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CHAIN OF CUSTODY 27

GAMMA SAMPLE AND QC DATA 35

TOTAL # PAGES IN DOCUMENT 225

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.: 36752

SDG No.	Order No.	Client Sample ID (List Order)	Lot-Sa No.	Work Order	Report DB ID	Batch No.
35635		BGS-A1-09D	J7H200149-15	J47901AA	9J479010	7233482
		BGS-A1-09S	J7H200149-14	J479W1AA	9J479W10	7233482
		BGS-A1-10D	J7H200149-13	J479T1AA	9J479T10	7233482
		BGS-A1-10S	J7H200149-12	J479Q1AA	9J479Q10	7233482
		BGS-A1-25D	J7H200149-2	J47881AA	9J478810	7233482
		BGS-A1-25S	J7H200149-1	J47861AA	9J478610	7233482
		BGS-A1-27D	J7H200149-11	J479M1AA	9J479M10	7233482
		BGS-A1-27S	J7H200149-10	J479K1AA	9J479K10	7233482
		BGS-A1-30D	J7H200149-7	J479G1AA	9J479G10	7233482
		BGS-A1-30S	J7H200149-6	J479F1AA	9J479F10	7233482
		BGS-A1-31D-1	J7H200149-4	J479C1AA	9J479C10	7233482
		BGS-A1-31D-2	J7H200149-5	J479D1AA	9J479D10	7233482
		BGS-A1-31S	J7H200149-3	J479A1AA	9J479A10	7233482
		BGS-A1-32D	J7H200149-9	J479J1AA	9J479J10	7233482
		BGS-A1-32S	J7H200149-8	J479H1AA	9J479H10	7233482

SEVERN TRENT STL

STL Richland
2800 George Washington Way
Richland, WA 99354

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Certificate of Analysis

September 18, 2007

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

Attention: Penny Bassett

Date Received at Lab	:	August 16, 2007
Project Name	:	Yerington Mine Soils
Project Number	:	132039
Enfos Number	:	01KF-0109
PO Number	:	129682.001
Sample Type	:	Fifteen (15) Soil Samples
SDG Number	:	35635

CASE NARRATIVE

I. Introduction

On August 16, 2007, fifteen soil samples were received at the TestAmerica Laboratory Richland (TALR) laboratory for radiochemical analysis. Upon receipt, the samples were assigned TALR identification numbers as described on the cover page of the Analytical Data Package report form. The samples were assigned to Lot Number J7H200149.

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, samples and sample duplicate results are within analytical requirements.

I certify that this Certificate of Analysis is in compliance with the SOW, both technically and for completeness, for other than the conditions detailed above. The Laboratory Manager or a designee, as verified by the following signature has authorized release of the data contained in this hard copy data package.

Reviewed and approved:

Sherryl A. Adam
Project Manager

Drinking Water Method Cross References

	DRINKING WATER ASTM METHOD CROSS REFERENCES	
Referenced Method	**Isotope(s)**	**STL Richland's SOP number**
EPA 901.1	Cs-134, I-131	RICH-RC-5017
EPA 900.0	Alpha & Beta	RICH-RC-5014
EPA 00-02	Gross Alpha (Coprecipitation)	RICH-RC-5021
EPA 903.0	Total Alpha Radium (Ra-226)	RICH-RC-5027
EPA 903.1	Ra-226	RICH-RC-5005
EPA 904.0	Ra-228	RICH-RC-5005
EPA 905.0	Sr-89/90	RICH-RC-5006
ASTM D5174	Uranium	RICH-RC-5058
EPA 906.0	Tritium	RICH-RC-5007

Uncertainty Estimation

Test America Richland has adopted the internationally accepted approach to estimating uncertainties described in "NIST Technical Note 1297, 1994 Edition". The approach, "Law of Propagation of Errors", involves the identification of all variables in an analytical method which are used to derive a result. These variables are related to the analytical result (R) by some functional relationship, R = constants * f(x,y,z....). The components (x,y,z) are evaluated to determine their contribution to the overall method uncertainty. The individual component uncertainties (u_i) are then combined using a statistical model that provides the most probable overall uncertainty value. All component uncertainties are categorized as type A, evaluated by statistical methods, or type B, evaluated by other means. Uncertainties not included in the components, such as sample homogeneity, are combined with the component uncertainty as the square root of the sum-of-the-squares of the individual uncertainties. The uncertainty associated with the derived result is the combined uncertainty (u_c) multiplied by the coverage factor (1,2, or 3).

When three or more sample replicates are used to derive the analytical result, the type A uncertainty is the standard deviation of the mean value (S/?n), where S is the standard deviation of the derived results. The type B uncertainties are all other random or non-random components that are not included in the standard deviation.

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

Report Definitions

Action Lev	An agreed upon activity level used to trigger some action when the final result is greater than or equal to the Action Level. Often the Action Level is related to the Decision Limit.
Batch	The QC preparation batch number that relates laboratory samples to QC samples that were prepared and analyzed together.
Bias	Defined by the equation (Result/Expected)-1 as defined by ANSI N13.30.
COC No	Chain of Custody Number assigned by the Client or STL Richland.
Count Error (#s)	Poisson counting statistics of the gross sample count and background. The uncertainty is absolute and in the same units as the result. For Liquid Scintillation Counting (LSC) the batch blank count is the background.
Total Uncert (#s) ***u_c - Combined Uncertainty.***	All known uncertainties associated with the preparation and analysis of the sample are propagated to give a measure of the uncertainty associated with the result, *u_c the combined uncertainty*. The uncertainty is absolute and in the same units as the result.
(#s), Coverage Factor	The coverage factor defines the width of the confidence interval, 1, 2 or 3 standard deviations.
CRDL (RL)	Contractual Required Detection Limit as defined in the Client's Statement Of Work or STL Richland "default" nominal detection limit. Often referred to the reporting level (RL)
Lc	Decision Level based on instrument background or blank, adjusted by the Efficiency, Chemical Yield, and Volume associated with the sample. The Type I error probability is approximately 5%. Lc=(1.645 * Sqrt(2*(BkgrndCnt/BkgrndCntMin)/SCntMin)) * (ConvFct/(Eff*Yld*Abn*Vol) * IngrFct). For LSC methods the batch blank is used as a measure of the background variability. Lc cannot be calculated when the background count is zero.
Lot-Sample No	The number assigned by the LIMS software to track samples received on the same day for a given client. The sample number is a sequential number assigned to each sample in the Lot.
MDC|MDA	Detection Level based on instrument background or blank, adjusted by the Efficiency, Chemical Yield, and Volume with a Type I and II error probability of approximately 5%. MDC = (4.65 * Sqrt((BkgrndCnt/BkgrndCntMin)/SCntMin) + 2.71/SCntMin) * (ConvFct/(Eff * Yld * Abn * Vol) * IngrFct). For LSC methods the batch blank is used as a measure of the background variability.
Primary Detector	The instrument identifier associated with the analysis of the sample aliquot.
Ratio U-234/U-238	The U-234 result divided by the U-238 result. The U-234/U-238 ratio for natural uranium in NIST SRM 4321C is 1.038.
Rst/MDC	Ratio of the Result to the MDC. A value greater than 1 may indicate activity above background at a high level of confidence. Caution should be used when applying this factor and it should be used in concert with the qualifiers associated with the result.
Rst/TotUcert	Ratio of the Result to the Total Uncertainty. If the uncertainty has a coverage factor of 2 a value greater than 1 may indicate activity above background at approximately the 95% level of confidence assuming a two-sided confidence interval. Caution should be used when applying this factor and it should be used in concert with the qualifiers associated with the result.
Report DB No	Sample Identifier used by the report system. The number is based upon the first five digits of the **Work Order** Number.
RER	The equation Replicate Error Ratio = (S-D)/[sqrt($TPUs^2$ + $TPUd^2$)] as defined by ICPT BOA where S is the original sample result, D is the result of the duplicate, TPUs is the total uncertainty of the original sample and TPUd is the total uncertainty of the duplicate sample.
SDG	Sample Delivery Group Number assigned by the Client or assigned by STL Richland upon sample receipt.
Sum Rpt Alpha Spec Rst(s)	The sum of the reported alpha spec results for tests derived from the same sample excluding duplicate result where the results are in the same units.
Work Order	The LIMS software assign test specific identifier.
Yield	The recovery of the tracer added to the sample such as Pu-242 used to trace a Pu-239/40 method.

Sample Results Summary

TAL Richland STLR

Ordered by Client Sample ID, Batch No.

Date: 18-Sep-07

Report No. : 36752

SDG No: 35635

Client ID	Work Order Number	Parameter	Result +- Uncertainty (2s)	Qual	Units	Yield	MDC|MDA	RER2
BGS-A1-09D	J47901AA	RA-226	0.783 +- 0.101	=	pCi/g		0.0248	
		RA-228	0.878 +- 0.147	=	pCi/g		0.0533	
BGS-A1-09S	J479W1AA	RA-226	0.825 +- 0.116	=	pCi/g		0.0439	
		RA-228	0.892 +- 0.153	=	pCi/g		0.0862	
BGS-A1-10D	J479T1AA	RA-226	0.803 +- 0.107	=	pCi/g		0.0304	
		RA-228	0.826 +- 0.140	=	pCi/g		0.0575	
BGS-A1-10S	J479Q1AA	RA-226	0.755 +- 0.103	=	pCi/g		0.0292	
		RA-228	0.882 +- 0.169	=	pCi/g		0.0641	
BGS-A1-25D	J47881AA	RA-226	1.45 +- 0.190	=	pCi/g		0.0408	
		RA-228	1.81 +- 0.265	=	pCi/g		0.0847	
BGS-A1-25S	J47861AA	RA-226	1.29 +- 0.174	=	pCi/g		0.0431	
		RA-228	1.72 +- 0.271	=	pCi/g		0.0856	
BGS-A1-25S DUP	J47861AC	RA-226	1.35 +- 0.179	=	pCi/g		0.0426	0.5
		RA-228	1.65 +- 0.261	=	pCi/g		0.0843	0.4
BGS-A1-27D	J479M1AA	RA-226	0.886 +- 0.119	=	pCi/g		0.0274	
		RA-228	0.925 +- 0.176	=	pCi/g		0.0547	
BGS-A1-27S	J479K1AA	RA-226	1.12 +- 0.142	=	pCi/g		0.0283	
		RA-228	1.44 +- 0.225	=	pCi/g		0.0554	
BGS-A1-30D	J479G1AA	RA-226	1.27 +- 0.166	=	pCi/g		0.0367	
		RA-228	1.82 +- 0.300	=	pCi/g		0.0754	
BGS-A1-30S	J479F1AA	RA-226	1.20 +- 0.155	=	pCi/g		0.033	
		RA-228	1.70 +- 0.279	=	pCi/g		0.0669	
BGS-A1-31D-1	J479C1AA	RA-226	1.44 +- 0.194	=	pCi/g		0.0465	
		RA-228	1.60 +- 0.255	=	pCi/g		0.0907	
BGS-A1-31D-2	J479D1AA	RA-226	1.52 +- 0.197	=	pCi/g		0.0486	
		RA-228	1.72 +- 0.272	=	pCi/g		0.101	
BGS-A1-31S	J479A1AA	RA-226	1.53 +- 0.198	=	pCi/g		0.043	
		RA-228	1.74 +- 0.254	=	pCi/g		0.0845	
BGS-A1-32D	J479J1AA	RA-226	0.705 +- 0.108	=	pCi/g		0.0411	

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

Sample Results Summary

TAL Richland STLR

Ordered by Client Sample ID, Batch No.

Date: 18-Sep-07

Report No. : 36752

SDG No: 35635

Client ID	Work Order Number	Parameter	Result +- Uncertainty (2s)	Qual	Units	Yield	MDC|MDA	RER2
BGS-A1-32D	J479J1AA	RA-228	0.796 +- 0.146	=	pCi/g		0.0826	
BGS-A1-32S	J479H1AA	RA-226	0.802 +- 0.106	=	pCi/g		0.0315	
		RA-228	0.910 +- 0.155	=	pCi/g		0.0618	

Number of Results: 32

TAL Richland
rptSTLRchSaSum
V5.1.4 A2002

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

QC Results Summary
TAL Richland STLR

Ordered by QC Type, Batch No.

Date: 18-Sep-07

Report No. : 36752

SDG No.: 35635

QC Type	Work Order Number	Parameter	Result +- Uncertainty (2s)	Qual	Units	Tracer Yield	LCS Recovery	Bias	MDC|MDA
BLANK QC	J5A4G1AA	RA-226	-0.0131 +- 0.0316	N	pCi/g				0.035
		RA-228	0.0355 +- 0.0313	N	pCi/g				0.058
LCS	J5A4G1AC	CS-137	1.22 +- 0.152	=	pCi/g		111%	0.1	0.017

Number of Results: 3

TAL Richland
rptSTLRchQcSum
V5.1.4 A2002

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

FORM I

SAMPLE RESULTS

Date: 18-Sep-07

Lab Name:	**TA Richland**	**SDG:**	35635	**Collection Date:**	7/27/2007 2:30:00 PM
Lot-Sample No.:	**J7H200149-15**	**Report No. :**	36752	**Received Date:**	8/16/2007 10:00:00 AM
Client Sample ID:	**BGS-A1-09D**	**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: 7233482	**Work Order:** J47901AA			**Report DB ID:** 9J479010								
RA-226	**0.783**	=	0.10	0.10	0.0248	pCi/g		*(31.5)*	9/12/07 06:10 p		375.4	E901.1
								(15.5)			g	GER11$1
RA-228	**0.878**	=	0.15	0.15	0.0533	pCi/g		*(16.5)*	9/12/07 06:10 p		375.4	E901.1
								(12.)			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: 18-Sep-07

Lab Name:	TA Richland	SDG:	35635	Collection Date:	7/27/2007 2:30:00 PM
Lot-Sample No.:	J7H200149-14	Report No. :	36752	Received Date:	8/16/2007 10:00:00 AM
Client Sample ID:	BGS-A1-09S	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: 7233482	Work Order: J479W1AA			Report DB ID: 9J479W10								
RA-226	**0.825**	=	0.12	0.12	0.0439	pCi/g		*(18.8)* *(14.2)*	9/12/07 06:10 p		376.6 g	E901.1 GER14$1
RA-228	**0.892**	=	0.15	0.15	0.0862	pCi/g		*(10.3)* *(11.7)*	9/12/07 06:10 p		376.6 g	E901.1 GER14$1

Number of Results: 2

Comments:

TAL Richland
rptSTLRchSample
V5.1.4 A2002

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

FORM I

SAMPLE RESULTS

Date: 18-Sep-07

Lab Name: TA Richland
Lot-Sample No.: J7H200149-13
Client Sample ID: BGS-A1-10D

SDG: 35635
Report No. : 36752
COC No. :

Collection Date: 7/27/2007 3:15:00 PM
Received Date: 8/16/2007 10:00:00 AM
Matrix: SOIL SO

Ordered by Client Sample ID, Batch No.

Parameter	Result	Qual	Count Error (2 s)	Total Uncert(2 s)	MDC|MDA, Action Lev	Rpt Unit, Lc	Yield CRDL(RL)	Rst/MDC, Rst/TotUcert	Analysis, Prep Date	Total Sa Size	Aliquot Size	Analy Method, Primary Detector
Batch: 7233482	**Work Order:** J479T1AA			**Report DB ID:** 9J479T10								
RA-226	**0.803**	=	0.11	0.11	0.0304	pCi/g		*(26.4)*	9/12/07 06:09 p		389.3	E901.1
								(15.)			g	GER10$1
RA-228	**0.826**	=	0.14	0.14	0.0575	pCi/g		*(14.4)*	9/12/07 06:09 p		389.3	E901.1
								(11.8)			g	GER10$1

Number of Results: 2

Comments:

TAL Richland
rptSTLRchSample
V5.1.4 A2002

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

FORM I

SAMPLE RESULTS

Date: 18-Sep-07

Lab Name: TA Richland
Lot-Sample No.: J7H200149-12
Client Sample ID: BGS-A1-10S

SDG: 35635
Report No. : 36752
COC No. :

Collection Date: 7/27/2007 3:15:00 PM
Received Date: 8/16/2007 10:00:00 AM
Matrix: SOIL SO

Ordered by Client Sample ID, Batch No.

Parameter	Result	Qual	Count Error (2 s)	Total Uncert(2 s)	MDC|MDA, Action Lev	Rpt Unit, Lc	Yield CRDL(RL)	Rst/MDC, Rst/TotUcert	Analysis, Prep Date	Total Sa Size	Aliquot Size	Analy Method, Primary Detector
Batch: 7233482	Work Order: J479Q1AA			Report DB ID: 9J479Q10								
RA-226	**0.755**	=	0.10	0.10	0.0292	pCi/g		*(25.8)*	9/12/07 06:09 p		396.6	E901.1
								(14.6)			g	GER13$1
RA-228	**0.882**	=	0.17	0.17	0.0641	pCi/g		*(13.7)*	9/12/07 06:09 p		396.6	E901.1
								(10.4)			g	GER13$1

Number of Results: 2

Comments:

TAL Richland
rptSTLRchSample
V5.1.4 A2002

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

FORM I

SAMPLE RESULTS

Date: 18-Sep-07

Lab Name:	TA Richland	SDG:	35635	Collection Date:	7/28/2007 10:45:00 AM
Lot-Sample No.:	J7H200149-2	Report No. :	36752	Received Date:	8/16/2007 10:00:00 AM
Client Sample ID:	BGS-A1-25D	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: 7233482	Work Order: J47881AA			Report DB ID: 9J478810								
RA-226	**1.45**	=	0.19	0.19	0.0408	pCi/g		*(35.5)*	9/11/07 06:08 a		341.8	E901.1
								(15.3)			g	GER5$1
RA-228	**1.81**	=	0.27	0.27	0.0847	pCi/g		*(21.4)*	9/11/07 06:08 a		341.8	E901.1
								(13.7)			g	GER5$1

Number of Results: 2

Comments:

TAL Richland
rptSTLRchSample
V5.1.4 A2002

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

FORM I

SAMPLE RESULTS

Date: 18-Sep-07

Lab Name:	TA Richland	**SDG:**	35635	**Collection Date:**	7/28/2007 10:45:00 AM
Lot-Sample No.:	J7H200149-1	**Report No. :**	36752	**Received Date:**	8/16/2007 10:00:00 AM
Client Sample ID:	BGS-A1-25S	**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: 7233482	**Work Order:** J47861AA			**Report DB ID:** 9J478610								
RA-226	**1.29**	=	0.17	0.17	0.0431	pCi/g		*(29.9)*	9/11/07 06:08 a		380.1	E901.1
								(14.8)			g	GER4$1
RA-228	**1.72**	=	0.27	0.27	0.0856	pCi/g		*(20.1)*	9/11/07 06:08 a		380.1	E901.1
								(12.7)			g	GER4$1

Number of Results: 2

Comments:

TAL Richland
rptSTLRchSample
V5.1.4 A2002

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

FORM I

SAMPLE RESULTS

Date: 18-Sep-07

Lab Name:	**TA Richland**	**SDG:**	35635	**Collection Date:**	7/27/2007 4:15:00 PM
Lot-Sample No.:	**J7H200149-11**	**Report No. :**	36752	**Received Date:**	8/16/2007 10:00:00 AM
Client Sample ID:	**BGS-A1-27D**	**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: 7233482	**Work Order:** J479M1AA			**Report DB ID:** 9J479M10								
RA-226	**0.886**	=	0.12	0.12	0.0274	pCi/g		*(32.4)*	9/12/07 05:38 a		373.9	E901.1
								(14.9)			g	GER12$1
RA-228	**0.925**	=	0.18	0.18	0.0547	pCi/g		*(16.9)*	9/12/07 05:38 a		373.9	E901.1
								(10.5)			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: 18-Sep-07

Lab Name: TA Richland
Lot-Sample No.: J7H200149-10
Client Sample ID: BGS-A1-27S

SDG: 35635
Report No. : 36752
COC No. :

Collection Date: 7/27/2007 4:15:00 PM
Received Date: 8/16/2007 10:00:00 AM
Matrix: SOIL SO

Ordered by Client Sample ID, Batch No.

Parameter	Result	Qual	Count Error (2 s)	Total Uncert(2 s)	MDC|MDA, Action Lev	Rpt Unit, Lc	Yield CRDL(RL)	Rst/MDC, Rst/TotUcert	Analysis, Prep Date	Total Sa Size	Aliquot Size	Analy Method, Primary Detector
Batch: 7233482	**Work Order:** J479K1AA			**Report DB ID:** 9J479K10								
RA-226	**1.12**	=	0.14	0.14	0.0283	pCi/g		*(39.6)*	9/12/07 05:37 a		372.7	E901.1
								(15.8)			g	GER11$1
RA-228	**1.44**	=	0.22	0.22	0.0554	pCi/g		*(26.)*	9/12/07 05:37 a		372.7	E901.1
								(12.8)			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: 18-Sep-07

Lab Name:	TA Richland	SDG:	35635	Collection Date:	7/28/2007 10:00:00 AM
Lot-Sample No.:	J7H200149-7	Report No. :	36752	Received Date:	8/16/2007 10:00:00 AM
Client Sample ID:	BGS-A1-30D	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: 7233482	Work Order: J479G1AA			Report DB ID: 9J479G10								
RA-226	**1.27**	=	0.17	0.17	0.0367	pCi/g		*(34.6)*	9/12/07 05:37 a		361.5	E901.1
								(15.3)			g	GER13$1
RA-228	**1.82**	=	0.30	0.30	0.0754	pCi/g		*(24.1)*	9/12/07 05:37 a		361.5	E901.1
								(12.1)			g	GER13$1

Number of Results: 2

Comments:

TAL Richland
rptSTLRchSample
V5.1.4 A2002

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

FORM I

SAMPLE RESULTS

Date: 18-Sep-07

Lab Name:	TA Richland	SDG:	35635	Collection Date:	7/28/2007 10:00:00 AM
Lot-Sample No.:	J7H200149-6	Report No. :	36752	Received Date:	8/16/2007 10:00:00 AM
Client Sample ID:	BGS-A1-30S	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: 7233482	Work Order: J479F1AA			Report DB ID: 9J479F10								
RA-226	**1.20**	=	0.16	0.16	0.033	pCi/g		(36.4) (15.5)	9/11/07 06:24 p		400.8 g	E901.1 GER13$1
RA-228	**1.70**	=	0.28	0.28	0.0669	pCi/g		(25.5) (12.2)	9/11/07 06:24 p		400.8 g	E901.1 GER13$1

Number of Results: 2

Comments:

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

FORM I

SAMPLE RESULTS

Date: 18-Sep-07

Lab Name: TA Richland
Lot-Sample No.: J7H200149-4
Client Sample ID: BGS-A1-31D-1

SDG: 35635
Report No. : 36752
COC No. :

Collection Date: 7/28/2007 9:00:00 AM
Received Date: 8/16/2007 10:00:00 AM
Matrix: SOIL SO

Ordered by Client Sample ID, Batch No.

Parameter	Result	Qual	Count Error (2 s)	Total Uncert(2 s)	MDC|MDA, Action Lev	Rpt Unit, Lc	Yield CRDL(RL)	Rst/MDC, Rst/TotUcert	Analysis, Prep Date	Total Sa Size	Aliquot Size	Analy Method, Primary Detector
Batch: 7233482	**Work Order:** J479C1AA			**Report DB ID:** 9J479C10								
RA-226	**1.44**	=	0.19	0.19	0.0465	pCi/g		*(31.)* *(14.9)*	9/11/07 06:23 p		340.1 g	E901.1 GER4$1
RA-228	**1.60**	=	0.25	0.25	0.0907	pCi/g		*(17.6)* *(12.5)*	9/11/07 06:23 p		340.1 g	E901.1 GER4$1

Number of Results: 2

Comments:

TAL Richland
rptSTLRchSample
V5.1.4 A2002

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

FORM I

SAMPLE RESULTS

Date: 18-Sep-07

Lab Name:	TA Richland	SDG:	35635	Collection Date:	7/28/2007 9:00:00 AM
Lot-Sample No.:	J7H200149-5	Report No. :	36752	Received Date:	8/16/2007 10:00:00 AM
Client Sample ID:	BGS-A1-31D-2	COC No. :		Matrix:	SOIL SO

Ordered by Client Sample ID, Batch No.

Parameter	Result	Qual	Count Error (2 s)	Total Uncert(2 s)	MDC|MDA, Action Lev	Rpt Unit, Lc	Yield CRDL(RL)	Rst/MDC, Rst/TotUcert	Analysis, Prep Date	Total Sa Size	Aliquot Size	Analy Method, Primary Detector
Batch: 7233482	Work Order: J479D1AA			Report DB ID: 9J479D10								
RA-226	**1.52**	=	0.20	0.20	0.0486	pCi/g		*(31.2)* *(15.4)*	9/11/07 06:23 p		346.1 g	E901.1 GER6$1
RA-228	**1.72**	=	0.27	0.27	0.101	pCi/g		*(17.)* *(12.6)*	9/11/07 06:23 p		346.1 g	E901.1 GER6$1

Number of Results: 2

Comments:

TAL Richland
rptSTLRchSample
V5.1.4 A2002

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

FORM I

SAMPLE RESULTS

Date: 18-Sep-07

Lab Name: TA Richland
Lot-Sample No.: J7H200149-3
Client Sample ID: BGS-A1-31S

SDG: 35635
Report No. : 36752
COC No. :

Collection Date: 7/28/2007 9:00:00 AM
Received Date: 8/16/2007 10:00:00 AM
Matrix: SOIL SO

Ordered by Client Sample ID, Batch No.

Parameter	Result	Qual	Count Error (2 s)	Total Uncert(2 s)	MDC|MDA, Action Lev	Rpt Unit, Lc	Yield CRDL(RL)	Rst/MDC, Rst/TotUcert	Analysis, Prep Date	Total Sa Size	Aliquot Size	Analy Method, Primary Detector
Batch: 7233482	Work Order: J479A1AA			Report DB ID: 9J479A10								
RA-226	**1.53**	=	0.20	0.20	0.043	pCi/g		(35.5) (15.4)	9/11/07 06:22 p		363.2 g	E901.1 GER5$1
RA-228	**1.74**	=	0.25	0.25	0.0845	pCi/g		(20.5) (13.7)	9/11/07 06:22 p		363.2 g	E901.1 GER5$1

Number of Results: 2

Comments:

TAL Richland
rptSTLRchSample
V5.1.4 A2002

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

FORM I

SAMPLE RESULTS

Date: 18-Sep-07

Lab Name:	TA Richland	SDG:	35635	Collection Date:	7/28/2007 8:00:00 AM
Lot-Sample No.:	J7H200149-9	Report No. :	36752	Received Date:	8/16/2007 10:00:00 AM
Client Sample ID:	BGS-A1-32D	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: 7233482	Work Order: J479J1AA			Report DB ID: 9J479J10								
RA-226	**0.705**	=	0.11	0.11	0.0411	pCi/g		*(17.2)* *(13.)*	9/12/07 05:37 a		369.8 g	E901.1 GER14$1
RA-228	**0.796**	=	0.15	0.15	0.0826	pCi/g		*(9.6)* *(10.9)*	9/12/07 05:37 a		369.8 g	E901.1 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 I

SAMPLE RESULTS

Date: 18-Sep-07

Lab Name: TA Richland
Lot-Sample No.: J7H200149-8
Client Sample ID: BGS-A1-32S

SDG: 35635
Report No. : 36752
COC No. :

Collection Date: 7/28/2007 8:00:00 AM
Received Date: 8/16/2007 10:00:00 AM
Matrix: SOIL SO

Ordered by Client Sample ID, Batch No.

Parameter	Result	Qual	Count Error (2 s)	Total Uncert(2 s)	MDC|MDA, Action Lev	Rpt Unit, Lc	Yield CRDL(RL)	Rst/MDC, Rst/TotUcert	Analysis, Prep Date	Total Sa Size	Aliquot Size	Analy Method, Primary Detector
Batch: 7233482	Work Order: J479H1AA			Report DB ID: 9J479H10								
RA-226	**0.802**	=	0.11	0.11	0.0315	pCi/g		(25.5) (15.2)	9/12/07 05:37 a		384.2 g	E901.1 GER10$1
RA-228	**0.910**	=	0.15	0.15	0.0618	pCi/g		(14.7) (11.8)	9/12/07 05:37 a		384.2 g	E901.1 GER10$1

Number of Results: 2

Comments:

TAL Richland
rptSTLRchSample
V5.1.4 A2002

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

FORM II

Date: 18-Sep-07

DUPLICATE RESULTS

Lab Name:	TA Richland	SDG:	35635	Collection Date:	7/28/2007 10:45:00 AM
Lot-Sample No.:	J7H200149-1	Report No. :	36752	Received Date:	8/16/2007 10:00:00 AM
Client Sample ID:	BGS-A1-25S 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: 7233482	Work Order: J47861AC			Report DB ID: J47861CR		Orig Sa DB ID: 9J478610						
RA-226	1.35	=	0.18	0.18	0.0426	pCi/g		(31.8)	9/11/07 06:22 p		380.1	E901.1
	1.29	= RER2	0.5					(15.1)			g	GER7$1
RA-228	1.65	=	0.26	0.26	0.0843	pCi/g		(19.5)	9/11/07 06:22 p		380.1	E901.1
	1.72	= RER2	0.4					(12.6)			g	GER7$1

Number of Results: 2

Comments:

TAL Richland
rptSTLRchDupV5.1
.4 A2002

RER2 - Replicate Error Ratio = (S-D)/[sqrt(sq(TPUs)+sq(TPUd))] as defined by ICPT BOA.
MDC|MDA,Lc - Detection, Decision Level based on instrument background or blank, adjusted by the sample Efficiency, Yield, and Volume.
= ERPIMS - Equal To, Analyte Detected

FORM II

BLANK RESULTS

Date: 18-Sep-07

Lab Name: TA Richland

SDG: 35635

Lot-Sample No.: J7H210000-482

Report No. : 36752

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: 7233482	Work Order: J5A4G1AA			Report DB ID: J5A4G1AB								
RA-226	-0.0131	ND	0.032	0.032	0.035	pCi/g		-0.37	9/12/07 06:11 p		200.0	E901.1
								-0.83			g	GER12$1
RA-228	0.0355	ND	0.031	0.031	0.058	pCi/g		0.61	9/12/07 06:11 p		200.0	E901.1
								(2.3)			g	GER12$1

Number of Results: 2

Comments:

TAL Richland
rptSTLRchBlank
V5.1.4 A2002

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

FORM II

LCS RESULTS

Date: 18-Sep-07

Lab Name: TA Richland

SDG: 35635

Lot-Sample No.: J7H210000-482

Report No. : 36752

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: 7233482	Work Order: J5A4G1AC			Report DB ID: J5A4G1CS									
CS-137	1.22	=	0.15	0.15	0.017	pCi/g		1.10	0.038	111%	9/13/07 05:26 a	200.0	E901.1
							Rec Limits:	70.	130.	0.1		g	GER12$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. _____

YERS000245

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☐ 201 East Washington Street / Suite 300
Phoenix, AZ 85004
602-567-4000 / FAX 602-567-4001

PROJECT NAME: Yerington Mine Site

PROJECT NUMBER: 132039 J7H200149 35635

LABORATORY NAME & ADDRESS: SEVERN TRENT LABS, RICHLAND, WA Due 09-07-07

LINE NO.	SAMPLE - I.D.	COLLECTION DATE	COLLECTION TIME	SAMPLER'S INITIALS	NUMBER OF CONTAINERS	CONTAINER SIZE AND TYPE	PRESER-VATIVE	MATRIX CODE	ANALYSES REQUESTED	FIELD FILTERED	QC - REQ	TAT	SAMPLING METHOD	DEPTH (FT.) BEGIN / END	PID READING (ppm)
01	BGS-A1-09S	7/27/07	14:30	PB	1	9 oz Glass	NONE	S	EPA 903.0, EPA 904.0, HASL 300 (U, TH) J479W					0.1 / 0.8	
02	BGS-A1-09D	↓	↓	↓	1	9 oz Glass	NONE	S	EPA 903.0, EPA 904.0, HASL 300 (U, TH) J479Q					2 / 3	
03														----	
04														----	
05														----	
06														----	
07														----	
08														----	
09														----	
10														----	

COLLECTED & RELEASED BY: Penny Bassett	DATE 8/13/07	TIME 8:30	COOLER I.D.:			COMMENTS (see note on back):
RECEIVED BY:	DATE 8/16/07	TIME 10:00	RELINQUISHED BY:	DATE / /	TIME :	
RECORD RETURNED BY:	DATE / /	TIME :				
COURIER:			SHIPPING NUMBER:			

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

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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YERS000247

PROJECT NAME: Yerington Mine Site

PROJECT NUMBER: 132039 J7H200149 35635

LABORATORY NAME & ADDRESS: SEVERN TRENT LABS, RICHLAND, WA Due 09 07 07

LINE NO.	SAMPLE – I.D.	COLLECTION DATE	COLLECTION TIME	SAMPLER'S INITIALS	NUMBER OF CONTAINERS	CONTAINER SIZE AND TYPE	PRESER-VATIVE	MATRIX CODE	ANALYSES REQUESTED	FIELD FILTERED	QC – REQ	TAT	SAMPLING METHOD	DEPTH (FT.) BEGIN / END	PID READING (ppm)
01	BGS-A1-10S	7/27/07	15:15	PB	1	9 oz Glass	NONE	S	EPA 903.0, EPA 904.0, HASL 300 (U, TH) J479Q					0.1 / 0.8	
02	BGS-A1-10D	↓	↓	↓	1	9 oz Glass	NONE	S	EPA 903.0, EPA 904.0, HASL 300 (U, TH) J479T					2 / 3	
03														----	
04														----	
05														----	
06														----	
07														----	
08														----	
09														----	
10														----	

COLLECTED & RELEASED BY: Penny Bauer	DATE 8/6/07	TIME 8:30	COOLER I.D.:			COMMENTS (see note on back):
RECEIVED BY:	DATE 8/6/07	TIME 10:00	RELINQUISHED BY:	DATE / /	TIME :	
RECORD RETURNED BY:	DATE / /	TIME :				
COURIER:			SHIPPING NUMBER:			

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

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CHAIN OF CUSTODY RECORD

COC No. YERS000281

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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 J7H200149 35635

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

Due 09.07.07

LINE NO.	SAMPLE - I.D.	COLLECTION DATE	COLLECTION TIME	SAMPLER'S INITIALS	NUMBER OF CONTAINERS	CONTAINER SIZE AND TYPE	PRESERVATIVE	MATRIX CODE	ANALYSES REQUESTED	FIELD FILTERED	QC - REQ	TAT	SAMPLING METHOD	DEPTH (FT.) BEGIN ---- END	PID READING (ppm)
01	BGS-A1-27S	7/27/07	16:15	PB	1	9 oz Glass	NONE	S	EPA 903.0, EPA 904.0, HASL 300 (U, TH) J479K					0.1 ---- 0.8	
02	BGS-A1-27D	↓	↓	↓	1	9 oz Glass	NONE	S	EPA 903.0, EPA 904.0, HASL 300 (U, TH) J479M					2 ---- 3	
03														----	
04														----	
05														----	
06														----	
07														----	
08														----	
09														----	
10														----	

COLLECTED & RELEASED BY: Penny Bassett	DATE 8/15/07	TIME 8:30	COOLER I.D.:			COMMENTS (see note on back):
RECEIVED BY:	DATE 8/16/07	TIME 10:00	RELINQUISHED BY:	DATE / /	TIME :	
RECORD RETURNED BY:	DATE / /	TIME :				
COURIER:			SHIPPING NUMBER:			

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

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29

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BROWN AND CALDWELL

CHAIN OF CUSTODY RECORD

COC No._____

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

YERS000291

PROJECT NAME: Yerington Mine Site

PROJECT NUMBER: 132039 J7F200149 35635

LABORATORY NAME & ADDRESS: SEVERN TRENT LABS, RICHLAND, WA Due 09-07-07

LINE NO.	SAMPLE - I.D.	COLLECTION DATE	COLLECTION TIME	SAMPLER'S INITIALS	NUMBER OF CONTAINERS	CONTAINER SIZE AND TYPE	PRESERVATIVE	MATRIX CODE	ANALYSES REQUESTED	FIELD FILTERED	QC - REQ	TAT	SAMPLING METHOD	DEPTH (FT.) BEGIN ---- END	PID READING (ppm)
01	BGS-A1-32S	7/28/07	08:00	PB	1	9 oz Glass	NONE	S	EPA 903.0, EPA 904.0, HASL 300 (U, TH) J479H		M			----0.1 0.8	
02	BGS-A1-32D	↓	↓	↓	1	9 oz Glass	NONE	S	EPA 903.0, EPA 904.0, HASL 300 (U, TH) J479J					----2 3	
03														----	
04														----	
05														----	
06														----	
07														----	
08														----	
09														----	
10														----	

COLLECTED & RELEASED BY: Penny Bennett	DATE 8/15/07	TIME 8:30	COOLER I.D.:			COMMENTS (see note on back):
RECEIVED BY:	DATE 8/16/07	TIME 10:00	RELINQUISHED BY:	DATE / /	TIME :	
RECORD RETURNED BY:	DATE / /	TIME :				
COURIER:			SHIPPING NUMBER:			

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

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TAL RICHLAND

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CHAIN OF CUSTODY RECORD

COC No. YERS000287

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

PROJECT NAME: Yerington Mine Site

PROJECT NUMBER: 132039 J7H200149 35635

LABORATORY NAME & ADDRESS: SEVERN TRENT LABS, RICHLAND, WA Due 09-07-07

LINE NO.	SAMPLE – I.D.	COLLECTION DATE	COLLECTION TIME	SAMPLER'S INITIALS	NUMBER OF CONTAINERS	CONTAINER SIZE AND TYPE	PRESER-VATIVE	MATRIX CODE	ANALYSES REQUESTED	FIELD FILTERED	QC – REQ	TAT	SAMPLING METHOD	DEPTH (FT.) BEGIN / END	PID READING (ppm)
01	BGS-A1-30S	7/26/07	10:00	PB	1	9 oz Glass	NONE	S	EPA 903.0, EPA 904.0, HASL 300 (U, TH) J479F					0.1 / 0.8	
02	BGS-A1-30D	↓	↓	↓	1	9 oz Glass	NONE	S	EPA 903.0, EPA 904.0, HASL 300 (U, TH) J479G					2 / 3	
03														----	
04														----	
05														----	
06														----	
07														----	
08														----	
09														----	
10														----	

COLLECTED & RELEASED BY: Penny Bagwell	DATE 8/15/07	TIME 8:30	COOLER I.D.:			COMMENTS (see note on back):
RECEIVED BY: RJK	DATE 8/16/07	TIME 10:00	RELINQUISHED BY:	DATE / /	TIME :	
RECORD RETURNED BY:	DATE / /	TIME :				
COURIER:			SHIPPING NUMBER:			

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

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

TAL RICHLAND

BROWN AND CALDWELL

CHAIN OF CUSTODY RECORD

COC No. _____

YERS000289

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

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

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

PROJECT NAME: Yerington Mine Site

PROJECT NUMBER: 132039 J7H220149 35635 Due 09-07-07

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

LINE NO.	SAMPLE – I.D.	COLLECTION DATE	COLLECTION TIME	SAMPLER'S INITIALS	NUMBER OF CONTAINERS	CONTAINER SIZE AND TYPE	PRESERVATIVE	MATRIX CODE	ANALYSES REQUESTED	FIELD FILTERED	QC – FIEQ	TAT	SAMPLING METHOD	DEPTH (FT.) BEGIN / END	PID READING (ppm)
01	BGS-A1-31S	7/25/07	09:00	PB	1	9 oz Glass	NONE	S	EPA 903.0, EPA 904.0, HASL 300 (U, TH) J479A					0.1 / 0.8	
02	BGS-A1-31D-1	↓	↓	↓	1	9 oz Glass	NONE	S	EPA 903.0, EPA 904.0, HASL 300 (U, TH) J479C					2 / 3	
03	BGS-A1-31D-2	↓	↓	↓	1	9 oz Glass	NONE	S	EPA 903.0, EPA 904.0, HASL 300 (U, TH) J479D					2 / 3	
04														----	
05														----	
06														----	
07														----	
08														----	
09														----	
10														----	

COLLECTED & RELEASED BY: Penny Bagwell	DATE 8/3/07	TIME 8:3	COOLER I.D.:			COMMENTS (see note on back):
RECEIVED BY:	DATE 8/16/07	TIME 10:00	RELINQUISHED BY:	DATE / /	TIME :	
RECORD RETURNED BY:	DATE / /	TIME :				
COURIER:			SHIPPING NUMBER:			

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

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. YERS000277

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

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

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

PROJECT NAME: Yerington Mine Site

PROJECT NUMBER: 132039 J7H200149 35635

LABORATORY NAME & ADDRESS: SEVERN TRENT LABS, RICHLAND, WA Due 09-07-07

LINE NO.	SAMPLE - I.D.	COLLECTION DATE	COLLECTION TIME	SAMPLER'S INITIALS	NUMBER OF CONTAINERS	CONTAINER SIZE AND TYPE	PRESERVATIVE	MATRIX CODE	ANALYSES REQUESTED	FIELD FILTERED	QC - REQ	TAT	SAMPLING METHOD	DEPTH (FT.) BEGIN ---- END	PID READING (ppm)
01	BGS-A1-25S	7/25/07	10:45	PB	1	9 oz Glass	NONE	S	EPA 903.0, EPA 904.0, HASL 300 (U, TH) J4786					0.1 ---- 0.8	
02	BGS-A1-25D	↓	↓	↓	1	9 oz Glass	NONE	S	EPA 903.0, EPA 904.0, HASL 300 (U, TH) J4788					2 ---- 3	
03														----	
04														----	
05														----	
06														----	
07														----	
08														----	
09														----	
10														----	

COLLECTED & RELEASED BY: Penny Bagen	DATE 8/15/07	TIME 8:30	COOLER I.D.:			COMMENTS (see note on back):
RECEIVED BY:	DATE 8/16/07	TIME 10:00	RELINQUISHED BY:	DATE / /	TIME :	
RECORD RETURNED BY:	DATE / /	TIME :				
COURIER:			SHIPPING NUMBER:			

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

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

SEVERN TRENT STL

Sample Check-in List

Date/Time Received: 8-16-07 1000

Client: BRC SDG #: 35635 NA [ ] SAF #: _____ NA [ ]

Work Order Number: J7H200149 Chain of Custody # YERS000277,289,287,291,281,247,245

Shipping Container ID: _____ Air Bill # _____

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

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

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

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

6. Number of samples in shipping container: 15

7. Sample holding times exceeded? NA [✓] Yes [ ] No [ ]

8. Samples have:
   _____ tape
   _____ custody seals
   _____ hazard labels
   ✓ appropriate samples labels

9. Samples are:
   ✓ in good condition
   _____ broken
   _____ leaking
   _____ have air bubbles
   (Only for samples requiring head space)

10. Sample pH taken? SOIL NA [✓] pH<2 [ ] pH>2 [ ] pH>9 [ ]

11. Sample Location, Sample Collector Listed? * Yes [✓] No [ ]
    *For documentation only. No corrective action needed.

12. Were any anomalies identified in sample receipt? Yes [ ] No [✓]

13. Description of anomalies (include sample numbers): _____

Sample Custodian: _____ Date: 8-16-07

Client Sample ID	Analysis Requested	Condition	Comments/Action

Client Informed on _____ by _____ Person contacted _____

[ ] No action necessary; process as is.

