
		% Abundances Found =		42.47			
BI-212	1.41E+10Y	0.00	288.07	0.31	--- Not Found ---		Abun.
			327.96	0.14	3.016E+01	20.20	
			452.83	0.31	--- Not Found ---		
			727.33*	6.58	1.982E+00	11.46	
			785.37	1.10	3.398E+00	24.00	
			893.41	0.38	--- Not Found ---		
			952.12	0.17	--- Not Found ---		
			1078.62	0.56	--- Not Found ---		
			1512.70	0.29	--- Not Found ---		
			1620.50	1.49	--- Not Found ---		
			1806.00	0.09	--- Not Found ---		
		% Abundances Found =		68.47			
RA-223	21.77Y	0.01	154.21	5.58	--- Not Found ---		Abun.
			269.46*	13.60	5.083E-01	13.99	
			323.87	3.88	--- Not Found ---		
		% Abundances Found =		58.98			
U-235HP	7.04E+08Y	0.00	143.76*	10.50	--- Not Found ---		Abun.
			185.71	54.00	2.575E-01	8.97	
			205.31	4.70	--- Not Found ---		
		% Abundances Found =		78.03			
U-238DHP	4.47E+09Y	0.00	63.28*	3.80	--- Not Found ---		Abun.
			92.59	5.41	2.282E+00	10.63	
		% Abundances Found =		58.74			

Flag: "*" = Keyline

VMS Nuclide Identification Report V3.0 Generated 14-SEP-2007 05:52:47

Configuration : $DISK1:[GER13.SAMPLE]J47172AA_130970526.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 : BRC SOIL
Sample date : 1-AUG-2007 15:30:00 Acquisition date : 13-SEP-2007 05:26:51
Sample ID : J47172AA Sample quantity : 313.40 GRAMS
Sample type : Sample geometry : S200
Elapsed live time: 0 10:00:00.00 Elapsed real time: 0 10:00:22.03 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 (PCI/GRAM)	Act error	MDA (PCI/GRAM)	MDA error	Act/MDA
K-40	1.915E+01	1.277E+00	2.414E-01	9.786E-03	79.326
TL-208	5.098E-01	3.472E-02	2.190E-02	7.134E-04	23.277
PB-212	1.702E+00	1.114E-01	3.776E-02	1.495E-03	45.063
BI-214	1.910E+00	1.205E-01	4.050E-02	1.334E-03	47.167
PB-214	2.134E+00	1.376E-01	4.342E-02	1.573E-03	49.143
RA-224DA	1.776E+00	1.162E-01	3.940E-02	1.560E-03	45.063
RA-226DA	1.910E+00	1.205E-01	4.050E-02	1.334E-03	47.166
AC-228	1.629E+00	1.361E-01	8.126E-02	4.581E-03	20.049
RA-228DA	1.652E+00	1.381E-01	8.242E-02	4.646E-03	20.049
TH-228DA	1.481E+00	1.008E-01	6.361E-02	2.072E-03	23.277
TH-232DA	1.749E+00	1.321E-01	1.398E-01	5.240E-03	12.508
U-234DA	2.305E+00	1.618E-01	8.313E-02	3.278E-03	27.725
U-238DA	2.134E+00	1.376E-01	4.342E-02	1.573E-03	49.143

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (PCI/GRAM)	K.L. Ided	Act error	MDA (PCI/GRAM)	MDA error	Act/MDA
BE-7	1.232E-01		8.483E-02	2.875E-01	9.154E-03	0.428
NA-22	-4.944E-03		8.363E-03	2.775E-02	1.092E-03	-0.178
SC-46	4.605E-01	+	3.946E-02	6.994E-02	2.863E-03	6.584
CR-51	-2.167E-01		1.475E-01	4.812E-01	1.874E-02	-0.450
MN-54	-1.333E-04		7.420E-03	2.511E-02	1.256E-03	-0.005
CO-57	-2.715E-02		4.865E-02	1.633E-01	5.959E-03	-0.166
CO-58	-2.444E-02		9.453E-03	3.043E-02	1.446E-03	-0.803
FE-59	-3.315E-02		2.548E-02	8.444E-02	3.626E-03	-0.393
CO-60	-2.146E-03		6.936E-03	2.367E-02	9.835E-04	-0.091
ZN-65	3.321E-02		2.056E-02	6.047E-02	2.504E-03	0.549
SE-75	1.239E-02		1.032E-02	3.494E-02	1.386E-03	0.355
SR-85	6.551E-02		1.095E-02	3.193E-02	1.003E-03	2.052
Y-88	7.857E-03		7.167E-03	2.566E-02	8.281E-04	0.306
NB-94	-1.584E-03		6.088E-03	2.052E-02	1.107E-03	-0.077
NB-95	6.765E-02		1.929E-02	5.608E-02	2.411E-03	1.206

