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TOTAL # PAGES IN DOCUMENT 231

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.: 36805

SDG No.	Order No.	Client Sample ID (List Order)	Lot-Sa No.	Work Order	Report DB ID	Batch No.
35711		BGS-A2-48D	J7H240308-16	J5K251AA	9J5K2510	7241626
		BGS-A2-48S	J7H240308-15	J5K241AA	9J5K2410	7241626
		BGS-A2-49D	J7H240308-12	J5K201AA	9J5K2010	7241626
		BGS-A2-49S	J7H240308-11	J5K2X1AA	9J5K2X10	7241626
		BGS-A2-50D	J7H240308-14	J5K231AA	9J5K2310	7241626
		BGS-A2-50S	J7H240308-13	J5K221AA	9J5K2210	7241626
		BGS-A2-56D	J7H240308-10	J5K2V1AA	9J5K2V10	7241626
		BGS-A2-56S	J7H240308-9	J5K2R1AA	9J5K2R10	7241626
		BGS-A2-57D	J7H240308-6	J5K2N1AA	9J5K2N10	7241626
		BGS-A2-57S	J7H240308-5	J5K2L1AA	9J5K2L10	7241626
		BGS-A2-58D	J7H240308-4	J5K2K1AA	9J5K2K10	7241626
		BGS-A2-58S	J7H240308-3	J5K2J1AA	9J5K2J10	7241626
		BGS-A2-59D	J7H240308-2	J5K2H1AA	9J5K2H10	7241626
		BGS-A2-59S	J7H240308-1	J5K2G1AA	9J5K2G10	7241626
		BGS-A2-60D	J7H240308-8	J5K2Q1AA	9J5K2Q10	7241626
		BGS-A2-60S	J7H240308-7	J5K2P1AA	9J5K2P10	7241626

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Certificate of Analysis

September 25, 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	:	Sixteen (16) Soil Samples
SDG Number	:	35711

CASE NARRATIVE

I. Introduction

On August 23, 2007, sixteen 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 J7H240308.

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

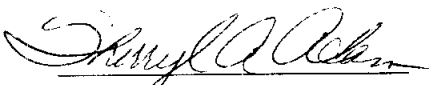
Gamma

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

The LCS, batch blank, sample 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: 25-Sep-07

Report No. : 36805 **SDG No:** 35711

Client ID	Work Order Number	Parameter	Result +- Uncertainty (2s)	Qual	Units	Yield	MDC|MDA	RER2
BGS-A2-48D	J5K251AA	RA-226	0.697 +- 0.104	=	pCi/g		0.0381	
		RA-228	0.754 +- 0.145	=	pCi/g		0.075	
BGS-A2-48S	J5K241AA	RA-226	1.18 +- 0.158	=	pCi/g		0.038	
		RA-228	1.07 +- 0.174	=	pCi/g		0.0733	
BGS-A2-49D	J5K201AA	RA-226	1.25 +- 0.164	=	pCi/g		0.0456	
		RA-228	1.31 +- 0.210	=	pCi/g		0.086	
BGS-A2-49S	J5K2X1AA	RA-226	1.19 +- 0.161	=	pCi/g		0.0441	
		RA-228	1.36 +- 0.225	=	pCi/g		0.0871	
BGS-A2-50D	J5K231AA	RA-226	1.06 +- 0.138	=	pCi/g		0.0407	
		RA-228	0.950 +- 0.173	=	pCi/g		0.0819	
BGS-A2-50S	J5K221AA	RA-226	1.07 +- 0.140	=	pCi/g		0.0337	
		RA-228	0.975 +- 0.160	=	pCi/g		0.0608	
BGS-A2-56D	J5K2V1AA	RA-226	0.802 +- 0.116	=	pCi/g		0.0445	
		RA-228	0.828 +- 0.149	=	pCi/g		0.0823	
BGS-A2-56S	J5K2R1AA	RA-226	1.07 +- 0.136	=	pCi/g		0.0282	
		RA-228	1.28 +- 0.201	ND	pCi/g		0.139	
BGS-A2-57D	J5K2N1AA	RA-226	0.926 +- 0.123	=	pCi/g		0.0277	
		RA-228	0.741 +- 0.147	=	pCi/g		0.0548	
BGS-A2-57S	J5K2L1AA	RA-226	0.792 +- 0.104	=	pCi/g		0.0275	
		RA-228	0.801 +- 0.140	=	pCi/g		0.0578	
BGS-A2-58D	J5K2K1AA	RA-226	0.960 +- 0.126	=	pCi/g		0.0326	
		RA-228	1.03 +- 0.167	=	pCi/g		0.0611	
BGS-A2-58S	J5K2J1AA	RA-226	1.06 +- 0.144	=	pCi/g		0.0379	
		RA-228	1.17 +- 0.183	=	pCi/g		0.0713	
BGS-A2-59D	J5K2H1AA	RA-226	0.903 +- 0.119	=	pCi/g		0.0354	
		RA-228	0.743 +- 0.141	=	pCi/g		0.0745	
BGS-A2-59S	J5K2G1AA	RA-226	0.764 +- 0.112	=	pCi/g		0.0378	
		RA-228	0.839 +- 0.164	=	pCi/g		0.0749	
BGS-A2-59S DUP	J5K2G1AC	RA-226	0.680 +- 0.103	=	pCi/g		0.0378	1.1

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V5.1.4 A2002

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

Sample Results Summary

TAL Richland STLR

Ordered by Client Sample ID, Batch No.

Date: 25-Sep-07

Report No. : 36805

SDG No: 35711

Client ID	Work Order Number	Parameter	Result +- Uncertainty (2s)	Qual	Units	Yield	MDC|MDA	RER2
BGS-A2-59S DUP	J5K2G1AC	RA-228	0.755 +- 0.157	=	pCi/g		0.0722	0.7
BGS-A2-60D	J5K2Q1AA	RA-226	0.775 +- 0.107	=	pCi/g		0.0261	
		RA-228	0.788 +- 0.149	=	pCi/g		0.0517	
BGS-A2-60S	J5K2P1AA	RA-226	0.797 +- 0.116	=	pCi/g		0.0457	
		RA-228	0.862 +- 0.166	=	pCi/g		0.0857	

Number of Results: 34

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: 25-Sep-07

Report No. : 36805

SDG No.: 35711

QC Type	Work Order Number	Parameter	Result +- Uncertainty (2s)	Qual	Units	Tracer Yield	LCS Recovery	Bias	MDC|MDA
BLANK QC	J5WEL1AA	RA-226	-0.0202 +- 0.0501	N	pCi/g				0.0615
		RA-228	-0.1340 +- 0.0828	N	pCi/g				0.101
LCS	J5WEL1AC	CS-137	1.19 +- 0.150	=	pCi/g		116%	0.2	0.0247

Number of Results: 3

TAL Richland
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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: 25-Sep-07

Lab Name: TA Richland | **SDG:** 35711 | **Collection Date:** 8/14/2007 2:00:00 PM

Lot-Sample No.: J7H240308-16 | **Report No. :** 36805 | **Received Date:** 8/23/2007 10:00:00 AM

Client Sample ID: BGS-A2-48D | **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: 7241626	**Work Order:** J5K251AA			**Report DB ID:** 9J5K2510								
RA-226	**0.697**	=	0.10	0.10	0.0381	pCi/g		*(18.3)*	9/20/07 05:26 a		361.0	E901.1
								(13.5)			g	GER4$1
RA-228	**0.754**	=	0.14	0.14	0.075	pCi/g		*(10.1)*	9/20/07 05:26 a		361.0	E901.1
								(10.4)			g	GER4$1

Number of Results: 2

Comments:

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

FORM I

SAMPLE RESULTS

Date: 25-Sep-07

Lab Name: TA Richland | **SDG:** 35711 | **Collection Date:** 8/14/2007 2:00:00 PM

Lot-Sample No.: J7H240308-15 | **Report No. :** 36805 | **Received Date:** 8/23/2007 10:00:00 AM

Client Sample ID: BGS-A2-48S | **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: 7241626	**Work Order:** J5K241AA			**Report DB ID:** 9J5K2410								
RA-226	**1.18**	=	0.16	0.16	0.038	pCi/g		*(31.2)*	9/19/07 06:24 p		352.9	E901.1
								(15.)			g	GER8$1
RA-228	**1.07**	=	0.17	0.17	0.0733	pCi/g		*(14.6)*	9/19/07 06:24 p		352.9	E901.1
								(12.4)			g	GER8$1

Number of Results: 2

Comments:

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

FORM I

SAMPLE RESULTS

Date: 25-Sep-07

Lab Name: TA Richland
Lot-Sample No.: J7H240308-12
Client Sample ID: BGS-A2-49D

SDG: 35711
Report No. : 36805
COC No. :

Collection Date: 8/14/2007 11:45:00 AM
Received Date: 8/23/2007 10:00:00 AM
Matrix: SOIL SO

Ordered by Client Sample ID, Batch No.

Parameter	Result	Qual	Count Error (2 s)	Total Uncert(2 s)	MDC|MDA, Action Lev	Rpt Unit, Lc	Yield CRDL(RL)	Rst/MDC, Rst/TotUcert	Analysis, Prep Date	Total Sa Size	Aliquot Size	Analy Method, Primary Detector
Batch: 7241626	**Work Order:** J5K201AA			**Report DB ID:** 9J5K2010								
RA-226	**1.25**	=	0.16	0.16	0.0456	pCi/g		*(27.5)*	9/19/07 06:22 p		322.4	E901.1
								(15.2)			g	GER5$1
RA-228	**1.31**	=	0.21	0.21	0.086	pCi/g		*(15.2)*	9/19/07 06:22 p		322.4	E901.1
								(12.5)			g	GER5$1

Number of Results: 2

Comments:

TAL Richland
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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: 25-Sep-07

Lab Name: TA Richland | **SDG:** 35711 | **Collection Date:** 8/14/2007 11:45:00 AM

Lot-Sample No.: J7H240308-11 | **Report No. :** 36805 | **Received Date:** 8/23/2007 10:00:00 AM

Client Sample ID: BGS-A2-49S | **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: 7241626	**Work Order:** J5K2X1AA			**Report DB ID:** 9J5K2X10								
RA-226	**1.19**	=	0.16	0.16	0.0441	pCi/g		*(27.)*	9/19/07 06:21 p		349.3	E901.1
								(14.7)			g	GER4$1
RA-228	**1.36**	=	0.22	0.22	0.0871	pCi/g		*(15.6)*	9/19/07 06:21 p		349.3	E901.1
								(12.1)			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: 25-Sep-07

Lab Name: TA Richland **SDG:** 35711 **Collection Date:** 8/14/2007 12:30:00 PM

Lot-Sample No.: J7H240308-14 **Report No. :** 36805 **Received Date:** 8/23/2007 10:00:00 AM

Client Sample ID: BGS-A2-50D **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: 7241626	**Work Order:** J5K231AA			**Report DB ID:** 9J5K2310								
RA-226	**1.06**	=	0.14	0.14	0.0407	pCi/g		*(26.)*	9/19/07 06:23 p		364.5	E901.1
								(15.3)			g	GER6$1
RA-228	**0.950**	=	0.17	0.17	0.0819	pCi/g		*(11.6)*	9/19/07 06:23 p		364.5	E901.1
								(11.)			g	GER6$1

Number of Results: 2

Comments:

TAL Richland
rptSTLRchSample
V5.1.4 A2002

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

FORM I

SAMPLE RESULTS

Date: 25-Sep-07

Lab Name: TA Richland
SDG: 35711
Collection Date: 8/14/2007 12:30:00 PM
Lot-Sample No.: J7H240308-13
Report No. : 36805
Received Date: 8/23/2007 10:00:00 AM
Client Sample ID: BGS-A2-50S
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: 7241626	Work Order: J5K221AA			Report DB ID: 9J5K2210								
RA-226	**1.07**	=	0.14	0.14	0.0337	pCi/g		*(31.8)* *(15.3)*	9/19/07 06:22 p		340.4 g	E901.1 GER10$1
RA-228	**0.975**	=	0.16	0.16	0.0608	pCi/g		*(16.)* *(12.2)*	9/19/07 06:22 p		340.4 g	E901.1 GER10$1

Number of Results: 2

Comments:

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

FORM I

SAMPLE RESULTS

Date: 25-Sep-07

Lab Name: TA Richland **SDG:** 35711 **Collection Date:** 8/14/2007 10:45:00 AM

Lot-Sample No.: J7H240308-10 **Report No. :** 36805 **Received Date:** 8/23/2007 10:00:00 AM

Client Sample ID: BGS-A2-56D **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: 7241626	**Work Order:** J5K2V1AA			**Report DB ID:** 9J5K2V10								
RA-226	**0.802**	=	0.12	0.12	0.0445	pCi/g		*(18.)*	9/19/07 06:20 p		365.1	E901.1
								(13.8)			g	GER14$1
RA-228	**0.828**	=	0.15	0.15	0.0823	pCi/g		*(10.1)*	9/19/07 06:20 p		365.1	E901.1
								(11.1)			g	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: 25-Sep-07

Lab Name: TA Richland **SDG:** 35711 **Collection Date:** 8/14/2007 10:45:00 AM

Lot-Sample No.: J7H240308-9 **Report No. :** 36805 **Received Date:** 8/23/2007 10:00:00 AM

Client Sample ID: BGS-A2-56S **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: 7241626	**Work Order:** J5K2R1AA			**Report DB ID:** 9J5K2R10								
RA-226	**1.07**	=	0.14	0.14	0.0282	pCi/g		*(37.8)* *(15.7)*	9/19/07 06:20 p		349.0 g	E901.1 GER11$1
RA-228	**1.28**	ND	0.20	0.20	0.139	pCi/g		*(9.2)* *(12.7)*	9/19/07 06:20 p		349.0 g	E901.1 GER11$1

Number of Results: 2

Comments:

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

FORM I

SAMPLE RESULTS

Date: 25-Sep-07

Lab Name: TA Richland | SDG: 35711 | Collection Date: 8/14/2007 9:15:00 AM

Lot-Sample No.: J7H240308-6 | Report No. : 36805 | Received Date: 8/23/2007 10:00:00 AM

Client Sample ID: BGS-A2-57D | 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: 7241626	Work Order: J5K2N1AA			Report DB ID: 9J5K2N10								
RA-226	**0.926**	=	0.12	0.12	0.0277	pCi/g		*(33.5)*	9/19/07 05:57 a		340.3	E901.1
								(15.)			g	GER12$1
RA-228	**0.741**	=	0.15	0.15	0.0548	pCi/g		*(13.5)*	9/19/07 05:57 a		340.3	E901.1
								(10.1)			g	GER12$1

Number of Results: 2

Comments:

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

FORM I

SAMPLE RESULTS

Date: 25-Sep-07

Lab Name: TA Richland
Lot-Sample No.: J7H240308-5
Client Sample ID: BGS-A2-57S

SDG: 35711
Report No. : 36805
COC No. :

Collection Date: 8/14/2007 9:15:00 AM
Received Date: 8/23/2007 10:00:00 AM
Matrix: SOIL SO

Ordered by Client Sample ID, Batch No.

Parameter	Result	Qual	Count Error (2 s)	Total Uncert(2 s)	MDC|MDA, Action Lev	Rpt Unit, Lc	Yield CRDL(RL)	Rst/MDC, Rst/TotUcert	Analysis, Prep Date	Total Sa Size	Aliquot Size	Analy Method, Primary Detector
Batch: 7241626	**Work Order:** J5K2L1AA			**Report DB ID:** 9J5K2L10								
RA-226	**0.792**	=	0.10	0.10	0.0275	pCi/g		*(28.8)*	9/19/07 05:56 a		341.3	E901.1
								(15.2)			g	GER11$1
RA-228	**0.801**	=	0.14	0.14	0.0578	pCi/g		*(13.9)*	9/19/07 05:56 a		341.3	E901.1
								(11.4)			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: 25-Sep-07

Lab Name: TA Richland
Lot-Sample No.: J7H240308-4
Client Sample ID: BGS-A2-58D

SDG: 35711
Report No. : 36805
COC No. :

Collection Date: 8/14/2007 8:30:00 AM
Received Date: 8/23/2007 10:00:00 AM
Matrix: SOIL SO

Ordered by Client Sample ID, Batch No.

Parameter	Result	Qual	Count Error (2 s)	Total Uncert(2 s)	MDC|MDA, Action Lev	Rpt Unit, Lc	Yield CRDL(RL)	Rst/MDC, Rst/TotUcert	Analysis, Prep Date	Total Sa Size	Aliquot Size	Analy Method, Primary Detector
Batch: 7241626	**Work Order:** J5K2K1AA			**Report DB ID:** 9J5K2K10								
RA-226	**0.960**	=	0.13	0.13	0.0326	pCi/g		*(29.5)*	9/19/07 05:56 a		363.3	E901.1
								(15.2)			g	GER10$1
RA-228	**1.03**	=	0.17	0.17	0.0611	pCi/g		*(16.9)*	9/19/07 05:56 a		363.3	E901.1
								(12.4)			g	GER10$1

Number of Results: 2

Comments:

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

FORM I

SAMPLE RESULTS

Date: 25-Sep-07

Lab Name: TA Richland
SDG: 35711
Collection Date: 8/14/2007 8:30:00 AM
Lot-Sample No.: J7H240308-3
Report No. : 36805
Received Date: 8/23/2007 10:00:00 AM
Client Sample ID: BGS-A2-58S
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: 7241626	**Work Order:** J5K2J1AA			**Report DB ID:** 9J5K2J10								
RA-226	**1.06**	=	0.14	0.14	0.0379	pCi/g		*(27.9)*	9/19/07 05:56 a		359.2	E901.1
								(14.7)			g	GER8$1
RA-228	**1.17**	=	0.18	0.18	0.0713	pCi/g		*(16.4)*	9/19/07 05:56 a		359.2	E901.1
								(12.8)			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: 25-Sep-07

Lab Name: TA Richland
Lot-Sample No.: J7H240308-2
Client Sample ID: BGS-A2-59D

SDG: 35711
Report No. : 36805
COC No. :

Collection Date: 8/14/2007 8:00:00 AM
Received Date: 8/23/2007 10:00:00 AM
Matrix: SOIL SO

Ordered by Client Sample ID, Batch No.

Parameter	Result	Qual	Count Error (2 s)	Total Uncert(2 s)	MDC|MDA, Action Lev	Rpt Unit, Lc	Yield CRDL(RL)	Rst/MDC, Rst/TotUcert	Analysis, Prep Date	Total Sa Size	Aliquot Size	Analy Method, Primary Detector
Batch: 7241626	**Work Order:** J5K2H1AA			**Report DB ID:** 9J5K2H10								
RA-226	**0.903**	=	0.12	0.12	0.0354	pCi/g		*(25.5)* *(15.1)*	9/19/07 05:55 a		373.3 g	E901.1 GER6$1
RA-228	**0.743**	=	0.14	0.14	0.0745	pCi/g		*(10.)* *(10.5)*	9/19/07 05:55 a		373.3 g	E901.1 GER6$1

Number of Results: 2

Comments:

TAL Richland
rptSTLRchSample
V5.1.4 A2002

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

FORM I

SAMPLE RESULTS

Date: 25-Sep-07

Lab Name: TA Richland | **SDG:** 35711 | **Collection Date:** 8/14/2007 8:00:00 AM

Lot-Sample No.: J7H240308-1 | **Report No. :** 36805 | **Received Date:** 8/23/2007 10:00:00 AM

Client Sample ID: BGS-A2-59S | **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: 7241626	**Work Order:** J5K2G1AA			**Report DB ID:** 9J5K2G10								
RA-226	**0.764**	=	0.11	0.11	0.0378	pCi/g		*(20.2)*	9/19/07 05:55 a		370.6	E901.1
								(13.7)			g	GER4$1
RA-228	**0.839**	=	0.16	0.16	0.0749	pCi/g		*(11.2)*	9/19/07 05:55 a		370.6	E901.1
								(10.2)			g	GER4$1

Number of Results: 2

Comments:

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

FORM I

SAMPLE RESULTS

Date: 25-Sep-07

Lab Name: TA Richland
SDG: 35711
Collection Date: 8/14/2007 10:15:00 AM
Lot-Sample No.: J7H240308-8
Report No. : 36805
Received Date: 8/23/2007 10:00:00 AM
Client Sample ID: BGS-A2-60D
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: 7241626	**Work Order:** J5K2Q1AA			**Report DB ID:** 9J5K2Q10								
RA-226	**0.775**	=	0.11	0.11	0.0261	pCi/g		*(29.7)*	9/19/07 06:19 p		366.1	E901.1
								(14.5)			g	GER12$1
RA-228	**0.788**	=	0.15	0.15	0.0517	pCi/g		*(15.2)*	9/19/07 06:19 p		366.1	E901.1
								(10.6)			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: 25-Sep-07

Lab Name: TA Richland | **SDG:** 35711 | **Collection Date:** 8/14/2007 10:15:00 AM

Lot-Sample No.: J7H240308-7 | **Report No. :** 36805 | **Received Date:** 8/23/2007 10:00:00 AM

Client Sample ID: BGS-A2-60S | **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: 7241626	**Work Order:** J5K2P1AA			**Report DB ID:** 9J5K2P10								
RA-226	**0.797**	=	0.12	0.12	0.0457	pCi/g		*(17.4)*	9/19/07 05:57 a		363.4	E901.1
								(13.7)			g	GER14$1
RA-228	**0.862**	=	0.17	0.17	0.0857	pCi/g		*(10.)*	9/19/07 05:57 a		363.4	E901.1
								(10.4)			g	GER14$1

Number of Results: 2

Comments:

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

FORM II

Date: 25-Sep-07

DUPLICATE RESULTS

Lab Name: TA Richland **SDG:** 35711 **Collection Date:** 8/14/2007 8:00:00 AM

Lot-Sample No.: J7H240308-1 **Report No. :** 36805 **Received Date:** 8/23/2007 10:00:00 AM

Client Sample ID: BGS-A2-59S 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: 7241626	**Work Order:** J5K2G1AC			**Report DB ID:** J5K2G1CR		**Orig Sa DB ID:** 9J5K2G10						
RA-226	0.680	=	0.10	0.10	0.0378	pCi/g		(18.)	9/19/07 06:26 p		370.6	E901.1
	0.764	= RER2	1.1					(13.2)			g	GER7$1
RA-228	0.755	=	0.16	0.16	0.0722	pCi/g		(10.5)	9/19/07 06:26 p		370.6	E901.1
	0.839	= RER2	0.7					(9.6)			g	GER7$1

Number of Results: 2

Comments:

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: 25-Sep-07

Lab Name: TA Richland **SDG:** 35711

Lot-Sample No.: J7H290000-626 **Report No. :** 36805 **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: 7241626	Work Order: J5WEL1AA			Report DB ID: J5WEL1AB								
RA-226	-0.0202	ND	0.050	0.050	0.0615	pCi/g		-0.33	9/19/07 05:57 a		200.6	E901.1
								-0.81			g	GER15$1
RA-228	-0.1340	ND	0.083	0.083	0.101	pCi/g		-(1.3)	9/19/07 05:57 a		200.6	E901.1
								-(3.2)			g	GER15$1

Number of Results: 2

Comments:

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

FORM II

LCS RESULTS

Date: 25-Sep-07

Lab Name: TA Richland **SDG:** 35711

Lot-Sample No.: J7H290000-626 **Report No. :** 36805 **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: 7241626	**Work Order:** J5WEL1AC			**Report DB ID:** J5WEL1CS									
CS-137	1.19	=	0.15	0.15	0.0247	pCi/g		1.03	2.4	116%	9/19/07 06:24 p	200.76	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. _____

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775-883-4118 / FAX 775-883-5108

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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

YERS000323

PROJECT NAME: Yerington Mine Site
PROJECT NUMBER: 132039

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

JTH240308 35711 Due 09.14.07

LINE NO.	SAMPLE - I.D.	COLLECTION DATE	COLLECTION TIME	SAMPLER'S INITIALS	NUMBER OF CONTAINERS	CONTAINER SIZE AND TYPE	PRESERVATIVE	MATRIX CODE	ANALYSES REQUESTED	FIELD FILTERED	QC - REQ	TAT	SAMPLING METHOD	DEPTH (FT.) BEGIN - END	PID READING (ppm)
01	BGS-A2-48S	8/14/07	1400	PB	1	9 oz Glass	NONE	S	PB ~~EPA 903.0, EPA 904.0~~ (HASL 300 ~~(U, TH)~~) Ra-226, 228			J5K24		0.1 - 0.5	
02	BGS-A2-48D	↓	↓		1	9 oz Glass	NONE	S	PB EPA 903.0, EPA 904.0 (HASL 300 ~~(U, TH)~~) ↓			J5K25		2 - 3	
03														----	
04														----	
05														----	
06														----	
07														----	
08														----	
09														----	
10														----	

COLLECTED & RELEASED BY:	DATE 8/22/07	TIME 14:00	COOLER I.D.:		COMMENTS (see note on back):
RECEIVED BY:	DATE 8/23/07	TIME 1000	RELINQUISHED BY:	DATE / /	TIME : Level 4
RECORD RETURNED BY:	DATE / /	TIME :			
COURIER:			SHIPPING NUMBER:		CC1KF-C109

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. _____

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☐ 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

YERS000327

TAL RICHLAND

PROJECT NAME: Yerington Mine Site

PROJECT NUMBER: 132039

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

J714240308 35711 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-A2-50S	8/14/07	12:30	PB	1	9 oz Glass	NONE	S	~~EPA 903.0, EPA 904.0~~ (HASL 300 ~~(U, TH)~~) Ra-226,228			J5K22		0.1	
02	BGS-A2-50D	↓	↓	↓	1	9 oz Glass	NONE	S	~~EPA 903.0, EPA 904.0~~ (HASL 300 ~~(U, TH)~~) ↓			J5K23		0.5 – 2 – 3	
03														----	
04														----	
05														----	
06														----	
07														----	
08														----	
09														----	
10														----	

COLLECTED & RELEASED BY:	DATE 8/22/07	TIME 1400	COOLER I.D.:		COMMENTS (see note on back):
RECEIVED BY:	DATE 8/23/07	TIME 1000	RELINQUISHED BY:	DATE / /	TIME : Level 4
RECORD RETURNED BY:	DATE / /	TIME :			
COURIER:			SHIPPING NUMBER:		CC1KF-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._____

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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

YERS000325

PROJECT NAME: Yerington Mine Site

PROJECT NUMBER: 132039

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

J7H240308 35711 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-A2-49S	8/14/07	11:45	PB	1	9 oz Glass	NONE	S	PB ~~EPA 903.0, EPA 904.0~~, HASL 300 ~~(U, TH)~~ Ra-226, 228			J5K2X		0.1 / 0.8	
02	BGS-A2-49D	↓	↓	↓	1	9 oz Glass	NONE	S	PB ~~EPA 903.0, EPA 904.0~~, HASL 300 ~~(U, TH)~~ ↓			J5K2O		2 / 3	
03														----	
04														----	
05														----	
06														----	
07														----	
08														----	
09														----	
10														----	

	DATE	TIME		DATE	TIME	
COLLECTED & RELEASED BY: Penny Barrett	8/22/07	14:00	COOLER I.D.:			COMMENTS (see note on back):
RECEIVED BY: [signature]	8/23/07	10 00	RELINQUISHED BY:	/ /	:	Level 4
RECORD RETURNED BY:	/ /	:				
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. _____

VERS000339

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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

J7H240308 35711 Due 09.14.07

LINE NO.	SAMPLE - I.D.	COLLECTION DATE	COLLECTION TIME	SAMPLER'S INITIALS	NUMBER OF CONTAINERS	CONTAINER SIZE AND TYPE	PRESERVATIVE	MATRIX CODE	ANALYSES REQUESTED	FIELD FILTERED	QC - REQ	TAT	SAMPLING METHOD	DEPTH (FT.) BEGIN / END	PID READING (ppm)
01	BGS-A2-56S	8/14/07	10:45	PB	1	9 oz Glass	NONE	S	PB ~~EPA 903.0, EPA 904.0~~, HASL 300 ~~(U, TH)~~ Ra-226,228			J5K2R		0.1 / 0.8	
02	BGS-A2-56D	↓	↓	↓	1	9 oz Glass	NONE	S	PB ~~EPA 903.0, EPA 904.0~~, HASL 300 ~~(U, TH)~~ ↓			J5K2V		2 / 3	
03														----	
04														----	
05														----	
06														----	
07														----	
08														----	
09														----	
10														----	

COLLECTED & RELEASED BY: Penney Bayatt	DATE 8/22/07	TIME 14:60	COOLER I.D.:			COMMENTS (see ~~note~~ on back): Level 4
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. _____

☐ 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

YERS000347

PROJECT NAME: Yerington Mine Site
PROJECT NUMBER: 132039

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

JTH240308 35711 Due 09.14.07

LINE NO.	SAMPLE - I.D.	COLLECTION DATE	COLLECTION TIME	SAMPLER'S INITIALS	NUMBER OF CONTAINERS	CONTAINER SIZE AND TYPE	PRESERVATIVE	MATRIX CODE	ANALYSES REQUESTED	FIELD FILTERED	QC - REQ	TAT	SAMPLING METHOD	DEPTH (FT.) BEGIN / END	PID READING (ppm)
01	BGS-A2-60S	8/14/07	10:15	PB	1	9 oz Glass	NONE	S	PB ~~EPA 903.0, EPA 904.0~~, HASL 300 (~~U, TH~~) Ra-226, 228			J5K27		0.1 / 0.8	
02	BGS-A2-60D	↓	↓	↓	1	9 oz Glass	NONE	S	PB ~~EPA 903.0, EPA 904.0~~, HASL 300 (~~U, TH~~) ↓			J5K29		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 1000	RELINQUISHED BY:	DATE / /	TIME :	Level 4
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. _____

YERS000341

☐ 3264 Goni Road / Suite 153
Carson City, NV 89706
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☐ 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

J7H240308 35711 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-A2-57S	8/14/07	09:15	PB	1	9 oz Glass	NONE	S	PB ~~EPA 903.0, EPA 904.0~~, HASL 300 ~~(U, TH)~~ Ra-226, 228			J5K2L		0.1 / 0.8	
02	BGS-A2-57D	↓	↓	↓	1	9 oz Glass	NONE	S	PB ~~EPA 903.0, EPA 904.0~~, HASL 300 ~~(U, TH)~~ ↓			J5K2N		2 / 3	
03														----	
04														----	
05														----	
06														----	
07														----	
08														----	
09														----	
10														----	

	DATE	TIME		DATE	TIME
COLLECTED & RELEASED BY: Penny Barrett	8/22/07	14:00	COOLER I.D.:		
RECEIVED BY: [signature]	8/23/07	10:00	RELINQUISHED BY:	/ /	:
RECORD RETURNED BY:	/ /	:			
COURIER:			SHIPPING NUMBER:		

COMMENTS (see note on back):

Level 4

Enfos Billing
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. _____

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702-938-4080 / FAX 702-938-4082

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

YERS000343

PROJECT NAME: Yerington Mine Site

PROJECT NUMBER: 132039

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

JTH240308 35711 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-A2-58S	8/14/07	08:30	PB	1	9 oz Glass	NONE	S	PB ~~EPA 903.0, EPA 904.0~~, HASL 300 (~~U, TH~~) Ra-226, 228			J5K2J		0.1 / 0.8	
02	BGS-A2-58D	↓	↓	↓	1	9 oz Glass	NONE	S	PB ~~EPA 903.0, EPA 904.0~~, HASL 300 (~~U, TH~~) ↓			J5K2K		2 / 3	
03														----	
04														----	
05														----	
06														----	
07														----	
08														----	
09														----	
10														----	

COLLECTED & RELEASED BY:	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 :	Level 4
RECORD RETURNED BY:	DATE / /	TIME :				
COURIER:			SHIPPING NUMBER:			Enfos Billing COLKF-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. _____

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☐ 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

YERS000345

PROJECT NAME: Yerington Mine Site
PROJECT NUMBER: 132039

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

JTH240308 ~~[illegible]~~ 35711 Due 09.14.07

LINE NO.	SAMPLE - I.D.	COLLECTION DATE	COLLECTION TIME	SAMPLER'S INITIALS	NUMBER OF CONTAINERS	CONTAINER SIZE AND TYPE	PRESERVATIVE	MATRIX CODE	ANALYSES REQUESTED	FIELD FILTERED	QC - REQ	TAT	SAMPLING METHOD	DEPTH (FT.) BEGIN / END	PID READING (ppm)
01	BGS-A2-59S	8/14/07	0800	PB	1	9 oz Glass	NONE	S	PB ~~EPA 903.0, EPA 904.0,~~ HASL 300 ~~(U, TH)~~ Ra-226, 228			J5K2G1		----0.1	
02	BGS-A2-59D	↓	↓	↓	1	9 oz Glass	NONE	S	~~EPA 903.0, EPA 904~~.0, HASL 300 ~~(U, TH)~~ ↓			J5K2H		0.8 ----2	
03														3 ----	
04														----	
05														----	
06														----	
07														----	
08														----	
09														----	
10														----	

COLLECTED & RELEASED BY: Timothy Bennett	DATE 8/14/07	TIME 14:00	COOLER I.D.:			COMMENTS (see note on back):
RECEIVED BY:	DATE 8/15/07	TIME 10:00	RELINQUISHED BY:	DATE / /	TIME :	Level 4
						Enfos Billing C01KF-0109
RECORD RETURNED BY:	DATE / /	TIME :				
COURIER:			SHIPPING NUMBER:			

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

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

SEVERN TRENT STL

Sample Check-in List

Date/Time Received: 8-23-07 1000

Client: BRC SDG #: 35711 NA [ ] SAF #: _____ NA [ ]

Work Order Number: J7H240308 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: 16
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: _____ 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, 9/05, Rev. 5

SEVERN TRENT STL

Data Review/Verification Checklist

RADIOCHEMISTRY, First Level Review

9/21/2007 1:28:47 PM

Lot No., Due Date: J7H240308; 09/14/2007

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

QC Batch No., Method Test: 7241626; RGAMMA Gamma by GER

SDG, Matrix: 35711; SOIL

1.0 COC			
1.1 Is the ICOC page complete; includes all applicable analysis, dates, SOP numbers, and revisions?	✓		
2.0 QC Batch			
2.1 Do the Summary/Detailed Reports include a calculated result for each sample listed on the QC Batch Sheet?	✓		
2.2 Are the QC appropriate for the analysis included in the batch?	✓		
2.3 Is the Analytical Batch Worksheet complete; includes as appropriate, volumes, count times, etc?	✓		
2.4 Does the Worksheets include a Tracer Vial label for each sample?			✓
3.0 QC & Samples			
3.1 Is the blank results, yield, and MDA within contract limits?	✓		
3.2 Is the LCS result, yield, and MDA within contract limits?	✓		
3.3 Are the MS/MSD results, yields, and MDA within contract limits?			✓
3.4 Are the duplicate result, yields, and MDAs within contract limits?	✓		
3.5 Are the sample yields and MDAs within contract limits?	✓		
4.0 Raw Data			
4.1 Were results calculated in the correct units?	✓		
4.2 Were analysis volumes entered correctly?	✓		
4.3 Were Yields entered correctly?			✓
4.4 Were spectra reviewed/meet contractual requirements?	✓		
4.5 Were raw counts reviewed for anomalies?	✓		
5.0 Other			
5.1 Are all nonconformances included and noted?			✓
5.2 Are all required forms filled out?	✓		
5.3 Was the correct methodology used?	✓		
5.4 Was transcription checked?	✓		
5.5 Were all calculations checked at a minimum frequency?	✓		
5.6 Are worksheet entries complete and correct?	✓		

6.0 Comments on any No response:

First Level Review Lisa Anderson **Date** 9/21/07

TAL RICHLAND

8/31/2007 10:05:22 AM

Sample Preparation/Analysis

536403, Brown and Caldwell , Brown and Caldwell

AnalyDueDate: 09/10/2007

AX Gamma PrpRC5013/5017
TA Gamma by HPGE 10 day ingrowth
01 STANDARD TEST SET

Batch: 7241626 **SOIL** **pCi/g**
SEQ Batch, Test: None All Tests: 7241626 AXTA,

PM, Quote: SA , 73181

Balance Id:1120421763
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:
1 J5K2G-1-AA J7H240308-1-SAMP 08/14/2007 08:00	370.60g,in AmtRec: 8OZJAR	#Containers: 1		5200		1000	G4	1555	9/19/07	
Scr:	Alpha:	Beta:								
2 J5K2G-1-AC-X J7H240308-1-DUP 08/14/2007 08:00	Not enough Sample AmtRec: 8OZJAR	#Containers: 1					G7	0426	9/19/07	
Scr:	Alpha:	Beta:								
3 J5K2H-1-AA J7H240308-2-SAMP 08/14/2007 08:00	373.30g,in AmtRec: 8OZJAR	#Containers: 1		5200		1000	G6	1555	9/19/07	
Scr:	Alpha:	Beta:								
4 J5K2J-1-AA J7H240308-3-SAMP 08/14/2007 08:30	359.20g,in AmtRec: 8OZJAR	#Containers: 1					G8	1556		
Scr:	Alpha:	Beta:								
5 J5K2K-1-AA J7H240308-4-SAMP 08/14/2007 08:30	363.30g,in AmtRec: 8OZJAR	#Containers: 1					G10	1556		
Scr:	Alpha:	Beta:								
6 J5K2L-1-AA J7H240308-5-SAMP 08/14/2007 09:15	341.30g,in AmtRec: 8OZJAR	#Containers: 1					G11	1556		
Scr:	Alpha:	Beta:								
7 J5K2N-1-AA J7H240308-6-SAMP 08/14/2007 09:15	340.30g,in AmtRec: 8OZJAR	#Containers: 1					G12	1557		
Scr:	Alpha:	Beta:								

TAL RICHLAND

8/31/2007 10:05:23 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:1120421763

Pipet #: ____

AnalyDueDate: 09/10/2007

Sep1 DT/Tm Tech:

Batch: 7241626 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 J5K2P-1-AA J7H240308-7-SAMP 08/14/2007 10:15		363.40g,in AmtRec: 8OZJAR	#Containers: 1		5200	~~1000~~ 600 9/19/07	G14	1557	9/19/07	
							Scr:	Alpha:	Beta:	
9 J5K2Q-1-AA J7H240308-8-SAMP 08/14/2007 10:15		366.10g,in AmtRec: 8OZJAR	#Containers: 1				G12	0419		
							Scr:	Alpha:	Beta:	
10 J5K2R-1-AA J7H240308-9-SAMP 08/14/2007 10:45		349.00g,in AmtRec: 8OZJAR	#Containers: 1				G11	0420		
							Scr:	Alpha:	Beta:	
11 J5K2V-1-AA J7H240308-10-SAMP 08/14/2007 10:45		365.10g,in AmtRec: 8OZJAR	#Containers: 1				G14	0420		
							Scr:	Alpha:	Beta:	
12 J5K2X-1-AA J7H240308-11-SAMP 08/14/2007 11:45		349.30g,in AmtRec: 8OZJAR	#Containers: 1				G4	0421		
							Scr:	Alpha:	Beta:	
13 J5K20-1-AA J7H240308-12-SAMP 08/14/2007 11:45		322.40g,in AmtRec: 8OZJAR	#Containers: 1				G5	0421		
							Scr:	Alpha:	Beta:	
14 J5K22-1-AA J7H240308-13-SAMP 08/14/2007 12:30		340.40g,in AmtRec: 8OZJAR	#Containers: 1				G10	0422		
							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

8/31/2007 10:05:24 AM

536403, Brown and Caldwell , Brown and Caldwell

AnalyDueDate: 09/10/2007

Sample Preparation/Analysis

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

Balance Id:1120421763

Pipet #: _____

Sep1 DT/Tm Tech:

Sep2 DT/Tm Tech:

Prep Tech: ,Barcotl

Batch: 7241626 SOIL pCi/g PM, Quote: SA , 73181

SEQ Batch, Test: None

Work Order, Lot, Sample DateTime	Total Amt/Unit	Initial Aliquot Amt/Unit	QC Tracer Prep Date	Dish Size	Ppt or Geometry	Count Time Min	Detector Id	Count On | Off (24hr) Circle	CR Analyst, Init/Date	Comments:
15 J5K23-1-AA J7H240308-14-SAMP 08/14/2007 12:30		364.50g,in AmtRec: 8OZJAR	#Containers: 1		5200	~~1000~~ 600 9/19/07	G6	0423	9/19/07	
							Scr:	Alpha:	Beta:	
16 J5K24-1-AA J7H240308-15-SAMP 08/14/2007 14:00		352.90g,in AmtRec: 8OZJAR	#Containers: 1				G8	0424		
							Scr:	Alpha:	Beta:	
17 J5K25-1-AA J7H240308-16-SAMP 08/14/2007 14:00		361.00g,in AmtRec: 8OZJAR	#Containers: 1				~~G5~~ 9/19/07 G4	1526	9/20/07	
							Scr:	Alpha:	Beta:	
18 J5WEL-1-AA-B J7H290000-626-BLK 08/14/2007 08:00		200.60g,in AmtRec:	#Containers: 1		200		G15	1557	9/19/07	
							Scr:	Alpha:	Beta:	
19 J5WEL-1-AC-C J7H290000-626-LCS 08/14/2007 08:00		200.76g,in AmtRec:	GSE1137 08/29/07,pd 06/08/05,r #Containers: 1				G15	0424	9/19/07	
							Scr:	Alpha:	Beta:	

Comments: not enough Smaple for Dup please recount on specate Detector. 10 day ingrowth started 8/31/07 JSW

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

J5K2G1AA-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

8/31/2007 10:05:24 AM

Sample Preparation/Analysis

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: 7241626 pCi/g
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:

J5WEL1AA-BLK:
Cs-137 RDL:0.2 pCi/g LCL: UCL: RPD: Cs-137DA RDL:0.2 pCi/g LCL: UCL: RPD:

J5WEL1AC-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

J5K2G1AA-SAMP Calc Info:
Uncert Level (#s).: 2 Decay to SaDt: Y Blk Subt.: N Sci.Not.: Y ODRs: B
J5WEL1AA-BLK:
Uncert Level (#s).: 2 Decay to SaDt: Y Blk Subt.: N Sci.Not.: Y ODRs: B
J5WEL1AC-LCS:
Uncert Level (#s).: 2 Decay to SaDt: Y Blk Subt.: N Sci.Not.: Y ODRs: B

Approved By _____ Date: _____

9/21/2007 1:28:15 PM

ICOC Fraction Transfer/Status Report

ByDate: 9/21/2006, 9/26/2007, Batch: '7241626', User: *ALL Order By DateTimeAccepting

Q Batch	Work Ord	CurStatus	Accepting		Comments
7241626					
AC		CalcC	**StringerR**	8/31/2007 11:10:21	
SC			wagarr	IsBatched 8/29/2007 4:22:17 PM	ICOC_RADCALC v4.8.26
SC			StringerR	InCnt1 8/31/2007 11:10:21 AM	RICH-RD-0007 REVISION 6
SC			StringerR	CalcC 9/20/2007 5:27:32 PM	RICH-RD-0007 REVISION 6
AC			**StringerR**	9/20/2007 5:27:32 PM	

AC: Accepting Entry; SC: Status Change

STL Richland

Richland Wa.

Grp Rec Cnt: 2

ICOCFractions v4.8.27

9/21/2007 1:28:14 PM

Rpt DB Transfer log (Batch Results)

SDG or Batch / Isotope	Rpt Db Id / Method	RTst	Qc	LotSample / Analysis Date	Client Id / Result	Matrix / Cnt Uncert	Received Date / Tot Uncert	Sample Date / Mda	Units	Expected	Yield	Volumes
35711	9J5K2010			J7H24030812	BGS-A2-49D	SOIL	8/23/2007 10:00:00	8/14/2007 11:45:00 AM				
RA-226DA	AXTA	0		9/19/2007 6:22:00 PM	**1.2524E+00**	8.225E-02	8.225E-02	4.56E-02	PCI/GRAM			3.224E+2
RA-228DA	AXTA	0		9/19/2007 6:22:00 PM	**1.3054E+00**	1.048E-01	1.048E-01	8.603E-02	PCI/GRAM			3.224E+2
35711	9J5K2210			J7H24030813	BGS-A2-50S	SOIL	8/23/2007 10:00:00	8/14/2007 12:30:00 PM				
RA-226DA	AXTA	0		9/19/2007 6:22:45 PM	**1.0734E+00**	7.014E-02	7.014E-02	3.373E-02	PCI/GRAM			3.404E+2
RA-228DA	AXTA	0		9/19/2007 6:22:45 PM	**9.7462E-01**	8.0E-02	8.0E-02	6.083E-02	PCI/GRAM			3.404E+2
35711	9J5K2310			J7H24030814	BGS-A2-50D	SOIL	8/23/2007 10:00:00	8/14/2007 12:30:00 PM				
RA-226DA	AXTA	0		9/19/2007 6:23:31 PM	**1.0565E+00**	6.901E-02	6.901E-02	4.066E-02	PCI/GRAM			3.645E+2
RA-228DA	AXTA	0		9/19/2007 6:23:31 PM	**9.499E-01**	8.647E-02	8.647E-02	8.192E-02	PCI/GRAM			3.645E+2
35711	9J5K2410			J7H24030815	BGS-A2-48S	SOIL	8/23/2007 10:00:00	8/14/2007 2:00:00 PM				
RA-226DA	AXTA	0		9/19/2007 6:24:10 PM	**1.1825E+00**	7.897E-02	7.897E-02	3.796E-02	PCI/GRAM			3.529E+2
RA-228DA	AXTA	0		9/19/2007 6:24:10 PM	**1.0724E+00**	8.682E-02	8.682E-02	7.326E-02	PCI/GRAM			3.529E+2
35711	9J5K2510			J7H24030816	BGS-A2-48D	SOIL	8/23/2007 10:00:00	8/14/2007 2:00:00 PM				
RA-226DA	AXTA	0		9/20/2007 5:26:03 AM	**6.97E-01**	5.182E-02	5.182E-02	3.815E-02	PCI/GRAM			3.61E+2
RA-228DA	AXTA	0		9/20/2007 5:26:03 AM	**7.5394E-01**	7.241E-02	7.241E-02	7.501E-02	PCI/GRAM			3.61E+2
35711	9J5K2G10			J7H2403081	BGS-A2-59S	SOIL	8/23/2007 10:00:00	8/14/2007 8:00:00 AM				
RA-226DA	AXTA	0		9/19/2007 5:55:30 AM	**7.6367E-01**	5.59E-02	5.59E-02	3.784E-02	PCI/GRAM			3.706E+2
RA-228DA	AXTA	0		9/19/2007 5:55:30 AM	**8.394E-01**	8.195E-02	8.195E-02	7.493E-02	PCI/GRAM			3.706E+2
35711	9J5K2H10			J7H2403082	BGS-A2-59D	SOIL	8/23/2007 10:00:00	8/14/2007 8:00:00 AM				
RA-226DA	AXTA	0		9/19/2007 5:55:50 AM	**9.0292E-01**	5.967E-02	5.967E-02	3.542E-02	PCI/GRAM			3.733E+2
RA-228DA	AXTA	0		9/19/2007 5:55:50 AM	**7.4344E-01**	7.067E-02	7.067E-02	7.45E-02	PCI/GRAM			3.733E+2
35711	9J5K2J10			J7H2403083	BGS-A2-58S	SOIL	8/23/2007 10:00:00	8/14/2007 8:30:00 AM				
RA-226DA	AXTA	0		9/19/2007 5:56:14 AM	**1.059E+00**	7.186E-02	7.186E-02	3.792E-02	PCI/GRAM			3.592E+2
RA-228DA	AXTA	0		9/19/2007 5:56:14 AM	**1.1708E+00**	9.155E-02	9.155E-02	7.134E-02	PCI/GRAM			3.592E+2
35711	9J5K2K10			J7H2403084	BGS-A2-58D	SOIL	8/23/2007 10:00:00	8/14/2007 8:30:00 AM				
RA-226DA	AXTA	0		9/19/2007 5:56:33 AM	**9.6034E-01**	6.306E-02	6.306E-02	3.257E-02	PCI/GRAM			3.633E+2
RA-228DA	AXTA	0		9/19/2007 5:56:33 AM	**1.0333E+00**	8.339E-02	8.339E-02	6.106E-02	PCI/GRAM			3.633E+2
35711	9J5K2L10			J7H2403085	BGS-A2-57S	SOIL	8/23/2007 10:00:00	8/14/2007 9:15:00 AM				
RA-226DA	AXTA	0		9/19/2007 5:56:44 AM	**7.9225E-01**	5.2E-02	5.2E-02	2.75E-02	PCI/GRAM			3.413E+2
RA-228DA	AXTA	0		9/19/2007 5:56:44 AM	**8.0139E-01**	7.012E-02	7.012E-02	5.781E-02	PCI/GRAM			3.413E+2
35711	9J5K2N10			J7H2403086	BGS-A2-57D	SOIL	8/23/2007 10:00:00	8/14/2007 9:15:00 AM				
RA-226DA	AXTA	0		9/19/2007 5:57:04 AM	**9.2635E-01**	6.163E-02	6.163E-02	2.766E-02	PCI/GRAM			3.403E+2
RA-228DA	AXTA	0		9/19/2007 5:57:04 AM	**7.4102E-01**	7.326E-02	7.326E-02	5.478E-02	PCI/GRAM			3.403E+2
35711	9J5K2P10			J7H2403087	BGS-A2-60S	SOIL	8/23/2007 10:00:00	8/14/2007 10:15:00 AM				
RA-226DA	AXTA	0		9/19/2007 5:57:25 AM	**7.9686E-01**	5.81E-02	5.81E-02	4.571E-02	PCI/GRAM			3.634E+2
RA-228DA	AXTA	0		9/19/2007 5:57:25 AM	**8.6168E-01**	8.29E-02	8.29E-02	8.574E-02	PCI/GRAM			3.634E+2
35711	9J5K2Q10			J7H2403088	BGS-A2-60D	SOIL	8/23/2007 10:00:00	8/14/2007 10:15:00 AM				
RA-226DA	AXTA	0		9/19/2007 6:19:48 PM	**7.7503E-01**	5.342E-02	5.342E-02	2.614E-02	PCI/GRAM			3.661E+2
RA-228DA	AXTA	0		9/19/2007 6:19:48 PM	**7.8755E-01**	7.44E-02	7.44E-02	5.172E-02	PCI/GRAM			3.661E+2
35711	9J5K2R10			J7H2403089	BGS-A2-56S	SOIL	8/23/2007 10:00:00	8/14/2007 10:45:00 AM				
RA-226DA	AXTA	0		9/19/2007 6:20:19 PM	**1.0667E+00**	6.816E-02	6.816E-02	2.822E-02	PCI/GRAM			3.49E+2
RA-228DA	AXTA	0		9/19/2007 6:20:19 PM	**1.2833E+00**	1.007E-01	1.007E-01	1.395E-01	PCI/GRAM			3.49E+2
35711	9J5K2V10			J7H24030810	BGS-A2-56D	SOIL	8/23/2007 10:00:00	8/14/2007 10:45:00 AM				
RA-226DA	AXTA	0		9/19/2007 6:20:48 PM	**8.0163E-01**	5.815E-02	5.815E-02	4.45E-02	PCI/GRAM			3.651E+2
RA-228DA	AXTA	0		9/19/2007 6:20:48 PM	**8.2812E-01**	7.439E-02	7.439E-02	8.232E-02	PCI/GRAM			3.651E+2
35711	9J5K2X10			J7H24030811	BGS-A2-49S	SOIL	8/23/2007 10:00:00	8/14/2007 11:45:00 AM				
RA-226DA	AXTA	0		9/19/2007 6:21:35 PM	**1.19E+00**	8.07E-02	8.07E-02	4.412E-02	PCI/GRAM			3.493E+2
RA-228DA	AXTA	0		9/19/2007 6:21:35 PM	**1.3601E+00**	1.123E-01	1.123E-01	8.711E-02	PCI/GRAM			3.493E+2
35711	J5K2G1CR			J7H2403081	BGS-A2-59S DUP	SOIL	8/23/2007 10:00:00	8/14/2007 8:00:00 AM				
RA-226DA	AXTA	0	R	9/19/2007 6:26:03 PM	**6.8027E-01**	5.166E-02	5.166E-02	3.781E-02	PCI/GRAM			3.706E+2
RA-228DA	AXTA	0	R	9/19/2007 6:26:03 PM	**7.5488E-01**	7.842E-02	7.842E-02	7.224E-02	PCI/GRAM			3.706E+2

7241626.7241626, **Samples Inserted | Updated | NotUpdated => 19 | 0 | 0,
**Results Inserted | ReTestInserted | Updated | NotInserted => 37 | 0 | 0 | 0.
**Diff RptDb | Qtms =>.

STL Richland, Wa Calc Review v4.8.27

Page 1

SDG or Batch / Isotope	Rpt Db Id / Method	RTst	Qc	LotSample / Analysis Date	Client Id / Result	Matrix / Cnt Uncert	Received Date / Tot Uncert	Sample Date / Mqa	Units	Expected	Yield	Volumes
35711	**J5WEL1AB**			**J7H290000626**	INTRA-LAB BLANK	SOIL	8/23/2007 10:00:00	8/14/2007 8:00:00 AM				
RA-226DA	AXTA	0	B	9/19/2007 5:57:42 AM	**-2.0219E-02**	2.505E-02	2.505E-02	6.146E-02	PCI/GRAM			2.006E+2
RA-228DA	AXTA	0	B	9/19/2007 5:57:42 AM	**-1.3371E-01**	4.14E-02	4.14E-02	1.005E-01	PCI/GRAM			2.006E+2
35711	**J5WEL1CS**			**J7H290000626**	INTRA-LAB CHECK	SOIL	8/23/2007 10:00:00	8/14/2007 8:00:00 AM				
CS-137DA	AXTA	0	S	9/19/2007 6:24:53 PM	**1.1888E+00**	7.496E-02	7.496E-02	2.467E-02	PCI/GRAM	1.0274E+00		2.008E+2

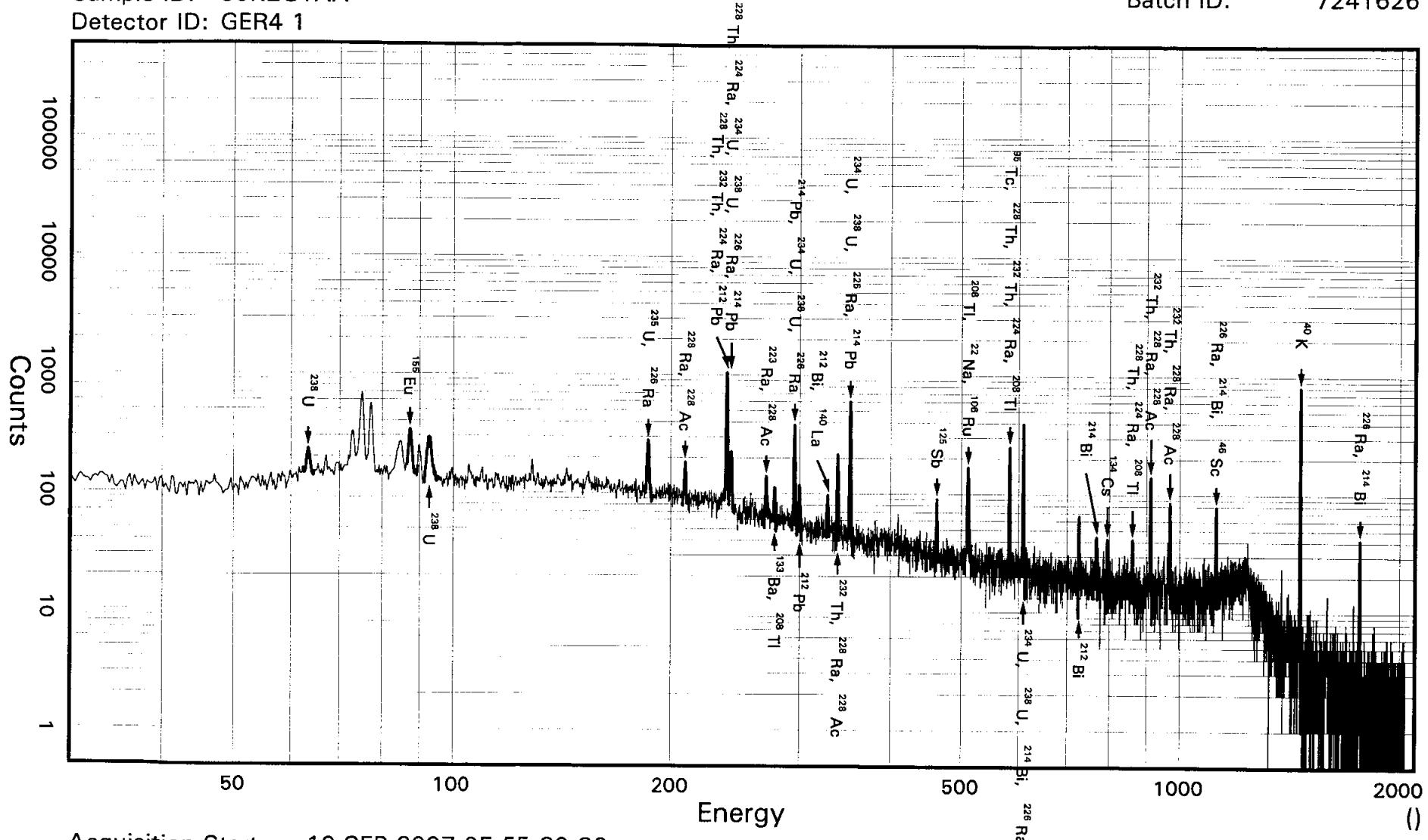
7241626.7241626, **Samples Inserted | Updated | NotUpdated => 19 | 0 | 0,
**Results Inserted | ReTestInserted | Updated | NotInserted => 37 | 0 | 0 | 0.
**Diff RptDb | Qtims => .

STL Richland WA.