Project Manager _____ Date _____

LS-023, 9/03, Rev. 5

SEVERN TRENT STL

Data Review/Verification Checklist

RADIOCHEMISTRY, First Level Review

9/14/2007 1:21:40 PM

Lot No., Due Date: J7H200149; 09/07/2007

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

QC Batch No., Method Test: 7233482; RGAMMA Gamma by GER

SDG, Matrix: 35635; SOIL

1.0 COC

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

2.0 QC Batch

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

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

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

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

3.0 QC & Samples

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

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

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

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

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

4.0 Raw Data

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

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

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

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

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

5.0 Other

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

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

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

5.4 Was transcription checked? Yes ✓ No N/A

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

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

6.0 Comments on any No response:

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

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Data Review Checklist
RADIOCHEMISTRY
Second Level Review

Batch Number: 723348R

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

Comments on any "No" response: _____

Second Level Review: Sherryl A Adam Date: 9-14-07

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

TAL RICHLAND

8/24/2007 5:51:10 PM

Sample Preparation/Analysis

Balance Id:1120421763

536403, Brown and Caldwell , Brown
and Caldwell

AX Gamma PrpRC5013/5017
TA Gamma by HPGE [redacted] per LRA
01 STANDARD TEST SET

Pipet #: _____

AnalyDueDate: 09/03/2007

Sep1 DT/Tm Tech:

Batch: 7233482 SOIL pCi/g PM, Quote: SA , 73181

Sep2 DT/Tm Tech:

SEQ Batch, Test: None

Prep Tech: ,WoodT

Work Order, Lot, Sample DateTime	Total Amt/Unit	Initial Aliquot Amt/Unit	QC Tracer Prep Date	Dish Size	Ppt or Geometry	Count Time Min	Detector Id	Count On | Off (24hr) Circle	CR Analyst, Init/Date	Comments:
1 J4786-1-AA J7H200149-1-SAMP 07/28/2007 10:45		380.10g,in AmtRec: JAR16OZG #Containers: 1			S200	~~1600~~ 600 9/11/07	G4	1608	9/11/07	
2 J4786-1-AC-X J7H200149-1-DUP 07/28/2007 10:45	Not enough sample 8/24/07 BN	AmtRec: JAR16OZG #Containers: 1					G7	0422	9/11/07 DD	
3 J4788-1-AA J7H200149-2-SAMP 07/28/2007 10:45		341.80g,in AmtRec: JAR16OZG #Containers: 1			S200		G5	1608	9/11/07	
4 J4788-1-AC-S J7H200149-2-MS 07/28/2007 10:45	No ms on gamma 8/24/07 BN	AmtRec: JAR16OZG #Containers: 1								
5 J479A-1-AA J7H200149-3-SAMP 07/28/2007 09:00		363.20g,in AmtRec: JAR16OZG #Containers: 1			S200		G5	0422	9/11/07 DD	
6 J479C-1-AA J7H200149-4-SAMP 07/28/2007 09:00		340.10g,in AmtRec: JAR16OZG #Containers: 1					G4	0423		
7 J479D-1-AA J7H200149-5-SAMP 07/28/2007 09:00		346.10g,in AmtRec: JAR16OZG #Containers: 1					G6	0423		

STL Richland Key: In - Initial Amt, fi - Final Amt, di - Diluted Amt, s1 - Sep1, s2 - Sep2 Page 1 ISV - Insufficient Volume for Analysis WO Cnt: 7
Richland Wa. pd - Prep Dt, r - Reference Dt, ec-Enrichment Cell, ct-Cocktailed Added Prep_SamplePrep v4.8.26

37

TAL RICHLAND

8/24/2007 5:51:11 PM

Sample Preparation/Analysis

536403, Brown and Caldwell and Caldwell , Brown

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

Balance Id:1120421763

Pipet #:

AnalyDueDate: 09/03/2007

Sep1 DT/Tm Tech:

Batch: 7233482 SOIL pCi/g PM, Quote: SA , 73181

SEQ Batch, Test: None

Sep2 DT/Tm Tech:

Prep Tech: ,WoodT

Work Order, Lot, Sample DateTime	Total Amt/Unit	Initial Aliquot Amt/Unit	QC Tracer Prep Date	Dish Size	Ppt or Geometry	Count Time Min	Detector Id	Count On | Off (24hr) Circle	CR Analyst, Init/Date	Comments:
8 J479F-1-AA J7H200149-6-SAMP 07/28/2007 10:00		400.80g,in AmtRec: JAR16OZG	#Containers: 1		5200	~~1000~~ (W) 9/1/3	G13	0424	9/11/07	Scr: Alpha: Beta:
9 J479G-1-AA J7H200149-7-SAMP 07/28/2007 10:00		361.50g,in AmtRec: JAR16OZG	#Containers: 1				G13	1537	9/12/07	Scr: Alpha: Beta:
10 J479H-1-AA J7H200149-8-SAMP 07/28/2007 08:00		384.20g,in AmtRec: JAR16OZG	#Containers: 1				G10	1537		Scr: Alpha: Beta:
11 J479J-1-AA J7H200149-9-SAMP 07/28/2007 08:00		369.80g,in AmtRec: JAR16OZG	#Containers: 1				G14	1537		Scr: Alpha: Beta:
12 J479K-1-AA J7H200149-10-SAMP 07/27/2007 16:15		372.70g,in AmtRec: JAR16OZG	#Containers: 1				G11	1537		Scr: Alpha: Beta:
13 J479M-1-AA J7H200149-11-SAMP 07/27/2007 16:15		373.90g,in AmtRec: JAR16OZG	#Containers: 1				G12	1534		Scr: Alpha: Beta:
14 J479Q-1-AA J7H200149-12-SAMP 07/27/2007 15:15		396.60g,in AmtRec: JAR16OZG	#Containers: 1				G13	0409	9/12/07	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

8/24/2007 5:51:12 PM

Sample Preparation/Analysis

536403, Brown and Caldwell and Caldwell , Brown

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

Balance Id:1120421763

Pipet #:

AnalyDueDate: 09/03/2007

Sep1 DT/Tm Tech:

Batch: 7233482 SOIL pCi/g PM, Quote: SA , 73181

SEQ Batch, Test: None

Sep2 DT/Tm Tech:

Prep Tech: ,WoodT

Work Order, Lot, Sample DateTime	Total Amt/Unit	Initial Aliquot Amt/Unit	QC Tracer Prep Date	Dish Size	Ppt or Geometry	Count Time Min	Detector Id	Count On | Off (24hr) Circle	CR Analyst, Init/Date	Comments:
15 J479T-1-AA J7H200149-13-SAMP 07/27/2007 15:15		389.30g,in AmtRec: JAR16OZG	#Containers: 1		5200	~~1000~~ 600 6/11/>	G10 Scr:	0409 Alpha:	9/12/07 DTD Beta:	
16 J479W-1-AA J7H200149-14-SAMP 07/27/2007 14:30		376.60g,in AmtRec: JAR16OZG	#Containers: 1				G14 Scr:	0410 Alpha:	Beta:	
17 J4790-1-AA J7H200149-15-SAMP 07/27/2007 14:30		375.40g,in AmtRec: JAR16OZG	#Containers: 1				G11 Scr:	0410 Alpha:	Beta:	
18 J5A4G-1-AA-B J7H210000-482-BLK 07/28/2007 10:45		200.00g,in AmtRec:	#Containers: 1		200		G12 Scr:	0411 Alpha:	Beta:	
19 J5A4G-1-AC-C J7H210000-482-LCS 07/28/2007 10:45		200.00g,in AmtRec:	GSE1126 08/06/07,pd 07/15/00,r #Containers: 1				G12 Scr:	1526 Alpha:	9/13/07 Beta:	

Comments: Not enough sample for dup, please recount on seperate detector. 10 ingrowth started 8/24/07 JSW.

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

J47861AA-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

8/24/2007 5:51:14 PM

Sample Preparation/Analysis

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

Balance Id:1120373922

Pipet #:

AnalyDueDate: 09/03/2007

Sep1 DT/Tm Tech:

Batch: 7233482 pCi/g
SEQ Batch, Test: None

Sep2 DT/Tm Tech:

Prep Tech: ,WoodT

Work Order, Lot, Sample DateTime	Total Amt/Unit	Initial Aliquot Amt/Unit	QC Tracer Prep Date	Dish Size	Ppt or Geometry	Count Time Min	Detector Id	Count On | Off (24hr) Circle	CR Analyst, Init/Date	Comments:

J47881AC-MS:

J5A4G1AA-BLK:
Cs-137 RDL:0.2 pCi/g LCL: UCL: RPD: Cs-137DA RDL:0.2 pCi/g LCL: UCL: RPD:

J5A4G1AC-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

J47861AA-SAMP Calc Info:
Uncert Level (#s).: 2 Decay to SaDt: Y Blk Subt.: N Sci.Not.: Y ODRs: B
J47881AC-MS:
Uncert Level (#s).: 2 Decay to SaDt: Y Blk Subt.: N Sci.Not.: Y ODRs: B
J5A4G1AA-BLK:
Uncert Level (#s).: 2 Decay to SaDt: Y Blk Subt.: N Sci.Not.: Y ODRs: B
J5A4G1AC-LCS:
Uncert Level (#s).: 2 Decay to SaDt: Y Blk Subt.: N Sci.Not.: Y ODRs: B

Approved By _____ Date: _____

9/14/2007 1:20:25 PM

ICOC Fraction Transfer/Status Report

ByDate: 9/14/2006, 9/19/2007, Batch: '7233482', User: *ALL Order By DateTimeAccepting

Q Batch	Work Ord	CurStatus	Accepting			Comments
7233482						
AC		**CalcC**	**WoodT**	8/24/2007 5:10:12 PM		
SC			Wagarr	IsBatched	8/21/2007 4:21:17 PM	ICOC_RADCALC v4.8.26
SC			WoodT	InPrep	8/24/2007 5:10:12 PM	RICH-RC-5013 Revision 7
SC			WoodT	Prep1C	8/24/2007 5:44:22 PM	RICH-RC-5013 REVISION 7
SC			WoodT	InPrep2	8/24/2007 5:44:54 PM	RICH-RC-5017 REVISION 6
SC			WoodT	Prep2C	8/24/2007 5:45:13 PM	RICH-RC-5017 REVISION 6
SC			BlackCL	InCnt1	8/27/2007 1:00:46 PM	RICH-RD-0007 REVISION 6
SC			DAWKINSO	CalcC	9/13/2007 9:23:47 PM	RICH-RD-0007 REVISION 6
AC			**WoodT**	8/24/2007 5:43:47 PM		
AC			**WoodT**	8/24/2007 5:44:22 PM		
AC			**WoodT**	8/24/2007 5:44:54 PM		
AC			**WoodT**	8/24/2007 5:45:13 PM		
AC			**BlackCL**	8/27/2007 1:00:46 PM		
AC			**DAWKINSO**	9/13/2007 9:23:47 PM		

AC: Accepting Entry; SC: Status Change

STL Richland

Richland Wa.

Grp Rec Cnt: 7

ICOCFractions v4.8.27

9/14/2007 1:20:24 PM

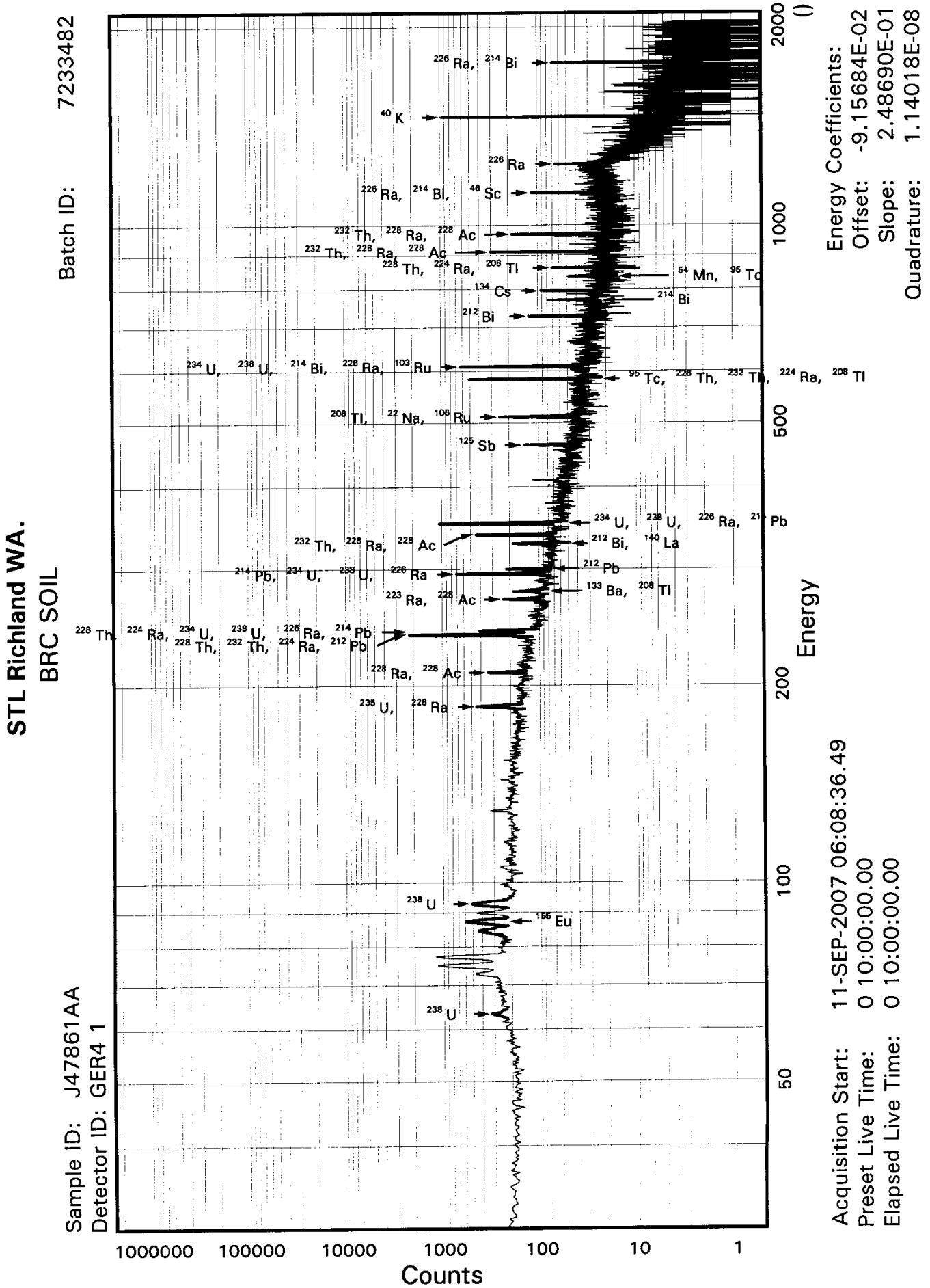
Rpt DB Transfer log (Batch Results)

SDG or Batch / Isotope	Rpt Db Id / Method	RTst	Qc	LotSample / Analysis Date	Client Id / Result	Matrix / Cnt Uncert	Received Date / Tot Uncert	Mda	Sample Date / Units	Expected	Yield	Volumes
35635	**9J478610**			**J7H2001491**	BGS-A1-25S	SOIL	8/16/2007 10:00:00		7/28/2007 10:45:00 AM			
RA-226DA	AXTA	0		9/11/2007 6:08:36 AM	**1.287E+00**	8.678E-02	8.678E-02	4.309E-02	PCI/GRAM			3.801E+2
RA-228DA	AXTA	0		9/11/2007 6:08:36 AM	**1.7159E+00**	1.353E-01	1.353E-01	8.558E-02	PCI/GRAM			3.801E+2
35635	**9J478810**			**J7H2001492**	BGS-A1-25D	SOIL	8/16/2007 10:00:00		7/28/2007 10:45:00 AM			
RA-226DA	AXTA	0		9/11/2007 6:08:51 AM	**1.4478E+00**	9.48E-02	9.48E-02	4.077E-02	PCI/GRAM			3.418E+2
RA-228DA	AXTA	0		9/11/2007 6:08:51 AM	**1.8111E+00**	1.326E-01	1.326E-01	8.474E-02	PCI/GRAM			3.418E+2
35635	**9J479010**			**J7H20014915**	BGS-A1-09D	SOIL	8/16/2007 10:00:00		7/27/2007 2:30:00 PM			
RA-226DA	AXTA	0		9/12/2007 6:10:46 PM	**7.8253E-01**	5.061E-02	5.061E-02	2.483E-02	PCI/GRAM			3.754E+2
RA-228DA	AXTA	0		9/12/2007 6:10:46 PM	**8.7792E-01**	7.33E-02	7.33E-02	5.327E-02	PCI/GRAM			3.754E+2
35635	**9J479A10**			**J7H2001493**	BGS-A1-31S	SOIL	8/16/2007 10:00:00		7/28/2007 9:00:00 AM			
RA-226DA	AXTA	0		9/11/2007 6:22:35 PM	**1.5278E+00**	9.915E-02	9.915E-02	4.301E-02	PCI/GRAM			3.632E+2
RA-228DA	AXTA	0		9/11/2007 6:22:35 PM	**1.7361E+00**	1.269E-01	1.269E-01	8.45E-02	PCI/GRAM			3.632E+2
35635	**9J479C10**			**J7H2001494**	BGS-A1-31D-1	SOIL	8/16/2007 10:00:00		7/28/2007 9:00:00 AM			
RA-226DA	AXTA	0		9/11/2007 6:23:22 PM	**1.4419E+00**	9.688E-02	9.688E-02	4.651E-02	PCI/GRAM			3.401E+2
RA-228DA	AXTA	0		9/11/2007 6:23:22 PM	**1.5961E+00**	1.274E-01	1.274E-01	9.071E-02	PCI/GRAM			3.401E+2
35635	**9J479D10**			**J7H2001495**	BGS-A1-31D-2	SOIL	8/16/2007 10:00:00		7/28/2007 9:00:00 AM			
RA-226DA	AXTA	0		9/11/2007 6:23:46 PM	**1.5156E+00**	9.867E-02	9.867E-02	4.865E-02	PCI/GRAM			3.461E+2
RA-228DA	AXTA	0		9/11/2007 6:23:46 PM	**1.7174E+00**	1.359E-01	1.359E-01	1.013E-01	PCI/GRAM			3.461E+2
35635	**9J479F10**			**J7H2001496**	BGS-A1-30S	SOIL	8/16/2007 10:00:00		7/28/2007 10:00:00 AM			
RA-226DA	AXTA	0		9/11/2007 6:24:38 PM	**1.203E+00**	7.77E-02	7.77E-02	3.304E-02	PCI/GRAM			4.008E+2
RA-228DA	AXTA	0		9/11/2007 6:24:38 PM	**1.7041E+00**	1.397E-01	1.397E-01	6.693E-02	PCI/GRAM			4.008E+2
35635	**9J479G10**			**J7H2001497**	BGS-A1-30D	SOIL	8/16/2007 10:00:00		7/28/2007 10:00:00 AM			
RA-226DA	AXTA	0		9/12/2007 5:37:10 AM	**1.2694E+00**	8.304E-02	8.304E-02	3.671E-02	PCI/GRAM			3.615E+2
RA-228DA	AXTA	0		9/12/2007 5:37:10 AM	**1.8165E+00**	1.499E-01	1.499E-01	7.54E-02	PCI/GRAM			3.615E+2
35635	**9J479H10**			**J7H2001498**	BGS-A1-32S	SOIL	8/16/2007 10:00:00		7/28/2007 8:00:00 AM			
RA-226DA	AXTA	0		9/12/2007 5:37:22 AM	**8.0211E-01**	5.284E-02	5.284E-02	3.147E-02	PCI/GRAM			3.842E+2
RA-228DA	AXTA	0		9/12/2007 5:37:22 AM	**9.0981E-01**	7.738E-02	7.738E-02	6.181E-02	PCI/GRAM			3.842E+2
35635	**9J479J10**			**J7H2001499**	BGS-A1-32D	SOIL	8/16/2007 10:00:00		7/28/2007 8:00:00 AM			
RA-226DA	AXTA	0		9/12/2007 5:37:39 AM	**7.0517E-01**	5.417E-02	5.417E-02	4.108E-02	PCI/GRAM			3.698E+2
RA-228DA	AXTA	0		9/12/2007 5:37:39 AM	**7.962E-01**	7.31E-02	7.31E-02	8.265E-02	PCI/GRAM			3.698E+2
35635	**9J479K10**			**J7H20014910**	BGS-A1-27S	SOIL	8/16/2007 10:00:00		7/27/2007 4:15:00 PM			
RA-226DA	AXTA	0		9/12/2007 5:37:52 AM	**1.1217E+00**	7.081E-02	7.081E-02	2.83E-02	PCI/GRAM			3.727E+2
RA-228DA	AXTA	0		9/12/2007 5:37:52 AM	**1.4393E+00**	1.123E-01	1.123E-01	5.539E-02	PCI/GRAM			3.727E+2
35635	**9J479M10**			**J7H20014911**	BGS-A1-27D	SOIL	8/16/2007 10:00:00		7/27/2007 4:15:00 PM			
RA-226DA	AXTA	0		9/12/2007 5:38:10 AM	**8.8615E-01**	5.953E-02	5.953E-02	2.736E-02	PCI/GRAM			3.739E+2
RA-228DA	AXTA	0		9/12/2007 5:38:10 AM	**9.2543E-01**	8.807E-02	8.807E-02	5.469E-02	PCI/GRAM			3.739E+2
35635	**9J479Q10**			**J7H20014912**	BGS-A1-10S	SOIL	8/16/2007 10:00:00		7/27/2007 3:15:00 PM			
RA-226DA	AXTA	0		9/12/2007 6:09:03 PM	**7.5504E-01**	5.163E-02	5.163E-02	2.925E-02	PCI/GRAM			3.966E+2
RA-228DA	AXTA	0		9/12/2007 6:09:03 PM	**8.8187E-01**	8.474E-02	8.474E-02	6.415E-02	PCI/GRAM			3.966E+2
35635	**9J479T10**			**J7H20014913**	BGS-A1-10D	SOIL	8/16/2007 10:00:00		7/27/2007 3:15:00 PM			
RA-226DA	AXTA	0		9/12/2007 6:09:41 PM	**8.025E-01**	5.343E-02	5.343E-02	3.039E-02	PCI/GRAM			3.893E+2
RA-228DA	AXTA	0		9/12/2007 6:09:41 PM	**8.2573E-01**	6.979E-02	6.979E-02	5.746E-02	PCI/GRAM			3.893E+2
35635	**9J479W10**			**J7H20014914**	BGS-A1-09S	SOIL	8/16/2007 10:00:00		7/27/2007 2:30:00 PM			
RA-226DA	AXTA	0		9/12/2007 6:10:12 PM	**8.2522E-01**	5.803E-02	5.803E-02	4.391E-02	PCI/GRAM			3.766E+2
RA-228DA	AXTA	0		9/12/2007 6:10:12 PM	**8.9207E-01**	7.631E-02	7.631E-02	8.621E-02	PCI/GRAM			3.766E+2
35635	**J47861CR**			**J7H2001491**	BGS-A1-25S DUP	SOIL	8/16/2007 10:00:00		7/28/2007 10:45:00 AM			
RA-226DA	AXTA	0	R	9/11/2007 6:22:01 PM	**1.3537E+00**	8.953E-02	8.953E-02	4.261E-02	PCI/GRAM			3.801E+2
RA-228DA	AXTA	0	R	9/11/2007 6:22:01 PM	**1.6457E+00**	1.306E-01	1.306E-01	8.425E-02	PCI/GRAM			3.801E+2
35635	**J5A4G1AB**			**J7H210000482**	INTRA-LAB BLANK	SOIL	8/16/2007 10:00:00		7/28/2007 10:45:00 AM			
RA-226DA	AXTA	0	B	9/12/2007 6:11:33 PM	**-1.3133E-02**	1.582E-02	1.582E-02	3.503E-02	PCI/GRAM			2.0E+2
RA-228DA	AXTA	0	B	9/12/2007 6:11:33 PM	**3.5501E-02**	1.563E-02	1.563E-02	5.803E-02	PCI/GRAM			2.0E+2

7233482,7233482, **Samples Inserted | Updated | NotUpdated => 18 | 0 | 0,
**Results Inserted | ReTestInserted | Updated | NotInserted => 35 | 0 | 0 | 0.
**Diff RptDb | Qtlms => .

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
35635	**J5A4G1CS**			**J7H210000482**	INTRA-LAB CHECK	SOIL	8/16/2007 10:00:00	7/28/2007 10:45:00 AM				
CS-137DA	AXTA	0	S	9/13/2007 5:26:32 AM	**1.2239E+00**	7.614E-02	7.614E-02	1.701E-02	PCI/GRAM	1.1033E+00		2.0E+2

7233482,7233482, **Samples Inserted | Updated | NotUpdated => 18 | 0 | 0,
**Results Inserted | ReTestInserted | Updated | NotInserted => 35 | 0 | 0 | 0.
**Diff RptDb | Qtims => .


STL Richland WA.
BRC SOIL
Batch ID: 7233482
Sample ID: J47861AA
Detector ID: GER4 1
Energy Coefficients:
Offset: -9.15684E-02
Slope: 2.48690E-01
Quadrature: 1.14018E-08
Acquisition Start: 11-SEP-2007 06:08:36.49
Preset Live Time: 0 10:00:00.00
Elapsed Live Time: 0 10:00:00.00
Counts
Energy
1000000
100000
10000
1000
100
10
1
50
100
200
500
1000
2000
226 Ra, 214 Bi
40 K
226 Ra
226 Ra, 214 Bi, 46 Sc
232 Th, 228 Ra, 228 Ac
232 Th, 228 Ra, 228 Ac
228 Th, 224 Ra, 208 Tl
54 Mn, 95 Tc
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, 108 Ru
125 Sb
234 U, 238 U, 226 Ra, 21 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, 228 Th, 238 U, 232 Th, 226 Ra, 224 Ra, 214 Pb, 212 Pb
228 Ra, 228 Ac
235 U, 226 Ra
238 U
155 Eu
238 U

SAMPLE IDENTIFICATION: J47861AA

CONFIGURATION ID: GER4:J47861AA_110970608
TITLE : BRC SOIL
SAMPLE ID : J47861AA

REPORT DATE: 12-SEP-07
ACQUIRE DATE: 11-SEP-07 06:08:36
ELAPSED LIVE TIME: 36000.0 Sec
PRESET LIVE TIME: 0 10:00:00

SAMPLE DATE: 28-JUL-2007 10:45:00.00
CALIB DATE: 11-SEP-2007 05:16:13.36
ELAPSED LIVE TIME: 0 10:00:00
ELAPSED REAL TIME: 0 10:00:20

SAMPLE QUANTITY: 3.8010E+02
SAMPLE GEOMETRY: S200

UNITS: GRAMS
SAMPLE TYPE:

ENERGY OFFSET: -.9157E-01 keV
ENERGY SLOPE: 2.4869E-01 keV/C
ENERGY Q COEFF: 1.1402E-08 keV/C^^2
PEAK SENSITIVITY: 5.000

FWHM OFFSET: 3.4232E-01 keV
FWHM SLOPE: 4.3628E-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 12-SEP-2007 16:43:51

Configuration : $DISK1:[GER4.SAMPLE]J47861AA_110970608.CNF;1
Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6
Sample title : BRC SOIL
Sample date : 28-JUL-2007 10:45:00 Acquisition date : 11-SEP-2007 06:08:36
Sample ID : J47861AA Sample quantity : 380.10 GRAMS
Sample type : Sample geometry : S200
Elapsed live time: 0 10:00:00.00 Elapsed real time: 0 10:00:20.95 0.1%
Start energy : 19.80 End energy : 2037.94
Sensitivity : 5.00 Gaussian : 40.00
Critical level : No

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	63.28*	213	2012	0.63	254.81	251	9	5.93E-03	41.1	
2	2	72.87*	400	2645	0.86	293.38	288	29	1.11E-02	26.1	3.68E+00
3	2	74.92*	2601	2833	0.87	301.63	288	29	7.22E-02	4.7	
4	2	77.16	3538	2734	0.88	310.62	288	29	9.83E-02	3.4	
5	8	84.54*	774	3483	1.40	340.29	333	24	2.15E-02	17.7	1.44E+00
6	8	87.24*	1443	2781	1.00	351.16	333	24	4.01E-02	8.0	
7	0	89.97	913	2511	0.88	362.15	357	11	2.54E-02	11.1	
8	0	93.02*	1406	3225	1.40	374.38	368	15	3.90E-02	9.5	
9	0	129.09	413	1812	0.87	519.42	515	9	1.15E-02	19.2	
10	0	185.93*	1383	2110	1.24	747.97	742	14	3.84E-02	7.9	
11	0	209.26	747	1587	0.97	841.77	836	11	2.08E-02	11.0	
12	5	238.61*	8660	1547	0.97	959.80	952	28	2.41E-01	1.5	4.37E+00
13	5	241.52	2072	1779	1.64	971.50	952	28	5.76E-02	5.3	
14	0	270.24	651	1456	1.09	1086.95	1080	15	1.81E-02	13.4	
15	0	277.61	510	1494	0.95	1116.59	1109	17	1.42E-02	17.9	
16	0	295.20*	2737	1349	1.02	1187.34	1180	16	7.60E-02	3.7	
17	0	300.19	480	1182	1.02	1207.40	1199	14	1.33E-02	15.9	
18	0	327.71	636	854	1.10	1318.03	1310	14	1.77E-02	10.5	
19	0	338.31*	1735	1005	1.12	1360.66	1354	14	4.82E-02	4.8	
20	0	351.89*	4763	1134	1.13	1415.26	1406	18	1.32E-01	2.3	
21	0	409.35	341	827	0.71	1646.27	1638	17	9.47E-03	20.1	
22	0	462.89	504	1043	1.13	1861.52	1850	24	1.40E-02	17.5	
23	0	510.93*	1007	1173	1.72	2054.65	2043	30	2.80E-02	11.4	
24	0	583.20*	2688	741	1.37	2345.19	2335	23	7.47E-02	3.5	
25	0	609.22*	3427	695	1.38	2449.82	2438	23	9.52E-02	2.7	
26	0	727.21	587	563	1.49	2924.15	2913	20	1.63E-02	9.4	
27	0	768.24	300	507	1.31	3089.08	3080	19	8.32E-03	16.4	
28	0	794.55	466	461	1.16	3194.85	3182	24	1.30E-02	11.3	
29	0	835.80	111	305	1.11	3360.65	3353	14	3.08E-03	30.3	
30	0	860.75	475	411	1.47	3460.96	3448	26	1.32E-02	10.9	
31	0	911.18*	1931	537	1.69	3663.69	3651	27	5.36E-02	3.8	
32	0	934.04	164	395	1.93	3755.55	3748	21	4.55E-03	27.0	
33	0	969.37	856	1074	1.45	3897.58	3878	30	2.38E-02	10.0	
34	0	1120.20	802	456	1.92	4503.83	4492	24	2.23E-02	6.9	
35	0	1238.81	215	744	2.18	4980.56	4963	28	5.98E-03	31.0	
36	0	1377.87	152	174	1.33	5539.49	5529	22	4.23E-03	20.5	
37	0	1460.68*	8497	247	2.18	5872.28	5854	35	2.36E-01	1.2	
38	0	1764.46*	541	135	2.02	7093.09	7075	37	1.50E-02	7.1	

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

VMS Nuclide Identification Report V3.0 Generated 12-SEP-2007 16:43:52

Configuration : $DISK1:[GER4.SAMPLE]J47861AA_110970608.CNF;1
Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.3
Sample title : BRC SOIL
Sample date : 28-JUL-2007 10:45:00 Acquisition date : 11-SEP-2007 06:08:36
Sample ID : J47861AA Sample quantity : 380.10 GRAMS
Sample type : Sample geometry : S200
Elapsed live time: 0 10:00:00.00 Elapsed real time: 0 10:00:20.95 0.1%
Energy tolerance : 1.50 Half life ratio : 8.00
Errors propagated: Yes Systematic Error : 5.00 %
Efficiency type : Empirical Efficiencies at : Peak Energy
Abundance limit : 80.00

Nuclide Line Activity Report

Nuclide Type: NP

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected PCI/GRAM	Decay Corr PCI/GRAM	1-Sigma %Error
K-40	1460.81	8497	10.67*	5.415E-01	2.905E+01	2.905E+01	6.39
TL-208	277.35	510	6.80	2.028E+00	7.305E-01	7.305E-01	19.11
	510.84	1007	21.60	1.301E+00	7.078E-01	7.078E-01	12.95
	583.14	2688	84.20*	1.175E+00	5.363E-01	5.363E-01	7.11
	860.37	475	12.46	8.553E-01	8.797E-01	8.797E-01	12.84
PB-212	238.63	8660	44.60*	2.244E+00	1.709E+00	1.709E+00	6.62
	300.09	480	3.41	1.920E+00	1.449E+00	1.449E+00	17.21
BI-214	609.31	3427	46.30*	1.136E+00	1.287E+00	1.287E+00	6.74
	768.36	300	5.04	9.415E-01	1.247E+00	1.247E+00	17.63
	1120.29	802	15.10	6.799E-01	1.542E+00	1.542E+00	9.33
	1764.49	541	15.80	4.701E-01	1.439E+00	1.439E+00	9.30
PB-214	241.98	2072	7.49	2.226E+00	2.454E+00	2.454E+00	8.35
	295.21	2737	19.20	1.943E+00	1.450E+00	1.450E+00	7.61
	351.92	4763	37.20*	1.714E+00	1.475E+00	1.475E+00	6.81
	785.91	------	1.10	9.238E-01	------ Line Not Found		------
RA-224DA	238.63	8660	44.60*	2.244E+00	1.709E+00	1.787E+00	6.62
	240.98	2072	3.95	2.226E+00	4.654E+00	4.867E+00	8.35
	583.14	2688	30.25	1.175E+00	1.493E+00	1.561E+00	7.11
	860.37	475	4.48	8.553E-01	2.447E+00	2.559E+00	12.84
RA-226DA	186.21	1383	3.50	2.594E+00	3.008E+00	3.008E+00	10.08
	241.98	2072	7.49	2.226E+00	2.454E+00	2.454E+00	8.35
	295.22	2737	19.20	1.943E+00	1.450E+00	1.450E+00	7.61
	351.92	4763	37.20	1.714E+00	1.475E+00	1.475E+00	6.81
	609.32	3427	46.30*	1.136E+00	1.287E+00	1.287E+00	6.74
	1120.28	802	15.10	6.799E-01	1.542E+00	1.542E+00	9.33
	1238.11	215	5.94	6.225E-01	1.150E+00	1.150E+00	31.64
	1764.49	541	15.80	4.701E-01	1.439E+00	1.439E+00	9.30
AC-228	209.28	747	4.40	2.433E+00	1.379E+00	1.379E+00	12.65
	270.23	651	3.60	2.065E+00	1.730E+00	1.730E+00	14.90
	338.32	1735	11.40	1.764E+00	1.704E+00	1.704E+00	8.11
	911.07	1931	27.70*	8.145E-01	1.691E+00	1.691E+00	7.89
	969.11	856	16.60	7.718E-01	1.320E+00	1.320E+00	12.08
RA-228DA	209.28	747	4.40	2.433E+00	1.379E+00	1.399E+00	12.65
	338.32	1735	11.40	1.764E+00	1.704E+00	1.730E+00	8.11
	911.07	1931	27.70*	8.145E-01	1.691E+00	1.716E+00	7.89
	964.60	------	5.20	7.752E-01	------ Line Not Found		------

Sample ID : J47861AA Acquisition date : 11-SEP-2007 06:08:36

Nuclide Type: NP

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected PCI/GRAM	Decay Corr PCI/GRAM	1-Sigma %Error
	969.11	856	16.60	7.718E-01	1.320E+00	1.340E+00	12.08
TH-228DA	238.63	8660	44.60	2.244E+00	1.709E+00	1.787E+00	6.62
	240.98	2072	3.95	2.226E+00	4.654E+00	4.867E+00	8.35
	583.14	2688	30.25*	1.175E+00	1.493E+00	1.561E+00	7.11
	860.37	475	4.48	8.553E-01	2.447E+00	2.559E+00	12.84
TH-232DA	238.63	8660	44.60	2.244E+00	1.709E+00	1.709E+00	6.62
	338.32	1735	12.40*	1.764E+00	1.567E+00	1.567E+00	8.11
	583.14	2688	30.25	1.175E+00	1.493E+00	1.493E+00	7.11
	911.07	1931	27.70	8.145E-01	1.691E+00	1.691E+00	7.89
	964.60	------	5.20	7.752E-01	------	Line Not Found	------
	969.11	856	16.60	7.718E-01	1.320E+00	1.320E+00	12.08
U-234DA	241.98	2072	7.49	2.226E+00	2.454E+00	2.454E+00	8.35
	295.22	2737	19.20*	1.943E+00	1.450E+00	1.450E+00	7.61
	351.92	4763	37.20	1.714E+00	1.475E+00	1.475E+00	6.81
	609.31	3427	46.30	1.136E+00	1.287E+00	1.287E+00	6.74
U-238DA	241.98	2072	7.49	2.226E+00	2.454E+00	2.454E+00	8.35
	295.22	2737	19.20	1.943E+00	1.450E+00	1.450E+00	7.61
	351.92	4763	37.20*	1.714E+00	1.475E+00	1.475E+00	6.81
	609.31	3427	46.30	1.136E+00	1.287E+00	1.287E+00	6.74
U-238DHP	63.28	213	3.80*	1.030E+00	1.077E+00	1.077E+00	41.61
	92.59	1406	5.41	2.397E+00	2.142E+00	2.142E+00	11.67

Nuclide Type: AP

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected PCI/GRAM	Decay Corr PCI/GRAM	1-Sigma %Error
MN-54	834.83	111	99.98*	8.770E-01	2.495E-02	2.757E-02	31.07

Flag: "*" = Keyline

Sample ID : J47861AA Acquisition date : 11-SEP-2007 06:08:36

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
2	72.87	400	2645	0.86	293.38	288	29	1.11E-02	26.1	1.56E+00	
2	74.92	2601	2833	0.87	301.63	288	29	7.22E-02	4.7	1.67E+00	
2	77.16	3538	2734	0.88	310.62	288	29	9.83E-02	3.4	1.78E+00	
8	84.54	774	3483	1.40	340.29	333	24	2.15E-02	17.7	2.11E+00	
8	87.24	1443	2781	1.00	351.16	333	24	4.01E-02	8.0	2.21E+00	T
0	89.97	913	2511	0.88	362.15	357	11	2.54E-02	11.1	2.30E+00	
0	129.09	413	1812	0.87	519.42	515	9	1.15E-02	19.2	2.85E+00	
0	327.71	636	854	1.10	1318.03	1310	14	1.77E-02	10.5	1.80E+00	T
0	409.35	341	827	0.71	1646.27	1638	17	9.47E-03	20.1	1.54E+00	
0	462.89	504	1043	1.13	1861.52	1850	24	1.40E-02	17.5	1.40E+00	T
0	727.21	587	563	1.49	2924.15	2913	20	1.63E-02	9.4	9.85E-01	T
0	794.55	466	461	1.16	3194.85	3182	24	1.30E-02	11.3	9.15E-01	T
0	934.04	164	395	1.93	3755.55	3748	21	4.55E-03	27.0	7.97E-01	
0	1377.87	152	174	1.33	5539.49	5529	22	4.23E-03	20.5	5.68E-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	0.05	511.00	179.68	8.793E-02	12.95	Abun.
			1274.54*	99.94	--- Not Found ---		
		% Abundances Found =		64.26			
SC-46	83.85D	0.54	889.25	99.98	--- Not Found ---		Abun.
			1120.51*	99.99	3.379E-01	9.33	
		% Abundances Found =		50.00			
TC-95M	61.00D	0.74	204.12*	66.20	--- Not Found ---		Abun.
			582.07	29.30	2.571E+00	7.11	
			835.13	26.10	1.594E-01	31.07	
		% Abundances Found =		45.56			
RU-103	39.35D	1.14	497.08*	89.00	--- Not Found ---		Abun.
			610.33	5.60	2.351E+01	6.74	
		% Abundances Found =		5.92			
RU-106DA	368.20D	0.12	511.85	20.60	8.078E-01	12.95	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	7.078E-01	18.55	
			600.56	17.80	--- Not Found ---		
			635.90	11.32	--- Not Found ---		
		% Abundances Found =		13.67			
BA-133	10.50Y	0.01	81.00	33.00	--- Not Found ---		Abun.
			276.40	6.90	7.258E-01	19.11	
			302.84	17.80	--- Not Found ---		
			356.00*	62.05	--- Not Found ---		
			383.85	8.70	--- Not Found ---		
		% Abundances Found =		5.37			
CS-134	2.06Y	0.06	569.31	15.43	--- Not Found ---		Abun.
			604.70	97.60	--- Not Found ---		
			795.84*	85.40	1.228E-01	13.09	
			801.93	8.73	--- Not Found ---		
		% Abundances Found =		41.22			
LA-140	40.22H	26.86	328.77	20.50	4.135E+07	12.47	Decay,Abun.
			487.03	45.50	--- Not Found ---		
			815.85	23.50	--- Not Found ---		
			1596.49*	95.49	--- Not Found ---		
		% Abundances Found =		11.08			
EU-155	4.96Y	0.02	42.90	21.16	--- Not Found ---		Abun.
			86.54	30.90	4.249E-01	10.64	
			105.31*	20.70	--- Not Found ---		
		% Abundances Found =		42.47			

Sample ID : J47861AA
Acquisition date : 11-SEP-2007 06:08:36

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	5.005E+01	14.77	
			452.83	0.31	--- Not Found ---		
			727.33*	6.58	1.788E+00	11.56	
			785.37	1.10	--- Not Found ---		
			893.41	0.38	--- Not Found ---		
			952.12	0.17	--- Not Found ---		
			1078.62	0.56	--- Not Found ---		
			1512.70	0.29	--- Not Found ---		
			1620.50	1.49	--- Not Found ---		
			1806.00	0.09	--- Not Found ---		
		% Abundances Found =		58.84			
RA-223	21.77Y	0.01	154.21	5.58	--- Not Found ---		Abun.
			269.46*	13.60	4.598E-01	14.90	
			323.87	3.88	--- Not Found ---		
		% Abundances Found =		58.98			
U-235HP	7.04E+08Y	0.00	143.76*	10.50	--- Not Found ---		Abun.
			185.71	54.00	1.950E-01	10.08	
			205.31	4.70	--- Not Found ---		
		% Abundances Found =		78.03			

Flag: "*" = Keyline

VMS Nuclide Identification Report V3.0 Generated 12-SEP-2007 16:43:53

Configuration : $DISK1:[GER4.SAMPLE]J47861AA_110970608.CNF;1
Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.3,WTMEAN/KEY V1.8
Analyses by : MINACT V2.8
Sample title : BRC SOIL
Sample date : 28-JUL-2007 10:45:00
Sample ID : J47861AA
Sample type :
Elapsed live time: 0 10:00:00.00
Peak Width (FWHM): 3.00
Energy tolerance : 1.50
Errors propagated: Yes
Efficiency type : Empirical
Abundance limit : 80.00

Acquisition date : 11-SEP-2007 06:08:36
Sample quantity : 380.10 GRAMS
Sample geometry : S200
Elapsed real time: 0 10:00:20.95 0.1%
Confidence level : 5.00 %
Half life ratio : 8.00
Systematic Error : 5.00 %
Efficiencies at : Peak Energy
WTM error limit : 3.00

Combined Activity-MDA Report

---- Identified Nuclides ----

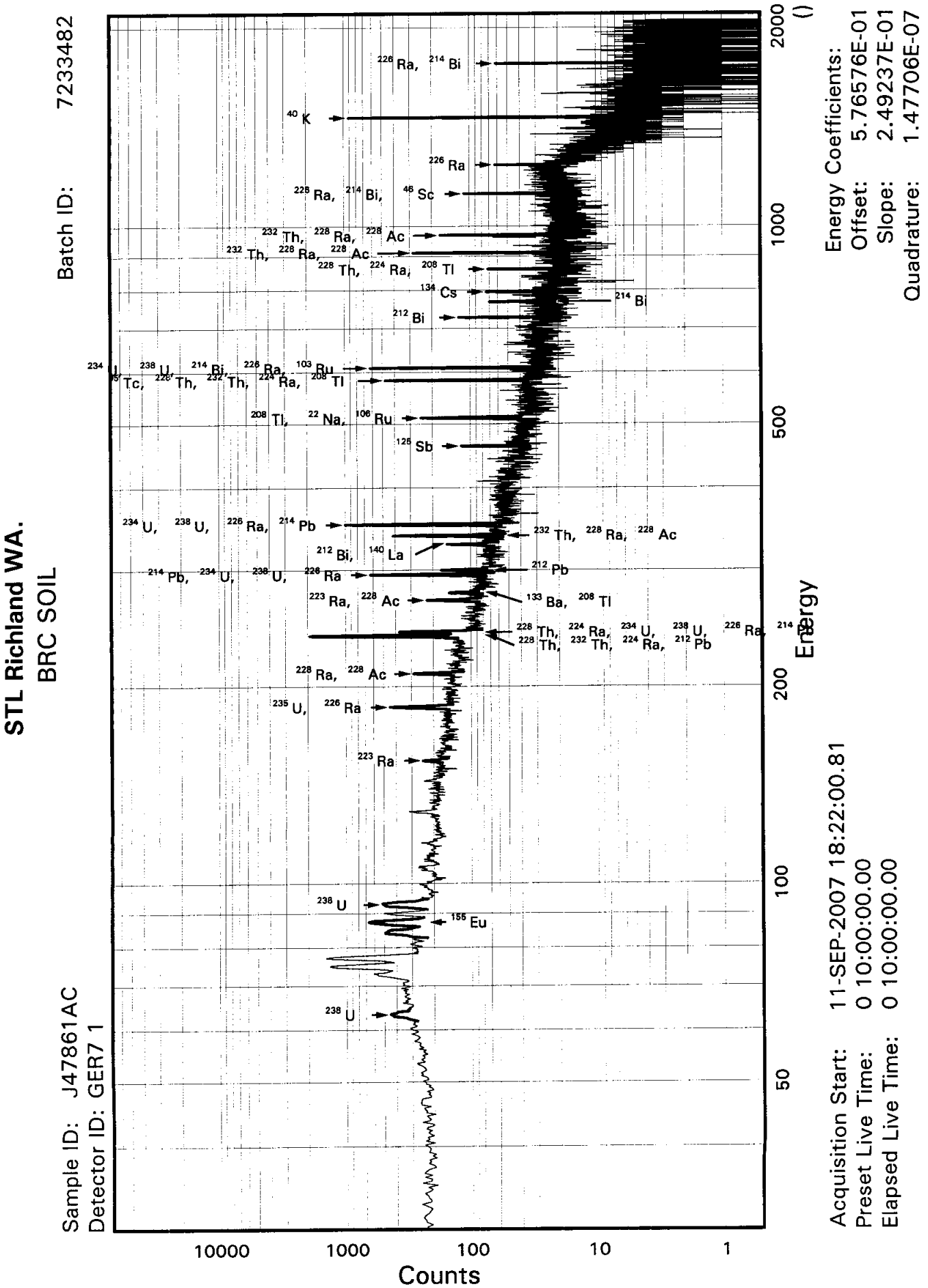
Nuclide	Activity (PCI/GRAM)	Act error	MDA (PCI/GRAM)	MDA error	Act/MDA
K-40	2.905E+01	1.857E+00	2.145E-01	8.138E-03	135.423
MN-54	2.757E-02	8.567E-03	2.612E-02	1.173E-03	1.056
TL-208	5.363E-01	3.813E-02	2.309E-02	8.339E-04	23.233
PB-212	1.709E+00	1.131E-01	3.724E-02	1.521E-03	45.894
BI-214	1.287E+00	8.678E-02	4.308E-02	1.557E-03	29.871
PB-214	1.475E+00	1.005E-01	4.403E-02	1.774E-03	33.511
RA-224DA	1.787E+00	1.183E-01	3.895E-02	1.590E-03	45.894
RA-226DA	1.287E+00	8.678E-02	4.309E-02	1.557E-03	29.871
AC-228	1.691E+00	1.333E-01	8.431E-02	4.041E-03	20.051
RA-228DA	1.716E+00	1.353E-01	8.558E-02	4.101E-03	20.051
TH-228DA	1.561E+00	1.110E-01	6.720E-02	2.427E-03	23.233
TH-232DA	1.567E+00	1.272E-01	1.377E-01	5.875E-03	11.376
U-234DA	1.450E+00	1.104E-01	8.324E-02	3.684E-03	17.413
U-238DA	1.475E+00	1.005E-01	4.403E-02	1.774E-03	33.511
U-238DHP	1.077E+00	4.480E-01	1.047E+00	4.444E-02	1.028

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

Nuclide	Key-Line Activity (PCI/GRAM)	K.L. Ided	Act error	MDA (PCI/GRAM)	MDA error	Act/MDA
BE-7	-8.047E-02		9.114E-02	3.041E-01	1.058E-02	-0.265
NA-22	-2.197E-03		9.421E-03	3.143E-02	1.159E-03	-0.070
SC-46	3.379E-01	+	3.153E-02	6.943E-02	2.607E-03	4.867
CR-51	-1.669E-01		1.499E-01	4.987E-01	2.269E-02	-0.335
CO-57	-9.520E-02		4.735E-02	1.528E-01	6.099E-03	-0.623
CO-58	-2.343E-02		1.017E-02	3.306E-02	1.443E-03	-0.709
FE-59	1.597E-02		2.994E-02	1.025E-01	3.987E-03	0.156
CO-60	-6.816E-03		7.405E-03	2.489E-02	9.608E-04	-0.274
ZN-65	-4.283E-02		2.384E-02	6.447E-02	2.441E-03	-0.664
SE-75	7.317E-03		1.018E-02	3.376E-02	1.434E-03	0.217
SR-85	6.169E-02		1.140E-02	3.400E-02	1.212E-03	1.814
Y-88	5.841E-03		6.859E-03	2.476E-02	7.903E-04	0.236
NB-94	-9.556E-03		6.732E-03	2.221E-02	1.041E-03	-0.430