Sample ID : J47172AA Acquisition date : 13-SEP-2007 05:26:51

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (PCI/GRAM)	K.L. Ided	Act error	MDA (PCI/GRAM)	MDA error	Act/MDA
TC-95M	-7.726E-03		1.245E-02	4.072E-02	1.598E-03	-0.190
ZR-95	2.708E-02		1.797E-02	6.074E-02	2.559E-03	0.446
ZRNB-95	9.746E-02		2.639E-02	7.672E-02	3.299E-03	1.270
RH-101	-7.880E-03		7.578E-03	2.326E-02	9.110E-04	-0.339
RH-102M	-4.127E-04		5.355E-03	1.791E-02	5.706E-04	-0.023
RU-103	4.007E-03		1.216E-02	4.072E-02	1.288E-03	0.098
RU-106DA	6.766E-02		5.963E-02	2.040E-01	6.753E-03	0.332
AG-108M	-8.483E-03		5.521E-03	1.820E-02	5.835E-04	-0.466
AG-110M	8.295E-03		9.612E-03	3.284E-02	1.823E-03	0.253
SN-113DA	6.017E-06		9.913E-03	3.359E-02	1.075E-03	0.000
SB-124	-1.408E-02		1.094E-02	3.149E-02	1.034E-03	-0.447
SB-125	8.711E-03		1.810E-02	6.122E-02	1.964E-03	0.142
SN-126DA	3.075E-02		6.284E-03	2.141E-02	7.267E-04	1.436
I-131	9.538E-02		2.409E-01	7.971E-01	2.790E-02	0.120
BA-133	-1.642E-03		8.861E-03	2.480E-02	8.889E-04	-0.066
CS-134	8.868E-02	+	1.536E-02	3.042E-02	1.399E-03	2.915
CS-137DA	-2.455E-02		7.336E-03	2.309E-02	7.745E-04	-1.063
LA-138	7.335E-03		9.622E-03	3.350E-02	1.367E-03	0.219
CE-139	-7.949E-04		7.302E-03	2.431E-02	9.506E-04	-0.033
BA-140	1.100E-01		2.179E-01	7.267E-01	2.314E-02	0.151
BALA-140	1.790E-01		1.563E-01	4.656E-01	1.789E-02	0.385
CE-141	-7.913E-03		2.473E-02	8.284E-02	3.095E-03	-0.096
CE-144	-9.152E-02		4.767E-02	1.578E-01	5.724E-03	-0.580
CEPR-144	-1.825E-01		9.535E-02	3.156E-01	1.145E-02	-0.578
PM-144	-5.244E-03		5.880E-03	1.962E-02	6.485E-04	-0.267
PM-146	3.060E-02		8.114E-03	2.766E-02	8.851E-04	1.106
EU-152	-2.847E-02		1.908E-02	6.186E-02	2.285E-03	-0.460
EU-154	-2.013E-02		2.311E-02	7.623E-02	2.999E-03	-0.264
EU-155	9.086E-02		2.648E-02	8.679E-02	3.337E-03	1.047
HF-181	1.148E-02		1.242E-02	4.191E-02	1.333E-03	0.274
BI-207	5.590E-03		5.639E-03	1.934E-02	6.262E-04	0.289
BI-210M	-1.220E-02		1.136E-02	3.215E-02	1.275E-03	-0.380
BI-212	1.982E+00	+	2.271E-01	4.419E-01	2.009E-02	4.484
RA-223	5.083E-01	+	7.112E-02	1.433E-01	5.685E-03	3.546
AC-227DA	4.491E-01		6.231E-02	1.728E-01	6.840E-03	2.599
TH-234DA	2.659E+00		1.075E+00	3.680E+00	1.873E-01	0.723
U-235HP	1.146E-01		4.629E-02	1.561E-01	5.804E-03	0.734
NP-237DA	-1.801E-02		1.336E-02	4.375E-02	1.712E-03	-0.412
U-238DHP	-3.893E-01		4.873E-01	1.627E+00	7.899E-02	-0.239
AM-241HP	5.846E-02		6.625E-02	2.246E-01	1.077E-02	0.260

