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CHAIN OF CUSTODY 27

GAMMA SAMPLE AND QC DATA 35

TOTAL # PAGES IN DOCUMENT 229

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.: 36845

SDG No.	Order No.	Client Sample ID (List Order)	Lot-Sa No.	Work Order	Report DB ID	Batch No.
35713		BGS-A2-55D	J7H240342-2	J5K7A1AA	9J5K7A10	7241630
		BGS-A2-55S	J7H240342-1	J5K641AA	9J5K6410	7241630
		BGS-A2-65D	J7H240342-4	J5K751AA	9J5K7510	7241630
		BGS-A2-65S	J7H240342-3	J5K7G1AA	9J5K7G10	7241630
		BGS-A2-66D-1	J7H240342-6	J5K8H1AA	9J5K8H10	7241630
		BGS-A2-66D-2	J7H240342-7	J5K8K1AA	9J5K8K10	7241630
		BGS-A2-66S	J7H240342-5	J5K8A1AA	9J5K8A10	7241630
		BGS-A2-67D	J7H240342-9	J5K9L1AA	9J5K9L10	7241630
		BGS-A2-67S	J7H240342-8	J5K861AA	9J5K8610	7241630
		BGS-A2-68D	J7H240342-11	J5K921AA	9J5K9210	7241630
		BGS-A2-68S	J7H240342-10	J5K9X1AA	9J5K9X10	7241630
		BGS-A2-69D	J7H240342-13	J5K971AA	9J5K9710	7241630
		BGS-A2-69S	J7H240342-12	J5K951AA	9J5K9510	7241630
		BGS-A2-71D	J7H240342-15	J5LAK1AA	9J5LAK10	7241630
		BGS-A2-71S	J7H240342-14	J5LAF1AA	9J5LAF10	7241630

TestAmerica

Certificate of Analysis

September 27, 2007

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

Attention: Penny Bassett

Date Received at Lab	:	August 23, 2007
Project Name	:	Yerington Mine Soils
Project Number	:	132039
Enfos Number	:	01KF-0109
PO Number	:	129682.001
Sample Type	:	Fifteen (15) Soil Samples
SDG Number	:	35713

CASE NARRATIVE

I. Introduction

On August 23, 2007, fifteen 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 J7H240342.

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:

Sample BGS-A2-55S had insufficient sample volume for duplicate analysis. It was counted on a different detector. The keyline for Ra-228DA was identified in samples BGS-A2-55D and BGS-A2-68S but there was not enough supporting gamma lines to allow meeting the 80% abundance criteria. The Ra-228DA result in each sample will be reported. 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.

Sample Results Summary

TAL Richland STLR

Ordered by Client Sample ID, Batch No.

Date: 27-Sep-07

Report No. : 36845

SDG No: 35713

Client ID	Work Order Number	Parameter	Result +- Uncertainty (2s)	Qual	Units	Yield	MDC|MDA	RER2
BGS-A2-55D	J5K7A1AA	RA-226	2.01 +- 0.252	=	pCi/g		0.0353	
		RA-228	0.642 +- 0.130	ND	pCi/g		0.125	
BGS-A2-55S	J5K641AA	RA-226	1.90 +- 0.237	=	pCi/g		0.0336	
		RA-228	0.714 +- 0.127	=	pCi/g		0.064	
BGS-A2-55S DUP	J5K641AC	RA-226	1.89 +- 0.243	=	pCi/g		0.0464	0.1
		RA-228	0.777 +- 0.147	=	pCi/g		0.0907	0.6
BGS-A2-65D	J5K751AA	RA-226	1.24 +- 0.160	=	pCi/g		0.0285	
		RA-228	1.37 +- 0.247	=	pCi/g		0.055	
BGS-A2-65S	J5K7G1AA	RA-226	1.36 +- 0.174	=	pCi/g		0.0302	
		RA-228	1.46 +- 0.230	=	pCi/g		0.0569	
BGS-A2-66D-1	J5K8H1AA	RA-226	0.996 +- 0.129	=	pCi/g		0.0306	
		RA-228	0.810 +- 0.139	=	pCi/g		0.0567	
BGS-A2-66D-2	J5K8K1AA	RA-226	1.17 +- 0.155	=	pCi/g		0.0374	
		RA-228	0.862 +- 0.159	=	pCi/g		0.0739	
BGS-A2-66S	J5K8A1AA	RA-226	1.34 +- 0.181	=	pCi/g		0.0505	
		RA-228	1.30 +- 0.211	=	pCi/g		0.0955	
BGS-A2-67D	J5K9L1AA	RA-226	1.82 +- 0.227	=	pCi/g		0.0379	
		RA-228	0.854 +- 0.149	=	pCi/g		0.0742	
BGS-A2-67S	J5K861AA	RA-226	1.88 +- 0.242	=	pCi/g		0.0379	
		RA-228	0.833 +- 0.154	=	pCi/g		0.0771	
BGS-A2-68D	J5K921AA	RA-226	1.31 +- 0.166	=	pCi/g		0.0269	
		RA-228	0.817 +- 0.155	=	pCi/g		0.0475	
BGS-A2-68S	J5K9X1AA	RA-226	1.36 +- 0.172	=	pCi/g		0.027	
		RA-228	1.09 +- 0.173	ND	pCi/g		0.127	
BGS-A2-69D	J5K971AA	RA-226	1.38 +- 0.181	=	pCi/g		0.043	
		RA-228	1.67 +- 0.256	=	pCi/g		0.0838	
BGS-A2-69S	J5K951AA	RA-226	1.08 +- 0.143	=	pCi/g		0.0351	
		RA-228	1.47 +- 0.250	=	pCi/g		0.0736	
BGS-A2-71D	J5LAK1AA	RA-226	1.00 +- 0.128	=	pCi/g		0.0265	

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

Sample Results Summary

TAL Richland STLR

Ordered by Client Sample ID, Batch No.

Date: 27-Sep-07

Report No. : 36845

SDG No: 35713

Client ID	Work Order Number	Parameter	Result +- Uncertainty (2s)	Qual	Units	Yield	MDC|MDA	RER2
BGS-A2-71D	J5LAK1AA	RA-228	1.22 +- 0.195	=	pCi/g		0.0533	
BGS-A2-71S	J5LAF1AA	RA-226	1.08 +- 0.139	=	pCi/g		0.0351	
		RA-228	1.48 +- 0.231	=	pCi/g		0.0645	

Number of Results: 32

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

QC Results Summary
TAL Richland STLR

Ordered by QC Type, Batch No.

Date: 27-Sep-07

Report No. : 36845

SDG No.: 35713

QC Type	Work Order Number	Parameter	Result +- Uncertainty (2s)	Qual	Units	Tracer Yield	LCS Recovery	Bias	MDC|MDA
BLANK QC	J5WE91AA	RA-226	-0.0472 +- 0.0515	N	pCi/g				0.0621
		RA-228	-0.0730 +- 0.0796	N	pCi/g				0.101
LCS	J5WE91AC	CS-137	1.19 +- 0.150	=	pCi/g		118%	0.2	0.0239

Number of Results: 3

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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: 27-Sep-07

Lab Name:	TA Richland	SDG:	35713	Collection Date:	8/15/2007 1:45:00 PM
Lot-Sample No.:	J7H240342-2	Report No. :	36845	Received Date:	8/23/2007 10:00:00 AM
Client Sample ID:	BGS-A2-55D	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: 7241630	Work Order: J5K7A1AA			Report DB ID: 9J5K7A10								
RA-226	**2.01**	=	0.25	0.25	0.0353	pCi/g		*(56.9)*	9/21/07 06:19 a		329.6	E901.1
								(15.9)			g	GER13$1
RA-228	**0.642**	ND	0.13	0.13	0.125	pCi/g		*(5.1)*	9/21/07 06:19 a		329.6	E901.1
								(9.9)			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: 27-Sep-07

Lab Name:	**TA Richland**	**SDG:**	35713	**Collection Date:**	8/15/2007 1:45:00 PM
Lot-Sample No.:	**J7H240342-1**	**Report No. :**	36845	**Received Date:**	8/23/2007 10:00:00 AM
Client Sample ID:	**BGS-A2-55S**	**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: 7241630	**Work Order:** J5K641AA			**Report DB ID:** 9J5K6410								
RA-226	**1.90**	=	0.24	0.24	0.0336	pCi/g		*(56.7)*	9/21/07 06:19 a		349.3	E901.1
								(16.1)			g	GER10$1
RA-228	**0.714**	=	0.13	0.13	0.064	pCi/g		*(11.2)*	9/21/07 06:19 a		349.3	E901.1
								(11.2)			g	GER10$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: 27-Sep-07

Lab Name:	**TA Richland**	**SDG:**	35713	**Collection Date:**	8/15/2007 2:45:00 PM
Lot-Sample No.:	**J7H240342-4**	**Report No. :**	36845	**Received Date:**	8/23/2007 10:00:00 AM
Client Sample ID:	**BGS-A2-65D**	**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: 7241630	**Work Order:** J5K751AA			**Report DB ID:** 9J5K7510								
RA-226	**1.24**	=	0.16	0.16	0.0285	pCi/g		*(43.6)*	9/21/07 06:20 a		368.1	E901.1
								(15.6)			g	GER12$1
RA-228	**1.37**	=	0.25	0.25	0.055	pCi/g		*(24.8)*	9/21/07 06:20 a		368.1	E901.1
								(11.)			g	GER12$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: 27-Sep-07

Lab Name:	TA Richland	SDG:	35713	Collection Date:	8/15/2007 2:45:00 PM
Lot-Sample No.:	J7H240342-3	Report No. :	36845	Received Date:	8/23/2007 10:00:00 AM
Client Sample ID:	BGS-A2-65S	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: 7241630	Work Order: J5K7G1AA			Report DB ID: 9J5K7G10								
RA-226	**1.36**	=	0.17	0.17	0.0302	pCi/g		*(45.1)*	9/21/07 06:20 a		327.3	E901.1
								(15.7)			g	GER11$1
RA-228	**1.46**	=	0.23	0.23	0.0569	pCi/g		*(25.6)*	9/21/07 06:20 a		327.3	E901.1
								(12.6)			g	GER11$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: 27-Sep-07

Lab Name:	**TA Richland**	**SDG:**	35713	**Collection Date:**	8/16/2007 7:15:00 AM
Lot-Sample No.:	**J7H240342-6**	**Report No. :**	36845	**Received Date:**	8/23/2007 10:00:00 AM
Client Sample ID:	**BGS-A2-66D-1**	**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: 7241630	**Work Order:** J5K8H1AA			**Report DB ID:** 9J5K8H10								
RA-226	**0.996**	=	0.13	0.13	0.0306	pCi/g		*(32.6)* *(15.4)*	9/21/07 09:50 p		389.2 g	E901.1 GER10$1
RA-228	**0.810**	=	0.14	0.14	0.0567	pCi/g		*(14.3)* *(11.7)*	9/21/07 09:50 p		389.2 g	E901.1 GER10$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: 27-Sep-07

Lab Name:	TA Richland	SDG:	35713	Collection Date:	8/16/2007 7:15:00 AM
Lot-Sample No.:	J7H240342-7	Report No. :	36845	Received Date:	8/23/2007 10:00:00 AM
Client Sample ID:	BGS-A2-66D-2	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: 7241630	Work Order: J5K8K1AA			Report DB ID: 9J5K8K10								
RA-226	**1.17**	=	0.16	0.16	0.0374	pCi/g		*(31.3)* *(15.1)*	9/21/07 09:58 p		383.0 g	E901.1 GER7$1
RA-228	**0.862**	=	0.16	0.16	0.0739	pCi/g		*(11.7)* *(10.9)*	9/21/07 09:58 p		383.0 g	E901.1 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: 27-Sep-07

Lab Name:	TA Richland	SDG:	35713	Collection Date:	8/16/2007 7:15:00 AM
Lot-Sample No.:	J7H240342-5	Report No. :	36845	Received Date:	8/23/2007 10:00:00 AM
Client Sample ID:	BGS-A2-66S	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: 7241630	Work Order: J5K8A1AA			Report DB ID: 9J5K8A10								
RA-226	**1.34**	=	0.18	0.18	0.0505	pCi/g		*(26.5)* *(14.8)*	9/21/07 06:20 a		313.8 g	E901.1 GER14$1
RA-228	**1.30**	=	0.21	0.21	0.0955	pCi/g		*(13.6)* *(12.3)*	9/21/07 06:20 a		313.8 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 I

SAMPLE RESULTS

Date: 27-Sep-07

Lab Name:	TA Richland	**SDG:**	35713	**Collection Date:**	8/16/2007 8:00:00 AM
Lot-Sample No.:	J7H240342-9	**Report No. :**	36845	**Received Date:**	8/23/2007 10:00:00 AM
Client Sample ID:	BGS-A2-67D	**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: 7241630	**Work Order:** J5K9L1AA			**Report DB ID:** 9J5K9L10								
RA-226	**1.82**	=	0.23	0.23	0.0379	pCi/g		*(48.1)*	9/21/07 09:54 p		377.7	E901.1
								(16.)			g	GER5$1
RA-228	**0.854**	=	0.15	0.15	0.0742	pCi/g		*(11.5)*	9/21/07 09:54 p		377.7	E901.1
								(11.5)			g	GER5$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: 27-Sep-07

Lab Name:	TA Richland	**SDG:**	35713	**Collection Date:**	8/16/2007 8:00:00 AM
Lot-Sample No.:	J7H240342-8	**Report No. :**	36845	**Received Date:**	8/23/2007 10:00:00 AM
Client Sample ID:	BGS-A2-67S	**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: 7241630	**Work Order:** J5K861AA			**Report DB ID:** 9J5K8610								
RA-226	**1.88**	=	0.24	0.24	0.0379	pCi/g		*(49.5)*	9/21/07 09:50 p		391.0	E901.1
								(15.5)			g	GER4$1
RA-228	**0.833**	=	0.15	0.15	0.0771	pCi/g		*(10.8)*	9/21/07 09:50 p		391.0	E901.1
								(10.8)			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: 27-Sep-07

Lab Name:	**TA Richland**	**SDG:**	35713	**Collection Date:**	8/16/2007 8:45:00 AM
Lot-Sample No.:	**J7H240342-11**	**Report No. :**	36845	**Received Date:**	8/23/2007 10:00:00 AM
Client Sample ID:	**BGS-A2-68D**	**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: 7241630	**Work Order:** J5K921AA			**Report DB ID:** 9J5K9210								
RA-226	**1.31**	=	0.17	0.17	0.0269	pCi/g		*(48.7)*	9/21/07 09:51 p		388.9	E901.1
								(15.7)			g	GER12$1
RA-228	**0.817**	=	0.16	0.16	0.0475	pCi/g		*(17.2)*	9/21/07 09:51 p		388.9	E901.1
								(10.5)			g	GER12$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: 27-Sep-07

Lab Name:	TA Richland	SDG:	35713	Collection Date:	8/16/2007 8:45:00 AM
Lot-Sample No.:	J7H240342-10	Report No. :	36845	Received Date:	8/23/2007 10:00:00 AM
Client Sample ID:	BGS-A2-68S	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: 7241630	Work Order: J5K9X1AA			Report DB ID: 9J5K9X10								
RA-226	**1.36**	=	0.17	0.17	0.027	pCi/g		*(50.4)* *(15.9)*	9/21/07 09:51 p		368.9 g	E901.1 GER11$1
RA-228	**1.09**	ND	0.17	0.17	0.127	pCi/g		*(8.5)* *(12.6)*	9/21/07 09:51 p		368.9 g	E901.1 GER11$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: 27-Sep-07

Lab Name:	TA Richland	SDG:	35713	Collection Date:	8/16/2007 9:30:00 AM
Lot-Sample No.:	J7H240342-13	Report No. :	36845	Received Date:	8/23/2007 10:00:00 AM
Client Sample ID:	BGS-A2-69D	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: 7241630	Work Order: J5K971AA			Report DB ID: 9J5K9710								
RA-226	**1.38**	=	0.18	0.18	0.043	pCi/g		*(32.)*	9/21/07 09:53 p		332.9	E901.1
								(15.2)			g	GER8$1
RA-228	**1.67**	=	0.26	0.26	0.0838	pCi/g		*(19.9)*	9/21/07 09:53 p		332.9	E901.1
								(13.1)			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: 27-Sep-07

Lab Name:	**TA Richland**	**SDG:**	35713	**Collection Date:**	8/16/2007 9:30:00 AM
Lot-Sample No.:	**J7H240342-12**	**Report No. :**	36845	**Received Date:**	8/23/2007 10:00:00 AM
Client Sample ID:	**BGS-A2-69S**	**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: 7241630	**Work Order:** J5K951AA			**Report DB ID:** 9J5K9510								
RA-226	**1.08**	=	0.14	0.14	0.0351	pCi/g		*(30.8)*	9/21/07 09:52 p		352.2	E901.1
								(15.1)			g	GER13$1
RA-228	**1.47**	=	0.25	0.25	0.0736	pCi/g		*(20.)*	9/21/07 09:52 p		352.2	E901.1
								(11.7)			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: 27-Sep-07

Lab Name:	TA Richland	SDG:	35713	Collection Date:	8/16/2007 10:15:00 AM
Lot-Sample No.:	J7H240342-15	Report No. :	36845	Received Date:	8/23/2007 10:00:00 AM
Client Sample ID:	BGS-A2-71D	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: 7241630	Work Order: J5LAK1AA			Report DB ID: 9J5LAK10								
RA-226	**1.00**	=	0.13	0.13	0.0265	pCi/g		*(37.8)*	9/22/07 11:10 a		392.3	E901.1
								(15.6)			g	GER11$1
RA-228	**1.22**	=	0.19	0.19	0.0533	pCi/g		*(23.)*	9/22/07 11:10 a		392.3	E901.1
								(12.6)			g	GER11$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: 27-Sep-07

Lab Name:	TA Richland	SDG:	35713	Collection Date:	8/16/2007 10:15:00 AM
Lot-Sample No.:	J7H240342-14	Report No. :	36845	Received Date:	8/23/2007 10:00:00 AM
Client Sample ID:	BGS-A2-71S	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: 7241630	Work Order: J5LAF1AA			Report DB ID: 9J5LAF10								
RA-226	**1.08**	=	0.14	0.14	0.0351	pCi/g		*(30.8)* *(15.5)*	9/22/07 11:09 a		348.5 g	E901.1 GER10$1
RA-228	**1.48**	=	0.23	0.23	0.0645	pCi/g		*(23.)* *(12.8)*	9/22/07 11:09 a		348.5 g	E901.1 GER10$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: 27-Sep-07

DUPLICATE RESULTS

Lab Name:	TA Richland	**SDG:**	35713	**Collection Date:**	8/15/2007 1:45:00 PM
Lot-Sample No.:	J7H240342-1	**Report No. :**	36845	**Received Date:**	8/23/2007 10:00:00 AM
Client Sample ID:	BGS-A2-55S 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: 7241630	**Work Order:** J5K641AC			**Report DB ID:** J5K641CR		**Orig Sa DB ID:** 9J5K6410						
RA-226	1.89	=	0.24	0.24	0.0464	pCi/g		(40.7)	9/21/07 09:49 p		349.3	E901.1
	1.9	= RER2	0.1					(15.5)			g	GER14$1
RA-228	0.777	=	0.15	0.15	0.0907	pCi/g		(8.6)	9/21/07 09:49 p		349.3	E901.1
	0.714	= RER2	0.6					(10.6)			g	GER14$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: 27-Sep-07

Lab Name: TA Richland **SDG:** 35713

Lot-Sample No.: J7H290000-630 **Report No. :** 36845 **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: 7241630	Work Order: J5WE91AA			Report DB ID: J5WE91AB								
RA-226	-0.0472	ND	0.051	0.051	0.0621	pCi/g		-0.76	9/21/07 06:20 a		201.3	E901.1
								-(1.8)			g	GER15$1
RA-228	-0.0730	ND	0.080	0.080	0.101	pCi/g		-0.72	9/21/07 06:20 a		201.3	E901.1
								-(1.8)			g	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: 27-Sep-07

Lab Name: TA Richland

SDG: 35713

Lot-Sample No.: J7H290000-630

Report No. : 36845

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: 7241630	Work Order: J5WE91AC			Report DB ID: J5WE91CS									
CS-137	1.19	=	0.15	0.15	0.0239	pCi/g		1.01	2.4	118%	9/21/07 08:09 p	203.3	E901.1
							Rec Limits:	70.	130.	0.2		g	GER15$1

Number of Results: 1

Comments:

TAL Richland
rptSTLRchLcs
V5.1.4 A2002

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._____

☐ 3264 Goni Road / Suite 153
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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

VERS000369

PROJECT NAME: Yerington Mine Site

PROJECT NUMBER: 132039

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

J7H240342 35713 Due 09-14-07

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-A2-71S	8-16-07	1045	PB	1	9 oz Glass	NONE	S	PB ~~EPA 903.0, EPA 904.0~~, HASL 300 ~~(U, TH)~~ Ra-226, 228			J5L	AF	----0.1 0.8	
02	BGS-A2-71D	↓	↓	↓	1	9 oz Glass	NONE	S	PB ~~EPA 903.0, EPA 904.0~~, HASL 300 ~~(U, TH)~~ ↓			J5L	AK	----2 3	
03														----	
04														----	
05														----	
06														----	
07														----	
08														----	
09														----	
10														----	

COLLECTED & RELEASED BY: Penny Bennett	DATE 8/22/07	TIME 1400	COOLER I.D.:			COMMENTS (see note on back):
RECEIVED BY:	DATE 8/23/07	TIME 10:00	RELINQUISHED BY:	DATE / /	TIME :	
RECORD RETURNED BY:	DATE / /	TIME :				
COURIER:			SHIPPING NUMBER:			001KF-0109

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

CHAIN OF CUSTODY RECORD

COC No. _____

YERS000365

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Las Vegas, NV 89102
702-938-4080 / FAX 702-938-4082

☐ 201 East Washington Street / Suite 106
Phoenix, AZ 85004
602-567-4000 / FAX 602-567-4001

PROJECT NAME: Yerington Mine Site

PROJECT NUMBER: 132039

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

JTH240342

35713 Due 09-14-07

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-A2-69S	8-16-07	09:30	PB	1	9 oz Glass	NONE	S	PB ~~EPA 903.0, EPA 904.0~~, HASL 300 ~~(U, TH)~~ Ra-226, 228			J5K95		0.1 / 0.8	
02	BGS-A2-69D	↓	↓	↓	1	9 oz Glass	NONE	S	PB ~~EPA 903.0, EPA 904.0~~, HASL 300 ~~(U, TH)~~ ↓			J5K97		2 / 3	
03														----	
04														----	
05														----	
06														----	
07														----	
08														----	
09														----	
10														----	

COLLECTED & RELEASED BY: Penny Bassett	DATE 8/22/07	TIME 14:00	COOLER I.D.:			COMMENTS (see note on back):
RECEIVED BY:	DATE 8/23/07	TIME 10:00	RELINQUISHED BY:	DATE / /	TIME :	
RECORD RETURNED BY:	DATE / /	TIME :				
COURIER:			SHIPPING NUMBER:			001KF-0109

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

COC No._____

YERS000363

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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

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

J7H240342 35713 Due 09-14-07

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-A2-68S	8-16-07	08:45	PB	1	9 oz Glass	NONE	S	PB ~~EPA 903.0, EPA 904.0~~ HASL 300 ~~(U, TH)~~ Ra-226, 228			J5K94		0.1 ---- 0.8	
02	BGS-A2-68D	↓	↓	↓	1	9 oz Glass	NONE	S	PB ~~EPA 903.0, EPA 904.0~~ HASL 300 ~~(U, TH)~~ ↓			J5K93		2 ---- 3	
03														----	
04														----	
05														----	
06														----	
07														----	
08														----	
09														----	
10														----	

COLLECTED & RELEASED BY: Penny Bassett	DATE 8/22/07	TIME 14:00	COOLER I.D.:			COMMENTS (see note on back):
RECEIVED BY:	DATE 8/23/07	TIME 10:00	RELINQUISHED BY:	DATE / /	TIME :	
RECORD RETURNED BY:	DATE / /	TIME :				
COURIER:			SHIPPING NUMBER:			001KF-0109

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

CHAIN OF CUSTODY RECORD

COC No. _____

YERS000361

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Las Vegas, NV 89102
702-938-4080 / FAX 702-938-4082

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

PROJECT NAME: Yerington Mine Site

PROJECT NUMBER: 132039

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

J7H240342 35713 Due 09.14.07

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-A2-67S	8-16-07	0800	PB	1	9 oz Glass	NONE	S	PB ~~EPA 903.0, EPA 904.0~~ HASL 300 ~~(U, TH)~~ Ra-226, 228		M	J5K86		0.1 / 0.8	
02	BGS-A2-67D	↓	↓	↓	1	9 oz Glass	NONE	S	PB ~~EPA 903.0, EPA 904.0~~ HASL 300 ~~(U, TH)~~ ↓			J5K9L		2 / 3	
03														----	
04														----	
05														----	
06														----	
07														----	
08														----	
09														----	
10														----	

COLLECTED & RELEASED BY: Penny Bandi	DATE 8/22/07	TIME 14:00	COOLER I.D.:			COMMENTS (see note on back):
RECEIVED BY:	DATE 8/23/07	TIME 10:00	RELINQUISHED BY:	DATE / /	TIME :	
RECORD RETURNED BY:	DATE / /	TIME :				
COURIER:			SHIPPING NUMBER:			001KC-0109

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.

BROWN AND CALDWELL

CHAIN OF CUSTODY RECORD

COC No. _____

YERS000359

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

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

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

PROJECT NAME: Yerington Mine Site

PROJECT NUMBER: 132039

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

J7H240342 35713 Due 09.14.07

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-A2-66S	8-16-07	0815	PB	1	9 oz Glass	NONE	S	PB ~~EPA 903.0, EPA 904.0,~~ HASL 300 ~~(U, TH)~~ Ra-226, 228			J5K8A		----0.1	
02	BGS-A2-66D-1	↓	↓	↓	1	9 oz Glass	NONE	S	PB ~~EPA 903.0, EPA 904.0,~~ HASL 300 ~~(U, TH)~~ ↓			J5K8H		0.1 ----2	
03	BGS-A2-66D-2	↓	↓	↓	1	9 oz Glass	NONE	S	PB ~~EPA 903.0, EPA 904.0,~~ HASL 300 ~~(U, TH)~~ ↓			J5K8K		3 ----2	
04														3 ----	
05														----	
06														----	
07														----	
08														----	
09														----	
10														----	

COLLECTED & RELEASED BY: Penny Barrett	DATE 8 22 07	TIME 1400	COOLER I.D.:			COMMENTS (see note on back):
RECEIVED BY:	DATE 8 23 07	TIME 10:00	RELINQUISHED BY:	DATE / /	TIME :	
RECORD RETURNED BY:	DATE / /	TIME :				Enfos Billing
COURIER:			SHIPPING NUMBER:			00LKF-0109

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

CHAIN OF CUSTODY RECORD

COC No._____

☐ 3264 Goni Road / Suite 153
Carson City, NV 89706
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☐ 4425 W. Spring Mountain Road / Suite 225
Las Vegas, NV 89102
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☐ 201 East Washington Street / Suite 500
Phoenix, AZ 85004
602-567-4000 / FAX 602-567-4001

YERS000357

PROJECT NAME: Yerington Mine Site

PROJECT NUMBER: 132039

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

J7H240342 35713 Due 08-14-07

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-A2-65S	8-15-07	1445	PB	1	9 oz Glass	NONE	S	PB EPA ~~903.0, EPA 904.0~~, HASL 300 ~~(U, TH)~~ Ra-226,228			J5K7G		----0.1 0.8	
02	BGS-A2-65D	↓	↓	↓	1	9 oz Glass	NONE	S	PB ~~EPA 903.0, EPA 904.0~~, HASL 300 ~~(U, TH)~~ ↓			J5K75		----2 3	
03														----	
04														----	
05														----	
06														----	
07														----	
08														----	
09														----	
10														----	

COLLECTED & RELEASED BY: Penny Bassett	DATE 8/22/07	TIME 14:00	COOLER I.D.:			COMMENTS (see note on back):
RECEIVED BY:	DATE 8/23/07	TIME 10:00	RELINQUISHED BY:	DATE / /	TIME :	
RECORD RETURNED BY:	DATE / /	TIME :				
COURIER:			SHIPPING NUMBER:			001KF-0109

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.

BROWN AND CALDWELL

CHAIN OF CUSTODY RECORD

COC No. YERS000337

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

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

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

PROJECT NAME: Yerington Mine Site

PROJECT NUMBER: 132039

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

J7H240342 35713 Due 09.14.07

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-A2-55S	8-15-07	1345	PB	1	9 oz Glass	NONE	S	PB EPA ~~903.0, EPA 904.0~~, HASL 300 ~~(U, TH)~~ Ra-226,228			J5K64		0.1 / 0.8	
02	BGS-A2-55D	↓	↓	↓	1	9 oz Glass	NONE	S	PB EPA ~~903.0, EPA 904.0~~, HASL 300 ~~(U, TH)~~ ↓			J5K7A		2 / 3	
03														----	
04														----	
05														----	
06														----	
07														----	
08														----	
09														----	
10														----	

COLLECTED & RELEASED BY: Penny Dooley	DATE 8 15 07	TIME 14 00	COOLER I.D.:			COMMENTS (see note on back):
RECEIVED BY:	DATE 8 15 07	TIME 10 00	RELINQUISHED BY:	DATE / /	TIME :	
RECORD RETURNED BY:	DATE / /	TIME :				Enfos Billing
COURIER:			SHIPPING NUMBER:			001KF-0109

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

33

SEVERN TRENT STL

Sample Check-in List

Date/Time Received: 8-23-07 1000

Client: BRC SDG #: 35713 NA [ ] SAF #: _____ NA [ ]

Work Order Number: J7H240342 Chain of Custody # _____

Shipping Container ID: _____ Air Bill # _____

1. Custody Seals on shipping container intact? NA [✓] Yes [ ] No [ ]

2. Custody Seals dated and signed? NA [✓] Yes [ ] No [ ]

3. Chain of Custody record present? Yes [✓] No [ ]

4. Cooler temperature: _____ NA [✓] 5. Vermiculite/packing materials is NA [✓] Wet [ ] Dry [ ]

6. Number of samples in shipping container: 15

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: 8-23-07

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

9/26/2007 10:55:26 AM

Lot No., Due Date: J7H240342; 09/14/2007

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

QC Batch No., Method Test: 7241630; RGAMMA Gamma by GER

SDG, Matrix: 35713; SOIL

1.0 COC

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

2.0 QC Batch

2.1 Do the Summary/Detailed Reports include a calculated result for each sample listed on the QC Batch Sheet? Yes ✓ No N/A

2.2 Are the QC appropriate for the analysis included in the batch? Yes ✓ No N/A

2.3 Is the Analytical Batch Worksheet complete; includes as appropriate, volumes, count times, etc? Yes ✓ No N/A

2.4 Does the Worksheets include a Tracer Vial label for each sample? Yes No N/A ✓

3.0 QC & Samples

3.1 Is the blank results, yield, and MDA within contract limits? Yes ✓ No N/A

3.2 Is the LCS result, yield, and MDA within contract limits? Yes ✓ No N/A

3.3 Are the MS/MSD results, yields, and MDA within contract limits? Yes No N/A ✓

3.4 Are the duplicate result, yields, and MDAs within contract limits? Yes ✓ No N/A

3.5 Are the sample yields and MDAs within contract limits? Yes ✓ No N/A

4.0 Raw Data

4.1 Were results calculated in the correct units? Yes ✓ No N/A

4.2 Were analysis volumes entered correctly? Yes ✓ No N/A

4.3 Were Yields entered correctly? Yes No N/A ✓

4.4 Were spectra reviewed/meet contractual requirements? Yes ✓ No N/A

4.5 Were raw counts reviewed for anomalies? Yes ✓ No N/A

5.0 Other

5.1 Are all nonconformances included and noted? Yes ✓ No N/A

5.2 Are all required forms filled out? Yes ✓ No N/A

5.3 Was the correct methodology used? Yes ✓ No N/A

5.4 Was transcription checked? Yes ✓ No N/A

5.5 Were all calculations checked at a minimum frequency? Yes ✓ No N/A

5.6 Are worksheet entries complete and correct? Yes ✓ No N/A

6.0 Comments on any No response:

See NCM # 10-10914 for additional information.

First Level Review Matt Lardy **Date** 9-26-07

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Data Review Checklist
RADIOCHEMISTRY
Second Level Review

Batch Number: 7241630

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 Adam Date: 9-26-07

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

TAL RICHLAND

9/5/2007 6:44:19 AM

Sample Preparation/Analysis

536403, Brown and Caldwell and Caldwell , Brown

AX Gamma PrpRC5013/5017
TA Gamma by HPGE 10 day ingrowth 9/5/07 JBW
01 STANDARD TEST SET

Balance Id:n/a
Pipet #:

AnalyDueDate: 09/10/2007

Sep1 DT/Tm Tech:

Batch: 7241630 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 J5K64-1-AA J7H240342-1-SAMP 08/15/2007 13:45		349.30g,in AmtRec: JAR8OZG	#Containers: 1		5200	~~1000~~ 600	610 Scr:	1619 Alpha:	9/21/07 Beta:	
2 J5K64-1-AC-X J7H240342-1-DUP 08/15/2007 13:45		not enough Sample AmtRec: JAR8OZG	#Containers: 1				614 Scr:	0749 Alpha:	9/21/07 OKP Beta:	
3 J5K7A-1-AA J7H240342-2-SAMP 08/15/2007 13:45		329.60g,in AmtRec: JAR8OZG	#Containers: 1		5200	~~1000~~ 600 9/21/07	613 Scr:	1619 Alpha:	9/21/07 m Beta:	
4 J5K7G-1-AA J7H240342-3-SAMP 08/15/2007 14:45		327.30g,in AmtRec: JAR8OZG	#Containers: 1				611 Scr:	1600 Alpha:		Beta:
5 J5K75-1-AA J7H240342-4-SAMP 08/15/2007 14:45		368.10g,in AmtRec: JAR8OZG	#Containers: 1				612 Scr:	1600 Alpha:		Beta:
6 J5K8A-1-AA J7H240342-5-SAMP 08/16/2007 07:15		313.80g,in AmtRec: JAR8OZG	#Containers: 1				614 Scr:	1600 Alpha:		Beta:
7 J5K8H-1-AA J7H240342-6-SAMP 08/16/2007 07:15		389.20g,in AmtRec: JAR8OZG	#Containers: 1				610 Scr:	0750 Alpha:	9/21/07 OKP Beta:	

TAL RICHLAND

9/5/2007 6:44:20 AM

Sample Preparation/Analysis

536403, Brown and Caldwell , Brown
and Caldwell

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

Balance Id:n/a

Pipet #:

AnalyDueDate: 09/10/2007

Sep1 DT/Tm Tech:

Batch: 7241630 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 J5K8K-1-AA J7H240342-7-SAMP 08/16/2007 07:15	AmtRec: JAR8OZG	383.00g,in	#Containers: 1		5200	~~1000~~ 600	G7	0758	9/21/07	Scr: Alpha: Beta:
9 J5K86-1-AA J7H240342-8-SAMP 08/16/2007 08:00	AmtRec: JAR8OZG	391.00g,in	#Containers: 1				G4	0750	9/21/07	Scr: Alpha: Beta:
10 J5K9L-1-AA J7H240342-9-SAMP 08/16/2007 08:00	AmtRec: JAR8OZG	377.70g,in	#Containers: 1				G5	0754		Scr: Alpha: Beta:
11 J5K9X-1-AA J7H240342-10-SAMP 08/16/2007 08:45	AmtRec: JAR8OZG	368.90g,in	#Containers: 1				G11	0751		Scr: Alpha: Beta:
12 J5K92-1-AA J7H240342-11-SAMP 08/16/2007 08:45	AmtRec: JAR8OZG	388.90g,in	#Containers: 1				G12			Scr: Alpha: Beta:
13 J5K95-1-AA J7H240342-12-SAMP 08/16/2007 09:30	AmtRec: JAR8OZG	352.20g,in	#Containers: 1				G13	0752		Scr: Alpha: Beta:
14 J5K97-1-AA J7H240342-13-SAMP 08/16/2007 09:30	AmtRec: JAR8OZG	332.90g,in	#Containers: 1				G8	0753		Scr: Alpha: Beta:

STL Richland Key: In - Initial Amt, fi - Final Amt, di - Diluted Amt, s1 - Sep1, s2 - Sep2 Page 2 ISV - Insufficient Volume for Analysis WO Cnt: 14
Richland Wa. pd - Prep Dt, r - Reference Dt, ec-Enrichment Cell, ct-Cocktailed Added Prep_SamplePrep v4.8.26

TAL RICHLAND

9/5/2007 6:44:20 AM

Sample Preparation/Analysis

536403, Brown and Caldwell and Caldwell , Brown

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

AnalyDueDate: 09/10/2007

Batch: 7241630 **SOIL** **pCi/g** **PM, Quote: SA , 73181**
SEQ Batch, Test: None

Balance Id:n/a
Pipet #:
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:
15 J5LAF-1-AA J7H240342-14-SAMP 08/16/2007 10:15		348.50g,in AmtRec: JAR8OZG	#Containers: 1		5200	600 ~~1000~~ 9/21/07	~~G5~~ 9/22/07 G10	Scr:	2109 Alpha:	9/22/07 Beta:
16 J5LAK-1-AA J7H240342-15-SAMP 08/16/2007 10:15		392.30g,in AmtRec: JAR8OZG	#Containers: 1				G11	Scr:	2110 Alpha:	9/22/07 Beta:
17 J5WE9-1-AA-B J7H290000-630-BLK 08/15/2007 13:45		201.30g,in AmtRec:	#Containers: 1		200	600 ~~1000~~ 9/21/07	G15	Scr:	0620 Alpha:	9/21/07 Beta:
18 J5WE9-1-AC-C J7H290000-630-LCS 08/15/2007 13:45		203.30g,in AmtRec:	GSE1139 08/29/07,pd 06/08/05,r #Containers: 1				G15	Scr:	0609 Alpha:	9/21/07 Beta:

Comments: not enough sample for Dup please recount on sperate Detector 10 day ingrowth started 9/5/07

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

J5K641AA-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

J5WE91AA-BLK:

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

J5WE91AC-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

Clouseau
Nonconformance Memo

TestAmerica

NCM #:	10-10914	Classification:	**Anomaly**
NCM Initiated By:	Matt Lardy	Status:	**GLREVIEW**
Date Opened:	09/26/2007	Production Area:	Environmental - Prep
Date Closed:		Tests:	Gamma by GER
		Lot #'s (Sample #'s):	J7H240342 (1,10,2),
		QC Batches:	7241630,
Nonconformance:	Other (describe in detail)		
Subcategory:	Other (explanation required)		

Problem Description / Root Cause

Name	Date	Description
Matt Lardy	09/26/2007	Customer: BRC

There was an insufficient amount of sample J5K641AA remaining to prepare a duplicate. Therefore sample J5K641AA was recounted as duplicate sample J5K641AC.

The KeyLine for Ra-228DA was identified in samples J5K7A1AA and J5K9X1AA but not enough supporting gamma lines were detected to allow meeting the 80% abundance criteria. The Ra-228DA result in each sample will be reported.

Corrective Action

Name	Date	Corrective Action
Matt Lardy	09/26/2007	The results will be reported.

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: 9/26/2007

9/26/2007 10:34:46 AM

ICOC Fraction Transfer/Status Report

ByDate: 9/26/2006, 10/1/2007, Batch: '7241630', User: *ALL Order By DateTimeAccepting

Q Batch	Work Ord	CurStatus	Accepting			Comments
7241630						
AC		**CalcC**	**BarcotI**	9/5/2007 6:56:44 AM		
SC			wagarr	IsBatched	8/29/2007 4:22:17 PM	ICOC_RADCALC v4.8.26
SC			BarcotI	Prep1C	9/5/2007 6:56:44 AM	RICH-RC-5013 REVISION 7
SC			BarcotI	InPrep2	9/5/2007 6:57:46 AM	RICH-RC-5017 REVISION 6
SC			BarcotI	Prep2C	9/5/2007 6:58:04 AM	RICH-RC-5017 REVISION 6
SC			BlackCL	InCnt1	9/5/2007 8:35:20 AM	RICH-RD-0007 REVISION 6
SC			StringerR	CalcC	9/23/2007 10:21:02 AM	RICH-RD-0007 REVISION 6
AC			**BarcotI**	9/5/2007 6:57:46 AM		
AC			**BarcotI**	9/5/2007 6:58:04 AM		
AC			**BlackCL**	9/5/2007 8:35:20 AM		
AC			**StringerR**	9/23/2007 10:21:02		

AC: Accepting Entry; SC: Status Change

STL Richland

Richland Wa.

Grp Rec Cnt: 5

ICOCFractions v4.8.27

9/26/2007 10:34:44 AM

Rpt DB Transfer log (Batch Results)

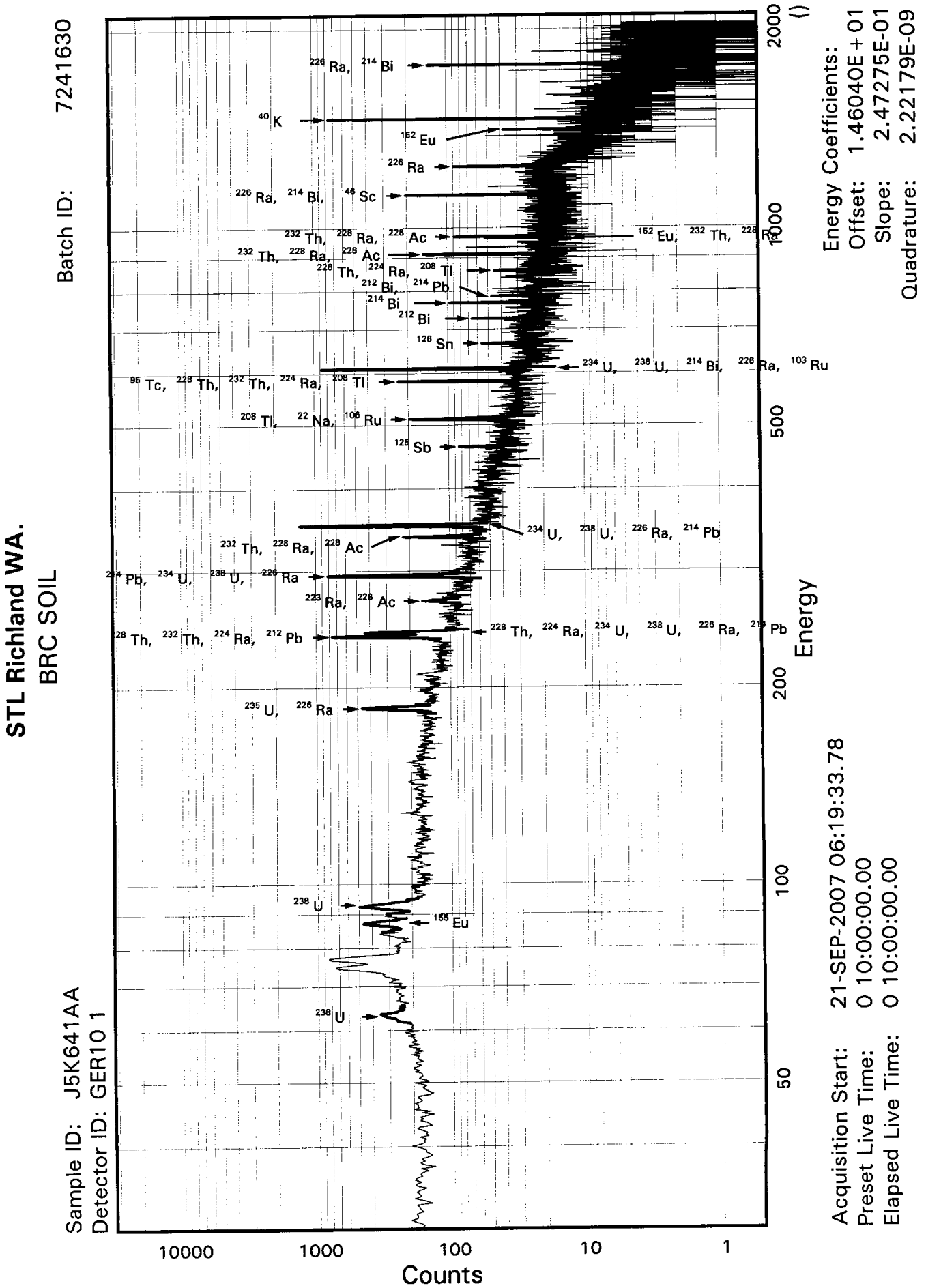
SDG or Batch / Isotope	Rpt Db Id / Method	RTst	Qc	LotSample / Analysis Date	Client Id / Result	Matrix / Cnt Uncert	Received Date / Tot Uncert	Mda	Sample Date / Units	Expected	Yield	Volumes
35713	**9J5K6410**			**J7H2403421**	BGS-A2-55S	SOIL	8/23/2007 10:00:00		8/15/2007 1:45:00 PM			
RA-226DA	AXTA	0		9/21/2007 6:19:34 AM	**1.9048E+00**	1.184E-01	1.184E-01	3.36E-02	PCI/GRAM			3.493E+2
RA-228DA	AXTA	0		9/21/2007 6:19:34 AM	**7.1438E-01**	6.372E-02	6.372E-02	6.404E-02	PCI/GRAM			3.493E+2
35713	**9J5K7510**			**J7H2403424**	BGS-A2-65D	SOIL	8/23/2007 10:00:00		8/15/2007 2:45:00 PM			
RA-226DA	AXTA	0		9/21/2007 6:20:13 AM	**1.2421E+00**	7.986E-02	7.986E-02	2.847E-02	PCI/GRAM			3.681E+2
RA-228DA	AXTA	0		9/21/2007 6:20:13 AM	**1.3654E+00**	1.237E-01	1.237E-01	5.501E-02	PCI/GRAM			3.681E+2
35713	**9J5K7A10**			**J7H2403422**	BGS-A2-55D	SOIL	8/23/2007 10:00:00		8/15/2007 1:45:00 PM			
RA-226DA	AXTA	0		9/21/2007 6:19:45 AM	**2.0075E+00**	1.259E-01	1.259E-01	3.525E-02	PCI/GRAM			3.296E+2
RA-228DA	AXTA	0		9/21/2007 6:19:45 AM	**6.4155E-01**	6.484E-02	6.484E-02	1.253E-01	PCI/GRAM			3.296E+2
35713	**9J5K7G10**			**J7H2403423**	BGS-A2-65S	SOIL	8/23/2007 10:00:00		8/15/2007 2:45:00 PM			
RA-226DA	AXTA	0		9/21/2007 6:20:02 AM	**1.3637E+00**	8.687E-02	8.687E-02	3.024E-02	PCI/GRAM			3.273E+2
RA-228DA	AXTA	0		9/21/2007 6:20:02 AM	**1.4555E+00**	1.152E-01	1.152E-01	5.692E-02	PCI/GRAM			3.273E+2
35713	**9J5K8610**			**J7H2403428**	BGS-A2-67S	SOIL	8/23/2007 10:00:00		8/16/2007 8:00:00 AM			
RA-226DA	AXTA	0		9/21/2007 9:50:57 PM	**1.8772E+00**	1.21E-01	1.21E-01	3.792E-02	PCI/GRAM			3.91E+2
RA-228DA	AXTA	0		9/21/2007 9:50:57 PM	**8.3337E-01**	7.707E-02	7.707E-02	7.71E-02	PCI/GRAM			3.91E+2
35713	**9J5K8A10**			**J7H2403425**	BGS-A2-66S	SOIL	8/23/2007 10:00:00		8/16/2007 7:15:00 AM			
RA-226DA	AXTA	0		9/21/2007 6:20:28 AM	**1.3401E+00**	9.067E-02	9.067E-02	5.053E-02	PCI/GRAM			3.138E+2
RA-228DA	AXTA	0		9/21/2007 6:20:28 AM	**1.3038E+00**	1.057E-01	1.057E-01	9.555E-02	PCI/GRAM			3.138E+2
35713	**9J5K8H10**			**J7H2403426**	BGS-A2-66D-1	SOIL	8/23/2007 10:00:00		8/16/2007 7:15:00 AM			
RA-226DA	AXTA	0		9/21/2007 9:50:02 PM	**9.9634E-01**	6.468E-02	6.468E-02	3.061E-02	PCI/GRAM			3.892E+2
RA-228DA	AXTA	0		9/21/2007 9:50:02 PM	**8.1026E-01**	6.946E-02	6.946E-02	5.668E-02	PCI/GRAM			3.892E+2
35713	**9J5K8K10**			**J7H2403427**	BGS-A2-66D-2	SOIL	8/23/2007 10:00:00		8/16/2007 7:15:00 AM			
RA-226DA	AXTA	0		9/21/2007 9:58:17 PM	**1.1704E+00**	7.765E-02	7.765E-02	3.737E-02	PCI/GRAM			3.83E+2
RA-228DA	AXTA	0		9/21/2007 9:58:17 PM	**8.6235E-01**	7.929E-02	7.929E-02	7.395E-02	PCI/GRAM			3.83E+2
35713	**9J5K9210**			**J7H24034211**	BGS-A2-68D	SOIL	8/23/2007 10:00:00		8/16/2007 8:45:00 AM			
RA-226DA	AXTA	0		9/21/2007 9:51:58 PM	**1.3071E+00**	8.315E-02	8.315E-02	2.686E-02	PCI/GRAM			3.889E+2
RA-228DA	AXTA	0		9/21/2007 9:51:58 PM	**8.1704E-01**	7.765E-02	7.765E-02	4.753E-02	PCI/GRAM			3.889E+2
35713	**9J5K9510**			**J7H24034212**	BGS-A2-69S	SOIL	8/23/2007 10:00:00		8/16/2007 9:30:00 AM			
RA-226DA	AXTA	0		9/21/2007 9:52:48 PM	**1.0801E+00**	7.157E-02	7.157E-02	3.508E-02	PCI/GRAM			3.522E+2
RA-228DA	AXTA	0		9/21/2007 9:52:48 PM	**1.4704E+00**	1.252E-01	1.252E-01	7.362E-02	PCI/GRAM			3.522E+2
35713	**9J5K9710**			**J7H24034213**	BGS-A2-69D	SOIL	8/23/2007 10:00:00		8/16/2007 9:30:00 AM			
RA-226DA	AXTA	0		9/21/2007 9:53:13 PM	**1.378E+00**	9.045E-02	9.045E-02	4.3E-02	PCI/GRAM			3.329E+2
RA-228DA	AXTA	0		9/21/2007 9:53:13 PM	**1.6689E+00**	1.278E-01	1.278E-01	8.381E-02	PCI/GRAM			3.329E+2
35713	**9J5K9L10**			**J7H2403429**	BGS-A2-67D	SOIL	8/23/2007 10:00:00		8/16/2007 8:00:00 AM			
RA-226DA	AXTA	0		9/21/2007 9:54:04 PM	**1.8189E+00**	1.134E-01	1.134E-01	3.785E-02	PCI/GRAM			3.777E+2
RA-228DA	AXTA	0		9/21/2007 9:54:04 PM	**8.5373E-01**	7.438E-02	7.438E-02	7.419E-02	PCI/GRAM			3.777E+2
35713	**9J5K9X10**			**J7H24034210**	BGS-A2-68S	SOIL	8/23/2007 10:00:00		8/16/2007 8:45:00 AM			
RA-226DA	AXTA	0		9/21/2007 9:51:39 PM	**1.3633E+00**	8.578E-02	8.578E-02	2.703E-02	PCI/GRAM			3.689E+2
RA-228DA	AXTA	0		9/21/2007 9:51:39 PM	**1.0865E+00**	8.629E-02	8.629E-02	1.271E-01	PCI/GRAM			3.689E+2
35713	**9J5LAF10**			**J7H24034214**	BGS-A2-71S	SOIL	8/23/2007 10:00:00		8/16/2007 10:15:00 AM			
RA-226DA	AXTA	0		9/22/2007 11:09:46	**1.0806E+00**	6.973E-02	6.973E-02	3.511E-02	PCI/GRAM			3.485E+2
RA-228DA	AXTA	0		9/22/2007 11:09:46	**1.4834E+00**	1.157E-01	1.157E-01	6.452E-02	PCI/GRAM			3.485E+2
35713	**9J5LAK10**			**J7H24034215**	BGS-A2-71D	SOIL	8/23/2007 10:00:00		8/16/2007 10:15:00 AM			
RA-226DA	AXTA	0		9/22/2007 11:10:43	**1.0009E+00**	6.412E-02	6.412E-02	2.647E-02	PCI/GRAM			3.923E+2
RA-228DA	AXTA	0		9/22/2007 11:10:43	**1.2242E+00**	9.747E-02	9.747E-02	5.33E-02	PCI/GRAM			3.923E+2
35713	**J5K641CR**			**J7H2403421**	BGS-A2-55S DUP	SOIL	8/23/2007 10:00:00		8/15/2007 1:45:00 PM			
RA-226DA	AXTA	0	R	9/21/2007 9:49:25 PM	**1.8851E+00**	1.214E-01	1.214E-01	4.637E-02	PCI/GRAM		RER 0.12	3.493E+2
RA-228DA	AXTA	0	R	9/21/2007 9:49:25 PM	**7.7665E-01**	7.328E-02	7.328E-02	9.068E-02	PCI/GRAM		-0.64	3.493E+2
35713	**J5WE91AB**			**J7H290000630**	INTRA-LAB BLANK	SOIL	8/23/2007 10:00:00		8/15/2007 1:45:00 PM			
RA-226DA	AXTA	0	B	9/21/2007 6:20:34 AM	**-4.7238E-02**	2.575E-02	2.575E-02	6.211E-02	PCI/GRAM			2.013E+2
RA-228DA	AXTA	0	B	9/21/2007 6:20:34 AM	**-7.2972E-02**	3.98E-02	3.98E-02	1.012E-01	PCI/GRAM			2.013E+2

7241630,7241630, **Samples Inserted | Updated | NotUpdated => 18 | 0 | 0,
**Results Inserted | ReTestInserted | Updated | NotInserted => 35 | 0 | 0 | 0.
**Diff RptDb | Qtims => .

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
35713	**J5WE91CS**			**J7H290000630**	INTRA-LAB CHECK	SOIL	8/23/2007 10:00:00		8/15/2007 1:45:00 PM			
CS-137DA	AXTA	0	S	9/21/2007 8:09:30 PM	**1.1895E+00**	7.479E-02	7.479E-02	2.388E-02	PCI/GRAM	1.007E+00	118%	2.033E+2

ok Matt Lardy 9-26-07

7241630,7241630, **Samples Inserted | Updated | NotUpdated => 18 | 0 | 0,
**Results Inserted | ReTestInserted | Updated | NotInserted => 35 | 0 | 0 | 0.
**Diff RptDb | Qtims => .