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

Nuclide	Key-Line Activity (PCI/GRAM)	K.L. Ided	Act error	MDA (PCI/GRAM)	MDA error	Act/MDA
NB-95	6.235E-02		2.049E-02	6.046E-02	2.495E-03	1.031
TC-95M	-7.805E-03		1.172E-02	3.911E-02	1.506E-03	-0.200
ZR-95	1.548E-02		1.954E-02	6.610E-02	2.696E-03	0.234
ZRNB-95	8.700E-02		2.742E-02	8.097E-02	3.341E-03	1.074
RH-101	6.490E-03		6.608E-03	2.237E-02	8.527E-04	0.290
RH-102M	-1.507E-03		5.662E-03	1.909E-02	6.627E-04	-0.079
RU-103	-2.086E-02		1.283E-02	4.205E-02	1.483E-03	-0.496
RU-106DA	-2.163E-02		6.388E-02	2.165E-01	7.820E-03	-0.100
AG-108M	-6.116E-03		5.620E-03	1.885E-02	6.326E-04	-0.324
AG-110M	2.233E-02		1.056E-02	3.672E-02	1.748E-03	0.608
SN-113DA	-1.924E-02		1.044E-02	3.368E-02	1.084E-03	-0.571
SB-124	-1.466E-02		1.108E-02	3.452E-02	1.248E-03	-0.425
SB-125	-1.549E-02		1.767E-02	5.956E-02	1.988E-03	-0.260
SN-126DA	6.242E-03		6.470E-03	2.212E-02	8.000E-04	0.282
I-131	-5.774E-01		2.939E-01	9.517E-01	3.609E-02	-0.607
BA-133	1.698E-02		8.878E-03	2.606E-02	1.030E-03	0.652
CS-134	1.228E-01	+	1.607E-02	3.553E-02	1.522E-03	3.456
CS-137DA	6.781E-03		7.706E-03	2.632E-02	9.459E-04	0.258
LA-138	9.103E-03		9.905E-03	3.476E-02	1.325E-03	0.262
CE-139	-8.514E-03		7.124E-03	2.291E-02	8.310E-04	-0.372
BA-140	1.136E-01		2.543E-01	8.565E-01	3.073E-02	0.133
BALA-140	-5.661E-01		1.718E-01	5.297E-01	1.931E-02	-1.069
CE-141	-4.118E-02		2.431E-02	7.848E-02	3.000E-03	-0.525
CE-144	-4.286E-02		4.613E-02	1.514E-01	6.138E-03	-0.283
CEPR-144	-8.480E-02		9.227E-02	3.029E-01	1.228E-02	-0.280
PM-144	2.592E-03		6.274E-03	2.150E-02	7.768E-04	0.121
PM-146	1.966E-02		8.425E-03	2.910E-02	9.936E-04	0.676
EU-152	-3.230E-02		1.851E-02	6.050E-02	2.519E-03	-0.534
EU-154	-3.821E-03		2.584E-02	8.637E-02	3.186E-03	-0.044
EU-155	8.637E-02		2.351E-02	7.899E-02	3.439E-03	1.093
HF-181	9.901E-03		1.317E-02	4.491E-02	1.567E-03	0.220
BI-207	1.039E-02		5.980E-03	2.029E-02	7.322E-04	0.512
BI-210M	7.082E-03		1.058E-02	3.133E-02	1.334E-03	0.226
BI-212	1.788E+00	+	2.066E-01	4.833E-01	2.195E-02	3.699
RA-223	4.598E-01	+	6.850E-02	1.430E-01	6.120E-03	3.215
AC-227DA	8.478E-02		5.336E-02	1.541E-01	6.265E-03	0.550
TH-234DA	2.515E+00		1.197E+00	4.111E+00	1.820E-01	0.612
U-235HP	1.142E-01		4.340E-02	1.440E-01	5.545E-03	0.793
NP-237DA	6.383E-03		1.311E-02	4.454E-02	2.009E-03	0.143
AM-241HP	-4.256E-03		3.998E-02	1.324E-01	5.458E-03	-0.032


STL Richland WA.
BRC SOIL
Batch ID: 7233482
Sample ID: J47861AC
Detector ID: GER7 1
Energy Coefficients:
Offset: 5.76576E-01
Slope: 2.49237E-01
Quadrature: 1.47706E-07
Acquisition Start: 11-SEP-2007 18:22:00.81
Preset Live Time: 0 10:00:00.00
Elapsed Live Time: 0 10:00:00.00
Counts
Energy
10000
1000
100
10
1
50
100
200
500
1000
2000
226 Ra, 214 Bi
40 K
226 Ra
228 Ra, 214 Bi, 46 Sc
232 Th, 228 Ra, 228 Ac
232 Th, 228 Ra, 228 Ac
228 Th, 224 Ra, 208 Tl
134 Cs
214 Bi
212 Bi
234 U, 238 U, 214 Bi, 226 Ra, 103 Ru
99 Tc, 226 Th, 232 Th, 224 Ra, 208 Tl
208 Tl, 22 Na, 106 Ru
125 Sb
234 U, 238 U, 226 Ra, 214 Pb
232 Th, 228 Ra, 228 Ac
212 Bi, 140 La
214 Pb, 234 U, 238 U, 226 Ra
212 Pb
223 Ra, 228 Ac
133 Ba, 208 Tl
228 Th, 224 Ra, 234 U, 238 U, 226 Ra, 214 Pb
228 Th, 232 Th, 224 Ra, 212 Pb
228 Ra, 228 Ac
235 U, 226 Ra
223 Ra
238 U
155 Eu
238 U

SAMPLE IDENTIFICATION: J47861AC

CONFIGURATION ID: GER7:J47861AC_110971822
TITLE : BRC SOIL
SAMPLE ID : J47861AC

REPORT DATE: 12-SEP-07
ACQUIRE DATE: 11-SEP-07 18:22:00
ELAPSED LIVE TIME: 36000.0 Sec
PRESET LIVE TIME: 0 10:00:00

SAMPLE DATE: 28-JUL-2007 10:45:00.00
CALIB DATE: 11-SEP-2007 04:52:04.02
ELAPSED LIVE TIME: 0 10:00:00
ELAPSED REAL TIME: 0 10:00:15

SAMPLE QUANTITY: 3.8010E+02
SAMPLE GEOMETRY: S200

UNITS: GRAMS
SAMPLE TYPE:

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

FWHM OFFSET: 5.5566E-01 keV
FWHM SLOPE: 3.6872E-02 sqr keV
ITERATIONS: 10
GAUSSIAN SENSITIVITY: 60.00 %

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

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

VMS Peak Search Report V1.9 Generated 12-SEP-2007 16:44:56

Configuration : $DISK1:[GER7.SAMPLE]J47861AC_110971822.CNF;1
Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6
Sample title : BRC SOIL
Sample date : 28-JUL-2007 10:45:00 Acquisition date : 11-SEP-2007 18:22:00
Sample ID : J47861AC Sample quantity : 380.10 GRAMS
Sample type : Sample geometry : S200
Elapsed live time: 0 10:00:00.00 Elapsed real time: 0 10:00:15.09 0.0%
Start energy : 20.52 End energy : 2052.24
Sensitivity : 5.00 Gaussian : 60.00
Critical level : No

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	63.28*	571	3608	1.18	251.54	246	12	1.59E-02	22.2	
2	4	72.87*	1106	3785	1.19	290.02	284	33	3.07E-02	11.9	1.49E+00
3	4	74.92*	4294	3924	1.09	298.22	284	33	1.19E-01	3.6	
4	4	77.13	5060	3421	1.02	307.10	284	33	1.41E-01	2.8	
5	5	84.50*	1126	3281	1.44	336.64	330	24	3.13E-02	11.4	1.75E+00
6	5	87.27*	1992	3220	1.23	347.76	330	24	5.53E-02	6.5	
7	0	89.96	1093	2375	1.02	358.55	354	10	3.03E-02	8.9	
8	0	92.96*	1698	3517	1.70	370.58	364	15	4.72E-02	8.2	
9	0	129.06	466	2129	0.87	515.34	510	11	1.30E-02	19.7	
10	0	154.27	340	1797	0.97	616.42	611	11	9.44E-03	24.8	
11	0	185.97*	1238	2270	1.16	743.53	737	15	3.44E-02	9.1	
12	0	209.20	817	1831	1.12	836.62	829	14	2.27E-02	11.7	
13	4	238.60*	8659	1567	1.11	954.47	947	28	2.41E-01	1.4	2.66E+00
14	4	241.60	1922	1580	1.65	966.50	947	28	5.34E-02	5.5	
15	0	270.14	673	1530	1.24	1080.86	1074	17	1.87E-02	13.9	
16	0	277.22	275	967	1.09	1109.25	1104	11	7.63E-03	22.7	
17	0	295.20	2644	1165	1.10	1181.27	1174	15	7.34E-02	3.4	
18	0	300.02	485	995	1.13	1200.57	1194	14	1.35E-02	14.5	
19	0	328.10	541	1265	1.10	1313.08	1305	20	1.50E-02	16.7	
20	0	338.30	1580	1146	1.07	1353.95	1346	16	4.39E-02	5.4	
21	0	351.82*	4756	1059	1.16	1408.09	1398	20	1.32E-01	2.3	
22	0	462.92	455	630	1.43	1852.99	1846	16	1.26E-02	13.2	
23	0	510.56*	972	950	1.71	2043.72	2030	26	2.70E-02	10.3	
24	0	583.08	2781	593	1.48	2333.92	2325	19	7.72E-02	2.8	
25	0	609.20	3473	682	1.30	2438.44	2425	26	9.65E-02	2.7	
26	0	727.22	671	513	1.44	2910.44	2899	22	1.86E-02	8.3	
27	0	768.35	240	443	1.30	3074.90	3066	18	6.67E-03	18.7	
28	0	794.77	266	517	1.32	3180.51	3170	22	7.39E-03	19.4	
29	0	860.39	373	343	1.18	3442.77	3430	21	1.04E-02	11.7	
30	0	911.13	1820	444	1.66	3645.48	3634	23	5.06E-02	3.5	
31	0	933.60	259	289	1.88	3735.27	3725	23	7.19E-03	15.7	
32	0	967.85*	1358	598	1.65	3872.04	3854	33	3.77E-02	5.4	
33	0	1120.07	709	452	1.82	4479.78	4468	24	1.97E-02	7.7	
34	0	1238.29	333	454	2.02	4951.50	4941	22	9.24E-03	15.0	
35	0	1377.76	171	160	1.57	5507.64	5494	25	4.74E-03	18.6	
36	0	1460.59*	8218	199	2.15	5837.74	5821	30	2.28E-01	1.2	
37	0	1589.51	292	192	5.55	6351.29	6325	48	8.12E-03	13.8	
38	0	1764.27	601	63	2.47	7046.93	7029	34	1.67E-02	5.1	

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

VMS Nuclide Identification Report V3.0 Generated 12-SEP-2007 16:44:56

Configuration : $DISK1:[GER7.SAMPLE]J47861AC_110971822.CNF;1
Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.3
Sample title : BRC SOIL
Sample date : 28-JUL-2007 10:45:00 Acquisition date : 11-SEP-2007 18:22:00
Sample ID : J47861AC Sample quantity : 380.10 GRAMS
Sample type : Sample geometry : S200
Elapsed live time: 0 10:00:00.00 Elapsed real time: 0 10:00:15.09 0.0%
Energy tolerance : 1.50 Half life ratio : 8.00
Errors propagated: Yes Systematic Error : 5.00 %
Efficiency type : Empirical Efficiencies at : Peak Energy
Abundance limit : 80.00

Nuclide Line Activity Report

Nuclide Type: NP

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected PCI/GRAM	Decay Corr PCI/GRAM	1-Sigma %Error
K-40	1460.81	8218	10.67*	5.447E-01	2.793E+01	2.793E+01	8.15
TL-208	277.35	275	6.80	1.994E+00	4.000E-01	4.000E-01	23.72
	510.84	972	21.60	1.253E+00	7.099E-01	7.099E-01	11.92
	583.14	2781	84.20*	1.132E+00	5.764E-01	5.764E-01	6.66
	860.37	373	12.46	8.376E-01	7.060E-01	7.060E-01	13.62
PB-212	238.63	8659	44.60*	2.224E+00	1.724E+00	1.724E+00	7.32
	300.09	485	3.41	1.879E+00	1.496E+00	1.496E+00	15.88
BI-214	609.31	3473	46.30*	1.094E+00	1.354E+00	1.354E+00	6.61
	768.36	240	5.04	9.151E-01	1.029E+00	1.029E+00	19.79
	1120.29	709	15.10	6.781E-01	1.368E+00	1.368E+00	10.07
	1764.49	601	15.80	4.659E-01	1.612E+00	1.612E+00	8.20
PB-214	241.98	1922	7.49	2.204E+00	2.300E+00	2.300E+00	9.01
	295.21	2644	19.20	1.902E+00	1.430E+00	1.430E+00	7.39
	351.92	4756	37.20*	1.665E+00	1.517E+00	1.517E+00	6.59
	785.91	------	1.10	8.992E-01	------	Line Not Found	------
RA-223	154.21	340	5.58	2.887E+00	4.165E-01	4.182E-01	25.92
	269.46	673	13.60*	2.032E+00	4.808E-01	4.827E-01	15.48
	323.87	------	3.88	1.773E+00	------	Line Not Found	------
RA-224DA	238.63	8659	44.60*	2.224E+00	1.724E+00	1.804E+00	7.32
	240.98	1922	3.95	2.204E+00	4.361E+00	4.563E+00	9.01
	583.14	2781	30.25	1.132E+00	1.604E+00	1.679E+00	6.66
	860.37	373	4.48	8.376E-01	1.963E+00	2.054E+00	13.62
RA-226DA	186.21	1238	3.50	2.621E+00	2.666E+00	2.666E+00	11.81
	241.98	1922	7.49	2.204E+00	2.300E+00	2.300E+00	9.01
	295.22	2644	19.20	1.902E+00	1.430E+00	1.430E+00	7.39
	351.92	4756	37.20	1.665E+00	1.517E+00	1.517E+00	6.59
	609.32	3473	46.30*	1.094E+00	1.354E+00	1.354E+00	6.61
	1120.28	709	15.10	6.781E-01	1.368E+00	1.368E+00	10.07
	1238.11	333	5.94	6.246E-01	1.771E+00	1.771E+00	16.61
	1764.49	601	15.80	4.659E-01	1.612E+00	1.613E+00	8.20
AC-228	209.28	817	4.40	2.434E+00	1.506E+00	1.506E+00	13.81
	270.23	673	3.60	2.032E+00	1.816E+00	1.816E+00	15.48
	338.32	1580	11.40	1.715E+00	1.596E+00	1.596E+00	8.23
	911.07	1820	27.70*	8.005E-01	1.621E+00	1.621E+00	7.93
	969.11	1358	16.60	7.629E-01	2.118E+00	2.118E+00	8.84
RA-228DA	209.28	817	4.40	2.434E+00	1.506E+00	1.529E+00	13.81

Sample ID : J47861AC Acquisition date : 11-SEP-2007 18:22:00

Nuclide Type: NP

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected PCI/GRAM	Decay Corr PCI/GRAM	1-Sigma %Error
	338.32	1580	11.40	1.715E+00	1.596E+00	1.620E+00	8.23
	911.07	1820	27.70*	8.005E-01	1.621E+00	1.646E+00	7.93
	964.60	------	5.20	7.650E-01	------ Line Not Found		------
	969.11	1358	16.60	7.629E-01	2.118E+00	2.150E+00	8.84
TH-228DA	238.63	8659	44.60	2.224E+00	1.724E+00	1.804E+00	7.32
	240.98	1922	3.95	2.204E+00	4.361E+00	4.563E+00	9.01
	583.14	2781	30.25*	1.132E+00	1.604E+00	1.679E+00	6.66
	860.37	373	4.48	8.376E-01	1.963E+00	2.054E+00	13.62
TH-232DA	238.63	8659	44.60	2.224E+00	1.724E+00	1.724E+00	7.32
	338.32	1580	12.40*	1.715E+00	1.468E+00	1.468E+00	8.23
	583.14	2781	30.25	1.132E+00	1.604E+00	1.604E+00	6.66
	911.07	1820	27.70	8.005E-01	1.621E+00	1.621E+00	7.93
	964.60	------	5.20	7.650E-01	------ Line Not Found		------
	969.11	1358	16.60	7.629E-01	2.118E+00	2.118E+00	8.84
U-234DA	241.98	1922	7.49	2.204E+00	2.300E+00	2.300E+00	9.01
	295.22	2644	19.20*	1.902E+00	1.430E+00	1.430E+00	7.39
	351.92	4756	37.20	1.665E+00	1.517E+00	1.517E+00	6.59
	609.31	3473	46.30	1.094E+00	1.354E+00	1.354E+00	6.61
U-238DA	241.98	1922	7.49	2.204E+00	2.300E+00	2.300E+00	9.01
	295.22	2644	19.20	1.902E+00	1.430E+00	1.430E+00	7.39
	351.92	4756	37.20*	1.665E+00	1.517E+00	1.517E+00	6.59
	609.31	3473	46.30	1.094E+00	1.354E+00	1.354E+00	6.61
U-238DHP	63.28	571	3.80*	1.813E+00	1.638E+00	1.638E+00	23.01
	92.59	1698	5.41	2.917E+00	2.125E+00	2.125E+00	10.24

Flag: "*" = Keyline

Sample ID : J47861AC Acquisition date : 11-SEP-2007 18:22:00

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
4	72.87	1106	3785	1.19	290.02	284	33	3.07E-02	11.9	2.31E+00	
4	74.92	4294	3924	1.09	298.22	284	33	1.19E-01	3.6	2.40E+00	
4	77.13	5060	3421	1.02	307.10	284	33	1.41E-01	2.8	2.49E+00	
5	84.50	1126	3281	1.44	336.64	330	24	3.13E-02	11.4	2.73E+00	
5	87.27	1992	3220	1.23	347.76	330	24	5.53E-02	6.5	2.80E+00	T
0	89.96	1093	2375	1.02	358.55	354	10	3.03E-02	8.9	2.86E+00	
0	129.06	466	2129	0.87	515.34	510	11	1.30E-02	19.7	3.05E+00	
0	328.10	541	1265	1.10	1313.08	1305	20	1.50E-02	16.7	1.76E+00	T
0	462.92	455	630	1.43	1852.99	1846	16	1.26E-02	13.2	1.35E+00	T
0	727.22	671	513	1.44	2910.44	2899	22	1.86E-02	8.3	9.55E-01	T
0	794.77	266	517	1.32	3180.51	3170	22	7.39E-03	19.4	8.91E-01	T
0	933.60	259	289	1.88	3735.27	3725	23	7.19E-03	15.7	7.85E-01	
0	1377.76	171	160	1.57	5507.64	5494	25	4.74E-03	18.6	5.72E-01	
0	1589.51	292	192	5.55	6351.29	6325	48	8.12E-03	13.8	5.08E-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	0.05	511.00	179.68	8.823E-02	11.92	Abun.
			1274.54*	99.94	--- Not Found ---		
		% Abundances Found =		64.26			
SC-46	83.85D	0.54	889.25	99.98	--- Not Found ---		Abun.
			1120.51*	99.99	3.009E-01	10.07	
		% Abundances Found =		50.00			
TC-95M	61.00D	0.75	204.12*	66.20	--- Not Found ---		Abun.
			582.07	29.30	2.779E+00	6.66	
			835.13	26.10	--- Not Found ---		
		% Abundances Found =		24.10			
RU-103	39.35D	1.16	497.08*	89.00	--- Not Found ---		Abun.
			610.33	5.60	2.496E+01	6.61	
		% Abundances Found =		5.92			
RU-106DA	368.20D	0.12	511.85	20.60	8.110E-01	11.92	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	6.642E-01	14.53	
			600.56	17.80	--- Not Found ---		
			635.90	11.32	--- Not Found ---		
		% Abundances Found =		13.67			
BA-133	10.50Y	0.01	81.00	33.00	--- Not Found ---		Abun.
			276.40	6.90	3.975E-01	23.72	
			302.84	17.80	--- Not Found ---		
			356.00*	62.05	--- Not Found ---		
			383.85	8.70	--- Not Found ---		
		% Abundances Found =		5.37			
CS-134	2.06Y	0.06	569.31	15.43	--- Not Found ---		Abun.
			604.70	97.60	--- Not Found ---		
			795.84*	85.40	7.202E-02	20.55	
			801.93	8.73	--- Not Found ---		
		% Abundances Found =		41.22			
LA-140	40.22H	27.17	328.77	20.50	4.466E+07	17.80	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	0.03	42.90	21.16	--- Not Found ---		Abun.
			86.54	30.90	4.625E-01	9.00	
			105.31*	20.70	--- Not Found ---		
		% Abundances Found =		42.47			

Sample ID : J47861AC Acquisition date : 11-SEP-2007 18:22:00

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	4.379E+01	19.48	
			452.83	0.31	--- Not Found ---		
			727.33*	6.58	2.109E+00	10.66	
			785.37	1.10	--- Not Found ---		
			893.41	0.38	--- Not Found ---		
			952.12	0.17	--- Not Found ---		
			1078.62	0.56	--- Not Found ---		
			1512.70	0.29	--- Not Found ---		
			1620.50	1.49	--- Not Found ---		
			1806.00	0.09	--- Not Found ---		
		% Abundances Found =		58.84			
U-235HP	7.04E+08Y	0.00	143.76*	10.50	--- Not Found ---		Abun.
			185.71	54.00	1.728E-01	11.81	
			205.31	4.70	--- Not Found ---		
		% Abundances Found =		78.03			

Flag: "*" = Keyline

VMS Nuclide Identification Report V3.0 Generated 12-SEP-2007 16:44:59

Configuration : $DISK1:[GER7.SAMPLE]J47861AC_110971822.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 : 28-JUL-2007 10:45:00 Acquisition date : 11-SEP-2007 18:22:00
Sample ID : J47861AC Sample quantity : 380.10 GRAMS
Sample type : Sample geometry : S200
Elapsed live time: 0 10:00:00.00 Elapsed real time: 0 10:00:15.09 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	2.793E+01	2.275E+00	2.101E-01	1.327E-02	132.923
TL-208	5.764E-01	3.838E-02	2.331E-02	7.833E-04	24.728
PB-212	1.724E+00	1.262E-01	3.737E-02	1.922E-03	46.144
BI-214	1.354E+00	8.952E-02	4.261E-02	1.452E-03	31.771
PB-214	1.517E+00	9.998E-02	4.456E-02	1.625E-03	34.035
RA-223	4.827E-01	7.475E-02	1.168E-01	5.496E-03	4.133
RA-224DA	1.804E+00	1.320E-01	3.910E-02	2.011E-03	46.144
RA-226DA	1.354E+00	8.953E-02	4.261E-02	1.452E-03	31.771
AC-228	1.621E+00	1.286E-01	8.300E-02	4.230E-03	19.533
RA-228DA	1.646E+00	1.306E-01	8.425E-02	4.294E-03	19.533
TH-228DA	1.679E+00	1.118E-01	6.788E-02	2.281E-03	24.728
TH-232DA	1.468E+00	1.208E-01	1.408E-01	5.144E-03	10.422
U-234DA	1.430E+00	1.056E-01	8.599E-02	3.630E-03	16.631
U-238DA	1.517E+00	9.998E-02	4.456E-02	1.625E-03	34.035
U-238DHP	1.638E+00	3.768E-01	7.486E-01	2.623E-02	2.187

RAE= 0.5374
RAE= 0.3730
ok LMA 9/14/07

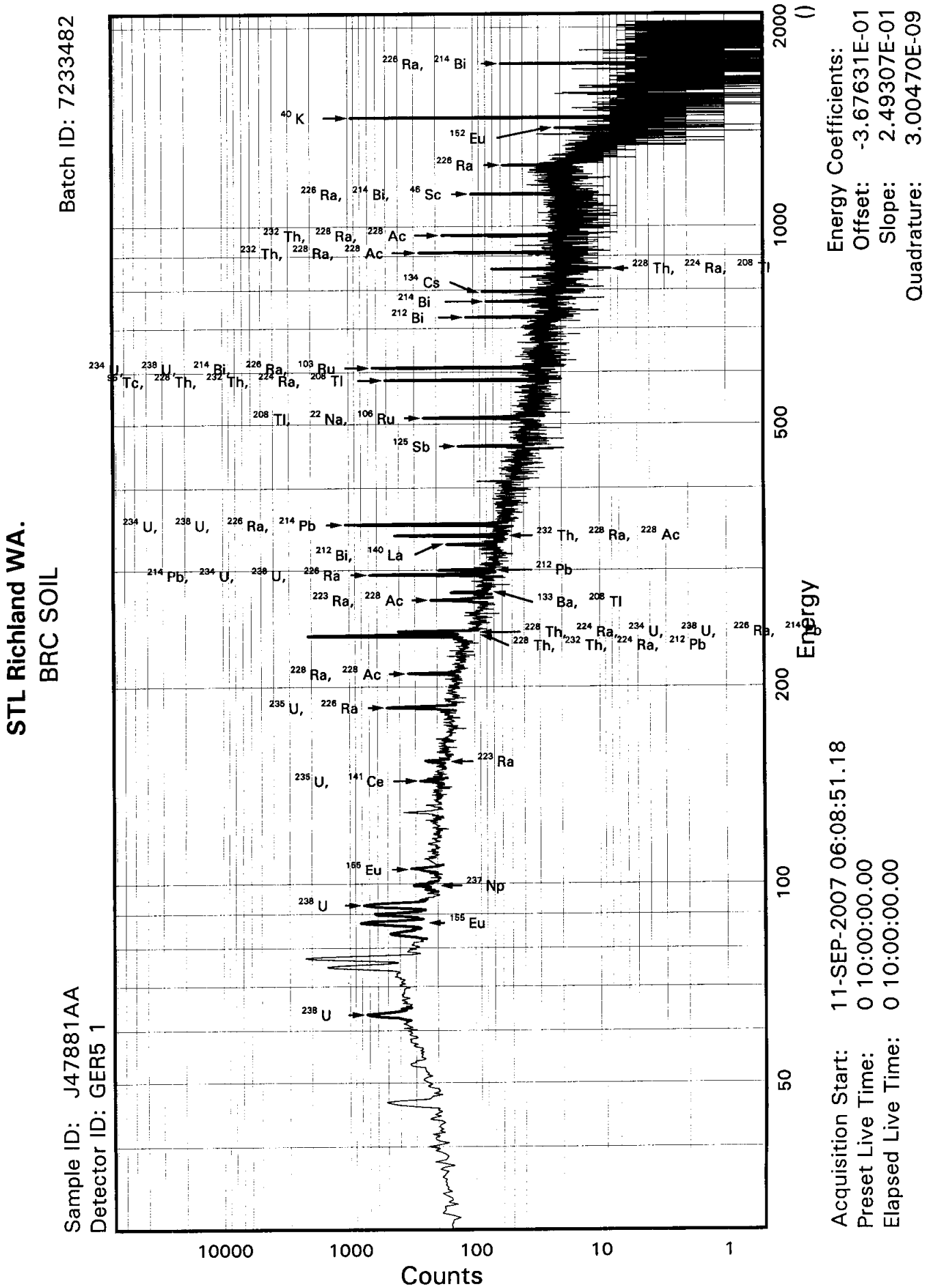
---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (PCI/GRAM)	K.L. Ided	Act error	MDA (PCI/GRAM)	MDA error	Act/MDA
BE-7	3.355E-02		9.378E-02	3.150E-01	1.062E-02	0.107
NA-22	-7.697E-03		9.107E-03	3.013E-02	1.739E-03	-0.255
SC-46	3.009E-01	+	3.031E-02	6.713E-02	2.796E-03	4.482
CR-51	-1.742E-01		1.600E-01	5.220E-01	1.905E-02	-0.334
MN-54	1.774E-02		7.781E-03	2.705E-02	1.263E-03	0.656
CO-57	-3.660E-03		4.612E-02	1.538E-01	6.944E-03	-0.024
CO-58	-1.801E-02		1.005E-02	3.301E-02	1.484E-03	-0.546
FE-59	9.110E-03		2.870E-02	9.831E-02	4.214E-03	0.093
CO-60	-8.222E-03		7.656E-03	2.511E-02	1.751E-03	-0.327
ZN-65	-3.056E-02		2.259E-02	6.211E-02	2.605E-03	-0.492
SE-75	4.741E-04		1.027E-02	3.440E-02	1.646E-03	0.014
SR-85	5.744E-02		1.179E-02	3.494E-02	1.121E-03	1.644
Y-88	-6.561E-03		6.780E-03	2.296E-02	7.723E-04	-0.286

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

Nuclide	Key-Line Activity (PCI/GRAM)	K.L. Ided	Act error	MDA (PCI/GRAM)	MDA error	Act/MDA
NB-94	-1.428E-02		6.352E-03	2.042E-02	1.007E-03	-0.699
NB-95	5.361E-02		2.119E-02	6.196E-02	2.590E-03	0.865
TC-95M	2.241E-02		1.259E-02	4.135E-02	2.260E-03	0.542
ZR-95	4.035E-02		1.964E-02	6.712E-02	2.764E-03	0.601
ZRNB-95	7.453E-02		2.820E-02	8.255E-02	3.451E-03	0.903
RH-101	9.291E-03		6.832E-03	2.248E-02	1.238E-03	0.413
RH-102M	5.942E-03		5.945E-03	2.011E-02	6.797E-04	0.296
RU-103	-1.179E-02		1.391E-02	4.577E-02	1.505E-03	-0.258
RU-106DA	8.222E-02		6.535E-02	2.246E-01	7.703E-03	0.366
AG-108M	-9.744E-04		5.631E-03	1.891E-02	6.635E-04	-0.052
AG-110M	3.067E-03		1.040E-02	3.544E-02	1.784E-03	0.087
SN-113DA	-1.667E-02		1.055E-02	3.486E-02	1.248E-03	-0.478
SB-124	2.544E-02		1.171E-02	3.665E-02	1.245E-03	0.694
SB-125	5.428E-03		1.827E-02	6.172E-02	2.174E-03	0.088
SN-126DA	8.231E-03		6.543E-03	2.233E-02	7.855E-04	0.369
I-131	-2.247E-01		3.025E-01	1.018E+00	3.699E-02	-0.221
BA-133	1.005E-02		8.938E-03	2.640E-02	9.615E-04	0.381
CS-134	7.202E-02	+	1.480E-02	3.458E-02	1.518E-03	2.083
CS-137DA	-5.348E-03		7.773E-03	2.585E-02	9.017E-04	-0.207
LA-138	-4.559E-03		9.316E-03	3.179E-02	2.053E-03	-0.143
CE-139	-5.561E-03		7.051E-03	2.310E-02	1.310E-03	-0.241
BA-140	-2.193E-01		2.636E-01	8.624E-01	2.815E-02	-0.254
BALA-140	8.642E-02		1.747E-01	5.166E-01	2.804E-02	0.167
CE-141	-1.285E-02		2.471E-02	8.179E-02	4.057E-03	-0.157
CE-144	-1.479E-02		4.548E-02	1.515E-01	6.631E-03	-0.098
CEPR-144	-2.915E-02		9.096E-02	3.031E-01	1.326E-02	-0.096
PM-144	-1.178E-03		6.403E-03	2.162E-02	7.400E-04	-0.055
PM-146	4.519E-03		8.299E-03	2.802E-02	9.676E-04	0.161
EU-152	-3.466E-02		1.978E-02	6.347E-02	2.317E-03	-0.546
EU-154	-2.493E-02		2.510E-02	8.273E-02	4.773E-03	-0.301
EU-155	1.228E-01		2.307E-02	7.640E-02	2.791E-03	1.607
HF-181	-2.769E-02		1.373E-02	4.424E-02	1.483E-03	-0.626
BI-207	4.598E-03		6.019E-03	2.066E-02	6.888E-04	0.223
BI-210M	-2.274E-02		1.137E-02	3.117E-02	1.484E-03	-0.730
BI-212	2.109E+00	+	2.248E-01	4.921E-01	2.231E-02	4.286
AC-227DA	2.660E-01		5.821E-02	1.668E-01	8.632E-03	1.595
TH-234DA	2.151E+00		1.161E+00	3.989E+00	1.902E-01	0.539
U-235HP	1.647E-01		4.452E-02	1.471E-01	7.168E-03	1.120
NP-237DA	-2.417E-03		1.356E-02	4.489E-02	1.727E-03	-0.054
AM-241HP	2.541E-02		2.802E-02	8.801E-02	3.195E-03	0.289

Below CRL


STL Richland WA.
BRC SOIL
Batch ID: 7233482
Sample ID: J47881AA
Detector ID: GER5 1
Energy Coefficients:
Offset: -3.67631E-01
Slope: 2.49307E-01
Quadrature: 3.00470E-09
Acquisition Start: 11-SEP-2007 06:08:51.18
Preset Live Time: 0 10:00:00.00
Elapsed Live Time: 0 10:00:00.00
Counts
Energy
10000
1000
100
10
1
50
100
200
500
1000
2000
226 Ra, 214 Bi
40 K
152 Eu
226 Ra
226 Ra, 214 Bi, 46 Sc
232 Th, 228 Ra, 228 Ac
232 Th, 228 Ra, 228 Ac
228 Th, 224 Ra, 208 Tl
134 Cs
214 Bi
212 Bi
234 U, 238 U, 214 Bi, 226 Ra, 103 Ru
99 Tc, 228 Th, 232 Th, 224 Ra, 208 Tl
208 Tl, 22 Na, 106 Ru
125 Sb
234 U, 238 U, 226 Ra, 214 Pb
232 Th, 228 Ra, 228 Ac
212 Bi, 140 La
214 Pb, 234 U, 238 U, 226 Ra
212 Pb
223 Ra, 228 Ac
133 Ba, 208 Tl
228 Th, 224 Ra, 234 U, 238 U, 226 Ra, 214 Pb
228 Th, 232 Th, 224 Ra, 212 Pb
228 Ra, 228 Ac
235 U, 226 Ra
223 Ra
235 U, 141 Ce
155 Eu
237 Np
238 U
155 Eu
238 U

SAMPLE IDENTIFICATION: J47881AA

CONFIGURATION ID: GER5:J47881AA_110970608
TITLE : BRC SOIL
SAMPLE ID : J47881AA

REPORT DATE: 12-SEP-07
ACQUIRE DATE: 11-SEP-07 06:08:51
ELAPSED LIVE TIME: 36000.0 Sec
PRESET LIVE TIME: 0 10:00:00

SAMPLE DATE: 28-JUL-2007 10:45:00.00
CALIB DATE: 11-SEP-2007 04:51:22.39
ELAPSED LIVE TIME: 0 10:00:00
ELAPSED REAL TIME: 0 10:00:15

SAMPLE QUANTITY: 3.4180E+02
SAMPLE GEOMETRY: ES200

UNITS: GRAMS
SAMPLE TYPE:

ENERGY OFFSET: -.3676E+00 keV
ENERGY SLOPE: 2.4931E-01 keV/C
ENERGY Q COEFF: 3.0047E-09 keV/C^^2
PEAK SENSITIVITY: 5.000

FWHM OFFSET: 7.8855E-01 keV
FWHM SLOPE: 2.3528E-02 sqr keV
ITERATIONS: 10
GAUSSIAN SENSITIVITY: 60.00 %

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

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

VMS Peak Search Report V1.9 Generated 12-SEP-2007 16:46:36

Configuration : RDND06$DKA100:[GER5.SAMPLE]J47881AA_110970608.CNF;1
Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6
Sample title : BRC SOIL
Sample date : 28-JUL-2007 10:45:00 Acquisition date : 11-SEP-2007 06:08:51
Sample ID : J47881AA Sample quantity : 341.80 GRAMS
Sample type : Sample geometry : ES200
Elapsed live time: 0 10:00:00.00 Elapsed real time: 0 10:00:15.08 0.0%
Start energy : 19.58 End energy : 2042.16
Sensitivity : 5.00 Gaussian : 60.00
Critical level : No

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	46.62*	775	2380	0.91	188.47	183	12	2.15E-02	14.2	
2	0	53.38	284	2578	1.12	215.57	211	10	7.88E-03	34.0	
3	0	63.43*	1100	4527	0.89	255.90	250	13	3.05E-02	13.4	
4	1	74.87*	4542	4267	0.93	301.77	296	21	1.26E-01	3.1	8.08E-01
5	1	77.14*	7571	3576	0.91	310.87	296	21	2.10E-01	2.0	
6	4	84.21	1315	3062	1.46	339.26	333	35	3.65E-02	8.9	3.85E+00
7	4	87.23	2533	3352	1.05	351.35	333	35	7.04E-02	5.1	
8	4	89.98	1897	3124	1.16	362.39	333	35	5.27E-02	6.2	
9	0	92.91*	2381	3766	1.42	374.13	368	15	6.61E-02	6.3	
10	0	99.33	608	3223	0.87	399.91	392	16	1.69E-02	21.3	
11	0	105.29	723	2633	1.21	423.80	417	14	2.01E-02	15.5	
12	0	129.07	600	2375	0.76	519.20	514	12	1.67E-02	16.8	
13	0	143.99	485	2401	1.48	579.04	572	14	1.35E-02	21.9	
14	0	153.98	210	1992	1.14	619.10	615	11	5.84E-03	41.7	
15	0	185.92*	1662	2303	1.21	747.19	739	16	4.62E-02	7.3	
16	0	209.14	699	1689	0.89	840.37	835	12	1.94E-02	12.3	
17	3	238.59*	8722	1438	1.02	958.47	951	28	2.42E-01	1.4	3.00E+00
18	3	241.61	2078	1900	1.54	970.59	951	28	5.77E-02	5.8	
19	0	270.24	877	1536	1.04	1085.43	1076	19	2.44E-02	11.3	
20	0	277.26	369	1098	1.03	1113.56	1108	14	1.03E-02	19.7	
21	0	295.10	2971	1558	1.12	1185.14	1176	21	8.25E-02	3.8	
22	0	300.15	473	1082	1.05	1205.41	1198	14	1.31E-02	15.5	
23	0	327.77	474	982	1.28	1316.16	1309	14	1.32E-02	14.7	
24	0	338.19	1886	1072	1.13	1357.98	1347	18	5.24E-02	4.7	
25	0	351.85	4905	1224	1.15	1412.77	1402	21	1.36E-01	2.3	
26	0	409.38	267	562	1.18	1643.53	1637	13	7.41E-03	19.3	
27	0	463.01	515	605	1.33	1858.61	1851	15	1.43E-02	11.4	
28	0	510.69*	1138	943	1.67	2049.86	2036	29	3.16E-02	9.3	
29	0	583.16*	2589	736	1.34	2340.53	2330	25	7.19E-02	3.6	
30	0	609.29*	3485	656	1.41	2445.34	2435	25	9.68E-02	2.7	
31	0	727.29	565	417	1.41	2918.60	2909	19	1.57E-02	9.6	
32	0	768.24	351	493	1.28	3082.86	3072	21	9.74E-03	16.7	
33	0	795.04	392	252	1.19	3190.33	3183	16	1.09E-02	10.4	
34	0	860.62	357	282	1.46	3453.38	3444	19	9.91E-03	12.5	
35	0	911.19*	1826	422	1.66	3656.22	3645	25	5.07E-02	3.6	
36	0	934.58	194	337	1.41	3750.02	3741	21	5.40E-03	21.5	
37	0	969.06*	912	963	1.45	3888.32	3869	30	2.53E-02	9.2	
38	0	1120.30*	658	588	1.89	4494.86	4482	33	1.83E-02	10.5	
39	0	1238.09	246	487	1.88	4967.31	4956	22	6.83E-03	20.4	
40	0	1378.20	140	173	1.82	5529.20	5518	20	3.89E-03	21.4	
41	0	1408.04	141	80	1.64	5648.91	5638	22	3.92E-03	16.1	
42	0	1460.76*	7518	198	1.92	5860.34	5844	33	2.09E-01	1.3	
43	0	1590.19	274	128	6.28	6379.42	6361	40	7.62E-03	12.9	

Sample ID : J47881AA Acquisition date : 11-SEP-2007 06:08:51

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
44	0	1764.40	545	65	2.24	7078.09	7064	28	1.51E-02	5.6	

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

VMS Nuclide Identification Report V3.1 Generated 12-SEP-2007 16:46:37

Configuration : RDND06$DKA100:[GER5.SAMPLE]J47881AA_110970608.CNF;1
Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.4
Sample title : BRC SOIL
Sample date : 28-JUL-2007 10:45:00 Acquisition date : 11-SEP-2007 06:08:51
Sample ID : J47881AA Sample quantity : 341.80 GRAMS
Sample type : Sample geometry : ES200
Elapsed live time: 0 10:00:00.00 Elapsed real time: 0 10:00:15.08 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	7518	10.67*	5.413E-01	2.859E+01	2.859E+01	6.19
TL-208	277.35	369	6.80	2.162E+00	5.519E-01	5.519E-01	20.61
	510.84	1138	21.60	1.323E+00	8.743E-01	8.743E-01	11.03
	583.14	2589	84.20*	1.185E+00	5.700E-01	5.700E-01	6.98
	860.37	357	12.46	8.521E-01	7.382E-01	7.382E-01	14.02
PB-212	238.63	8722	44.60*	2.420E+00	1.775E+00	1.775E+00	6.32
	300.09	473	3.41	2.033E+00	1.497E+00	1.497E+00	16.61
BI-214	609.31	3485	46.30*	1.142E+00	1.448E+00	1.448E+00	6.55
	768.36	351	5.04	9.387E-01	1.628E+00	1.628E+00	17.81
	1120.29	658	15.10	6.795E-01	1.409E+00	1.409E+00	12.15
	1764.49	545	15.80	4.621E-01	1.639E+00	1.639E+00	8.13
PB-214	241.98	2078	7.49	2.398E+00	2.541E+00	2.541E+00	8.45
	295.21	2971	19.20	2.060E+00	1.650E+00	1.650E+00	7.12
	351.92	4905	37.20*	1.793E+00	1.615E+00	1.615E+00	6.38
	785.91	------	1.10	9.208E-01	------ Line Not Found		------
RA-223	154.21	210	5.58	3.234E+00	2.561E-01	2.571E-01	42.12
	269.46	877	13.60*	2.204E+00	6.426E-01	6.452E-01	12.80
	323.87	------	3.88	1.915E+00	------ Line Not Found		------
RA-224DA	238.63	8722	44.60*	2.420E+00	1.775E+00	1.856E+00	6.32
	240.98	2078	3.95	2.398E+00	4.819E+00	5.039E+00	8.45
	583.14	2589	30.25	1.185E+00	1.587E+00	1.659E+00	6.98
	860.37	357	4.48	8.521E-01	2.053E+00	2.147E+00	14.02
RA-226DA	186.21	1662	3.50	2.882E+00	3.620E+00	3.620E+00	9.53
	241.98	2078	7.49	2.398E+00	2.541E+00	2.541E+00	8.45
	295.22	2971	19.20	2.060E+00	1.650E+00	1.650E+00	7.12
	351.92	4905	37.20	1.793E+00	1.615E+00	1.615E+00	6.38
	609.32	3485	46.30*	1.142E+00	1.448E+00	1.448E+00	6.55
	1120.28	658	15.10	6.795E-01	1.409E+00	1.409E+00	12.15
	1238.11	246	5.94	6.235E-01	1.458E+00	1.458E+00	21.28
	1764.49	545	15.80	4.621E-01	1.639E+00	1.639E+00	8.13
AC-228	209.28	699	4.40	2.660E+00	1.312E+00	1.312E+00	13.79
	270.23	877	3.60	2.204E+00	2.428E+00	2.428E+00	12.80
	338.32	1886	11.40	1.851E+00	1.964E+00	1.964E+00	7.57
	911.07	1826	27.70*	8.114E-01	1.784E+00	1.784E+00	7.32
	969.11	912	16.60	7.697E-01	1.568E+00	1.568E+00	11.13
RA-228DA	209.28	699	4.40	2.660E+00	1.312E+00	1.332E+00	13.79

Sample ID : J47881AA Acquisition date : 11-SEP-2007 06:08:51

Nuclide Type: NP

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected PCI/GRAM	Decay Corr PCI/GRAM	1-Sigma %Error
	338.32	1886	11.40	1.851E+00	1.964E+00	1.993E+00	7.57
	911.07	1826	27.70*	8.114E-01	1.784E+00	1.811E+00	7.32
	964.60	------	5.20	7.727E-01	------	Line Not Found	------
	969.11	912	16.60	7.697E-01	1.568E+00	1.591E+00	11.13
TH-228DA	238.63	8722	44.60	2.420E+00	1.775E+00	1.856E+00	6.32
	240.98	2078	3.95	2.398E+00	4.819E+00	5.039E+00	8.45
	583.14	2589	30.25*	1.185E+00	1.587E+00	1.659E+00	6.98
	860.37	357	4.48	8.521E-01	2.053E+00	2.147E+00	14.02
TH-232DA	238.63	8722	44.60	2.420E+00	1.775E+00	1.775E+00	6.32
	338.32	1886	12.40*	1.851E+00	1.805E+00	1.805E+00	7.57
	583.14	2589	30.25	1.185E+00	1.587E+00	1.587E+00	6.98
	911.07	1826	27.70	8.114E-01	1.784E+00	1.784E+00	7.32
	964.60	------	5.20	7.727E-01	------	Line Not Found	------
	969.11	912	16.60	7.697E-01	1.568E+00	1.568E+00	11.13
U-234DA	241.98	2078	7.49	2.398E+00	2.541E+00	2.541E+00	8.45
	295.22	2971	19.20*	2.060E+00	1.650E+00	1.650E+00	7.12
	351.92	4905	37.20	1.793E+00	1.615E+00	1.615E+00	6.38
	609.31	3485	46.30	1.142E+00	1.448E+00	1.448E+00	6.55
U-235HP	143.76	485	10.50*	3.353E+00	3.025E-01	3.025E-01	22.74
	185.71	1662	54.00	2.882E+00	2.346E-01	2.346E-01	9.53
	205.31	------	4.70	2.695E+00	------	Line Not Found	------
U-238DA	241.98	2078	7.49	2.398E+00	2.541E+00	2.541E+00	8.45
	295.22	2971	19.20	2.060E+00	1.650E+00	1.650E+00	7.12
	351.92	4905	37.20*	1.793E+00	1.615E+00	1.615E+00	6.38
	609.31	3485	46.30	1.142E+00	1.448E+00	1.448E+00	6.55
U-238DHP	63.28	1100	3.80*	3.566E+00	1.782E+00	1.782E+00	14.67
	92.59	2381	5.41	3.876E+00	2.493E+00	2.493E+00	8.69