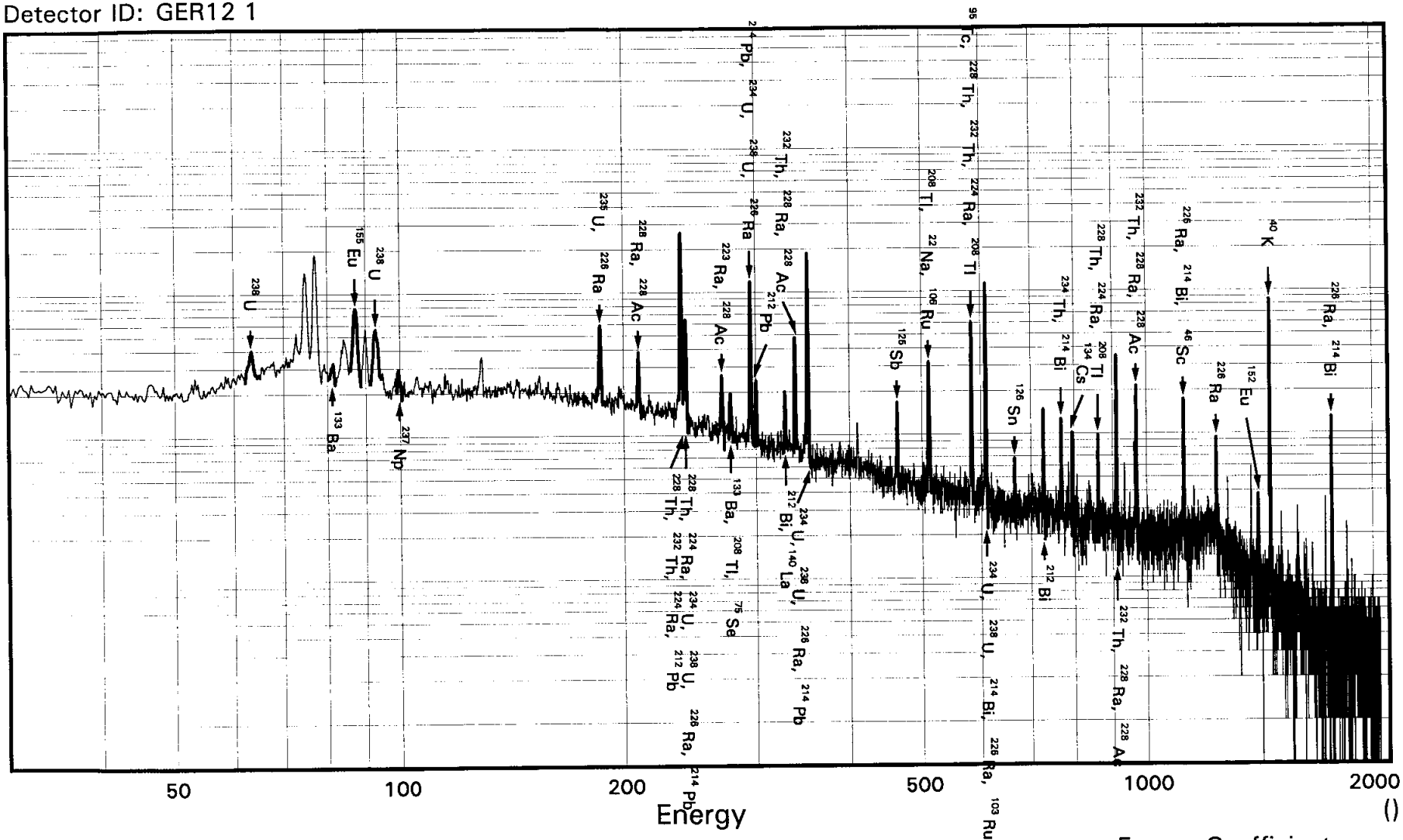
STL Richland WA.

BRC SOIL

Sample ID: J47172AC

Detector ID: GER12 1

Batch ID: 7232501



Acquisition Start: 13-SEP-2007 17:56:09.25

Preset Live Time: 0 10:00:00.00

Elapsed Live Time: 0 10:00:00.00

Energy Coefficients:

Offset: 1.13995E+01

Slope: 2.47618E-01

Quadrature: 1.95627E-09

SAMPLE IDENTIFICATION: J47172AC

CONFIGURATION ID: GER12:J47172AC_130971756
TITLE : BRC SOIL
SAMPLE ID : J47172AC

REPORT DATE: 14-SEP-07
ACQUIRE DATE: 13-SEP-07 17:56:09
ELAPSED LIVE TIME: 36000.0 Sec
PRESET LIVE TIME: 0 10:00:00

SAMPLE DATE: 1-AUG-2007 15:30:00.00
CALIB DATE: 13-SEP-2007 05:00:39.61
ELAPSED LIVE TIME: 0 10:00:00
ELAPSED REAL TIME: 0 10:00:21

SAMPLE QUANTITY: 3.1340E+02
SAMPLE GEOMETRY: S200

UNITS: GRAMS
SAMPLE TYPE:

ENERGY OFFSET: 1.1399E+01 keV
ENERGY SLOPE: 2.4762E-01 keV/C
ENERGY Q COEFF: 1.9563E-09 keV/C^^2
PEAK SENSITIVITY: 5.000

FWHM OFFSET: 4.3244E-01 keV
FWHM SLOPE: 3.5163E-02 sqr keV
ITERATIONS: 10
GAUSSIAN SENSITIVITY: 70.00 %

ABUNDANCE LIMIT: 80.00 %
ENERGY TOLERANCE: 2.000 keV
VARIABLE PEAK WIDTH: 3.00

HALF-LIFE RATIO: 8.00
ACTIVITY MULTIPLIER: 1.0000E+06
LIBRARY: [NUC_LIBR]QRL.NLB

VMS Peak Search Report V1.9 Generated 14-SEP-2007 05:53:58

Configuration : $DISK1:[GER12.SAMPLE]J47172AC_130971756.CNF;1
Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6
Sample title : BRC SOIL
Sample date : 1-AUG-2007 15:30:00 Acquisition date : 13-SEP-2007 17:56:09
Sample ID : J47172AC Sample quantity : 313.40 GRAMS
Sample type : Sample geometry : S200
Elapsed live time: 0 10:00:00.00 Elapsed real time: 0 10:00:21.67 0.1%
Start energy : 11.65 End energy : 2040.02
Sensitivity : 5.00 Gaussian : 70.00
Critical level : No