BRC SOIL

Sample ID: J5K2G1AA
Detector ID: GER4 1

Batch ID: 7241626



Acquisition Start: 19-SEP-2007 05:55:30.32
Preset Live Time: 0 10:00:00.00
Elapsed Live Time: 0 10:00:00.00

Energy Coefficients:
Offset: -1.09010E-01
Slope: 2.48688E-01
Quadrature: 4.92614E-09

SAMPLE IDENTIFICATION: ~~J5~~K2G1AA

CONFIGURATION ID: GER4:J5K2G1AA_190970555
TITLE : BRC SOIL
SAMPLE ID : J5K2G1AA

REPORT DATE: 19-SEP-07
ACQUIRE DATE: 19-SEP-07 05:55:30
ELAPSED LIVE TIME: 36000.0 Sec
PRESET LIVE TIME: 0 10:00:00

SAMPLE QUANTITY: 3.7060E+02
SAMPLE GEOMETRY: S200

ENERGY OFFSET: -.1090E+00 keV
ENERGY SLOPE: 2.4869E-01 keV/C
ENERGY Q COEFF: 4.9261E-09 keV/C^^2
PEAK SENSITIVITY: 5.000

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

SAMPLE DATE: ~~14~~-AUG-2007 08:00:00.00
CALIB DATE: 19-SEP-2007 05:32:02.18
ELAPSED LIVE TIME: 0 10:00:00
ELAPSED REAL TIME: 0 10:00:15

UNITS: GRAMS
SAMPLE TYPE:

FWHM OFFSET: 2.9494E-01 keV
FWHM SLOPE: 4.6154E-02 sqr keV
ITERATIONS: 10
GAUSSIAN SENSITIVITY: 10.00 %

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

VMS Peak Search Report V1.9 Generated 19-SEP-2007 15:55:51

Configuration : $DISK1:[GER4.SAMPLE]J5K2G1AA_190970555.CNF;1
Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6
Sample title : BRC SOIL
Sample date : 14-AUG-2007 08:00:00 Acquisition date : 19-SEP-2007 05:55:30
Sample ID : J5K2G1AA Sample quantity : 370.60 GRAMS
Sample type : Sample geometry : S200
Elapsed live time: 0 10:00:00.00 Elapsed real time: 0 10:00:15.58 0.0%
Start energy : 19.79 End energy : 2037.47
Sensitivity : 5.00 Gaussian : 10.00
Critical level : No

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	63.30*	103	1324	0.65	254.98	251	9	2.85E-03	71.3	
2	5	72.94*	399	1954	1.11	293.75	285	33	1.11E-02	25.2	2.07E+00
3	5	74.96*	1269	1642	0.88	301.86	285	33	3.52E-02	7.6	
4	5	77.15*	1488	1630	0.93	310.65	285	33	4.13E-02	6.4	
5	0	84.47*	309	2159	1.48	340.12	333	14	8.59E-03	34.7	
6	0	87.17*	515	2010	0.90	350.95	347	13	1.43E-02	19.3	
7	0	90.02	439	1036	0.97	362.40	359	8	1.22E-02	13.6	
8	0	92.92*	777	2123	1.48	374.09	368	17	2.16E-02	14.7	
9	0	129.01	276	1572	0.74	519.19	512	13	7.68E-03	30.2	
10	0	185.96*	925	1438	1.32	748.18	741	16	2.57E-02	10.3	
11	0	209.13	429	1177	1.04	841.35	835	14	1.19E-02	17.6	
12	4	238.60*	3848	994	0.98	959.87	951	29	1.07E-01	2.4	1.57E+00
13	4	241.69	954	1230	1.48	972.30	951	29	2.65E-02	9.1	
14	0	270.23	242	1036	0.56	1087.03	1080	15	6.71E-03	29.7	
15	0	277.36	191	624	0.76	1115.72	1110	11	5.30E-03	26.4	
16	0	295.18*	1556	920	1.08	1187.36	1178	19	4.32E-02	5.5	
17	0	300.15	320	518	0.88	1207.36	1202	11	8.89E-03	14.9	
18	0	327.92	229	572	1.01	1319.00	1313	12	6.36E-03	21.9	
19	0	338.29*	809	609	1.17	1360.69	1353	14	2.25E-02	8.1	
20	0	351.84*	2645	829	1.10	1415.20	1406	21	7.35E-02	3.5	
21	0	409.70	142	240	0.99	1647.83	1644	8	3.95E-03	20.9	
22	0	462.99	278	433	1.01	1862.12	1855	16	7.72E-03	17.8	
23	0	511.02*	280	829	1.56	2055.22	2044	25	7.78E-03	33.7	
24	0	583.19*	1219	413	1.36	2345.41	2337	18	3.39E-02	5.2	
25	0	609.37*	1982	469	1.26	2450.65	2441	24	5.51E-02	3.9	
26	0	727.22	338	412	1.89	2924.50	2915	22	9.38E-03	14.1	
27	0	768.42	121	337	1.12	3090.16	3082	17	3.37E-03	31.1	
28	0	794.82	163	342	1.60	3196.30	3188	21	4.54E-03	25.2	
29	0	860.56	135	350	1.53	3460.62	3449	21	3.75E-03	30.6	
30	0	911.25*	924	455	1.77	3664.39	3649	31	2.57E-02	6.9	
31	0	968.10	671	466	1.82	3892.95	3874	30	1.86E-02	8.7	
32	0	1120.26	413	421	1.44	4504.74	4493	25	1.15E-02	12.3	
33	0	1377.68	174	114	1.35	5539.62	5526	28	4.83E-03	15.1	
34	0	1460.66*	7248	224	2.16	5873.21	5855	37	2.01E-01	1.3	
35	0	1764.25	373	63	2.09	7093.69	7075	33	1.04E-02	7.0	

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

VMS Nuclide Identification Report V3.0 Generated 19-SEP-2007 15:55:51

Configuration : $DISK1:[GER4.SAMPLE]J5K2G1AA_190970555.CNF;1
Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.3
Sample title : BRC SOIL
Sample date : 14-AUG-2007 08:00:00 Acquisition date : 19-SEP-2007 05:55:30
Sample ID : J5K2G1AA Sample quantity : 370.60 GRAMS
Sample type : Sample geometry : S200
Elapsed live time: 0 10:00:00.00 Elapsed real time: 0 10:00:15.58 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	7248	10.67*	5.415E-01	2.541E+01	2.541E+01	6.42
TL-208	277.35	191	6.80	2.029E+00	2.802E-01	2.802E-01	27.26
	510.84	280	21.60	1.301E+00	2.019E-01	2.019E-01	34.23
	583.14	1219	84.20*	1.175E+00	2.496E-01	2.496E-01	8.07
	860.37	135	12.46	8.555E-01	2.567E-01	2.567E-01	31.36
PB-212	238.63	3848	44.60*	2.244E+00	7.788E-01	7.788E-01	6.89
	300.09	320	3.41	1.920E+00	9.903E-01	9.903E-01	16.36
BI-214	609.31	1982	46.30*	1.136E+00	7.636E-01	7.636E-01	7.32
	768.36	121	5.04	9.413E-01	5.184E-01	5.184E-01	31.72
	1120.29	413	15.10	6.798E-01	8.149E-01	8.149E-01	13.81
	1764.49	373	15.80	4.702E-01	1.017E+00	1.017E+00	9.27
PB-214	241.98	954	7.49	2.225E+00	1.160E+00	1.160E+00	11.13
	295.21	1556	19.20	1.943E+00	8.449E-01	8.449E-01	8.66
	351.92	2645	37.20*	1.714E+00	8.403E-01	8.403E-01	7.31
	785.91	------	1.10	9.238E-01	------ Line Not Found		------
RA-224DA	238.63	3848	44.60*	2.244E+00	7.788E-01	8.072E-01	6.89
	240.98	954	3.95	2.225E+00	2.199E+00	2.280E+00	11.13
	583.14	1219	30.25	1.175E+00	6.947E-01	7.200E-01	8.07
	860.37	135	4.48	8.555E-01	7.139E-01	7.400E-01	31.36
RA-226DA	186.21	925	3.50	2.594E+00	2.064E+00	2.064E+00	12.07
	241.98	954	7.49	2.225E+00	1.160E+00	1.160E+00	11.13
	295.22	1556	19.20	1.943E+00	8.449E-01	8.449E-01	8.66
	351.92	2645	37.20	1.714E+00	8.403E-01	8.403E-01	7.31
	609.32	1982	46.30*	1.136E+00	7.636E-01	7.637E-01	7.32
	1120.28	413	15.10	6.798E-01	8.149E-01	8.150E-01	13.81
	1238.11	------	5.94	6.228E-01	------ Line Not Found		------
	1764.49	373	15.80	4.702E-01	1.017E+00	1.017E+00	9.27
AC-228	209.28	429	4.40	2.434E+00	8.121E-01	8.121E-01	18.70
	270.23	242	3.60	2.065E+00	6.584E-01	6.584E-01	30.44
	338.32	809	11.40	1.764E+00	8.155E-01	8.155E-01	10.43
	911.07	924	27.70*	8.144E-01	8.295E-01	8.295E-01	9.76
	969.11	671	16.60	7.727E-01	1.060E+00	1.060E+00	11.03
RA-228DA	209.28	429	4.40	2.434E+00	8.121E-01	8.219E-01	18.70
	338.32	809	11.40	1.764E+00	8.155E-01	8.252E-01	10.43
	911.07	924	27.70*	8.144E-01	8.295E-01	8.394E-01	9.76
	964.60	------	5.20	7.752E-01	------ Line Not Found		------

Nuclide Type: NP

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected PCI/GRAM	Decay Corr PCI/GRAM	1-Sigma %Error
	969.11	671	16.60	7.727E-01	1.060E+00	1.073E+00	11.03
TH-228DA	238.63	3848	44.60	2.244E+00	7.788E-01	8.072E-01	6.89
	240.98	954	3.95	2.225E+00	2.199E+00	2.280E+00	11.13
	583.14	1219	30.25*	1.175E+00	6.947E-01	7.200E-01	8.07
	860.37	135	4.48	8.555E-01	7.139E-01	7.400E-01	31.36
TH-232DA	238.63	3848	44.60	2.244E+00	7.788E-01	7.788E-01	6.89
	338.32	809	12.40*	1.764E+00	7.497E-01	7.497E-01	10.43
	583.14	1219	30.25	1.175E+00	6.947E-01	6.947E-01	8.07
	911.07	924	27.70	8.144E-01	8.295E-01	8.295E-01	9.76
	964.60	------	5.20	7.752E-01	------ Line Not Found		------
	969.11	671	16.60	7.727E-01	1.060E+00	1.060E+00	11.03
U-234DA	241.98	954	7.49	2.225E+00	1.160E+00	1.160E+00	11.13
	295.22	1556	19.20*	1.943E+00	8.449E-01	8.449E-01	8.66
	351.92	2645	37.20	1.714E+00	8.403E-01	8.403E-01	7.31
	609.31	1982	46.30	1.136E+00	7.636E-01	7.636E-01	7.32
U-238DA	241.98	954	7.49	2.225E+00	1.160E+00	1.160E+00	11.13
	295.22	1556	19.20	1.943E+00	8.449E-01	8.449E-01	8.66
	351.92	2645	37.20*	1.714E+00	8.403E-01	8.403E-01	7.31
	609.31	1982	46.30	1.136E+00	7.636E-01	7.636E-01	7.32
U-238DHP	63.28	103	3.80*	1.031E+00	5.308E-01	5.308E-01	71.55
	92.59	777	5.41	2.394E+00	1.216E+00	1.216E+00	16.20

Flag: "*" = Keyline

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
5	72.94	399	1954	1.11	293.75	285	33	1.11E-02	25.2	1.57E+00	
5	74.96	1269	1642	0.88	301.86	285	33	3.52E-02	7.6	1.67E+00	
5	77.15	1488	1630	0.93	310.65	285	33	4.13E-02	6.4	1.78E+00	
0	84.47	309	2159	1.48	340.12	333	14	8.59E-03	34.7	2.10E+00	
0	87.17	515	2010	0.90	350.95	347	13	1.43E-02	19.3	2.21E+00	T
0	90.02	439	1036	0.97	362.40	359	8	1.22E-02	13.6	2.30E+00	
0	129.01	276	1572	0.74	519.19	512	13	7.68E-03	30.2	2.85E+00	
0	327.92	229	572	1.01	1319.00	1313	12	6.36E-03	21.9	1.80E+00	T
0	409.70	142	240	0.99	1647.83	1644	8	3.95E-03	20.9	1.53E+00	
0	462.99	278	433	1.01	1862.12	1855	16	7.72E-03	17.8	1.40E+00	T
0	727.22	338	412	1.89	2924.50	2915	22	9.38E-03	14.1	9.85E-01	T
0	794.82	163	342	1.60	3196.30	3188	21	4.54E-03	25.2	9.15E-01	T
0	1377.68	174	114	1.35	5539.62	5526	28	4.83E-03	15.1	5.68E-01	

Flags: "T" = Tentatively associated

Sample ID : J5K2G1AA Acquisition date : 19-SEP-2007 05:55:30

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	2.491E-02	34.23	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	1.659E-01	13.81	
		% Abundances Found =		50.00			
TC-95M	61.00D	0.59	204.12*	66.20	--- Not Found ---		Abun.
			582.07	29.30	1.081E+00	8.07	
			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	1.193E+01	7.32	
		% Abundances Found =		5.92			
RU-106DA	368.20D	0.10	511.85	20.60	2.265E-01	34.23	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	3.977E-01	18.78	
			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	2.780E-01	27.26	
			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	4.382E-02	26.01	
			801.93	8.73	--- Not Found ---		
		% Abundances Found =		41.22			
LA-140	40.22H	21.55	328.77	20.50	3.860E+05	22.92	Decay,Abun.
			487.03	45.50	--- Not Found ---		
			815.85	23.50	--- Not Found ---		
			1596.49*	95.49	--- Not Found ---		
		% Abundances Found =		11.08			
EU-155	4.96Y	0.02	42.90	21.16	--- Not Found ---		Abun.
			86.54	30.90	1.552E-01	20.50	
			105.31*	20.70	--- Not Found ---		
		% Abundances Found =		42.47			

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	1.851E+01	24.25	
			452.83	0.31	--- Not Found ---		
			727.33*	6.58	1.055E+00	15.60	
			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	1.748E-01	30.44	
			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	1.338E-01	12.07	
			205.31	4.70	--- Not Found ---		
		% Abundances Found =		78.03			

Flag: "*" = Keyline

VMS Nuclide Identification Report V3.0 Generated 19-SEP-2007 15:55:54

Configuration : $DISK1:[GER4.SAMPLE]J5K2G1AA_190970555.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	: 14-AUG-2007 08:00:00	Acquisition date	: 19-SEP-2007 05:55:30
Sample ID	: J5K2G1AA	Sample quantity	: 370.60 GRAMS
Sample type	:	Sample geometry	: S200
Elapsed live time	: 0 10:00:00.00	Elapsed real time	: 0 10:00:15.58 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 ----

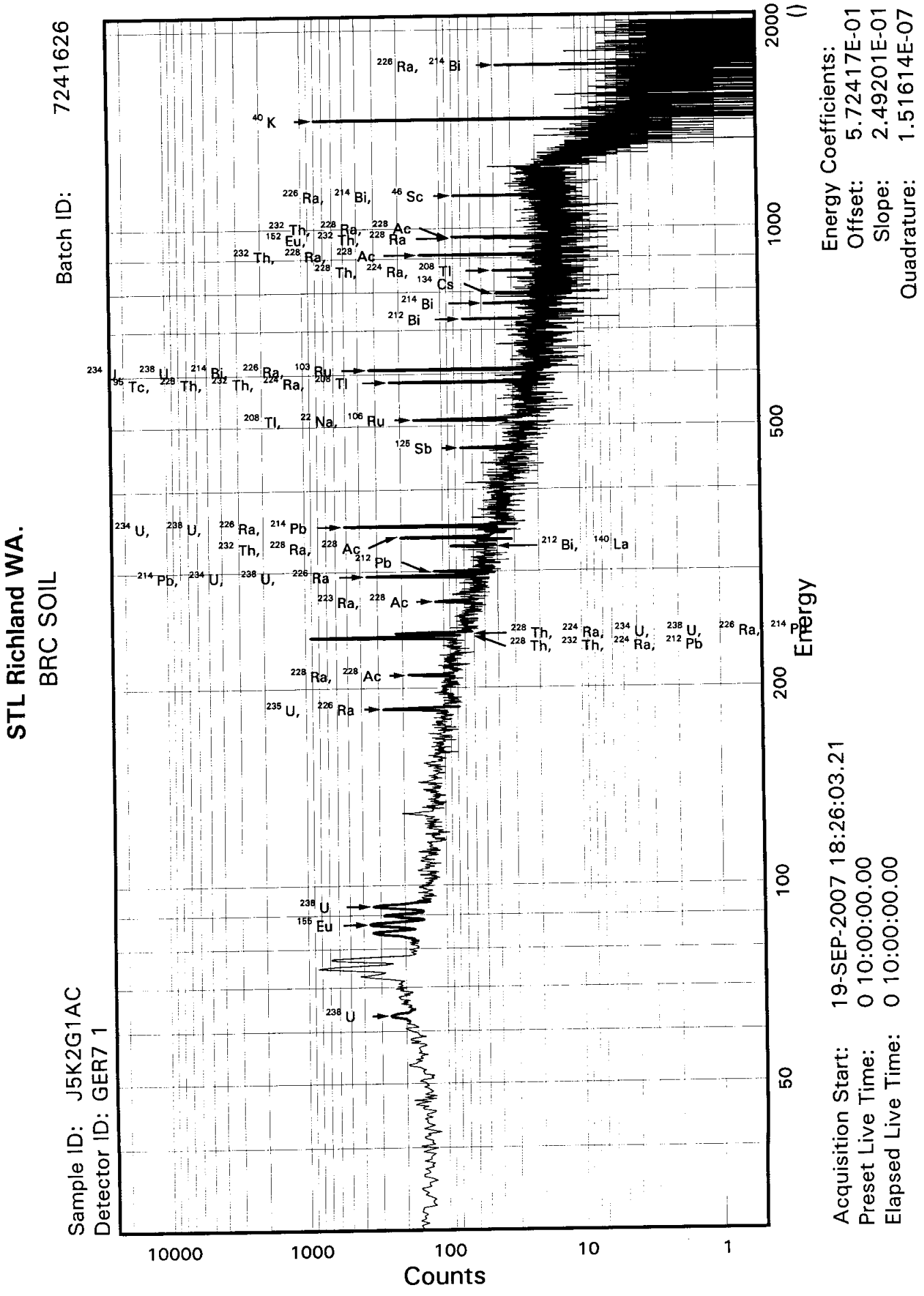
Nuclide	Activity (PCI/GRAM)	Act error	MDA (PCI/GRAM)	MDA error	Act/MDA
K-40	2.541E+01	1.631E+00	1.858E-01	7.050E-03	136.770
TL-208	2.496E-01	2.015E-02	1.984E-02	7.168E-04	12.576
PB-212	7.788E-01	5.366E-02	3.000E-02	1.225E-03	25.964
BI-214	7.636E-01	5.590E-02	3.784E-02	1.368E-03	20.183
PB-214	8.403E-01	6.144E-02	3.741E-02	1.507E-03	22.463
RA-224DA	8.072E-01	5.562E-02	3.109E-02	1.270E-03	25.964
RA-226DA	7.637E-01	5.590E-02	3.784E-02	1.368E-03	20.183
AC-228	8.295E-01	8.098E-02	7.404E-02	3.548E-03	11.203
RA-228DA	8.394E-01	8.195E-02	7.493E-02	3.591E-03	11.203
TH-228DA	7.200E-01	5.813E-02	5.725E-02	2.068E-03	12.576
TH-232DA	7.497E-01	7.822E-02	1.139E-01	4.860E-03	6.580
U-234DA	8.449E-01	7.321E-02	7.085E-02	3.135E-03	11.925
U-238DA	8.403E-01	6.144E-02	3.741E-02	1.507E-03	22.463
U-238DHP	5.308E-01	3.798E-01	8.410E-01	3.568E-02	0.631

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

Nuclide	Key-Line Activity (PCI/GRAM)	K.L. Ided	Act error	MDA (PCI/GRAM)	MDA error	Act/MDA
BE-7	2.489E-02		6.929E-02	2.362E-01	8.216E-03	0.105
NA-22	-6.773E-03		8.114E-03	2.726E-02	1.006E-03	-0.248
SC-46	1.659E-01	+	2.292E-02	5.362E-02	2.013E-03	3.094
CR-51	1.977E-02		1.021E-01	3.469E-01	1.578E-02	0.057
MN-54	-3.097E-03		6.729E-03	2.270E-02	1.020E-03	-0.136
CO-57	-3.192E-02		3.634E-02	1.200E-01	4.791E-03	-0.266
CO-58	-4.772E-03		7.952E-03	2.688E-02	1.173E-03	-0.178
FE-59	-9.155E-03		2.458E-02	8.268E-02	3.216E-03	-0.111
CO-60	-1.685E-02		7.020E-03	2.235E-02	8.629E-04	-0.754
ZN-65	3.068E-02		1.963E-02	5.814E-02	2.201E-03	0.528
SE-75	-1.187E-02		8.270E-03	2.677E-02	1.138E-03	-0.443
SR-85	3.488E-02		8.805E-03	2.663E-02	9.493E-04	1.310
Y-88	1.300E-02		6.060E-03	2.327E-02	7.426E-04	0.559
NB-94	5.035E-03		5.904E-03	2.036E-02	9.544E-04	0.247

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

Nuclide	Key-Line Activity (PCI/GRAM)	K.L. Ided	Act error	MDA (PCI/GRAM)	MDA error	Act/MDA
NB-95	1.261E-02		1.536E-02	4.403E-02	1.817E-03	0.286
TC-95M	2.001E-03		8.761E-03	2.967E-02	1.143E-03	0.067
ZR-95	4.990E-04		1.579E-02	5.285E-02	2.156E-03	0.009
ZRNB-95	2.051E-02		2.224E-02	6.386E-02	2.635E-03	0.321
RH-101	-3.840E-03		5.794E-03	1.801E-02	6.866E-04	-0.213
RH-102M	-6.916E-03		4.882E-03	1.613E-02	5.599E-04	-0.429
RU-103	-1.400E-02		9.609E-03	3.157E-02	1.113E-03	-0.444
RU-106DA	9.470E-02		5.418E-02	1.893E-01	6.840E-03	0.500
AG-108M	-4.964E-03		4.845E-03	1.628E-02	5.463E-04	-0.305
AG-110M	-3.440E-04		9.092E-03	3.082E-02	1.468E-03	-0.011
SN-113DA	3.241E-03		8.653E-03	2.897E-02	9.324E-04	0.112
SB-124	-9.662E-03		8.142E-03	2.637E-02	9.532E-04	-0.366
SB-125	-3.162E-03		1.501E-02	5.121E-02	1.709E-03	-0.062
SN-126DA	4.941E-03		5.358E-03	1.841E-02	6.659E-04	0.268
I-131	-1.256E-01		1.170E-01	3.857E-01	1.462E-02	-0.326
BA-133	-1.128E-02		7.938E-03	2.197E-02	8.685E-04	-0.514
CS-134	4.382E-02	+	1.140E-02	2.816E-02	1.206E-03	1.556
CS-137DA	-8.237E-03		6.475E-03	2.139E-02	7.689E-04	-0.385
LA-138	-8.431E-04		8.680E-03	2.975E-02	1.134E-03	-0.028
CE-139	-4.097E-03		5.479E-03	1.783E-02	6.467E-04	-0.230
BA-140	-4.733E-02		1.316E-01	4.392E-01	1.576E-02	-0.108
BALA-140	-2.108E-01		8.796E-02	2.780E-01	1.014E-02	-0.758
CE-141	-1.638E-03		1.651E-02	5.472E-02	2.092E-03	-0.030
CE-144	-6.061E-02		3.587E-02	1.172E-01	4.750E-03	-0.517
CEPR-144	-1.222E-01		7.175E-02	2.343E-01	9.499E-03	-0.522
PM-144	4.444E-04		5.372E-03	1.837E-02	6.636E-04	0.024
PM-146	-6.815E-04		6.761E-03	2.300E-02	7.853E-04	-0.030
EU-152	-1.675E-02		1.591E-02	5.271E-02	2.195E-03	-0.318
EU-154	-1.957E-02		2.237E-02	7.507E-02	2.769E-03	-0.261
EU-155	6.910E-02		1.856E-02	6.341E-02	2.761E-03	1.090
HF-181	-5.970E-03		9.911E-03	3.323E-02	1.160E-03	-0.180
BI-207	3.719E-03		5.101E-03	1.722E-02	6.213E-04	0.216
BI-210M	1.675E-02		8.844E-03	2.676E-02	1.140E-03	0.626
BI-212	1.055E+00	+	1.646E-01	3.891E-01	1.767E-02	2.712
RA-223	1.748E-01	+	5.322E-02	1.131E-01	4.838E-03	1.546
AC-227DA	7.239E-02		4.341E-02	1.268E-01	5.156E-03	0.571
TH-234DA	2.246E+00		1.065E+00	3.752E+00	1.661E-01	0.599
U-235HP	9.812E-02		3.574E-02	1.200E-01	4.624E-03	0.817
NP-237DA	-1.397E-03		1.084E-02	3.680E-02	1.660E-03	-0.038
AM-241HP	-4.598E-02		3.143E-02	1.036E-01	4.271E-03	-0.444


STL Richland WA.
BRC SOIL
Batch ID: 7241626
Sample ID: J5K2G1AC
Detector ID: GER7 1
Acquisition Start: 19-SEP-2007 18:26:03.21
Preset Live Time: 0 10:00:00.00
Elapsed Live Time: 0 10:00:00.00
Energy Coefficients:
Offset: 5.72417E-01
Slope: 2.49201E-01
Quadrature: 1.51614E-07
Counts
Energy
10000
1000
100
10
1
2000
1000
500
200
100
50
226 Ra, 214 Bi
40 K
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
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 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: J5K2G1AC

CONFIGURATION ID: GER7:J5K2G1AC_190971826
TITLE : BRC SOIL
SAMPLE ID : J5K2G1AC

REPORT DATE: 20-SEP-07	SAMPLE DATE: 14-AUG-2007 08:00:00.00
ACQUIRE DATE: 19-SEP-07 18:26:03	CALIB DATE: 19-SEP-2007 05:32:19.12
ELAPSED LIVE TIME: 36000.0 Sec	ELAPSED LIVE TIME: 0 10:00:00
PRESET LIVE TIME: 0 10:00:00	ELAPSED REAL TIME: 0 10:00:10
SAMPLE QUANTITY: 3.7060E+02	UNITS: GRAMS
SAMPLE GEOMETRY: S200	SAMPLE TYPE:
ENERGY OFFSET: 5.7242E-01 keV	FWHM OFFSET: 5.3729E-01 keV
ENERGY SLOPE: 2.4920E-01 keV/C	FWHM SLOPE: 3.7461E-02 sqr keV
ENERGY Q COEFF: 1.5161E-07 keV/C^^2	ITERATIONS: 10
PEAK SENSITIVITY: 5.000	GAUSSIAN SENSITIVITY: 10.00 %
ABUNDANCE LIMIT: 80.00 %	HALF-LIFE RATIO: 8.00
ENERGY TOLERANCE: 1.500 keV	ACTIVITY MULTIPLIER: 1.0000E+06
VARIABLE PEAK WIDTH: 3.00	LIBRARY: [NUC_LIBR]QRL.NLB

VMS Peak Search Report V1.9 Generated 20-SEP-2007 04:26:15

Configuration : $DISK1:[GER7.SAMPLE]J5K2G1AC_190971826.CNF;1
Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6
Sample title : BRC SOIL
Sample date : 14-AUG-2007 08:00:00 Acquisition date : 19-SEP-2007 18:26:03
Sample ID : J5K2G1AC Sample quantity : 370.60 GRAMS
Sample type : Sample geometry : S200
Elapsed live time: 0 10:00:00.00 Elapsed real time: 0 10:00:10.63 0.0%
Start energy : 20.51 End energy : 2052.20
Sensitivity : 5.00 Gaussian : 10.00
Critical level : No

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	63.41*	208	2014	1.05	252.11	247	11	5.78E-03	44.6	
2	3	72.93*	537	2507	1.14	290.29	284	30	1.49E-02	20.2	2.05E+00
3	3	74.95*	1917	2362	1.00	298.39	284	30	5.33E-02	6.1	
4	3	77.14	2435	2353	1.09	307.21	284	30	6.76E-02	4.7	
5	5	84.65*	559	2712	1.42	337.32	328	36	1.55E-02	23.0	1.03E+00
6	5	87.22*	851	2021	1.12	347.63	328	36	2.36E-02	12.1	
7	5	89.86	547	1671	0.95	358.20	328	36	1.52E-02	15.2	
8	0	92.88*	818	2176	1.27	370.33	364	15	2.27E-02	13.7	
9	0	128.92	367	1606	0.86	514.88	509	13	1.02E-02	23.1	
10	0	186.02*	604	1187	0.90	743.82	738	12	1.68E-02	13.4	
11	0	209.22	370	1067	1.01	836.86	831	12	1.03E-02	18.4	
12	5	238.56*	3642	1038	1.06	954.45	947	27	1.01E-01	2.6	2.05E+00
13	5	241.62	1074	1079	1.58	966.72	947	27	2.98E-02	7.5	
14	0	270.22	363	1071	1.66	1081.33	1072	18	1.01E-02	21.8	
15	0	295.07	1506	928	1.12	1180.94	1172	18	4.18E-02	5.4	
16	0	300.18	270	604	1.07	1201.40	1196	12	7.51E-03	19.2	
17	0	327.93	166	466	0.83	1312.58	1307	10	4.61E-03	25.5	
18	0	338.15	808	730	1.11	1353.52	1345	16	2.24E-02	8.3	
19	0	351.83*	2363	796	1.19	1408.32	1399	18	6.56E-02	3.7	
20	0	409.56	109	344	0.79	1639.55	1635	10	3.01E-03	33.4	
21	0	462.77	217	299	1.35	1852.64	1848	11	6.03E-03	16.8	
22	0	510.94*	335	748	1.77	2045.46	2035	23	9.30E-03	26.1	
23	0	583.16*	1240	578	1.44	2334.51	2324	26	3.44E-02	6.3	
24	0	609.20*	1702	565	1.46	2438.68	2428	22	4.73E-02	4.6	
25	0	726.92	317	363	1.47	2909.57	2899	22	8.80E-03	14.1	
26	0	768.34	139	362	1.21	3075.18	3066	19	3.87E-03	29.1	
27	0	795.07	201	357	2.91	3182.03	3171	25	5.58E-03	22.5	
28	0	860.86	173	259	1.50	3444.98	3436	20	4.82E-03	20.9	
29	0	911.20*	816	461	1.80	3646.10	3632	30	2.27E-02	7.5	
30	2	964.60	162	245	1.97	3859.43	3851	35	4.51E-03	20.6	1.08E+00
31	2	968.95	534	240	1.78	3876.79	3851	35	1.48E-02	7.3	
32	0	1120.30	362	422	1.34	4481.04	4469	24	1.01E-02	13.8	
33	0	1460.70*	7083	139	2.16	5838.49	5820	36	1.97E-01	1.3	
34	0	1588.07	51	48	1.28	6345.86	6338	15	1.42E-03	27.1	
35	0	1730.05	70	65	1.38	6911.02	6895	29	1.96E-03	27.4	
36	0	1764.66	340	56	2.34	7048.74	7033	30	9.44E-03	7.3	

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

VMS Nuclide Identification Report V3.0 Generated 20-SEP-2007 04:26:16

Configuration : $DISK1:[GER7.SAMPLE]J5K2G1AC_190971826.CNF;1
Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.3
Sample title : BRC SOIL
Sample date : 14-AUG-2007 08:00:00 Acquisition date : 19-SEP-2007 18:26:03
Sample ID : J5K2G1AC Sample quantity : 370.60 GRAMS
Sample type : Sample geometry : S200
Elapsed live time: 0 10:00:00.00 Elapsed real time: 0 10:00:10.63 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	7083	10.67*	5.447E-01	2.469E+01	2.469E+01	8.16
TL-208	277.35	------	6.80	1.993E+00	------ Line Not Found		------
	510.84	335	21.60	1.252E+00	2.509E-01	2.509E-01	26.78
	583.14	1240	84.20*	1.132E+00	2.636E-01	2.636E-01	8.70
	860.37	173	12.46	8.372E-01	3.368E-01	3.368E-01	22.00
PB-212	238.63	3642	44.60*	2.224E+00	7.438E-01	7.438E-01	7.62
	300.09	270	3.41	1.878E+00	8.552E-01	8.552E-01	20.25
BI-214	609.31	1702	46.30*	1.094E+00	6.802E-01	6.802E-01	7.59
	768.36	139	5.04	9.151E-01	6.121E-01	6.121E-01	29.82
	1120.29	362	15.10	6.780E-01	7.167E-01	7.167E-01	15.21
	1764.49	340	15.80	4.658E-01	9.352E-01	9.352E-01	9.69
PB-214	241.98	1074	7.49	2.204E+00	1.318E+00	1.318E+00	10.39
	295.21	1506	19.20	1.903E+00	8.352E-01	8.352E-01	8.48
	351.92	2363	37.20*	1.665E+00	7.728E-01	7.728E-01	7.21
	785.91	------	1.10	8.992E-01	------ Line Not Found		------
RA-224DA	238.63	3642	44.60*	2.224E+00	7.438E-01	7.714E-01	7.62
	240.98	1074	3.95	2.204E+00	2.500E+00	2.592E+00	10.39
	583.14	1240	30.25	1.132E+00	7.337E-01	7.609E-01	8.70
	860.37	173	4.48	8.372E-01	9.366E-01	9.713E-01	22.00
RA-226DA	186.21	604	3.50	2.621E+00	1.334E+00	1.334E+00	15.33
	241.98	1074	7.49	2.204E+00	1.318E+00	1.318E+00	10.39
	295.22	1506	19.20	1.903E+00	8.352E-01	8.352E-01	8.48
	351.92	2363	37.20	1.665E+00	7.728E-01	7.728E-01	7.21
	609.32	1702	46.30*	1.094E+00	6.802E-01	6.803E-01	7.59
	1120.28	362	15.10	6.780E-01	7.167E-01	7.167E-01	15.21
	1238.11	------	5.94	6.246E-01	------ Line Not Found		------
	1764.49	340	15.80	4.658E-01	9.352E-01	9.352E-01	9.69
AC-228	209.28	370	4.40	2.434E+00	6.996E-01	6.996E-01	19.84
	270.23	363	3.60	2.032E+00	1.005E+00	1.005E+00	22.85
	338.32	808	11.40	1.716E+00	8.363E-01	8.363E-01	10.34
	911.07	816	27.70*	8.004E-01	7.458E-01	7.458E-01	10.39
	969.11	534	16.60	7.622E-01	8.553E-01	8.553E-01	10.14
RA-228DA	209.28	370	4.40	2.434E+00	6.996E-01	7.081E-01	19.84
	338.32	808	11.40	1.716E+00	8.363E-01	8.464E-01	10.34
	911.07	816	27.70*	8.004E-01	7.458E-01	7.549E-01	10.39
	964.60	162	5.20	7.650E-01	8.261E-01	8.361E-01	21.76

Nuclide Type: NP

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected PCI/GRAM	Decay Corr PCI/GRAM	1-Sigma %Error
	969.11	534	16.60	7.622E-01	8.553E-01	8.657E-01	10.14
TH-228DA	238.63	3642	44.60	2.224E+00	7.438E-01	7.714E-01	7.62
	240.98	1074	3.95	2.204E+00	2.500E+00	2.592E+00	10.39
	583.14	1240	30.25*	1.132E+00	7.337E-01	7.609E-01	8.70
	860.37	173	4.48	8.372E-01	9.366E-01	9.713E-01	22.00
TH-232DA	238.63	3642	44.60	2.224E+00	7.438E-01	7.438E-01	7.62
	338.32	808	12.40*	1.716E+00	7.688E-01	7.688E-01	10.34
	583.14	1240	30.25	1.132E+00	7.337E-01	7.337E-01	8.70
	911.07	816	27.70	8.004E-01	7.458E-01	7.458E-01	10.39
	964.60	162	5.20	7.650E-01	8.261E-01	8.261E-01	21.76
	969.11	534	16.60	7.622E-01	8.553E-01	8.553E-01	10.14
U-234DA	241.98	1074	7.49	2.204E+00	1.318E+00	1.318E+00	10.39
	295.22	1506	19.20*	1.903E+00	8.352E-01	8.352E-01	8.48
	351.92	2363	37.20	1.665E+00	7.728E-01	7.728E-01	7.21
	609.31	1702	46.30	1.094E+00	6.802E-01	6.802E-01	7.59
U-238DA	241.98	1074	7.49	2.204E+00	1.318E+00	1.318E+00	10.39
	295.22	1506	19.20	1.903E+00	8.352E-01	8.352E-01	8.48
	351.92	2363	37.20*	1.665E+00	7.728E-01	7.728E-01	7.21
	609.31	1702	46.30	1.094E+00	6.802E-01	6.802E-01	7.59
U-238DHP	63.28	208	3.80*	1.820E+00	6.089E-01	6.089E-01	45.00
	92.59	818	5.41	2.916E+00	1.050E+00	1.050E+00	15.03

Flag: "*" = Keyline

Sample ID : J5K2G1AC Acquisition date : 19-SEP-2007 18:26:03

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
3	72.93	537	2507	1.14	290.29	284	30	1.49E-02	20.2	2.32E+00	
3	74.95	1917	2362	1.00	298.39	284	30	5.33E-02	6.1	2.40E+00	
3	77.14	2435	2353	1.09	307.21	284	30	6.76E-02	4.7	2.49E+00	
5	84.65	559	2712	1.42	337.32	328	36	1.55E-02	23.0	2.74E+00	
5	87.22	851	2021	1.12	347.63	328	36	2.36E-02	12.1	2.80E+00	T
5	89.86	547	1671	0.95	358.20	328	36	1.52E-02	15.2	2.86E+00	
0	128.92	367	1606	0.86	514.88	509	13	1.02E-02	23.1	3.06E+00	
0	327.93	166	466	0.83	1312.58	1307	10	4.61E-03	25.5	1.76E+00	T
0	409.56	109	344	0.79	1639.55	1635	10	3.01E-03	33.4	1.48E+00	
0	462.77	217	299	1.35	1852.64	1848	11	6.03E-03	16.8	1.35E+00	T
0	726.92	317	363	1.47	2909.57	2899	22	8.80E-03	14.1	9.55E-01	T
0	795.07	201	357	2.91	3182.03	3171	25	5.58E-03	22.5	8.91E-01	T
0	1588.07	51	48	1.28	6345.86	6338	15	1.42E-03	27.1	5.08E-01	
0	1730.05	70	65	1.38	6911.02	6895	29	1.96E-03	27.4	4.73E-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	3.098E-02	26.78	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	1.465E-01	15.21	
		% Abundances Found =		50.00			
TC-95M	61.00D	0.60	204.12*	66.20	--- Not Found ---		Abun.
			582.07	29.30	1.149E+00	8.70	
			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	1.072E+01	7.59	
		% Abundances Found =		5.92			
RU-106DA	368.20D	0.10	511.85	20.60	2.819E-01	26.78	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	3.229E-01	17.86	
			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	5.534E-02	23.49	
			801.93	8.73	--- Not Found ---		
		% Abundances Found =		41.22			
LA-140	40.22H	21.87	328.77	20.50	3.567E+05	26.28	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	2.998E-01	21.76	
			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	2.021E-01	13.62	

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	1.378E+01	27.45	
			452.83	0.31	--- Not Found ---		
			727.33*	6.58	1.021E+00	15.68	
			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	2.668E-01	22.85	
			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	8.647E-02	15.33	
			205.31	4.70	--- Not Found ---		
	% Abundances Found =			78.03			

Flag: "*" = Keyline

VMS Nuclide Identification Report V3.0 Generated 20-SEP-2007 04:26:18

Configuration : $DISK1:[GER7.SAMPLE]J5K2G1AC_190971826.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 : 14-AUG-2007 08:00:00 Acquisition date : 19-SEP-2007 18:26:03
Sample ID : J5K2G1AC Sample quantity : 370.60 GRAMS
Sample type : Sample geometry : S200
Elapsed live time: 0 10:00:00.00 Elapsed real time: 0 10:00:10.63 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	2.469E+01	2.015E+00	1.791E-01	1.132E-02	137.814
TL-208	2.636E-01	2.294E-02	2.059E-02	6.919E-04	12.802
PB-212	7.438E-01	5.671E-02	3.155E-02	1.623E-03	23.575
BI-214	6.802E-01	5.166E-02	3.780E-02	1.289E-03	17.994
PB-214	7.728E-01	5.569E-02	3.885E-02	1.416E-03	19.893
RA-224DA	7.714E-01	5.881E-02	3.272E-02	1.683E-03	23.575
RA-226DA	6.803E-01	5.166E-02	3.781E-02	1.289E-03	17.993
AC-228	7.458E-01	7.748E-02	7.137E-02	3.637E-03	10.450
RA-228DA	7.549E-01	7.842E-02	7.224E-02	3.682E-03	10.450
TH-228DA	7.609E-01	6.622E-02	5.943E-02	1.997E-03	12.802
TH-232DA	7.688E-01	7.946E-02	1.183E-01	4.321E-03	6.499
U-234DA	8.352E-01	7.085E-02	7.297E-02	3.081E-03	11.445
U-238DA	7.728E-01	5.569E-02	3.885E-02	1.416E-03	19.893
U-238DHP	6.089E-01	2.740E-01	5.928E-01	2.077E-02	1.027

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

Nuclide	Key-Line Activity (PCI/GRAM)	K.L. Ided	Act error	MDA (PCI/GRAM)	MDA error	Act/MDA
BE-7	-9.599E-02		7.155E-02	2.343E-01	7.898E-03	-0.410
NA-22	7.837E-03		8.124E-03	2.794E-02	1.613E-03	0.281
SC-46	1.465E-01	+	2.229E-02	5.244E-02	2.184E-03	2.794
CR-51	9.565E-02		1.082E-01	3.638E-01	1.328E-02	0.263
MN-54	-7.118E-03		6.750E-03	2.253E-02	1.052E-03	-0.316
CO-57	-2.464E-02		3.639E-02	1.213E-01	5.476E-03	-0.203
CO-58	-8.315E-03		8.411E-03	2.820E-02	1.268E-03	-0.295
FE-59	-3.251E-02		2.332E-02	7.725E-02	3.311E-03	-0.421
CO-60	-9.761E-03		6.712E-03	2.173E-02	1.515E-03	-0.449
ZN-65	-5.918E-03		2.103E-02	5.981E-02	2.508E-03	-0.099
SE-75	-2.249E-03		8.706E-03	2.806E-02	1.342E-03	-0.080
SR-85	4.685E-02		9.501E-03	2.866E-02	9.195E-04	1.634
Y-88	5.775E-03		5.243E-03	1.979E-02	6.656E-04	0.292
NB-94	-6.582E-03		5.814E-03	1.931E-02	9.528E-04	-0.341

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

Nuclide	Key-Line Activity (PCI/GRAM)	K.L. Ided	Act error	MDA (PCI/GRAM)	MDA error	Act/MDA
NB-95	3.189E-02		1.503E-02	4.436E-02	1.855E-03	0.719
TC-95M	3.279E-03		9.246E-03	3.045E-02	1.664E-03	0.108
ZR-95	-7.752E-04		1.621E-02	5.419E-02	2.232E-03	-0.014
ZRNB-95	4.899E-02		2.163E-02	6.400E-02	2.676E-03	0.765
RH-101	7.993E-03		5.757E-03	1.909E-02	1.051E-03	0.419
RH-102M	3.068E-03		4.946E-03	1.679E-02	5.675E-04	0.183
RU-103	-1.227E-04		9.873E-03	3.311E-02	1.089E-03	-0.004
RU-106DA	3.416E-02		5.473E-02	1.882E-01	6.453E-03	0.182
AG-108M	-3.604E-04		4.903E-03	1.657E-02	5.813E-04	-0.022
AG-110M	-1.611E-04		9.372E-03	3.187E-02	1.604E-03	-0.005
SN-113DA	-1.339E-02		8.517E-03	2.818E-02	1.009E-03	-0.475
SB-124	-3.278E-03		8.571E-03	2.711E-02	9.208E-04	-0.121
SB-125	-6.752E-03		1.550E-02	5.208E-02	1.835E-03	-0.130
SN-126DA	9.713E-03		5.599E-03	1.938E-02	6.816E-04	0.501
I-131	-5.574E-02		1.218E-01	4.135E-01	1.502E-02	-0.135
BA-133	7.081E-03		7.900E-03	2.263E-02	8.244E-04	0.313
CS-134	5.534E-02	+	1.300E-02	2.874E-02	1.262E-03	1.926
CS-137DA	-8.674E-03		6.670E-03	2.196E-02	7.661E-04	-0.395
LA-138	-8.912E-03		7.876E-03	2.636E-02	1.703E-03	-0.338
CE-139	-3.435E-03		5.582E-03	1.841E-02	1.044E-03	-0.187
BA-140	4.595E-01		1.430E-01	4.950E-01	1.616E-02	0.928
BALA-140	-1.127E-01		8.410E-02	2.762E-01	1.499E-02	-0.408
CE-141	4.182E-03		1.668E-02	5.592E-02	2.774E-03	0.075
CE-144	-4.251E-02		3.572E-02	1.184E-01	5.181E-03	-0.359
CEPR-144	-8.470E-02		7.145E-02	2.368E-01	1.036E-02	-0.358
PM-144	-5.848E-03		5.507E-03	1.835E-02	6.280E-04	-0.319
PM-146	1.193E-02		7.074E-03	2.436E-02	8.414E-04	0.490
EU-152	-1.518E-02		1.649E-02	5.385E-02	1.966E-03	-0.282
EU-154	2.470E-02		2.248E-02	7.747E-02	4.469E-03	0.319
EU-155	3.280E-02		1.742E-02	5.982E-02	2.186E-03	0.548
HF-181	3.324E-03		1.007E-02	3.402E-02	1.141E-03	0.098
BI-207	2.805E-03		5.241E-03	1.805E-02	6.018E-04	0.155
BI-210M	-5.799E-03		9.590E-03	2.721E-02	1.296E-03	-0.213
BI-212	1.021E+00	+	1.601E-01	3.862E-01	1.751E-02	2.644
RA-223	2.668E-01	+	6.097E-02	1.180E-01	5.553E-03	2.261
AC-227DA	1.115E-01		4.577E-02	1.349E-01	6.981E-03	0.827
TH-234DA	3.399E+00		1.084E+00	3.784E+00	1.804E-01	0.898
U-235HP	1.023E-01		3.568E-02	1.201E-01	5.852E-03	0.852
NP-237DA	1.698E-03		1.185E-02	3.957E-02	1.522E-03	0.043
AM-241HP	1.207E-02		2.157E-02	7.042E-02	2.557E-03	0.171

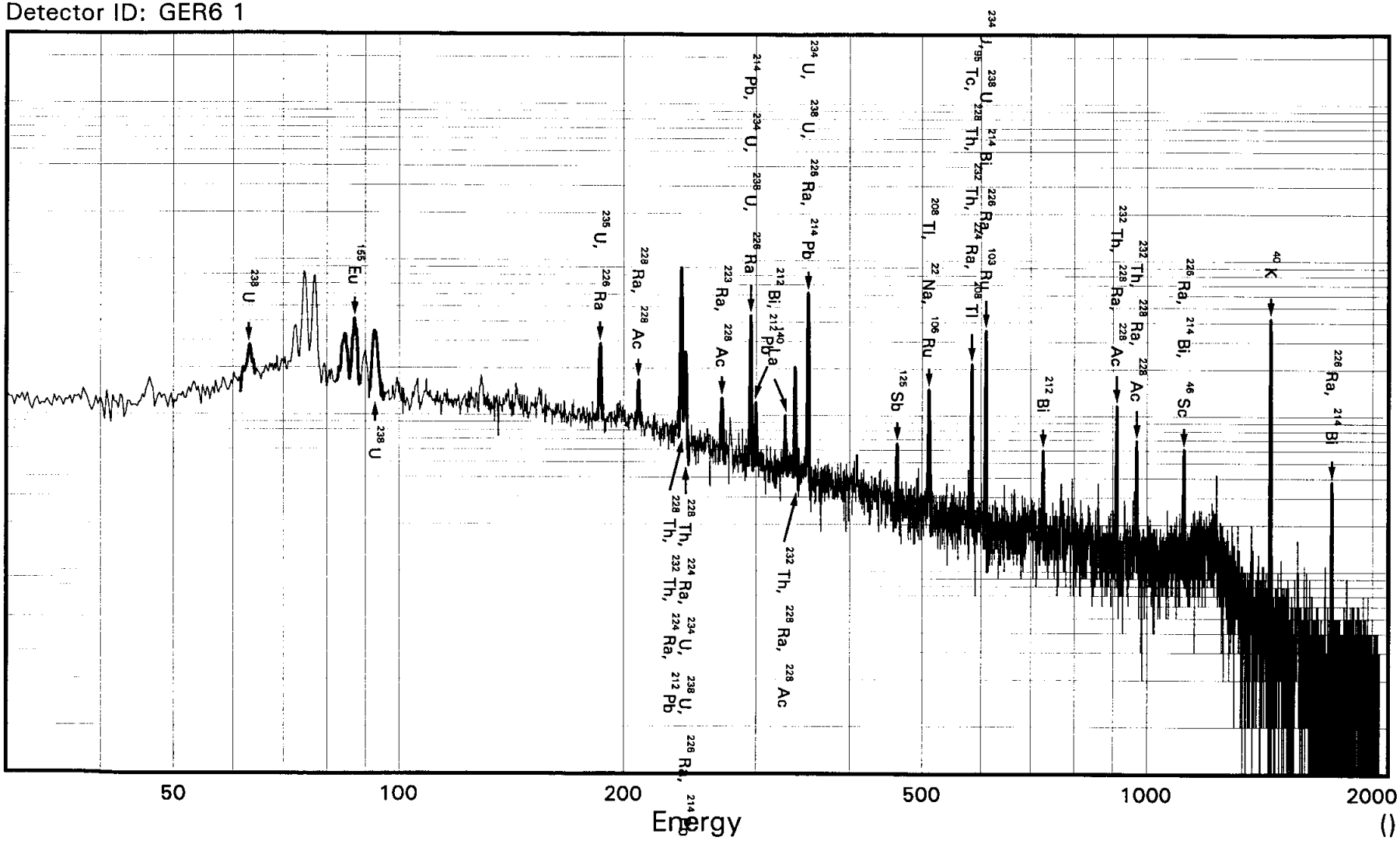
STL Richland WA.

BRC SOIL

Sample ID: J5K2H1AA

Batch ID: 7241626

Detector ID: GER6 1



Acquisition Start: 19-SEP-2007 05:55:49.50

Preset Live Time: 0 10:00:00.00

Elapsed Live Time: 0 10:00:00.00

Energy Coefficients:

Offset: 8.57179E-02

Slope: 2.49304E-01

Quadrature: 1.10097E-08

SAMPLE IDENTIFICATION: J5K2H1AA

CONFIGURATION ID: GER6:J5K2H1AA_190970555
TITLE : BRC SOIL
SAMPLE ID : J5K2H1AA

REPORT DATE: 19-SEP-07
ACQUIRE DATE: 19-SEP-07 05:55:49
ELAPSED LIVE TIME: 36000.0 Sec
PRESET LIVE TIME: 0 10:00:00

SAMPLE DATE: 14-AUG-2007 08:00:00.00
CALIB DATE: 19-SEP-2007 05:32:35.73
ELAPSED LIVE TIME: 0 10:00:00
ELAPSED REAL TIME: 0 10:00:11

SAMPLE QUANTITY: 3.7330E+02
SAMPLE GEOMETRY: S200

UNITS: GRAMS
SAMPLE TYPE:

ENERGY OFFSET: 8.5718E-02 keV
ENERGY SLOPE: 2.4930E-01 keV/C
ENERGY Q COEFF: 1.1010E-08 keV/C^^2
PEAK SENSITIVITY: 5.000

FWHM OFFSET: 2.6195E-01 keV
FWHM SLOPE: 6.2590E-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 19-SEP-2007 19:31:31

Configuration : $DISK1:[GER6.SAMPLE]J5K2H1AA_190970555.CNF;1
Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6
Sample title : BRC SOIL
Sample date : 14-AUG-2007 08:00:00 Acquisition date : 19-SEP-2007 05:55:49
Sample ID : J5K2H1AA Sample quantity : 373.30 GRAMS
Sample type : Sample geometry : S200
Elapsed live time: 0 10:00:00.00 Elapsed real time: 0 10:00:11.24 0.0%
Start energy : 20.03 End energy : 2043.12
Sensitivity : 5.00 Gaussian : 40.00
Critical level : No

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	62.99*	334	2061	0.82	252.33	246	12	9.28E-03	29.1	
2	3	72.70*	424	2450	1.06	291.28	284	32	1.18E-02	26.1	1.22E+00
3	3	74.80*	2152	2334	1.07	299.69	284	32	5.98E-02	5.6	
4	3	77.06	2790	2178	1.08	308.76	284	32	7.75E-02	4.1	
5	6	84.50*	601	2913	1.48	338.59	330	25	1.67E-02	22.5	1.83E+00
6	6	87.17*	1017	1970	1.15	349.31	330	25	2.83E-02	9.8	
7	0	89.94	555	1473	1.37	360.43	356	10	1.54E-02	13.7	
8	0	92.82*	1249	2415	1.65	371.98	366	18	3.47E-02	10.0	
9	0	185.85*	795	1419	1.32	745.09	738	14	2.21E-02	11.4	
10	0	209.21	420	1214	1.15	838.82	832	14	1.17E-02	18.2	
11	0	238.60*	3796	1275	1.16	956.66	950	14	1.05E-01	2.7	
12	0	241.85	1072	1158	1.53	969.73	964	15	2.98E-02	7.7	
13	0	270.20	543	1059	1.38	1083.44	1074	20	1.51E-02	15.3	
14	0	295.21	2015	882	1.14	1183.73	1175	18	5.60E-02	4.1	
15	0	300.08	315	916	1.10	1203.26	1194	18	8.74E-03	23.3	
16	0	328.24	293	710	0.83	1316.21	1309	17	8.14E-03	21.6	
17	0	338.51	941	1079	1.33	1357.39	1347	24	2.61E-02	9.8	
18	0	351.94	3361	941	1.40	1411.26	1399	23	9.33E-02	2.9	
19	0	463.19	349	546	1.74	1857.42	1846	24	9.70E-03	15.9	
20	0	510.69*	377	755	2.01	2047.94	2033	30	1.05E-02	22.0	
21	0	583.08	1300	498	1.66	2338.25	2327	23	3.61E-02	4.7	
22	0	609.23	2489	453	1.79	2443.11	2428	26	6.91E-02	2.8	
23	0	727.03	326	431	1.62	2915.50	2903	27	9.06E-03	15.9	
24	0	911.09	884	430	2.32	3653.59	3635	35	2.46E-02	6.4	
25	0	969.07	340	480	2.22	3886.09	3872	24	9.44E-03	14.0	
26	0	1120.09	573	394	2.52	4491.62	4474	35	1.59E-02	9.0	
27	0	1460.67*	5031	154	3.20	5857.13	5835	42	1.40E-01	1.6	
28	0	1764.58	478	54	3.19	7075.47	7056	39	1.33E-02	5.7	

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

VMS Nuclide Identification Report V3.0 Generated 19-SEP-2007 19:31:31

Configuration : $DISK1:[GER6.SAMPLE]J5K2H1AA_190970555.CNF;1
Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.3
Sample title : BRC SOIL
Sample date : 14-AUG-2007 08:00:00 Acquisition date : 19-SEP-2007 05:55:49
Sample ID : J5K2H1AA Sample quantity : 373.30 GRAMS
Sample type : Sample geometry : S200
Elapsed live time: 0 10:00:00.00 Elapsed real time: 0 10:00:11.24 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	5031	10.67*	5.924E-01	1.601E+01	1.601E+01	8.44
TL-208	277.35	------	6.80	2.285E+00	------ Line Not Found		------
	510.84	377	21.60	1.380E+00	2.543E-01	2.543E-01	22.74
	583.14	1300	84.20*	1.240E+00	2.503E-01	2.503E-01	7.59
	860.37	------	12.46	9.141E-01	------ Line Not Found		------
PB-212	238.63	3796	44.60*	2.572E+00	6.654E-01	6.654E-01	6.77
	300.09	315	3.41	2.143E+00	8.658E-01	8.658E-01	24.08
BI-214	609.31	2489	46.30*	1.197E+00	9.029E-01	9.029E-01	6.61
	768.36	------	5.04	9.981E-01	------ Line Not Found		------
	1120.29	573	15.10	7.420E-01	1.029E+00	1.029E+00	11.19
	1764.49	478	15.80	4.956E-01	1.227E+00	1.227E+00	8.65
PB-214	241.98	1072	7.49	2.546E+00	1.131E+00	1.131E+00	9.94
	295.21	2015	19.20	2.172E+00	9.717E-01	9.717E-01	7.41
	351.92	3361	37.20*	1.877E+00	9.677E-01	9.677E-01	6.74
	785.91	------	1.10	9.808E-01	------ Line Not Found		------
RA-224DA	238.63	3796	44.60*	2.572E+00	6.654E-01	6.897E-01	6.77
	240.98	1072	3.95	2.546E+00	2.144E+00	2.222E+00	9.94
	583.14	1300	30.25	1.240E+00	6.968E-01	7.223E-01	7.59
	860.37	------	4.48	9.141E-01	------ Line Not Found		------
RA-226DA	186.21	795	3.50	3.059E+00	1.494E+00	1.494E+00	13.01
	241.98	1072	7.49	2.546E+00	1.131E+00	1.131E+00	9.94
	295.22	2015	19.20	2.172E+00	9.717E-01	9.717E-01	7.41
	351.92	3361	37.20	1.877E+00	9.677E-01	9.677E-01	6.74
	609.32	2489	46.30*	1.197E+00	9.029E-01	9.029E-01	6.61
	1120.28	573	15.10	7.420E-01	1.029E+00	1.029E+00	11.19
	1238.11	------	5.94	6.834E-01	------ Line Not Found		------
	1764.49	478	15.80	4.956E-01	1.227E+00	1.227E+00	8.65
AC-228	209.28	420	4.40	2.831E+00	6.787E-01	6.787E-01	19.26
	270.23	543	3.60	2.334E+00	1.300E+00	1.300E+00	16.51
	338.32	941	11.40	1.939E+00	8.559E-01	8.559E-01	11.57
	911.07	884	27.70*	8.741E-01	7.346E-01	7.346E-01	9.51
	969.11	340	16.60	8.328E-01	4.941E-01	4.941E-01	15.65
RA-228DA	209.28	420	4.40	2.831E+00	6.787E-01	6.868E-01	19.26
	338.32	941	11.40	1.939E+00	8.559E-01	8.662E-01	11.57
	911.07	884	27.70*	8.741E-01	7.346E-01	7.434E-01	9.51
	964.60	------	5.20	8.359E-01	------ Line Not Found		------

Nuclide Type: NP

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected PCI/GRAM	Decay Corr PCI/GRAM	1-Sigma %Error
	969.11	340	16.60	8.328E-01	4.941E-01	5.000E-01	15.65
TH-228DA	238.63	3796	44.60	2.572E+00	6.654E-01	6.897E-01	6.77
	240.98	1072	3.95	2.546E+00	2.144E+00	2.222E+00	9.94
	583.14	1300	30.25*	1.240E+00	6.968E-01	7.223E-01	7.59
	860.37	------	4.48	9.141E-01	------ Line Not Found		------
TH-232DA	238.63	3796	44.60	2.572E+00	6.654E-01	6.654E-01	6.77
	338.32	941	12.40*	1.939E+00	7.869E-01	7.869E-01	11.57
	583.14	1300	30.25	1.240E+00	6.968E-01	6.968E-01	7.59
	911.07	884	27.70	8.741E-01	7.346E-01	7.346E-01	9.51
	964.60	------	5.20	8.359E-01	------ Line Not Found		------
	969.11	340	16.60	8.328E-01	4.941E-01	4.941E-01	15.65
U-234DA	241.98	1072	7.49	2.546E+00	1.131E+00	1.131E+00	9.94
	295.22	2015	19.20*	2.172E+00	9.717E-01	9.717E-01	7.41
	351.92	3361	37.20	1.877E+00	9.677E-01	9.677E-01	6.74
	609.31	2489	46.30	1.197E+00	9.029E-01	9.029E-01	6.61
U-238DA	241.98	1072	7.49	2.546E+00	1.131E+00	1.131E+00	9.94
	295.22	2015	19.20	2.172E+00	9.717E-01	9.717E-01	7.41
	351.92	3361	37.20*	1.877E+00	9.677E-01	9.677E-01	6.74
	609.31	2489	46.30	1.197E+00	9.029E-01	9.029E-01	6.61
U-238DHP	63.28	334	3.80*	2.131E+00	8.293E-01	8.293E-01	29.71
	92.59	1249	5.41	3.369E+00	1.379E+00	1.379E+00	11.99

Flag: "*" = Keyline

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
3	72.70	424	2450	1.06	291.28	284	32	1.18E-02	26.1	2.69E+00	
3	74.80	2152	2334	1.07	299.69	284	32	5.98E-02	5.6	2.79E+00	
3	77.06	2790	2178	1.08	308.76	284	32	7.75E-02	4.1	2.89E+00	
6	84.50	601	2913	1.48	338.59	330	25	1.67E-02	22.5	3.16E+00	
6	87.17	1017	1970	1.15	349.31	330	25	2.83E-02	9.8	3.24E+00	T
0	89.94	555	1473	1.37	360.43	356	10	1.54E-02	13.7	3.31E+00	
0	328.24	293	710	0.83	1316.21	1309	17	8.14E-03	21.6	1.99E+00	T
0	463.19	349	546	1.74	1857.42	1846	24	9.70E-03	15.9	1.49E+00	T
0	727.03	326	431	1.62	2915.50	2903	27	9.06E-03	15.9	1.04E+00	T

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	3.139E-02	22.74	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	2.095E-01	11.19	
		% Abundances Found =		50.00			
TC-95M	61.00D	0.59	204.12*	66.20	--- Not Found ---		Abun.
			582.07	29.30	1.084E+00	7.59	
			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	1.410E+01	6.61	
		% Abundances Found =		5.92			
RU-106DA	368.20D	0.10	511.85	20.60	2.854E-01	22.74	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	4.654E-01	17.00	
			600.56	17.80	--- Not Found ---		
			635.90	11.32	--- Not Found ---		
		% Abundances Found =		13.67			
LA-140	40.22H	21.55	328.77	20.50	4.443E+05	22.49	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	2.075E-01	11.90	
			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	2.130E+01	23.84	
			452.83	0.31	--- Not Found ---		
			727.33*	6.58	9.565E-01	17.27	
			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			

Sample ID : J5K2H1AA Acquisition date : 19-SEP-2007 05:55:49

Nuclide	Half-life	Half-Life Ratio	Energy	%Abund	Activity (PCI/GRAM)	1-Sigma %Error	Rejected by
RA-223	21.77Y	0.00	154.21	5.58	--- Not Found ---		Abun.
			269.46*	13.60	3.452E-01	16.51	
			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	9.683E-02	13.01	
			205.31	4.70	--- Not Found ---		
		% Abundances Found =		78.03			

Flag: "*" = Keyline

VMS Nuclide Identification Report V3.0 Generated 19-SEP-2007 19:31:33

Configuration : $DISK1:[GER6.SAMPLE]J5K2H1AA_190970555.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 : 14-AUG-2007 08:00:00 Acquisition date : 19-SEP-2007 05:55:49
Sample ID : J5K2H1AA Sample quantity : 373.30 GRAMS
Sample type : Sample geometry : S200
Elapsed live time: 0 10:00:00.00 Elapsed real time: 0 10:00:11.24 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	1.601E+01	1.351E+00	1.739E-01	1.148E-02	92.072
TL-208	2.503E-01	1.899E-02	1.977E-02	6.436E-04	12.664
PB-212	6.654E-01	4.507E-02	3.001E-02	1.114E-03	22.175
BI-214	9.029E-01	5.967E-02	3.542E-02	1.162E-03	25.492
PB-214	9.677E-01	6.519E-02	3.678E-02	1.263E-03	26.311
RA-224DA	6.897E-01	4.671E-02	3.110E-02	1.155E-03	22.175
RA-226DA	9.029E-01	5.967E-02	3.542E-02	1.162E-03	25.492
AC-228	7.346E-01	6.983E-02	7.362E-02	3.651E-03	9.979
RA-228DA	7.434E-01	7.067E-02	7.450E-02	3.694E-03	9.979
TH-228DA	7.223E-01	5.479E-02	5.703E-02	1.857E-03	12.664
TH-232DA	7.869E-01	9.103E-02	1.117E-01	3.871E-03	7.045
U-234DA	9.717E-01	7.203E-02	6.734E-02	2.432E-03	14.429
U-238DA	9.677E-01	6.519E-02	3.678E-02	1.263E-03	26.311
U-238DHP	8.293E-01	2.464E-01	4.755E-01	1.700E-02	1.744

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

Nuclide	Key-Line Activity (PCI/GRAM)	K.L. Ided	Act error	MDA (PCI/GRAM)	MDA error	Act/MDA
BE-7	4.836E-02		6.755E-02	2.312E-01	7.477E-03	0.209
NA-22	-1.042E-02		8.023E-03	2.640E-02	1.600E-03	-0.395
SC-46	2.095E-01	+	2.345E-02	5.142E-02	2.206E-03	4.075
CR-51	4.511E-02		9.760E-02	3.263E-01	1.140E-02	0.138
MN-54	5.211E-03		6.939E-03	2.350E-02	1.060E-03	0.222
CO-57	-3.160E-02		3.118E-02	1.030E-01	3.859E-03	-0.307
CO-58	1.225E-04		8.389E-03	2.823E-02	1.224E-03	0.004
FE-59	-1.848E-02		2.226E-02	7.409E-02	3.246E-03	-0.249
CO-60	2.949E-03		6.199E-03	2.136E-02	1.563E-03	0.138
ZN-65	4.536E-02		2.073E-02	6.101E-02	2.631E-03	0.744
SE-75	1.378E-02		7.993E-03	2.552E-02	9.425E-04	0.540
SR-85	6.824E-02		9.586E-03	2.858E-02	8.998E-04	2.388
Y-88	8.436E-04		6.140E-03	2.184E-02	7.399E-04	0.039
NB-94	-4.553E-03		5.809E-03	1.950E-02	9.322E-04	-0.233

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

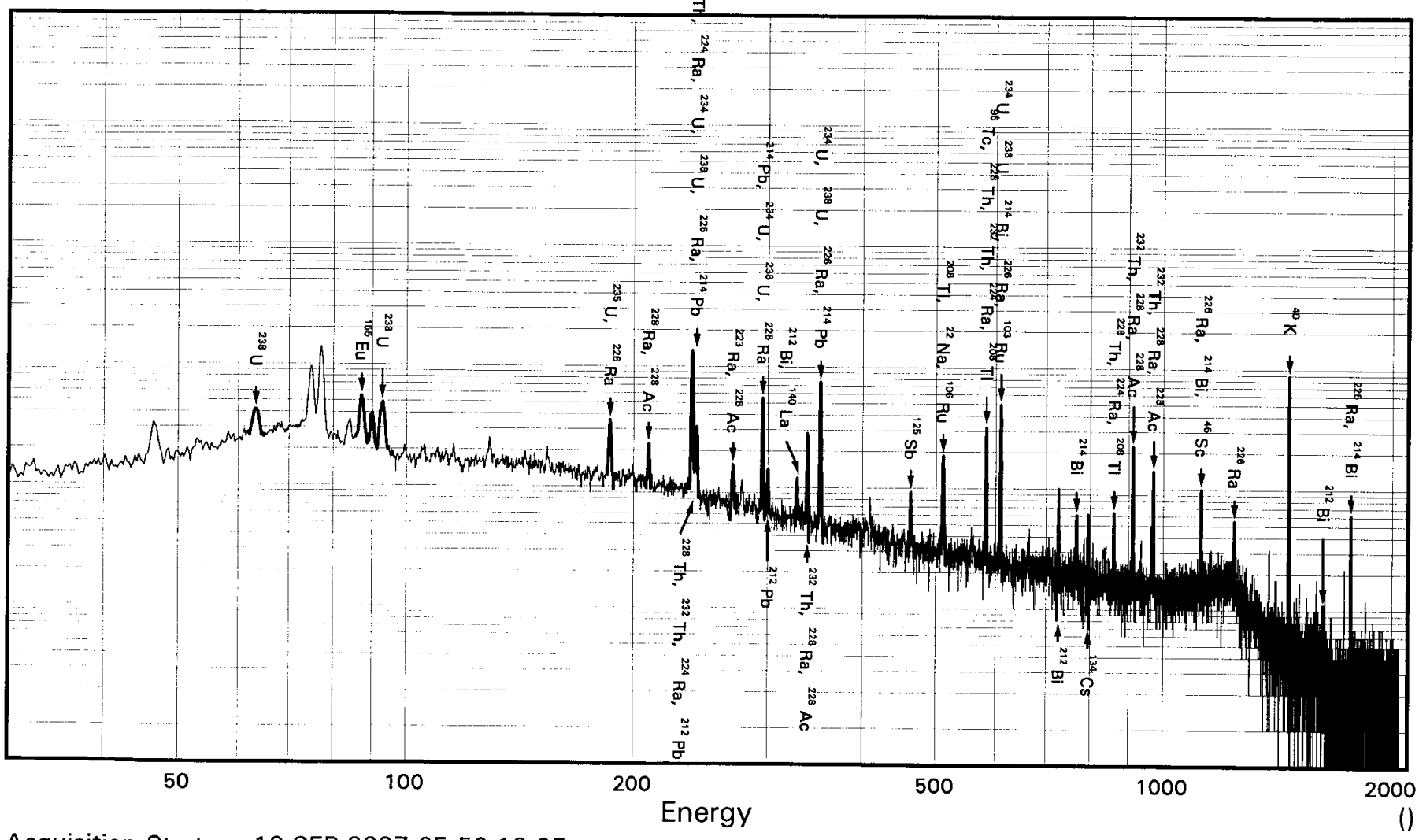
Nuclide	Key-Line Activity (PCI/GRAM)	K.L. Ided	Act error	MDA (PCI/GRAM)	MDA error	Act/MDA
NB-95	4.798E-02		1.325E-02	4.594E-02	1.845E-03	1.044
TC-95M	9.103E-03		8.210E-03	2.720E-02	1.000E-03	0.335
ZR-95	9.189E-03		1.500E-02	5.133E-02	2.029E-03	0.179
ZRNB-95	7.053E-02		1.918E-02	6.649E-02	2.670E-03	1.061
RH-101	9.804E-03		5.033E-03	1.706E-02	6.254E-04	0.575
RH-102M	2.900E-03		4.784E-03	1.635E-02	5.295E-04	0.177
RU-103	1.624E-03		9.636E-03	3.261E-02	1.041E-03	0.050
RU-106DA	-2.983E-02		5.439E-02	1.822E-01	5.998E-03	-0.164
AG-108M	-1.437E-03		4.940E-03	1.637E-02	5.380E-04	-0.088
AG-110M	-3.432E-03		8.994E-03	3.040E-02	1.484E-03	-0.113
SN-113DA	-8.221E-03		7.971E-03	2.636E-02	8.656E-04	-0.312
SB-124	5.464E-03		9.306E-03	2.690E-02	8.813E-04	0.203
SB-125	-1.274E-02		1.515E-02	4.981E-02	1.639E-03	-0.256
SN-126DA	1.840E-02		5.514E-03	1.913E-02	6.393E-04	0.961
I-131	-4.246E-02		1.091E-01	3.674E-01	1.248E-02	-0.116
BA-133	-1.966E-03		7.491E-03	2.142E-02	7.331E-04	-0.092
CS-134	3.857E-02		7.670E-03	2.652E-02	1.121E-03	1.455
CS-137DA	-5.840E-03		6.411E-03	2.117E-02	7.009E-04	-0.276
LA-138	-5.420E-03		8.843E-03	2.996E-02	2.024E-03	-0.181
CE-139	1.626E-03		4.807E-03	1.583E-02	5.700E-04	0.103
BA-140	-7.451E-02		1.332E-01	4.421E-01	1.411E-02	-0.169
BALA-140	-3.679E-01		9.802E-02	2.889E-01	1.630E-02	-1.274
CE-141	-1.898E-03		1.417E-02	4.700E-02	1.728E-03	-0.040
CE-144	-3.991E-02		3.031E-02	9.991E-02	3.769E-03	-0.399
CEPR-144	-8.038E-02		6.061E-02	1.998E-01	7.537E-03	-0.402
PM-144	-8.945E-04		5.254E-03	1.774E-02	5.835E-04	-0.050
PM-146	3.474E-03		6.631E-03	2.274E-02	7.437E-04	0.153
EU-152	-1.599E-02		1.831E-02	5.185E-02	1.791E-03	-0.308
EU-154	-3.064E-02		2.215E-02	7.270E-02	4.404E-03	-0.422
EU-155	6.201E-02		1.563E-02	5.135E-02	2.092E-03	1.208
HF-181	2.076E-03		9.537E-03	3.241E-02	1.045E-03	0.064
BI-207	7.193E-03		5.138E-03	1.781E-02	5.768E-04	0.404
BI-210M	-5.691E-03		8.594E-03	2.442E-02	9.012E-04	-0.233
BI-212	9.565E-01	+	1.652E-01	3.676E-01	1.613E-02	2.602
RA-223	3.452E-01	+	5.699E-02	1.093E-01	4.030E-03	3.158
AC-227DA	2.453E-01		4.324E-02	1.236E-01	4.586E-03	1.985
TH-234DA	2.542E+00		1.017E+00	3.525E+00	1.668E-01	0.721
U-235HP	8.065E-02		3.051E-02	1.025E-01	3.782E-03	0.787
NP-237DA	1.849E-02		1.069E-02	3.622E-02	1.281E-03	0.511
AM-241HP	9.142E-03		1.747E-02	5.254E-02	1.824E-03	0.174

STL Richland WA.