Nuclide Type: FP

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected PCI/GRAM	Decay Corr PCI/GRAM	1-Sigma %Error
CE-141	145.44	485	48.40*	3.353E+00	6.562E-02	1.714E-01	22.74

Flag: "*" = Keyline

Sample ID : J47881AA Acquisition date : 11-SEP-2007 06:08:51

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
0	46.62	775	2380	0.91	188.47	183	12	2.15E-02	14.2	2.63E+00	
0	53.38	284	2578	1.12	215.57	211	10	7.88E-03	34.0	3.11E+00	
1	74.87	4542	4267	0.93	301.77	296	21	1.26E-01	3.1	3.82E+00	
1	77.14	7571	3576	0.91	310.87	296	21	2.10E-01	2.0	3.84E+00	
4	84.21	1315	3062	1.46	339.26	333	35	3.65E-02	8.9	3.88E+00	
4	87.23	2533	3352	1.05	351.35	333	35	7.04E-02	5.1	3.89E+00	T
4	89.98	1897	3124	1.16	362.39	333	35	5.27E-02	6.2	3.89E+00	
0	99.33	608	3223	0.87	399.91	392	16	1.69E-02	21.3	3.84E+00	T
0	105.29	723	2633	1.21	423.80	417	14	2.01E-02	15.5	3.79E+00	T
0	129.07	600	2375	0.76	519.20	514	12	1.67E-02	16.8	3.53E+00	
0	327.77	474	982	1.28	1316.16	1309	14	1.32E-02	14.7	1.90E+00	T
0	409.38	267	562	1.18	1643.53	1637	13	7.41E-03	19.3	1.59E+00	
0	463.01	515	605	1.33	1858.61	1851	15	1.43E-02	11.4	1.43E+00	T
0	727.29	565	417	1.41	2918.60	2909	19	1.57E-02	9.6	9.83E-01	T
0	795.04	392	252	1.19	3190.33	3183	16	1.09E-02	10.4	9.12E-01	T
0	934.58	194	337	1.41	3750.02	3741	21	5.40E-03	21.5	7.94E-01	
0	1378.20	140	173	1.82	5529.20	5518	20	3.89E-03	21.4	5.69E-01	
0	1408.04	141	80	1.64	5648.91	5638	22	3.92E-03	16.1	5.59E-01	T
0	1590.19	274	128	6.28	6379.42	6361	40	7.62E-03	12.9	5.04E-01	

Flags: "T" = Tentatively associated

Sample ID : J47881AA Acquisition date : 11-SEP-2007 06:08:51

Nuclide	Half-life	Half-Life Ratio	Energy	%Abund	Activity (PCI/GRAM)	1-Sigma %Error	Rejected by
NA-22	2.60Y	0.05	511.00	179.68	1.086E-01	11.03	Abun.
			1274.54*	99.94	--- Not Found ---		
		% Abundances Found =		64.26			
SC-46	83.85D	0.54	889.25	99.98	--- Not Found ---		Abun.
			1120.51*	99.99	3.087E-01	12.15	
		% Abundances Found =		50.00			
TC-95M	61.00D	0.74	204.12*	66.20	--- Not Found ---		Abun.
			582.07	29.30	2.732E+00	6.98	
			835.13	26.10	--- Not Found ---		
		% Abundances Found =		24.10			
RU-103	39.35D	1.14	497.08*	89.00	--- Not Found ---		Abun.
			610.33	5.60	2.645E+01	6.55	
		% Abundances Found =		5.92			
RU-106DA	368.20D	0.12	511.85	20.60	9.978E-01	11.03	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	7.850E-01	12.82	
			600.56	17.80	--- Not Found ---		
			635.90	11.32	--- Not Found ---		
		% Abundances Found =		13.67			
BA-133	10.50Y	0.01	81.00	33.00	--- Not Found ---		Abun.
			276.40	6.90	5.483E-01	20.61	
			302.84	17.80	--- Not Found ---		
			356.00*	62.05	--- Not Found ---		
			383.85	8.70	--- Not Found ---		
		% Abundances Found =		5.37			
CS-134	2.06Y	0.06	569.31	15.43	--- Not Found ---		Abun.
			604.70	97.60	--- Not Found ---		
			795.84*	85.40	1.153E-01	12.12	
			801.93	8.73	--- Not Found ---		
		% Abundances Found =		41.22			
LA-140	40.22H	26.86	328.77	20.50	3.265E+07	15.89	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	--- Not Found ---		

Sample ID : J47881AA Acquisition date : 11-SEP-2007 06:08:51

Nuclide	Half-life	Half-Life Ratio	Energy	%Abund	Activity (PCI/GRAM)	1-Sigma %Error	Rejected by
EU-152	13.60Y	0.01	1085.78	10.00	--- Not Found ---		Abun.
			1112.02	13.30	--- Not Found ---		
			1407.95	20.70	2.699E-01	17.21	
		% Abundances Found =		15.50			
EU-155	4.96Y	0.02	42.90	21.16	--- Not Found ---		Abun.
			86.54	30.90	4.712E-01	7.89	
			105.31*	20.70	2.056E-01	16.63	
		% Abundances Found =		70.92			
BI-212	1.41E+10Y	0.00	288.07	0.31	--- Not Found ---		Abun.
			327.96	0.14	3.952E+01	17.75	
			452.83	0.31	--- Not Found ---		
			727.33*	6.58	1.917E+00	11.62	
			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			
NP-237DA	2.14E+06Y	0.00	98.44	17.60	1.976E-01	22.10	Abun.
			311.98*	36.00	--- Not Found ---		
		% Abundances Found =		32.84			

Flag: "*" = Keyline

VMS Nuclide Identification Report V3.1 Generated 12-SEP-2007 16:46:38

Configuration : RDND06$DKA100:[GER5.SAMPLE]J47881AA_110970608.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 : 28-JUL-2007 10:45:00 Acquisition date : 11-SEP-2007 06:08:51
Sample ID : J47881AA Sample quantity : 341.80 GRAMS
Sample type : Sample geometry : ES200
Elapsed live time: 0 10:00:00.00 Elapsed real time: 0 10:00:15.08 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	2.859E+01	1.769E+00	1.946E-01	6.632E-03	146.902
CE-141	1.714E-01	3.898E-02	8.225E-02	2.808E-03	2.084
TL-208	5.700E-01	3.979E-02	2.333E-02	7.576E-04	24.437
PB-212	1.775E+00	1.122E-01	3.820E-02	1.374E-03	46.457
BI-214	1.448E+00	9.480E-02	4.077E-02	1.324E-03	35.509
PB-214	1.615E+00	1.030E-01	4.688E-02	1.516E-03	34.458
RA-223	6.452E-01	8.261E-02	1.209E-01	4.240E-03	5.337
RA-224DA	1.856E+00	1.174E-01	3.995E-02	1.436E-03	46.457
RA-226DA	1.448E+00	9.480E-02	4.077E-02	1.324E-03	35.509
AC-228	1.784E+00	1.307E-01	8.349E-02	3.321E-03	21.373
RA-228DA	1.811E+00	1.326E-01	8.474E-02	3.370E-03	21.373
TH-228DA	1.659E+00	1.158E-01	6.790E-02	2.205E-03	24.437
TH-232DA	1.805E+00	1.366E-01	1.399E-01	4.511E-03	12.901
U-234DA	1.650E+00	1.175E-01	8.752E-02	2.955E-03	18.853
U-235HP	3.025E-01	6.880E-02	1.443E-01	4.909E-03	2.096
U-238DA	1.615E+00	1.030E-01	4.688E-02	1.516E-03	34.458
U-238DHP	1.782E+00	2.616E-01	4.842E-01	1.519E-02	3.681

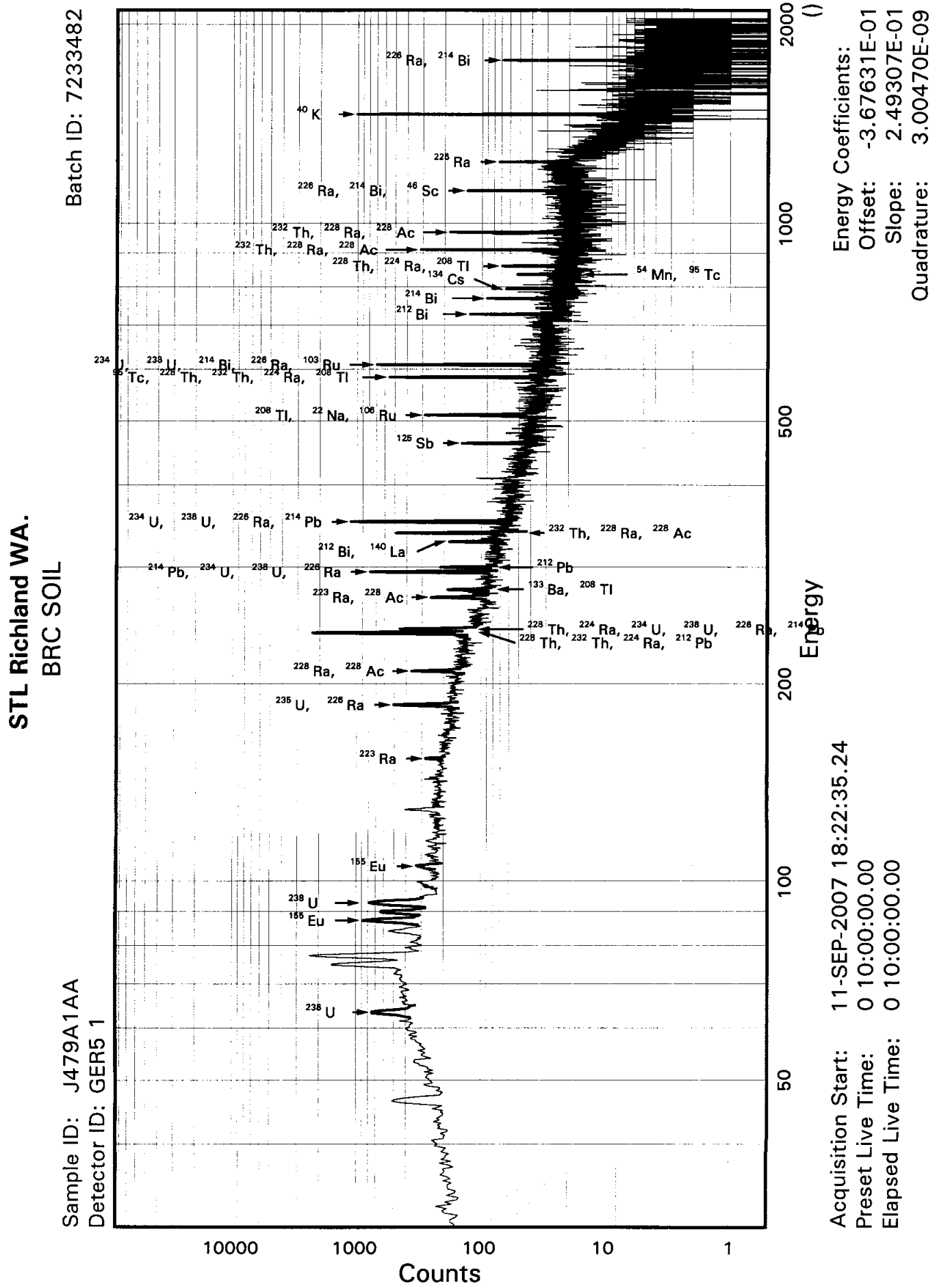
---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (PCI/GRAM)	K.L. Ided	Act error	MDA (PCI/GRAM)	MDA error	Act/MDA
BE-7	-1.645E-01		9.352E-02	3.068E-01	9.969E-03	-0.536
NA-22	-3.757E-03		8.531E-03	2.892E-02	9.702E-04	-0.130
NA-24	-7.367E+12		3.047E+13	Half-Life too short		
SC-46	3.087E-01	+	3.752E-02	7.212E-02	2.480E-03	4.281
CR-51	-3.851E-01		1.646E-01	5.261E-01	1.684E-02	-0.732
MN-54	2.277E-02		7.951E-03	2.786E-02	1.058E-03	0.817
CO-57	-8.114E-02		4.921E-02	1.583E-01	5.303E-03	-0.513
CO-58	-2.151E-02		1.003E-02	3.256E-02	1.211E-03	-0.661
FE-59	-5.476E-02		2.986E-02	9.583E-02	3.367E-03	-0.571
CO-60	-6.661E-03		7.280E-03	2.441E-02	8.333E-04	-0.273
ZN-65	-2.782E-02		2.278E-02	6.170E-02	2.133E-03	-0.451

Sample ID : J47881AA Acquisition date : 11-SEP-2007 06:08:51

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

Nuclide	Key-Line Activity (PCI/GRAM)	K.L. Ided	Act error	MDA (PCI/GRAM)	MDA error	Act/MDA
SE-75	-4.593E-03		1.093E-02	3.485E-02	1.229E-03	-0.132
SR-85	6.596E-02		1.168E-02	3.529E-02	1.132E-03	1.869
Y-88	-8.952E-03		7.123E-03	2.385E-02	7.436E-04	-0.375
NB-94	-8.691E-04		6.672E-03	2.263E-02	8.854E-04	-0.038
NB-95	5.989E-02		2.080E-02	6.306E-02	2.252E-03	0.950
TC-95M	-2.526E-03		1.263E-02	4.235E-02	1.528E-03	-0.060
ZR-95	4.538E-02		2.059E-02	7.198E-02	2.549E-03	0.630
ZRNB-95	8.288E-02		2.781E-02	8.438E-02	3.014E-03	0.982
MO-99	-6.838E-04		5.078E-04	Half-Life too short		
RH-101	-1.397E-03		7.054E-03	2.368E-02	8.532E-04	-0.059
RH-102M	-3.282E-04		5.697E-03	1.927E-02	6.265E-04	-0.017
RU-103	-5.434E-03		1.330E-02	4.467E-02	1.443E-03	-0.122
RU-106DA	4.881E-02		6.480E-02	2.197E-01	7.122E-03	0.222
AG-108M	-5.859E-03		5.835E-03	1.951E-02	6.360E-04	-0.300
AG-110M	-1.021E-02		1.021E-02	3.399E-02	1.344E-03	-0.300
SN-113DA	-2.079E-02		1.094E-02	3.618E-02	1.168E-03	-0.574
SB-124	5.034E-03		1.053E-02	3.496E-02	1.135E-03	0.144
SB-125	4.721E-03		1.878E-02	6.395E-02	2.083E-03	0.074
SN-126DA	2.613E-02		6.824E-03	2.349E-02	7.590E-04	1.112
I-131	-7.183E-02		3.088E-01	1.017E+00	3.291E-02	-0.071
BA-133	5.766E-03		9.868E-03	2.799E-02	9.053E-04	0.206
CS-134	1.153E-01	+	1.398E-02	3.620E-02	1.329E-03	3.184
CS-137DA	-3.627E-02		7.929E-03	2.340E-02	7.522E-04	-1.550
LA-138	-4.329E-04		8.950E-03	3.092E-02	1.055E-03	-0.014
CE-139	1.789E-03		7.303E-03	2.473E-02	8.743E-04	0.072
BA-140	-2.106E-01		2.593E-01	8.616E-01	2.781E-02	-0.244
BALA-140	7.792E-02		1.726E-01	5.124E-01	1.716E-02	0.152
LA-140	9.872E-01		8.796E-01	Half-Life too short		
CE-144	5.160E-02		4.844E-02	1.560E-01	5.194E-03	0.331
CEPR-144	1.050E-01		9.689E-02	3.120E-01	1.039E-02	0.336
PM-144	1.805E-03		6.381E-03	2.149E-02	6.970E-04	0.084
PM-146	1.799E-02		8.236E-03	2.851E-02	9.294E-04	0.631
EU-152	-2.557E-02		1.989E-02	6.457E-02	2.084E-03	-0.396
EU-154	-7.206E-03		2.344E-02	7.972E-02	2.674E-03	-0.090
EU-155	2.056E-01	+	3.418E-02	7.362E-02	2.394E-03	2.792
HF-181	-1.617E-02		1.399E-02	4.644E-02	1.507E-03	-0.348
BI-207	2.474E-03		6.194E-03	2.091E-02	6.785E-04	0.118
BI-210M	-1.306E-02		1.158E-02	3.231E-02	1.137E-03	-0.404
BI-212	1.917E+00	+	2.228E-01	4.943E-01	2.041E-02	3.878
AC-227DA	3.019E-01		5.884E-02	1.694E-01	6.099E-03	1.782
TH-234DA	2.963E+00		1.221E+00	4.248E+00	1.615E-01	0.697
NP-237DA	1.278E-02		1.386E-02	4.643E-02	1.516E-03	0.275
AM-241HP	5.929E-03		1.671E-02	5.188E-02	1.655E-03	0.114


STL Richland WA.
BRC SOIL
Batch ID: 7233482
Sample ID: J479A1AA
Detector ID: GER5 1
Energy Coefficients:
Offset: -3.67631E-01
Slope: 2.49307E-01
Quadrature: 3.00470E-09
Acquisition Start: 11-SEP-2007 18:22:35.24
Preset Live Time: 0 10:00:00.00
Elapsed Live Time: 0 10:00:00.00
Counts
Energy
10000
1000
100
10
1
50
100
200
500
1000
2000
226 Ra, 214 Bi
40 K
228 Ra
226 Ra, 214 Bi, 46 Sc
232 Th, 228 Ra, 228 Ac
232 Th, 228 Ra, 228 Ac
228 Th, 224 Ra, 208 Tl
134 Cs
54 Mn, 95 Tc
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 Pb
228 Th, 232 Th, 224 Ra, 212 Pb
228 Ra, 228 Ac
235 U, 226 Ra
223 Ra
155 Eu
238 U
155 Eu
238 U

SAMPLE IDENTIFICATION: J479A1AA

CONFIGURATION ID: GER5:J479A1AA_110971822
TITLE : BRC SOIL
SAMPLE ID : J479A1AA

REPORT DATE: 12-SEP-07
ACQUIRE DATE: 11-SEP-07 18:22:35
ELAPSED LIVE TIME: 36000.0 Sec
PRESET LIVE TIME: 0 10:00:00

SAMPLE DATE: 28-JUL-2007 09:00:00.00
CALIB DATE: 11-SEP-2007 04:51:22.39
ELAPSED LIVE TIME: 0 10:00:00
ELAPSED REAL TIME: 0 10:00:16

SAMPLE QUANTITY: 3.6320E+02
SAMPLE GEOMETRY: ES200

UNITS: GRAMS
SAMPLE TYPE:

ENERGY OFFSET: -.3676E+00 keV
ENERGY SLOPE: 2.4931E-01 keV/C
ENERGY Q COEFF: 3.0047E-09 keV/C^^2
PEAK SENSITIVITY: 5.000

FWHM OFFSET: 7.8855E-01 keV
FWHM SLOPE: 2.3528E-02 sqr keV
ITERATIONS: 10
GAUSSIAN SENSITIVITY: 80.00 %

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

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

VMS Peak Search Report V1.9 Generated 12-SEP-2007 16:48:28

Configuration : RDND06$DKA100:[GER5.SAMPLE]J479A1AA_110971822.CNF;1
Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6
Sample title : BRC SOIL
Sample date : 28-JUL-2007 09:00:00 Acquisition date : 11-SEP-2007 18:22:35
Sample ID : J479A1AA Sample quantity : 363.20 GRAMS
Sample type : Sample geometry : ES200
Elapsed live time: 0 10:00:00.00 Elapsed real time: 0 10:00:16.22 0.0%
Start energy : 19.58 End energy : 2042.16
Sensitivity : 5.00 Gaussian : 80.00
Critical level : No

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	46.54*	818	2724	0.98	188.17	182	13	2.27E-02	14.6	
2	0	53.24	340	2086	1.15	215.01	211	8	9.44E-03	23.9	
3	0	63.37*	1279	3917	0.94	255.66	251	11	3.55E-02	10.3	
4	1	74.86*	4743	5066	0.96	301.75	296	21	1.32E-01	3.3	1.31E+00
5	1	77.13*	7806	3986	0.91	310.87	296	21	2.17E-01	2.0	
6	0	84.13	1105	3698	1.04	338.91	333	12	3.07E-02	11.4	
7	3	87.20	2654	3681	1.14	351.24	345	36	7.37E-02	4.9	2.19E+00
8	3	89.91	1418	3302	0.90	362.11	345	36	3.94E-02	8.3	
9	3	92.82*	2216	4114	1.30	373.78	345	36	6.16E-02	6.9	
10	0	105.49	529	2236	1.38	424.60	420	10	1.47E-02	17.3	
11	0	129.00	749	2443	0.87	518.91	514	11	2.08E-02	13.3	
12	0	154.05	270	1815	0.81	619.38	616	9	7.49E-03	29.1	
13	0	185.92*	1624	2857	1.18	747.23	738	18	4.51E-02	8.4	
14	0	209.10	1005	2339	0.92	840.19	833	16	2.79E-02	11.2	
15	5	238.57*	9542	1492	1.03	958.40	951	28	2.65E-01	1.4	1.97E+00
16	5	241.59	2492	1811	1.65	970.51	951	28	6.92E-02	4.4	
17	0	270.15	958	1809	1.14	1085.08	1076	20	2.66E-02	11.4	
18	0	277.62	465	1815	1.07	1115.04	1107	20	1.29E-02	23.0	
19	0	295.17	3148	1240	1.03	1185.41	1178	14	8.74E-02	3.0	
20	0	300.00	631	1106	1.05	1204.80	1198	14	1.75E-02	11.9	
21	0	327.85	512	1135	1.19	1316.51	1309	15	1.42E-02	15.0	
22	0	338.21	2077	1307	1.11	1358.05	1346	21	5.77E-02	4.9	
23	0	351.81	5361	1149	1.17	1412.60	1403	19	1.49E-01	2.0	
24	0	409.22	287	956	1.27	1642.88	1636	18	7.98E-03	25.9	
25	0	463.02	544	717	1.28	1858.66	1848	18	1.51E-02	12.3	
26	0	510.68*	1084	1016	1.47	2049.82	2037	27	3.01E-02	9.8	
27	0	583.14*	2684	687	1.31	2340.46	2331	19	7.46E-02	3.2	
28	0	609.30*	3908	713	1.31	2445.37	2432	27	1.09E-01	2.6	
29	0	727.18	693	415	1.73	2918.18	2910	19	1.93E-02	8.0	
30	0	768.32	422	343	1.54	3083.19	3075	16	1.17E-02	11.0	
31	0	794.95	389	385	1.92	3189.98	3178	22	1.08E-02	13.8	
32	0	835.59	64	317	0.60	3353.00	3348	13	1.79E-03	58.3	
33	0	860.29	342	526	1.53	3452.04	3438	26	9.50E-03	19.2	
34	0	911.09*	1860	463	1.39	3655.79	3645	23	5.17E-02	3.5	
35	0	933.89	172	357	1.50	3747.24	3739	19	4.78E-03	23.6	
36	0	968.32*	1121	810	1.54	3885.33	3868	31	3.12E-02	7.1	
37	0	1120.35*	794	482	1.58	4495.10	4481	27	2.21E-02	7.7	
38	0	1238.32	395	491	1.45	4968.23	4956	25	1.10E-02	13.7	
39	0	1378.00	203	154	1.83	5528.41	5518	21	5.63E-03	15.0	
40	0	1460.78*	7718	219	1.84	5860.40	5844	35	2.14E-01	1.3	
41	0	1587.89	126	124	0.42	6370.20	6359	20	3.51E-03	20.5	
42	0	1729.78	147	44	1.78	6939.24	6928	22	4.08E-03	12.8	
43	0	1764.41	656	87	2.11	7078.10	7061	35	1.82E-02	5.4	

Sample ID : J479A1AA Acquisition date : 11-SEP-2007 18:22:35

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
44	0	1847.50	106	48	1.88	7411.35	7400	22	2.96E-03	17.0	

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

VMS Nuclide Identification Report V3.1 Generated 12-SEP-2007 16:48:28

Configuration : RDND06$DKA100:[GER5.SAMPLE]J479A1AA_110971822.CNF;1
Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.4
Sample title : BRC SOIL
Sample date : 28-JUL-2007 09:00:00 Acquisition date : 11-SEP-2007 18:22:35
Sample ID : J479A1AA Sample quantity : 363.20 GRAMS
Sample type : Sample geometry : ES200
Elapsed live time: 0 10:00:00.00 Elapsed real time: 0 10:00:16.22 0.0%
Energy tolerance : 1.50 Half life ratio : 8.00
Errors propagated: Yes Systematic Error : 5.00 %
Efficiency type : Empirical Efficiencies at : Peak Energy
Abundance limit : 80.00

Nuclide Line Activity Report

Nuclide Type: NP

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected PCI/GRAM	Decay Corr PCI/GRAM	1-Sigma %Error
K-40	1460.81	7718	10.67*	5.413E-01	2.762E+01	2.762E+01	6.19
TL-208	277.35	465	6.80	2.159E+00	6.550E-01	6.550E-01	23.84
	510.84	1084	21.60	1.323E+00	7.843E-01	7.843E-01	11.42
	583.14	2684	84.20*	1.185E+00	5.562E-01	5.562E-01	6.78
	860.37	342	12.46	8.524E-01	6.653E-01	6.653E-01	20.18
PB-212	238.63	9542	44.60*	2.420E+00	1.827E+00	1.827E+00	6.31
	300.09	631	3.41	2.034E+00	1.881E+00	1.881E+00	13.32
BI-214	609.31	3908	46.30*	1.142E+00	1.528E+00	1.528E+00	6.49
	768.36	422	5.04	9.387E-01	1.846E+00	1.846E+00	12.56
	1120.29	794	15.10	6.794E-01	1.600E+00	1.600E+00	9.78
	1764.49	656	15.80	4.621E-01	1.858E+00	1.858E+00	8.02
PB-214	241.98	2492	7.49	2.398E+00	2.867E+00	2.867E+00	7.57
	295.21	3148	19.20	2.060E+00	1.645E+00	1.645E+00	6.72
	351.92	5361	37.20*	1.793E+00	1.661E+00	1.661E+00	6.29
	785.91	------	1.10	9.208E-01	------ Line Not Found		------
RA-223	154.21	270	5.58	3.233E+00	3.089E-01	3.101E-01	29.77
	269.46	958	13.60*	2.205E+00	6.601E-01	6.627E-01	12.89
	323.87	------	3.88	1.915E+00	------ Line Not Found		------
RA-224DA	238.63	9542	44.60*	2.420E+00	1.827E+00	1.912E+00	6.31
	240.98	2492	3.95	2.398E+00	5.437E+00	5.689E+00	7.57
	583.14	2684	30.25	1.185E+00	1.548E+00	1.620E+00	6.78
	860.37	342	4.48	8.524E-01	1.850E+00	1.936E+00	20.18
RA-226DA	186.21	1624	3.50	2.881E+00	3.329E+00	3.329E+00	10.44
	241.98	2492	7.49	2.398E+00	2.867E+00	2.868E+00	7.57
	295.22	3148	19.20	2.060E+00	1.645E+00	1.645E+00	6.72
	351.92	5361	37.20	1.793E+00	1.661E+00	1.661E+00	6.29
	609.32	3908	46.30*	1.142E+00	1.528E+00	1.528E+00	6.49
	1120.28	794	15.10	6.794E-01	1.600E+00	1.600E+00	9.78
	1238.11	395	5.94	6.234E-01	2.207E+00	2.207E+00	14.96
	1764.49	656	15.80	4.621E-01	1.858E+00	1.858E+00	8.02
AC-228	209.28	1005	4.40	2.661E+00	1.774E+00	1.774E+00	12.79
	270.23	958	3.60	2.205E+00	2.494E+00	2.494E+00	12.89
	338.32	2077	11.40	1.850E+00	2.035E+00	2.035E+00	7.69
	911.07	1860	27.70*	8.115E-01	1.710E+00	1.710E+00	7.31
	969.11	1121	16.60	7.702E-01	1.813E+00	1.813E+00	9.54
RA-228DA	209.28	1005	4.40	2.661E+00	1.774E+00	1.801E+00	12.79

Sample ID : J479A1AA Acquisition date : 11-SEP-2007 18:22:35

Nuclide Type: NP

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected PCI/GRAM	Decay Corr PCI/GRAM	1-Sigma %Error
	338.32	2077	11.40	1.850E+00	2.035E+00	2.066E+00	7.69
	911.07	1860	27.70*	8.115E-01	1.710E+00	1.736E+00	7.31
	964.60	------	5.20	7.727E-01	------ Line Not Found		------
	969.11	1121	16.60	7.702E-01	1.813E+00	1.841E+00	9.54
TH-228DA	238.63	9542	44.60	2.420E+00	1.827E+00	1.912E+00	6.31
	240.98	2492	3.95	2.398E+00	5.437E+00	5.689E+00	7.57
	583.14	2684	30.25*	1.185E+00	1.548E+00	1.620E+00	6.78
	860.37	342	4.48	8.524E-01	1.850E+00	1.936E+00	20.18
TH-232DA	238.63	9542	44.60	2.420E+00	1.827E+00	1.827E+00	6.31
	338.32	2077	12.40*	1.850E+00	1.871E+00	1.871E+00	7.69
	583.14	2684	30.25	1.185E+00	1.548E+00	1.548E+00	6.78
	911.07	1860	27.70	8.115E-01	1.710E+00	1.710E+00	7.31
	964.60	------	5.20	7.727E-01	------ Line Not Found		------
	969.11	1121	16.60	7.702E-01	1.813E+00	1.813E+00	9.54
U-234DA	241.98	2492	7.49	2.398E+00	2.867E+00	2.867E+00	7.57
	295.22	3148	19.20*	2.060E+00	1.645E+00	1.645E+00	6.72
	351.92	5361	37.20	1.793E+00	1.661E+00	1.661E+00	6.29
	609.31	3908	46.30	1.142E+00	1.528E+00	1.528E+00	6.49
U-238DA	241.98	2492	7.49	2.398E+00	2.867E+00	2.867E+00	7.57
	295.22	3148	19.20	2.060E+00	1.645E+00	1.645E+00	6.72
	351.92	5361	37.20*	1.793E+00	1.661E+00	1.661E+00	6.29
	609.31	3908	46.30	1.142E+00	1.528E+00	1.528E+00	6.49
U-238DHP	63.28	1279	3.80*	3.564E+00	1.953E+00	1.953E+00	11.89
	92.59	2216	5.41	3.877E+00	2.184E+00	2.184E+00	9.12

Nuclide Type: AP

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected PCI/GRAM	Decay Corr PCI/GRAM	1-Sigma %Error
MN-54	834.83	64	99.98*	8.739E-01	1.522E-02	1.684E-02	58.61

Flag: "*" = Keyline

Sample ID : J479A1AA Acquisition date : 11-SEP-2007 18:22:35

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
0	46.54	818	2724	0.98	188.17	182	13	2.27E-02	14.6	2.63E+00	
0	53.24	340	2086	1.15	215.01	211	8	9.44E-03	23.9	3.10E+00	
1	74.86	4743	5066	0.96	301.75	296	21	1.32E-01	3.3	3.82E+00	
1	77.13	7806	3986	0.91	310.87	296	21	2.17E-01	2.0	3.84E+00	
0	84.13	1105	3698	1.04	338.91	333	12	3.07E-02	11.4	3.88E+00	
3	87.20	2654	3681	1.14	351.24	345	36	7.37E-02	4.9	3.89E+00	T
3	89.91	1418	3302	0.90	362.11	345	36	3.94E-02	8.3	3.89E+00	
0	105.49	529	2236	1.38	424.60	420	10	1.47E-02	17.3	3.79E+00	T
0	129.00	749	2443	0.87	518.91	514	11	2.08E-02	13.3	3.54E+00	
0	327.85	512	1135	1.19	1316.51	1309	15	1.42E-02	15.0	1.90E+00	T
0	409.22	287	956	1.27	1642.88	1636	18	7.98E-03	25.9	1.59E+00	
0	463.02	544	717	1.28	1858.66	1848	18	1.51E-02	12.3	1.43E+00	T
0	727.18	693	415	1.73	2918.18	2910	19	1.93E-02	8.0	9.84E-01	T
0	794.95	389	385	1.92	3189.98	3178	22	1.08E-02	13.8	9.12E-01	T
0	933.89	172	357	1.50	3747.24	3739	19	4.78E-03	23.6	7.94E-01	
0	1378.00	203	154	1.83	5528.41	5518	21	5.63E-03	15.0	5.69E-01	
0	1587.89	126	124	0.42	6370.20	6359	20	3.51E-03	20.5	5.04E-01	
0	1729.78	147	44	1.78	6939.24	6928	22	4.08E-03	12.8	4.70E-01	
0	1847.50	106	48	1.88	7411.35	7400	22	2.96E-03	17.0	4.45E-01	

Flags: "T" = Tentatively associated

Sample ID : J479A1AA Acquisition date : 11-SEP-2007 18:22:35

Nuclide	Half-life	Half-Life Ratio	Energy	%Abund	Activity (PCI/GRAM)	1-Sigma %Error	Rejected by
NA-22	2.60Y	0.05	511.00	179.68	9.748E-02	11.42	Abun.
			1274.54*	99.94	--- Not Found ---		
		% Abundances Found =		64.26			
SC-46	83.85D	0.54	889.25	99.98	--- Not Found ---		Abun.
			1120.51*	99.99	3.521E-01	9.78	
		% Abundances Found =		50.00			
TC-95M	61.00D	0.75	204.12*	66.20	--- Not Found ---		Abun.
			582.07	29.30	2.683E+00	6.78	
			835.13	26.10	9.789E-02	58.61	
		% Abundances Found =		45.56			
RU-103	39.35D	1.16	497.08*	89.00	--- Not Found ---		Abun.
			610.33	5.60	2.820E+01	6.49	
		% Abundances Found =		5.92			
RU-106DA	368.20D	0.12	511.85	20.60	8.961E-01	11.42	Abun.
			621.84*	9.80	--- Not Found ---		
		% Abundances Found =		67.76			
SB-125	2.77Y	0.05	176.33	6.89	--- Not Found ---		Abun.
			427.89*	29.33	--- Not Found ---		
			463.38	10.35	7.809E-01	13.68	
			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	6.509E-01	23.84	
			302.84	17.80	--- Not Found ---		
			356.00*	62.05	--- Not Found ---		
			383.85	8.70	--- Not Found ---		
		% Abundances Found =		5.37			
CS-134	2.06Y	0.06	569.31	15.43	--- Not Found ---		Abun.
			604.70	97.60	--- Not Found ---		
			795.84*	85.40	1.077E-01	15.15	
			801.93	8.73	--- Not Found ---		
		% Abundances Found =		41.22			
LA-140	40.22H	27.21	328.77	20.50	4.223E+07	16.12	Decay,Abun.
			487.03	45.50	--- Not Found ---		
			815.85	23.50	--- Not Found ---		
			1596.49*	95.49	--- Not Found ---		
		% Abundances Found =		11.08			
EU-155	4.96Y	0.03	42.90	21.16	--- Not Found ---		Abun.
			86.54	30.90	4.646E-01	7.76	
			105.31*	20.70	1.418E-01	18.30	
		% Abundances Found =		70.92			

Sample ID : J479A1AA Acquisition date : 11-SEP-2007 18:22:35

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	4.018E+01	17.96	
			452.83	0.31	--- Not Found ---		
			727.33*	6.58	2.214E+00	10.29	
			785.37	1.10	--- Not Found ---		
			893.41	0.38	--- Not Found ---		
			952.12	0.17	--- Not Found ---		
			1078.62	0.56	--- Not Found ---		
			1512.70	0.29	--- Not Found ---		
			1620.50	1.49	--- Not Found ---		
			1806.00	0.09	--- Not Found ---		
		% Abundances Found =		58.84			
U-235HP	7.04E+08Y	0.00	143.76*	10.50	--- Not Found ---		Abun.
			185.71	54.00	2.158E-01	10.44	
			205.31	4.70	--- Not Found ---		
		% Abundances Found =		78.03			

Flag: "*" = Keyline

VMS Nuclide Identification Report V3.1 Generated 12-SEP-2007 16:48:29

Configuration : RDND06$DKA100:[GER5.SAMPLE]J479A1AA_110971822.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 : 28-JUL-2007 09:00:00 Acquisition date : 11-SEP-2007 18:22:35
Sample ID : J479A1AA Sample quantity : 363.20 GRAMS
Sample type : Sample geometry : ES200
Elapsed live time: 0 10:00:00.00 Elapsed real time: 0 10:00:16.22 0.0%
Peak Width (FWHM): 3.00 Confidence level : 5.00 %
Energy tolerance : 1.50 Half life ratio : 8.00
Errors propagated: Yes Systematic Error : 5.00 %
Efficiency type : Empirical Efficiencies at : Peak Energy
Abundance limit : 80.00 WTM error limit : 3.00

Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Activity (PCI/GRAM)	Act error	MDA (PCI/GRAM)	MDA error	Act/MDA
K-40	2.762E+01	1.709E+00	1.799E-01	6.130E-03	153.570
MN-54	1.684E-02	9.870E-03	2.611E-02	9.917E-04	0.645
TL-208	5.562E-01	3.771E-02	2.256E-02	7.328E-04	24.651
PB-212	1.827E+00	1.152E-01	3.830E-02	1.377E-03	47.705
BI-214	1.528E+00	9.915E-02	4.301E-02	1.396E-03	35.524
PB-214	1.661E+00	1.046E-01	4.615E-02	1.492E-03	35.993
RA-223	6.627E-01	8.542E-02	1.181E-01	4.142E-03	5.612
RA-224DA	1.912E+00	1.206E-01	4.008E-02	1.441E-03	47.705
RA-226DA	1.528E+00	9.915E-02	4.301E-02	1.396E-03	35.523
AC-228	1.710E+00	1.250E-01	8.324E-02	3.311E-03	20.545
RA-228DA	1.736E+00	1.269E-01	8.450E-02	3.361E-03	20.545
TH-228DA	1.620E+00	1.098E-01	6.571E-02	2.134E-03	24.651
TH-232DA	1.871E+00	1.438E-01	1.415E-01	4.562E-03	13.218
U-234DA	1.645E+00	1.106E-01	8.781E-02	2.965E-03	18.738
U-238DA	1.661E+00	1.046E-01	4.615E-02	1.492E-03	35.993
U-238DHP	1.953E+00	2.322E-01	4.821E-01	1.512E-02	4.051

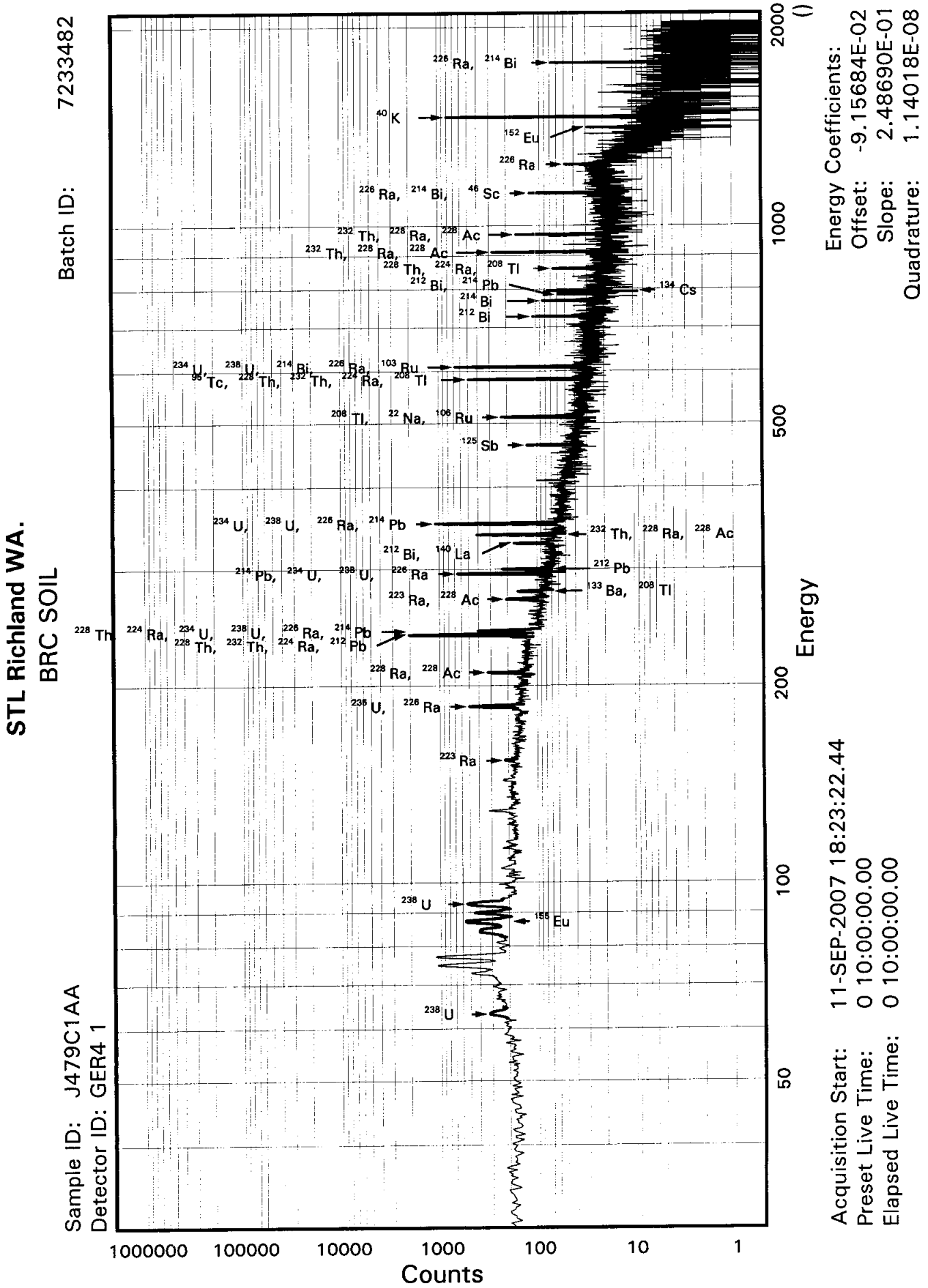
---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (PCI/GRAM)	K.L. Ided	Act error	MDA (PCI/GRAM)	MDA error	Act/MDA
BE-7	-5.696E-02		9.493E-02	3.179E-01	1.033E-02	-0.179
NA-22	5.688E-03		8.044E-03	2.791E-02	9.362E-04	0.204
NA-24	6.308E+13		5.764E+13	Half-Life too short		
SC-46	3.521E-01	+	3.442E-02	7.189E-02	2.472E-03	4.898
CR-51	-1.061E-01		1.632E-01	5.365E-01	1.717E-02	-0.198
CO-57	-2.812E-02		4.851E-02	1.579E-01	5.291E-03	-0.178
CO-58	-2.123E-02		1.017E-02	3.307E-02	1.230E-03	-0.642
FE-59	-2.094E-02		2.866E-02	9.458E-02	3.324E-03	-0.221
CO-60	2.000E-03		7.146E-03	2.468E-02	8.426E-04	0.081
ZN-65	-1.042E-02		2.196E-02	6.099E-02	2.109E-03	-0.171
SE-75	3.698E-04		1.062E-02	3.406E-02	1.201E-03	0.011
SR-85	3.619E-02		1.149E-02	3.423E-02	1.098E-03	1.057

Sample ID : J479A1AA Acquisition date : 11-SEP-2007 18:22:35

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

Nuclide	Key-Line Activity (PCI/GRAM)	K.L. Ided	Act error	MDA (PCI/GRAM)	MDA error	Act/MDA
Y-88	4.308E-03		7.389E-03	2.666E-02	8.312E-04	0.162
NB-94	-7.368E-03		6.531E-03	2.167E-02	8.478E-04	-0.340
NB-95	5.860E-02		1.984E-02	6.019E-02	2.150E-03	0.974
TC-95M	1.262E-02		1.304E-02	4.236E-02	1.529E-03	0.298
ZR-95	1.227E-02		1.888E-02	6.507E-02	2.304E-03	0.189
ZRNB-95	8.170E-02		2.642E-02	8.023E-02	2.866E-03	1.018
MO-99	-3.349E-04		5.045E-04	Half-Life too short		
RH-101	8.200E-03		6.978E-03	2.358E-02	8.497E-04	0.348
RH-102M	6.966E-03		5.737E-03	1.966E-02	6.390E-04	0.354
RU-103	1.031E-02		1.324E-02	4.514E-02	1.458E-03	0.228
RU-106DA	-3.984E-02		6.644E-02	2.199E-01	7.130E-03	-0.181
AG-108M	-1.512E-02		5.911E-03	1.917E-02	6.247E-04	-0.789
AG-110M	-4.116E-03		1.019E-02	3.432E-02	1.357E-03	-0.120
SN-113DA	-6.667E-03		1.062E-02	3.585E-02	1.157E-03	-0.186
SB-124	6.970E-04		1.122E-02	3.476E-02	1.129E-03	0.020
SB-125	-4.205E-03		1.848E-02	6.250E-02	2.036E-03	-0.067
SN-126DA	2.281E-02		6.593E-03	2.263E-02	7.312E-04	1.008
I-131	2.259E-01		3.180E-01	1.058E+00	3.423E-02	0.214
BA-133	7.279E-03		9.392E-03	2.671E-02	8.639E-04	0.273
CS-134	1.077E-01	+	1.632E-02	3.452E-02	1.267E-03	3.119
CS-137DA	-2.707E-02		7.835E-03	2.412E-02	7.753E-04	-1.123
LA-138	-1.625E-02		9.004E-03	2.913E-02	9.941E-04	-0.558
CE-139	-3.342E-03		7.300E-03	2.458E-02	8.689E-04	-0.136
BA-140	1.977E-02		2.617E-01	8.815E-01	2.845E-02	0.022
BALA-140	-9.994E-01		1.863E-01	4.937E-01	1.654E-02	-2.024
LA-140	-5.950E+00		1.194E+00	Half-Life too short		
CE-141	-4.460E-03		2.614E-02	8.519E-02	2.909E-03	-0.052
CE-144	6.081E-03		4.735E-02	1.551E-01	5.165E-03	0.039
CEPR-144	1.290E-02		9.471E-02	3.102E-01	1.033E-02	0.042
PM-144	7.801E-04		6.502E-03	2.179E-02	7.067E-04	0.036
PM-146	1.854E-02		8.277E-03	2.857E-02	9.312E-04	0.649
EU-152	-2.681E-03		1.946E-02	6.421E-02	2.073E-03	-0.042
EU-154	1.254E-02		2.213E-02	7.657E-02	2.568E-03	0.164
EU-155	1.418E-01	+	2.595E-02	7.277E-02	2.366E-03	1.949
HF-181	1.477E-02		1.358E-02	4.646E-02	1.508E-03	0.318
BI-207	1.156E-03		5.997E-03	2.017E-02	6.546E-04	0.057
BI-210M	-3.941E-03		1.108E-02	3.132E-02	1.103E-03	-0.126
BI-212	2.214E+00	+	2.279E-01	4.946E-01	2.042E-02	4.477
AC-227DA	3.447E-01		5.942E-02	1.692E-01	6.089E-03	2.038
TH-234DA	4.915E+00		1.150E+00	4.038E+00	1.535E-01	1.217
U-235HP	9.269E-02		4.565E-02	1.499E-01	5.101E-03	0.618
NP-237DA	-3.217E-02		1.399E-02	4.479E-02	1.462E-03	-0.718
AM-241HP	2.595E-02		1.602E-02	5.133E-02	1.637E-03	0.506