STL Richland WA.
BRC SOIL
Batch ID: 7241630
Sample ID: J5K641AA
Detector ID: GER10 1
Energy Coefficients:
Offset: 1.46040E+01
Slope: 2.47275E-01
Quadrature: 2.22179E-09
Acquisition Start: 21-SEP-2007 06:19:33.78
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
212 Bi, 214 Pb
214 Bi
212 Bi
126 Sn
95 Tc, 228 Th, 232 Th, 224 Ra, 208 Tl
234 U, 238 U, 214 Bi, 226 Ra, 103 Ru
208 Tl, 22 Na, 106 Ru
125 Sb
234 U, 238 U, 226 Ra, 214 Pb
232 Th, 228 Ra, 228 Ac
214 Pb, 234 U, 238 U, 226 Ra
223 Ra, 228 Ac
228 Th, 232 Th, 224 Ra, 212 Pb
228 Th, 224 Ra, 234 U, 238 U, 226 Ra, 214 Pb
235 U, 226 Ra
238 U
155 Eu
238 U

SAMPLE IDENTIFICATION: J5K641AA

CONFIGURATION ID: GER10:J5K641AA_210970619
TITLE : BRC SOIL
SAMPLE ID : J5K641AA

REPORT DATE: 21-SEP-07
ACQUIRE DATE: 21-SEP-07 06:19:33
ELAPSED LIVE TIME: 36000.0 Sec
PRESET LIVE TIME: 0 10:00:00

SAMPLE DATE: 15-AUG-2007 13:45:00.00
CALIB DATE: 21-SEP-2007 05:17:58.46
ELAPSED LIVE TIME: 0 10:00:00
ELAPSED REAL TIME: 0 10:00:16

SAMPLE QUANTITY: 3.4930E+02
SAMPLE GEOMETRY: S200

UNITS: GRAMS
SAMPLE TYPE:

ENERGY OFFSET: 1.4604E+01 keV
ENERGY SLOPE: 2.4728E-01 keV/C
ENERGY Q COEFF: 2.2218E-09 keV/C^^2
PEAK SENSITIVITY: 5.000

FWHM OFFSET: 1.1819E+00 keV
FWHM SLOPE: 2.1265E-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 21-SEP-2007 21:14:39

Configuration : $DISK1:[GER10.SAMPLE]J5K641AA_210970619.CNF;1
Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6
Sample title : BRC SOIL
Sample date : 15-AUG-2007 13:45:00 Acquisition date : 21-SEP-2007 06:19:33
Sample ID : J5K641AA Sample quantity : 349.30 GRAMS
Sample type : Sample geometry : S200
Elapsed live time: 0 10:00:00.00 Elapsed real time: 0 10:00:16.07 0.0%
Start energy : 17.08 End energy : 2040.43
Sensitivity : 5.00 Gaussian : 30.00
Critical level : No

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	63.08	699	3594	1.13	196.02	189	16	1.94E-02	19.5	
2	3	74.77*	2980	5828	1.82	243.33	231	30	8.28E-02	7.1	2.94E+00
3	3	77.05	3105	3926	1.26	252.53	231	30	8.62E-02	4.9	
4	0	87.32	928	4312	1.19	294.05	284	16	2.58E-02	16.2	
5	0	93.16	1350	5162	1.31	317.69	305	22	3.75E-02	13.9	
6	0	185.77	2085	3661	1.66	692.19	679	24	5.79E-02	8.0	
7	2	238.66	4051	2182	1.46	906.10	896	35	1.13E-01	2.8	1.14E+00
8	2	241.87	2476	2152	1.75	919.07	896	35	6.88E-02	4.8	
9	0	269.85	445	1935	1.43	1032.24	1022	21	1.24E-02	21.5	
10	0	295.22	4854	1883	1.49	1134.80	1122	25	1.35E-01	2.5	
11	0	338.35	918	1364	1.42	1309.22	1299	21	2.55E-02	9.2	
12	0	351.92*	8382	1515	1.58	1364.11	1353	24	2.33E-01	1.5	
13	0	462.85	273	664	1.25	1812.70	1803	18	7.57E-03	19.9	
14	0	511.02*	724	1107	2.19	2007.51	1992	36	2.01E-02	14.8	
15	0	583.23	1430	660	1.73	2299.50	2287	21	3.97E-02	4.6	
16	0	609.30	6779	842	1.81	2404.92	2388	31	1.88E-01	1.6	
17	0	665.78	260	498	1.78	2633.36	2620	24	7.21E-03	20.2	
18	0	727.21	331	394	1.63	2881.76	2872	20	9.20E-03	13.6	
19	0	768.30	656	666	1.79	3047.91	3034	33	1.82E-02	10.7	
20	0	786.15	159	476	1.92	3120.09	3107	22	4.42E-03	30.7	
21	0	860.39	193	298	2.13	3420.31	3412	17	5.37E-03	18.9	
22	0	911.22	1106	457	1.90	3625.87	3613	26	3.07E-02	5.4	
23	0	934.10	413	341	1.96	3718.39	3704	24	1.15E-02	11.1	
24	0	964.27	243	412	1.59	3840.37	3827	23	6.74E-03	19.5	
25	0	969.04	515	400	1.80	3859.68	3850	22	1.43E-02	9.5	
26	0	1120.27	1579	447	1.97	4471.21	4455	32	4.38E-02	4.2	
27	0	1155.43	183	364	0.88	4613.40	4604	21	5.08E-03	23.3	
28	0	1238.07	578	462	1.85	4947.56	4935	26	1.60E-02	9.6	
29	0	1377.77	334	209	2.01	5512.48	5501	22	9.28E-03	10.8	
30	0	1408.24	215	147	1.44	5635.70	5625	23	5.97E-03	13.1	
31	0	1460.81*	7051	246	2.09	5848.27	5831	34	1.96E-01	1.3	
32	0	1662.05	57	88	0.86	6662.00	6648	19	1.57E-03	33.2	
33	0	1729.75	206	111	2.15	6935.74	6923	24	5.72E-03	12.4	
34	0	1764.40	1260	84	1.96	7075.85	7056	36	3.50E-02	3.3	
35	0	1847.27	194	43	1.60	7410.94	7395	31	5.40E-03	10.3	

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

VMS Nuclide Identification Report V3.0 Generated 21-SEP-2007 21:14:40

Configuration : $DISK1:[GER10.SAMPLE]J5K641AA_210970619.CNF;1
Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.3
Sample title : BRC SOIL
Sample date : 15-AUG-2007 13:45:00 Acquisition date : 21-SEP-2007 06:19:33
Sample ID : J5K641AA Sample quantity : 349.30 GRAMS
Sample type : Sample geometry : S200
Elapsed live time: 0 10:00:00.00 Elapsed real time: 0 10:00:16.07 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	7051	10.67*	8.323E-01	1.706E+01	1.706E+01	6.39
TL-208	277.35	------	6.80	2.752E+00	------ Line Not Found		------
	510.84	724	21.60	1.867E+00	3.861E-01	3.861E-01	15.91
	583.14	1430	84.20*	1.704E+00	2.142E-01	2.142E-01	7.56
	860.37	193	12.46	1.273E+00	2.620E-01	2.620E-01	20.12
PB-212	238.63	4051	44.60*	3.006E+00	6.494E-01	6.494E-01	6.99
	300.09	------	3.41	2.624E+00	------ Line Not Found		------
BI-214	609.31	6779	46.30*	1.652E+00	1.905E+00	1.905E+00	6.22
	768.36	656	5.04	1.391E+00	2.010E+00	2.010E+00	12.54
	1120.29	1579	15.10	1.028E+00	2.186E+00	2.186E+00	7.57
	1764.49	1260	15.80	7.322E-01	2.341E+00	2.341E+00	6.84
PB-214	241.98	2476	7.49	2.983E+00	2.382E+00	2.382E+00	8.02
	295.21	4854	19.20	2.650E+00	2.051E+00	2.051E+00	6.78
	351.92	8382	37.20*	2.378E+00	2.037E+00	2.037E+00	6.29
	785.91	159	1.10	1.367E+00	2.276E+00	2.276E+00	31.36
RA-224DA	238.63	4051	44.60*	3.006E+00	6.494E-01	6.737E-01	6.99
	240.98	2476	3.95	2.983E+00	4.517E+00	4.685E+00	8.02
	583.14	1430	30.25	1.704E+00	5.963E-01	6.186E-01	7.56
	860.37	193	4.48	1.273E+00	7.286E-01	7.558E-01	20.12
RA-226DA	186.21	2085	3.50	3.435E+00	3.728E+00	3.728E+00	10.26
	241.98	2476	7.49	2.983E+00	2.382E+00	2.382E+00	8.02
	295.22	4854	19.20	2.650E+00	2.051E+00	2.051E+00	6.78
	351.92	8382	37.20	2.378E+00	2.037E+00	2.037E+00	6.29
	609.32	6779	46.30*	1.652E+00	1.905E+00	1.905E+00	6.22
	1120.28	1579	15.10	1.028E+00	2.186E+00	2.186E+00	7.57
	1238.11	578	5.94	9.474E-01	2.207E+00	2.207E+00	11.36
	1764.49	1260	15.80	7.322E-01	2.341E+00	2.341E+00	6.84
AC-228	209.28	------	4.40	3.233E+00	------ Line Not Found		------
	270.23	445	3.60	2.797E+00	9.496E-01	9.496E-01	22.42
	338.32	918	11.40	2.437E+00	7.105E-01	7.105E-01	11.03
	911.07	1106	27.70*	1.216E+00	7.057E-01	7.057E-01	8.92
	969.11	515	16.60	1.157E+00	5.764E-01	5.764E-01	11.77
RA-228DA	209.28	------	4.40	3.233E+00	------ Line Not Found		------
	338.32	918	11.40	2.437E+00	7.105E-01	7.192E-01	11.03
	911.07	1106	27.70*	1.216E+00	7.057E-01	7.144E-01	8.92
	964.60	243	5.20	1.162E+00	8.628E-01	8.734E-01	20.72

Sample ID : J5K641AA Acquisition date : 21-SEP-2007 06:19:33

Nuclide Type: NP

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected PCI/GRAM	Decay Corr PCI/GRAM	1-Sigma %Error
	969.11	515	16.60	1.157E+00	5.764E-01	5.835E-01	11.77
TH-228DA	238.63	4051	44.60	3.006E+00	6.494E-01	6.737E-01	6.99
	240.98	2476	3.95	2.983E+00	4.517E+00	4.685E+00	8.02
	583.14	1430	30.25*	1.704E+00	5.963E-01	6.186E-01	7.56
	860.37	193	4.48	1.273E+00	7.286E-01	7.558E-01	20.12
TH-232DA	238.63	4051	44.60	3.006E+00	6.494E-01	6.494E-01	6.99
	338.32	918	12.40*	2.437E+00	6.532E-01	6.532E-01	11.03
	583.14	1430	30.25	1.704E+00	5.963E-01	5.963E-01	7.56
	911.07	1106	27.70	1.216E+00	7.057E-01	7.057E-01	8.92
	964.60	243	5.20	1.162E+00	8.628E-01	8.628E-01	20.72
	969.11	515	16.60	1.157E+00	5.764E-01	5.764E-01	11.77
U-234DA	241.98	2476	7.49	2.983E+00	2.382E+00	2.382E+00	8.02
	295.22	4854	19.20*	2.650E+00	2.051E+00	2.051E+00	6.78
	351.92	8382	37.20	2.378E+00	2.037E+00	2.037E+00	6.29
	609.31	6779	46.30	1.652E+00	1.905E+00	1.905E+00	6.22
U-238DA	241.98	2476	7.49	2.983E+00	2.382E+00	2.382E+00	8.02
	295.22	4854	19.20	2.650E+00	2.051E+00	2.051E+00	6.78
	351.92	8382	37.20*	2.378E+00	2.037E+00	2.037E+00	6.29
	609.31	6779	46.30	1.652E+00	1.905E+00	1.905E+00	6.22
U-238DHP	63.28	699	3.80*	2.067E+00	1.912E+00	1.912E+00	20.47
	92.59	1350	5.41	3.602E+00	1.489E+00	1.489E+00	15.25

Flag: "*" = Keyline

Sample ID : J5K641AA Acquisition date : 21-SEP-2007 06:19:33

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
3	74.77	2980	5828	1.82	243.33	231	30	8.28E-02	7.1	2.87E+00	
3	77.05	3105	3926	1.26	252.53	231	30	8.62E-02	4.9	2.99E+00	
0	87.32	928	4312	1.19	294.05	284	16	2.58E-02	16.2	3.43E+00	T
0	462.85	273	664	1.25	1812.70	1803	18	7.57E-03	19.9	1.99E+00	T
0	665.78	260	498	1.78	2633.36	2620	24	7.21E-03	20.2	1.55E+00	T
0	727.21	331	394	1.63	2881.76	2872	20	9.20E-03	13.6	1.45E+00	T
0	934.10	413	341	1.96	3718.39	3704	24	1.15E-02	11.1	1.19E+00	
0	1155.43	183	364	0.88	4613.40	4604	21	5.08E-03	23.3	1.00E+00	
0	1377.77	334	209	2.01	5512.48	5501	22	9.28E-03	10.8	8.70E-01	
0	1408.24	215	147	1.44	5635.70	5625	23	5.97E-03	13.1	8.56E-01	T
0	1662.05	57	88	0.86	6662.00	6648	19	1.57E-03	33.2	7.60E-01	
0	1729.75	206	111	2.15	6935.74	6923	24	5.72E-03	12.4	7.41E-01	
0	1847.27	194	43	1.60	7410.94	7395	31	5.40E-03	10.3	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	4.768E-02	15.91	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	4.479E-01	7.57	
		% Abundances Found =		50.00			
TC-95M	61.00D	0.60	204.12*	66.20	--- Not Found ---		Abun.
			582.07	29.30	9.363E-01	7.56	
			835.13	26.10	--- Not Found ---		
		% Abundances Found =		24.10			
RU-103	39.35D	0.94	497.08*	89.00	--- Not Found ---		Abun.
			610.33	5.60	3.016E+01	6.22	
		% Abundances Found =		5.92			
RU-106DA	368.20D	0.10	511.85	20.60	4.340E-01	15.91	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	2.912E-01	20.73	
			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	3.602E-02	21.13	
			695.00	99.95	--- Not Found ---		
		% Abundances Found =		33.59			
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	3.132E-01	20.72	
			1085.78	10.00	--- Not Found ---		
			1112.02	13.30	--- Not Found ---		
			1407.95	20.70	2.619E-01	14.53	
		% Abundances Found =		26.29			
EU-155	4.96Y	0.02	42.90	21.16	--- Not Found ---		Abun.
			86.54	30.90	1.907E-01	17.36	
			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	7.456E-01	15.19	

Sample ID : J5K641AA Acquisition date : 21-SEP-2007 06:19:33

Nuclide	Half-life	Half-Life Ratio	Energy	%Abund	Activity (PCI/GRAM)	1-Sigma %Error	Rejected by
BI-212	1.41E+10Y	0.00	785.37	1.10	2.276E+00	31.48	Abun.
			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 =		67.26			
RA-223	21.77Y	0.00	154.21	5.58	--- Not Found ---		Abun.
			269.46*	13.60	2.522E-01	22.42	
			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	2.416E-01	10.26	
			205.31	4.70	--- Not Found ---		
		% Abundances Found =		78.03			

Flag: "*" = Keyline

VMS Nuclide Identification Report V3.0 Generated 21-SEP-2007 21:14:43

Configuration : $DISK1:[GER10.SAMPLE]J5K641AA_210970619.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 : 15-AUG-2007 13:45:00 Acquisition date : 21-SEP-2007 06:19:33
Sample ID : J5K641AA Sample quantity : 349.30 GRAMS
Sample type : Sample geometry : S200
Elapsed live time: 0 10:00:00.00 Elapsed real time: 0 10:00:16.07 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	1.706E+01	1.090E+00	1.539E-01	5.760E-03	110.889
TL-208	2.142E-01	1.618E-02	1.763E-02	5.771E-04	12.153
PB-212	6.494E-01	4.540E-02	3.430E-02	1.381E-03	18.936
BI-214	1.905E+00	1.184E-01	3.360E-02	1.116E-03	56.694
PB-214	2.037E+00	1.281E-01	3.939E-02	1.375E-03	51.716
RA-224DA	6.737E-01	4.709E-02	3.558E-02	1.433E-03	18.936
RA-226DA ✓	1.905E+00	1.184E-01	3.360E-02	1.116E-03	56.694
AC-228	7.057E-01	6.295E-02	6.326E-02	3.196E-03	11.156
RA-228DA	7.144E-01	6.372E-02	6.404E-02 ✓	3.235E-03	11.156
TH-228DA	6.186E-01	4.673E-02	5.090E-02	1.666E-03	12.153
TH-232DA	6.532E-01	7.203E-02	1.198E-01	4.297E-03	5.454
U-234DA	2.051E+00	1.390E-01	7.956E-02	3.058E-03	25.775
U-238DA	2.037E+00	1.281E-01	3.939E-02	1.375E-03	51.716
U-238DHP	1.912E+00	3.915E-01	7.760E-01	2.779E-02	2.464

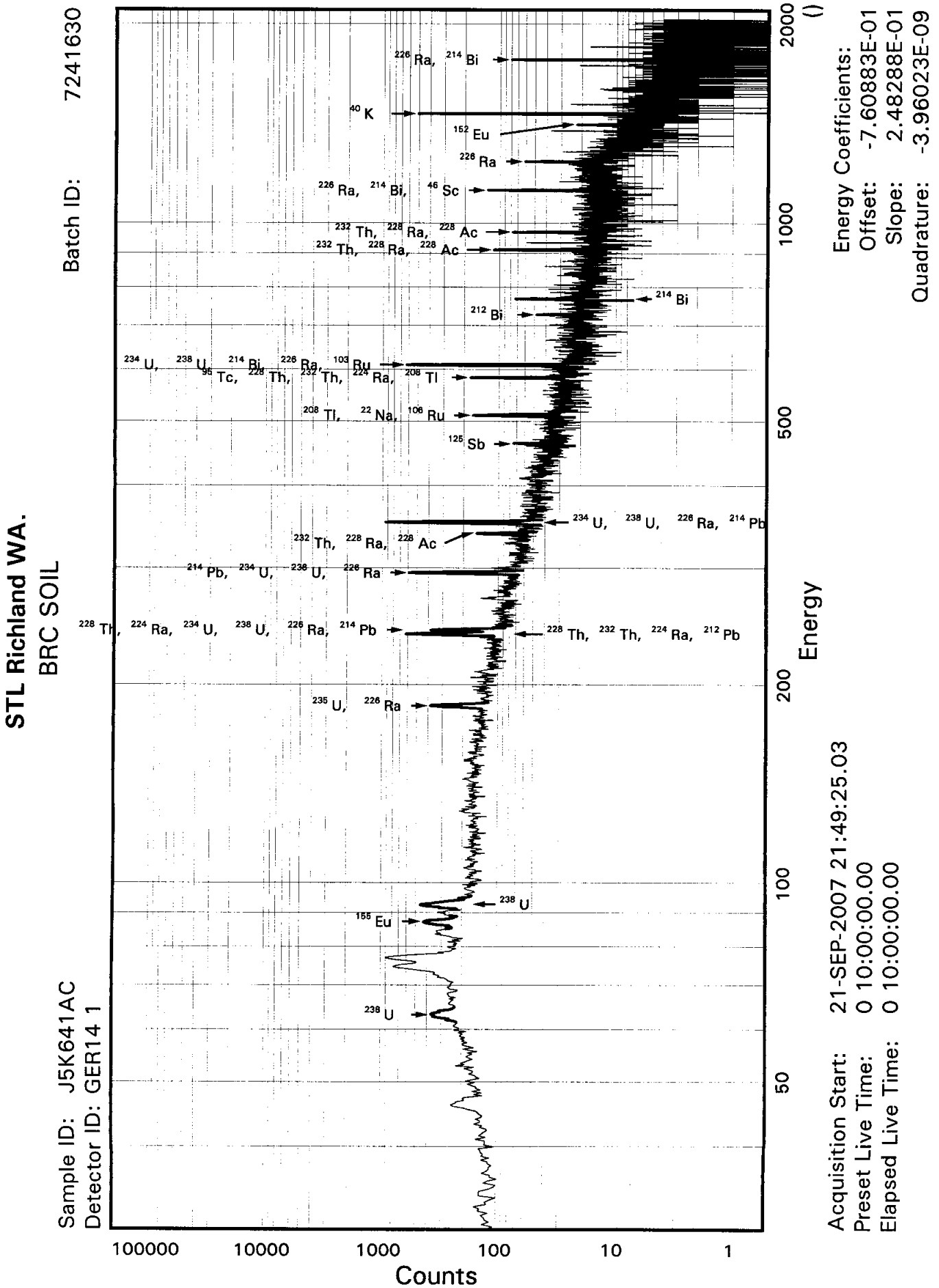
---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (PCI/GRAM)	K.L. Ided	Act error	MDA (PCI/GRAM)	MDA error	Act/MDA
BE-7	-5.023E-02		6.624E-02	2.201E-01	6.954E-03	-0.228
NA-22	-4.538E-03		6.244E-03	2.097E-02	7.681E-04	-0.216
SC-46	4.479E-01	+	3.389E-02	5.791E-02	2.208E-03	7.734
CR-51	-4.544E-02		1.138E-01	3.735E-01	1.383E-02	-0.122
MN-54	-1.702E-02		5.924E-03	1.875E-02	8.661E-04	-0.907
CO-57	-3.488E-02		4.437E-02	1.479E-01	5.231E-03	-0.236
CO-58	-3.479E-02		7.663E-03	2.285E-02	1.014E-03	-1.523
FE-59	-2.966E-02		1.825E-02	5.901E-02	2.343E-03	-0.503
CO-60	4.531E-03		5.235E-03	1.823E-02	6.958E-04	0.249
ZN-65	-8.479E-03		1.592E-02	4.395E-02	1.693E-03	-0.193
SE-75	6.960E-03		1.074E-02	3.022E-02	1.199E-03	0.230
SR-85	9.288E-02		1.005E-02	2.815E-02	8.810E-04	3.300
Y-88	1.849E-03		5.243E-03	1.859E-02	5.866E-04	0.099
NB-94	-6.713E-03		5.049E-03	1.662E-02	8.136E-04	-0.404

Sample ID : J5K641AA Acquisition date : 21-SEP-2007 06:19:33

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

Nuclide	Key-Line Activity (PCI/GRAM)	K.L. Ided	Act error	MDA (PCI/GRAM)	MDA error	Act/MDA
NB-95	9.840E-02		1.442E-02	4.250E-02	1.748E-03	2.315
TC-95M	4.811E-03		1.046E-02	3.490E-02	1.415E-03	0.138
ZR-95	4.963E-03		1.303E-02	4.447E-02	1.801E-03	0.112
ZRNB-95	1.446E-01		2.082E-02	6.125E-02	2.519E-03	2.361
RH-101	5.378E-03		7.474E-03	2.206E-02	8.943E-04	0.244
RH-102M	-3.248E-03		4.532E-03	1.507E-02	4.765E-04	-0.215
RU-103	1.884E-03		9.079E-03	3.056E-02	9.614E-04	0.062
RU-106DA	3.411E-02		4.937E-02	1.662E-01	5.560E-03	0.205
AG-108M	-5.715E-03		4.818E-03	1.595E-02	5.053E-04	-0.358
AG-110M	2.666E-04		7.640E-03	2.584E-02	1.292E-03	0.010
SN-113DA	-1.437E-02		8.417E-03	2.771E-02	8.730E-04	-0.518
SB-124	-5.245E-06		8.767E-03	2.457E-02	8.134E-04	0.000
SB-125	2.809E-02		1.551E-02	5.291E-02	1.676E-03	0.531
SN-126DA	3.602E-02	+	7.609E-03	1.718E-02	5.910E-04	2.096
I-131	-1.239E-01		1.228E-01	4.097E-01	1.390E-02	-0.302
BA-133	2.891E-03		8.147E-03	2.338E-02	8.090E-04	0.124
CS-134	3.629E-02		6.613E-03	2.263E-02	9.797E-04	1.604
CS-137DA	2.667E-03		6.140E-03	1.736E-02	5.920E-04	0.154
LA-138	1.413E-04		7.440E-03	2.548E-02	9.588E-04	0.006
CE-139	2.035E-04		6.498E-03	2.171E-02	8.766E-04	0.009
BA-140	-8.409E-02		1.277E-01	4.235E-01	1.347E-02	-0.199
BALA-140	5.222E-04		7.348E-02	2.516E-01	9.041E-03	0.002
CE-141	2.859E-02		2.005E-02	6.745E-02	2.511E-03	0.424
CE-144	-1.021E-01		4.383E-02	1.434E-01	4.992E-03	-0.712
CEPR-144	-2.051E-01		8.767E-02	2.868E-01	9.983E-03	-0.715
PM-144	3.321E-03		4.936E-03	1.661E-02	5.545E-04	0.200
PM-146	8.523E-03		6.579E-03	2.241E-02	7.099E-04	0.380
EU-152	-4.252E-02		1.898E-02	5.482E-02	1.944E-03	-0.776
EU-154	-7.545E-03		1.711E-02	5.781E-02	2.118E-03	-0.131
EU-155	1.053E-02		2.148E-02	7.051E-02	2.405E-03	0.149
HF-181	5.790E-05		9.588E-03	3.219E-02	1.016E-03	0.002
BI-207	8.392E-03		4.663E-03	1.587E-02	5.156E-04	0.529
BI-210M	2.803E-03		1.046E-02	2.929E-02	1.160E-03	0.096
BI-212	7.456E-01	+	1.132E-01	2.944E-01	1.316E-02	2.533
RA-223	2.522E-01	+	5.653E-02	1.237E-01	4.885E-03	2.039
AC-227DA	7.889E-01		7.355E-02	1.710E-01	6.893E-03	4.614
TH-234DA	2.962E+00		8.898E-01	3.076E+00	1.416E-01	0.963
U-235HP	6.821E-02		4.222E-02	1.421E-01	5.237E-03	0.480
NP-237DA	-2.453E-02		1.227E-02	3.936E-02	1.477E-03	-0.623
AM-241HP	6.069E-02		3.230E-02	9.140E-02	3.381E-03	0.664


STL Richland WA.
BRC SOIL
Batch ID: 7241630
Sample ID: J5K641AC
Detector ID: GER14 1
226 Ra, 214 Bi
40 K
152 Eu
226 Ra
228 Ra, 214 Bi, 46 Sc
232 Th, 228 Ra, 228 Ac
232 Th, 228 Ra, 228 Ac
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
214 Pb, 234 U, 238 U, 226 Ra
228 Th, 224 Ra, 234 U, 238 U, 226 Ra, 214 Pb
228 Th, 232 Th, 224 Ra, 212 Pb
235 U, 226 Ra
238 U
155 Eu
238 U
100000
10000
1000
100
10
1
Counts
50
100
200
500
1000
2000
()
Energy
Energy Coefficients:
Offset: -7.60883E-01
Slope: 2.48288E-01
Quadrature: -3.96023E-09
Acquisition Start: 21-SEP-2007 21:49:25.03
Preset Live Time: 0 10:00:00.00
Elapsed Live Time: 0 10:00:00.00

SAMPLE IDENTIFICATION: J5K641AC

CONFIGURATION ID: GER14:J5K641AC_210972149
TITLE : BRC SOIL
SAMPLE ID : J5K641AC

REPORT DATE: 23-SEP-07
ACQUIRE DATE: 21-SEP-07 21:49:25
ELAPSED LIVE TIME: 36000.0 Sec
PRESET LIVE TIME: 0 10:00:00

SAMPLE DATE: 15-AUG-2007 13:45:00.00
CALIB DATE: 21-SEP-2007 05:04:29.29
ELAPSED LIVE TIME: 0 10:00:00
ELAPSED REAL TIME: 0 10:00:16

SAMPLE QUANTITY: 3.4930E+02
SAMPLE GEOMETRY: S200

UNITS: GRAMS
SAMPLE TYPE:

ENERGY OFFSET: -.7609E+00 keV
ENERGY SLOPE: 2.4829E-01 keV/C
ENERGY Q COEFF: -.3960E-08 keV/C^^2
PEAK SENSITIVITY: 5.000

FWHM OFFSET: 1.0534E+00 keV
FWHM SLOPE: 2.9276E-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 23-SEP-2007 09:50:46

Configuration : $DISK1:[GER14.SAMPLE]J5K641AC_210972149.CNF;1
Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6
Sample title : BRC SOIL
Sample date : 15-AUG-2007 13:45:00 Acquisition date : 21-SEP-2007 21:49:25
Sample ID : J5K641AC Sample quantity : 349.30 GRAMS
Sample type : Sample geometry : S200
Elapsed live time: 0 10:00:00.00 Elapsed real time: 0 10:00:16.48 0.0%
Start energy : 19.10 End energy : 2032.95
Sensitivity : 5.00 Gaussian : 30.00
Critical level : No

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	46.27	584	2121	1.18	189.43	183	15	1.62E-02	17.7	
2	0	63.20	908	3381	1.65	257.62	250	15	2.52E-02	14.3	
3	2	74.79*	2793	4800	1.58	304.30	290	34	7.76E-02	6.7	4.81E+00
4	2	76.97	4096	4409	1.50	313.05	290	34	1.14E-01	4.3	
5	0	87.36*	607	4195	1.21	354.90	346	16	1.69E-02	24.7	
6	0	92.80	1853	3528	1.52	376.81	370	19	5.15E-02	8.1	
7	0	185.92	1884	2575	1.77	751.88	741	20	5.23E-02	7.0	
8	1	238.67	3145	2037	1.49	964.33	954	40	8.74E-02	3.3	1.51E+00
9	1	241.93	1867	1932	1.66	977.46	954	40	5.19E-02	5.7	
10	0	295.21	3324	1713	1.48	1192.07	1181	23	9.23E-02	3.2	
11	0	338.37	667	988	1.78	1365.89	1357	17	1.85E-02	10.0	
12	0	351.93	5957	1353	1.54	1420.51	1408	25	1.65E-01	1.9	
13	0	462.46	387	857	3.54	1865.70	1854	29	1.08E-02	18.9	
14	0	510.82*	323	977	2.34	2060.50	2046	28	8.97E-03	29.1	
15	0	583.23	1019	602	1.53	2352.14	2341	23	2.83E-02	6.2	
16	0	609.34*	4540	660	1.77	2457.31	2442	30	1.26E-01	2.1	
17	0	726.84	318	451	2.46	2930.63	2918	27	8.83E-03	16.6	
18	0	768.41	634	493	1.74	3098.07	3082	35	1.76E-02	9.9	
19	0	911.19	796	380	1.90	3673.17	3660	28	2.21E-02	6.8	
20	0	933.67	314	284	1.21	3763.71	3752	24	8.72E-03	13.3	
21	0	969.10	357	358	1.60	3906.44	3896	22	9.92E-03	12.7	
22	0	1120.12*	915	462	1.99	4514.77	4500	31	2.54E-02	6.4	
23	0	1237.98	305	419	1.57	4989.51	4978	24	8.46E-03	14.6	
24	0	1377.79	264	135	1.84	5552.70	5540	24	7.34E-03	10.7	
25	0	1408.04	93	133	1.28	5674.58	5664	19	2.59E-03	25.0	
26	0	1460.73*	4270	209	2.14	5886.83	5866	43	1.19E-01	1.9	
27	0	1509.37	135	100	1.30	6082.76	6066	25	3.75E-03	17.2	
28	0	1729.22	185	62	2.06	6968.42	6950	33	5.13E-03	12.1	
29	0	1764.61*	698	116	2.58	7110.98	7094	40	1.94E-02	5.7	
30	0	1847.35	133	54	2.47	7444.31	7429	29	3.68E-03	14.8	

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

VMS Nuclide Identification Report V3.0 Generated 23-SEP-2007 09:50:47

Configuration : $DISK1:[GER14.SAMPLE]J5K641AC_210972149.CNF;1
Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.3
Sample title : BRC SOIL
Sample date : 15-AUG-2007 13:45:00 Acquisition date : 21-SEP-2007 21:49:25
Sample ID : J5K641AC Sample quantity : 349.30 GRAMS
Sample type : Sample geometry : S200
Elapsed live time: 0 10:00:00.00 Elapsed real time: 0 10:00:16.48 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	4270	10.67*	5.514E-01	1.560E+01	1.560E+01	6.27
TL-208	277.35	------	6.80	2.084E+00	------ Line Not Found		------
	510.84	323	21.60	1.292E+00	2.486E-01	2.486E-01	29.67
	583.14	1019	84.20*	1.159E+00	2.245E-01	2.245E-01	8.63
	860.37	------	12.46	8.432E-01	------ Line Not Found		------
PB-212	238.63	3145	44.60*	2.316E+00	6.544E-01	6.544E-01	7.06
	300.09	------	3.41	1.967E+00	------ Line Not Found		------
BI-214	609.31	4540	46.30*	1.118E+00	1.885E+00	1.885E+00	6.44
	768.36	634	5.04	9.245E-01	2.927E+00	2.927E+00	11.79
	1120.29	915	15.10	6.816E-01	1.911E+00	1.911E+00	8.83
	1764.49	698	15.80	4.738E-01	2.006E+00	2.006E+00	8.23
PB-214	241.98	1867	7.49	2.295E+00	2.335E+00	2.335E+00	8.46
	295.21	3324	19.20	1.991E+00	1.869E+00	1.869E+00	6.88
	351.92	5957	37.20*	1.742E+00	1.976E+00	1.976E+00	6.27
	785.91	------	1.10	9.077E-01	------ Line Not Found		------
RA-224DA	238.63	3145	44.60*	2.316E+00	6.544E-01	6.793E-01	7.06
	240.98	1867	3.95	2.295E+00	4.427E+00	4.596E+00	8.46
	583.14	1019	30.25	1.159E+00	6.249E-01	6.487E-01	8.63
	860.37	------	4.48	8.432E-01	------ Line Not Found		------
RA-226DA	186.21	1884	3.50	2.708E+00	4.272E+00	4.272E+00	9.39
	241.98	1867	7.49	2.295E+00	2.335E+00	2.335E+00	8.46
	295.22	3324	19.20	1.991E+00	1.869E+00	1.869E+00	6.88
	351.92	5957	37.20	1.742E+00	1.976E+00	1.976E+00	6.27
	609.32	4540	46.30*	1.118E+00	1.885E+00	1.885E+00	6.44
	1120.28	915	15.10	6.816E-01	1.911E+00	1.911E+00	8.83
	1238.11	305	5.94	6.292E-01	1.751E+00	1.752E+00	15.80
	1764.49	698	15.80	4.738E-01	2.006E+00	2.006E+00	8.23
AC-228	209.28	------	4.40	2.523E+00	------ Line Not Found		------
	270.23	------	3.60	2.124E+00	------ Line Not Found		------
	338.32	667	11.40	1.796E+00	7.002E-01	7.002E-01	11.66
	911.07	796	27.70*	8.049E-01	7.671E-01	7.671E-01	9.44
	969.11	357	16.60	7.658E-01	6.039E-01	6.039E-01	14.20
RA-228DA	209.28	------	4.40	2.523E+00	------ Line Not Found		------
	338.32	667	11.40	1.796E+00	7.002E-01	7.090E-01	11.66
	911.07	796	27.70*	8.049E-01	7.671E-01	7.767E-01	9.44
	964.60	------	5.20	7.687E-01	------ Line Not Found		------

Sample ID : J5K641AC Acquisition date : 21-SEP-2007 21:49:25

Nuclide Type: NP

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected PCI/GRAM	Decay Corr PCI/GRAM	1-Sigma %Error
	969.11	357	16.60	7.658E-01	6.039E-01	6.114E-01	14.20
TH-228DA	238.63	3145	44.60	2.316E+00	6.544E-01	6.793E-01	7.06
	240.98	1867	3.95	2.295E+00	4.427E+00	4.596E+00	8.46
	583.14	1019	30.25*	1.159E+00	6.249E-01	6.487E-01	8.63
	860.37	------	4.48	8.432E-01	------ Line Not Found		------
TH-232DA	238.63	3145	44.60	2.316E+00	6.544E-01	6.544E-01	7.06
	338.32	667	12.40*	1.796E+00	6.438E-01	6.438E-01	11.66
	583.14	1019	30.25	1.159E+00	6.249E-01	6.249E-01	8.63
	911.07	796	27.70	8.049E-01	7.671E-01	7.671E-01	9.44
	964.60	------	5.20	7.687E-01	------ Line Not Found		------
	969.11	357	16.60	7.658E-01	6.039E-01	6.039E-01	14.20
U-234DA	241.98	1867	7.49	2.295E+00	2.335E+00	2.335E+00	8.46
	295.22	3324	19.20*	1.991E+00	1.869E+00	1.869E+00	6.88
	351.92	5957	37.20	1.742E+00	1.976E+00	1.976E+00	6.27
	609.31	4540	46.30	1.118E+00	1.885E+00	1.885E+00	6.44
U-238DA	241.98	1867	7.49	2.295E+00	2.335E+00	2.335E+00	8.46
	295.22	3324	19.20	1.991E+00	1.869E+00	1.869E+00	6.88
	351.92	5957	37.20*	1.742E+00	1.976E+00	1.976E+00	6.27
	609.31	4540	46.30	1.118E+00	1.885E+00	1.885E+00	6.44
U-238DHP	63.28	908	3.80*	3.310E+00	1.552E+00	1.552E+00	15.54
	92.59	1853	5.41	3.455E+00	2.130E+00	2.130E+00	10.10

Flag: "*" = Keyline

Unidentified Energy Lines
Sample ID : J5K641AC

Acquisition date : 21-SEP-2007 21:49:25

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
0	46.27	584	2121	1.18	189.43	183	15	1.62E-02	17.7	2.82E+00	
2	74.79	2793	4800	1.58	304.30	290	34	7.76E-02	6.7	3.44E+00	
2	76.97	4096	4409	1.50	313.05	290	34	1.14E-01	4.3	3.45E+00	
0	87.36	607	4195	1.21	354.90	346	16	1.69E-02	24.7	3.47E+00	T
0	462.46	387	857	3.54	1865.70	1854	29	1.08E-02	18.9	1.40E+00	T
0	726.84	318	451	2.46	2930.63	2918	27	8.83E-03	16.6	9.68E-01	T
0	933.67	314	284	1.21	3763.71	3752	24	8.72E-03	13.3	7.89E-01	
0	1377.79	264	135	1.84	5552.70	5540	24	7.34E-03	10.7	5.78E-01	
0	1408.04	93	133	1.28	5674.58	5664	19	2.59E-03	25.0	5.68E-01	T
0	1509.37	135	100	1.30	6082.76	6066	25	3.75E-03	17.2	5.37E-01	
0	1729.22	185	62	2.06	6968.42	6950	33	5.13E-03	12.1	4.82E-01	
0	1847.35	133	54	2.47	7444.31	7429	29	3.68E-03	14.8	4.56E-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	3.072E-02	29.67	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	3.936E-01	8.83	
		% Abundances Found =		50.00			
TC-95M	61.00D	0.62	204.12*	66.20	--- Not Found ---		Abun.
			582.07	29.30	9.885E-01	8.63	
			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	3.019E+01	6.44	
		% Abundances Found =		5.92			
RU-106DA	368.20D	0.10	511.85	20.60	2.798E-01	29.67	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	5.894E-01	19.80	
			600.56	17.80	--- Not Found ---		
			635.90	11.32	--- Not Found ---		
		% Abundances Found =		13.67			
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	1.715E-01	25.66	
		% Abundances Found =		15.50			
EU-155	4.96Y	0.02	42.90	21.16	--- Not Found ---		Abun.
			86.54	30.90	1.235E-01	25.46	
			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	1.073E+00	17.92	
			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 ---		

Sample ID : J5K641AC
Acquisition date : 21-SEP-2007 21:49:25

Nuclide	Half-life	Half-Life Ratio	Energy	%Abund	Activity (PCI/GRAM)	1-Sigma %Error	Rejected by
BI-212	1.41E+10Y	0.00	1620.50	1.49	--- Not Found ---		Abun.
			1806.00	0.09	--- Not Found ---		
		% Abundances Found =		57.62			
U-235HP	7.04E+08Y	0.00	143.76*	10.50	--- Not Found ---		Abun.
			185.71	54.00	2.769E-01	9.39	
			205.31	4.70	--- Not Found ---		
		% Abundances Found =		78.03			

Flag: "*" = Keyline

VMS Nuclide Identification Report V3.0 Generated 23-SEP-2007 09:50:49

Configuration	: $DISK1:[GER14.SAMPLE]J5K641AC_210972149.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	: 15-AUG-2007 13:45:00	Acquisition date	: 21-SEP-2007 21:49:25
Sample ID	: J5K641AC	Sample quantity	: 349.30 GRAMS
Sample type	:	Sample geometry	: S200
Elapsed live time	: 0 10:00:00.00	Elapsed real time	: 0 10:00:16.48 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 ----

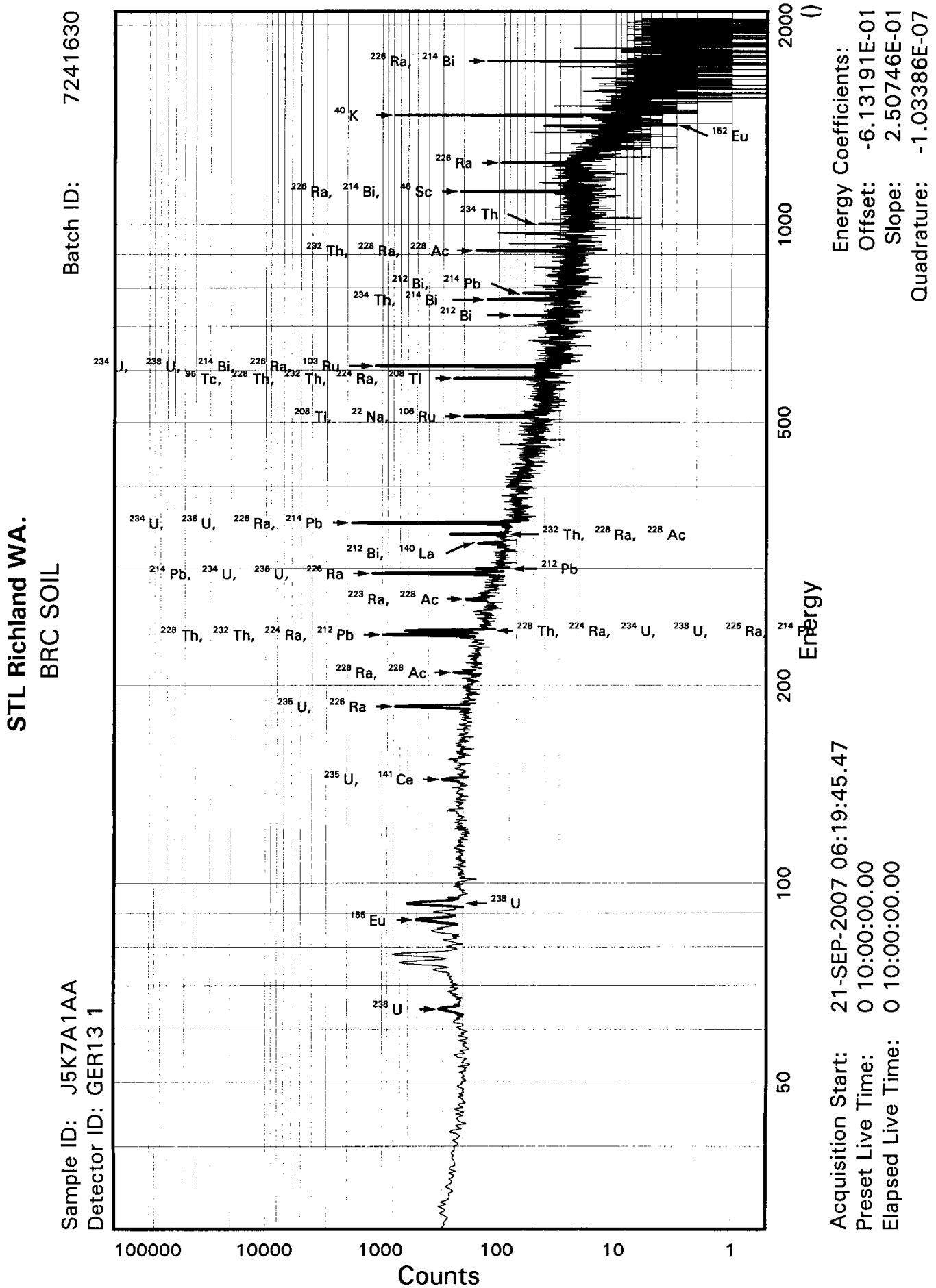
Nuclide	Activity (PCI/GRAM)	Act error	MDA (PCI/GRAM)	MDA error	Act/MDA
K-40	1.560E+01	9.781E-01	2.045E-01	6.691E-03	76.292
TL-208	2.245E-01	1.937E-02	2.520E-02	8.483E-04	8.910
PB-212	6.544E-01	4.624E-02	4.182E-02	1.558E-03	15.650
BI-214	1.885E+00	1.214E-01	4.637E-02	1.596E-03	40.656
PB-214	1.976E+00	1.240E-01 RER	5.059E-02	1.655E-03	39.061
RA-224DA	6.793E-01	4.799E-02	4.341E-02	1.617E-03	15.650
RA-226DA	1.885E+00 ✓	1.214E-01 0.12	4.637E-02 ✓	1.596E-03	40.655
AC-228	7.671E-01	7.238E-02	8.956E-02	3.721E-03	8.565
RA-228DA	7.767E-01 ✓	7.328E-02 -0.64	9.068E-02 ✓	3.767E-03	8.565
TH-228DA	6.487E-01	5.596E-02	7.280E-02	2.451E-03	8.910
TH-232DA	6.438E-01	7.503E-02	1.562E-01	5.094E-03	4.123
U-234DA	1.869E+00	1.286E-01	1.039E-01	3.576E-03	17.992
U-238DA	1.976E+00	1.240E-01	5.059E-02	1.655E-03	39.061
U-238DHP	1.552E+00	2.411E-01	4.808E-01	1.573E-02	3.227

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

Nuclide	Key-Line Activity (PCI/GRAM)	K.L. Ided	Act error	MDA (PCI/GRAM)	MDA error	Act/MDA
BE-7	-7.501E-03		9.093E-02	3.036E-01	9.778E-03	-0.025
NA-22	-2.116E-02		9.022E-03	2.912E-02	9.553E-04	-0.727
SC-46	3.936E-01	+	3.476E-02	7.452E-02	2.623E-03	5.282
CR-51	-1.496E-01		1.433E-01	4.790E-01	1.553E-02	-0.312
MN-54	4.326E-03		8.326E-03	2.804E-02	1.134E-03	0.154
CO-57	-6.104E-02		5.339E-02	1.733E-01	6.445E-03	-0.352
CO-58	-3.043E-02		1.021E-02	3.174E-02	1.266E-03	-0.959
FE-59	3.230E-02		2.542E-02	8.767E-02	3.161E-03	0.368
CO-60	-9.561E-03		7.551E-03	2.507E-02	8.172E-04	-0.381
ZN-65	6.089E-04		2.224E-02	6.276E-02	2.222E-03	0.010
SE-75	-1.864E-02		1.163E-02	3.781E-02	1.370E-03	-0.493
SR-85	1.188E-01		1.391E-02	3.946E-02	1.241E-03	3.011
Y-88	-1.238E-02		7.606E-03	2.488E-02	7.715E-04	-0.498
NB-94	-4.425E-03		7.098E-03	2.396E-02	9.878E-04	-0.185

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

Nuclide	Key-Line Activity (PCI/GRAM)	K.L. Ided	Act error	MDA (PCI/GRAM)	MDA error	Act/MDA
NB-95	1.322E-01		2.052E-02	6.089E-02	2.360E-03	2.172
TC-95M	-3.223E-06		1.284E-02	4.288E-02	1.625E-03	0.000
ZR-95	2.065E-02		1.872E-02	6.391E-02	2.462E-03	0.323
ZRNB-95	1.928E-01		2.942E-02	8.722E-02	3.380E-03	2.211
RH-101	8.377E-03		7.810E-03	2.624E-02	9.955E-04	0.319
RH-102M	-3.773E-03		6.267E-03	2.077E-02	6.696E-04	-0.182
RU-103	7.797E-03		1.307E-02	4.393E-02	1.399E-03	0.178
RU-106DA	-1.393E-02		6.730E-02	2.275E-01	7.911E-03	-0.061
AG-108M	-5.789E-03		6.484E-03	2.146E-02	7.012E-04	-0.270
AG-110M	-3.241E-04		1.074E-02	3.664E-02	1.521E-03	-0.009
SN-113DA	9.499E-03		1.128E-02	3.821E-02	1.248E-03	0.249
SB-124	-2.196E-02		1.246E-02	3.398E-02	1.163E-03	-0.646
SB-125	2.101E-02		2.096E-02	7.095E-02	2.320E-03	0.296
SN-126DA	1.805E-02		6.971E-03	2.409E-02	8.665E-04	0.749
I-131	1.070E-01		1.729E-01	5.864E-01	1.920E-02	0.183
BA-133	1.038E-02		1.071E-02	3.093E-02	1.012E-03	0.336
CS-134	3.283E-02		9.247E-03	3.189E-02	1.260E-03	1.030
CS-137DA	-1.516E-02		8.015E-03	2.612E-02	9.356E-04	-0.581
LA-138	1.850E-03		1.024E-02	3.536E-02	1.157E-03	0.052
CE-139	-3.427E-03		7.894E-03	2.643E-02	1.001E-03	-0.130
BA-140	-6.130E-02		1.830E-01	6.062E-01	1.954E-02	-0.101
BALA-140	-1.007E-01		1.083E-01	3.601E-01	1.169E-02	-0.280
CE-141	5.857E-02		2.457E-02	8.087E-02	3.026E-03	0.724
CE-144	-8.581E-03		5.169E-02	1.695E-01	6.289E-03	-0.051
CEPR-144	-6.905E-02		1.038E-01	3.390E-01	1.258E-02	-0.204
PM-144	2.479E-03		6.750E-03	2.275E-02	7.889E-04	0.109
PM-146	-5.400E-03		9.145E-03	3.036E-02	9.872E-04	-0.178
EU-152	-2.069E-02		2.358E-02	7.141E-02	2.333E-03	-0.290
EU-154	-5.986E-02		2.490E-02	8.021E-02	2.631E-03	-0.746
EU-155	-1.183E-02		2.304E-02	7.587E-02	2.651E-03	-0.156
HF-181	4.256E-03		1.321E-02	4.431E-02	1.424E-03	0.096
BI-207	5.560E-03		6.240E-03	2.145E-02	7.134E-04	0.259
BI-210M	-7.763E-02		1.255E-02	3.612E-02	1.306E-03	-2.149
BI-212	1.073E+00	+	1.922E-01	4.169E-01	1.838E-02	2.574
RA-223	3.053E-01		4.764E-02	1.534E-01	5.521E-03	1.991
AC-227DA	7.894E-01		8.146E-02	2.054E-01	7.667E-03	3.844
TH-234DA	3.480E+00		1.193E+00	4.187E+00	1.649E-01	0.831
U-235HP	1.125E-01		5.071E-02	1.670E-01	6.243E-03	0.673
NP-237DA	-9.086E-03		1.570E-02	5.145E-02	1.704E-03	-0.177
AM-241HP	7.915E-02		1.721E-02	4.925E-02	1.628E-03	1.607


STL Richland WA.
BRC SOIL
Batch ID: 7241630
Sample ID: J5K7A1AA
Detector ID: GER13 1
Energy Coefficients:
Offset: -6.13191E-01
Slope: 2.50746E-01
Quadrature: -1.03386E-07
Acquisition Start: 21-SEP-2007 06:19:45.47
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
234 Th
232 Th, 228 Ra, 228 Ac
212 Bi, 214 Pb
234 Th, 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
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
228 Th, 232 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
235 U, 141 Ce
238 U
186 Eu
238 U

SAMPLE IDENTIFICATION: J5K7A1AA

CONFIGURATION ID: GER13:J5K7A1AA_210970619
TITLE : BRC SOIL
SAMPLE ID : J5K7A1AA

REPORT DATE: 21-SEP-07
ACQUIRE DATE: 21-SEP-07 06:19:45
ELAPSED LIVE TIME: 36000.0 Sec
PRESET LIVE TIME: 0 10:00:00

SAMPLE DATE: 15-AUG-2007 13:45:00.00
CALIB DATE: 21-SEP-2007 05:03:58.49
ELAPSED LIVE TIME: 0 10:00:00
ELAPSED REAL TIME: 0 10:00:19

SAMPLE QUANTITY: 3.2960E+02
SAMPLE GEOMETRY: S200

UNITS: GRAMS
SAMPLE TYPE:

ENERGY OFFSET: -.6132E+00 keV
ENERGY SLOPE: 2.5075E-01 keV/C
ENERGY Q COEFF: -.1034E-06 keV/C^^2
PEAK SENSITIVITY: 5.000

FWHM OFFSET: 5.2337E-01 keV
FWHM SLOPE: 3.7620E-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 21-SEP-2007 21:15:47

Configuration : $DISK1:[GER13.SAMPLE]J5K7A1AA_210970619.CNF;1
Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6
Sample title : BRC SOIL
Sample date : 15-AUG-2007 13:45:00 Acquisition date : 21-SEP-2007 06:19:45
Sample ID : J5K7A1AA Sample quantity : 329.60 GRAMS
Sample type : Sample geometry : S200
Elapsed live time: 0 10:00:00.00 Elapsed real time: 0 10:00:19.75 0.1% ✓
Start energy : 19.45 End energy : 2046.56 ✓
Sensitivity : 5.00 Gaussian : 60.00
Critical level : No

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	64.51	322	1960	0.79	259.73	255	9	8.93E-03	25.4	
2	3	75.81*	1551	2922	1.01	304.84	291	29	4.31E-02	7.8	4.08E+00
3	3	78.00	2396	2786	0.97	313.56	291	29	6.66E-02	4.9	
4	0	84.98*	541	3160	1.73	341.41	334	14	1.50E-02	25.0	
5	0	87.90	1237	2523	0.95	353.06	348	11	3.44E-02	8.4	
6	0	90.50	511	2238	0.72	363.43	359	10	1.42E-02	17.9	
7	0	93.23	1705	3005	1.17	374.31	369	13	4.74E-02	7.0	
8	0	144.02	433	2513	1.21	576.97	571	12	1.20E-02	23.7	
9	0	185.86	2993	2576	1.21	743.92	736	14	8.31E-02	4.0	
10	0	209.10	261	1835	0.94	836.66	831	11	7.24E-03	32.4	
11	2	238.50*	3524	1935	1.12	953.99	947	27	9.79E-02	3.3	2.52E+00
12	2	241.78	2807	1778	1.33	967.06	947	27	7.80E-02	3.8	
13	0	269.86	487	1950	1.83	1079.13	1072	16	1.35E-02	20.8	
14	0	294.94*	5585	1819	1.17	1179.28	1169	20	1.55E-01	2.4	
15	0	299.89	344	1106	1.04	1199.04	1193	12	9.55E-03	20.2	
16	0	327.58	175	1059	0.82	1309.58	1304	11	4.85E-03	36.8	
17	0	337.93	841	1492	1.11	1350.91	1343	17	2.33E-02	11.1	
18	0	351.71*	9343	1728	1.26	1405.91	1396	24	2.60E-01	1.6	
19	0	510.78*	276	1224	2.18	2041.21	2028	27	7.68E-03	43.5	
20	0	583.02*	1194	849	1.45	2329.83	2317	21	3.32E-02	7.4	
21	0	609.15*	6792	946	1.46	2434.22	2421	27	1.89E-01	1.9	
22	0	727.25	329	587	1.73	2906.25	2895	23	9.15E-03	17.1	
23	0	767.80	600	942	1.46	3068.39	3057	29	1.67E-02	13.0	
24	0	785.52	207	550	1.47	3139.22	3130	21	5.75E-03	25.0	
25	0	911.22*	913	467	1.70	3641.96	3630	24	2.53E-02	6.7	
26	0	934.11	381	525	1.58	3733.51	3721	25	1.06E-02	14.6	
27	0	967.22	993	799	5.52	3865.99	3841	43	2.76E-02	8.8	
28	0	1001.14	158	406	1.36	4001.69	3991	21	4.38E-03	28.3	
29	0	1120.34*	1418	777	1.84	4478.73	4462	35	3.94E-02	6.0	
30	0	1238.14	537	513	1.88	4950.36	4940	21	1.49E-02	9.9	
31	0	1377.67	433	271	2.20	5509.22	5496	26	1.20E-02	10.0	
32	0	1407.96	296	231	1.83	5630.58	5618	32	8.23E-03	14.3	
33	0	1460.55*	6472	450	2.20	5841.34	5824	35	1.80E-01	1.7	
34	0	1509.45	158	289	1.09	6037.29	6023	35	4.40E-03	28.8	
35	0	1729.61	218	149	2.50	6920.04	6903	29	6.06E-03	13.8	
36	0	1763.82*	1124	167	2.40	7057.24	7040	32	3.12E-02	4.2	
37	0	1846.61	183	105	2.96	7389.40	7374	30	5.08E-03	14.3	

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

VMS Nuclide Identification Report V3.0 Generated 21-SEP-2007 21:15:48

Configuration : $DISK1:[GER13.SAMPLE]J5K7A1AA_210970619.CNF;1
Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.3
Sample title : BRC SOIL
Sample date : 15-AUG-2007 13:45:00 Acquisition date : 21-SEP-2007 06:19:45
Sample ID : J5K7A1AA Sample quantity : 329.60 GRAMS
Sample type : Sample geometry : S200
Elapsed live time: 0 10:00:00.00 Elapsed real time: 0 10:00:19.75 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	6472	10.67*	7.699E-01	1.795E+01	1.795E+01	6.65
TL-208	277.35	------	6.80	2.834E+00	------ Line Not Found		------
	510.84	276	21.60	1.898E+00	1.536E-01	1.536E-01	43.93
	583.14	1194	84.20*	1.721E+00	1.876E-01	1.876E-01	9.54
	860.37	------	12.46	1.247E+00	------ Line Not Found		------
PB-212	238.63	3524	44.60*	3.095E+00	5.816E-01	5.816E-01	7.17
	300.09	344	3.41	2.702E+00	8.501E-01	8.501E-01	21.14
BI-214	609.31	6792	46.30*	1.665E+00	2.007E+00	2.007E+00	6.27
	768.36	600	5.04	1.378E+00	1.968E+00	1.968E+00	14.55
	1120.29	1418	15.10	9.769E-01	2.190E+00	2.190E+00	8.84
	1764.49	1124	15.80	6.731E-01	2.408E+00	2.408E+00	7.40
PB-214	241.98	2807	7.49	3.071E+00	2.779E+00	2.779E+00	7.43
	295.21	5585	19.20	2.730E+00	2.427E+00	2.427E+00	6.80
	351.92	9343	37.20*	2.443E+00	2.342E+00	2.342E+00	6.38
	785.91	207	1.10	1.351E+00	3.169E+00	3.169E+00	25.92
RA-224DA	238.63	3524	44.60*	3.095E+00	5.816E-01	6.033E-01	7.17
	240.98	2807	3.95	3.071E+00	5.270E+00	5.467E+00	7.43
	583.14	1194	30.25	1.721E+00	5.221E-01	5.416E-01	9.54
	860.37	------	4.48	1.247E+00	------ Line Not Found		------
RA-226DA	186.21	2993	3.50	3.493E+00	5.576E+00	5.576E+00	7.52
	241.98	2807	7.49	3.071E+00	2.779E+00	2.779E+00	7.43
	295.22	5585	19.20	2.730E+00	2.427E+00	2.427E+00	6.80
	351.92	9343	37.20	2.443E+00	2.342E+00	2.342E+00	6.38
	609.32	6792	46.30*	1.665E+00	2.007E+00	2.007E+00	6.27
	1120.28	1418	15.10	9.769E-01	2.190E+00	2.190E+00	8.84
	1238.11	537	5.94	8.902E-01	2.312E+00	2.313E+00	11.76
	1764.49	1124	15.80	6.731E-01	2.408E+00	2.409E+00	7.40
TH-228DA	238.63	3524	44.60	3.095E+00	5.816E-01	6.033E-01	7.17
	240.98	2807	3.95	3.071E+00	5.270E+00	5.467E+00	7.43
	583.14	1194	30.25*	1.721E+00	5.221E-01	5.416E-01	9.54
	860.37	------	4.48	1.247E+00	------ Line Not Found		------
TH-232DA	238.63	3524	44.60	3.095E+00	5.816E-01	5.816E-01	7.17
	338.32	841	12.40*	2.506E+00	6.161E-01	6.161E-01	12.71
	583.14	1194	30.25	1.721E+00	5.221E-01	5.221E-01	9.54
	911.07	913	27.70	1.184E+00	6.338E-01	6.338E-01	10.11
	964.60	------	5.20	1.124E+00	------ Line Not Found		------

Sample ID : J5K7A1AA Acquisition date : 21-SEP-2007 06:19:45

Nuclide Type: NP

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected PCI/GRAM	Decay Corr PCI/GRAM	1-Sigma %Error
	969.11	------	16.60	1.119E+00	------ Line Not Found		------
TH-234DA	766.41	600	0.21	1.378E+00	4.723E+01	4.723E+01	14.55
	1001.03	158	0.65*	1.085E+00	5.090E+00	5.090E+00	29.14
U-234DA	241.98	2807	7.49	3.071E+00	2.779E+00	2.779E+00	7.43
	295.22	5585	19.20*	2.730E+00	2.427E+00	2.427E+00	6.80
	351.92	9343	37.20	2.443E+00	2.342E+00	2.342E+00	6.38
	609.31	6792	46.30	1.665E+00	2.007E+00	2.007E+00	6.27
U-235HP	143.76	433	10.50*	3.695E+00	2.545E-01	2.545E-01	24.47
	185.71	2993	54.00	3.493E+00	3.614E-01	3.614E-01	7.52
	205.31	------	4.70	3.345E+00	------ Line Not Found		------
U-238DA	241.98	2807	7.49	3.071E+00	2.779E+00	2.779E+00	7.43
	295.22	5585	19.20	2.730E+00	2.427E+00	2.427E+00	6.80
	351.92	9343	37.20*	2.443E+00	2.342E+00	2.342E+00	6.38
	609.31	6792	46.30	1.665E+00	2.007E+00	2.007E+00	6.27
U-238DHP	63.28	322	3.80*	9.660E-01	1.996E+00	1.996E+00	26.35
	92.59	1705	5.41	2.769E+00	2.592E+00	2.592E+00	9.68

Nuclide Type: FP

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected PCI/GRAM	Decay Corr PCI/GRAM	1-Sigma %Error
CE-141	145.44	433	48.40*	3.695E+00	5.520E-02	1.213E-01	24.47

Flag: "*" = Keyline

Unidentified Energy Lines
Sample ID : J5K7A1AA Acquisition date : 21-SEP-2007 06:19:45

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
3	75.81	1551	2922	1.01	304.84	291	29	4.31E-02	7.8	1.75E+00	
3	78.00	2396	2786	0.97	313.56	291	29	6.66E-02	4.9	1.89E+00	
0	84.98	541	3160	1.73	341.41	334	14	1.50E-02	25.0	2.33E+00	
0	87.90	1237	2523	0.95	353.06	348	11	3.44E-02	8.4	2.50E+00	T
0	90.50	511	2238	0.72	363.43	359	10	1.42E-02	17.9	2.64E+00	
0	209.10	261	1835	0.94	836.66	831	11	7.24E-03	32.4	3.32E+00	T
0	269.86	487	1950	1.83	1079.13	1072	16	1.35E-02	20.8	2.88E+00	T
0	327.58	175	1059	0.82	1309.58	1304	11	4.85E-03	36.8	2.56E+00	T
0	727.25	329	587	1.73	2906.25	2895	23	9.15E-03	17.1	1.44E+00	T
0	934.11	381	525	1.58	3733.51	3721	25	1.06E-02	14.6	1.16E+00	
0	967.22	993	799	5.52	3865.99	3841	43	2.76E-02	8.8	1.12E+00	
0	1377.67	433	271	2.20	5509.22	5496	26	1.20E-02	10.0	8.09E-01	
0	1407.96	296	231	1.83	5630.58	5618	32	8.23E-03	14.3	7.94E-01	T
0	1509.45	158	289	1.09	6037.29	6023	35	4.40E-03	28.8	7.50E-01	
0	1729.61	218	149	2.50	6920.04	6903	29	6.06E-03	13.8	6.81E-01	
0	1846.61	183	105	2.96	7389.40	7374	30	5.08E-03	14.3	6.57E-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	1.897E-02	43.93	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	4.487E-01	8.84	
		% Abundances Found =		50.00			
TC-95M	61.00D	0.60	204.12*	66.20	--- Not Found ---		Abun.
			582.07	29.30	8.198E-01	9.54	
			835.13	26.10	--- Not Found ---		
		% Abundances Found =		24.10			
RU-103	39.35D	0.94	497.08*	89.00	--- Not Found ---		Abun.
			610.33	5.60	3.179E+01	6.27	
		% Abundances Found =		5.92			
RU-106DA	368.20D	0.10	511.85	20.60	1.726E-01	43.93	Abun.
			621.84*	9.80	--- Not Found ---		
		% Abundances Found =		67.76			
LA-140	40.22H	22.02	328.77	20.50	3.222E+05	37.36	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	4.128E-01	15.74	
		% Abundances Found =		15.50			
EU-155	4.96Y	0.02	42.90	21.16	--- Not Found ---		Abun.
			86.54	30.90	3.701E-01	10.85	
			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	1.120E+01	38.19	
			452.83	0.31	--- Not Found ---		
			727.33*	6.58	7.900E-01	18.37	
			785.37	1.10	3.169E+00	26.06	
			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 ---		

Sample ID : J5K7A1AA Acquisition date : 21-SEP-2007 06:19:45

Nuclide	Half-life	Half-Life Ratio	Energy	%Abund	Activity (PCI/GRAM)	1-Sigma %Error	Rejected by
BI-212	1.41E+10Y	0.00	1806.00	0.09	--- Not Found ---		Abun.
		% Abundances Found =		68.47			
RA-223	21.77Y	0.00	154.21	5.58	--- Not Found ---		Abun.
			269.46*	13.60	2.839E-01	21.75	
			323.87	3.88	--- Not Found ---		
		% Abundances Found =		58.98			
AC-228	1.41E+10Y	0.00	209.28	4.40	4.069E-01	33.01	Abun.
			270.23	3.60	1.069E+00	21.75	
			338.32	11.40	6.702E-01	12.71	
			911.07*	27.70	6.338E-01	10.11	
			969.11	16.60	--- Not Found ---		
		% Abundances Found =		73.94			
RA-228DA	5.75Y	0.02	209.28	4.40	4.119E-01	33.01	Abun.
			338.32	11.40	6.784E-01	12.71	
			911.07*	27.70	6.415E-01	10.11	
			964.60	5.20	--- Not Found ---		
			969.11	16.60	--- Not Found ---		
		% Abundances Found =		66.62			

Flag: "*" = Keyline

VMS Nuclide Identification Report V3.0 Generated 21-SEP-2007 21:15:50

Configuration	: $DISK1:[GER13.SAMPLE]J5K7A1AA_210970619.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	: 15-AUG-2007 13:45:00	Acquisition date	: 21-SEP-2007 06:19:45
Sample ID	: J5K7A1AA	Sample quantity	: 329.60 GRAMS
Sample type	:	Sample geometry	: S200
Elapsed live time	: 0 10:00:00.00	Elapsed real time	: 0 10:00:19.75 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	1.795E+01	1.194E+00	1.983E-01	8.040E-03	90.489
CE-141	1.213E-01	2.968E-02	6.356E-02	2.375E-03	1.908
TL-208	1.876E-01	1.789E-02	1.892E-02	6.164E-04	9.912
PB-212	5.816E-01	4.167E-02	3.538E-02	1.401E-03	16.438
BI-214	2.007E+00	1.259E-01	3.525E-02	1.161E-03	56.943
PB-214	2.342E+00	1.495E-01	4.051E-02	1.468E-03	57.808
RA-224DA	6.033E-01	4.323E-02	3.670E-02	1.453E-03	16.438
RA-226DA	2.007E+00	1.259E-01	3.525E-02	1.161E-03	56.943
TH-228DA	5.416E-01	5.164E-02	5.464E-02	1.780E-03	9.912
TH-232DA	6.161E-01	7.831E-02	1.228E-01	4.600E-03	5.018
TH-234DA	5.090E+00	1.483E+00	3.161E+00	1.609E-01	1.610
U-234DA	2.427E+00	1.650E-01	7.906E-02	3.117E-03	30.700
U-235HP	2.545E-01	6.228E-02	1.349E-01	5.016E-03	1.886
U-238DA	2.342E+00	1.495E-01	4.051E-02	1.468E-03	57.808
U-238DHP	1.996E+00	5.259E-01	1.472E+00	7.147E-02	1.356

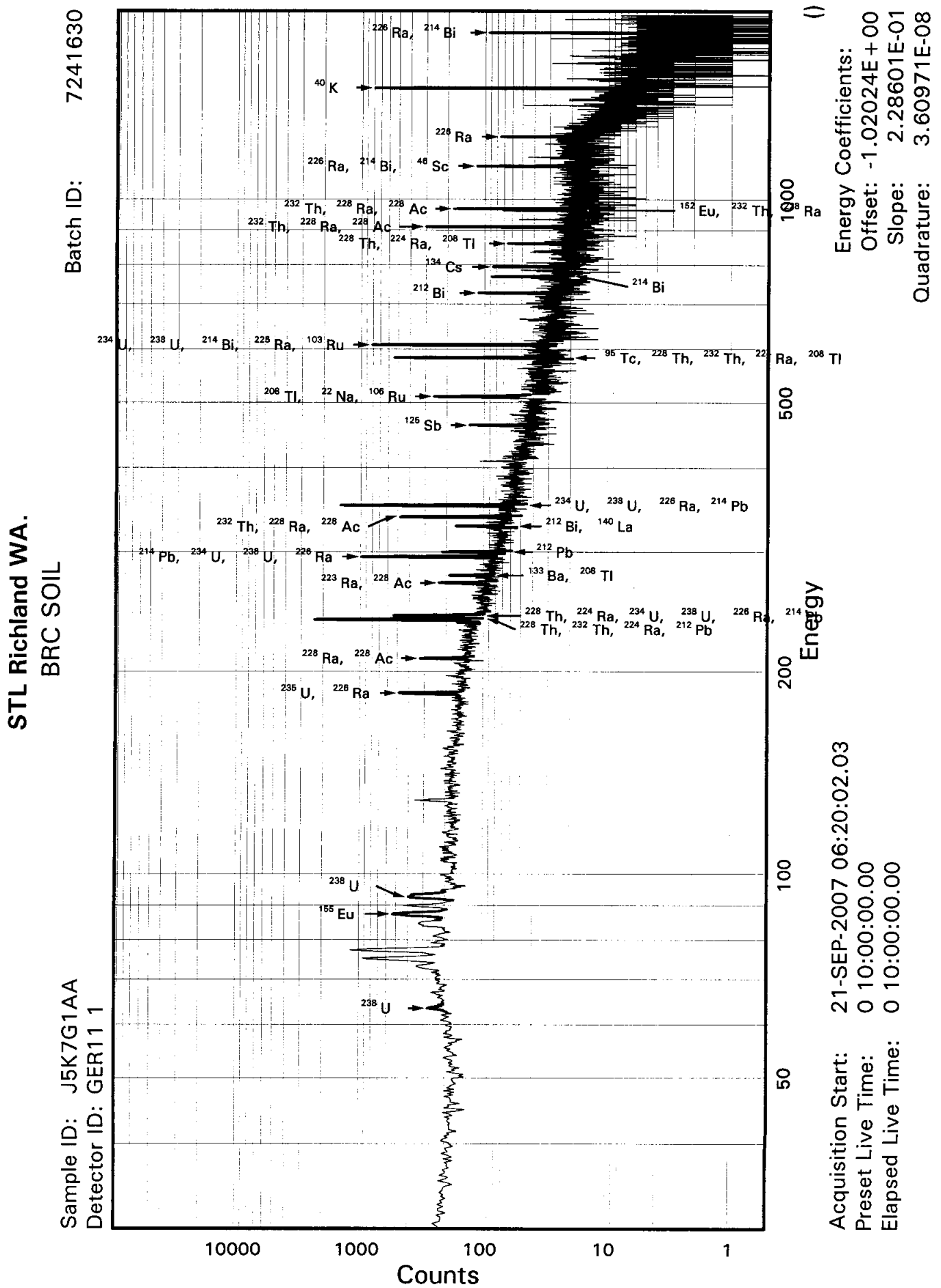
---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (PCI/GRAM)	K.L. Ided	Act error	MDA (PCI/GRAM)	MDA error	Act/MDA
BE-7	4.204E-03		7.079E-02	2.374E-01	7.557E-03	0.018
NA-22	-1.036E-02		7.431E-03	2.434E-02	9.578E-04	-0.426
SC-46	4.487E-01	+	3.966E-02	6.615E-02	2.708E-03	6.783
CR-51	-2.576E-01		1.159E-01	3.727E-01	1.451E-02	-0.691
MN-54	8.131E-03		6.207E-03	2.143E-02	1.072E-03	0.379
CO-57	1.753E-02		4.426E-02	1.491E-01	5.440E-03	0.118
CO-58	-2.281E-02		7.945E-03	2.539E-02	1.207E-03	-0.898
FE-59	-2.537E-02		2.053E-02	6.840E-02	2.937E-03	-0.371
CO-60	7.931E-04		6.669E-03	2.256E-02	9.373E-04	0.035
ZN-65	-6.272E-04		1.896E-02	5.425E-02	2.247E-03	-0.012
SE-75	-5.235E-03		9.150E-03	3.001E-02	1.191E-03	-0.174
SR-85	3.075E-02		8.789E-03	2.584E-02	8.117E-04	1.190
Y-88	-2.590E-03		5.922E-03	2.043E-02	6.592E-04	-0.127