BRC SOIL

Sample ID: J5K2J1AA
Detector ID: GER8 1

Batch ID: 7241626



Acquisition Start: 19-SEP-2007 05:56:13.95
Preset Live Time: 0 10:00:00.00
Elapsed Live Time: 0 10:00:00.00

Energy Coefficients:
Offset: -8.95842E-02
Slope: 2.49789E-01
Quadrature: 1.58038E-08

SAMPLE IDENTIFICATION: J5K2J1AA

CONFIGURATION ID: GER8:J5K2J1AA_190970556
TITLE : BRC SOIL
SAMPLE ID : J5K2J1AA

REPORT DATE: 19-SEP-07
ACQUIRE DATE: 19-SEP-07 05:56:13
ELAPSED LIVE TIME: 36000.0 Sec
PRESET LIVE TIME: 0 10:00:00

SAMPLE DATE: 14-AUG-2007 08:30:00.00
CALIB DATE: 19-SEP-2007 05:44:13.02
ELAPSED LIVE TIME: 0 10:00:00
ELAPSED REAL TIME: 0 10:00:12

SAMPLE QUANTITY: 3.5920E+02
SAMPLE GEOMETRY: ES200

UNITS: GRAMS
SAMPLE TYPE:

ENERGY OFFSET: -.8958E-01 keV
ENERGY SLOPE: 2.4979E-01 keV/C
ENERGY Q COEFF: 1.5804E-08 keV/C^^2
PEAK SENSITIVITY: 5.000

FWHM OFFSET: 9.8116E-01 keV
FWHM SLOPE: 1.9291E-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 19-SEP-2007 19:34:28

Configuration : $DISK1:[GER8.SAMPLE]J5K2J1AA_190970556.CNF;1
Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6
Sample title : BRC SOIL
Sample date : 14-AUG-2007 08:30:00 Acquisition date : 19-SEP-2007 05:56:13
Sample ID : J5K2J1AA Sample quantity : 359.20 GRAMS
Sample type : Sample geometry : ES200
Elapsed live time: 0 10:00:00.00 Elapsed real time: 0 10:00:12.81 0.0%
Start energy : 19.89 End energy : 2047.24
Sensitivity : 5.00 Gaussian : 40.00
Critical level : No

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	46.50*	413	1804	1.06	186.50	181	12	1.15E-02	23.1	
2	0	63.31*	498	3443	1.26	253.79	248	13	1.38E-02	26.1	
3	2	74.84*	3282	4212	1.23	299.96	288	29	9.12E-02	4.8	1.55E+00
4	2	77.11*	5094	3365	1.08	309.05	288	29	1.41E-01	2.9	
5	0	83.96*	430	2821	1.11	336.47	332	12	1.20E-02	25.7	
6	0	87.24	1562	3043	1.16	349.62	343	13	4.34E-02	7.7	
7	2	89.95	790	1969	0.94	360.47	356	24	2.20E-02	10.6	1.59E+00
8	2	92.93*	1318	2923	1.30	372.37	356	24	3.66E-02	9.6	
9	0	129.19	356	2234	0.71	517.56	509	14	9.88E-03	28.7	
10	0	186.11*	1151	1776	1.37	745.40	738	15	3.20E-02	9.1	
11	0	209.15	552	1244	1.00	837.64	832	12	1.53E-02	13.5	
12	3	238.66*	6185	1398	1.19	955.75	948	28	1.72E-01	1.9	1.44E+00
13	3	241.72	1712	1439	1.71	967.98	948	28	4.75E-02	5.7	
14	0	270.04	519	1192	1.51	1081.36	1073	17	1.44E-02	15.9	
15	0	295.22	2371	1045	1.13	1182.14	1175	16	6.59E-02	3.7	
16	0	300.09	448	945	1.39	1201.62	1194	16	1.24E-02	16.0	
17	0	328.02	292	932	0.95	1313.43	1305	16	8.12E-03	24.1	
18	0	338.28	1243	888	1.18	1354.50	1344	18	3.45E-02	6.3	
19	0	351.93*	4191	1108	1.38	1409.15	1397	25	1.16E-01	2.7	
20	0	409.17	232	529	0.95	1638.27	1631	14	6.44E-03	22.0	
21	0	462.77	330	570	1.24	1852.80	1843	18	9.17E-03	17.8	
22	0	510.76*	448	1025	1.74	2044.86	2032	30	1.24E-02	24.1	
23	0	583.18	2013	467	1.51	2334.71	2324	21	5.59E-02	3.5	
24	0	609.31*	2854	599	1.51	2439.28	2428	22	7.93E-02	3.0	
25	0	727.02	569	435	1.38	2910.34	2897	28	1.58E-02	9.7	
26	0	768.19	323	379	1.60	3075.11	3063	23	8.96E-03	14.4	
27	0	794.88	267	305	1.26	3181.91	3170	21	7.42E-03	15.2	
28	0	860.63	173	366	0.68	3445.05	3434	22	4.79E-03	25.1	
29	0	911.20	1325	345	1.42	3647.38	3636	23	3.68E-02	4.1	
30	0	969.51	518	884	1.47	3880.72	3861	31	1.44E-02	15.0	
31	0	1120.19	587	332	1.51	4483.64	4474	22	1.63E-02	7.9	
32	0	1237.86	227	334	1.45	4954.42	4945	20	6.31E-03	18.0	
33	0	1377.81	179	157	1.40	5514.32	5502	27	4.97E-03	18.3	
34	0	1460.78*	6939	135	1.88	5846.25	5830	36	1.93E-01	1.3	
35	0	1588.00	98	47	2.16	6355.17	6346	19	2.71E-03	17.6	
36	0	1592.94	73	90	2.30	6374.95	6365	27	2.03E-03	32.6	
37	0	1621.08	55	59	3.03	6487.50	6476	24	1.54E-03	34.0	
38	0	1631.36	101	29	1.46	6528.61	6517	24	2.80E-03	15.9	
39	0	1729.87	81	66	0.85	6922.64	6912	20	2.25E-03	23.7	
40	0	1764.62	540	23	1.84	7061.66	7049	31	1.50E-02	4.9	

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

VMS Nuclide Identification Report V3.0 Generated 19-SEP-2007 19:34:28

Configuration : $DISK1:[GER8.SAMPLE]J5K2J1AA_190970556.CNF;1
Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.3
Sample title : BRC SOIL
Sample date : 14-AUG-2007 08:30:00 Acquisition date : 19-SEP-2007 05:56:13
Sample ID : J5K2J1AA Sample quantity : 359.20 GRAMS
Sample type : Sample geometry : ES200
Elapsed live time: 0 10:00:00.00 Elapsed real time: 0 10:00:12.81 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	6939	10.67*	5.801E-01	2.343E+01	2.343E+01	6.26
TL-208	277.35	------	6.80	2.336E+00	------ Line Not Found		------
	510.84	448	21.60	1.414E+00	3.063E-01	3.063E-01	24.81
	583.14	2013	84.20*	1.263E+00	3.956E-01	3.956E-01	6.99
	860.37	173	12.46	9.070E-01	3.192E-01	3.192E-01	26.00
PB-212	238.63	6185	44.60*	2.617E+00	1.107E+00	1.107E+00	6.58
	300.09	448	3.41	2.195E+00	1.251E+00	1.251E+00	17.20
BI-214	609.31	2854	46.30*	1.217E+00	1.059E+00	1.059E+00	6.79
	768.36	323	5.04	9.990E-01	1.339E+00	1.339E+00	15.76
	1120.29	587	15.10	7.256E-01	1.120E+00	1.120E+00	9.96
	1764.49	540	15.80	4.949E-01	1.444E+00	1.444E+00	7.70
PB-214	241.98	1712	7.49	2.593E+00	1.842E+00	1.842E+00	8.51
	295.21	2371	19.20	2.224E+00	1.161E+00	1.161E+00	7.23
	351.92	4191	37.20*	1.930E+00	1.220E+00	1.220E+00	6.63
	785.91	------	1.10	9.798E-01	------ Line Not Found		------
RA-224DA	238.63	6185	44.60*	2.617E+00	1.107E+00	1.148E+00	6.58
	240.98	1712	3.95	2.593E+00	3.493E+00	3.621E+00	8.51
	583.14	2013	30.25	1.263E+00	1.101E+00	1.141E+00	6.99
	860.37	173	4.48	9.070E-01	8.877E-01	9.201E-01	26.00
RA-226DA	186.21	1151	3.50	3.107E+00	2.213E+00	2.213E+00	11.08
	241.98	1712	7.49	2.593E+00	1.842E+00	1.842E+00	8.51
	295.22	2371	19.20	2.224E+00	1.161E+00	1.161E+00	7.23
	351.92	4191	37.20	1.930E+00	1.220E+00	1.220E+00	6.63
	609.32	2854	46.30*	1.217E+00	1.059E+00	1.059E+00	6.79
	1120.28	587	15.10	7.256E-01	1.120E+00	1.120E+00	9.96
	1238.11	227	5.94	6.669E-01	1.199E+00	1.199E+00	18.98
	1764.49	540	15.80	4.949E-01	1.444E+00	1.444E+00	7.70
AC-228	209.28	552	4.40	2.875E+00	9.114E-01	9.114E-01	14.86
	270.23	519	3.60	2.384E+00	1.263E+00	1.263E+00	17.06
	338.32	1243	11.40	1.994E+00	1.143E+00	1.143E+00	8.76
	911.07	1325	27.70*	8.642E-01	1.157E+00	1.157E+00	7.82
	969.11	518	16.60	8.199E-01	7.948E-01	7.948E-01	16.38
RA-228DA	209.28	552	4.40	2.875E+00	9.114E-01	9.223E-01	14.86
	338.32	1243	11.40	1.994E+00	1.143E+00	1.157E+00	8.76
	911.07	1325	27.70*	8.642E-01	1.157E+00	1.171E+00	7.82
	964.60	------	5.20	8.234E-01	------ Line Not Found		------

Nuclide Type: NP

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected PCI/GRAM	Decay Corr PCI/GRAM	1-Sigma %Error
	969.11	518	16.60	8.199E-01	7.948E-01	8.043E-01	16.38
TH-228DA	238.63	6185	44.60	2.617E+00	1.107E+00	1.148E+00	6.58
	240.98	1712	3.95	2.593E+00	3.493E+00	3.621E+00	8.51
	583.14	2013	30.25*	1.263E+00	1.101E+00	1.141E+00	6.99
	860.37	173	4.48	9.070E-01	8.877E-01	9.201E-01	26.00
TH-232DA	238.63	6185	44.60	2.617E+00	1.107E+00	1.107E+00	6.58
	338.32	1243	12.40*	1.994E+00	1.051E+00	1.051E+00	8.76
	583.14	2013	30.25	1.263E+00	1.101E+00	1.101E+00	6.99
	911.07	1325	27.70	8.642E-01	1.157E+00	1.157E+00	7.82
	964.60	------	5.20	8.234E-01	------ Line Not Found		------
	969.11	518	16.60	8.199E-01	7.948E-01	7.948E-01	16.38
U-234DA	241.98	1712	7.49	2.593E+00	1.842E+00	1.842E+00	8.51
	295.22	2371	19.20*	2.224E+00	1.161E+00	1.161E+00	7.23
	351.92	4191	37.20	1.930E+00	1.220E+00	1.220E+00	6.63
	609.31	2854	46.30	1.217E+00	1.059E+00	1.059E+00	6.79
U-238DA	241.98	1712	7.49	2.593E+00	1.842E+00	1.842E+00	8.51
	295.22	2371	19.20	2.224E+00	1.161E+00	1.161E+00	7.23
	351.92	4191	37.20*	1.930E+00	1.220E+00	1.220E+00	6.63
	609.31	2854	46.30	1.217E+00	1.059E+00	1.059E+00	6.79
U-238DHP	63.28	498	3.80*	3.725E+00	7.357E-01	7.357E-01	26.76
	92.59	1318	5.41	4.071E+00	1.250E+00	1.250E+00	11.36

Flag: "*" = Keyline

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
0	46.50	413	1804	1.06	186.50	181	12	1.15E-02	23.1	2.83E+00	
2	74.84	3282	4212	1.23	299.96	288	29	9.12E-02	4.8	3.99E+00	
2	77.11	5094	3365	1.08	309.05	288	29	1.41E-01	2.9	4.01E+00	
0	83.96	430	2821	1.11	336.47	332	12	1.20E-02	25.7	4.06E+00	
0	87.24	1562	3043	1.16	349.62	343	13	4.34E-02	7.7	4.07E+00	T
2	89.95	790	1969	0.94	360.47	356	24	2.20E-02	10.6	4.08E+00	
0	129.19	356	2234	0.71	517.56	509	14	9.88E-03	28.7	3.77E+00	
0	328.02	292	932	0.95	1313.43	1305	16	8.12E-03	24.1	2.04E+00	T
0	409.17	232	529	0.95	1638.27	1631	14	6.44E-03	22.0	1.70E+00	
0	462.77	330	570	1.24	1852.80	1843	18	9.17E-03	17.8	1.54E+00	T
0	727.02	569	435	1.38	2910.34	2897	28	1.58E-02	9.7	1.05E+00	T
0	794.88	267	305	1.26	3181.91	3170	21	7.42E-03	15.2	9.70E-01	T
0	1377.81	179	157	1.40	5514.32	5502	27	4.97E-03	18.3	6.09E-01	
0	1588.00	98	47	2.16	6355.17	6346	19	2.71E-03	17.6	5.41E-01	
0	1592.94	73	90	2.30	6374.95	6365	27	2.03E-03	32.6	5.39E-01	
0	1621.08	55	59	3.03	6487.50	6476	24	1.54E-03	34.0	5.31E-01	T
0	1631.36	101	29	1.46	6528.61	6517	24	2.80E-03	15.9	5.29E-01	
0	1729.87	81	66	0.85	6922.64	6912	20	2.25E-03	23.7	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	3.781E-02	24.81	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	2.280E-01	9.96	
		% Abundances Found =		50.00			
TC-95M	61.00D	0.59	204.12*	66.20	--- Not Found ---		Abun.
			582.07	29.30	1.713E+00	6.99	
			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	1.654E+01	6.79	
		% Abundances Found =		5.92			
RU-106DA	368.20D	0.10	511.85	20.60	3.438E-01	24.81	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	4.449E-01	18.80	
			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	6.962E-02	16.48	
			801.93	8.73	--- Not Found ---		
		% Abundances Found =		41.22			
LA-140	40.22H	21.54	328.77	20.50	4.450E+05	24.83	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	2.630E-01	9.80	
			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	2.151E+01	26.06	
			452.83	0.31	--- Not Found ---		
			727.33*	6.58	1.726E+00	11.79	
			785.37	1.10	--- Not Found ---		
			893.41	0.38	--- Not Found ---		
			952.12	0.17	--- Not Found ---		

Sample ID : J5K2J1AA Acquisition date : 19-SEP-2007 05:56:13

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	1.459E+00	34.73	
			1806.00	0.09	--- Not Found ---		
		% Abundances Found =		71.89			
RA-223	21.77Y	0.00	154.21	5.58	--- Not Found ---		Abun.
			269.46*	13.60	3.354E-01	17.06	
			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	1.434E-01	11.08	
			205.31	4.70	--- Not Found ---		
		% Abundances Found =		78.03			

Flag: "*" = Keyline

VMS Nuclide Identification Report V3.0 Generated 19-SEP-2007 19:34:30

Configuration : $DISK1:[GER8.SAMPLE]J5K2J1AA_190970556.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 : 14-AUG-2007 08:30:00 Acquisition date : 19-SEP-2007 05:56:13
Sample ID : J5K2J1AA Sample quantity : 359.20 GRAMS
Sample type : Sample geometry : ES200
Elapsed live time: 0 10:00:00.00 Elapsed real time: 0 10:00:12.81 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 ----

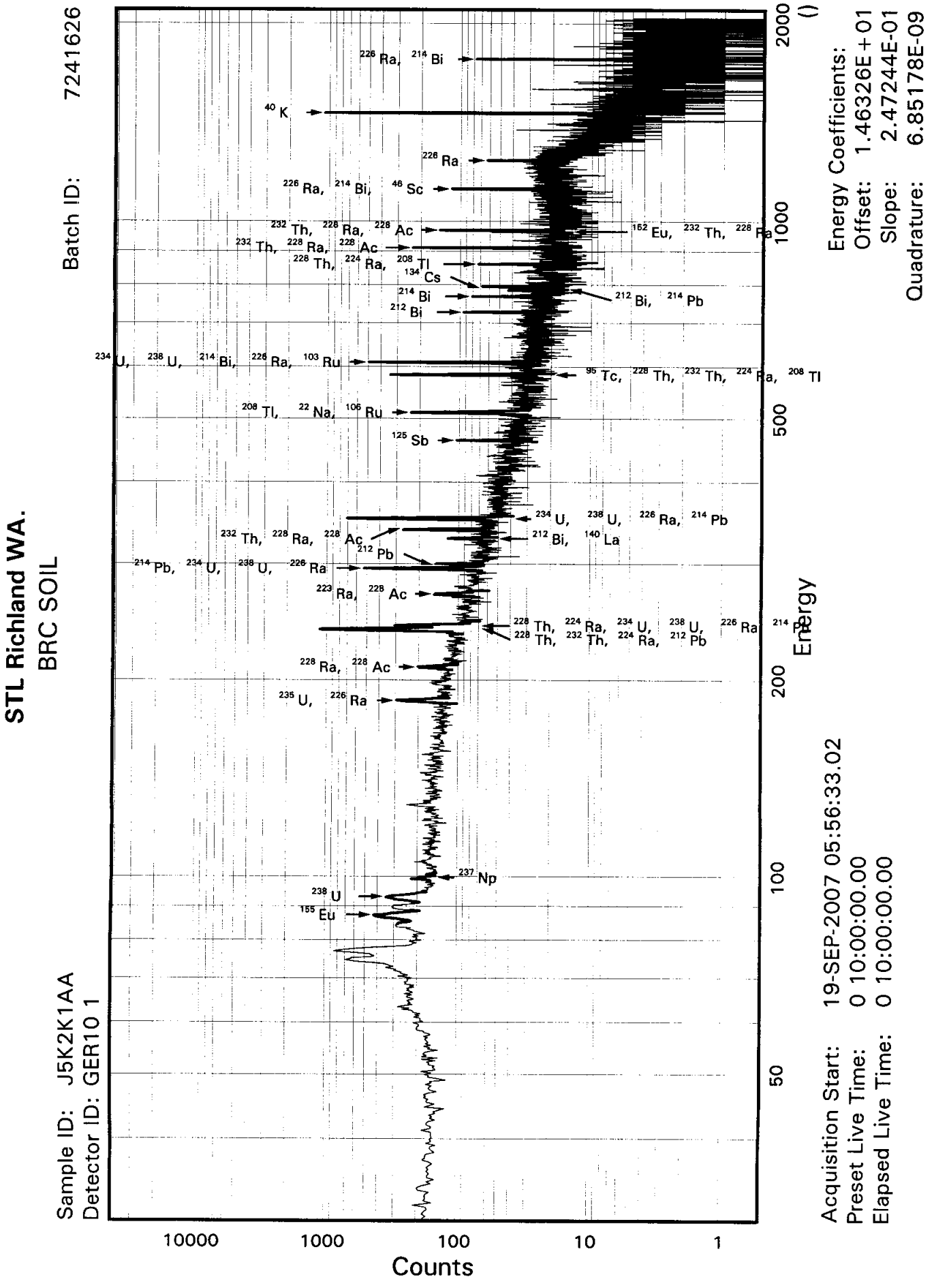
Nuclide	Activity (PCI/GRAM)	Act error	MDA (PCI/GRAM)	MDA error	Act/MDA
K-40	2.343E+01	1.466E+00	1.482E-01	5.230E-03	158.118
TL-208	3.956E-01	2.764E-02	1.998E-02	6.821E-04	19.802
PB-212	1.107E+00	7.284E-02	3.205E-02	1.232E-03	34.556
BI-214	1.059E+00	7.186E-02	3.792E-02	1.327E-03	27.926
PB-214	1.220E+00	8.092E-02	3.760E-02	1.286E-03	32.439
RA-224DA	1.148E+00	7.550E-02	3.322E-02	1.277E-03	34.556
RA-226DA	1.059E+00	7.186E-02	3.792E-02	1.327E-03	27.925
AC-228	1.157E+00	9.047E-02	7.049E-02	3.081E-03	16.412
RA-228DA	1.171E+00	9.155E-02	7.134E-02	3.118E-03	16.412
TH-228DA	1.141E+00	7.976E-02	5.764E-02	1.968E-03	19.802
TH-232DA	1.051E+00	9.208E-02	1.205E-01	4.204E-03	8.721
U-234DA	1.161E+00	8.388E-02	7.392E-02	2.737E-03	15.699
U-238DA	1.220E+00	8.092E-02	3.760E-02	1.286E-03	32.439
U-238DHP	7.357E-01	1.969E-01	4.134E-01	1.318E-02	1.780

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

Nuclide	Key-Line Activity (PCI/GRAM)	K.L. Ided	Act error	MDA (PCI/GRAM)	MDA error	Act/MDA
BE-7	1.144E-02		6.979E-02	2.329E-01	7.449E-03	0.049
NA-22	-6.107E-03		7.371E-03	2.462E-02	8.471E-04	-0.248
SC-46	2.280E-01	+	2.270E-02	5.486E-02	1.929E-03	4.156
CR-51	-3.574E-02		1.062E-01	3.549E-01	1.265E-02	-0.101
MN-54	1.141E-03		6.652E-03	2.245E-02	9.487E-04	0.051
CO-57	1.705E-02		3.968E-02	1.313E-01	4.489E-03	0.130
CO-58	-1.034E-02		7.940E-03	2.603E-02	1.081E-03	-0.397
FE-59	-2.586E-02		2.122E-02	7.066E-02	2.564E-03	-0.366
CO-60	-1.481E-04		6.464E-03	2.209E-02	7.881E-04	-0.007
ZN-65	-1.839E-02		1.864E-02	5.207E-02	1.845E-03	-0.353
SE-75	-4.323E-03		9.208E-03	2.856E-02	1.088E-03	-0.151
SR-85	5.663E-02		9.216E-03	2.815E-02	8.923E-04	2.011
Y-88	3.567E-03		5.839E-03	2.130E-02	6.649E-04	0.168
NB-94	7.343E-03		5.742E-03	1.978E-02	8.564E-04	0.371

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

Nuclide	Key-Line Activity (PCI/GRAM)	K.L. Ided	Act error	MDA (PCI/GRAM)	MDA error	Act/MDA
NB-95	4.284E-02		1.449E-02	4.367E-02	1.752E-03	0.981
TC-95M	1.066E-02		9.625E-03	3.172E-02	1.213E-03	0.336
ZR-95	1.047E-02		1.498E-02	5.122E-02	2.040E-03	0.204
ZRNB-95	6.991E-02		2.092E-02	6.335E-02	2.542E-03	1.103
RH-101	4.850E-03		6.727E-03	2.002E-02	7.633E-04	0.242
RH-102M	-4.690E-03		4.831E-03	1.581E-02	5.059E-04	-0.297
RU-103	8.617E-03		9.768E-03	3.290E-02	1.048E-03	0.262
RU-106DA	9.423E-02		5.485E-02	1.908E-01	6.755E-03	0.494
AG-108M	-8.109E-03		4.978E-03	1.612E-02	5.151E-04	-0.503
AG-110M	1.249E-02		8.891E-03	3.065E-02	1.339E-03	0.407
SN-113DA	-3.825E-03		8.914E-03	2.958E-02	9.316E-04	-0.129
SB-124	-4.043E-03		8.454E-03	2.667E-02	9.279E-04	-0.152
SB-125	2.078E-02		1.593E-02	5.395E-02	1.721E-03	0.385
SN-126DA	6.341E-03		5.670E-03	1.950E-02	7.165E-04	0.325
I-131	-5.272E-02		1.230E-01	4.091E-01	1.369E-02	-0.129
BA-133	1.249E-02		7.789E-03	2.274E-02	7.725E-04	0.549
CS-134	6.962E-02	+	1.147E-02	2.856E-02	1.173E-03	2.438
CS-137DA	-1.840E-03		6.616E-03	2.232E-02	8.164E-04	-0.082
LA-138	1.977E-03		8.093E-03	2.808E-02	9.942E-04	0.070
CE-139	-3.046E-03		5.973E-03	1.954E-02	7.280E-04	-0.156
BA-140	1.195E-01		1.308E-01	4.528E-01	1.474E-02	0.264
BALA-140	2.581E-02		8.566E-02	2.598E-01	8.915E-03	0.099
CE-141	-3.366E-03		1.766E-02	5.810E-02	2.049E-03	-0.058
CE-144	-6.019E-02		4.089E-02	1.275E-01	4.314E-03	-0.472
CEPR-144	-1.207E-01		8.177E-02	2.549E-01	8.628E-03	-0.474
PM-144	-3.598E-03		5.475E-03	1.841E-02	6.494E-04	-0.195
PM-146	1.312E-02		7.154E-03	2.433E-02	7.791E-04	0.539
EU-152	-1.490E-02		1.640E-02	5.424E-02	1.877E-03	-0.275
EU-154	-1.720E-02		2.036E-02	6.799E-02	2.339E-03	-0.253
EU-155	4.784E-02		1.822E-02	6.080E-02	2.002E-03	0.787
HF-181	-8.263E-03		1.005E-02	3.298E-02	1.054E-03	-0.251
BI-207	6.862E-03		5.007E-03	1.738E-02	5.854E-04	0.395
BI-210M	-1.017E-02		9.752E-03	2.741E-02	1.043E-03	-0.371
BI-212	1.726E+00	+	2.034E-01	4.062E-01	1.830E-02	4.249
RA-223	3.354E-01	+	5.721E-02	1.219E-01	4.628E-03	2.751
AC-227DA	4.054E-01		5.383E-02	1.496E-01	5.753E-03	2.710
TH-234DA	1.263E+00		9.509E-01	3.343E+00	1.362E-01	0.378
U-235HP	5.318E-02		3.770E-02	1.251E-01	4.386E-03	0.425
NP-237DA	-4.688E-03		1.156E-02	3.863E-02	1.396E-03	-0.121
AM-241HP	6.281E-02		1.529E-02	4.403E-02	1.420E-03	1.426


STL Richland WA.
BRC SOIL
Batch ID: 7241626
Sample ID: J5K2K1AA
Detector ID: GER10 1
Energy Coefficients:
Offset: 1.46326E+01
Slope: 2.47244E-01
Quadrature: 6.85178E-09
Acquisition Start: 19-SEP-2007 05:56:33.02
Preset Live Time: 0 10:00:00.00
Elapsed Live Time: 0 10:00:00.00
Counts
Energy
10000
1000
100
10
1
2000
1000
500
200
100
50
226 Ra, 214 Bi
40 K
226 Ra
226 Ra, 214 Bi, 46 Sc
232 Th, 228 Ra, 228 Ac
152 Eu, 232 Th, 228 Ra
232 Th, 228 Ra, 228 Ac
228 Th, 224 Ra, 208 Tl
134 Cs
214 Bi
212 Bi
212 Bi, 214 Pb
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
228 Th, 232 Th, 224 Ra, 212 Pb
228 Ra, 228 Ac
235 U, 226 Ra
237 Np
238 U
155 Eu

SAMPLE IDENTIFICATION: J5K2K1AA

CONFIGURATION ID: GER10:J5K2K1AA_190970556
TITLE : BRC SOIL
SAMPLE ID : J5K2K1AA

REPORT DATE: 19-SEP-07
ACQUIRE DATE: 19-SEP-07 05:56:33
ELAPSED LIVE TIME: 36000.0 Sec
PRESET LIVE TIME: 0 10:00:00

SAMPLE DATE: 14-AUG-2007 08:30:00.00
CALIB DATE: 19-SEP-2007 05:47:00.31
ELAPSED LIVE TIME: 0 10:00:00
ELAPSED REAL TIME: 0 10:00:15

SAMPLE QUANTITY: 3.6330E+02
SAMPLE GEOMETRY: S200

UNITS: GRAMS
SAMPLE TYPE:

ENERGY OFFSET: 1.4633E+01 keV
ENERGY SLOPE: 2.4724E-01 keV/C
ENERGY Q COEFF: 6.8518E-09 keV/C^^2
PEAK SENSITIVITY: 5.000

FWHM OFFSET: 1.1953E+00 keV
FWHM SLOPE: 2.0517E-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 19-SEP-2007 19:35:45

Configuration : $DISK1:[GER10.SAMPLE]J5K2K1AA_190970556.CNF;1
Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6
Sample title : BRC SOIL
Sample date : 14-AUG-2007 08:30:00 Acquisition date : 19-SEP-2007 05:56:33
Sample ID : J5K2K1AA Sample quantity : 363.30 GRAMS
Sample type : Sample geometry : S200
Elapsed live time: 0 10:00:00.00 Elapsed real time: 0 10:00:15.44 0.0%
Start energy : 17.10 End energy : 2040.51
Sensitivity : 5.00 Gaussian : 20.00
Critical level : No

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	1	74.79*	1772	4315	1.25	243.31	236	37	4.92E-02	8.6	1.51E+00
2	1	77.08	3401	4062	1.39	252.56	236	37	9.45E-02	4.8	
3	0	87.41	836	4189	1.27	294.34	283	17	2.32E-02	18.1	
4	0	93.25	865	3418	1.54	317.97	308	17	2.40E-02	15.9	
5	0	99.66	150	2203	0.74	343.90	338	14	4.17E-03	67.0	
6	0	129.03	273	1816	0.95	462.68	458	11	7.59E-03	30.8	
7	0	186.00	1066	2397	1.42	693.11	684	19	2.96E-02	11.4	
8	0	209.15	572	2064	1.54	786.72	779	18	1.59E-02	16.4	
9	3	238.62	6886	1778	1.53	905.92	892	43	1.91E-01	1.8	1.32E+00
10	3	241.68	1646	1913	1.79	918.28	892	43	4.57E-02	7.2	
11	0	270.35	713	1939	2.19	1034.26	1022	26	1.98E-02	14.8	
12	0	295.23	2608	1659	1.32	1134.85	1123	24	7.24E-02	4.0	
13	0	300.21	326	1091	1.14	1155.02	1148	16	9.05E-03	20.2	
14	0	327.89	388	1086	1.63	1266.94	1257	18	1.08E-02	17.7	
15	0	338.31	1325	1161	1.46	1309.08	1299	19	3.68E-02	5.9	
16	0	351.83*	4626	1420	1.51	1363.76	1348	30	1.29E-01	2.5	
17	0	463.08	450	634	1.19	1813.68	1805	19	1.25E-02	12.4	
18	0	510.84*	903	1111	2.10	2006.85	1991	34	2.51E-02	11.8	
19	0	583.15	2224	719	1.68	2299.26	2288	23	6.18E-02	3.4	
20	0	609.22	3555	873	1.71	2404.69	2389	31	9.87E-02	2.7	
21	0	727.25	494	527	1.51	2882.00	2871	22	1.37E-02	11.0	
22	0	768.39	273	452	0.77	3048.39	3039	19	7.57E-03	17.0	
23	0	785.74	108	414	1.34	3118.55	3107	19	3.01E-03	39.6	
24	0	794.77	265	415	1.02	3155.06	3145	20	7.36E-03	17.2	
25	0	860.59	316	313	1.56	3421.23	3411	18	8.79E-03	12.5	
26	0	911.13	1665	447	1.97	3625.61	3612	26	4.62E-02	3.8	
27	0	964.73	209	376	1.83	3842.34	3834	16	5.81E-03	19.0	
28	0	969.08	857	462	1.70	3859.93	3850	21	2.38E-02	6.4	
29	0	1120.28	852	524	2.01	4471.33	4457	31	2.37E-02	7.5	
30	0	1238.18	305	396	1.77	4948.09	4937	19	8.48E-03	14.5	
31	0	1378.11	194	207	1.73	5513.85	5500	26	5.38E-03	18.6	
32	0	1460.81*	9683	209	2.16	5848.24	5832	33	2.69E-01	1.1	
33	0	1588.09	164	66	1.86	6362.89	6353	19	4.55E-03	12.0	
34	0	1729.98	121	77	0.94	6936.56	6923	29	3.35E-03	18.0	
35	0	1764.28	683	69	2.34	7075.24	7058	32	1.90E-02	4.7	

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

VMS Nuclide Identification Report V3.0 Generated 19-SEP-2007 19:35:46

Configuration : $DISK1:[GER10.SAMPLE]J5K2K1AA_190970556.CNF;1
Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.3
Sample title : BRC SOIL
Sample date : 14-AUG-2007 08:30:00 Acquisition date : 19-SEP-2007 05:56:33
Sample ID : J5K2K1AA Sample quantity : 363.30 GRAMS
Sample type : Sample geometry : S200
Elapsed live time: 0 10:00:00.00 Elapsed real time: 0 10:00:15.44 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	9683	10.67*	8.323E-01	2.253E+01	2.253E+01	6.34
TL-208	277.35	------	6.80	2.752E+00	------ Line Not Found		------
	510.84	903	21.60	1.867E+00	4.625E-01	4.625E-01	13.16
	583.14	2224	84.20*	1.704E+00	3.203E-01	3.203E-01	6.87
	860.37	316	12.46	1.273E+00	4.122E-01	4.122E-01	14.30
PB-212	238.63	6886	44.60*	3.006E+00	1.061E+00	1.061E+00	6.66
	300.09	326	3.41	2.623E+00	7.526E-01	7.526E-01	21.15
BI-214	609.31	3555	46.30*	1.652E+00	9.603E-01	9.603E-01	6.57
	768.36	273	5.04	1.391E+00	8.034E-01	8.034E-01	18.24
	1120.29	852	15.10	1.028E+00	1.134E+00	1.134E+00	9.78
	1764.49	683	15.80	7.322E-01	1.219E+00	1.219E+00	7.63
PB-214	241.98	1646	7.49	2.984E+00	1.522E+00	1.522E+00	9.61
	295.21	2608	19.20	2.650E+00	1.059E+00	1.059E+00	7.47
	351.92	4626	37.20*	2.378E+00	1.081E+00	1.081E+00	6.60
	785.91	108	1.10	1.367E+00	1.487E+00	1.487E+00	40.13
RA-224DA	238.63	6886	44.60*	3.006E+00	1.061E+00	1.100E+00	6.66
	240.98	1646	3.95	2.984E+00	2.886E+00	2.991E+00	9.61
	583.14	2224	30.25	1.704E+00	8.915E-01	9.241E-01	6.87
	860.37	316	4.48	1.273E+00	1.147E+00	1.188E+00	14.30
RA-226DA	186.21	1066	3.50	3.433E+00	1.833E+00	1.833E+00	13.11
	241.98	1646	7.49	2.984E+00	1.522E+00	1.522E+00	9.61
	295.22	2608	19.20	2.650E+00	1.059E+00	1.059E+00	7.47
	351.92	4626	37.20	2.378E+00	1.081E+00	1.081E+00	6.60
	609.32	3555	46.30*	1.652E+00	9.603E-01	9.603E-01	6.57
	1120.28	852	15.10	1.028E+00	1.134E+00	1.134E+00	9.78
	1238.11	305	5.94	9.474E-01	1.120E+00	1.120E+00	15.74
	1764.49	683	15.80	7.322E-01	1.219E+00	1.219E+00	7.63
AC-228	209.28	572	4.40	3.234E+00	8.306E-01	8.306E-01	17.64
	270.23	713	3.60	2.794E+00	1.464E+00	1.464E+00	16.10
	338.32	1325	11.40	2.437E+00	9.853E-01	9.853E-01	8.55
	911.07	1665	27.70*	1.216E+00	1.021E+00	1.021E+00	8.07
	969.11	857	16.60	1.157E+00	9.216E-01	9.216E-01	9.40
RA-228DA	209.28	572	4.40	3.234E+00	8.306E-01	8.405E-01	17.64
	338.32	1325	11.40	2.437E+00	9.853E-01	9.971E-01	8.55
	911.07	1665	27.70*	1.216E+00	1.021E+00	1.033E+00	8.07
	964.60	209	5.20	1.161E+00	7.158E-01	7.243E-01	20.27

Nuclide Type: NP

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected PCI/GRAM	Decay Corr PCI/GRAM	1-Sigma %Error
	969.11	857	16.60	1.157E+00	9.216E-01	9.326E-01	9.40
TH-228DA	238.63	6886	44.60	3.006E+00	1.061E+00	1.100E+00	6.66
	240.98	1646	3.95	2.984E+00	2.886E+00	2.991E+00	9.61
	583.14	2224	30.25*	1.704E+00	8.915E-01	9.241E-01	6.87
	860.37	316	4.48	1.273E+00	1.147E+00	1.188E+00	14.30
TH-232DA	238.63	6886	44.60	3.006E+00	1.061E+00	1.061E+00	6.66
	338.32	1325	12.40*	2.437E+00	9.058E-01	9.058E-01	8.55
	583.14	2224	30.25	1.704E+00	8.915E-01	8.915E-01	6.87
	911.07	1665	27.70	1.216E+00	1.021E+00	1.021E+00	8.07
	964.60	209	5.20	1.161E+00	7.158E-01	7.158E-01	20.27
	969.11	857	16.60	1.157E+00	9.216E-01	9.216E-01	9.40
U-234DA	241.98	1646	7.49	2.984E+00	1.522E+00	1.522E+00	9.61
	295.22	2608	19.20*	2.650E+00	1.059E+00	1.059E+00	7.47
	351.92	4626	37.20	2.378E+00	1.081E+00	1.081E+00	6.60
	609.31	3555	46.30	1.652E+00	9.603E-01	9.603E-01	6.57
U-238DA	241.98	1646	7.49	2.984E+00	1.522E+00	1.522E+00	9.61
	295.22	2608	19.20	2.650E+00	1.059E+00	1.059E+00	7.47
	351.92	4626	37.20*	2.378E+00	1.081E+00	1.081E+00	6.60
	609.31	3555	46.30	1.652E+00	9.603E-01	9.603E-01	6.57

Flag: "*" = Keyline

Unidentified Energy Lines
Sample ID : J5K2K1AA

Acquisition date : 19-SEP-2007 05:56:33

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
1	74.79	1772	4315	1.25	243.31	236	37	4.92E-02	8.6	2.87E+00	
1	77.08	3401	4062	1.39	252.56	236	37	9.45E-02	4.8	2.99E+00	
0	87.41	836	4189	1.27	294.34	283	17	2.32E-02	18.1	3.44E+00	T
0	93.25	865	3418	1.54	317.97	308	17	2.40E-02	15.9	3.60E+00	T
0	99.66	150	2203	0.74	343.90	338	14	4.17E-03	67.0	3.73E+00	T
0	129.03	273	1816	0.95	462.68	458	11	7.59E-03	30.8	3.87E+00	
0	327.89	388	1086	1.63	1266.94	1257	18	1.08E-02	17.7	2.48E+00	T
0	463.08	450	634	1.19	1813.68	1805	19	1.25E-02	12.4	1.99E+00	T
0	727.25	494	527	1.51	2882.00	2871	22	1.37E-02	11.0	1.45E+00	T
0	794.77	265	415	1.02	3155.06	3145	20	7.36E-03	17.2	1.36E+00	T
0	1378.11	194	207	1.73	5513.85	5500	26	5.38E-03	18.6	8.70E-01	
0	1588.09	164	66	1.86	6362.89	6353	19	4.55E-03	12.0	7.84E-01	
0	1729.98	121	77	0.94	6936.56	6923	29	3.35E-03	18.0	7.41E-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	5.709E-02	13.16	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	2.308E-01	9.78	
		% Abundances Found =		50.00			
TC-95M	61.00D	0.59	204.12*	66.20	--- Not Found ---		Abun.
			582.07	29.30	1.387E+00	6.87	
			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	1.500E+01	6.57	
		% Abundances Found =		5.92			
RU-106DA	368.20D	0.10	511.85	20.60	5.191E-01	13.16	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	4.622E-01	13.71	
			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	4.894E-02	18.39	
			801.93	8.73	--- Not Found ---		
		% Abundances Found =		41.22			
LA-140	40.22H	21.54	328.77	20.50	4.804E+05	18.78	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	2.598E-01	20.27	
			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	1.650E-01	19.17	

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	2.322E+01	20.38	
			452.83	0.31	--- Not Found ---		
			727.33*	6.58	1.070E+00	12.88	
			785.37	1.10	1.487E+00	40.22	
			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	3.889E-01	16.10	
			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	1.188E-01	13.11	
			205.31	4.70	--- Not Found ---		
	% Abundances Found =		78.03				
NP-237DA	2.14E+06Y	0.00	98.44	17.60	4.719E-02	67.30	Abun.
			311.98*	36.00	--- Not Found ---		
	% Abundances Found =		32.84				
U-238DHP	4.47E+09Y	0.00	63.28*	3.80	--- Not Found ---		Abun.
			92.59	5.41	9.173E-01	17.06	
	% Abundances Found =		58.74				

Flag: "*" = Keyline

VMS Nuclide Identification Report V3.0 Generated 19-SEP-2007 19:35:49

Configuration : $DISK1:[GER10.SAMPLE]J5K2K1AA_190970556.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 : 14-AUG-2007 08:30:00
Sample ID : J5K2K1AA
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 : 19-SEP-2007 05:56:33
Sample quantity : 363.30 GRAMS
Sample geometry : S200
Elapsed real time: 0 10:00:15.44 0.0%
Confidence level : 5.00 %
Half life ratio : 8.00
Systematic Error : 5.00 %
Efficiencies at : Peak Energy
WTM error limit : 3.00

Combined Activity-MDA Report

---- Identified Nuclides ----

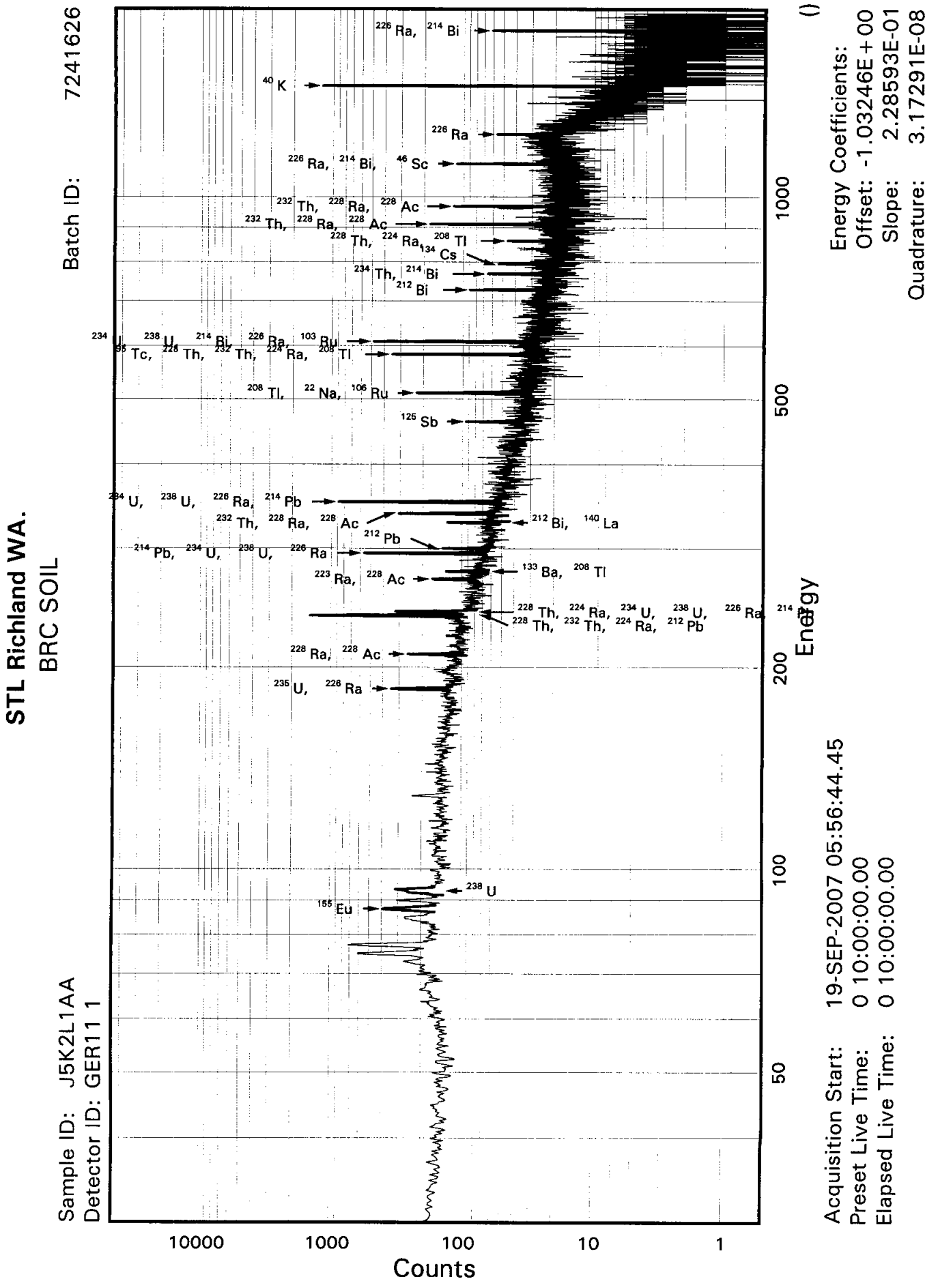
Nuclide	Activity (PCI/GRAM)	Act error	MDA (PCI/GRAM)	MDA error	Act/MDA
K-40	2.253E+01	1.429E+00	1.380E-01	5.165E-03	163.298
TL-208	3.203E-01	2.202E-02	1.743E-02	5.705E-04	18.381
PB-212	1.061E+00	7.064E-02	3.073E-02	1.238E-03	34.537
BI-214	9.603E-01	6.305E-02	3.256E-02	1.082E-03	29.489
PB-214	1.081E+00	7.136E-02	3.574E-02	1.247E-03	30.241
RA-224DA	1.100E+00	7.322E-02	3.185E-02	1.283E-03	34.537
RA-226DA	9.603E-01	6.306E-02	3.257E-02	1.082E-03	29.488
AC-228	1.021E+00	8.240E-02	6.033E-02	3.048E-03	16.924
RA-228DA	1.033E+00	8.339E-02	6.106E-02	3.085E-03	16.924
TH-228DA	9.241E-01	6.352E-02	5.027E-02	1.646E-03	18.381
TH-232DA	9.058E-01	7.741E-02	1.090E-01	3.910E-03	8.313
U-234DA	1.059E+00	7.913E-02	6.854E-02	2.634E-03	15.455
U-238DA	1.081E+00	7.136E-02	3.574E-02	1.247E-03	30.241

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

Nuclide	Key-Line Activity (PCI/GRAM)	K.L. Ided	Act error	MDA (PCI/GRAM)	MDA error	Act/MDA
BE-7	9.271E-02		6.310E-02	2.151E-01	6.797E-03	0.431
NA-22	-2.605E-04		6.173E-03	2.103E-02	7.705E-04	-0.012
SC-46	2.308E-01	+	2.258E-02	4.485E-02	1.710E-03	5.147
CR-51	9.547E-02		1.023E-01	3.404E-01	1.260E-02	0.280
MN-54	5.604E-04		5.588E-03	1.893E-02	8.741E-04	0.030
CO-57	-1.586E-02		4.031E-02	1.347E-01	4.766E-03	-0.118
CO-58	-1.939E-02		6.662E-03	2.109E-02	9.361E-04	-0.919
FE-59	-3.048E-02		1.810E-02	5.854E-02	2.324E-03	-0.521
CO-60	-5.521E-04		5.202E-03	1.777E-02	6.781E-04	-0.031
ZN-65	9.854E-03		1.518E-02	4.333E-02	1.668E-03	0.227
SE-75	2.329E-03		9.736E-03	2.729E-02	1.082E-03	0.085
SR-85	7.743E-02		9.194E-03	2.622E-02	8.208E-04	2.953
Y-88	5.768E-03		4.611E-03	1.696E-02	5.350E-04	0.340
NB-94	-4.301E-03		4.660E-03	1.551E-02	7.592E-04	-0.277
NB-95	5.954E-02		1.252E-02	3.761E-02	1.547E-03	1.583

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

Nuclide	Key-Line Activity (PCI/GRAM)	K.L. Ided	Act error	MDA (PCI/GRAM)	MDA error	Act/MDA
TC-95M	5.431E-04		1.061E-02	3.159E-02	1.280E-03	0.017
ZR-95	8.373E-04		1.225E-02	4.167E-02	1.687E-03	0.020
ZRNB-95	8.736E-02		1.814E-02	5.445E-02	2.240E-03	1.604
RH-101	-5.428E-04		6.991E-03	2.038E-02	8.260E-04	-0.027
RH-102M	-6.026E-03		4.416E-03	1.454E-02	4.594E-04	-0.415
RU-103	1.421E-02		8.497E-03	2.904E-02	9.136E-04	0.489
RU-106DA	2.598E-02		4.773E-02	1.605E-01	5.368E-03	0.162
AG-108M	-4.026E-03		4.467E-03	1.486E-02	4.709E-04	-0.271
AG-110M	-2.169E-03		7.263E-03	2.446E-02	1.223E-03	-0.089
SN-113DA	1.513E-03		7.730E-03	2.613E-02	8.233E-04	0.058
SB-124	-1.138E-03		8.332E-03	2.330E-02	7.715E-04	-0.049
SB-125	2.712E-02		1.379E-02	4.725E-02	1.497E-03	0.574
SN-126DA	1.443E-02		4.776E-03	1.631E-02	5.609E-04	0.885
I-131	6.688E-02		1.069E-01	3.636E-01	1.233E-02	0.184
BA-133	1.326E-02		7.259E-03	2.126E-02	7.354E-04	0.624
CS-134	4.894E-02	+	8.998E-03	2.316E-02	1.003E-03	2.113
CS-137DA	-1.456E-02		5.522E-03	1.742E-02	5.940E-04	-0.836
LA-138	-8.766E-03		6.603E-03	2.183E-02	8.213E-04	-0.402
CE-139	-1.120E-03		5.884E-03	1.963E-02	7.925E-04	-0.057
BA-140	-1.733E-01		1.164E-01	3.806E-01	1.211E-02	-0.455
BALA-140	-3.357E-03		6.482E-02	2.201E-01	7.910E-03	-0.015
CE-141	2.518E-02		1.770E-02	5.961E-02	2.219E-03	0.422
CE-144	-6.943E-02		4.400E-02	1.298E-01	4.517E-03	-0.535
CEPR-144	-1.384E-01		8.801E-02	2.596E-01	9.034E-03	-0.533
PM-144	-5.375E-03		4.773E-03	1.563E-02	5.218E-04	-0.344
PM-146	1.840E-02		6.467E-03	2.218E-02	7.027E-04	0.830
EU-152	1.958E-02		1.861E-02	5.237E-02	1.857E-03	0.374
EU-154	9.036E-03		1.702E-02	5.855E-02	2.145E-03	0.154
EU-155	3.087E-02		2.049E-02	6.636E-02	2.264E-03	0.465
HF-181	-7.267E-03		8.986E-03	2.984E-02	9.421E-04	-0.244
BI-207	9.009E-03		4.350E-03	1.487E-02	4.829E-04	0.606
BI-210M	8.532E-03		9.572E-03	2.702E-02	1.070E-03	0.316
BI-212	1.070E+00	+	1.379E-01	3.246E-01	1.451E-02	3.297
RA-223	3.889E-01	+	6.259E-02	1.165E-01	4.604E-03	3.337
AC-227DA	1.183E+00		9.221E-02	1.772E-01	7.145E-03	6.677
TH-234DA	9.631E-01		7.828E-01	2.687E+00	1.237E-01	0.358
U-235HP	2.379E-02		3.797E-02	1.276E-01	4.703E-03	0.186
NP-237DA	2.136E-02		1.119E-02	3.741E-02	1.404E-03	0.571
U-238DHP	5.574E-01		2.257E-01	7.460E-01	2.671E-02	0.747
AM-241HP	-4.562E-02		2.620E-02	8.501E-02	3.145E-03	-0.537


STL Richland WA.
BRC SOIL
Batch ID: 7241626
Sample ID: J5K2L1AA
Detector ID: GER11 1
Energy Coefficients:
Offset: -1.03246E+00
Slope: 2.28593E-01
Quadrature: 3.17291E-08
Acquisition Start: 19-SEP-2007 05:56:44.45
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
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
212 Pb
214 Pb, 234 U, 238 U, 226 Ra
223 Ra, 228 Ac
133 Ba, 208 Tl
228 Th, 224 Ra, 234 U, 238 U, 226 Ra, 214
228 Th, 232 Th, 224 Ra, 212 Pb
228 Ra, 228 Ac
235 U, 226 Ra
238 U
155 Eu

SAMPLE IDENTIFICATION: J5K2L1AA

CONFIGURATION ID: GER11:J5K2L1AA_190970556
TITLE : BRC SOIL
SAMPLE ID : J5K2L1AA

REPORT DATE: 19-SEP-07
ACQUIRE DATE: 19-SEP-07 05:56:44
ELAPSED LIVE TIME: 36000.0 Sec
PRESET LIVE TIME: 0 10:00:00

SAMPLE DATE: 14-AUG-2007 09:15:00.00
CALIB DATE: 19-SEP-2007 05:36:32.14
ELAPSED LIVE TIME: 0 10:00:00
ELAPSED REAL TIME: 0 10:00:31

SAMPLE QUANTITY: 3.4130E+02
SAMPLE GEOMETRY: S200

UNITS: GRAMS
SAMPLE TYPE:

ENERGY OFFSET: -.1032E+01 keV
ENERGY SLOPE: 2.2859E-01 keV/C
ENERGY Q COEFF: 3.1729E-08 keV/C^^2
PEAK SENSITIVITY: 5.000

FWHM OFFSET: 2.1661E-01 keV
FWHM SLOPE: 4.0739E-02 sqr keV
ITERATIONS: 10
GAUSSIAN SENSITIVITY: 50.00 %

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

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

VMS Peak Search Report V1.9 Generated 19-SEP-2007 19:36:40

Configuration : $DISK1:[GER11.SAMPLE]J5K2L1AA_190970556.CNF;1
Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6
Sample title : BRC SOIL
Sample date : 14-AUG-2007 09:15:00 Acquisition date : 19-SEP-2007 05:56:44
Sample ID : J5K2L1AA Sample quantity : 341.30 GRAMS
Sample type : Sample geometry : S200
Elapsed live time: 0 10:00:00.00 Elapsed real time: 0 10:00:31.77 0.1%
Start energy : 1.25 End energy : 1873.73
Sensitivity : 5.00 Gaussian : 50.00
Critical level : No

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	72.93*	131	1535	0.73	323.52	320	8	3.64E-03	56.2	
2	0	74.97*	990	1862	0.68	332.47	328	9	2.75E-02	9.0	
3	0	77.22	1694	1896	0.70	342.31	338	10	4.71E-02	5.4	
4	0	84.48*	495	2403	1.35	374.05	367	15	1.38E-02	22.9	
5	0	87.27*	851	1630	0.82	386.27	382	10	2.36E-02	9.8	
6	0	89.94	489	1403	0.72	397.94	394	9	1.36E-02	14.5	
7	0	92.90	832	1983	1.39	410.88	405	13	2.31E-02	11.5	
8	0	129.20	420	1591	0.90	569.65	564	12	1.17E-02	19.6	
9	0	186.05	886	1498	0.96	818.31	813	12	2.46E-02	9.4	
10	0	209.26	474	1177	0.61	919.84	915	11	1.32E-02	14.8	
11	6	238.61	5314	991	0.85	1048.18	1042	32	1.48E-01	1.8	3.21E+00
12	6	241.67	1516	1662	1.51	1061.56	1042	32	4.21E-02	7.2	
13	0	270.06	521	1350	0.98	1185.73	1176	18	1.45E-02	17.1	
14	0	277.40	314	772	0.86	1217.83	1212	12	8.71E-03	18.6	
15	0	295.15	2088	1052	0.90	1295.44	1287	16	5.80E-02	4.1	
16	0	300.07	279	762	0.90	1316.96	1311	12	7.74E-03	20.8	
17	0	327.93	344	759	0.91	1438.80	1432	14	9.56E-03	17.8	
18	0	338.12	1119	930	0.90	1483.36	1474	17	3.11E-02	6.9	
19	0	351.81*	3833	941	1.00	1543.19	1535	18	1.06E-01	2.5	
20	0	462.81	323	533	1.05	2028.56	2021	16	8.98E-03	17.0	
21	0	510.60*	606	954	1.45	2237.49	2225	27	1.68E-02	17.7	
22	0	582.93	1874	499	1.22	2553.70	2543	21	5.21E-02	3.8	
23	0	609.00	2930	521	1.38	2667.65	2659	20	8.14E-02	2.7	
24	0	727.03	377	469	1.50	3183.54	3173	20	1.05E-02	15.0	
25	0	767.43	421	430	1.47	3360.15	3348	25	1.17E-02	13.9	
26	0	794.73	217	414	1.66	3479.45	3469	21	6.02E-03	24.6	
27	0	860.05	272	315	1.83	3764.92	3754	22	7.56E-03	15.3	
28	0	910.60	1260	472	1.67	3985.81	3972	28	3.50E-02	5.0	
29	0	967.88	816	742	1.56	4236.08	4216	34	2.27E-02	9.3	
30	0	1119.53	650	442	1.54	4898.66	4886	24	1.81E-02	8.2	
31	0	1237.22	237	491	1.82	5412.76	5403	21	6.58E-03	20.9	
32	0	1377.16	163	182	1.40	6023.99	6011	21	4.53E-03	19.2	
33	0	1459.97*	10739	228	2.04	6385.61	6368	34	2.98E-01	1.1	
34	0	1728.76	139	44	2.11	7559.20	7546	27	3.87E-03	13.1	
35	0	1763.66*	541	72	2.28	7711.54	7694	36	1.50E-02	6.1	

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

VMS Nuclide Identification Report V3.0 Generated 19-SEP-2007 19:36:41

Configuration : $DISK1:[GER11.SAMPLE]J5K2L1AA_190970556.CNF;1
Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.3
Sample title : BRC SOIL
Sample date : 14-AUG-2007 09:15:00 Acquisition date : 19-SEP-2007 05:56:44
Sample ID : J5K2L1AA Sample quantity : 341.30 GRAMS
Sample type : Sample geometry : S200
Elapsed live time: 0 10:00:00.00 Elapsed real time: 0 10:00:31.77 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	10739	10.67*	8.391E-01	2.639E+01	2.639E+01	6.46
TL-208	277.35	314	6.80	2.956E+00	3.434E-01	3.434E-01	19.62
	510.84	606	21.60	1.997E+00	3.093E-01	3.093E-01	18.68
	583.14	1874	84.20*	1.816E+00	2.697E-01	2.697E-01	7.08
	860.37	272	12.46	1.328E+00	3.618E-01	3.618E-01	16.86
PB-212	238.63	5314	44.60*	3.227E+00	8.123E-01	8.123E-01	6.49
	300.09	279	3.41	2.818E+00	6.379E-01	6.379E-01	21.68
BI-214	609.31	2930	46.30*	1.757E+00	7.922E-01	7.922E-01	6.56
	768.36	421	5.04	1.463E+00	1.256E+00	1.256E+00	15.33
	1120.29	650	15.10	1.051E+00	9.008E-01	9.008E-01	10.40
	1764.49	541	15.80	7.427E-01	1.013E+00	1.013E+00	8.56
PB-214	241.98	1516	7.49	3.203E+00	1.390E+00	1.390E+00	9.55
	295.21	2088	19.20	2.847E+00	8.404E-01	8.404E-01	7.51
	351.92	3833	37.20*	2.553E+00	8.877E-01	8.877E-01	6.67
	785.91	------	1.10	1.435E+00	------ Line Not Found		------
RA-224DA	238.63	5314	44.60*	3.227E+00	8.123E-01	8.419E-01	6.49
	240.98	1516	3.95	3.203E+00	2.636E+00	2.732E+00	9.55
	583.14	1874	30.25	1.816E+00	7.507E-01	7.781E-01	7.08
	860.37	272	4.48	1.328E+00	1.006E+00	1.043E+00	16.86
RA-226DA	186.21	886	3.50	3.657E+00	1.523E+00	1.523E+00	11.21
	241.98	1516	7.49	3.203E+00	1.390E+00	1.390E+00	9.55
	295.22	2088	19.20	2.847E+00	8.404E-01	8.405E-01	7.51
	351.92	3833	37.20	2.553E+00	8.877E-01	8.877E-01	6.67
	609.32	2930	46.30*	1.757E+00	7.922E-01	7.922E-01	6.56
	1120.28	650	15.10	1.051E+00	9.008E-01	9.009E-01	10.40
	1238.11	237	5.94	9.619E-01	9.114E-01	9.115E-01	21.83
	1764.49	541	15.80	7.427E-01	1.013E+00	1.014E+00	8.56
AC-228	209.28	474	4.40	3.462E+00	6.840E-01	6.840E-01	16.04
	270.23	521	3.60	3.003E+00	1.059E+00	1.059E+00	18.24
	338.32	1119	11.40	2.618E+00	8.249E-01	8.249E-01	9.32
	911.07	1260	27.70*	1.264E+00	7.919E-01	7.919E-01	8.75
	969.11	816	16.60	1.197E+00	9.034E-01	9.034E-01	11.62
RA-228DA	209.28	474	4.40	3.462E+00	6.840E-01	6.922E-01	16.04
	338.32	1119	11.40	2.618E+00	8.249E-01	8.348E-01	9.32
	911.07	1260	27.70*	1.264E+00	7.919E-01	8.014E-01	8.75
	964.60	------	5.20	1.201E+00	------ Line Not Found		------