STL Richland WA.
BRC SOIL
Batch ID: 7233482
Sample ID: J479C1AA
Detector ID: GER4 1
Energy Coefficients:
Offset: -9.15684E-02
Slope: 2.48690E-01
Quadrature: 1.14018E-08
Acquisition Start: 11-SEP-2007 18:23:22.44
Preset Live Time: 0 10:00:00.00
Elapsed Live Time: 0 10:00:00.00
Counts
Energy
1000000
100000
10000
1000
100
10
1
50
100
200
500
1000
2000
226 Ra, 214 Bi
40 K
152 Eu
228 Ra
226 Ra, 214 Bi, 46 Sc
232 Th, 228 Ra, 228 Ac
232 Th, 228 Ra, 228 Ac
228 Th, 224 Ra, 208 Tl
212 Bi, 214 Pb
214 Bi
212 Bi
134 Cs
234 U, 238 U, 214 Bi, 226 Ra, 103 Ru
95 Tc, 228 Th, 232 Th, 224 Ra, 208 Tl
208 Tl, 22 Na, 106 Ru
125 Sb
234 U, 238 U, 226 Ra, 214 Pb
232 Th, 228 Ra, 228 Ac
212 Bi, 140 La
212 Pb
214 Pb, 234 U, 238 U, 226 Ra
133 Ba, 208 Tl
223 Ra, 228 Ac
228 Th, 224 Ra, 234 U, 228 Th, 238 U, 232 Th, 226 Ra, 224 Ra, 214 Pb, 212 Pb
228 Ra, 228 Ac
235 U, 226 Ra
223 Ra
238 U
155 Eu
238 U

SAMPLE IDENTIFICATION: J479C1AA

CONFIGURATION ID: GER4:J479C1AA_110971823
TITLE : BRC SOIL
SAMPLE ID : J479C1AA

REPORT DATE: 12-SEP-07
ACQUIRE DATE: 11-SEP-07 18:23:22
ELAPSED LIVE TIME: 36000.0 Sec
PRESET LIVE TIME: 0 10:00:00

SAMPLE DATE: 28-JUL-2007 09:00:00.00
CALIB DATE: 11-SEP-2007 05:16:13.36
ELAPSED LIVE TIME: 0 10:00:00
ELAPSED REAL TIME: 0 10:00:19

SAMPLE QUANTITY: 3.4010E+02
SAMPLE GEOMETRY: S200

UNITS: GRAMS
SAMPLE TYPE:

ENERGY OFFSET: -.9157E-01 keV
ENERGY SLOPE: 2.4869E-01 keV/C
ENERGY Q COEFF: 1.1402E-08 keV/C^^2
PEAK SENSITIVITY: 5.000

FWHM OFFSET: 3.4232E-01 keV
FWHM SLOPE: 4.3628E-02 sqr keV
ITERATIONS: 10
GAUSSIAN SENSITIVITY: 60.00 %

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

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

VMS Peak Search Report V1.9 Generated 12-SEP-2007 16:50:07

Configuration : $DISK1:[GER4.SAMPLE]J479C1AA_110971823.CNF;1
Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6
Sample title : BRC SOIL
Sample date : 28-JUL-2007 09:00:00 Acquisition date : 11-SEP-2007 18:23:22
Sample ID : J479C1AA Sample quantity : 340.10 GRAMS
Sample type : Sample geometry : S200
Elapsed live time: 0 10:00:00.00 Elapsed real time: 0 10:00:19.84 0.1%
Start energy : 19.80 End energy : 2037.94
Sensitivity : 5.00 Gaussian : 60.00
Critical level : No

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	63.21*	369	2343	1.03	254.52	250	11	1.02E-02	27.2	
2	5	72.82*	745	3451	1.12	293.18	284	33	2.07E-02	17.7	2.14E+00
3	5	74.92*	2686	2617	0.91	301.64	284	33	7.46E-02	4.4	
4	5	77.13	3435	2273	0.86	310.50	284	33	9.54E-02	3.2	
5	7	84.56*	809	3245	1.45	340.40	333	35	2.25E-02	16.4	8.02E-01
6	7	87.23*	1526	2725	1.06	351.11	333	35	4.24E-02	7.8	
7	7	89.97	953	2238	0.93	362.15	333	35	2.65E-02	10.2	
8	0	92.84*	1562	2831	1.42	373.67	368	13	4.34E-02	7.7	
9	0	129.13	460	1829	0.83	519.59	515	10	1.28E-02	18.0	
10	0	153.96	150	1374	0.81	619.45	616	8	4.15E-03	43.7	
11	0	185.94*	1382	2078	1.18	748.00	742	13	3.84E-02	7.7	
12	0	209.29	712	1858	0.85	841.91	835	14	1.98E-02	13.4	
13	5	238.59*	8134	1464	0.99	959.70	953	28	2.26E-01	1.5	3.96E+00
14	5	241.61	2027	1952	1.64	971.85	953	28	5.63E-02	5.8	
15	0	270.04	671	1593	1.29	1086.17	1079	18	1.86E-02	14.5	
16	0	277.42	364	1012	1.43	1115.86	1110	12	1.01E-02	18.3	
17	0	295.16*	2802	1175	1.13	1187.16	1179	16	7.78E-02	3.4	
18	0	300.07	512	1229	0.80	1206.89	1200	16	1.42E-02	15.9	
19	0	327.94	379	870	0.98	1318.95	1313	12	1.05E-02	16.4	
20	0	338.23*	1551	907	1.07	1360.34	1353	14	4.31E-02	5.1	
21	0	351.82*	4919	1063	1.11	1414.98	1407	18	1.37E-01	2.2	
22	0	409.40	215	800	1.19	1646.45	1637	16	5.98E-03	30.2	
23	0	462.94	430	563	1.20	1861.70	1855	14	1.19E-02	12.7	
24	0	510.66*	811	998	1.74	2053.58	2044	27	2.25E-02	12.7	
25	0	583.09*	2412	607	1.38	2344.77	2335	20	6.70E-02	3.6	
26	0	609.23*	3435	724	1.32	2449.85	2440	20	9.54E-02	2.7	
27	0	727.31	594	638	1.65	2924.55	2913	26	1.65E-02	10.6	
28	0	768.06	411	455	1.39	3088.37	3077	21	1.14E-02	12.1	
29	0	785.58	200	311	1.21	3158.79	3151	16	5.55E-03	18.3	
30	0	795.14	304	524	1.20	3197.22	3184	24	8.45E-03	17.8	
31	0	860.61	315	370	1.35	3460.40	3451	20	8.74E-03	14.0	
32	0	911.05*	1607	418	1.54	3663.14	3652	24	4.46E-02	4.0	
33	0	933.88	215	360	1.45	3754.91	3744	22	5.99E-03	20.2	
34	0	968.48	1013	852	1.60	3893.99	3876	31	2.81E-02	7.8	
35	0	1120.12	813	545	1.95	4503.53	4488	29	2.26E-02	7.8	
36	0	1237.74	174	522	1.67	4976.28	4967	22	4.83E-03	29.3	
37	0	1377.83	213	202	1.93	5539.29	5521	33	5.90E-03	18.4	
38	0	1407.61	118	131	1.27	5659.02	5647	21	3.27E-03	22.7	
39	0	1460.57*	7134	263	2.25	5871.83	5853	35	1.98E-01	1.4	
40	0	1729.47	127	76	1.47	6952.49	6938	31	3.54E-03	17.3	
41	0	1764.21*	549	98	1.92	7092.07	7074	34	1.53E-02	6.4	

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

VMS Nuclide Identification Report V3.0 Generated 12-SEP-2007 16:50:08

Configuration : $DISK1:[GER4.SAMPLE]J479C1AA_110971823.CNF;1
Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.3
Sample title : BRC SOIL
Sample date : 28-JUL-2007 09:00:00 Acquisition date : 11-SEP-2007 18:23:22
Sample ID : J479C1AA Sample quantity : 340.10 GRAMS
Sample type : Sample geometry : S200
Elapsed live time: 0 10:00:00.00 Elapsed real time: 0 10:00:19.84 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	7134	10.67*	5.415E-01	2.725E+01	2.725E+01	6.42
TL-208	277.35	364	6.80	2.028E+00	5.830E-01	5.830E-01	19.42
	510.84	811	21.60	1.302E+00	6.367E-01	6.367E-01	14.07
	583.14	2412	84.20*	1.176E+00	5.379E-01	5.379E-01	7.12
	860.37	315	12.46	8.554E-01	6.519E-01	6.519E-01	15.53
PB-212	238.63	8134	44.60*	2.244E+00	1.794E+00	1.794E+00	6.63
	300.09	512	3.41	1.921E+00	1.726E+00	1.726E+00	17.28
BI-214	609.31	3435	46.30*	1.136E+00	1.442E+00	1.442E+00	6.72
	768.36	411	5.04	9.417E-01	1.913E+00	1.913E+00	13.69
	1120.29	813	15.10	6.799E-01	1.748E+00	1.748E+00	9.98
	1764.49	549	15.80	4.702E-01	1.632E+00	1.632E+00	8.79
PB-214	241.98	2027	7.49	2.226E+00	2.683E+00	2.683E+00	8.69
	295.21	2802	19.20	1.943E+00	1.658E+00	1.658E+00	7.51
	351.92	4919	37.20*	1.714E+00	1.703E+00	1.703E+00	6.78
	785.91	200	1.10	9.241E-01	4.338E+00	4.338E+00	19.48
RA-223	154.21	150	5.58	2.794E+00	2.117E-01	2.126E-01	44.16
	269.46	671	13.60*	2.066E+00	5.271E-01	5.292E-01	15.90
	323.87	------	3.88	1.819E+00	------	Line Not Found	------
RA-224DA	238.63	8134	44.60*	2.244E+00	1.794E+00	1.877E+00	6.63
	240.98	2027	3.95	2.226E+00	5.088E+00	5.324E+00	8.69
	583.14	2412	30.25	1.176E+00	1.497E+00	1.567E+00	7.12
	860.37	315	4.48	8.554E-01	1.813E+00	1.897E+00	15.53
RA-226DA	186.21	1382	3.50	2.594E+00	3.359E+00	3.359E+00	9.92
	241.98	2027	7.49	2.226E+00	2.683E+00	2.683E+00	8.69
	295.22	2802	19.20	1.943E+00	1.658E+00	1.658E+00	7.51
	351.92	4919	37.20	1.714E+00	1.703E+00	1.703E+00	6.78
	609.32	3435	46.30*	1.136E+00	1.442E+00	1.442E+00	6.72
	1120.28	813	15.10	6.799E-01	1.748E+00	1.748E+00	9.98
	1238.11	174	5.94	6.230E-01	1.038E+00	1.038E+00	29.97
	1764.49	549	15.80	4.702E-01	1.632E+00	1.632E+00	8.79
AC-228	209.28	712	4.40	2.433E+00	1.467E+00	1.467E+00	14.83
	270.23	671	3.60	2.066E+00	1.991E+00	1.991E+00	15.90
	338.32	1551	11.40	1.764E+00	1.702E+00	1.702E+00	8.30
	911.07	1607	27.70*	8.146E-01	1.572E+00	1.572E+00	7.98
	969.11	1013	16.60	7.725E-01	1.743E+00	1.743E+00	10.33
RA-228DA	209.28	712	4.40	2.433E+00	1.467E+00	1.489E+00	14.83

Sample ID : J479C1AA Acquisition date : 11-SEP-2007 18:23:22

Nuclide Type: NP

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected PCI/GRAM	Decay Corr PCI/GRAM	1-Sigma %Error
	338.32	1551	11.40	1.764E+00	1.702E+00	1.728E+00	8.30
	911.07	1607	27.70*	8.146E-01	1.572E+00	1.596E+00	7.98
	964.60	------	5.20	7.752E-01	------ Line Not Found		------
	969.11	1013	16.60	7.725E-01	1.743E+00	1.770E+00	10.33
TH-228DA	238.63	8134	44.60	2.244E+00	1.794E+00	1.877E+00	6.63
	240.98	2027	3.95	2.226E+00	5.088E+00	5.324E+00	8.69
	583.14	2412	30.25*	1.176E+00	1.497E+00	1.567E+00	7.12
	860.37	315	4.48	8.554E-01	1.813E+00	1.897E+00	15.53
TH-232DA	238.63	8134	44.60	2.244E+00	1.794E+00	1.794E+00	6.63
	338.32	1551	12.40*	1.764E+00	1.565E+00	1.565E+00	8.30
	583.14	2412	30.25	1.176E+00	1.497E+00	1.497E+00	7.12
	911.07	1607	27.70	8.146E-01	1.572E+00	1.572E+00	7.98
	964.60	------	5.20	7.752E-01	------ Line Not Found		------
	969.11	1013	16.60	7.725E-01	1.743E+00	1.743E+00	10.33
U-234DA	241.98	2027	7.49	2.226E+00	2.683E+00	2.683E+00	8.69
	295.22	2802	19.20*	1.943E+00	1.658E+00	1.658E+00	7.51
	351.92	4919	37.20	1.714E+00	1.703E+00	1.703E+00	6.78
	609.31	3435	46.30	1.136E+00	1.442E+00	1.442E+00	6.72
U-238DA	241.98	2027	7.49	2.226E+00	2.683E+00	2.683E+00	8.69
	295.22	2802	19.20	1.943E+00	1.658E+00	1.658E+00	7.51
	351.92	4919	37.20*	1.714E+00	1.703E+00	1.703E+00	6.78
	609.31	3435	46.30	1.136E+00	1.442E+00	1.442E+00	6.72
U-238DHP	63.28	369	3.80*	1.026E+00	2.087E+00	2.087E+00	27.99
	92.59	1562	5.41	2.391E+00	2.665E+00	2.665E+00	10.29

Flag: "*" = Keyline

Unidentified Energy Lines
Sample ID : J479C1AA

Acquisition date : 11-SEP-2007 18:23:22

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
5	72.82	745	3451	1.12	293.18	284	33	2.07E-02	17.7	1.56E+00	
5	74.92	2686	2617	0.91	301.64	284	33	7.46E-02	4.4	1.67E+00	
5	77.13	3435	2273	0.86	310.50	284	33	9.54E-02	3.2	1.78E+00	
7	84.56	809	3245	1.45	340.40	333	35	2.25E-02	16.4	2.11E+00	
7	87.23	1526	2725	1.06	351.11	333	35	4.24E-02	7.8	2.21E+00	T
7	89.97	953	2238	0.93	362.15	333	35	2.65E-02	10.2	2.30E+00	
0	129.13	460	1829	0.83	519.59	515	10	1.28E-02	18.0	2.85E+00	
0	327.94	379	870	0.98	1318.95	1313	12	1.05E-02	16.4	1.80E+00	T
0	409.40	215	800	1.19	1646.45	1637	16	5.98E-03	30.2	1.54E+00	
0	462.94	430	563	1.20	1861.70	1855	14	1.19E-02	12.7	1.40E+00	T
0	727.31	594	638	1.65	2924.55	2913	26	1.65E-02	10.6	9.85E-01	T
0	795.14	304	524	1.20	3197.22	3184	24	8.45E-03	17.8	9.15E-01	T
0	933.88	215	360	1.45	3754.91	3744	22	5.99E-03	20.2	7.97E-01	
0	1377.83	213	202	1.93	5539.29	5521	33	5.90E-03	18.4	5.68E-01	
0	1407.61	118	131	1.27	5659.02	5647	21	3.27E-03	22.7	5.58E-01	T
0	1729.47	127	76	1.47	6952.49	6938	31	3.54E-03	17.3	4.77E-01	

Flags: "T" = Tentatively associated

Sample ID : J479C1AA Acquisition date : 11-SEP-2007 18:23:22

Nuclide	Half-life	Half-Life Ratio	Energy	%Abund	Activity (PCI/GRAM)	1-Sigma %Error	Rejected by
NA-22	2.60Y	0.05	511.00	179.68	7.913E-02	14.07	Abun.
			1274.54*	99.94	--- Not Found ---		
		% Abundances Found =		64.26			
SC-46	83.85D	0.54	889.25	99.98	--- Not Found ---		Abun.
			1120.51*	99.99	3.849E-01	9.98	
		% Abundances Found =		50.00			
TC-95M	61.00D	0.75	204.12*	66.20	--- Not Found ---		Abun.
			582.07	29.30	2.595E+00	7.12	
			835.13	26.10	--- Not Found ---		
		% Abundances Found =		24.10			
RU-103	39.35D	1.16	497.08*	89.00	--- Not Found ---		Abun.
			610.33	5.60	2.662E+01	6.72	
		% Abundances Found =		5.92			
RU-106DA	368.20D	0.12	511.85	20.60	7.275E-01	14.07	Abun.
			621.84*	9.80	--- Not Found ---		
		% Abundances Found =		67.76			
SB-125	2.77Y	0.05	176.33	6.89	--- Not Found ---		Abun.
			427.89*	29.33	--- Not Found ---		
			463.38	10.35	6.748E-01	14.07	
			600.56	17.80	--- Not Found ---		
			635.90	11.32	--- Not Found ---		
		% Abundances Found =		13.67			
BA-133	10.50Y	0.01	81.00	33.00	--- Not Found ---		Abun.
			276.40	6.90	5.793E-01	19.42	
			302.84	17.80	--- Not Found ---		
			356.00*	62.05	--- Not Found ---		
			383.85	8.70	--- Not Found ---		
		% Abundances Found =		5.37			
CS-134	2.06Y	0.06	569.31	15.43	--- Not Found ---		Abun.
			604.70	97.60	--- Not Found ---		
			795.84*	85.40	8.960E-02	18.96	
			801.93	8.73	--- Not Found ---		
		% Abundances Found =		41.22			
LA-140	40.22H	27.21	328.77	20.50	3.513E+07	17.67	Decay,Abun.
			487.03	45.50	--- Not Found ---		
			815.85	23.50	--- Not Found ---		
			1596.49*	95.49	--- Not Found ---		
		% Abundances Found =		11.08			
EU-152	13.60Y	0.01	121.78	28.40	--- Not Found ---		Abun.
			244.67	7.49	--- Not Found ---		
			344.27*	26.50	--- Not Found ---		
			778.89	12.74	--- Not Found ---		
			964.01	14.40	--- Not Found ---		

Sample ID : J479C1AA Acquisition date : 11-SEP-2007 18:23:22

Nuclide	Half-life	Half-Life Ratio	Energy	%Abund	Activity (PCI/GRAM)	1-Sigma %Error	Rejected by
EU-152	13.60Y	0.01	1085.78	10.00	--- Not Found ---		Abun.
			1112.02	13.30	--- Not Found ---		
			1407.95	20.70	2.260E-01	23.60	
		% Abundances Found =		15.50			
EU-155	4.96Y	0.03	42.90	21.16	--- Not Found ---		Abun.
			86.54	30.90	5.022E-01	10.44	
			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	3.341E+01	19.36	
			452.83	0.31	--- Not Found ---		
			727.33*	6.58	2.021E+00	12.61	
			785.37	1.10	4.338E+00	19.67	
			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			
U-235HP	7.04E+08Y	0.00	143.76*	10.50	--- Not Found ---		Abun.
			185.71	54.00	2.177E-01	9.92	
			205.31	4.70	--- Not Found ---		
		% Abundances Found =		78.03			

Flag: "*" = Keyline

VMS Nuclide Identification Report V3.0 Generated 12-SEP-2007 16:50:10

Configuration : $DISK1:[GER4.SAMPLE]J479C1AA_110971823.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 : 28-JUL-2007 09:00:00
Sample ID : J479C1AA
Sample type :
Elapsed live time: 0 10:00:00.00
Peak Width (FWHM): 3.00
Energy tolerance : 1.50
Errors propagated: Yes
Efficiency type : Empirical
Abundance limit : 80.00

Acquisition date : 11-SEP-2007 18:23:22
Sample quantity : 340.10 GRAMS
Sample geometry : S200
Elapsed real time: 0 10:00:19.84 0.1%
Confidence level : 5.00 %
Half life ratio : 8.00
Systematic Error : 5.00 %
Efficiencies at : Peak Energy
WTM error limit : 3.00

Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Activity (PCI/GRAM)	Act error	MDA (PCI/GRAM)	MDA error	Act/MDA
K-40	2.725E+01	1.750E+00	2.193E-01	8.322E-03	124.248
TL-208	5.379E-01	3.828E-02	2.516E-02	9.089E-04	21.376
PB-212	1.794E+00	1.189E-01	4.028E-02	1.645E-03	44.538
BI-214	1.442E+00	9.687E-02	4.650E-02	1.681E-03	31.005
PB-214	1.703E+00	1.154E-01	4.715E-02	1.899E-03	36.111
RA-223	5.292E-01	8.414E-02	1.267E-01	5.419E-03	4.178
RA-224DA	1.877E+00	1.244E-01	4.214E-02	1.721E-03	44.538
RA-226DA	1.442E+00	9.688E-02	4.651E-02	1.681E-03	31.004
AC-228	1.572E+00	1.255E-01	8.935E-02	4.282E-03	17.596
RA-228DA	1.596E+00	1.274E-01	9.071E-02	4.347E-03	17.596
TH-228DA	1.567E+00	1.115E-01	7.329E-02	2.647E-03	21.376
TH-232DA	1.565E+00	1.299E-01	1.484E-01	6.330E-03	10.546
U-234DA	1.658E+00	1.245E-01	8.958E-02	3.964E-03	18.513
U-238DA	1.703E+00	1.154E-01	4.715E-02	1.899E-03	36.111
U-238DHP	2.087E+00	5.842E-01	1.122E+00	4.761E-02	1.860

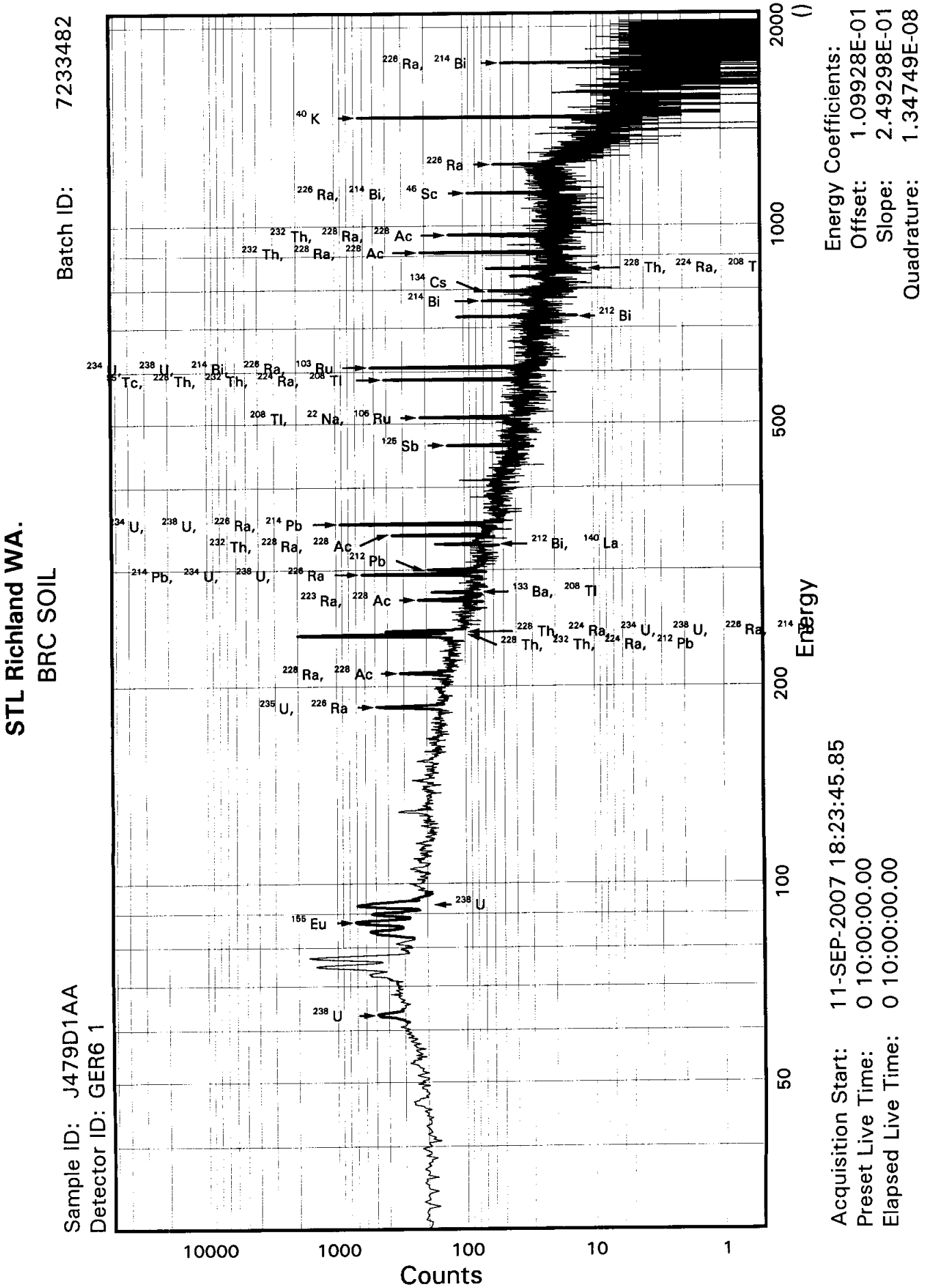
---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (PCI/GRAM)	K.L. Ided	Act error	MDA (PCI/GRAM)	MDA error	Act/MDA
BE-7	7.305E-02		9.871E-02	3.370E-01	1.172E-02	0.217
NA-22	-2.228E-02		1.004E-02	3.193E-02	1.178E-03	-0.698
SC-46	3.849E-01	+	3.841E-02	7.829E-02	2.939E-03	4.917
CR-51	1.282E-01		1.669E-01	5.677E-01	2.583E-02	0.226
MN-54	-1.213E-03		8.739E-03	2.966E-02	1.332E-03	-0.041
CO-57	3.067E-03		5.038E-02	1.668E-01	6.658E-03	0.018
CO-58	-1.990E-02		1.051E-02	3.454E-02	1.507E-03	-0.576
FE-59	-4.285E-02		3.170E-02	1.049E-01	4.080E-03	-0.409
CO-60	-1.068E-02		7.976E-03	2.651E-02	1.023E-03	-0.403
ZN-65	2.068E-02		2.449E-02	7.133E-02	2.701E-03	0.290
SE-75	6.734E-03		1.114E-02	3.695E-02	1.570E-03	0.182
SR-85	4.953E-02		1.204E-02	3.605E-02	1.285E-03	1.374
Y-88	8.338E-03		7.604E-03	2.772E-02	8.847E-04	0.301

Sample ID : J479C1AA Acquisition date : 11-SEP-2007 18:23:22

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

Nuclide	Key-Line Activity (PCI/GRAM)	K.L. Ided	Act error	MDA (PCI/GRAM)	MDA error	Act/MDA
NB-94	9.624E-04		6.984E-03	2.382E-02	1.117E-03	0.040
NB-95	1.051E-01		2.307E-02	6.876E-02	2.837E-03	1.528
TC-95M	1.101E-02		1.278E-02	4.319E-02	1.664E-03	0.255
ZR-95	2.769E-02		2.166E-02	7.372E-02	3.007E-03	0.376
ZRNB-95	1.434E-01		3.073E-02	9.157E-02	3.779E-03	1.566
RH-101	1.123E-02		7.136E-03	2.422E-02	9.232E-04	0.464
RH-102M	-4.708E-03		6.187E-03	2.070E-02	7.188E-04	-0.227
RU-103	2.847E-03		1.430E-02	4.839E-02	1.707E-03	0.059
RU-106DA	-6.143E-02		6.766E-02	2.272E-01	8.207E-03	-0.270
AG-108M	-2.085E-02		6.156E-03	1.962E-02	6.586E-04	-1.063
AG-110M	-4.044E-03		1.133E-02	3.821E-02	1.819E-03	-0.106
SN-113DA	-2.953E-02		1.129E-02	3.578E-02	1.152E-03	-0.825
SB-124	1.244E-02		1.108E-02	3.730E-02	1.348E-03	0.334
SB-125	1.293E-02		1.929E-02	6.632E-02	2.213E-03	0.195
SN-126DA	9.356E-03		6.823E-03	2.347E-02	8.489E-04	0.399
I-131	5.453E-01		3.337E-01	1.133E+00	4.295E-02	0.481
BA-133	1.026E-02		9.744E-03	2.834E-02	1.120E-03	0.362
CS-134	8.960E-02	+	1.699E-02	3.786E-02	1.622E-03	2.367
CS-137DA	-1.910E-02		7.988E-03	2.579E-02	9.267E-04	-0.741
LA-138	-1.002E-02		1.030E-02	3.441E-02	1.312E-03	-0.291
CE-139	-1.099E-02		7.655E-03	2.454E-02	8.899E-04	-0.448
BA-140	2.002E-01		2.858E-01	9.664E-01	3.467E-02	0.207
BALA-140	-4.675E-01		2.001E-01	6.433E-01	2.345E-02	-0.727
CE-141	-2.435E-02		2.699E-02	8.805E-02	3.365E-03	-0.277
CE-144	-1.170E-01		4.899E-02	1.572E-01	6.373E-03	-0.744
CEPR-144	-2.357E-01		9.799E-02	3.144E-01	1.274E-02	-0.750
PM-144	-3.301E-03		6.860E-03	2.322E-02	8.388E-04	-0.142
PM-146	5.408E-03		8.634E-03	2.956E-02	1.009E-03	0.183
EU-152	1.569E-02		1.992E-02	6.745E-02	2.809E-03	0.233
EU-154	-5.011E-02		2.733E-02	8.785E-02	3.240E-03	-0.570
EU-155	1.030E-01		2.528E-02	8.477E-02	3.691E-03	1.215
HF-181	1.091E-02		1.413E-02	4.826E-02	1.684E-03	0.226
BI-207	1.044E-02		6.450E-03	2.190E-02	7.903E-04	0.477
BI-210M	-8.617E-05		1.210E-02	3.408E-02	1.451E-03	-0.003
BI-212	2.021E+00	+	2.548E-01	5.163E-01	2.344E-02	3.915
AC-227DA	7.059E-02		5.829E-02	1.680E-01	6.831E-03	0.420
TH-234DA	5.567E+00		1.332E+00	4.608E+00	2.040E-01	1.208
U-235HP	1.246E-01		4.781E-02	1.587E-01	6.113E-03	0.785
NP-237DA	2.216E-02		1.414E-02	4.843E-02	2.185E-03	0.458
AM-241HP	7.250E-02		4.388E-02	1.467E-01	6.050E-03	0.494


STL Richland WA.
BRC SOIL
Batch ID: 7233482
Sample ID: J479D1AA
Detector ID: GER6 1
Energy Coefficients:
Offset: 1.09928E-01
Slope: 2.49298E-01
Quadrature: 1.34749E-08
Acquisition Start: 11-SEP-2007 18:23:45.85
Preset Live Time: 0 10:00:00.00
Elapsed Live Time: 0 10:00:00.00
Counts
Energy
10000
1000
100
10
1
50
100
200
500
1000
2000
226 Ra, 214 Bi
40 K
226 Ra
226 Ra, 214 Bi, 46 Sc
232 Th, 228 Ra, 228 Ac
232 Th, 228 Ra, 228 Ac
228 Th, 224 Ra, 208 T
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 Bi, 140 La
212 Pb
214 Pb, 234 U, 238 U, 226 Ra
133 Ba, 208 Tl
223 Ra, 228 Ac
228 Th, 224 Ra, 234 U, 238 U, 226 Ra, 214
228 Th, 232 Th, 224 Ra, 212 Pb
228 Ra, 228 Ac
235 U, 226 Ra
238 U
155 Eu
238 U

SAMPLE IDENTIFICATION: J479D1AA

CONFIGURATION ID: GER6:J479D1AA_110971823
TITLE : BRC SOIL
SAMPLE ID : J479D1AA

REPORT DATE: 12-SEP-07
ACQUIRE DATE: 11-SEP-07 18:23:45
ELAPSED LIVE TIME: 36000.0 Sec
PRESET LIVE TIME: 0 10:00:00

SAMPLE DATE: 28-JUL-2007 09:00:00.00
CALIB DATE: 11-SEP-2007 04:51:23.33
ELAPSED LIVE TIME: 0 10:00:00
ELAPSED REAL TIME: 0 10:00:17

SAMPLE QUANTITY: 3.4610E+02
SAMPLE GEOMETRY: S200

UNITS: GRAMS
SAMPLE TYPE:

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

FWHM OFFSET: 2.3450E-01 keV
FWHM SLOPE: 6.4137E-02 sqr keV
ITERATIONS: 10
GAUSSIAN SENSITIVITY: 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 12-SEP-2007 16:50:57

Configuration : $DISK1:[GER6.SAMPLE]J479D1AA_110971823.CNF;1
Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6
Sample title : BRC SOIL
Sample date : 28-JUL-2007 09:00:00 Acquisition date : 11-SEP-2007 18:23:45
Sample ID : J479D1AA Sample quantity : 346.10 GRAMS
Sample type : Sample geometry : S200
Elapsed live time: 0 10:00:00.00 Elapsed real time: 0 10:00:17.19 0.0%
Start energy : 20.05 End energy : 2043.26
Sensitivity : 5.00 Gaussian : 50.00
Critical level : No

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	63.21	795	3612	0.97	253.11	247	12	2.21E-02	15.5	
2	4	72.76*	816	4584	1.14	291.43	285	31	2.27E-02	18.8	2.43E+00
3	4	74.81*	4561	4110	1.09	299.65	285	31	1.27E-01	3.4	
4	4	77.07	5779	3597	1.03	308.70	285	31	1.61E-01	2.5	
5	7	84.40*	1640	3485	1.53	338.11	331	35	4.55E-02	8.3	7.31E-01
6	7	87.20*	2547	3622	1.26	349.33	331	35	7.08E-02	5.7	
7	7	89.86	1508	2819	1.13	360.01	331	35	4.19E-02	7.6	
8	0	92.92*	2836	4966	1.56	372.27	366	23	7.88E-02	6.9	
9	0	129.12	411	2309	0.96	517.49	511	11	1.14E-02	23.2	
10	0	185.92*	1715	2525	1.21	745.30	737	17	4.76E-02	7.3	
11	0	209.20	971	1864	1.18	838.69	832	14	2.70E-02	10.0	
12	4	238.66*	9056	1732	1.16	956.84	948	31	2.52E-01	1.5	1.49E+00
13	4	241.73	2372	2153	1.80	969.13	948	31	6.59E-02	5.7	
14	0	270.21	878	1791	1.42	1083.39	1076	21	2.44E-02	12.5	
15	0	277.58	275	1311	0.67	1112.96	1104	14	7.63E-03	28.6	
16	0	295.26	3207	1599	1.32	1183.84	1173	22	8.91E-02	3.6	
17	0	300.02	570	1258	1.24	1202.94	1195	16	1.58E-02	14.5	
18	0	328.17	338	1205	0.81	1315.85	1307	16	9.40E-03	23.6	
19	0	338.32	1715	1125	1.34	1356.56	1349	17	4.76E-02	5.1	
20	0	351.96*	4982	1747	1.41	1411.26	1397	26	1.38E-01	2.7	
21	0	409.58	219	988	0.91	1642.37	1631	19	6.08E-03	30.1	
22	0	463.14	588	819	1.19	1857.17	1846	22	1.63E-02	11.3	
23	0	510.75*	1447	1144	2.05	2048.09	2032	34	4.02E-02	6.9	
24	0	583.17	2692	925	1.60	2338.52	2328	26	7.48E-02	3.3	
25	0	609.29*	3873	882	1.82	2443.28	2429	31	1.08E-01	2.6	
26	0	727.17	701	507	1.51	2915.97	2904	25	1.95E-02	8.2	
27	0	768.11	356	597	1.60	3080.13	3068	24	9.88E-03	14.7	
28	0	794.91	273	465	2.00	3187.62	3177	21	7.58E-03	16.3	
29	0	860.26	429	372	1.55	3449.65	3437	25	1.19E-02	10.3	
30	0	911.05*	1888	540	2.21	3653.29	3638	30	5.25E-02	3.6	
31	0	967.90	1410	804	2.43	3881.23	3857	42	3.92E-02	5.7	
32	0	1120.17	744	620	2.61	4491.76	4476	32	2.07E-02	8.3	
33	0	1238.07	283	523	1.27	4964.48	4952	25	7.85E-03	17.5	
34	0	1460.66*	7838	289	3.00	5856.81	5832	45	2.18E-01	1.3	
35	0	1764.51	621	136	3.70	7074.77	7050	45	1.73E-02	5.9	

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

VMS Nuclide Identification Report V3.0 Generated 12-SEP-2007 16:50:57

Configuration : $DISK1:[GER6.SAMPLE]J479D1AA_110971823.CNF;1
Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.3
Sample title : BRC SOIL
Sample date : 28-JUL-2007 09:00:00 Acquisition date : 11-SEP-2007 18:23:45
Sample ID : J479D1AA Sample quantity : 346.10 GRAMS
Sample type : Sample geometry : S200
Elapsed live time: 0 10:00:00.00 Elapsed real time: 0 10:00:17.19 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	7838	10.67*	5.924E-01	2.690E+01	2.690E+01	8.38
TL-208	277.35	275	6.80	2.284E+00	3.837E-01	3.837E-01	29.28
	510.84	1447	21.60	1.380E+00	1.053E+00	1.053E+00	9.10
	583.14	2692	84.20*	1.240E+00	5.594E-01	5.594E-01	6.80
	860.37	429	12.46	9.141E-01	8.171E-01	8.171E-01	12.40
PB-212	238.63	9056	44.60*	2.572E+00	1.713E+00	1.713E+00	6.40
	300.09	570	3.41	2.143E+00	1.690E+00	1.690E+00	15.78
BI-214	609.31	3873	46.30*	1.197E+00	1.515E+00	1.515E+00	6.51
	768.36	356	5.04	9.984E-01	1.533E+00	1.533E+00	16.07
	1120.29	744	15.10	7.420E-01	1.440E+00	1.440E+00	10.62
	1764.49	621	15.80	4.956E-01	1.720E+00	1.720E+00	8.80
PB-214	241.98	2372	7.49	2.547E+00	2.697E+00	2.697E+00	8.44
	295.21	3207	19.20	2.172E+00	1.668E+00	1.668E+00	7.16
	351.92	4982	37.20*	1.877E+00	1.547E+00	1.547E+00	6.66
	785.91	------	1.10	9.808E-01	------	Line Not Found	------
RA-224DA	238.63	9056	44.60*	2.572E+00	1.713E+00	1.792E+00	6.40
	240.98	2372	3.95	2.547E+00	5.114E+00	5.351E+00	8.44
	583.14	2692	30.25	1.240E+00	1.557E+00	1.629E+00	6.80
	860.37	429	4.48	9.141E-01	2.273E+00	2.378E+00	12.40
RA-226DA	186.21	1715	3.50	3.058E+00	3.475E+00	3.475E+00	9.60
	241.98	2372	7.49	2.547E+00	2.697E+00	2.697E+00	8.44
	295.22	3207	19.20	2.172E+00	1.668E+00	1.668E+00	7.16
	351.92	4982	37.20	1.877E+00	1.547E+00	1.547E+00	6.66
	609.32	3873	46.30*	1.197E+00	1.515E+00	1.516E+00	6.51
	1120.28	744	15.10	7.420E-01	1.440E+00	1.440E+00	10.62
	1238.11	283	5.94	6.834E-01	1.510E+00	1.510E+00	18.96
	1764.49	621	15.80	4.956E-01	1.720E+00	1.721E+00	8.80
AC-228	209.28	971	4.40	2.831E+00	1.690E+00	1.690E+00	11.75
	270.23	878	3.60	2.334E+00	2.266E+00	2.266E+00	13.96
	338.32	1715	11.40	1.940E+00	1.682E+00	1.682E+00	7.93
	911.07	1888	27.70*	8.741E-01	1.692E+00	1.692E+00	7.92
	969.11	1410	16.60	8.336E-01	2.211E+00	2.211E+00	8.98
RA-228DA	209.28	971	4.40	2.831E+00	1.690E+00	1.716E+00	11.75
	338.32	1715	11.40	1.940E+00	1.682E+00	1.707E+00	7.93
	911.07	1888	27.70*	8.741E-01	1.692E+00	1.717E+00	7.92
	964.60	------	5.20	8.359E-01	------	Line Not Found	------

Nuclide Line Activity Report (continued)
Sample ID : J479D1AA
Acquisition date : 11-SEP-2007 18:23:45

Nuclide Type: NP

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected PCI/GRAM	Decay Corr PCI/GRAM	1-Sigma %Error
	969.11	1410	16.60	8.336E-01	2.211E+00	2.244E+00	8.98
TH-228DA	238.63	9056	44.60	2.572E+00	1.713E+00	1.792E+00	6.40
	240.98	2372	3.95	2.547E+00	5.114E+00	5.351E+00	8.44
	583.14	2692	30.25*	1.240E+00	1.557E+00	1.629E+00	6.80
	860.37	429	4.48	9.141E-01	2.273E+00	2.378E+00	12.40
TH-232DA	238.63	9056	44.60	2.572E+00	1.713E+00	1.713E+00	6.40
	338.32	1715	12.40*	1.940E+00	1.546E+00	1.546E+00	7.93
	583.14	2692	30.25	1.240E+00	1.557E+00	1.557E+00	6.80
	911.07	1888	27.70	8.741E-01	1.692E+00	1.692E+00	7.92
	964.60	------	5.20	8.359E-01	------	Line Not Found	------
	969.11	1410	16.60	8.336E-01	2.211E+00	2.211E+00	8.98
U-234DA	241.98	2372	7.49	2.547E+00	2.697E+00	2.697E+00	8.44
	295.22	3207	19.20*	2.172E+00	1.668E+00	1.668E+00	7.16
	351.92	4982	37.20	1.877E+00	1.547E+00	1.547E+00	6.66
	609.31	3873	46.30	1.197E+00	1.515E+00	1.515E+00	6.51
U-238DA	241.98	2372	7.49	2.547E+00	2.697E+00	2.697E+00	8.44
	295.22	3207	19.20	2.172E+00	1.668E+00	1.668E+00	7.16
	351.92	4982	37.20*	1.877E+00	1.547E+00	1.547E+00	6.66
	609.31	3873	46.30	1.197E+00	1.515E+00	1.515E+00	6.51
U-238DHP	63.28	795	3.80*	2.145E+00	2.116E+00	2.116E+00	16.68
	92.59	2836	5.41	3.371E+00	3.374E+00	3.374E+00	9.57

Flag: "*" = Keyline

Sample ID : J479D1AA Acquisition date : 11-SEP-2007 18:23:45

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
4	72.76	816	4584	1.14	291.43	285	31	2.27E-02	18.8	2.69E+00	
4	74.81	4561	4110	1.09	299.65	285	31	1.27E-01	3.4	2.79E+00	
4	77.07	5779	3597	1.03	308.70	285	31	1.61E-01	2.5	2.89E+00	
7	84.40	1640	3485	1.53	338.11	331	35	4.55E-02	8.3	3.16E+00	
7	87.20	2547	3622	1.26	349.33	331	35	7.08E-02	5.7	3.24E+00	T
7	89.86	1508	2819	1.13	360.01	331	35	4.19E-02	7.6	3.30E+00	
0	129.12	411	2309	0.96	517.49	511	11	1.14E-02	23.2	3.56E+00	
0	328.17	338	1205	0.81	1315.85	1307	16	9.40E-03	23.6	1.99E+00	T
0	409.58	219	988	0.91	1642.37	1631	19	6.08E-03	30.1	1.65E+00	
0	463.14	588	819	1.19	1857.17	1846	22	1.63E-02	11.3	1.49E+00	T
0	727.17	701	507	1.51	2915.97	2904	25	1.95E-02	8.2	1.04E+00	T
0	794.91	273	465	2.00	3187.62	3177	21	7.58E-03	16.3	9.72E-01	T

Flags: "T" = Tentatively associated

Sample ID : J479D1AA Acquisition date : 11-SEP-2007 18:23:45

Nuclide	Half-life	Half-Life Ratio	Energy	%Abund	Activity (PCI/GRAM)	1-Sigma %Error	Rejected by
NA-22	2.60Y	0.05	511.00	179.68	1.309E-01	9.10	Abun.
			1274.54*	99.94	--- Not Found ---		
		% Abundances Found =		64.26			
SC-46	83.85D	0.54	889.25	99.98	--- Not Found ---		Abun.
			1120.51*	99.99	3.171E-01	10.62	
		% Abundances Found =		50.00			
TC-95M	61.00D	0.75	204.12*	66.20	--- Not Found ---		Abun.
			582.07	29.30	2.699E+00	6.80	
			835.13	26.10	--- Not Found ---		
		% Abundances Found =		24.10			
RU-103	39.35D	1.16	497.08*	89.00	--- Not Found ---		Abun.
			610.33	5.60	2.798E+01	6.51	
		% Abundances Found =		5.92			
RU-106DA	368.20D	0.12	511.85	20.60	1.203E+00	9.10	Abun.
			621.84*	9.80	--- Not Found ---		
		% Abundances Found =		67.76			
SB-125	2.77Y	0.05	176.33	6.89	--- Not Found ---		Abun.
			427.89*	29.33	--- Not Found ---		
			463.38	10.35	8.506E-01	12.80	
			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	3.812E-01	29.28	
			302.84	17.80	--- Not Found ---		
			356.00*	62.05	--- Not Found ---		
			383.85	8.70	--- Not Found ---		
		% Abundances Found =		5.37			
CS-134	2.06Y	0.06	569.31	15.43	--- Not Found ---		Abun.
			604.70	97.60	--- Not Found ---		
			795.84*	85.40	7.433E-02	17.52	
			801.93	8.73	--- Not Found ---		
		% Abundances Found =		41.22			
LA-140	40.22H	27.21	328.77	20.50	2.790E+07	24.34	Decay,Abun.
			487.03	45.50	--- Not Found ---		
			815.85	23.50	--- Not Found ---		
			1596.49*	95.49	--- Not Found ---		
		% Abundances Found =		11.08			
EU-155	4.96Y	0.03	42.90	21.16	--- Not Found ---		Abun.
			86.54	30.90	5.622E-01	8.80	
			105.31*	20.70	--- Not Found ---		
		% Abundances Found =		42.47			