Sample ID : J5K7A1AA Acquisition date : 21-SEP-2007 06:19:45

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

Nuclide	Key-Line Activity (PCI/GRAM)	K.L. Ided	Act error	MDA (PCI/GRAM)	MDA error	Act/MDA
NB-94	-1.358E-03		5.597E-03	1.893E-02	1.022E-03	-0.072
NB-95	1.073E-01		1.637E-02	4.739E-02	2.038E-03	2.265
TC-95M	2.490E-02		1.052E-02	3.476E-02	1.364E-03	0.716
ZR-95	2.458E-02		1.479E-02	5.034E-02	2.120E-03	0.488
ZRNB-95	1.581E-01		2.365E-02	6.831E-02	2.938E-03	2.315
RH-101	2.529E-03		6.358E-03	2.096E-02	8.210E-04	0.121
RH-102M	-9.283E-03		4.871E-03	1.584E-02	5.045E-04	-0.586
RU-103	1.214E-02		9.654E-03	3.272E-02	1.035E-03	0.371
RU-106DA	7.160E-02		5.015E-02	1.731E-01	5.727E-03	0.414
AG-108M	-2.751E-03		4.981E-03	1.668E-02	5.348E-04	-0.165
AG-110M	-6.191E-03		8.766E-03	2.935E-02	1.629E-03	-0.211
SN-113DA	-2.293E-03		8.444E-03	2.856E-02	9.138E-04	-0.080
SB-124	1.403E-04		8.742E-03	2.659E-02	8.734E-04	0.005
SB-125	-1.443E-02		1.561E-02	5.204E-02	1.669E-03	-0.277
SN-126DA	1.425E-02		5.354E-03	1.844E-02	6.257E-04	0.773
I-131	-2.376E-01		1.312E-01	4.211E-01	1.474E-02	-0.564
BA-133	3.468E-04		8.118E-03	2.281E-02	8.177E-04	0.015
CS-134	2.588E-02		7.014E-03	2.390E-02	1.099E-03	1.083
CS-137DA	-1.497E-02		6.272E-03	2.023E-02	6.787E-04	-0.740
LA-138	-8.411E-03		8.661E-03	2.911E-02	1.188E-03	-0.289
CE-139	-1.632E-02		6.709E-03	2.164E-02	8.459E-04	-0.754
BA-140	-1.740E-01		1.362E-01	4.436E-01	1.412E-02	-0.392
BALA-140	2.834E-02		9.111E-02	3.145E-01	1.209E-02	0.090
CE-144	2.342E-02		4.332E-02	1.462E-01	5.303E-03	0.160
CEPR-144	4.634E-02		8.663E-02	2.924E-01	1.061E-02	0.158
PM-144	-7.970E-03		5.091E-03	1.681E-02	5.557E-04	-0.474
PM-146	-5.312E-04		6.988E-03	2.347E-02	7.512E-04	-0.023
EU-152	-1.443E-02		1.755E-02	5.745E-02	2.122E-03	-0.251
EU-154	-2.566E-02		2.056E-02	6.760E-02	2.660E-03	-0.380
EU-155	2.230E-02		2.376E-02	7.782E-02	2.992E-03	0.287
HF-181	-6.128E-03		1.021E-02	3.391E-02	1.078E-03	-0.181
BI-207	-3.942E-04		4.820E-03	1.642E-02	5.314E-04	-0.024
BI-210M	-9.519E-03		1.034E-02	2.927E-02	1.161E-03	-0.325
BI-212	7.900E-01	+	1.451E-01	3.229E-01	1.469E-02	2.446
RA-223	2.839E-01	+	6.175E-02	1.262E-01	5.007E-03	2.249
AC-227DA	2.140E-01		5.123E-02	1.493E-01	5.911E-03	1.433
AC-228	6.338E-01	+	6.405E-02	1.238E-01	6.978E-03	5.120
RA-228DA	6.415E-01	+	6.484E-02	1.253E-01	7.063E-03	5.120
NP-237DA	-1.028E-02		1.237E-02	4.077E-02	1.595E-03	-0.252
AM-241HP	-6.238E-02		6.118E-02	2.030E-01	9.740E-03	-0.307


STL Richland WA.
BRC SOIL
Batch ID: 7241630
Sample ID: J5K7G1AA
Detector ID: GER11 1
Energy Coefficients:
Offset: -1.02024E+00
Slope: 2.28601E-01
Quadrature: 3.60971E-08
Acquisition Start: 21-SEP-2007 06:20:02.03
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
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
234 U, 238 U, 226 Ra, 214 Pb
212 Bi, 140 La
212 Pb
133 Ba, 208 Tl
228 Th, 224 Ra, 234 U, 238 U, 226 Ra, 214
228 Th, 232 Th, 224 Ra, 212 Pb
208 Tl, 22 Na, 106 Ru
125 Sb
234 U, 238 U, 214 Bi, 228 Ra, 103 Ru
95 Tc, 228 Th, 232 Th, 22 Ra, 208 Tl
212 Bi
134 Cs
228 Th, 224 Ra, 208 Tl
232 Th, 228 Ra, 228 Ac
232 Th, 228 Ra, 228 Ac
226 Ra, 214 Bi, 46 Sc
228 Ra
40 K
226 Ra, 214 Bi
152 Eu, 232 Th, 208 Ra
214 Bi

SAMPLE IDENTIFICATION: J5K7G1AA

CONFIGURATION ID: GER11:J5K7G1AA_210970620
TITLE : BRC SOIL
SAMPLE ID : J5K7G1AA

REPORT DATE: 21-SEP-07
ACQUIRE DATE: 21-SEP-07 06:20:02
ELAPSED LIVE TIME: 36000.0 Sec
PRESET LIVE TIME: 0 10:00:00

SAMPLE DATE: 15-AUG-2007 14:45:00.00
CALIB DATE: 21-SEP-2007 05:03:29.48
ELAPSED LIVE TIME: 0 10:00:00
ELAPSED REAL TIME: 0 10:00:35

SAMPLE QUANTITY: 3.2730E+02
SAMPLE GEOMETRY: S200

UNITS: GRAMS
SAMPLE TYPE:

ENERGY OFFSET: -.1020E+01 keV
ENERGY SLOPE: 2.2860E-01 keV/C
ENERGY Q COEFF: 3.6097E-08 keV/C^^2
PEAK SENSITIVITY: 5.000

FWHM OFFSET: 2.5096E-01 keV
FWHM SLOPE: 3.8471E-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 21-SEP-2007 21:17:17

Configuration : $DISK1:[GER11.SAMPLE]J5K7G1AA_210970620.CNF;1
Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6
Sample title : BRC SOIL
Sample date : 15-AUG-2007 14:45:00 Acquisition date : 21-SEP-2007 06:20:02
Sample ID : J5K7G1AA Sample quantity : 327.30 GRAMS
Sample type : Sample geometry : S200
Elapsed live time: 0 10:00:00.00 Elapsed real time: 0 10:00:35.06 0.1%
Start energy : 1.27 End energy : 1874.10
Sensitivity : 5.00 Gaussian : 30.00
Critical level : No

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	63.42	201	1581	0.50	281.88	278	8	5.58E-03	34.9	
2	2	73.06*	220	2146	0.70	324.03	319	29	6.12E-03	39.7	2.44E+00
3	2	75.00*	1996	2061	0.71	332.54	319	29	5.54E-02	4.9	
4	2	77.20	3144	1951	0.71	342.16	319	29	8.73E-02	3.2	
5	0	84.50*	511	2698	1.49	374.09	368	13	1.42E-02	22.3	
6	0	87.28*	1434	2436	1.03	386.22	381	12	3.98E-02	7.5	
7	0	89.96	875	2080	0.80	397.96	393	11	2.43E-02	10.7	
8	0	92.89	1310	2418	1.43	410.78	405	13	3.64E-02	8.2	
9	0	129.10	536	1809	0.77	569.17	564	10	1.49E-02	15.5	
10	0	186.02	1547	1924	1.01	818.09	812	13	4.30E-02	6.4	
11	0	209.26	909	1537	0.77	919.71	914	13	2.53E-02	9.5	
12	5	238.60	8852	1205	0.83	1048.01	1029	40	2.46E-01	1.3	5.54E+00
13	5	241.72	2496	1417	1.37	1061.69	1029	40	6.93E-02	3.9	
14	0	270.12	952	1512	1.17	1185.88	1177	19	2.64E-02	10.3	
15	0	277.24	330	977	0.72	1217.00	1212	11	9.15E-03	19.2	
16	0	295.13	3861	1162	0.91	1295.22	1287	15	1.07E-01	2.5	
17	0	300.17	587	1286	0.93	1317.24	1307	17	1.63E-02	14.6	
18	0	327.85	463	909	1.06	1438.29	1433	13	1.29E-02	14.2	
19	0	338.22	1848	877	0.93	1483.62	1477	14	5.13E-02	4.1	
20	0	351.79*	6369	922	0.98	1542.99	1534	17	1.77E-01	1.7	
21	0	409.17	281	696	1.14	1793.86	1788	14	7.79E-03	20.8	
22	0	462.57	459	768	1.29	2027.29	2021	19	1.27E-02	15.2	
23	0	510.61*	601	1188	1.42	2237.31	2227	24	1.67E-02	18.6	
24	0	582.93	3027	666	1.27	2553.42	2543	25	8.41E-02	2.9	
25	0	608.98	4837	819	1.32	2667.27	2658	25	1.34E-01	2.1	
26	0	726.88	757	398	1.69	3182.54	3172	22	2.10E-02	7.7	
27	0	767.97	415	481	1.35	3362.11	3352	19	1.15E-02	13.6	
28	0	794.47	390	414	1.13	3477.92	3466	23	1.08E-02	14.5	
29	0	805.88	82	356	0.58	3527.76	3518	16	2.28E-03	52.6	
30	0	859.96	377	561	1.84	3764.06	3751	31	1.05E-02	16.4	
31	0	910.66	2194	493	1.61	3985.59	3971	31	6.10E-02	3.3	
32	0	933.36	294	329	1.53	4084.77	4075	24	8.17E-03	14.9	
33	0	964.02	336	385	1.60	4218.71	4208	19	9.34E-03	13.1	
34	0	968.49	1232	475	1.65	4238.23	4228	29	3.42E-02	5.2	
35	0	1119.61	963	378	2.20	4898.36	4888	24	2.67E-02	5.5	
36	0	1237.50	470	412	1.78	5413.20	5401	26	1.31E-02	11.0	
37	0	1376.94	318	232	1.87	6022.07	6007	29	8.83E-03	12.9	
38	0	1460.01*	6694	275	1.94	6384.75	6368	37	1.86E-01	1.4	
39	0	1508.87	100	169	1.54	6598.06	6582	26	2.77E-03	31.7	
40	0	1587.36	171	89	1.66	6940.69	6932	19	4.76E-03	13.6	
41	0	1629.91	159	81	2.41	7126.37	7113	31	4.41E-03	16.3	
42	0	1728.95	203	84	1.26	7558.64	7545	26	5.63E-03	11.7	
43	0	1763.66*	885	69	2.27	7710.10	7695	28	2.46E-02	4.1	

Sample ID : J5K7G1AA Acquisition date : 21-SEP-2007 06:20:02

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
44	0	1847.12	138	77	1.84	8074.29	8059	27	3.83E-03	15.8	

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

VMS Nuclide Identification Report V3.0 Generated 21-SEP-2007 21:17:17

Configuration : $DISK1:[GER11.SAMPLE]J5K7G1AA_210970620.CNF;1
Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.3
Sample title : BRC SOIL
Sample date : 15-AUG-2007 14:45:00 Acquisition date : 21-SEP-2007 06:20:02
Sample ID : J5K7G1AA Sample quantity : 327.30 GRAMS
Sample type : Sample geometry : S200
Elapsed live time: 0 10:00:00.00 Elapsed real time: 0 10:00:35.06 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	6694	10.67*	8.391E-01	1.715E+01	1.715E+01	6.53
TL-208	277.35	330	6.80	2.957E+00	3.760E-01	3.760E-01	20.17
	510.84	601	21.60	1.997E+00	3.196E-01	3.196E-01	19.56
	583.14	3027	84.20*	1.816E+00	4.542E-01	4.542E-01	6.67
	860.37	377	12.46	1.329E+00	5.228E-01	5.228E-01	17.81
PB-212	238.63	8852	44.60*	3.227E+00	1.411E+00	1.411E+00	6.37
	300.09	587	3.41	2.818E+00	1.401E+00	1.401E+00	15.90
BI-214	609.31	4837	46.30*	1.757E+00	1.364E+00	1.364E+00	6.37
	768.36	415	5.04	1.463E+00	1.290E+00	1.290E+00	15.10
	1120.29	963	15.10	1.051E+00	1.391E+00	1.391E+00	8.42
	1764.49	885	15.80	7.427E-01	1.730E+00	1.730E+00	7.32
PB-214	241.98	2496	7.49	3.203E+00	2.387E+00	2.387E+00	7.34
	295.21	3861	19.20	2.847E+00	1.620E+00	1.620E+00	6.77
	351.92	6369	37.20*	2.553E+00	1.538E+00	1.538E+00	6.40
	785.91	------	1.10	1.435E+00	------	Line Not Found	------
RA-224DA	238.63	8852	44.60*	3.227E+00	1.411E+00	1.464E+00	6.37
	240.98	2496	3.95	3.203E+00	4.526E+00	4.695E+00	7.34
	583.14	3027	30.25	1.816E+00	1.264E+00	1.311E+00	6.67
	860.37	377	4.48	1.329E+00	1.454E+00	1.508E+00	17.81
RA-226DA	186.21	1547	3.50	3.657E+00	2.772E+00	2.772E+00	8.86
	241.98	2496	7.49	3.203E+00	2.387E+00	2.387E+00	7.34
	295.22	3861	19.20	2.847E+00	1.620E+00	1.620E+00	6.77
	351.92	6369	37.20	2.553E+00	1.538E+00	1.538E+00	6.40
	609.32	4837	46.30*	1.757E+00	1.364E+00	1.364E+00	6.37
	1120.28	963	15.10	1.051E+00	1.391E+00	1.392E+00	8.42
	1238.11	470	5.94	9.617E-01	1.887E+00	1.887E+00	12.66
	1764.49	885	15.80	7.427E-01	1.730E+00	1.730E+00	7.32
AC-228	209.28	909	4.40	3.462E+00	1.369E+00	1.369E+00	11.32
	270.23	952	3.60	3.003E+00	2.020E+00	2.020E+00	12.08
	338.32	1848	11.40	2.617E+00	1.421E+00	1.421E+00	7.47
	911.07	2194	27.70*	1.264E+00	1.438E+00	1.438E+00	7.91
	969.11	1232	16.60	1.197E+00	1.423E+00	1.423E+00	8.74
RA-228DA	209.28	909	4.40	3.462E+00	1.369E+00	1.386E+00	11.32
	338.32	1848	11.40	2.617E+00	1.421E+00	1.438E+00	7.47
	911.07	2194	27.70*	1.264E+00	1.438E+00	1.456E+00	7.91
	964.60	336	5.20	1.202E+00	1.234E+00	1.249E+00	14.88

Sample ID : J5K7G1AA Acquisition date : 21-SEP-2007 06:20:02

Nuclide Type: NP

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected PCI/GRAM	Decay Corr PCI/GRAM	1-Sigma %Error
	969.11	1232	16.60	1.197E+00	1.423E+00	1.441E+00	8.74
TH-228DA	238.63	8852	44.60	3.227E+00	1.411E+00	1.464E+00	6.37
	240.98	2496	3.95	3.203E+00	4.526E+00	4.695E+00	7.34
	583.14	3027	30.25*	1.816E+00	1.264E+00	1.311E+00	6.67
	860.37	377	4.48	1.329E+00	1.454E+00	1.508E+00	17.81
TH-232DA	238.63	8852	44.60	3.227E+00	1.411E+00	1.411E+00	6.37
	338.32	1848	12.40*	2.617E+00	1.306E+00	1.306E+00	7.47
	583.14	3027	30.25	1.816E+00	1.264E+00	1.264E+00	6.67
	911.07	2194	27.70	1.264E+00	1.438E+00	1.438E+00	7.91
	964.60	336	5.20	1.202E+00	1.234E+00	1.234E+00	14.88
	969.11	1232	16.60	1.197E+00	1.423E+00	1.423E+00	8.74
U-234DA	241.98	2496	7.49	3.203E+00	2.387E+00	2.387E+00	7.34
	295.22	3861	19.20*	2.847E+00	1.620E+00	1.620E+00	6.77
	351.92	6369	37.20	2.553E+00	1.538E+00	1.538E+00	6.40
	609.31	4837	46.30	1.757E+00	1.364E+00	1.364E+00	6.37
U-238DA	241.98	2496	7.49	3.203E+00	2.387E+00	2.387E+00	7.34
	295.22	3861	19.20	2.847E+00	1.620E+00	1.620E+00	6.77
	351.92	6369	37.20*	2.553E+00	1.538E+00	1.538E+00	6.40
	609.31	4837	46.30	1.757E+00	1.364E+00	1.364E+00	6.37
U-238DHP	63.28	201	3.80*	1.166E+00	1.040E+00	1.040E+00	35.52
	92.59	1310	5.41	3.127E+00	1.776E+00	1.776E+00	10.53

Flag: "*" = Keyline

Sample ID : J5K7G1AA Acquisition date : 21-SEP-2007 06:20:02

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
2	73.06	220	2146	0.70	324.03	319	29	6.12E-03	39.7	1.91E+00	
2	75.00	1996	2061	0.71	332.54	319	29	5.54E-02	4.9	2.05E+00	
2	77.20	3144	1951	0.71	342.16	319	29	8.73E-02	3.2	2.21E+00	
0	84.50	511	2698	1.49	374.09	368	13	1.42E-02	22.3	2.69E+00	
0	87.28	1434	2436	1.03	386.22	381	12	3.98E-02	7.5	2.84E+00	T
0	89.96	875	2080	0.80	397.96	393	11	2.43E-02	10.7	2.99E+00	
0	129.10	536	1809	0.77	569.17	564	10	1.49E-02	15.5	3.91E+00	
0	327.85	463	909	1.06	1438.29	1433	13	1.29E-02	14.2	2.67E+00	T
0	409.17	281	696	1.14	1793.86	1788	14	7.79E-03	20.8	2.32E+00	
0	462.57	459	768	1.29	2027.29	2021	19	1.27E-02	15.2	2.14E+00	T
0	726.88	757	398	1.69	3182.54	3172	22	2.10E-02	7.7	1.53E+00	T
0	794.47	390	414	1.13	3477.92	3466	23	1.08E-02	14.5	1.42E+00	T
0	805.88	82	356	0.58	3527.76	3518	16	2.28E-03	52.6	1.40E+00	
0	933.36	294	329	1.53	4084.77	4075	24	8.17E-03	14.9	1.24E+00	
0	1376.94	318	232	1.87	6022.07	6007	29	8.83E-03	12.9	8.79E-01	
0	1508.87	100	169	1.54	6598.06	6582	26	2.77E-03	31.7	8.19E-01	
0	1587.36	171	89	1.66	6940.69	6932	19	4.76E-03	13.6	7.90E-01	
0	1629.91	159	81	2.41	7126.37	7113	31	4.41E-03	16.3	7.77E-01	
0	1728.95	203	84	1.26	7558.64	7545	26	5.63E-03	11.7	7.50E-01	
0	1847.12	138	77	1.84	8074.29	8059	27	3.83E-03	15.8	7.27E-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	3.947E-02	19.56	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	2.850E-01	8.42	
		% Abundances Found =		50.00			
TC-95M	61.00D	0.60	204.12*	66.20	--- Not Found ---		Abun.
			582.07	29.30	1.984E+00	6.67	
			835.13	26.10	--- Not Found ---		
		% Abundances Found =		24.10			
RU-103	39.35D	0.94	497.08*	89.00	--- Not Found ---		Abun.
			610.33	5.60	2.158E+01	6.37	
		% Abundances Found =		5.92			
RU-106DA	368.20D	0.10	511.85	20.60	3.592E-01	19.56	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	4.879E-01	16.34	
			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	3.730E-01	20.17	
			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	7.623E-02	15.91	
			801.93	8.73	--- Not Found ---		
		% Abundances Found =		41.22			
LA-140	40.22H	21.99	328.77	20.50	8.094E+05	15.51	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	4.480E-01	14.88	

Sample ID : J5K7G1AA Acquisition date : 21-SEP-2007 06:20:02

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	3.795E-01	10.12	
			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	2.862E+01	17.41	
			452.83	0.31	--- Not Found ---		
			727.33*	6.58	1.725E+00	10.16	
			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	5.365E-01	12.08	
			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	1.797E-01	8.86	
			205.31	4.70	--- Not Found ---		
		% Abundances Found =		78.03			

Flag: "*" = Keyline

VMS Nuclide Identification Report V3.0 Generated 21-SEP-2007 21:17:23

Configuration : $DISK1:[GER11.SAMPLE]J5K7G1AA_210970620.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 : 15-AUG-2007 14:45:00 Acquisition date : 21-SEP-2007 06:20:02
Sample ID : J5K7G1AA Sample quantity : 327.30 GRAMS
Sample type : Sample geometry : S200
Elapsed live time: 0 10:00:00.00 Elapsed real time: 0 10:00:35.06 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 ----

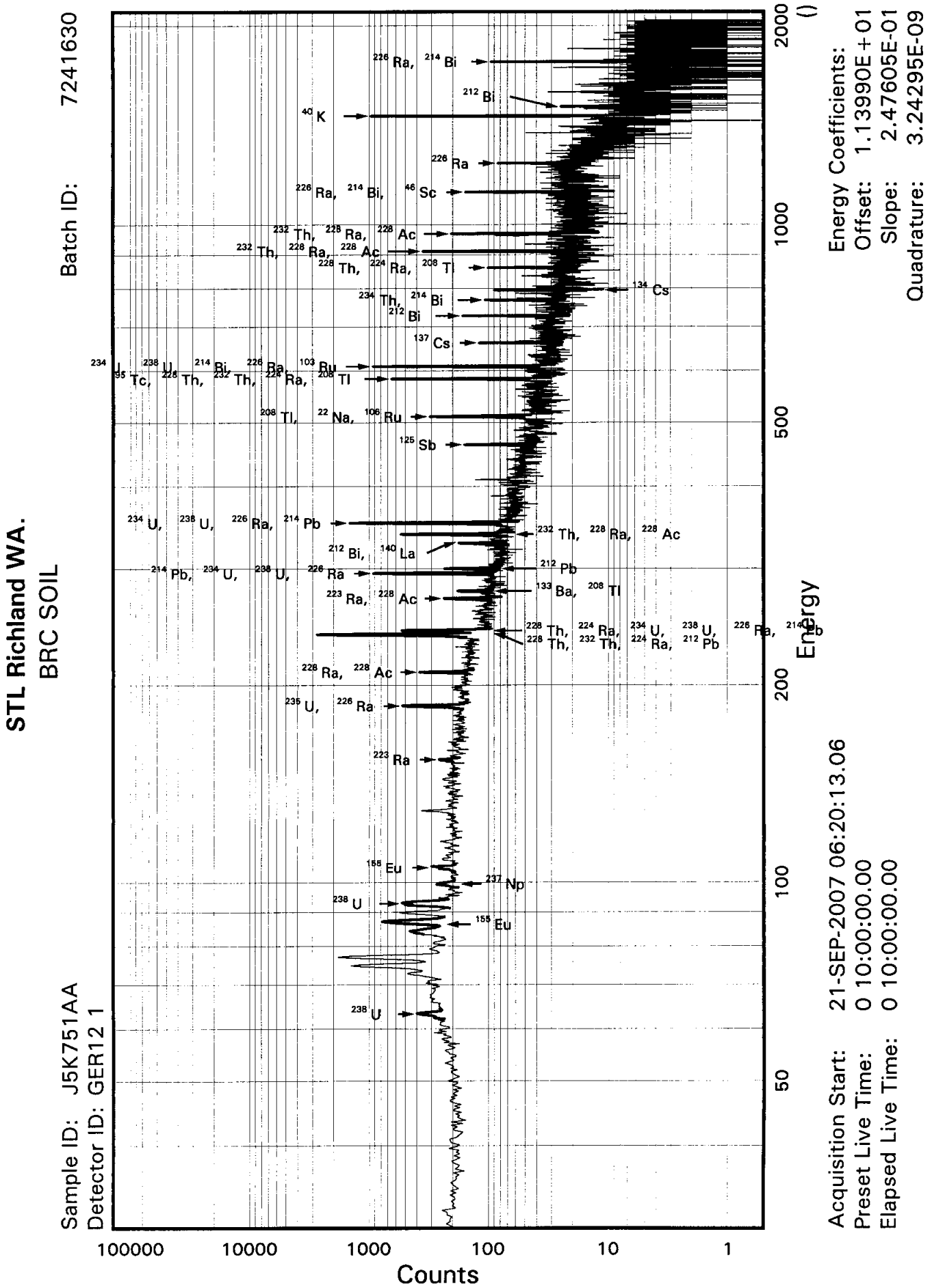
Nuclide	Activity (PCI/GRAM)	Act error	MDA (PCI/GRAM)	MDA error	Act/MDA
K-40	1.715E+01	1.121E+00	1.457E-01	5.755E-03	117.722
TL-208	4.542E-01	3.031E-02	1.651E-02	5.465E-04	27.514
PB-212	1.411E+00	8.993E-02	2.707E-02	1.010E-03	52.129
BI-214	1.364E+00	8.687E-02	3.024E-02	1.003E-03	45.098
PB-214	1.538E+00	9.840E-02	3.161E-02	1.142E-03	48.665
RA-224DA	1.464E+00	9.328E-02	2.808E-02	1.047E-03	52.129
RA-226DA	1.364E+00	8.687E-02	3.024E-02	1.004E-03	45.097
AC-228	1.438E+00	1.138E-01	5.623E-02	2.910E-03	25.573
RA-228DA	1.456E+00	1.152E-01	5.692E-02	2.945E-03	25.573
TH-228DA	1.311E+00	8.753E-02	4.766E-02	1.578E-03	27.514
TH-232DA	1.306E+00	9.754E-02	1.022E-01	3.787E-03	12.786
U-234DA	1.620E+00	1.097E-01	6.382E-02	2.435E-03	25.386
U-238DA	1.538E+00	9.840E-02	3.161E-02	1.142E-03	48.665
U-238DHP	1.040E+00	3.695E-01	9.390E-01	3.893E-02	1.108

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

Nuclide	Key-Line Activity (PCI/GRAM)	K.L. Ided	Act error	MDA (PCI/GRAM)	MDA error	Act/MDA
BE-7	-2.736E-02		5.979E-02	1.987E-01	6.539E-03	-0.138
NA-22	-3.735E-03		6.172E-03	2.087E-02	7.977E-04	-0.179
SC-46	2.850E-01	+	2.399E-02	4.949E-02	1.925E-03	5.758
CR-51	4.809E-02		9.172E-02	3.072E-01	1.173E-02	0.157
MN-54	1.632E-03		5.511E-03	1.873E-02	8.743E-04	0.087
CO-57	-5.187E-02		3.422E-02	1.146E-01	4.204E-03	-0.453
CO-58	-9.403E-03		6.238E-03	1.952E-02	8.714E-04	-0.482
FE-59	-1.370E-02		1.758E-02	5.866E-02	2.379E-03	-0.234
CO-60	9.752E-03		5.155E-03	1.835E-02	7.420E-04	0.531
ZN-65	7.680E-03		1.419E-02	4.112E-02	1.616E-03	0.187
SE-75	5.972E-04		7.254E-03	2.454E-02	9.281E-04	0.024
SR-85	1.840E-02		7.104E-03	2.094E-02	6.828E-04	0.879
Y-88	1.100E-02		5.175E-03	1.921E-02	6.137E-04	0.573
NB-94	6.093E-03		4.536E-03	1.567E-02	7.810E-04	0.389

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

Nuclide	Key-Line Activity (PCI/GRAM)	K.L. Ided	Act error	MDA (PCI/GRAM)	MDA error	Act/MDA
NB-95	5.079E-02		1.253E-02	3.809E-02	1.561E-03	1.333
TC-95M	6.666E-04		8.351E-03	2.754E-02	1.002E-03	0.024
ZR-95	8.494E-03		1.139E-02	3.946E-02	1.589E-03	0.215
ZRNB-95	7.639E-02		1.808E-02	5.500E-02	2.254E-03	1.389
RH-101	2.357E-03		5.608E-03	1.748E-02	6.332E-04	0.135
RH-102M	-9.077E-04		4.048E-03	1.351E-02	4.450E-04	-0.067
RU-103	9.918E-03		8.113E-03	2.750E-02	9.013E-04	0.361
RU-106DA	-2.341E-03		4.245E-02	1.436E-01	4.770E-03	-0.016
AG-108M	-2.341E-03		3.943E-03	1.320E-02	4.358E-04	-0.177
AG-110M	-1.085E-03		7.037E-03	2.370E-02	1.210E-03	-0.046
SN-113DA	-1.102E-02		7.069E-03	2.348E-02	7.709E-04	-0.469
SB-124	-8.540E-04		6.622E-03	2.238E-02	7.425E-04	-0.038
SB-125	8.582E-03		1.309E-02	4.456E-02	1.471E-03	0.193
SN-126DA	7.436E-03		4.536E-03	1.552E-02	5.202E-04	0.479
I-131	1.207E-01		1.039E-01	3.470E-01	1.221E-02	0.348
BA-133	-2.195E-04		5.994E-03	1.884E-02	6.750E-04	-0.012
CS-134	7.623E-02	+	1.213E-02	2.376E-02	1.031E-03	3.208
CS-137DA	-7.546E-03		5.364E-03	1.755E-02	5.824E-04	-0.430
LA-138	9.055E-03		7.430E-03	2.615E-02	1.039E-03	0.346
CE-139	7.261E-05		5.040E-03	1.690E-02	6.004E-04	0.004
BA-140	2.357E-02		1.121E-01	3.728E-01	1.224E-02	0.063
BALA-140	-2.770E-01		7.981E-02	2.425E-01	9.112E-03	-1.142
CE-141	-1.689E-02		1.538E-02	5.152E-02	1.857E-03	-0.328
CE-144	3.756E-02		3.332E-02	1.144E-01	4.230E-03	0.328
CEPR-144	7.627E-02		6.666E-02	2.288E-01	8.462E-03	0.333
PM-144	2.260E-03		4.365E-03	1.489E-02	4.943E-04	0.152
PM-146	1.221E-02		5.964E-03	2.044E-02	6.747E-04	0.597
EU-152	-7.784E-03		1.388E-02	4.558E-02	1.672E-03	-0.171
EU-154	-5.487E-03		1.697E-02	5.776E-02	2.207E-03	-0.095
EU-155	8.911E-02		1.868E-02	6.115E-02	2.416E-03	1.457
HF-181	-1.574E-02		8.546E-03	2.763E-02	9.087E-04	-0.570
BI-207	4.618E-03		4.064E-03	1.404E-02	4.640E-04	0.329
BI-210M	6.972E-03		7.740E-03	2.370E-02	8.968E-04	0.294
BI-212	1.725E+00	+	1.753E-01	3.452E-01	1.530E-02	4.998
RA-223	5.365E-01	+	6.481E-02	1.108E-01	4.197E-03	4.844
AC-227DA	7.697E-02		3.219E-02	1.108E-01	4.126E-03	0.695
TH-234DA	1.766E+00		7.906E-01	2.782E+00	1.313E-01	0.635
U-235HP	3.995E-02		3.218E-02	1.098E-01	3.971E-03	0.364
NP-237DA	-4.141E-03		9.661E-03	3.207E-02	1.225E-03	-0.129
AM-241HP	-6.072E-02		3.682E-02	1.237E-01	4.913E-03	-0.491


STL Richland WA.
BRC SOIL
Batch ID: 7241630
Sample ID: J5K751AA
Detector ID: GER12 1
Energy Coefficients:
Offset: 1.13990E+01
Slope: 2.47605E-01
Quadrature: 3.24295E-09
Acquisition Start: 21-SEP-2007 06:20:13.06
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
212 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
234 Th, 214 Bi
212 Bi
137 Cs
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
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
155 Eu
237 Np
238 U
155 Eu
238 U

SAMPLE IDENTIFICATION: J5K751AA

CONFIGURATION ID: GER12:J5K751AA_210970620
TITLE : BRC SOIL
SAMPLE ID : J5K751AA

REPORT DATE: 21-SEP-07
ACQUIRE DATE: 21-SEP-07 06:20:13
ELAPSED LIVE TIME: 36000.0 Sec
PRESET LIVE TIME: 0 10:00:00

SAMPLE DATE: 15-AUG-2007 14:45:00.00
CALIB DATE: 21-SEP-2007 05:03:44.00
ELAPSED LIVE TIME: 0 10:00:00
ELAPSED REAL TIME: 0 10:00:20

SAMPLE QUANTITY: 3.6810E+02
SAMPLE GEOMETRY: S200

UNITS: GRAMS
SAMPLE TYPE:

ENERGY OFFSET: 1.1399E+01 keV
ENERGY SLOPE: 2.4760E-01 keV/C
ENERGY Q COEFF: 3.2430E-09 keV/C^^2
PEAK SENSITIVITY: 5.000

FWHM OFFSET: 3.9831E-01 keV
FWHM SLOPE: 3.6466E-02 sqr keV
ITERATIONS: 10
GAUSSIAN SENSITIVITY: 80.00 %

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 21-SEP-2007 21:18:54

Configuration : $DISK1:[GER12.SAMPLE]J5K751AA_210970620.CNF;1
Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6
Sample title : BRC SOIL
Sample date : 15-AUG-2007 14:45:00 Acquisition date : 21-SEP-2007 06:20:13
Sample ID : J5K751AA Sample quantity : 368.10 GRAMS
Sample type : Sample geometry : S200
Elapsed live time: 0 10:00:00.00 Elapsed real time: 0 10:00:20.63 0.1%
Start energy : 11.65 End energy : 2039.99
Sensitivity : 5.00 Gaussian : 80.00
Critical level : No

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	63.23	425	2508	0.64	209.33	205	10	1.18E-02	22.5	
2	2	74.78*	3519	2721	0.86	255.98	242	29	9.78E-02	3.4	1.62E+01
3	2	77.02	5447	2650	0.82	265.03	242	29	1.51E-01	2.2	
4	0	86.41*	2699	5726	0.97	302.94	291	21	7.50E-02	7.3	
5	0	89.89	1333	2515	0.93	316.99	312	11	3.70E-02	7.8	
6	0	92.86	1690	2991	1.54	329.01	323	13	4.69E-02	7.1	
7	0	99.45	353	1894	0.95	355.61	351	10	9.79E-03	23.7	
8	0	105.18	435	2304	1.19	378.73	373	12	1.21E-02	22.6	
9	0	128.93	735	2281	0.81	474.66	469	12	2.04E-02	13.5	
10	0	154.12	207	1970	0.80	576.39	572	10	5.74E-03	40.9	
11	0	186.00	2009	2521	1.23	705.16	698	16	5.58E-02	6.0	
12	0	209.28	1093	1939	0.98	799.16	793	14	3.04E-02	9.1	
13	4	238.63	10619	1726	0.98	917.70	909	29	2.95E-01	1.2	1.06E+01
14	4	241.73	2529	1741	1.41	930.21	909	29	7.03E-02	4.4	
15	0	270.32	901	1367	1.44	1045.67	1038	15	2.50E-02	9.6	
16	0	277.42	370	1321	1.09	1074.37	1068	13	1.03E-02	20.9	
17	0	295.21*	3863	1444	1.07	1146.20	1138	16	1.07E-01	2.8	
18	0	300.04	616	1239	0.94	1165.73	1158	15	1.71E-02	13.1	
19	0	327.94	611	1236	1.23	1278.39	1272	17	1.70E-02	13.8	
20	0	338.24	2284	1519	0.99	1319.97	1309	22	6.35E-02	4.8	
21	0	351.87*	6669	1495	1.07	1375.04	1364	20	1.85E-01	1.9	
22	0	409.40	217	774	0.77	1607.38	1602	12	6.03E-03	26.5	
23	0	462.85	620	925	1.00	1823.23	1813	20	1.72E-02	12.7	
24	0	510.76*	717	1321	1.55	2016.73	2005	24	1.99E-02	15.8	
25	0	583.16	3357	829	1.25	2309.08	2298	19	9.32E-02	2.7	
26	0	609.24*	5038	857	1.31	2414.42	2403	24	1.40E-01	2.2	
27	0	661.56	438	528	1.06	2625.71	2616	17	1.22E-02	12.9	
28	0	727.21	748	439	1.22	2890.83	2881	17	2.08E-02	7.4	
29	0	768.34	488	532	0.99	3056.92	3047	21	1.36E-02	12.7	
30	0	772.58	136	275	0.92	3074.06	3069	13	3.76E-03	26.8	
31	0	794.94	395	375	1.14	3164.35	3155	18	1.10E-02	12.6	
32	0	860.52	404	487	1.13	3429.18	3418	21	1.12E-02	14.6	
33	0	911.15	2412	603	1.59	3633.67	3621	29	6.70E-02	3.2	
34	0	934.19	155	417	2.02	3726.71	3717	19	4.31E-03	28.0	
35	0	968.36	1520	927	1.57	3864.68	3847	33	4.22E-02	5.7	
36	0	1120.14	1068	507	1.70	4477.60	4462	28	2.97E-02	5.9	
37	0	1238.17	498	468	1.27	4954.22	4943	25	1.38E-02	10.9	
38	0	1377.99	323	183	1.75	5518.83	5507	27	8.98E-03	11.4	
39	0	1460.64*	7981	583	1.90	5852.60	5836	31	2.22E-01	1.4	
40	0	1510.77	76	215	0.83	6055.02	6037	30	2.10E-03	48.9	
41	0	1588.07	125	180	1.44	6367.18	6356	18	3.46E-03	23.3	
42	0	1630.19	145	87	1.62	6537.23	6521	31	4.01E-03	18.1	
43	0	1729.76	199	130	1.99	6939.32	6922	29	5.54E-03	15.5	

Sample ID : J5K751AA Acquisition date : 21-SEP-2007 06:20:13

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
44	0	1764.24	891	143	2.14	7078.52	7060	33	2.47E-02	4.8	

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

VMS Nuclide Identification Report V3.0 Generated 21-SEP-2007 21:18:55

Configuration : $DISK1:[GER12.SAMPLE]J5K751AA_210970620.CNF;1
Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.3
Sample title : BRC SOIL
Sample date : 15-AUG-2007 14:45:00 Acquisition date : 21-SEP-2007 06:20:13
Sample ID : J5K751AA Sample quantity : 368.10 GRAMS
Sample type : Sample geometry : S200
Elapsed live time: 0 10:00:00.00 Elapsed real time: 0 10:00:20.63 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	7981	10.67*	8.870E-01	1.720E+01	1.720E+01	10.09
TL-208	277.35	370	6.80	3.059E+00	3.626E-01	3.626E-01	21.94
	510.84	717	21.60	2.026E+00	3.343E-01	3.343E-01	16.84
	583.14	3357	84.20*	1.844E+00	4.410E-01	4.410E-01	6.57
	860.37	404	12.46	1.377E+00	4.796E-01	4.796E-01	16.64
PB-212	238.63	10619	44.60*	3.358E+00	1.446E+00	1.446E+00	6.84
	300.09	616	3.41	2.909E+00	1.268E+00	1.268E+00	14.58
BI-214	609.31	5038	46.30*	1.787E+00	1.242E+00	1.242E+00	6.43
	768.36	488	5.04	1.504E+00	1.314E+00	1.314E+00	14.49
	1120.29	1068	15.10	1.112E+00	1.297E+00	1.297E+00	9.14
	1764.49	891	15.80	7.551E-01	1.523E+00	1.523E+00	8.43
PB-214	241.98	2529	7.49	3.332E+00	2.067E+00	2.067E+00	8.02
	295.21	3863	19.20	2.939E+00	1.396E+00	1.396E+00	7.06
	351.92	6669	37.20*	2.617E+00	1.397E+00	1.397E+00	6.60
	785.91	------	1.10	1.478E+00	------ Line Not Found		------
RA-223	154.21	207	5.58	4.130E+00	1.828E-01	1.834E-01	41.47
	269.46	901	13.60*	3.110E+00	4.345E-01	4.359E-01	11.63
	323.87	------	3.88	2.766E+00	------ Line Not Found		------
RA-224DA	238.63	10619	44.60*	3.358E+00	1.446E+00	1.500E+00	6.84
	240.98	2529	3.95	3.332E+00	3.920E+00	4.066E+00	8.02
	583.14	3357	30.25	1.844E+00	1.227E+00	1.273E+00	6.57
	860.37	404	4.48	1.377E+00	1.334E+00	1.384E+00	16.64
RA-226DA	186.21	2009	3.50	3.840E+00	3.048E+00	3.049E+00	9.10
	241.98	2529	7.49	3.332E+00	2.067E+00	2.067E+00	8.02
	295.22	3863	19.20	2.939E+00	1.396E+00	1.396E+00	7.06
	351.92	6669	37.20	2.617E+00	1.397E+00	1.397E+00	6.60
	609.32	5038	46.30*	1.787E+00	1.242E+00	1.242E+00	6.43
	1120.28	1068	15.10	1.112E+00	1.297E+00	1.297E+00	9.14
	1238.11	498	5.94	1.022E+00	1.672E+00	1.672E+00	13.56
	1764.49	891	15.80	7.551E-01	1.523E+00	1.523E+00	8.43
AC-228	209.28	1093	4.40	3.618E+00	1.400E+00	1.400E+00	11.33
	270.23	901	3.60	3.110E+00	1.641E+00	1.641E+00	11.63
	338.32	2284	11.40	2.688E+00	1.521E+00	1.521E+00	7.96
	911.07	2412	27.70*	1.316E+00	1.349E+00	1.349E+00	9.06
	969.11	1520	16.60	1.254E+00	1.490E+00	1.490E+00	9.95
RA-228DA	209.28	1093	4.40	3.618E+00	1.400E+00	1.417E+00	11.33

Sample ID : J5K751AA Acquisition date : 21-SEP-2007 06:20:13

Nuclide Type: NP

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected PCI/GRAM	Decay Corr PCI/GRAM	1-Sigma %Error
	338.32	2284	11.40	2.688E+00	1.521E+00	1.539E+00	7.96
	911.07	2412	27.70*	1.316E+00	1.349E+00	1.365E+00	9.06
	964.60	------	5.20	1.257E+00	------ Line Not Found		------
	969.11	1520	16.60	1.254E+00	1.490E+00	1.508E+00	9.95
TH-228DA	238.63	10619	44.60	3.358E+00	1.446E+00	1.500E+00	6.84
	240.98	2529	3.95	3.332E+00	3.920E+00	4.066E+00	8.02
	583.14	3357	30.25*	1.844E+00	1.227E+00	1.273E+00	6.57
	860.37	404	4.48	1.377E+00	1.334E+00	1.384E+00	16.64
TH-232DA	238.63	10619	44.60	3.358E+00	1.446E+00	1.446E+00	6.84
	338.32	2284	12.40*	2.688E+00	1.398E+00	1.398E+00	7.96
	583.14	3357	30.25	1.844E+00	1.227E+00	1.227E+00	6.57
	911.07	2412	27.70	1.316E+00	1.349E+00	1.349E+00	9.06
	964.60	------	5.20	1.257E+00	------ Line Not Found		------
	969.11	1520	16.60	1.254E+00	1.490E+00	1.490E+00	9.95
U-234DA	241.98	2529	7.49	3.332E+00	2.067E+00	2.067E+00	8.02
	295.22	3863	19.20*	2.939E+00	1.396E+00	1.396E+00	7.06
	351.92	6669	37.20	2.617E+00	1.397E+00	1.397E+00	6.60
	609.31	5038	46.30	1.787E+00	1.242E+00	1.242E+00	6.43
U-238DA	241.98	2529	7.49	3.332E+00	2.067E+00	2.067E+00	8.02
	295.22	3863	19.20	2.939E+00	1.396E+00	1.396E+00	7.06
	351.92	6669	37.20*	2.617E+00	1.397E+00	1.397E+00	6.60
	609.31	5038	46.30	1.787E+00	1.242E+00	1.242E+00	6.43
U-238DHP	63.28	425	3.80*	2.172E+00	1.051E+00	1.051E+00	23.40
	92.59	1690	5.41	3.845E+00	1.657E+00	1.657E+00	9.96

Nuclide Type: FP

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected PCI/GRAM	Decay Corr PCI/GRAM	1-Sigma %Error
CS-137DA	661.65	438	85.10*	1.682E+00	6.245E-02	6.259E-02	14.29

Flag: "*" = Keyline

Unidentified Energy Lines
Sample ID : J5K751AA

Acquisition date : 21-SEP-2007 06:20:13

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
2	74.78	3519	2721	0.86	255.98	242	29	9.78E-02	3.4	3.02E+00	
2	77.02	5447	2650	0.82	265.03	242	29	1.51E-01	2.2	3.15E+00	
0	86.41	2699	5726	0.97	302.94	291	21	7.50E-02	7.3	3.61E+00	T
0	89.89	1333	2515	0.93	316.99	312	11	3.70E-02	7.8	3.75E+00	
0	99.45	353	1894	0.95	355.61	351	10	9.79E-03	23.7	4.02E+00	T
0	105.18	435	2304	1.19	378.73	373	12	1.21E-02	22.6	4.12E+00	T
0	128.93	735	2281	0.81	474.66	469	12	2.04E-02	13.5	4.26E+00	
0	327.94	611	1236	1.23	1278.39	1272	17	1.70E-02	13.8	2.74E+00	T
0	409.40	217	774	0.77	1607.38	1602	12	6.03E-03	26.5	2.36E+00	
0	462.85	620	925	1.00	1823.23	1813	20	1.72E-02	12.7	2.17E+00	T
0	727.21	748	439	1.22	2890.83	2881	17	2.08E-02	7.4	1.57E+00	T
0	772.58	136	275	0.92	3074.06	3069	13	3.76E-03	26.8	1.50E+00	
0	794.94	395	375	1.14	3164.35	3155	18	1.10E-02	12.6	1.46E+00	T
0	934.19	155	417	2.02	3726.71	3717	19	4.31E-03	28.0	1.29E+00	
0	1377.99	323	183	1.75	5518.83	5507	27	8.98E-03	11.4	9.33E-01	
0	1510.77	76	215	0.83	6055.02	6037	30	2.10E-03	48.9	8.62E-01	T
0	1588.07	125	180	1.44	6367.18	6356	18	3.46E-03	23.3	8.26E-01	
0	1630.19	145	87	1.62	6537.23	6521	31	4.01E-03	18.1	8.07E-01	
0	1729.76	199	130	1.99	6939.32	6922	29	5.54E-03	15.5	7.68E-01	

Flags: "T" = Tentatively associated

Sample ID : J5K751AA
Acquisition date : 21-SEP-2007 06:20:13

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	4.129E-02	16.84	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	2.656E-01	9.14	
		% Abundances Found =		50.00			
TC-95M	61.00D	0.60	204.12*	66.20	--- Not Found ---		Abun.
			582.07	29.30	1.926E+00	6.57	
			835.13	26.10	--- Not Found ---		
		% Abundances Found =		24.10			
RU-103	39.35D	0.94	497.08*	89.00	--- Not Found ---		Abun.
			610.33	5.60	1.966E+01	6.43	
		% Abundances Found =		5.92			
RU-106DA	368.20D	0.10	511.85	20.60	3.758E-01	16.84	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	5.770E-01	14.06	
			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	3.597E-01	21.94	
			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	6.665E-02	14.54	
			801.93	8.73	--- Not Found ---		
		% Abundances Found =		41.22			
LA-140	40.22H	21.99	328.77	20.50	9.242E+05	15.15	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	4.999E-01	10.27	
			105.31*	20.70	1.054E-01	23.51	
		% Abundances Found =		70.92			

Sample ID : J5K751AA
Acquisition date : 21-SEP-2007 06:20:13

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	3.268E+01	17.09	
			452.83	0.31	--- Not Found ---		
			727.33*	6.58	1.478E+00	10.18	
			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	6.171E+00	50.87	
			1620.50	1.49	--- Not Found ---		
			1806.00	0.09	--- Not Found ---		
		% Abundances Found =		61.38			
TH-234DA	4.47E+09Y	0.00	766.41	0.21	3.154E+01	14.49	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	1.976E-01	9.10	
			205.31	4.70	--- Not Found ---		
		% Abundances Found =		78.03			
NP-237DA	2.14E+06Y	0.00	98.44	17.60	1.017E-01	24.62	Abun.
			311.98*	36.00	--- Not Found ---		
		% Abundances Found =		32.84			

Flag: "*" = Keyline

VMS Nuclide Identification Report V3.0 Generated 21-SEP-2007 21:18:57

Configuration : $DISK1:[GER12.SAMPLE]J5K751AA_210970620.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 : 15-AUG-2007 14:45:00 Acquisition date : 21-SEP-2007 06:20:13
Sample ID : J5K751AA Sample quantity : 368.10 GRAMS
Sample type : Sample geometry : S200
Elapsed live time: 0 10:00:00.00 Elapsed real time: 0 10:00:20.63 0.1%
Peak Width (FWHM): 3.00 Confidence level : 5.00 %
Energy tolerance : 2.00 Half life ratio : 8.00
Errors propagated: Yes Systematic Error : 5.00 %
Efficiency type : Empirical Efficiencies at : Peak Energy
Abundance limit : 80.00 WTM error limit : 3.00

Combined Activity-MDA Report

---- Identified Nuclides ----

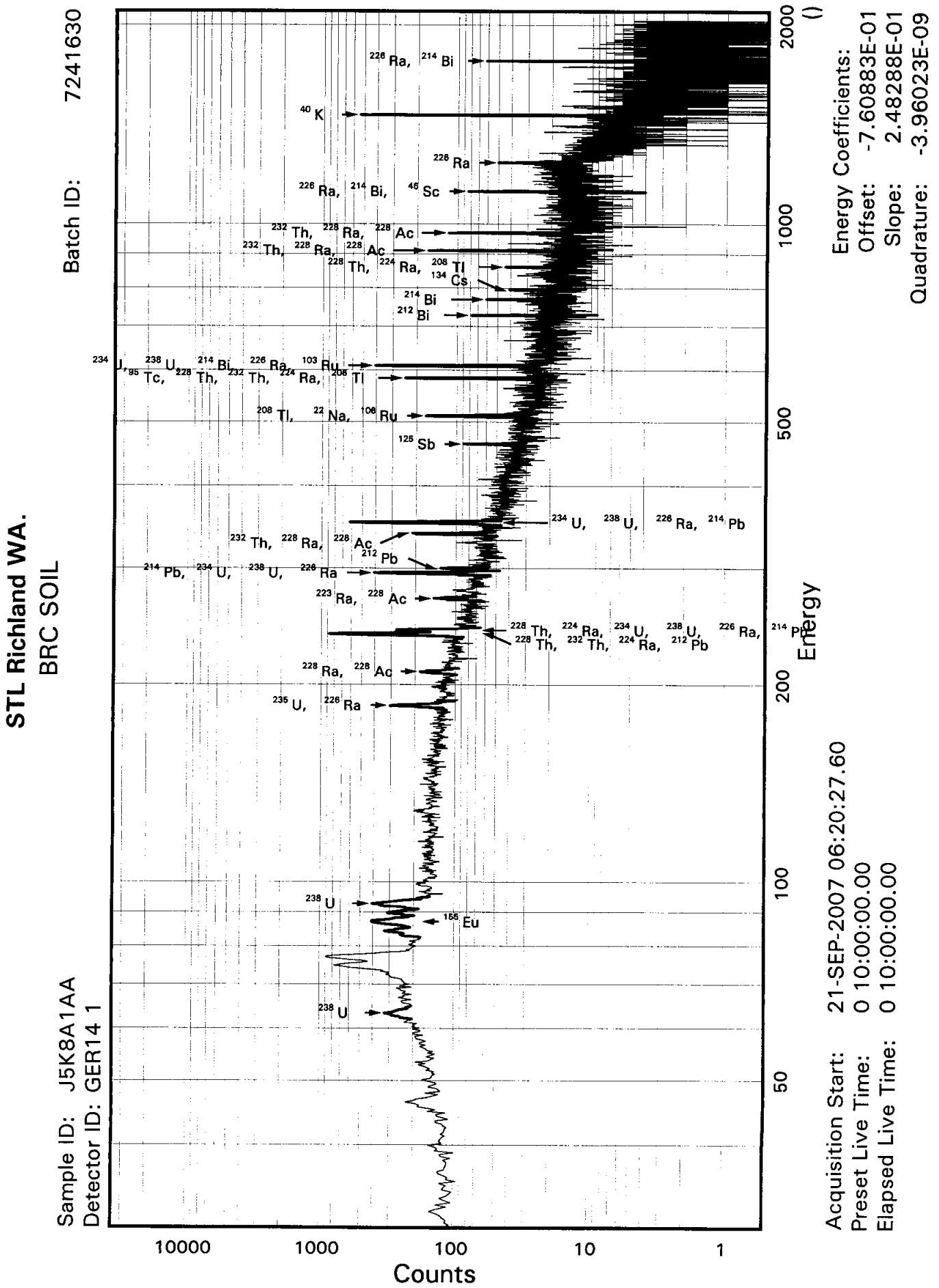
Nuclide	Activity (PCI/GRAM)	Act error	MDA (PCI/GRAM)	MDA error	Act/MDA
K-40	1.720E+01	1.736E+00	1.706E-01	1.477E-02	100.801
CS-137DA	6.259E-02	8.944E-03	1.747E-02	6.137E-04	3.582
TL-208	4.410E-01	2.898E-02	1.453E-02	4.832E-04	30.340
PB-212	1.446E+00	9.892E-02	2.595E-02	1.167E-03	55.742
BI-214	1.242E+00	7.986E-02	2.847E-02	9.652E-04	43.629
PB-214	1.397E+00	9.224E-02	3.025E-02	1.169E-03	46.184
RA-223	4.359E-01	5.069E-02	8.044E-02	3.485E-03	5.419
RA-224DA	1.500E+00	1.026E-01	2.691E-02	1.211E-03	55.742
RA-226DA	1.242E+00	7.986E-02	2.847E-02	9.652E-04	43.628
AC-228	1.349E+00	1.222E-01	5.435E-02	3.712E-03	24.821
RA-228DA	1.365E+00	1.237E-01	5.501E-02	3.757E-03	24.821
TH-228DA	1.273E+00	8.368E-02	4.196E-02	1.395E-03	30.340
TH-232DA	1.398E+00	1.113E-01	9.115E-02	3.540E-03	15.336
U-234DA	1.396E+00	9.862E-02	5.734E-02	2.373E-03	24.348
U-238DA	1.397E+00	9.224E-02	3.025E-02	1.169E-03	46.184
U-238DHP	1.051E+00	2.460E-01	5.344E-01	2.046E-02	1.967

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

Nuclide	Key-Line Activity (PCI/GRAM)	K.L. Ided	Act error	MDA (PCI/GRAM)	MDA error	Act/MDA
BE-7	5.124E-02		5.419E-02	1.827E-01	6.171E-03	0.280
NA-22	6.910E-04		5.486E-03	1.852E-02	1.415E-03	0.037
SC-46	2.656E-01	+	2.427E-02	4.372E-02	2.142E-03	6.076
CR-51	-3.271E-02		8.497E-02	2.790E-01	1.088E-02	-0.117
MN-54	1.113E-02		5.137E-03	1.772E-02	1.046E-03	0.628
CO-57	2.434E-02		3.108E-02	1.041E-01	4.140E-03	0.234
CO-58	-4.027E-03		5.527E-03	1.861E-02	1.031E-03	-0.216
FE-59	2.665E-03		1.552E-02	5.305E-02	2.726E-03	0.050
CO-60	-7.307E-03		4.913E-03	1.577E-02	1.540E-03	-0.463
ZN-65	1.171E-03		1.391E-02	3.996E-02	1.981E-03	0.029
SE-75	-4.083E-03		6.670E-03	2.213E-02	9.659E-04	-0.184
SR-85	3.170E-02		6.914E-03	2.048E-02	6.423E-04	1.548

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

Nuclide	Key-Line Activity (PCI/GRAM)	K.L. Ided	Act error	MDA (PCI/GRAM)	MDA error	Act/MDA
Y-88	-3.470E-03		4.681E-03	1.594E-02	5.925E-04	-0.218
NB-94	-2.526E-03		4.281E-03	1.434E-02	9.288E-04	-0.176
NB-95	2.032E-02		1.093E-02	3.265E-02	1.594E-03	0.622
TC-95M	-6.633E-03		7.456E-03	2.509E-02	1.156E-03	-0.264
ZR-95	1.622E-02		1.122E-02	3.803E-02	1.809E-03	0.426
ZRNB-95	3.038E-02		1.571E-02	4.696E-02	2.294E-03	0.647
RH-101	1.041E-02		4.986E-03	1.623E-02	7.502E-04	0.642
RH-102M	3.228E-03		3.754E-03	1.265E-02	4.292E-04	0.255
RU-103	-4.180E-03		7.242E-03	2.388E-02	7.770E-04	-0.175
RU-106DA	6.246E-02		3.968E-02	1.369E-01	4.681E-03	0.456
AG-108M	-6.923E-03		3.755E-03	1.222E-02	4.407E-04	-0.566
AG-110M	-9.317E-03		6.436E-03	2.108E-02	1.412E-03	-0.442
SN-113DA	-7.803E-04		6.555E-03	2.212E-02	8.327E-04	-0.035
SB-124	2.250E-04		6.300E-03	2.061E-02	6.955E-04	0.011
SB-125	-4.561E-03		1.205E-02	4.027E-02	1.463E-03	-0.113
SN-126DA	1.151E-02		4.449E-03	1.428E-02	5.099E-04	0.806
I-131	2.942E-03		9.451E-02	3.214E-01	1.234E-02	0.009
BA-133	1.083E-03		6.171E-03	1.804E-02	6.956E-04	0.060
CS-134	6.665E-02	+	9.690E-03	2.174E-02	1.156E-03	3.066
LA-138	-8.225E-03		5.905E-03	1.944E-02	1.729E-03	-0.423
CE-139	-3.026E-03		4.698E-03	1.536E-02	7.197E-04	-0.197
BA-140	4.272E-02		1.026E-01	3.527E-01	1.130E-02	0.121
BALA-140	-2.946E-01		7.561E-02	2.146E-01	1.537E-02	-1.373
CE-141	-8.282E-03		1.430E-02	4.719E-02	2.005E-03	-0.175
CE-144	6.689E-03		3.062E-02	1.023E-01	3.987E-03	0.065
CEPR-144	1.330E-02		6.125E-02	2.047E-01	7.973E-03	0.065
PM-144	-9.552E-04		3.977E-03	1.340E-02	4.572E-04	-0.071
PM-146	1.181E-02		5.607E-03	1.910E-02	6.703E-04	0.618
EU-152	-4.720E-03		1.247E-02	4.233E-02	1.641E-03	-0.112
EU-154	-2.070E-03		1.522E-02	5.110E-02	3.904E-03	-0.041
EU-155	1.054E-01	+	2.478E-02	5.378E-02	2.260E-03	1.960
HF-181	-1.399E-02		7.496E-03	2.415E-02	8.092E-04	-0.579
BI-207	5.643E-03		3.857E-03	1.332E-02	4.382E-04	0.424
BI-210M	-9.217E-03		7.276E-03	2.129E-02	9.269E-04	-0.433
BI-212	1.478E+00	+	1.505E-01	3.215E-01	1.580E-02	4.598
AC-227DA	1.590E-01		3.851E-02	1.122E-01	5.061E-03	1.417
TH-234DA	1.828E+00		7.452E-01	2.554E+00	1.563E-01	0.716
U-235HP	9.150E-02		3.062E-02	1.020E-01	4.280E-03	0.897
NP-237DA	7.996E-03		9.017E-03	3.006E-02	1.197E-03	0.266
AM-241HP	2.274E-03		1.923E-02	6.366E-02	2.278E-03	0.036


STL Richland WA.
BRC SOIL
Batch ID: 7241630
Sample ID: J5K8A1AA
Detector ID: GER14 1
Energy Coefficients:
Offset: -7.60883E-01
Slope: 2.48288E-01
Quadrature: -3.96023E-09
Acquisition Start: 21-SEP-2007 06:20:27.60
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 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: ~~J5~~K8A1AA

CONFIGURATION ID: GER14:J5K8A1AA_210970620
TITLE : BRC SOIL
SAMPLE ID : J5K8A1AA

REPORT DATE: 21-SEP-07
ACQUIRE DATE: 21-SEP-07 06:20:27
ELAPSED LIVE TIME: 36000.0 Sec
PRESET LIVE TIME: 0 10:00:00

SAMPLE DATE: 16-AUG-2007 07:15:00.00
CALIB DATE: 21-SEP-2007 05:04:29.29
ELAPSED LIVE TIME: 0 10:00:00
ELAPSED REAL TIME: 0 10:00:15

SAMPLE QUANTITY: 3.1380E+02
SAMPLE GEOMETRY: S200

UNITS: GRAMS
SAMPLE TYPE:

ENERGY OFFSET: -.7609E+00 keV
ENERGY SLOPE: 2.4829E-01 keV/C
ENERGY Q COEFF: -.3960E-08 keV/C^^2
PEAK SENSITIVITY: 5.000

FWHM OFFSET: 1.0534E+00 keV
FWHM SLOPE: 2.9276E-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 21-SEP-2007 21:23:17

Configuration : $DISK1:[GER14.SAMPLE]J5K8A1AA_210970620.CNF;1
Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6
Sample title : BRC SOIL
Sample date : 16-AUG-2007 07:15:00 Acquisition date : 21-SEP-2007 06:20:27
Sample ID : J5K8A1AA Sample quantity : 313.80 GRAMS
Sample type : Sample geometry : S200
Elapsed live time: 0 10:00:00.00 Elapsed real time: 0 10:00:15.60 0.0%
Start energy : 19.10 End energy : 2032.95
Sensitivity : 5.00 Gaussian : 40.00
Critical level : No

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	46.37	557	1877	1.41	189.84	183	15	1.55E-02	17.5	
2	0	63.33	510	2757	1.10	258.13	252	13	1.42E-02	21.7	
3	2	74.74*	2310	4672	1.40	304.08	296	40	6.42E-02	7.3	9.35E-01
4	2	76.98	4102	4211	1.45	313.10	296	40	1.14E-01	4.2	
5	1	84.27*	481	3053	1.45	342.47	335	27	1.34E-02	27.9	1.65E+00
6	1	87.02*	1155	3530	1.37	353.55	335	27	3.21E-02	12.3	
7	3	89.89	515	1600	0.97	365.11	361	26	1.43E-02	13.8	1.37E+00
8	3	92.86	1574	3684	1.78	377.08	361	26	4.37E-02	10.2	
9	0	186.03	1376	2821	1.30	752.31	740	25	3.82E-02	10.7	
10	0	209.45	573	2100	1.90	846.63	837	20	1.59E-02	20.1	
11	2	238.63	5043	1704	1.52	964.17	953	34	1.40E-01	2.2	1.81E+00
12	2	241.79	1543	1590	1.83	976.90	953	34	4.29E-02	6.5	
13	0	269.95	546	1594	2.14	1090.32	1080	22	1.52E-02	16.4	
14	0	295.21	2261	1379	1.59	1192.07	1182	21	6.28E-02	4.1	
15	0	300.08	216	1092	1.01	1211.70	1205	16	6.00E-03	30.1	
16	0	338.38	1126	1285	1.64	1365.95	1354	24	3.13E-02	7.7	
17	0	351.92	3965	1159	1.60	1420.48	1407	23	1.10E-01	2.5	
18	0	409.36	106	718	1.22	1651.85	1644	17	2.96E-03	50.2	
19	0	463.04	350	744	1.15	1868.06	1858	23	9.72E-03	18.0	
20	0	510.99*	547	968	2.18	2061.18	2044	33	1.52E-02	18.1	
21	0	583.07	1564	673	1.71	2351.52	2339	26	4.35E-02	4.6	
22	0	609.29*	2900	635	1.82	2457.14	2443	28	8.05E-02	3.0	
23	0	727.68	343	398	1.34	2933.99	2922	21	9.52E-03	13.5	
24	0	768.57	255	319	1.45	3098.68	3091	18	7.07E-03	15.5	
25	0	794.87	192	241	1.92	3204.64	3197	17	5.34E-03	17.4	
26	0	860.38	228	354	2.27	3468.49	3457	26	6.33E-03	20.2	
27	0	911.14	1201	366	1.82	3672.99	3659	30	3.34E-02	4.9	
28	0	934.40	186	226	1.51	3766.67	3757	20	5.16E-03	18.4	
29	0	969.25	565	444	1.22	3907.05	3893	22	1.57E-02	9.0	
30	0	1120.33*	572	345	2.26	4515.60	4503	27	1.59E-02	8.4	
31	0	1238.07	273	327	1.42	4989.88	4978	22	7.58E-03	14.2	
32	0	1460.77*	4536	229	2.15	5886.97	5869	36	1.26E-01	1.8	
33	0	1510.09	63	113	1.16	6085.67	6076	28	1.75E-03	34.9	
34	0	1764.64*	487	62	1.95	7111.10	7092	40	1.35E-02	6.5	