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	63.27	552	2588	0.82	209.49	205	10	1.53E-02	17.7	
2	3	74.82*	4126	3651	0.98	256.13	242	30	1.15E-01	3.4	9.79E+00
3	3	77.07	6090	2810	0.86	265.19	242	30	1.69E-01	2.1	
4	0	81.22	237	1727	0.80	281.97	279	7	6.59E-03	29.8	
5	0	84.15*	876	3687	1.41	293.81	286	14	2.43E-02	15.6	
6	0	87.19*	2433	3117	1.10	306.07	300	12	6.76E-02	5.2	
7	0	89.84	1282	2398	0.94	316.79	312	10	3.56E-02	7.7	
8	0	92.87	1731	3247	1.41	329.03	323	13	4.81E-02	7.2	
9	0	99.77	163	1712	0.51	356.86	353	8	4.53E-03	44.8	
10	0	129.06	802	3422	1.06	475.19	468	17	2.23E-02	17.1	
11	0	186.03	2035	3169	1.08	705.25	695	18	5.65E-02	6.9	
12	0	209.37	937	2153	0.88	799.50	793	14	2.60E-02	11.0	
13	4	238.70	10144	1965	1.00	917.94	909	29	2.82E-01	1.3	1.10E+01
14	4	241.84	2995	1993	1.43	930.61	909	29	8.32E-02	3.9	
15	0	270.26	1008	1570	1.31	1045.41	1038	16	2.80E-02	9.3	
16	0	277.53	533	1498	1.16	1074.76	1068	15	1.48E-02	16.4	
17	0	295.22	5171	2138	1.04	1146.20	1135	23	1.44E-01	2.7	
18	0	300.13	755	1430	1.02	1166.03	1158	16	2.10E-02	11.8	
19	0	328.26	472	1318	1.04	1279.62	1271	15	1.31E-02	17.4	
20	0	338.37	1988	1260	1.16	1320.46	1313	15	5.52E-02	4.5	
21	0	351.95*	8591	1721	1.08	1375.28	1365	22	2.39E-01	1.7	
22	0	409.65	317	761	1.16	1608.31	1602	13	8.81E-03	18.8	
23	0	463.04	609	887	1.23	1823.92	1815	18	1.69E-02	12.2	
24	0	510.83*	1235	1144	1.55	2016.90	2004	26	3.43E-02	9.1	
25	0	583.26	3235	893	1.36	2309.41	2299	19	8.99E-02	2.8	
26	0	609.35*	6610	787	1.36	2414.76	2404	22	1.84E-01	1.7	
27	0	665.59	183	452	0.81	2641.88	2635	15	5.08E-03	26.4	
28	0	727.33	770	527	1.49	2891.22	2882	19	2.14E-02	8.0	
29	0	768.34	497	568	1.21	3056.82	3049	18	1.38E-02	12.1	
30	0	794.86	481	374	1.45	3163.90	3156	18	1.34E-02	10.5	
31	0	860.40	401	516	1.07	3428.56	3417	22	1.11E-02	15.3	
32	0	911.13	2435	504	1.63	3633.42	3619	26	6.76E-02	2.9	
33	0	934.34	260	491	1.89	3727.17	3716	22	7.21E-03	19.5	
34	0	968.90	1235	1203	1.50	3866.74	3848	32	3.43E-02	7.7	
35	0	1120.20	1382	475	1.94	4477.72	4463	25	3.84E-02	4.5	
36	0	1238.39	591	647	1.92	4954.97	4938	33	1.64E-02	11.8	
37	0	1377.62	380	319	1.86	5517.23	5501	28	1.05E-02	12.3	
38	0	1408.46	220	221	2.08	5641.75	5627	28	6.12E-03	17.5	
39	0	1460.74*	7134	665	1.98	5852.89	5837	31	1.98E-01	1.5	
40	0	1509.41	65	191	1.13	6049.41	6039	16	1.79E-03	40.1	
41	0	1587.87	148	208	1.60	6366.24	6356	23	4.12E-03	22.9	
42	0	1729.68	215	152	1.55	6938.87	6928	25	5.98E-03	15.1	
43	0	1764.21	1172	144	1.85	7078.32	7060	34	3.25E-02	3.9	

Sample ID : J47172AC Acquisition date : 13-SEP-2007 17:56:09

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
44	0	1846.98	162	50	1.94	7412.51	7402	20	4.50E-03	12.0	

Flag: "*" = Peak area was modified by background subtraction

VMS Nuclide Identification Report V3.0 Generated 14-SEP-2007 05:53:59

Configuration : $DISK1:[GER12.SAMPLE]J47172AC_130971756.CNF;1
Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.3
Sample title : BRC SOIL
Sample date : 1-AUG-2007 15:30:00 Acquisition date : 13-SEP-2007 17:56:09
Sample ID : J47172AC Sample quantity : 313.40 GRAMS
Sample type : Sample geometry : S200
Elapsed live time: 0 10:00:00.00 Elapsed real time: 0 10:00:21.67 0.1%
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: NP