Nuclide Type: NP

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected PCI/GRAM	Decay Corr PCI/GRAM	1-Sigma %Error
	969.11	816	16.60	1.197E+00	9.034E-01	9.142E-01	11.62
TH-228DA	238.63	5314	44.60	3.227E+00	8.123E-01	8.419E-01	6.49
	240.98	1516	3.95	3.203E+00	2.636E+00	2.732E+00	9.55
	583.14	1874	30.25*	1.816E+00	7.507E-01	7.781E-01	7.08
	860.37	272	4.48	1.328E+00	1.006E+00	1.043E+00	16.86
TH-232DA	238.63	5314	44.60	3.227E+00	8.123E-01	8.123E-01	6.49
	338.32	1119	12.40*	2.618E+00	7.583E-01	7.583E-01	9.32
	583.14	1874	30.25	1.816E+00	7.507E-01	7.507E-01	7.08
	911.07	1260	27.70	1.264E+00	7.919E-01	7.919E-01	8.75
	964.60	------	5.20	1.201E+00	------ Line Not Found		------
	969.11	816	16.60	1.197E+00	9.034E-01	9.034E-01	11.62
U-234DA	241.98	1516	7.49	3.203E+00	1.390E+00	1.390E+00	9.55
	295.22	2088	19.20*	2.847E+00	8.404E-01	8.404E-01	7.51
	351.92	3833	37.20	2.553E+00	8.877E-01	8.877E-01	6.67
	609.31	2930	46.30	1.757E+00	7.922E-01	7.922E-01	6.56
U-238DA	241.98	1516	7.49	3.203E+00	1.390E+00	1.390E+00	9.55
	295.22	2088	19.20	2.847E+00	8.404E-01	8.404E-01	7.51
	351.92	3833	37.20*	2.553E+00	8.877E-01	8.877E-01	6.67
	609.31	2930	46.30	1.757E+00	7.922E-01	7.922E-01	6.56

Flag: "*" = Keyline

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
0	72.93	131	1535	0.73	323.52	320	8	3.64E-03	56.2	1.90E+00	
0	74.97	990	1862	0.68	332.47	328	9	2.75E-02	9.0	2.05E+00	
0	77.22	1694	1896	0.70	342.31	338	10	4.71E-02	5.4	2.21E+00	
0	84.48	495	2403	1.35	374.05	367	15	1.38E-02	22.9	2.68E+00	
0	87.27	851	1630	0.82	386.27	382	10	2.36E-02	9.8	2.84E+00	T
0	89.94	489	1403	0.72	397.94	394	9	1.36E-02	14.5	2.99E+00	
0	92.90	832	1983	1.39	410.88	405	13	2.31E-02	11.5	3.13E+00	T
0	129.20	420	1591	0.90	569.65	564	12	1.17E-02	19.6	3.91E+00	
0	327.93	344	759	0.91	1438.80	1432	14	9.56E-03	17.8	2.67E+00	T
0	462.81	323	533	1.05	2028.56	2021	16	8.98E-03	17.0	2.14E+00	T
0	727.03	377	469	1.50	3183.54	3173	20	1.05E-02	15.0	1.53E+00	T
0	794.73	217	414	1.66	3479.45	3469	21	6.02E-03	24.6	1.42E+00	T
0	1377.16	163	182	1.40	6023.99	6011	21	4.53E-03	19.2	8.79E-01	
0	1728.76	139	44	2.11	7559.20	7546	27	3.87E-03	13.1	7.50E-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	3.818E-02	18.68	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	1.833E-01	10.40	
		% Abundances Found =		50.00			
TC-95M	61.00D	0.59	204.12*	66.20	--- Not Found ---		Abun.
			582.07	29.30	1.168E+00	7.08	
			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	1.236E+01	6.56	
		% Abundances Found =		5.92			
RU-106DA	368.20D	0.10	511.85	20.60	3.471E-01	18.68	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	3.295E-01	17.98	
			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	3.406E-01	19.62	
			302.84	17.80	--- Not Found ---		
			356.00*	62.05	--- Not Found ---		
			383.85	8.70	--- Not Found ---		
		% Abundances Found =		5.37			
CS-134	2.06Y	0.05	569.31	15.43	--- Not Found ---		Abun.
			604.70	97.60	--- Not Found ---		
			795.84*	85.40	4.059E-02	25.46	
			801.93	8.73	--- Not Found ---		
		% Abundances Found =		41.22			
LA-140	40.22H	21.52	328.77	20.50	4.169E+05	18.89	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	2.158E-01	11.93	
			105.31*	20.70	--- Not Found ---		
		% Abundances Found =		42.47			

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	2.041E+01	20.48	
			452.83	0.31	--- Not Found ---		
			727.33*	6.58	8.235E-01	16.42	
			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	2.813E-01	18.24	
			323.87	3.88	--- Not Found ---		
		% Abundances Found =		58.98			
TH-234DA	4.47E+09Y	0.00	766.41	0.21	3.016E+01	15.33	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	9.874E-02	11.21	
			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	1.082E+00	13.31	
		% Abundances Found =		58.74			

Flag: "*" = Keyline

VMS Nuclide Identification Report V3.0 Generated 19-SEP-2007 19:36:43

Configuration : $DISK1:[GER11.SAMPLE]J5K2L1AA_190970556.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 : 14-AUG-2007 09:15:00 Acquisition date : 19-SEP-2007 05:56:44
Sample ID : J5K2L1AA Sample quantity : 341.30 GRAMS
Sample type : Sample geometry : S200
Elapsed live time: 0 10:00:00.00 Elapsed real time: 0 10:00:31.77 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 ----

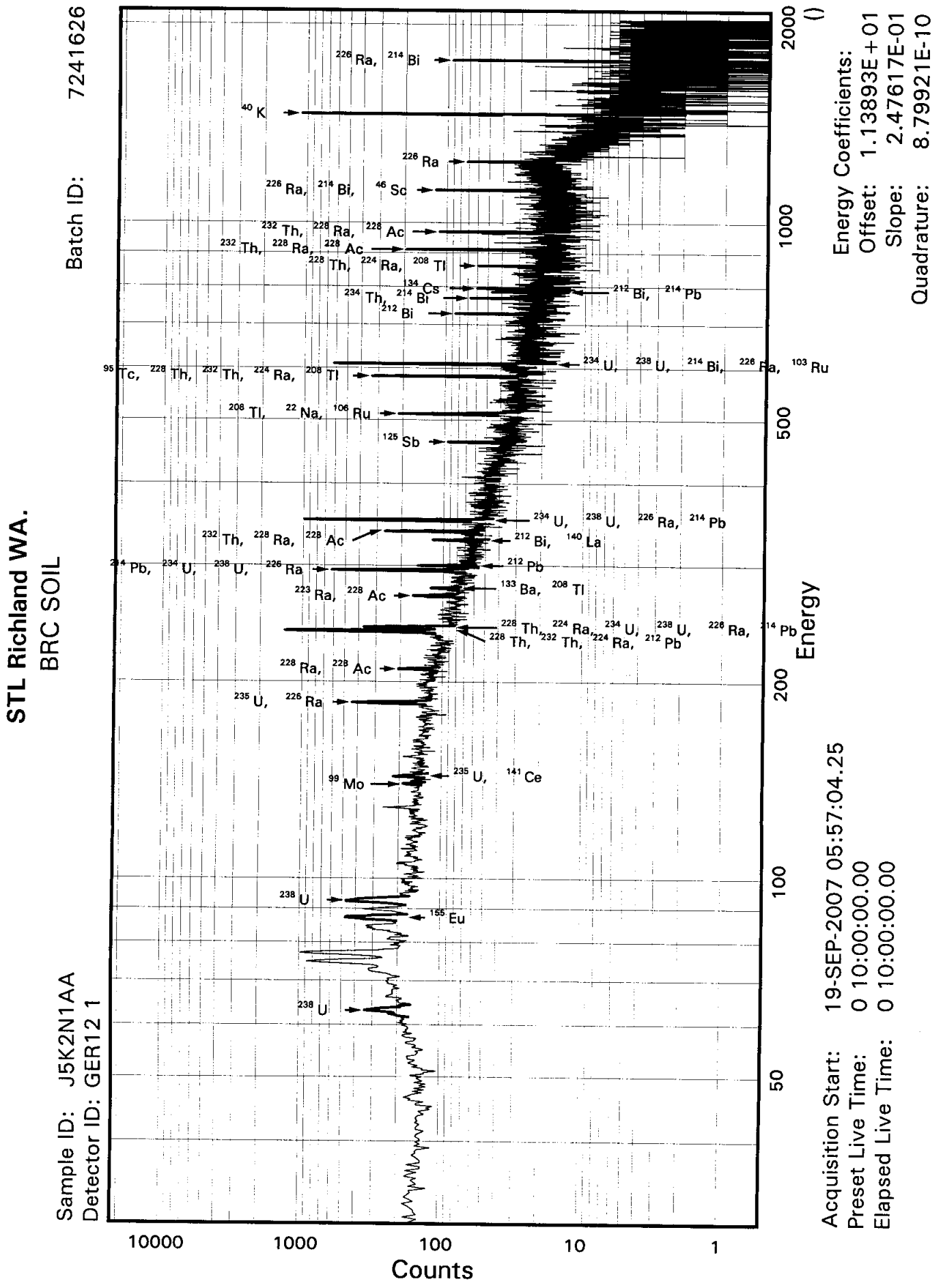
Nuclide	Activity (PCI/GRAM)	Act error	MDA (PCI/GRAM)	MDA error	Act/MDA
K-40	2.639E+01	1.705E+00	1.436E-01	5.672E-03	183.768
TL-208	2.697E-01	1.910E-02	1.422E-02	4.709E-04	18.961
PB-212	8.123E-01	5.270E-02	2.393E-02	8.926E-04	33.945
BI-214	7.922E-01	5.200E-02	2.750E-02	9.127E-04	28.807
PB-214	8.877E-01	5.919E-02	2.916E-02	1.054E-03	30.445
RA-224DA	8.419E-01	5.462E-02	2.480E-02	9.252E-04	33.945
RA-226DA	7.922E-01	5.200E-02	2.750E-02	9.127E-04	28.807
AC-228	7.919E-01	6.929E-02	5.713E-02	2.956E-03	13.862
RA-228DA	8.014E-01	7.012E-02	5.781E-02	2.992E-03	13.862
TH-228DA	7.781E-01	5.511E-02	4.104E-02	1.358E-03	18.961
TH-232DA	7.583E-01	7.067E-02	9.102E-02	3.375E-03	8.332
U-234DA	8.404E-01	6.312E-02	5.405E-02	2.062E-03	15.548
U-238DA	8.877E-01	5.919E-02	2.916E-02	1.054E-03	30.445

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

Nuclide	Key-Line Activity (PCI/GRAM)	K.L. Ided	Act error	MDA (PCI/GRAM)	MDA error	Act/MDA
BE-7	-7.387E-02		5.214E-02	1.697E-01	5.585E-03	-0.435
NA-22	2.824E-03		6.400E-03	2.188E-02	8.361E-04	0.129
SC-46	1.833E-01	+	1.906E-02	4.320E-02	1.680E-03	4.243
CR-51	-7.550E-02		7.955E-02	2.611E-01	9.971E-03	-0.289
MN-54	2.112E-03		5.118E-03	1.735E-02	8.099E-04	0.122
CO-57	-1.042E-02		2.887E-02	9.837E-02	3.610E-03	-0.106
CO-58	-9.526E-04		5.789E-03	1.956E-02	8.735E-04	-0.049
FE-59	-1.230E-02		1.752E-02	5.813E-02	2.358E-03	-0.212
CO-60	1.204E-02		5.200E-03	1.844E-02	7.455E-04	0.653
ZN-65	1.740E-02		1.443E-02	4.204E-02	1.651E-03	0.414
SE-75	-2.329E-03		6.240E-03	2.103E-02	7.951E-04	-0.111
SR-85	8.204E-03		6.525E-03	1.882E-02	6.138E-04	0.436
Y-88	-1.750E-03		4.268E-03	1.484E-02	4.742E-04	-0.118
NB-94	-4.557E-03		4.296E-03	1.412E-02	7.037E-04	-0.323
NB-95	3.638E-02		1.114E-02	3.371E-02	1.381E-03	1.079

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

Nuclide	Key-Line Activity (PCI/GRAM)	K.L. Ided	Act error	MDA (PCI/GRAM)	MDA error	Act/MDA
TC-95M	1.456E-03		6.953E-03	2.303E-02	8.379E-04	0.063
ZR-95	4.719E-03		1.120E-02	3.839E-02	1.546E-03	0.123
ZRNB-95	5.473E-02		1.615E-02	4.893E-02	2.005E-03	1.119
RH-101	8.703E-03		4.917E-03	1.529E-02	5.537E-04	0.569
RH-102M	3.808E-04		3.536E-03	1.185E-02	3.902E-04	0.032
RU-103	2.702E-03		7.079E-03	2.373E-02	7.776E-04	0.114
RU-106DA	-6.039E-02		4.115E-02	1.347E-01	4.474E-03	-0.448
AG-108M	1.834E-03		3.553E-03	1.207E-02	3.986E-04	0.152
AG-110M	-2.113E-03		6.678E-03	2.229E-02	1.138E-03	-0.095
SN-113DA	-5.702E-03		6.308E-03	2.115E-02	6.943E-04	-0.270
SB-124	-2.210E-03		6.085E-03	2.042E-02	6.773E-04	-0.108
SB-125	1.598E-02		1.153E-02	3.953E-02	1.305E-03	0.404
SN-126DA	7.813E-03		3.993E-03	1.371E-02	4.594E-04	0.570
I-131	-7.610E-02		8.602E-02	2.906E-01	1.022E-02	-0.262
BA-133	-2.062E-03		5.840E-03	1.705E-02	6.109E-04	-0.121
CS-134	4.059E-02	+	1.033E-02	2.035E-02	8.832E-04	1.995
CS-137DA	6.440E-03		4.753E-03	1.621E-02	5.381E-04	0.397
LA-138	-6.303E-03		6.724E-03	2.274E-02	9.039E-04	-0.277
CE-139	6.157E-03		4.302E-03	1.462E-02	5.192E-04	0.421
BA-140	1.462E-01		9.791E-02	3.408E-01	1.119E-02	0.429
BALA-140	-1.098E-01		5.860E-02	1.888E-01	7.094E-03	-0.582
CE-141	-5.051E-03		1.282E-02	4.342E-02	1.565E-03	-0.116
CE-144	-2.314E-02		2.768E-02	9.401E-02	3.477E-03	-0.246
CEPR-144	-4.573E-02		5.537E-02	1.881E-01	6.955E-03	-0.243
PM-144	1.278E-02		4.110E-03	1.432E-02	4.754E-04	0.892
PM-146	1.238E-02		5.146E-03	1.773E-02	5.852E-04	0.698
EU-152	-2.135E-03		1.217E-02	4.015E-02	1.473E-03	-0.053
EU-154	3.411E-03		1.770E-02	6.024E-02	2.302E-03	0.057
EU-155	2.264E-02		1.530E-02	5.114E-02	2.020E-03	0.443
HF-181	7.022E-03		7.352E-03	2.488E-02	8.182E-04	0.282
BI-207	6.735E-03		3.685E-03	1.280E-02	4.230E-04	0.526
BI-210M	7.519E-04		7.066E-03	2.060E-02	7.796E-04	0.036
BI-212	8.235E-01	+	1.352E-01	2.896E-01	1.283E-02	2.844
RA-223	2.813E-01	+	5.129E-02	9.254E-02	3.506E-03	3.040
AC-227DA	1.408E-02		3.316E-02	9.817E-02	3.656E-03	0.143
TH-234DA	1.541E+00		7.933E-01	2.763E+00	1.304E-01	0.558
U-235HP	3.771E-02		2.761E-02	9.477E-02	3.426E-03	0.398
NP-237DA	-5.709E-03		8.516E-03	2.816E-02	1.076E-03	-0.203
U-238DHP	4.746E-01		2.367E-01	8.230E-01	3.412E-02	0.577
AM-241HP	-6.158E-02		3.319E-02	1.037E-01	4.120E-03	-0.594


STL Richland WA.
BRC SOIL
Batch ID: 7241626
Sample ID: J5K2N1AA
Detector ID: GER12 1
Energy Coefficients:
Offset: 1.13893E+01
Slope: 2.47617E-01
Quadrature: 8.79921E-10
Acquisition Start: 19-SEP-2007 05:57:04.25
Preset Live Time: 0 10:00:00.00
Elapsed Live Time: 0 10:00:00.00
Counts
Energy
10000
1000
100
10
1
2000
1000
500
200
100
50
226 Ra, 214 Bi
40 K
226 Ra
226 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
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
212 Bi, 140 La
214 Pb, 234 U, 238 U, 226 Ra
212 Pb
223 Ra, 228 Ac
133 Ba, 208 Tl
228 Th, 224 Ra, 234 U, 238 U, 226 Ra, 214 Pb
228 Th, 232 Th, 224 Ra, 212 Pb
228 Ra, 228 Ac
235 U, 226 Ra
99 Mo
235 U, 141 Ce
238 U
155 Eu
238 U

SAMPLE IDENTIFICATION: J5K2N1AA

CONFIGURATION ID: GER12:J5K2N1AA_190970557
TITLE : BRC SOIL
SAMPLE ID : J5K2N1AA

REPORT DATE: 19-SEP-07
ACQUIRE DATE: 19-SEP-07 05:57:04
ELAPSED LIVE TIME: 36000.0 Sec
PRESET LIVE TIME: 0 10:00:00

SAMPLE DATE: 14-AUG-2007 09:15:00.00
CALIB DATE: 19-SEP-2007 05:33:07.37
ELAPSED LIVE TIME: 0 10:00:00
ELAPSED REAL TIME: 0 10:00:16

SAMPLE QUANTITY: 3.4030E+02
SAMPLE GEOMETRY: S200

UNITS: GRAMS
SAMPLE TYPE:

ENERGY OFFSET: 1.1389E+01 keV
ENERGY SLOPE: 2.4762E-01 keV/C
ENERGY Q COEFF: 8.7992E-10 keV/C^^2
PEAK SENSITIVITY: 5.000

FWHM OFFSET: 3.9328E-01 keV
FWHM SLOPE: 3.7673E-02 sqr keV
ITERATIONS: 10
GAUSSIAN SENSITIVITY: 50.00 %

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 19-SEP-2007 19:37:36

Configuration : $DISK1:[GER12.SAMPLE]J5K2N1AA_190970557.CNF;1
Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6
Sample title : BRC SOIL
Sample date : 14-AUG-2007 09:15:00 Acquisition date : 19-SEP-2007 05:57:04
Sample ID : J5K2N1AA Sample quantity : 340.30 GRAMS
Sample type : Sample geometry : S200
Elapsed live time: 0 10:00:00.00 Elapsed real time: 0 10:00:16.59 0.0%
Start energy : 11.64 End energy : 2039.93
Sensitivity : 5.00 Gaussian : 50.00
Critical level : No

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	63.10	631	2075	0.77	208.84	203	12	1.75E-02	15.0	
2	3	74.82*	1787	2550	0.85	256.17	251	20	4.96E-02	6.0	1.60E+00
3	3	77.06	2851	2173	0.86	265.21	251	20	7.92E-02	3.7	
4	0	84.33*	462	2859	1.55	294.58	287	14	1.28E-02	26.1	
5	0	87.21*	1092	1959	0.99	306.21	301	10	3.03E-02	8.5	
6	0	89.86	625	1827	0.88	316.92	312	10	1.74E-02	13.4	
7	0	92.70	1583	2308	1.32	328.39	322	13	4.40E-02	6.7	
8	0	129.08	288	1363	0.62	475.29	471	9	8.01E-03	23.8	
9	0	139.78*	7	1167	0.74	518.52	516	8	1.95E-04	888.5	
10	0	144.02	308	1525	0.85	535.62	530	11	8.55E-03	25.3	
11	0	185.98	1390	1823	1.11	705.06	699	14	3.86E-02	7.1	
12	0	209.14	517	1248	1.01	798.60	793	12	1.43E-02	14.4	
13	4	238.66	5178	1307	1.01	917.82	909	29	1.44E-01	2.0	3.56E+00
14	4	241.77	1626	1371	1.43	930.38	909	29	4.52E-02	5.8	
15	0	270.01	533	1200	1.62	1044.43	1038	15	1.48E-02	14.8	
16	0	277.30	164	873	1.13	1073.87	1069	11	4.54E-03	35.8	
17	0	295.18*	2560	1349	1.09	1146.10	1136	19	7.11E-02	4.1	
18	0	300.11	343	835	0.95	1165.97	1158	13	9.52E-03	18.2	
19	0	327.85	286	795	0.91	1278.01	1271	14	7.95E-03	21.7	
20	0	338.30	1001	866	1.13	1320.21	1312	15	2.78E-02	7.1	
21	0	351.91*	4453	1061	1.05	1375.17	1366	19	1.24E-01	2.4	
22	0	463.03	285	665	1.20	1823.95	1815	18	7.92E-03	22.1	
23	0	511.00*	452	922	1.96	2017.67	2006	26	1.26E-02	22.5	
24	0	583.19	1718	496	1.29	2309.20	2301	16	4.77E-02	3.8	
25	0	609.27*	3473	710	1.33	2414.52	2401	23	9.65E-02	2.8	
26	0	727.37	346	490	1.69	2891.44	2884	21	9.62E-03	17.2	
27	0	768.31	283	444	1.43	3056.77	3046	20	7.85E-03	19.2	
28	0	785.75	229	265	2.37	3127.20	3119	18	6.36E-03	18.0	
29	0	794.94	267	402	1.27	3164.31	3152	23	7.41E-03	20.5	
30	0	860.48	233	288	1.53	3429.01	3421	16	6.47E-03	15.5	
31	0	911.08	1210	490	1.50	3633.35	3620	26	3.36E-02	5.1	
32	0	933.96	194	325	1.19	3725.75	3715	22	5.38E-03	21.4	
33	0	968.28	711	816	1.57	3864.34	3846	32	1.98E-02	10.8	
34	0	1120.11	751	589	1.52	4477.50	4462	31	2.09E-02	8.8	
35	0	1237.96	378	447	1.48	4953.41	4942	23	1.05E-02	13.3	
36	0	1377.89	128	169	1.63	5518.49	5509	20	3.55E-03	23.0	
37	0	1460.60*	8495	636	1.85	5852.50	5836	34	2.36E-01	1.4	
38	0	1588.04	84	114	0.74	6367.14	6356	22	2.33E-03	29.6	
39	0	1729.33	161	77	1.63	6937.72	6923	29	4.47E-03	15.4	
40	0	1764.15	674	123	1.86	7078.33	7062	29	1.87E-02	5.5	

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

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

Configuration : $DISK1:[GER12.SAMPLE]J5K2N1AA_190970557.CNF;1
Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.3
Sample title : BRC SOIL
Sample date : 14-AUG-2007 09:15:00 Acquisition date : 19-SEP-2007 05:57:04
Sample ID : J5K2N1AA Sample quantity : 340.30 GRAMS
Sample type : Sample geometry : S200
Elapsed live time: 0 10:00:00.00 Elapsed real time: 0 10:00:16.59 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	8495	10.67*	8.870E-01	1.980E+01	1.980E+01	10.09
TL-208	277.35	164	6.80	3.060E+00	1.734E-01	1.734E-01	36.43
	510.84	452	21.60	2.026E+00	2.280E-01	2.280E-01	23.26
	583.14	1718	84.20*	1.844E+00	2.441E-01	2.441E-01	7.09
	860.37	233	12.46	1.377E+00	2.994E-01	2.994E-01	17.43
PB-212	238.63	5178	44.60*	3.357E+00	7.629E-01	7.629E-01	7.00
	300.09	343	3.41	2.908E+00	7.626E-01	7.626E-01	19.31
BI-214	609.31	3473	46.30*	1.787E+00	9.263E-01	9.263E-01	6.65
	768.36	283	5.04	1.504E+00	8.228E-01	8.228E-01	20.46
	1120.29	751	15.10	1.112E+00	9.870E-01	9.870E-01	11.26
	1764.49	674	15.80	7.551E-01	1.247E+00	1.247E+00	8.88
PB-214	241.98	1626	7.49	3.331E+00	1.437E+00	1.437E+00	8.88
	295.21	2560	19.20	2.940E+00	1.001E+00	1.001E+00	7.66
	351.92	4453	37.20*	2.617E+00	1.009E+00	1.009E+00	6.76
	785.91	229	1.10	1.478E+00	3.105E+00	3.105E+00	19.34
RA-224DA	238.63	5178	44.60*	3.357E+00	7.629E-01	7.907E-01	7.00
	240.98	1626	3.95	3.331E+00	2.726E+00	2.825E+00	8.88
	583.14	1718	30.25	1.844E+00	6.795E-01	7.043E-01	7.09
	860.37	233	4.48	1.377E+00	8.327E-01	8.630E-01	17.43
RA-226DA	186.21	1390	3.50	3.841E+00	2.282E+00	2.282E+00	9.82
	241.98	1626	7.49	3.331E+00	1.437E+00	1.438E+00	8.88
	295.22	2560	19.20	2.940E+00	1.001E+00	1.001E+00	7.66
	351.92	4453	37.20	2.617E+00	1.009E+00	1.009E+00	6.76
	609.32	3473	46.30*	1.787E+00	9.263E-01	9.263E-01	6.65
	1120.28	751	15.10	1.112E+00	9.870E-01	9.870E-01	11.26
	1238.11	378	5.94	1.022E+00	1.375E+00	1.375E+00	15.60
	1764.49	674	15.80	7.551E-01	1.247E+00	1.247E+00	8.88
AC-228	209.28	517	4.40	3.620E+00	7.155E-01	7.155E-01	15.88
	270.23	533	3.60	3.112E+00	1.050E+00	1.050E+00	16.19
	338.32	1001	11.40	2.687E+00	7.209E-01	7.209E-01	9.55
	911.07	1210	27.70*	1.316E+00	7.323E-01	7.323E-01	9.89
	969.11	711	16.60	1.254E+00	7.539E-01	7.539E-01	13.50
RA-228DA	209.28	517	4.40	3.620E+00	7.155E-01	7.241E-01	15.88
	338.32	1001	11.40	2.687E+00	7.209E-01	7.295E-01	9.55
	911.07	1210	27.70*	1.316E+00	7.323E-01	7.410E-01	9.89
	964.60	------	5.20	1.257E+00	------ Line Not Found		------

Nuclide Type: NP

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected PCI/GRAM	Decay Corr PCI/GRAM	1-Sigma %Error
	969.11	711	16.60	1.254E+00	7.539E-01	7.629E-01	13.50
TH-228DA	238.63	5178	44.60	3.357E+00	7.629E-01	7.907E-01	7.00
	240.98	1626	3.95	3.331E+00	2.726E+00	2.825E+00	8.88
	583.14	1718	30.25*	1.844E+00	6.795E-01	7.043E-01	7.09
	860.37	233	4.48	1.377E+00	8.327E-01	8.630E-01	17.43
TH-232DA	238.63	5178	44.60	3.357E+00	7.629E-01	7.629E-01	7.00
	338.32	1001	12.40*	2.687E+00	6.627E-01	6.627E-01	9.55
	583.14	1718	30.25	1.844E+00	6.795E-01	6.795E-01	7.09
	911.07	1210	27.70	1.316E+00	7.323E-01	7.323E-01	9.89
	964.60	------	5.20	1.257E+00	------ Line Not Found		------
	969.11	711	16.60	1.254E+00	7.539E-01	7.539E-01	13.50
U-234DA	241.98	1626	7.49	3.331E+00	1.437E+00	1.437E+00	8.88
	295.22	2560	19.20*	2.940E+00	1.001E+00	1.001E+00	7.66
	351.92	4453	37.20	2.617E+00	1.009E+00	1.009E+00	6.76
	609.31	3473	46.30	1.787E+00	9.263E-01	9.263E-01	6.65
U-235HP	143.76	308	10.50*	4.201E+00	1.540E-01	1.540E-01	26.13
	185.71	1390	54.00	3.841E+00	1.479E-01	1.479E-01	9.82
	205.31	------	4.70	3.656E+00	------ Line Not Found		------
U-238DA	241.98	1626	7.49	3.331E+00	1.437E+00	1.437E+00	8.88
	295.22	2560	19.20	2.940E+00	1.001E+00	1.001E+00	7.66
	351.92	4453	37.20*	2.617E+00	1.009E+00	1.009E+00	6.76
	609.31	3473	46.30	1.787E+00	9.263E-01	9.263E-01	6.65
U-238DHP	63.28	631	3.80*	2.161E+00	1.696E+00	1.696E+00	16.24
	92.59	1583	5.41	3.840E+00	1.681E+00	1.681E+00	9.72

Nuclide Type: FP

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected PCI/GRAM	Decay Corr PCI/GRAM	1-Sigma %Error
CE-141	145.44	308	48.40*	4.201E+00	3.341E-02	7.210E-02	26.13

Flag: "*" = Keyline

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
3	74.82	1787	2550	0.85	256.17	251	20	4.96E-02	6.0	3.02E+00	
3	77.06	2851	2173	0.86	265.21	251	20	7.92E-02	3.7	3.15E+00	
0	84.33	462	2859	1.55	294.58	287	14	1.28E-02	26.1	3.53E+00	
0	87.21	1092	1959	0.99	306.21	301	10	3.03E-02	8.5	3.65E+00	T
0	89.86	625	1827	0.88	316.92	312	10	1.74E-02	13.4	3.75E+00	
0	129.08	288	1363	0.62	475.29	471	9	8.01E-03	23.8	4.26E+00	
0	139.78	7	1167	0.74	518.52	516	8	1.95E-04	****	4.22E+00	T
0	327.85	286	795	0.91	1278.01	1271	14	7.95E-03	21.7	2.74E+00	T
0	463.03	285	665	1.20	1823.95	1815	18	7.92E-03	22.1	2.17E+00	T
0	727.37	346	490	1.69	2891.44	2884	21	9.62E-03	17.2	1.57E+00	T
0	794.94	267	402	1.27	3164.31	3152	23	7.41E-03	20.5	1.46E+00	T
0	933.96	194	325	1.19	3725.75	3715	22	5.38E-03	21.4	1.29E+00	
0	1377.89	128	169	1.63	5518.49	5509	20	3.55E-03	23.0	9.33E-01	
0	1588.04	84	114	0.74	6367.14	6356	22	2.33E-03	29.6	8.26E-01	
0	1729.33	161	77	1.63	6937.72	6923	29	4.47E-03	15.4	7.68E-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	2.814E-02	23.26	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	2.008E-01	11.26	
		% Abundances Found =		50.00			
TC-95M	61.00D	0.59	204.12*	66.20	--- Not Found ---		Abun.
			582.07	29.30	1.057E+00	7.09	
			835.13	26.10	--- Not Found ---		
		% Abundances Found =		24.10			
MO-99	66.02H	13.11	140.50*	90.70	3.575E+00	888.50	Decay,Abun.
			181.07	6.20	--- Not Found ---		
			739.58	12.80	--- Not Found ---		
		% Abundances Found =		82.68	(Abn. Limit = 94.00%)		
RU-103	39.35D	0.92	497.08*	89.00	--- Not Found ---		Abun.
			610.33	5.60	1.446E+01	6.65	
		% Abundances Found =		5.92			
RU-106DA	368.20D	0.10	511.85	20.60	2.559E-01	23.26	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	2.869E-01	22.93	
			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	1.720E-01	36.43	
			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	4.863E-02	21.73	
			801.93	8.73	--- Not Found ---		
		% Abundances Found =		41.22			
LA-140	40.22H	21.52	328.77	20.50	3.383E+05	22.61	Decay,Abun.
			487.03	45.50	--- Not Found ---		
			815.85	23.50	--- Not Found ---		
			1596.49*	95.49	--- Not Found ---		
		% Abundances Found =		11.08			

Nuclide	Half-life	Half-Life Ratio	Energy	%Abund	Activity (PCI/GRAM)	1-Sigma %Error	Rejected by
EU-155	4.96Y	0.02	42.90	21.16	--- Not Found ---		Abun.
			86.54	30.90	2.168E-01	11.13	
			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	1.656E+01	23.96	
			452.83	0.31	--- Not Found ---		
			727.33*	6.58	7.406E-01	18.62	
			785.37	1.10	3.105E+00	19.54	
			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	2.787E-01	16.19	
			323.87	3.88	--- Not Found ---		
		% Abundances Found =		58.98			
TH-234DA	4.47E+09Y	0.00	766.41	0.21	1.975E+01	20.46	Abun.
			1001.03*	0.65	--- Not Found ---		
		% Abundances Found =		24.42			

Flag: "*" = Keyline

VMS Nuclide Identification Report V3.0 Generated 19-SEP-2007 19:37:39

Configuration : $DISK1:[GER12.SAMPLE]J5K2N1AA_190970557.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 : 14-AUG-2007 09:15:00
Sample ID : J5K2N1AA
Sample type :
Elapsed live time: 0 10:00:00.00
Peak Width (FWHM): 3.00
Energy tolerance : 2.00
Errors propagated: Yes
Efficiency type : Empirical
Abundance limit : 80.00

Acquisition date : 19-SEP-2007 05:57:04
Sample quantity : 340.30 GRAMS
Sample geometry : S200
Elapsed real time: 0 10:00:16.59 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 ----

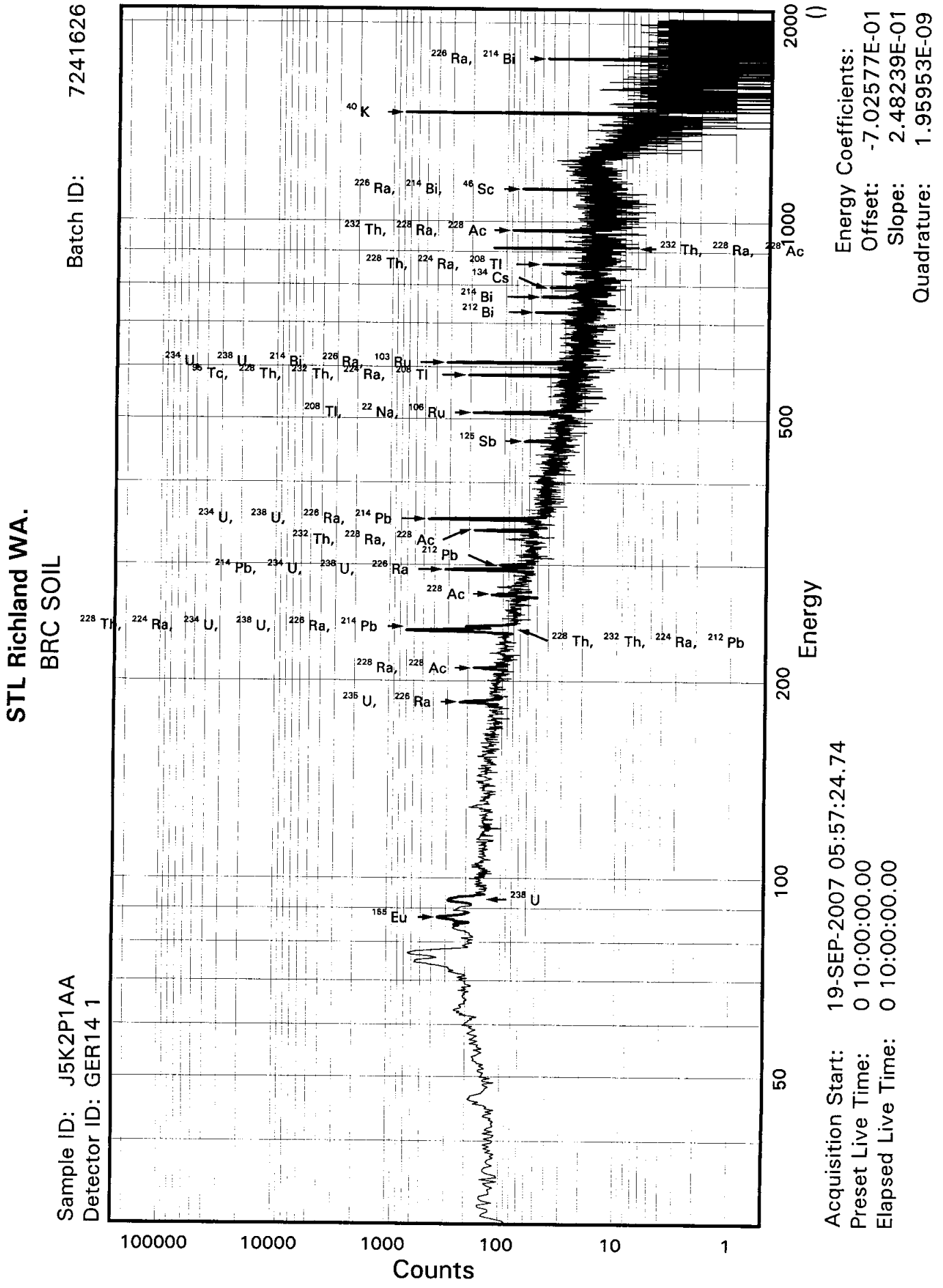
Nuclide	Activity (PCI/GRAM)	Act error	MDA (PCI/GRAM)	MDA error	Act/MDA
K-40	1.980E+01	1.998E+00	1.872E-01	1.621E-02	105.749
CE-141	7.210E-02	1.884E-02	4.219E-02	1.792E-03	1.709
TL-208	2.441E-01	1.731E-02	1.538E-02	5.113E-04	15.875
PB-212	7.629E-01	5.344E-02	2.418E-02	1.088E-03	31.551
BI-214	9.263E-01	6.162E-02	2.766E-02	9.379E-04	33.486
PB-214	1.009E+00	6.817E-02	2.918E-02	1.127E-03	34.585
RA-224DA	7.907E-01	5.539E-02	2.506E-02	1.127E-03	31.551
RA-226DA	9.263E-01	6.163E-02	2.766E-02	9.379E-04	33.485
AC-228	7.323E-01	7.239E-02	5.413E-02	3.697E-03	13.528
RA-228DA	7.410E-01	7.326E-02	5.478E-02	3.741E-03	13.528
TH-228DA	7.043E-01	4.994E-02	4.437E-02	1.475E-03	15.875
TH-232DA	6.627E-01	6.327E-02	8.848E-02	3.437E-03	7.490
U-234DA	1.001E+00	7.663E-02	5.561E-02	2.301E-03	17.993
U-235HP	1.540E-01	4.024E-02	9.216E-02	3.867E-03	1.671
U-238DA	1.009E+00	6.817E-02	2.918E-02	1.127E-03	34.585
U-238DHP	1.696E+00	2.754E-01	5.007E-01	1.917E-02	3.386

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

Nuclide	Key-Line Activity (PCI/GRAM)	K.L. Ided	Act error	MDA (PCI/GRAM)	MDA error	Act/MDA
BE-7	-3.815E-02		5.083E-02	1.670E-01	5.641E-03	-0.228
NA-22	-3.911E-03		5.602E-03	1.894E-02	1.448E-03	-0.206
SC-46	2.008E-01	+	2.261E-02	4.236E-02	2.075E-03	4.741
CR-51	-1.289E-02		8.021E-02	2.636E-01	1.028E-02	-0.049
MN-54	4.618E-03		4.884E-03	1.675E-02	9.887E-04	0.276
CO-57	4.791E-03		2.952E-02	9.843E-02	3.916E-03	0.049
CO-58	-1.135E-03		5.780E-03	1.959E-02	1.085E-03	-0.058
FE-59	7.827E-03		1.588E-02	5.438E-02	2.795E-03	0.144
CO-60	-4.298E-03		4.773E-03	1.601E-02	1.563E-03	-0.269
ZN-65	2.464E-02		1.407E-02	4.171E-02	2.067E-03	0.591
SE-75	4.324E-03		6.400E-03	2.149E-02	9.378E-04	0.201
SR-85	4.133E-02		6.556E-03	2.018E-02	6.329E-04	2.048

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

Nuclide	Key-Line Activity (PCI/GRAM)	K.L. Ided	Act error	MDA (PCI/GRAM)	MDA error	Act/MDA
Y-88	-6.290E-03		4.641E-03	1.530E-02	5.686E-04	-0.411
NB-94	-2.594E-03		4.151E-03	1.385E-02	8.972E-04	-0.187
NB-95	4.517E-02		1.027E-02	3.145E-02	1.536E-03	1.436
TC-95M	2.838E-03		7.025E-03	2.390E-02	1.101E-03	0.119
ZR-95	1.299E-02		1.083E-02	3.761E-02	1.789E-03	0.345
ZRNB-95	6.618E-02		1.487E-02	4.554E-02	2.224E-03	1.453
RH-101	2.748E-03		4.781E-03	1.532E-02	7.081E-04	0.179
RH-102M	2.491E-03		3.459E-03	1.166E-02	3.955E-04	0.214
RU-103	6.828E-05		7.052E-03	2.342E-02	7.622E-04	0.003
RU-106DA	3.742E-02		3.853E-02	1.321E-01	4.517E-03	0.283
AG-108M	-3.435E-03		3.602E-03	1.188E-02	4.285E-04	-0.289
AG-110M	3.843E-03		6.477E-03	2.209E-02	1.479E-03	0.174
SN-113DA	1.632E-03		6.207E-03	2.102E-02	7.913E-04	0.078
SB-124	-5.102E-03		6.581E-03	2.023E-02	6.827E-04	-0.252
SB-125	2.781E-02		1.186E-02	4.067E-02	1.477E-03	0.684
SN-126DA	3.769E-03		3.995E-03	1.357E-02	4.843E-04	0.278
I-131	-1.367E-01		8.587E-02	2.839E-01	1.090E-02	-0.482
BA-133	9.729E-03		5.783E-03	1.728E-02	6.662E-04	0.563
CS-134	4.863E-02	+	1.057E-02	2.045E-02	1.087E-03	2.378
CS-137DA	-6.135E-03		4.522E-03	1.476E-02	5.184E-04	-0.416
LA-138	2.800E-03		6.505E-03	2.261E-02	2.011E-03	0.124
CE-139	-1.344E-03		4.468E-03	1.464E-02	6.859E-04	-0.092
BA-140	-9.008E-02		9.528E-02	3.198E-01	1.024E-02	-0.282
BALA-140	-8.060E-02		5.847E-02	1.923E-01	1.377E-02	-0.419
CE-144	-1.308E-02		2.862E-02	9.500E-02	3.700E-03	-0.138
CEPR-144	-2.586E-02		5.724E-02	1.900E-01	7.401E-03	-0.136
PM-144	-1.894E-03		3.837E-03	1.284E-02	4.381E-04	-0.147
PM-146	2.381E-03		5.301E-03	1.781E-02	6.250E-04	0.134
EU-152	-2.687E-03		1.187E-02	4.032E-02	1.563E-03	-0.067
EU-154	-7.428E-03		1.541E-02	5.239E-02	4.002E-03	-0.142
EU-155	5.604E-02		1.472E-02	4.983E-02	2.094E-03	1.125
HF-181	3.694E-03		7.458E-03	2.498E-02	8.369E-04	0.148
BI-207	3.791E-03		3.663E-03	1.261E-02	4.149E-04	0.301
BI-210M	-5.468E-03		6.989E-03	2.055E-02	8.948E-04	-0.266
BI-212	7.406E-01	+	1.379E-01	2.828E-01	1.390E-02	2.619
RA-223	2.787E-01	+	4.513E-02	9.363E-02	4.057E-03	2.977
AC-227DA	3.833E-02		3.517E-02	1.026E-01	4.628E-03	0.373
TH-234DA	2.059E+00		7.609E-01	2.664E+00	1.630E-01	0.773
NP-237DA	1.166E-02		8.718E-03	2.916E-02	1.162E-03	0.400
AM-241HP	-7.372E-03		1.863E-02	5.924E-02	2.119E-03	-0.124


STL Richland WA.
BRC SOIL
Batch ID: 7241626
Sample ID: J5K2P1AA
Detector ID: GER14 1
Energy Coefficients:
Offset: -7.02577E-01
Slope: 2.48239E-01
Quadrature: 1.95953E-09
Acquisition Start: 19-SEP-2007 05:57:24.74
Preset Live Time: 0 10:00:00.00
Elapsed Live Time: 0 10:00:00.00
Counts
Energy
100000
10000
1000
100
10
1
2000
1000
500
200
100
50
226 Ra, 214 Bi
40 K
226 Ra, 214 Bi, 46 Sc
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
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: J5K2P1AA

CONFIGURATION ID: GER14:J5K2P1AA_190970557
TITLE : BRC SOIL
SAMPLE ID : J5K2P1AA

REPORT DATE: 19-SEP-07
ACQUIRE DATE: 19-SEP-07 05:57:24
ELAPSED LIVE TIME: 36000.0 Sec
PRESET LIVE TIME: 0 10:00:00

SAMPLE DATE: 14-AUG-2007 10:15:00.00
CALIB DATE: 19-SEP-2007 05:33:35.47
ELAPSED LIVE TIME: 0 10:00:00
ELAPSED REAL TIME: 0 10:00:15

SAMPLE QUANTITY: 3.6340E+02
SAMPLE GEOMETRY: S200

UNITS: GRAMS
SAMPLE TYPE:

ENERGY OFFSET: -.7026E+00 keV
ENERGY SLOPE: 2.4824E-01 keV/C
ENERGY Q COEFF: 1.9595E-09 keV/C^^2
PEAK SENSITIVITY: 5.000

FWHM OFFSET: 1.1329E+00 keV
FWHM SLOPE: 2.6383E-02 sqr keV
ITERATIONS: 10
GAUSSIAN SENSITIVITY: 10.00 %

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

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

VMS Peak Search Report V1.9 Generated 19-SEP-2007 15:58:03

Configuration : $DISK1:[GER14.SAMPLE]J5K2P1AA_190970557.CNF;1
Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6
Sample title : BRC SOIL
Sample date : 14-AUG-2007 10:15:00 Acquisition date : 19-SEP-2007 05:57:24
Sample ID : J5K2P1AA Sample quantity : 363.40 GRAMS
Sample type : Sample geometry : S200
Elapsed live time: 0 10:00:00.00 Elapsed real time: 0 10:00:15.28 0.0%
Start energy : 19.16 End energy : 2033.01
Sensitivity : 5.00 Gaussian : 10.00
Critical level : No

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	2	74.78*	1888	4094	1.65	304.08	290	31	5.24E-02	9.3	4.83E+00
2	2	77.04	2594	3236	1.31	313.19	290	31	7.21E-02	5.5	
3	0	87.16*	496	3487	0.95	353.92	345	16	1.38E-02	27.7	
4	0	92.99	878	2264	1.87	377.41	371	14	2.44E-02	12.0	
5	0	186.09	774	2342	1.43	752.48	743	21	2.15E-02	13.8	
6	0	209.29	283	1621	1.20	845.94	839	16	7.86E-03	27.9	
7	3	238.67	3927	1702	1.49	964.26	952	35	1.09E-01	2.6	1.40E+00
8	3	241.63	1135	1696	2.05	976.18	952	35	3.15E-02	9.1	
9	0	271.19	299	1641	1.78	1095.29	1080	23	8.32E-03	30.3	
10	0	295.18	1652	1388	1.52	1191.93	1182	21	4.59E-02	5.4	
11	0	300.09	213	1002	1.29	1211.70	1204	16	5.92E-03	29.3	
12	0	338.44	752	1225	1.34	1366.20	1355	24	2.09E-02	11.0	
13	0	351.95	2649	1233	1.61	1420.59	1408	25	7.36E-02	3.6	
14	0	462.86	290	671	2.04	1867.37	1857	22	8.04E-03	20.2	
15	0	511.07*	619	969	1.93	2061.57	2044	37	1.72E-02	16.6	
16	0	583.27	1353	641	1.71	2352.42	2341	26	3.76E-02	5.1	
17	0	609.32*	1997	656	1.78	2457.35	2446	26	5.55E-02	4.0	
18	0	727.65	205	457	1.32	2934.00	2922	22	5.70E-03	23.6	
19	0	768.33	217	435	1.88	3097.87	3086	22	6.02E-03	21.9	
20	0	794.84	191	305	1.88	3204.64	3195	21	5.30E-03	20.7	
21	0	860.98	169	422	1.11	3471.09	3462	25	4.70E-03	29.0	
22	0	911.20	919	504	1.91	3673.38	3654	34	2.55E-02	7.1	
23	0	969.02	507	400	1.92	3906.29	3895	24	1.41E-02	9.9	
24	0	1120.14*	388	461	1.83	4515.01	4499	30	1.08E-02	13.7	
25	0	1460.73*	6951	240	2.18	5886.94	5866	44	1.93E-01	1.4	
26	0	1729.74	108	35	1.99	6970.48	6955	28	2.99E-03	15.1	
27	0	1764.59*	344	59	2.21	7110.84	7097	32	9.54E-03	8.1	

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

VMS Nuclide Identification Report V3.0 Generated 19-SEP-2007 15:58:04

Configuration : $DISK1:[GER14.SAMPLE]J5K2P1AA_190970557.CNF;1
Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.3
Sample title : BRC SOIL
Sample date : 14-AUG-2007 10:15:00 Acquisition date : 19-SEP-2007 05:57:24
Sample ID : J5K2P1AA Sample quantity : 363.40 GRAMS
Sample type : Sample geometry : S200
Elapsed live time: 0 10:00:00.00 Elapsed real time: 0 10:00:15.28 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	6951	10.67*	5.514E-01	2.441E+01	2.441E+01	6.14
TL-208	277.35	------	6.80	2.084E+00	------ Line Not Found		------
	510.84	619	21.60	1.291E+00	4.581E-01	4.581E-01	17.64
	583.14	1353	84.20*	1.159E+00	2.865E-01	2.865E-01	7.91
	860.37	169	12.46	8.428E-01	3.329E-01	3.329E-01	29.75
PB-212	238.63	3927	44.60*	2.316E+00	7.854E-01	7.854E-01	6.77
	300.09	213	3.41	1.967E+00	6.560E-01	6.560E-01	29.95
BI-214	609.31	1997	46.30*	1.118E+00	7.968E-01	7.968E-01	7.29
	768.36	217	5.04	9.246E-01	9.610E-01	9.610E-01	22.79
	1120.29	388	15.10	6.816E-01	7.792E-01	7.792E-01	14.98
	1764.49	344	15.80	4.738E-01	9.483E-01	9.483E-01	10.06
PB-214	241.98	1135	7.49	2.297E+00	1.363E+00	1.363E+00	11.04
	295.21	1652	19.20	1.991E+00	8.929E-01	8.929E-01	8.11
	351.92	2649	37.20*	1.742E+00	8.447E-01	8.447E-01	6.97
	785.91	------	1.10	9.077E-01	------ Line Not Found		------
RA-224DA	238.63	3927	44.60*	2.316E+00	7.854E-01	8.140E-01	6.77
	240.98	1135	3.95	2.297E+00	2.585E+00	2.679E+00	11.04
	583.14	1353	30.25	1.159E+00	7.976E-01	8.266E-01	7.91
	860.37	169	4.48	8.428E-01	9.258E-01	9.595E-01	29.75
RA-226DA	186.21	774	3.50	2.707E+00	1.688E+00	1.688E+00	15.12
	241.98	1135	7.49	2.297E+00	1.363E+00	1.363E+00	11.04
	295.22	1652	19.20	1.991E+00	8.929E-01	8.930E-01	8.11
	351.92	2649	37.20	1.742E+00	8.447E-01	8.448E-01	6.97
	609.32	1997	46.30*	1.118E+00	7.968E-01	7.969E-01	7.29
	1120.28	388	15.10	6.816E-01	7.792E-01	7.792E-01	14.98
	1238.11	------	5.94	6.292E-01	------ Line Not Found		------
	1764.49	344	15.80	4.738E-01	9.483E-01	9.483E-01	10.06
AC-228	209.28	283	4.40	2.523E+00	5.268E-01	5.268E-01	28.58
	270.23	299	3.60	2.118E+00	8.113E-01	8.113E-01	30.91
	338.32	752	11.40	1.795E+00	7.595E-01	7.595E-01	12.55
	911.07	919	27.70*	8.049E-01	8.515E-01	8.515E-01	9.62
	969.11	507	16.60	7.659E-01	8.237E-01	8.237E-01	11.83
RA-228DA	209.28	283	4.40	2.523E+00	5.268E-01	5.331E-01	28.58
	338.32	752	11.40	1.795E+00	7.595E-01	7.686E-01	12.55
	911.07	919	27.70*	8.049E-01	8.515E-01	8.617E-01	9.62
	964.60	------	5.20	7.687E-01	------ Line Not Found		------

Nuclide Type: NP

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected PCI/GRAM	Decay Corr PCI/GRAM	1-Sigma %Error
	969.11	507	16.60	7.659E-01	8.237E-01	8.336E-01	11.83
TH-228DA	238.63	3927	44.60	2.316E+00	7.854E-01	8.140E-01	6.77
	240.98	1135	3.95	2.297E+00	2.585E+00	2.679E+00	11.04
	583.14	1353	30.25*	1.159E+00	7.976E-01	8.266E-01	7.91
	860.37	169	4.48	8.428E-01	9.258E-01	9.595E-01	29.75
TH-232DA	238.63	3927	44.60	2.316E+00	7.854E-01	7.854E-01	6.77
	338.32	752	12.40*	1.795E+00	6.983E-01	6.983E-01	12.55
	583.14	1353	30.25	1.159E+00	7.976E-01	7.976E-01	7.91
	911.07	919	27.70	8.049E-01	8.515E-01	8.515E-01	9.62
	964.60	------	5.20	7.687E-01	------ Line Not Found		------
	969.11	507	16.60	7.659E-01	8.237E-01	8.237E-01	11.83
U-234DA	241.98	1135	7.49	2.297E+00	1.363E+00	1.363E+00	11.04
	295.22	1652	19.20*	1.991E+00	8.929E-01	8.929E-01	8.11
	351.92	2649	37.20	1.742E+00	8.447E-01	8.447E-01	6.97
	609.31	1997	46.30	1.118E+00	7.968E-01	7.968E-01	7.29
U-238DA	241.98	1135	7.49	2.297E+00	1.363E+00	1.363E+00	11.04
	295.22	1652	19.20	1.991E+00	8.929E-01	8.929E-01	8.11
	351.92	2649	37.20*	1.742E+00	8.447E-01	8.447E-01	6.97
	609.31	1997	46.30	1.118E+00	7.968E-01	7.968E-01	7.29

Flag: "*" = Keyline

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
2	74.78	1888	4094	1.65	304.08	290	31	5.24E-02	9.3	3.44E+00	
2	77.04	2594	3236	1.31	313.19	290	31	7.21E-02	5.5	3.45E+00	
0	87.16	496	3487	0.95	353.92	345	16	1.38E-02	27.7	3.47E+00	T
0	92.99	878	2264	1.87	377.41	371	14	2.44E-02	12.0	3.45E+00	T
0	462.86	290	671	2.04	1867.37	1857	22	8.04E-03	20.2	1.40E+00	T
0	727.65	205	457	1.32	2934.00	2922	22	5.70E-03	23.6	9.67E-01	T
0	794.84	191	305	1.88	3204.64	3195	21	5.30E-03	20.7	8.99E-01	T
0	1729.74	108	35	1.99	6970.48	6955	28	2.99E-03	15.1	4.81E-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	5.654E-02	17.64	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	1.585E-01	14.98	
		% Abundances Found =		50.00			
TC-95M	61.00D	0.59	204.12*	66.20	--- Not Found ---		Abun.
			582.07	29.30	1.240E+00	7.91	
			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	1.243E+01	7.29	
		% Abundances Found =		5.92			
RU-106DA	368.20D	0.10	511.85	20.60	5.141E-01	17.64	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	4.231E-01	21.06	
			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	5.309E-02	21.65	
			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	9.695E-02	28.34	
			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	6.662E-01	24.52	
			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			

Nuclide	Half-life	Half-Life Ratio	Energy	%Abund	Activity (PCI/GRAM)	1-Sigma %Error	Rejected by
U-235HP	7.04E+08Y	0.00	143.76*	10.50	--- Not Found ---		Abun.
			185.71	54.00	1.094E-01	15.12	
			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	9.708E-01	13.46	
		% Abundances Found =		58.74			

Flag: "*" = Keyline

VMS Nuclide Identification Report V3.0 Generated 19-SEP-2007 15:58:06

Configuration : $DISK1:[GER14.SAMPLE]J5K2P1AA_190970557.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 : 14-AUG-2007 10:15:00
Sample ID : J5K2P1AA
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 : 19-SEP-2007 05:57:24
Sample quantity : 363.40 GRAMS
Sample geometry : S200
Elapsed real time: 0 10:00:15.28 0.0%
Confidence level : 5.00 %
Half life ratio : 8.00
Systematic Error : 5.00 %
Efficiencies at : Peak Energy
WTM error limit : 3.00

Combined Activity-MDA Report

---- Identified Nuclides ----

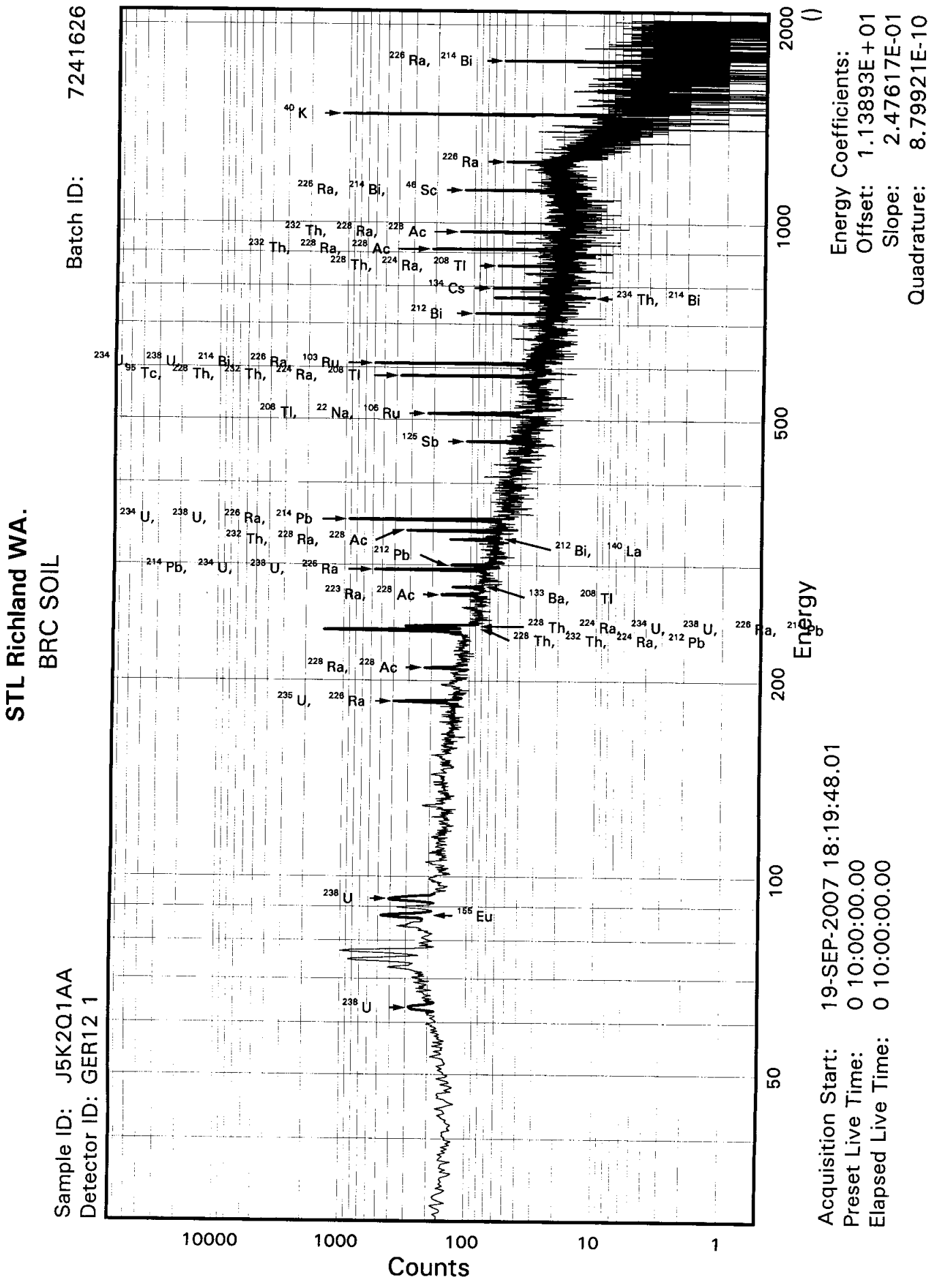
Nuclide	Activity (PCI/GRAM)	Act error	MDA (PCI/GRAM)	MDA error	Act/MDA
K-40	2.441E+01	1.498E+00	2.002E-01	6.550E-03	121.937
TL-208	2.865E-01	2.265E-02	2.358E-02	7.939E-04	12.151
PB-212	7.854E-01	5.316E-02	3.818E-02	1.422E-03	20.570
BI-214	7.968E-01	5.809E-02	4.570E-02	1.573E-03	17.435
PB-214	8.447E-01	5.886E-02	4.673E-02	1.529E-03	18.077
RA-224DA	8.140E-01	5.510E-02	3.957E-02	1.474E-03	20.570
RA-226DA	7.969E-01	5.810E-02	4.571E-02	1.573E-03	17.435
AC-228	8.515E-01	8.192E-02	8.473E-02	3.520E-03	10.049
RA-228DA	8.617E-01	8.290E-02	8.574E-02	3.562E-03	10.049
TH-228DA	8.266E-01	6.535E-02	6.803E-02	2.290E-03	12.151
TH-232DA	6.983E-01	8.766E-02	1.430E-01	4.663E-03	4.884
U-234DA	8.929E-01	7.241E-02	8.911E-02	3.067E-03	10.021
U-238DA	8.447E-01	5.886E-02	4.673E-02	1.529E-03	18.077

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

Nuclide	Key-Line Activity (PCI/GRAM)	K.L. Ided	Act error	MDA (PCI/GRAM)	MDA error	Act/MDA
BE-7	5.082E-03		8.229E-02	2.749E-01	8.852E-03	0.018
NA-22	-1.702E-02		8.613E-03	2.818E-02	9.246E-04	-0.604
SC-46	1.585E-01	+	2.374E-02	5.538E-02	1.949E-03	2.862
CR-51	4.652E-02		1.271E-01	4.301E-01	1.394E-02	0.108
MN-54	-5.779E-03		7.824E-03	2.581E-02	1.044E-03	-0.224
CO-57	-6.431E-02		4.662E-02	1.543E-01	5.737E-03	-0.417
CO-58	-2.639E-02		9.399E-03	2.939E-02	1.172E-03	-0.898
FE-59	-3.643E-02		2.538E-02	8.314E-02	2.997E-03	-0.438
CO-60	1.644E-03		7.313E-03	2.528E-02	8.242E-04	0.065
ZN-65	8.651E-03		2.229E-02	6.357E-02	2.251E-03	0.136
SE-75	1.396E-02		1.248E-02	3.516E-02	1.274E-03	0.397
SR-85	1.073E-01		1.270E-02	3.620E-02	1.138E-03	2.963
Y-88	-2.920E-03		6.387E-03	2.224E-02	6.896E-04	-0.131
NB-94	-5.891E-03		6.654E-03	2.236E-02	9.220E-04	-0.263
NB-95	7.250E-02		1.786E-02	5.324E-02	2.064E-03	1.362