Sample ID : J479D1AA Acquisition date : 11-SEP-2007 18:23:45

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	2.653E+01	25.60	
			452.83	0.31	--- Not Found ---		
			727.33*	6.58	2.218E+00	10.58	
			785.37	1.10	--- Not Found ---		
			893.41	0.38	--- Not Found ---		
			952.12	0.17	--- Not Found ---		
			1078.62	0.56	--- Not Found ---		
			1512.70	0.29	--- Not Found ---		
			1620.50	1.49	--- Not Found ---		
			1806.00	0.09	--- Not Found ---		
		% Abundances Found =		58.84			
RA-223	21.77Y	0.01	154.21	5.58	--- Not Found ---		Abun.
			269.46*	13.60	6.022E-01	13.96	
			323.87	3.88	--- Not Found ---		
		% Abundances Found =		58.98			
U-235HP	7.04E+08Y	0.00	143.76*	10.50	--- Not Found ---		Abun.
			185.71	54.00	2.252E-01	9.60	
			205.31	4.70	--- Not Found ---		
		% Abundances Found =		78.03			

Flag: "*" = Keyline

VMS Nuclide Identification Report V3.0 Generated 12-SEP-2007 16:50:59

Configuration : $DISK1:[GER6.SAMPLE]J479D1AA_110971823.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 : 28-JUL-2007 09:00:00 Acquisition date : 11-SEP-2007 18:23:45
Sample ID : J479D1AA Sample quantity : 346.10 GRAMS
Sample type : Sample geometry : S200
Elapsed live time: 0 10:00:00.00 Elapsed real time: 0 10:00:17.19 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	2.690E+01	2.254E+00	2.327E-01	1.536E-02	115.608
TL-208	5.594E-01	3.805E-02	2.735E-02	8.904E-04	20.454
PB-212	1.713E+00	1.095E-01	3.748E-02	1.391E-03	45.698
BI-214	1.515E+00	9.867E-02	4.864E-02	1.596E-03	31.154
PB-214	1.547E+00	1.030E-01	4.728E-02	1.624E-03	32.725
RA-224DA	1.792E+00	1.146E-01	3.921E-02	1.456E-03	45.698
RA-226DA	1.516E+00	9.867E-02	4.865E-02	1.596E-03	31.154
AC-228	1.692E+00	1.339E-01	9.980E-02	4.949E-03	16.951
RA-228DA	1.717E+00	1.359E-01	1.013E-01	5.024E-03	16.951
TH-228DA	1.629E+00	1.108E-01	7.965E-02	2.593E-03	20.454
TH-232DA	1.546E+00	1.225E-01	1.453E-01	5.038E-03	10.637
U-234DA	1.668E+00	1.195E-01	8.822E-02	3.187E-03	18.907
U-238DA	1.547E+00	1.030E-01	4.728E-02	1.624E-03	32.725
U-238DHP	2.116E+00	3.530E-01	6.507E-01	2.326E-02	3.252

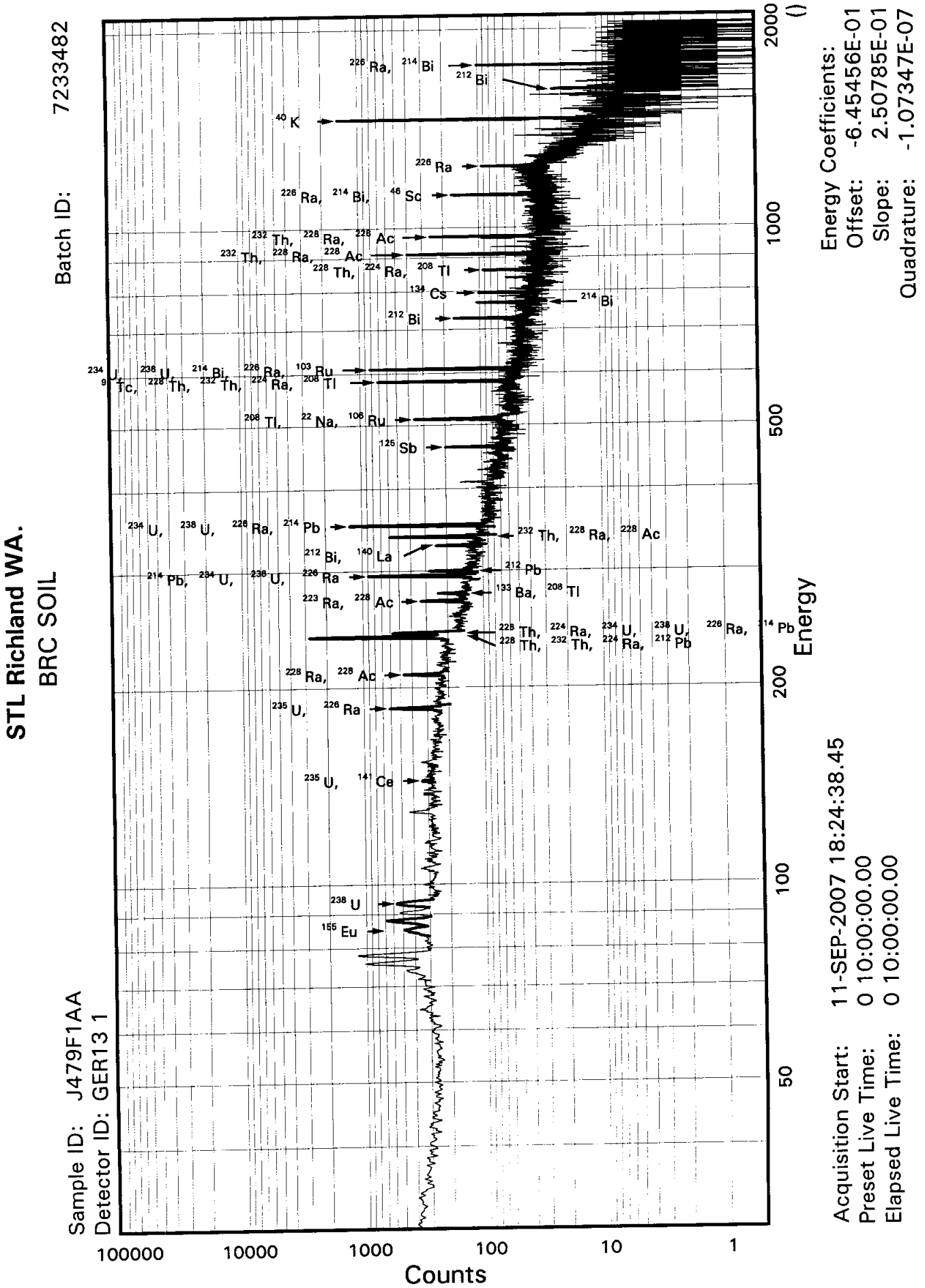
---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (PCI/GRAM)	K.L. Ided	Act error	MDA (PCI/GRAM)	MDA error	Act/MDA
BE-7	-7.598E-02		1.041E-01	3.471E-01	1.123E-02	-0.219
NA-22	-2.156E-02		1.024E-02	3.281E-02	1.989E-03	-0.657
SC-46	3.171E-01	+	3.369E-02	7.261E-02	3.116E-03	4.367
CR-51	-1.543E-02		1.677E-01	5.547E-01	1.937E-02	-0.028
MN-54	6.789E-03		9.385E-03	3.208E-02	1.447E-03	0.212
CO-57	-6.426E-02		4.402E-02	1.448E-01	5.426E-03	-0.444
CO-58	-2.384E-02		1.195E-02	3.836E-02	1.663E-03	-0.621
FE-59	-1.188E-02		3.389E-02	1.132E-01	4.958E-03	-0.105
CO-60	-1.066E-03		8.657E-03	2.909E-02	2.128E-03	-0.037
ZN-65	4.118E-02		2.762E-02	7.924E-02	3.418E-03	0.520
SE-75	1.403E-02		1.084E-02	3.569E-02	1.318E-03	0.393
SR-85	1.099E-01		1.427E-02	4.101E-02	1.291E-03	2.680
Y-88	1.536E-02		8.600E-03	3.156E-02	1.069E-03	0.487
NB-94	7.206E-03		7.517E-03	2.578E-02	1.232E-03	0.280

Sample ID : J479D1AA Acquisition date : 11-SEP-2007 18:23:45

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

Nuclide	Key-Line Activity (PCI/GRAM)	K.L. Ided	Act error	MDA (PCI/GRAM)	MDA error	Act/MDA
NB-95	1.233E-01		2.578E-02	7.546E-02	3.030E-03	1.634
TC-95M	2.056E-02		1.226E-02	4.051E-02	1.489E-03	0.508
ZR-95	1.812E-02		2.280E-02	7.737E-02	3.058E-03	0.234
ZRNB-95	1.669E-01		3.429E-02	1.003E-01	4.030E-03	1.663
RH-101	1.503E-02		6.701E-03	2.260E-02	8.284E-04	0.665
RH-102M	3.991E-03		6.391E-03	2.169E-02	7.026E-04	0.184
RU-103	-7.584E-03		1.495E-02	4.983E-02	1.591E-03	-0.152
RU-106DA	6.655E-02		7.226E-02	2.457E-01	8.086E-03	0.271
AG-108M	-6.715E-03		6.397E-03	2.087E-02	6.861E-04	-0.322
AG-110M	5.975E-03		1.206E-02	4.105E-02	2.004E-03	0.146
SN-113DA	-1.524E-02		1.163E-02	3.819E-02	1.254E-03	-0.399
SB-124	-5.713E-03		1.389E-02	3.901E-02	1.278E-03	-0.146
SB-125	2.474E-02		2.049E-02	6.876E-02	2.262E-03	0.360
SN-126DA	1.975E-02		7.458E-03	2.540E-02	8.485E-04	0.778
I-131	3.558E-01		3.242E-01	1.103E+00	3.748E-02	0.322
BA-133	2.444E-03		9.803E-03	2.817E-02	9.643E-04	0.087
CS-134	7.433E-02	+	1.302E-02	3.715E-02	1.571E-03	2.001
CS-137DA	-9.806E-03		8.562E-03	2.804E-02	9.285E-04	-0.350
LA-138	-2.892E-03		1.157E-02	3.926E-02	2.653E-03	-0.074
CE-139	4.828E-03		6.951E-03	2.289E-02	8.240E-04	0.211
BA-140	1.205E-01		3.024E-01	1.011E+00	3.227E-02	0.119
BALA-140	-5.072E-01		2.174E-01	6.931E-01	3.912E-02	-0.732
CE-141	4.297E-02		2.389E-02	7.980E-02	2.935E-03	0.538
CE-144	-1.686E-02		4.286E-02	1.430E-01	5.393E-03	-0.118
CEPR-144	-3.373E-02		8.572E-02	2.859E-01	1.079E-02	-0.118
PM-144	4.726E-03		7.549E-03	2.431E-02	7.996E-04	0.194
PM-146	9.061E-03		9.023E-03	3.085E-02	1.009E-03	0.294
EU-152	-2.622E-02		2.207E-02	6.735E-02	2.326E-03	-0.389
EU-154	-4.932E-02		2.787E-02	9.019E-02	5.464E-03	-0.547
EU-155	9.329E-02		2.188E-02	7.100E-02	2.893E-03	1.314
HF-181	6.145E-03		1.526E-02	5.159E-02	1.664E-03	0.119
BI-207	6.124E-03		6.600E-03	2.259E-02	7.319E-04	0.271
BI-210M	2.103E-02		1.135E-02	3.314E-02	1.223E-03	0.635
BI-212	2.218E+00	+	2.346E-01	5.143E-01	2.257E-02	4.312
RA-223	6.022E-01	+	8.407E-02	1.507E-01	5.554E-03	3.996
AC-227DA	3.975E-01		6.128E-02	1.696E-01	6.294E-03	2.344
TH-234DA	5.118E+00		1.343E+00	4.656E+00	2.202E-01	1.099
U-235HP	1.584E-01		4.255E-02	1.412E-01	5.211E-03	1.121
NP-237DA	-8.476E-03		1.449E-02	4.776E-02	1.689E-03	-0.177
AM-241HP	2.845E-02		2.365E-02	7.467E-02	2.592E-03	0.381


STL Richland WA.
BRC SOIL
Batch ID: 7233482
Sample ID: J479F1AA
Detector ID: GER13 1
Energy Coefficients:
Offset: -6.45456E-01
Slope: 2.50785E-01
Quadrature: -1.07347E-07
Acquisition Start: 11-SEP-2007 18:24:38.45
Preset Live Time: 0 10:00:00.00
Elapsed Live Time: 0 10:00:00.00
Counts
Energy
100000
10000
1000
100
10
1
50
100
200
500
1000
2000
40 K
226 Ra
226 Ra, 214 Bi, 46 Sc
232 Th, 228 Ra, 228 Ac
232 Th, 228 Ra, 228 Ac
228 Th, 224 Ra, 208 Tl
134 Cs
214 Bi
212 Bi
234 U, 238 U, 214 Bi, 226 Ra, 103 Ru
99 Tc, 228 Th, 232 Th, 224 Ra, 208 Tl
208 Tl, 22 Na, 106 Ru
125 Sb
234 U, 238 U, 226 Ra, 214 Pb
232 Th, 228 Ra, 228 Ac
212 Bi, 140 La
212 Pb
214 Pb, 234 U, 238 U, 226 Ra
133 Ba, 208 Tl
223 Ra, 228 Ac
228 Th, 224 Ra, 234 U, 238 U, 226 Ra, 214 Pb
228 Th, 232 Th, 224 Ra, 212 Pb
228 Ra, 228 Ac
235 U, 226 Ra
235 U, 141 Ce
238 U
155 Eu

SAMPLE IDENTIFICATION: J479F1AA

CONFIGURATION ID: GER13:J479F1AA_110971824
TITLE : BRC SOIL
SAMPLE ID : J479F1AA

REPORT DATE: 12-SEP-07
ACQUIRE DATE: 11-SEP-07 18:24:38
ELAPSED LIVE TIME: 36000.0 Sec
PRESET LIVE TIME: 0 10:00:00

SAMPLE DATE: 28-JUL-2007 10:00:00.00
CALIB DATE: 11-SEP-2007 04:52:35.24
ELAPSED LIVE TIME: 0 10:00:00
ELAPSED REAL TIME: 0 10:00:26

SAMPLE QUANTITY: 4.0080E+02
SAMPLE GEOMETRY: S200

UNITS: GRAMS
SAMPLE TYPE:

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

FWHM OFFSET: 4.7499E-01 keV
FWHM SLOPE: 4.0031E-02 sqr keV
ITERATIONS: 10
GAUSSIAN SENSITIVITY: 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 12-SEP-2007 16:52:04

Configuration : $DISK1:[GER13.SAMPLE]J479F1AA_110971824.CNF;1
Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6
Sample title : BRC SOIL
Sample date : 28-JUL-2007 10:00:00 Acquisition date : 11-SEP-2007 18:24:38
Sample ID : J479F1AA Sample quantity : 400.80 GRAMS
Sample type : Sample geometry : S200
Elapsed live time: 0 10:00:00.00 Elapsed real time: 0 10:00:26.18 0.1%
Start energy : 19.42 End energy : 2046.58
Sensitivity : 5.00 Gaussian : 50.00
Critical level : No

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	1	73.89*	349	3668	0.90	297.23	292	28	9.68E-03	35.5	1.81E+00
2	1	75.81*	2249	3587	0.91	304.92	292	28	6.25E-02	5.8	
3	1	78.01	3299	3459	0.89	313.67	292	28	9.16E-02	3.9	
4	6	85.20*	744	4648	1.46	342.36	335	24	2.07E-02	21.1	1.10E+00
5	6	87.98*	1549	3347	1.10	353.43	335	24	4.30E-02	7.9	
6	0	90.53	971	3158	1.07	363.62	359	10	2.70E-02	11.3	
7	0	93.53	1513	3586	1.47	375.59	370	12	4.20E-02	8.3	
8	0	129.24	544	3171	0.95	518.03	512	11	1.51E-02	20.5	
9	0	144.13	203	2186	0.81	577.42	574	8	5.64E-03	40.5	
10	0	185.99	2068	3763	1.21	744.46	737	17	5.74E-02	7.2	
11	0	209.20	952	2922	0.93	837.03	831	13	2.64E-02	12.2	
12	5	238.49*	12007	2437	1.10	953.94	943	31	3.34E-01	1.3	2.29E+00
13	5	241.45	3104	2642	1.77	965.76	943	31	8.62E-02	4.5	
14	0	269.97	1047	2297	1.23	1079.56	1072	16	2.91E-02	10.7	
15	0	277.15	388	1678	0.96	1108.22	1103	12	1.08E-02	21.7	
16	0	295.01*	3606	2053	1.14	1179.52	1171	16	1.00E-01	3.4	
17	0	299.90	753	1583	1.09	1199.02	1193	13	2.09E-02	11.5	
18	0	327.82	589	1820	0.94	1310.50	1301	16	1.64E-02	16.7	
19	0	338.04	2721	1882	1.29	1351.28	1341	19	7.56E-02	4.3	
20	0	351.69*	6346	1715	1.31	1405.77	1397	18	1.76E-01	2.1	
21	0	409.38	395	1226	1.30	1636.10	1630	15	1.10E-02	20.0	
22	0	462.78	820	1112	1.29	1849.35	1840	18	2.28E-02	10.2	
23	0	510.67*	1316	1836	1.77	2040.65	2027	27	3.65E-02	10.5	
24	0	583.07*	3748	1328	1.40	2329.87	2317	22	1.04E-01	3.1	
25	0	609.22*	4949	1154	1.48	2434.37	2421	25	1.37E-01	2.4	
26	0	727.31	877	1281	1.51	2906.34	2893	30	2.44E-02	10.6	
27	0	768.09	507	756	1.84	3069.36	3059	21	1.41E-02	12.3	
28	0	795.01	443	705	1.47	3176.96	3167	20	1.23E-02	13.4	
29	0	860.67	442	656	1.65	3439.53	3430	20	1.23E-02	13.0	
30	0	911.26*	2939	825	1.84	3641.86	3628	32	8.16E-02	3.2	
31	0	933.78	268	567	0.81	3731.95	3723	21	7.45E-03	19.8	
32	0	968.58*	1748	1322	1.74	3871.17	3852	35	4.86E-02	6.1	
33	0	1120.45*	1049	829	1.63	4478.94	4466	30	2.91E-02	7.7	
34	0	1238.05	634	1014	2.16	4949.77	4934	34	1.76E-02	13.6	
35	0	1377.59	423	318	2.53	5508.67	5490	35	1.17E-02	12.1	
36	0	1460.55*	13018	620	2.12	5841.09	5823	36	3.62E-01	1.1	
37	0	1587.82	180	230	2.36	6351.23	6342	22	5.00E-03	17.9	
38	0	1620.95	171	123	2.27	6484.07	6468	33	4.76E-03	16.5	
39	0	1729.15	222	119	1.85	6917.99	6901	33	6.16E-03	13.0	
40	0	1763.80*	768	154	2.30	7057.01	7039	33	2.13E-02	5.8	

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

VMS Nuclide Identification Report V3.0 Generated 12-SEP-2007 16:52:04

Configuration : $DISK1:[GER13.SAMPLE]J479F1AA_110971824.CNF;1
Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.3
Sample title : BRC SOIL
Sample date : 28-JUL-2007 10:00:00 Acquisition date : 11-SEP-2007 18:24:38
Sample ID : J479F1AA Sample quantity : 400.80 GRAMS
Sample type : Sample geometry : S200
Elapsed live time: 0 10:00:00.00 Elapsed real time: 0 10:00:26.18 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	13018	10.67*	7.699E-01	2.968E+01	2.968E+01	6.53
TL-208	277.35	388	6.80	2.835E+00	3.765E-01	3.765E-01	22.63
	510.84	1316	21.60	1.898E+00	6.012E-01	6.012E-01	12.02
	583.14	3748	84.20*	1.721E+00	4.844E-01	4.844E-01	6.72
	860.37	442	12.46	1.247E+00	5.332E-01	5.332E-01	14.92
PB-212	238.63	12007	44.60*	3.095E+00	1.630E+00	1.630E+00	6.51
	300.09	753	3.41	2.702E+00	1.531E+00	1.531E+00	13.12
BI-214	609.31	4949	46.30*	1.664E+00	1.203E+00	1.203E+00	6.46
	768.36	507	5.04	1.378E+00	1.366E+00	1.366E+00	14.00
	1120.29	1049	15.10	9.768E-01	1.333E+00	1.333E+00	10.08
	1764.49	768	15.80	6.731E-01	1.353E+00	1.353E+00	8.38
PB-214	241.98	3104	7.49	3.073E+00	2.526E+00	2.526E+00	7.81
	295.21	3606	19.20	2.729E+00	1.289E+00	1.289E+00	7.21
	351.92	6346	37.20*	2.443E+00	1.308E+00	1.308E+00	6.51
	785.91	------	1.10	1.351E+00	------ Line Not Found		------
RA-224DA	238.63	12007	44.60*	3.095E+00	1.630E+00	1.705E+00	6.51
	240.98	3104	3.95	3.073E+00	4.790E+00	5.011E+00	7.81
	583.14	3748	30.25	1.721E+00	1.348E+00	1.411E+00	6.72
	860.37	442	4.48	1.247E+00	1.483E+00	1.552E+00	14.92
RA-226DA	186.21	2068	3.50	3.492E+00	3.169E+00	3.169E+00	9.56
	241.98	3104	7.49	3.073E+00	2.526E+00	2.526E+00	7.81
	295.22	3606	19.20	2.729E+00	1.289E+00	1.289E+00	7.21
	351.92	6346	37.20	2.443E+00	1.308E+00	1.308E+00	6.51
	609.32	4949	46.30*	1.664E+00	1.203E+00	1.203E+00	6.46
	1120.28	1049	15.10	9.768E-01	1.333E+00	1.333E+00	10.08
	1238.11	634	5.94	8.902E-01	2.246E+00	2.246E+00	14.95
	1764.49	768	15.80	6.731E-01	1.353E+00	1.353E+00	8.38
AC-228	209.28	952	4.40	3.315E+00	1.222E+00	1.222E+00	13.72
	270.23	1047	3.60	2.880E+00	1.892E+00	1.892E+00	12.44
	338.32	2721	11.40	2.506E+00	1.784E+00	1.784E+00	7.57
	911.07	2939	27.70*	1.184E+00	1.679E+00	1.679E+00	8.20
	969.11	1748	16.60	1.119E+00	1.762E+00	1.762E+00	9.50
RA-228DA	209.28	952	4.40	3.315E+00	1.222E+00	1.240E+00	13.72
	338.32	2721	11.40	2.506E+00	1.784E+00	1.811E+00	7.57
	911.07	2939	27.70*	1.184E+00	1.679E+00	1.704E+00	8.20
	964.60	------	5.20	1.124E+00	------ Line Not Found		------

Sample ID : J479F1AA Acquisition date : 11-SEP-2007 18:24:38

Nuclide Type: NP

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected PCI/GRAM	Decay Corr PCI/GRAM	1-Sigma %Error
	969.11	1748	16.60	1.119E+00	1.762E+00	1.789E+00	9.50
TH-228DA	238.63	12007	44.60	3.095E+00	1.630E+00	1.705E+00	6.51
	240.98	3104	3.95	3.073E+00	4.790E+00	5.011E+00	7.81
	583.14	3748	30.25*	1.721E+00	1.348E+00	1.411E+00	6.72
	860.37	442	4.48	1.247E+00	1.483E+00	1.552E+00	14.92
TH-232DA	238.63	12007	44.60	3.095E+00	1.630E+00	1.630E+00	6.51
	338.32	2721	12.40*	2.506E+00	1.640E+00	1.640E+00	7.57
	583.14	3748	30.25	1.721E+00	1.348E+00	1.348E+00	6.72
	911.07	2939	27.70	1.184E+00	1.679E+00	1.679E+00	8.20
	964.60	------	5.20	1.124E+00	------ Line Not Found		------
	969.11	1748	16.60	1.119E+00	1.762E+00	1.762E+00	9.50
U-234DA	241.98	3104	7.49	3.073E+00	2.526E+00	2.526E+00	7.81
	295.22	3606	19.20*	2.729E+00	1.289E+00	1.289E+00	7.21
	351.92	6346	37.20	2.443E+00	1.308E+00	1.308E+00	6.51
	609.31	4949	46.30	1.664E+00	1.203E+00	1.203E+00	6.46
U-235HP	143.76	203	10.50*	3.695E+00	9.797E-02	9.797E-02	41.02
	185.71	2068	54.00	3.492E+00	2.054E-01	2.054E-01	9.56
	205.31	------	4.70	3.345E+00	------ Line Not Found		------
U-238DA	241.98	3104	7.49	3.073E+00	2.526E+00	2.526E+00	7.81
	295.22	3606	19.20	2.729E+00	1.289E+00	1.289E+00	7.21
	351.92	6346	37.20*	2.443E+00	1.308E+00	1.308E+00	6.51
	609.31	4949	46.30	1.664E+00	1.203E+00	1.203E+00	6.46

Nuclide Type: FP

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected PCI/GRAM	Decay Corr PCI/GRAM	1-Sigma %Error
CE-141	145.44	203	48.40*	3.695E+00	2.125E-02	5.616E-02	41.02

Flag: "*" = Keyline

Sample ID : J479F1AA Acquisition date : 11-SEP-2007 18:24:38

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
1	73.89	349	3668	0.90	297.23	292	28	9.68E-03	35.5	1.61E+00	
1	75.81	2249	3587	0.91	304.92	292	28	6.25E-02	5.8	1.75E+00	
1	78.01	3299	3459	0.89	313.67	292	28	9.16E-02	3.9	1.90E+00	
6	85.20	744	4648	1.46	342.36	335	24	2.07E-02	21.1	2.35E+00	T
6	87.98	1549	3347	1.10	353.43	335	24	4.30E-02	7.9	2.50E+00	
0	90.53	971	3158	1.07	363.62	359	10	2.70E-02	11.3	2.64E+00	
0	93.53	1513	3586	1.47	375.59	370	12	4.20E-02	8.3	2.78E+00	T
0	129.24	544	3171	0.95	518.03	512	11	1.51E-02	20.5	3.65E+00	
0	327.82	589	1820	0.94	1310.50	1301	16	1.64E-02	16.7	2.55E+00	T
0	409.38	395	1226	1.30	1636.10	1630	15	1.10E-02	20.0	2.21E+00	
0	462.78	820	1112	1.29	1849.35	1840	18	2.28E-02	10.2	2.03E+00	T
0	727.31	877	1281	1.51	2906.34	2893	30	2.44E-02	10.6	1.44E+00	T
0	795.01	443	705	1.47	3176.96	3167	20	1.23E-02	13.4	1.34E+00	T
0	933.78	268	567	0.81	3731.95	3723	21	7.45E-03	19.8	1.16E+00	
0	1377.59	423	318	2.53	5508.67	5490	35	1.17E-02	12.1	8.09E-01	
0	1587.82	180	230	2.36	6351.23	6342	22	5.00E-03	17.9	7.21E-01	
0	1620.95	171	123	2.27	6484.07	6468	33	4.76E-03	16.5	7.11E-01	T
0	1729.15	222	119	1.85	6917.99	6901	33	6.16E-03	13.0	6.81E-01	

Flags: "T" = Tentatively associated

Sample ID : J479F1AA Acquisition date : 11-SEP-2007 18:24:38

Nuclide	Half-life	Half-Life Ratio	Energy	%Abund	Activity (PCI/GRAM)	1-Sigma %Error	Rejected by
NA-22	2.60Y	0.05	511.00	179.68	7.471E-02	12.02	Abun.
			1274.54*	99.94	--- Not Found ---		
		% Abundances Found =		64.26			
SC-46	83.85D	0.54	889.25	99.98	--- Not Found ---		Abun.
			1120.51*	99.99	2.933E-01	10.08	
		% Abundances Found =		50.00			
TC-95M	61.00D	0.75	204.12*	66.20	--- Not Found ---		Abun.
			582.07	29.30	2.336E+00	6.72	
			835.13	26.10	--- Not Found ---		
		% Abundances Found =		24.10			
RU-103	39.35D	1.16	497.08*	89.00	--- Not Found ---		Abun.
			610.33	5.60	2.219E+01	6.46	
		% Abundances Found =		5.92			
RU-106DA	368.20D	0.12	511.85	20.60	6.868E-01	12.02	Abun.
			621.84*	9.80	--- Not Found ---		
		% Abundances Found =		67.76			
SB-125	2.77Y	0.05	176.33	6.89	--- Not Found ---		Abun.
			427.89*	29.33	--- Not Found ---		
			463.38	10.35	7.529E-01	11.76	
			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	3.741E-01	22.63	
			302.84	17.80	--- Not Found ---		
			356.00*	62.05	--- Not Found ---		
			383.85	8.70	--- Not Found ---		
		% Abundances Found =		5.37			
CS-134	2.06Y	0.06	569.31	15.43	--- Not Found ---		Abun.
			604.70	97.60	--- Not Found ---		
			795.84*	85.40	7.579E-02	14.98	
			801.93	8.73	--- Not Found ---		
		% Abundances Found =		41.22			
LA-140	40.22H	27.19	328.77	20.50	3.214E+07	17.85	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	0.03	42.90	21.16	--- Not Found ---		Abun.
			86.54	30.90	1.956E-01	22.21	
			105.31*	20.70	--- Not Found ---		
		% Abundances Found =		42.47			

Sample ID : J479F1AA Acquisition date : 11-SEP-2007 18:24:38

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	3.108E+01	19.53	
			452.83	0.31	--- Not Found ---		
			727.33*	6.58	1.730E+00	12.54	
			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	3.033E+00	18.01	
			1806.00	0.09	--- Not Found ---		
		% Abundances Found =		71.89			
RA-223	21.77Y	0.01	154.21	5.58	--- Not Found ---		Abun.
			269.46*	13.60	5.028E-01	12.44	
			323.87	3.88	--- Not Found ---		
		% Abundances Found =		58.98			
U-238DHP	4.47E+09Y	0.00	63.28*	3.80	--- Not Found ---		Abun.
			92.59	5.41	1.882E+00	10.65	
		% Abundances Found =		58.74			

Flag: "*" = Keyline

VMS Nuclide Identification Report V3.0 Generated 12-SEP-2007 16:52:06

Configuration : $DISK1:[GER13.SAMPLE]J479F1AA_110971824.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 : 28-JUL-2007 10:00:00 Acquisition date : 11-SEP-2007 18:24:38
Sample ID : J479F1AA Sample quantity : 400.80 GRAMS
Sample type : Sample geometry : S200
Elapsed live time: 0 10:00:00.00 Elapsed real time: 0 10:00:26.18 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	2.968E+01	1.937E+00	1.904E-01	7.718E-03	155.909
CE-141	5.616E-02	2.304E-02	7.392E-02	2.762E-03	0.760
TL-208	4.844E-01	3.258E-02	1.891E-02	6.159E-04	25.619
PB-212	1.630E+00	1.060E-01	3.147E-02	1.246E-03	51.784
BI-214	1.203E+00	7.769E-02	3.304E-02	1.088E-03	36.410
PB-214	1.308E+00	8.521E-02	3.717E-02	1.347E-03	35.186
RA-224DA	1.705E+00	1.110E-01	3.292E-02	1.304E-03	51.784
RA-226DA	1.203E+00	7.770E-02	3.304E-02	1.088E-03	36.410
AC-228	1.679E+00	1.376E-01	6.593E-02	3.716E-03	25.462
RA-228DA	1.704E+00	1.397E-01	6.693E-02	3.773E-03	25.462
TH-228DA	1.411E+00	9.487E-02	5.507E-02	1.794E-03	25.619
TH-232DA	1.640E+00	1.242E-01	1.159E-01	4.344E-03	14.147
U-234DA	1.289E+00	9.298E-02	6.980E-02	2.752E-03	18.467
U-235HP	9.797E-02	4.019E-02	1.291E-01	4.798E-03	0.759
U-238DA	1.308E+00	8.521E-02	3.717E-02	1.347E-03	35.186

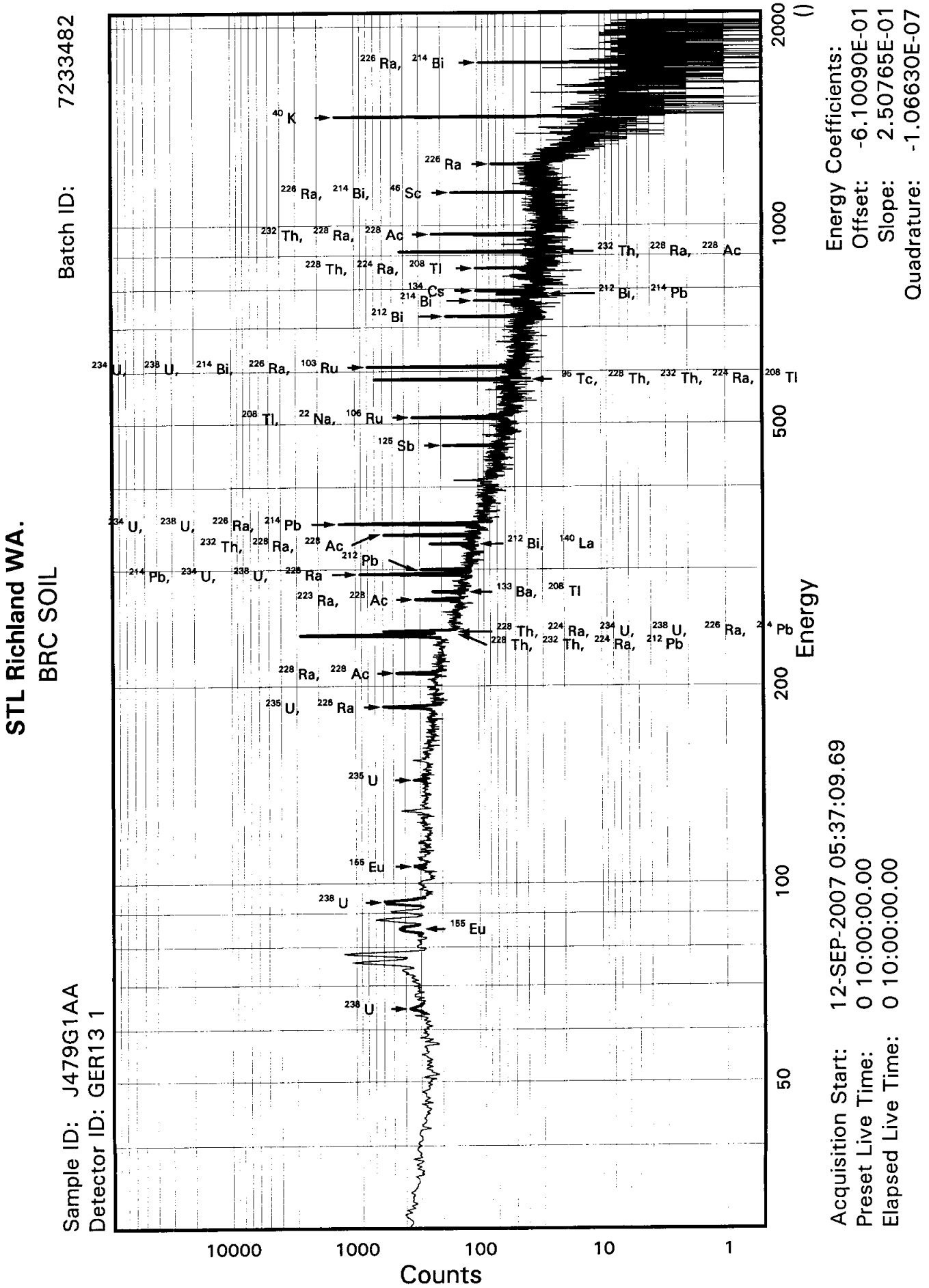
---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (PCI/GRAM)	K.L. Ided	Act error	MDA (PCI/GRAM)	MDA error	Act/MDA
BE-7	7.894E-02		7.674E-02	2.585E-01	8.229E-03	0.305
NA-22	8.951E-03		7.513E-03	2.547E-02	1.002E-03	0.351
SC-46	2.933E-01	+	2.957E-02	5.516E-02	2.258E-03	5.317
CR-51	1.414E-03		1.332E-01	4.424E-01	1.723E-02	0.003
MN-54	4.304E-03		6.276E-03	2.135E-02	1.068E-03	0.202
CO-57	6.300E-02		4.199E-02	1.423E-01	5.192E-03	0.443
CO-58	-1.954E-02		8.325E-03	2.698E-02	1.282E-03	-0.724
FE-59	-1.644E-02		2.353E-02	7.874E-02	3.381E-03	-0.209
CO-60	8.021E-04		6.342E-03	2.170E-02	9.016E-04	0.037
ZN-65	-2.449E-02		1.853E-02	5.096E-02	2.110E-03	-0.481
SE-75	5.272E-03		8.652E-03	2.869E-02	1.138E-03	0.184
SR-85	4.435E-02		9.529E-03	2.765E-02	8.688E-04	1.604
Y-88	-3.704E-03		5.645E-03	1.913E-02	6.172E-04	-0.194

Sample ID : J479F1AA Acquisition date : 11-SEP-2007 18:24:38

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

Nuclide	Key-Line Activity (PCI/GRAM)	K.L. Ided	Act error	MDA (PCI/GRAM)	MDA error	Act/MDA
NB-94	-2.951E-03		5.320E-03	1.779E-02	9.603E-04	-0.166
NB-95	5.800E-02		1.712E-02	4.944E-02	2.126E-03	1.173
TC-95M	3.853E-03		1.079E-02	3.557E-02	1.396E-03	0.108
ZR-95	2.713E-02		1.602E-02	5.395E-02	2.272E-03	0.503
ZRNB-95	7.947E-02		2.278E-02	6.579E-02	2.829E-03	1.208
RH-101	6.175E-03		6.340E-03	1.991E-02	7.799E-04	0.310
RH-102M	-1.651E-03		4.743E-03	1.578E-02	5.027E-04	-0.105
RU-103	-9.776E-03		1.114E-02	3.668E-02	1.160E-03	-0.267
RU-106DA	3.636E-02		5.127E-02	1.742E-01	5.765E-03	0.209
AG-108M	7.783E-03		4.668E-03	1.589E-02	5.094E-04	0.490
AG-110M	-9.054E-03		8.668E-03	2.867E-02	1.591E-03	-0.316
SN-113DA	-1.356E-02		8.535E-03	2.834E-02	9.066E-04	-0.478
SB-124	-2.131E-03		9.118E-03	2.749E-02	9.030E-04	-0.078
SB-125	2.906E-02		1.489E-02	5.072E-02	1.627E-03	0.573
SN-126DA	1.072E-02		5.112E-03	1.740E-02	5.907E-04	0.616
I-131	2.266E-01		2.555E-01	8.475E-01	2.966E-02	0.267
BA-133	-1.006E-05		7.723E-03	2.165E-02	7.761E-04	0.000
CS-134	7.579E-02	+	1.136E-02	2.679E-02	1.232E-03	2.829
CS-137DA	-4.455E-03		5.897E-03	1.958E-02	6.567E-04	-0.228
LA-138	6.070E-03		7.952E-03	2.758E-02	1.126E-03	0.220
CE-139	9.733E-04		6.269E-03	2.092E-02	8.177E-04	0.047
BA-140	2.374E-01		2.113E-01	7.072E-01	2.252E-02	0.336
BALA-140	-3.234E-03		1.355E-01	4.381E-01	1.684E-02	-0.007
CE-144	-3.611E-02		4.060E-02	1.362E-01	4.941E-03	-0.265
CEPR-144	-7.152E-02		8.121E-02	2.725E-01	9.884E-03	-0.262
PM-144	-2.306E-03		5.004E-03	1.679E-02	5.548E-04	-0.137
PM-146	1.096E-02		6.713E-03	2.277E-02	7.287E-04	0.481
EU-152	-3.935E-02		1.629E-02	5.202E-02	1.922E-03	-0.756
EU-154	2.484E-02		2.066E-02	7.005E-02	2.756E-03	0.355
EU-155	1.071E-01		2.348E-02	7.593E-02	2.919E-03	1.411
HF-181	-1.317E-02		1.115E-02	3.662E-02	1.165E-03	-0.360
BI-207	4.262E-03		4.810E-03	1.644E-02	5.322E-04	0.259
BI-210M	-3.474E-03		9.129E-03	2.612E-02	1.036E-03	-0.133
BI-212	1.730E+00	+	2.170E-01	3.800E-01	1.728E-02	4.554
RA-223	5.028E-01	+	6.256E-02	1.230E-01	4.878E-03	4.088
AC-227DA	2.877E-01		5.011E-02	1.426E-01	5.645E-03	2.017
TH-234DA	1.344E+00		9.450E-01	3.195E+00	1.626E-01	0.421
NP-237DA	-1.153E-02		1.145E-02	3.767E-02	1.474E-03	-0.306
U-238DHP	5.874E-01		4.155E-01	1.405E+00	6.820E-02	0.418
AM-241HP	2.254E-02		5.656E-02	1.915E-01	9.188E-03	0.118


STL Richland WA.
BRC SOIL
Batch ID: 7233482
Sample ID: J479G1AA
Detector ID: GER13 1
Energy Coefficients:
Offset: -6.10090E-01
Slope: 2.50765E-01
Quadrature: -1.06630E-07
Acquisition Start: 12-SEP-2007 05:37:09.69
Preset Live Time: 0 10:00:00.00
Elapsed Live Time: 0 10:00:00.00
Counts
Energy
10000
1000
100
10
1
50
100
200
500
1000
2000
40 K
226 Ra, 214 Bi
226 Ra
226 Ra, 214 Bi, 46 Sc
232 Th, 228 Ra, 228 Ac
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 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
235 U
155 Eu
238 U
155 Eu
238 U

SAMPLE IDENTIFICATION: J479G1AA

CONFIGURATION ID: GER13:J479G1AA_120970537
TITLE : BRC SOIL
SAMPLE ID : J479G1AA

REPORT DATE: 12-SEP-07
ACQUIRE DATE: 12-SEP-07 05:37:09
ELAPSED LIVE TIME: 36000.0 Sec
PRESET LIVE TIME: 0 10:00:00

SAMPLE DATE: 28-JUL-2007 10:00:00.00
CALIB DATE: 12-SEP-2007 05:08:01.49
ELAPSED LIVE TIME: 0 10:00:00
ELAPSED REAL TIME: 0 10:00:25

SAMPLE QUANTITY: 3.6150E+02
SAMPLE GEOMETRY: S200

UNITS: GRAMS
SAMPLE TYPE:

ENERGY OFFSET: -.6101E+00 keV
ENERGY SLOPE: 2.5076E-01 keV/C
ENERGY Q COEFF: -.1066E-06 keV/C^^2
PEAK SENSITIVITY: 5.000

FWHM OFFSET: 4.0643E-01 keV
FWHM SLOPE: 4.2975E-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 12-SEP-2007 16:53:12

Configuration : $DISK1:[GER13.SAMPLE]J479G1AA_120970537.CNF;1
Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6
Sample title : BRC SOIL
Sample date : 28-JUL-2007 10:00:00 Acquisition date : 12-SEP-2007 05:37:09
Sample ID : J479G1AA Sample quantity : 361.50 GRAMS
Sample type : Sample geometry : S200
Elapsed live time: 0 10:00:00.00 Elapsed real time: 0 10:00:25.65 0.1%
Start energy : 19.45 End energy : 2046.50
Sensitivity : 5.00 Gaussian : 70.00
Critical level : No

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	64.55	335	2528	0.78	259.87	256	9	9.30E-03	27.6	
2	2	75.86*	2201	3963	0.89	304.97	299	35	6.11E-02	6.1	1.33E+00
3	2	78.04	3302	3314	0.83	313.70	299	35	9.17E-02	3.7	
4	0	85.33*	425	3393	1.51	342.77	337	11	1.18E-02	28.9	
5	0	87.97*	1561	3352	1.02	353.28	348	11	4.34E-02	7.8	
6	0	90.61	874	2955	0.83	363.81	359	10	2.43E-02	12.1	
7	0	93.64	1663	4051	1.34	375.91	369	14	4.62E-02	8.5	
8	0	106.15	141	2575	0.69	425.81	422	9	3.91E-03	65.7	
9	0	129.23	692	2926	0.89	517.89	513	11	1.92E-02	15.6	
10	0	143.81	248	2378	0.67	576.07	572	9	6.90E-03	35.9	
11	0	185.96	1861	3207	1.15	744.24	737	14	5.17E-02	6.9	
12	0	209.25	1350	3381	1.05	837.20	830	17	3.75E-02	10.3	
13	5	238.49*	11953	2525	1.11	953.88	946	28	3.32E-01	1.3	2.84E+00
14	5	241.46	2951	2582	1.67	965.73	946	28	8.20E-02	4.5	
15	0	270.08	1008	2118	1.28	1079.95	1074	15	2.80E-02	10.4	
16	0	277.34	485	1622	1.21	1108.94	1104	12	1.35E-02	17.3	
17	0	295.03*	3646	2078	1.09	1179.53	1171	17	1.01E-01	3.4	
18	0	299.95	832	1884	0.92	1199.18	1191	16	2.31E-02	12.2	
19	0	327.73	587	1877	0.87	1310.07	1301	17	1.63E-02	17.4	
20	0	338.06	2691	1735	1.20	1351.34	1343	17	7.48E-02	4.0	
21	0	351.72*	6342	1951	1.23	1405.85	1396	21	1.76E-01	2.2	
22	0	409.33	395	1070	1.11	1635.89	1629	14	1.10E-02	18.3	
23	0	462.86	529	918	1.07	1849.70	1843	13	1.47E-02	12.6	
24	0	510.75*	1308	1720	1.67	2040.97	2029	27	3.63E-02	10.3	
25	0	583.12*	3873	996	1.52	2330.11	2321	19	1.08E-01	2.7	
26	0	609.20*	4710	1243	1.50	2434.33	2420	27	1.31E-01	2.6	
27	0	727.32	1040	878	1.58	2906.42	2896	24	2.89E-02	7.1	
28	0	768.08	422	867	1.27	3069.39	3058	23	1.17E-02	16.1	
29	0	786.18	140	945	1.57	3141.76	3128	25	3.90E-03	50.5	
30	0	795.24	404	707	1.59	3177.98	3168	20	1.12E-02	14.6	
31	0	860.51	478	701	1.35	3439.01	3426	23	1.33E-02	13.0	
32	0	911.21*	2826	868	1.65	3641.80	3628	31	7.85E-02	3.4	
33	0	934.17	262	607	1.43	3733.64	3723	22	7.28E-03	21.3	
34	0	968.32*	1864	1358	1.87	3870.29	3850	38	5.18E-02	6.0	
35	0	1120.28*	1028	761	2.16	4478.42	4464	27	2.86E-02	7.4	
36	0	1238.43	359	687	2.55	4951.48	4941	21	9.98E-03	16.4	
37	0	1377.41	354	270	1.65	5508.17	5492	30	9.83E-03	12.6	
38	0	1460.51*	12497	669	2.15	5841.15	5822	37	3.47E-01	1.1	
39	0	1587.55	158	248	1.65	6350.41	6340	24	4.40E-03	21.3	
40	0	1729.53	175	138	1.62	6919.84	6907	27	4.85E-03	16.2	
41	0	1763.66*	833	142	2.37	7056.73	7037	41	2.31E-02	5.5	