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected PCI/GRAM	Decay Corr PCI/GRAM	1-Sigma %Error
K-40	1460.81	7134	10.67*	8.869E-01	1.806E+01	1.806E+01	10.11
TL-208	277.35	533	6.80	3.058E+00	6.144E-01	6.144E-01	17.67
	510.84	1235	21.60	2.026E+00	6.762E-01	6.762E-01	10.85
	583.14	3235	84.20*	1.844E+00	4.992E-01	4.992E-01	6.63
	860.37	401	12.46	1.377E+00	5.593E-01	5.593E-01	17.29
PB-212	238.63	10144	44.60*	3.357E+00	1.623E+00	1.623E+00	6.85
	300.09	755	3.41	2.908E+00	1.824E+00	1.824E+00	13.44
BI-214	609.31	6610	46.30*	1.786E+00	1.914E+00	1.914E+00	6.28
	768.36	497	5.04	1.504E+00	1.570E+00	1.570E+00	14.02
	1120.29	1382	15.10	1.112E+00	1.972E+00	1.972E+00	8.30
	1764.49	1172	15.80	7.551E-01	2.352E+00	2.352E+00	8.00
PB-214	241.98	2995	7.49	3.331E+00	2.876E+00	2.876E+00	7.79
	295.21	5171	19.20	2.939E+00	2.195E+00	2.195E+00	7.03
	351.92	8591	37.20*	2.617E+00	2.114E+00	2.114E+00	6.54
	785.91	------	1.10	1.478E+00	------ Line Not Found		------
RA-224DA	238.63	10144	44.60*	3.357E+00	1.623E+00	1.694E+00	6.85
	240.98	2995	3.95	3.331E+00	5.453E+00	5.693E+00	7.79
	583.14	3235	30.25	1.844E+00	1.389E+00	1.451E+00	6.63
	860.37	401	4.48	1.377E+00	1.555E+00	1.624E+00	17.29
RA-226DA	186.21	2035	3.50	3.840E+00	3.627E+00	3.627E+00	9.67
	241.98	2995	7.49	3.331E+00	2.876E+00	2.876E+00	7.79
	295.22	5171	19.20	2.939E+00	2.195E+00	2.195E+00	7.03
	351.92	8591	37.20	2.617E+00	2.114E+00	2.114E+00	6.54
	609.32	6610	46.30*	1.786E+00	1.914E+00	1.915E+00	6.28
	1120.28	1382	15.10	1.112E+00	1.972E+00	1.972E+00	8.30
	1238.11	591	5.94	1.022E+00	2.332E+00	2.332E+00	14.30
	1764.49	1172	15.80	7.551E-01	2.352E+00	2.353E+00	8.00
AC-228	209.28	937	4.40	3.617E+00	1.410E+00	1.410E+00	12.95
	270.23	1008	3.60	3.110E+00	2.157E+00	2.157E+00	11.45
	338.32	1988	11.40	2.687E+00	1.555E+00	1.555E+00	7.76
	911.07	2435	27.70*	1.316E+00	1.600E+00	1.600E+00	8.96
	969.11	1235	16.60	1.253E+00	1.423E+00	1.423E+00	11.19
RA-228DA	209.28	937	4.40	3.617E+00	1.410E+00	1.430E+00	12.95
	338.32	1988	11.40	2.687E+00	1.555E+00	1.577E+00	7.76
	911.07	2435	27.70*	1.316E+00	1.600E+00	1.623E+00	8.96
	964.60	------	5.20	1.257E+00	------ Line Not Found		------

Sample ID : J47172AC Acquisition date : 13-SEP-2007 17:56:09

Nuclide Type: NP

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected PCI/GRAM	Decay Corr PCI/GRAM	1-Sigma %Error
	969.11	1235	16.60	1.253E+00	1.423E+00	1.443E+00	11.19
TH-228DA	238.63	10144	44.60	3.357E+00	1.623E+00	1.694E+00	6.85
	240.98	2995	3.95	3.331E+00	5.453E+00	5.693E+00	7.79
	583.14	3235	30.25*	1.844E+00	1.389E+00	1.451E+00	6.63
	860.37	401	4.48	1.377E+00	1.555E+00	1.624E+00	17.29
TH-232DA	238.63	10144	44.60	3.357E+00	1.623E+00	1.623E+00	6.85
	338.32	1988	12.40*	2.687E+00	1.429E+00	1.429E+00	7.76
	583.14	3235	30.25	1.844E+00	1.389E+00	1.389E+00	6.63
	911.07	2435	27.70	1.316E+00	1.600E+00	1.600E+00	8.96
	964.60	------	5.20	1.257E+00	------	Line Not Found	------
	969.11	1235	16.60	1.253E+00	1.423E+00	1.423E+00	11.19
U-234DA	241.98	2995	7.49	3.331E+00	2.876E+00	2.876E+00	7.79
	295.22	5171	19.20*	2.939E+00	2.195E+00	2.195E+00	7.03
	351.92	8591	37.20	2.617E+00	2.114E+00	2.114E+00	6.54
	609.31	6610	46.30	1.786E+00	1.914E+00	1.914E+00	6.28
U-238DA	241.98	2995	7.49	3.331E+00	2.876E+00	2.876E+00	7.79
	295.22	5171	19.20	2.939E+00	2.195E+00	2.195E+00	7.03
	351.92	8591	37.20*	2.617E+00	2.114E+00	2.114E+00	6.54
	609.31	6610	46.30	1.786E+00	1.914E+00	1.914E+00	6.28
U-238DHP	63.28	552	3.80*	2.176E+00	1.600E+00	1.600E+00	18.82
	92.59	1731	5.41	3.846E+00	1.993E+00	1.993E+00	10.03