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

VMS Nuclide Identification Report V3.0 Generated 21-SEP-2007 21:23:18

Configuration : $DISK1:[GER14.SAMPLE]J5K8A1AA_210970620.CNF;1
Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.3
Sample title : BRC SOIL
Sample date : 16-AUG-2007 07:15:00 Acquisition date : 21-SEP-2007 06:20:27
Sample ID : J5K8A1AA Sample quantity : 313.80 GRAMS
Sample type : Sample geometry : S200
Elapsed live time: 0 10:00:00.00 Elapsed real time: 0 10:00:15.60 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	4536	10.67*	5.514E-01	1.845E+01	1.845E+01	6.24
TL-208	277.35	------	6.80	2.084E+00	------ Line Not Found		------
	510.84	547	21.60	1.292E+00	4.694E-01	4.694E-01	19.00
	583.14	1564	84.20*	1.159E+00	3.835E-01	3.835E-01	7.57
	860.37	228	12.46	8.432E-01	5.193E-01	5.193E-01	21.21
PB-212	238.63	5043	44.60*	2.316E+00	1.168E+00	1.168E+00	6.60
	300.09	216	3.41	1.967E+00	7.705E-01	7.705E-01	30.69
BI-214	609.31	2900	46.30*	1.118E+00	1.340E+00	1.340E+00	6.77
	768.36	255	5.04	9.244E-01	1.307E+00	1.307E+00	16.73
	1120.29	572	15.10	6.815E-01	1.331E+00	1.331E+00	10.40
	1764.49	487	15.80	4.738E-01	1.555E+00	1.555E+00	8.81
PB-214	241.98	1543	7.49	2.295E+00	2.147E+00	2.147E+00	9.01
	295.21	2261	19.20	1.991E+00	1.415E+00	1.415E+00	7.31
	351.92	3965	37.20*	1.742E+00	1.464E+00	1.464E+00	6.46
	785.91	------	1.10	9.077E-01	------ Line Not Found		------
RA-224DA	238.63	5043	44.60*	2.316E+00	1.168E+00	1.211E+00	6.60
	240.98	1543	3.95	2.295E+00	4.071E+00	4.220E+00	9.01
	583.14	1564	30.25	1.159E+00	1.067E+00	1.106E+00	7.57
	860.37	228	4.48	8.432E-01	1.444E+00	1.497E+00	21.21
RA-226DA	186.21	1376	3.50	2.707E+00	3.475E+00	3.475E+00	12.44
	241.98	1543	7.49	2.295E+00	2.147E+00	2.147E+00	9.01
	295.22	2261	19.20	1.991E+00	1.415E+00	1.415E+00	7.31
	351.92	3965	37.20	1.742E+00	1.464E+00	1.464E+00	6.46
	609.32	2900	46.30*	1.118E+00	1.340E+00	1.340E+00	6.77
	1120.28	572	15.10	6.815E-01	1.331E+00	1.331E+00	10.40
	1238.11	273	5.94	6.292E-01	1.747E+00	1.747E+00	15.40
	1764.49	487	15.80	4.738E-01	1.555E+00	1.555E+00	8.81
AC-228	209.28	573	4.40	2.522E+00	1.236E+00	1.236E+00	21.01
	270.23	546	3.60	2.125E+00	1.707E+00	1.707E+00	17.48
	338.32	1126	11.40	1.796E+00	1.317E+00	1.317E+00	9.75
	911.07	1201	27.70*	8.049E-01	1.288E+00	1.288E+00	8.11
	969.11	565	16.60	7.657E-01	1.063E+00	1.063E+00	11.07
RA-228DA	209.28	573	4.40	2.522E+00	1.236E+00	1.250E+00	21.01
	338.32	1126	11.40	1.796E+00	1.317E+00	1.332E+00	9.75
	911.07	1201	27.70*	8.049E-01	1.288E+00	1.304E+00	8.11
	964.60	------	5.20	7.687E-01	------ Line Not Found		------

Sample ID : J5K8A1AA Acquisition date : 21-SEP-2007 06:20:27

Nuclide Type: NP

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected PCI/GRAM	Decay Corr PCI/GRAM	1-Sigma %Error
	969.11	565	16.60	7.657E-01	1.063E+00	1.076E+00	11.07
TH-228DA	238.63	5043	44.60	2.316E+00	1.168E+00	1.211E+00	6.60
	240.98	1543	3.95	2.295E+00	4.071E+00	4.220E+00	9.01
	583.14	1564	30.25*	1.159E+00	1.067E+00	1.106E+00	7.57
	860.37	228	4.48	8.432E-01	1.444E+00	1.497E+00	21.21
TH-232DA	238.63	5043	44.60	2.316E+00	1.168E+00	1.168E+00	6.60
	338.32	1126	12.40*	1.796E+00	1.210E+00	1.210E+00	9.75
	583.14	1564	30.25	1.159E+00	1.067E+00	1.067E+00	7.57
	911.07	1201	27.70	8.049E-01	1.288E+00	1.288E+00	8.11
	964.60	------	5.20	7.687E-01	------ Line Not Found		------
	969.11	565	16.60	7.657E-01	1.063E+00	1.063E+00	11.07
U-234DA	241.98	1543	7.49	2.295E+00	2.147E+00	2.147E+00	9.01
	295.22	2261	19.20*	1.991E+00	1.415E+00	1.415E+00	7.31
	351.92	3965	37.20	1.742E+00	1.464E+00	1.464E+00	6.46
	609.31	2900	46.30	1.118E+00	1.340E+00	1.340E+00	6.77
U-238DA	241.98	1543	7.49	2.295E+00	2.147E+00	2.147E+00	9.01
	295.22	2261	19.20	1.991E+00	1.415E+00	1.415E+00	7.31
	351.92	3965	37.20*	1.742E+00	1.464E+00	1.464E+00	6.46
	609.31	2900	46.30	1.118E+00	1.340E+00	1.340E+00	6.77
U-238DHP	63.28	510	3.80*	3.312E+00	9.689E-01	9.689E-01	22.52
	92.59	1574	5.41	3.455E+00	2.015E+00	2.015E+00	11.81

Flag: "*" = Keyline

Unidentified Energy Lines
Sample ID : J5K8A1AA Acquisition date : 21-SEP-2007 06:20:27

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
0	46.37	557	1877	1.41	189.84	183	15	1.55E-02	17.5	2.83E+00	
2	74.74	2310	4672	1.40	304.08	296	40	6.42E-02	7.3	3.44E+00	
2	76.98	4102	4211	1.45	313.10	296	40	1.14E-01	4.2	3.45E+00	
1	84.27	481	3053	1.45	342.47	335	27	1.34E-02	27.9	3.47E+00	
1	87.02	1155	3530	1.37	353.55	335	27	3.21E-02	12.3	3.47E+00	T
3	89.89	515	1600	0.97	365.11	361	26	1.43E-02	13.8	3.46E+00	
0	409.36	106	718	1.22	1651.85	1644	17	2.96E-03	50.2	1.55E+00	
0	463.04	350	744	1.15	1868.06	1858	23	9.72E-03	18.0	1.40E+00	T
0	727.68	343	398	1.34	2933.99	2922	21	9.52E-03	13.5	9.67E-01	T
0	794.87	192	241	1.92	3204.64	3197	17	5.34E-03	17.4	8.99E-01	T
0	934.40	186	226	1.51	3766.67	3757	20	5.16E-03	18.4	7.89E-01	
0	1510.09	63	113	1.16	6085.67	6076	28	1.75E-03	34.9	5.37E-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	5.794E-02	19.00	Abun.
			1274.54*	99.94	--- Not Found ---		
		% Abundances Found =		64.26			
SC-46	83.85D	0.43	889.25	99.98	--- Not Found ---		Abun.
			1120.51*	99.99	2.710E-01	10.40	
		% Abundances Found =		50.00			
TC-95M	61.00D	0.59	204.12*	66.20	--- Not Found ---		Abun.
			582.07	29.30	1.662E+00	7.57	
			835.13	26.10	--- Not Found ---		
		% Abundances Found =		24.10			
RU-103	39.35D	0.92	497.08*	89.00	--- Not Found ---		Abun.
			610.33	5.60	2.095E+01	6.77	
		% Abundances Found =		5.92			
RU-106DA	368.20D	0.10	511.85	20.60	5.269E-01	19.00	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	5.923E-01	18.92	
			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	6.196E-02	18.49	
			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	2.616E-01	13.67	
			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	1.289E+00	15.05	
			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 : J5K8A1AA Acquisition date : 21-SEP-2007 06:20:27

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	4.534E-01	17.48	
			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	2.252E-01	12.44	
			205.31	4.70	--- Not Found ---		
		% Abundances Found =		78.03			

Flag: "*" = Keyline

VMS Nuclide Identification Report V3.0 Generated 21-SEP-2007 21:23:19

Configuration : $DISK1:[GER14.SAMPLE]J5K8A1AA_210970620.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 : 16-AUG-2007 07:15:00 Acquisition date : 21-SEP-2007 06:20:27
Sample ID : J5K8A1AA Sample quantity : 313.80 GRAMS
Sample type : Sample geometry : S200
Elapsed live time: 0 10:00:00.00 Elapsed real time: 0 10:00:15.60 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 ----

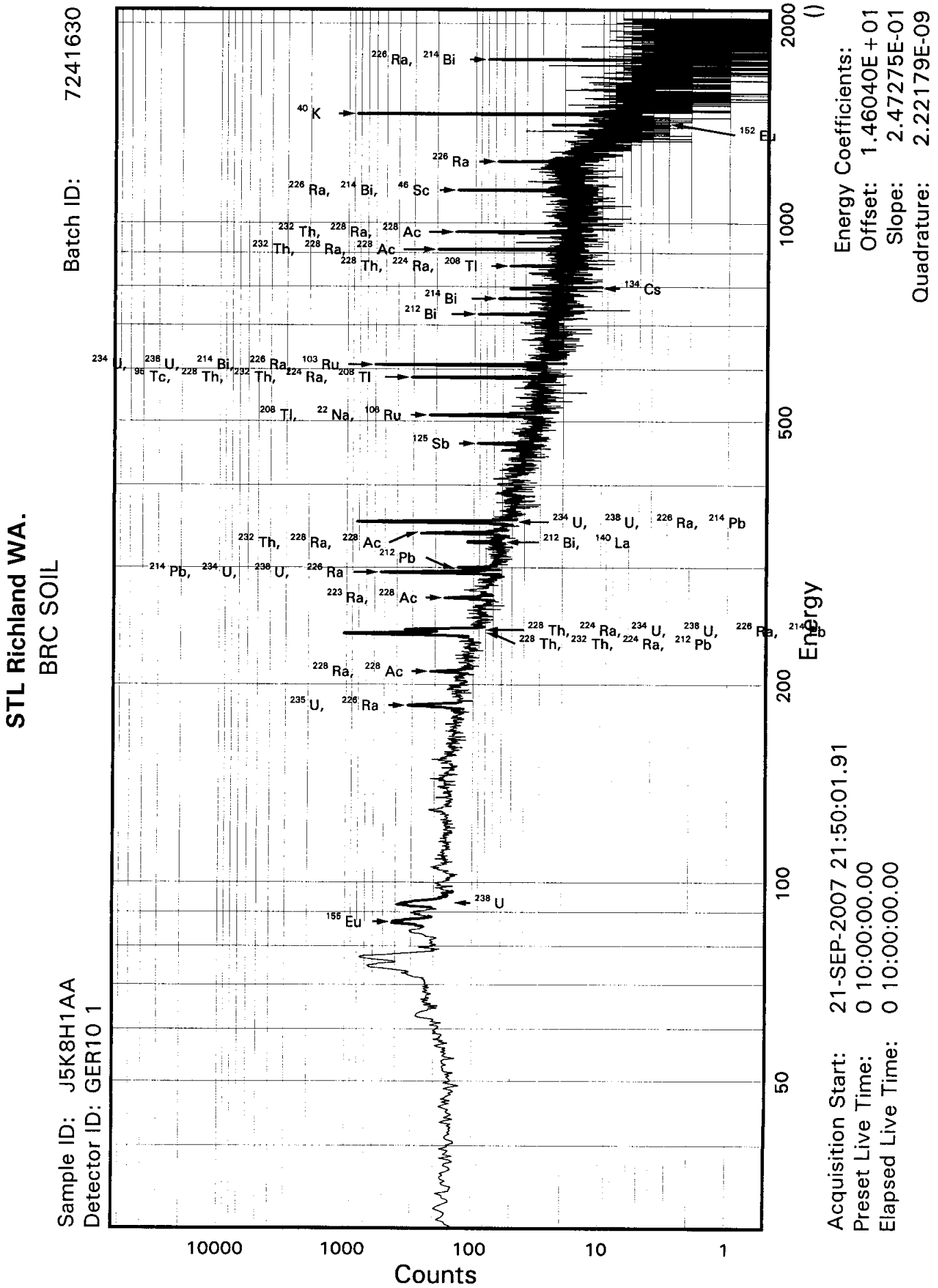
Nuclide	Activity (PCI/GRAM)	Act error	MDA (PCI/GRAM)	MDA error	Act/MDA
K-40	1.845E+01	1.152E+00	2.374E-01	7.768E-03	77.695
TL-208	3.835E-01	2.904E-02	2.730E-02	9.192E-04	14.044
PB-212	1.168E+00	7.704E-02	4.532E-02	1.688E-03	25.771
BI-214	1.340E+00	9.067E-02	5.053E-02	1.739E-03	26.523
PB-214	1.464E+00	9.461E-02	5.428E-02	1.775E-03	26.974
RA-224DA	1.211E+00	7.986E-02	4.698E-02	1.750E-03	25.771
RA-226DA	1.340E+00 ✓	9.067E-02	5.053E-02 ✓	1.740E-03	26.522
AC-228	1.288E+00	1.045E-01	9.441E-02	3.922E-03	13.646
RA-228DA	1.304E+00 ✓	1.057E-01	9.555E-02 ✓	3.969E-03	13.646
TH-228DA	1.106E+00	8.380E-02	7.878E-02	2.652E-03	14.044
TH-232DA	1.210E+00	1.181E-01	1.675E-01	5.462E-03	7.229
U-234DA	1.415E+00	1.034E-01	1.083E-01	3.728E-03	13.064
U-238DA	1.464E+00	9.461E-02	5.428E-02	1.775E-03	26.974
U-238DHP	9.689E-01	2.182E-01	5.127E-01	1.678E-02	1.890

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

Nuclide	Key-Line Activity (PCI/GRAM)	K.L. Ided	Act error	MDA (PCI/GRAM)	MDA error	Act/MDA
BE-7	-1.455E-01		9.893E-02	3.228E-01	1.039E-02	-0.451
NA-22	-2.328E-02		9.548E-03	3.070E-02	1.007E-03	-0.758
SC-46	2.710E-01	+	2.817E-02	6.969E-02	2.453E-03	3.888
CR-51	8.049E-02		1.494E-01	5.084E-01	1.648E-02	0.158
MN-54	-6.866E-03		9.032E-03	2.977E-02	1.204E-03	-0.231
CO-57	-8.240E-02		5.623E-02	1.818E-01	6.760E-03	-0.453
CO-58	-7.695E-03		1.073E-02	3.551E-02	1.416E-03	-0.217
FE-59	2.379E-02		2.752E-02	9.437E-02	3.402E-03	0.252
CO-60	3.702E-03		7.834E-03	2.726E-02	8.886E-04	0.136
ZN-65	-5.036E-02		2.546E-02	6.718E-02	2.378E-03	-0.750
SE-75	1.858E-02		1.425E-02	4.052E-02	1.469E-03	0.459
SR-85	1.415E-01		1.516E-02	4.260E-02	1.339E-03	3.321
Y-88	-1.163E-03		7.257E-03	2.550E-02	7.910E-04	-0.046
NB-94	-1.814E-03		7.477E-03	2.546E-02	1.050E-03	-0.071

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

Nuclide	Key-Line Activity (PCI/GRAM)	K.L. Ided	Act error	MDA (PCI/GRAM)	MDA error	Act/MDA
NB-95	6.627E-02		2.051E-02	6.078E-02	2.356E-03	1.090
TC-95M	-2.050E-02		1.572E-02	4.496E-02	1.704E-03	-0.456
ZR-95	4.677E-02		2.051E-02	7.081E-02	2.728E-03	0.660
ZRNB-95	9.800E-02		2.967E-02	8.799E-02	3.410E-03	1.114
RH-101	2.537E-02		8.499E-03	2.854E-02	1.083E-03	0.889
RH-102M	-1.348E-02		6.821E-03	2.203E-02	7.102E-04	-0.612
RU-103	-1.516E-02		1.373E-02	4.501E-02	1.433E-03	-0.337
RU-106DA	6.682E-03		7.277E-02	2.473E-01	8.599E-03	0.027
AG-108M	-3.563E-03		6.870E-03	2.288E-02	7.476E-04	-0.156
AG-110M	1.697E-02		1.136E-02	3.971E-02	1.648E-03	0.427
SN-113DA	-1.272E-02		1.199E-02	3.977E-02	1.299E-03	-0.320
SB-124	4.760E-03		1.315E-02	3.781E-02	1.295E-03	0.126
SB-125	2.009E-02		2.195E-02	7.438E-02	2.432E-03	0.270
SN-126DA	1.751E-02		7.297E-03	2.529E-02	9.095E-04	0.692
I-131	9.434E-02		1.679E-01	5.694E-01	1.865E-02	0.166
BA-133	2.710E-03		1.154E-02	3.302E-02	1.081E-03	0.082
CS-134	6.196E-02	+	1.146E-02	3.558E-02	1.406E-03	1.741
CS-137DA	-1.723E-02		8.515E-03	2.765E-02	9.904E-04	-0.623
LA-138	-5.271E-03		1.031E-02	3.502E-02	1.146E-03	-0.151
CE-139	-5.488E-04		8.329E-03	2.798E-02	1.060E-03	-0.020
BA-140	2.563E-01		1.851E-01	6.273E-01	2.022E-02	0.409
BALA-140	-2.204E-01		1.138E-01	3.640E-01	1.181E-02	-0.606
CE-141	3.083E-02		2.512E-02	8.277E-02	3.098E-03	0.372
CE-144	1.089E-02		5.439E-02	1.789E-01	6.639E-03	0.061
CEPR-144	-5.370E-02		1.094E-01	3.578E-01	1.328E-02	-0.150
PM-144	9.156E-03		7.290E-03	2.514E-02	8.715E-04	0.364
PM-146	-4.170E-04		9.823E-03	3.288E-02	1.069E-03	-0.013
EU-152	-3.156E-02		2.945E-02	7.691E-02	2.512E-03	-0.410
EU-154	-6.554E-02		2.637E-02	8.466E-02	2.777E-03	-0.774
EU-155	6.743E-02		2.474E-02	8.228E-02	2.874E-03	0.820
HF-181	-3.408E-05		1.417E-02	4.736E-02	1.522E-03	-0.001
BI-207	2.705E-03		6.760E-03	2.313E-02	7.690E-04	0.117
BI-210M	2.661E-04		1.389E-02	3.889E-02	1.406E-03	0.007
BI-212	1.289E+00	+	1.940E-01	4.932E-01	2.174E-02	2.614
RA-223	4.534E-01	+	7.924E-02	1.685E-01	6.068E-03	2.690
AC-227DA	1.164E+00		1.043E-01	2.427E-01	9.061E-03	4.794
TH-234DA	1.412E+00		1.235E+00	4.279E+00	1.685E-01	0.330
U-235HP	8.124E-02		5.349E-02	1.764E-01	6.594E-03	0.460
NP-237DA	-1.919E-02		1.675E-02	5.447E-02	1.804E-03	-0.352
AM-241HP	6.271E-02		1.823E-02	5.260E-02	1.739E-03	1.192


STL Richland WA.
BRC SOIL
Batch ID: 7241630
Sample ID: J5K8H1AA
Detector ID: GER10 1
Energy Coefficients:
Offset: 1.46040E+01
Slope: 2.47275E-01
Quadrature: 2.22179E-09
Acquisition Start: 21-SEP-2007 21:50:01.91
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 Bi, 140 La
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

SAMPLE IDENTIFICATION: J5K8H1AA

CONFIGURATION ID: GER10:J5K8H1AA_210972150
TITLE : BRC SOIL
SAMPLE ID : J5K8H1AA

REPORT DATE: 23-SEP-07
ACQUIRE DATE: 21-SEP-07 21:50:01
ELAPSED LIVE TIME: 36000.0 Sec
PRESET LIVE TIME: 0 10:00:00

SAMPLE DATE: 16-AUG-2007 07:15:00.00
CALIB DATE: 21-SEP-2007 05:17:58.46
ELAPSED LIVE TIME: 0 10:00:00
ELAPSED REAL TIME: 0 10:00:15

SAMPLE QUANTITY: 3.8920E+02
SAMPLE GEOMETRY: S200

UNITS: GRAMS
SAMPLE TYPE:

ENERGY OFFSET: 1.4604E+01 keV
ENERGY SLOPE: 2.4728E-01 keV/C
ENERGY Q COEFF: 2.2218E-09 keV/C^^2
PEAK SENSITIVITY: 5.000

FWHM OFFSET: 1.1819E+00 keV
FWHM SLOPE: 2.1265E-02 sqr keV
ITERATIONS: 10
GAUSSIAN SENSITIVITY: 70.00 %

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 23-SEP-2007 09:59:09

Configuration : $DISK1:[GER10.SAMPLE]J5K8H1AA_210972150.CNF;1
Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6
Sample title : BRC SOIL
Sample date : 16-AUG-2007 07:15:00 Acquisition date : 21-SEP-2007 21:50:01
Sample ID : J5K8H1AA Sample quantity : 389.20 GRAMS
Sample type : Sample geometry : S200
Elapsed live time: 0 10:00:00.00 Elapsed real time: 0 10:00:15.18 0.0%
Start energy : 17.08 End energy : 2040.43
Sensitivity : 5.00 Gaussian : 70.00
Critical level : No

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	4	74.90*	2979	5179	2.00	243.83	229	32	8.27E-02	7.1	7.20E+00
2	4	77.05	3319	3452	1.40	252.56	229	32	9.22E-02	4.6	
3	0	87.11	1033	2696	1.26	293.24	288	12	2.87E-02	10.5	
4	0	89.79	465	2058	1.36	304.04	300	10	1.29E-02	18.9	
5	0	93.09	1550	3996	1.87	317.42	310	24	4.30E-02	11.2	
6	0	185.91	1437	2613	1.52	692.76	683	21	3.99E-02	9.3	
7	0	209.30	581	1900	1.24	787.37	779	17	1.62E-02	15.3	
8	3	238.65	5886	1894	1.43	906.07	895	34	1.64E-01	1.9	1.44E+00
9	3	241.74	1954	1890	1.87	918.53	895	34	5.43E-02	5.9	
10	0	270.25	624	1667	1.53	1033.82	1022	22	1.73E-02	14.7	
11	0	295.19	3064	1564	1.42	1134.70	1123	23	8.51E-02	3.4	
12	0	300.08	357	1125	1.25	1154.46	1147	16	9.92E-03	18.8	
13	0	327.79	393	1167	1.81	1266.53	1257	19	1.09E-02	18.4	
14	0	338.36	1339	1825	1.48	1309.26	1294	30	3.72E-02	8.3	
15	0	351.89*	5189	1391	1.54	1363.99	1348	27	1.44E-01	2.2	
16	0	462.93	388	763	1.84	1813.02	1802	20	1.08E-02	15.7	
17	0	511.04*	892	1221	2.13	2007.59	1992	38	2.48E-02	12.7	
18	0	583.21	2124	788	1.63	2299.45	2286	28	5.90E-02	3.8	
19	0	609.31	3951	921	1.63	2404.99	2391	30	1.10E-01	2.5	
20	0	727.59	541	605	1.65	2883.30	2870	31	1.50E-02	12.2	
21	0	768.22	356	451	1.95	3047.58	3036	22	9.89E-03	13.9	
22	0	795.79	260	544	2.35	3159.09	3143	29	7.21E-03	22.8	
23	0	860.35	309	401	2.34	3420.14	3409	25	8.58E-03	15.8	
24	0	911.18	1398	546	2.02	3625.72	3611	28	3.88E-02	4.8	
25	0	934.11	217	307	1.90	3718.41	3710	19	6.02E-03	17.9	
26	0	968.39	981	776	1.69	3857.05	3838	34	2.72E-02	8.0	
27	0	1120.19	865	473	1.78	4470.89	4459	26	2.40E-02	6.7	
28	0	1238.40	372	471	2.15	4948.89	4937	25	1.03E-02	14.4	
29	0	1378.20	223	214	1.66	5514.22	5501	28	6.21E-03	17.1	
30	0	1408.57	93	175	1.85	5637.02	5619	24	2.58E-03	30.3	
31	0	1460.82*	7785	255	2.16	5848.30	5833	31	2.16E-01	1.2	
32	0	1509.38	85	105	1.92	6044.66	6033	21	2.37E-03	25.3	
33	0	1588.22	91	116	1.36	6363.44	6354	20	2.52E-03	24.5	
34	0	1729.70	182	58	2.31	6935.53	6923	26	5.07E-03	11.4	
35	0	1764.47	716	116	2.40	7076.13	7060	31	1.99E-02	5.0	
36	0	1847.61	119	72	2.47	7412.30	7398	33	3.32E-03	18.3	

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

VMS Nuclide Identification Report V3.0 Generated 23-SEP-2007 09:59:10

Configuration : $DISK1:[GER10.SAMPLE]J5K8H1AA_210972150.CNF;1
Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.3
Sample title : BRC SOIL
Sample date : 16-AUG-2007 07:15:00 Acquisition date : 21-SEP-2007 21:50:01
Sample ID : J5K8H1AA Sample quantity : 389.20 GRAMS
Sample type : Sample geometry : S200
Elapsed live time: 0 10:00:00.00 Elapsed real time: 0 10:00:15.18 0.0%
Energy tolerance : 1.50 Half life ratio : 8.00
Errors propagated: Yes Systematic Error : 5.00 %
Efficiency type : Empirical Efficiencies at : Peak Energy
Abundance limit : 80.00

Nuclide Line Activity Report

Nuclide Type: NP

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected PCI/GRAM	Decay Corr PCI/GRAM	1-Sigma %Error
K-40	1460.81	7785	10.67*	8.323E-01	1.691E+01	1.691E+01	6.37
TL-208	277.35	------	6.80	2.752E+00	------ Line Not Found		------
	510.84	892	21.60	1.867E+00	4.266E-01	4.266E-01	14.04
	583.14	2124	84.20*	1.704E+00	2.855E-01	2.855E-01	7.10
	860.37	309	12.46	1.273E+00	3.756E-01	3.756E-01	17.24
PB-212	238.63	5886	44.60*	3.006E+00	8.469E-01	8.469E-01	6.71
	300.09	357	3.41	2.624E+00	7.697E-01	7.697E-01	19.78
BI-214	609.31	3951	46.30*	1.652E+00	9.963E-01	9.963E-01	6.49
	768.36	356	5.04	1.391E+00	9.794E-01	9.794E-01	15.37
	1120.29	865	15.10	1.028E+00	1.075E+00	1.075E+00	9.21
	1764.49	716	15.80	7.321E-01	1.194E+00	1.194E+00	7.81
PB-214	241.98	1954	7.49	2.984E+00	1.686E+00	1.686E+00	8.70
	295.21	3064	19.20	2.650E+00	1.162E+00	1.162E+00	7.15
	351.92	5189	37.20*	2.378E+00	1.132E+00	1.132E+00	6.49
	785.91	------	1.10	1.367E+00	------ Line Not Found		------
RA-224DA	238.63	5886	44.60*	3.006E+00	8.469E-01	8.785E-01	6.71
	240.98	1954	3.95	2.984E+00	3.198E+00	3.317E+00	8.70
	583.14	2124	30.25	1.704E+00	7.946E-01	8.242E-01	7.10
	860.37	309	4.48	1.273E+00	1.045E+00	1.084E+00	17.24
RA-226DA	186.21	1437	3.50	3.434E+00	2.307E+00	2.307E+00	11.29
	241.98	1954	7.49	2.984E+00	1.686E+00	1.686E+00	8.70
	295.22	3064	19.20	2.650E+00	1.162E+00	1.162E+00	7.15
	351.92	5189	37.20	2.378E+00	1.132E+00	1.132E+00	6.49
	609.32	3951	46.30*	1.652E+00	9.963E-01	9.963E-01	6.49
	1120.28	865	15.10	1.028E+00	1.075E+00	1.076E+00	9.21
	1238.11	372	5.94	9.472E-01	1.274E+00	1.274E+00	15.68
	1764.49	716	15.80	7.321E-01	1.194E+00	1.194E+00	7.81
AC-228	209.28	581	4.40	3.233E+00	7.885E-01	7.885E-01	16.56
	270.23	624	3.60	2.795E+00	1.196E+00	1.196E+00	16.02
	338.32	1339	11.40	2.437E+00	9.299E-01	9.299E-01	10.32
	911.07	1398	27.70*	1.216E+00	8.005E-01	8.005E-01	8.57
	969.11	981	16.60	1.158E+00	9.841E-01	9.841E-01	10.58
RA-228DA	209.28	581	4.40	3.233E+00	7.885E-01	7.981E-01	16.56
	338.32	1339	11.40	2.437E+00	9.299E-01	9.413E-01	10.32
	911.07	1398	27.70*	1.216E+00	8.005E-01	8.103E-01	8.57
	964.60	------	5.20	1.162E+00	------ Line Not Found		------

Sample ID : J5K8H1AA Acquisition date : 21-SEP-2007 21:50:01

Nuclide Type: NP

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected PCI/GRAM	Decay Corr PCI/GRAM	1-Sigma %Error
	969.11	981	16.60	1.158E+00	9.841E-01	9.961E-01	10.58
TH-228DA	238.63	5886	44.60	3.006E+00	8.469E-01	8.785E-01	6.71
	240.98	1954	3.95	2.984E+00	3.198E+00	3.317E+00	8.70
	583.14	2124	30.25*	1.704E+00	7.946E-01	8.242E-01	7.10
	860.37	309	4.48	1.273E+00	1.045E+00	1.084E+00	17.24
TH-232DA	238.63	5886	44.60	3.006E+00	8.469E-01	8.469E-01	6.71
	338.32	1339	12.40*	2.437E+00	8.549E-01	8.549E-01	10.32
	583.14	2124	30.25	1.704E+00	7.946E-01	7.946E-01	7.10
	911.07	1398	27.70	1.216E+00	8.005E-01	8.005E-01	8.57
	964.60	------	5.20	1.162E+00	------ Line Not Found		------
	969.11	981	16.60	1.158E+00	9.841E-01	9.841E-01	10.58
U-234DA	241.98	1954	7.49	2.984E+00	1.686E+00	1.686E+00	8.70
	295.22	3064	19.20*	2.650E+00	1.162E+00	1.162E+00	7.15
	351.92	5189	37.20	2.378E+00	1.132E+00	1.132E+00	6.49
	609.31	3951	46.30	1.652E+00	9.963E-01	9.963E-01	6.49
U-238DA	241.98	1954	7.49	2.984E+00	1.686E+00	1.686E+00	8.70
	295.22	3064	19.20	2.650E+00	1.162E+00	1.162E+00	7.15
	351.92	5189	37.20*	2.378E+00	1.132E+00	1.132E+00	6.49
	609.31	3951	46.30	1.652E+00	9.963E-01	9.963E-01	6.49

Flag: "*" = Keyline

Sample ID : J5K8H1AA Acquisition date : 21-SEP-2007 21:50:01

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
4	74.90	2979	5179	2.00	243.83	229	32	8.27E-02	7.1	2.88E+00	
4	77.05	3319	3452	1.40	252.56	229	32	9.22E-02	4.6	2.99E+00	
0	87.11	1033	2696	1.26	293.24	288	12	2.87E-02	10.5	3.43E+00	T
0	89.79	465	2058	1.36	304.04	300	10	1.29E-02	18.9	3.51E+00	
0	93.09	1550	3996	1.87	317.42	310	24	4.30E-02	11.2	3.60E+00	T
0	327.79	393	1167	1.81	1266.53	1257	19	1.09E-02	18.4	2.49E+00	T
0	462.93	388	763	1.84	1813.02	1802	20	1.08E-02	15.7	1.99E+00	T
0	727.59	541	605	1.65	2883.30	2870	31	1.50E-02	12.2	1.45E+00	T
0	795.79	260	544	2.35	3159.09	3143	29	7.21E-03	22.8	1.35E+00	T
0	934.11	217	307	1.90	3718.41	3710	19	6.02E-03	17.9	1.19E+00	
0	1378.20	223	214	1.66	5514.22	5501	28	6.21E-03	17.1	8.70E-01	
0	1408.57	93	175	1.85	5637.02	5619	24	2.58E-03	30.3	8.56E-01	T
0	1509.38	85	105	1.92	6044.66	6033	21	2.37E-03	25.3	8.12E-01	
0	1588.22	91	116	1.36	6363.44	6354	20	2.52E-03	24.5	7.84E-01	
0	1729.70	182	58	2.31	6935.53	6923	26	5.07E-03	11.4	7.41E-01	
0	1847.61	119	72	2.47	7412.30	7398	33	3.32E-03	18.3	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	5.268E-02	14.04	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	2.202E-01	9.21	
		% Abundances Found =		50.00			
TC-95M	61.00D	0.60	204.12*	66.20	--- Not Found ---		Abun.
			582.07	29.30	1.247E+00	7.10	
			835.13	26.10	--- Not Found ---		
		% Abundances Found =		24.10			
RU-103	39.35D	0.94	497.08*	89.00	--- Not Found ---		Abun.
			610.33	5.60	1.576E+01	6.49	
		% Abundances Found =		5.92			
RU-106DA	368.20D	0.10	511.85	20.60	4.795E-01	14.04	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	3.716E-01	16.76	
			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	4.479E-02	23.71	
			801.93	8.73	--- Not Found ---		
		% Abundances Found =		41.22			
LA-140	40.22H	21.97	328.77	20.50	6.103E+05	19.44	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	1.017E-01	30.90	
		% Abundances Found =		15.50			
EU-155	4.96Y	0.02	42.90	21.16	--- Not Found ---		Abun.
			86.54	30.90	1.909E-01	12.28	

Sample ID : J5K8H1AA
Acquisition date : 21-SEP-2007 21:50:01

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	2.195E+01	20.99	
			452.83	0.31	--- Not Found ---		
			727.33*	6.58	1.094E+00	13.88	
			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	3.175E-01	16.02	
			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	1.495E-01	11.29	
			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	1.535E+00	12.82	
		% Abundances Found =		58.74			

Flag: "*" = Keyline

VMS Nuclide Identification Report V3.0 Generated 23-SEP-2007 09:59:12

Configuration : $DISK1:[GER10.SAMPLE]J5K8H1AA_210972150.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 : 16-AUG-2007 07:15:00
Sample ID : J5K8H1AA
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 : 21-SEP-2007 21:50:01
Sample quantity : 389.20 GRAMS
Sample geometry : S200
Elapsed real time: 0 10:00:15.18 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	1.691E+01	1.077E+00	1.471E-01	5.508E-03	114.925
TL-208	2.855E-01	2.026E-02	1.542E-02	5.048E-04	18.516
PB-212	8.469E-01	5.679E-02	2.923E-02	1.178E-03	28.971
BI-214	9.963E-01	6.467E-02	3.061E-02	1.017E-03	32.551
PB-214	1.132E+00	7.347E-02	3.374E-02	1.178E-03	33.540
RA-224DA	8.785E-01	5.891E-02	3.032E-02	1.221E-03	28.971
RA-226DA	✓9.963E-01	6.468E-02	3.061E-02✓	1.017E-03	32.551
AC-228	8.005E-01	6.862E-02	5.600E-02	2.829E-03	14.295
RA-228DA	✓8.103E-01	6.946E-02	5.668E-02✓	2.864E-03	14.295
TH-228DA	8.242E-01	5.851E-02	4.451E-02	1.457E-03	18.516
TH-232DA	8.549E-01	8.819E-02	1.039E-01	3.729E-03	8.227
U-234DA	1.162E+00	8.303E-02	6.429E-02	2.471E-03	18.069
U-238DA	1.132E+00	7.347E-02	3.374E-02	1.178E-03	33.540

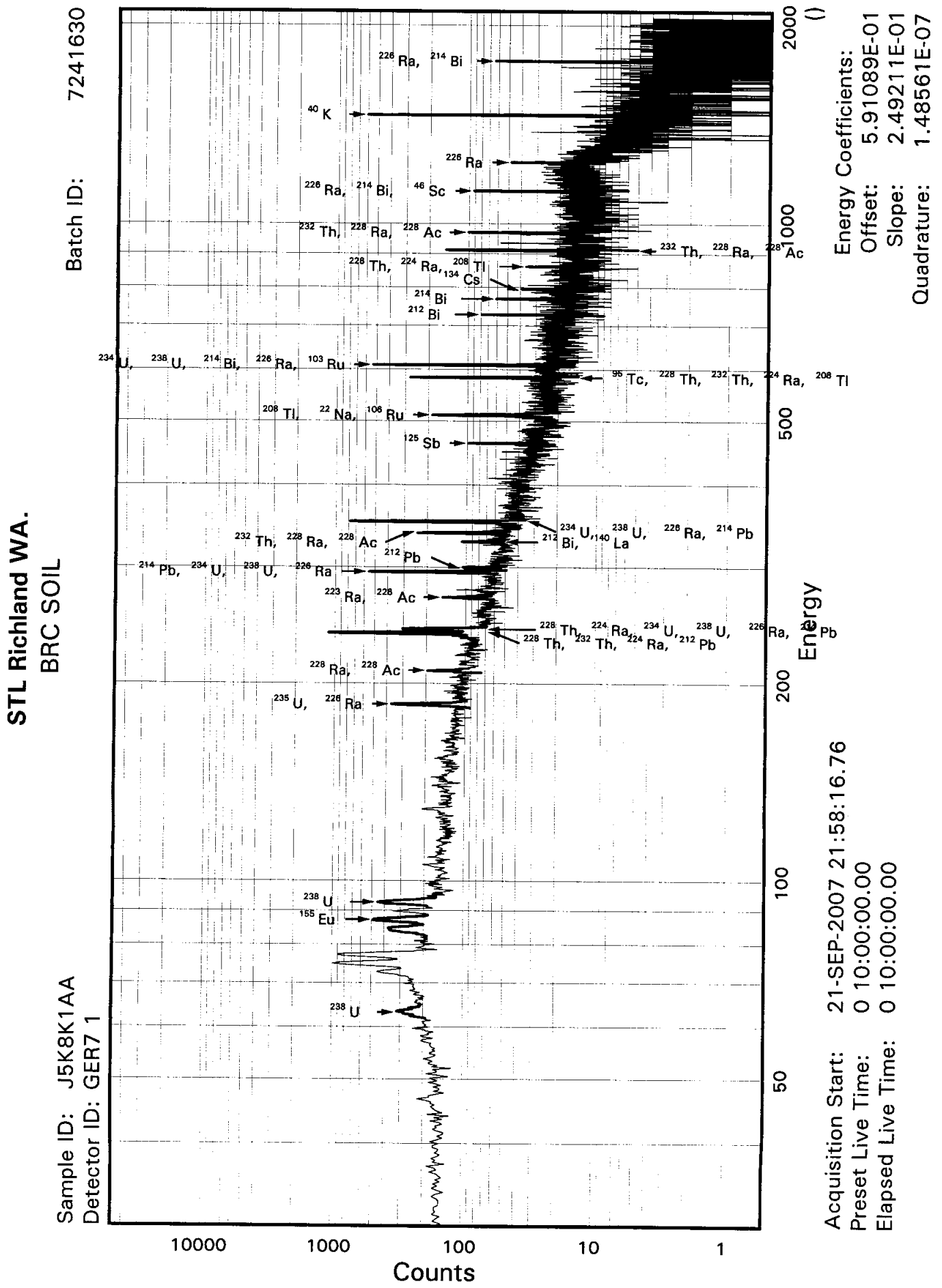
---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (PCI/GRAM)	K.L. Ided	Act error	MDA (PCI/GRAM)	MDA error	Act/MDA
BE-7	8.310E-02		5.874E-02	2.002E-01	6.325E-03	0.415
NA-22	-3.568E-05		5.531E-03	1.885E-02	6.905E-04	-0.002
SC-46	2.202E-01	+	2.027E-02	4.313E-02	1.644E-03	5.106
CR-51	7.735E-02		9.845E-02	3.270E-01	1.211E-02	0.237
MN-54	-4.233E-03		5.127E-03	1.709E-02	7.890E-04	-0.248
CO-57	1.921E-03		3.825E-02	1.284E-01	4.540E-03	0.015
CO-58	-1.930E-02		6.073E-03	1.901E-02	8.438E-04	-1.015
FE-59	-1.371E-02		1.621E-02	5.343E-02	2.122E-03	-0.256
CO-60	4.343E-03		4.501E-03	1.574E-02	6.007E-04	0.276
ZN-65	-1.140E-02		1.476E-02	4.043E-02	1.557E-03	-0.282
SE-75	-2.543E-02		9.552E-03	2.530E-02	1.004E-03	-1.005
SR-85	8.721E-02		9.161E-03	2.546E-02	7.971E-04	3.425
Y-88	1.942E-03		4.089E-03	1.471E-02	4.642E-04	0.132
NB-94	2.816E-03		4.337E-03	1.483E-02	7.258E-04	0.190
NB-95	5.385E-02		1.184E-02	3.552E-02	1.461E-03	1.516

Sample ID : J5K8H1AA Acquisition date : 21-SEP-2007 21:50:01

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

Nuclide	Key-Line Activity (PCI/GRAM)	K.L. Ided	Act error	MDA (PCI/GRAM)	MDA error	Act/MDA
TC-95M	2.230E-02		1.013E-02	3.049E-02	1.236E-03	0.732
ZR-95	2.433E-02		1.182E-02	4.098E-02	1.659E-03	0.594
ZRNB-95	7.875E-02		1.705E-02	5.112E-02	2.103E-03	1.540
RH-101	-5.806E-03		6.548E-03	1.895E-02	7.681E-04	-0.306
RH-102M	-3.429E-03		4.026E-03	1.336E-02	4.224E-04	-0.257
RU-103	-1.497E-03		7.792E-03	2.611E-02	8.215E-04	-0.057
RU-106DA	-1.355E-03		4.375E-02	1.459E-01	4.880E-03	-0.009
AG-108M	-6.967E-03		4.191E-03	1.376E-02	4.360E-04	-0.506
AG-110M	-5.669E-03		6.706E-03	2.231E-02	1.116E-03	-0.254
SN-113DA	7.979E-04		7.418E-03	2.504E-02	7.889E-04	0.032
SB-124	1.040E-02		7.847E-03	2.254E-02	7.461E-04	0.462
SB-125	-3.217E-03		1.307E-02	4.388E-02	1.390E-03	-0.073
SN-126DA	1.446E-02		4.331E-03	1.482E-02	5.096E-04	0.976
I-131	1.648E-01		1.067E-01	3.652E-01	1.239E-02	0.451
BA-133	1.625E-02		7.064E-03	2.073E-02	7.170E-04	0.784
CS-134	4.479E-02	+	1.062E-02	2.121E-02	9.183E-04	2.112
CS-137DA	-2.087E-02		5.203E-03	1.573E-02	5.363E-04	-1.327
LA-138	4.619E-03		6.234E-03	2.180E-02	8.201E-04	0.212
CE-139	-8.811E-03		5.670E-03	1.865E-02	7.530E-04	-0.472
BA-140	1.677E-02		1.115E-01	3.745E-01	1.191E-02	0.045
BALA-140	-1.197E-01		6.716E-02	2.078E-01	7.468E-03	-0.576
CE-141	4.911E-02		1.745E-02	5.860E-02	2.181E-03	0.838
CE-144	-1.006E-01		3.814E-02	1.242E-01	4.322E-03	-0.810
CEPR-144	-2.008E-01		7.629E-02	2.483E-01	8.644E-03	-0.808
PM-144	5.670E-04		4.486E-03	1.479E-02	4.938E-04	0.038
PM-146	-4.913E-04		5.950E-03	1.999E-02	6.332E-04	-0.025
EU-152	2.712E-02		2.176E-02	4.826E-02	1.712E-03	0.562
EU-154	3.254E-03		1.517E-02	5.190E-02	1.901E-03	0.063
EU-155	7.898E-02		1.951E-02	6.369E-02	2.173E-03	1.240
HF-181	7.406E-03		8.343E-03	2.830E-02	8.935E-04	0.262
BI-207	5.318E-04		4.142E-03	1.387E-02	4.505E-04	0.038
BI-210M	-1.800E-02		9.044E-03	2.435E-02	9.645E-04	-0.739
BI-212	1.094E+00	+	1.518E-01	2.926E-01	1.308E-02	3.738
RA-223	3.175E-01	+	5.088E-02	1.074E-01	4.242E-03	2.957
AC-227DA	9.320E-01		7.689E-02	1.601E-01	6.455E-03	5.822
TH-234DA	1.942E+00		7.582E-01	2.624E+00	1.208E-01	0.740
U-235HP	1.063E-01		3.697E-02	1.241E-01	4.575E-03	0.857
NP-237DA	1.334E-02		1.039E-02	3.465E-02	1.300E-03	0.385
U-238DHP	6.698E-01		2.116E-01	6.981E-01	2.500E-02	0.960
AM-241HP	-1.059E-01		2.525E-02	7.834E-02	2.898E-03	-1.352


STL Richland WA.
BRC SOIL
Batch ID: 7241630
Sample ID: J5K8K1AA
Detector ID: GER7 1
Energy Coefficients:
Offset: 5.91089E-01
Slope: 2.49211E-01
Quadrature: 1.48561E-07
Acquisition Start: 21-SEP-2007 21:58:16.76
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
232 Th, 228 Ra, 228 Ac
212 Pb
234 U, 238 U, 226 Ra, 214 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: J5K8K1AA

CONFIGURATION ID: GER7:J5K8K1AA_210972158
TITLE : BRC SOIL
SAMPLE ID : J5K8K1AA

REPORT DATE: 23-SEP-07
ACQUIRE DATE: 21-SEP-07 21:58:16
ELAPSED LIVE TIME: 36000.0 Sec
PRESET LIVE TIME: 0 10:00:00

SAMPLE DATE: 16-AUG-2007 07:15:00.00
CALIB DATE: 21-SEP-2007 05:02:40.55
ELAPSED LIVE TIME: 0 10:00:00
ELAPSED REAL TIME: 0 10:00:11

SAMPLE QUANTITY: 3.8300E+02
SAMPLE GEOMETRY: S200

UNITS: GRAMS
SAMPLE TYPE:

ENERGY OFFSET: 5.9109E-01 keV
ENERGY SLOPE: 2.4921E-01 keV/C
ENERGY Q COEFF: 1.4856E-07 keV/C^^2
PEAK SENSITIVITY: 5.000

FWHM OFFSET: 5.4342E-01 keV
FWHM SLOPE: 3.7913E-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 23-SEP-2007 10:00:37

Configuration : $DISK1:[GER7.SAMPLE]J5K8K1AA_210972158.CNF;1
Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6
Sample title : BRC SOIL
Sample date : 16-AUG-2007 07:15:00 Acquisition date : 21-SEP-2007 21:58:16
Sample ID : J5K8K1AA Sample quantity : 383.00 GRAMS
Sample type : Sample geometry : S200
Elapsed live time: 0 10:00:00.00 Elapsed real time: 0 10:00:11.15 0.0%
Start energy : 20.53 End energy : 2052.10
Sensitivity : 5.00 Gaussian : 40.00
Critical level : No

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	63.18*	490	2780	1.39	251.11	245	14	1.36E-02	23.9	
2	2	72.85*	471	3054	1.05	289.90	282	32	1.31E-02	25.8	4.39E+00
3	2	74.91*	2463	2806	1.05	298.18	282	32	6.84E-02	5.3	
4	2	77.22	3294	2481	1.06	307.44	282	32	9.15E-02	3.7	
5	5	84.48*	683	3334	1.44	336.54	328	26	1.90E-02	20.6	7.96E-01
6	5	87.23*	1169	2515	1.04	347.58	328	26	3.25E-02	9.8	
7	0	89.90	554	1873	0.81	358.30	354	10	1.54E-02	15.2	
8	0	92.83*	1200	2312	1.29	370.03	364	13	3.33E-02	9.3	
9	0	128.99	231	1561	0.92	515.07	511	11	6.40E-03	33.9	
10	0	185.97*	1329	1809	1.27	743.53	734	18	3.69E-02	8.4	
11	0	209.42	391	1584	1.01	837.53	829	16	1.09E-02	23.3	
12	3	238.60*	4696	1276	1.09	954.52	947	28	1.30E-01	2.2	2.31E+00
13	3	241.69	1458	1360	1.51	966.90	947	28	4.05E-02	6.5	
14	0	270.11	366	1162	0.93	1080.77	1073	17	1.02E-02	21.9	
15	0	295.21	2483	849	1.14	1181.38	1174	16	6.90E-02	3.3	
16	0	299.99	215	604	1.04	1200.53	1196	11	5.96E-03	23.2	
17	0	327.89	229	644	1.09	1312.33	1307	12	6.35E-03	23.1	
18	0	338.25	1003	756	1.16	1353.81	1346	16	2.79E-02	6.9	
19	0	351.84*	3883	984	1.22	1408.27	1397	23	1.08E-01	2.8	
20	0	462.96	296	553	0.80	1853.28	1842	20	8.21E-03	20.4	
21	0	510.86*	650	830	1.79	2045.03	2032	32	1.81E-02	15.6	
22	0	583.03*	1490	521	1.44	2333.89	2321	24	4.14E-02	5.0	
23	0	609.19*	3026	437	1.43	2438.58	2428	24	8.40E-02	2.7	
24	0	727.44	426	343	1.47	2911.54	2900	23	1.18E-02	10.7	
25	0	768.62	259	362	1.63	3076.21	3064	21	7.20E-03	16.8	
26	0	794.96	137	294	1.49	3181.51	3171	19	3.79E-03	27.1	
27	0	860.37	216	195	2.27	3442.94	3434	18	5.99E-03	14.6	
28	0	911.13*	964	362	1.95	3645.75	3629	27	2.68E-02	5.8	
29	0	934.55	258	295	0.37	3739.32	3727	30	7.18E-03	17.5	
30	0	969.19	420	638	1.40	3877.70	3859	28	1.17E-02	15.1	
31	0	1120.37	646	276	1.75	4481.32	4470	24	1.79E-02	7.0	
32	0	1237.98	200	291	1.80	4950.61	4941	19	5.57E-03	18.8	
33	0	1377.59	180	111	1.17	5507.35	5495	23	5.00E-03	14.9	
34	0	1460.66*	4894	142	1.98	5838.45	5819	39	1.36E-01	1.6	
35	0	1729.68	125	50	2.09	6909.79	6899	24	3.48E-03	14.5	
36	0	1764.41	573	33	2.14	7047.99	7030	39	1.59E-02	4.8	

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

VMS Nuclide Identification Report V3.0 Generated 23-SEP-2007 10:00:37

Configuration : $DISK1:[GER7.SAMPLE]J5K8K1AA_210972158.CNF;1
Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.3
Sample title : BRC SOIL
Sample date : 16-AUG-2007 07:15:00 Acquisition date : 21-SEP-2007 21:58:16
Sample ID : J5K8K1AA Sample quantity : 383.00 GRAMS
Sample type : Sample geometry : S200
Elapsed live time: 0 10:00:00.00 Elapsed real time: 0 10:00:11.15 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	4894	10.67*	5.447E-01	1.650E+01	1.650E+01	8.22
TL-208	277.35	------	6.80	1.993E+00	------ Line Not Found		------
	510.84	650	21.60	1.252E+00	4.711E-01	4.711E-01	16.74
	583.14	1490	84.20*	1.132E+00	3.065E-01	3.065E-01	7.83
	860.37	216	12.46	8.376E-01	4.052E-01	4.052E-01	16.20
PB-212	238.63	4696	44.60*	2.224E+00	9.280E-01	9.280E-01	7.51
	300.09	215	3.41	1.879E+00	6.566E-01	6.566E-01	24.10
BI-214	609.31	3026	46.30*	1.094E+00	1.170E+00	1.170E+00	6.63
	768.36	259	5.04	9.149E-01	1.101E+00	1.101E+00	18.03
	1120.29	646	15.10	6.779E-01	1.237E+00	1.237E+00	9.57
	1764.49	573	15.80	4.658E-01	1.526E+00	1.526E+00	8.05
PB-214	241.98	1458	7.49	2.204E+00	1.732E+00	1.732E+00	9.65
	295.21	2483	19.20	1.902E+00	1.333E+00	1.333E+00	7.33
	351.92	3883	37.20*	1.665E+00	1.229E+00	1.229E+00	6.77
	785.91	------	1.10	8.992E-01	------ Line Not Found		------
RA-224DA	238.63	4696	44.60*	2.224E+00	9.280E-01	9.626E-01	7.51
	240.98	1458	3.95	2.204E+00	3.284E+00	3.407E+00	9.65
	583.14	1490	30.25	1.132E+00	8.533E-01	8.851E-01	7.83
	860.37	216	4.48	8.376E-01	1.127E+00	1.169E+00	16.20
RA-226DA	186.21	1329	3.50	2.621E+00	2.840E+00	2.840E+00	11.24
	241.98	1458	7.49	2.204E+00	1.732E+00	1.732E+00	9.65
	295.22	2483	19.20	1.902E+00	1.333E+00	1.333E+00	7.33
	351.92	3883	37.20	1.665E+00	1.229E+00	1.229E+00	6.77
	609.32	3026	46.30*	1.094E+00	1.170E+00	1.170E+00	6.63
	1120.28	646	15.10	6.779E-01	1.237E+00	1.237E+00	9.57
	1238.11	200	5.94	6.247E-01	1.059E+00	1.059E+00	20.06
	1764.49	573	15.80	4.658E-01	1.526E+00	1.526E+00	8.05
AC-228	209.28	391	4.40	2.433E+00	7.168E-01	7.168E-01	24.45
	270.23	366	3.60	2.032E+00	9.818E-01	9.818E-01	22.98
	338.32	1003	11.40	1.716E+00	1.005E+00	1.005E+00	9.27
	911.07	964	27.70*	8.005E-01	8.519E-01	8.519E-01	9.19
	969.11	420	16.60	7.621E-01	6.509E-01	6.509E-01	16.64
RA-228DA	209.28	391	4.40	2.433E+00	7.168E-01	7.256E-01	24.45
	338.32	1003	11.40	1.716E+00	1.005E+00	1.018E+00	9.27
	911.07	964	27.70*	8.005E-01	8.519E-01	8.624E-01	9.19
	964.60	------	5.20	7.650E-01	------ Line Not Found		------

Sample ID : J5K8K1AA Acquisition date : 21-SEP-2007 21:58:16

Nuclide Type: NP

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected PCI/GRAM	Decay Corr PCI/GRAM	1-Sigma %Error
	969.11	420	16.60	7.621E-01	6.509E-01	6.589E-01	16.64
TH-228DA	238.63	4696	44.60	2.224E+00	9.280E-01	9.626E-01	7.51
	240.98	1458	3.95	2.204E+00	3.284E+00	3.407E+00	9.65
	583.14	1490	30.25*	1.132E+00	8.533E-01	8.851E-01	7.83
	860.37	216	4.48	8.376E-01	1.127E+00	1.169E+00	16.20
TH-232DA	238.63	4696	44.60	2.224E+00	9.280E-01	9.280E-01	7.51
	338.32	1003	12.40*	1.716E+00	9.244E-01	9.244E-01	9.27
	583.14	1490	30.25	1.132E+00	8.533E-01	8.533E-01	7.83
	911.07	964	27.70	8.005E-01	8.519E-01	8.519E-01	9.19
	964.60	------	5.20	7.650E-01	------ Line Not Found		------
	969.11	420	16.60	7.621E-01	6.509E-01	6.509E-01	16.64
U-234DA	241.98	1458	7.49	2.204E+00	1.732E+00	1.732E+00	9.65
	295.22	2483	19.20*	1.902E+00	1.333E+00	1.333E+00	7.33
	351.92	3883	37.20	1.665E+00	1.229E+00	1.229E+00	6.77
	609.31	3026	46.30	1.094E+00	1.170E+00	1.170E+00	6.63
U-238DA	241.98	1458	7.49	2.204E+00	1.732E+00	1.732E+00	9.65
	295.22	2483	19.20	1.902E+00	1.333E+00	1.333E+00	7.33
	351.92	3883	37.20*	1.665E+00	1.229E+00	1.229E+00	6.77
	609.31	3026	46.30	1.094E+00	1.170E+00	1.170E+00	6.63
U-238DHP	63.28	490	3.80*	1.807E+00	1.400E+00	1.400E+00	24.71
	92.59	1200	5.41	2.915E+00	1.491E+00	1.491E+00	11.16

Flag: "*" = Keyline

Sample ID : J5K8K1AA Acquisition date : 21-SEP-2007 21:58:16

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
2	72.85	471	3054	1.05	289.90	282	32	1.31E-02	25.8	2.31E+00	
2	74.91	2463	2806	1.05	298.18	282	32	6.84E-02	5.3	2.40E+00	
2	77.22	3294	2481	1.06	307.44	282	32	9.15E-02	3.7	2.49E+00	
5	84.48	683	3334	1.44	336.54	328	26	1.90E-02	20.6	2.73E+00	
5	87.23	1169	2515	1.04	347.58	328	26	3.25E-02	9.8	2.80E+00	T
0	89.90	554	1873	0.81	358.30	354	10	1.54E-02	15.2	2.86E+00	
0	128.99	231	1561	0.92	515.07	511	11	6.40E-03	33.9	3.06E+00	
0	327.89	229	644	1.09	1312.33	1307	12	6.35E-03	23.1	1.76E+00	T
0	462.96	296	553	0.80	1853.28	1842	20	8.21E-03	20.4	1.35E+00	T
0	727.44	426	343	1.47	2911.54	2900	23	1.18E-02	10.7	9.55E-01	T
0	794.96	137	294	1.49	3181.51	3171	19	3.79E-03	27.1	8.91E-01	T
0	934.55	258	295	0.37	3739.32	3727	30	7.18E-03	17.5	7.85E-01	
0	1377.59	180	111	1.17	5507.35	5495	23	5.00E-03	14.9	5.72E-01	
0	1729.68	125	50	2.09	6909.79	6899	24	3.48E-03	14.5	4.74E-01	

Flags: "T" = Tentatively associated

Sample ID : J5K8K1AA Acquisition date : 21-SEP-2007 21:58:16

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	5.818E-02	16.74	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	2.533E-01	9.57	
		% Abundances Found =		50.00			
TC-95M	61.00D	0.60	204.12*	66.20	--- Not Found ---		Abun.
			582.07	29.30	1.339E+00	7.83	
			835.13	26.10	--- Not Found ---		
		% Abundances Found =		24.10			
RU-103	39.35D	0.94	497.08*	89.00	--- Not Found ---		Abun.
			610.33	5.60	1.851E+01	6.63	
		% Abundances Found =		5.92			
RU-106DA	368.20D	0.10	511.85	20.60	5.294E-01	16.74	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	4.253E-01	21.25	
			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	3.637E-02	27.86	
			801.93	8.73	--- Not Found ---		
		% Abundances Found =		41.22			
LA-140	40.22H	21.97	328.77	20.50	5.114E+05	23.95	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	2.686E-01	11.58	
			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	1.836E+01	25.23	
			452.83	0.31	--- Not Found ---		
			727.33*	6.58	1.330E+00	12.67	
			785.37	1.10	--- Not Found ---		
			893.41	0.38	--- Not Found ---		
			952.12	0.17	--- Not Found ---		

Sample ID : J5K8K1AA
Acquisition date : 21-SEP-2007 21:58:16

Nuclide	Half-life	Half-Life Ratio	Energy	%Abund	Activity (PCI/GRAM)	1-Sigma %Error	Rejected by
BI-212	1.41E+10Y	0.00	1078.62	0.56	--- Not Found ---		Abun.
			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	2.607E-01	22.98	
			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	1.840E-01	11.24	
			205.31	4.70	--- Not Found ---		
		% Abundances Found =		78.03			

Flag: "*" = Keyline

VMS Nuclide Identification Report V3.0 Generated 23-SEP-2007 10:00:39

Configuration : $DISK1:[GER7.SAMPLE]J5K8K1AA_210972158.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 : 16-AUG-2007 07:15:00
Sample ID : J5K8K1AA
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 : 21-SEP-2007 21:58:16
Sample quantity : 383.00 GRAMS
Sample geometry : S200
Elapsed real time: 0 10:00:11.15 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 ----

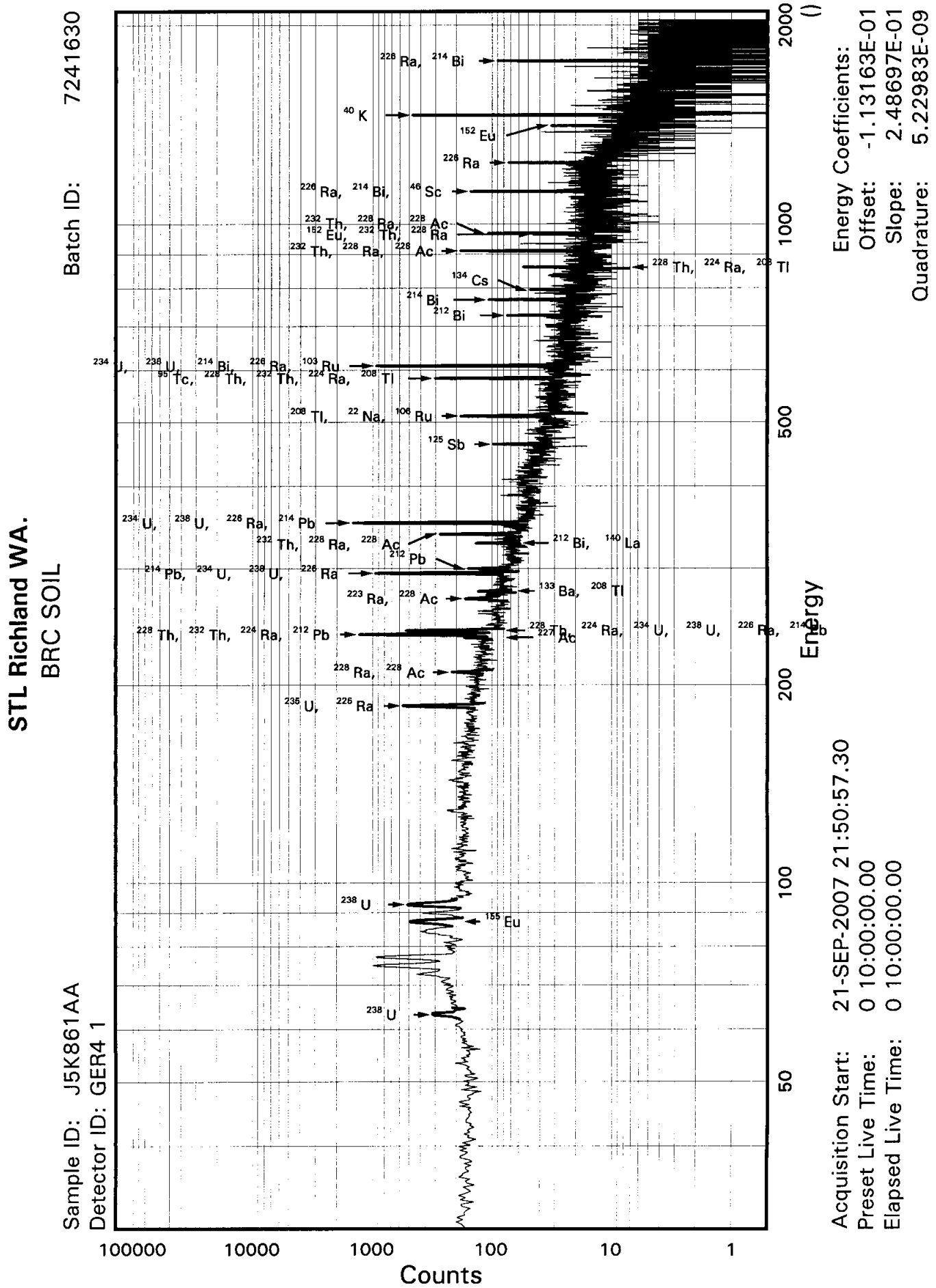
Nuclide	Activity (PCI/GRAM)	Act error	MDA (PCI/GRAM)	MDA error	Act/MDA
K-40	1.650E+01	1.357E+00	1.659E-01	1.048E-02	99.477
TL-208	3.065E-01	2.399E-02	2.024E-02	6.802E-04	15.145
PB-212	9.280E-01	6.967E-02	3.304E-02	1.700E-03	28.083
BI-214	1.170E+00	7.764E-02	3.737E-02	1.274E-03	31.322
PB-214	1.229E+00	8.324E-02	3.910E-02	1.426E-03	31.433
RA-224DA	9.626E-01	7.226E-02	3.428E-02	1.763E-03	28.083
RA-226DA ✓	1.170E+00	7.765E-02	3.737E-02 ✓	1.274E-03	31.321
AC-228	8.519E-01	7.833E-02	7.305E-02	3.723E-03	11.662
RA-228DA ✓	8.624E-01	7.929E-02	7.395E-02 ✓	3.769E-03	11.662
TH-228DA	8.851E-01	6.927E-02	5.844E-02	1.964E-03	15.145
TH-232DA	9.244E-01	8.566E-02	1.289E-01	4.708E-03	7.171
U-234DA	1.333E+00	9.773E-02	7.435E-02	3.139E-03	17.923
U-238DA	1.229E+00	8.324E-02	3.910E-02	1.426E-03	31.433
U-238DHP	1.400E+00	3.459E-01	6.119E-01	2.144E-02	2.288