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

Nuclide	Key-Line Activity (PCI/GRAM)	K.L. Ided	Act error	MDA (PCI/GRAM)	MDA error	Act/MDA
TC-95M	-7.650E-03		1.246E-02	3.761E-02	1.425E-03	-0.203
ZR-95	1.461E-02		1.734E-02	5.904E-02	2.274E-03	0.247
ZRNB-95	1.123E-01		2.586E-02	7.722E-02	2.993E-03	1.454
RH-101	7.284E-03		7.065E-03	2.361E-02	8.958E-04	0.309
RH-102M	-6.406E-03		5.833E-03	1.912E-02	6.166E-04	-0.335
RU-103	-7.414E-03		1.135E-02	3.744E-02	1.192E-03	-0.198
RU-106DA	4.140E-02		6.313E-02	2.160E-01	7.511E-03	0.192
AG-108M	-8.195E-03		6.081E-03	1.991E-02	6.506E-04	-0.412
AG-110M	-6.675E-03		1.050E-02	3.545E-02	1.471E-03	-0.188
SN-113DA	5.705E-03		1.019E-02	3.439E-02	1.123E-03	0.166
SB-124	6.211E-03		1.060E-02	3.207E-02	1.098E-03	0.194
SB-125	4.046E-03		1.894E-02	6.352E-02	2.077E-03	0.064
SN-126DA	9.217E-03		6.220E-03	2.140E-02	7.697E-04	0.431
I-131	-8.929E-02		1.385E-01	4.619E-01	1.513E-02	-0.193
BA-133	-1.027E-03		9.823E-03	2.781E-02	9.103E-04	-0.037
CS-134	5.309E-02	+	1.150E-02	3.058E-02	1.208E-03	1.736
CS-137DA	-5.684E-03		7.261E-03	2.421E-02	8.671E-04	-0.235
LA-138	1.271E-02		9.552E-03	3.406E-02	1.115E-03	0.373
CE-139	7.398E-03		7.015E-03	2.355E-02	8.920E-04	0.314
BA-140	-9.631E-02		1.542E-01	5.199E-01	1.676E-02	-0.185
BALA-140	3.331E-02		8.701E-02	3.047E-01	9.885E-03	0.109
CE-141	4.535E-02		2.072E-02	6.979E-02	2.612E-03	0.650
CE-144	-9.174E-02		4.546E-02	1.492E-01	5.537E-03	-0.615
CEPR-144	-1.829E-01		9.092E-02	2.985E-01	1.108E-02	-0.613
PM-144	-6.674E-03		6.506E-03	2.139E-02	7.416E-04	-0.312
PM-146	6.602E-03		8.429E-03	2.842E-02	9.243E-04	0.232
EU-152	-3.071E-02		2.508E-02	6.487E-02	2.119E-03	-0.473
EU-154	-4.531E-02		2.382E-02	7.812E-02	2.563E-03	-0.580
EU-155	4.481E-02		2.145E-02	7.081E-02	2.474E-03	0.633
HF-181	-1.400E-03		1.197E-02	3.984E-02	1.280E-03	-0.035
BI-207	8.410E-03		6.067E-03	2.092E-02	6.957E-04	0.402
BI-210M	-1.277E-02		1.234E-02	3.368E-02	1.218E-03	-0.379
BI-212	6.662E-01	+	1.634E-01	3.986E-01	1.757E-02	1.671
RA-223	1.419E-01		4.761E-02	1.354E-01	4.874E-03	1.048
AC-227DA	8.962E-01		8.390E-02	2.007E-01	7.494E-03	4.464
TH-234DA	-5.385E-01		1.113E+00	3.747E+00	1.476E-01	-0.144
U-235HP	-1.187E-02		4.417E-02	1.477E-01	5.519E-03	-0.080
NP-237DA	1.145E-02		1.390E-02	4.724E-02	1.565E-03	0.242
U-238DHP	4.336E-01		1.366E-01	4.526E-01	1.481E-02	0.958
AM-241HP	-3.754E-02		1.406E-02	4.521E-02	1.494E-03	-0.830


STL Richland WA.
BRC SOIL
Batch ID: 7241626
Sample ID: J5K2Q1AA
Detector ID: GER12 1
Energy Coefficients:
Offset: 1.13893E+01
Slope: 2.47617E-01
Quadrature: 8.79921E-10
Acquisition Start: 19-SEP-2007 18:19:48.01
Preset Live Time: 0 10:00:00.00
Elapsed Live Time: 0 10:00:00.00
Counts
Energy
10000
1000
100
10
1
2000
1000
500
200
100
50
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
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 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
238 U

SAMPLE IDENTIFICATION: J5K2Q1AA

CONFIGURATION ID: GER12:J5K2Q1AA_190971819
TITLE : BRC SOIL
SAMPLE ID : J5K2Q1AA

REPORT DATE: 20-SEP-07
ACQUIRE DATE: 19-SEP-07 18:19:48
ELAPSED LIVE TIME: 36000.0 Sec
PRESET LIVE TIME: 0 10:00:00

SAMPLE DATE: 14-AUG-2007 10:15:00.00
CALIB DATE: 19-SEP-2007 05:33:07.37
ELAPSED LIVE TIME: 0 10:00:00
ELAPSED REAL TIME: 0 10:00:17

SAMPLE QUANTITY: 3.6610E+02
SAMPLE GEOMETRY: S200

UNITS: GRAMS
SAMPLE TYPE:

ENERGY OFFSET: 1.1389E+01 keV
ENERGY SLOPE: 2.4762E-01 keV/C
ENERGY Q COEFF: 8.7992E-10 keV/C^^2
PEAK SENSITIVITY: 5.000

FWHM OFFSET: 3.9328E-01 keV
FWHM SLOPE: 3.7673E-02 sqr keV
ITERATIONS: 10
GAUSSIAN SENSITIVITY: 50.00 %

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 20-SEP-2007 14:33:12

Configuration : $DISK1:[GER12.SAMPLE]J5K2Q1AA_190971819.CNF;1
Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6
Sample title : BRC SOIL
Sample date : 14-AUG-2007 10:15:00 Acquisition date : 19-SEP-2007 18:19:48
Sample ID : J5K2Q1AA Sample quantity : 366.10 GRAMS
Sample type : Sample geometry : S200
Elapsed live time: 0 10:00:00.00 Elapsed real time: 0 10:00:17.01 0.0%
Start energy : 11.64 End energy : 2039.93
Sensitivity : 5.00 Gaussian : 50.00
Critical level : No

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	63.23	313	1948	0.98	209.35	205	10	8.68E-03	27.0	
2	1	72.86*	299	2231	0.79	248.23	241	30	8.30E-03	32.4	5.42E+00
3	1	74.80*	1793	2177	0.79	256.06	241	30	4.98E-02	5.8	
4	1	77.08	2617	2101	0.80	265.27	241	30	7.27E-02	3.9	
5	0	84.15*	357	3160	0.93	293.83	286	15	9.92E-03	36.0	
6	0	87.23*	979	2285	0.98	306.29	301	11	2.72E-02	10.3	
7	0	89.87	541	1888	0.75	316.92	312	10	1.50E-02	15.6	
8	0	92.73	1317	2558	1.40	328.48	322	14	3.66E-02	8.6	
9	0	129.20	252	1758	0.86	475.78	470	11	7.01E-03	32.8	
10	0	185.95	1178	2261	1.04	704.95	698	18	3.27E-02	9.9	
11	0	209.38	583	1754	1.03	799.57	792	16	1.62E-02	16.6	
12	5	238.65	5429	1313	0.98	917.78	910	28	1.51E-01	1.9	2.68E+00
13	5	241.73	1498	1362	1.58	930.24	910	28	4.16E-02	6.3	
14	0	270.04	405	1393	0.99	1044.55	1036	16	1.12E-02	21.2	
15	0	277.43	205	969	0.72	1074.39	1068	12	5.69E-03	31.2	
16	0	295.21*	2240	1313	1.01	1146.22	1138	18	6.22E-02	4.5	
17	0	300.27	466	1151	1.03	1166.63	1157	19	1.29E-02	18.1	
18	0	328.14	316	765	0.99	1279.20	1273	12	8.78E-03	18.4	
19	0	338.16	1298	831	1.01	1319.66	1310	16	3.61E-02	5.7	
20	0	351.90*	4073	1002	1.05	1375.14	1366	19	1.13E-01	2.5	
21	0	463.00	374	582	0.86	1823.82	1814	17	1.04E-02	15.7	
22	0	510.85*	642	1047	2.23	2017.05	2005	27	1.78E-02	16.8	
23	0	583.15	1884	669	1.25	2309.04	2300	21	5.23E-02	4.1	
24	0	609.22*	3126	829	1.35	2414.32	2402	27	8.68E-02	3.3	
25	0	727.24	486	353	1.29	2890.91	2882	19	1.35E-02	10.4	
26	0	768.16	336	449	1.51	3056.20	3046	22	9.34E-03	17.0	
27	0	794.93	250	366	0.95	3164.28	3153	19	6.94E-03	19.4	
28	0	860.60	231	386	1.11	3429.48	3419	21	6.42E-03	19.2	
29	0	911.13	1384	401	1.53	3633.53	3620	24	3.84E-02	4.2	
30	0	933.93	180	279	1.29	3725.64	3717	18	5.00E-03	20.0	
31	0	968.65	702	793	1.34	3865.85	3848	30	1.95E-02	10.6	
32	0	1120.26	746	579	1.65	4478.10	4465	31	2.07E-02	8.8	
33	0	1238.04	343	420	2.41	4953.73	4944	21	9.52E-03	13.8	
34	0	1377.44	205	173	2.10	5516.66	5504	25	5.69E-03	16.3	
35	0	1460.59*	9482	603	1.90	5852.46	5836	33	2.63E-01	1.3	
36	0	1763.92	651	63	2.42	7077.39	7059	34	1.81E-02	5.0	

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

VMS Nuclide Identification Report V3.0 Generated 20-SEP-2007 14:33:12

Configuration : $DISK1:[GER12.SAMPLE]J5K2Q1AA_190971819.CNF;1
Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.3
Sample title : BRC SOIL
Sample date : 14-AUG-2007 10:15:00 Acquisition date : 19-SEP-2007 18:19:48
Sample ID : J5K2Q1AA Sample quantity : 366.10 GRAMS
Sample type : Sample geometry : S200
Elapsed live time: 0 10:00:00.00 Elapsed real time: 0 10:00:17.01 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	9482	10.67*	8.870E-01	2.054E+01	2.054E+01	10.08
TL-208	277.35	205	6.80	3.059E+00	2.019E-01	2.019E-01	31.87
	510.84	642	21.60	2.026E+00	3.010E-01	3.010E-01	17.81
	583.14	1884	84.20*	1.844E+00	2.489E-01	2.489E-01	7.30
	860.37	231	12.46	1.377E+00	2.763E-01	2.763E-01	20.85
PB-212	238.63	5429	44.60*	3.357E+00	7.434E-01	7.434E-01	6.99
	300.09	466	3.41	2.907E+00	9.631E-01	9.631E-01	19.24
BI-214	609.31	3126	46.30*	1.787E+00	7.750E-01	7.750E-01	6.89
	768.36	336	5.04	1.504E+00	9.102E-01	9.102E-01	18.38
	1120.29	746	15.10	1.112E+00	9.116E-01	9.116E-01	11.25
	1764.49	651	15.80	7.552E-01	1.118E+00	1.118E+00	8.59
PB-214	241.98	1498	7.49	3.332E+00	1.231E+00	1.231E+00	9.18
	295.21	2240	19.20	2.939E+00	8.139E-01	8.139E-01	7.88
	351.92	4073	37.20*	2.617E+00	8.578E-01	8.578E-01	6.81
	785.91	------	1.10	1.478E+00	------ Line Not Found		------
RA-224DA	238.63	5429	44.60*	3.357E+00	7.434E-01	7.709E-01	6.99
	240.98	1498	3.95	3.332E+00	2.335E+00	2.421E+00	9.18
	583.14	1884	30.25	1.844E+00	6.927E-01	7.184E-01	7.30
	860.37	231	4.48	1.377E+00	7.684E-01	7.968E-01	20.85
RA-226DA	186.21	1178	3.50	3.841E+00	1.797E+00	1.797E+00	12.04
	241.98	1498	7.49	3.332E+00	1.231E+00	1.231E+00	9.18
	295.22	2240	19.20	2.939E+00	8.139E-01	8.139E-01	7.88
	351.92	4073	37.20	2.617E+00	8.578E-01	8.579E-01	6.81
	609.32	3126	46.30*	1.787E+00	7.750E-01	7.750E-01	6.89
	1120.28	746	15.10	1.112E+00	9.116E-01	9.116E-01	11.25
	1238.11	343	5.94	1.022E+00	1.157E+00	1.157E+00	16.00
	1764.49	651	15.80	7.552E-01	1.118E+00	1.118E+00	8.59
AC-228	209.28	583	4.40	3.617E+00	7.509E-01	7.509E-01	17.94
	270.23	405	3.60	3.112E+00	7.407E-01	7.407E-01	22.22
	338.32	1298	11.40	2.688E+00	8.685E-01	8.685E-01	8.51
	911.07	1384	27.70*	1.316E+00	7.781E-01	7.781E-01	9.45
	969.11	702	16.60	1.253E+00	6.922E-01	6.922E-01	13.34
RA-228DA	209.28	583	4.40	3.617E+00	7.509E-01	7.600E-01	17.94
	338.32	1298	11.40	2.688E+00	8.685E-01	8.791E-01	8.51
	911.07	1384	27.70*	1.316E+00	7.781E-01	7.876E-01	9.45
	964.60	------	5.20	1.257E+00	------ Line Not Found		------

Nuclide Type: NP

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected PCI/GRAM	Decay Corr PCI/GRAM	1-Sigma %Error
	969.11	702	16.60	1.253E+00	6.922E-01	7.006E-01	13.34
TH-228DA	238.63	5429	44.60	3.357E+00	7.434E-01	7.709E-01	6.99
	240.98	1498	3.95	3.332E+00	2.335E+00	2.421E+00	9.18
	583.14	1884	30.25*	1.844E+00	6.927E-01	7.184E-01	7.30
	860.37	231	4.48	1.377E+00	7.684E-01	7.968E-01	20.85
TH-232DA	238.63	5429	44.60	3.357E+00	7.434E-01	7.434E-01	6.99
	338.32	1298	12.40*	2.688E+00	7.985E-01	7.985E-01	8.51
	583.14	1884	30.25	1.844E+00	6.927E-01	6.927E-01	7.30
	911.07	1384	27.70	1.316E+00	7.781E-01	7.781E-01	9.45
	964.60	------	5.20	1.257E+00	------ Line Not Found		------
	969.11	702	16.60	1.253E+00	6.922E-01	6.922E-01	13.34
U-234DA	241.98	1498	7.49	3.332E+00	1.231E+00	1.231E+00	9.18
	295.22	2240	19.20*	2.939E+00	8.139E-01	8.139E-01	7.88
	351.92	4073	37.20	2.617E+00	8.578E-01	8.578E-01	6.81
	609.31	3126	46.30	1.787E+00	7.750E-01	7.750E-01	6.89
U-238DA	241.98	1498	7.49	3.332E+00	1.231E+00	1.231E+00	9.18
	295.22	2240	19.20	2.939E+00	8.139E-01	8.139E-01	7.88
	351.92	4073	37.20*	2.617E+00	8.578E-01	8.578E-01	6.81
	609.31	3126	46.30	1.787E+00	7.750E-01	7.750E-01	6.89
U-238DHP	63.28	313	3.80*	2.172E+00	7.768E-01	7.768E-01	27.76
	92.59	1317	5.41	3.841E+00	1.300E+00	1.300E+00	11.09

Flag: "*" = Keyline

Unidentified Energy Lines
Sample ID : J5K2Q1AA

Acquisition date : 19-SEP-2007 18:19:48

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
1	72.86	299	2231	0.79	248.23	241	30	8.30E-03	32.4	2.89E+00	
1	74.80	1793	2177	0.79	256.06	241	30	4.98E-02	5.8	3.02E+00	
1	77.08	2617	2101	0.80	265.27	241	30	7.27E-02	3.9	3.15E+00	
0	84.15	357	3160	0.93	293.83	286	15	9.92E-03	36.0	3.52E+00	
0	87.23	979	2285	0.98	306.29	301	11	2.72E-02	10.3	3.65E+00	T
0	89.87	541	1888	0.75	316.92	312	10	1.50E-02	15.6	3.75E+00	
0	129.20	252	1758	0.86	475.78	470	11	7.01E-03	32.8	4.26E+00	
0	328.14	316	765	0.99	1279.20	1273	12	8.78E-03	18.4	2.74E+00	T
0	463.00	374	582	0.86	1823.82	1814	17	1.04E-02	15.7	2.17E+00	T
0	727.24	486	353	1.29	2890.91	2882	19	1.35E-02	10.4	1.57E+00	T
0	794.93	250	366	0.95	3164.28	3153	19	6.94E-03	19.4	1.46E+00	T
0	933.93	180	279	1.29	3725.64	3717	18	5.00E-03	20.0	1.29E+00	
0	1377.44	205	173	2.10	5516.66	5504	25	5.69E-03	16.3	9.33E-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	3.716E-02	17.81	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	1.862E-01	11.25	
		% Abundances Found =		50.00			
TC-95M	61.00D	0.60	204.12*	66.20	--- Not Found ---		Abun.
			582.07	29.30	1.083E+00	7.30	
			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	1.220E+01	6.89	
		% Abundances Found =		5.92			
RU-106DA	368.20D	0.10	511.85	20.60	3.380E-01	17.81	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	3.501E-01	16.80	
			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	2.003E-01	31.87	
			302.84	17.80	--- Not Found ---		
			356.00*	62.05	--- Not Found ---		
			383.85	8.70	--- Not Found ---		
		% Abundances Found =		5.37			
CS-134	2.06Y	0.05	569.31	15.43	--- Not Found ---		Abun.
			604.70	97.60	--- Not Found ---		
			795.84*	85.40	4.235E-02	20.74	
			801.93	8.73	--- Not Found ---		
		% Abundances Found =		41.22			
LA-140	40.22H	21.81	328.77	20.50	4.226E+05	19.46	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	1.806E-01	12.59	
			105.31*	20.70	--- Not Found ---		
		% Abundances Found =		42.47			

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	1.701E+01	21.01	
			452.83	0.31	--- Not Found ---		
			727.33*	6.58	9.664E-01	12.50	
			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	1.967E-01	22.22	
			323.87	3.88	--- Not Found ---		
		% Abundances Found =		58.98			
TH-234DA	4.47E+09Y	0.00	766.41	0.21	2.184E+01	18.38	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	1.165E-01	12.04	
			205.31	4.70	--- Not Found ---		
		% Abundances Found =		78.03			

Flag: "*" = Keyline

VMS Nuclide Identification Report V3.0 Generated 20-SEP-2007 14:33:14

Configuration : $DISK1:[GER12.SAMPLE]J5K2Q1AA_190971819.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 : 14-AUG-2007 10:15:00 Acquisition date : 19-SEP-2007 18:19:48
Sample ID : J5K2Q1AA Sample quantity : 366.10 GRAMS
Sample type : Sample geometry : S200
Elapsed live time: 0 10:00:00.00 Elapsed real time: 0 10:00:17.01 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 ----

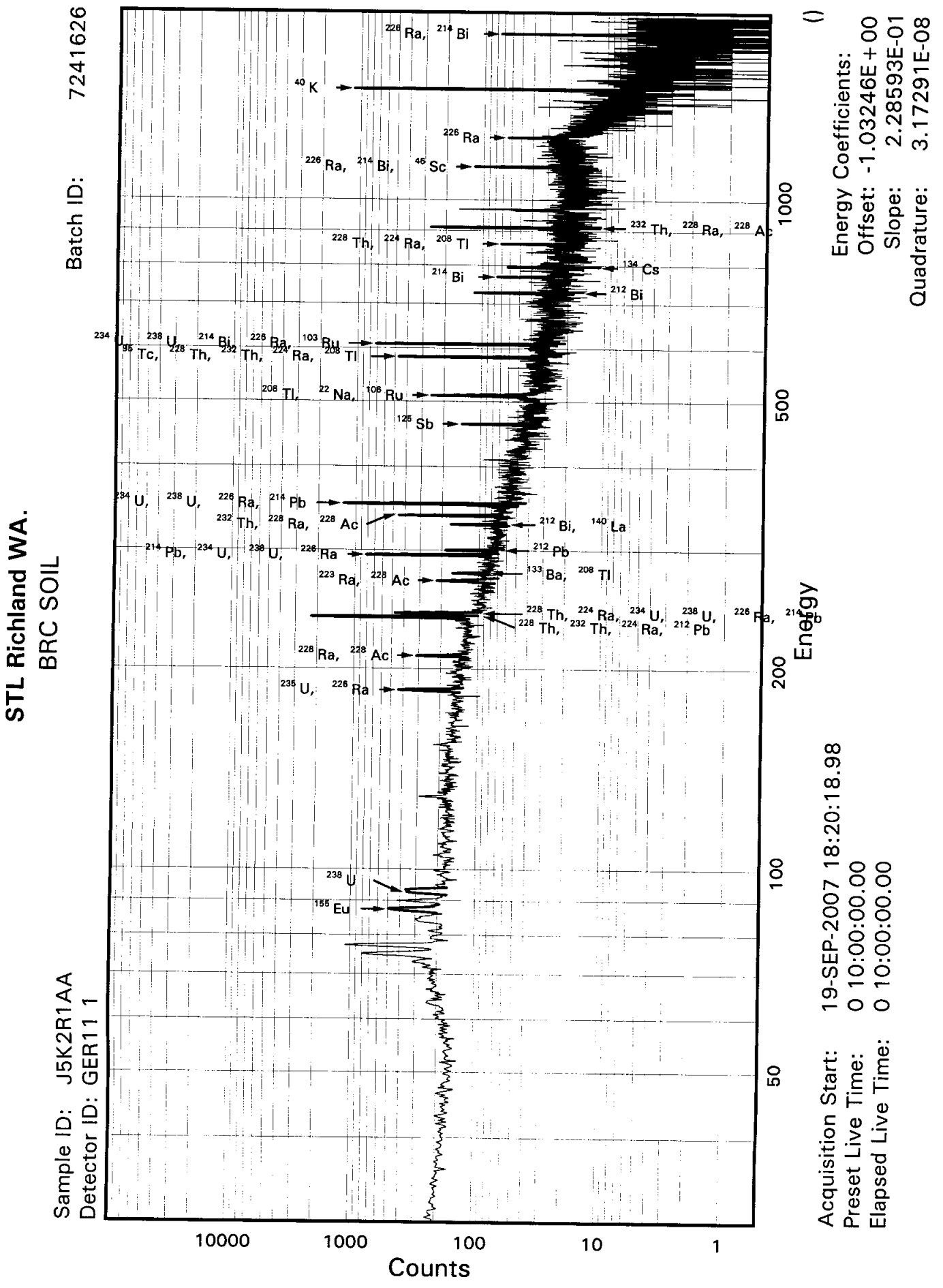
Nuclide	Activity (PCI/GRAM)	Act error	MDA (PCI/GRAM)	MDA error	Act/MDA
K-40	2.054E+01	2.070E+00	1.806E-01	1.563E-02	113.743
TL-208	2.489E-01	1.816E-02	1.484E-02	4.936E-04	16.766
PB-212	7.434E-01	5.195E-02	2.332E-02	1.049E-03	31.883
BI-214	7.750E-01	5.342E-02	2.614E-02	8.861E-04	29.654
PB-214	8.578E-01	5.838E-02	2.753E-02	1.064E-03	31.160
RA-224DA	7.709E-01	5.387E-02	2.418E-02	1.088E-03	31.883
RA-226DA	7.750E-01	5.342E-02	2.614E-02	8.861E-04	29.653
AC-228	7.781E-01	7.351E-02	5.110E-02	3.490E-03	15.227
RA-228DA	7.876E-01	7.440E-02	5.172E-02	3.533E-03	15.227
TH-228DA	7.184E-01	5.242E-02	4.285E-02	1.425E-03	16.766
TH-232DA	7.985E-01	6.798E-02	8.455E-02	3.284E-03	9.444
U-234DA	8.139E-01	6.413E-02	5.333E-02	2.207E-03	15.260
U-238DA	8.578E-01	5.838E-02	2.753E-02	1.064E-03	31.160
U-238DHP	7.768E-01	2.156E-01	4.752E-01	1.820E-02	1.635

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

Nuclide	Key-Line Activity (PCI/GRAM)	K.L. Ided	Act error	MDA (PCI/GRAM)	MDA error	Act/MDA
BE-7	-5.786E-02		5.026E-02	1.638E-01	5.531E-03	-0.353
NA-22	-1.249E-02		5.474E-03	1.757E-02	1.342E-03	-0.711
SC-46	1.862E-01	+	2.094E-02	3.900E-02	1.911E-03	4.774
CR-51	-1.217E-02		7.779E-02	2.555E-01	9.963E-03	-0.048
MN-54	3.849E-03		4.732E-03	1.618E-02	9.550E-04	0.238
CO-57	4.826E-03		2.821E-02	9.403E-02	3.741E-03	0.051
CO-58	-3.893E-03		5.503E-03	1.844E-02	1.021E-03	-0.211
FE-59	-5.488E-03		1.592E-02	5.360E-02	2.755E-03	-0.102
CO-60	2.553E-03		4.512E-03	1.569E-02	1.532E-03	0.163
ZN-65	7.275E-03		1.339E-02	3.870E-02	1.918E-03	0.188
SE-75	1.474E-03		6.161E-03	2.059E-02	8.985E-04	0.072
SR-85	3.494E-02		6.304E-03	1.933E-02	6.064E-04	1.808
Y-88	2.467E-03		4.077E-03	1.468E-02	5.455E-04	0.168
NB-94	7.172E-03		4.078E-03	1.407E-02	9.111E-04	0.510

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

Nuclide	Key-Line Activity (PCI/GRAM)	K.L. Ided	Act error	MDA (PCI/GRAM)	MDA error	Act/MDA
NB-95	2.630E-02		1.016E-02	3.057E-02	1.493E-03	0.860
TC-95M	1.422E-02		6.685E-03	2.285E-02	1.053E-03	0.622
ZR-95	2.965E-03		1.025E-02	3.517E-02	1.673E-03	0.084
ZRNB-95	3.932E-02		1.465E-02	4.414E-02	2.156E-03	0.891
RH-101	8.934E-03		4.568E-03	1.473E-02	6.806E-04	0.607
RH-102M	1.842E-03		3.478E-03	1.166E-02	3.955E-04	0.158
RU-103	-2.445E-04		6.710E-03	2.226E-02	7.243E-04	-0.011
RU-106DA	3.422E-02		3.862E-02	1.318E-01	4.508E-03	0.260
AG-108M	2.124E-03		3.387E-03	1.145E-02	4.129E-04	0.185
AG-110M	-6.381E-03		6.253E-03	2.062E-02	1.380E-03	-0.310
SN-113DA	2.400E-03		5.913E-03	2.005E-02	7.547E-04	0.120
SB-124	-3.203E-04		5.984E-03	1.910E-02	6.445E-04	-0.017
SB-125	2.825E-02		1.132E-02	3.877E-02	1.408E-03	0.729
SN-126DA	7.715E-03		3.810E-03	1.307E-02	4.666E-04	0.590
I-131	-2.719E-02		8.384E-02	2.833E-01	1.087E-02	-0.096
BA-133	3.140E-03		5.436E-03	1.597E-02	6.160E-04	0.197
CS-134	4.235E-02	+	8.785E-03	1.939E-02	1.031E-03	2.184
CS-137DA	-6.901E-04		4.289E-03	1.434E-02	5.037E-04	-0.048
LA-138	-3.096E-03		6.004E-03	2.033E-02	1.809E-03	-0.152
CE-139	2.386E-03		4.238E-03	1.399E-02	6.554E-04	0.171
BA-140	-1.644E-01		9.166E-02	3.021E-01	9.677E-03	-0.544
BALA-140	-2.403E-01		6.237E-02	1.789E-01	1.281E-02	-1.343
CE-141	9.297E-03		1.260E-02	4.198E-02	1.784E-03	0.221
CE-144	-5.365E-02		2.724E-02	8.847E-02	3.446E-03	-0.606
CEPR-144	-1.059E-01		5.448E-02	1.770E-01	6.896E-03	-0.598
PM-144	-2.357E-03		3.910E-03	1.304E-02	4.448E-04	-0.181
PM-146	6.581E-03		4.747E-03	1.615E-02	5.667E-04	0.408
EU-152	5.101E-03		1.134E-02	3.880E-02	1.504E-03	0.131
EU-154	-2.727E-02		1.488E-02	4.859E-02	3.712E-03	-0.561
EU-155	5.892E-02		1.412E-02	4.758E-02	1.999E-03	1.238
HF-181	-1.123E-03		7.132E-03	2.365E-02	7.921E-04	-0.047
BI-207	2.986E-03		3.559E-03	1.220E-02	4.015E-04	0.245
BI-210M	3.864E-03		6.923E-03	1.995E-02	8.687E-04	0.194
BI-212	9.664E-01	+	1.208E-01	2.668E-01	1.311E-02	3.622
RA-223	1.967E-01	+	4.370E-02	8.767E-02	3.799E-03	2.244
AC-227DA	1.005E-01		3.359E-02	9.869E-02	4.450E-03	1.019
TH-234DA	1.027E+00		6.982E-01	2.433E+00	1.489E-01	0.422
U-235HP	5.342E-02		2.717E-02	9.086E-02	3.813E-03	0.588
NP-237DA	5.479E-04		8.276E-03	2.732E-02	1.088E-03	0.020
AM-241HP	7.604E-03		1.691E-02	5.615E-02	2.009E-03	0.135


STL Richland WA.
BRC SOIL
Batch ID: 7241626
Sample ID: J5K2R1AA
Detector ID: GER11 1
Energy Coefficients:
Offset: -1.03246E+00
Slope: 2.28593E-01
Quadrature: 3.17291E-08
Acquisition Start: 19-SEP-2007 18:20:18.98
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
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
214 Pb, 234 U, 238 U, 226 Ra
212 Pb
223 Ra, 228 Ac
133 Ba, 208 Tl
228 Th, 224 Ra, 234 U, 238 U, 226 Ra, 214 Pb
228 Th, 232 Th, 224 Ra, 212 Pb
228 Ra, 228 Ac
235 U, 226 Ra
238 U
155 Eu

SAMPLE IDENTIFICATION: J5K2R1AA

CONFIGURATION ID: GER11:J5K2R1AA_190971820
TITLE : BRC SOIL
SAMPLE ID : J5K2R1AA

REPORT DATE: 20-SEP-07
ACQUIRE DATE: 19-SEP-07 18:20:18
ELAPSED LIVE TIME: 36000.0 Sec
PRESET LIVE TIME: 0 10:00:00

SAMPLE DATE: 14-AUG-2007 10:45:00.00
CALIB DATE: 19-SEP-2007 05:36:32.14
ELAPSED LIVE TIME: 0 10:00:00
ELAPSED REAL TIME: 0 10:00:35

SAMPLE QUANTITY: 3.4900E+02
SAMPLE GEOMETRY: S200

UNITS: GRAMS
SAMPLE TYPE:

ENERGY OFFSET: -.1032E+01 keV
ENERGY SLOPE: 2.2859E-01 keV/C
ENERGY Q COEFF: 3.1729E-08 keV/C^^2
PEAK SENSITIVITY: 5.000

FWHM OFFSET: 2.1661E-01 keV
FWHM SLOPE: 4.0739E-02 sqr keV
ITERATIONS: 10
GAUSSIAN SENSITIVITY: 50.00 %

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

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

VMS Peak Search Report V1.9 Generated 20-SEP-2007 14:36:01

Configuration : $DISK1:[GER11.SAMPLE]J5K2R1AA_190971820.CNF;1
Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6
Sample title : BRC SOIL
Sample date : 14-AUG-2007 10:45:00 Acquisition date : 19-SEP-2007 18:20:18
Sample ID : J5K2R1AA Sample quantity : 349.00 GRAMS
Sample type : Sample geometry : S200
Elapsed live time: 0 10:00:00.00 Elapsed real time: 0 10:00:35.12 0.1%
Start energy : 1.25 End energy : 1873.73
Sensitivity : 5.00 Gaussian : 50.00
Critical level : No

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	4	74.94*	1958	2356	0.83	332.34	320	28	5.44E-02	5.5	4.25E+00
2	4	77.19	2896	1760	0.71	342.17	320	28	8.05E-02	3.3	
3	0	87.23*	1353	2536	1.04	386.09	381	13	3.76E-02	8.3	
4	0	89.97	722	2101	0.66	398.07	393	11	2.00E-02	12.9	
5	0	93.00	1157	2141	1.56	411.34	405	12	3.21E-02	8.5	
6	0	129.21	308	1610	0.67	569.71	566	9	8.57E-03	24.2	
7	0	186.02	1479	1959	1.02	818.18	811	14	4.11E-02	6.9	
8	0	209.28	838	1605	0.89	919.92	914	13	2.33E-02	10.4	
9	5	238.59	8104	1244	0.83	1048.08	1040	29	2.25E-01	1.4	8.04E+00
10	5	241.69	1907	1430	1.37	1061.65	1040	29	5.30E-02	4.9	
11	0	270.26	953	1688	1.19	1186.60	1176	22	2.65E-02	11.5	
12	0	277.26	316	913	0.79	1217.19	1212	11	8.78E-03	19.3	
13	0	295.16	3076	1159	0.87	1295.47	1289	15	8.55E-02	3.0	
14	0	300.03	505	871	0.99	1316.78	1311	12	1.40E-02	12.5	
15	0	327.95	416	898	0.89	1438.87	1432	13	1.16E-02	15.7	
16	0	338.23	1592	1081	0.91	1483.82	1476	15	4.42E-02	5.2	
17	0	351.76*	5381	795	0.94	1542.99	1535	16	1.49E-01	1.8	
18	0	409.40	180	618	1.08	1795.02	1790	12	5.00E-03	28.7	
19	0	462.76	561	709	0.85	2028.32	2018	20	1.56E-02	12.4	
20	0	510.57*	908	1245	1.63	2237.33	2224	31	2.52E-02	13.6	
21	0	582.87	2679	664	1.27	2553.41	2545	23	7.44E-02	3.2	
22	0	608.94	4035	590	1.23	2667.37	2659	22	1.12E-01	2.2	
23	0	726.82	771	512	1.65	3182.65	3170	26	2.14E-02	8.8	
24	0	767.93	318	511	1.26	3362.31	3354	20	8.83E-03	18.4	
25	0	794.49	361	330	1.47	3478.40	3468	20	1.00E-02	13.4	
26	0	860.16	378	445	1.31	3765.38	3752	25	1.05E-02	13.7	
27	0	910.61	2063	371	1.73	3985.85	3974	28	5.73E-02	3.1	
28	0	967.55	1228	781	1.64	4234.64	4215	33	3.41E-02	6.4	
29	0	1119.48	906	466	2.01	4898.43	4884	28	2.52E-02	6.6	
30	0	1237.45	304	527	2.03	5413.75	5403	22	8.46E-03	17.3	
31	0	1377.09	179	207	1.64	6023.69	6010	23	4.97E-03	19.2	
32	0	1459.85*	10463	284	2.01	6385.09	6368	35	2.91E-01	1.1	
33	0	1587.35	140	93	1.67	6941.79	6929	22	3.90E-03	15.8	
34	0	1728.85	155	79	1.68	7559.57	7544	29	4.29E-03	14.8	
35	0	1763.62*	652	106	2.12	7711.36	7695	40	1.81E-02	5.8	

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

VMS Nuclide Identification Report V3.0 Generated 20-SEP-2007 14:36:02

Configuration : $DISK1:[GER11.SAMPLE]J5K2R1AA_190971820.CNF;1
Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.3
Sample title : BRC SOIL
Sample date : 14-AUG-2007 10:45:00 Acquisition date : 19-SEP-2007 18:20:18
Sample ID : J5K2R1AA Sample quantity : 349.00 GRAMS
Sample type : Sample geometry : S200
Elapsed live time: 0 10:00:00.00 Elapsed real time: 0 10:00:35.12 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	10463	10.67*	8.391E-01	2.514E+01	2.514E+01	6.47
TL-208	277.35	316	6.80	2.956E+00	3.383E-01	3.383E-01	20.32
	510.84	908	21.60	1.997E+00	4.530E-01	4.530E-01	14.90
	583.14	2679	84.20*	1.816E+00	3.769E-01	3.769E-01	6.78
	860.37	378	12.46	1.328E+00	4.918E-01	4.918E-01	15.37
PB-212	238.63	8104	44.60*	3.227E+00	1.211E+00	1.211E+00	6.39
	300.09	505	3.41	2.819E+00	1.130E+00	1.130E+00	14.01
BI-214	609.31	4035	46.30*	1.758E+00	1.067E+00	1.067E+00	6.39
	768.36	318	5.04	1.463E+00	9.278E-01	9.278E-01	19.52
	1120.29	906	15.10	1.051E+00	1.228E+00	1.228E+00	9.14
	1764.49	652	15.80	7.427E-01	1.195E+00	1.195E+00	8.36
PB-214	241.98	1907	7.49	3.203E+00	1.710E+00	1.710E+00	7.96
	295.21	3076	19.20	2.847E+00	1.211E+00	1.211E+00	6.98
	351.92	5381	37.20*	2.553E+00	1.219E+00	1.219E+00	6.44
	785.91	------	1.10	1.435E+00	------ Line Not Found		------
RA-224DA	238.63	8104	44.60*	3.227E+00	1.211E+00	1.256E+00	6.39
	240.98	1907	3.95	3.203E+00	3.242E+00	3.362E+00	7.96
	583.14	2679	30.25	1.816E+00	1.049E+00	1.088E+00	6.78
	860.37	378	4.48	1.328E+00	1.368E+00	1.418E+00	15.37
RA-226DA	186.21	1479	3.50	3.657E+00	2.486E+00	2.486E+00	9.22
	241.98	1907	7.49	3.203E+00	1.710E+00	1.710E+00	7.96
	295.22	3076	19.20	2.847E+00	1.211E+00	1.211E+00	6.98
	351.92	5381	37.20	2.553E+00	1.219E+00	1.219E+00	6.44
	609.32	4035	46.30*	1.758E+00	1.067E+00	1.067E+00	6.39
	1120.28	906	15.10	1.051E+00	1.228E+00	1.228E+00	9.14
	1238.11	304	5.94	9.618E-01	1.146E+00	1.147E+00	18.36
	1764.49	652	15.80	7.427E-01	1.195E+00	1.195E+00	8.36
TH-228DA	238.63	8104	44.60	3.227E+00	1.211E+00	1.256E+00	6.39
	240.98	1907	3.95	3.203E+00	3.242E+00	3.362E+00	7.96
	583.14	2679	30.25*	1.816E+00	1.049E+00	1.088E+00	6.78
	860.37	378	4.48	1.328E+00	1.368E+00	1.418E+00	15.37
TH-232DA	238.63	8104	44.60	3.227E+00	1.211E+00	1.211E+00	6.39
	338.32	1592	12.40*	2.617E+00	1.055E+00	1.055E+00	8.08
	583.14	2679	30.25	1.816E+00	1.049E+00	1.049E+00	6.78
	911.07	2063	27.70	1.264E+00	1.268E+00	1.268E+00	7.85
	964.60	------	5.20	1.201E+00	------ Line Not Found		------

Nuclide Type: NP

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected PCI/GRAM	Decay Corr PCI/GRAM	1-Sigma %Error
	969.11	------	16.60	1.196E+00	------	Line Not Found	------
U-234DA	241.98	1907	7.49	3.203E+00	1.710E+00	1.710E+00	7.96
	295.22	3076	19.20*	2.847E+00	1.211E+00	1.211E+00	6.98
	351.92	5381	37.20	2.553E+00	1.219E+00	1.219E+00	6.44
	609.31	4035	46.30	1.758E+00	1.067E+00	1.067E+00	6.39
U-238DA	241.98	1907	7.49	3.203E+00	1.710E+00	1.710E+00	7.96
	295.22	3076	19.20	2.847E+00	1.211E+00	1.211E+00	6.98
	351.92	5381	37.20*	2.553E+00	1.219E+00	1.219E+00	6.44
	609.31	4035	46.30	1.758E+00	1.067E+00	1.067E+00	6.39

Flag: "*" = Keyline

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
4	74.94	1958	2356	0.83	332.34	320	28	5.44E-02	5.5	2.05E+00	
4	77.19	2896	1760	0.71	342.17	320	28	8.05E-02	3.3	2.21E+00	
0	87.23	1353	2536	1.04	386.09	381	13	3.76E-02	8.3	2.84E+00	T
0	89.97	722	2101	0.66	398.07	393	11	2.00E-02	12.9	2.99E+00	
0	93.00	1157	2141	1.56	411.34	405	12	3.21E-02	8.5	3.13E+00	T
0	129.21	308	1610	0.67	569.71	566	9	8.57E-03	24.2	3.91E+00	
0	209.28	838	1605	0.89	919.92	914	13	2.33E-02	10.4	3.46E+00	T
0	270.26	953	1688	1.19	1186.60	1176	22	2.65E-02	11.5	3.00E+00	T
0	327.95	416	898	0.89	1438.87	1432	13	1.16E-02	15.7	2.67E+00	T
0	409.40	180	618	1.08	1795.02	1790	12	5.00E-03	28.7	2.32E+00	
0	462.76	561	709	0.85	2028.32	2018	20	1.56E-02	12.4	2.14E+00	T
0	726.82	771	512	1.65	3182.65	3170	26	2.14E-02	8.8	1.53E+00	T
0	794.49	361	330	1.47	3478.40	3468	20	1.00E-02	13.4	1.42E+00	T
0	967.55	1228	781	1.64	4234.64	4215	33	3.41E-02	6.4	1.20E+00	
0	1377.09	179	207	1.64	6023.69	6010	23	4.97E-03	19.2	8.79E-01	
0	1587.35	140	93	1.67	6941.79	6929	22	3.90E-03	15.8	7.90E-01	
0	1728.85	155	79	1.68	7559.57	7544	29	4.29E-03	14.8	7.50E-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	5.593E-02	14.90	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	2.508E-01	9.14	
		% Abundances Found =		50.00			
TC-95M	61.00D	0.60	204.12*	66.20	--- Not Found ---		Abun.
			582.07	29.30	1.640E+00	6.78	
			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	1.678E+01	6.39	
		% Abundances Found =		5.92			
RU-106DA	368.20D	0.10	511.85	20.60	5.088E-01	14.90	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	5.597E-01	13.75	
			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	3.356E-01	20.32	
			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	6.621E-02	14.94	
			801.93	8.73	--- Not Found ---		
		% Abundances Found =		41.22			
LA-140	40.22H	21.79	328.77	20.50	5.946E+05	16.88	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	3.360E-01	10.69	
			105.31*	20.70	--- Not Found ---		
		% Abundances Found =		42.47			

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	2.413E+01	18.64	
			452.83	0.31	--- Not Found ---		
			727.33*	6.58	1.647E+00	11.06	
			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	5.035E-01	13.08	
			323.87	3.88	--- Not Found ---		
		% Abundances Found =		58.98			
AC-228	1.41E+10Y	0.00	209.28	4.40	1.184E+00	12.14	Abun.
			270.23	3.60	1.896E+00	13.08	
			338.32	11.40	1.148E+00	8.08	
			911.07*	27.70	1.268E+00	7.85	
			969.11	16.60	--- Not Found ---		
		% Abundances Found =		73.94			
RA-228DA	5.75Y	0.02	209.28	4.40	1.198E+00	12.14	Abun.
			338.32	11.40	1.161E+00	8.08	
			911.07*	27.70	1.283E+00	7.85	
			964.60	5.20	--- Not Found ---		
			969.11	16.60	--- Not Found ---		
		% Abundances Found =		66.62			
U-235HP	7.04E+08Y	0.00	143.76*	10.50	--- Not Found ---		Abun.
			185.71	54.00	1.611E-01	9.22	
			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	1.469E+00	10.79	
		% Abundances Found =		58.74			

Flag: "*" = Keyline

VMS Nuclide Identification Report V3.0 Generated 20-SEP-2007 14:36:04

Configuration : $DISK1:[GER11.SAMPLE]J5K2R1AA_190971820.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 : 14-AUG-2007 10:45:00 Acquisition date : 19-SEP-2007 18:20:18
Sample ID : J5K2R1AA Sample quantity : 349.00 GRAMS
Sample type : Sample geometry : S200
Elapsed live time: 0 10:00:00.00 Elapsed real time: 0 10:00:35.12 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 ----

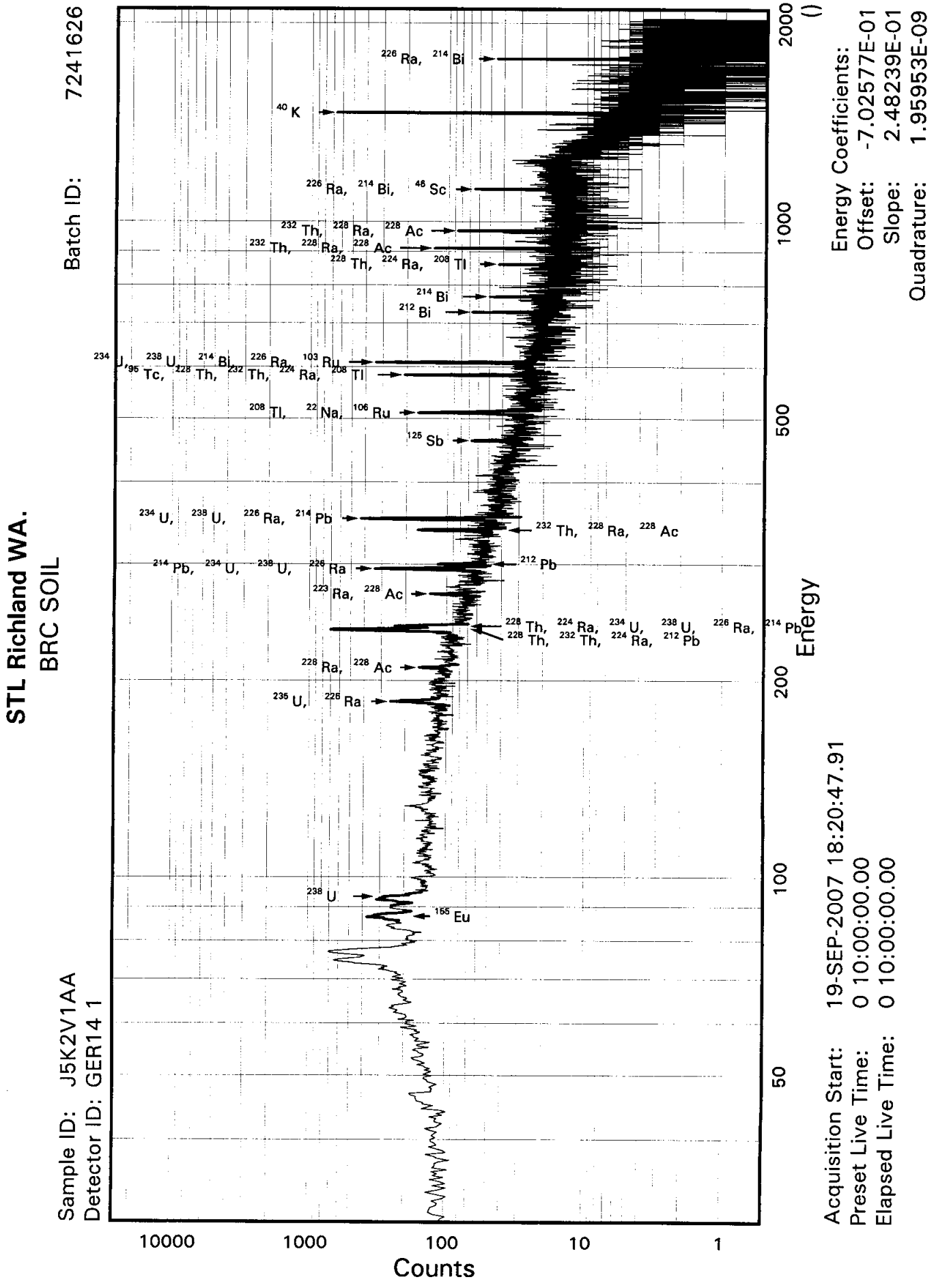
Nuclide	Activity (PCI/GRAM)	Act error	MDA (PCI/GRAM)	MDA error	Act/MDA
K-40	2.514E+01	1.625E+00	1.479E-01	5.843E-03	169.966
TL-208	3.769E-01	2.555E-02	1.513E-02	5.010E-04	24.905
PB-212	1.211E+00	7.743E-02	2.540E-02	9.476E-04	47.686
BI-214	1.067E+00	6.815E-02	2.822E-02	9.366E-04	37.797
PB-214	1.219E+00	7.844E-02	3.023E-02	1.092E-03	40.309
RA-224DA	1.256E+00	8.029E-02	2.634E-02	9.826E-04	47.686
RA-226DA	1.067E+00	6.816E-02	2.822E-02	9.366E-04	37.797
TH-228DA	1.088E+00	7.375E-02	4.368E-02	1.446E-03	24.905
TH-232DA	1.055E+00	8.528E-02	9.622E-02	3.567E-03	10.965
U-234DA	1.211E+00	8.446E-02	5.743E-02	2.191E-03	21.084
U-238DA	1.219E+00	7.844E-02	3.023E-02	1.092E-03	40.309

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

Nuclide	Key-Line Activity (PCI/GRAM)	K.L. Ided	Act error	MDA (PCI/GRAM)	MDA error	Act/MDA
BE-7	1.053E-02		5.573E-02	1.863E-01	6.133E-03	0.057
NA-22	-8.406E-03		6.094E-03	2.007E-02	7.672E-04	-0.419
SC-46	2.508E-01	+	2.291E-02	4.573E-02	1.778E-03	5.484
CR-51	7.237E-02		8.468E-02	2.840E-01	1.084E-02	0.255
MN-54	1.813E-02		5.518E-03	1.901E-02	8.874E-04	0.954
CO-57	3.532E-02		3.066E-02	1.054E-01	3.870E-03	0.335
CO-58	-1.274E-03		6.034E-03	2.034E-02	9.082E-04	-0.063
FE-59	-6.157E-03		1.766E-02	5.898E-02	2.392E-03	-0.104
CO-60	8.144E-03		5.527E-03	1.925E-02	7.784E-04	0.423
ZN-65	5.531E-03		1.470E-02	4.189E-02	1.646E-03	0.132
SE-75	-3.025E-03		6.538E-03	2.198E-02	8.314E-04	-0.138
SR-85	1.783E-02		6.686E-03	1.964E-02	6.403E-04	0.908
Y-88	-1.404E-03		4.790E-03	1.662E-02	5.312E-04	-0.084
NB-94	-8.484E-04		4.429E-03	1.483E-02	7.391E-04	-0.057
NB-95	3.508E-02		1.175E-02	3.527E-02	1.445E-03	0.995
TC-95M	7.680E-03		7.664E-03	2.547E-02	9.268E-04	0.302
ZR-95	1.207E-02		1.138E-02	3.930E-02	1.582E-03	0.307

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

Nuclide	Key-Line Activity (PCI/GRAM)	K.L. Ided	Act error	MDA (PCI/GRAM)	MDA error	Act/MDA
ZRNB-95	5.324E-02		1.699E-02	5.102E-02	2.091E-03	1.043
RH-101	1.098E-02		5.143E-03	1.612E-02	5.838E-04	0.681
RH-102M	2.139E-03		3.844E-03	1.292E-02	4.255E-04	0.166
RU-103	-2.385E-02		7.637E-03	2.369E-02	7.764E-04	-1.007
RU-106DA	2.062E-02		4.320E-02	1.463E-01	4.859E-03	0.141
AG-108M	6.294E-05		3.638E-03	1.226E-02	4.048E-04	0.005
AG-110M	-3.916E-03		6.854E-03	2.272E-02	1.160E-03	-0.172
SN-113DA	-2.492E-03		6.444E-03	2.176E-02	7.146E-04	-0.114
SB-124	2.317E-03		6.192E-03	2.099E-02	6.963E-04	0.110
SB-125	1.191E-02		1.149E-02	3.923E-02	1.295E-03	0.303
SN-126DA	1.501E-02		4.301E-03	1.482E-02	4.965E-04	1.013
I-131	-2.563E-01		9.251E-02	3.006E-01	1.058E-02	-0.853
BA-133	7.242E-03		5.613E-03	1.790E-02	6.416E-04	0.404
CS-134	6.621E-02	+	9.889E-03	2.148E-02	9.326E-04	3.082
CS-137DA	8.141E-04		4.981E-03	1.668E-02	5.537E-04	0.049
LA-138	1.519E-02		7.048E-03	2.548E-02	1.013E-03	0.596
CE-139	1.199E-02		4.639E-03	1.574E-02	5.592E-04	0.761
BA-140	-2.543E-02		1.019E-01	3.465E-01	1.137E-02	-0.073
BALA-140	-1.641E-01		7.062E-02	2.238E-01	8.409E-03	-0.733
CE-141	-2.350E-02		1.361E-02	4.531E-02	1.633E-03	-0.519
CE-144	1.309E-02		2.952E-02	1.014E-01	3.749E-03	0.129
CEPR-144	2.792E-02		5.907E-02	2.029E-01	7.502E-03	0.138
PM-144	-2.193E-03		4.272E-03	1.426E-02	4.734E-04	-0.154
PM-146	1.572E-02		5.634E-03	1.932E-02	6.377E-04	0.813
EU-152	4.087E-03		1.296E-02	4.297E-02	1.576E-03	0.095
EU-154	-1.767E-02		1.667E-02	5.533E-02	2.114E-03	-0.319
EU-155	6.567E-02		1.671E-02	5.545E-02	2.190E-03	1.184
HF-181	-6.442E-03		7.699E-03	2.532E-02	8.325E-04	-0.254
BI-207	5.159E-03		3.909E-03	1.347E-02	4.450E-04	0.383
BI-210M	2.708E-03		7.310E-03	2.138E-02	8.089E-04	0.127
BI-212	1.647E+00	+	1.822E-01	3.279E-01	1.453E-02	5.022
RA-223	5.035E-01	+	6.587E-02	1.012E-01	3.834E-03	4.976
AC-227DA	2.290E-02		3.512E-02	1.040E-01	3.874E-03	0.220
AC-228	1.268E+00	+	9.951E-02	1.378E-01	7.132E-03	9.199
RA-228DA	1.283E+00	+	1.007E-01	1.395E-01	7.218E-03	9.199
TH-234DA	1.414E+00		7.886E-01	2.740E+00	1.293E-01	0.516
U-235HP	7.006E-02		2.891E-02	9.916E-02	3.585E-03	0.706
NP-237DA	1.383E-02		9.281E-03	3.133E-02	1.196E-03	0.442
U-238DHP	8.716E-01		2.624E-01	9.052E-01	3.752E-02	0.963
AM-241HP	-2.286E-02		3.584E-02	1.143E-01	4.541E-03	-0.200


STL Richland WA.
BRC SOIL
Batch ID: 7241626
Sample ID: J5K2V1AA
Detector ID: GER14 1
Energy Coefficients:
Offset: -7.02577E-01
Slope: 2.48239E-01
Quadrature: 1.95953E-09
Acquisition Start: 19-SEP-2007 18:20:47.91
Preset Live Time: 0 10:00:00.00
Elapsed Live Time: 0 10:00:00.00
Counts
Energy
10000
1000
100
10
1
2000
1000
500
200
100
50
226 Ra, 214 Bi
40 K
226 Ra, 214 Bi, 46 Sc
232 Th, 228 Ra, 228 Ac
232 Th, 228 Ra, 228 Ac
228 Th, 224 Ra, 208 Tl
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
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
238 U
155 Eu

SAMPLE IDENTIFICATION: J5K2V1AA

CONFIGURATION ID: GER14:J5K2V1AA_190971820
TITLE : BRC SOIL
SAMPLE ID : J5K2V1AA

REPORT DATE: 20-SEP-07
ACQUIRE DATE: 19-SEP-07 18:20:47
ELAPSED LIVE TIME: 36000.0 Sec
PRESET LIVE TIME: 0 10:00:00

SAMPLE DATE: 14-AUG-2007 10:15:00.00
CALIB DATE: 19-SEP-2007 05:33:35.47
ELAPSED LIVE TIME: 0 10:00:00
ELAPSED REAL TIME: 0 10:00:14

SAMPLE QUANTITY: 3.6510E+02
SAMPLE GEOMETRY: S200

UNITS: GRAMS
SAMPLE TYPE:

ENERGY OFFSET: -.7026E+00 keV
ENERGY SLOPE: 2.4824E-01 keV/C
ENERGY Q COEFF: 1.9595E-09 keV/C^^2
PEAK SENSITIVITY: 5.000

FWHM OFFSET: 1.1329E+00 keV
FWHM SLOPE: 2.6383E-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 20-SEP-2007 14:39:18

Configuration : $DISK1:[GER14.SAMPLE]J5K2V1AA_190971820.CNF;1
Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6
Sample title : BRC SOIL
Sample date : 14-AUG-2007 10:15:00 Acquisition date : 19-SEP-2007 18:20:47
Sample ID : J5K2V1AA Sample quantity : 365.10 GRAMS
Sample type : Sample geometry : S200
Elapsed live time: 0 10:00:00.00 Elapsed real time: 0 10:00:14.80 0.0%
Start energy : 19.16 End energy : 2033.01
Sensitivity : 5.00 Gaussian : 30.00
Critical level : No

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	1	74.90*	2086	3536	1.50	304.55	290	34	5.80E-02	7.7	6.09E+00
2	1	76.97	3336	3305	1.50	312.90	290	34	9.27E-02	4.6	
3	0	87.15*	683	2675	1.16	353.90	348	13	1.90E-02	16.7	
4	0	93.41	612	3711	1.48	379.12	367	19	1.70E-02	24.4	
5	0	185.78	788	2363	1.13	751.23	741	21	2.19E-02	13.5	
6	0	209.32	435	1624	1.34	846.05	838	18	1.21E-02	19.1	
7	2	238.65	3990	1652	1.48	964.21	953	32	1.11E-01	2.6	1.15E+00
8	2	241.71	1098	1290	1.78	976.51	953	32	3.05E-02	7.3	
9	0	270.40	414	1210	1.14	1092.08	1082	19	1.15E-02	17.9	
10	0	295.21	1821	1325	1.51	1192.02	1181	23	5.06E-02	5.0	
11	0	300.31	258	891	1.04	1212.60	1205	15	7.16E-03	22.6	
12	0	338.35	823	1077	1.63	1365.81	1355	22	2.29E-02	9.3	
13	0	351.94	2719	1040	1.73	1420.54	1409	23	7.55E-02	3.2	
14	0	462.88	330	591	2.07	1867.44	1857	21	9.16E-03	16.6	
15	0	510.78*	496	942	1.91	2060.41	2043	33	1.38E-02	19.7	
16	0	583.09	1367	739	1.78	2351.68	2337	29	3.80E-02	5.5	
17	0	609.29*	2018	636	1.69	2457.23	2445	26	5.61E-02	4.0	
18	0	727.21	310	495	1.41	2932.23	2917	26	8.62E-03	17.5	
19	0	768.23	187	392	1.67	3097.46	3086	21	5.20E-03	23.6	
20	0	861.07	132	301	1.25	3471.44	3458	20	3.67E-03	28.7	
21	0	911.24	887	362	1.78	3673.53	3660	29	2.46E-02	6.2	
22	0	968.28	660	566	1.62	3903.29	3885	35	1.83E-02	10.2	
23	0	1120.21*	409	447	2.20	4515.30	4501	32	1.14E-02	13.1	
24	0	1460.71*	5691	204	2.21	5886.84	5866	39	1.58E-01	1.6	
25	0	1764.45*	356	49	2.03	7110.30	7091	36	9.90E-03	7.8	

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

VMS Nuclide Identification Report V3.0 Generated 20-SEP-2007 14:39:18

Configuration : $DISK1:[GER14.SAMPLE]J5K2V1AA_190971820.CNF;1
Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.3
Sample title : BRC SOIL
Sample date : 14-AUG-2007 10:15:00 Acquisition date : 19-SEP-2007 18:20:47
Sample ID : J5K2V1AA Sample quantity : 365.10 GRAMS
Sample type : Sample geometry : S200
Elapsed live time: 0 10:00:00.00 Elapsed real time: 0 10:00:14.80 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	5691	10.67*	5.514E-01	1.989E+01	1.989E+01	6.17
TL-208	277.35	------	6.80	2.084E+00	------ Line Not Found		------
	510.84	496	21.60	1.292E+00	3.657E-01	3.657E-01	20.58
	583.14	1367	84.20*	1.159E+00	2.880E-01	2.880E-01	8.17
	860.37	132	12.46	8.427E-01	2.585E-01	2.585E-01	29.40
PB-212	238.63	3990	44.60*	2.316E+00	7.944E-01	7.944E-01	6.75
	300.09	258	3.41	1.966E+00	7.907E-01	7.907E-01	23.35
BI-214	609.31	2018	46.30*	1.118E+00	8.016E-01	8.016E-01	7.25
	768.36	187	5.04	9.247E-01	8.253E-01	8.253E-01	24.45
	1120.29	409	15.10	6.816E-01	8.175E-01	8.175E-01	14.48
	1764.49	356	15.80	4.738E-01	9.790E-01	9.790E-01	9.76
PB-214	241.98	1098	7.49	2.296E+00	1.313E+00	1.313E+00	9.58
	295.21	1821	19.20	1.991E+00	9.795E-01	9.795E-01	7.85
	351.92	2719	37.20*	1.742E+00	8.629E-01	8.629E-01	6.80
	785.91	------	1.10	9.077E-01	------ Line Not Found		------
RA-224DA	238.63	3990	44.60*	2.316E+00	7.944E-01	8.238E-01	6.75
	240.98	1098	3.95	2.296E+00	2.490E+00	2.582E+00	9.58
	583.14	1367	30.25	1.159E+00	8.016E-01	8.312E-01	8.17
	860.37	132	4.48	8.427E-01	7.190E-01	7.456E-01	29.40
RA-226DA	186.21	788	3.50	2.709E+00	1.709E+00	1.710E+00	14.93
	241.98	1098	7.49	2.296E+00	1.313E+00	1.313E+00	9.58
	295.22	1821	19.20	1.991E+00	9.795E-01	9.796E-01	7.85
	351.92	2719	37.20	1.742E+00	8.629E-01	8.629E-01	6.80
	609.32	2018	46.30*	1.118E+00	8.016E-01	8.016E-01	7.25
	1120.28	409	15.10	6.816E-01	8.175E-01	8.176E-01	14.48
	1238.11	------	5.94	6.292E-01	------ Line Not Found		------
	1764.49	356	15.80	4.738E-01	9.790E-01	9.790E-01	9.76
AC-228	209.28	435	4.40	2.523E+00	8.066E-01	8.066E-01	20.14
	270.23	414	3.60	2.123E+00	1.113E+00	1.113E+00	18.90
	338.32	823	11.40	1.796E+00	8.268E-01	8.268E-01	11.06
	911.07	887	27.70*	8.049E-01	8.182E-01	8.182E-01	8.98
	969.11	660	16.60	7.663E-01	1.066E+00	1.066E+00	12.08
RA-228DA	209.28	435	4.40	2.523E+00	8.066E-01	8.164E-01	20.14
	338.32	823	11.40	1.796E+00	8.268E-01	8.368E-01	11.06
	911.07	887	27.70*	8.049E-01	8.182E-01	8.281E-01	8.98
	964.60	------	5.20	7.687E-01	------ Line Not Found		------

Nuclide Type: NP

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected PCI/GRAM	Decay Corr PCI/GRAM	1-Sigma %Error
	969.11	660	16.60	7.663E-01	1.066E+00	1.079E+00	12.08
TH-228DA	238.63	3990	44.60	2.316E+00	7.944E-01	8.238E-01	6.75
	240.98	1098	3.95	2.296E+00	2.490E+00	2.582E+00	9.58
	583.14	1367	30.25*	1.159E+00	8.016E-01	8.312E-01	8.17
	860.37	132	4.48	8.427E-01	7.190E-01	7.456E-01	29.40
TH-232DA	238.63	3990	44.60	2.316E+00	7.944E-01	7.944E-01	6.75
	338.32	823	12.40*	1.796E+00	7.601E-01	7.601E-01	11.06
	583.14	1367	30.25	1.159E+00	8.016E-01	8.016E-01	8.17
	911.07	887	27.70	8.049E-01	8.182E-01	8.182E-01	8.98
	964.60	------	5.20	7.687E-01	------ Line Not Found		------
	969.11	660	16.60	7.663E-01	1.066E+00	1.066E+00	12.08
U-234DA	241.98	1098	7.49	2.296E+00	1.313E+00	1.313E+00	9.58
	295.22	1821	19.20*	1.991E+00	9.795E-01	9.795E-01	7.85
	351.92	2719	37.20	1.742E+00	8.629E-01	8.629E-01	6.80
	609.31	2018	46.30	1.118E+00	8.016E-01	8.016E-01	7.25
U-238DA	241.98	1098	7.49	2.296E+00	1.313E+00	1.313E+00	9.58
	295.22	1821	19.20	1.991E+00	9.795E-01	9.795E-01	7.85
	351.92	2719	37.20*	1.742E+00	8.629E-01	8.629E-01	6.80
	609.31	2018	46.30	1.118E+00	8.016E-01	8.016E-01	7.25

Flag: "*" = Keyline

Unidentified Energy Lines
Sample ID : J5K2V1AA

Acquisition date : 19-SEP-2007 18:20:47

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
1	74.90	2086	3536	1.50	304.55	290	34	5.80E-02	7.7	3.44E+00	
1	76.97	3336	3305	1.50	312.90	290	34	9.27E-02	4.6	3.45E+00	
0	87.15	683	2675	1.16	353.90	348	13	1.90E-02	16.7	3.47E+00	T
0	93.41	612	3711	1.48	379.12	367	19	1.70E-02	24.4	3.45E+00	T
0	462.88	330	591	2.07	1867.44	1857	21	9.16E-03	16.6	1.40E+00	T
0	727.21	310	495	1.41	2932.23	2917	26	8.62E-03	17.5	9.67E-01	T

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	4.516E-02	20.58	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	1.670E-01	14.48	
		% Abundances Found =		50.00			
TC-95M	61.00D	0.60	204.12*	66.20	--- Not Found ---		Abun.
			582.07	29.30	1.254E+00	8.17	
			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	1.262E+01	7.25	
		% Abundances Found =		5.92			
RU-106DA	368.20D	0.10	511.85	20.60	4.108E-01	20.58	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	4.801E-01	17.62	
			600.56	17.80	--- Not Found ---		
			635.90	11.32	--- Not Found ---		
		% Abundances Found =		13.67			
EU-155	4.96Y	0.02	42.90	21.16	--- Not Found ---		Abun.
			86.54	30.90	1.330E-01	17.71	
			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	--- Not Found ---		
			452.83	0.31	--- Not Found ---		
			727.33*	6.58	1.003E+00	18.71	
			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			
RA-223	21.77Y	0.00	154.21	5.58	--- Not Found ---		Abun.
			269.46*	13.60	2.956E-01	18.90	
			323.87	3.88	--- Not Found ---		
		% Abundances Found =		58.98			
U-235HP	7.04E+08Y	0.00	143.76*	10.50	--- Not Found ---		Abun.