Flag: "*" = Keyline

Sample ID : J47172AC Acquisition date : 13-SEP-2007 17:56:09

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
3	74.82	4126	3651	0.98	256.13	242	30	1.15E-01	3.4	3.02E+00	
3	77.07	6090	2810	0.86	265.19	242	30	1.69E-01	2.1	3.15E+00	
0	81.22	237	1727	0.80	281.97	279	7	6.59E-03	29.8	3.38E+00	T
0	84.15	876	3687	1.41	293.81	286	14	2.43E-02	15.6	3.52E+00	
0	87.19	2433	3117	1.10	306.07	300	12	6.76E-02	5.2	3.65E+00	T
0	89.84	1282	2398	0.94	316.79	312	10	3.56E-02	7.7	3.75E+00	
0	99.77	163	1712	0.51	356.86	353	8	4.53E-03	44.8	4.02E+00	T
0	129.06	802	3422	1.06	475.19	468	17	2.23E-02	17.1	4.26E+00	
0	328.26	472	1318	1.04	1279.62	1271	15	1.31E-02	17.4	2.74E+00	T
0	409.65	317	761	1.16	1608.31	1602	13	8.81E-03	18.8	2.36E+00	
0	463.04	609	887	1.23	1823.92	1815	18	1.69E-02	12.2	2.17E+00	T
0	665.59	183	452	0.81	2641.88	2635	15	5.08E-03	26.4	1.67E+00	T
0	727.33	770	527	1.49	2891.22	2882	19	2.14E-02	8.0	1.57E+00	T
0	794.86	481	374	1.45	3163.90	3156	18	1.34E-02	10.5	1.46E+00	T
0	934.34	260	491	1.89	3727.17	3716	22	7.21E-03	19.5	1.29E+00	
0	1377.62	380	319	1.86	5517.23	5501	28	1.05E-02	12.3	9.33E-01	
0	1408.46	220	221	2.08	5641.75	5627	28	6.12E-03	17.5	9.15E-01	T
0	1509.41	65	191	1.13	6049.41	6039	16	1.79E-03	40.1	8.62E-01	
0	1587.87	148	208	1.60	6366.24	6356	23	4.12E-03	22.9	8.26E-01	
0	1729.68	215	152	1.55	6938.87	6928	25	5.98E-03	15.1	7.68E-01	
0	1846.98	162	50	1.94	7412.51	7402	20	4.50E-03	12.0	7.27E-01	

Flags: "T" = Tentatively associated

Sample ID : J47172AC Acquisition date : 13-SEP-2007 17:56:09

Nuclide	Half-life	Half-Life Ratio	Energy	%Abund	Activity (PCI/GRAM)	1-Sigma %Error	Rejected by
NA-22	2.60Y	0.05	511.00	179.68	8.390E-02	10.85	Abun.
			1274.54*	99.94	--- Not Found ---		
		% Abundances Found =		64.26			
SC-46	83.85D	0.52	889.25	99.98	--- Not Found ---		Abun.
			1120.51*	99.99	4.261E-01	8.30	
		% Abundances Found =		50.00			
SE-75	119.78D	0.36	121.12	16.70	--- Not Found ---		Abun.
			136.00	59.20	--- Not Found ---		
			264.65*	59.80	--- Not Found ---		
			279.53	25.20	2.130E-01	17.67	
			400.65	11.40	--- Not Found ---		
		% Abundances Found =		14.63			
TC-95M	61.00D	0.71	204.12*	66.20	--- Not Found ---		Abun.
			582.07	29.30	2.347E+00	6.63	
			835.13	26.10	--- Not Found ---		
		% Abundances Found =		24.10			
RU-103	39.35D	1.10	497.08*	89.00	--- Not Found ---		Abun.
			610.33	5.60	3.394E+01	6.28	
		% Abundances Found =		5.92			
RU-106DA	368.20D	0.12	511.85	20.60	7.692E-01	10.85	Abun.
			621.84*	9.80	--- Not Found ---		
		% Abundances Found =		67.76			
SB-125	2.77Y	0.04	176.33	6.89	--- Not Found ---		Abun.
			427.89*	29.33	--- Not Found ---		
			463.38	10.35	6.688E-01	13.64	
			600.56	17.80	--- Not Found ---		
			635.90	11.32	--- Not Found ---		
		% Abundances Found =		13.67			
SN-126DA	1.00E+05Y	0.00	414.70	97.66	--- Not Found ---		Abun.
			666.33*	99.95	2.616E-02	27.15	
			695.00	99.95	--- Not Found ---		
		% Abundances Found =		33.59			
BA-133	10.50Y	0.01	81.00	33.00	5.136E-02	30.60	Abun.
			276.40	6.90	6.103E-01	17.67	
			302.84	17.80	--- Not Found ---		
			356.00*	62.05	--- Not Found ---		
			383.85	8.70	--- Not Found ---		
		% Abundances Found =		31.06			
CS-134	2.06Y	0.06	569.31	15.43	--- Not Found ---		Abun.
			604.70	97.60	--- Not Found ---		
			795.84*	85.40	9.587E-02	12.75	
			801.93	8.73	--- Not Found ---		
		% Abundances Found =		41.22			