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

Nuclide	Key-Line Activity (PCI/GRAM)	K.L. Ided	Act error	MDA (PCI/GRAM)	MDA error	Act/MDA
BE-7	-4.191E-02		7.147E-02	2.369E-01	7.985E-03	-0.177
NA-22	7.823E-04		7.477E-03	2.530E-02	1.460E-03	0.031
SC-46	2.533E-01	+	2.425E-02	5.586E-02	2.327E-03	4.534
CR-51	-8.213E-02		1.095E-01	3.592E-01	1.311E-02	-0.229
MN-54	2.109E-03		6.444E-03	2.206E-02	1.030E-03	0.096
CO-57	-2.657E-02		3.833E-02	1.273E-01	5.746E-03	-0.209
CO-58	-1.210E-02		8.133E-03	2.684E-02	1.207E-03	-0.451
FE-59	-1.436E-02		2.153E-02	7.241E-02	3.104E-03	-0.198
CO-60	-8.853E-03		6.352E-03	2.105E-02	1.468E-03	-0.421
ZN-65	-2.016E-02		1.828E-02	5.045E-02	2.116E-03	-0.400
SE-75	3.837E-03		8.504E-03	2.813E-02	1.346E-03	0.136
SR-85	4.859E-02		9.250E-03	2.787E-02	8.939E-04	1.744
Y-88	7.617E-03		6.312E-03	2.326E-02	7.824E-04	0.327
NB-94	-9.694E-03		5.778E-03	1.883E-02	9.292E-04	-0.515

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

Nuclide	Key-Line Activity (PCI/GRAM)	K.L. Ided	Act error	MDA (PCI/GRAM)	MDA error	Act/MDA
NB-95	5.885E-02		1.458E-02	4.501E-02	1.882E-03	1.308
TC-95M	-4.818E-04		9.672E-03	3.160E-02	1.727E-03	-0.015
ZR-95	2.601E-02		1.483E-02	5.210E-02	2.146E-03	0.499
ZRNB-95	8.698E-02		2.102E-02	6.488E-02	2.713E-03	1.341
RH-101	3.953E-03		5.966E-03	1.963E-02	1.081E-03	0.201
RH-102M	-2.548E-03		4.955E-03	1.645E-02	5.561E-04	-0.155
RU-103	-5.931E-03		9.539E-03	3.154E-02	1.037E-03	-0.188
RU-106DA	3.256E-02		5.372E-02	1.840E-01	6.311E-03	0.177
AG-108M	9.500E-04		5.100E-03	1.722E-02	6.042E-04	0.055
AG-110M	8.850E-04		8.631E-03	2.938E-02	1.479E-03	0.030
SN-113DA	-8.275E-03		8.644E-03	2.885E-02	1.033E-03	-0.287
SB-124	2.258E-03		8.733E-03	2.785E-02	9.462E-04	0.081
SB-125	-1.698E-02		1.572E-02	5.204E-02	1.833E-03	-0.326
SN-126DA	1.680E-02		5.655E-03	1.966E-02	6.917E-04	0.854
I-131	-7.190E-02		1.254E-01	4.232E-01	1.537E-02	-0.170
BA-133	2.221E-03		7.639E-03	2.234E-02	8.135E-04	0.099
CS-134	3.637E-02	+	1.013E-02	2.671E-02	1.172E-03	1.362
CS-137DA	-1.692E-02		6.436E-03	2.039E-02	7.113E-04	-0.829
LA-138	-3.344E-03		8.093E-03	2.772E-02	1.790E-03	-0.121
CE-139	-5.582E-03		5.947E-03	1.945E-02	1.103E-03	-0.287
BA-140	-1.219E-01		1.371E-01	4.617E-01	1.507E-02	-0.264
BALA-140	-2.289E-01		9.609E-02	2.993E-01	1.625E-02	-0.765
CE-141	1.474E-02		1.744E-02	5.843E-02	2.898E-03	0.252
CE-144	-1.557E-02		3.771E-02	1.230E-01	5.382E-03	-0.127
CEPR-144	-3.130E-02		7.541E-02	2.460E-01	1.076E-02	-0.127
PM-144	-8.769E-04		5.264E-03	1.781E-02	6.096E-04	-0.049
PM-146	1.158E-02		7.040E-03	2.414E-02	8.338E-04	0.479
EU-152	-4.000E-02		1.674E-02	5.478E-02	2.000E-03	-0.730
EU-154	2.161E-03		2.065E-02	6.990E-02	4.033E-03	0.031
EU-155	7.177E-02		1.874E-02	6.359E-02	2.324E-03	1.129
HF-181	1.370E-03		1.039E-02	3.484E-02	1.168E-03	0.039
BI-207	-5.327E-03		5.047E-03	1.686E-02	5.623E-04	-0.316
BI-210M	-1.203E-02		9.646E-03	2.688E-02	1.280E-03	-0.448
BI-212	1.330E+00	+	1.686E-01	3.907E-01	1.771E-02	3.405
RA-223	2.607E-01	+	5.991E-02	1.221E-01	5.748E-03	2.135
AC-227DA	2.662E-01		5.037E-02	1.443E-01	7.466E-03	1.845
TH-234DA	2.458E+00		1.011E+00	3.514E+00	1.675E-01	0.700
U-235HP	1.092E-01		3.734E-02	1.249E-01	6.088E-03	0.874
NP-237DA	-1.719E-02		1.200E-02	3.894E-02	1.498E-03	-0.441
AM-241HP	1.923E-03		2.365E-02	7.141E-02	2.593E-03	0.027


STL Richland WA.
BRC SOIL
Batch ID: 7241630
Sample ID: J5K861AA
Detector ID: GER4 1
Acquisition Start: 21-SEP-2007 21:50:57.30
Preset Live Time: 0 10:00:00.00
Elapsed Live Time: 0 10:00:00.00
Energy Coefficients:
Offset: -1.13163E-01
Slope: 2.48697E-01
Quadrature: 5.22983E-09
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
152 Eu, 232 Th, 228 Ra
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
133 Ba, 208 Tl
228 Th, 232 Th, 224 Ra, 212 Pb
228 Th, 227 Ac
224 Ra, 234 U, 238 U, 226 Ra, 214 Pb
228 Ra, 228 Ac
235 U, 226 Ra
238 U
155 Eu
238 U

SAMPLE IDENTIFICATION: J5K861AA

CONFIGURATION ID: GER4:J5K861AA_210972150
TITLE : BRC SOIL
SAMPLE ID : J5K861AA

REPORT DATE: 23-SEP-07
ACQUIRE DATE: 21-SEP-07 21:50:57
ELAPSED LIVE TIME: 36000.0 Sec
PRESET LIVE TIME: 0 10:00:00

SAMPLE DATE: 16-AUG-2007 08:00:00.00
CALIB DATE: 21-SEP-2007 05:02:11.04
ELAPSED LIVE TIME: 0 10:00:00
ELAPSED REAL TIME: 0 10:00:18

SAMPLE QUANTITY: 3.9100E+02
SAMPLE GEOMETRY: S200

UNITS: GRAMS
SAMPLE TYPE:

ENERGY OFFSET: -.1132E+00 keV
ENERGY SLOPE: 2.4870E-01 keV/C
ENERGY Q COEFF: 5.2298E-09 keV/C^^2
PEAK SENSITIVITY: 5.000

FWHM OFFSET: 2.4163E-01 keV
FWHM SLOPE: 4.8462E-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 23-SEP-2007 10:03:49

Configuration : $DISK1:[GER4.SAMPLE]J5K861AA_210972150.CNF;1
Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6
Sample title : BRC SOIL
Sample date : 16-AUG-2007 08:00:00 Acquisition date : 21-SEP-2007 21:50:57
Sample ID : J5K861AA Sample quantity : 391.00 GRAMS
Sample type : Sample geometry : S200
Elapsed live time: 0 10:00:00.00 Elapsed real time: 0 10:00:18.31 0.1%
Start energy : 19.78 End energy : 2037.57
Sensitivity : 5.00 Gaussian : 30.00
Critical level : No

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	63.21*	325	2074	0.80	254.62	250	11	9.02E-03	29.3	
2	3	72.88*	222	2789	0.87	293.49	286	31	6.16E-03	48.0	1.91E+00
3	3	74.93*	2056	2626	0.88	301.75	286	31	5.71E-02	5.7	
4	3	77.13*	2614	2403	0.88	310.58	286	31	7.26E-02	4.5	
5	0	84.47*	615	2885	1.37	340.09	334	13	1.71E-02	19.5	
6	0	87.30*	1182	2178	1.09	351.49	346	11	3.28E-02	8.5	
7	0	89.89	713	1834	0.77	361.91	357	10	1.98E-02	11.8	
8	0	92.70*	1301	2560	1.21	373.21	368	13	3.61E-02	8.9	
9	0	186.00*	2051	2001	1.17	748.34	741	15	5.70E-02	5.5	
10	0	209.12	567	1727	1.09	841.32	833	15	1.58E-02	16.5	
11	1	236.00	234	1491	1.08	949.39	942	38	6.51E-03	33.9	6.05E+00
12	1	238.61*	4612	1318	0.97	959.87	942	38	1.28E-01	2.2	
13	1	242.02	1860	1345	1.10	973.60	942	38	5.17E-02	4.8	
14	0	258.94	266	1041	1.04	1041.60	1036	13	7.39E-03	25.8	
15	0	270.22	668	1538	1.64	1086.95	1079	19	1.86E-02	14.6	
16	0	277.56	239	1357	1.19	1116.49	1105	17	6.64E-03	36.0	
17	0	295.22*	4006	1056	1.05	1187.48	1181	15	1.11E-01	2.4	
18	0	300.08	311	796	0.89	1207.03	1202	11	8.63E-03	18.5	
19	0	327.98	300	758	0.88	1319.22	1313	12	8.33E-03	19.3	
20	0	332.43	41	604	0.68	1337.11	1334	9	1.15E-03	107.9	
21	0	338.11*	1013	1198	1.05	1359.96	1349	20	2.82E-02	9.3	
22	0	351.89*	6803	1087	1.12	1415.35	1406	18	1.89E-01	1.7	
23	0	462.90	342	591	1.03	1861.68	1854	17	9.50E-03	17.2	
24	0	511.08*	767	734	1.70	2055.40	2043	29	2.13E-02	12.7	
25	0	583.14*	1327	702	1.28	2345.10	2334	20	3.69E-02	5.9	
26	0	609.28*	5142	516	1.32	2450.22	2438	23	1.43E-01	1.9	
27	0	727.20	309	470	1.15	2924.32	2914	23	8.59E-03	16.4	
28	0	768.08	591	473	1.34	3088.68	3075	25	1.64E-02	9.3	
29	0	794.84	159	327	1.31	3196.24	3187	18	4.41E-03	24.1	
30	0	860.28	270	304	1.60	3459.33	3448	22	7.49E-03	15.2	
31	0	911.02*	968	439	1.54	3663.36	3652	25	2.69E-02	6.1	
32	0	934.19	355	300	1.74	3756.50	3744	26	9.87E-03	12.5	
33	0	964.61	153	292	1.29	3878.81	3870	17	4.25E-03	23.3	
34	0	969.24	758	339	1.75	3897.38	3887	29	2.10E-02	7.1	
35	0	1120.31	1182	385	1.92	4504.74	4491	31	3.28E-02	5.1	
36	0	1238.03	452	308	2.15	4978.00	4966	24	1.26E-02	9.9	
37	0	1377.63	318	160	2.32	5539.20	5522	33	8.83E-03	10.6	
38	0	1407.96	169	128	1.56	5661.13	5647	23	4.70E-03	15.3	
39	0	1460.68*	3616	202	1.98	5873.04	5856	32	1.00E-01	2.0	
40	0	1509.63	143	139	2.07	6069.84	6055	31	3.98E-03	20.2	
41	0	1729.64	210	90	1.82	6954.24	6937	36	5.82E-03	12.9	
42	0	1764.18	832	99	2.28	7093.07	7075	36	2.31E-02	4.5	
43	0	1847.38	123	61	2.37	7427.51	7412	25	3.41E-03	15.7	

Sample ID : J5K861AA Acquisition date : 21-SEP-2007 21:50:57

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 23-SEP-2007 10:03:50

Configuration : $DISK1:[GER4.SAMPLE]J5K861AA_210972150.CNF;1
Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.3
Sample title : BRC SOIL
Sample date : 16-AUG-2007 08:00:00 Acquisition date : 21-SEP-2007 21:50:57
Sample ID : J5K861AA Sample quantity : 391.00 GRAMS
Sample type : Sample geometry : S200
Elapsed live time: 0 10:00:00.00 Elapsed real time: 0 10:00:18.31 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	3616	10.67*	5.415E-01	1.202E+01	1.202E+01	6.60
TL-208	277.35	239	6.80	2.028E+00	3.330E-01	3.330E-01	36.56
	510.84	767	21.60	1.301E+00	5.241E-01	5.241E-01	14.10
	583.14	1327	84.20*	1.176E+00	2.575E-01	2.575E-01	8.51
	860.37	270	12.46	8.557E-01	4.857E-01	4.857E-01	16.70
PB-212	238.63	4612	44.60*	2.244E+00	8.849E-01	8.849E-01	6.84
	300.09	311	3.41	1.921E+00	9.108E-01	9.108E-01	19.65
BI-214	609.31	5142	46.30*	1.136E+00	1.877E+00	1.877E+00	6.45
	768.36	591	5.04	9.416E-01	2.389E+00	2.389E+00	11.37
	1120.29	1182	15.10	6.798E-01	2.211E+00	2.211E+00	8.04
	1764.49	832	15.80	4.702E-01	2.150E+00	2.150E+00	7.49
PB-214	241.98	1860	7.49	2.223E+00	2.144E+00	2.144E+00	8.07
	295.21	4006	19.20	1.943E+00	2.062E+00	2.062E+00	7.11
	351.92	6803	37.20*	1.714E+00	2.048E+00	2.048E+00	6.65
	785.91	------	1.10	9.238E-01	------	Line Not Found	------
RA-224DA	238.63	4612	44.60*	2.244E+00	8.849E-01	9.178E-01	6.84
	240.98	1860	3.95	2.223E+00	4.066E+00	4.217E+00	8.07
	583.14	1327	30.25	1.176E+00	7.168E-01	7.434E-01	8.51
	860.37	270	4.48	8.557E-01	1.351E+00	1.401E+00	16.70
RA-226DA	186.21	2051	3.50	2.594E+00	4.338E+00	4.338E+00	8.30
	241.98	1860	7.49	2.223E+00	2.144E+00	2.144E+00	8.07
	295.22	4006	19.20	1.943E+00	2.062E+00	2.062E+00	7.11
	351.92	6803	37.20	1.714E+00	2.048E+00	2.048E+00	6.65
	609.32	5142	46.30*	1.136E+00	1.877E+00	1.877E+00	6.45
	1120.28	1182	15.10	6.798E-01	2.211E+00	2.211E+00	8.04
	1238.11	452	5.94	6.229E-01	2.346E+00	2.346E+00	11.63
	1764.49	832	15.80	4.702E-01	2.150E+00	2.150E+00	7.49
AC-228	209.28	567	4.40	2.434E+00	1.017E+00	1.017E+00	17.69
	270.23	668	3.60	2.065E+00	1.726E+00	1.726E+00	15.98
	338.32	1013	11.40	1.764E+00	9.676E-01	9.676E-01	11.42
	911.07	968	27.70*	8.146E-01	8.233E-01	8.233E-01	9.25
	969.11	758	16.60	7.719E-01	1.135E+00	1.135E+00	9.84
RA-228DA	209.28	567	4.40	2.434E+00	1.017E+00	1.029E+00	17.69
	338.32	1013	11.40	1.764E+00	9.676E-01	9.794E-01	11.42
	911.07	968	27.70*	8.146E-01	8.233E-01	8.334E-01	9.25
	964.60	153	5.20	7.752E-01	7.296E-01	7.385E-01	24.25

Sample ID : J5K861AA Acquisition date : 21-SEP-2007 21:50:57

Nuclide Type: NP

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected PCI/GRAM	Decay Corr PCI/GRAM	1-Sigma %Error
	969.11	758	16.60	7.719E-01	1.135E+00	1.149E+00	9.84
TH-228DA	238.63	4612	44.60	2.244E+00	8.849E-01	9.178E-01	6.84
	240.98	1860	3.95	2.223E+00	4.066E+00	4.217E+00	8.07
	583.14	1327	30.25*	1.176E+00	7.168E-01	7.434E-01	8.51
	860.37	270	4.48	8.557E-01	1.351E+00	1.401E+00	16.70
TH-232DA	238.63	4612	44.60	2.244E+00	8.849E-01	8.849E-01	6.84
	338.32	1013	12.40*	1.764E+00	8.895E-01	8.895E-01	11.42
	583.14	1327	30.25	1.176E+00	7.168E-01	7.168E-01	8.51
	911.07	968	27.70	8.146E-01	8.233E-01	8.233E-01	9.25
	964.60	153	5.20	7.752E-01	7.296E-01	7.296E-01	24.25
	969.11	758	16.60	7.719E-01	1.135E+00	1.135E+00	9.84
U-234DA	241.98	1860	7.49	2.223E+00	2.144E+00	2.144E+00	8.07
	295.22	4006	19.20*	1.943E+00	2.062E+00	2.062E+00	7.11
	351.92	6803	37.20	1.714E+00	2.048E+00	2.048E+00	6.65
	609.31	5142	46.30	1.136E+00	1.877E+00	1.877E+00	6.45
U-238DA	241.98	1860	7.49	2.223E+00	2.144E+00	2.144E+00	8.07
	295.22	4006	19.20	1.943E+00	2.062E+00	2.062E+00	7.11
	351.92	6803	37.20*	1.714E+00	2.048E+00	2.048E+00	6.65
	609.31	5142	46.30	1.136E+00	1.877E+00	1.877E+00	6.45
U-238DHP	63.28	325	3.80*	1.026E+00	1.599E+00	1.599E+00	29.98
	92.59	1301	5.41	2.388E+00	1.934E+00	1.934E+00	11.19

Flag: "*" = Keyline

Sample ID : J5K861AA Acquisition date : 21-SEP-2007 21:50:57

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
3	72.88	222	2789	0.87	293.49	286	31	6.16E-03	48.0	1.56E+00	
3	74.93	2056	2626	0.88	301.75	286	31	5.71E-02	5.7	1.67E+00	
3	77.13	2614	2403	0.88	310.58	286	31	7.26E-02	4.5	1.78E+00	
0	84.47	615	2885	1.37	340.09	334	13	1.71E-02	19.5	2.10E+00	
0	87.30	1182	2178	1.09	351.49	346	11	3.28E-02	8.5	2.21E+00	T
0	89.89	713	1834	0.77	361.91	357	10	1.98E-02	11.8	2.30E+00	
1	236.00	234	1491	1.08	949.39	942	38	6.51E-03	33.9	2.26E+00	T
0	258.94	266	1041	1.04	1041.60	1036	13	7.39E-03	25.8	2.13E+00	
0	327.98	300	758	0.88	1319.22	1313	12	8.33E-03	19.3	1.80E+00	T
0	332.43	41	604	0.68	1337.11	1334	9	1.15E-03	****	1.79E+00	
0	462.90	342	591	1.03	1861.68	1854	17	9.50E-03	17.2	1.40E+00	T
0	727.20	309	470	1.15	2924.32	2914	23	8.59E-03	16.4	9.85E-01	T
0	794.84	159	327	1.31	3196.24	3187	18	4.41E-03	24.1	9.15E-01	T
0	934.19	355	300	1.74	3756.50	3744	26	9.87E-03	12.5	7.97E-01	
0	1377.63	318	160	2.32	5539.20	5522	33	8.83E-03	10.6	5.68E-01	
0	1407.96	169	128	1.56	5661.13	5647	23	4.70E-03	15.3	5.58E-01	T
0	1509.63	143	139	2.07	6069.84	6055	31	3.98E-03	20.2	5.27E-01	
0	1729.64	210	90	1.82	6954.24	6937	36	5.82E-03	12.9	4.76E-01	
0	1847.38	123	61	2.37	7427.51	7412	25	3.41E-03	15.7	4.57E-01	

Flags: "T" = Tentatively associated

Sample ID : J5K861AA
Acquisition date : 21-SEP-2007 21:50:57

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	6.472E-02	14.10	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	4.526E-01	8.04	
		% Abundances Found =		50.00			
TC-95M	61.00D	0.60	204.12*	66.20	--- Not Found ---		Abun.
			582.07	29.30	1.124E+00	8.51	
			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	2.967E+01	6.45	
		% Abundances Found =		5.92			
RU-106DA	368.20D	0.10	511.85	20.60	5.890E-01	14.10	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	4.641E-01	18.20	
			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	3.303E-01	36.56	
			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	0.05	569.31	15.43	--- Not Found ---		Abun.
			604.70	97.60	--- Not Found ---		
			795.84*	85.40	4.035E-02	25.01	
			801.93	8.73	--- Not Found ---		
		% Abundances Found =		41.22			
LA-140	40.22H	21.95	328.77	20.50	6.304E+05	20.39	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	2.648E-01	24.25	

Sample ID : J5K861AA Acquisition date : 21-SEP-2007 21:50:57

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	2.825E-01	16.54	
		% Abundances Found =		26.29			
EU-155	4.96Y	0.02	42.90	21.16	--- Not Found ---		Abun.
			86.54	30.90	3.369E-01	11.02	
			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	2.297E+01	21.87	
			452.83	0.31	--- Not Found ---		
			727.33*	6.58	9.155E-01	17.74	
			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	4.583E-01	15.98	
			323.87	3.88	--- Not Found ---		
		% Abundances Found =		58.98			
AC-227DA	21.77Y	0.00	236.00*	11.34	1.760E-01	34.54	Abun.
			256.20	6.21	--- Not Found ---		
		% Abundances Found =		64.62			
U-235HP	7.04E+08Y	0.00	143.76*	10.50	--- Not Found ---		Abun.
			185.71	54.00	2.812E-01	8.30	
			205.31	4.70	--- Not Found ---		
		% Abundances Found =		78.03			

Flag: "*" = Keyline

VMS Nuclide Identification Report V3.0 Generated 23-SEP-2007 10:03:53

Configuration : $DISK1:[GER4.SAMPLE]J5K861AA_210972150.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 : 16-AUG-2007 08:00:00 Acquisition date : 21-SEP-2007 21:50:57
Sample ID : J5K861AA Sample quantity : 391.00 GRAMS
Sample type : Sample geometry : S200
Elapsed live time: 0 10:00:00.00 Elapsed real time: 0 10:00:18.31 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	1.202E+01	7.932E-01	1.992E-01	7.559E-03	60.315
TL-208	2.575E-01	2.191E-02	1.884E-02	6.804E-04	13.670
PB-212	8.849E-01	6.048E-02	3.226E-02	1.317E-03	27.425
BI-214	1.877E+00	1.210E-01	3.792E-02	1.370E-03	49.509
PB-214	2.048E+00	1.361E-01	4.210E-02	1.696E-03	48.649
RA-224DA	9.178E-01	6.273E-02	3.347E-02	1.367E-03	27.425
RA-226DA	1.877E+00	1.210E-01	3.792E-02	1.370E-03	49.507
AC-228	8.233E-01	7.614E-02	7.617E-02	3.650E-03	10.809
RA-228DA	8.334E-01	7.707E-02	7.710E-02	3.695E-03	10.809
TH-228DA	7.434E-01	6.325E-02	5.438E-02	1.964E-03	13.670
TH-232DA	8.895E-01	1.016E-01	1.237E-01	5.277E-03	7.190
U-234DA	2.062E+00	1.467E-01	7.725E-02	3.418E-03	26.694
U-238DA	2.048E+00	1.361E-01	4.210E-02	1.696E-03	48.649
U-238DHP	1.599E+00	4.794E-01	8.904E-01	3.778E-02	1.796

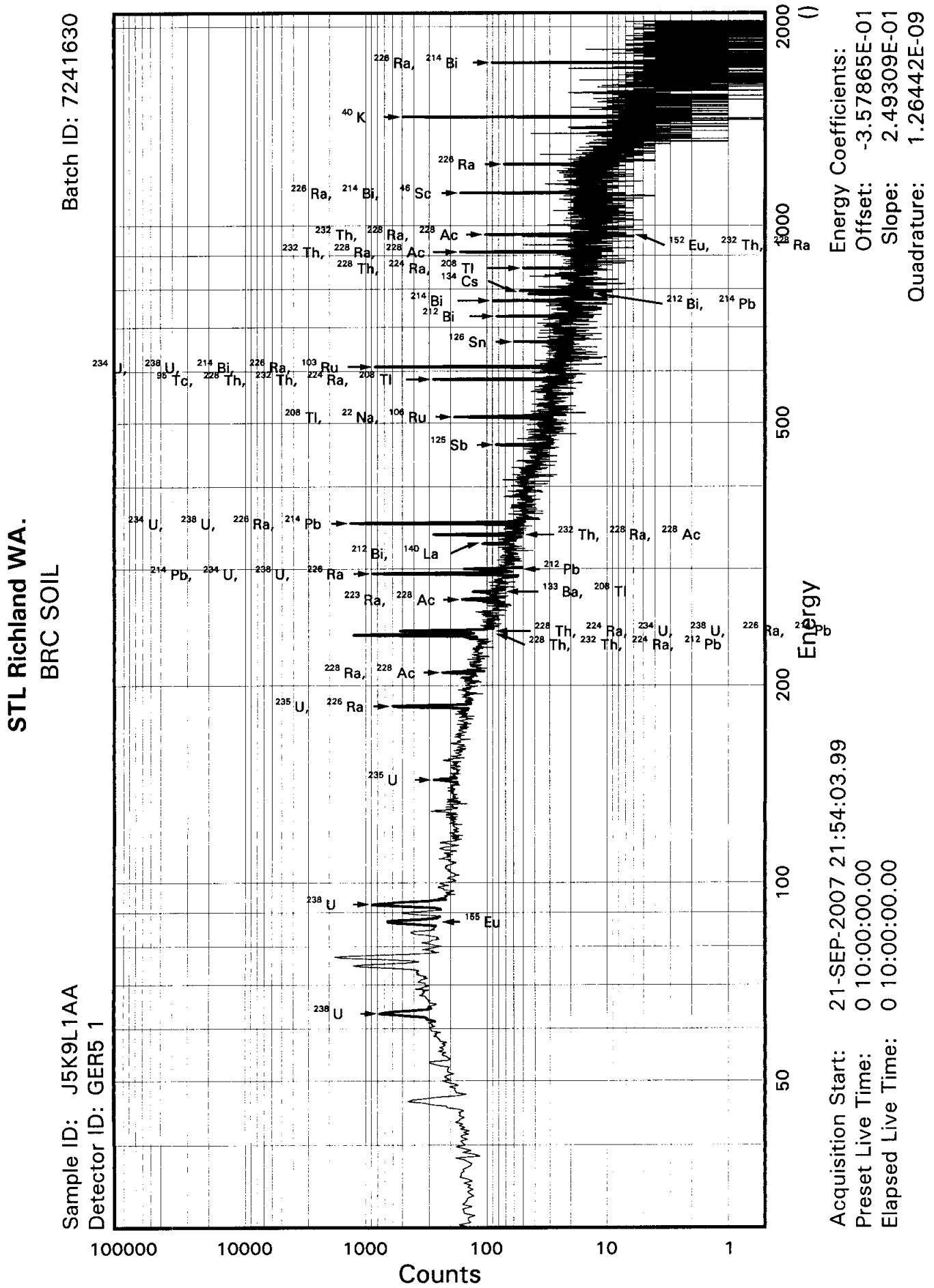
---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (PCI/GRAM)	K.L. Ided	Act error	MDA (PCI/GRAM)	MDA error	Act/MDA
BE-7	-2.114E-01		7.494E-02	2.395E-01	8.332E-03	-0.883
NA-22	-9.326E-03		7.275E-03	2.408E-02	8.884E-04	-0.387
SC-46	4.526E-01	+	3.639E-02	6.907E-02	2.593E-03	6.552
CR-51	1.236E-01		1.117E-01	3.823E-01	1.739E-02	0.323
MN-54	1.842E-03		6.846E-03	2.331E-02	1.047E-03	0.079
CO-57	-3.917E-03		4.018E-02	1.347E-01	5.378E-03	-0.029
CO-58	-2.867E-02		8.534E-03	2.657E-02	1.159E-03	-1.079
FE-59	-1.611E-02		2.209E-02	7.360E-02	2.863E-03	-0.219
CO-60	-6.923E-03		6.567E-03	2.180E-02	8.414E-04	-0.318
ZN-65	3.842E-03		1.810E-02	5.168E-02	1.957E-03	0.074
SE-75	-1.397E-02		8.835E-03	2.864E-02	1.217E-03	-0.488
SR-85	4.611E-02		9.104E-03	2.744E-02	9.784E-04	1.680
Y-88	1.068E-02		6.494E-03	2.411E-02	7.695E-04	0.443
NB-94	2.813E-03		5.678E-03	1.942E-02	9.102E-04	0.145

Sample ID : J5K861AA
Acquisition date : 21-SEP-2007 21:50:57

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

Nuclide	Key-Line Activity (PCI/GRAM)	K.L. Ided	Act error	MDA (PCI/GRAM)	MDA error	Act/MDA
NB-95	7.822E-02		1.648E-02	5.008E-02	2.067E-03	1.562
TC-95M	4.318E-03		9.850E-03	3.279E-02	1.263E-03	0.132
ZR-95	-9.439E-03		1.550E-02	5.113E-02	2.086E-03	-0.185
ZRNB-95	1.186E-01		2.387E-02	7.250E-02	2.992E-03	1.636
RH-101	-1.090E-03		6.168E-03	1.970E-02	7.507E-04	-0.055
RH-102M	2.264E-03		4.938E-03	1.684E-02	5.845E-04	0.134
RU-103	1.014E-02		9.747E-03	3.337E-02	1.177E-03	0.304
RU-106DA	8.329E-02		5.412E-02	1.881E-01	6.794E-03	0.443
AG-108M	4.561E-03		5.073E-03	1.749E-02	5.871E-04	0.261
AG-110M	4.622E-03		9.037E-03	3.083E-02	1.468E-03	0.150
SN-113DA	-1.842E-02		9.157E-03	2.946E-02	9.481E-04	-0.625
SB-124	3.339E-03		8.505E-03	2.736E-02	9.890E-04	0.122
SB-125	5.997E-03		1.660E-02	5.691E-02	1.899E-03	0.105
SN-126DA	2.083E-02		5.653E-03	1.969E-02	7.121E-04	1.058
I-131	2.800E-02		1.255E-01	4.223E-01	1.601E-02	0.066
BA-133	9.643E-03		8.215E-03	2.402E-02	9.496E-04	0.401
CS-134	4.035E-02	+	1.009E-02	2.790E-02	1.195E-03	1.446
CS-137DA	-2.129E-02		6.559E-03	2.053E-02	7.378E-04	-1.037
LA-138	1.412E-04		9.157E-03	3.181E-02	1.213E-03	0.004
CE-139	-1.834E-02		6.265E-03	1.978E-02	7.175E-04	-0.927
BA-140	4.957E-02		1.438E-01	4.841E-01	1.737E-02	0.102
BALA-140	-2.479E-01		1.022E-01	3.226E-01	1.176E-02	-0.768
CE-141	-4.829E-02		1.884E-02	6.070E-02	2.320E-03	-0.796
CE-144	-3.670E-02		3.905E-02	1.300E-01	5.270E-03	-0.282
CEPR-144	-7.274E-02		7.810E-02	2.601E-01	1.054E-02	-0.280
PM-144	-7.457E-03		5.389E-03	1.787E-02	6.458E-04	-0.417
PM-146	1.346E-02		7.199E-03	2.494E-02	8.516E-04	0.540
EU-152	-1.313E-02		1.708E-02	5.694E-02	2.371E-03	-0.231
EU-154	-1.513E-02		1.981E-02	6.652E-02	2.454E-03	-0.227
EU-155	7.514E-02		2.087E-02	6.806E-02	2.963E-03	1.104
HF-181	1.451E-02		1.071E-02	3.674E-02	1.282E-03	0.395
BI-207	4.456E-03		5.318E-03	1.791E-02	6.462E-04	0.249
BI-210M	2.735E-04		9.915E-03	2.817E-02	1.199E-03	0.010
BI-212	9.155E-01	+	1.624E-01	3.709E-01	1.684E-02	2.469
RA-223	4.583E-01	+	7.324E-02	1.260E-01	5.391E-03	3.638
AC-227DA	1.760E-01	+	6.081E-02	1.412E-01	5.742E-03	1.247
TH-234DA	3.803E+00		1.052E+00	3.714E+00	1.645E-01	1.024
U-235HP	1.954E-01		4.077E-02	1.350E-01	5.199E-03	1.447
NP-237DA	-7.349E-03		1.202E-02	4.053E-02	1.828E-03	-0.181
AM-241HP	-2.825E-02		3.307E-02	1.114E-01	4.596E-03	-0.253


STL Richland WA.
BRC SOIL
Batch ID: 7241630
Sample ID: J5K9L1AA
Detector ID: GER5 1
Energy Coefficients:
Offset: -3.57865E-01
Slope: 2.49309E-01
Quadrature: 1.26442E-09
Acquisition Start: 21-SEP-2007 21:54:03.99
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
228 Ra, 214 Bi
40 K
228 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
126 Sn
234 U, 238 U, 214 Bi, 226 Ra, 103 Ru
96 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
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
235 U
238 U
155 Eu
238 U
152 Eu, 232 Th, 228 Ra
212 Bi, 214 Pb
232 Th, 228 Ra, 228 Ac
212 Pb
133 Ba, 208 Tl

SAMPLE IDENTIFICATION: J5K9L1AA

CONFIGURATION ID: GER5:J5K9L1AA_210972154
TITLE : BRC SOIL
SAMPLE ID : J5K9L1AA

REPORT DATE: 23-SEP-07
ACQUIRE DATE: 21-SEP-07 21:54:03
ELAPSED LIVE TIME: 36000.0 Sec
PRESET LIVE TIME: 0 10:00:00

SAMPLE DATE: 16-AUG-2007 08:00:00.00
CALIB DATE: 21-SEP-2007 05:02:05.95
ELAPSED LIVE TIME: 0 10:00:00
ELAPSED REAL TIME: 0 10:00:13

SAMPLE QUANTITY: 3.7770E+02
SAMPLE GEOMETRY: ES200

UNITS: GRAMS
SAMPLE TYPE:

ENERGY OFFSET: -.3579E+00 keV
ENERGY SLOPE: 2.4931E-01 keV/C
ENERGY Q COEFF: 1.2644E-09 keV/C^^2
PEAK SENSITIVITY: 5.000

FWHM OFFSET: 7.4814E-01 keV
FWHM SLOPE: 2.6214E-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 23-SEP-2007 10:04:57

Configuration : RDND06$DKA100:[GER5.SAMPLE]J5K9L1AA_210972154.CNF;1
Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6
Sample title : BRC SOIL
Sample date : 16-AUG-2007 08:00:00 Acquisition date : 21-SEP-2007 21:54:03
Sample ID : J5K9L1AA Sample quantity : 377.70 GRAMS
Sample type : Sample geometry : ES200
Elapsed live time: 0 10:00:00.00 Elapsed real time: 0 10:00:13.27 0.0%
Start energy : 19.59 End energy : 2042.07
Sensitivity : 5.00 Gaussian : 20.00
Critical level : No

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	46.52*	767	1980	0.91	188.01	182	12	2.13E-02	13.1	
2	0	53.16	245	1912	0.79	214.67	211	9	6.82E-03	32.7	
3	0	63.30*	1343	4144	0.86	255.32	248	14	3.73E-02	10.9	
4	2	74.88*	3291	3518	0.86	301.77	296	21	9.14E-02	3.8	5.13E-01
5	2	77.12*	5542	3328	0.90	310.79	296	21	1.54E-01	2.5	
6	0	84.06	763	3195	1.16	338.60	333	12	2.12E-02	15.2	
7	0	87.25	1800	3147	1.04	351.42	346	12	5.00E-02	6.7	
8	0	89.93	1014	2485	0.93	362.17	357	10	2.82E-02	9.7	
9	0	92.76*	2691	3324	1.23	373.52	367	14	7.48E-02	5.3	
10	0	115.16	240	2303	0.77	463.34	459	13	6.68E-03	41.7	
11	0	129.04	331	1678	0.80	519.04	515	9	9.20E-03	23.0	
12	0	143.71	312	1814	0.90	577.88	573	10	8.66E-03	26.2	
13	0	185.96*	2038	2567	1.19	747.33	738	17	5.66E-02	6.3	
14	0	209.29	415	1449	1.28	840.90	835	11	1.15E-02	18.4	
15	2	238.58*	4921	1356	1.02	958.41	951	29	1.37E-01	2.2	3.86E+00
16	2	241.80	2266	1712	1.40	971.32	951	29	6.30E-02	4.8	
17	0	269.88	639	1530	1.65	1083.92	1074	20	1.77E-02	15.5	
18	0	277.44	193	970	0.88	1114.28	1111	12	5.37E-03	33.2	
19	0	295.15	4000	1046	1.09	1185.29	1177	17	1.11E-01	2.4	
20	0	299.82	531	1079	1.01	1204.04	1194	18	1.47E-02	15.2	
21	0	327.94	119	760	0.83	1316.81	1312	11	3.31E-03	45.8	
22	0	338.29	1083	953	1.04	1358.34	1349	18	3.01E-02	7.3	
23	0	351.84	6555	1106	1.14	1412.69	1401	21	1.82E-01	1.8	
24	0	463.16	237	594	1.46	1859.19	1851	15	6.59E-03	23.4	
25	0	510.90*	499	738	2.01	2050.66	2040	24	1.39E-02	18.0	
26	0	583.13*	1560	440	1.45	2340.39	2332	19	4.33E-02	4.3	
27	0	609.24	4838	476	1.35	2445.12	2434	21	1.34E-01	1.8	
28	0	665.08	175	383	1.02	2669.11	2658	18	4.87E-03	27.2	
29	0	727.20	418	340	1.27	2918.24	2908	20	1.16E-02	11.9	
30	0	768.25	455	437	1.30	3082.91	3072	24	1.26E-02	13.1	
31	0	785.30	153	327	1.56	3151.31	3144	19	4.26E-03	29.3	
32	0	795.21	200	271	1.58	3191.02	3182	17	5.54E-03	20.3	
33	0	860.53	226	294	1.34	3453.03	3444	21	6.28E-03	17.4	
34	0	911.24*	954	368	1.62	3656.42	3643	25	2.65E-02	5.9	
35	0	933.82	303	303	1.75	3746.99	3735	27	8.41E-03	14.6	
36	0	964.70	149	278	1.36	3870.87	3862	17	4.15E-03	23.3	
37	0	968.97	613	285	1.48	3887.99	3879	22	1.70E-02	7.3	
38	0	1120.13	980	367	1.39	4494.28	4481	26	2.72E-02	5.5	
39	0	1237.96	370	337	1.35	4966.89	4954	22	1.03E-02	11.9	
40	0	1281.05	153	170	0.92	5139.69	5128	25	4.26E-03	21.0	
41	0	1377.81	247	112	1.29	5527.81	5517	22	6.86E-03	11.3	
42	0	1401.84	59	108	0.83	5624.16	5611	19	1.65E-03	38.0	
43	0	1460.69*	3944	183	2.02	5860.22	5844	37	1.10E-01	2.0	

Sample ID : J5K9L1AA Acquisition date : 21-SEP-2007 21:54:03

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
44	0	1509.38	111	102	2.02	6055.49	6046	21	3.07E-03	21.6	
45	0	1729.46	190	55	2.61	6938.22	6921	33	5.28E-03	12.3	
46	0	1764.42	806	80	1.95	7078.42	7063	31	2.24E-02	4.5	

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

VMS Nuclide Identification Report V3.1 Generated 23-SEP-2007 10:04:58

Configuration : RDND06$DKA100:[GER5.SAMPLE]J5K9L1AA_210972154.CNF;1
Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.4
Sample title : BRC SOIL
Sample date : 16-AUG-2007 08:00:00 Acquisition date : 21-SEP-2007 21:54:03
Sample ID : J5K9L1AA Sample quantity : 377.70 GRAMS
Sample type : Sample geometry : ES200
Elapsed live time: 0 10:00:00.00 Elapsed real time: 0 10:00:13.27 0.0%
Energy tolerance : 1.50 Half life ratio : 8.00
Errors propagated: Yes Systematic Error : 5.00 %
Efficiency type : Empirical Efficiencies at : Peak Energy
Abundance limit : 80.00

Nuclide Line Activity Report

Nuclide Type: NP

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected PCI/GRAM	Decay Corr PCI/GRAM	1-Sigma %Error
K-40	1460.81	3944	10.67*	5.414E-01	1.357E+01	1.357E+01	6.36
TL-208	277.35	193	6.80	2.161E+00	2.614E-01	2.614E-01	33.76
	510.84	499	21.60	1.323E+00	3.474E-01	3.474E-01	18.97
	583.14	1560	84.20*	1.185E+00	3.110E-01	3.110E-01	7.35
	860.37	226	12.46	8.522E-01	4.231E-01	4.231E-01	18.53
PB-212	238.63	4921	44.60*	2.420E+00	9.061E-01	9.061E-01	6.53
	300.09	531	3.41	2.035E+00	1.520E+00	1.520E+00	16.31
BI-214	609.31	4838	46.30*	1.142E+00	1.819E+00	1.819E+00	6.24
	768.36	455	5.04	9.387E-01	1.912E+00	1.912E+00	14.47
	1120.29	980	15.10	6.795E-01	1.898E+00	1.898E+00	8.21
	1764.49	806	15.80	4.621E-01	2.194E+00	2.194E+00	7.45
PB-214	241.98	2266	7.49	2.397E+00	2.510E+00	2.510E+00	7.81
	295.21	4000	19.20	2.060E+00	2.010E+00	2.010E+00	6.51
	351.92	6555	37.20*	1.793E+00	1.953E+00	1.953E+00	6.21
	785.91	153	1.10	9.214E-01	3.004E+00	3.004E+00	29.94
RA-224DA	238.63	4921	44.60*	2.420E+00	9.061E-01	9.398E-01	6.53
	240.98	2266	3.95	2.397E+00	4.759E+00	4.936E+00	7.81
	583.14	1560	30.25	1.185E+00	8.655E-01	8.978E-01	7.35
	860.37	226	4.48	8.522E-01	1.177E+00	1.220E+00	18.53
RA-226DA	186.21	2038	3.50	2.881E+00	4.017E+00	4.017E+00	8.83
	241.98	2266	7.49	2.397E+00	2.510E+00	2.510E+00	7.81
	295.22	4000	19.20	2.060E+00	2.010E+00	2.010E+00	6.51
	351.92	6555	37.20	1.793E+00	1.953E+00	1.953E+00	6.21
	609.32	4838	46.30*	1.142E+00	1.819E+00	1.819E+00	6.24
	1120.28	980	15.10	6.795E-01	1.898E+00	1.898E+00	8.21
	1238.11	370	5.94	6.236E-01	1.984E+00	1.984E+00	13.35
	1764.49	806	15.80	4.621E-01	2.194E+00	2.194E+00	7.45
AC-228	209.28	415	4.40	2.659E+00	7.054E-01	7.054E-01	19.43
	270.23	639	3.60	2.207E+00	1.598E+00	1.598E+00	16.67
	338.32	1083	11.40	1.850E+00	1.020E+00	1.020E+00	9.45
	911.07	954	27.70*	8.114E-01	8.434E-01	8.434E-01	8.71
	969.11	613	16.60	7.697E-01	9.534E-01	9.534E-01	9.64
RA-228DA	209.28	415	4.40	2.659E+00	7.054E-01	7.140E-01	19.43
	338.32	1083	11.40	1.850E+00	1.020E+00	1.033E+00	9.45
	911.07	954	27.70*	8.114E-01	8.434E-01	8.537E-01	8.71
	964.60	149	5.20	7.727E-01	7.384E-01	7.475E-01	24.18

Sample ID : J5K9L1AA Acquisition date : 21-SEP-2007 21:54:03

Nuclide Type: NP

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected PCI/GRAM	Decay Corr PCI/GRAM	1-Sigma %Error
	969.11	613	16.60	7.697E-01	9.534E-01	9.651E-01	9.64
TH-228DA	238.63	4921	44.60	2.420E+00	9.061E-01	9.398E-01	6.53
	240.98	2266	3.95	2.397E+00	4.759E+00	4.936E+00	7.81
	583.14	1560	30.25*	1.185E+00	8.655E-01	8.978E-01	7.35
	860.37	226	4.48	8.522E-01	1.177E+00	1.220E+00	18.53
TH-232DA	238.63	4921	44.60	2.420E+00	9.061E-01	9.061E-01	6.53
	338.32	1083	12.40*	1.850E+00	9.380E-01	9.380E-01	9.45
	583.14	1560	30.25	1.185E+00	8.655E-01	8.655E-01	7.35
	911.07	954	27.70	8.114E-01	8.434E-01	8.434E-01	8.71
	964.60	149	5.20	7.727E-01	7.384E-01	7.384E-01	24.18
	969.11	613	16.60	7.697E-01	9.534E-01	9.534E-01	9.64
U-234DA	241.98	2266	7.49	2.397E+00	2.510E+00	2.510E+00	7.81
	295.22	4000	19.20*	2.060E+00	2.010E+00	2.010E+00	6.51
	351.92	6555	37.20	1.793E+00	1.953E+00	1.953E+00	6.21
	609.31	4838	46.30	1.142E+00	1.819E+00	1.819E+00	6.24
U-235HP	143.76	312	10.50*	3.357E+00	1.759E-01	1.759E-01	26.86
	185.71	2038	54.00	2.881E+00	2.604E-01	2.604E-01	8.83
	205.31	------	4.70	2.695E+00	------	Line Not Found	------
U-238DA	241.98	2266	7.49	2.397E+00	2.510E+00	2.510E+00	7.81
	295.22	4000	19.20	2.060E+00	2.010E+00	2.010E+00	6.51
	351.92	6555	37.20*	1.793E+00	1.953E+00	1.953E+00	6.21
	609.31	4838	46.30	1.142E+00	1.819E+00	1.819E+00	6.24
U-238DHP	63.28	1343	3.80*	3.561E+00	1.973E+00	1.973E+00	12.36
	92.59	2691	5.41	3.877E+00	2.550E+00	2.550E+00	8.01

Flag: "*" = Keyline

Unidentified Energy Lines
Sample ID : J5K9L1AA

Acquisition date : 21-SEP-2007 21:54:03

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
0	46.52	767	1980	0.91	188.01	182	12	2.13E-02	13.1	2.62E+00	
0	53.16	245	1912	0.79	214.67	211	9	6.82E-03	32.7	3.09E+00	
2	74.88	3291	3518	0.86	301.77	296	21	9.14E-02	3.8	3.82E+00	
2	77.12	5542	3328	0.90	310.79	296	21	1.54E-01	2.5	3.84E+00	
0	84.06	763	3195	1.16	338.60	333	12	2.12E-02	15.2	3.88E+00	
0	87.25	1800	3147	1.04	351.42	346	12	5.00E-02	6.7	3.89E+00	T
0	89.93	1014	2485	0.93	362.17	357	10	2.82E-02	9.7	3.89E+00	
0	115.16	240	2303	0.77	463.34	459	13	6.68E-03	41.7	3.70E+00	
0	129.04	331	1678	0.80	519.04	515	9	9.20E-03	23.0	3.54E+00	
0	327.94	119	760	0.83	1316.81	1312	11	3.31E-03	45.8	1.90E+00	T
0	463.16	237	594	1.46	1859.19	1851	15	6.59E-03	23.4	1.43E+00	T
0	665.08	175	383	1.02	2669.11	2658	18	4.87E-03	27.2	1.06E+00	T
0	727.20	418	340	1.27	2918.24	2908	20	1.16E-02	11.9	9.84E-01	T
0	795.21	200	271	1.58	3191.02	3182	17	5.54E-03	20.3	9.12E-01	T
0	933.82	303	303	1.75	3746.99	3735	27	8.41E-03	14.6	7.95E-01	
0	1281.05	153	170	0.92	5139.69	5128	25	4.26E-03	21.0	6.06E-01	
0	1377.81	247	112	1.29	5527.81	5517	22	6.86E-03	11.3	5.69E-01	
0	1401.84	59	108	0.83	5624.16	5611	19	1.65E-03	38.0	5.61E-01	
0	1509.38	111	102	2.02	6055.49	6046	21	3.07E-03	21.6	5.27E-01	
0	1729.46	190	55	2.61	6938.22	6921	33	5.28E-03	12.3	4.70E-01	

Flags: "T" = Tentatively associated

Sample ID : J5K9L1AA Acquisition date : 21-SEP-2007 21:54:03

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	4.290E-02	18.97	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	3.886E-01	8.21	
		% Abundances Found =		50.00			
TC-95M	61.00D	0.60	204.12*	66.20	--- Not Found ---		Abun.
			582.07	29.30	1.357E+00	7.35	
			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	2.875E+01	6.24	
		% Abundances Found =		5.92			
RU-106DA	368.20D	0.10	511.85	20.60	3.904E-01	18.97	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	3.259E-01	24.14	
			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	3.288E-02	27.87	
			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	2.593E-01	33.76	
			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	5.272E-02	21.25	
			801.93	8.73	--- Not Found ---		
		% Abundances Found =		41.22			
LA-140	40.22H	21.95	328.77	20.50	2.465E+05	46.15	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 : J5K9L1AA Acquisition date : 21-SEP-2007 21:54:03

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	2.680E-01	24.18	
			1085.78	10.00	--- Not Found ---		
			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	3.020E-01	8.97	
			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	8.973E+00	46.83	
			452.83	0.31	--- Not Found ---		
			727.33*	6.58	1.284E+00	13.52	
			785.37	1.10	3.004E+00	30.07	
			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	4.243E-01	16.67	
			323.87	3.88	--- Not Found ---		
		% Abundances Found =		58.98			

Flag: "*" = Keyline

VMS Nuclide Identification Report V3.1 Generated 23-SEP-2007 10:04:59

Configuration : RDND06$DKA100:[GER5.SAMPLE]J5K9L1AA_210972154.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 : 16-AUG-2007 08:00:00 Acquisition date : 21-SEP-2007 21:54:03
Sample ID : J5K9L1AA Sample quantity : 377.70 GRAMS
Sample type : Sample geometry : ES200
Elapsed live time: 0 10:00:00.00 Elapsed real time: 0 10:00:13.27 0.0%
Peak Width (FWHM): 3.00 Confidence level : 5.00 %
Energy tolerance : 1.50 Half life ratio : 8.00
Errors propagated: Yes Systematic Error : 5.00 %
Efficiency type : Empirical Efficiencies at : Peak Energy
Abundance limit : 80.00 WTM error limit : 3.00

Combined Activity-MDA Report

---- Identified Nuclides ----

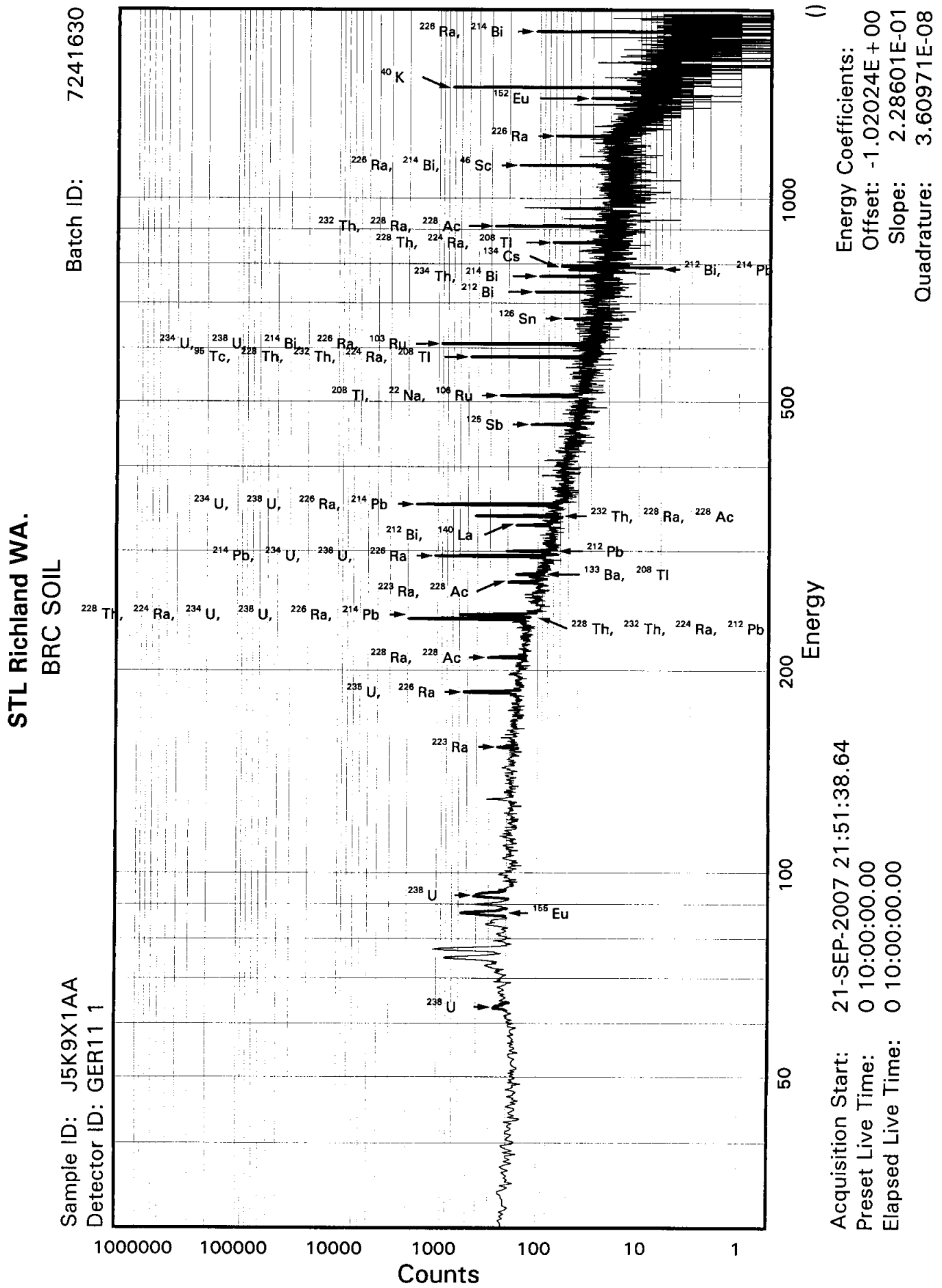
Nuclide	Activity (PCI/GRAM)	Act error	MDA (PCI/GRAM)	MDA error	Act/MDA
K-40	1.357E+01	8.632E-01	1.794E-01	6.113E-03	75.654
TL-208	3.110E-01	2.287E-02	2.021E-02	6.565E-04	15.384
PB-212	9.061E-01	5.921E-02	3.382E-02	1.216E-03	26.789
BI-214	1.819E+00	1.134E-01	3.785E-02	1.229E-03	48.055
PB-214	1.953E+00	1.213E-01	4.043E-02	1.307E-03	48.314
RA-224DA	9.398E-01	6.142E-02	3.508E-02	1.261E-03	26.789
RA-226DA	1.819E+00	1.134E-01	3.785E-02	1.229E-03	48.055
AC-228	8.434E-01	7.348E-02	7.330E-02	2.915E-03	11.507
RA-228DA	8.537E-01	7.438E-02	7.419E-02	2.951E-03	11.507
TH-228DA	8.978E-01	6.602E-02	5.836E-02	1.895E-03	15.384
TH-232DA	9.380E-01	8.869E-02	1.221E-01	3.935E-03	7.685
U-234DA	2.010E+00	1.308E-01	7.416E-02	2.504E-03	27.108
U-235HP	1.759E-01	4.725E-02	1.288E-01	4.381E-03	1.366
U-238DA	1.953E+00	1.213E-01	4.043E-02	1.307E-03	48.314
U-238DHP	1.973E+00	2.438E-01	3.989E-01	1.251E-02	4.946

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

Nuclide	Key-Line Activity (PCI/GRAM)	K.L. Ided	Act error	MDA (PCI/GRAM)	MDA error	Act/MDA
BE-7	-5.744E-02		7.308E-02	2.435E-01	7.911E-03	-0.236
NA-22	-1.231E-02		7.767E-03	2.214E-02	7.425E-04	-0.556
NA-24	-1.131E+09		2.802E+09	Half-Life too short		
SC-46	3.886E-01	+	3.192E-02	6.636E-02	2.282E-03	5.856
CR-51	1.082E-01		1.156E-01	3.865E-01	1.237E-02	0.280
MN-54	1.564E-02		6.826E-03	2.377E-02	9.025E-04	0.658
CO-57	-2.922E-02		4.235E-02	1.381E-01	4.626E-03	-0.212
CO-58	-1.095E-02		8.210E-03	2.706E-02	1.007E-03	-0.405
FE-59	-7.283E-03		2.113E-02	7.187E-02	2.526E-03	-0.101
CO-60	3.645E-03		6.319E-03	2.189E-02	7.474E-04	0.167
ZN-65	5.020E-03		1.720E-02	5.018E-02	1.735E-03	0.100
SE-75	-8.238E-03		9.723E-03	2.923E-02	1.031E-03	-0.282
SR-85	1.831E-02		9.101E-03	2.686E-02	8.611E-04	0.682

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

Nuclide	Key-Line Activity (PCI/GRAM)	K.L. Ided	Act error	MDA (PCI/GRAM)	MDA error	Act/MDA
Y-88	-2.433E-03		6.005E-03	2.077E-02	6.475E-04	-0.117
NB-94	-6.856E-03		5.755E-03	1.895E-02	7.414E-04	-0.362
NB-95	6.431E-02		1.561E-02	4.773E-02	1.705E-03	1.347
TC-95M	-5.331E-04		1.023E-02	3.437E-02	1.241E-03	-0.016
ZR-95	1.519E-02		1.499E-02	5.186E-02	1.837E-03	0.293
ZRNB-95	9.726E-02		2.256E-02	6.904E-02	2.466E-03	1.409
MO-99	-5.234E-05		5.711E-05	Half-Life too short		
RH-101	9.467E-03		6.243E-03	2.116E-02	7.623E-04	0.447
RH-102M	7.976E-03		5.097E-03	1.752E-02	5.695E-04	0.455
RU-103	1.749E-02		1.008E-02	3.468E-02	1.120E-03	0.504
RU-106DA	-1.269E-02		5.743E-02	1.908E-01	6.186E-03	-0.067
AG-108M	-1.051E-03		5.030E-03	1.700E-02	5.540E-04	-0.062
AG-110M	1.411E-02		8.613E-03	2.999E-02	1.186E-03	0.470
SN-113DA	-4.485E-03		9.002E-03	3.039E-02	9.805E-04	-0.148
SB-124	-1.076E-02		8.616E-03	2.705E-02	8.784E-04	-0.398
SB-125	2.091E-02		1.639E-02	5.628E-02	1.833E-03	0.372
SN-126DA	3.288E-02	+	9.162E-03	2.079E-02	6.719E-04	1.581
I-131	-3.271E-03		1.261E-01	4.302E-01	1.392E-02	-0.008
BA-133	1.328E-02		8.241E-03	2.375E-02	7.683E-04	0.559
CS-134	5.272E-02	+	1.120E-02	2.783E-02	1.022E-03	1.895
CS-137DA	-5.208E-03		7.293E-03	2.079E-02	6.683E-04	-0.251
LA-138	-3.324E-03		8.304E-03	2.807E-02	9.581E-04	-0.118
CE-139	-7.926E-03		6.322E-03	2.115E-02	7.476E-04	-0.375
BA-140	-1.664E-01		1.445E-01	4.752E-01	1.534E-02	-0.350
BALA-140	-2.157E-01		9.979E-02	3.210E-01	1.075E-02	-0.672
LA-140	-5.223E-02		2.721E-02	Half-Life too short		
CE-141	6.311E-02		2.231E-02	6.342E-02	2.165E-03	0.995
CE-144	-2.606E-02		4.046E-02	1.321E-01	4.400E-03	-0.197
CEPR-144	-5.092E-02		8.093E-02	2.643E-01	8.801E-03	-0.193
PM-144	6.586E-03		5.663E-03	1.922E-02	6.236E-04	0.343
PM-146	6.789E-03		7.263E-03	2.484E-02	8.098E-04	0.273
EU-152	-3.051E-02		1.757E-02	5.648E-02	1.823E-03	-0.540
EU-154	-4.108E-02		2.114E-02	6.087E-02	2.042E-03	-0.675
EU-155	6.360E-02		1.848E-02	6.134E-02	1.995E-03	1.037
HF-181	-5.313E-03		1.021E-02	3.419E-02	1.109E-03	-0.155
BI-207	6.431E-03		5.243E-03	1.785E-02	5.793E-04	0.360
BI-210M	-6.994E-03		1.010E-02	2.839E-02	9.993E-04	-0.246
BI-212	1.284E+00	+	1.735E-01	3.885E-01	1.604E-02	3.304
RA-223	4.243E-01	+	7.075E-02	1.287E-01	4.514E-03	3.298
AC-227DA	2.935E-01		5.112E-02	1.469E-01	5.286E-03	1.998
TH-234DA	5.487E+00		1.113E+00	3.890E+00	1.479E-01	1.411
NP-237DA	-7.539E-03		1.232E-02	4.054E-02	1.323E-03	-0.186
AM-241HP	5.400E-02		1.464E-02	4.278E-02	1.365E-03	1.262