Nuclide	Half-life	Half-Life Ratio	Energy	%Abund	Activity (PCI/GRAM)	1-Sigma %Error	Rejected by
U-235HP	7.04E+08Y	0.00	185.71	54.00	1.108E-01	14.93	Abun.
			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	6.732E-01	25.17	
		% Abundances Found =		58.74			

Flag: "*" = Keyline

VMS Nuclide Identification Report V3.0 Generated 20-SEP-2007 14:39:20

Configuration : $DISK1:[GER14.SAMPLE]J5K2V1AA_190971820.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 : 14-AUG-2007 10:15:00 Acquisition date : 19-SEP-2007 18:20:47
Sample ID : J5K2V1AA Sample quantity : 365.10 GRAMS
Sample type : Sample geometry : S200
Elapsed live time: 0 10:00:00.00 Elapsed real time: 0 10:00:14.80 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	1.989E+01	1.228E+00	1.818E-01	5.949E-03	109.401
TL-208	2.880E-01	2.353E-02	2.268E-02	7.636E-04	12.695
PB-212	7.944E-01	5.361E-02	3.796E-02	1.414E-03	20.929
BI-214	8.016E-01	5.815E-02	4.450E-02	1.532E-03	18.013
PB-214	8.629E-01	5.865E-02	4.580E-02	1.498E-03	18.840
RA-224DA	8.238E-01	5.559E-02	3.936E-02	1.466E-03	20.929
RA-226DA	8.016E-01	5.815E-02	4.450E-02	1.532E-03	18.013
AC-228	8.182E-01	7.349E-02	8.134E-02	3.379E-03	10.059
RA-228DA	8.281E-01	7.439E-02	8.232E-02	3.420E-03	10.059
TH-228DA	8.312E-01	6.790E-02	6.548E-02	2.204E-03	12.695
TH-232DA	7.601E-01	8.404E-02	1.357E-01	4.426E-03	5.602
U-234DA	9.795E-01	7.689E-02	8.750E-02	3.012E-03	11.195
U-238DA	8.629E-01	5.865E-02	4.580E-02	1.498E-03	18.840

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

Nuclide	Key-Line Activity (PCI/GRAM)	K.L. Ided	Act error	MDA (PCI/GRAM)	MDA error	Act/MDA
BE-7	-6.361E-03		8.236E-02	2.746E-01	8.843E-03	-0.023
NA-22	9.831E-03		8.176E-03	2.864E-02	9.395E-04	0.343
SC-46	1.670E-01	+	2.419E-02	5.492E-02	1.933E-03	3.041
CR-51	7.866E-02		1.260E-01	4.276E-01	1.386E-02	0.184
MN-54	1.927E-04		7.337E-03	2.459E-02	9.942E-04	0.008
CO-57	5.415E-02		4.581E-02	1.545E-01	5.746E-03	0.350
CO-58	-2.091E-02		9.230E-03	2.935E-02	1.170E-03	-0.712
FE-59	-3.749E-02		2.482E-02	8.118E-02	2.927E-03	-0.462
CO-60	3.921E-03		7.108E-03	2.477E-02	8.076E-04	0.158
ZN-65	7.501E-03		2.096E-02	5.988E-02	2.120E-03	0.125
SE-75	3.633E-03		1.146E-02	3.390E-02	1.229E-03	0.107
SR-85	1.073E-01		1.279E-02	3.646E-02	1.146E-03	2.943
Y-88	8.317E-03		5.996E-03	2.256E-02	6.996E-04	0.369
NB-94	-1.203E-02		6.655E-03	2.188E-02	9.019E-04	-0.550
NB-95	6.176E-02		1.713E-02	5.113E-02	1.982E-03	1.208

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

Nuclide	Key-Line Activity (PCI/GRAM)	K.L. Ided	Act error	MDA (PCI/GRAM)	MDA error	Act/MDA
TC-95M	-6.352E-03		1.274E-02	3.759E-02	1.425E-03	-0.169
ZR-95	1.290E-02		1.698E-02	5.782E-02	2.227E-03	0.223
ZRNB-95	7.913E-02		2.481E-02	7.372E-02	2.857E-03	1.073
RH-101	1.074E-02		7.119E-03	2.382E-02	9.036E-04	0.451
RH-102M	-6.097E-03		5.773E-03	1.894E-02	6.108E-04	-0.322
RU-103	1.717E-02		1.150E-02	3.904E-02	1.243E-03	0.440
RU-106DA	8.259E-02		6.281E-02	2.166E-01	7.531E-03	0.381
AG-108M	-3.535E-03		5.940E-03	1.970E-02	6.437E-04	-0.179
AG-110M	9.106E-03		9.700E-03	3.371E-02	1.399E-03	0.270
SN-113DA	-8.006E-03		1.026E-02	3.403E-02	1.111E-03	-0.235
SB-124	7.879E-03		1.097E-02	3.251E-02	1.113E-03	0.242
SB-125	1.671E-02		1.850E-02	6.254E-02	2.045E-03	0.267
SN-126DA	2.005E-02		6.204E-03	2.159E-02	7.764E-04	0.929
I-131	8.733E-02		1.446E-01	4.892E-01	1.602E-02	0.178
BA-133	1.392E-02		9.636E-03	2.793E-02	9.141E-04	0.498
CS-134	3.828E-02		8.556E-03	2.960E-02	1.170E-03	1.293
CS-137DA	-1.495E-02		7.269E-03	2.356E-02	8.441E-04	-0.634
LA-138	-9.440E-03		8.795E-03	2.943E-02	9.631E-04	-0.321
CE-139	3.958E-03		6.927E-03	2.322E-02	8.793E-04	0.171
BA-140	-1.078E-01		1.623E-01	5.468E-01	1.762E-02	-0.197
BALA-140	-2.435E-01		9.010E-02	2.785E-01	9.035E-03	-0.874
CE-141	3.724E-02		2.084E-02	7.024E-02	2.629E-03	0.530
CE-144	-1.217E-01		4.515E-02	1.465E-01	5.436E-03	-0.831
CEPR-144	-2.434E-01		9.029E-02	2.930E-01	1.087E-02	-0.831
PM-144	-3.616E-03		6.318E-03	2.121E-02	7.353E-04	-0.171
PM-146	1.991E-02		8.135E-03	2.783E-02	9.048E-04	0.716
EU-152	1.537E-02		2.177E-02	6.422E-02	2.098E-03	0.239
EU-154	2.543E-02		2.254E-02	7.889E-02	2.588E-03	0.322
EU-155	1.508E-02		2.074E-02	6.828E-02	2.385E-03	0.221
HF-181	-1.009E-02		1.184E-02	3.895E-02	1.252E-03	-0.259
BI-207	4.895E-03		5.766E-03	1.981E-02	6.589E-04	0.247
BI-210M	-1.024E-02		1.184E-02	3.244E-02	1.173E-03	-0.316
BI-212	1.003E+00	+	1.877E-01	4.156E-01	1.832E-02	2.414
RA-223	2.956E-01	+	5.587E-02	1.356E-01	4.882E-03	2.180
AC-227DA	9.619E-01		8.591E-02	1.999E-01	7.462E-03	4.812
TH-234DA	2.456E-01		1.082E+00	3.695E+00	1.455E-01	0.066
U-235HP	1.090E-01		4.384E-02	1.477E-01	5.519E-03	0.738
NP-237DA	2.129E-02		1.363E-02	4.656E-02	1.542E-03	0.457
U-238DHP	4.218E-01		1.356E-01	4.496E-01	1.471E-02	0.938
AM-241HP	-2.977E-02		1.380E-02	4.474E-02	1.479E-03	-0.665

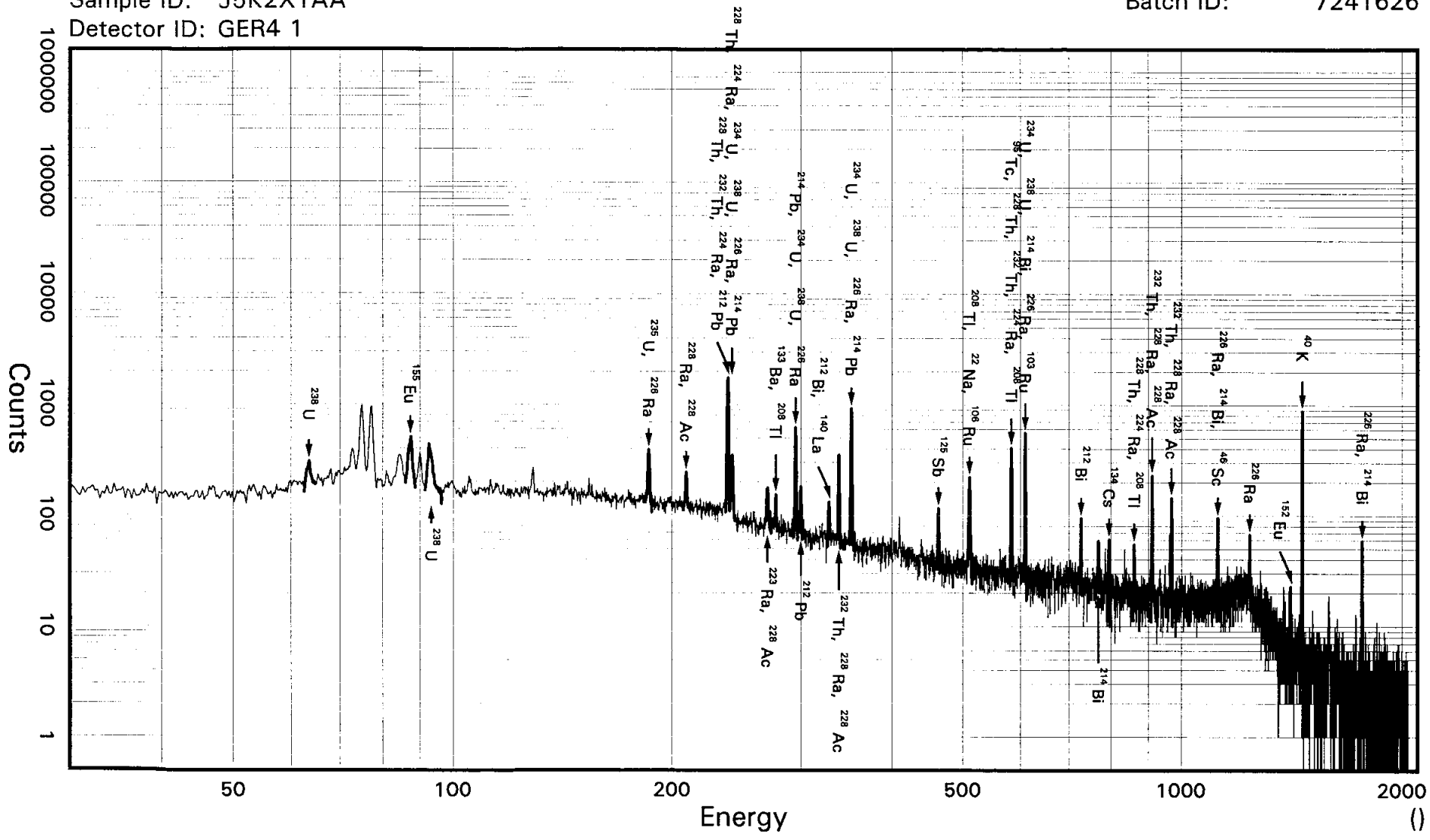
STL Richland WA.

BRC SOIL

Sample ID: J5K2X1AA

Batch ID: 7241626

Detector ID: GER4 1



Acquisition Start: 19-SEP-2007 18:21:34.65

Preset Live Time: 0 10:00:00.00

Elapsed Live Time: 0 10:00:00.00

Energy Coefficients:

Offset: -1.09010E-01

Slope: 2.48688E-01

Quadrature: 4.92614E-09

SAMPLE IDENTIFICATION: J5K2X1AA

CONFIGURATION ID: GER4:J5K2X1AA_190971821
TITLE : BRC SOIL
SAMPLE ID : J5K2X1AA

REPORT DATE: 20-SEP-07
ACQUIRE DATE: 19-SEP-07 18:21:34
ELAPSED LIVE TIME: 36000.0 Sec
PRESET LIVE TIME: 0 10:00:00

SAMPLE DATE: 14-AUG-2007 11:45:00.00
CALIB DATE: 19-SEP-2007 05:32:02.18
ELAPSED LIVE TIME: 0 10:00:00
ELAPSED REAL TIME: 0 10:00:18

SAMPLE QUANTITY: 3.4930E+02
SAMPLE GEOMETRY: S200

UNITS: GRAMS
SAMPLE TYPE:

ENERGY OFFSET: -.1090E+00 keV
ENERGY SLOPE: 2.4869E-01 keV/C
ENERGY Q COEFF: 4.9261E-09 keV/C^^2
PEAK SENSITIVITY: 5.000

FWHM OFFSET: 2.9494E-01 keV
FWHM SLOPE: 4.6154E-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 20-SEP-2007 15:04:49

Configuration : $DISK1:[GER4.SAMPLE]J5K2X1AA_190971821.CNF;1
Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6
Sample title : BRC SOIL
Sample date : 14-AUG-2007 11:45:00 Acquisition date : 19-SEP-2007 18:21:34
Sample ID : J5K2X1AA Sample quantity : 349.30 GRAMS
Sample type : Sample geometry : S200
Elapsed live time: 0 10:00:00.00 Elapsed real time: 0 10:00:18.63 0.1%
Start energy : 19.79 End energy : 2037.47
Sensitivity : 5.00 Gaussian : 70.00
Critical level : No

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	63.50*	239	1681	0.76	255.79	252	9	6.63E-03	34.1	
2	2	72.87*	182	2482	0.83	293.44	287	30	5.06E-03	53.6	1.50E+00
3	2	74.91*	1960	2286	0.84	301.67	287	30	5.45E-02	5.5	
4	2	77.13*	2632	2074	0.85	310.59	287	30	7.31E-02	4.1	
5	0	84.36*	622	2739	1.48	339.66	332	14	1.73E-02	19.3	
6	0	87.29*	1156	2138	1.05	351.43	346	11	3.21E-02	8.6	
7	0	89.91	676	1862	0.90	361.97	357	10	1.88E-02	12.5	
8	0	93.34*	1481	3195	1.30	375.76	368	21	4.11E-02	10.2	
9	0	129.01	342	1940	0.85	519.21	513	12	9.50E-03	26.3	
10	0	186.00*	1242	1956	1.12	748.37	740	16	3.45E-02	8.8	
11	0	209.18	615	1627	1.15	841.57	834	14	1.71E-02	14.5	
12	6	238.61*	6876	1245	1.00	959.91	953	28	1.91E-01	1.6	2.40E+00
13	6	241.61	1734	1803	1.59	971.96	953	28	4.82E-02	6.8	
14	0	270.13	845	1882	1.52	1086.64	1075	26	2.35E-02	14.5	
15	0	277.38	320	821	0.85	1115.78	1111	11	8.89E-03	18.2	
16	0	295.21*	2421	1132	1.03	1187.48	1179	17	6.73E-02	3.9	
17	0	300.12	514	939	1.03	1207.22	1201	14	1.43E-02	13.4	
18	0	328.05	361	864	1.34	1319.53	1313	14	1.00E-02	18.1	
19	0	338.32*	1298	933	1.10	1360.83	1352	16	3.61E-02	6.3	
20	0	351.87*	3887	1194	1.04	1415.31	1407	20	1.08E-01	2.8	
21	0	409.52	327	807	1.17	1647.13	1636	20	9.10E-03	22.0	
22	0	462.99	450	929	1.26	1862.11	1850	26	1.25E-02	19.2	
23	0	510.79*	731	1076	1.74	2054.31	2042	30	2.03E-02	15.2	
24	0	583.15*	2103	580	1.39	2345.26	2335	20	5.84E-02	3.7	
25	0	609.27*	2912	517	1.40	2450.25	2441	20	8.09E-02	2.8	
26	0	727.16	491	459	1.35	2924.27	2913	21	1.37E-02	10.3	
27	0	768.19	256	480	2.14	3089.24	3078	20	7.12E-03	18.9	
28	0	794.87	291	298	1.54	3196.49	3186	19	8.09E-03	13.4	
29	0	860.41	312	388	1.91	3459.99	3448	25	8.66E-03	15.4	
30	0	911.13*	1411	438	1.61	3663.92	3651	26	3.92E-02	4.5	
31	0	968.51	887	765	1.63	3894.64	3876	33	2.46E-02	8.6	
32	0	1120.33	695	496	1.77	4504.99	4492	30	1.93E-02	8.7	
33	0	1238.09	277	476	0.91	4978.44	4967	23	7.70E-03	18.4	
34	0	1408.38	71	129	0.85	5663.07	5651	21	1.98E-03	32.5	
35	0	1460.62*	7826	161	2.14	5873.06	5854	35	2.17E-01	1.2	
36	0	1729.40	121	87	3.39	6953.58	6931	41	3.36E-03	21.2	
37	0	1764.24	496	100	2.04	7093.64	7079	30	1.38E-02	6.3	

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

VMS Nuclide Identification Report V3.0 Generated 20-SEP-2007 15:04:49

Configuration : $DISK1:[GER4.SAMPLE]J5K2X1AA_190971821.CNF;1
Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.3
Sample title : BRC SOIL
Sample date : 14-AUG-2007 11:45:00 Acquisition date : 19-SEP-2007 18:21:34
Sample ID : J5K2X1AA Sample quantity : 349.30 GRAMS
Sample type : Sample geometry : S200
Elapsed live time: 0 10:00:00.00 Elapsed real time: 0 10:00:18.63 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	7826	10.67*	5.415E-01	2.911E+01	2.911E+01	6.40
TL-208	277.35	320	6.80	2.029E+00	4.989E-01	4.989E-01	19.38
	510.84	731	21.60	1.302E+00	5.591E-01	5.591E-01	16.43
	583.14	2103	84.20*	1.176E+00	4.566E-01	4.566E-01	7.20
	860.37	312	12.46	8.556E-01	6.288E-01	6.288E-01	16.86
PB-212	238.63	6876	44.60*	2.244E+00	1.477E+00	1.477E+00	6.66
	300.09	514	3.41	1.920E+00	1.688E+00	1.688E+00	14.99
BI-214	609.31	2912	46.30*	1.136E+00	1.190E+00	1.190E+00	6.78
	768.36	256	5.04	9.415E-01	1.160E+00	1.160E+00	19.95
	1120.29	695	15.10	6.798E-01	1.455E+00	1.455E+00	10.73
	1764.49	496	15.80	4.702E-01	1.435E+00	1.435E+00	8.71
PB-214	241.98	1734	7.49	2.226E+00	2.236E+00	2.236E+00	9.37
	295.21	2421	19.20	1.943E+00	1.395E+00	1.395E+00	7.73
	351.92	3887	37.20*	1.714E+00	1.310E+00	1.310E+00	7.01
	785.91	------	1.10	9.238E-01	------ Line Not Found		------
RA-224DA	238.63	6876	44.60*	2.244E+00	1.477E+00	1.531E+00	6.66
	240.98	1734	3.95	2.226E+00	4.240E+00	4.397E+00	9.37
	583.14	2103	30.25	1.176E+00	1.271E+00	1.318E+00	7.20
	860.37	312	4.48	8.556E-01	1.749E+00	1.813E+00	16.86
RA-226DA	186.21	1242	3.50	2.594E+00	2.941E+00	2.941E+00	10.82
	241.98	1734	7.49	2.226E+00	2.236E+00	2.236E+00	9.37
	295.22	2421	19.20	1.943E+00	1.395E+00	1.395E+00	7.73
	351.92	3887	37.20	1.714E+00	1.310E+00	1.310E+00	7.01
	609.32	2912	46.30*	1.136E+00	1.190E+00	1.190E+00	6.78
	1120.28	695	15.10	6.798E-01	1.455E+00	1.455E+00	10.73
	1238.11	277	5.94	6.228E-01	1.610E+00	1.610E+00	19.36
	1764.49	496	15.80	4.702E-01	1.435E+00	1.435E+00	8.71
AC-228	209.28	615	4.40	2.434E+00	1.234E+00	1.234E+00	15.82
	270.23	845	3.60	2.066E+00	2.442E+00	2.442E+00	15.89
	338.32	1298	11.40	1.763E+00	1.388E+00	1.388E+00	9.11
	911.07	1411	27.70*	8.145E-01	1.344E+00	1.344E+00	8.26
	969.11	887	16.60	7.724E-01	1.487E+00	1.487E+00	10.97
RA-228DA	209.28	615	4.40	2.434E+00	1.234E+00	1.249E+00	15.82
	338.32	1298	11.40	1.763E+00	1.388E+00	1.405E+00	9.11
	911.07	1411	27.70*	8.145E-01	1.344E+00	1.360E+00	8.26
	964.60	------	5.20	7.752E-01	------ Line Not Found		------

Nuclide Type: NP

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected PCI/GRAM	Decay Corr PCI/GRAM	1-Sigma %Error
	969.11	887	16.60	7.724E-01	1.487E+00	1.505E+00	10.97
TH-228DA	238.63	6876	44.60	2.244E+00	1.477E+00	1.531E+00	6.66
	240.98	1734	3.95	2.226E+00	4.240E+00	4.397E+00	9.37
	583.14	2103	30.25*	1.176E+00	1.271E+00	1.318E+00	7.20
	860.37	312	4.48	8.556E-01	1.749E+00	1.813E+00	16.86
TH-232DA	238.63	6876	44.60	2.244E+00	1.477E+00	1.477E+00	6.66
	338.32	1298	12.40*	1.763E+00	1.276E+00	1.276E+00	9.11
	583.14	2103	30.25	1.176E+00	1.271E+00	1.271E+00	7.20
	911.07	1411	27.70	8.145E-01	1.344E+00	1.344E+00	8.26
	964.60	------	5.20	7.752E-01	------ Line Not Found		------
	969.11	887	16.60	7.724E-01	1.487E+00	1.487E+00	10.97
U-234DA	241.98	1734	7.49	2.226E+00	2.236E+00	2.236E+00	9.37
	295.22	2421	19.20*	1.943E+00	1.395E+00	1.395E+00	7.73
	351.92	3887	37.20	1.714E+00	1.310E+00	1.310E+00	7.01
	609.31	2912	46.30	1.136E+00	1.190E+00	1.190E+00	6.78
U-238DA	241.98	1734	7.49	2.226E+00	2.236E+00	2.236E+00	9.37
	295.22	2421	19.20	1.943E+00	1.395E+00	1.395E+00	7.73
	351.92	3887	37.20*	1.714E+00	1.310E+00	1.310E+00	7.01
	609.31	2912	46.30	1.136E+00	1.190E+00	1.190E+00	6.78
U-238DHP	63.28	239	3.80*	1.043E+00	1.294E+00	1.294E+00	34.74
	92.59	1481	5.41	2.406E+00	2.445E+00	2.445E+00	12.29

Flag: "*" = Keyline

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
2	72.87	182	2482	0.83	293.44	287	30	5.06E-03	53.6	1.56E+00	
2	74.91	1960	2286	0.84	301.67	287	30	5.45E-02	5.5	1.67E+00	
2	77.13	2632	2074	0.85	310.59	287	30	7.31E-02	4.1	1.78E+00	
0	84.36	622	2739	1.48	339.66	332	14	1.73E-02	19.3	2.10E+00	
0	87.29	1156	2138	1.05	351.43	346	11	3.21E-02	8.6	2.21E+00	T
0	89.91	676	1862	0.90	361.97	357	10	1.88E-02	12.5	2.30E+00	
0	129.01	342	1940	0.85	519.21	513	12	9.50E-03	26.3	2.85E+00	
0	328.05	361	864	1.34	1319.53	1313	14	1.00E-02	18.1	1.80E+00	T
0	409.52	327	807	1.17	1647.13	1636	20	9.10E-03	22.0	1.53E+00	
0	462.99	450	929	1.26	1862.11	1850	26	1.25E-02	19.2	1.40E+00	T
0	727.16	491	459	1.35	2924.27	2913	21	1.37E-02	10.3	9.85E-01	T
0	794.87	291	298	1.54	3196.49	3186	19	8.09E-03	13.4	9.15E-01	T
0	1408.38	71	129	0.85	5663.07	5651	21	1.98E-03	32.5	5.58E-01	T
0	1729.40	121	87	3.39	6953.58	6931	41	3.36E-03	21.2	4.77E-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	6.902E-02	16.43	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	2.970E-01	10.73	
		% Abundances Found =		50.00			
TC-95M	61.00D	0.60	204.12*	66.20	--- Not Found ---		Abun.
			582.07	29.30	1.986E+00	7.20	
			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	1.871E+01	6.78	
		% Abundances Found =		5.92			
RU-106DA	368.20D	0.10	511.85	20.60	6.279E-01	16.43	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	6.831E-01	20.15	
			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	4.949E-01	19.38	
			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	8.287E-02	14.96	
			801.93	8.73	--- Not Found ---		
		% Abundances Found =		41.22			
LA-140	40.22H	21.77	328.77	20.50	7.496E+05	19.27	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 ---		

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	1.334E-01	33.10	
		% Abundances Found =		15.50			
EU-155	4.96Y	0.02	42.90	21.16	--- Not Found ---		Abun.
			86.54	30.90	3.688E-01	11.10	
			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	3.094E+01	20.83	
			452.83	0.31	--- Not Found ---		
			727.33*	6.58	1.629E+00	12.30	
			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	6.484E-01	15.89	
			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	1.906E-01	10.82	
			205.31	4.70	--- Not Found ---		
		% Abundances Found =		78.03			

Flag: "*" = Keyline

VMS Nuclide Identification Report V3.0 Generated 20-SEP-2007 15:04:51

Configuration : $DISK1:[GER4.SAMPLE]J5K2X1AA_190971821.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 : 14-AUG-2007 11:45:00 Acquisition date : 19-SEP-2007 18:21:34
Sample ID : J5K2X1AA Sample quantity : 349.30 GRAMS
Sample type : Sample geometry : S200
Elapsed live time: 0 10:00:00.00 Elapsed real time: 0 10:00:18.63 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 ----

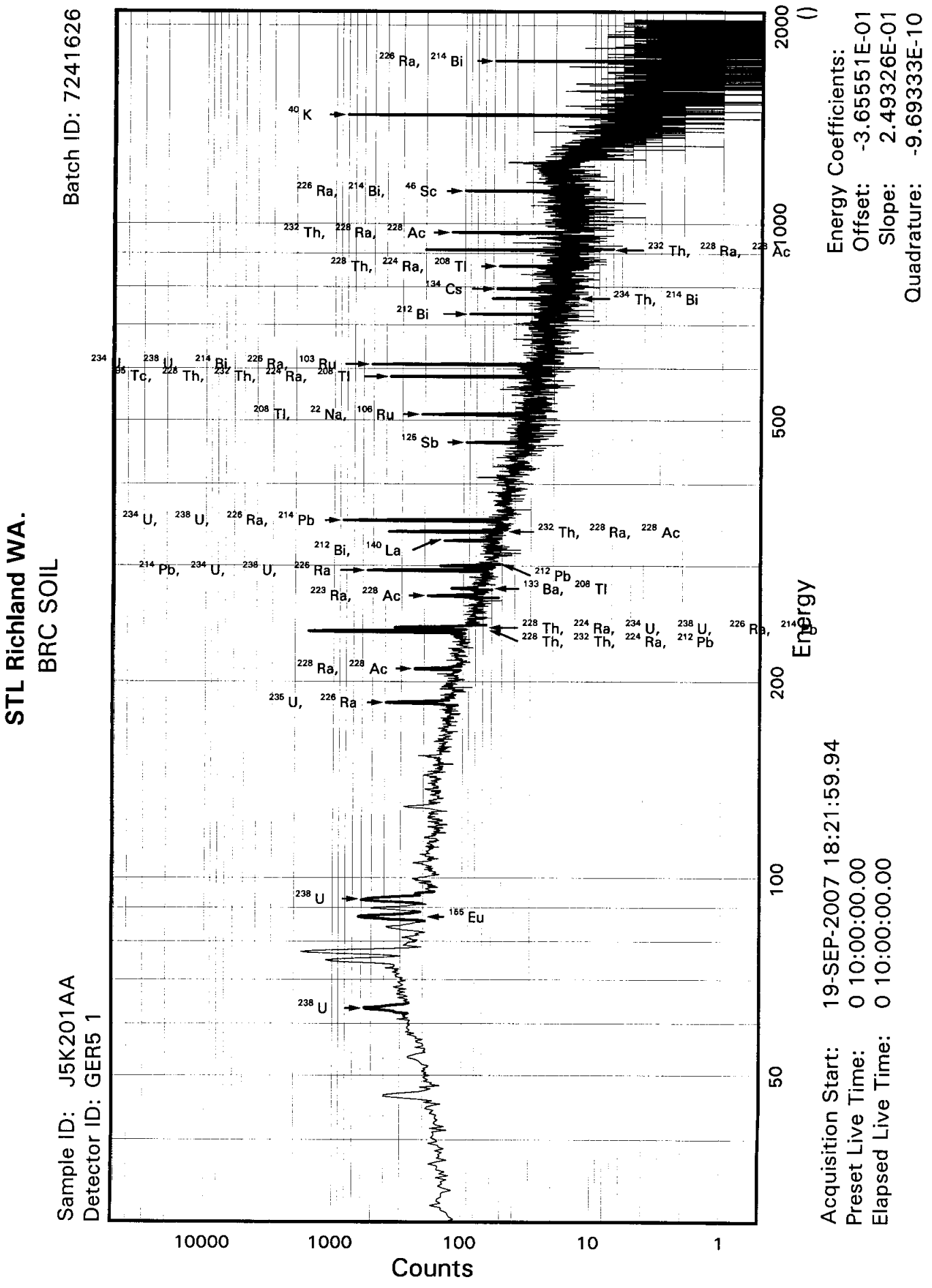
Nuclide	Activity (PCI/GRAM)	Act error	MDA (PCI/GRAM)	MDA error	Act/MDA
K-40	2.911E+01	1.863E+00	2.122E-01	8.053E-03	137.164
TL-208	4.566E-01	3.288E-02	2.354E-02	8.502E-04	19.398
PB-212	1.477E+00	9.833E-02	3.688E-02	1.506E-03	40.040
BI-214	1.190E+00	8.070E-02	4.412E-02	1.595E-03	26.971
PB-214	1.310E+00	9.177E-02	4.720E-02	1.901E-03	27.753
RA-224DA	1.531E+00	1.020E-01	3.824E-02	1.562E-03	40.040
RA-226DA	1.190E+00	8.070E-02	4.412E-02	1.595E-03	26.971
AC-228	1.344E+00	1.110E-01	8.607E-02	4.125E-03	15.613
RA-228DA	1.360E+00	1.123E-01	8.711E-02	4.175E-03	15.613
TH-228DA	1.318E+00	9.489E-02	6.794E-02	2.454E-03	19.398
TH-232DA	1.276E+00	1.163E-01	1.382E-01	5.895E-03	9.231
U-234DA	1.395E+00	1.079E-01	8.544E-02	3.781E-03	16.329
U-238DA	1.310E+00	9.177E-02	4.720E-02	1.901E-03	27.753
U-238DHP	1.294E+00	4.496E-01	1.017E+00	4.314E-02	1.273

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

Nuclide	Key-Line Activity (PCI/GRAM)	K.L. Ided	Act error	MDA (PCI/GRAM)	MDA error	Act/MDA
BE-7	-5.736E-02		8.246E-02	2.759E-01	9.596E-03	-0.208
NA-22	-1.278E-02		9.508E-03	3.152E-02	1.163E-03	-0.405
SC-46	2.970E-01	+	3.186E-02	6.550E-02	2.459E-03	4.534
CR-51	1.113E-01		1.248E-01	4.255E-01	1.936E-02	0.262
MN-54	5.180E-03		7.945E-03	2.721E-02	1.222E-03	0.190
CO-57	2.423E-02		4.451E-02	1.488E-01	5.940E-03	0.163
CO-58	-1.801E-02		9.686E-03	3.172E-02	1.384E-03	-0.568
FE-59	-4.745E-03		2.736E-02	9.230E-02	3.590E-03	-0.051
CO-60	-3.609E-03		7.999E-03	2.705E-02	1.044E-03	-0.133
ZN-65	2.348E-02		2.283E-02	6.643E-02	2.515E-03	0.353
SE-75	1.776E-02		1.037E-02	3.224E-02	1.370E-03	0.551
SR-85	4.274E-02		1.071E-02	3.196E-02	1.139E-03	1.338
Y-88	-6.883E-05		7.112E-03	2.512E-02	8.015E-04	-0.003
NB-94	2.901E-03		6.997E-03	2.386E-02	1.118E-03	0.122

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

Nuclide	Key-Line Activity (PCI/GRAM)	K.L. Ided	Act error	MDA (PCI/GRAM)	MDA error	Act/MDA
NB-95	4.985E-02		1.840E-02	5.401E-02	2.229E-03	0.923
TC-95M	9.770E-03		1.062E-02	3.604E-02	1.388E-03	0.271
ZR-95	2.853E-02		1.869E-02	6.363E-02	2.596E-03	0.448
ZRNB-95	7.374E-02		2.655E-02	7.795E-02	3.217E-03	0.946
RH-101	1.128E-02		6.889E-03	2.211E-02	8.429E-04	0.510
RH-102M	5.600E-03		5.664E-03	1.940E-02	6.737E-04	0.289
RU-103	-7.531E-03		1.152E-02	3.842E-02	1.355E-03	-0.196
RU-106DA	-1.000E-03		6.325E-02	2.152E-01	7.775E-03	-0.005
AG-108M	2.263E-03		5.415E-03	1.858E-02	6.237E-04	0.122
AG-110M	-2.546E-03		1.064E-02	3.583E-02	1.706E-03	-0.071
SN-113DA	-1.573E-02		1.010E-02	3.272E-02	1.053E-03	-0.481
SB-124	-1.636E-02		9.817E-03	3.144E-02	1.136E-03	-0.521
SB-125	1.744E-02		1.775E-02	6.125E-02	2.044E-03	0.285
SN-126DA	1.637E-02		6.536E-03	2.263E-02	8.186E-04	0.723
I-131	-1.123E-01		1.413E-01	4.675E-01	1.772E-02	-0.240
BA-133	4.324E-03		9.427E-03	2.717E-02	1.074E-03	0.159
CS-134	8.287E-02	+	1.240E-02	3.336E-02	1.429E-03	2.484
CS-137DA	-2.181E-03		7.573E-03	2.547E-02	9.153E-04	-0.086
LA-138	-1.122E-02		1.042E-02	3.447E-02	1.314E-03	-0.326
CE-139	-2.871E-03		6.552E-03	2.138E-02	7.754E-04	-0.134
BA-140	-1.148E-01		1.615E-01	5.340E-01	1.916E-02	-0.215
BALA-140	-2.487E-01		1.038E-01	3.289E-01	1.199E-02	-0.756
CE-141	-5.610E-02		2.026E-02	6.444E-02	2.463E-03	-0.871
CE-144	-7.012E-02		4.285E-02	1.401E-01	5.679E-03	-0.500
CEPR-144	-1.390E-01		8.570E-02	2.803E-01	1.136E-02	-0.496
PM-144	-6.123E-03		6.327E-03	2.118E-02	7.651E-04	-0.289
PM-146	2.640E-02		8.318E-03	2.891E-02	9.871E-04	0.913
EU-152	-1.638E-03		1.893E-02	6.355E-02	2.647E-03	-0.026
EU-154	-2.842E-02		2.618E-02	8.734E-02	3.221E-03	-0.325
EU-155	9.078E-02		2.281E-02	7.724E-02	3.363E-03	1.175
HF-181	5.791E-03		1.139E-02	3.878E-02	1.353E-03	0.149
BI-207	1.187E-03		6.149E-03	2.051E-02	7.401E-04	0.058
BI-210M	4.595E-03		1.083E-02	3.083E-02	1.313E-03	0.149
BI-212	1.629E+00	+	2.005E-01	4.705E-01	2.137E-02	3.463
RA-223	6.484E-01	+	1.031E-01	1.445E-01	6.183E-03	4.487
AC-227DA	9.423E-02		5.267E-02	1.531E-01	6.227E-03	0.615
TH-234DA	3.629E+00		1.245E+00	4.376E+00	1.938E-01	0.829
U-235HP	1.192E-01		4.239E-02	1.417E-01	5.459E-03	0.841
NP-237DA	-2.238E-02		1.312E-02	4.332E-02	1.954E-03	-0.517
AM-241HP	-3.213E-03		3.867E-02	1.296E-01	5.344E-03	-0.025


STL Richland WA.
BRC SOIL
Batch ID: 7241626
Sample ID: J5K201AA
Detector ID: GER5 1
Energy Coefficients:
Offset: -3.65551E-01
Slope: 2.49326E-01
Quadrature: -9.69333E-10
Acquisition Start: 19-SEP-2007 18:21:59.94
Preset Live Time: 0 10:00:00.00
Elapsed Live Time: 0 10:00:00.00
Counts
Energy
10000
1000
100
10
1
2000
1000
500
200
100
50
226 Ra, 214 Bi
40 K
226 Ra, 214 Bi, 46 Sc
232 Th, 228 Ra, 228 Ac
228 Th, 224 Ra, 208 Tl
134 Cs
212 Bi
234 Th, 214 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, 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
185 Eu
238 U

SAMPLE IDENTIFICATION: J5K201AA

CONFIGURATION ID: GER5:J5K201AA_190971821
TITLE : BRC SOIL
SAMPLE ID : J5K201AA

REPORT DATE: 20-SEP-07
ACQUIRE DATE: 19-SEP-07 18:21:59
ELAPSED LIVE TIME: 36000.0 Sec
PRESET LIVE TIME: 0 10:00:00

SAMPLE DATE: 14-AUG-2007 11:45:00.00
CALIB DATE: 19-SEP-2007 05:32:03.46
ELAPSED LIVE TIME: 0 10:00:00
ELAPSED REAL TIME: 0 10:00:12

SAMPLE QUANTITY: 3.2240E+02
SAMPLE GEOMETRY: ES200

UNITS: GRAMS
SAMPLE TYPE:

ENERGY OFFSET: -.3656E+00 keV
ENERGY SLOPE: 2.4933E-01 keV/C
ENERGY Q COEFF: -.9693E-09 keV/C^^2
PEAK SENSITIVITY: 5.000

FWHM OFFSET: 7.9460E-01 keV
FWHM SLOPE: 2.4855E-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 20-SEP-2007 15:11:12

Configuration : RDND06$DKA100:[GER5.SAMPLE]J5K201AA_190971821.CNF;1
Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6
Sample title : BRC SOIL
Sample date : 14-AUG-2007 11:45:00 Acquisition date : 19-SEP-2007 18:21:59
Sample ID : J5K201AA Sample quantity : 322.40 GRAMS
Sample type : Sample geometry : ES200
Elapsed live time: 0 10:00:00.00 Elapsed real time: 0 10:00:12.71 0.0%
Start energy : 19.58 End energy : 2042.05
Sensitivity : 5.00 Gaussian : 40.00
Critical level : No

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	46.77*	486	2349	0.84	189.05	182	14	1.35E-02	23.0	
2	0	63.35*	729	3201	0.71	255.54	249	12	2.02E-02	16.7	
3	2	74.87*	3065	3605	0.88	301.76	295	22	8.51E-02	4.1	1.36E+00
4	2	77.14*	5650	2902	0.90	310.87	295	22	1.57E-01	2.4	
5	0	84.21	1053	2362	1.20	339.20	334	12	2.92E-02	9.7	
6	0	87.15	1932	2545	1.09	351.01	346	12	5.37E-02	5.7	
7	0	89.93	1204	2276	0.85	362.15	357	11	3.34E-02	8.2	
8	0	92.98*	2088	3080	1.47	374.38	368	17	5.80E-02	7.0	
9	0	128.72	642	2164	1.13	517.76	511	14	1.78E-02	15.8	
10	0	185.86*	1146	1902	1.18	746.90	740	15	3.18E-02	9.3	
11	0	209.32	656	1428	1.23	841.00	835	13	1.82E-02	12.5	
12	3	238.60*	6493	1284	1.02	958.43	949	31	1.80E-01	1.7	2.57E+00
13	3	241.62	1685	1621	1.57	970.55	949	31	4.68E-02	6.8	
14	0	270.30	531	1245	0.97	1085.58	1077	16	1.48E-02	15.5	
15	0	277.14	215	889	0.88	1113.01	1108	12	5.98E-03	28.4	
16	0	295.18	2218	1118	1.06	1185.39	1177	17	6.16E-02	4.1	
17	0	300.08	448	914	1.22	1205.02	1197	15	1.24E-02	15.5	
18	0	327.99	430	996	1.10	1316.97	1308	19	1.19E-02	18.3	
19	0	338.31	1470	896	0.96	1358.39	1351	17	4.08E-02	5.4	
20	0	351.88	3849	1014	1.12	1412.80	1402	20	1.07E-01	2.6	
21	0	463.04	440	683	1.28	1858.65	1849	23	1.22E-02	16.1	
22	0	510.66*	659	890	1.57	2049.65	2036	31	1.83E-02	15.7	
23	0	583.16*	1838	604	1.32	2340.45	2331	22	5.11E-02	4.3	
24	0	609.32	2843	507	1.33	2445.34	2434	22	7.90E-02	2.8	
25	0	727.08	425	494	1.68	2917.67	2906	23	1.18E-02	14.4	
26	0	767.84	317	300	1.41	3081.17	3070	20	8.81E-03	14.5	
27	0	794.92	320	300	1.82	3189.78	3180	22	8.89E-03	14.9	
28	0	860.84	283	283	1.76	3454.17	3445	20	7.86E-03	13.7	
29	0	911.17*	1245	377	1.69	3656.04	3642	27	3.46E-02	4.9	
30	0	933.93	135	287	0.65	3747.35	3738	20	3.74E-03	27.5	
31	0	968.52	742	752	1.48	3886.07	3868	32	2.06E-02	10.0	
32	0	1120.14	606	419	1.76	4494.21	4481	27	1.68E-02	8.9	
33	0	1378.15	117	116	0.94	5529.07	5518	20	3.25E-03	21.5	
34	0	1460.72*	6734	170	1.97	5860.26	5844	33	1.87E-01	1.4	
35	0	1631.71	39	56	1.68	6546.11	6531	18	1.09E-03	40.8	
36	0	1729.44	85	61	2.28	6938.11	6924	23	2.35E-03	23.1	
37	0	1764.35	495	68	1.95	7078.14	7063	35	1.37E-02	6.3	

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

VMS Nuclide Identification Report V3.1 Generated 20-SEP-2007 15:11:13

Configuration : RDND06$DKA100:[GER5.SAMPLE]J5K201AA_190971821.CNF;1
Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.4
Sample title : BRC SOIL
Sample date : 14-AUG-2007 11:45:00 Acquisition date : 19-SEP-2007 18:21:59
Sample ID : J5K201AA Sample quantity : 322.40 GRAMS
Sample type : Sample geometry : ES200
Elapsed live time: 0 10:00:00.00 Elapsed real time: 0 10:00:12.71 0.0%
Energy tolerance : 1.50 Half life ratio : 8.00
Errors propagated: Yes Systematic Error : 5.00 %
Efficiency type : Empirical Efficiencies at : Peak Energy
Abundance limit : 80.00

Nuclide Line Activity Report

Nuclide Type: NP

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected PCI/GRAM	Decay Corr PCI/GRAM	1-Sigma %Error
K-40	1460.81	6734	10.67*	5.413E-01	2.715E+01	2.715E+01	6.20
TL-208	277.35	215	6.80	2.162E+00	3.412E-01	3.412E-01	29.07
	510.84	659	21.60	1.323E+00	5.370E-01	5.370E-01	16.82
	583.14	1838	84.20*	1.185E+00	4.292E-01	4.292E-01	7.35
	860.37	283	12.46	8.519E-01	6.206E-01	6.206E-01	15.13
PB-212	238.63	6493	44.60*	2.420E+00	1.401E+00	1.401E+00	6.40
	300.09	448	3.41	2.033E+00	1.503E+00	1.503E+00	16.60
BI-214	609.31	2843	46.30*	1.142E+00	1.252E+00	1.252E+00	6.57
	768.36	317	5.04	9.392E-01	1.560E+00	1.560E+00	15.76
	1120.29	606	15.10	6.795E-01	1.375E+00	1.375E+00	10.77
	1764.49	495	15.80	4.621E-01	1.578E+00	1.578E+00	8.66
PB-214	241.98	1685	7.49	2.398E+00	2.185E+00	2.185E+00	9.19
	295.21	2218	19.20	2.060E+00	1.306E+00	1.306E+00	7.27
	351.92	3849	37.20*	1.793E+00	1.344E+00	1.344E+00	6.49
	785.91	------	1.10	9.208E-01	------ Line Not Found		------
RA-224DA	238.63	6493	44.60*	2.420E+00	1.401E+00	1.452E+00	6.40
	240.98	1685	3.95	2.398E+00	4.143E+00	4.296E+00	9.19
	583.14	1838	30.25	1.185E+00	1.195E+00	1.239E+00	7.35
	860.37	283	4.48	8.519E-01	1.726E+00	1.790E+00	15.13
RA-226DA	186.21	1146	3.50	2.882E+00	2.645E+00	2.645E+00	11.13
	241.98	1685	7.49	2.398E+00	2.185E+00	2.185E+00	9.19
	295.22	2218	19.20	2.060E+00	1.306E+00	1.306E+00	7.27
	351.92	3849	37.20	1.793E+00	1.344E+00	1.344E+00	6.49
	609.32	2843	46.30*	1.142E+00	1.252E+00	1.252E+00	6.57
	1120.28	606	15.10	6.795E-01	1.375E+00	1.376E+00	10.77
	1238.11	------	5.94	6.235E-01	------ Line Not Found		------
	1764.49	495	15.80	4.621E-01	1.578E+00	1.578E+00	8.66
AC-228	209.28	656	4.40	2.659E+00	1.305E+00	1.305E+00	13.96
	270.23	531	3.60	2.204E+00	1.559E+00	1.559E+00	16.65
	338.32	1470	11.40	1.850E+00	1.623E+00	1.623E+00	8.00
	911.07	1245	27.70*	8.115E-01	1.290E+00	1.290E+00	8.03
	969.11	742	16.60	7.701E-01	1.351E+00	1.351E+00	11.86
RA-228DA	209.28	656	4.40	2.659E+00	1.305E+00	1.321E+00	13.96
	338.32	1470	11.40	1.850E+00	1.623E+00	1.642E+00	8.00
	911.07	1245	27.70*	8.115E-01	1.290E+00	1.305E+00	8.03
	964.60	------	5.20	7.727E-01	------ Line Not Found		------

Nuclide Type: NP

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected PCI/GRAM	Decay Corr PCI/GRAM	1-Sigma %Error
	969.11	742	16.60	7.701E-01	1.351E+00	1.367E+00	11.86
TH-228DA	238.63	6493	44.60	2.420E+00	1.401E+00	1.452E+00	6.40
	240.98	1685	3.95	2.398E+00	4.143E+00	4.296E+00	9.19
	583.14	1838	30.25*	1.185E+00	1.195E+00	1.239E+00	7.35
	860.37	283	4.48	8.519E-01	1.726E+00	1.790E+00	15.13
TH-232DA	238.63	6493	44.60	2.420E+00	1.401E+00	1.401E+00	6.40
	338.32	1470	12.40*	1.850E+00	1.492E+00	1.492E+00	8.00
	583.14	1838	30.25	1.185E+00	1.195E+00	1.195E+00	7.35
	911.07	1245	27.70	8.115E-01	1.290E+00	1.290E+00	8.03
	964.60	------	5.20	7.727E-01	------ Line Not Found		------
	969.11	742	16.60	7.701E-01	1.351E+00	1.351E+00	11.86
U-234DA	241.98	1685	7.49	2.398E+00	2.185E+00	2.185E+00	9.19
	295.22	2218	19.20*	2.060E+00	1.306E+00	1.306E+00	7.27
	351.92	3849	37.20	1.793E+00	1.344E+00	1.344E+00	6.49
	609.31	2843	46.30	1.142E+00	1.252E+00	1.252E+00	6.57
U-238DA	241.98	1685	7.49	2.398E+00	2.185E+00	2.185E+00	9.19
	295.22	2218	19.20	2.060E+00	1.306E+00	1.306E+00	7.27
	351.92	3849	37.20*	1.793E+00	1.344E+00	1.344E+00	6.49
	609.31	2843	46.30	1.142E+00	1.252E+00	1.252E+00	6.57
U-238DHP	63.28	729	3.80*	3.563E+00	1.253E+00	1.253E+00	17.72
	92.59	2088	5.41	3.876E+00	2.319E+00	2.319E+00	9.20

Flag: "*" = Keyline

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
0	46.77	486	2349	0.84	189.05	182	14	1.35E-02	23.0	2.65E+00	
2	74.87	3065	3605	0.88	301.76	295	22	8.51E-02	4.1	3.82E+00	
2	77.14	5650	2902	0.90	310.87	295	22	1.57E-01	2.4	3.84E+00	
0	84.21	1053	2362	1.20	339.20	334	12	2.92E-02	9.7	3.88E+00	
0	87.15	1932	2545	1.09	351.01	346	12	5.37E-02	5.7	3.89E+00	T
0	89.93	1204	2276	0.85	362.15	357	11	3.34E-02	8.2	3.89E+00	
0	128.72	642	2164	1.13	517.76	511	14	1.78E-02	15.8	3.54E+00	
0	327.99	430	996	1.10	1316.97	1308	19	1.19E-02	18.3	1.90E+00	T
0	463.04	440	683	1.28	1858.65	1849	23	1.22E-02	16.1	1.43E+00	T
0	727.08	425	494	1.68	2917.67	2906	23	1.18E-02	14.4	9.84E-01	T
0	794.92	320	300	1.82	3189.78	3180	22	8.89E-03	14.9	9.12E-01	T
0	933.93	135	287	0.65	3747.35	3738	20	3.74E-03	27.5	7.94E-01	
0	1378.15	117	116	0.94	5529.07	5518	20	3.25E-03	21.5	5.69E-01	
0	1631.71	39	56	1.68	6546.11	6531	18	1.09E-03	40.8	4.93E-01	
0	1729.44	85	61	2.28	6938.11	6924	23	2.35E-03	23.1	4.70E-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	6.629E-02	16.82	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	2.808E-01	10.77	
		% Abundances Found =		50.00			
TC-95M	61.00D	0.60	204.12*	66.20	--- Not Found ---		Abun.
			582.07	29.30	1.867E+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	1.969E+01	6.57	
		% Abundances Found =		5.92			
RU-106DA	368.20D	0.10	511.85	20.60	6.030E-01	16.82	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	7.082E-01	17.22	
			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	3.384E-01	29.07	
			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	9.900E-02	16.16	
			801.93	8.73	--- Not Found ---		
		% Abundances Found =		41.22			
LA-140	40.22H	21.77	328.77	20.50	9.197E+05	19.22	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	3.798E-01	8.26	
			105.31*	20.70	--- Not Found ---		
		% Abundances Found =		42.47			

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	3.796E+01	20.78	
			452.83	0.31	--- Not Found ---		
			727.33*	6.58	1.529E+00	15.82	
			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	4.139E-01	16.65	
			323.87	3.88	--- Not Found ---		
		% Abundances Found =		58.98			
TH-234DA	4.47E+09Y	0.00	766.41	0.21	3.743E+01	15.76	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	1.714E-01	11.13	
			205.31	4.70	--- Not Found ---		
		% Abundances Found =		78.03			

Flag: "*" = Keyline

VMS Nuclide Identification Report V3.1 Generated 20-SEP-2007 15:11:14

Configuration : RDND06$DKA100:[GER5.SAMPLE]J5K201AA_190971821.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 : 14-AUG-2007 11:45:00 Acquisition date : 19-SEP-2007 18:21:59
Sample ID : J5K201AA Sample quantity : 322.40 GRAMS
Sample type : Sample geometry : ES200
Elapsed live time: 0 10:00:00.00 Elapsed real time: 0 10:00:12.71 0.0%
Peak Width (FWHM): 3.00 Confidence level : 5.00 %
Energy tolerance : 1.50 Half life ratio : 8.00
Errors propagated: Yes Systematic Error : 5.00 %
Efficiency type : Empirical Efficiencies at : Peak Energy
Abundance limit : 80.00 WTM error limit : 3.00

Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Activity (PCI/GRAM)	Act error	MDA (PCI/GRAM)	MDA error	Act/MDA
K-40	2.715E+01	1.684E+00	1.961E-01	6.684E-03	138.426
TL-208	4.292E-01	3.155E-02	2.336E-02	7.587E-04	18.372
PB-212	1.401E+00	8.964E-02	3.770E-02	1.355E-03	37.158
BI-214	1.252E+00	8.224E-02	4.560E-02	1.480E-03	27.464
PB-214	1.344E+00	8.724E-02	4.456E-02	1.441E-03	30.159
RA-224DA	1.452E+00	9.295E-02	3.909E-02	1.405E-03	37.158
RA-226DA	1.252E+00	8.225E-02	4.560E-02	1.480E-03	27.463
AC-228	1.290E+00	1.036E-01	8.500E-02	3.381E-03	15.174
RA-228DA	1.305E+00	1.048E-01	8.603E-02	3.422E-03	15.174
TH-228DA	1.239E+00	9.105E-02	6.743E-02	2.190E-03	18.372
TH-232DA	1.492E+00	1.194E-01	1.400E-01	4.512E-03	10.658
U-234DA	1.306E+00	9.496E-02	8.715E-02	2.943E-03	14.990
U-238DA	1.344E+00	8.724E-02	4.456E-02	1.441E-03	30.159
U-238DHP	1.253E+00	2.221E-01	4.615E-01	1.448E-02	2.715

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

Nuclide	Key-Line Activity (PCI/GRAM)	K.L. Ided	Act error	MDA (PCI/GRAM)	MDA error	Act/MDA
BE-7	-1.524E-01		8.316E-02	2.704E-01	8.784E-03	-0.564
NA-22	5.837E-03		8.994E-03	3.095E-02	1.038E-03	0.189
NA-24	6.086E+09		2.469E+09	Half-Life too short		
SC-46	2.808E-01	+	3.025E-02	6.609E-02	2.273E-03	4.250
CR-51	3.024E-02		1.306E-01	4.320E-01	1.383E-02	0.070
MN-54	3.903E-03		7.770E-03	2.648E-02	1.006E-03	0.147
CO-57	-1.030E-03		4.495E-02	1.522E-01	5.100E-03	-0.007
CO-58	-9.294E-03		9.505E-03	3.156E-02	1.174E-03	-0.294
FE-59	-4.783E-02		2.589E-02	8.478E-02	2.979E-03	-0.564
CO-60	-6.467E-03		7.668E-03	2.554E-02	8.722E-04	-0.253
ZN-65	-2.570E-02		2.248E-02	6.244E-02	2.158E-03	-0.412
SE-75	-1.542E-02		1.026E-02	3.271E-02	1.153E-03	-0.471
SR-85	4.406E-02		1.050E-02	3.162E-02	1.014E-03	1.393
Y-88	2.122E-03		6.133E-03	2.225E-02	6.937E-04	0.095

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

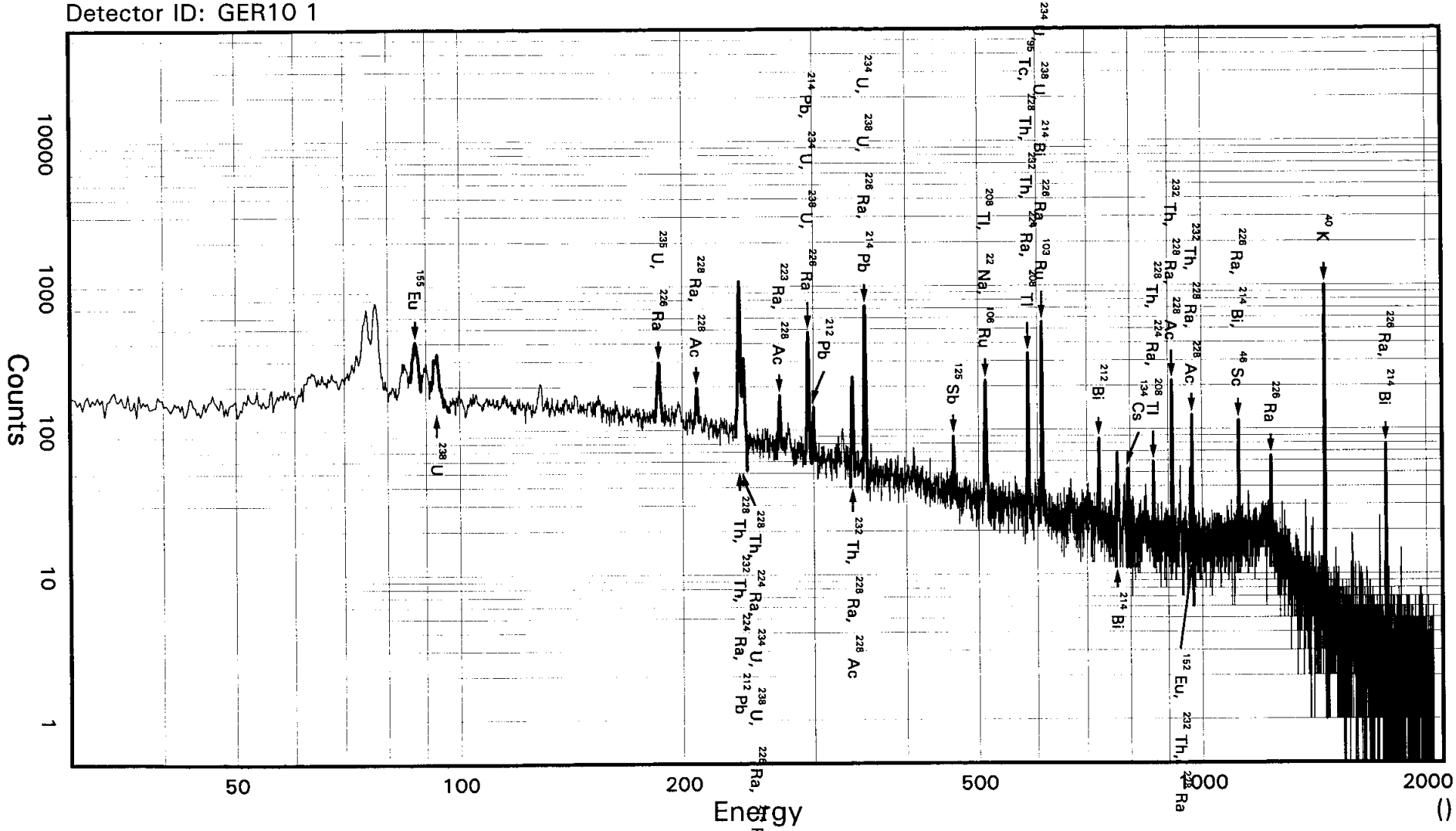
Nuclide	Key-Line Activity (PCI/GRAM)	K.L. Ided	Act error	MDA (PCI/GRAM)	MDA error	Act/MDA
NB-94	-3.799E-03		6.707E-03	2.241E-02	8.765E-04	-0.170
NB-95	3.779E-02		1.701E-02	5.110E-02	1.825E-03	0.739
TC-95M	2.761E-02		1.131E-02	3.820E-02	1.379E-03	0.723
ZR-95	7.001E-03		1.816E-02	6.207E-02	2.199E-03	0.113
ZRNB-95	5.626E-02		2.453E-02	7.378E-02	2.635E-03	0.763
MO-99	-4.957E-05		4.836E-05	Half-Life too short		
RH-101	2.176E-02		6.963E-03	2.348E-02	8.460E-04	0.927
RH-102M	1.332E-03		5.695E-03	1.925E-02	6.258E-04	0.069
RU-103	1.808E-02		1.166E-02	3.998E-02	1.291E-03	0.452
RU-106DA	7.720E-02		6.543E-02	2.279E-01	7.389E-03	0.339
AG-108M	7.524E-03		5.953E-03	2.039E-02	6.647E-04	0.369
AG-110M	-2.560E-03		1.034E-02	3.476E-02	1.375E-03	-0.074
SN-113DA	-1.727E-02		9.879E-03	3.253E-02	1.050E-03	-0.531
SB-124	1.376E-02		9.842E-03	3.237E-02	1.051E-03	0.425
SB-125	5.139E-03		1.867E-02	6.330E-02	2.062E-03	0.081
SN-126DA	2.343E-02		6.472E-03	2.285E-02	7.382E-04	1.025
I-131	8.224E-02		1.416E-01	4.847E-01	1.569E-02	0.170
BA-133	-2.045E-03		9.388E-03	2.708E-02	8.761E-04	-0.076
CS-134	9.900E-02	+	1.600E-02	3.389E-02	1.244E-03	2.921
CS-137DA	-2.520E-02		7.531E-03	2.378E-02	7.644E-04	-1.060
LA-138	-3.912E-03		9.062E-03	3.071E-02	1.048E-03	-0.127
CE-139	-7.194E-03		6.736E-03	2.245E-02	7.935E-04	-0.320
BA-140	-1.777E-01		1.642E-01	5.393E-01	1.741E-02	-0.329
BALA-140	-4.107E-01		1.078E-01	3.182E-01	1.066E-02	-1.291
LA-140	-1.089E-01		2.675E-02	Half-Life too short		
CE-141	4.032E-02		2.028E-02	6.903E-02	2.357E-03	0.584
CE-144	-9.722E-02		4.466E-02	1.449E-01	4.825E-03	-0.671
CEPR-144	-1.942E-01		8.931E-02	2.898E-01	9.651E-03	-0.670
PM-144	-8.045E-03		6.681E-03	2.171E-02	7.042E-04	-0.371
PM-146	9.008E-03		8.103E-03	2.773E-02	9.041E-04	0.325
EU-152	-2.985E-03		1.904E-02	6.367E-02	2.055E-03	-0.047
EU-154	1.393E-02		2.489E-02	8.550E-02	2.868E-03	0.163
EU-155	6.417E-02		2.122E-02	7.013E-02	2.280E-03	0.915
HF-181	-6.829E-03		1.201E-02	4.004E-02	1.299E-03	-0.171
BI-207	-2.239E-03		6.075E-03	2.017E-02	6.544E-04	-0.111
BI-210M	-8.193E-03		1.149E-02	3.207E-02	1.129E-03	-0.255
BI-212	1.529E+00	+	2.419E-01	4.844E-01	2.000E-02	3.156
RA-223	4.139E-01	+	6.891E-02	1.489E-01	5.224E-03	2.779
AC-227DA	2.284E-01		5.805E-02	1.679E-01	6.044E-03	1.360
TH-234DA	2.550E+00		1.189E+00	4.213E+00	1.601E-01	0.605
U-235HP	1.009E-01		4.346E-02	1.479E-01	5.031E-03	0.683
NP-237DA	-2.444E-02		1.390E-02	4.468E-02	1.458E-03	-0.547
AM-241HP	4.960E-02		1.647E-02	4.957E-02	1.581E-03	1.001

STL Richland WA.