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

VMS Nuclide Identification Report V3.0 Generated 12-SEP-2007 16:53:12

Configuration : $DISK1:[GER13.SAMPLE]J479G1AA_120970537.CNF;1
Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.3
Sample title : BRC SOIL
Sample date : 28-JUL-2007 10:00:00
Sample ID : J479G1AA
Sample type :
Elapsed live time: 0 10:00:00.00
Energy tolerance : 1.50
Errors propagated: Yes
Efficiency type : Empirical
Abundance limit : 80.00

Acquisition date : 12-SEP-2007 05:37:09
Sample quantity : 361.50 GRAMS
Sample geometry : S200
Elapsed real time: 0 10:00:25.65 0.1%
Half life ratio : 8.00
Systematic Error : 5.00 %
Efficiencies at : Peak Energy

Nuclide Line Activity Report

Nuclide Type: NP

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected PCI/GRAM	Decay Corr PCI/GRAM	1-Sigma %Error
K-40	1460.81	12497	10.67*	7.699E-01	3.159E+01	3.159E+01	6.53
TL-208	277.35	485	6.80	2.834E+00	5.225E-01	5.225E-01	18.42
	510.84	1308	21.60	1.898E+00	6.627E-01	6.627E-01	11.87
	583.14	3873	84.20*	1.721E+00	5.551E-01	5.551E-01	6.54
	860.37	478	12.46	1.247E+00	6.391E-01	6.391E-01	14.90
PB-212	238.63	11953	44.60*	3.095E+00	1.798E+00	1.798E+00	6.51
	300.09	832	3.41	2.701E+00	1.876E+00	1.876E+00	13.73
BI-214	609.31	4710	46.30*	1.665E+00	1.269E+00	1.269E+00	6.54
	768.36	422	5.04	1.378E+00	1.262E+00	1.262E+00	17.40
	1120.29	1028	15.10	9.770E-01	1.447E+00	1.447E+00	9.80
	1764.49	833	15.80	6.731E-01	1.626E+00	1.626E+00	8.22
PB-214	241.98	2951	7.49	3.073E+00	2.663E+00	2.663E+00	7.80
	295.21	3646	19.20	2.729E+00	1.445E+00	1.445E+00	7.23
	351.92	6342	37.20*	2.443E+00	1.449E+00	1.449E+00	6.57
	785.91	140	1.10	1.350E+00	1.964E+00	1.964E+00	50.92
RA-224DA	238.63	11953	44.60*	3.095E+00	1.798E+00	1.883E+00	6.51
	240.98	2951	3.95	3.073E+00	5.049E+00	5.285E+00	7.80
	583.14	3873	30.25	1.721E+00	1.545E+00	1.617E+00	6.54
	860.37	478	4.48	1.247E+00	1.777E+00	1.861E+00	14.90
RA-226DA	186.21	1861	3.50	3.492E+00	3.161E+00	3.161E+00	9.35
	241.98	2951	7.49	3.073E+00	2.663E+00	2.663E+00	7.80
	295.22	3646	19.20	2.729E+00	1.445E+00	1.445E+00	7.23
	351.92	6342	37.20	2.443E+00	1.449E+00	1.449E+00	6.57
	609.32	4710	46.30*	1.665E+00	1.269E+00	1.269E+00	6.54
	1120.28	1028	15.10	9.770E-01	1.447E+00	1.447E+00	9.80
	1238.11	359	5.94	8.900E-01	1.411E+00	1.411E+00	17.54
	1764.49	833	15.80	6.731E-01	1.626E+00	1.626E+00	8.22
AC-228	209.28	1350	4.40	3.315E+00	1.922E+00	1.922E+00	12.07
	270.23	1008	3.60	2.880E+00	2.019E+00	2.019E+00	12.24
	338.32	2691	11.40	2.505E+00	1.957E+00	1.957E+00	7.44
	911.07	2826	27.70*	1.184E+00	1.789E+00	1.789E+00	8.25
	969.11	1864	16.60	1.120E+00	2.083E+00	2.083E+00	9.42
RA-228DA	209.28	1350	4.40	3.315E+00	1.922E+00	1.951E+00	12.07
	338.32	2691	11.40	2.505E+00	1.957E+00	1.987E+00	7.44
	911.07	2826	27.70*	1.184E+00	1.789E+00	1.816E+00	8.25
	964.60	------	5.20	1.124E+00	------	Line Not Found	------

Sample ID : J479G1AA Acquisition date : 12-SEP-2007 05:37:09

Nuclide Type: NP

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected PCI/GRAM	Decay Corr PCI/GRAM	1-Sigma %Error
	969.11	1864	16.60	1.120E+00	2.083E+00	2.115E+00	9.42
TH-228DA	238.63	11953	44.60	3.095E+00	1.798E+00	1.883E+00	6.51
	240.98	2951	3.95	3.073E+00	5.049E+00	5.285E+00	7.80
	583.14	3873	30.25*	1.721E+00	1.545E+00	1.617E+00	6.54
	860.37	478	4.48	1.247E+00	1.777E+00	1.861E+00	14.90
TH-232DA	238.63	11953	44.60	3.095E+00	1.798E+00	1.798E+00	6.51
	338.32	2691	12.40*	2.505E+00	1.799E+00	1.799E+00	7.44
	583.14	3873	30.25	1.721E+00	1.545E+00	1.545E+00	6.54
	911.07	2826	27.70	1.184E+00	1.789E+00	1.789E+00	8.25
	964.60	------	5.20	1.124E+00	------ Line Not Found		------
	969.11	1864	16.60	1.120E+00	2.083E+00	2.083E+00	9.42
U-234DA	241.98	2951	7.49	3.073E+00	2.663E+00	2.663E+00	7.80
	295.22	3646	19.20*	2.729E+00	1.445E+00	1.445E+00	7.23
	351.92	6342	37.20	2.443E+00	1.449E+00	1.449E+00	6.57
	609.31	4710	46.30	1.665E+00	1.269E+00	1.269E+00	6.54
U-235HP	143.76	248	10.50*	3.695E+00	1.330E-01	1.330E-01	36.48
	185.71	1861	54.00	3.492E+00	2.049E-01	2.049E-01	9.35
	205.31	------	4.70	3.345E+00	------ Line Not Found		------
U-238DA	241.98	2951	7.49	3.073E+00	2.663E+00	2.663E+00	7.80
	295.22	3646	19.20	2.729E+00	1.445E+00	1.445E+00	7.23
	351.92	6342	37.20*	2.443E+00	1.449E+00	1.449E+00	6.57
	609.31	4710	46.30	1.665E+00	1.269E+00	1.269E+00	6.54
U-238DHP	63.28	335	3.80*	9.688E-01	1.890E+00	1.890E+00	28.43
	92.59	1663	5.41	2.788E+00	2.290E+00	2.290E+00	10.76

Flag: "*" = Keyline

Unidentified Energy Lines
Sample ID : J479G1AA
Acquisition date : 12-SEP-2007 05:37:09

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
2	75.86	2201	3963	0.89	304.97	299	35	6.11E-02	6.1	1.75E+00	
2	78.04	3302	3314	0.83	313.70	299	35	9.17E-02	3.7	1.90E+00	
0	85.33	425	3393	1.51	342.77	337	11	1.18E-02	28.9	2.35E+00	T
0	87.97	1561	3352	1.02	353.28	348	11	4.34E-02	7.8	2.50E+00	
0	90.61	874	2955	0.83	363.81	359	10	2.43E-02	12.1	2.64E+00	
0	106.15	141	2575	0.69	425.81	422	9	3.91E-03	65.7	3.26E+00	T
0	129.23	692	2926	0.89	517.89	513	11	1.92E-02	15.6	3.65E+00	
0	327.73	587	1877	0.87	1310.07	1301	17	1.63E-02	17.4	2.56E+00	T
0	409.33	395	1070	1.11	1635.89	1629	14	1.10E-02	18.3	2.21E+00	
0	462.86	529	918	1.07	1849.70	1843	13	1.47E-02	12.6	2.03E+00	T
0	727.32	1040	878	1.58	2906.42	2896	24	2.89E-02	7.1	1.44E+00	T
0	795.24	404	707	1.59	3177.98	3168	20	1.12E-02	14.6	1.34E+00	T
0	934.17	262	607	1.43	3733.64	3723	22	7.28E-03	21.3	1.16E+00	
0	1377.41	354	270	1.65	5508.17	5492	30	9.83E-03	12.6	8.09E-01	
0	1587.55	158	248	1.65	6350.41	6340	24	4.40E-03	21.3	7.21E-01	
0	1729.53	175	138	1.62	6919.84	6907	27	4.85E-03	16.2	6.81E-01	

Flags: "T" = Tentatively associated

Rejected Report
Sample ID : J479G1AA
Acquisition date : 12-SEP-2007 05:37:09

Nuclide	Half-life	Half-Life Ratio	Energy	%Abund	Activity (PCI/GRAM)	1-Sigma %Error	Rejected by
NA-22	2.60Y	0.05	511.00	179.68	8.239E-02	11.87	Abun.
			1274.54*	99.94	--- Not Found ---		
		% Abundances Found =		64.26			
SC-46	83.85D	0.55	889.25	99.98	--- Not Found ---		Abun.
			1120.51*	99.99	3.197E-01	9.80	
		% Abundances Found =		50.00			
TC-95M	61.00D	0.75	204.12*	66.20	--- Not Found ---		Abun.
			582.07	29.30	2.691E+00	6.54	
			835.13	26.10	--- Not Found ---		
		% Abundances Found =		24.10			
RU-103	39.35D	1.17	497.08*	89.00	--- Not Found ---		Abun.
			610.33	5.60	2.361E+01	6.54	
		% Abundances Found =		5.92			
RU-106DA	368.20D	0.13	511.85	20.60	7.578E-01	11.87	Abun.
			621.84*	9.80	--- Not Found ---		
		% Abundances Found =		67.76			
SB-125	2.77Y	0.05	176.33	6.89	--- Not Found ---		Abun.
			427.89*	29.33	--- Not Found ---		
			463.38	10.35	5.381E-01	13.93	
			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	5.192E-01	18.42	
			302.84	17.80	--- Not Found ---		
			356.00*	62.05	--- Not Found ---		
			383.85	8.70	--- Not Found ---		
		% Abundances Found =		5.37			
CS-134	2.06Y	0.06	569.31	15.43	--- Not Found ---		Abun.
			604.70	97.60	--- Not Found ---		
			795.84*	85.40	7.673E-02	16.13	
			801.93	8.73	--- Not Found ---		
		% Abundances Found =		41.22			
LA-140	40.22H	27.46	328.77	20.50	4.304E+07	18.52	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	0.03	42.90	21.16	--- Not Found ---		Abun.
			86.54	30.90	1.236E-01	29.68	
			105.31*	20.70	4.410E-02	65.97	
		% Abundances Found =		70.92			

Sample ID : J479G1AA Acquisition date : 12-SEP-2007 05:37:09

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	3.432E+01	20.14	
			452.83	0.31	--- Not Found ---		
			727.33*	6.58	2.273E+00	9.80	
			785.37	1.10	1.964E+00	50.99	
			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	0.01	154.21	5.58	--- Not Found ---		Abun.
			269.46*	13.60	5.366E-01	12.24	
			323.87	3.88	--- Not Found ---		
		% Abundances Found =		58.98			

Flag: "*" = Keyline

VMS Nuclide Identification Report V3.0 Generated 12-SEP-2007 16:53:14

Configuration : $DISK1:[GER13.SAMPLE]J479G1AA_120970537.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 : 28-JUL-2007 10:00:00 Acquisition date : 12-SEP-2007 05:37:09
Sample ID : J479G1AA Sample quantity : 361.50 GRAMS
Sample type : Sample geometry : S200
Elapsed live time: 0 10:00:00.00 Elapsed real time: 0 10:00:25.65 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	3.159E+01	2.062E+00	2.160E-01	8.758E-03	146.233
TL-208	5.551E-01	3.632E-02	2.064E-02	6.721E-04	26.897
PB-212	1.798E+00	1.171E-01	3.460E-02	1.370E-03	51.977
BI-214	1.269E+00	8.303E-02	3.670E-02	1.209E-03	34.584
PB-214	1.449E+00	9.519E-02	4.018E-02	1.456E-03	36.076
RA-224DA	1.883E+00	1.226E-01	3.622E-02	1.434E-03	51.977
RA-226DA	1.269E+00	8.304E-02	3.671E-02	1.209E-03	34.583
AC-228	1.789E+00	1.477E-01	7.426E-02	4.186E-03	24.091
RA-228DA	1.816E+00	1.499E-01	7.540E-02	4.250E-03	24.091
TH-228DA	1.617E+00	1.058E-01	6.013E-02	1.958E-03	26.897
TH-232DA	1.799E+00	1.338E-01	1.223E-01	4.583E-03	14.707
U-234DA	1.445E+00	1.045E-01	7.711E-02	3.040E-03	18.741
U-235HP	1.330E-01	4.852E-02	1.377E-01	5.117E-03	0.966
U-238DA	1.449E+00	9.519E-02	4.018E-02	1.456E-03	36.076
U-238DHP	1.890E+00	5.371E-01	1.416E+00	6.873E-02	1.335

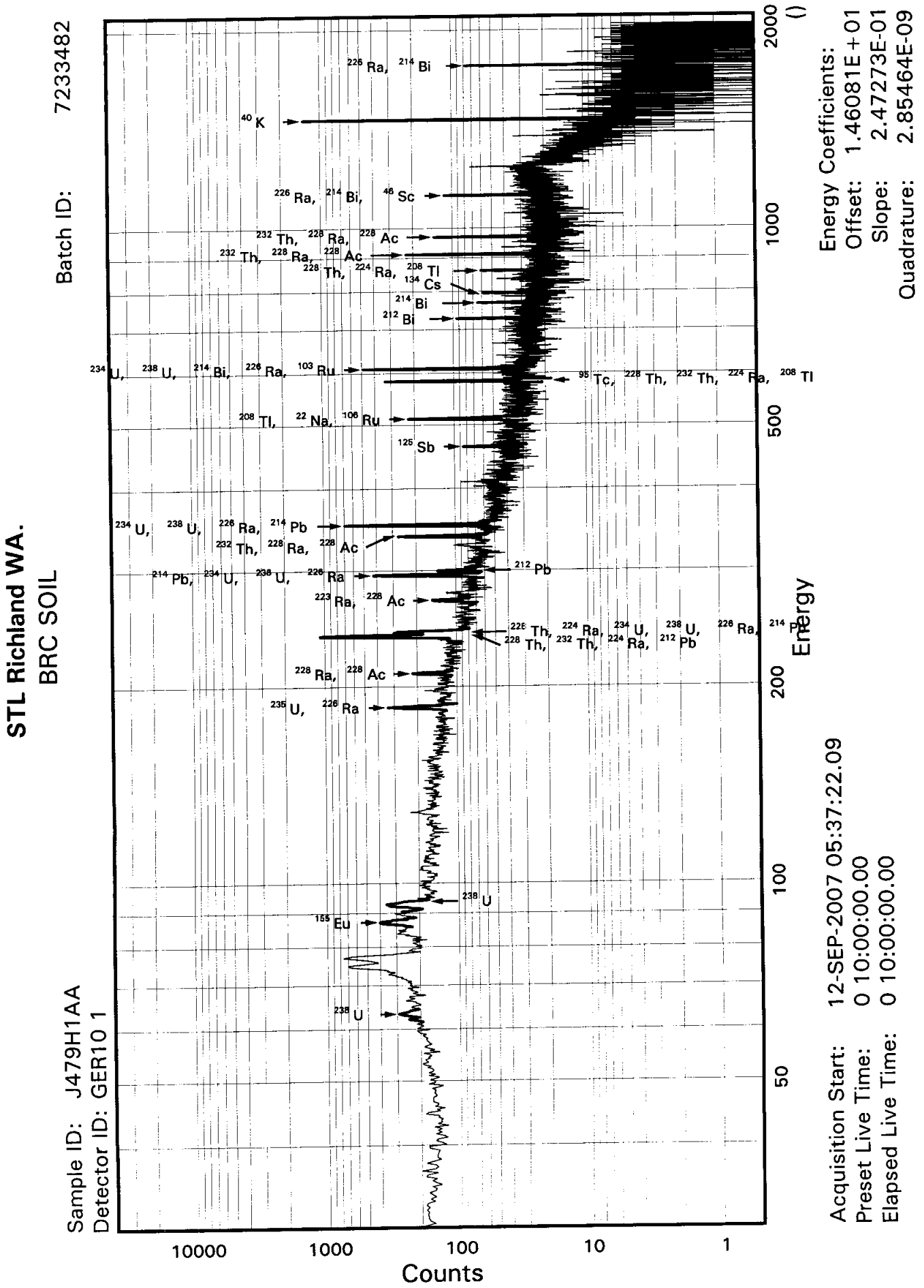
---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (PCI/GRAM)	K.L. Ided	Act error	MDA (PCI/GRAM)	MDA error	Act/MDA
BE-7	-1.727E-02		8.236E-02	2.746E-01	8.745E-03	-0.063
NA-22	8.034E-03		8.087E-03	2.782E-02	1.095E-03	0.289
SC-46	3.197E-01	+	3.133E-02	6.143E-02	2.515E-03	5.204
CR-51	-8.318E-02		1.444E-01	4.783E-01	1.862E-02	-0.174
MN-54	-6.062E-04		7.053E-03	2.373E-02	1.188E-03	-0.026
CO-57	-4.589E-02		4.710E-02	1.519E-01	5.543E-03	-0.302
CO-58	-4.631E-03		9.105E-03	3.058E-02	1.453E-03	-0.151
FE-59	-5.594E-02		2.737E-02	8.873E-02	3.810E-03	-0.630
CO-60	7.152E-03		6.927E-03	2.392E-02	9.938E-04	0.299
ZN-65	-4.972E-03		2.092E-02	5.877E-02	2.434E-03	-0.085
SE-75	9.110E-04		9.406E-03	3.181E-02	1.262E-03	0.029
SR-85	2.919E-02		1.029E-02	2.980E-02	9.362E-04	0.980
Y-88	1.831E-02		6.402E-03	2.372E-02	7.654E-04	0.772

Sample ID : J479G1AA Acquisition date : 12-SEP-2007 05:37:09

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

Nuclide	Key-Line Activity (PCI/GRAM)	K.L. Ided	Act error	MDA (PCI/GRAM)	MDA error	Act/MDA
NB-94	-2.411E-03		5.857E-03	1.958E-02	1.057E-03	-0.123
NB-95	3.051E-02		1.818E-02	5.333E-02	2.293E-03	0.572
TC-95M	3.154E-02		1.193E-02	3.964E-02	1.555E-03	0.796
ZR-95	4.256E-02		1.725E-02	5.960E-02	2.511E-03	0.714
ZRNB-95	4.198E-02		2.405E-02	7.059E-02	3.036E-03	0.595
RH-101	1.665E-03		6.790E-03	2.132E-02	8.351E-04	0.078
RH-102M	-5.189E-03		5.034E-03	1.662E-02	5.294E-04	-0.312
RU-103	1.135E-02		1.204E-02	4.050E-02	1.281E-03	0.280
RU-106DA	2.527E-02		5.708E-02	1.933E-01	6.397E-03	0.131
AG-108M	-5.088E-03		5.039E-03	1.677E-02	5.377E-04	-0.303
AG-110M	2.334E-03		9.291E-03	3.132E-02	1.738E-03	0.075
SN-113DA	-1.407E-02		9.204E-03	3.065E-02	9.806E-04	-0.459
SB-124	-8.443E-03		1.045E-02	3.033E-02	9.964E-04	-0.278
SB-125	3.997E-03		1.582E-02	5.348E-02	1.715E-03	0.075
SN-126DA	9.588E-03		5.622E-03	1.909E-02	6.479E-04	0.502
I-131	-8.114E-02		2.970E-01	9.775E-01	3.421E-02	-0.083
BA-133	-1.047E-02		8.539E-03	2.352E-02	8.430E-04	-0.445
CS-134	7.673E-02	+	1.238E-02	2.943E-02	1.353E-03	2.607
CS-137DA	-1.999E-02		6.600E-03	2.092E-02	7.018E-04	-0.955
LA-138	7.728E-03		8.871E-03	3.067E-02	1.252E-03	0.252
CE-139	-4.263E-03		6.711E-03	2.244E-02	8.773E-04	-0.190
BA-140	-1.255E-01		2.427E-01	7.982E-01	2.541E-02	-0.157
BALA-140	-2.415E-01		1.565E-01	4.849E-01	1.864E-02	-0.498
CE-141	3.463E-02		2.725E-02	8.037E-02	3.003E-03	0.431
CE-144	-1.375E-02		4.621E-02	1.502E-01	5.450E-03	-0.092
CEPR-144	-2.796E-02		9.243E-02	3.005E-01	1.090E-02	-0.093
PM-144	3.268E-04		5.597E-03	1.888E-02	6.241E-04	0.017
PM-146	3.180E-03		7.411E-03	2.497E-02	7.990E-04	0.127
EU-152	-2.356E-02		1.761E-02	5.745E-02	2.122E-03	-0.410
EU-154	3.631E-02		2.213E-02	7.659E-02	3.013E-03	0.474
EU-155	4.410E-02	+	2.909E-02	8.141E-02	3.130E-03	0.542
HF-181	1.147E-02		1.201E-02	4.049E-02	1.287E-03	0.283
BI-207	7.694E-03		5.274E-03	1.809E-02	5.857E-04	0.425
BI-210M	-1.190E-02		9.839E-03	2.902E-02	1.151E-03	-0.410
BI-212	2.273E+00	+	2.228E-01	4.289E-01	1.950E-02	5.301
RA-223	5.366E-01	+	6.569E-02	1.341E-01	5.319E-03	4.001
AC-227DA	3.233E-01		5.633E-02	1.556E-01	6.158E-03	2.078
TH-234DA	4.311E+00		1.058E+00	3.634E+00	1.850E-01	1.186
NP-237DA	-3.967E-03		1.248E-02	4.155E-02	1.626E-03	-0.095
AM-241HP	1.357E-01		6.287E-02	2.051E-01	9.839E-03	0.662


STL Richland WA.
BRC SOIL
Batch ID: 7233482
Sample ID: J479H1AA
Detector ID: GER10 1
Energy Coefficients:
Offset: 1.46081E+01
Slope: 2.47273E-01
Quadrature: 2.85464E-09
Acquisition Start: 12-SEP-2007 05:37:22.09
Preset Live Time: 0 10:00:00.00
Elapsed Live Time: 0 10:00:00.00
Counts
Energy
10000
1000
100
10
1
50
100
200
500
1000
2000
226 Ra, 214 Bi
40 K
226 Ra, 214 Bi, 46 Sc
232 Th, 228 Ra, 228 Ac
232 Th, 228 Ra, 228 Ac
228 Th, 224 Ra, 208 Tl
134 Cs
214 Bi
212 Bi
234 U, 238 U, 214 Bi, 226 Ra, 103 Ru
95 Tc, 228 Th, 232 Th, 224 Ra, 208 Tl
208 Tl, 22 Na, 106 Ru
125 Sb
234 U, 238 U, 226 Ra, 214 Pb
232 Th, 228 Ra, 228 Ac
214 Pb, 234 U, 238 U, 226 Ra
212 Pb
223 Ra, 228 Ac
228 Th, 224 Ra, 234 U, 238 U, 228 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: J479H1AA

CONFIGURATION ID: GER10:J479H1AA_120970537
TITLE : BRC SOIL
SAMPLE ID : J479H1AA

REPORT DATE: 12-SEP-07
ACQUIRE DATE: 12-SEP-07 05:37:22
ELAPSED LIVE TIME: 36000.0 Sec
PRESET LIVE TIME: 0 10:00:00

SAMPLE DATE: 28-JUL-2007 08:00:00.00
CALIB DATE: 12-SEP-2007 05:22:30.78
ELAPSED LIVE TIME: 0 10:00:00
ELAPSED REAL TIME: 0 10:00:15

SAMPLE QUANTITY: 3.8420E+02
SAMPLE GEOMETRY: S200

UNITS: GRAMS
SAMPLE TYPE:

ENERGY OFFSET: 1.4608E+01 keV
ENERGY SLOPE: 2.4727E-01 keV/C
ENERGY Q COEFF: 2.8546E-09 keV/C^^2
PEAK SENSITIVITY: 5.000

FWHM OFFSET: 1.1564E+00 keV
FWHM SLOPE: 2.4319E-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 12-SEP-2007 16:54:28

Configuration : $DISK1:[GER10.SAMPLE]J479H1AA_120970537.CNF;1
Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6
Sample title : BRC SOIL
Sample date : 28-JUL-2007 08:00:00 Acquisition date : 12-SEP-2007 05:37:22
Sample ID : J479H1AA Sample quantity : 384.20 GRAMS
Sample type : Sample geometry : S200
Elapsed live time: 0 10:00:00.00 Elapsed real time: 0 10:00:15.93 0.0%
Start energy : 17.08 End energy : 2040.46
Sensitivity : 5.00 Gaussian : 30.00
Critical level : No

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	63.30	332	2701	0.84	196.90	189	13	9.22E-03	32.8	
2	2	74.78*	1789	3549	1.19	243.35	237	37	4.97E-02	7.2	1.70E+00
3	2	76.99	2757	3788	1.27	252.27	237	37	7.66E-02	5.4	
4	0	87.18	908	2724	1.35	293.47	288	12	2.52E-02	12.0	
5	0	93.93	538	4378	1.61	320.80	305	19	1.49E-02	29.9	
6	0	185.99	1224	2253	1.45	693.10	684	19	3.40E-02	8.4	
7	0	209.41	510	1880	1.46	787.78	780	16	1.42E-02	16.9	
8	3	238.62	6232	2032	1.46	905.92	896	38	1.73E-01	1.9	1.75E+00
9	3	241.68	1628	2379	1.98	918.30	896	38	4.52E-02	8.2	
10	0	270.43	589	1568	1.72	1034.56	1024	20	1.64E-02	14.6	
11	0	295.17	2432	1415	1.59	1134.63	1123	21	6.75E-02	3.9	
12	0	300.11	333	1379	1.11	1154.60	1146	19	9.26E-03	23.4	
13	0	338.26	1226	1364	1.48	1308.88	1299	21	3.40E-02	7.0	
14	0	351.87*	4097	1173	1.51	1363.91	1351	22	1.14E-01	2.5	
15	0	409.35	149	694	0.65	1596.34	1590	15	4.14E-03	34.1	
16	0	463.30	349	775	1.95	1814.53	1805	21	9.69E-03	17.8	
17	0	510.92*	785	1198	2.02	2007.08	1991	37	2.18E-02	14.4	
18	0	583.17	2247	921	1.72	2299.25	2284	32	6.24E-02	4.0	
19	0	609.27*	3140	726	1.69	2404.80	2392	24	8.72E-02	2.7	
20	0	727.20	437	516	1.05	2881.73	2871	22	1.21E-02	12.2	
21	0	768.13	273	460	1.51	3047.24	3038	20	7.57E-03	17.5	
22	0	794.82	222	513	1.26	3155.15	3142	25	6.18E-03	24.1	
23	0	860.26	322	540	1.82	3419.78	3406	27	8.94E-03	17.8	
24	0	911.13	1545	628	1.86	3625.50	3610	29	4.29E-02	4.7	
25	0	969.15	875	527	1.74	3860.10	3847	24	2.43E-02	6.8	
26	0	1120.19	676	599	1.75	4470.87	4459	26	1.88E-02	9.2	
27	0	1377.72	184	164	1.41	5512.22	5501	22	5.10E-03	15.4	
28	0	1460.75*	11713	281	2.04	5847.97	5831	34	3.25E-01	1.0	
29	0	1730.02	152	52	2.22	6936.78	6920	36	4.22E-03	13.9	
30	0	1764.38	614	102	1.79	7075.71	7061	28	1.71E-02	5.3	
31	0	1847.81	113	48	2.28	7413.05	7395	41	3.14E-03	18.2	

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

VMS Nuclide Identification Report V3.0 Generated 12-SEP-2007 16:54:29

Configuration : $DISK1:[GER10.SAMPLE]J479H1AA_120970537.CNF;1
Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.3
Sample title : BRC SOIL
Sample date : 28-JUL-2007 08:00:00 Acquisition date : 12-SEP-2007 05:37:22
Sample ID : J479H1AA Sample quantity : 384.20 GRAMS
Sample type : Sample geometry : S200
Elapsed live time: 0 10:00:00.00 Elapsed real time: 0 10:00:15.93 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	11713	10.67*	8.324E-01	2.577E+01	2.577E+01	6.32
TL-208	277.35	------	6.80	2.752E+00	------ Line Not Found		------
	510.84	785	21.60	1.867E+00	3.803E-01	3.803E-01	15.53
	583.14	2247	84.20*	1.704E+00	3.060E-01	3.060E-01	7.19
	860.37	322	12.46	1.273E+00	3.965E-01	3.965E-01	19.12
PB-212	238.63	6232	44.60*	3.006E+00	9.083E-01	9.083E-01	6.70
	300.09	333	3.41	2.623E+00	7.284E-01	7.284E-01	24.22
BI-214	609.31	3140	46.30*	1.652E+00	8.021E-01	8.021E-01	6.59
	768.36	273	5.04	1.391E+00	7.597E-01	7.597E-01	18.63
	1120.29	676	15.10	1.028E+00	8.505E-01	8.505E-01	11.15
	1764.49	614	15.80	7.322E-01	1.038E+00	1.038E+00	8.02
PB-214	241.98	1628	7.49	2.984E+00	1.423E+00	1.423E+00	10.43
	295.21	2432	19.20	2.650E+00	9.338E-01	9.338E-01	7.39
	351.92	4097	37.20*	2.378E+00	9.050E-01	9.050E-01	6.59
	785.91	------	1.10	1.367E+00	------ Line Not Found		------
RA-224DA	238.63	6232	44.60*	3.006E+00	9.083E-01	9.508E-01	6.70
	240.98	1628	3.95	2.984E+00	2.699E+00	2.825E+00	10.43
	583.14	2247	30.25	1.704E+00	8.518E-01	8.917E-01	7.19
	860.37	322	4.48	1.273E+00	1.103E+00	1.155E+00	19.12
RA-226DA	186.21	1224	3.50	3.433E+00	1.991E+00	1.991E+00	10.60
	241.98	1628	7.49	2.984E+00	1.423E+00	1.423E+00	10.43
	295.22	2432	19.20	2.650E+00	9.338E-01	9.339E-01	7.39
	351.92	4097	37.20	2.378E+00	9.050E-01	9.051E-01	6.59
	609.32	3140	46.30*	1.652E+00	8.021E-01	8.021E-01	6.59
	1120.28	676	15.10	1.028E+00	8.505E-01	8.505E-01	11.15
	1238.11	------	5.94	9.474E-01	------ Line Not Found		------
	1764.49	614	15.80	7.322E-01	1.038E+00	1.038E+00	8.02
AC-228	209.28	510	4.40	3.232E+00	7.013E-01	7.013E-01	18.04
	270.23	589	3.60	2.794E+00	1.145E+00	1.145E+00	15.92
	338.32	1226	11.40	2.437E+00	8.621E-01	8.621E-01	9.32
	911.07	1545	27.70*	1.216E+00	8.961E-01	8.961E-01	8.51
	969.11	875	16.60	1.157E+00	8.899E-01	8.899E-01	9.69
RA-228DA	209.28	510	4.40	3.232E+00	7.013E-01	7.121E-01	18.04
	338.32	1226	11.40	2.437E+00	8.621E-01	8.754E-01	9.32
	911.07	1545	27.70*	1.216E+00	8.961E-01	9.098E-01	8.51
	964.60	------	5.20	1.162E+00	------ Line Not Found		------

Sample ID : J479H1AA Acquisition date : 12-SEP-2007 05:37:22

Nuclide Type: NP

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected PCI/GRAM	Decay Corr PCI/GRAM	1-Sigma %Error
	969.11	875	16.60	1.157E+00	8.899E-01	9.036E-01	9.69
TH-228DA	238.63	6232	44.60	3.006E+00	9.083E-01	9.508E-01	6.70
	240.98	1628	3.95	2.984E+00	2.699E+00	2.825E+00	10.43
	583.14	2247	30.25*	1.704E+00	8.518E-01	8.917E-01	7.19
	860.37	322	4.48	1.273E+00	1.103E+00	1.155E+00	19.12
TH-232DA	238.63	6232	44.60	3.006E+00	9.083E-01	9.083E-01	6.70
	338.32	1226	12.40*	2.437E+00	7.926E-01	7.926E-01	9.32
	583.14	2247	30.25	1.704E+00	8.518E-01	8.518E-01	7.19
	911.07	1545	27.70	1.216E+00	8.961E-01	8.961E-01	8.51
	964.60	------	5.20	1.162E+00	------	Line Not Found	------
	969.11	875	16.60	1.157E+00	8.899E-01	8.899E-01	9.69
U-234DA	241.98	1628	7.49	2.984E+00	1.423E+00	1.423E+00	10.43
	295.22	2432	19.20*	2.650E+00	9.338E-01	9.338E-01	7.39
	351.92	4097	37.20	2.378E+00	9.050E-01	9.050E-01	6.59
	609.31	3140	46.30	1.652E+00	8.021E-01	8.021E-01	6.59
U-238DA	241.98	1628	7.49	2.984E+00	1.423E+00	1.423E+00	10.43
	295.22	2432	19.20	2.650E+00	9.338E-01	9.338E-01	7.39
	351.92	4097	37.20*	2.378E+00	9.050E-01	9.050E-01	6.59
	609.31	3140	46.30	1.652E+00	8.021E-01	8.021E-01	6.59
U-238DHP	63.28	332	3.80*	2.084E+00	8.188E-01	8.188E-01	33.32
	92.59	538	5.41	3.620E+00	5.366E-01	5.366E-01	30.57

Flag: "*" = Keyline

Sample ID : J479H1AA Acquisition date : 12-SEP-2007 05:37:22

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
2	74.78	1789	3549	1.19	243.35	237	37	4.97E-02	7.2	2.87E+00	
2	76.99	2757	3788	1.27	252.27	237	37	7.66E-02	5.4	2.99E+00	
0	87.18	908	2724	1.35	293.47	288	12	2.52E-02	12.0	3.43E+00	T
0	409.35	149	694	0.65	1596.34	1590	15	4.14E-03	34.1	2.16E+00	
0	463.30	349	775	1.95	1814.53	1805	21	9.69E-03	17.8	1.99E+00	T
0	727.20	437	516	1.05	2881.73	2871	22	1.21E-02	12.2	1.45E+00	T
0	794.82	222	513	1.26	3155.15	3142	25	6.18E-03	24.1	1.36E+00	T
0	1377.72	184	164	1.41	5512.22	5501	22	5.10E-03	15.4	8.70E-01	
0	1730.02	152	52	2.22	6936.78	6920	36	4.22E-03	13.9	7.41E-01	
0	1847.81	113	48	2.28	7413.05	7395	41	3.14E-03	18.2	7.13E-01	

Flags: "T" = Tentatively associated

Sample ID : J479H1AA Acquisition date : 12-SEP-2007 05:37:22

Nuclide	Half-life	Half-Life Ratio	Energy	%Abund	Activity (PCI/GRAM)	1-Sigma %Error	Rejected by
NA-22	2.60Y	0.05	511.00	179.68	4.729E-02	15.53	Abun.
			1274.54*	99.94	--- Not Found ---		
		% Abundances Found =		64.26			
SC-46	83.85D	0.55	889.25	99.98	--- Not Found ---		Abun.
			1120.51*	99.99	1.880E-01	11.15	
		% Abundances Found =		50.00			
TC-95M	61.00D	0.76	204.12*	66.20	--- Not Found ---		Abun.
			582.07	29.30	1.485E+00	7.19	
			835.13	26.10	--- Not Found ---		
		% Abundances Found =		24.10			
RU-103	39.35D	1.17	497.08*	89.00	--- Not Found ---		Abun.
			610.33	5.60	1.494E+01	6.59	
		% Abundances Found =		5.92			
RU-106DA	368.20D	0.13	511.85	20.60	4.350E-01	15.53	Abun.
			621.84*	9.80	--- Not Found ---		
		% Abundances Found =		67.76			
SB-125	2.77Y	0.05	176.33	6.89	--- Not Found ---		Abun.
			427.89*	29.33	--- Not Found ---		
			463.38	10.35	3.412E-01	18.80	
			600.56	17.80	--- Not Found ---		
			635.90	11.32	--- Not Found ---		
		% Abundances Found =		13.67			
CS-134	2.06Y	0.06	569.31	15.43	--- Not Found ---		Abun.
			604.70	97.60	--- Not Found ---		
			795.84*	85.40	3.919E-02	24.97	
			801.93	8.73	--- Not Found ---		
		% Abundances Found =		41.22			
EU-155	4.96Y	0.03	42.90	21.16	--- Not Found ---		Abun.
			86.54	30.90	1.706E-01	13.52	
			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	8.942E-01	13.94	
			785.37	1.10	--- Not Found ---		
			893.41	0.38	--- Not Found ---		
			952.12	0.17	--- Not Found ---		
			1078.62	0.56	--- Not Found ---		
			1512.70	0.29	--- Not Found ---		
			1620.50	1.49	--- Not Found ---		
			1806.00	0.09	--- Not Found ---		
		% Abundances Found =		57.62			

Sample ID : J479H1AA Acquisition date : 12-SEP-2007 05:37:22

Nuclide	Half-life	Half-Life Ratio	Energy	%Abund	Activity (PCI/GRAM)	1-Sigma %Error	Rejected by
RA-223	21.77Y	0.01	154.21	5.58	--- Not Found ---		Abun.
			269.46*	13.60	3.043E-01	15.92	
			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	1.291E-01	10.60	
			205.31	4.70	--- Not Found ---		
		% Abundances Found =		78.03			

Flag: "*" = Keyline

VMS Nuclide Identification Report V3.0 Generated 12-SEP-2007 16:54:32

Configuration : $DISK1:[GER10.SAMPLE]J479H1AA_120970537.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 : 28-JUL-2007 08:00:00 Acquisition date : 12-SEP-2007 05:37:22
Sample ID : J479H1AA Sample quantity : 384.20 GRAMS
Sample type : Sample geometry : S200
Elapsed live time: 0 10:00:00.00 Elapsed real time: 0 10:00:15.93 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	2.577E+01	1.630E+00	1.443E-01	5.404E-03	178.528
TL-208	3.060E-01	2.201E-02	1.691E-02	5.538E-04	18.093
PB-212	9.083E-01	6.087E-02	2.984E-02	1.202E-03	30.438
BI-214	8.021E-01	5.284E-02	3.147E-02	1.046E-03	25.487
PB-214	9.050E-01	5.964E-02	3.421E-02	1.194E-03	26.452
RA-224DA	9.508E-01	6.372E-02	3.124E-02	1.258E-03	30.438
RA-226DA	8.021E-01	5.284E-02	3.147E-02	1.046E-03	25.487
AC-228	8.961E-01	7.622E-02	6.088E-02	3.075E-03	14.719
RA-228DA	9.098E-01	7.738E-02	6.181E-02	3.123E-03	14.719
TH-228DA	8.917E-01	6.414E-02	4.928E-02	1.614E-03	18.093
TH-232DA	7.926E-01	7.389E-02	1.061E-01	3.806E-03	7.473
U-234DA	9.338E-01	6.905E-02	6.704E-02	2.576E-03	13.930
U-238DA	9.050E-01	5.964E-02	3.421E-02	1.194E-03	26.452
U-238DHP	8.188E-01	2.729E-01	6.878E-01	2.463E-02	1.191

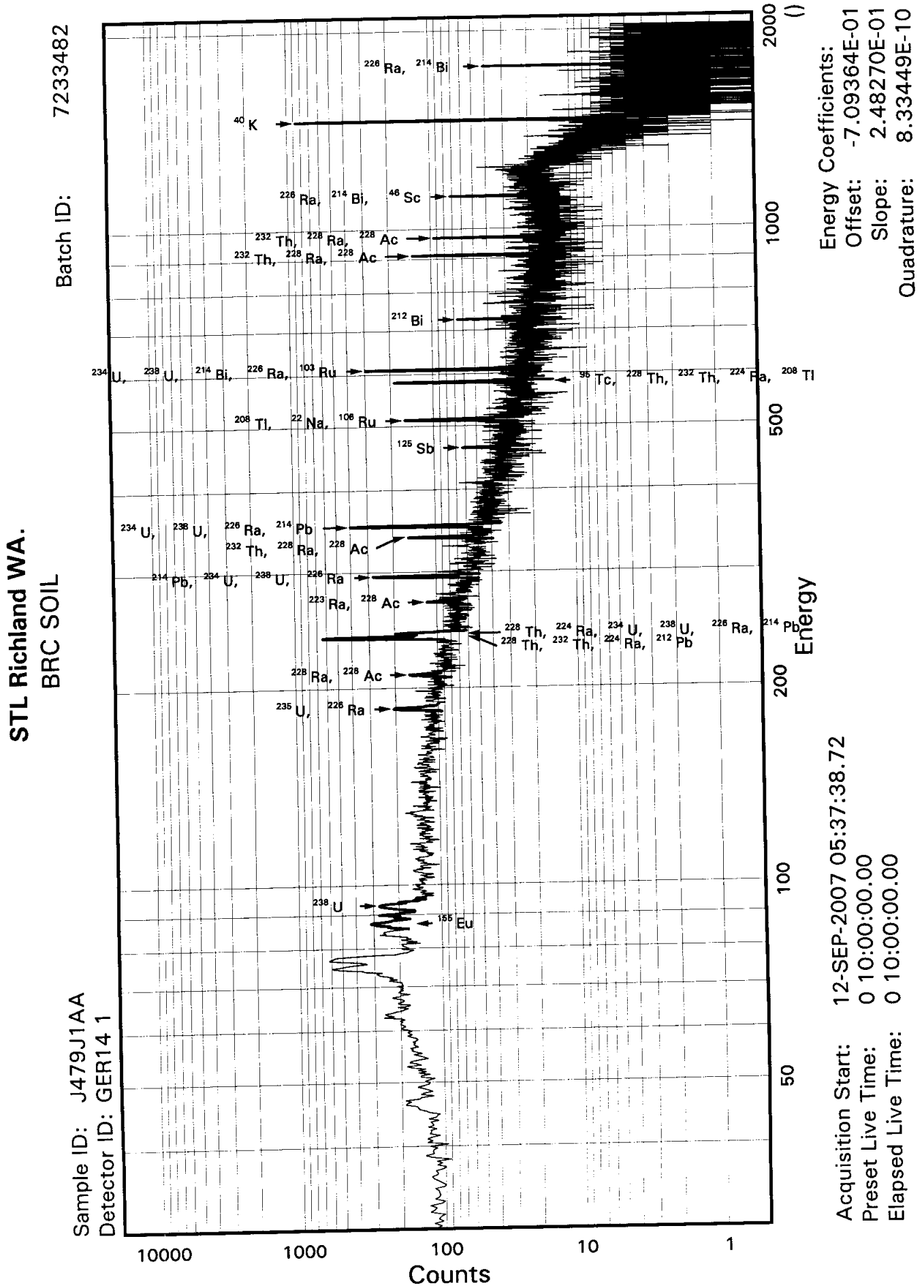
---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (PCI/GRAM)	K.L. Ided	Act error	MDA (PCI/GRAM)	MDA error	Act/MDA
BE-7	7.222E-02		6.868E-02	2.318E-01	7.325E-03	0.311
NA-22	-1.120E-02		6.460E-03	2.094E-02	7.671E-04	-0.535
SC-46	1.880E-01	+	2.096E-02	4.621E-02	1.762E-03	4.069
CR-51	-1.904E-01		1.238E-01	4.091E-01	1.515E-02	-0.465
MN-54	2.684E-03		5.762E-03	1.940E-02	8.957E-04	0.138
CO-57	-7.912E-02		3.966E-02	1.301E-01	4.602E-03	-0.608
CO-58	-1.085E-02		7.289E-03	2.377E-02	1.055E-03	-0.457
FE-59	-3.648E-02		2.152E-02	7.040E-02	2.795E-03	-0.518
CO-60	-4.345E-03		5.202E-03	1.722E-02	6.573E-04	-0.252
ZN-65	-9.165E-03		1.614E-02	4.507E-02	1.736E-03	-0.203
SE-75	6.494E-03		9.609E-03	2.776E-02	1.101E-03	0.234
SR-85	9.441E-02		1.025E-02	2.852E-02	8.927E-04	3.311
Y-88	1.302E-03		4.588E-03	1.617E-02	5.101E-04	0.081
NB-94	-1.907E-03		4.694E-03	1.561E-02	7.642E-04	-0.122