STL Richland WA.
BRC SOIL
Batch ID: 7241630
Sample ID: J5K9X1AA
Detector ID: GER11 1
Energy Coefficients:
Offset: -1.02024E+00
Slope: 2.28601E-01
Quadrature: 3.60971E-08
Acquisition Start: 21-SEP-2007 21:51:38.64
Preset Live Time: 0 10:00:00.00
Elapsed Live Time: 0 10:00:00.00
Energy
Counts
1000000
100000
10000
1000
100
10
1
50
100
200
500
1000
226 Ra, 214 Bi
40 K
152 Eu
226 Ra
228 Ra, 214 Bi, 46 Sc
232 Th, 228 Ra, 228 Ac
228 Th, 224 Ra, 208 Tl
134 Cs
234 Th, 214 Bi
212 Bi
212 Bi, 214 Pb
126 Sn
234 U, 95 Tc, 238 U, 228 Th, 214 Bi, 232 Th, 226 Ra, 224 Ra, 103 Ru, 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
223 Ra
238 U
155 Eu
238 U

SAMPLE IDENTIFICATION: J5K9X1AA

CONFIGURATION ID: GER11:J5K9X1AA_210972151
TITLE : BRC SOIL
SAMPLE ID : J5K9X1AA

REPORT DATE: 23-SEP-07
ACQUIRE DATE: 21-SEP-07 21:51:38
ELAPSED LIVE TIME: 36000.0 Sec
PRESET LIVE TIME: 0 10:00:00

SAMPLE DATE: 16-AUG-2007 08:45:00.00
CALIB DATE: 21-SEP-2007 05:03:29.48
ELAPSED LIVE TIME: 0 10:00:00
ELAPSED REAL TIME: 0 10:00:35

SAMPLE QUANTITY: 3.6890E+02
SAMPLE GEOMETRY: S200

UNITS: GRAMS
SAMPLE TYPE:

ENERGY OFFSET: -.1020E+01 keV
ENERGY SLOPE: 2.2860E-01 keV/C
ENERGY Q COEFF: 3.6097E-08 keV/C^^2
PEAK SENSITIVITY: 5.000

FWHM OFFSET: 2.5096E-01 keV
FWHM SLOPE: 3.8471E-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 23-SEP-2007 10:08:21

Configuration : $DISK1:[GER11.SAMPLE]J5K9X1AA_210972151.CNF;1
Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6
Sample title : BRC SOIL
Sample date : 16-AUG-2007 08:45:00 Acquisition date : 21-SEP-2007 21:51:38
Sample ID : J5K9X1AA Sample quantity : 368.90 GRAMS
Sample type : Sample geometry : S200
Elapsed live time: 0 10:00:00.00 Elapsed real time: 0 10:00:35.09 0.1%
Start energy : 1.27 End energy : 1874.10
Sensitivity : 5.00 Gaussian : 60.00
Critical level : No

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	63.48	264	1755	0.72	282.12	278	9	7.33E-03	29.3	
2	3	74.98*	1941	2216	0.78	332.46	319	29	5.39E-02	5.3	4.44E+00
3	3	77.19	3041	1997	0.75	342.11	319	29	8.45E-02	3.4	
4	0	84.37*	500	3247	1.70	373.49	365	16	1.39E-02	26.6	
5	0	87.25*	1387	2435	0.80	386.11	381	12	3.85E-02	7.7	
6	0	90.01	774	2193	0.73	398.17	393	11	2.15E-02	12.3	
7	0	92.81	1196	2676	1.33	410.43	405	13	3.32E-02	9.3	
8	0	129.01	416	1773	0.52	568.76	564	10	1.16E-02	19.5	
9	0	154.26	290	1473	0.71	679.18	675	9	8.05E-03	24.6	
10	0	185.96	1855	2266	1.09	817.85	811	14	5.15E-02	5.9	
11	0	209.20	654	1483	0.77	919.45	915	11	1.82E-02	12.0	
12	2	238.60	7168	1455	0.82	1048.02	1041	28	1.99E-01	1.6	8.40E+00
13	2	241.84	2038	1552	1.03	1062.22	1041	28	5.66E-02	4.7	
14	0	270.31	728	1806	1.26	1186.68	1178	20	2.02E-02	14.8	
15	0	277.45	229	951	0.86	1217.91	1213	10	6.36E-03	26.1	
16	0	295.16	4187	1136	0.90	1295.35	1288	14	1.16E-01	2.3	
17	0	300.07	519	972	0.80	1316.85	1311	13	1.44E-02	13.2	
18	0	327.99	370	992	0.95	1438.90	1433	13	1.03E-02	18.3	
19	0	338.19	1507	970	0.93	1483.51	1477	15	4.19E-02	5.2	
20	0	351.79*	7107	1063	0.98	1542.97	1535	16	1.97E-01	1.6	
21	0	409.28	157	593	1.07	1794.32	1789	12	4.37E-03	31.9	
22	0	462.67	398	670	1.04	2027.74	2019	17	1.11E-02	15.7	
23	0	510.69*	530	1041	1.54	2237.64	2228	22	1.47E-02	19.7	
24	0	582.79	2410	740	1.18	2552.82	2544	23	6.70E-02	3.5	
25	0	608.97	5451	772	1.30	2667.23	2654	23	1.51E-01	1.9	
26	0	664.84	155	354	0.62	2911.43	2905	15	4.30E-03	27.6	
27	0	726.82	543	542	1.17	3182.30	3173	22	1.51E-02	11.7	
28	0	767.90	460	467	1.24	3361.82	3352	19	1.28E-02	12.2	
29	0	786.54	332	507	5.55	3443.25	3430	31	9.23E-03	21.4	
30	0	794.65	343	422	1.47	3478.70	3466	25	9.52E-03	17.1	
31	0	859.95	422	345	1.66	3764.01	3753	22	1.17E-02	10.7	
32	0	910.57	1846	387	1.51	3985.19	3972	25	5.13E-02	3.4	
33	0	933.79	304	574	1.82	4086.63	4074	33	8.43E-03	21.0	
34	0	967.37	1420	655	1.84	4233.34	4212	40	3.94E-02	5.6	
35	0	1119.48	1204	442	1.97	4897.79	4885	26	3.34E-02	5.0	
36	0	1237.26	496	452	2.23	5412.14	5400	28	1.38E-02	11.2	
37	0	1376.79	368	220	1.80	6021.41	6004	33	1.02E-02	11.5	
38	0	1406.96	196	166	1.89	6153.17	6141	26	5.45E-03	16.7	
39	0	1459.97*	6627	255	2.00	6384.59	6368	40	1.84E-01	1.5	
40	0	1729.03	196	112	1.35	7558.97	7543	30	5.44E-03	13.8	
41	0	1763.68*	990	83	2.02	7710.20	7693	32	2.75E-02	4.0	
42	0	1846.84	154	71	2.42	8073.06	8061	31	4.27E-03	14.7	

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

VMS Nuclide Identification Report V3.0 Generated 23-SEP-2007 10:08:21

Configuration : $DISK1:[GER11.SAMPLE]J5K9X1AA_210972151.CNF;1
Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.3
Sample title : BRC SOIL
Sample date : 16-AUG-2007 08:45:00 Acquisition date : 21-SEP-2007 21:51:38
Sample ID : J5K9X1AA Sample quantity : 368.90 GRAMS
Sample type : Sample geometry : S200
Elapsed live time: 0 10:00:00.00 Elapsed real time: 0 10:00:35.09 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	6627	10.67*	8.391E-01	1.506E+01	1.506E+01	6.54
TL-208	277.35	229	6.80	2.955E+00	2.319E-01	2.319E-01	26.86
	510.84	530	21.60	1.996E+00	2.503E-01	2.503E-01	20.62
	583.14	2410	84.20*	1.816E+00	3.208E-01	3.208E-01	6.96
	860.37	422	12.46	1.329E+00	5.190E-01	5.190E-01	12.76
PB-212	238.63	7168	44.60*	3.227E+00	1.014E+00	1.014E+00	6.43
	300.09	519	3.41	2.818E+00	1.099E+00	1.099E+00	14.58
BI-214	609.31	5451	46.30*	1.757E+00	1.363E+00	1.363E+00	6.29
	768.36	460	5.04	1.463E+00	1.271E+00	1.271E+00	13.82
	1120.29	1204	15.10	1.051E+00	1.544E+00	1.544E+00	8.05
	1764.49	990	15.80	7.427E-01	1.718E+00	1.718E+00	7.23
PB-214	241.98	2038	7.49	3.202E+00	1.729E+00	1.729E+00	7.84
	295.21	4187	19.20	2.847E+00	1.559E+00	1.559E+00	6.70
	351.92	7107	37.20*	2.553E+00	1.523E+00	1.523E+00	6.37
	785.91	332	1.10	1.434E+00	4.288E+00	4.288E+00	22.36
RA-223	154.21	290	5.58	3.885E+00	2.719E-01	2.728E-01	25.34
	269.46	728	13.60*	3.002E+00	3.631E-01	3.642E-01	16.09
	323.87	------	3.88	2.689E+00	------ Line Not Found		------
RA-224DA	238.63	7168	44.60*	3.227E+00	1.014E+00	1.051E+00	6.43
	240.98	2038	3.95	3.202E+00	3.279E+00	3.401E+00	7.84
	583.14	2410	30.25	1.816E+00	8.930E-01	9.263E-01	6.96
	860.37	422	4.48	1.329E+00	1.443E+00	1.497E+00	12.76
RA-226DA	186.21	1855	3.50	3.658E+00	2.949E+00	2.949E+00	8.54
	241.98	2038	7.49	3.202E+00	1.729E+00	1.729E+00	7.84
	295.22	4187	19.20	2.847E+00	1.559E+00	1.559E+00	6.70
	351.92	7107	37.20	2.553E+00	1.523E+00	1.523E+00	6.37
	609.32	5451	46.30*	1.757E+00	1.363E+00	1.363E+00	6.29
	1120.28	1204	15.10	1.051E+00	1.544E+00	1.544E+00	8.05
	1238.11	496	5.94	9.619E-01	1.766E+00	1.766E+00	12.77
	1764.49	990	15.80	7.427E-01	1.718E+00	1.718E+00	7.23
TH-228DA	238.63	7168	44.60	3.227E+00	1.014E+00	1.051E+00	6.43
	240.98	2038	3.95	3.202E+00	3.279E+00	3.401E+00	7.84
	583.14	2410	30.25*	1.816E+00	8.930E-01	9.263E-01	6.96
	860.37	422	4.48	1.329E+00	1.443E+00	1.497E+00	12.76
TH-232DA	238.63	7168	44.60	3.227E+00	1.014E+00	1.014E+00	6.43
	338.32	1507	12.40*	2.617E+00	9.451E-01	9.451E-01	8.10

Sample ID : J5K9X1AA Acquisition date : 21-SEP-2007 21:51:38

Nuclide Type: NP

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected PCI/GRAM	Decay Corr PCI/GRAM	1-Sigma %Error
	583.14	2410	30.25	1.816E+00	8.930E-01	8.930E-01	6.96
	911.07	1846	27.70	1.264E+00	1.073E+00	1.073E+00	7.94
	964.60	------	5.20	1.201E+00	------	Line Not Found	------
	969.11	------	16.60	1.196E+00	------	Line Not Found	------
U-234DA	241.98	2038	7.49	3.202E+00	1.729E+00	1.729E+00	7.84
	295.22	4187	19.20*	2.847E+00	1.559E+00	1.559E+00	6.70
	351.92	7107	37.20	2.553E+00	1.523E+00	1.523E+00	6.37
	609.31	5451	46.30	1.757E+00	1.363E+00	1.363E+00	6.29
U-238DA	241.98	2038	7.49	3.202E+00	1.729E+00	1.729E+00	7.84
	295.22	4187	19.20	2.847E+00	1.559E+00	1.559E+00	6.70
	351.92	7107	37.20*	2.553E+00	1.523E+00	1.523E+00	6.37
	609.31	5451	46.30	1.757E+00	1.363E+00	1.363E+00	6.29
U-238DHP	63.28	264	3.80*	1.170E+00	1.208E+00	1.208E+00	29.97
	92.59	1196	5.41	3.123E+00	1.441E+00	1.441E+00	11.45

Flag: "*" = Keyline

Unidentified Energy Lines
Sample ID : J5K9X1AA

Acquisition date : 21-SEP-2007 21:51:38

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
3	74.98	1941	2216	0.78	332.46	319	29	5.39E-02	5.3	2.05E+00	
3	77.19	3041	1997	0.75	342.11	319	29	8.45E-02	3.4	2.21E+00	
0	84.37	500	3247	1.70	373.49	365	16	1.39E-02	26.6	2.68E+00	
0	87.25	1387	2435	0.80	386.11	381	12	3.85E-02	7.7	2.84E+00	T
0	90.01	774	2193	0.73	398.17	393	11	2.15E-02	12.3	2.99E+00	
0	129.01	416	1773	0.52	568.76	564	10	1.16E-02	19.5	3.91E+00	
0	209.20	654	1483	0.77	919.45	915	11	1.82E-02	12.0	3.46E+00	T
0	327.99	370	992	0.95	1438.90	1433	13	1.03E-02	18.3	2.67E+00	T
0	409.28	157	593	1.07	1794.32	1789	12	4.37E-03	31.9	2.32E+00	
0	462.67	398	670	1.04	2027.74	2019	17	1.11E-02	15.7	2.14E+00	T
0	664.84	155	354	0.62	2911.43	2905	15	4.30E-03	27.6	1.64E+00	T
0	726.82	543	542	1.17	3182.30	3173	22	1.51E-02	11.7	1.53E+00	T
0	794.65	343	422	1.47	3478.70	3466	25	9.52E-03	17.1	1.42E+00	T
0	933.79	304	574	1.82	4086.63	4074	33	8.43E-03	21.0	1.24E+00	
0	967.37	1420	655	1.84	4233.34	4212	40	3.94E-02	5.6	1.20E+00	
0	1376.79	368	220	1.80	6021.41	6004	33	1.02E-02	11.5	8.79E-01	
0	1406.96	196	166	1.89	6153.17	6141	26	5.45E-03	16.7	8.64E-01	T
0	1729.03	196	112	1.35	7558.97	7543	30	5.44E-03	13.8	7.50E-01	
0	1846.84	154	71	2.42	8073.06	8061	31	4.27E-03	14.7	7.27E-01	

Flags: "T" = Tentatively associated

Sample ID : J5K9X1AA Acquisition date : 21-SEP-2007 21:51:38

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	3.090E-02	20.62	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	3.159E-01	8.05	
		% Abundances Found =		50.00			
TC-95M	61.00D	0.60	204.12*	66.20	--- Not Found ---		Abun.
			582.07	29.30	1.400E+00	6.96	
			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	2.153E+01	6.29	
		% Abundances Found =		5.92			
RU-106DA	368.20D	0.10	511.85	20.60	2.812E-01	20.62	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	3.759E-01	16.83	
			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	1.919E-02	28.28	
			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	2.300E-01	26.86	
			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	5.947E-02	18.30	
			801.93	8.73	--- Not Found ---		
		% Abundances Found =		41.22			
LA-140	40.22H	21.93	328.77	20.50	5.509E+05	19.34	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 : J5K9X1AA Acquisition date : 21-SEP-2007 21:51:38

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	2.246E-01	17.90	
		% Abundances Found =		15.50			
EU-155	4.96Y	0.02	42.90	21.16	--- Not Found ---		Abun.
			86.54	30.90	3.258E-01	10.29	
			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	2.033E+01	20.90	
			452.83	0.31	--- Not Found ---		
			727.33*	6.58	1.098E+00	13.49	
			785.37	1.10	4.288E+00	22.53	
			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-228	1.41E+10Y	0.00	209.28	4.40	8.735E-01	13.54	Abun.
			270.23	3.60	1.372E+00	16.09	
			338.32	11.40	1.028E+00	8.10	
			911.07*	27.70	1.073E+00	7.94	
			969.11	16.60	--- Not Found ---		
		% Abundances Found =		73.94			
RA-228DA	5.75Y	0.02	209.28	4.40	8.841E-01	13.54	Abun.
			338.32	11.40	1.041E+00	8.10	
			911.07*	27.70	1.086E+00	7.94	
			964.60	5.20	--- Not Found ---		
			969.11	16.60	--- Not Found ---		
		% Abundances Found =		66.62			
TH-234DA	4.47E+09Y	0.00	766.41	0.21	3.050E+01	13.82	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	1.911E-01	8.54	
			205.31	4.70	--- Not Found ---		
		% Abundances Found =		78.03			

Flag: "*" = Keyline

VMS Nuclide Identification Report V3.0 Generated 23-SEP-2007 10:08:25

Configuration : $DISK1:[GER11.SAMPLE]J5K9X1AA_210972151.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 : 16-AUG-2007 08:45:00 Acquisition date : 21-SEP-2007 21:51:38
Sample ID : J5K9X1AA Sample quantity : 368.90 GRAMS
Sample type : Sample geometry : S200
Elapsed live time: 0 10:00:00.00 Elapsed real time: 0 10:00:35.09 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 ----

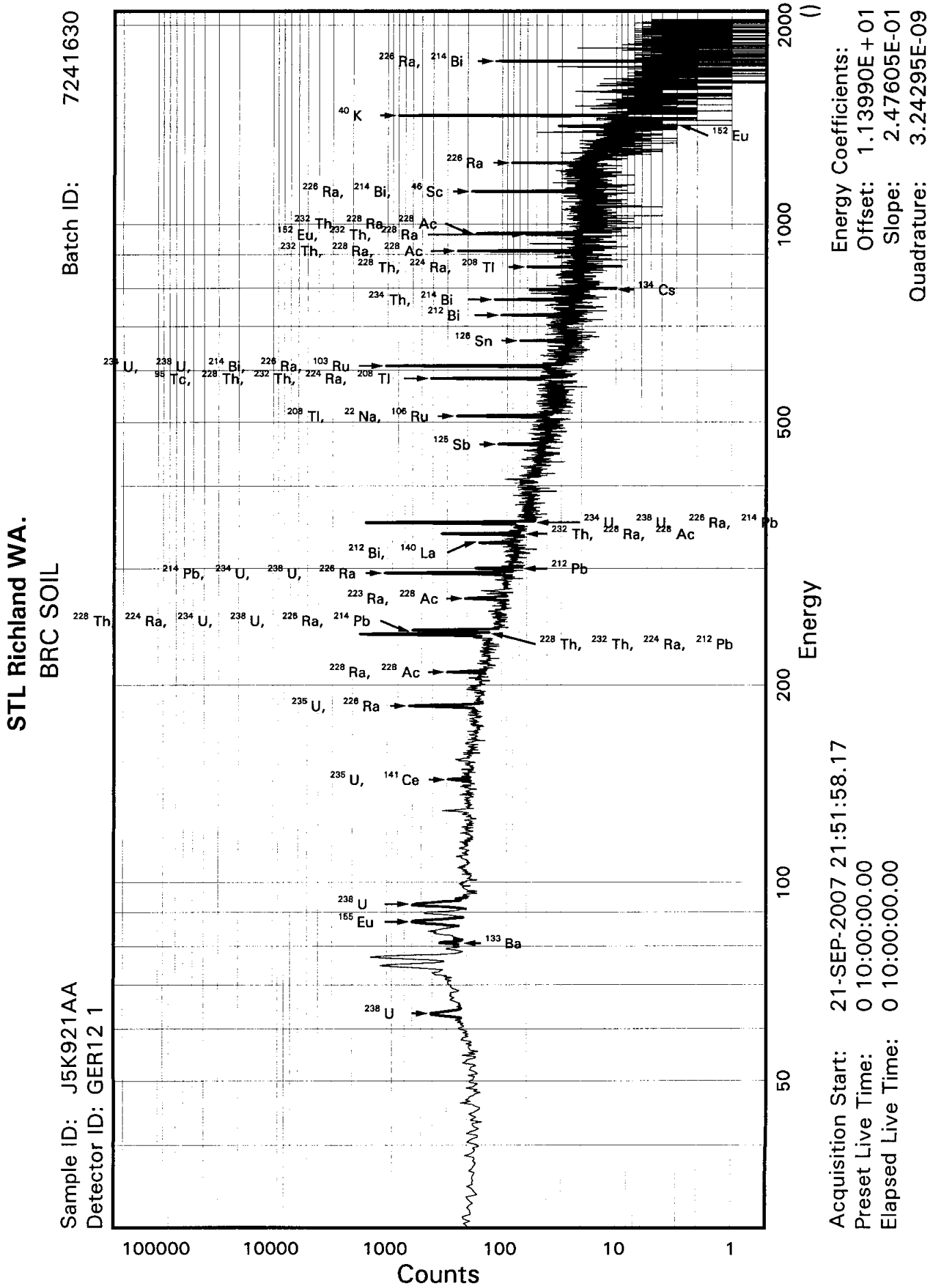
Nuclide	Activity (PCI/GRAM)	Act error	MDA (PCI/GRAM)	MDA error	Act/MDA
K-40	1.506E+01	9.847E-01	1.297E-01	5.125E-03	116.128
TL-208	3.208E-01	2.234E-02	1.420E-02	4.700E-04	22.598
PB-212	1.014E+00	6.519E-02	2.555E-02	9.530E-04	39.680
BI-214	1.363E+00	8.577E-02	2.703E-02	8.970E-04	50.439
PB-214	1.523E+00	9.703E-02	2.932E-02	1.060E-03	51.932
RA-223	3.642E-01	5.859E-02	7.659E-02	2.902E-03	4.756
RA-224DA	1.051E+00	6.761E-02	2.650E-02	9.884E-04	39.680
RA-226DA	1.363E+00	8.578E-02	2.703E-02	8.970E-04	50.438
TH-228DA	9.263E-01	6.450E-02	4.099E-02	1.357E-03	22.598
TH-232DA	9.451E-01	7.657E-02	8.799E-02	3.262E-03	10.742
U-234DA	1.559E+00	1.044E-01	5.430E-02	2.071E-03	28.713
U-238DA	1.523E+00	9.703E-02	2.932E-02	1.060E-03	51.932
U-238DHP	1.208E+00	3.622E-01	8.447E-01	3.502E-02	1.431

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

Nuclide	Key-Line Activity (PCI/GRAM)	K.L. Ided	Act error	MDA (PCI/GRAM)	MDA error	Act/MDA
BE-7	-1.997E-02		5.223E-02	1.738E-01	5.720E-03	-0.115
NA-22	-9.081E-03		5.392E-03	1.775E-02	6.785E-04	-0.512
SC-46	3.159E-01	+	2.542E-02	4.822E-02	1.875E-03	6.552
CR-51	-1.139E-01		8.162E-02	2.662E-01	1.016E-02	-0.428
MN-54	6.306E-03		4.838E-03	1.665E-02	7.773E-04	0.379
CO-57	1.414E-02		3.048E-02	1.041E-01	3.821E-03	0.136
CO-58	-1.227E-02		5.670E-03	1.834E-02	8.187E-04	-0.669
FE-59	-3.884E-02		1.524E-02	4.841E-02	1.964E-03	-0.802
CO-60	6.580E-03		4.674E-03	1.649E-02	6.666E-04	0.399
ZN-65	-4.829E-04		1.264E-02	3.603E-02	1.415E-03	-0.013
SE-75	1.177E-02		6.405E-03	2.192E-02	8.288E-04	0.537
SR-85	2.291E-02		6.166E-03	1.841E-02	6.005E-04	1.244
Y-88	1.159E-02		4.703E-03	1.755E-02	5.608E-04	0.660
NB-94	-5.182E-04		4.128E-03	1.392E-02	6.940E-04	-0.037
NB-95	5.582E-02		1.135E-02	3.451E-02	1.414E-03	1.618

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

Nuclide	Key-Line Activity (PCI/GRAM)	K.L. Ided	Act error	MDA (PCI/GRAM)	MDA error	Act/MDA
TC-95M	1.036E-02		7.497E-03	2.493E-02	9.071E-04	0.416
ZR-95	5.723E-03		1.042E-02	3.595E-02	1.447E-03	0.159
ZRNB-95	8.453E-02		1.645E-02	4.997E-02	2.048E-03	1.692
RH-101	8.290E-03		5.017E-03	1.575E-02	5.703E-04	0.526
RH-102M	-1.864E-03		3.578E-03	1.189E-02	3.914E-04	-0.157
RU-103	4.861E-04		7.062E-03	2.360E-02	7.734E-04	0.021
RU-106DA	2.306E-02		3.849E-02	1.315E-01	4.365E-03	0.175
AG-108M	-8.687E-04		3.534E-03	1.189E-02	3.927E-04	-0.073
AG-110M	4.129E-03		6.051E-03	2.070E-02	1.057E-03	0.199
SN-113DA	-1.511E-02		6.135E-03	2.000E-02	6.566E-04	-0.756
SB-124	-2.783E-04		6.188E-03	1.984E-02	6.581E-04	-0.014
SB-125	1.574E-02		1.144E-02	3.921E-02	1.294E-03	0.401
SN-126DA	1.919E-02	+	5.427E-03	1.342E-02	4.496E-04	1.430
I-131	-7.648E-02		9.282E-02	3.021E-01	1.063E-02	-0.253
BA-133	8.584E-03		5.339E-03	1.712E-02	6.134E-04	0.501
CS-134	5.947E-02	+	1.088E-02	1.963E-02	8.522E-04	3.029
CS-137DA	7.006E-03		5.140E-03	1.510E-02	5.009E-04	0.464
LA-138	-1.714E-03		6.630E-03	2.251E-02	8.947E-04	-0.076
CE-139	1.008E-03		4.553E-03	1.529E-02	5.432E-04	0.066
BA-140	-3.612E-02		1.014E-01	3.340E-01	1.096E-02	-0.108
BALA-140	-1.332E-01		6.757E-02	2.193E-01	8.242E-03	-0.607
CE-141	-4.109E-02		1.385E-02	4.499E-02	1.622E-03	-0.913
CE-144	7.920E-03		2.960E-02	1.012E-01	3.741E-03	0.078
CEPR-144	1.520E-02		5.920E-02	2.023E-01	7.481E-03	0.075
PM-144	-5.996E-03		3.907E-03	1.284E-02	4.264E-04	-0.467
PM-146	1.217E-02		5.201E-03	1.787E-02	5.900E-04	0.681
EU-152	9.961E-03		1.251E-02	4.174E-02	1.531E-03	0.239
EU-154	-1.644E-02		1.468E-02	4.908E-02	1.876E-03	-0.335
EU-155	4.337E-02		1.613E-02	5.355E-02	2.115E-03	0.810
HF-181	-6.286E-03		7.217E-03	2.381E-02	7.829E-04	-0.264
BI-207	7.364E-03		3.668E-03	1.276E-02	4.217E-04	0.577
BI-210M	-7.836E-03		6.738E-03	2.074E-02	7.849E-04	-0.378
BI-212	1.098E+00	+	1.480E-01	2.978E-01	1.319E-02	3.686
AC-227DA	3.756E-02		3.550E-02	1.054E-01	3.926E-03	0.356
AC-228	1.073E+00	+	8.525E-02	1.256E-01	6.499E-03	8.546
RA-228DA	1.086E+00	+	8.629E-02	1.271E-01	6.579E-03	8.546
TH-234DA	2.445E+00		7.008E-01	2.480E+00	1.171E-01	0.986
U-235HP	1.056E-01		2.951E-02	1.004E-01	3.628E-03	1.052
NP-237DA	-9.032E-03		8.783E-03	2.889E-02	1.104E-03	-0.313
AM-241HP	-1.927E-02		3.214E-02	1.095E-01	4.351E-03	-0.176


STL Richland WA.
BRC SOIL
Batch ID: 7241630
Sample ID: J5K921AA
Detector ID: GER12 1
Energy Coefficients:
Offset: 1.13990E+01
Slope: 2.47605E-01
Quadrature: 3.24295E-09
Acquisition Start: 21-SEP-2007 21:51:58.17
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
152 Eu, 232 Th, 228 Ra
232 Th, 228 Ra, 228 Ac
228 Th, 224 Ra, 208 Tl
134 Cs
234 Th, 214 Bi
212 Bi
126 Sn
234 U, 238 U, 214 Bi, 226 Ra, 103 Ru
99 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
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
235 U, 141 Ce
238 U
155 Eu
133 Ba
238 U

SAMPLE IDENTIFICATION: J5K921AA

CONFIGURATION ID: GER12:J5K921AA_210972151
TITLE : BRC SOIL
SAMPLE ID : J5K921AA

REPORT DATE: 22-SEP-07
ACQUIRE DATE: 21-SEP-07 21:51:58
ELAPSED LIVE TIME: 36000.0 Sec
PRESET LIVE TIME: 0 10:00:00

SAMPLE DATE: 16-AUG-2007 08:45:00.00
CALIB DATE: 21-SEP-2007 05:03:44.00
ELAPSED LIVE TIME: 0 10:00:00
ELAPSED REAL TIME: 0 10:00:18

SAMPLE QUANTITY: 3.8890E+02
SAMPLE GEOMETRY: S200

UNITS: GRAMS
SAMPLE TYPE:

ENERGY OFFSET: 1.1399E+01 keV
ENERGY SLOPE: 2.4760E-01 keV/C
ENERGY Q COEFF: 3.2430E-09 keV/C^^2
PEAK SENSITIVITY: 5.000

FWHM OFFSET: 3.9831E-01 keV
FWHM SLOPE: 3.6466E-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 22-SEP-2007 07:52:53

Configuration : $DISK1:[GER12.SAMPLE]J5K921AA_210972151.CNF;1
Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6
Sample title : BRC SOIL
Sample date : 16-AUG-2007 08:45:00 Acquisition date : 21-SEP-2007 21:51:58
Sample ID : J5K921AA Sample quantity : 388.90 GRAMS
Sample type : Sample geometry : S200
Elapsed live time: 0 10:00:00.00 Elapsed real time: 0 10:00:18.98 0.1%
Start energy : 11.65 End energy : 2039.99
Sensitivity : 5.00 Gaussian : 10.00
Critical level : No

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	63.37	648	2324	0.87	209.91	205	10	1.80E-02	14.5	
2	2	72.95*	165	2255	0.86	248.60	244	28	4.59E-03	53.6	3.98E+00
3	2	74.84*	2635	2649	0.85	256.22	244	28	7.32E-02	4.4	
4	2	77.07	4074	2625	0.87	265.22	244	28	1.13E-01	3.0	
5	0	80.90	154	1696	0.48	280.70	279	7	4.28E-03	45.1	
6	0	84.33*	750	3441	1.45	294.55	287	14	2.08E-02	17.6	
7	0	87.17*	1676	2545	1.13	306.00	301	11	4.66E-02	6.5	
8	0	89.82	1037	2189	0.88	316.71	312	10	2.88E-02	9.0	
9	0	92.74	2109	3386	1.23	328.49	322	16	5.86E-02	6.5	
10	0	129.03	409	1724	0.67	475.08	471	9	1.14E-02	19.0	
11	0	143.63	254	1982	0.75	534.02	530	10	7.06E-03	33.3	
12	0	185.92	2145	2617	1.03	704.83	697	16	5.96E-02	5.8	
13	0	209.26	575	1700	0.84	799.10	794	12	1.60E-02	14.9	
14	0	238.63	6063	2171	0.88	917.69	910	14	1.68E-01	2.1	
15	0	241.78	2411	1757	1.04	930.42	924	14	6.70E-02	4.2	
16	0	270.23	729	1789	1.47	1045.35	1036	19	2.02E-02	14.4	
17	0	295.16*	4312	1642	1.01	1146.02	1135	19	1.20E-01	2.8	
18	0	299.88	444	1057	0.93	1165.07	1159	14	1.23E-02	16.2	
19	0	328.00	218	947	0.78	1278.64	1274	11	6.05E-03	28.2	
20	0	338.21	1286	1154	1.18	1319.86	1312	16	3.57E-02	6.5	
21	0	351.92*	7267	1223	1.10	1375.25	1366	17	2.02E-01	1.6	
22	0	462.77	379	606	1.24	1822.92	1816	14	1.05E-02	14.7	
23	0	510.83*	571	1014	1.65	2016.99	2004	26	1.59E-02	18.4	
24	0	583.20	2082	894	1.22	2309.25	2299	23	5.78E-02	4.4	
25	0	609.27*	5601	838	1.28	2414.53	2403	23	1.56E-01	2.0	
26	0	665.35	167	376	1.05	2641.03	2636	14	4.64E-03	25.7	
27	0	727.15	530	485	1.37	2890.60	2880	20	1.47E-02	11.1	
28	0	768.41	491	423	1.09	3057.21	3049	16	1.36E-02	10.4	
29	0	795.52	318	456	1.63	3166.71	3156	26	8.85E-03	19.4	
30	0	860.73	294	313	1.52	3430.03	3419	19	8.18E-03	15.6	
31	0	911.11	1525	510	1.50	3633.48	3620	27	4.24E-02	4.3	
32	0	933.88	279	346	1.70	3725.46	3715	20	7.74E-03	15.1	
33	0	964.58	227	459	1.40	3849.42	3839	19	6.30E-03	20.4	
34	0	969.00	862	403	1.27	3867.25	3857	21	2.39E-02	6.1	
35	0	1120.34	1323	534	1.77	4478.42	4462	34	3.68E-02	5.3	
36	0	1155.05	124	293	1.85	4618.60	4611	18	3.43E-03	29.2	
37	0	1238.08	429	501	1.67	4953.89	4942	23	1.19E-02	12.5	
38	0	1377.51	343	162	1.70	5516.90	5507	22	9.53E-03	9.7	
39	0	1401.72	97	118	1.29	5614.69	5605	16	2.71E-03	23.6	
40	0	1407.97	160	168	1.83	5639.92	5628	23	4.45E-03	19.5	
41	0	1460.64*	6269	550	1.90	5852.60	5836	31	1.74E-01	1.6	
42	0	1729.25	253	86	2.29	6937.27	6922	32	7.03E-03	11.1	
43	0	1764.23	974	212	2.15	7078.49	7063	30	2.71E-02	4.9	

Sample ID : J5K921AA Acquisition date : 21-SEP-2007 21:51:58

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
44	0	1846.98	147	86	1.88	7412.63	7399	27	4.09E-03	16.9	

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

VMS Nuclide Identification Report V3.0 Generated 22-SEP-2007 07:52:54

Configuration : $DISK1:[GER12.SAMPLE]J5K921AA_210972151.CNF;1
Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.3
Sample title : BRC SOIL
Sample date : 16-AUG-2007 08:45:00 Acquisition date : 21-SEP-2007 21:51:58
Sample ID : J5K921AA Sample quantity : 388.90 GRAMS
Sample type : Sample geometry : S200
Elapsed live time: 0 10:00:00.00 Elapsed real time: 0 10:00:18.98 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	6269	10.67*	8.870E-01	1.279E+01	1.279E+01	10.13
TL-208	277.35	------	6.80	3.060E+00	------	Line Not Found	------
	510.84	571	21.60	2.026E+00	2.520E-01	2.520E-01	19.30
	583.14	2082	84.20*	1.844E+00	2.589E-01	2.589E-01	7.42
	860.37	294	12.46	1.377E+00	3.312E-01	3.312E-01	17.51
PB-212	238.63	6063	44.60*	3.358E+00	7.816E-01	7.816E-01	7.04
	300.09	444	3.41	2.910E+00	8.638E-01	8.638E-01	17.47
BI-214	609.31	5601	46.30*	1.787E+00	1.307E+00	1.307E+00	6.36
	768.36	491	5.04	1.504E+00	1.251E+00	1.251E+00	12.58
	1120.29	1323	15.10	1.112E+00	1.521E+00	1.521E+00	8.78
	1764.49	974	15.80	7.551E-01	1.576E+00	1.576E+00	8.51
PB-214	241.98	2411	7.49	3.331E+00	1.866E+00	1.866E+00	7.94
	295.21	4312	19.20	2.940E+00	1.475E+00	1.475E+00	7.06
	351.92	7267	37.20*	2.617E+00	1.441E+00	1.441E+00	6.53
	785.91	------	1.10	1.478E+00	------	Line Not Found	------
RA-224DA	238.63	6063	44.60*	3.358E+00	7.816E-01	8.107E-01	7.04
	240.98	2411	3.95	3.331E+00	3.538E+00	3.669E+00	7.94
	583.14	2082	30.25	1.844E+00	7.206E-01	7.474E-01	7.42
	860.37	294	4.48	1.377E+00	9.212E-01	9.555E-01	17.51
RA-226DA	186.21	2145	3.50	3.841E+00	3.081E+00	3.081E+00	8.93
	241.98	2411	7.49	3.331E+00	1.866E+00	1.866E+00	7.94
	295.22	4312	19.20	2.940E+00	1.475E+00	1.475E+00	7.06
	351.92	7267	37.20	2.617E+00	1.441E+00	1.441E+00	6.53
	609.32	5601	46.30*	1.787E+00	1.307E+00	1.307E+00	6.36
	1120.28	1323	15.10	1.112E+00	1.521E+00	1.522E+00	8.78
	1238.11	429	5.94	1.022E+00	1.363E+00	1.363E+00	14.87
	1764.49	974	15.80	7.551E-01	1.576E+00	1.576E+00	8.51
AC-228	209.28	575	4.40	3.618E+00	6.976E-01	6.976E-01	16.39
	270.23	729	3.60	3.111E+00	1.256E+00	1.256E+00	15.85
	338.32	1286	11.40	2.688E+00	8.101E-01	8.101E-01	9.10
	911.07	1525	27.70*	1.316E+00	8.072E-01	8.072E-01	9.50
	969.11	862	16.60	1.253E+00	7.998E-01	7.998E-01	10.13
RA-228DA	209.28	575	4.40	3.618E+00	6.976E-01	7.061E-01	16.39
	338.32	1286	11.40	2.688E+00	8.101E-01	8.199E-01	9.10
	911.07	1525	27.70*	1.316E+00	8.072E-01	8.170E-01	9.50
	964.60	227	5.20	1.257E+00	6.697E-01	6.778E-01	21.96

Sample ID : J5K921AA Acquisition date : 21-SEP-2007 21:51:58

Nuclide Type: NP

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected PCI/GRAM	Decay Corr PCI/GRAM	1-Sigma %Error
	969.11	862	16.60	1.253E+00	7.998E-01	8.096E-01	10.13
TH-228DA	238.63	6063	44.60	3.358E+00	7.816E-01	8.107E-01	7.04
	240.98	2411	3.95	3.331E+00	3.538E+00	3.669E+00	7.94
	583.14	2082	30.25*	1.844E+00	7.206E-01	7.474E-01	7.42
	860.37	294	4.48	1.377E+00	9.212E-01	9.555E-01	17.51
TH-232DA	238.63	6063	44.60	3.358E+00	7.816E-01	7.816E-01	7.04
	338.32	1286	12.40*	2.688E+00	7.447E-01	7.447E-01	9.10
	583.14	2082	30.25	1.844E+00	7.206E-01	7.206E-01	7.42
	911.07	1525	27.70	1.316E+00	8.072E-01	8.072E-01	9.50
	964.60	227	5.20	1.257E+00	6.697E-01	6.697E-01	21.96
	969.11	862	16.60	1.253E+00	7.998E-01	7.998E-01	10.13
U-234DA	241.98	2411	7.49	3.331E+00	1.866E+00	1.866E+00	7.94
	295.22	4312	19.20*	2.940E+00	1.475E+00	1.475E+00	7.06
	351.92	7267	37.20	2.617E+00	1.441E+00	1.441E+00	6.53
	609.31	5601	46.30	1.787E+00	1.307E+00	1.307E+00	6.36
U-235HP	143.76	254	10.50*	4.203E+00	1.111E-01	1.111E-01	33.98
	185.71	2145	54.00	3.841E+00	1.997E-01	1.997E-01	8.93
	205.31	------	4.70	3.656E+00	------ Line Not Found		------
U-238DA	241.98	2411	7.49	3.331E+00	1.866E+00	1.866E+00	7.94
	295.22	4312	19.20	2.940E+00	1.475E+00	1.475E+00	7.06
	351.92	7267	37.20*	2.617E+00	1.441E+00	1.441E+00	6.53
	609.31	5601	46.30	1.787E+00	1.307E+00	1.307E+00	6.36
U-238DHP	63.28	648	3.80*	2.184E+00	1.508E+00	1.508E+00	15.79
	92.59	2109	5.41	3.841E+00	1.959E+00	1.959E+00	9.58

Nuclide Type: FP

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected PCI/GRAM	Decay Corr PCI/GRAM	1-Sigma %Error
CE-141	145.44	254	48.40*	4.203E+00	2.410E-02	5.279E-02	33.98

Flag: "*" = Keyline

Sample ID : J5K921AA Acquisition date : 21-SEP-2007 21:51:58

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
2	72.95	165	2255	0.86	248.60	244	28	4.59E-03	53.6	2.90E+00	
2	74.84	2635	2649	0.85	256.22	244	28	7.32E-02	4.4	3.02E+00	
2	77.07	4074	2625	0.87	265.22	244	28	1.13E-01	3.0	3.15E+00	
0	80.90	154	1696	0.48	280.70	279	7	4.28E-03	45.1	3.36E+00	T
0	84.33	750	3441	1.45	294.55	287	14	2.08E-02	17.6	3.53E+00	
0	87.17	1676	2545	1.13	306.00	301	11	4.66E-02	6.5	3.65E+00	T
0	89.82	1037	2189	0.88	316.71	312	10	2.88E-02	9.0	3.74E+00	
0	129.03	409	1724	0.67	475.08	471	9	1.14E-02	19.0	4.26E+00	
0	328.00	218	947	0.78	1278.64	1274	11	6.05E-03	28.2	2.74E+00	T
0	462.77	379	606	1.24	1822.92	1816	14	1.05E-02	14.7	2.17E+00	T
0	665.35	167	376	1.05	2641.03	2636	14	4.64E-03	25.7	1.68E+00	T
0	727.15	530	485	1.37	2890.60	2880	20	1.47E-02	11.1	1.57E+00	T
0	795.52	318	456	1.63	3166.71	3156	26	8.85E-03	19.4	1.46E+00	T
0	933.88	279	346	1.70	3725.46	3715	20	7.74E-03	15.1	1.29E+00	
0	1155.05	124	293	1.85	4618.60	4611	18	3.43E-03	29.2	1.08E+00	
0	1377.51	343	162	1.70	5516.90	5507	22	9.53E-03	9.7	9.33E-01	
0	1401.72	97	118	1.29	5614.69	5605	16	2.71E-03	23.6	9.19E-01	
0	1407.97	160	168	1.83	5639.92	5628	23	4.45E-03	19.5	9.15E-01	T
0	1729.25	253	86	2.29	6937.27	6922	32	7.03E-03	11.1	7.68E-01	
0	1846.98	147	86	1.88	7412.63	7399	27	4.09E-03	16.9	7.27E-01	

Flags: "T" = Tentatively associated

Sample ID : J5K921AA Acquisition date : 21-SEP-2007 21:51:58

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	3.112E-02	19.30	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	3.113E-01	8.78	
		% Abundances Found =		50.00			
TC-95M	61.00D	0.60	204.12*	66.20	--- Not Found ---		Abun.
			582.07	29.30	1.130E+00	7.42	
			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	2.065E+01	6.36	
		% Abundances Found =		5.92			
RU-106DA	368.20D	0.10	511.85	20.60	2.832E-01	19.30	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	3.337E-01	15.92	
			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	1.925E-02	26.42	
			695.00	99.95	--- Not Found ---		
		% Abundances Found =		33.59			
BA-133	10.50Y	0.01	81.00	33.00	2.700E-02	45.58	Abun.
			276.40	6.90	--- Not Found ---		
			302.84	17.80	--- Not Found ---		
			356.00*	62.05	--- Not Found ---		
			383.85	8.70	--- Not Found ---		
		% Abundances Found =		25.69			
CS-134	2.06Y	0.05	569.31	15.43	--- Not Found ---		Abun.
			604.70	97.60	--- Not Found ---		
			795.84*	85.40	5.086E-02	20.72	
			801.93	8.73	--- Not Found ---		
		% Abundances Found =		41.22			
LA-140	40.22H	21.93	328.77	20.50	2.988E+05	28.92	Decay,Abun.
			487.03	45.50	--- Not Found ---		
			815.85	23.50	--- Not Found ---		
			1596.49*	95.49	--- Not Found ---		
		% Abundances Found =		11.08			

Sample ID : J5K921AA Acquisition date : 21-SEP-2007 21:51:58

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	2.431E-01	21.96	
			1085.78	10.00	--- Not Found ---		
			1112.02	13.30	--- Not Found ---		
			1407.95	20.70	1.640E-01	22.11	
		% Abundances Found =		26.29			
EU-155	4.96Y	0.02	42.90	21.16	--- Not Found ---		Abun.
			86.54	30.90	2.914E-01	9.71	
			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	1.102E+01	29.98	
			452.83	0.31	--- Not Found ---		
			727.33*	6.58	9.922E-01	13.10	
			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	3.337E-01	15.85	
			323.87	3.88	--- Not Found ---		
		% Abundances Found =		58.98			
TH-234DA	4.47E+09Y	0.00	766.41	0.21	3.002E+01	12.58	Abun.
			1001.03*	0.65	--- Not Found ---		
		% Abundances Found =		24.42			

Flag: "*" = Keyline

VMS Nuclide Identification Report V3.0 Generated 22-SEP-2007 07:52:58

Configuration : $DISK1:[GER12.SAMPLE]J5K921AA_210972151.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 : 16-AUG-2007 08:45:00 Acquisition date : 21-SEP-2007 21:51:58
Sample ID : J5K921AA Sample quantity : 388.90 GRAMS
Sample type : Sample geometry : S200
Elapsed live time: 0 10:00:00.00 Elapsed real time: 0 10:00:18.98 0.1%
Peak Width (FWHM): 3.00 Confidence level : 5.00 %
Energy tolerance : 2.00 Half life ratio : 8.00
Errors propagated: Yes Systematic Error : 5.00 %
Efficiency type : Empirical Efficiencies at : Peak Energy
Abundance limit : 80.00 WTM error limit : 3.00

Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Activity (PCI/GRAM)	Act error	MDA (PCI/GRAM)	MDA error	Act/MDA
K-40	1.279E+01	1.295E+00	1.569E-01	1.358E-02	81.506
CE-141	5.279E-02	1.794E-02	4.399E-02	1.869E-03	1.200
TL-208	2.589E-01	1.921E-02	1.404E-02	4.667E-04	18.443
PB-212	7.816E-01	5.501E-02	2.477E-02	1.114E-03	31.552
BI-214	1.307E+00	8.315E-02	2.686E-02	9.106E-04	48.664
PB-214	1.441E+00	9.410E-02	2.788E-02	1.077E-03	51.683
RA-224DA	8.107E-01	5.706E-02	2.569E-02	1.156E-03	31.552
RA-226DA	1.307E+00	8.315E-02	2.686E-02	9.106E-04	48.664
AC-228	8.072E-01	7.672E-02	4.696E-02	3.207E-03	17.189
RA-228DA	8.170E-01	7.765E-02	4.753E-02	3.246E-03	17.189
TH-228DA	7.474E-01	5.545E-02	4.053E-02	1.347E-03	18.443
TH-232DA	7.447E-01	6.773E-02	8.581E-02	3.333E-03	8.678
U-234DA	1.475E+00	1.041E-01	5.221E-02	2.161E-03	28.248
U-235HP	1.111E-01	3.775E-02	9.127E-02	3.830E-03	1.217
U-238DA	1.441E+00	9.410E-02	2.788E-02	1.077E-03	51.683
U-238DHP	1.508E+00	2.381E-01	4.841E-01	1.853E-02	3.115

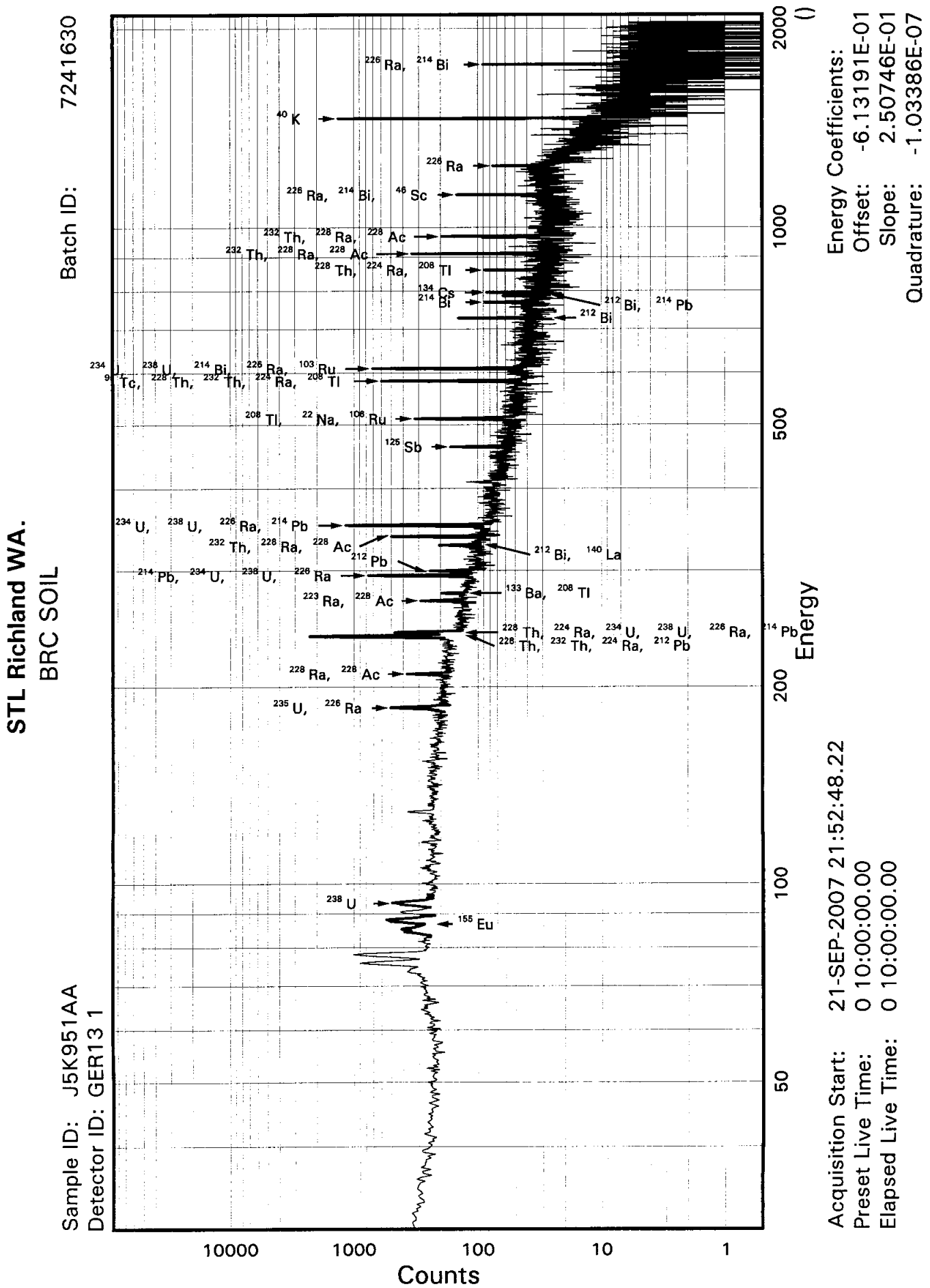
---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (PCI/GRAM)	K.L. Ided	Act error	MDA (PCI/GRAM)	MDA error	Act/MDA
BE-7	-1.124E-01		4.896E-02	1.563E-01	5.278E-03	-0.719
NA-22	-6.785E-03		4.801E-03	1.559E-02	1.192E-03	-0.435
SC-46	3.113E-01	+	2.733E-02	4.401E-02	2.156E-03	7.074
CR-51	3.596E-02		7.743E-02	2.569E-01	1.002E-02	0.140
MN-54	3.861E-04		4.411E-03	1.501E-02	8.861E-04	0.026
CO-57	-1.192E-02		2.943E-02	9.773E-02	3.888E-03	-0.122
CO-58	-1.894E-02		5.431E-03	1.675E-02	9.277E-04	-1.131
FE-59	-2.155E-02		1.379E-02	4.543E-02	2.335E-03	-0.474
CO-60	9.965E-03		4.450E-03	1.535E-02	1.499E-03	0.649
ZN-65	2.091E-02		1.136E-02	3.414E-02	1.692E-03	0.613
SE-75	2.526E-03		6.142E-03	2.061E-02	8.993E-04	0.123
SR-85	2.383E-02		5.960E-03	1.776E-02	5.570E-04	1.342

Sample ID : J5K921AA Acquisition date : 21-SEP-2007 21:51:58

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

Nuclide	Key-Line Activity (PCI/GRAM)	K.L. Ided	Act error	MDA (PCI/GRAM)	MDA error	Act/MDA
Y-88	7.387E-03		4.621E-03	1.693E-02	6.293E-04	0.436
NB-94	-1.251E-03		3.899E-03	1.315E-02	8.514E-04	-0.095
NB-95	3.902E-02		1.027E-02	3.113E-02	1.520E-03	1.254
TC-95M	4.271E-03		6.956E-03	2.371E-02	1.093E-03	0.180
ZR-95	1.179E-02		1.043E-02	3.527E-02	1.678E-03	0.334
ZRNB-95	5.795E-02		1.481E-02	4.489E-02	2.193E-03	1.291
RH-101	8.161E-03		4.642E-03	1.510E-02	6.980E-04	0.540
RH-102M	-4.319E-03		3.376E-03	1.103E-02	3.740E-04	-0.392
RU-103	-1.020E-02		6.875E-03	2.228E-02	7.248E-04	-0.458
RU-106DA	1.402E-02		3.580E-02	1.220E-01	4.172E-03	0.115
AG-108M	-6.815E-04		3.399E-03	1.139E-02	4.108E-04	-0.060
AG-110M	-1.146E-02		5.792E-03	1.865E-02	1.249E-03	-0.615
SN-113DA	-6.904E-03		5.918E-03	1.968E-02	7.408E-04	-0.351
SB-124	-1.728E-03		5.952E-03	1.937E-02	6.537E-04	-0.089
SB-125	9.778E-03		1.105E-02	3.753E-02	1.363E-03	0.261
SN-126DA	1.925E-02	+	5.087E-03	1.353E-02	4.830E-04	1.423
I-131	4.593E-02		8.606E-02	2.945E-01	1.130E-02	0.156
BA-133	-2.683E-04		5.246E-03	1.586E-02	6.115E-04	-0.017
CS-134	5.086E-02	+	1.054E-02	1.825E-02	9.706E-04	2.786
CS-137DA	8.235E-03		4.717E-03	1.398E-02	4.911E-04	0.589
LA-138	-1.879E-03		5.652E-03	1.936E-02	1.722E-03	-0.097
CE-139	-9.197E-03		4.461E-03	1.427E-02	6.689E-04	-0.644
BA-140	-9.850E-02		9.376E-02	3.153E-01	1.010E-02	-0.312
BALA-140	4.887E-02		6.048E-02	2.119E-01	1.517E-02	0.231
CE-144	4.573E-02		2.855E-02	9.599E-02	3.739E-03	0.476
CEPR-144	9.221E-02		5.711E-02	1.920E-01	7.479E-03	0.480
PM-144	-2.199E-03		3.584E-03	1.201E-02	4.098E-04	-0.183
PM-146	1.666E-02		5.070E-03	1.738E-02	6.098E-04	0.959
EU-152	-8.972E-03		1.161E-02	3.921E-02	1.520E-03	-0.229
EU-154	-2.254E-02		1.337E-02	4.301E-02	3.286E-03	-0.524
EU-155	3.622E-02		1.425E-02	4.849E-02	2.038E-03	0.747
HF-181	1.297E-02		6.913E-03	2.355E-02	7.890E-04	0.551
BI-207	5.664E-03		3.486E-03	1.208E-02	3.974E-04	0.469
BI-210M	-4.628E-03		7.024E-03	1.992E-02	8.675E-04	-0.232
BI-212	9.922E-01	+	1.299E-01	2.698E-01	1.326E-02	3.677
RA-223	3.337E-01	+	5.289E-02	9.040E-02	3.917E-03	3.691
AC-227DA	1.020E-01		3.451E-02	1.014E-01	4.571E-03	1.007
TH-234DA	1.188E+00		6.461E-01	2.220E+00	1.359E-01	0.535
NP-237DA	-6.133E-03		8.463E-03	2.772E-02	1.104E-03	-0.221
AM-241HP	-1.334E-02		1.737E-02	5.703E-02	2.040E-03	-0.234


STL Richland WA.
BRC SOIL
Batch ID: 7241630
Sample ID: J5K951AA
Detector ID: GER13 1
Energy Coefficients:
Offset: -6.13191E-01
Slope: 2.50746E-01
Quadrature: -1.03386E-07
Acquisition Start: 21-SEP-2007 21:52:48.22
Preset Live Time: 0 10:00:00.00
Elapsed Live Time: 0 10:00:00.00
Energy
Counts
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, 214 Pb
212 Bi
234 U, 238 U, 214 Bi, 226 Ra, 103 Ru
9 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
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
238 U
155 Eu

SAMPLE IDENTIFICATION: J5K951AA

CONFIGURATION ID: GER13:J5K951AA_210972152
TITLE : BRC SOIL
SAMPLE ID : J5K951AA

REPORT DATE: 23-SEP-07
ACQUIRE DATE: 21-SEP-07 21:52:48
ELAPSED LIVE TIME: 36000.0 Sec
PRESET LIVE TIME: 0 10:00:00

SAMPLE DATE: 16-AUG-2007 09:30:00.00
CALIB DATE: 21-SEP-2007 05:03:58.49
ELAPSED LIVE TIME: 0 10:00:00
ELAPSED REAL TIME: 0 10:00:22

SAMPLE QUANTITY: 3.5220E+02
SAMPLE GEOMETRY: S200

UNITS: GRAMS
SAMPLE TYPE:

ENERGY OFFSET: -.6132E+00 keV
ENERGY SLOPE: 2.5075E-01 keV/C
ENERGY Q COEFF: -.1034E-06 keV/C^^2
PEAK SENSITIVITY: 5.000

FWHM OFFSET: 5.2337E-01 keV
FWHM SLOPE: 3.7620E-02 sqr keV
ITERATIONS: 10
GAUSSIAN SENSITIVITY: 70.00 %

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 23-SEP-2007 10:11:07

Configuration : $DISK1:[GER13.SAMPLE]J5K951AA_210972152.CNF;1
Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6
Sample title : BRC SOIL
Sample date : 16-AUG-2007 09:30:00 Acquisition date : 21-SEP-2007 21:52:48
Sample ID : J5K951AA Sample quantity : 352.20 GRAMS
Sample type : Sample geometry : S200
Elapsed live time: 0 10:00:00.00 Elapsed real time: 0 10:00:22.61 0.1%
Start energy : 19.45 End energy : 2046.56
Sensitivity : 5.00 Gaussian : 70.00
Critical level : No

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	1	75.85*	1529	2901	0.79	305.00	300	20	4.25E-02	7.1	1.80E+00
2	1	78.04	2792	3165	0.90	313.74	300	20	7.75E-02	4.4	
3	0	86.85*	1949	6675	3.17	348.86	334	26	5.41E-02	12.1	
4	0	90.58	726	2537	1.02	363.74	359	10	2.02E-02	13.5	
5	0	93.44	1239	4131	1.32	375.16	370	17	3.44E-02	12.2	
6	0	115.69	183	1738	0.71	463.90	461	8	5.10E-03	40.1	
7	0	129.29	541	2533	0.92	518.17	513	11	1.50E-02	18.5	
8	0	185.83	1869	3572	1.28	743.79	733	19	5.19E-02	8.0	
9	0	209.24	788	2512	0.94	837.20	831	14	2.19E-02	14.0	
10	4	238.47*	9658	2289	1.10	953.87	946	28	2.68E-01	1.5	1.57E+00
11	4	241.47	2370	2417	1.62	965.85	946	28	6.58E-02	5.6	
12	0	269.99	897	2016	1.11	1079.67	1072	17	2.49E-02	11.9	
13	0	277.24	272	1422	1.03	1108.62	1104	11	7.55E-03	27.6	
14	0	295.00*	3051	2007	1.16	1179.49	1170	18	8.47E-02	4.0	
15	0	299.91	700	1620	1.12	1199.12	1192	16	1.94E-02	13.4	
16	0	327.93	467	1549	1.09	1310.98	1302	15	1.30E-02	19.0	
17	0	338.13	2099	1394	1.25	1351.70	1343	16	5.83E-02	4.5	
18	0	351.68*	5635	1677	1.27	1405.79	1396	19	1.57E-01	2.3	
19	0	409.83	80	1102	0.72	1637.99	1630	13	2.21E-03	87.0	
20	0	462.87	642	908	1.22	1849.83	1842	17	1.78E-02	11.5	
21	0	510.70*	941	1472	1.76	2040.89	2028	29	2.61E-02	14.2	
22	0	583.03*	3167	1088	1.40	2329.84	2319	22	8.80E-02	3.4	
23	0	609.18*	3905	994	1.46	2434.37	2422	22	1.08E-01	2.8	
24	0	727.22	762	668	1.71	2906.15	2896	19	2.12E-02	7.8	
25	0	768.32	433	708	1.72	3070.46	3059	22	1.20E-02	14.1	
26	0	785.79	164	514	1.20	3140.33	3132	16	4.56E-03	27.6	
27	0	795.11	418	585	1.62	3177.58	3166	21	1.16E-02	13.2	
28	0	860.49	407	595	1.94	3439.04	3428	21	1.13E-02	13.6	
29	0	911.09*	2235	807	1.60	3641.42	3626	32	6.21E-02	4.0	
30	0	934.20	226	424	1.78	3733.86	3725	18	6.27E-03	19.4	
31	0	968.21*	1576	925	1.82	3869.93	3851	32	4.38E-02	5.6	
32	0	1120.16*	939	787	1.92	4478.01	4462	29	2.61E-02	8.3	
33	0	1238.01	290	671	1.77	4949.85	4940	20	8.07E-03	19.5	
34	0	1377.89	210	321	2.04	5510.10	5496	25	5.84E-03	20.6	
35	0	1460.57*	11326	676	2.06	5841.39	5824	34	3.15E-01	1.2	
36	0	1588.03	166	150	1.61	6352.30	6342	20	4.60E-03	15.9	
37	0	1729.09	163	109	2.48	6917.94	6899	29	4.54E-03	15.7	
38	0	1763.87*	641	132	1.88	7057.44	7044	26	1.78E-02	6.1	
39	0	1846.39	125	86	1.88	7388.54	7371	31	3.48E-03	18.6	

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

VMS Nuclide Identification Report V3.0 Generated 23-SEP-2007 10:11:08

Configuration : $DISK1:[GER13.SAMPLE]J5K951AA_210972152.CNF;1
Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.3
Sample title : BRC SOIL
Sample date : 16-AUG-2007 09:30:00 Acquisition date : 21-SEP-2007 21:52:48
Sample ID : J5K951AA Sample quantity : 352.20 GRAMS
Sample type : Sample geometry : S200
Elapsed live time: 0 10:00:00.00 Elapsed real time: 0 10:00:22.61 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	11326	10.67*	7.699E-01	2.939E+01	2.939E+01	6.55
TL-208	277.35	272	6.80	2.835E+00	3.007E-01	3.007E-01	28.29
	510.84	941	21.60	1.898E+00	4.892E-01	4.892E-01	15.35
	583.14	3167	84.20*	1.721E+00	4.658E-01	4.658E-01	6.87
	860.37	407	12.46	1.247E+00	5.584E-01	5.584E-01	15.46
PB-212	238.63	9658	44.60*	3.095E+00	1.492E+00	1.492E+00	6.55
	300.09	700	3.41	2.702E+00	1.619E+00	1.619E+00	14.86
BI-214	609.31	3905	46.30*	1.665E+00	1.080E+00	1.080E+00	6.63
	768.36	433	5.04	1.378E+00	1.330E+00	1.330E+00	15.58
	1120.29	939	15.10	9.771E-01	1.356E+00	1.356E+00	10.55
	1764.49	641	15.80	6.731E-01	1.284E+00	1.284E+00	8.60
PB-214	241.98	2370	7.49	3.073E+00	2.195E+00	2.195E+00	8.49
	295.21	3051	19.20	2.729E+00	1.241E+00	1.241E+00	7.55
	351.92	5635	37.20*	2.443E+00	1.322E+00	1.322E+00	6.58
	785.91	164	1.10	1.351E+00	2.355E+00	2.355E+00	28.44
RA-224DA	238.63	9658	44.60*	3.095E+00	1.492E+00	1.547E+00	6.55
	240.98	2370	3.95	3.073E+00	4.162E+00	4.317E+00	8.49
	583.14	3167	30.25	1.721E+00	1.297E+00	1.345E+00	6.87
	860.37	407	4.48	1.247E+00	1.553E+00	1.611E+00	15.46
RA-226DA	186.21	1869	3.50	3.493E+00	3.258E+00	3.258E+00	10.22
	241.98	2370	7.49	3.073E+00	2.195E+00	2.195E+00	8.49
	295.22	3051	19.20	2.729E+00	1.241E+00	1.241E+00	7.55
	351.92	5635	37.20	2.443E+00	1.322E+00	1.322E+00	6.58
	609.32	3905	46.30*	1.665E+00	1.080E+00	1.080E+00	6.63
	1120.28	939	15.10	9.771E-01	1.356E+00	1.356E+00	10.55
	1238.11	290	5.94	8.903E-01	1.170E+00	1.170E+00	20.49
	1764.49	641	15.80	6.731E-01	1.284E+00	1.284E+00	8.60
AC-228	209.28	788	4.40	3.315E+00	1.152E+00	1.152E+00	15.35
	270.23	897	3.60	2.880E+00	1.845E+00	1.845E+00	13.53
	338.32	2099	11.40	2.505E+00	1.567E+00	1.567E+00	7.72
	911.07	2235	27.70*	1.184E+00	1.453E+00	1.453E+00	8.52
	969.11	1576	16.60	1.120E+00	1.807E+00	1.807E+00	9.19
RA-228DA	209.28	788	4.40	3.315E+00	1.152E+00	1.166E+00	15.35
	338.32	2099	11.40	2.505E+00	1.567E+00	1.586E+00	7.72
	911.07	2235	27.70*	1.184E+00	1.453E+00	1.470E+00	8.52
	964.60	------	5.20	1.124E+00	------ Line Not Found		------