BRC SOIL

Sample ID: J5K221AA
Detector ID: GER10 1

Batch ID: 7241626



Acquisition Start: 19-SEP-2007 18:22:45.46
Preset Live Time: 0 10:00:00.00
Elapsed Live Time: 0 10:00:00.00

Energy Coefficients:
Offset: 1.46326E+01
Slope: 2.47244E-01
Quadrature: 6.85178E-09

SAMPLE IDENTIFICATION: J5K221AA

CONFIGURATION ID: GER10:J5K221AA_190971822
TITLE : BRC SOIL
SAMPLE ID : J5K221AA

REPORT DATE: 20-SEP-07
ACQUIRE DATE: 19-SEP-07 18:22:45
ELAPSED LIVE TIME: 36000.0 Sec
PRESET LIVE TIME: 0 10:00:00

SAMPLE DATE: 14-AUG-2007 12:30:00.00
CALIB DATE: 19-SEP-2007 05:47:00.31
ELAPSED LIVE TIME: 0 10:00:00
ELAPSED REAL TIME: 0 10:00:14

SAMPLE QUANTITY: 3.4040E+02
SAMPLE GEOMETRY: S200

UNITS: GRAMS
SAMPLE TYPE:

ENERGY OFFSET: 1.4633E+01 keV
ENERGY SLOPE: 2.4724E-01 keV/C
ENERGY Q COEFF: 6.8518E-09 keV/C^^2
PEAK SENSITIVITY: 5.000

FWHM OFFSET: 1.1953E+00 keV
FWHM SLOPE: 2.0517E-02 sqr keV
ITERATIONS: 10
GAUSSIAN SENSITIVITY: 10.00 %

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

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

VMS Peak Search Report V1.9 Generated 20-SEP-2007 04:23:10

Configuration : $DISK1:[GER10.SAMPLE]J5K221AA_190971822.CNF;1
Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6
Sample title : BRC SOIL
Sample date : 14-AUG-2007 12:30:00 Acquisition date : 19-SEP-2007 18:22:45
Sample ID : J5K221AA Sample quantity : 340.40 GRAMS
Sample type : Sample geometry : S200
Elapsed live time: 0 10:00:00.00 Elapsed real time: 0 10:00:14.87 0.0%
Start energy : 17.10 End energy : 2040.51
Sensitivity : 5.00 Gaussian : 10.00
Critical level : No

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	2	74.85*	1832	3807	1.32	243.56	237	24	5.09E-02	7.8	2.11E+00
2	2	77.06	3335	3881	1.43	252.50	237	24	9.26E-02	4.9	
3	0	87.13	914	2680	1.28	293.20	288	12	2.54E-02	11.8	
4	0	93.15	1161	3752	1.61	317.57	310	23	3.22E-02	14.2	
5	0	128.62	395	2295	1.46	461.03	454	16	1.10E-02	27.5	
6	0	186.02	1203	2584	1.53	693.18	684	21	3.34E-02	10.9	
7	0	208.98	524	2004	1.49	786.06	777	18	1.45E-02	17.6	
8	2	238.65	6224	1695	1.53	906.03	895	35	1.73E-01	1.9	2.01E+00
9	2	241.77	1767	1600	1.83	918.65	895	35	4.91E-02	6.3	
10	0	270.11	587	1719	1.06	1033.25	1022	23	1.63E-02	16.0	
11	0	295.18	2820	1481	1.53	1134.66	1123	24	7.83E-02	3.6	
12	0	300.05	302	1085	1.06	1154.34	1147	16	8.39E-03	21.6	
13	0	338.38	1094	1401	1.56	1309.39	1299	22	3.04E-02	8.0	
14	0	351.86*	4641	1110	1.55	1363.88	1351	23	1.29E-01	2.2	
15	0	409.74	165	687	1.74	1597.98	1590	16	4.58E-03	31.5	
16	0	462.80	424	781	1.60	1812.57	1801	24	1.18E-02	15.5	
17	0	511.04*	956	1131	2.17	2007.63	1991	38	2.65E-02	11.6	
18	0	583.06	2147	859	1.48	2298.92	2283	32	5.96E-02	4.1	
19	0	609.26	3723	870	1.60	2404.87	2388	32	1.03E-01	2.6	
20	0	727.04	475	450	1.52	2881.16	2871	22	1.32E-02	10.7	
21	0	768.11	317	744	1.55	3047.26	3035	30	8.82E-03	21.7	
22	0	795.31	356	630	2.22	3157.24	3137	37	9.90E-03	19.7	
23	0	860.48	255	398	1.69	3420.80	3410	21	7.09E-03	17.7	
24	0	911.14	1471	396	1.69	3625.66	3612	27	4.09E-02	4.1	
25	0	934.05	215	365	1.31	3718.27	3708	22	5.98E-03	20.4	
26	0	964.66	207	344	1.78	3842.08	3834	16	5.74E-03	18.5	
27	0	969.14	844	417	1.74	3860.19	3849	25	2.34E-02	6.6	
28	0	1120.02	854	438	2.03	4470.27	4455	28	2.37E-02	6.8	
29	0	1237.85	314	484	1.90	4946.75	4934	24	8.73E-03	16.6	
30	0	1401.88	105	135	2.60	5609.99	5600	22	2.93E-03	25.8	
31	0	1460.79*	9052	203	2.10	5848.17	5829	39	2.51E-01	1.1	
32	0	1729.46	144	59	1.75	6934.43	6920	25	4.01E-03	13.6	
33	0	1764.38	721	71	2.24	7075.64	7056	36	2.00E-02	4.6	
34	0	1847.49	108	54	2.39	7411.64	7394	27	3.00E-03	17.2	

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

VMS Nuclide Identification Report V3.0 Generated 20-SEP-2007 04:23:10

Configuration : $DISK1:[GER10.SAMPLE]J5K221AA_190971822.CNF;1
Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.3
Sample title : BRC SOIL
Sample date : 14-AUG-2007 12:30:00 Acquisition date : 19-SEP-2007 18:22:45
Sample ID : J5K221AA Sample quantity : 340.40 GRAMS
Sample type : Sample geometry : S200
Elapsed live time: 0 10:00:00.00 Elapsed real time: 0 10:00:14.87 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	9052	10.67*	8.323E-01	2.248E+01	2.248E+01	6.35
TL-208	277.35	------	6.80	2.752E+00	------ Line Not Found		------
	510.84	956	21.60	1.867E+00	5.228E-01	5.228E-01	13.02
	583.14	2147	84.20*	1.704E+00	3.300E-01	3.300E-01	7.22
	860.37	255	12.46	1.273E+00	3.550E-01	3.550E-01	19.04
PB-212	238.63	6224	44.60*	3.006E+00	1.024E+00	1.024E+00	6.69
	300.09	302	3.41	2.624E+00	7.449E-01	7.449E-01	22.53
BI-214	609.31	3723	46.30*	1.652E+00	1.073E+00	1.073E+00	6.53
	768.36	317	5.04	1.391E+00	9.982E-01	9.982E-01	22.69
	1120.29	854	15.10	1.028E+00	1.214E+00	1.214E+00	9.25
	1764.49	721	15.80	7.322E-01	1.374E+00	1.374E+00	7.58
PB-214	241.98	1767	7.49	2.984E+00	1.744E+00	1.744E+00	8.97
	295.21	2820	19.20	2.650E+00	1.222E+00	1.222E+00	7.25
	351.92	4641	37.20*	2.378E+00	1.157E+00	1.157E+00	6.49
	785.91	------	1.10	1.367E+00	------ Line Not Found		------
RA-224DA	238.63	6224	44.60*	3.006E+00	1.024E+00	1.062E+00	6.69
	240.98	1767	3.95	2.984E+00	3.306E+00	3.428E+00	8.97
	583.14	2147	30.25	1.704E+00	9.184E-01	9.523E-01	7.22
	860.37	255	4.48	1.273E+00	9.874E-01	1.024E+00	19.04
RA-226DA	186.21	1203	3.50	3.433E+00	2.209E+00	2.209E+00	12.70
	241.98	1767	7.49	2.984E+00	1.744E+00	1.744E+00	8.97
	295.22	2820	19.20	2.650E+00	1.222E+00	1.223E+00	7.25
	351.92	4641	37.20	2.378E+00	1.157E+00	1.157E+00	6.49
	609.32	3723	46.30*	1.652E+00	1.073E+00	1.073E+00	6.53
	1120.28	854	15.10	1.028E+00	1.214E+00	1.214E+00	9.25
	1238.11	314	5.94	9.476E-01	1.232E+00	1.232E+00	17.73
	1764.49	721	15.80	7.322E-01	1.374E+00	1.374E+00	7.58
AC-228	209.28	524	4.40	3.236E+00	8.114E-01	8.114E-01	18.77
	270.23	587	3.60	2.796E+00	1.287E+00	1.287E+00	17.27
	338.32	1094	11.40	2.437E+00	8.686E-01	8.686E-01	10.09
	911.07	1471	27.70*	1.216E+00	9.630E-01	9.630E-01	8.21
	969.11	844	16.60	1.157E+00	9.688E-01	9.688E-01	9.56
RA-228DA	209.28	524	4.40	3.236E+00	8.114E-01	8.212E-01	18.77
	338.32	1094	11.40	2.437E+00	8.686E-01	8.791E-01	10.09
	911.07	1471	27.70*	1.216E+00	9.630E-01	9.746E-01	8.21
	964.60	207	5.20	1.162E+00	7.550E-01	7.641E-01	19.79

Nuclide Type: NP

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected PCI/GRAM	Decay Corr PCI/GRAM	1-Sigma %Error
	969.11	844	16.60	1.157E+00	9.688E-01	9.805E-01	9.56
TH-228DA	238.63	6224	44.60	3.006E+00	1.024E+00	1.062E+00	6.69
	240.98	1767	3.95	2.984E+00	3.306E+00	3.428E+00	8.97
	583.14	2147	30.25*	1.704E+00	9.184E-01	9.523E-01	7.22
	860.37	255	4.48	1.273E+00	9.874E-01	1.024E+00	19.04
TH-232DA	238.63	6224	44.60	3.006E+00	1.024E+00	1.024E+00	6.69
	338.32	1094	12.40*	2.437E+00	7.985E-01	7.985E-01	10.09
	583.14	2147	30.25	1.704E+00	9.184E-01	9.184E-01	7.22
	911.07	1471	27.70	1.216E+00	9.630E-01	9.630E-01	8.21
	964.60	207	5.20	1.162E+00	7.550E-01	7.550E-01	19.79
	969.11	844	16.60	1.157E+00	9.688E-01	9.688E-01	9.56
U-234DA	241.98	1767	7.49	2.984E+00	1.744E+00	1.744E+00	8.97
	295.22	2820	19.20*	2.650E+00	1.222E+00	1.222E+00	7.25
	351.92	4641	37.20	2.378E+00	1.157E+00	1.157E+00	6.49
	609.31	3723	46.30	1.652E+00	1.073E+00	1.073E+00	6.53
U-238DA	241.98	1767	7.49	2.984E+00	1.744E+00	1.744E+00	8.97
	295.22	2820	19.20	2.650E+00	1.222E+00	1.222E+00	7.25
	351.92	4641	37.20*	2.378E+00	1.157E+00	1.157E+00	6.49
	609.31	3723	46.30	1.652E+00	1.073E+00	1.073E+00	6.53

Flag: "*" = Keyline

Sample ID : J5K221AA
Acquisition date : 19-SEP-2007 18:22:45

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
2	74.85	1832	3807	1.32	243.56	237	24	5.09E-02	7.8	2.87E+00	
2	77.06	3335	3881	1.43	252.50	237	24	9.26E-02	4.9	2.99E+00	
0	87.13	914	2680	1.28	293.20	288	12	2.54E-02	11.8	3.43E+00	T
0	93.15	1161	3752	1.61	317.57	310	23	3.22E-02	14.2	3.60E+00	T
0	128.62	395	2295	1.46	461.03	454	16	1.10E-02	27.5	3.87E+00	
0	409.74	165	687	1.74	1597.98	1590	16	4.58E-03	31.5	2.16E+00	
0	462.80	424	781	1.60	1812.57	1801	24	1.18E-02	15.5	1.99E+00	T
0	727.04	475	450	1.52	2881.16	2871	22	1.32E-02	10.7	1.45E+00	T
0	795.31	356	630	2.22	3157.24	3137	37	9.90E-03	19.7	1.35E+00	T
0	934.05	215	365	1.31	3718.27	3708	22	5.98E-03	20.4	1.19E+00	
0	1401.88	105	135	2.60	5609.99	5600	22	2.93E-03	25.8	8.59E-01	
0	1729.46	144	59	1.75	6934.43	6920	25	4.01E-03	13.6	7.41E-01	
0	1847.49	108	54	2.39	7411.64	7394	27	3.00E-03	17.2	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	6.454E-02	13.02	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	2.478E-01	9.25	
		% Abundances Found =		50.00			
TC-95M	61.00D	0.60	204.12*	66.20	--- Not Found ---		Abun.
			582.07	29.30	1.435E+00	7.22	
			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	1.687E+01	6.53	
		% Abundances Found =		5.92			
RU-106DA	368.20D	0.10	511.85	20.60	5.871E-01	13.02	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	4.646E-01	16.60	
			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	7.024E-02	20.74	
			801.93	8.73	--- Not Found ---		
		% Abundances Found =		41.22			
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	2.740E-01	19.79	
			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	1.931E-01	13.38	
			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 ---		

Nuclide	Half-life	Half-Life Ratio	Energy	%Abund	Activity (PCI/GRAM)	1-Sigma %Error	Rejected by
BI-212	1.41E+10Y	0.00	727.33*	6.58	1.097E+00	12.62	Abun.
			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			
RA-223	21.77Y	0.00	154.21	5.58	--- Not Found ---		Abun.
			269.46*	13.60	3.418E-01	17.27	
			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	1.431E-01	12.70	
			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	1.314E+00	15.47	
		% Abundances Found =		58.74			

Flag: "*" = Keyline

VMS Nuclide Identification Report V3.0 Generated 20-SEP-2007 04:23:12

Configuration : $DISK1:[GER10.SAMPLE]J5K221AA_190971822.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 : 14-AUG-2007 12:30:00 Acquisition date : 19-SEP-2007 18:22:45
Sample ID : J5K221AA Sample quantity : 340.40 GRAMS
Sample type : Sample geometry : S200
Elapsed live time: 0 10:00:00.00 Elapsed real time: 0 10:00:14.87 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 ----

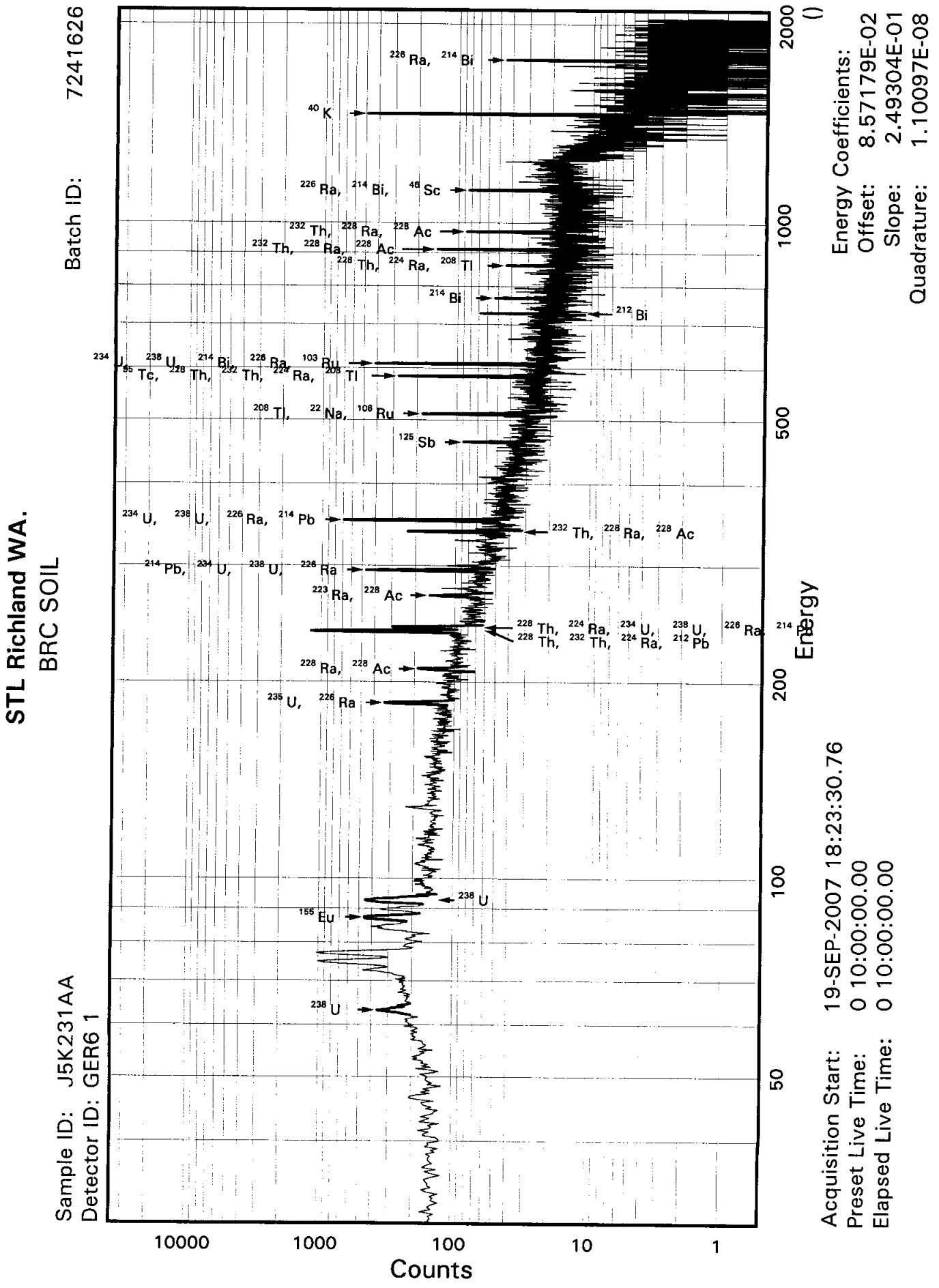
Nuclide	Activity (PCI/GRAM)	Act error	MDA (PCI/GRAM)	MDA error	Act/MDA
K-40	2.248E+01	1.427E+00	1.505E-01	5.635E-03	149.324
TL-208	3.300E-01	2.383E-02	1.780E-02	5.829E-04	18.535
PB-212	1.024E+00	6.844E-02	3.221E-02	1.298E-03	31.783
BI-214	1.073E+00	7.014E-02	3.373E-02	1.121E-03	31.822
PB-214	1.157E+00	7.508E-02	3.585E-02	1.251E-03	32.276
RA-224DA	1.062E+00	7.097E-02	3.340E-02	1.345E-03	31.783
RA-226DA	1.073E+00	7.014E-02	3.373E-02	1.121E-03	31.821
AC-228	9.630E-01	7.905E-02	6.010E-02	3.036E-03	16.023
RA-228DA	9.746E-01	8.000E-02	6.083E-02	3.073E-03	16.023
TH-228DA	9.523E-01	6.879E-02	5.138E-02	1.682E-03	18.535
TH-232DA	7.985E-01	8.055E-02	1.189E-01	4.266E-03	6.716
U-234DA	1.222E+00	8.868E-02	7.246E-02	2.785E-03	16.871
U-238DA	1.157E+00	7.508E-02	3.585E-02	1.251E-03	32.276

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

Nuclide	Key-Line Activity (PCI/GRAM)	K.L. Ided	Act error	MDA (PCI/GRAM)	MDA error	Act/MDA
BE-7	-1.585E-02		6.526E-02	2.187E-01	6.911E-03	-0.072
NA-22	-9.318E-03		6.191E-03	2.045E-02	7.492E-04	-0.456
SC-46	2.478E-01	+	2.293E-02	4.757E-02	1.814E-03	5.209
CR-51	-1.933E-01		1.099E-01	3.539E-01	1.310E-02	-0.546
MN-54	-3.281E-03		5.789E-03	1.941E-02	8.964E-04	-0.169
CO-57	-8.222E-02		4.240E-02	1.393E-01	4.927E-03	-0.590
CO-58	-2.387E-02		6.954E-03	2.160E-02	9.587E-04	-1.105
FE-59	-3.427E-02		1.905E-02	6.143E-02	2.439E-03	-0.558
CO-60	-5.691E-03		5.526E-03	1.846E-02	7.044E-04	-0.308
ZN-65	-5.572E-03		1.642E-02	4.567E-02	1.759E-03	-0.122
SE-75	-1.713E-03		1.030E-02	2.871E-02	1.139E-03	-0.060
SR-85	9.628E-02		1.007E-02	2.814E-02	8.809E-04	3.421
Y-88	5.008E-03		4.790E-03	1.756E-02	5.539E-04	0.285
NB-94	7.655E-03		4.909E-03	1.699E-02	8.315E-04	0.451
NB-95	6.155E-02		1.328E-02	3.994E-02	1.643E-03	1.541

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

Nuclide	Key-Line Activity (PCI/GRAM)	K.L. Ided	Act error	MDA (PCI/GRAM)	MDA error	Act/MDA
TC-95M	2.224E-02		1.173E-02	3.346E-02	1.356E-03	0.665
ZR-95	1.992E-02		1.295E-02	4.484E-02	1.816E-03	0.444
ZRNB-95	9.088E-02		1.920E-02	5.772E-02	2.374E-03	1.574
RH-101	1.948E-03		7.404E-03	2.159E-02	8.751E-04	0.090
RH-102M	-2.542E-03		4.491E-03	1.499E-02	4.737E-04	-0.170
RU-103	-8.821E-04		8.886E-03	2.983E-02	9.384E-04	-0.030
RU-106DA	-1.454E-02		4.908E-02	1.632E-01	5.459E-03	-0.089
AG-108M	-8.732E-03		4.679E-03	1.530E-02	4.850E-04	-0.571
AG-110M	-1.545E-02		7.857E-03	2.544E-02	1.272E-03	-0.607
SN-113DA	-6.944E-03		7.949E-03	2.654E-02	8.360E-04	-0.262
SB-124	-9.864E-04		8.854E-03	2.478E-02	8.204E-04	-0.040
SB-125	3.316E-03		1.454E-02	4.914E-02	1.557E-03	0.067
SN-126DA	1.537E-02		5.067E-03	1.731E-02	5.953E-04	0.888
I-131	2.575E-02		1.166E-01	3.953E-01	1.341E-02	0.065
BA-133	6.638E-03		7.715E-03	2.235E-02	7.731E-04	0.297
CS-134	7.024E-02	+	1.457E-02	2.462E-02	1.066E-03	2.853
CS-137DA	-7.558E-03		5.802E-03	1.888E-02	6.439E-04	-0.400
LA-138	-1.342E-03		7.073E-03	2.421E-02	9.109E-04	-0.055
CE-139	-1.253E-02		6.238E-03	2.036E-02	8.222E-04	-0.615
BA-140	-5.221E-02		1.245E-01	4.150E-01	1.320E-02	-0.126
BALA-140	-9.347E-02		6.845E-02	2.248E-01	8.079E-03	-0.416
CE-141	3.022E-02		1.886E-02	6.351E-02	2.364E-03	0.476
CE-144	-3.590E-03		4.668E-02	1.366E-01	4.755E-03	-0.026
CEPR-144	-6.056E-03		9.336E-02	2.732E-01	9.511E-03	-0.022
PM-144	-5.476E-04		4.884E-03	1.629E-02	5.437E-04	-0.034
PM-146	5.358E-03		6.584E-03	2.236E-02	7.084E-04	0.240
EU-152	1.024E-02		1.936E-02	5.414E-02	1.920E-03	0.189
EU-154	-1.565E-02		1.695E-02	5.679E-02	2.081E-03	-0.276
EU-155	4.437E-02		2.052E-02	6.952E-02	2.371E-03	0.638
HF-181	1.393E-02		9.488E-03	3.236E-02	1.022E-03	0.431
BI-207	2.302E-04		4.578E-03	1.533E-02	4.980E-04	0.015
BI-210M	-4.685E-03		1.001E-02	2.777E-02	1.100E-03	-0.169
BI-212	1.097E+00	+	1.385E-01	3.293E-01	1.472E-02	3.330
RA-223	3.418E-01	+	5.903E-02	1.211E-01	4.785E-03	2.822
AC-227DA	1.124E+00		9.050E-02	1.830E-01	7.377E-03	6.146
TH-234DA	1.950E+00		8.429E-01	2.922E+00	1.345E-01	0.667
U-235HP	5.289E-02		3.992E-02	1.344E-01	4.955E-03	0.393
NP-237DA	3.889E-03		1.179E-02	3.907E-02	1.466E-03	0.100
U-238DHP	1.188E+00		2.447E-01	7.931E-01	2.840E-02	1.498
AM-241HP	-1.309E-01		2.845E-02	8.717E-02	3.225E-03	-1.502


STL Richland WA.
BRC SOIL
Batch ID: 7241626
Sample ID: J5K231AA
Detector ID: GER6 1
Energy Coefficients:
Offset: 8.57179E-02
Slope: 2.49304E-01
Quadrature: 1.10097E-08
Acquisition Start: 19-SEP-2007 18:23:30.76
Preset Live Time: 0 10:00:00.00
Elapsed Live Time: 0 10:00:00.00
Counts
Energy
10000
1000
100
10
1
2000
1000
500
200
100
50
226 Ra, 214 Bi
40 K
226 Ra, 214 Bi, 46 Sc
232 Th, 228 Ra, 228 Ac
232 Th, 228 Ra, 228 Ac
228 Th, 224 Ra, 208 Tl
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
223 Ra, 228 Ac
228 Th, 224 Ra, 234 U, 238 U, 226 Ra
228 Th, 232 Th, 224 Ra, 212 Pb
228 Ra, 228 Ac
235 U, 226 Ra
238 U
155 Eu
238 U

SAMPLE IDENTIFICATION: J5K231AA

CONFIGURATION ID: GER6:J5K231AA_190971823
TITLE : BRC SOIL
SAMPLE ID : J5K231AA

REPORT DATE: 20-SEP-07
ACQUIRE DATE: 19-SEP-07 18:23:30
ELAPSED LIVE TIME: 36000.0 Sec
PRESET LIVE TIME: 0 10:00:00

SAMPLE DATE: 14-AUG-2007 12:30:00.00
CALIB DATE: 19-SEP-2007 05:32:35.73
ELAPSED LIVE TIME: 0 10:00:00
ELAPSED REAL TIME: 0 10:00:13

SAMPLE QUANTITY: 3.6450E+02
SAMPLE GEOMETRY: S200

UNITS: GRAMS
SAMPLE TYPE:

ENERGY OFFSET: 8.5718E-02 keV
ENERGY SLOPE: 2.4930E-01 keV/C
ENERGY Q COEFF: 1.1010E-08 keV/C^^2
PEAK SENSITIVITY: 5.000

FWHM OFFSET: 2.6195E-01 keV
FWHM SLOPE: 6.2590E-02 sqr keV
ITERATIONS: 10
GAUSSIAN SENSITIVITY: 50.00 %

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

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

VMS Peak Search Report V1.9 Generated 20-SEP-2007 15:25:30

Configuration : $DISK1:[GER6.SAMPLE]J5K231AA_190971823.CNF;1
Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6
Sample title : BRC SOIL
Sample date : 14-AUG-2007 12:30:00 Acquisition date : 19-SEP-2007 18:23:30
Sample ID : J5K231AA Sample quantity : 364.50 GRAMS
Sample type : Sample geometry : S200
Elapsed live time: 0 10:00:00.00 Elapsed real time: 0 10:00:13.02 0.0%
Start energy : 20.03 End energy : 2043.12
Sensitivity : 5.00 Gaussian : 50.00
Critical level : No

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	46.60*	55	1564	0.70	186.57	182	10	1.54E-03	139.1	
2	0	63.19*	532	2399	0.86	253.14	248	12	1.48E-02	19.7	
3	5	72.78*	653	3347	1.28	291.60	284	31	1.81E-02	20.8	1.12E+00
4	5	74.81*	2659	2801	1.07	299.72	284	31	7.38E-02	4.9	
5	5	77.02	3501	2452	1.00	308.60	284	31	9.72E-02	3.4	
6	0	84.30*	726	2527	1.53	337.81	332	13	2.02E-02	15.6	
7	0	87.22*	1103	2237	1.18	349.52	344	11	3.06E-02	9.4	
8	0	89.83	743	1771	1.00	359.98	355	10	2.06E-02	11.2	
9	0	92.86*	1581	2330	1.50	372.13	366	15	4.39E-02	7.4	
10	0	128.84	350	1369	0.92	516.46	512	10	9.72E-03	20.5	
11	0	185.96*	1099	1616	1.30	745.54	739	15	3.05E-02	9.1	
12	0	209.27	740	1387	1.51	839.04	831	17	2.05E-02	12.1	
13	4	238.66*	5313	1217	1.17	956.92	949	30	1.48E-01	2.0	2.48E+00
14	4	241.77	1647	1443	1.81	969.38	949	30	4.57E-02	6.8	
15	0	270.37	595	1181	1.58	1084.10	1076	19	1.65E-02	14.4	
16	0	295.26	2139	1075	1.23	1183.92	1175	17	5.94E-02	4.1	
17	0	338.28	1093	790	1.41	1356.47	1348	17	3.04E-02	6.6	
18	0	351.91	3747	988	1.34	1411.14	1401	19	1.04E-01	2.6	
19	0	462.70	358	698	1.13	1855.49	1844	23	9.94E-03	17.1	
20	0	510.91*	577	866	1.66	2048.80	2032	34	1.60E-02	15.8	
21	0	583.08	1724	629	1.77	2338.26	2323	28	4.79E-02	4.2	
22	0	609.22	2844	530	1.68	2443.10	2431	25	7.90E-02	2.6	
23	0	727.30	352	356	1.64	2916.62	2906	22	9.77E-03	12.8	
24	0	768.23	284	350	1.81	3080.73	3068	21	7.89E-03	13.9	
25	0	860.36	274	221	1.80	3450.18	3440	19	7.62E-03	11.6	
26	0	911.14	1103	538	1.86	3653.79	3634	36	3.06E-02	5.8	
27	0	969.09	498	693	2.31	3886.17	3870	31	1.38E-02	12.7	
28	0	1120.23	709	411	2.48	4492.18	4474	35	1.97E-02	7.6	
29	0	1460.65*	5980	258	3.18	5857.08	5833	45	1.66E-01	1.5	
30	0	1764.37	531	76	3.65	7074.62	7055	40	1.48E-02	5.7	

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

VMS Nuclide Identification Report V3.0 Generated 20-SEP-2007 15:25:30

Configuration : $DISK1:[GER6.SAMPLE]J5K231AA_190971823.CNF;1
Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.3
Sample title : BRC SOIL
Sample date : 14-AUG-2007 12:30:00 Acquisition date : 19-SEP-2007 18:23:30
Sample ID : J5K231AA Sample quantity : 364.50 GRAMS
Sample type : Sample geometry : S200
Elapsed live time: 0 10:00:00.00 Elapsed real time: 0 10:00:13.02 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	5980	10.67*	5.924E-01	1.948E+01	1.948E+01	8.42
TL-208	277.35	------	6.80	2.285E+00	------ Line Not Found		------
	510.84	577	21.60	1.379E+00	3.986E-01	3.986E-01	16.87
	583.14	1724	84.20*	1.240E+00	3.401E-01	3.401E-01	7.31
	860.37	274	12.46	9.141E-01	4.963E-01	4.963E-01	13.51
PB-212	238.63	5313	44.60*	2.572E+00	9.540E-01	9.540E-01	6.54
	300.09	------	3.41	2.143E+00	------ Line Not Found		------
BI-214	609.31	2844	46.30*	1.197E+00	1.056E+00	1.056E+00	6.53
	768.36	284	5.04	9.983E-01	1.163E+00	1.163E+00	15.28
	1120.29	709	15.10	7.419E-01	1.303E+00	1.303E+00	10.08
	1764.49	531	15.80	4.956E-01	1.397E+00	1.397E+00	8.63
PB-214	241.98	1647	7.49	2.547E+00	1.778E+00	1.778E+00	9.21
	295.21	2139	19.20	2.172E+00	1.056E+00	1.056E+00	7.42
	351.92	3747	37.20*	1.878E+00	1.105E+00	1.105E+00	6.60
	785.91	------	1.10	9.808E-01	------ Line Not Found		------
RA-224DA	238.63	5313	44.60*	2.572E+00	9.540E-01	9.892E-01	6.54
	240.98	1647	3.95	2.547E+00	3.372E+00	3.497E+00	9.21
	583.14	1724	30.25	1.240E+00	9.465E-01	9.814E-01	7.31
	860.37	274	4.48	9.141E-01	1.380E+00	1.431E+00	13.51
RA-226DA	186.21	1099	3.50	3.058E+00	2.115E+00	2.115E+00	10.97
	241.98	1647	7.49	2.547E+00	1.778E+00	1.778E+00	9.21
	295.22	2139	19.20	2.172E+00	1.056E+00	1.056E+00	7.42
	351.92	3747	37.20	1.878E+00	1.105E+00	1.105E+00	6.60
	609.32	2844	46.30*	1.197E+00	1.056E+00	1.056E+00	6.53
	1120.28	709	15.10	7.419E-01	1.303E+00	1.303E+00	10.08
	1238.11	------	5.94	6.834E-01	------ Line Not Found		------
	1764.49	531	15.80	4.956E-01	1.397E+00	1.397E+00	8.63
AC-228	209.28	740	4.40	2.830E+00	1.223E+00	1.223E+00	13.60
	270.23	595	3.60	2.333E+00	1.460E+00	1.460E+00	15.72
	338.32	1093	11.40	1.941E+00	1.018E+00	1.018E+00	8.99
	911.07	1103	27.70*	8.741E-01	9.385E-01	9.385E-01	9.10
	969.11	498	16.60	8.328E-01	7.418E-01	7.418E-01	14.46
RA-228DA	209.28	740	4.40	2.830E+00	1.223E+00	1.238E+00	13.60
	338.32	1093	11.40	1.941E+00	1.018E+00	1.030E+00	8.99
	911.07	1103	27.70*	8.741E-01	9.385E-01	9.499E-01	9.10
	964.60	------	5.20	8.359E-01	------ Line Not Found		------

Nuclide Type: NP

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected PCI/GRAM	Decay Corr PCI/GRAM	1-Sigma %Error
	969.11	498	16.60	8.328E-01	7.418E-01	7.507E-01	14.46
TH-228DA	238.63	5313	44.60	2.572E+00	9.540E-01	9.892E-01	6.54
	240.98	1647	3.95	2.547E+00	3.372E+00	3.497E+00	9.21
	583.14	1724	30.25*	1.240E+00	9.465E-01	9.814E-01	7.31
	860.37	274	4.48	9.141E-01	1.380E+00	1.431E+00	13.51
TH-232DA	238.63	5313	44.60	2.572E+00	9.540E-01	9.540E-01	6.54
	338.32	1093	12.40*	1.941E+00	9.359E-01	9.359E-01	8.99
	583.14	1724	30.25	1.240E+00	9.465E-01	9.465E-01	7.31
	911.07	1103	27.70	8.741E-01	9.385E-01	9.385E-01	9.10
	964.60	------	5.20	8.359E-01	------ Line Not Found		------
	969.11	498	16.60	8.328E-01	7.418E-01	7.418E-01	14.46
U-234DA	241.98	1647	7.49	2.547E+00	1.778E+00	1.778E+00	9.21
	295.22	2139	19.20*	2.172E+00	1.056E+00	1.056E+00	7.42
	351.92	3747	37.20	1.878E+00	1.105E+00	1.105E+00	6.60
	609.31	2844	46.30	1.197E+00	1.056E+00	1.056E+00	6.53
U-238DA	241.98	1647	7.49	2.547E+00	1.778E+00	1.778E+00	9.21
	295.22	2139	19.20	2.172E+00	1.056E+00	1.056E+00	7.42
	351.92	3747	37.20*	1.878E+00	1.105E+00	1.105E+00	6.60
	609.31	2844	46.30	1.197E+00	1.056E+00	1.056E+00	6.53
U-238DHP	63.28	532	3.80*	2.144E+00	1.345E+00	1.345E+00	20.62
	92.59	1581	5.41	3.369E+00	1.787E+00	1.787E+00	9.96

Flag: "*" = Keyline

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
0	46.60	55	1564	0.70	186.57	182	10	1.54E-03	****	9.58E-01	
5	72.78	653	3347	1.28	291.60	284	31	1.81E-02	20.8	2.69E+00	
5	74.81	2659	2801	1.07	299.72	284	31	7.38E-02	4.9	2.79E+00	
5	77.02	3501	2452	1.00	308.60	284	31	9.72E-02	3.4	2.89E+00	
0	84.30	726	2527	1.53	337.81	332	13	2.02E-02	15.6	3.15E+00	
0	87.22	1103	2237	1.18	349.52	344	11	3.06E-02	9.4	3.24E+00	T
0	89.83	743	1771	1.00	359.98	355	10	2.06E-02	11.2	3.30E+00	
0	128.84	350	1369	0.92	516.46	512	10	9.72E-03	20.5	3.56E+00	
0	462.70	358	698	1.13	1855.49	1844	23	9.94E-03	17.1	1.50E+00	T
0	727.30	352	356	1.64	2916.62	2906	22	9.77E-03	12.8	1.04E+00	T

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	4.921E-02	16.87	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	2.660E-01	10.08	
		% Abundances Found =		50.00			
TC-95M	61.00D	0.60	204.12*	66.20	--- Not Found ---		Abun.
			582.07	29.30	1.479E+00	7.31	
			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	1.660E+01	6.53	
		% Abundances Found =		5.92			
RU-106DA	368.20D	0.10	511.85	20.60	4.476E-01	16.87	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	4.881E-01	18.08	
			600.56	17.80	--- Not Found ---		
			635.90	11.32	--- Not Found ---		
		% Abundances Found =		13.67			
EU-155	4.96Y	0.02	42.90	21.16	--- Not Found ---		Abun.
			86.54	30.90	2.302E-01	11.55	
			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	1.057E+00	14.39	
			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			
RA-223	21.77Y	0.00	154.21	5.58	--- Not Found ---		Abun.
			269.46*	13.60	3.878E-01	15.72	
			323.87	3.88	--- Not Found ---		
		% Abundances Found =		58.98			
U-235HP	7.04E+08Y	0.00	143.76*	10.50	--- Not Found ---		Abun.

Nuclide	Half-life	Half-Life Ratio	Energy	%Abund	Activity (PCI/GRAM)	1-Sigma %Error	Rejected by
U-235HP	7.04E+08Y	0.00	185.71	54.00	1.371E-01	10.97	Abun.
			205.31	4.70	--- Not Found ---		
		% Abundances Found =		78.03			

Flag: "*" = Keyline

VMS Nuclide Identification Report V3.0 Generated 20-SEP-2007 15:25:32

Configuration : $DISK1:[GER6.SAMPLE]J5K231AA_190971823.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 : 14-AUG-2007 12:30:00 Acquisition date : 19-SEP-2007 18:23:30
Sample ID : J5K231AA Sample quantity : 364.50 GRAMS
Sample type : Sample geometry : S200
Elapsed live time: 0 10:00:00.00 Elapsed real time: 0 10:00:13.02 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 ----

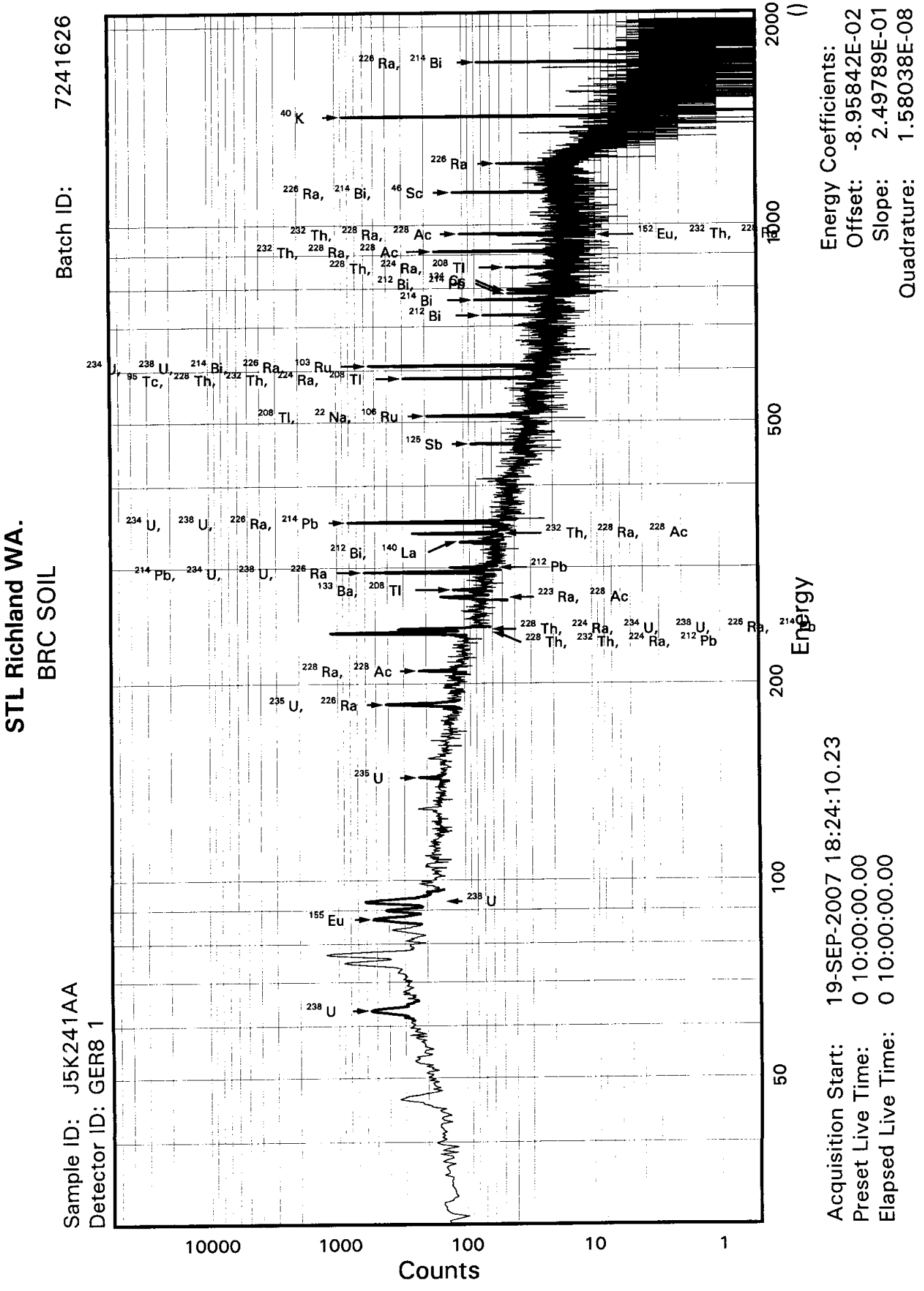
Nuclide	Activity (PCI/GRAM)	Act error	MDA (PCI/GRAM)	MDA error	Act/MDA
K-40	1.948E+01	1.641E+00	1.997E-01	1.319E-02	97.574
TL-208	3.401E-01	2.485E-02	2.170E-02	7.066E-04	15.669
PB-212	9.540E-01	6.241E-02	3.097E-02	1.149E-03	30.807
BI-214	1.056E+00	6.901E-02	4.066E-02	1.334E-03	25.984
PB-214	1.105E+00	7.288E-02	3.984E-02	1.368E-03	27.737
RA-224DA	9.892E-01	6.471E-02	3.211E-02	1.192E-03	30.807
RA-226DA	1.056E+00	6.901E-02	4.066E-02	1.334E-03	25.984
AC-228	9.385E-01	8.544E-02	8.094E-02	4.014E-03	11.596
RA-228DA	9.499E-01	8.647E-02	8.192E-02	4.062E-03	11.596
TH-228DA	9.814E-01	7.173E-02	6.264E-02	2.039E-03	15.668
TH-232DA	9.359E-01	8.416E-02	1.218E-01	4.223E-03	7.682
U-234DA	1.056E+00	7.838E-02	7.650E-02	2.763E-03	13.809
U-238DA	1.105E+00	7.288E-02	3.984E-02	1.368E-03	27.737
U-238DHP	1.345E+00	2.773E-01	5.227E-01	1.869E-02	2.573

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

Nuclide	Key-Line Activity (PCI/GRAM)	K.L. Ided	Act error	MDA (PCI/GRAM)	MDA error	Act/MDA
BE-7	6.974E-02		7.357E-02	2.519E-01	8.148E-03	0.277
NA-22	-4.732E-03		8.621E-03	2.888E-02	1.750E-03	-0.164
SC-46	2.660E-01	+	2.680E-02	5.668E-02	2.432E-03	4.693
CR-51	2.639E-02		1.121E-01	3.728E-01	1.302E-02	0.071
MN-54	-3.303E-03		7.404E-03	2.457E-02	1.108E-03	-0.134
CO-57	4.386E-03		3.505E-02	1.171E-01	4.388E-03	0.037
CO-58	-1.268E-02		8.931E-03	2.914E-02	1.264E-03	-0.435
FE-59	6.658E-03		2.416E-02	8.202E-02	3.593E-03	0.081
CO-60	-1.616E-03		7.170E-03	2.420E-02	1.770E-03	-0.067
ZN-65	4.510E-02		2.223E-02	6.503E-02	2.805E-03	0.694
SE-75	2.140E-03		8.343E-03	2.733E-02	1.010E-03	0.078
SR-85	8.128E-02		1.063E-02	3.125E-02	9.838E-04	2.601
Y-88	-4.300E-03		6.944E-03	2.384E-02	8.075E-04	-0.180
NB-94	-2.636E-03		6.464E-03	2.184E-02	1.044E-03	-0.121

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

Nuclide	Key-Line Activity (PCI/GRAM)	K.L. Ided	Act error	MDA (PCI/GRAM)	MDA error	Act/MDA
NB-95	7.340E-02		1.687E-02	5.044E-02	2.026E-03	1.455
TC-95M	1.585E-02		9.177E-03	2.983E-02	1.097E-03	0.531
ZR-95	5.823E-02		1.721E-02	5.984E-02	2.365E-03	0.973
ZRNB-95	1.073E-01		2.434E-02	7.279E-02	2.923E-03	1.474
RH-101	1.472E-02		5.458E-03	1.847E-02	6.768E-04	0.797
RH-102M	-8.140E-03		5.186E-03	1.709E-02	5.535E-04	-0.476
RU-103	-1.453E-02		1.082E-02	3.564E-02	1.138E-03	-0.408
RU-106DA	1.154E-01		5.955E-02	2.058E-01	6.774E-03	0.561
AG-108M	-1.702E-03		5.207E-03	1.723E-02	5.664E-04	-0.099
AG-110M	-1.093E-03		9.606E-03	3.260E-02	1.592E-03	-0.034
SN-113DA	-1.102E-02		9.052E-03	2.981E-02	9.791E-04	-0.370
SB-124	2.853E-03		9.951E-03	2.924E-02	9.578E-04	0.098
SB-125	7.511E-03		1.663E-02	5.567E-02	1.832E-03	0.135
SN-126DA	2.092E-02		6.259E-03	2.156E-02	7.202E-04	0.970
I-131	-7.963E-03		1.224E-01	4.133E-01	1.404E-02	-0.019
BA-133	-1.379E-02		8.521E-03	2.360E-02	8.079E-04	-0.584
CS-134	3.995E-02		8.477E-03	2.914E-02	1.232E-03	1.371
CS-137DA	-1.762E-02		7.154E-03	2.279E-02	7.546E-04	-0.773
LA-138	1.695E-02		9.977E-03	3.534E-02	2.388E-03	0.480
CE-139	-4.369E-04		5.523E-03	1.809E-02	6.513E-04	-0.024
BA-140	-2.246E-01		1.529E-01	4.981E-01	1.589E-02	-0.451
BALA-140	-2.961E-01		1.083E-01	3.392E-01	1.914E-02	-0.873
CE-141	2.815E-03		1.576E-02	5.237E-02	1.926E-03	0.054
CE-144	-4.806E-02		3.457E-02	1.138E-01	4.294E-03	-0.422
CEPR-144	-9.526E-02		6.914E-02	2.277E-01	8.589E-03	-0.418
PM-144	1.603E-03		5.911E-03	2.005E-02	6.595E-04	0.080
PM-146	1.804E-02		7.577E-03	2.628E-02	8.592E-04	0.686
EU-152	-3.049E-02		1.711E-02	5.479E-02	1.892E-03	-0.557
EU-154	-1.561E-02		2.378E-02	7.948E-02	4.815E-03	-0.196
EU-155	7.065E-02		1.784E-02	5.830E-02	2.375E-03	1.212
HF-181	-5.951E-03		1.075E-02	3.603E-02	1.162E-03	-0.165
BI-207	1.060E-02		5.526E-03	1.919E-02	6.217E-04	0.552
BI-210M	-4.339E-03		9.260E-03	2.639E-02	9.742E-04	-0.164
BI-212	1.057E+00	+	1.520E-01	3.869E-01	1.698E-02	2.731
RA-223	3.878E-01	+	6.096E-02	1.191E-01	4.390E-03	3.255
AC-227DA	2.394E-01		4.819E-02	1.373E-01	5.097E-03	1.743
TH-234DA	2.914E-01		1.131E+00	3.804E+00	1.800E-01	0.077
U-235HP	6.057E-02		3.368E-02	1.129E-01	4.164E-03	0.537
NP-237DA	-2.325E-03		1.171E-02	3.889E-02	1.375E-03	-0.060
AM-241HP	-3.411E-04		1.854E-02	6.001E-02	2.083E-03	-0.006


STL Richland WA.
BRC SOIL
Batch ID: 7241626
Sample ID: J5K241AA
Detector ID: GER8 1
Energy Coefficients:
Offset: -8.95842E-02
Slope: 2.49789E-01
Quadrature: 1.58038E-08
Acquisition Start: 19-SEP-2007 18:24:10.23
Preset Live Time: 0 10:00:00.00
Elapsed Live Time: 0 10:00:00.00
Counts
Energy
10000
1000
100
10
1
2000
1000
500
200
100
50
226 Ra, 214 Bi
40 K
226 Ra
226 Ra, 214 Bi, 46 Sc
232 Th, 228 Ra, 228 Ac
152 Eu, 232 Th,
232 Th, 228 Ra, 228 Ac
228 Th, 224 Ra, 208 Tl
212 Bi, 214 Pb
214 Bi
212 Bi
234 U, 238 U, 214 Bi, 226 Ra, 103 Ru
95 Tc, 228 Th, 232 Th, 224 Ra, 208 Tl
208 Tl, 22 Na, 106 Ru
125 Sb
234 U, 238 U, 226 Ra, 214 Pb
232 Th, 228 Ra, 228 Ac
212 Bi, 140 La
214 Pb, 234 U, 238 U, 226 Ra
212 Pb
133 Ba, 208 Tl
223 Ra, 228 Ac
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
235 U
238 U
155 Eu
238 U

SAMPLE IDENTIFICATION: J5K241AA

CONFIGURATION ID: GER8:J5K241AA_190971824
TITLE : BRC SOIL
SAMPLE ID : J5K241AA

REPORT DATE: 20-SEP-07
ACQUIRE DATE: 19-SEP-07 18:24:10
ELAPSED LIVE TIME: 36000.0 Sec
PRESET LIVE TIME: 0 10:00:00

SAMPLE DATE: 14-AUG-2007 14:00:00.00
CALIB DATE: 19-SEP-2007 05:44:13.02
ELAPSED LIVE TIME: 0 10:00:00
ELAPSED REAL TIME: 0 10:00:12

SAMPLE QUANTITY: 3.5290E+02
SAMPLE GEOMETRY: ES200

UNITS: GRAMS
SAMPLE TYPE:

ENERGY OFFSET: -.8958E-01 keV
ENERGY SLOPE: 2.4979E-01 keV/C
ENERGY Q COEFF: 1.5804E-08 keV/C^^2
PEAK SENSITIVITY: 5.000

FWHM OFFSET: 9.8116E-01 keV
FWHM SLOPE: 1.9291E-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 20-SEP-2007 17:20:52

Configuration : $DISK1:[GER8.SAMPLE]J5K241AA_190971824.CNF;1
Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6
Sample title : BRC SOIL
Sample date : 14-AUG-2007 14:00:00 Acquisition date : 19-SEP-2007 18:24:10
Sample ID : J5K241AA Sample quantity : 352.90 GRAMS
Sample type : Sample geometry : ES200
Elapsed live time: 0 10:00:00.00 Elapsed real time: 0 10:00:12.89 0.0%
Start energy : 19.89 End energy : 2047.24
Sensitivity : 5.00 Gaussian : 20.00
Critical level : No

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	46.32*	436	2415	1.05	185.81	178	15	1.21E-02	26.5	
2	0	63.39*	1396	4556	1.17	254.13	245	18	3.88E-02	12.0	
3	2	74.86*	2655	4068	1.11	300.04	293	23	7.38E-02	5.4	7.07E-01
4	2	77.08*	4374	3696	1.08	308.94	293	23	1.22E-01	3.4	
5	0	84.05*	720	2649	1.08	336.83	331	12	2.00E-02	15.1	
6	0	87.23	1561	3028	1.21	349.57	343	13	4.34E-02	7.7	
7	3	89.96	830	2008	0.89	360.50	356	32	2.30E-02	9.9	3.21E+00
8	3	92.86*	2307	3552	1.55	372.09	356	32	6.41E-02	6.9	
9	0	129.19	225	1820	0.91	517.56	513	11	6.24E-03	37.5	
10	0	143.91	346	2000	0.84	576.48	570	14	9.61E-03	27.9	
11	0	185.92*	1724	2636	1.24	744.63	733	24	4.79E-02	8.5	
12	0	209.26	479	1316	0.95	838.07	833	12	1.33E-02	15.8	
13	2	238.67*	5405	1247	1.20	955.78	944	33	1.50E-01	2.0	1.59E+00
14	2	241.78	1675	1260	1.55	968.23	944	33	4.65E-02	5.8	
15	0	270.17	598	1386	1.89	1081.86	1071	21	1.66E-02	16.1	
16	0	277.49	142	1154	0.83	1111.18	1102	15	3.94E-03	53.0	
17	0	295.28	2600	1128	1.06	1182.38	1174	18	7.22E-02	3.6	
18	0	300.31	255	822	0.90	1202.53	1197	13	7.07E-03	24.2	
19	0	328.01	388	1043	2.05	1313.41	1304	20	1.08E-02	21.0	
20	0	338.26	959	818	1.13	1354.42	1347	15	2.66E-02	7.3	
21	0	351.92*	4329	1045	1.32	1409.09	1399	21	1.20E-01	2.5	
22	0	409.80	141	709	0.70	1640.78	1632	17	3.92E-03	44.3	
23	0	462.94	319	485	1.32	1853.46	1846	15	8.85E-03	16.1	
24	0	510.82*	523	832	1.69	2045.10	2031	29	1.45E-02	19.0	
25	0	583.10	1616	515	1.39	2334.39	2324	20	4.49E-02	4.2	
26	0	609.26*	3132	522	1.42	2439.07	2427	24	8.70E-02	2.7	
27	0	727.28	363	523	1.57	2911.42	2901	28	1.01E-02	15.8	
28	0	767.98	342	417	1.19	3074.29	3064	21	9.50E-03	13.8	
29	0	786.05	103	358	1.19	3146.61	3135	21	2.85E-03	40.4	
30	0	795.02	167	332	1.41	3182.50	3174	20	4.64E-03	24.0	
31	0	860.72	226	247	1.94	3445.41	3436	19	6.28E-03	15.7	
32	0	911.20	1192	337	1.66	3647.39	3634	27	3.31E-02	4.6	
33	0	934.10	237	351	1.67	3739.03	3726	31	6.57E-03	20.7	
34	0	964.32	195	302	1.31	3859.94	3850	19	5.42E-03	19.6	
35	0	969.02	617	356	1.72	3878.77	3869	23	1.71E-02	7.9	
36	0	1120.24	689	384	1.61	4483.82	4472	24	1.91E-02	7.4	
37	0	1238.37	251	397	2.29	4956.48	4945	21	6.97E-03	18.0	
38	0	1377.98	176	124	1.49	5515.00	5503	23	4.88E-03	16.0	
39	0	1460.78*	7067	151	1.87	5846.24	5831	35	1.96E-01	1.3	
40	0	1509.36	71	89	1.12	6040.61	6029	23	1.97E-03	31.4	
41	0	1729.66	135	24	1.43	6921.80	6911	20	3.76E-03	11.4	
42	0	1764.53	563	79	1.88	7061.27	7048	33	1.56E-02	5.9	

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

VMS Nuclide Identification Report V3.0 Generated 20-SEP-2007 17:20:53

Configuration : $DISK1:[GER8.SAMPLE]J5K241AA_190971824.CNF;1
Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.3
Sample title : BRC SOIL
Sample date : 14-AUG-2007 14:00:00 Acquisition date : 19-SEP-2007 18:24:10
Sample ID : J5K241AA Sample quantity : 352.90 GRAMS
Sample type : Sample geometry : ES200
Elapsed live time: 0 10:00:00.00 Elapsed real time: 0 10:00:12.89 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	7067	10.67*	5.801E-01	2.429E+01	2.429E+01	6.26
TL-208	277.35	142	6.80	2.335E+00	1.898E-01	1.898E-01	53.38
	510.84	523	21.60	1.413E+00	3.645E-01	3.645E-01	19.93
	583.14	1616	84.20*	1.263E+00	3.232E-01	3.232E-01	7.39
	860.37	226	12.46	9.070E-01	4.258E-01	4.258E-01	17.05
PB-212	238.63	5405	44.60*	2.617E+00	9.851E-01	9.851E-01	6.62
	300.09	255	3.41	2.194E+00	7.240E-01	7.240E-01	24.97
BI-214	609.31	3132	46.30*	1.217E+00	1.182E+00	1.182E+00	6.68
	768.36	342	5.04	9.992E-01	1.444E+00	1.444E+00	15.19
	1120.29	689	15.10	7.255E-01	1.338E+00	1.338E+00	9.61
	1764.49	563	15.80	4.950E-01	1.531E+00	1.531E+00	8.37
PB-214	241.98	1675	7.49	2.592E+00	1.835E+00	1.835E+00	8.55
	295.21	2600	19.20	2.224E+00	1.295E+00	1.295E+00	7.20
	351.92	4329	37.20*	1.930E+00	1.283E+00	1.283E+00	6.54
	785.91	103	1.10	9.797E-01	2.029E+00	2.029E+00	40.90
RA-224DA	238.63	5405	44.60*	2.617E+00	9.851E-01	1.021E+00	6.62
	240.98	1675	3.95	2.592E+00	3.480E+00	3.608E+00	8.55
	583.14	1616	30.25	1.263E+00	8.996E-01	9.327E-01	7.39
	860.37	226	4.48	9.070E-01	1.184E+00	1.228E+00	17.05
RA-226DA	186.21	1724	3.50	3.109E+00	3.371E+00	3.372E+00	10.58
	241.98	1675	7.49	2.592E+00	1.835E+00	1.835E+00	8.55
	295.22	2600	19.20	2.224E+00	1.295E+00	1.296E+00	7.20
	351.92	4329	37.20	1.930E+00	1.283E+00	1.283E+00	6.54
	609.32	3132	46.30*	1.217E+00	1.182E+00	1.183E+00	6.68
	1120.28	689	15.10	7.255E-01	1.338E+00	1.338E+00	9.61
	1238.11	251	5.94	6.667E-01	1.348E+00	1.348E+00	19.00
	1764.49	563	15.80	4.950E-01	1.531E+00	1.531E+00	8.37
AC-228	209.28	479	4.40	2.874E+00	8.058E-01	8.058E-01	17.00
	270.23	598	3.60	2.384E+00	1.483E+00	1.483E+00	17.27
	338.32	959	11.40	1.994E+00	8.973E-01	8.973E-01	9.48
	911.07	1192	27.70*	8.642E-01	1.060E+00	1.060E+00	8.10
	969.11	617	16.60	8.202E-01	9.646E-01	9.646E-01	10.25
RA-228DA	209.28	479	4.40	2.874E+00	8.058E-01	8.155E-01	17.00
	338.32	959	11.40	1.994E+00	8.973E-01	9.082E-01	9.48
	911.07	1192	27.70*	8.642E-01	1.060E+00	1.072E+00	8.10
	964.60	195	5.20	8.236E-01	9.694E-01	9.811E-01	20.64

Nuclide Type: NP

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected PCI/GRAM	Decay Corr PCI/GRAM	1-Sigma %Error
	969.11	617	16.60	8.202E-01	9.646E-01	9.763E-01	10.25
TH-228DA	238.63	5405	44.60	2.617E+00	9.851E-01	1.021E+00	6.62
	240.98	1675	3.95	2.592E+00	3.480E+00	3.608E+00	8.55
	583.14	1616	30.25*	1.263E+00	8.996E-01	9.327E-01	7.39
	860.37	226	4.48	9.070E-01	1.184E+00	1.228E+00	17.05
TH-232DA	238.63	5405	44.60	2.617E+00	9.851E-01	9.851E-01	6.62
	338.32	959	12.40*	1.994E+00	8.250E-01	8.250E-01	9.48
	583.14	1616	30.25	1.263E+00	8.996E-01	8.996E-01	7.39
	911.07	1192	27.70	8.642E-01	1.060E+00	1.060E+00	8.10
	964.60	195	5.20	8.236E-01	9.694E-01	9.694E-01	20.64
	969.11	617	16.60	8.202E-01	9.646E-01	9.646E-01	10.25
U-234DA	241.98	1675	7.49	2.592E+00	1.835E+00	1.835E+00	8.55
	295.22	2600	19.20*	2.224E+00	1.295E+00	1.295E+00	7.20
	351.92	4329	37.20	1.930E+00	1.283E+00	1.283E+00	6.54
	609.31	3132	46.30	1.217E+00	1.182E+00	1.182E+00	6.68
U-235HP	143.76	346	10.50*	3.592E+00	1.951E-01	1.951E-01	28.61
	185.71	1724	54.00	3.109E+00	2.185E-01	2.185E-01	10.58
	205.31	------	4.70	2.912E+00	------ Line Not Found		------
U-238DA	241.98	1675	7.49	2.592E+00	1.835E+00	1.835E+00	8.55
	295.22	2600	19.20	2.224E+00	1.295E+00	1.295E+00	7.20
	351.92	4329	37.20*	1.930E+00	1.283E+00	1.283E+00	6.54
	609.31	3132	46.30	1.217E+00	1.182E+00	1.182E+00	6.68
U-238DHP	63.28	1396	3.80*	3.728E+00	2.096E+00	2.096E+00	13.42
	92.59	2307	5.41	4.071E+00	2.228E+00	2.228E+00	9.13

Flag: "*" = Keyline

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
0	46.32	436	2415	1.05	185.81	178	15	1.21E-02	26.5	2.82E+00	
2	74.86	2655	4068	1.11	300.04	293	23	7.38E-02	5.4	3.99E+00	
2	77.08	4374	3696	1.08	308.94	293	23	1.22E-01	3.4	4.01E+00	
0	84.05	720	2649	1.08	336.83	331	12	2.00E-02	15.1	4.07E+00	
0	87.23	1561	3028	1.21	349.57	343	13	4.34E-02	7.7	4.07E+00	T
3	89.96	830	2008	0.89	360.50	356	32	2.30E-02	9.9	4.08E+00	
0	129.19	225	1820	0.91	517.56	513	11	6.24E-03	37.5	3.77E+00	
0	328.01	388	1043	2.05	1313.41	1304	20	1.08E-02	21.0	2.04E+00	T
0	409.80	141	709	0.70	1640.78	1632	17	3.92E-03	44.3	1.70E+00	
0	462.94	319	485	1.32	1853.46	1846	15	8.85E-03	16.1	1.54E+00	T
0	727.28	363	523	1.57	2911.42	2901	28	1.01E-02	15.8	1.05E+00	T
0	795.02	167	332	1.41	3182.50	3174	20	4.64E-03	24.0	9.70E-01	T
0	934.10	237	351	1.67	3739.03	3726	31	6.57E-03	20.7	8.46E-01	
0	1377.98	176	124	1.49	5515.00	5503	23	4.88E-03	16.0	6.09E-01	
0	1509.36	71	89	1.12	6040.61	6029	23	1.97E-03	31.4	5.64E-01	
0	1729.66	135	24	1.43	6921.80	6911	20	3.76E-03	11.4	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	4.499E-02	19.93	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	2.729E-01	9.61	
		% Abundances Found =		50.00			
TC-95M	61.00D	0.60	204.12*	66.20	--- Not Found ---		Abun.
			582.07	29.30	1.404E+00	7.39	
			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	1.856E+01	6.68	
		% Abundances Found =		5.92			
RU-106DA	368.20D	0.10	511.85	20.60	4.092E-01	19.93	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	4.373E-01	17.16	
			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	1.883E-01	53.38	
			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	4.432E-02	24.90	
			801.93	8.73	--- Not Found ---		
		% Abundances Found =		41.22			
LA-140	40.22H	21.72	328.77	20.50	6.777E+05	21.89	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	3.519E-01	20.64	