Nuclide	Half-life	Half-Life Ratio	Energy	%Abund	Activity (PCI/GRAM)	1-Sigma %Error	Rejected by
LA-140	40.22H	25.84	328.77	20.50	1.211E+07	18.50	Decay,Abun.
			487.03	45.50	--- Not Found ---		
			815.85	23.50	--- Not Found ---		
			1596.49*	95.49	--- Not Found ---		
		% Abundances Found =		11.08			
EU-152	13.60Y	0.01	121.78	28.40	--- Not Found ---		Abun.
			244.67	7.49	--- Not Found ---		
			344.27*	26.50	--- Not Found ---		
			778.89	12.74	--- Not Found ---		
			964.01	14.40	--- Not Found ---		
			1085.78	10.00	--- Not Found ---		
			1112.02	13.30	--- Not Found ---		
			1407.95	20.70	2.801E-01	20.38	
		% Abundances Found =		15.50			
EU-155	4.96Y	0.02	42.90	21.16	--- Not Found ---		Abun.
			86.54	30.90	5.260E-01	8.89	
			105.31*	20.70	--- Not Found ---		
		% Abundances Found =		42.47			
BI-212	1.41E+10Y	0.00	288.07	0.31	--- Not Found ---		Abun.
			327.96	0.14	2.968E+01	20.13	
			452.83	0.31	--- Not Found ---		
			727.33*	6.58	1.788E+00	10.66	
			785.37	1.10	--- Not Found ---		
			893.41	0.38	--- Not Found ---		
			952.12	0.17	--- Not Found ---		
			1078.62	0.56	--- Not Found ---		
			1512.70	0.29	--- Not Found ---		
			1620.50	1.49	--- Not Found ---		
			1806.00	0.09	--- Not Found ---		
		% Abundances Found =		58.84			
RA-223	21.77Y	0.01	154.21	5.58	--- Not Found ---		Abun.
			269.46*	13.60	5.732E-01	11.45	
			323.87	3.88	--- Not Found ---		
		% Abundances Found =		58.98			
TH-234DA	4.47E+09Y	0.00	766.41	0.21	3.768E+01	14.02	Abun.
			1001.03*	0.65	--- Not Found ---		
		% Abundances Found =		24.42			
U-235HP	7.04E+08Y	0.00	143.76*	10.50	--- Not Found ---		Abun.
			185.71	54.00	2.351E-01	9.67	
			205.31	4.70	--- Not Found ---		
		% Abundances Found =		78.03			
NP-237DA	2.14E+06Y	0.00	98.44	17.60	5.518E-02	45.33	Abun.
			311.98*	36.00	--- Not Found ---		
		% Abundances Found =		32.84			

Flag: "*" = Keyline

VMS Nuclide Identification Report V3.0 Generated 14-SEP-2007 05:54:01

Configuration : $DISK1:[GER12.SAMPLE]J47172AC_130971756.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 : BRC SOIL
Sample date : 1-AUG-2007 15:30:00
Sample ID : J47172AC
Sample type :
Elapsed live time: 0 10:00:00.00
Peak Width (FWHM): 3.00
Energy tolerance : 2.00
Errors propagated: Yes
Efficiency type : Empirical
Abundance limit : 80.00

Acquisition date : 13-SEP-2007 17:56:09
Sample quantity : 313.40 GRAMS
Sample geometry : S200
Elapsed real time: 0 10:00:21.67 0.1%
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 (PCI/GRAM)	Act error	MDA (PCI/GRAM)	MDA error	Act/MDA
K-40	1.806E+01	1.826E+00	2.041E-01	1.766E-02	88.487
TL-208	4.992E-01	3.312E-02	1.889E-02	6.280E-04	26.431
PB-212	1.623E+00	1.112E-01	3.104E-02	1.396E-03	52.283
BI-214	1.914E+00	1.201E-01	3.498E-02	1.186E-03	54.727
PB-214	2.114E+00	1.381E-01	3.617E-02	1.397E-03	58.443
RA-224DA	1.694E+00	1.161E-01	3.241E-02	1.458E-03	52.283
RA-226DA RQL= 0.02039	1.915E+00	1.201E-01	3.498E-02	1.186E-03	54.726
AC-228	1.600E+00	1.433E-01	6.005E-02	4.102E-03	26.641
RA-228DA RQL= 0.11116	1.623E+00	1.454E-01	6.092E-02	4.161E-03	26.641
TH-228DA	1.451E+00	9.623E-02	5.488E-02	1.825E-03	26.431
TH-232DA	1.429E+00	1.110E-01	1.134E-01	4.404E-03	12.606
U-234DA	2.195E+00	1.544E-01	6.953E-02	2.877E-03	31.567
U-238DA	2.114E+00	1.381E-01	3.617E-02	1.397E-03	58.443
U-238DHP	1.600E+00	3.011E-01	6.612E-01	2.531E-02	2.420