Sample ID : J5K951AA Acquisition date : 21-SEP-2007 21:52:48

Nuclide Type: NP

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected PCI/GRAM	Decay Corr PCI/GRAM	1-Sigma %Error
	969.11	1576	16.60	1.120E+00	1.807E+00	1.829E+00	9.19
TH-228DA	238.63	9658	44.60	3.095E+00	1.492E+00	1.547E+00	6.55
	240.98	2370	3.95	3.073E+00	4.162E+00	4.317E+00	8.49
	583.14	3167	30.25*	1.721E+00	1.297E+00	1.345E+00	6.87
	860.37	407	4.48	1.247E+00	1.553E+00	1.611E+00	15.46
TH-232DA	238.63	9658	44.60	3.095E+00	1.492E+00	1.492E+00	6.55
	338.32	2099	12.40*	2.505E+00	1.441E+00	1.441E+00	7.72
	583.14	3167	30.25	1.721E+00	1.297E+00	1.297E+00	6.87
	911.07	2235	27.70	1.184E+00	1.453E+00	1.453E+00	8.52
	964.60	------	5.20	1.124E+00	------ Line Not Found		------
	969.11	1576	16.60	1.120E+00	1.807E+00	1.807E+00	9.19
U-234DA	241.98	2370	7.49	3.073E+00	2.195E+00	2.195E+00	8.49
	295.22	3051	19.20*	2.729E+00	1.241E+00	1.241E+00	7.55
	351.92	5635	37.20	2.443E+00	1.322E+00	1.322E+00	6.58
	609.31	3905	46.30	1.665E+00	1.080E+00	1.080E+00	6.63
U-238DA	241.98	2370	7.49	3.073E+00	2.195E+00	2.195E+00	8.49
	295.22	3051	19.20	2.729E+00	1.241E+00	1.241E+00	7.55
	351.92	5635	37.20*	2.443E+00	1.322E+00	1.322E+00	6.58
	609.31	3905	46.30	1.665E+00	1.080E+00	1.080E+00	6.63

Flag: "*" = Keyline

Sample ID : J5K951AA Acquisition date : 21-SEP-2007 21:52:48

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
1	75.85	1529	2901	0.79	305.00	300	20	4.25E-02	7.1	1.75E+00	
1	78.04	2792	3165	0.90	313.74	300	20	7.75E-02	4.4	1.90E+00	
0	86.85	1949	6675	3.17	348.86	334	26	5.41E-02	12.1	2.44E+00	T
0	90.58	726	2537	1.02	363.74	359	10	2.02E-02	13.5	2.64E+00	
0	93.44	1239	4131	1.32	375.16	370	17	3.44E-02	12.2	2.78E+00	T
0	115.69	183	1738	0.71	463.90	461	8	5.10E-03	40.1	3.48E+00	
0	129.29	541	2533	0.92	518.17	513	11	1.50E-02	18.5	3.65E+00	
0	327.93	467	1549	1.09	1310.98	1302	15	1.30E-02	19.0	2.55E+00	T
0	409.83	80	1102	0.72	1637.99	1630	13	2.21E-03	87.0	2.21E+00	
0	462.87	642	908	1.22	1849.83	1842	17	1.78E-02	11.5	2.03E+00	T
0	727.22	762	668	1.71	2906.15	2896	19	2.12E-02	7.8	1.44E+00	T
0	795.11	418	585	1.62	3177.58	3166	21	1.16E-02	13.2	1.34E+00	T
0	934.20	226	424	1.78	3733.86	3725	18	6.27E-03	19.4	1.16E+00	
0	1377.89	210	321	2.04	5510.10	5496	25	5.84E-03	20.6	8.09E-01	
0	1588.03	166	150	1.61	6352.30	6342	20	4.60E-03	15.9	7.21E-01	
0	1729.09	163	109	2.48	6917.94	6899	29	4.54E-03	15.7	6.81E-01	
0	1846.39	125	86	1.88	7388.54	7371	31	3.48E-03	18.6	6.57E-01	

Flags: "T" = Tentatively associated

Sample ID : J5K951AA Acquisition date : 21-SEP-2007 21:52:48

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	6.041E-02	15.35	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	2.774E-01	10.55	
		% Abundances Found =		50.00			
TC-95M	61.00D	0.60	204.12*	66.20	--- Not Found ---		Abun.
			582.07	29.30	2.032E+00	6.87	
			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	1.705E+01	6.63	
		% Abundances Found =		5.92			
RU-106DA	368.20D	0.10	511.85	20.60	5.497E-01	15.35	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	6.670E-01	12.90	
			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	2.984E-01	28.29	
			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	8.080E-02	14.84	
			801.93	8.73	--- Not Found ---		
		% Abundances Found =		41.22			
LA-140	40.22H	21.91	328.77	20.50	7.499E+05	19.99	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	5.588E-01	13.92	
			105.31*	20.70	--- Not Found ---		
		% Abundances Found =		42.47			

Sample ID : J5K951AA Acquisition date : 21-SEP-2007 21:52:48

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	2.802E+01	21.50	
			452.83	0.31	--- Not Found ---		
			727.33*	6.58	1.710E+00	10.33	
			785.37	1.10	2.355E+00	28.57	
			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			
RA-223	21.77Y	0.00	154.21	5.58	--- Not Found ---		Abun.
			269.46*	13.60	4.899E-01	13.53	
			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	2.112E-01	10.22	
			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	1.757E+00	13.90	
		% Abundances Found =		58.74			

Flag: "*" = Keyline

VMS Nuclide Identification Report V3.0 Generated 23-SEP-2007 10:11:10

Configuration : $DISK1:[GER13.SAMPLE]J5K951AA_210972152.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 : 16-AUG-2007 09:30:00 Acquisition date : 21-SEP-2007 21:52:48
Sample ID : J5K951AA Sample quantity : 352.20 GRAMS
Sample type : Sample geometry : S200
Elapsed live time: 0 10:00:00.00 Elapsed real time: 0 10:00:22.61 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	2.939E+01	1.924E+00	2.120E-01	8.593E-03	138.652
TL-208	4.658E-01	3.202E-02	2.001E-02	6.518E-04	23.279
PB-212	1.492E+00	9.773E-02	3.353E-02	1.328E-03	44.484
BI-214	1.080E+00	7.157E-02	3.508E-02	1.155E-03	30.791
PB-214	1.322E+00	8.699E-02	3.991E-02	1.446E-03	33.121
RA-224DA	1.547E+00	1.014E-01	3.478E-02	1.377E-03	44.484
RA-226DA	1.080E+00	7.157E-02	3.508E-02	1.155E-03	30.791
AC-228	1.453E+00	1.237E-01	7.273E-02	4.100E-03	19.973
RA-228DA	1.470E+00	1.252E-01	7.362E-02	4.150E-03	19.973
TH-228DA	1.345E+00	9.243E-02	5.777E-02	1.882E-03	23.279
TH-232DA	1.441E+00	1.112E-01	1.192E-01	4.465E-03	12.090
U-234DA	1.241E+00	9.365E-02	7.563E-02	2.982E-03	16.410
U-238DA	1.322E+00	8.699E-02	3.991E-02	1.446E-03	33.121

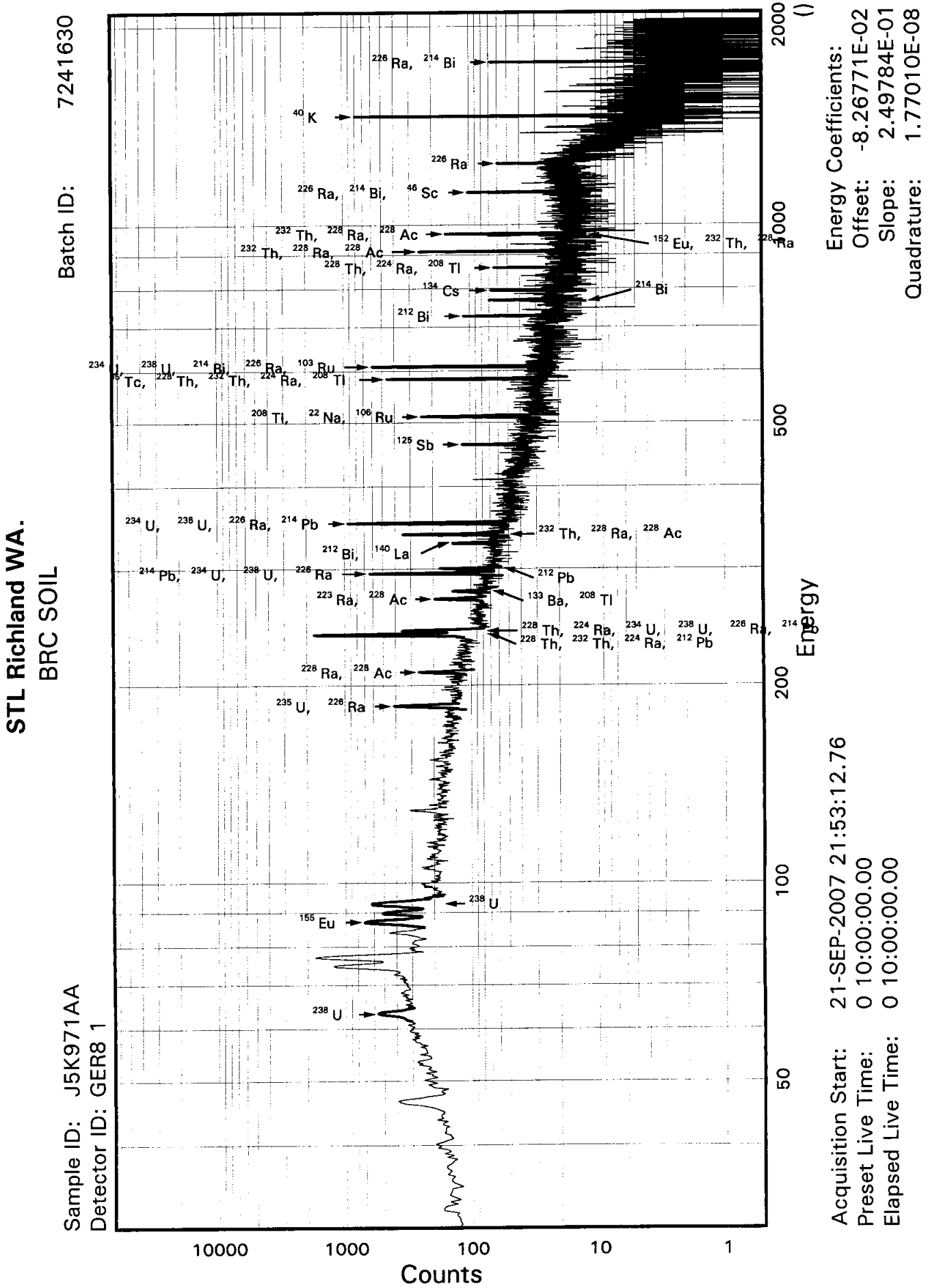
---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (PCI/GRAM)	K.L. Ided	Act error	MDA (PCI/GRAM)	MDA error	Act/MDA
BE-7	-3.661E-02		7.205E-02	2.395E-01	7.626E-03	-0.153
NA-22	-3.225E-03		8.042E-03	2.685E-02	1.056E-03	-0.120
SC-46	2.774E-01	+	2.926E-02	5.567E-02	2.279E-03	4.983
CR-51	-7.404E-02		1.112E-01	3.667E-01	1.428E-02	-0.202
MN-54	7.775E-03		6.539E-03	2.245E-02	1.123E-03	0.346
CO-57	1.354E-02		4.325E-02	1.455E-01	5.310E-03	0.093
CO-58	-2.127E-02		7.738E-03	2.485E-02	1.181E-03	-0.856
FE-59	-4.926E-02		2.257E-02	7.354E-02	3.158E-03	-0.670
CO-60	1.606E-03		6.426E-03	2.177E-02	9.045E-04	0.074
ZN-65	-5.247E-03		1.921E-02	5.458E-02	2.260E-03	-0.096
SE-75	8.396E-03		9.024E-03	2.994E-02	1.188E-03	0.280
SR-85	5.196E-02		9.028E-03	2.640E-02	8.295E-04	1.968
Y-88	5.793E-03		5.706E-03	2.008E-02	6.479E-04	0.288
NB-94	-4.025E-04		5.725E-03	1.938E-02	1.046E-03	-0.021
NB-95	3.835E-02		1.485E-02	4.312E-02	1.854E-03	0.889

Sample ID : J5K951AA Acquisition date : 21-SEP-2007 21:52:48

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

Nuclide	Key-Line Activity (PCI/GRAM)	K.L. Ided	Act error	MDA (PCI/GRAM)	MDA error	Act/MDA
TC-95M	2.124E-02		1.026E-02	3.388E-02	1.329E-03	0.627
ZR-95	3.116E-02		1.570E-02	5.321E-02	2.241E-03	0.586
ZRNB-95	5.703E-02		2.138E-02	6.211E-02	2.671E-03	0.918
RH-101	1.026E-02		6.132E-03	2.029E-02	7.947E-04	0.506
RH-102M	-4.940E-03		4.938E-03	1.631E-02	5.197E-04	-0.303
RU-103	-1.368E-02		9.896E-03	3.237E-02	1.024E-03	-0.423
RU-106DA	-7.152E-02		5.329E-02	1.766E-01	5.846E-03	-0.405
AG-108M	-3.278E-03		4.874E-03	1.628E-02	5.222E-04	-0.201
AG-110M	2.152E-03		8.663E-03	2.943E-02	1.633E-03	0.073
SN-113DA	-6.996E-03		8.649E-03	2.904E-02	9.289E-04	-0.241
SB-124	4.265E-03		8.805E-03	2.753E-02	9.044E-04	0.155
SB-125	-1.082E-02		1.532E-02	5.121E-02	1.642E-03	-0.211
SN-126DA	1.401E-02		5.294E-03	1.818E-02	6.169E-04	0.771
I-131	1.530E-02		1.279E-01	4.218E-01	1.476E-02	0.036
BA-133	1.132E-02		8.095E-03	2.313E-02	8.290E-04	0.489
CS-134	8.080E-02	+	1.199E-02	2.794E-02	1.285E-03	2.892
CS-137DA	4.746E-03		6.358E-03	2.156E-02	7.233E-04	0.220
LA-138	7.289E-03		8.646E-03	3.025E-02	1.234E-03	0.241
CE-139	-6.169E-03		6.347E-03	2.090E-02	8.172E-04	-0.295
BA-140	2.391E-02		1.382E-01	4.598E-01	1.464E-02	0.052
BALA-140	-1.176E-01		8.418E-02	2.732E-01	1.050E-02	-0.430
CE-141	2.121E-02		1.928E-02	6.483E-02	2.422E-03	0.327
CE-144	3.033E-02		4.352E-02	1.438E-01	5.215E-03	0.211
CEPR-144	6.178E-02		8.706E-02	2.876E-01	1.043E-02	0.215
PM-144	-1.329E-05		5.265E-03	1.782E-02	5.891E-04	-0.001
PM-146	1.378E-02		7.204E-03	2.452E-02	7.848E-04	0.562
EU-152	-8.624E-03		1.689E-02	5.549E-02	2.050E-03	-0.155
EU-154	-1.042E-02		2.219E-02	7.401E-02	2.912E-03	-0.141
EU-155	8.778E-02		2.436E-02	7.928E-02	3.048E-03	1.107
HF-181	8.408E-03		1.015E-02	3.423E-02	1.089E-03	0.246
BI-207	1.407E-02		5.076E-03	1.758E-02	5.689E-04	0.800
BI-210M	-5.608E-03		1.008E-02	2.872E-02	1.139E-03	-0.195
BI-212	1.710E+00	+	1.767E-01	3.996E-01	1.817E-02	4.280
RA-223	4.899E-01	+	6.627E-02	1.273E-01	5.047E-03	3.850
AC-227DA	2.884E-01		5.316E-02	1.522E-01	6.025E-03	1.895
TH-234DA	1.963E+00		1.031E+00	3.517E+00	1.790E-01	0.558
U-235HP	3.168E-02		4.037E-02	1.357E-01	5.044E-03	0.233
NP-237DA	-6.035E-03		1.224E-02	4.049E-02	1.584E-03	-0.149
U-238DHP	6.368E-02		4.400E-01	1.471E+00	7.143E-02	0.043
AM-241HP	7.223E-02		6.022E-02	2.029E-01	9.732E-03	0.356


STL Richland WA.
BRC SOIL
Batch ID: 7241630
Sample ID: J5K971AA
Detector ID: GER8 1
Energy Coefficients:
Offset: -8.26771E-02
Slope: 2.49784E-01
Quadrature: 1.77010E-08
Acquisition Start: 21-SEP-2007 21:53:12.76
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
212 Bi
152 Eu, 232 Th, 228 Ra
214 Bi
234 U, 238 U, 214 Bi, 226 Ra, 103 Ru
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
228 Th, 232 Th, 224 Ra, 212 Pb
228 Ra, 228 Ac
235 U, 226 Ra
238 U
155 Eu
238 U

SAMPLE IDENTIFICATION: J5K971AA

CONFIGURATION ID: GER8:J5K971AA_210972153
TITLE : BRC SOIL
SAMPLE ID : J5K971AA

REPORT DATE: 23-SEP-07
ACQUIRE DATE: 21-SEP-07 21:53:12
ELAPSED LIVE TIME: 36000.0 Sec
PRESET LIVE TIME: 0 10:00:00

SAMPLE DATE: 16-AUG-2007 09:30:00.00
CALIB DATE: 21-SEP-2007 05:03:13.65
ELAPSED LIVE TIME: 0 10:00:00
ELAPSED REAL TIME: 0 10:00:14

SAMPLE QUANTITY: 3.3290E+02
SAMPLE GEOMETRY: ES200

UNITS: GRAMS
SAMPLE TYPE:

ENERGY OFFSET: -.8268E-01 keV
ENERGY SLOPE: 2.4978E-01 keV/C
ENERGY Q COEFF: 1.7701E-08 keV/C^^2
PEAK SENSITIVITY: 5.000

FWHM OFFSET: 9.8049E-01 keV
FWHM SLOPE: 2.1979E-02 sqr keV
ITERATIONS: 10
GAUSSIAN SENSITIVITY: 70.00 %

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 23-SEP-2007 10:12:43

Configuration : $DISK1:[GER8.SAMPLE]J5K971AA_210972153.CNF;1
Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6
Sample title : BRC SOIL
Sample date : 16-AUG-2007 09:30:00 Acquisition date : 21-SEP-2007 21:53:12
Sample ID : J5K971AA Sample quantity : 332.90 GRAMS
Sample type : Sample geometry : ES200
Elapsed live time: 0 10:00:00.00 Elapsed real time: 0 10:00:14.27 0.0%
Start energy : 19.90 End energy : 2047.34
Sensitivity : 5.00 Gaussian : 70.00
Critical level : No

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	46.44*	639	2432	1.09	186.27	180	14	1.77E-02	17.9	
2	0	63.23*	953	3959	1.04	253.46	247	13	2.65E-02	14.7	
3	2	74.85*	4482	4614	1.18	299.99	288	28	1.24E-01	3.6	1.76E+00
4	2	77.13*	6734	3800	1.10	309.10	288	28	1.87E-01	2.4	
5	0	84.25*	768	3570	0.94	337.63	329	14	2.13E-02	17.2	
6	0	87.21	2400	3236	1.19	349.46	343	13	6.67E-02	5.3	
7	3	89.99	1375	2168	1.11	360.59	356	28	3.82E-02	6.5	1.66E+00
8	3	92.94*	2450	4014	1.59	372.41	356	28	6.80E-02	6.9	
9	0	129.00	687	2185	0.94	516.77	511	13	1.91E-02	14.5	
10	0	185.94*	1561	1986	1.37	744.68	736	16	4.34E-02	7.3	
11	0	209.34	873	1672	1.17	838.37	830	16	2.42E-02	11.0	
12	3	238.67*	8451	1519	1.21	955.76	946	31	2.35E-01	1.5	1.17E+00
13	3	241.72	2074	1612	1.76	967.99	946	31	5.76E-02	5.7	
14	0	270.22	673	1567	1.31	1082.06	1073	19	1.87E-02	14.6	
15	0	277.44	358	1216	1.31	1110.97	1105	16	9.94E-03	22.4	
16	0	295.29	2717	1396	1.12	1182.40	1172	19	7.55E-02	3.8	
17	0	300.27	466	877	1.19	1202.37	1196	13	1.30E-02	13.9	
18	0	327.98	395	1067	1.28	1313.27	1305	17	1.10E-02	19.6	
19	0	338.35	1562	1072	1.28	1354.79	1345	18	4.34E-02	5.5	
20	0	351.92*	5020	1271	1.31	1409.07	1396	25	1.39E-01	2.4	
21	0	409.64	232	676	1.04	1640.11	1634	15	6.45E-03	25.3	
22	0	463.02	497	732	1.29	1853.77	1844	21	1.38E-02	14.4	
23	0	510.85*	959	703	1.64	2045.21	2031	27	2.67E-02	9.8	
24	0	583.19	2634	728	1.41	2334.73	2322	28	7.32E-02	3.1	
25	0	609.28*	3442	631	1.45	2439.15	2428	23	9.56E-02	2.4	
26	0	727.37	573	520	1.74	2911.71	2900	25	1.59E-02	10.0	
27	0	768.07	399	414	1.49	3074.60	3063	23	1.11E-02	12.3	
28	0	794.91	312	386	1.55	3181.99	3172	22	8.66E-03	14.7	
29	0	860.50	271	387	1.48	3444.47	3434	22	7.53E-03	16.8	
30	0	911.28	1750	439	1.69	3647.67	3635	30	4.86E-02	3.8	
31	0	934.46	185	402	0.97	3740.41	3726	28	5.14E-03	26.9	
32	0	964.69	204	321	1.48	3861.39	3858	14	5.68E-03	18.9	
33	0	968.88	884	326	1.55	3878.12	3871	19	2.45E-02	5.3	
34	0	1120.28	724	456	1.95	4483.91	4471	29	2.01E-02	8.1	
35	0	1238.30	224	398	1.82	4956.08	4947	19	6.23E-03	19.4	
36	0	1377.91	193	130	1.70	5514.59	5500	25	5.37E-03	15.2	
37	0	1402.44	50	111	0.56	5612.71	5599	16	1.39E-03	42.6	
38	0	1460.81*	6508	187	1.94	5846.21	5830	36	1.81E-01	1.4	
39	0	1588.29	166	67	1.93	6356.13	6343	22	4.60E-03	13.2	
40	0	1592.72	139	64	2.02	6373.85	6365	20	3.87E-03	14.6	
41	0	1630.98	83	62	1.96	6526.87	6515	21	2.32E-03	22.9	
42	0	1729.60	121	54	1.61	6921.34	6908	25	3.36E-03	16.5	
43	0	1764.53	575	54	1.94	7061.01	7046	32	1.60E-02	5.3	

Sample ID : J5K971AA Acquisition date : 21-SEP-2007 21:53:12

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 23-SEP-2007 10:12:43

Configuration : $DISK1:[GER8.SAMPLE]J5K971AA_210972153.CNF;1
Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.3
Sample title : BRC SOIL
Sample date : 16-AUG-2007 09:30:00 Acquisition date : 21-SEP-2007 21:53:12
Sample ID : J5K971AA Sample quantity : 332.90 GRAMS
Sample type : Sample geometry : ES200
Elapsed live time: 0 10:00:00.00 Elapsed real time: 0 10:00:14.27 0.0%
Energy tolerance : 1.50 Half life ratio : 8.00
Errors propagated: Yes Systematic Error : 5.00 %
Efficiency type : Empirical Efficiencies at : Peak Energy
Abundance limit : 80.00

Nuclide Line Activity Report

Nuclide Type: NP

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected PCI/GRAM	Decay Corr PCI/GRAM	1-Sigma %Error
K-40	1460.81	6508	10.67*	5.801E-01	2.371E+01	2.371E+01	6.27
TL-208	277.35	358	6.80	2.335E+00	5.085E-01	5.085E-01	23.27
	510.84	959	21.60	1.413E+00	7.087E-01	7.087E-01	11.48
	583.14	2634	84.20*	1.263E+00	5.586E-01	5.586E-01	6.82
	860.37	271	12.46	9.072E-01	5.411E-01	5.411E-01	18.07
PB-212	238.63	8451	44.60*	2.617E+00	1.633E+00	1.633E+00	6.49
	300.09	466	3.41	2.194E+00	1.405E+00	1.405E+00	15.23
BI-214	609.31	3442	46.30*	1.217E+00	1.378E+00	1.378E+00	6.56
	768.36	399	5.04	9.991E-01	1.787E+00	1.787E+00	13.85
	1120.29	724	15.10	7.255E-01	1.490E+00	1.490E+00	10.11
	1764.49	575	15.80	4.950E-01	1.657E+00	1.657E+00	7.94
PB-214	241.98	2074	7.49	2.593E+00	2.409E+00	2.409E+00	8.53
	295.21	2717	19.20	2.224E+00	1.435E+00	1.435E+00	7.30
	351.92	5020	37.20*	1.930E+00	1.576E+00	1.576E+00	6.53
	785.91	------	1.10	9.798E-01	------	Line Not Found	------
RA-224DA	238.63	8451	44.60*	2.617E+00	1.633E+00	1.693E+00	6.49
	240.98	2074	3.95	2.593E+00	4.568E+00	4.738E+00	8.53
	583.14	2634	30.25	1.263E+00	1.555E+00	1.613E+00	6.82
	860.37	271	4.48	9.072E-01	1.505E+00	1.561E+00	18.07
RA-226DA	186.21	1561	3.50	3.109E+00	3.235E+00	3.235E+00	9.61
	241.98	2074	7.49	2.593E+00	2.409E+00	2.409E+00	8.53
	295.22	2717	19.20	2.224E+00	1.435E+00	1.435E+00	7.30
	351.92	5020	37.20	1.930E+00	1.576E+00	1.577E+00	6.53
	609.32	3442	46.30*	1.217E+00	1.378E+00	1.378E+00	6.56
	1120.28	724	15.10	7.255E-01	1.490E+00	1.490E+00	10.11
	1238.11	224	5.94	6.667E-01	1.277E+00	1.277E+00	20.29
	1764.49	575	15.80	4.950E-01	1.657E+00	1.657E+00	7.94
AC-228	209.28	873	4.40	2.874E+00	1.557E+00	1.557E+00	12.69
	270.23	673	3.60	2.383E+00	1.769E+00	1.769E+00	15.91
	338.32	1562	11.40	1.993E+00	1.550E+00	1.550E+00	8.23
	911.07	1750	27.70*	8.641E-01	1.649E+00	1.649E+00	7.66
	969.11	884	16.60	8.203E-01	1.463E+00	1.463E+00	8.43
RA-228DA	209.28	873	4.40	2.874E+00	1.557E+00	1.576E+00	12.69
	338.32	1562	11.40	1.993E+00	1.550E+00	1.569E+00	8.23
	911.07	1750	27.70*	8.641E-01	1.649E+00	1.669E+00	7.66
	964.60	204	5.20	8.234E-01	1.077E+00	1.090E+00	20.04

Sample ID : J5K971AA Acquisition date : 21-SEP-2007 21:53:12

Nuclide Type: NP

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected PCI/GRAM	Decay Corr PCI/GRAM	1-Sigma %Error
	969.11	884	16.60	8.203E-01	1.463E+00	1.481E+00	8.43
TH-228DA	238.63	8451	44.60	2.617E+00	1.633E+00	1.693E+00	6.49
	240.98	2074	3.95	2.593E+00	4.568E+00	4.738E+00	8.53
	583.14	2634	30.25*	1.263E+00	1.555E+00	1.613E+00	6.82
	860.37	271	4.48	9.072E-01	1.505E+00	1.561E+00	18.07
TH-232DA	238.63	8451	44.60	2.617E+00	1.633E+00	1.633E+00	6.49
	338.32	1562	12.40*	1.993E+00	1.425E+00	1.425E+00	8.23
	583.14	2634	30.25	1.263E+00	1.555E+00	1.555E+00	6.82
	911.07	1750	27.70	8.641E-01	1.649E+00	1.649E+00	7.66
	964.60	204	5.20	8.234E-01	1.077E+00	1.077E+00	20.04
	969.11	884	16.60	8.203E-01	1.463E+00	1.463E+00	8.43
U-234DA	241.98	2074	7.49	2.593E+00	2.409E+00	2.409E+00	8.53
	295.22	2717	19.20*	2.224E+00	1.435E+00	1.435E+00	7.30
	351.92	5020	37.20	1.930E+00	1.576E+00	1.576E+00	6.53
	609.31	3442	46.30	1.217E+00	1.378E+00	1.378E+00	6.56
U-238DA	241.98	2074	7.49	2.593E+00	2.409E+00	2.409E+00	8.53
	295.22	2717	19.20	2.224E+00	1.435E+00	1.435E+00	7.30
	351.92	5020	37.20*	1.930E+00	1.576E+00	1.576E+00	6.53
	609.31	3442	46.30	1.217E+00	1.378E+00	1.378E+00	6.56
U-238DHP	63.28	953	3.80*	3.723E+00	1.518E+00	1.518E+00	15.82
	92.59	2450	5.41	4.071E+00	2.508E+00	2.508E+00	9.12

Flag: "*" = Keyline

Sample ID : J5K971AA Acquisition date : 21-SEP-2007 21:53:12

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
0	46.44	639	2432	1.09	186.27	180	14	1.77E-02	17.9	2.83E+00	
2	74.85	4482	4614	1.18	299.99	288	28	1.24E-01	3.6	3.99E+00	
2	77.13	6734	3800	1.10	309.10	288	28	1.87E-01	2.4	4.01E+00	
0	84.25	768	3570	0.94	337.63	329	14	2.13E-02	17.2	4.07E+00	
0	87.21	2400	3236	1.19	349.46	343	13	6.67E-02	5.3	4.07E+00	T
3	89.99	1375	2168	1.11	360.59	356	28	3.82E-02	6.5	4.08E+00	
0	129.00	687	2185	0.94	516.77	511	13	1.91E-02	14.5	3.77E+00	
0	327.98	395	1067	1.28	1313.27	1305	17	1.10E-02	19.6	2.04E+00	T
0	409.64	232	676	1.04	1640.11	1634	15	6.45E-03	25.3	1.70E+00	
0	463.02	497	732	1.29	1853.77	1844	21	1.38E-02	14.4	1.54E+00	T
0	727.37	573	520	1.74	2911.71	2900	25	1.59E-02	10.0	1.05E+00	T
0	794.91	312	386	1.55	3181.99	3172	22	8.66E-03	14.7	9.70E-01	T
0	934.46	185	402	0.97	3740.41	3726	28	5.14E-03	26.9	8.46E-01	
0	1377.91	193	130	1.70	5514.59	5500	25	5.37E-03	15.2	6.09E-01	
0	1402.44	50	111	0.56	5612.71	5599	16	1.39E-03	42.6	6.00E-01	
0	1588.29	166	67	1.93	6356.13	6343	22	4.60E-03	13.2	5.41E-01	
0	1592.72	139	64	2.02	6373.85	6365	20	3.87E-03	14.6	5.39E-01	
0	1630.98	83	62	1.96	6526.87	6515	21	2.32E-03	22.9	5.29E-01	
0	1729.60	121	54	1.61	6921.34	6908	25	3.36E-03	16.5	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	8.751E-02	11.48	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	3.049E-01	10.11	
		% Abundances Found =		50.00			
TC-95M	61.00D	0.60	204.12*	66.20	--- Not Found ---		Abun.
			582.07	29.30	2.437E+00	6.82	
			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	2.176E+01	6.56	
		% Abundances Found =		5.92			
RU-106DA	368.20D	0.10	511.85	20.60	7.963E-01	11.48	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	7.229E-01	15.53	
			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	5.044E-01	23.27	
			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	8.774E-02	16.09	
			801.93	8.73	--- Not Found ---		
		% Abundances Found =		41.22			
LA-140	40.22H	21.91	328.77	20.50	8.399E+05	20.51	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	3.909E-01	20.04	

Sample ID : J5K971AA Acquisition date : 21-SEP-2007 21:53:12

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	4.361E-01	8.03	
			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	3.138E+01	21.99	
			452.83	0.31	--- Not Found ---		
			727.33*	6.58	1.876E+00	12.03	
			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	4.698E-01	15.91	
			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	2.097E-01	9.61	
			205.31	4.70	--- Not Found ---		
		% Abundances Found =		78.03			

Flag: "*" = Keyline

VMS Nuclide Identification Report V3.0 Generated 23-SEP-2007 10:12:45

Configuration : $DISK1:[GER8.SAMPLE]J5K971AA_210972153.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 : 16-AUG-2007 09:30:00 Acquisition date : 21-SEP-2007 21:53:12
Sample ID : J5K971AA Sample quantity : 332.90 GRAMS
Sample type : Sample geometry : ES200
Elapsed live time: 0 10:00:00.00 Elapsed real time: 0 10:00:14.27 0.0%
Peak Width (FWHM): 3.00 Confidence level : 5.00 %
Energy tolerance : 1.50 Half life ratio : 8.00
Errors propagated: Yes Systematic Error : 5.00 %
Efficiency type : Empirical Efficiencies at : Peak Energy
Abundance limit : 80.00 WTM error limit : 3.00

Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Activity (PCI/GRAM)	Act error	MDA (PCI/GRAM)	MDA error	Act/MDA
K-40	2.371E+01	1.487E+00	1.894E-01	6.684E-03	125.197
TL-208	5.586E-01	3.808E-02	2.211E-02	7.549E-04	25.268
PB-212	1.633E+00	1.059E-01	3.540E-02	1.361E-03	46.128
BI-214	1.378E+00	9.045E-02	4.300E-02	1.505E-03	32.046
PB-214	1.576E+00	1.029E-01	4.415E-02	1.510E-03	35.708
RA-224DA	1.693E+00	1.099E-01	3.671E-02	1.412E-03	46.128
RA-226DA	1.378E+00	9.045E-02	4.300E-02	1.505E-03	32.046
AC-228	1.649E+00	1.263E-01	8.280E-02	3.619E-03	19.914
RA-228DA	1.669E+00	1.278E-01	8.381E-02	3.663E-03	19.914
TH-228DA	1.613E+00	1.099E-01	6.382E-02	2.179E-03	25.268
TH-232DA	1.425E+00	1.173E-01	1.434E-01	5.002E-03	9.942
U-234DA	1.435E+00	1.047E-01	8.621E-02	3.192E-03	16.649
U-238DA	1.576E+00	1.029E-01	4.415E-02	1.510E-03	35.708
U-238DHP	1.518E+00	2.402E-01	4.915E-01	1.567E-02	3.089

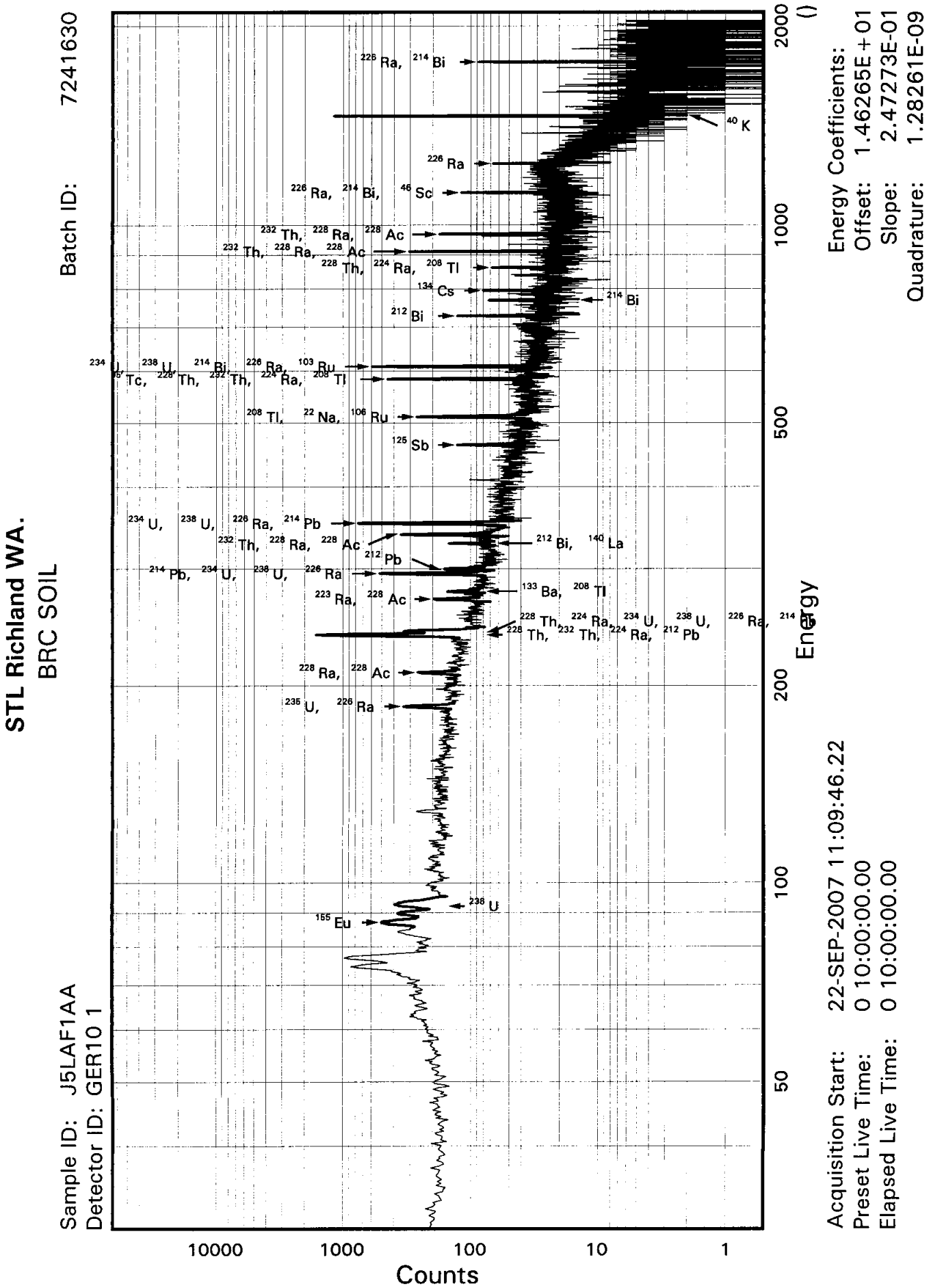
---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (PCI/GRAM)	K.L. Ided	Act error	MDA (PCI/GRAM)	MDA error	Act/MDA
BE-7	8.528E-02		8.329E-02	2.852E-01	9.124E-03	0.299
NA-22	-7.993E-03		8.317E-03	2.796E-02	9.619E-04	-0.286
SC-46	3.049E-01	+	3.083E-02	6.436E-02	2.263E-03	4.737
CR-51	-8.337E-03		1.285E-01	4.264E-01	1.520E-02	-0.020
MN-54	1.332E-03		7.647E-03	2.612E-02	1.103E-03	0.051
CO-57	-2.977E-03		4.619E-02	1.512E-01	5.170E-03	-0.020
CO-58	-1.563E-02		9.255E-03	3.050E-02	1.267E-03	-0.512
FE-59	-3.673E-02		2.441E-02	7.950E-02	2.885E-03	-0.462
CO-60	-1.539E-02		7.155E-03	2.315E-02	8.260E-04	-0.665
ZN-65	1.937E-02		2.100E-02	6.096E-02	2.160E-03	0.318
SE-75	-1.149E-02		1.078E-02	3.279E-02	1.249E-03	-0.350
SR-85	6.128E-02		1.058E-02	3.182E-02	1.009E-03	1.925
Y-88	-5.226E-03		6.217E-03	2.141E-02	6.686E-04	-0.244
NB-94	6.506E-03		6.395E-03	2.218E-02	9.605E-04	0.293

Sample ID : J5K971AA Acquisition date : 21-SEP-2007 21:53:12

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

Nuclide	Key-Line Activity (PCI/GRAM)	K.L. Ided	Act error	MDA (PCI/GRAM)	MDA error	Act/MDA
NB-95	4.603E-02		1.733E-02	5.225E-02	2.097E-03	0.881
TC-95M	-7.188E-04		1.203E-02	3.739E-02	1.430E-03	-0.019
ZR-95	-1.435E-02		1.688E-02	5.691E-02	2.267E-03	-0.252
ZRNB-95	6.855E-02		2.496E-02	7.531E-02	3.022E-03	0.910
RH-101	4.886E-03		7.721E-03	2.318E-02	8.838E-04	0.211
RH-102M	-9.798E-03		5.768E-03	1.898E-02	6.074E-04	-0.516
RU-103	-1.544E-05		1.120E-02	3.791E-02	1.208E-03	0.000
RU-106DA	-1.394E-02		6.442E-02	2.156E-01	7.630E-03	-0.065
AG-108M	-8.389E-04		5.623E-03	1.906E-02	6.088E-04	-0.044
AG-110M	4.740E-03		9.946E-03	3.419E-02	1.493E-03	0.139
SN-113DA	-1.494E-02		9.754E-03	3.246E-02	1.022E-03	-0.460
SB-124	3.174E-03		9.926E-03	3.136E-02	1.091E-03	0.101
SB-125	2.002E-03		1.791E-02	6.090E-02	1.943E-03	0.033
SN-126DA	1.529E-02		6.406E-03	2.200E-02	8.085E-04	0.695
I-131	1.844E-01		1.469E-01	4.926E-01	1.648E-02	0.374
BA-133	-8.952E-04		9.328E-03	2.611E-02	8.869E-04	-0.034
CS-134	8.774E-02	+	1.412E-02	3.434E-02	1.410E-03	2.555
CS-137DA	-8.268E-03		7.383E-03	2.421E-02	8.859E-04	-0.341
LA-138	-4.755E-03		8.453E-03	2.887E-02	1.022E-03	-0.165
CE-139	1.556E-03		6.776E-03	2.288E-02	8.526E-04	0.068
BA-140	2.551E-01		1.615E-01	5.550E-01	1.807E-02	0.460
BALA-140	1.976E-01		1.102E-01	3.470E-01	1.191E-02	0.570
CE-141	7.614E-02		2.111E-02	6.915E-02	2.439E-03	1.101
CE-144	-6.476E-02		4.870E-02	1.473E-01	4.985E-03	-0.440
CEPR-144	-6.026E-02		9.934E-02	2.947E-01	9.973E-03	-0.204
PM-144	-2.669E-04		6.416E-03	2.153E-02	7.595E-04	-0.012
PM-146	8.864E-03		8.144E-03	2.795E-02	8.948E-04	0.317
EU-152	-2.789E-02		1.989E-02	6.350E-02	2.197E-03	-0.439
EU-154	-9.390E-03		2.274E-02	7.743E-02	2.663E-03	-0.121
EU-155	6.215E-02		2.136E-02	7.068E-02	2.327E-03	0.879
HF-181	-6.694E-03		1.176E-02	3.949E-02	1.262E-03	-0.170
BI-207	-2.546E-03		6.022E-03	2.013E-02	6.783E-04	-0.126
BI-210M	-2.919E-03		1.137E-02	3.206E-02	1.220E-03	-0.091
BI-212	1.876E+00	+	2.257E-01	4.860E-01	2.190E-02	3.860
RA-223	4.698E-01	+	7.476E-02	1.461E-01	5.547E-03	3.215
AC-227DA	6.270E-01		6.917E-02	1.803E-01	6.934E-03	3.478
TH-234DA	3.104E+00		1.183E+00	4.133E+00	1.684E-01	0.751
U-235HP	3.207E-02		4.398E-02	1.445E-01	5.065E-03	0.222
NP-237DA	4.353E-03		1.354E-02	4.515E-02	1.632E-03	0.096
AM-241HP	7.201E-02		1.835E-02	5.241E-02	1.691E-03	1.374


STL Richland WA.
BRC SOIL
Batch ID: 7241630
Sample ID: J5LAF1AA
Detector ID: GER10 1
Energy Coefficients:
Offset: 1.46265E+01
Slope: 2.47273E-01
Quadrature: 1.28261E-09
Acquisition Start: 22-SEP-2007 11:09:46.22
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
226 Ra, 214 Bi, 46 Sc
232 Th, 228 Ra, 228 Ac
228 Th, 224 Ra, 208 Tl
134 Cs
212 Bi
214 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, 234 U, 238 U, 226 Ra, 214
228 Th, 232 Th, 224 Ra, 212 Pb
228 Ra, 228 Ac
235 U, 226 Ra
238 U
155 Eu

SAMPLE IDENTIFICATION: J5LAF1AA

CONFIGURATION ID: GER10:J5LAF1AA_220971109
TITLE : BRC SOIL
SAMPLE ID : J5LAF1AA

REPORT DATE: 23-SEP-07
ACQUIRE DATE: 22-SEP-07 11:09:46
ELAPSED LIVE TIME: 36000.0 Sec
PRESET LIVE TIME: 0 10:00:00

SAMPLE DATE: 16-AUG-2007 10:15:00.00
CALIB DATE: 22-SEP-2007 08:58:56.98
ELAPSED LIVE TIME: 0 10:00:00
ELAPSED REAL TIME: 0 10:00:17

SAMPLE QUANTITY: 3.4850E+02
SAMPLE GEOMETRY: S200

UNITS: GRAMS
SAMPLE TYPE:

ENERGY OFFSET: 1.4627E+01 keV
ENERGY SLOPE: 2.4727E-01 keV/C
ENERGY Q COEFF: 1.2826E-09 keV/C^^2
PEAK SENSITIVITY: 5.000

FWHM OFFSET: 1.0864E+00 keV
FWHM SLOPE: 2.5065E-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 23-SEP-2007 10:14:39

Configuration : $DISK1:[GER10.SAMPLE]J5LAF1AA_220971109.CNF;1
Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6
Sample title : BRC SOIL
Sample date : 16-AUG-2007 10:15:00 Acquisition date : 22-SEP-2007 11:09:46
Sample ID : J5LAF1AA Sample quantity : 348.50 GRAMS
Sample type : Sample geometry : S200
Elapsed live time: 0 10:00:00.00 Elapsed real time: 0 10:00:17.37 0.0%
Start energy : 17.10 End energy : 2040.37
Sensitivity : 5.00 Gaussian : 60.00
Critical level : No

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	2	74.78*	2393	4620	1.32	243.28	236	31	6.65E-02	6.5	1.52E+00
2	2	77.04	4147	4664	1.40	252.40	236	31	1.15E-01	4.3	
3	0	87.16	1258	3196	1.39	293.33	288	12	3.50E-02	9.4	
4	0	92.22	2296	5851	4.58	313.79	300	28	6.38E-02	9.7	
5	0	129.07	411	1919	1.22	462.83	458	11	1.14E-02	21.2	
6	0	186.08	1181	2311	1.56	693.36	686	16	3.28E-02	9.6	
7	0	209.37	860	2263	1.56	787.54	779	18	2.39E-02	13.4	
8	4	238.65	8830	2028	1.46	905.99	891	46	2.45E-01	1.6	9.62E-01
9	4	241.61	2223	2470	2.13	917.92	891	46	6.17E-02	7.7	
10	0	270.20	736	1852	1.73	1033.58	1023	21	2.04E-02	12.9	
11	0	277.39	402	1357	1.17	1062.65	1055	16	1.12E-02	18.3	
12	0	295.21	2895	1797	1.54	1134.71	1123	24	8.04E-02	3.8	
13	0	300.14	608	1270	1.59	1154.63	1146	17	1.69E-02	12.2	
14	0	328.10	330	1315	1.04	1267.73	1259	18	9.16E-03	22.7	
15	0	338.29	1916	1677	1.56	1308.90	1295	25	5.32E-02	5.4	
16	0	351.95*	4622	1604	1.57	1364.18	1352	25	1.28E-01	2.5	
17	0	409.41	305	906	1.24	1596.55	1587	19	8.48E-03	20.9	
18	0	462.90	664	824	1.50	1812.85	1801	23	1.84E-02	10.3	
19	0	510.84*	1058	1173	2.05	2006.72	1991	31	2.94E-02	10.0	
20	0	583.16	2891	801	1.60	2299.19	2288	24	8.03E-02	2.9	
21	0	609.32	3837	826	1.61	2404.97	2392	26	1.07E-01	2.4	
22	0	727.27	829	611	1.67	2881.95	2869	28	2.30E-02	7.9	
23	0	768.46	292	540	1.35	3048.53	3038	20	8.12E-03	17.6	
24	0	794.84	343	502	0.97	3155.21	3144	22	9.53E-03	15.1	
25	0	860.50	409	482	1.92	3420.73	3408	26	1.14E-02	13.3	
26	0	911.23	2292	518	1.87	3625.90	3611	30	6.37E-02	3.2	
27	0	933.96	245	364	1.13	3717.80	3706	23	6.80E-03	18.3	
28	0	967.93	1697	740	1.75	3855.21	3836	36	4.71E-02	4.9	
29	0	1120.27	764	561	1.93	4471.23	4457	27	2.12E-02	8.1	
30	0	1238.49	462	575	2.33	4949.31	4936	32	1.28E-02	14.0	
31	0	1377.53	228	185	1.72	5511.56	5500	23	6.32E-03	13.5	
32	0	1460.76*	10611	210	2.10	5848.13	5830	35	2.95E-01	1.0	
33	0	1588.23	174	102	2.28	6363.64	6352	22	4.84E-03	13.5	
34	0	1729.42	148	90	2.14	6934.56	6919	27	4.11E-03	15.8	
35	0	1764.35	765	82	1.90	7075.81	7056	34	2.12E-02	4.5	

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

VMS Nuclide Identification Report V3.0 Generated 23-SEP-2007 10:14:39

Configuration : $DISK1:[GER10.SAMPLE]J5LAF1AA_220971109.CNF;1
Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.3
Sample title : BRC SOIL
Sample date : 16-AUG-2007 10:15:00 Acquisition date : 22-SEP-2007 11:09:46
Sample ID : J5LAF1AA Sample quantity : 348.50 GRAMS
Sample type : Sample geometry : S200
Elapsed live time: 0 10:00:00.00 Elapsed real time: 0 10:00:17.37 0.0%
Energy tolerance : 1.50 Half life ratio : 8.00
Errors propagated: Yes Systematic Error : 5.00 %
Efficiency type : Empirical Efficiencies at : Peak Energy
Abundance limit : 80.00

Nuclide Line Activity Report

Nuclide Type: NP

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected PCI/GRAM	Decay Corr PCI/GRAM	1-Sigma %Error
K-40	1460.81	10611	10.67*	8.324E-01	2.574E+01	2.574E+01	6.33
TL-208	277.35	402	6.80	2.751E+00	4.627E-01	4.627E-01	19.33
	510.84	1058	21.60	1.867E+00	5.649E-01	5.649E-01	11.64
	583.14	2891	84.20*	1.704E+00	4.340E-01	4.340E-01	6.63
	860.37	409	12.46	1.273E+00	5.560E-01	5.560E-01	15.02
PB-212	238.63	8830	44.60*	3.006E+00	1.419E+00	1.419E+00	6.62
	300.09	608	3.41	2.623E+00	1.463E+00	1.463E+00	13.71
BI-214	609.31	3837	46.30*	1.652E+00	1.081E+00	1.081E+00	6.45
	768.36	292	5.04	1.391E+00	8.986E-01	8.986E-01	18.74
	1120.29	764	15.10	1.028E+00	1.060E+00	1.060E+00	10.28
	1764.49	765	15.80	7.322E-01	1.424E+00	1.424E+00	7.50
PB-214	241.98	2223	7.49	2.985E+00	2.142E+00	2.142E+00	10.04
	295.21	2895	19.20	2.650E+00	1.226E+00	1.226E+00	7.35
	351.92	4622	37.20*	2.377E+00	1.126E+00	1.126E+00	6.60
	785.91	------	1.10	1.367E+00	------ Line Not Found		------
RA-224DA	238.63	8830	44.60*	3.006E+00	1.419E+00	1.472E+00	6.62
	240.98	2223	3.95	2.985E+00	4.062E+00	4.215E+00	10.04
	583.14	2891	30.25	1.704E+00	1.208E+00	1.254E+00	6.63
	860.37	409	4.48	1.273E+00	1.546E+00	1.605E+00	15.02
RA-226DA	186.21	1181	3.50	3.433E+00	2.118E+00	2.118E+00	11.53
	241.98	2223	7.49	2.985E+00	2.142E+00	2.142E+00	10.04
	295.22	2895	19.20	2.650E+00	1.226E+00	1.226E+00	7.35
	351.92	4622	37.20	2.377E+00	1.126E+00	1.126E+00	6.60
	609.32	3837	46.30*	1.652E+00	1.081E+00	1.081E+00	6.45
	1120.28	764	15.10	1.028E+00	1.060E+00	1.060E+00	10.28
	1238.11	462	5.94	9.472E-01	1.768E+00	1.768E+00	15.31
	1764.49	765	15.80	7.322E-01	1.424E+00	1.424E+00	7.50
AC-228	209.28	860	4.40	3.233E+00	1.302E+00	1.302E+00	14.89
	270.23	736	3.60	2.795E+00	1.576E+00	1.576E+00	14.42
	338.32	1916	11.40	2.437E+00	1.486E+00	1.486E+00	8.17
	911.07	2292	27.70*	1.216E+00	1.465E+00	1.465E+00	7.80
	969.11	1697	16.60	1.158E+00	1.901E+00	1.901E+00	8.47
RA-228DA	209.28	860	4.40	3.233E+00	1.302E+00	1.318E+00	14.89
	338.32	1916	11.40	2.437E+00	1.486E+00	1.504E+00	8.17
	911.07	2292	27.70*	1.216E+00	1.465E+00	1.483E+00	7.80
	964.60	------	5.20	1.162E+00	------ Line Not Found		------

Sample ID : J5LAF1AA Acquisition date : 22-SEP-2007 11:09:46

Nuclide Type: NP

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected PCI/GRAM	Decay Corr PCI/GRAM	1-Sigma %Error
	969.11	1697	16.60	1.158E+00	1.901E+00	1.925E+00	8.47
TH-228DA	238.63	8830	44.60	3.006E+00	1.419E+00	1.472E+00	6.62
	240.98	2223	3.95	2.985E+00	4.062E+00	4.215E+00	10.04
	583.14	2891	30.25*	1.704E+00	1.208E+00	1.254E+00	6.63
	860.37	409	4.48	1.273E+00	1.546E+00	1.605E+00	15.02
TH-232DA	238.63	8830	44.60	3.006E+00	1.419E+00	1.419E+00	6.62
	338.32	1916	12.40*	2.437E+00	1.366E+00	1.366E+00	8.17
	583.14	2891	30.25	1.704E+00	1.208E+00	1.208E+00	6.63
	911.07	2292	27.70	1.216E+00	1.465E+00	1.465E+00	7.80
	964.60	------	5.20	1.162E+00	------ Line Not Found		------
	969.11	1697	16.60	1.158E+00	1.901E+00	1.901E+00	8.47
U-234DA	241.98	2223	7.49	2.985E+00	2.142E+00	2.142E+00	10.04
	295.22	2895	19.20*	2.650E+00	1.226E+00	1.226E+00	7.35
	351.92	4622	37.20	2.377E+00	1.126E+00	1.126E+00	6.60
	609.31	3837	46.30	1.652E+00	1.081E+00	1.081E+00	6.45
U-238DA	241.98	2223	7.49	2.985E+00	2.142E+00	2.142E+00	10.04
	295.22	2895	19.20	2.650E+00	1.226E+00	1.226E+00	7.35
	351.92	4622	37.20*	2.377E+00	1.126E+00	1.126E+00	6.60
	609.31	3837	46.30	1.652E+00	1.081E+00	1.081E+00	6.45

Flag: "*" = Keyline

Sample ID : J5LAF1AA
Acquisition date : 22-SEP-2007 11:09:46

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
2	74.78	2393	4620	1.32	243.28	236	31	6.65E-02	6.5	2.87E+00	
2	77.04	4147	4664	1.40	252.40	236	31	1.15E-01	4.3	2.99E+00	
0	87.16	1258	3196	1.39	293.33	288	12	3.50E-02	9.4	3.43E+00	T
0	92.22	2296	5851	4.58	313.79	300	28	6.38E-02	9.7	3.58E+00	T
0	129.07	411	1919	1.22	462.83	458	11	1.14E-02	21.2	3.87E+00	
0	328.10	330	1315	1.04	1267.73	1259	18	9.16E-03	22.7	2.48E+00	T
0	409.41	305	906	1.24	1596.55	1587	19	8.48E-03	20.9	2.16E+00	
0	462.90	664	824	1.50	1812.85	1801	23	1.84E-02	10.3	1.99E+00	T
0	727.27	829	611	1.67	2881.95	2869	28	2.30E-02	7.9	1.45E+00	T
0	794.84	343	502	0.97	3155.21	3144	22	9.53E-03	15.1	1.36E+00	T
0	933.96	245	364	1.13	3717.80	3706	23	6.80E-03	18.3	1.19E+00	
0	1377.53	228	185	1.72	5511.56	5500	23	6.32E-03	13.5	8.70E-01	
0	1588.23	174	102	2.28	6363.64	6352	22	4.84E-03	13.5	7.84E-01	
0	1729.42	148	90	2.14	6934.56	6919	27	4.11E-03	15.8	7.41E-01	

Flags: "T" = Tentatively associated

Sample ID : J5LAF1AA Acquisition date : 22-SEP-2007 11:09:46

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	6.978E-02	11.64	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	2.178E-01	10.28	
		% Abundances Found =		50.00			
TC-95M	61.00D	0.61	204.12*	66.20	--- Not Found ---		Abun.
			582.07	29.30	1.904E+00	6.63	
			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	1.722E+01	6.45	
		% Abundances Found =		5.92			
RU-106DA	368.20D	0.10	511.85	20.60	6.353E-01	11.64	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	7.110E-01	11.85	
			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	4.590E-01	19.33	
			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	6.607E-02	16.50	
			801.93	8.73	--- Not Found ---		
		% Abundances Found =		41.22			
LA-140	40.22H	22.23	328.77	20.50	6.837E+05	23.51	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	2.597E-01	11.32	
			105.31*	20.70	--- Not Found ---		
		% Abundances Found =		42.47			

Sample ID : J5LAF1AA Acquisition date : 22-SEP-2007 11:09:46

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	2.059E+01	24.80	
			452.83	0.31	--- Not Found ---		
			727.33*	6.58	1.871E+00	10.38	
			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	4.185E-01	14.42	
			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	1.373E-01	11.53	
			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	2.556E+00	11.55	
		% Abundances Found =		58.74			

Flag: "*" = Keyline

VMS Nuclide Identification Report V3.0 Generated 23-SEP-2007 10:14:41

Configuration : $DISK1:[GER10.SAMPLE]J5LAF1AA_220971109.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 : 16-AUG-2007 10:15:00 Acquisition date : 22-SEP-2007 11:09:46
Sample ID : J5LAF1AA Sample quantity : 348.50 GRAMS
Sample type : Sample geometry : S200
Elapsed live time: 0 10:00:00.00 Elapsed real time: 0 10:00:17.37 0.0%
Peak Width (FWHM): 3.00 Confidence level : 5.00 %
Energy tolerance : 1.50 Half life ratio : 8.00
Errors propagated: Yes Systematic Error : 5.00 %
Efficiency type : Empirical Efficiencies at : Peak Energy
Abundance limit : 80.00 WTM error limit : 3.00

Combined Activity-MDA Report

---- Identified Nuclides ----

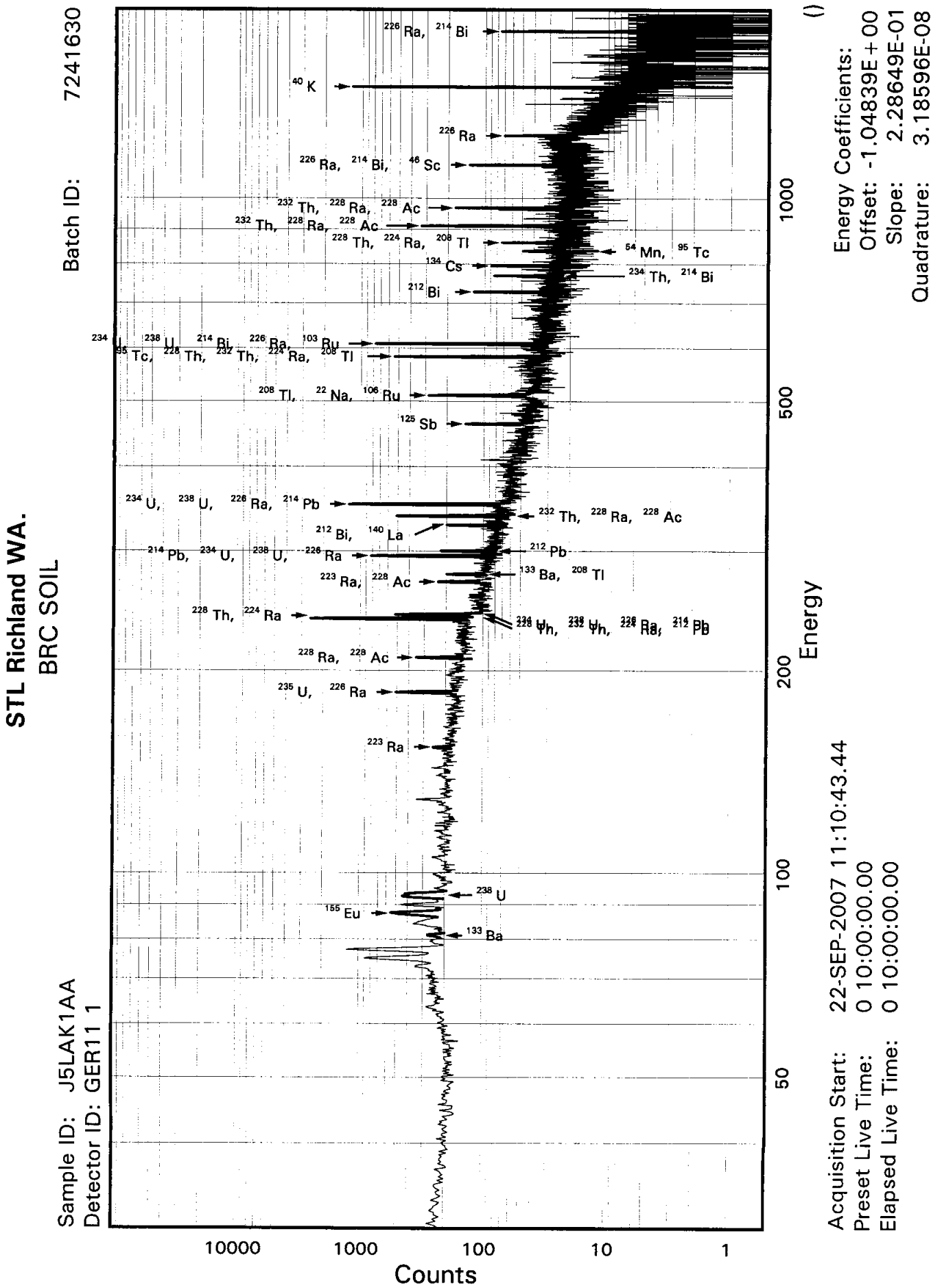
Nuclide	Activity (PCI/GRAM)	Act error	MDA (PCI/GRAM)	MDA error	Act/MDA
K-40	2.574E+01	1.630E+00	1.561E-01	5.842E-03	164.924
TL-208	4.340E-01	2.879E-02	1.913E-02	6.263E-04	22.690
PB-212	1.419E+00	9.391E-02	3.379E-02	1.361E-03	41.990
BI-214	1.081E+00	6.973E-02	3.511E-02	1.166E-03	30.779
PB-214	1.126E+00	7.426E-02	3.978E-02	1.388E-03	28.303
RA-224DA	1.472E+00	9.745E-02	3.507E-02	1.412E-03	41.990
RA-226DA	1.081E+00	6.973E-02	3.511E-02	1.167E-03	30.778
AC-228	1.465E+00	1.143E-01	6.373E-02	3.220E-03	22.992
RA-228DA	1.483E+00	1.157E-01	6.452E-02	3.260E-03	22.992
TH-228DA	1.254E+00	8.316E-02	5.525E-02	1.809E-03	22.690
TH-232DA	1.366E+00	1.116E-01	1.235E-01	4.432E-03	11.060
U-234DA	1.226E+00	9.004E-02	7.546E-02	2.900E-03	16.245
U-238DA	1.126E+00	7.426E-02	3.978E-02	1.388E-03	28.303