Nuclide	Half-life	Half-Life Ratio	Energy	%Abund	Activity (PCI/GRAM)	1-Sigma %Error	Rejected by
EU-152	13.60Y	0.01	1085.78	10.00	--- Not Found ---		Abun.
			1112.02	13.30	--- Not Found ---		
			1407.95	20.70	--- Not Found ---		
		% Abundances Found =		10.78			
EU-155	4.96Y	0.02	42.90	21.16	--- Not Found ---		Abun.
			86.54	30.90	2.675E-01	9.78	
			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	2.906E+01	23.28	
			452.83	0.31	--- Not Found ---		
			727.33*	6.58	1.123E+00	17.19	
			785.37	1.10	2.029E+00	40.99	
			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	3.937E-01	17.27	
			323.87	3.88	--- Not Found ---		
		% Abundances Found =		58.98			

Flag: "*" = Keyline

VMS Nuclide Identification Report V3.0 Generated 20-SEP-2007 17:20:55

Configuration : $DISK1:[GER8.SAMPLE]J5K241AA_190971824.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 : 14-AUG-2007 14:00:00 Acquisition date : 19-SEP-2007 18:24:10
Sample ID : J5K241AA Sample quantity : 352.90 GRAMS
Sample type : Sample geometry : ES200
Elapsed live time: 0 10:00:00.00 Elapsed real time: 0 10:00:12.89 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	2.429E+01	1.519E+00	1.684E-01	5.942E-03	144.264
TL-208	3.232E-01	2.390E-02	2.012E-02	6.871E-04	16.062
PB-212	9.851E-01	6.521E-02	3.148E-02	1.211E-03	31.287
BI-214	1.182E+00	7.897E-02	3.795E-02	1.328E-03	31.155
PB-214	1.283E+00	8.393E-02	3.855E-02	1.318E-03	33.268
RA-224DA	1.021E+00	6.761E-02	3.264E-02	1.255E-03	31.287
RA-226DA	1.183E+00	7.897E-02	3.796E-02	1.328E-03	31.155
AC-228	1.060E+00	8.578E-02	7.239E-02	3.164E-03	14.637
RA-228DA	1.072E+00	8.682E-02	7.326E-02	3.202E-03	14.637
TH-228DA	9.327E-01	6.897E-02	5.807E-02	1.983E-03	16.062
TH-232DA	8.250E-01	7.820E-02	1.220E-01	4.257E-03	6.762
U-234DA	1.295E+00	9.324E-02	7.590E-02	2.810E-03	17.069
U-235HP	1.951E-01	5.581E-02	1.241E-01	4.351E-03	1.572
U-238DA	1.283E+00	8.393E-02	3.855E-02	1.318E-03	33.268
U-238DHP	2.096E+00	2.813E-01	4.209E-01	1.342E-02	4.979

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

Nuclide	Key-Line Activity (PCI/GRAM)	K.L. Ided	Act error	MDA (PCI/GRAM)	MDA error	Act/MDA
BE-7	-1.347E-01		7.416E-02	2.383E-01	7.622E-03	-0.565
NA-22	1.312E-02		7.471E-03	2.627E-02	9.038E-04	0.499
SC-46	2.729E-01	+	2.623E-02	5.972E-02	2.100E-03	4.570
CR-51	4.057E-03		1.093E-01	3.668E-01	1.307E-02	0.011
MN-54	-5.123E-04		6.668E-03	2.242E-02	9.471E-04	-0.023
CO-57	-4.396E-02		4.057E-02	1.325E-01	4.529E-03	-0.332
CO-58	-7.079E-03		8.388E-03	2.780E-02	1.155E-03	-0.255
FE-59	1.215E-02		2.216E-02	7.652E-02	2.777E-03	0.159
CO-60	-7.946E-03		6.373E-03	2.103E-02	7.504E-04	-0.378
ZN-65	-3.523E-03		1.900E-02	5.446E-02	1.930E-03	-0.065
SE-75	-1.168E-02		9.933E-03	2.882E-02	1.097E-03	-0.405
SR-85	4.581E-02		8.962E-03	2.751E-02	8.721E-04	1.665
Y-88	1.399E-04		5.616E-03	2.008E-02	6.270E-04	0.007

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

Nuclide	Key-Line Activity (PCI/GRAM)	K.L. Ided	Act error	MDA (PCI/GRAM)	MDA error	Act/MDA
NB-94	-9.351E-03		5.930E-03	1.922E-02	8.322E-04	-0.486
NB-95	6.115E-02		1.586E-02	4.793E-02	1.923E-03	1.276
TC-95M	2.728E-02		9.961E-03	3.342E-02	1.278E-03	0.816
ZR-95	-7.059E-03		1.544E-02	5.173E-02	2.061E-03	-0.136
ZRNB-95	9.193E-02		2.298E-02	6.945E-02	2.787E-03	1.324
RH-101	9.762E-03		6.881E-03	2.056E-02	7.836E-04	0.475
RH-102M	2.861E-03		5.139E-03	1.723E-02	5.513E-04	0.166
RU-103	9.340E-03		9.906E-03	3.340E-02	1.064E-03	0.280
RU-106DA	1.389E-02		5.647E-02	1.928E-01	6.824E-03	0.072
AG-108M	5.782E-03		5.070E-03	1.715E-02	5.479E-04	0.337
AG-110M	-1.035E-02		8.712E-03	2.853E-02	1.246E-03	-0.363
SN-113DA	-3.750E-03		8.776E-03	2.914E-02	9.177E-04	-0.129
SB-124	1.597E-02		8.584E-03	2.764E-02	9.616E-04	0.578
SB-125	9.084E-03		1.625E-02	5.459E-02	1.742E-03	0.166
SN-126DA	3.481E-03		5.495E-03	1.882E-02	6.915E-04	0.185
I-131	-8.690E-02		1.232E-01	4.085E-01	1.366E-02	-0.213
BA-133	-6.275E-03		8.333E-03	2.330E-02	7.914E-04	-0.269
CS-134	4.432E-02	+	1.103E-02	2.752E-02	1.130E-03	1.610
CS-137DA	-3.370E-03		6.618E-03	2.224E-02	8.137E-04	-0.152
LA-138	6.553E-03		7.670E-03	2.724E-02	9.645E-04	0.241
CE-139	-4.395E-03		6.083E-03	1.985E-02	7.397E-04	-0.221
BA-140	-9.687E-02		1.401E-01	4.731E-01	1.540E-02	-0.205
BALA-140	-2.739E-01		8.116E-02	2.453E-01	8.418E-03	-1.117
CE-141	6.093E-02		2.144E-02	6.108E-02	2.155E-03	0.998
CE-144	8.512E-03		4.193E-02	1.299E-01	4.398E-03	0.066
CEPR-144	1.665E-02		8.385E-02	2.599E-01	8.795E-03	0.064
PM-144	4.146E-03		5.424E-03	1.868E-02	6.590E-04	0.222
PM-146	2.047E-02		7.227E-03	2.475E-02	7.925E-04	0.827
EU-152	1.095E-03		1.692E-02	5.670E-02	1.962E-03	0.019
EU-154	3.624E-02		2.064E-02	7.259E-02	2.497E-03	0.499
EU-155	4.557E-02		1.853E-02	6.184E-02	2.036E-03	0.737
HF-181	1.257E-04		1.027E-02	3.416E-02	1.092E-03	0.004
BI-207	1.790E-03		5.052E-03	1.732E-02	5.836E-04	0.103
BI-210M	-1.049E-02		9.918E-03	2.787E-02	1.061E-03	-0.376
BI-212	1.123E+00	+	1.930E-01	3.857E-01	1.738E-02	2.911
RA-223	3.937E-01	+	6.800E-02	1.245E-01	4.725E-03	3.163
AC-227DA	3.429E-01		5.271E-02	1.496E-01	5.753E-03	2.292
TH-234DA	2.766E+00		1.051E+00	3.724E+00	1.517E-01	0.743
NP-237DA	1.324E-03		1.178E-02	3.960E-02	1.431E-03	0.033
AM-241HP	4.932E-02		1.566E-02	4.525E-02	1.460E-03	1.090

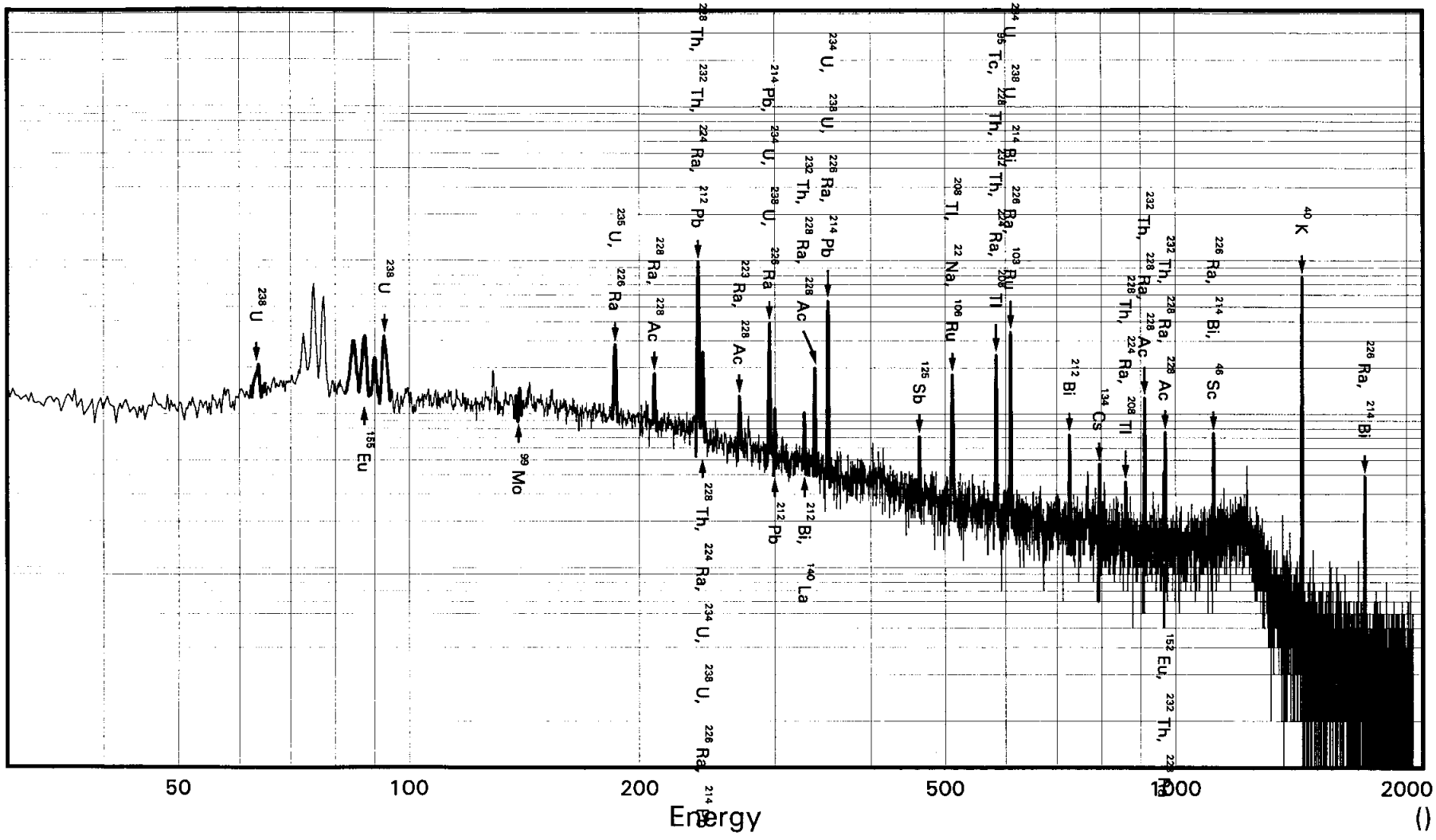
STL Richland WA.

BRC SOIL

Sample ID: J5K251AA

Batch ID: 7241626

Detector ID: GER4 1



Acquisition Start: 20-SEP-2007 05:26:02.74

Preset Live Time: 0 10:00:00.00

Elapsed Live Time: 0 10:00:00.00

Energy Coefficients:

Offset: -7.38530E-02

Slope: 2.48651E-01

Quadrature: 1.44016E-08

SAMPLE IDENTIFICATION: J5K251AA

CONFIGURATION ID: GER4:J5K251AA_200970526
TITLE : BRC SOIL
SAMPLE ID : J5K251AA

REPORT DATE: 20-SEP-07
ACQUIRE DATE: 20-SEP-07 05:26:02
ELAPSED LIVE TIME: 36000.0 Sec
PRESET LIVE TIME: 0 10:00:00

SAMPLE QUANTITY: 3.6100E+02
SAMPLE GEOMETRY: S200

ENERGY OFFSET: -.7385E-01 keV
ENERGY SLOPE: 2.4865E-01 keV/C
ENERGY Q COEFF: 1.4402E-08 keV/C^^2
PEAK SENSITIVITY: 5.000

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

SAMPLE DATE: 14-AUG-2007 14:00:00.00
CALIB DATE: 20-SEP-2007 05:04:40.11
ELAPSED LIVE TIME: 0 10:00:00
ELAPSED REAL TIME: 0 10:00:15

UNITS: GRAMS
SAMPLE TYPE:

FWHM OFFSET: 4.3453E-01 keV
FWHM SLOPE: 3.8115E-02 sqr keV
ITERATIONS: 10
GAUSSIAN SENSITIVITY: 20.00 %

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

VMS Peak Search Report V1.9 Generated 20-SEP-2007 17:22:04

Configuration : $DISK1:[GER4.SAMPLE]J5K251AA_200970526.CNF;1
Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6
Sample title : BRC SOIL
Sample date : 14-AUG-2007 14:00:00 Acquisition date : 20-SEP-2007 05:26:02
Sample ID : J5K251AA Sample quantity : 361.00 GRAMS
Sample type : Sample geometry : S200
Elapsed live time: 0 10:00:00.00 Elapsed real time: 0 10:00:15.14 0.0%
Start energy : 19.82 End energy : 2037.84
Sensitivity : 5.00 Gaussian : 20.00
Critical level : No

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	63.19*	30	1442	0.71	254.44	251	10	8.40E-04	256.3	
2	2	72.81*	245	1662	0.92	293.10	286	31	6.82E-03	35.7	3.46E+00
3	2	74.93*	1387	1581	0.93	301.63	286	31	3.85E-02	6.9	
4	2	77.15*	1585	1478	0.93	310.57	286	31	4.40E-02	5.9	
5	7	84.60*	656	2386	1.48	340.51	332	36	1.82E-02	18.8	8.25E-01
6	7	87.28*	732	1674	1.06	351.31	332	36	2.03E-02	12.8	
7	7	89.96	525	1379	1.21	362.08	332	36	1.46E-02	14.5	
8	0	92.88*	718	1651	1.29	373.83	368	13	1.99E-02	13.1	
9	0	128.80	113	1154	0.59	518.29	516	9	3.15E-03	54.6	
10	0	139.22	140	1229	1.96	560.17	554	12	3.88E-03	50.9	
11	0	185.99*	775	1364	1.38	748.28	741	14	2.15E-02	11.5	
12	0	209.29	386	914	0.86	841.94	837	11	1.07E-02	16.0	
13	3	238.62*	3746	840	0.99	959.91	953	27	1.04E-01	2.4	3.26E+00
14	3	241.69	964	1205	1.37	972.25	953	27	2.68E-02	8.6	
15	0	270.02	448	921	1.08	1086.16	1077	17	1.25E-02	16.2	
16	0	295.19*	1339	932	0.92	1187.38	1178	17	3.72E-02	6.1	
17	0	299.91	286	449	1.03	1206.38	1202	10	7.94E-03	15.0	
18	0	328.01	265	563	1.23	1319.35	1313	13	7.35E-03	19.5	
19	0	338.27*	616	662	1.12	1360.61	1354	14	1.71E-02	10.7	
20	0	351.91*	2434	569	1.18	1415.47	1408	15	6.76E-02	3.2	
21	0	462.93	212	430	1.08	1861.87	1853	16	5.88E-03	23.0	
22	0	510.91*	523	685	1.94	2054.78	2042	27	1.45E-02	17.5	
23	0	583.19*	1144	512	1.27	2345.38	2335	21	3.18E-02	6.1	
24	0	609.28*	1763	464	1.44	2450.28	2439	21	4.90E-02	4.1	
25	0	727.23	361	316	1.50	2924.51	2915	22	1.00E-02	13.6	
26	0	794.82	169	352	0.75	3196.23	3185	24	4.68E-03	26.0	
27	0	860.65	144	290	1.54	3460.90	3450	20	4.00E-03	26.0	
28	0	911.03*	808	316	1.74	3663.41	3649	28	2.24E-02	6.7	
29	0	964.97	121	290	1.48	3880.27	3872	16	3.35E-03	28.5	
30	0	969.09	413	290	1.77	3896.83	3887	20	1.15E-02	10.0	
31	0	1120.25	466	337	1.68	4504.42	4494	23	1.29E-02	9.8	
32	0	1460.77*	6860	135	2.20	5873.09	5855	41	1.91E-01	1.4	
33	0	1764.49	327	40	1.90	7093.64	7079	31	9.09E-03	6.9	

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

VMS Nuclide Identification Report V3.0 Generated 20-SEP-2007 17:22:04

Configuration : $DISK1:[GER4.SAMPLE]J5K251AA_200970526.CNF;1
Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.3
Sample title : BRC SOIL
Sample date : 14-AUG-2007 14:00:00 Acquisition date : 20-SEP-2007 05:26:02
Sample ID : J5K251AA Sample quantity : 361.00 GRAMS
Sample type : Sample geometry : S200
Elapsed live time: 0 10:00:00.00 Elapsed real time: 0 10:00:15.14 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	6860	10.67*	5.415E-01	2.469E+01	2.469E+01	6.43
TL-208	277.35	------	6.80	2.029E+00	------ Line Not Found		------
	510.84	523	21.60	1.301E+00	3.871E-01	3.871E-01	18.53
	583.14	1144	84.20*	1.175E+00	2.404E-01	2.404E-01	8.68
	860.37	144	12.46	8.554E-01	2.812E-01	2.812E-01	26.85
PB-212	238.63	3746	44.60*	2.244E+00	7.784E-01	7.784E-01	6.88
	300.09	286	3.41	1.921E+00	9.072E-01	9.072E-01	16.46
BI-214	609.31	1763	46.30*	1.136E+00	6.970E-01	6.970E-01	7.43
	768.36	------	5.04	9.414E-01	------ Line Not Found		------
	1120.29	466	15.10	6.798E-01	9.434E-01	9.434E-01	11.65
	1764.49	327	15.80	4.701E-01	9.164E-01	9.164E-01	9.19
PB-214	241.98	964	7.49	2.225E+00	1.202E+00	1.202E+00	10.74
	295.21	1339	19.20	1.943E+00	7.465E-01	7.465E-01	9.08
	351.92	2434	37.20*	1.714E+00	7.938E-01	7.938E-01	7.15
	785.91	------	1.10	9.238E-01	------ Line Not Found		------
RA-224DA	238.63	3746	44.60*	2.244E+00	7.784E-01	8.075E-01	6.88
	240.98	964	3.95	2.225E+00	2.280E+00	2.365E+00	10.74
	583.14	1144	30.25	1.175E+00	6.692E-01	6.942E-01	8.68
	860.37	144	4.48	8.554E-01	7.821E-01	8.113E-01	26.85
RA-226DA	186.21	775	3.50	2.594E+00	1.775E+00	1.776E+00	13.07
	241.98	964	7.49	2.225E+00	1.202E+00	1.202E+00	10.74
	295.22	1339	19.20	1.943E+00	7.465E-01	7.465E-01	9.08
	351.92	2434	37.20	1.714E+00	7.938E-01	7.938E-01	7.15
	609.32	1763	46.30*	1.136E+00	6.970E-01	6.970E-01	7.43
	1120.28	466	15.10	6.798E-01	9.434E-01	9.434E-01	11.65
	1238.11	------	5.94	6.228E-01	------ Line Not Found		------
	1764.49	327	15.80	4.701E-01	9.164E-01	9.164E-01	9.19
AC-228	209.28	386	4.40	2.433E+00	7.491E-01	7.491E-01	17.23
	270.23	448	3.60	2.066E+00	1.253E+00	1.253E+00	17.51
	338.32	616	11.40	1.764E+00	6.368E-01	6.368E-01	12.56
	911.07	808	27.70*	8.146E-01	7.448E-01	7.448E-01	9.60
	969.11	413	16.60	7.720E-01	6.696E-01	6.696E-01	12.08
RA-228DA	209.28	386	4.40	2.433E+00	7.491E-01	7.582E-01	17.23
	338.32	616	11.40	1.764E+00	6.368E-01	6.445E-01	12.56
	911.07	808	27.70*	8.146E-01	7.448E-01	7.539E-01	9.60
	964.60	121	5.20	7.749E-01	6.228E-01	6.304E-01	29.34

Nuclide Type: NP

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected PCI/GRAM	Decay Corr PCI/GRAM	1-Sigma %Error
	969.11	413	16.60	7.720E-01	6.696E-01	6.778E-01	12.08
TH-228DA	238.63	3746	44.60	2.244E+00	7.784E-01	8.075E-01	6.88
	240.98	964	3.95	2.225E+00	2.280E+00	2.365E+00	10.74
	583.14	1144	30.25*	1.175E+00	6.692E-01	6.942E-01	8.68
	860.37	144	4.48	8.554E-01	7.821E-01	8.113E-01	26.85
TH-232DA	238.63	3746	44.60	2.244E+00	7.784E-01	7.784E-01	6.88
	338.32	616	12.40*	1.764E+00	5.854E-01	5.854E-01	12.56
	583.14	1144	30.25	1.175E+00	6.692E-01	6.692E-01	8.68
	911.07	808	27.70	8.146E-01	7.448E-01	7.448E-01	9.60
	964.60	121	5.20	7.749E-01	6.228E-01	6.228E-01	29.34
	969.11	413	16.60	7.720E-01	6.696E-01	6.696E-01	12.08
U-234DA	241.98	964	7.49	2.225E+00	1.202E+00	1.202E+00	10.74
	295.22	1339	19.20*	1.943E+00	7.465E-01	7.465E-01	9.08
	351.92	2434	37.20	1.714E+00	7.938E-01	7.938E-01	7.15
	609.31	1763	46.30	1.136E+00	6.970E-01	6.970E-01	7.43
U-238DA	241.98	964	7.49	2.225E+00	1.202E+00	1.202E+00	10.74
	295.22	1339	19.20	1.943E+00	7.465E-01	7.465E-01	9.08
	351.92	2434	37.20*	1.714E+00	7.938E-01	7.938E-01	7.15
	609.31	1763	46.30	1.136E+00	6.970E-01	6.970E-01	7.43
U-238DHP	63.28	30	3.80*	1.025E+00	1.614E-01	1.614E-01	256.33
	92.59	718	5.41	2.393E+00	1.153E+00	1.153E+00	14.80

Flag: "*" = Keyline

Sample ID : J5K251AA Acquisition date : 20-SEP-2007 05:26:02

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
2	72.81	245	1662	0.92	293.10	286	31	6.82E-03	35.7	1.56E+00	
2	74.93	1387	1581	0.93	301.63	286	31	3.85E-02	6.9	1.67E+00	
2	77.15	1585	1478	0.93	310.57	286	31	4.40E-02	5.9	1.78E+00	
7	84.60	656	2386	1.48	340.51	332	36	1.82E-02	18.8	2.11E+00	
7	87.28	732	1674	1.06	351.31	332	36	2.03E-02	12.8	2.21E+00	T
7	89.96	525	1379	1.21	362.08	332	36	1.46E-02	14.5	2.30E+00	
0	128.80	113	1154	0.59	518.29	516	9	3.15E-03	54.6	2.85E+00	
0	139.22	140	1229	1.96	560.17	554	12	3.88E-03	50.9	2.85E+00	T
0	328.01	265	563	1.23	1319.35	1313	13	7.35E-03	19.5	1.80E+00	T
0	462.93	212	430	1.08	1861.87	1853	16	5.88E-03	23.0	1.40E+00	T
0	727.23	361	316	1.50	2924.51	2915	22	1.00E-02	13.6	9.85E-01	T
0	794.82	169	352	0.75	3196.23	3185	24	4.68E-03	26.0	9.15E-01	T

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	4.781E-02	18.53	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	1.932E-01	11.65	
		% Abundances Found =		50.00			
TC-95M	61.00D	0.60	204.12*	66.20	--- Not Found ---		Abun.
			582.07	29.30	1.050E+00	8.68	
			835.13	26.10	--- Not Found ---		
		% Abundances Found =		24.10			
MO-99	66.02H	13.40	140.50*	90.70	1.211E+02	51.31	Decay,Abun.
			181.07	6.20	--- Not Found ---		
			739.58	12.80	--- Not Found ---		
		% Abundances Found =		82.68	(Abn. Limit = 94.00%)		
RU-103	39.35D	0.94	497.08*	89.00	--- Not Found ---		Abun.
			610.33	5.60	1.103E+01	7.43	
		% Abundances Found =		5.92			
RU-106DA	368.20D	0.10	511.85	20.60	4.351E-01	18.53	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	3.112E-01	23.79	
			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	4.643E-02	26.86	
			801.93	8.73	--- Not Found ---		
		% Abundances Found =		41.22			
LA-140	40.22H	21.99	328.77	20.50	6.191E+05	20.63	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	2.260E-01	29.34	
			1085.78	10.00	--- Not Found ---		
			1112.02	13.30	--- Not Found ---		

Nuclide	Half-life	Half-Life Ratio	Energy	%Abund	Activity (PCI/GRAM)	1-Sigma %Error	Rejected by
EU-152	13.60Y	0.01	1407.95	20.70	--- Not Found ---		Abun.
	% Abundances Found =			10.78			
EU-155	4.96Y	0.02	42.90	21.16	--- Not Found ---		Abun.
			86.54	30.90	2.259E-01	14.57	
			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	2.195E+01	22.09	
			452.83	0.31	--- Not Found ---		
			727.33*	6.58	1.157E+00	15.17	
			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	3.328E-01	17.51	
			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	1.151E-01	13.07	
			205.31	4.70	--- Not Found ---		
	% Abundances Found =			78.03			

Flag: "*" = Keyline

VMS Nuclide Identification Report V3.0 Generated 20-SEP-2007 17:22:06

Configuration : $DISK1:[GER4.SAMPLE]J5K251AA_200970526.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 : 14-AUG-2007 14:00:00 Acquisition date : 20-SEP-2007 05:26:02
Sample ID : J5K251AA Sample quantity : 361.00 GRAMS
Sample type : Sample geometry : S200
Elapsed live time: 0 10:00:00.00 Elapsed real time: 0 10:00:15.14 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	2.469E+01	1.587E+00	1.759E-01	6.673E-03	140.400
TL-208	2.404E-01	2.086E-02	2.029E-02	7.330E-04	11.848
PB-212	7.784E-01	5.356E-02	3.135E-02	1.280E-03	24.827
BI-214	6.970E-01	5.182E-02	3.815E-02	1.379E-03	18.271
PB-214	7.938E-01	5.678E-02	3.689E-02	1.486E-03	21.519
RA-224DA	8.075E-01	5.556E-02	3.252E-02	1.328E-03	24.827
RA-226DA	6.970E-01	5.182E-02	3.815E-02	1.379E-03	18.271
AC-228	7.448E-01	7.153E-02	7.411E-02	3.551E-03	10.051
RA-228DA	7.539E-01	7.241E-02	7.501E-02	3.595E-03	10.051
TH-228DA	6.942E-01	6.024E-02	5.859E-02	2.116E-03	11.848
TH-232DA	5.854E-01	7.354E-02	1.153E-01	4.918E-03	5.077
U-234DA	7.465E-01	6.775E-02	6.952E-02	3.076E-03	10.738
U-238DA	7.938E-01	5.678E-02	3.689E-02	1.486E-03	21.519
U-238DHP	1.614E-01	4.138E-01	8.720E-01	3.700E-02	0.185

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

Nuclide	Key-Line Activity (PCI/GRAM)	K.L. Ided	Act error	MDA (PCI/GRAM)	MDA error	Act/MDA
BE-7	8.452E-03		6.863E-02	2.350E-01	8.174E-03	0.036
NA-22	9.633E-03		8.195E-03	2.860E-02	1.055E-03	0.337
SC-46	1.932E-01	+	2.251E-02	5.466E-02	2.052E-03	3.534
CR-51	1.382E-02		1.058E-01	3.597E-01	1.637E-02	0.038
MN-54	5.142E-04		6.511E-03	2.198E-02	9.873E-04	0.023
CO-57	-2.492E-02		4.478E-02	1.261E-01	5.032E-03	-0.198
CO-58	-9.751E-03		8.537E-03	2.812E-02	1.227E-03	-0.347
FE-59	-3.729E-03		2.258E-02	7.610E-02	2.960E-03	-0.049
CO-60	-3.249E-03		6.468E-03	2.192E-02	8.463E-04	-0.148
ZN-65	-6.626E-03		2.018E-02	5.658E-02	2.142E-03	-0.117
SE-75	-4.404E-03		8.532E-03	2.736E-02	1.163E-03	-0.161
SR-85	3.280E-02		8.772E-03	2.678E-02	9.550E-04	1.225
Y-88	1.253E-02		5.407E-03	2.117E-02	6.756E-04	0.592
NB-94	-5.510E-03		6.049E-03	1.991E-02	9.332E-04	-0.277

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

Nuclide	Key-Line Activity (PCI/GRAM)	K.L. Ided	Act error	MDA (PCI/GRAM)	MDA error	Act/MDA
NB-95	1.675E-03		1.284E-02	4.356E-02	1.797E-03	0.038
TC-95M	2.404E-02		9.130E-03	3.107E-02	1.197E-03	0.774
ZR-95	-4.908E-03		1.503E-02	5.077E-02	2.071E-03	-0.097
ZRNB-95	4.545E-03		1.846E-02	6.276E-02	2.590E-03	0.072
RH-101	2.619E-03		5.862E-03	1.830E-02	6.974E-04	0.143
RH-102M	-3.298E-03		4.834E-03	1.633E-02	5.669E-04	-0.202
RU-103	-7.350E-03		9.404E-03	3.162E-02	1.115E-03	-0.232
RU-106DA	8.207E-02		5.489E-02	1.884E-01	6.805E-03	0.436
AG-108M	3.035E-03		4.876E-03	1.638E-02	5.499E-04	0.185
AG-110M	-7.043E-03		9.200E-03	3.035E-02	1.445E-03	-0.232
SN-113DA	-9.571E-04		8.421E-03	2.815E-02	9.061E-04	-0.034
SB-124	1.112E-02		8.530E-03	2.822E-02	1.020E-03	0.394
SB-125	-7.063E-03		1.515E-02	5.006E-02	1.671E-03	-0.141
SN-126DA	1.756E-02		5.347E-03	1.898E-02	6.865E-04	0.925
I-131	7.557E-02		1.208E-01	4.104E-01	1.556E-02	0.184
BA-133	5.951E-03		7.479E-03	2.266E-02	8.957E-04	0.263
CS-134	4.643E-02	+	1.247E-02	2.733E-02	1.171E-03	1.699
CS-137DA	-9.884E-03		6.130E-03	2.034E-02	7.311E-04	-0.486
LA-138	9.620E-03		8.907E-03	3.155E-02	1.203E-03	0.305
CE-139	-6.768E-03		5.413E-03	1.815E-02	6.581E-04	-0.373
BA-140	2.969E-01		1.384E-01	4.821E-01	1.730E-02	0.616
BALA-140	-1.017E-01		8.485E-02	2.838E-01	1.035E-02	-0.358
CE-141	-4.221E-02		1.774E-02	5.606E-02	2.142E-03	-0.753
CE-144	-1.613E-02		3.713E-02	1.218E-01	4.938E-03	-0.132
CEPR-144	-3.309E-02		7.426E-02	2.436E-01	9.874E-03	-0.136
PM-144	-5.175E-03		5.377E-03	1.768E-02	6.387E-04	-0.293
PM-146	5.648E-03		6.784E-03	2.353E-02	8.034E-04	0.240
EU-152	-1.664E-02		1.580E-02	5.247E-02	2.185E-03	-0.317
EU-154	2.528E-02		2.260E-02	7.880E-02	2.907E-03	0.321
EU-155	3.364E-02		1.912E-02	6.461E-02	2.813E-03	0.521
HF-181	8.090E-03		9.937E-03	3.432E-02	1.198E-03	0.236
BI-207	1.852E-03		4.858E-03	1.651E-02	5.956E-04	0.112
BI-210M	5.364E-03		9.255E-03	2.643E-02	1.126E-03	0.203
BI-212	1.157E+00	+	1.756E-01	3.763E-01	1.709E-02	3.076
RA-223	3.328E-01	+	5.826E-02	1.158E-01	4.955E-03	2.873
AC-227DA	1.796E-02		4.332E-02	1.243E-01	5.053E-03	0.145
TH-234DA	2.417E+00		1.077E+00	3.780E+00	1.674E-01	0.639
U-235HP	1.202E-01		3.719E-02	1.233E-01	4.751E-03	0.974
NP-237DA	-1.305E-02		1.115E-02	3.722E-02	1.679E-03	-0.351
AM-241HP	-6.804E-02		3.513E-02	1.113E-01	4.590E-03	-0.611

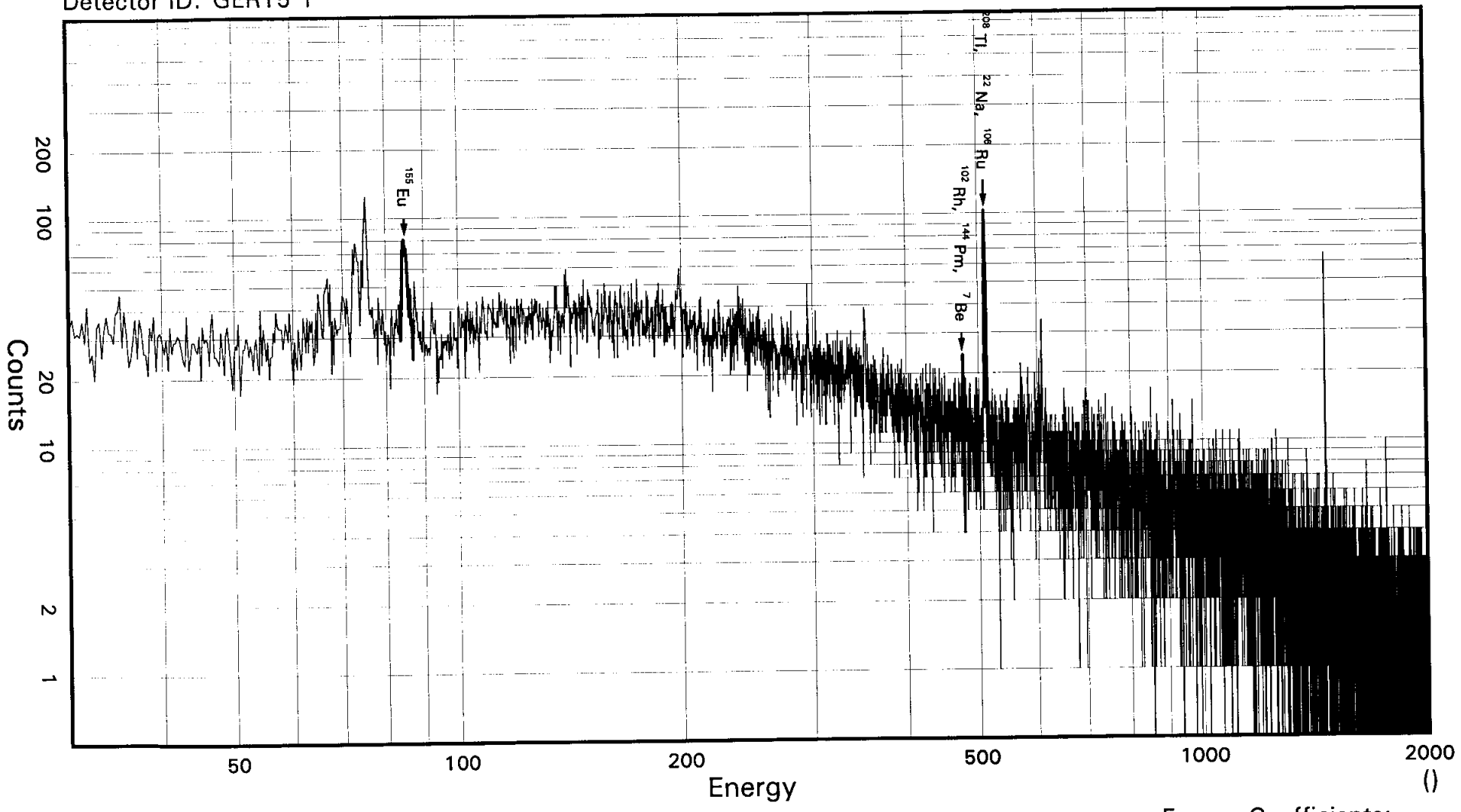
STL Richland WA.

BRC SOIL

Sample ID: J5WEL1AA

Batch ID: 7241626

Detector ID: GER15 1



Acquisition Start: 19-SEP-2007 05:57:42.06

Preset Live Time: 0 10:00:00.00

Elapsed Live Time: 0 10:00:00.00

Energy Coefficients:

Offset: 1.17577E+01

Slope: 2.41377E-01

Quadrature: 9.51094E-09

SAMPLE IDENTIFICATION: J5WEL1AA

CONFIGURATION ID: GER15:J5WEL1AA_190970557
TITLE : BRC SOIL
SAMPLE ID : J5WEL1AA

REPORT DATE: 19-SEP-07
ACQUIRE DATE: 19-SEP-07 05:57:42
ELAPSED LIVE TIME: 36000.0 Sec
PRESET LIVE TIME: 0 10:00:00

SAMPLE DATE: 14-AUG-2007 08:00:00.00
CALIB DATE: 19-SEP-2007 05:46:59.77
ELAPSED LIVE TIME: 0 10:00:00
ELAPSED REAL TIME: 0 10:00:13

SAMPLE QUANTITY: 2.0060E+02
SAMPLE GEOMETRY: 200ML

UNITS: GRAMS
SAMPLE TYPE:

ENERGY OFFSET: 1.1758E+01 keV
ENERGY SLOPE: 2.4138E-01 keV/C
ENERGY Q COEFF: 9.5109E-09 keV/C^^2
PEAK SENSITIVITY: 5.000

FWHM OFFSET: 5.5882E-01 keV
FWHM SLOPE: 3.4703E-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 19-SEP-2007 15:58:13

Configuration : RDND06$DKA100:[GER15.SAMPLE]J5WEL1AA_190970557.CNF;1
Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6
Sample title : BRC SOIL
Sample date : 14-AUG-2007 08:00:00 Acquisition date : 19-SEP-2007 05:57:42
Sample ID : J5WEL1AA Sample quantity : 200.60 GRAMS
Sample type : Sample geometry : 200ML
Elapsed live time: 0 10:00:00.00 Elapsed real time: 0 10:00:13.73 0.0%
Start energy : 12.00 End energy : 1989.75
Sensitivity : 5.00 Gaussian : 10.00
Critical level : No

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	84.94*	11	492	1.36	303.19	297	15	3.12E-04	555.9	
2	0	475.69	23	122	0.59	1921.90	1919	12	6.52E-04	95.8	
3	0	511.24*	21	282	2.43	2069.13	2058	24	5.82E-04	325.3	

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

VMS Nuclide Identification Report V3.1 Generated 19-SEP-2007 15:58:13

Configuration : RDND06$DKA100:[GER15.SAMPLE]J5WEL1AA_190970557.CNF;1
Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.4
Sample title : BRC SOIL
Sample date : 14-AUG-2007 08:00:00 Acquisition date : 19-SEP-2007 05:57:42
Sample ID : J5WEL1AA Sample quantity : 200.60 GRAMS
Sample type : Sample geometry : 200ML
Elapsed live time: 0 10:00:00.00 Elapsed real time: 0 10:00:13.73 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: AP

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected PCI/GRAM	Decay Corr PCI/GRAM	1-Sigma %Error
BE-7	477.59	23	10.42*	1.385E+00	6.084E-02	9.721E-02	95.97
RH-102M	475.10	23	95.00*	1.385E+00	6.674E-03	6.833E-03	95.97

Flag: "*" = Keyline

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
0	84.94	11	492	1.36	303.19	297	15	3.12E-04	****	3.58E+00	T
0	511.24	21	282	2.43	2069.13	2058	24	5.82E-04	****	1.31E+00	T

Flags: "T" = Tentatively associated

Sample ID : J5WEL1AA
Acquisition date : 19-SEP-2007 05:57:42

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	3.420E-03	325.33	Abun.
			1274.54*	99.94	--- Not Found ---		
		% Abundances Found =		64.26			
RU-106DA	368.20D	0.10	511.85	20.60	3.110E-02	325.33	Abun.
			621.84*	9.80	--- Not Found ---		
		% Abundances Found =		67.76			
PM-144	363.00D	0.10	476.81	42.20	1.610E-02	95.97	Abun.
			618.06*	99.10	--- Not Found ---		
			696.54	100.00	--- Not Found ---		
		% Abundances Found =		17.49			
EU-155	4.96Y	0.02	42.90	21.16	--- Not Found ---		Abun.
			86.54	30.90	3.858E-03	555.94	
			105.31*	20.70	--- Not Found ---		
		% Abundances Found =		42.47			
TL-208	1.41E+10Y	0.00	277.35	6.80	--- Not Found ---		Abun.
			510.84	21.60	2.771E-02	325.33	
			583.14*	84.20	--- Not Found ---		
			860.37	12.46	--- Not Found ---		
		% Abundances Found =		17.27			

Flag: "*" = Keyline

VMS Nuclide Identification Report V3.1 Generated 19-SEP-2007 15:58:14

Configuration : RDND06$DKA100:[GER15.SAMPLE]J5WEL1AA_190970557.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 : 14-AUG-2007 08:00:00 Acquisition date : 19-SEP-2007 05:57:42
Sample ID : J5WEL1AA Sample quantity : 200.60 GRAMS
Sample type : Sample geometry : 200ML
Elapsed live time: 0 10:00:00.00 Elapsed real time: 0 10:00:13.73 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
BE-7	9.721E-02	9.329E-02	2.919E-01	1.185E-02	0.333
RH-102M	6.833E-03	6.558E-03	2.033E-02	8.238E-04	0.336

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

Nuclide	Key-Line Activity (PCI/GRAM)	K.L. Ided	Act error	MDA (PCI/GRAM)	MDA error	Act/MDA
NA-22	1.609E-03		7.248E-03	2.562E-02	8.224E-04	0.063
NA-24	-7.574E+08		1.646E+09	Half-Life too short		
K-40	-3.934E-01		1.970E-01	6.903E-01	2.252E-02	-0.570
SC-46	-2.707E-02		1.473E-02	3.915E-02	1.242E-03	-0.692
CR-51	-1.077E-01		1.252E-01	4.125E-01	1.546E-02	-0.261
MN-54	-5.295E-04		7.541E-03	2.616E-02	8.521E-04	-0.020
CO-57	3.103E-02		3.615E-02	1.238E-01	4.748E-03	0.251
CO-58	5.525E-04		8.517E-03	2.994E-02	9.736E-04	0.018
FE-59	8.421E-03		2.199E-02	7.833E-02	2.500E-03	0.108
CO-60	3.277E-03		7.059E-03	2.520E-02	8.200E-04	0.130
ZN-65	-4.635E-02		1.740E-02	5.477E-02	1.741E-03	-0.846
SE-75	1.043E-02		9.701E-03	3.345E-02	1.427E-03	0.312
SR-85	1.037E-01		1.320E-02	4.104E-02	1.723E-03	2.527
Y-88	1.765E-03		8.562E-03	3.138E-02	9.571E-04	0.056
NB-94	-1.406E-02		6.524E-03	2.094E-02	6.819E-04	-0.672
NB-95	8.082E-03		1.344E-02	4.663E-02	1.508E-03	0.173
TC-95M	-2.693E-03		9.906E-03	3.387E-02	1.525E-03	-0.080
ZR-95	-4.003E-03		1.648E-02	5.597E-02	1.807E-03	-0.072
ZRNB-95	1.225E-02		1.944E-02	6.747E-02	2.182E-03	0.182
MO-99	1.222E-04		3.763E-05	Half-Life too short		
RH-101	3.623E-02		6.994E-03	2.418E-02	1.091E-03	1.498
RU-103	5.640E-03		1.192E-02	4.091E-02	1.692E-03	0.138
RU-106DA	-4.599E-02		6.235E-02	2.111E-01	7.382E-03	-0.218
AG-108M	-7.234E-03		5.853E-03	1.939E-02	7.520E-04	-0.373
AG-110M	2.947E-04		9.213E-03	3.223E-02	1.049E-03	0.009
SN-113DA	-2.088E-03		9.603E-03	3.288E-02	1.212E-03	-0.063

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

Nuclide	Key-Line Activity (PCI/GRAM)	K.L. Ided	Act error	MDA (PCI/GRAM)	MDA error	Act/MDA
SB-124	1.097E-03		1.006E-02	3.474E-02	1.268E-03	0.032
SB-125	-5.248E-05		1.783E-02	6.108E-02	2.353E-03	-0.001
SN-126DA	-9.077E-03		5.934E-03	1.945E-02	6.118E-04	-0.467
I-131	2.153E-01		1.339E-01	4.757E-01	1.775E-02	0.453
BA-133	-1.418E-02		8.371E-03	2.776E-02	1.038E-03	-0.511
CS-134	5.029E-03		7.063E-03	2.534E-02	8.229E-04	0.198
CS-137DA	2.743E-03		6.661E-03	2.327E-02	7.309E-04	0.118
LA-138	9.108E-03		9.340E-03	3.506E-02	1.144E-03	0.260
CE-139	3.897E-03		6.028E-03	2.034E-02	9.139E-04	0.192
BA-140	1.571E-01		1.506E-01	5.246E-01	2.141E-02	0.299
BALA-140	-7.556E-02		1.051E-01	3.605E-01	1.163E-02	-0.210
LA-140	-3.797E-04		2.222E-02	Half-Life too short		
CE-141	-1.817E-02		1.666E-02	5.497E-02	2.244E-03	-0.330
CE-144	-7.837E-02		3.480E-02	1.121E-01	4.213E-03	-0.699
CEPR-144	-1.571E-01		6.959E-02	2.242E-01	8.425E-03	-0.701
PM-144	3.803E-03		6.563E-03	2.297E-02	8.104E-04	0.166
PM-146	-1.638E-02		8.307E-03	2.677E-02	1.061E-03	-0.612
EU-152	3.491E-02		1.969E-02	6.787E-02	2.544E-03	0.514
EU-154	9.481E-03		1.995E-02	7.123E-02	2.286E-03	0.133
EU-155	-5.027E-03		1.446E-02	4.932E-02	1.637E-03	-0.102
HF-181	-1.183E-02		1.183E-02	3.916E-02	1.597E-03	-0.302
BI-207	-3.496E-04		6.282E-03	2.171E-02	8.436E-04	-0.016
TL-208	3.506E-05		1.069E-02	2.790E-02	1.059E-03	0.001
BI-210M	1.374E-02		9.387E-03	3.253E-02	1.384E-03	0.422
BI-212	1.420E-01		1.017E-01	3.591E-01	1.413E-02	0.395
PB-212	1.442E-02		1.118E-02	3.862E-02	1.703E-03	0.373
BI-214	-2.013E-02		2.505E-02	6.147E-02	2.212E-03	-0.327
PB-214	3.340E-02		2.144E-02	5.523E-02	2.067E-03	0.605
RA-223	-8.632E-02		3.518E-02	1.122E-01	4.747E-03	-0.770
RA-224DA	1.495E-02		1.158E-02	4.004E-02	1.765E-03	0.373
RA-226DA	-2.022E-02		2.505E-02	6.146E-02	2.212E-03	-0.329
AC-227DA	-6.068E-02		4.281E-02	1.418E-01	6.266E-03	-0.428
AC-228	-1.321E-01		4.091E-02	9.934E-02	3.232E-03	-1.330
RA-228DA	-1.337E-01		4.140E-02	1.005E-01	3.271E-03	-1.330
TH-228DA	1.011E-04		3.085E-02	8.049E-02	3.054E-03	0.001
TH-232DA	6.995E-02		4.311E-02	1.481E-01	5.554E-03	0.472
TH-234DA	6.640E-01		1.034E+00	3.658E+00	1.188E-01	0.182
U-234DA	9.944E-02		2.675E-02	9.367E-02	3.762E-03	1.062
U-235HP	-2.776E-02		3.522E-02	1.170E-01	4.721E-03	-0.237
NP-237DA	-2.098E-02		1.392E-02	4.516E-02	1.735E-03	-0.464
U-238DA	3.340E-02		2.144E-02	5.523E-02	2.067E-03	0.605
U-238DHP	-1.605E-02		7.451E-02	2.495E-01	7.780E-03	-0.064
AM-241HP	-6.251E-03		7.812E-03	2.591E-02	8.202E-04	-0.241

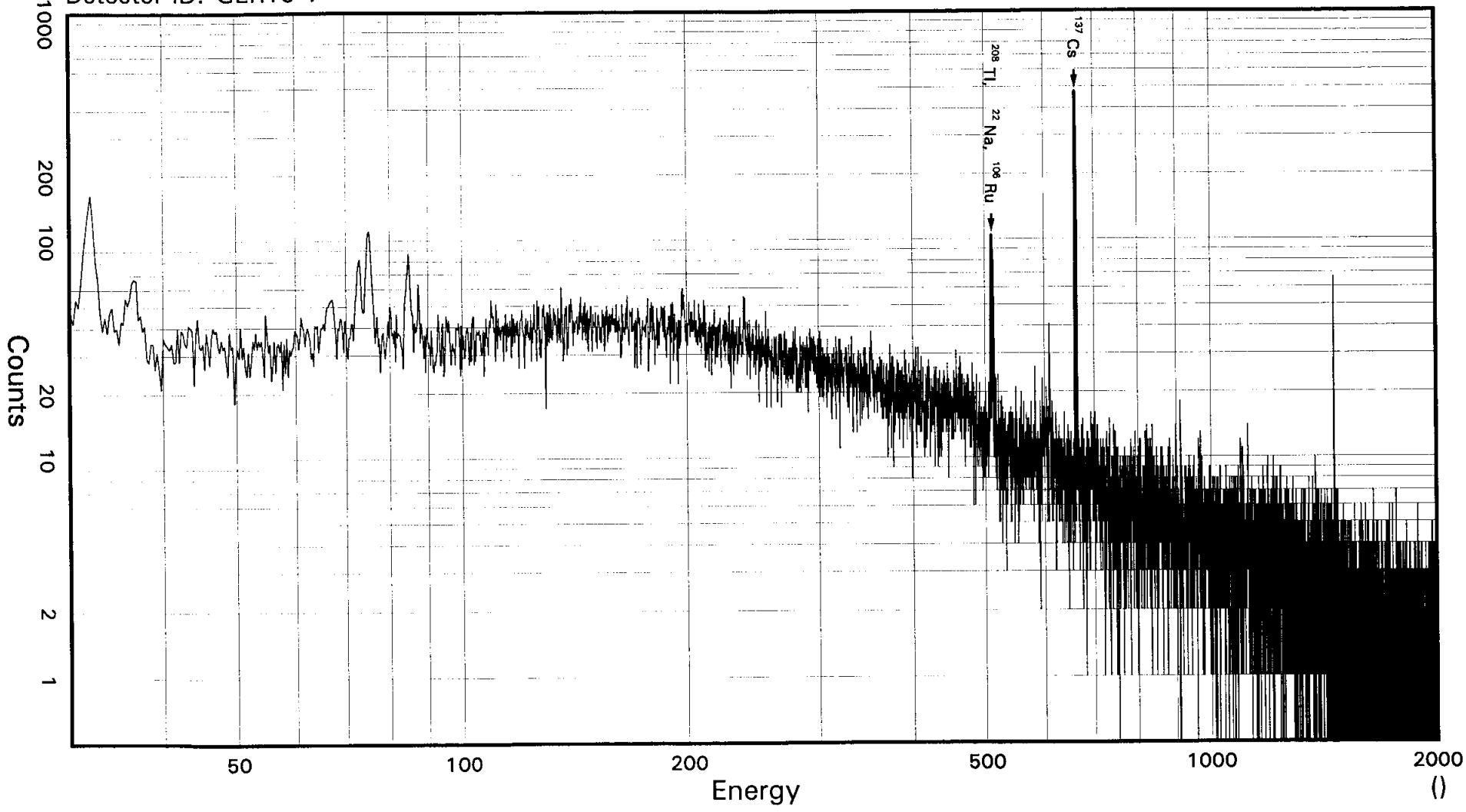
STL Richland WA.

BRC SOIL

Sample ID: J5WEL1AC

Batch ID: 7241626

Detector ID: GER15 1



Acquisition Start: 19-SEP-2007 18:24:53.43

Preset Live Time: 0 10:00:00.00

Elapsed Live Time: 0 10:00:00.00

Energy Coefficients:

Offset: 1.17577E+01

Slope: 2.41377E-01

Quadrature: 9.51094E-09

SAMPLE IDENTIFICATION: J5WEL1AC

CONFIGURATION ID: GER15:J5WEL1AC_190971824
TITLE : BRC SOIL
SAMPLE ID : J5WEL1AC

REPORT DATE: 20-SEP-07
ACQUIRE DATE: 19-SEP-07 18:24:53
ELAPSED LIVE TIME: 36000.0 Sec
PRESET LIVE TIME: 0 10:00:00

SAMPLE DATE: 19-SEP-2007 12:00:00.00
CALIB DATE: 19-SEP-2007 05:46:59.77
ELAPSED LIVE TIME: 0 10:00:00
ELAPSED REAL TIME: 0 10:00:14

SAMPLE QUANTITY: 2.0076E+02
SAMPLE GEOMETRY: 200ML

UNITS: GRAMS
SAMPLE TYPE:

ENERGY OFFSET: 1.1758E+01 keV
ENERGY SLOPE: 2.4138E-01 keV/C
ENERGY Q COEFF: 9.5109E-09 keV/C^^2
PEAK SENSITIVITY: 5.000

FWHM OFFSET: 5.5882E-01 keV
FWHM SLOPE: 3.4703E-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 20-SEP-2007 04:25:22

Configuration : RDND06$DKA100:[GER15.SAMPLE]J5WEL1AC_190971824.CNF;1
Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6
Sample title : BRC SOIL
Sample date : 19-SEP-2007 12:00:00 Acquisition date : 19-SEP-2007 18:24:53
Sample ID : J5WEL1AC Sample quantity : 200.76 GRAMS
Sample type : Sample geometry : 200ML
Elapsed live time: 0 10:00:00.00 Elapsed real time: 0 10:00:14.32 0.0%
Start energy : 12.00 End energy : 1989.75
Sensitivity : 5.00 Gaussian : 10.00
Critical level : No

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	31.90	506	558	0.90	83.44	77	13	1.40E-02	10.6	
2	0	511.30*	19	402	2.45	2069.39	2057	28	5.36E-04	399.4	0.00E+00
3	0	661.81	2895	214	1.37	2692.82	2680	28	8.04E-02	2.2	

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

VMS Nuclide Identification Report V3.1 Generated 20-SEP-2007 04:25:22

Configuration : RDND06$DKA100:[GER15.SAMPLE]J5WEL1AC_190971824.CNF;1
Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.4
Sample title : BRC SOIL
Sample date : 19-SEP-2007 12:00:00 Acquisition date : 19-SEP-2007 18:24:53
Sample ID : J5WEL1AC Sample quantity : 200.76 GRAMS
Sample type : Sample geometry : 200ML
Elapsed live time: 0 10:00:00.00 Elapsed real time: 0 10:00:14.32 0.0%
Energy tolerance : 2.00 Half life ratio : 8.00
Errors propagated: Yes Systematic Error : 5.00 %
Efficiency type : Empirical Efficiencies at : Peak Energy
Abundance limit : 80.00

Nuclide Line Activity Report

Nuclide Type: FP

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected PCI/GRAM	Decay Corr PCI/GRAM	1-Sigma %Error
CS-137DA	661.65	2895	85.10*	1.070E+00	1.189E+00	1.189E+00	6.31

Flag: "*" = Keyline

Sample ID : J5WEL1AC Acquisition date : 19-SEP-2007 18:24:53

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
0	31.90	506	558	0.90	83.44	77	13	1.40E-02	10.6	1.47E+00	
0	511.30	19	402	2.45	2069.39	2057	28	5.36E-04	****	1.31E+00	T

Flags: "T" = Tentatively associated

Sample ID : J5WEL1AC
Acquisition date : 19-SEP-2007 18:24:53

Nuclide	Half-life	Half-Life Ratio	Energy	%Abund	Activity (PCI/GRAM)	1-Sigma %Error	Rejected by
NA-22	2.60Y	0.00	511.00	179.68	3.062E-03	399.50	Abun.
			1274.54*	99.94	--- Not Found ---		
		% Abundances	Found =	64.26			
RU-106DA	368.20D	0.00	511.85	20.60	2.673E-02	399.50	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	2.547E-02	399.50	
			583.14*	84.20	--- Not Found ---		
			860.37	12.46	--- Not Found ---		
		% Abundances	Found =	17.27			

Flag: "*" = Keyline

VMS Nuclide Identification Report V3.1 Generated 20-SEP-2007 04:25:23

Configuration : RDND06$DKA100:[GER15.SAMPLE]J5WEL1AC_190971824.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 : 19-SEP-2007 12:00:00 Acquisition date : 19-SEP-2007 18:24:53
Sample ID : J5WEL1AC Sample quantity : 200.76 GRAMS
Sample type : Sample geometry : 200ML
Elapsed live time: 0 10:00:00.00 Elapsed real time: 0 10:00:14.32 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
CS-137DA	1.189E+00	7.496E-02	2.467E-02	7.748E-04	48.184

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

Nuclide	Key-Line Activity (PCI/GRAM)	K.L. Ided	Act error	MDA (PCI/GRAM)	MDA error	Act/MDA
BE-7	-1.268E-01		6.320E-02	2.029E-01	8.240E-03	-0.625
NA-22	-3.469E-03		7.256E-03	2.489E-02	7.990E-04	-0.139
NA-24	8.439E-04		1.098E-02	3.874E-02	1.263E-03	0.022
K-40	-2.795E-01		1.965E-01	6.963E-01	2.271E-02	-0.401
SC-46	-1.075E-02		1.092E-02	3.010E-02	9.552E-04	-0.357
CR-51	1.763E-02		5.682E-02	1.913E-01	7.172E-03	0.092
MN-54	8.218E-04		6.498E-03	2.275E-02	7.409E-04	0.036
CO-57	-1.073E-03		3.550E-02	1.197E-01	4.593E-03	-0.009
CO-58	-1.176E-02		6.191E-03	2.024E-02	6.581E-04	-0.581
FE-59	4.624E-03		1.275E-02	4.537E-02	1.448E-03	0.102
CO-60	2.678E-03		6.880E-03	2.451E-02	7.976E-04	0.109
ZN-65	-1.720E-02		1.536E-02	5.169E-02	1.643E-03	-0.333
SE-75	-6.125E-03		8.432E-03	2.816E-02	1.201E-03	-0.218
SR-85	5.941E-02		9.460E-03	2.916E-02	1.225E-03	2.037
Y-88	-2.785E-03		6.439E-03	2.288E-02	6.979E-04	-0.122
NB-94	6.629E-03		6.132E-03	2.213E-02	7.208E-04	0.299
NB-95	-2.083E-03		6.236E-03	2.110E-02	6.823E-04	-0.099
TC-95M	8.240E-03		7.270E-03	2.523E-02	1.136E-03	0.327
ZR-95	1.450E-02		9.933E-03	3.580E-02	1.156E-03	0.405
ZRNB-95	-3.658E-03		1.243E-02	4.213E-02	1.362E-03	-0.087
MO-99	3.106E-03		4.828E-03	1.641E-02	6.472E-04	0.189
RH-101	2.668E-02		6.767E-03	2.362E-02	1.065E-03	1.130
RH-102M	3.482E-03		6.916E-03	2.361E-02	9.566E-04	0.147
RU-103	-1.436E-02		6.502E-03	2.060E-02	8.523E-04	-0.697
RU-106DA	4.246E-02		6.270E-02	2.197E-01	7.685E-03	0.193
AG-108M	3.762E-03		6.618E-03	2.278E-02	8.838E-04	0.165
AG-110M	-8.107E-03		9.025E-03	3.046E-02	9.912E-04	-0.266

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

Nuclide	Key-Line Activity (PCI/GRAM)	K.L. Ided	Act error	MDA (PCI/GRAM)	MDA error	Act/MDA
SN-113DA	1.783E-02		8.891E-03	3.136E-02	1.156E-03	0.569
SB-124	-1.569E-04		7.052E-03	2.423E-02	8.844E-04	-0.006
SB-125	1.804E-02		2.063E-02	7.138E-02	2.750E-03	0.253
SN-126DA	2.148E-03		7.182E-03	2.114E-02	6.649E-04	0.102
I-131	2.431E-03		7.056E-03	2.442E-02	9.112E-04	0.100
BA-133	-1.989E-02		9.151E-03	2.996E-02	1.121E-03	-0.664
CS-134	4.767E-03		6.918E-03	2.478E-02	8.047E-04	0.192
LA-138	4.885E-03		1.043E-02	3.792E-02	1.237E-03	0.129
CE-139	5.149E-03		5.322E-03	1.799E-02	8.082E-04	0.286
BA-140	2.893E-02		2.424E-02	8.408E-02	3.431E-03	0.344
BALA-140	-1.055E-02		1.375E-02	4.725E-02	1.524E-03	-0.223
LA-140	-2.482E-03		8.046E-03	2.839E-02	9.156E-04	-0.087
CE-141	9.484E-03		8.291E-03	2.828E-02	1.155E-03	0.335
CE-144	-1.493E-02		3.476E-02	1.166E-01	4.381E-03	-0.128
CEPR-144	-3.104E-02		6.949E-02	2.330E-01	8.756E-03	-0.133
PM-144	-2.299E-03		6.247E-03	2.133E-02	7.528E-04	-0.108
PM-146	2.554E-03		9.532E-03	3.253E-02	1.290E-03	0.079
EU-152	8.223E-03		2.146E-02	7.207E-02	2.701E-03	0.114
EU-154	-8.836E-03		2.046E-02	7.030E-02	2.257E-03	-0.126
EU-155	-9.213E-03		1.469E-02	4.981E-02	1.653E-03	-0.185
HF-181	7.565E-03		7.474E-03	2.582E-02	1.053E-03	0.293
BI-207	7.990E-03		6.178E-03	2.197E-02	8.536E-04	0.364
TL-208	-1.976E-03		1.065E-02	2.757E-02	1.046E-03	-0.072
BI-210M	1.145E-02		1.011E-02	3.476E-02	1.479E-03	0.330
BI-212	2.194E-01		9.712E-02	3.503E-01	1.378E-02	0.626
PB-212	3.219E-02		1.180E-02	4.104E-02	1.809E-03	0.784
BI-214	-4.938E-02		2.535E-02	6.032E-02	2.171E-03	-0.819
PB-214	5.852E-03		2.187E-02	5.609E-02	2.100E-03	0.104
RA-223	5.005E-04		3.778E-02	1.277E-01	5.405E-03	0.004
RA-224DA	3.221E-02		1.181E-02	4.106E-02	1.810E-03	0.784
RA-226DA	-4.953E-02		2.535E-02	6.030E-02	2.170E-03	-0.821
AC-227DA	-1.034E-01		4.573E-02	1.483E-01	6.556E-03	-0.697
AC-228	-8.610E-02		3.890E-02	9.653E-02	3.141E-03	-0.892
RA-228DA	-8.611E-02		3.890E-02	9.655E-02	3.142E-03	-0.892
TH-228DA	-5.502E-03		2.966E-02	7.678E-02	2.913E-03	-0.072
TH-232DA	-2.575E-02		4.461E-02	1.472E-01	5.521E-03	-0.175
TH-234DA	-1.386E+00		1.007E+00	3.300E+00	1.072E-01	-0.420
U-234DA	4.641E-02		2.918E-02	1.001E-01	4.022E-03	0.463
U-235HP	2.767E-02		3.740E-02	1.271E-01	5.129E-03	0.218
NP-237DA	-1.620E-02		1.465E-02	4.800E-02	1.844E-03	-0.338
U-238DA	5.852E-03		2.187E-02	5.609E-02	2.100E-03	0.104
U-238DHP	-1.419E-01		8.190E-02	2.646E-01	8.252E-03	-0.536
AM-241HP	-2.669E-03		8.324E-03	2.786E-02	8.821E-04	-0.096