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (PCI/GRAM)	K.L. Ided	Act error	MDA (PCI/GRAM)	MDA error	Act/MDA
BE-7	-5.360E-02		7.132E-02	2.347E-01	7.926E-03	-0.228
NA-22	2.699E-03		6.360E-03	2.163E-02	1.653E-03	0.125
SC-46	4.261E-01	+	3.537E-02	5.963E-02	2.921E-03	7.145
CR-51	1.351E-01		1.214E-01	4.032E-01	1.572E-02	0.335
MN-54	9.846E-03		5.974E-03	2.060E-02	1.217E-03	0.478
CO-57	-2.458E-02		3.936E-02	1.296E-01	5.156E-03	-0.190
CO-58	-1.011E-02		7.495E-03	2.487E-02	1.377E-03	-0.406
FE-59	-7.221E-02		2.084E-02	6.454E-02	3.317E-03	-1.119
CO-60	-9.375E-03		5.734E-03	1.833E-02	1.790E-03	-0.512
ZN-65	2.010E-02		1.689E-02	4.971E-02	2.463E-03	0.404
SE-75	1.536E-02		8.412E-03	2.830E-02	1.235E-03	0.543
SR-85	4.472E-02		9.176E-03	2.703E-02	8.478E-04	1.655
Y-88	-4.500E-03		6.023E-03	2.053E-02	7.632E-04	-0.219
NB-94	-5.781E-03		5.133E-03	1.700E-02	1.101E-03	-0.340

Sample ID : J47172AC Acquisition date : 13-SEP-2007 17:56:09

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (PCI/GRAM)	K.L. Ided	Act error	MDA (PCI/GRAM)	MDA error	Act/MDA
NB-95	6.398E-02		1.528E-02	4.612E-02	2.252E-03	1.387
TC-95M	2.505E-03		9.705E-03	3.287E-02	1.515E-03	0.076
ZR-95	3.211E-02		1.483E-02	5.041E-02	2.398E-03	0.637
ZRNB-95	9.076E-02		2.083E-02	6.281E-02	3.068E-03	1.445
RH-101	1.462E-02		6.335E-03	1.994E-02	9.215E-04	0.733
RH-102M	-1.608E-03		4.511E-03	1.495E-02	5.070E-04	-0.108
RU-103	3.107E-03		9.759E-03	3.258E-02	1.060E-03	0.095
RU-106DA	5.174E-02		4.890E-02	1.675E-01	5.728E-03	0.309
AG-108M	9.453E-04		4.550E-03	1.529E-02	5.513E-04	0.062
AG-110M	-4.893E-03		7.860E-03	2.630E-02	1.761E-03	-0.186
SN-113DA	-1.130E-02		8.296E-03	2.744E-02	1.033E-03	-0.412
SB-124	-1.036E-02		8.215E-03	2.674E-02	9.024E-04	-0.387
SB-125	1.405E-02		1.482E-02	5.015E-02	1.822E-03	0.280
SN-126DA	2.616E-02	+	7.102E-03	1.761E-02	6.285E-04	1.486
I-131	-1.487E-01		2.013E-01	6.760E-01	2.595E-02	-0.220
BA-133	1.550E-03		7.049E-03	2.058E-02	7.936E-04	0.075
CS-134	9.587E-02	+	1.223E-02	2.730E-02	1.452E-03	3.511
CS-137DA	9.945E-04		6.305E-03	1.804E-02	6.337E-04	0.055
LA-138	5.758E-03		7.646E-03	2.680E-02	2.384E-03	0.215
CE-139	-1.968E-02		6.258E-03	1.947E-02	9.122E-04	-1.011
BA-140	-9.893E-02		1.782E-01	6.032E-01	1.932E-02	-0.164
BALA-140	-1.814E-01		1.292E-01	4.170E-01	2.986E-02	-0.435
CE-141	-9.047E-03		2.016E-02	6.621E-02	2.813E-03	-0.137
CE-144	-1.020E-02		4.004E-02	1.248E-01	4.863E-03	-0.082
CEPR-144	-2.059E-02		8.009E-02	2.497E-01	9.725E-03	-0.082
PM-144	-2.546E-03		4.969E-03	1.665E-02	5.680E-04	-0.153
PM-146	2.000E-02		6.591E-03	2.249E-02	7.894E-04	0.889
EU-152	-1.629E-02		1.533E-02	5.144E-02	1.994E-03	-0.317
EU-154	1.180E-02		1.756E-02	5.992E-02	4.577E-03	0.197
EU-155	7.097E-02		1.907E-02	6.391E-02	2.686E-03	1.110
HF-181	8.682E-04		1.034E-02	3.444E-02	1.154E-03	0.025
BI-207	7.135E-03		4.552E-03	1.572E-02	5.173E-04	0.454
BI-210M	-9.269E-03		8.912E-03	2.608E-02	1.136E-03	-0.355
BI-212	1.788E+00	+	1.906E-01	3.835E-01	1.885E-02	4.662
RA-223	5.732E-01	+	6.563E-02	1.221E-01	5.291E-03	4.694
AC-227DA	1.679E-01		4.617E-02	1.343E-01	6.055E-03	1.251
TH-234DA	2.974E+00		8.940E-01	3.061E+00	1.873E-01	0.972
U-235HP	8.835E-02		3.730E-02	1.238E-01	5.194E-03	0.714
NP-237DA	-2.353E-02		1.125E-02	3.585E-02	1.428E-03	-0.656
AM-241HP	-1.353E-02		2.382E-02	7.762E-02	2.777E-03	-0.174