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

Nuclide	Key-Line Activity (PCI/GRAM)	K.L. Ided	Act error	MDA (PCI/GRAM)	MDA error	Act/MDA
BE-7	-1.338E-02		6.928E-02	2.324E-01	7.342E-03	-0.058
NA-22	-3.260E-03		6.636E-03	2.225E-02	8.152E-04	-0.147
SC-46	2.178E-01	+	2.239E-02	4.791E-02	1.827E-03	4.546
CR-51	-6.133E-02		1.139E-01	3.752E-01	1.389E-02	-0.163
MN-54	1.163E-03		6.180E-03	2.087E-02	9.635E-04	0.056
CO-57	-3.845E-02		4.480E-02	1.462E-01	5.170E-03	-0.263
CO-58	-3.117E-02		7.706E-03	2.341E-02	1.039E-03	-1.331
FE-59	-3.656E-02		1.997E-02	6.551E-02	2.601E-03	-0.558
CO-60	-3.718E-03		5.781E-03	1.934E-02	7.379E-04	-0.192
ZN-65	-5.081E-02		1.750E-02	4.558E-02	1.755E-03	-1.115
SE-75	-1.349E-02		1.053E-02	2.994E-02	1.187E-03	-0.450
SR-85	9.652E-02		1.057E-02	2.948E-02	9.229E-04	3.274
Y-88	-4.068E-05		5.177E-03	1.803E-02	5.688E-04	-0.002
NB-94	-3.217E-04		5.107E-03	1.721E-02	8.422E-04	-0.019
NB-95	7.561E-02		1.449E-02	4.302E-02	1.769E-03	1.758

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

Nuclide	Key-Line Activity (PCI/GRAM)	K.L. Ided	Act error	MDA (PCI/GRAM)	MDA error	Act/MDA
TC-95M	-4.486E-03		1.166E-02	3.484E-02	1.413E-03	-0.129
ZR-95	3.305E-02		1.420E-02	4.906E-02	1.987E-03	0.674
ZRNB-95	1.104E-01		2.080E-02	6.171E-02	2.538E-03	1.790
RH-101	-2.268E-03		7.416E-03	2.183E-02	8.846E-04	-0.104
RH-102M	2.676E-03		4.703E-03	1.592E-02	5.032E-04	0.168
RU-103	3.073E-03		9.564E-03	3.225E-02	1.015E-03	0.095
RU-106DA	-1.562E-02		5.139E-02	1.705E-01	5.703E-03	-0.092
AG-108M	-9.035E-03		4.891E-03	1.605E-02	5.085E-04	-0.563
AG-110M	8.135E-03		8.105E-03	2.767E-02	1.383E-03	0.294
SN-113DA	6.248E-03		8.492E-03	2.890E-02	9.106E-04	0.216
SB-124	-9.018E-03		9.327E-03	2.632E-02	8.713E-04	-0.343
SB-125	1.080E-02		1.544E-02	5.243E-02	1.661E-03	0.206
SN-126DA	1.674E-02		5.046E-03	1.754E-02	6.034E-04	0.954
I-131	3.212E-02		1.329E-01	4.398E-01	1.492E-02	0.073
BA-133	3.872E-03		8.306E-03	2.328E-02	8.054E-04	0.166
CS-134	6.607E-02	+	1.090E-02	2.664E-02	1.153E-03	2.480
CS-137DA	-5.696E-03		5.827E-03	1.953E-02	6.660E-04	-0.292
LA-138	9.323E-04		7.430E-03	2.537E-02	9.546E-04	0.037
CE-139	6.963E-03		6.408E-03	2.168E-02	8.754E-04	0.321
BA-140	3.130E-02		1.350E-01	4.538E-01	1.444E-02	0.069
BALA-140	3.445E-02		8.307E-02	2.783E-01	1.000E-02	0.124
CE-141	-6.636E-03		2.013E-02	6.587E-02	2.452E-03	-0.101
CE-144	-1.529E-02		4.739E-02	1.436E-01	5.000E-03	-0.106
CEPR-144	-2.976E-02		9.479E-02	2.873E-01	1.000E-02	-0.104
PM-144	-7.922E-03		5.161E-03	1.675E-02	5.592E-04	-0.473
PM-146	7.312E-03		6.875E-03	2.339E-02	7.411E-04	0.313
EU-152	-3.192E-02		1.940E-02	5.563E-02	1.973E-03	-0.574
EU-154	-8.763E-03		1.833E-02	6.148E-02	2.252E-03	-0.143
EU-155	3.571E-02		2.189E-02	7.279E-02	2.483E-03	0.491
HF-181	-1.715E-02		1.002E-02	3.279E-02	1.035E-03	-0.523
BI-207	7.518E-04		4.925E-03	1.648E-02	5.353E-04	0.046
BI-210M	-1.464E-02		1.047E-02	2.878E-02	1.140E-03	-0.509
BI-212	1.871E+00	+	1.942E-01	3.820E-01	1.708E-02	4.898
RA-223	4.185E-01	+	6.035E-02	1.286E-01	5.081E-03	3.254
AC-227DA	1.347E+00		1.039E-01	1.953E-01	7.873E-03	6.898
TH-234DA	1.513E+00		8.973E-01	3.067E+00	1.412E-01	0.493
U-235HP	6.592E-02		4.236E-02	1.398E-01	5.152E-03	0.472
NP-237DA	4.700E-03		1.206E-02	4.012E-02	1.505E-03	0.117
U-238DHP	7.411E-01		2.422E-01	8.080E-01	2.894E-02	0.917
AM-241HP	-9.142E-02		2.829E-02	9.091E-02	3.363E-03	-1.006


STL Richland WA.
BRC SOIL
Batch ID: 7241630
Sample ID: J5LAK1AA
Detector ID: GER11 1
Energy Coefficients:
Offset: -1.04839E+00
Slope: 2.28649E-01
Quadrature: 3.18596E-08
Acquisition Start: 22-SEP-2007 11:10:43.44
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
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
54 Mn, 95 Tc
134 Cs
234 Th, 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
228 Th, 224 Ra
228 Ra, 228 Ac
235 U, 226 Ra
223 Ra
238 U
155 Eu
133 Ba

SAMPLE IDENTIFICATION: J5LAK1AA

CONFIGURATION ID: GER11:J5LAK1AA_220971110
TITLE : BRC SOIL
SAMPLE ID : J5LAK1AA

REPORT DATE: 23-SEP-07
ACQUIRE DATE: 22-SEP-07 11:10:43
ELAPSED LIVE TIME: 36000.0 Sec
PRESET LIVE TIME: 0 10:00:00

SAMPLE DATE: 16-AUG-2007 10:15:00.00
CALIB DATE: 22-SEP-2007 08:59:11.67
ELAPSED LIVE TIME: 0 10:00:00
ELAPSED REAL TIME: 0 10:00:37

SAMPLE QUANTITY: 3.9230E+02
SAMPLE GEOMETRY: S200

UNITS: GRAMS
SAMPLE TYPE:

ENERGY OFFSET: -.1048E+01 keV
ENERGY SLOPE: 2.2865E-01 keV/C
ENERGY Q COEFF: 3.1860E-08 keV/C^^2
PEAK SENSITIVITY: 5.000

FWHM OFFSET: 1.9553E-01 keV
FWHM SLOPE: 4.1975E-02 sqr keV
ITERATIONS: 10
GAUSSIAN SENSITIVITY: 70.00 %

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 23-SEP-2007 10:17:20

Configuration : $DISK1:[GER11.SAMPLE]J5LAK1AA_220971110.CNF;1
Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6
Sample title : BRC SOIL
Sample date : 16-AUG-2007 10:15:00 Acquisition date : 22-SEP-2007 11:10:43
Sample ID : J5LAK1AA Sample quantity : 392.30 GRAMS
Sample type : Sample geometry : S200
Elapsed live time: 0 10:00:00.00 Elapsed real time: 0 10:00:37.60 0.1%
Start energy : 1.24 End energy : 1874.19
Sensitivity : 5.00 Gaussian : 70.00
Critical level : No

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	76.02*	6093	7199	2.77	337.06	317	31	1.69E-01	4.3	
2	0	81.08	229	1427	0.65	359.18	356	7	6.37E-03	28.1	
3	0	84.57*	516	2950	1.23	374.43	368	13	1.43E-02	23.0	
4	0	87.23*	1309	2731	0.96	386.05	381	12	3.64E-02	8.6	
5	0	89.96	807	2257	0.83	397.98	393	10	2.24E-02	11.6	
6	0	92.96	1432	2517	1.53	411.13	406	12	3.98E-02	7.5	
7	0	128.98	531	2157	0.71	568.63	563	11	1.48E-02	17.5	
8	0	154.24	267	1821	0.92	679.10	674	10	7.42E-03	30.6	
9	0	186.01	1397	2042	1.03	818.01	812	12	3.88E-02	7.0	
10	0	209.18	748	1671	0.88	919.30	915	11	2.08E-02	11.2	
11	1	238.62	9341	1374	0.83	1048.02	1041	28	2.59E-01	1.3	1.43E+00
12	1	240.92	888	1416	0.88	1058.09	1041	28	2.47E-02	9.9	
13	1	242.00	1561	1280	0.85	1062.84	1041	28	4.34E-02	5.5	
14	0	270.15	605	1446	1.02	1185.89	1179	14	1.68E-02	13.9	
15	0	277.32	328	1027	0.80	1217.23	1213	10	9.10E-03	19.1	
16	0	295.19	3236	1263	0.91	1295.35	1288	15	8.99E-02	3.0	
17	0	300.02	519	1091	0.82	1316.48	1310	13	1.44E-02	13.8	
18	0	327.89	604	1150	0.97	1438.33	1431	16	1.68E-02	13.2	
19	0	338.28	2080	974	0.95	1483.74	1476	16	5.78E-02	4.0	
20	0	351.84*	5487	1110	1.02	1543.03	1535	16	1.52E-01	1.9	
21	0	409.22	243	650	1.13	1793.88	1789	12	6.76E-03	21.9	
22	0	462.91	512	921	1.19	2028.57	2022	20	1.42E-02	15.4	
23	0	510.49*	884	1218	1.44	2236.50	2224	26	2.45E-02	13.2	
24	0	582.99	3045	666	1.25	2553.38	2544	19	8.46E-02	2.7	
25	0	609.05	4255	718	1.22	2667.30	2656	23	1.18E-01	2.2	
26	0	727.05	723	563	1.60	3182.94	3171	23	2.01E-02	9.3	
27	0	767.86	342	560	1.30	3361.25	3351	20	9.49E-03	17.8	
28	0	794.58	345	473	1.28	3478.01	3468	21	9.58E-03	14.4	
29	0	835.04	225	333	1.74	3654.77	3645	18	6.26E-03	17.5	
30	0	860.09	438	481	1.48	3764.23	3751	26	1.22E-02	12.5	
31	0	910.77	2212	610	1.58	3985.61	3971	28	6.14E-02	3.4	
32	0	932.91	254	417	1.58	4082.34	4070	24	7.05E-03	19.1	
33	0	967.72	1574	850	1.71	4234.43	4214	38	4.37E-02	5.6	
34	0	1119.75	1069	620	1.99	4898.50	4883	33	2.97E-02	6.7	
35	0	1237.39	309	607	1.78	5412.26	5401	24	8.59E-03	18.7	
36	0	1377.04	279	223	1.52	6022.03	6009	26	7.75E-03	13.8	
37	0	1401.30	77	194	0.91	6127.93	6113	22	2.13E-03	40.9	
38	0	1460.10*	10815	285	2.00	6384.66	6367	33	3.00E-01	1.1	
39	0	1508.61	78	116	1.27	6596.46	6586	21	2.17E-03	31.2	
40	0	1589.42	325	208	5.35	6949.21	6926	50	9.03E-03	13.3	
41	0	1763.73*	793	77	2.57	7709.99	7690	43	2.20E-02	4.7	
42	0	1846.87	124	53	1.08	8072.80	8059	28	3.46E-03	15.3	

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

VMS Nuclide Identification Report V3.0 Generated 23-SEP-2007 10:17:21

Configuration : $DISK1:[GER11.SAMPLE]J5LAK1AA_220971110.CNF;1
Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.3
Sample title : BRC SOIL
Sample date : 16-AUG-2007 10:15:00 Acquisition date : 22-SEP-2007 11:10:43
Sample ID : J5LAK1AA Sample quantity : 392.30 GRAMS
Sample type : Sample geometry : S200
Elapsed live time: 0 10:00:00.00 Elapsed real time: 0 10:00:37.60 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	10815	10.67*	8.390E-01	2.312E+01	2.312E+01	6.46
TL-208	277.35	328	6.80	2.956E+00	3.120E-01	3.120E-01	20.09
	510.84	884	21.60	1.997E+00	3.920E-01	3.920E-01	14.46
	583.14	3045	84.20*	1.815E+00	3.812E-01	3.812E-01	6.59
	860.37	438	12.46	1.328E+00	5.065E-01	5.065E-01	14.33
PB-212	238.63	9341	44.60*	3.226E+00	1.242E+00	1.242E+00	6.37
	300.09	519	3.41	2.819E+00	1.033E+00	1.033E+00	15.19
BI-214	609.31	4255	46.30*	1.757E+00	1.001E+00	1.001E+00	6.41
	768.36	342	5.04	1.463E+00	8.871E-01	8.871E-01	18.95
	1120.29	1069	15.10	1.051E+00	1.290E+00	1.290E+00	9.21
	1764.49	793	15.80	7.426E-01	1.294E+00	1.294E+00	7.68
PB-214	241.98	1561	7.49	3.201E+00	1.246E+00	1.246E+00	8.30
	295.21	3236	19.20	2.847E+00	1.133E+00	1.133E+00	6.96
	351.92	5487	37.20*	2.553E+00	1.106E+00	1.106E+00	6.47
	785.91	------	1.10	1.435E+00	------ Line Not Found		------
RA-223	154.21	267	5.58	3.885E+00	2.358E-01	2.366E-01	31.18
	269.46	605	13.60*	3.003E+00	2.837E-01	2.846E-01	15.27
	323.87	------	3.88	2.689E+00	------ Line Not Found		------
RA-224DA	238.63	9341	44.60*	3.226E+00	1.242E+00	1.289E+00	6.37
	240.98	888	3.95	3.209E+00	1.341E+00	1.391E+00	11.73
	583.14	3045	30.25	1.815E+00	1.061E+00	1.101E+00	6.59
	860.37	438	4.48	1.328E+00	1.409E+00	1.462E+00	14.33
RA-226DA	186.21	1397	3.50	3.657E+00	2.089E+00	2.089E+00	9.32
	241.98	1561	7.49	3.201E+00	1.246E+00	1.246E+00	8.30
	295.22	3236	19.20	2.847E+00	1.133E+00	1.133E+00	6.96
	351.92	5487	37.20	2.553E+00	1.106E+00	1.106E+00	6.47
	609.32	4255	46.30*	1.757E+00	1.001E+00	1.001E+00	6.41
	1120.28	1069	15.10	1.051E+00	1.290E+00	1.290E+00	9.21
	1238.11	309	5.94	9.618E-01	1.036E+00	1.036E+00	19.71
	1764.49	793	15.80	7.426E-01	1.294E+00	1.294E+00	7.68
AC-228	209.28	748	4.40	3.462E+00	9.396E-01	9.396E-01	12.77
	270.23	605	3.60	3.003E+00	1.072E+00	1.072E+00	15.27
	338.32	2080	11.40	2.617E+00	1.334E+00	1.334E+00	7.40
	911.07	2212	27.70*	1.264E+00	1.209E+00	1.209E+00	7.96
	969.11	1574	16.60	1.197E+00	1.515E+00	1.515E+00	8.97
RA-228DA	209.28	748	4.40	3.462E+00	9.396E-01	9.513E-01	12.77

Sample ID : J5LAK1AA Acquisition date : 22-SEP-2007 11:10:43

Nuclide Type: NP

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected PCI/GRAM	Decay Corr PCI/GRAM	1-Sigma %Error
	338.32	2080	11.40	2.617E+00	1.334E+00	1.351E+00	7.40
	911.07	2212	27.70*	1.264E+00	1.209E+00	1.224E+00	7.96
	964.60	------	5.20	1.201E+00	------ Line Not Found		------
	969.11	1574	16.60	1.197E+00	1.515E+00	1.534E+00	8.97
TH-228DA	238.63	9341	44.60	3.226E+00	1.242E+00	1.289E+00	6.37
	240.98	888	3.95	3.209E+00	1.341E+00	1.391E+00	11.73
	583.14	3045	30.25*	1.815E+00	1.061E+00	1.101E+00	6.59
	860.37	438	4.48	1.328E+00	1.409E+00	1.462E+00	14.33
TH-232DA	238.63	9341	44.60	3.226E+00	1.242E+00	1.242E+00	6.37
	338.32	2080	12.40*	2.617E+00	1.227E+00	1.227E+00	7.40
	583.14	3045	30.25	1.815E+00	1.061E+00	1.061E+00	6.59
	911.07	2212	27.70	1.264E+00	1.209E+00	1.209E+00	7.96
	964.60	------	5.20	1.201E+00	------ Line Not Found		------
	969.11	1574	16.60	1.197E+00	1.515E+00	1.515E+00	8.97
U-234DA	241.98	1561	7.49	3.201E+00	1.246E+00	1.246E+00	8.30
	295.22	3236	19.20*	2.847E+00	1.133E+00	1.133E+00	6.96
	351.92	5487	37.20	2.553E+00	1.106E+00	1.106E+00	6.47
	609.31	4255	46.30	1.757E+00	1.001E+00	1.001E+00	6.41
U-238DA	241.98	1561	7.49	3.201E+00	1.246E+00	1.246E+00	8.30
	295.22	3236	19.20	2.847E+00	1.133E+00	1.133E+00	6.96
	351.92	5487	37.20*	2.553E+00	1.106E+00	1.106E+00	6.47
	609.31	4255	46.30	1.757E+00	1.001E+00	1.001E+00	6.41

Nuclide Type: AP

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected PCI/GRAM	Decay Corr PCI/GRAM	1-Sigma %Error
MN-54	834.83	225	99.98*	1.363E+00	3.164E-02	3.436E-02	18.81

Flag: "*" = Keyline

Unidentified Energy Lines
Sample ID : J5LAK1AA Acquisition date : 22-SEP-2007 11:10:43

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
0	76.02	6093	7199	2.77	337.06	317	31	1.69E-01	4.3	2.12E+00	
0	81.08	229	1427	0.65	359.18	356	7	6.37E-03	28.1	2.47E+00	T
0	84.57	516	2950	1.23	374.43	368	13	1.43E-02	23.0	2.69E+00	
0	87.23	1309	2731	0.96	386.05	381	12	3.64E-02	8.6	2.84E+00	T
0	89.96	807	2257	0.83	397.98	393	10	2.24E-02	11.6	2.99E+00	
0	92.96	1432	2517	1.53	411.13	406	12	3.98E-02	7.5	3.13E+00	T
0	128.98	531	2157	0.71	568.63	563	11	1.48E-02	17.5	3.91E+00	
0	327.89	604	1150	0.97	1438.33	1431	16	1.68E-02	13.2	2.67E+00	T
0	409.22	243	650	1.13	1793.88	1789	12	6.76E-03	21.9	2.32E+00	
0	462.91	512	921	1.19	2028.57	2022	20	1.42E-02	15.4	2.14E+00	T
0	727.05	723	563	1.60	3182.94	3171	23	2.01E-02	9.3	1.53E+00	T
0	794.58	345	473	1.28	3478.01	3468	21	9.58E-03	14.4	1.42E+00	T
0	932.91	254	417	1.58	4082.34	4070	24	7.05E-03	19.1	1.24E+00	
0	1377.04	279	223	1.52	6022.03	6009	26	7.75E-03	13.8	8.79E-01	
0	1401.30	77	194	0.91	6127.93	6113	22	2.13E-03	40.9	8.66E-01	
0	1508.61	78	116	1.27	6596.46	6586	21	2.17E-03	31.2	8.19E-01	
0	1589.42	325	208	5.35	6949.21	6926	50	9.03E-03	13.3	7.89E-01	
0	1846.87	124	53	1.08	8072.80	8059	28	3.46E-03	15.3	7.27E-01	

Flags: "T" = Tentatively associated

Sample ID : J5LAK1AA Acquisition date : 22-SEP-2007 11:10:43

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	4.842E-02	14.46	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	2.650E-01	9.21	
		% Abundances Found =		50.00			
TC-95M	61.00D	0.61	204.12*	66.20	--- Not Found ---		Abun.
			582.07	29.30	1.673E+00	6.59	
			835.13	26.10	1.851E-01	18.81	
		% Abundances Found =		45.56			
RU-103	39.35D	0.95	497.08*	89.00	--- Not Found ---		Abun.
			610.33	5.60	1.595E+01	6.41	
		% Abundances Found =		5.92			
RU-106DA	368.20D	0.10	511.85	20.60	4.409E-01	14.46	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	4.546E-01	16.49	
			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	5.419E-02	28.89	Abun.
			276.40	6.90	3.096E-01	20.09	
			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	5.626E-02	15.86	
			801.93	8.73	--- Not Found ---		
		% Abundances Found =		41.22			
LA-140	40.22H	22.23	328.77	20.50	1.035E+06	14.61	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	2.894E-01	10.95	
			105.31*	20.70	--- Not Found ---		
		% Abundances Found =		42.47			

Sample ID : J5LAK1AA Acquisition date : 22-SEP-2007 11:10:43

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	3.115E+01	16.61	
			452.83	0.31	--- Not Found ---		
			727.33*	6.58	1.375E+00	11.45	
			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			
TH-234DA	4.47E+09Y	0.00	766.41	0.21	2.129E+01	18.95	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	1.354E-01	9.32	
			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	1.618E+00	10.00	
		% Abundances	Found =	58.74			

Flag: "*" = Keyline

VMS Nuclide Identification Report V3.0 Generated 23-SEP-2007 10:17:23

Configuration : $DISK1:[GER11.SAMPLE]J5LAK1AA_220971110.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 : 16-AUG-2007 10:15:00 Acquisition date : 22-SEP-2007 11:10:43
Sample ID : J5LAK1AA Sample quantity : 392.30 GRAMS
Sample type : Sample geometry : S200
Elapsed live time: 0 10:00:00.00 Elapsed real time: 0 10:00:37.60 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	2.312E+01	1.493E+00	1.241E-01	4.904E-03	186.228
MN-54	3.436E-02	6.463E-03	1.572E-02	7.341E-04	2.186
TL-208	3.812E-01	2.511E-02	1.467E-02	4.856E-04	25.984
PB-212	1.242E+00	7.913E-02	2.413E-02	9.001E-04	51.486
BI-214	1.001E+00	6.412E-02	2.647E-02	8.784E-04	37.814
PB-214	1.106E+00	7.154E-02	2.875E-02	1.039E-03	38.457
RA-223	2.846E-01	4.345E-02	7.489E-02	2.838E-03	3.801
RA-224DA	1.289E+00	8.211E-02	2.504E-02	9.340E-04	51.486
RA-226DA	1.001E+00	6.412E-02	2.647E-02	8.785E-04	37.813
AC-228	1.209E+00	9.628E-02	5.265E-02	2.724E-03	22.968
RA-228DA	1.224E+00	9.747E-02	5.330E-02	2.758E-03	22.968
TH-228DA	1.101E+00	7.253E-02	4.237E-02	1.403E-03	25.984
TH-232DA	1.227E+00	9.083E-02	8.679E-02	3.218E-03	14.134
U-234DA	1.133E+00	7.883E-02	5.430E-02	2.071E-03	20.871
U-238DA	1.106E+00	7.154E-02	2.875E-02	1.039E-03	38.457

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

Nuclide	Key-Line Activity (PCI/GRAM)	K.L. Ided	Act error	MDA (PCI/GRAM)	MDA error	Act/MDA
BE-7	-7.052E-02		5.250E-02	1.708E-01	5.621E-03	-0.413
NA-22	-8.843E-03		5.712E-03	1.866E-02	7.133E-04	-0.474
SC-46	2.650E-01	+	2.441E-02	4.392E-02	1.708E-03	6.033
CR-51	-3.069E-02		8.115E-02	2.682E-01	1.024E-02	-0.114
CO-57	5.783E-03		3.059E-02	9.910E-02	3.637E-03	0.058
CO-58	3.599E-03		5.674E-03	1.932E-02	8.625E-04	0.186
FE-59	-3.554E-03		1.704E-02	5.677E-02	2.303E-03	-0.063
CO-60	-1.229E-03		4.926E-03	1.656E-02	6.696E-04	-0.074
ZN-65	3.585E-02		1.404E-02	4.145E-02	1.628E-03	0.865
SE-75	7.590E-03		6.154E-03	2.098E-02	7.936E-04	0.362
SR-85	1.603E-02		6.005E-03	1.816E-02	5.921E-04	0.883
Y-88	9.850E-03		4.168E-03	1.572E-02	5.025E-04	0.626
NB-94	-5.286E-03		4.266E-03	1.390E-02	6.929E-04	-0.380

Sample ID : J5LAK1AA Acquisition date : 22-SEP-2007 11:10:43

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

Nuclide	Key-Line Activity (PCI/GRAM)	K.L. Ided	Act error	MDA (PCI/GRAM)	MDA error	Act/MDA
NB-95	3.037E-02		1.107E-02	3.296E-02	1.351E-03	0.922
TC-95M	-2.197E-03		7.340E-03	2.415E-02	8.787E-04	-0.091
ZR-95	5.707E-03		1.113E-02	3.794E-02	1.528E-03	0.150
ZRNB-95	4.626E-02		1.590E-02	4.739E-02	1.942E-03	0.976
RH-101	1.337E-02		4.861E-03	1.532E-02	5.549E-04	0.873
RH-102M	-1.794E-03		3.535E-03	1.168E-02	3.846E-04	-0.154
RU-103	-2.989E-03		7.187E-03	2.368E-02	7.760E-04	-0.126
RU-106DA	-1.727E-02		3.845E-02	1.282E-01	4.256E-03	-0.135
AG-108M	-1.503E-03		3.600E-03	1.202E-02	3.968E-04	-0.125
AG-110M	5.234E-04		6.419E-03	2.148E-02	1.097E-03	0.024
SN-113DA	-8.533E-03		6.075E-03	2.017E-02	6.621E-04	-0.423
SB-124	-2.906E-03		5.855E-03	1.922E-02	6.374E-04	-0.151
SB-125	-7.342E-03		1.115E-02	3.713E-02	1.226E-03	-0.198
SN-126DA	1.015E-02		4.036E-03	1.377E-02	4.615E-04	0.737
I-131	5.723E-02		9.117E-02	3.132E-01	1.102E-02	0.183
BA-133	9.980E-03		5.324E-03	1.702E-02	6.098E-04	0.586
CS-134	5.626E-02	+	8.924E-03	2.103E-02	9.130E-04	2.675
CS-137DA	-3.151E-03		4.697E-03	1.547E-02	5.134E-04	-0.204
LA-138	1.037E-02		6.938E-03	2.456E-02	9.764E-04	0.422
CE-139	1.208E-02		4.460E-03	1.512E-02	5.370E-04	0.799
BA-140	5.871E-03		1.002E-01	3.414E-01	1.120E-02	0.017
BALA-140	7.436E-02		6.692E-02	2.037E-01	7.655E-03	0.365
CE-141	-1.400E-02		1.331E-02	4.479E-02	1.615E-03	-0.313
CE-144	-1.098E-02		3.002E-02	9.695E-02	3.585E-03	-0.113
CEPR-144	-2.239E-02		6.004E-02	1.939E-01	7.170E-03	-0.115
PM-144	-4.750E-04		3.928E-03	1.316E-02	4.370E-04	-0.036
PM-146	1.858E-03		5.090E-03	1.710E-02	5.643E-04	0.109
EU-152	9.220E-03		1.204E-02	4.005E-02	1.469E-03	0.230
EU-154	-2.087E-02		1.565E-02	5.140E-02	1.964E-03	-0.406
EU-155	5.688E-02		1.602E-02	5.325E-02	2.103E-03	1.068
HF-181	-9.794E-03		7.554E-03	2.457E-02	8.081E-04	-0.399
BI-207	5.223E-03		3.756E-03	1.289E-02	4.258E-04	0.405
BI-210M	-5.606E-03		6.267E-03	1.995E-02	7.550E-04	-0.281
BI-212	1.375E+00	+	1.575E-01	3.040E-01	1.347E-02	4.524
AC-227DA	4.988E-02		3.328E-02	9.921E-02	3.694E-03	0.503
TH-234DA	2.240E+00		7.313E-01	2.546E+00	1.202E-01	0.880
U-235HP	6.693E-02		2.822E-02	9.672E-02	3.497E-03	0.692
NP-237DA	-1.804E-03		8.707E-03	2.891E-02	1.104E-03	-0.062
U-238DHP	7.238E-01		2.630E-01	8.530E-01	3.536E-02	0.849
AM-241HP	1.684E-02		3.310E-02	1.075E-01	4.269E-03	0.157

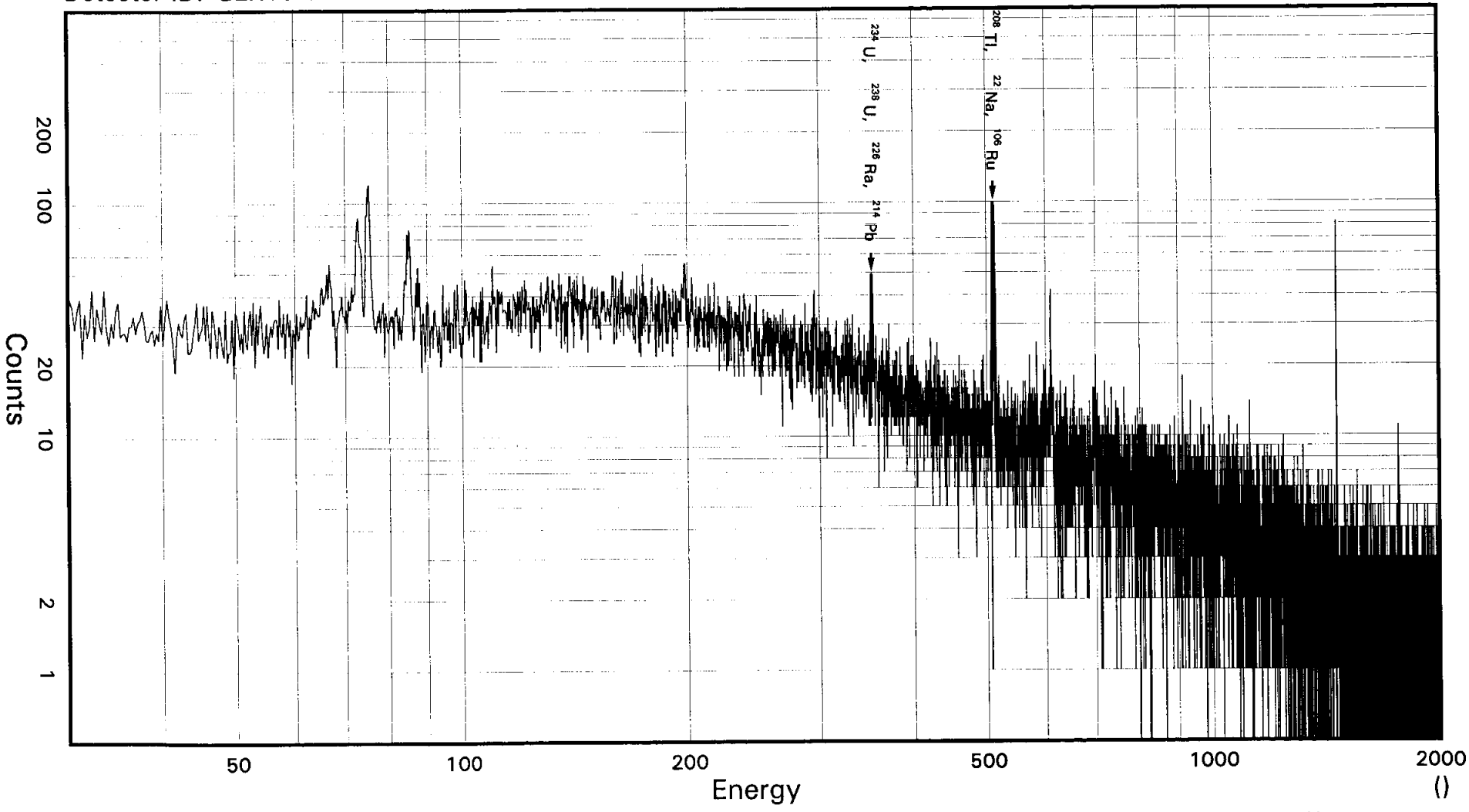
STL Richland WA.

BRC SOIL

Sample ID: J5WE91AA

Detector ID: GER15 1

Batch ID: 7241630



Acquisition Start: 21-SEP-2007 06:20:34.43

Preset Live Time: 0 10:00:00.00

Elapsed Live Time: 0 10:00:00.00

Energy Coefficients:

Offset: 1.17998E+01

Slope: 2.41328E-01

Quadrature: 1.55420E-08

SAMPLE IDENTIFICATION: J5WE91AA

CONFIGURATION ID: GER15:J5WE91AA_210970620
TITLE : BRC SOIL
SAMPLE ID : J5WE91AA

REPORT DATE: 21-SEP-07
ACQUIRE DATE: 21-SEP-07 06:20:34
ELAPSED LIVE TIME: 36000.0 Sec
PRESET LIVE TIME: 0 10:00:00

SAMPLE DATE: 15-AUG-2007 13:45:00.00
CALIB DATE: 21-SEP-2007 05:17:57.68
ELAPSED LIVE TIME: 0 10:00:00
ELAPSED REAL TIME: 0 10:00:13

SAMPLE QUANTITY: 2.0130E+02
SAMPLE GEOMETRY: 200ML

UNITS: GRAMS
SAMPLE TYPE:

ENERGY OFFSET: 1.1800E+01 keV
ENERGY SLOPE: 2.4133E-01 keV/C
ENERGY Q COEFF: 1.5542E-08 keV/C^^2
PEAK SENSITIVITY: 5.000

FWHM OFFSET: 6.8027E-01 keV
FWHM SLOPE: 3.2311E-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 21-SEP-2007 16:21:03

Configuration : RDND06$DKA100:[GER15.SAMPLE]J5WE91AA_210970620.CNF;1
Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6
Sample title : BRC SOIL
Sample date : 15-AUG-2007 13:45:00 Acquisition date : 21-SEP-2007 06:20:34
Sample ID : J5WE91AA Sample quantity : 201.30 GRAMS
Sample type : Sample geometry : 200ML
Elapsed live time: 0 10:00:00.00 Elapsed real time: 0 10:00:13.65 0.0%
Start energy : 12.04 End energy : 1989.81
Sensitivity : 5.00 Gaussian : 10.00
Critical level : No

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	352.03*	68	225	0.90	1409.69	1403	14	1.90E-03	63.6	
2	0	511.28*	155	348	2.29	2069.42	2055	34	4.31E-03	50.8	

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

VMS Nuclide Identification Report V3.1 Generated 21-SEP-2007 16:21:03

Configuration	: RDND06$DKA100:[GER15.SAMPLE]J5WE91AA_210970620.CNF;1		
Analyses by	: PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.4		
Sample title	: BRC SOIL		
Sample date	: 15-AUG-2007 13:45:00	Acquisition date	: 21-SEP-2007 06:20:34
Sample ID	: J5WE91AA	Sample quantity	: 201.30 GRAMS
Sample type	:	Sample geometry	: 200ML
Elapsed live time	: 0 10:00:00.00	Elapsed real time	: 0 10:00:13.65 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 : J5WE91AA Acquisition date : 21-SEP-2007 06:20:34

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
0	352.03	68	225	0.90	1409.69	1403	14	1.90E-03	63.6	1.74E+00	T
0	511.28	155	348	2.29	2069.42	2055	34	4.31E-03	50.8	1.31E+00	T

Flags: "T" = Tentatively associated

Sample ID : J5WE91AA Acquisition date : 21-SEP-2007 06:20:34

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	2.527E-02	51.23	Abun.
			1274.54*	99.94	--- Not Found ---		
		% Abundances Found =		64.26			
RU-106DA	368.20D	0.10	511.85	20.60	2.300E-01	51.23	Abun.
			621.84*	9.80	--- Not Found ---		
		% Abundances Found =		67.76			
TL-208	1.41E+10Y	0.00	277.35	6.80	--- Not Found ---		Abun.
			510.84	21.60	2.046E-01	51.23	
			583.14*	84.20	--- Not Found ---		
			860.37	12.46	--- Not Found ---		
		% Abundances Found =		17.27			
PB-214	4.47E+09Y	0.00	241.98	7.49	--- Not Found ---		Abun.
			295.21	19.20	--- Not Found ---		
			351.92*	37.20	3.944E-02	63.88	
			785.91	1.10	--- Not Found ---		
		% Abundances Found =		57.24			
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	3.944E-02	63.88	
			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			
U-234DA	4.47E+09Y	0.00	241.98	7.49	--- Not Found ---		Abun.
			295.22*	19.20	--- Not Found ---		
			351.92	37.20	3.944E-02	63.88	
			609.31	46.30	--- Not Found ---		
		% Abundances Found =		33.76			
U-238DA	4.47E+09Y	0.00	241.98	7.49	--- Not Found ---		Abun.
			295.22	19.20	--- Not Found ---		
			351.92*	37.20	3.944E-02	63.88	
			609.31	46.30	--- Not Found ---		
		% Abundances Found =		33.76			

Flag: "*" = Keyline

VMS Nuclide Identification Report V3.1 Generated 21-SEP-2007 16:21:05

Configuration : RDND06$DKA100:[GER15.SAMPLE]J5WE91AA_210970620.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 : 15-AUG-2007 13:45:00 Acquisition date : 21-SEP-2007 06:20:34
Sample ID : J5WE91AA Sample quantity : 201.30 GRAMS
Sample type : Sample geometry : 200ML
Elapsed live time: 0 10:00:00.00 Elapsed real time: 0 10:00:13.65 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	-8.768E-02		7.991E-02	2.688E-01	1.092E-02	-0.326
NA-22	1.693E-03		7.009E-03	2.474E-02	7.941E-04	0.068
NA-24	7.534E+08		3.902E+09	Half-Life too short		
K-40	-7.316E-02		1.974E-01	7.108E-01	2.319E-02	-0.103
SC-46	-2.030E-02		1.485E-02	4.029E-02	1.279E-03	-0.504
CR-51	3.456E-02		1.253E-01	4.305E-01	1.614E-02	0.080
MN-54	-1.161E-03		7.164E-03	2.465E-02	8.027E-04	-0.047
CO-57	-1.293E-02		3.771E-02	1.285E-01	4.931E-03	-0.101
CO-58	-3.903E-03		9.095E-03	3.112E-02	1.012E-03	-0.125
FE-59	5.563E-03		2.110E-02	7.474E-02	2.386E-03	0.074
CO-60	-4.969E-03		7.184E-03	2.481E-02	8.072E-04	-0.200
ZN-65	-3.965E-02		1.714E-02	5.440E-02	1.729E-03	-0.729
SE-75	5.627E-03		1.019E-02	3.424E-02	1.460E-03	0.164
SR-85	9.791E-02		1.341E-02	4.197E-02	1.762E-03	2.333
Y-88	-6.637E-03		8.134E-03	2.816E-02	8.588E-04	-0.236
NB-94	9.731E-03		6.699E-03	2.407E-02	7.837E-04	0.404
NB-95	-6.949E-03		1.275E-02	4.362E-02	1.410E-03	-0.159
TC-95M	1.734E-02		1.042E-02	3.579E-02	1.612E-03	0.484
ZR-95	1.515E-02		1.604E-02	5.737E-02	1.852E-03	0.264
ZRNB-95	-1.280E-02		1.843E-02	6.270E-02	2.027E-03	-0.204
MO-99	8.855E-05		4.525E-05	Half-Life too short		
RH-101	2.319E-02		6.907E-03	2.376E-02	1.072E-03	0.976
RH-102M	1.941E-03		5.577E-03	1.948E-02	7.892E-04	0.100
RU-103	-1.944E-02		1.207E-02	3.984E-02	1.648E-03	-0.488
RU-106DA	2.493E-02		6.500E-02	2.244E-01	7.849E-03	0.111
AG-108M	-9.057E-04		5.925E-03	1.992E-02	7.726E-04	-0.045
AG-110M	-1.303E-02		1.018E-02	3.355E-02	1.092E-03	-0.388
SN-113DA	-1.340E-02		1.008E-02	3.300E-02	1.216E-03	-0.406
SB-124	-1.464E-02		1.049E-02	3.436E-02	1.254E-03	-0.426
SB-125	-7.032E-03		1.841E-02	6.158E-02	2.372E-03	-0.114
SN-126DA	-1.385E-03		6.136E-03	2.076E-02	6.530E-04	-0.067
I-131	-6.183E-02		1.524E-01	5.131E-01	1.915E-02	-0.121
BA-133	3.246E-02		9.403E-03	2.947E-02	1.102E-03	1.101

Sample ID : J5WE91AA Acquisition date : 21-SEP-2007 06:20:34

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

Nuclide	Key-Line Activity (PCI/GRAM)	K.L. Ided	Act error	MDA (PCI/GRAM)	MDA error	Act/MDA
CS-134	1.757E-03		7.522E-03	2.630E-02	8.542E-04	0.067
CS-137DA	-4.669E-03		7.214E-03	2.410E-02	7.569E-04	-0.194
LA-138	-1.460E-03		1.076E-02	3.792E-02	1.238E-03	-0.038
CE-139	-3.615E-04		6.089E-03	2.067E-02	9.283E-04	-0.017
BA-140	-1.333E-01		1.627E-01	5.477E-01	2.235E-02	-0.243
BALA-140	1.540E-01		1.028E-01	3.912E-01	1.262E-02	0.394
LA-140	2.109E-02		2.994E-02	Half-Life too short		
CE-141	-4.217E-03		1.690E-02	5.754E-02	2.349E-03	-0.073
CE-144	-8.644E-03		3.696E-02	1.263E-01	4.746E-03	-0.068
CEPR-144	-1.877E-02		7.391E-02	2.525E-01	9.486E-03	-0.074
PM-144	-3.799E-03		6.532E-03	2.195E-02	7.745E-04	-0.173
PM-146	5.399E-03		8.065E-03	2.838E-02	1.125E-03	0.190
EU-152	-2.926E-03		1.904E-02	6.466E-02	2.424E-03	-0.045
EU-154	3.416E-03		1.930E-02	6.797E-02	2.182E-03	0.050
EU-155	8.181E-03		1.511E-02	5.098E-02	1.692E-03	0.160
HF-181	3.179E-03		1.161E-02	4.045E-02	1.650E-03	0.079
BI-207	1.706E-02		6.385E-03	2.291E-02	8.901E-04	0.745
TL-208	-1.067E-02		1.062E-02	2.652E-02	1.006E-03	-0.402
BI-210M	-1.430E-02		9.620E-03	3.210E-02	1.366E-03	-0.445
BI-212	4.430E-02		9.605E-02	3.381E-01	1.331E-02	0.131
PB-212	2.106E-02		1.113E-02	3.805E-02	1.677E-03	0.554
BI-214	-4.732E-02		2.574E-02	6.209E-02	2.235E-03	-0.762
PB-214	3.944E-02	+	2.520E-02	5.584E-02	2.091E-03	0.706
RA-223	-9.157E-03		3.514E-02	1.203E-01	5.090E-03	-0.076
RA-224DA	2.185E-02		1.154E-02	3.947E-02	1.740E-03	0.554
RA-226DA	-4.724E-02		2.575E-02	6.211E-02	2.235E-03	-0.761
AC-227DA	-7.333E-02		4.371E-02	1.410E-01	6.230E-03	-0.520
AC-228	-7.209E-02		3.932E-02	9.998E-02	3.253E-03	-0.721
RA-228DA	-7.297E-02		3.980E-02	1.012E-01	3.293E-03	-0.721
TH-228DA	-3.082E-02		3.067E-02	7.658E-02	2.906E-03	-0.402
TH-232DA	8.506E-02		4.174E-02	1.465E-01	5.495E-03	0.580
TH-234DA	-1.535E+00		1.010E+00	3.352E+00	1.089E-01	-0.458
U-234DA	1.016E-01		2.763E-02	9.763E-02	3.921E-03	1.041
U-235HP	-1.720E-02		3.557E-02	1.207E-01	4.870E-03	-0.143
NP-237DA	-2.727E-02		1.411E-02	4.612E-02	1.772E-03	-0.591
U-238DA	3.944E-02	+	2.520E-02	5.584E-02	2.091E-03	0.706
U-238DHP	-9.475E-02		8.130E-02	2.710E-01	8.451E-03	-0.350
AM-241HP	-1.127E-02		8.088E-03	2.689E-02	8.513E-04	-0.419

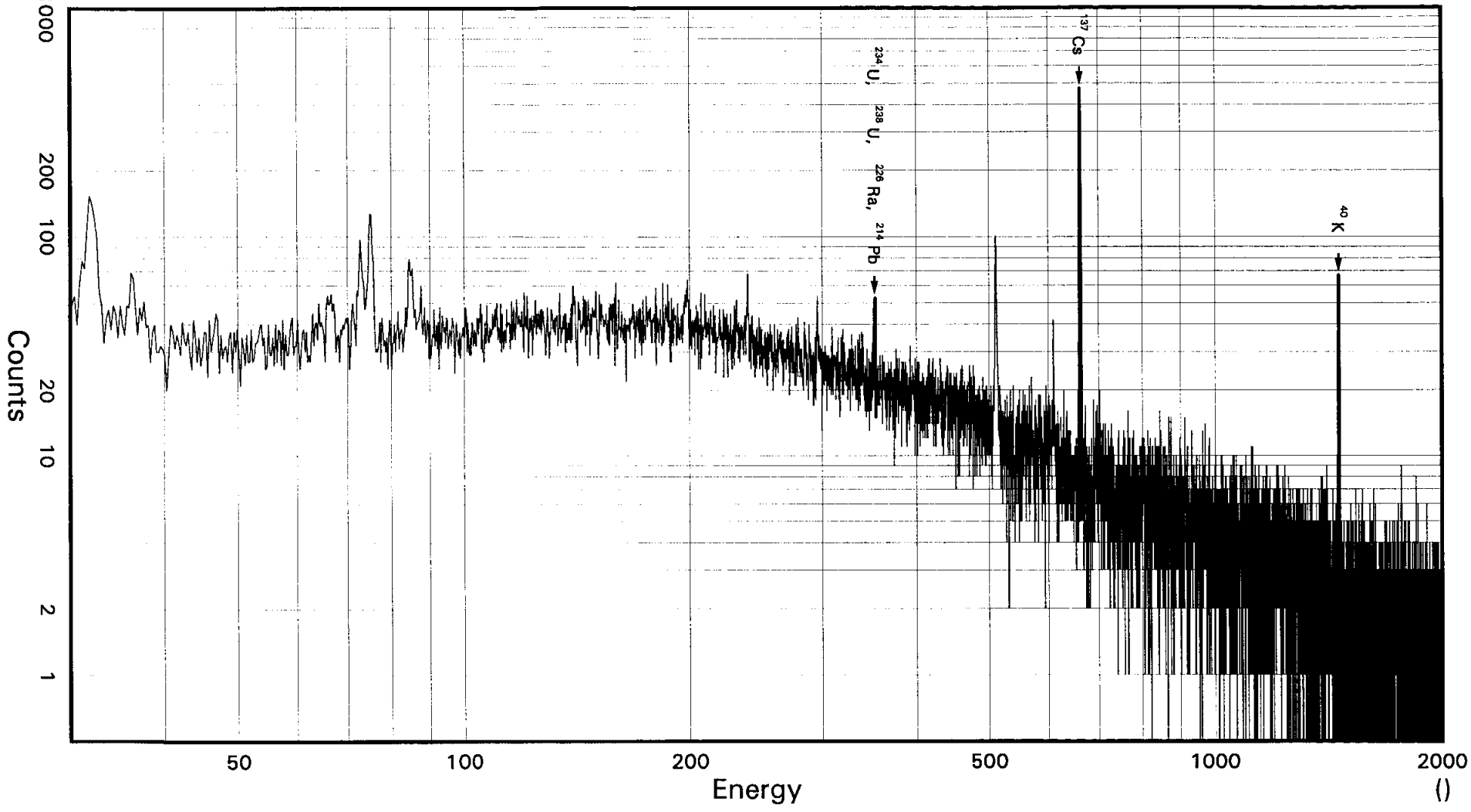
STL Richland WA.

BRC SOIL

Sample ID: J5WE91AC

Detector ID: GER15 1

Batch ID: 7241630



Acquisition Start: 21-SEP-2007 20:09:29.90

Preset Live Time: 0 10:00:00.00

Elapsed Live Time: 0 10:00:00.00

Energy Coefficients:

Offset: 1.17998E+01

Slope: 2.41328E-01

Quadrature: 1.55420E-08

SAMPLE IDENTIFICATION: J5WE91AC

CONFIGURATION ID: GER15:J5WE91AC_210972009
TITLE : BRC SOIL
SAMPLE ID : J5WE91AC

REPORT DATE: 22-SEP-07
ACQUIRE DATE: 21-SEP-07 20:09:29
ELAPSED LIVE TIME: 36000.0 Sec
PRESET LIVE TIME: 0 10:00:00

SAMPLE DATE: 21-SEP-2007 12:00:00.00
CALIB DATE: 21-SEP-2007 05:17:57.68
ELAPSED LIVE TIME: 0 10:00:00
ELAPSED REAL TIME: 0 10:00:14

SAMPLE QUANTITY: 2.0330E+02
SAMPLE GEOMETRY: 200ML

UNITS: GRAMS
SAMPLE TYPE:

ENERGY OFFSET: 1.1800E+01 keV
ENERGY SLOPE: 2.4133E-01 keV/C
ENERGY Q COEFF: 1.5542E-08 keV/C^^2
PEAK SENSITIVITY: 5.000

FWHM OFFSET: 6.8027E-01 keV
FWHM SLOPE: 3.2311E-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 22-SEP-2007 06:10:00

Configuration : RDND06$DKA100:[GER15.SAMPLE]J5WE91AC_210972009.CNF;1
Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6
Sample title : BRC SOIL
Sample date : 21-SEP-2007 12:00:00 Acquisition date : 21-SEP-2007 20:09:29
Sample ID : J5WE91AC Sample quantity : 203.30 GRAMS
Sample type : Sample geometry : 200ML
Elapsed live time: 0 10:00:00.00 Elapsed real time: 0 10:00:14.44 0.0%
Start energy : 12.04 End energy : 1989.81
Sensitivity : 5.00 Gaussian : 10.00
Critical level : No

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	31.99	495	576	1.04	83.65	77	13	1.37E-02	11.0	
2	2	72.95*	14	276	1.13	253.39	249	19	3.89E-04	330.1	1.12E+00
3	0	351.89*	37	340	1.11	1409.09	1403	16	1.02E-03	137.5	
4	0	661.77	2934	191	1.37	2692.84	2679	28	8.15E-02	2.2	
5	0	1460.81*	22	35	1.91	6001.97	5983	34	6.03E-04	158.2	

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

VMS Nuclide Identification Report V3.1 Generated 22-SEP-2007 06:10:00

Configuration : RDND06$DKA100:[GER15.SAMPLE]J5WE91AC_210972009.CNF;1
Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.4
Sample title : BRC SOIL
Sample date : 21-SEP-2007 12:00:00 Acquisition date : 21-SEP-2007 20:09:29
Sample ID : J5WE91AC Sample quantity : 203.30 GRAMS
Sample type : Sample geometry : 200ML
Elapsed live time: 0 10:00:00.00 Elapsed real time: 0 10:00:14.44 0.0%
Energy tolerance : 2.00 Half life ratio : 8.00
Errors propagated: Yes Systematic Error : 5.00 %
Efficiency type : Empirical Efficiencies at : Peak Energy
Abundance limit : 80.00

Nuclide Line Activity Report

Nuclide Type: NP

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected PCI/GRAM	Decay Corr PCI/GRAM	1-Sigma %Error
K-40	1460.81	22	10.67*	5.616E-01	1.338E-01	1.338E-01	158.29

Nuclide Type: FP

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected PCI/GRAM	Decay Corr PCI/GRAM	1-Sigma %Error
CS-137DA	661.65	2934	85.10*	1.070E+00	1.189E+00	1.189E+00	6.29

Flag: "*" = Keyline

Unidentified Energy Lines
Page : 2
Sample ID : J5WE91AC
Acquisition date : 21-SEP-2007 20:09:29

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
0	31.99	495	576	1.04	83.65	77	13	1.37E-02	11.0	1.48E+00	
2	72.95	14	276	1.13	253.39	249	19	3.89E-04	****	3.55E+00	
0	351.89	37	340	1.11	1409.09	1403	16	1.02E-03	****	1.74E+00	T

Flags: "T" = Tentatively associated

Sample ID : J5WE91AC Acquisition date : 21-SEP-2007 20:09:29

Nuclide	Half-life	Half-Life Ratio	Energy	%Abund	Activity (PCI/GRAM)	1-Sigma %Error	Rejected by
PB-214	4.47E+09Y	0.00	241.98	7.49	--- Not Found ---		Abun.
			295.21	19.20	--- Not Found ---		
			351.92*	37.20	2.097E-02	137.66	
			785.91	1.10	--- Not Found ---		
		% Abundances Found =		57.24			
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	2.097E-02	137.66	
			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			
U-234DA	4.47E+09Y	0.00	241.98	7.49	--- Not Found ---		Abun.
			295.22*	19.20	--- Not Found ---		
			351.92	37.20	2.097E-02	137.66	
			609.31	46.30	--- Not Found ---		
		% Abundances Found =		33.76			
U-238DA	4.47E+09Y	0.00	241.98	7.49	--- Not Found ---		Abun.
			295.22	19.20	--- Not Found ---		
			351.92*	37.20	2.097E-02	137.66	
			609.31	46.30	--- Not Found ---		
		% Abundances Found =		33.76			

Flag: "*" = Keyline

VMS Nuclide Identification Report V3.1 Generated 22-SEP-2007 06:10:02

Configuration : RDND06$DKA100:[GER15.SAMPLE]J5WE91AC_210972009.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 : 21-SEP-2007 12:00:00 Acquisition date : 21-SEP-2007 20:09:29
Sample ID : J5WE91AC Sample quantity : 203.30 GRAMS
Sample type : Sample geometry : 200ML
Elapsed live time: 0 10:00:00.00 Elapsed real time: 0 10:00:14.44 0.0%
Peak Width (FWHM): 3.00 Confidence level : 5.00 %
Energy tolerance : 2.00 Half life ratio : 8.00
Errors propagated: Yes Systematic Error : 5.00 %
Efficiency type : Empirical Efficiencies at : Peak Energy
Abundance limit : 80.00 WTM error limit : 3.00

Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Activity (PCI/GRAM)	Act error	MDA (PCI/GRAM)	MDA error	Act/MDA
K-40	1.338E-01	2.118E-01	1.949E-01	6.357E-03	0.687
CS-137DA	1.189E+00	7.478E-02	2.388E-02	7.501E-04	49.802

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

Nuclide	Key-Line Activity (PCI/GRAM)	K.L. Ided	Act error	MDA (PCI/GRAM)	MDA error	Act/MDA
BE-7	-3.414E-02		6.070E-02	2.062E-01	8.376E-03	-0.166
NA-22	3.970E-03		6.916E-03	2.468E-02	7.923E-04	0.161
NA-24	6.608E-03		1.156E-02	4.237E-02	1.381E-03	0.156
SC-46	-2.121E-02		1.092E-02	2.889E-02	9.167E-04	-0.734
CR-51	8.399E-02		5.877E-02	2.038E-01	7.640E-03	0.412
MN-54	-1.201E-02		6.816E-03	2.214E-02	7.212E-04	-0.542
CO-57	-2.147E-02		3.521E-02	1.194E-01	4.581E-03	-0.180
CO-58	-1.714E-02		6.552E-03	2.056E-02	6.685E-04	-0.834
FE-59	3.554E-02		1.246E-02	4.718E-02	1.506E-03	0.753
CO-60	-7.393E-04		6.524E-03	2.319E-02	7.545E-04	-0.032
ZN-65	-4.444E-03		1.530E-02	5.271E-02	1.675E-03	-0.084
SE-75	6.883E-03		8.929E-03	2.999E-02	1.279E-03	0.229
SR-85	-9.617E-02		1.195E-02	2.969E-02	1.247E-03	-3.239
Y-88	3.875E-03		7.332E-03	2.699E-02	8.233E-04	0.144
NB-94	-1.609E-03		6.870E-03	2.349E-02	7.651E-04	-0.069
NB-95	-2.915E-03		6.383E-03	2.186E-02	7.069E-04	-0.133
TC-95M	-4.228E-03		7.397E-03	2.461E-02	1.108E-03	-0.172
ZR-95	8.839E-03		1.093E-02	3.890E-02	1.256E-03	0.227
ZRNB-95	-3.425E-03		1.263E-02	4.353E-02	1.408E-03	-0.079
MO-99	3.422E-03		4.916E-03	1.695E-02	6.687E-04	0.202
RH-101	3.479E-02		7.446E-03	2.528E-02	1.140E-03	1.376
RH-102M	-1.004E-03		6.765E-03	2.318E-02	9.391E-04	-0.043
RU-103	2.888E-03		6.931E-03	2.402E-02	9.937E-04	0.120
RU-106DA	2.041E-03		6.105E-02	2.087E-01	7.299E-03	0.010
AG-108M	-9.645E-03		6.940E-03	2.252E-02	8.737E-04	-0.428
AG-110M	-1.110E-02		8.754E-03	2.888E-02	9.399E-04	-0.384

Sample ID : J5WE91AC Acquisition date : 21-SEP-2007 20:09:29

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

Nuclide	Key-Line Activity (PCI/GRAM)	K.L. Ided	Act error	MDA (PCI/GRAM)	MDA error	Act/MDA
SN-113DA	4.768E-03		9.100E-03	3.099E-02	1.142E-03	0.154
SB-124	-2.433E-03		7.089E-03	2.390E-02	8.725E-04	-0.102
SB-125	-2.374E-02		2.094E-02	6.848E-02	2.638E-03	-0.347
SN-126DA	-6.971E-04		7.170E-03	2.049E-02	6.445E-04	-0.034
I-131	-1.351E-02		7.357E-03	2.387E-02	8.906E-04	-0.566
BA-133	-3.137E-03		1.062E-02	3.028E-02	1.133E-03	-0.104
CS-134	5.712E-03		7.280E-03	2.584E-02	8.390E-04	0.221
LA-138	1.345E-02		1.013E-02	3.799E-02	1.240E-03	0.354
CE-139	-8.008E-03		5.310E-03	1.752E-02	7.871E-04	-0.457
BA-140	2.804E-02		2.425E-02	8.529E-02	3.480E-03	0.329
BALA-140	-1.162E-02		1.489E-02	5.075E-02	1.637E-03	-0.229
LA-140	-8.390E-03		9.094E-03	3.074E-02	9.913E-04	-0.273
CE-141	3.544E-03		8.441E-03	2.895E-02	1.182E-03	0.122
CE-144	1.475E-02		3.433E-02	1.183E-01	4.447E-03	0.125
CEPR-144	3.004E-02		6.867E-02	2.367E-01	8.895E-03	0.127
PM-144	5.878E-04		6.269E-03	2.143E-02	7.563E-04	0.027
PM-146	2.612E-03		9.414E-03	3.262E-02	1.293E-03	0.080
EU-152	5.922E-04		2.050E-02	6.967E-02	2.611E-03	0.009
EU-154	1.117E-02		1.946E-02	6.946E-02	2.230E-03	0.161
EU-155	6.925E-03		1.604E-02	5.386E-02	1.787E-03	0.129
HF-181	6.551E-03		7.496E-03	2.620E-02	1.069E-03	0.250
BI-207	9.622E-03		6.548E-03	2.302E-02	8.946E-04	0.418
TL-208	-1.043E-02		1.072E-02	2.716E-02	1.030E-03	-0.384
BI-210M	-1.377E-02		1.041E-02	3.484E-02	1.483E-03	-0.395
BI-212	2.193E-01		9.620E-02	3.513E-01	1.382E-02	0.624
PB-212	3.478E-02		1.256E-02	4.280E-02	1.887E-03	0.813
BI-214	-3.848E-02		2.555E-02	6.253E-02	2.251E-03	-0.615
PB-214	2.097E-02	+	2.887E-02	5.879E-02	2.201E-03	0.357
RA-223	-1.018E-02		3.839E-02	1.311E-01	5.547E-03	-0.078
RA-224DA	3.480E-02		1.257E-02	4.282E-02	1.888E-03	0.813
RA-226DA	-3.869E-02		2.555E-02	6.251E-02	2.250E-03	-0.619
AC-227DA	-1.233E-01		4.944E-02	1.562E-01	6.902E-03	-0.789
AC-228	-6.874E-02		3.841E-02	9.701E-02	3.157E-03	-0.709
RA-228DA	-6.875E-02		3.842E-02	9.703E-02	3.157E-03	-0.709
TH-228DA	-2.905E-02		2.985E-02	7.564E-02	2.870E-03	-0.384
TH-232DA	4.041E-02		4.625E-02	1.591E-01	5.967E-03	0.254
TH-234DA	8.361E-01		1.006E+00	3.634E+00	1.180E-01	0.230
U-234DA	1.089E-01		3.004E-02	1.053E-01	4.229E-03	1.034
U-235HP	3.787E-02		3.810E-02	1.316E-01	5.309E-03	0.288
NP-237DA	-1.521E-03		1.503E-02	5.115E-02	1.965E-03	-0.030
U-238DA	2.097E-02	+	2.887E-02	5.879E-02	2.201E-03	0.357
U-238DHP	-1.830E-02		8.268E-02	2.805E-01	8.749E-03	-0.065
AM-241HP	2.606E-03		8.482E-03	2.914E-02	9.225E-04	0.089

9/5/2007 6:44:21 AM

Sample Preparation/Analysis

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

Balance Id:n/a
Pipet #:
Sep1 DT/Tm Tech:
Sep2 DT/Tm Tech:
Prep Tech: ,Barcotl

AnalyDueDate: 09/10/2007

Batch: 7241630 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:

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J5K641AA-SAMP Calc Info:
     Uncert Level (#s).: 2     Decay to SaDt: Y     Blk Subt.: N     Sci.Not.: Y     ODRs: B
J5WE91AA-BLK:
     Uncert Level (#s).: 2     Decay to SaDt: Y     Blk Subt.: N     Sci.Not.: Y     ODRs: B
J5WE91AC-LCS:
     Uncert Level (#s).: 2     Decay to SaDt: Y     Blk Subt.: N     Sci.Not.: Y     ODRs: B
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Approved By _____ Date: _____