Sample ID : J479H1AA Acquisition date : 12-SEP-2007 05:37:22

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

Nuclide	Key-Line Activity (PCI/GRAM)	K.L. Ided	Act error	MDA (PCI/GRAM)	MDA error	Act/MDA
NB-95	6.988E-02		1.500E-02	4.446E-02	1.829E-03	1.572
TC-95M	2.842E-03		1.134E-02	3.371E-02	1.367E-03	0.084
ZR-95	1.040E-02		1.403E-02	4.763E-02	1.929E-03	0.218
ZRNB-95	9.400E-02		1.986E-02	5.886E-02	2.421E-03	1.597
RH-101	3.107E-03		6.423E-03	1.919E-02	7.778E-04	0.162
RH-102M	-1.339E-03		4.296E-03	1.428E-02	4.513E-04	-0.094
RU-103	4.849E-04		9.582E-03	3.200E-02	1.007E-03	0.015
RU-106DA	2.294E-03		4.642E-02	1.574E-01	5.265E-03	0.015
AG-108M	-2.350E-03		4.266E-03	1.418E-02	4.493E-04	-0.166
AG-110M	1.160E-03		7.342E-03	2.465E-02	1.233E-03	0.047
SN-113DA	1.661E-03		7.790E-03	2.620E-02	8.254E-04	0.063
SB-124	-9.472E-03		9.163E-03	2.624E-02	8.688E-04	-0.361
SB-125	-1.503E-03		1.330E-02	4.449E-02	1.410E-03	-0.034
SN-126DA	4.083E-03		4.506E-03	1.538E-02	5.290E-04	0.265
I-131	1.011E-01		2.431E-01	8.210E-01	2.785E-02	0.123
BA-133	1.107E-02		7.222E-03	2.092E-02	7.237E-04	0.529
CS-134	3.919E-02	+	9.788E-03	2.200E-02	9.523E-04	1.782
CS-137DA	-1.048E-02		5.278E-03	1.722E-02	5.870E-04	-0.609
LA-138	-4.700E-03		6.482E-03	2.199E-02	8.273E-04	-0.214
CE-139	-3.609E-04		5.815E-03	1.939E-02	7.828E-04	-0.019
BA-140	1.435E-01		1.964E-01	6.591E-01	2.097E-02	0.218
BALA-140	-1.252E-01		1.094E-01	3.647E-01	1.311E-02	-0.343
CE-141	1.789E-02		2.056E-02	6.907E-02	2.571E-03	0.259
CE-144	-7.221E-02		3.908E-02	1.285E-01	4.474E-03	-0.562
CEPR-144	-1.443E-01		7.816E-02	2.571E-01	8.948E-03	-0.561
PM-144	-4.214E-03		4.628E-03	1.547E-02	5.162E-04	-0.272
PM-146	7.288E-03		6.015E-03	2.036E-02	6.451E-04	0.358
EU-152	-2.576E-02		1.785E-02	4.777E-02	1.694E-03	-0.539
EU-154	-3.390E-02		1.777E-02	5.734E-02	2.100E-03	-0.591
EU-155	3.400E-02		1.899E-02	6.429E-02	2.193E-03	0.529
HF-181	-1.275E-02		1.023E-02	3.347E-02	1.057E-03	-0.381
BI-207	3.871E-03		4.211E-03	1.445E-02	4.695E-04	0.268
BI-210M	-1.575E-02		9.328E-03	2.515E-02	9.964E-04	-0.626
BI-212	8.942E-01	+	1.246E-01	2.994E-01	1.338E-02	2.987
RA-223	3.043E-01	+	4.844E-02	1.101E-01	4.351E-03	2.763
AC-227DA	1.172E+00		9.020E-02	1.693E-01	6.826E-03	6.921
TH-234DA	1.401E-01		8.014E-01	2.732E+00	1.258E-01	0.051
U-235HP	4.218E-02		3.579E-02	1.203E-01	4.435E-03	0.351
NP-237DA	1.460E-03		1.069E-02	3.611E-02	1.355E-03	0.040
AM-241HP	8.057E-02		2.851E-02	8.083E-02	2.990E-03	0.997


STL Richland WA.
BRC SOIL
Batch ID: 7233482
Sample ID: J479J1AA
Detector ID: GER14 1
Energy Coefficients:
Offset: -7.09364E-01
Slope: 2.48270E-01
Quadrature: 8.33449E-10
Acquisition Start: 12-SEP-2007 05:37:38.72
Preset Live Time: 0 10:00:00.00
Elapsed Live Time: 0 10:00:00.00
Counts
Energy
10000
1000
100
10
1
50
100
200
500
1000
2000
226 Ra, 214 Bi
40 K
226 Ra, 214 Bi, 46 Sc
232 Th, 228 Ra, 228 Ac
232 Th, 228 Ra, 228 Ac
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, 214 Pb
228 Th, 232 Th, 224 Ra, 212 Pb
228 Ra, 228 Ac
235 U, 228 Ra
238 U
155 Eu

SAMPLE IDENTIFICATION: J479J1AA

CONFIGURATION ID: GER14:J479J1AA_120970537
TITLE : BRC SOIL
SAMPLE ID : J479J1AA

REPORT DATE: 12-SEP-07
ACQUIRE DATE: 12-SEP-07 05:37:38
ELAPSED LIVE TIME: 36000.0 Sec
PRESET LIVE TIME: 0 10:00:00

SAMPLE DATE: 28-JUL-2007 08:00:00.00
CALIB DATE: 12-SEP-2007 05:09:03.58
ELAPSED LIVE TIME: 0 10:00:00
ELAPSED REAL TIME: 0 10:00:14

SAMPLE QUANTITY: 3.6980E+02
SAMPLE GEOMETRY: S200

UNITS: GRAMS
SAMPLE TYPE:

ENERGY OFFSET: -.7094E+00 keV
ENERGY SLOPE: 2.4827E-01 keV/C
ENERGY Q COEFF: 8.3345E-10 keV/C^^2
PEAK SENSITIVITY: 5.000

FWHM OFFSET: 1.1180E+00 keV
FWHM SLOPE: 2.5747E-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 12-SEP-2007 15:38:19

Configuration : $DISK1:[GER14.SAMPLE]J479J1AA_120970537.CNF;1
Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6
Sample title : BRC SOIL
Sample date : 28-JUL-2007 08:00:00
Sample ID : J479J1AA
Sample type :
Elapsed live time: 0 10:00:00.00
Start energy : 19.15
Sensitivity : 5.00
Critical level : No

Acquisition date : 12-SEP-2007 05:37:38
Sample quantity : 369.80 GRAMS
Sample geometry : S200
Elapsed real time: 0 10:00:14.88 0.0%
End energy : 2033.17
Gaussian : 10.00

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	1	74.80*	1738	3672	1.47	304.13	292	40	4.83E-02	9.1	2.81E+00
2	1	77.05	2871	3320	1.48	313.19	292	40	7.98E-02	5.3	
3	2	87.16	937	1878	1.59	353.91	348	22	2.60E-02	9.4	1.87E+00
4	2	89.83	484	1759	1.11	364.66	348	22	1.34E-02	17.6	
5	0	93.13	1062	2820	2.15	377.98	370	20	2.95E-02	12.7	
6	0	186.09	610	1870	1.70	752.41	744	17	1.70E-02	16.7	
7	0	209.63	369	1598	1.77	847.23	838	17	1.03E-02	21.9	
8	3	238.66	3749	1379	1.52	964.17	951	36	1.04E-01	2.6	1.12E+00
9	3	241.70	1102	1575	2.02	976.38	951	36	3.06E-02	9.3	
10	0	270.03	402	1598	2.79	1090.50	1079	25	1.12E-02	23.1	
11	0	295.29	1364	1221	1.54	1192.25	1183	20	3.79E-02	6.0	
12	0	338.44	686	995	1.50	1366.05	1356	20	1.90E-02	10.3	
13	0	351.95*	2283	1134	1.59	1420.45	1410	24	6.34E-02	4.1	
14	0	463.11	155	567	1.32	1868.20	1859	17	4.29E-03	31.3	
15	0	510.71*	585	881	2.48	2059.92	2044	34	1.63E-02	16.4	
16	0	583.13	1233	624	1.66	2351.61	2336	28	3.42E-02	5.6	
17	0	609.37*	1798	757	1.63	2457.30	2441	33	4.99E-02	4.7	
18	0	727.07	260	318	1.21	2931.39	2921	18	7.21E-03	15.1	
19	0	911.07	861	388	1.52	3672.48	3659	29	2.39E-02	6.5	
20	0	968.91	522	273	1.54	3905.44	3896	20	1.45E-02	7.9	
21	0	1120.35*	358	423	1.65	4515.42	4501	27	9.94E-03	15.3	
22	0	1460.72*	7587	172	2.19	5886.34	5867	36	2.11E-01	1.3	
23	0	1764.49	357	46	1.85	7109.85	7092	33	9.93E-03	6.8	

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

VMS Nuclide Identification Report V3.0 Generated 12-SEP-2007 15:38:19

Configuration : $DISK1:[GER14.SAMPLE]J479J1AA_120970537.CNF;1
Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.3
Sample title : BRC SOIL
Sample date : 28-JUL-2007 08:00:00
Sample ID : J479J1AA
Sample type :
Elapsed live time: 0 10:00:00.00
Energy tolerance : 1.50
Errors propagated: Yes
Efficiency type : Empirical
Abundance limit : 80.00

Acquisition date : 12-SEP-2007 05:37:38
Sample quantity : 369.80 GRAMS
Sample geometry : S200
Elapsed real time: 0 10:00:14.88 0.0%
Half life ratio : 8.00
Systematic Error : 5.00 %
Efficiencies at : Peak Energy

Nuclide Line Activity Report

Nuclide Type: NP

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected PCI/GRAM	Decay Corr PCI/GRAM	1-Sigma %Error
K-40	1460.81	7587	10.67*	5.514E-01	2.618E+01	2.618E+01	6.11
TL-208	277.35	------	6.80	2.084E+00	------ Line Not Found		------
	510.84	585	21.60	1.292E+00	4.258E-01	4.258E-01	17.43
	583.14	1233	84.20*	1.159E+00	2.565E-01	2.565E-01	8.22
	860.37	------	12.46	8.432E-01	------ Line Not Found		------
PB-212	238.63	3749	44.60*	2.316E+00	7.370E-01	7.370E-01	6.75
	300.09	------	3.41	1.967E+00	------ Line Not Found		------
BI-214	609.31	1798	46.30*	1.118E+00	7.051E-01	7.051E-01	7.68
	768.36	------	5.04	9.246E-01	------ Line Not Found		------
	1120.29	358	15.10	6.815E-01	7.059E-01	7.059E-01	16.43
	1764.49	357	15.80	4.738E-01	9.692E-01	9.692E-01	9.01
PB-214	241.98	1102	7.49	2.296E+00	1.300E+00	1.300E+00	11.17
	295.21	1364	19.20	1.991E+00	7.247E-01	7.247E-01	8.53
	351.92	2283	37.20*	1.742E+00	7.154E-01	7.154E-01	7.26
	785.91	------	1.10	9.077E-01	------ Line Not Found		------
RA-224DA	238.63	3749	44.60*	2.316E+00	7.370E-01	7.715E-01	6.75
	240.98	1102	3.95	2.296E+00	2.466E+00	2.582E+00	11.17
	583.14	1233	30.25	1.159E+00	7.139E-01	7.473E-01	8.22
	860.37	------	4.48	8.432E-01	------ Line Not Found		------
RA-226DA	186.21	610	3.50	2.707E+00	1.308E+00	1.308E+00	17.87
	241.98	1102	7.49	2.296E+00	1.300E+00	1.301E+00	11.17
	295.22	1364	19.20	1.991E+00	7.247E-01	7.248E-01	8.53
	351.92	2283	37.20	1.742E+00	7.154E-01	7.154E-01	7.26
	609.32	1798	46.30*	1.118E+00	7.051E-01	7.052E-01	7.68
	1120.28	358	15.10	6.815E-01	7.059E-01	7.059E-01	16.43
	1238.11	------	5.94	6.292E-01	------ Line Not Found		------
	1764.49	357	15.80	4.738E-01	9.692E-01	9.693E-01	9.01
AC-228	209.28	369	4.40	2.520E+00	6.756E-01	6.756E-01	22.74
	270.23	402	3.60	2.125E+00	1.067E+00	1.067E+00	23.95
	338.32	686	11.40	1.795E+00	6.801E-01	6.801E-01	11.92
	911.07	861	27.70*	8.050E-01	7.842E-01	7.842E-01	9.18
	969.11	522	16.60	7.659E-01	8.342E-01	8.342E-01	10.18
RA-228DA	209.28	369	4.40	2.520E+00	6.756E-01	6.859E-01	22.74
	338.32	686	11.40	1.795E+00	6.801E-01	6.906E-01	11.92
	911.07	861	27.70*	8.050E-01	7.842E-01	7.962E-01	9.18
	964.60	------	5.20	7.687E-01	------ Line Not Found		------

Nuclide Line Activity Report (continued)
Sample ID : J479J1AA
Acquisition date : 12-SEP-2007 05:37:38

Nuclide Type: NP

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected PCI/GRAM	Decay Corr PCI/GRAM	1-Sigma %Error
	969.11	522	16.60	7.659E-01	8.342E-01	8.470E-01	10.18
TH-228DA	238.63	3749	44.60	2.316E+00	7.370E-01	7.715E-01	6.75
	240.98	1102	3.95	2.296E+00	2.466E+00	2.582E+00	11.17
	583.14	1233	30.25*	1.159E+00	7.139E-01	7.473E-01	8.22
	860.37	------	4.48	8.432E-01	------ Line Not Found		------
TH-232DA	238.63	3749	44.60	2.316E+00	7.370E-01	7.370E-01	6.75
	338.32	686	12.40*	1.795E+00	6.253E-01	6.253E-01	11.92
	583.14	1233	30.25	1.159E+00	7.139E-01	7.139E-01	8.22
	911.07	861	27.70	8.050E-01	7.842E-01	7.842E-01	9.18
	964.60	------	5.20	7.687E-01	------ Line Not Found		------
	969.11	522	16.60	7.659E-01	8.342E-01	8.342E-01	10.18
U-234DA	241.98	1102	7.49	2.296E+00	1.300E+00	1.300E+00	11.17
	295.22	1364	19.20*	1.991E+00	7.247E-01	7.247E-01	8.53
	351.92	2283	37.20	1.742E+00	7.154E-01	7.154E-01	7.26
	609.31	1798	46.30	1.118E+00	7.051E-01	7.051E-01	7.68
U-238DA	241.98	1102	7.49	2.296E+00	1.300E+00	1.300E+00	11.17
	295.22	1364	19.20	1.991E+00	7.247E-01	7.247E-01	8.53
	351.92	2283	37.20*	1.742E+00	7.154E-01	7.154E-01	7.26
	609.31	1798	46.30	1.118E+00	7.051E-01	7.051E-01	7.68

Flag: "*" = Keyline

Sample ID : J479J1AA Acquisition date : 12-SEP-2007 05:37:38

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
1	74.80	1738	3672	1.47	304.13	292	40	4.83E-02	9.1	3.44E+00	
1	77.05	2871	3320	1.48	313.19	292	40	7.98E-02	5.3	3.45E+00	
2	87.16	937	1878	1.59	353.91	348	22	2.60E-02	9.4	3.47E+00	T
2	89.83	484	1759	1.11	364.66	348	22	1.34E-02	17.6	3.46E+00	
0	93.13	1062	2820	2.15	377.98	370	20	2.95E-02	12.7	3.45E+00	T
0	463.11	155	567	1.32	1868.20	1859	17	4.29E-03	31.3	1.40E+00	T
0	727.07	260	318	1.21	2931.39	2921	18	7.21E-03	15.1	9.67E-01	T

Flags: "T" = Tentatively associated

Sample ID : J479J1AA
Acquisition date : 12-SEP-2007 05:37:38

Nuclide	Half-life	Half-Life Ratio	Energy	%Abund	Activity (PCI/GRAM)	1-Sigma %Error	Rejected by
NA-22	2.60Y	0.05	511.00	179.68	5.294E-02	17.43	Abun.
			1274.54*	99.94	--- Not Found ---		
		% Abundances Found =		64.26			
SC-46	83.85D	0.55	889.25	99.98	--- Not Found ---		Abun.
			1120.51*	99.99	1.561E-01	16.43	
		% Abundances Found =		50.00			
TC-95M	61.00D	0.76	204.12*	66.20	--- Not Found ---		Abun.
			582.07	29.30	1.245E+00	8.22	
			835.13	26.10	--- Not Found ---		
		% Abundances Found =		24.10			
RU-103	39.35D	1.17	497.08*	89.00	--- Not Found ---		Abun.
			610.33	5.60	1.313E+01	7.68	
		% Abundances Found =		5.92			
RU-106DA	368.20D	0.13	511.85	20.60	4.869E-01	17.43	Abun.
			621.84*	9.80	--- Not Found ---		
		% Abundances Found =		67.76			
SB-125	2.77Y	0.05	176.33	6.89	--- Not Found ---		Abun.
			427.89*	29.33	--- Not Found ---		
			463.38	10.35	2.236E-01	31.89	
			600.56	17.80	--- Not Found ---		
			635.90	11.32	--- Not Found ---		
		% Abundances Found =		13.67			
EU-155	4.96Y	0.03	42.90	21.16	--- Not Found ---		Abun.
			86.54	30.90	1.807E-01	11.18	
			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	8.281E-01	16.48	
			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	0.01	154.21	5.58	--- Not Found ---		Abun.
			269.46*	13.60	2.835E-01	23.95	
			323.87	3.88	--- Not Found ---		
		% Abundances Found =		58.98			
U-235HP	7.04E+08Y	0.00	143.76*	10.50	--- Not Found ---		Abun.

Sample ID : J479J1AA
Acquisition date : 12-SEP-2007 05:37:38

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	8.479E-02	17.87	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	1.154E+00	14.05	
		% Abundances Found =		58.74			

Flag: "*" = Keyline

VMS Nuclide Identification Report V3.0 Generated 12-SEP-2007 15:38:21

Configuration : $DISK1:[GER14.SAMPLE]J479J1AA_120970537.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 : 28-JUL-2007 08:00:00 Acquisition date : 12-SEP-2007 05:37:38
Sample ID : J479J1AA Sample quantity : 369.80 GRAMS
Sample type : Sample geometry : S200
Elapsed live time: 0 10:00:00.00 Elapsed real time: 0 10:00:14.88 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	2.618E+01	1.600E+00	1.867E-01	6.108E-03	140.259
TL-208	2.565E-01	2.109E-02	2.288E-02	7.702E-04	11.210
PB-212	7.370E-01	4.973E-02	3.540E-02	1.319E-03	20.816
BI-214	7.051E-01	5.417E-02	4.108E-02	1.414E-03	17.165
PB-214	7.154E-01	5.193E-02	4.443E-02	1.453E-03	16.103
RA-224DA	7.715E-01	5.206E-02	3.706E-02	1.381E-03	20.816
RA-226DA	7.052E-01	5.417E-02	4.108E-02	1.414E-03	17.165
AC-228	7.842E-01	7.199E-02	8.140E-02	3.382E-03	9.634
RA-228DA	7.962E-01	7.310E-02	8.265E-02	3.433E-03	9.634
TH-228DA	7.473E-01	6.145E-02	6.667E-02	2.244E-03	11.210
TH-232DA	6.253E-01	7.453E-02	1.339E-01	4.366E-03	4.671
U-234DA	7.247E-01	6.179E-02	8.804E-02	3.030E-03	8.232
U-238DA	7.154E-01	5.193E-02	4.443E-02	1.453E-03	16.103

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

Nuclide	Key-Line Activity (PCI/GRAM)	K.L. Ided	Act error	MDA (PCI/GRAM)	MDA error	Act/MDA
BE-7	9.305E-03		8.858E-02	2.976E-01	9.584E-03	0.031
NA-22	1.454E-03		8.519E-03	2.885E-02	9.465E-04	0.050
SC-46	1.561E-01	+	2.564E-02	5.853E-02	2.060E-03	2.666
CR-51	4.053E-02		1.513E-01	5.141E-01	1.666E-02	0.079
MN-54	9.341E-04		7.632E-03	2.571E-02	1.040E-03	0.036
CO-57	-4.558E-02		4.453E-02	1.486E-01	5.526E-03	-0.307
CO-58	-1.295E-02		1.023E-02	3.358E-02	1.339E-03	-0.386
FE-59	-2.946E-02		2.911E-02	9.681E-02	3.490E-03	-0.304
CO-60	-5.840E-05		7.251E-03	2.456E-02	8.009E-04	-0.002
ZN-65	3.200E-02		2.211E-02	6.500E-02	2.301E-03	0.492
SE-75	-7.377E-03		1.243E-02	3.441E-02	1.247E-03	-0.214
SR-85	1.046E-01		1.324E-02	3.835E-02	1.206E-03	2.727
Y-88	6.022E-05		6.574E-03	2.308E-02	7.157E-04	0.003
NB-94	8.302E-03		6.544E-03	2.245E-02	9.256E-04	0.370
NB-95	1.717E-02		1.712E-02	5.846E-02	2.266E-03	0.294

Sample ID : J479J1AA Acquisition date : 12-SEP-2007 05:37:38

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

Nuclide	Key-Line Activity (PCI/GRAM)	K.L. Ided	Act error	MDA (PCI/GRAM)	MDA error	Act/MDA
TC-95M	-4.154E-03		1.353E-02	4.022E-02	1.524E-03	-0.103
ZR-95	-2.753E-02		1.837E-02	6.020E-02	2.319E-03	-0.457
ZRNB-95	3.278E-02		2.253E-02	7.734E-02	2.997E-03	0.424
RH-101	1.347E-02		6.738E-03	2.267E-02	8.600E-04	0.594
RH-102M	-8.433E-03		5.604E-03	1.831E-02	5.905E-04	-0.460
RU-103	8.791E-04		1.340E-02	4.492E-02	1.430E-03	0.020
RU-106DA	3.357E-02		6.343E-02	2.175E-01	7.563E-03	0.154
AG-108M	-1.022E-02		5.692E-03	1.856E-02	6.065E-04	-0.550
AG-110M	-1.356E-02		1.052E-02	3.436E-02	1.426E-03	-0.395
SN-113DA	-2.281E-02		1.033E-02	3.355E-02	1.096E-03	-0.680
SB-124	-7.842E-03		1.190E-02	3.359E-02	1.150E-03	-0.233
SB-125	3.299E-02		1.777E-02	6.085E-02	1.989E-03	0.542
SN-126DA	-1.302E-03		5.954E-03	2.014E-02	7.242E-04	-0.065
I-131	-2.064E-01		3.172E-01	1.062E+00	3.479E-02	-0.194
BA-133	-1.539E-03		9.163E-03	2.607E-02	8.534E-04	-0.059
CS-134	4.415E-02		8.818E-03	3.046E-02	1.204E-03	1.449
CS-137DA	-6.849E-03		6.992E-03	2.333E-02	8.358E-04	-0.294
LA-138	-2.956E-03		8.934E-03	3.075E-02	1.006E-03	-0.096
CE-139	-1.804E-02		7.014E-03	2.275E-02	8.615E-04	-0.793
BA-140	-3.824E-01		2.661E-01	8.659E-01	2.790E-02	-0.442
BALA-140	4.884E-02		1.461E-01	5.132E-01	1.665E-02	0.095
CE-141	5.688E-03		2.384E-02	8.031E-02	3.005E-03	0.071
CE-144	-9.300E-02		4.390E-02	1.444E-01	5.360E-03	-0.644
CEPR-144	-1.865E-01		8.781E-02	2.889E-01	1.072E-02	-0.646
PM-144	2.190E-03		6.481E-03	2.137E-02	7.410E-04	0.102
PM-146	-6.651E-03		7.978E-03	2.645E-02	8.600E-04	-0.251
EU-152	-3.160E-02		2.062E-02	6.169E-02	2.015E-03	-0.512
EU-154	7.368E-03		2.345E-02	7.963E-02	2.612E-03	0.093
EU-155	3.352E-02		1.990E-02	6.602E-02	2.307E-03	0.508
HF-181	1.710E-02		1.340E-02	4.559E-02	1.465E-03	0.375
BI-207	6.264E-03		5.780E-03	1.955E-02	6.500E-04	0.320
BI-210M	1.766E-03		1.137E-02	3.187E-02	1.153E-03	0.055
BI-212	8.281E-01	+	1.365E-01	3.854E-01	1.699E-02	2.149
RA-223	2.835E-01	+	6.789E-02	1.312E-01	4.723E-03	2.161
AC-227DA	8.227E-01		7.582E-02	1.828E-01	6.824E-03	4.501
TH-234DA	1.379E-01		1.124E+00	3.843E+00	1.514E-01	0.036
U-235HP	2.042E-02		4.111E-02	1.388E-01	5.186E-03	0.147
NP-237DA	1.820E-02		1.326E-02	4.546E-02	1.505E-03	0.400
U-238DHP	4.970E-01		1.329E-01	4.405E-01	1.441E-02	1.128
AM-241HP	-4.192E-02		1.359E-02	4.353E-02	1.439E-03	-0.963

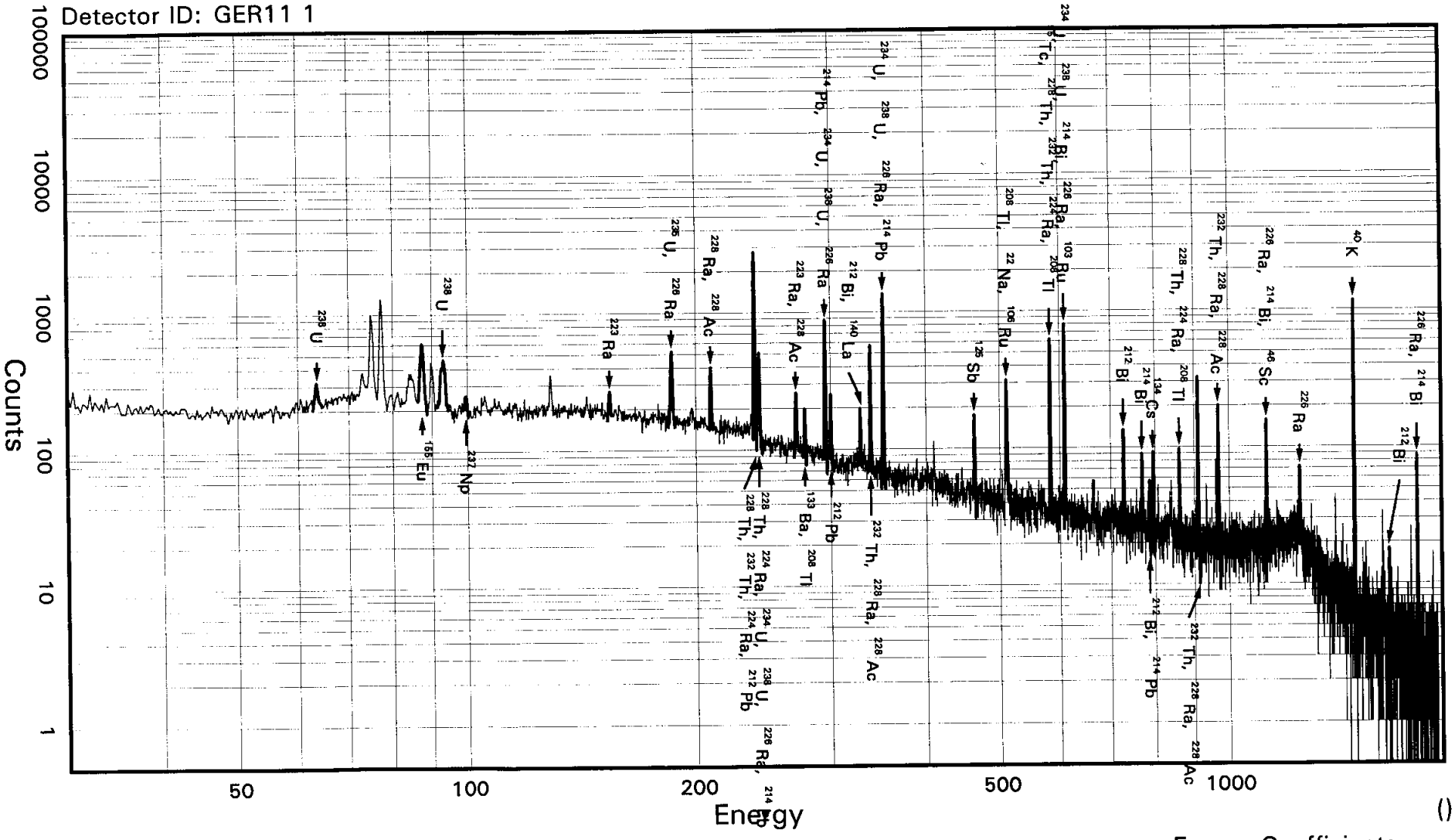
STL Richland WA.

BRC SOIL

Sample ID: J479K1AA

Detector ID: GER11 1

Batch ID: 7233482



Acquisition Start: 12-SEP-2007 05:37:51.75

Preset Live Time: 0 10:00:00.00

Elapsed Live Time: 0 10:00:00.00

Energy Coefficients:

Offset: -1.01112E+00

Slope: 2.28546E-01

Quadrature: 3.09284E-08

SAMPLE IDENTIFICATION: J479K1AA

CONFIGURATION ID: GER11:J479K1AA_120970537
TITLE : BRC SOIL
SAMPLE ID : J479K1AA

REPORT DATE: 12-SEP-07
ACQUIRE DATE: 12-SEP-07 05:37:51
ELAPSED LIVE TIME: 36000.0 Sec
PRESET LIVE TIME: 0 10:00:00

SAMPLE DATE: 27-JUL-2007 16:15:00.00
CALIB DATE: 12-SEP-2007 05:07:46.53
ELAPSED LIVE TIME: 0 10:00:00
ELAPSED REAL TIME: 0 10:00:37

SAMPLE QUANTITY: 3.7270E+02
SAMPLE GEOMETRY: S200

UNITS: GRAMS
SAMPLE TYPE:

ENERGY OFFSET: -.1011E+01 keV
ENERGY SLOPE: 2.2855E-01 keV/C
ENERGY Q COEFF: 3.0928E-08 keV/C^^2
PEAK SENSITIVITY: 5.000

FWHM OFFSET: 1.8231E-01 keV
FWHM SLOPE: 4.2425E-02 sqr keV
ITERATIONS: 10
GAUSSIAN SENSITIVITY: 60.00 %

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

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

VMS Peak Search Report V1.9 Generated 12-SEP-2007 16:55:49

Configuration : $DISK1:[GER11.SAMPLE]J479K1AA_120970537.CNF;1
Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6
Sample title : BRC SOIL
Sample date : 27-JUL-2007 16:15:00
Sample ID : J479K1AA
Sample type :
Elapsed live time: 0 10:00:00.00
Start energy : 1.27
Sensitivity : 5.00
Critical level : No

Acquisition date : 12-SEP-2007 05:37:51
Sample quantity : 372.70 GRAMS
Sample geometry : S200
Elapsed real time: 0 10:00:37.95 0.1%
End energy : 1873.31
Gaussian : 60.00

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	63.59	235	1766	0.50	282.65	279	8	6.53E-03	31.7	
2	0	72.96*	114	1994	0.60	323.64	321	7	3.17E-03	69.2	
3	0	75.01*	2220	2752	0.69	332.62	328	10	6.17E-02	5.1	
4	0	77.22*	3178	2861	0.70	342.28	338	12	8.83E-02	3.9	
5	0	84.45	906	3249	1.44	373.91	367	14	2.52E-02	13.8	
6	0	87.29*	1517	2616	0.96	386.32	381	12	4.21E-02	7.5	
7	0	89.91*	853	2093	0.83	397.81	393	10	2.37E-02	10.9	
8	0	93.04	1546	2885	1.44	411.51	405	14	4.30E-02	7.8	
9	0	99.50	187	1347	0.71	439.77	437	7	5.20E-03	33.4	
10	0	129.15	614	2128	0.79	569.48	565	11	1.71E-02	15.1	
11	0	154.06	337	1775	0.85	678.46	674	10	9.36E-03	24.0	
12	0	186.00	1882	2495	1.03	818.17	810	16	5.23E-02	6.4	
13	0	209.26	900	1758	0.78	919.92	915	12	2.50E-02	9.9	
14	7	238.61	10141	1340	0.83	1048.31	1042	31	2.82E-01	1.2	6.13E+00
15	7	241.62	2824	2328	1.64	1061.49	1042	31	7.85E-02	5.0	
16	0	270.14	934	1510	1.15	1186.25	1179	16	2.60E-02	9.8	
17	0	277.24	458	1026	1.02	1217.26	1212	11	1.27E-02	14.3	
18	0	295.17	3387	1222	0.92	1295.72	1288	15	9.41E-02	2.8	
19	0	300.01*	598	1075	0.78	1316.88	1310	13	1.66E-02	12.4	
20	0	328.01	503	1111	0.91	1439.36	1433	14	1.40E-02	14.8	
21	0	338.22	2135	1156	0.93	1484.00	1476	16	5.93E-02	4.2	
22	0	351.78	5918	1148	0.94	1543.32	1533	19	1.64E-01	1.9	
23	0	409.11	369	979	1.14	1794.05	1785	20	1.03E-02	21.4	
24	0	462.80	588	617	0.91	2028.84	2022	14	1.63E-02	9.9	
25	0	510.64	1794	1122	1.35	2238.07	2228	21	4.98E-02	5.2	
26	0	582.93	3448	676	1.26	2554.15	2544	23	9.58E-02	2.6	
27	0	609.01	4531	582	1.24	2668.15	2659	19	1.26E-01	2.0	
28	0	673.45	55	358	0.62	2949.90	2943	13	1.51E-03	72.8	
29	0	726.83	783	517	1.50	3183.31	3174	20	2.17E-02	8.0	
30	0	767.92	370	527	1.16	3362.90	3353	19	1.03E-02	15.8	
31	0	785.22	228	380	1.39	3438.52	3429	18	6.32E-03	21.2	
32	0	794.69	434	541	1.54	3479.95	3468	24	1.21E-02	12.9	
33	0	860.07	496	410	1.01	3765.73	3754	23	1.38E-02	10.0	
34	0	910.71	2463	536	1.78	3987.06	3973	28	6.84E-02	3.0	
35	0	933.86	275	405	1.68	4088.27	4074	24	7.64E-03	17.4	
36	0	967.74	1873	796	1.85	4236.35	4215	42	5.20E-02	4.9	
37	0	1119.64	1103	511	1.65	4900.14	4888	27	3.06E-02	5.7	
38	0	1237.65	318	597	1.72	5415.77	5404	23	8.82E-03	17.8	
39	0	1376.89	253	187	1.82	6024.08	6015	19	7.03E-03	12.7	
40	0	1459.97	11347	194	2.06	6386.99	6371	33	3.15E-01	1.0	
41	0	1588.81	293	226	1.85	6949.71	6930	41	8.12E-03	14.0	
42	0	1620.36	80	99	2.07	7087.49	7070	23	2.22E-03	26.8	
43	0	1728.79	198	72	1.58	7560.99	7543	32	5.50E-03	11.9	

Sample ID : J479K1AA Acquisition date : 12-SEP-2007 05:37:51

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
44	0	1763.72	886	111	2.37	7713.51	7694	47	2.46E-02	4.6	

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

VMS Nuclide Identification Report V3.0 Generated 12-SEP-2007 16:55:49

Configuration : $DISK1:[GER11.SAMPLE]J479K1AA_120970537.CNF;1
Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.3
Sample title : BRC SOIL
Sample date : 27-JUL-2007 16:15:00
Sample ID : J479K1AA
Sample type :
Elapsed live time: 0 10:00:00.00
Energy tolerance : 1.50
Errors propagated: Yes
Efficiency type : Empirical
Abundance limit : 80.00

Acquisition date : 12-SEP-2007 05:37:51
Sample quantity : 372.70 GRAMS
Sample geometry : S200
Elapsed real time: 0 10:00:37.95 0.1%
Half life ratio : 8.00
Systematic Error : 5.00 %
Efficiencies at : Peak Energy

Nuclide Line Activity Report

Nuclide Type: NP

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected PCI/GRAM	Decay Corr PCI/GRAM	1-Sigma %Error
K-40	1460.81	11347	10.67*	8.391E-01	2.553E+01	2.553E+01	6.45
TL-208	277.35	458	6.80	2.957E+00	4.587E-01	4.587E-01	15.63
	510.84	1794	21.60	1.996E+00	8.379E-01	8.379E-01	7.95
	583.14	3448	84.20*	1.816E+00	4.543E-01	4.543E-01	6.54
	860.37	496	12.46	1.328E+00	6.035E-01	6.035E-01	12.23
PB-212	238.63	10141	44.60*	3.227E+00	1.420E+00	1.420E+00	6.35
	300.09	598	3.41	2.819E+00	1.253E+00	1.253E+00	13.88
BI-214	609.31	4531	46.30*	1.757E+00	1.122E+00	1.122E+00	6.31
	768.36	370	5.04	1.463E+00	1.011E+00	1.011E+00	17.04
	1120.29	1103	15.10	1.051E+00	1.400E+00	1.400E+00	8.50
	1764.49	886	15.80	7.426E-01	1.522E+00	1.522E+00	7.59
PB-214	241.98	2824	7.49	3.204E+00	2.371E+00	2.371E+00	8.00
	295.21	3387	19.20	2.847E+00	1.248E+00	1.248E+00	6.90
	351.92	5918	37.20*	2.553E+00	1.255E+00	1.255E+00	6.45
	785.91	228	1.10	1.436E+00	2.904E+00	2.904E+00	22.19
RA-223	154.21	337	5.58	3.886E+00	3.130E-01	3.143E-01	24.77
	269.46	934	13.60*	3.003E+00	4.608E-01	4.627E-01	11.67
	323.87	------	3.88	2.689E+00	------	Line Not Found	------
RA-224DA	238.63	10141	44.60*	3.227E+00	1.420E+00	1.487E+00	6.35
	240.98	2824	3.95	3.204E+00	4.496E+00	4.709E+00	8.00
	583.14	3448	30.25	1.816E+00	1.265E+00	1.325E+00	6.54
	860.37	496	4.48	1.328E+00	1.678E+00	1.758E+00	12.23
RA-226DA	186.21	1882	3.50	3.657E+00	2.961E+00	2.961E+00	8.86
	241.98	2824	7.49	3.204E+00	2.371E+00	2.371E+00	8.00
	295.22	3387	19.20	2.847E+00	1.248E+00	1.248E+00	6.90
	351.92	5918	37.20	2.553E+00	1.255E+00	1.255E+00	6.45
	609.32	4531	46.30*	1.757E+00	1.122E+00	1.122E+00	6.31
	1120.28	1103	15.10	1.051E+00	1.400E+00	1.400E+00	8.50
	1238.11	318	5.94	9.616E-01	1.120E+00	1.120E+00	18.88
	1764.49	886	15.80	7.426E-01	1.522E+00	1.522E+00	7.59
AC-228	209.28	900	4.40	3.462E+00	1.190E+00	1.190E+00	11.67
	270.23	934	3.60	3.003E+00	1.741E+00	1.741E+00	11.67
	338.32	2135	11.40	2.617E+00	1.441E+00	1.441E+00	7.49
	911.07	2463	27.70*	1.264E+00	1.417E+00	1.417E+00	7.80
	969.11	1873	16.60	1.197E+00	1.898E+00	1.898E+00	8.53
RA-228DA	209.28	900	4.40	3.462E+00	1.190E+00	1.209E+00	11.67

Sample ID : J479K1AA Acquisition date : 12-SEP-2007 05:37:51

Nuclide Type: NP

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected PCI/GRAM	Decay Corr PCI/GRAM	1-Sigma %Error
	338.32	2135	11.40	2.617E+00	1.441E+00	1.464E+00	7.49
	911.07	2463	27.70*	1.264E+00	1.417E+00	1.439E+00	7.80
	964.60	------	5.20	1.201E+00	------ Line Not Found		------
	969.11	1873	16.60	1.197E+00	1.898E+00	1.927E+00	8.53
TH-228DA	238.63	10141	44.60	3.227E+00	1.420E+00	1.487E+00	6.35
	240.98	2824	3.95	3.204E+00	4.496E+00	4.709E+00	8.00
	583.14	3448	30.25*	1.816E+00	1.265E+00	1.325E+00	6.54
	860.37	496	4.48	1.328E+00	1.678E+00	1.758E+00	12.23
TH-232DA	238.63	10141	44.60	3.227E+00	1.420E+00	1.420E+00	6.35
	338.32	2135	12.40*	2.617E+00	1.325E+00	1.325E+00	7.49
	583.14	3448	30.25	1.816E+00	1.265E+00	1.265E+00	6.54
	911.07	2463	27.70	1.264E+00	1.417E+00	1.417E+00	7.80
	964.60	------	5.20	1.201E+00	------ Line Not Found		------
	969.11	1873	16.60	1.197E+00	1.898E+00	1.898E+00	8.53
U-234DA	241.98	2824	7.49	3.204E+00	2.371E+00	2.371E+00	8.00
	295.22	3387	19.20*	2.847E+00	1.248E+00	1.248E+00	6.90
	351.92	5918	37.20	2.553E+00	1.255E+00	1.255E+00	6.45
	609.31	4531	46.30	1.757E+00	1.122E+00	1.122E+00	6.31
U-238DA	241.98	2824	7.49	3.204E+00	2.371E+00	2.371E+00	8.00
	295.22	3387	19.20	2.847E+00	1.248E+00	1.248E+00	6.90
	351.92	5918	37.20*	2.553E+00	1.255E+00	1.255E+00	6.45
	609.31	4531	46.30	1.757E+00	1.122E+00	1.122E+00	6.31
U-238DHP	63.28	235	3.80*	1.179E+00	1.057E+00	1.057E+00	32.33
	92.59	1546	5.41	3.134E+00	1.837E+00	1.837E+00	10.22

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected PCI/GRAM	Decay Corr PCI/GRAM	1-Sigma %Error
BI-212	288.07	------	0.31	2.889E+00	------ Line Not Found		------
	327.96	503	0.14	2.668E+00	2.731E+01	2.731E+01	17.88
	452.83	------	0.31	2.167E+00	------ Line Not Found		------
	727.33	783	6.58*	1.530E+00	1.565E+00	1.565E+00	10.39
	785.37	228	1.10	1.436E+00	2.904E+00	2.904E+00	22.36
	893.41	------	0.38	1.285E+00	------ Line Not Found		------
	952.12	------	0.17	1.215E+00	------ Line Not Found		------
	1078.62	------	0.56	1.087E+00	------ Line Not Found		------
	1512.70	------	0.29	8.172E-01	------ Line Not Found		------
	1620.50	80	1.49	7.796E-01	1.387E+00	1.387E+00	27.73
	1806.00	------	0.09	7.343E-01	------ Line Not Found		------

Flag: "*" = Keyline

Unidentified Energy Lines
Sample ID : J479K1AA

Acquisition date : 12-SEP-2007 05:37:51

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
0	72.96	114	1994	0.60	323.64	321	7	3.17E-03	69.2	1.90E+00	
0	75.01	2220	2752	0.69	332.62	328	10	6.17E-02	5.1	2.05E+00	
0	77.22	3178	2861	0.70	342.28	338	12	8.83E-02	3.9	2.21E+00	
0	84.45	906	3249	1.44	373.91	367	14	2.52E-02	13.8	2.68E+00	
0	87.29	1517	2616	0.96	386.32	381	12	4.21E-02	7.5	2.85E+00	T
0	89.91	853	2093	0.83	397.81	393	10	2.37E-02	10.9	2.98E+00	
0	99.50	187	1347	0.71	439.77	437	7	5.20E-03	33.4	3.39E+00	T
0	129.15	614	2128	0.79	569.48	565	11	1.71E-02	15.1	3.91E+00	
0	409.11	369	979	1.14	1794.05	1785	20	1.03E-02	21.4	2.32E+00	
0	462.80	588	617	0.91	2028.84	2022	14	1.63E-02	9.9	2.14E+00	T
0	673.45	55	358	0.62	2949.90	2943	13	1.51E-03	72.8	1.63E+00	
0	794.69	434	541	1.54	3479.95	3468	24	1.21E-02	12.9	1.42E+00	T
0	933.86	275	405	1.68	4088.27	4074	24	7.64E-03	17.4	1.24E+00	
0	1376.89	253	187	1.82	6024.08	6015	19	7.03E-03	12.7	8.79E-01	
0	1588.81	293	226	1.85	6949.71	6930	41	8.12E-03	14.0	7.90E-01	
0	1728.79	198	72	1.58	7560.99	7543	32	5.50E-03	11.9	7.50E-01	

Flags: "T" = Tentatively associated

Sample ID : J479K1AA Acquisition date : 12-SEP-2007 05:37:51

Nuclide	Half-life	Half-Life Ratio	Energy	%Abund	Activity (PCI/GRAM)	1-Sigma %Error	Rejected by
NA-22	2.60Y	0.05	511.00	179.68	1.042E-01	7.95	Abun.
			1274.54*	99.94	--- Not Found ---		
		% Abundances Found =		64.26			
SC-46	83.85D	0.56	889.25	99.98	--- Not Found ---		Abun.
			1120.51*	99.99	3.112E-01	8.50	
		% Abundances Found =		50.00			
TC-95M	61.00D	0.77	204.12*	66.20	--- Not Found ---		Abun.
			582.07	29.30	2.221E+00	6.54	
			835.13	26.10	--- Not Found ---		
		% Abundances Found =		24.10			
RU-103	39.35D	1.19	497.08*	89.00	--- Not Found ---		Abun.
			610.33	5.60	2.114E+01	6.31	
		% Abundances Found =		5.92			
RU-106DA	368.20D	0.13	511.85	20.60	9.594E-01	7.95	Abun.
			621.84*	9.80	--- Not Found ---		
		% Abundances Found =		67.76			
SB-125	2.77Y	0.05	176.33	6.89	--- Not Found ---		Abun.
			427.89*	29.33	--- Not Found ---		
			463.38	10.35	5.531E-01	11.55	
			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	4.559E-01	15.63	
			302.84	17.80	--- Not Found ---		
			356.00*	62.05	--- Not Found ---		
			383.85	8.70	--- Not Found ---		
		% Abundances Found =		5.37			
CS-134	2.06Y	0.06	569.31	15.43	--- Not Found ---		Abun.
			604.70	97.60	--- Not Found ---		
			795.84*	85.40	7.524E-02	14.52	
			801.93	8.73	--- Not Found ---		
		% Abundances Found =		41.22			
LA-140	40.22H	27.91	328.77	20.50	4.652E+07	16.04	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	0.03	42.90	21.16	--- Not Found ---		Abun.
			86.54	30.90	3.538E-01	10.11	
			105.31*	20.70	--- Not Found ---		
		% Abundances Found =		42.47			

Sample ID : J479K1AA Acquisition date : 12-SEP-2007 05:37:51

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	1.919E-01	8.86	
			205.31	4.70	--- Not Found ---		
		% Abundances Found =		78.03			
NP-237DA	2.14E+06Y	0.00	98.44	17.60	6.310E-02	34.00	Abun.
			311.98*	36.00	--- Not Found ---		
		% Abundances Found =		32.84			

Flag: "*" = Keyline

VMS Nuclide Identification Report V3.0 Generated 12-SEP-2007 16:55:51

Configuration : $DISK1:[GER11.SAMPLE]J479K1AA_120970537.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 : 27-JUL-2007 16:15:00 Acquisition date : 12-SEP-2007 05:37:51
Sample ID : J479K1AA Sample quantity : 372.70 GRAMS
Sample type : Sample geometry : S200
Elapsed live time: 0 10:00:00.00 Elapsed real time: 0 10:00:37.95 0.1%
Peak Width (FWHM): 3.00 Confidence level : 5.00 %
Energy tolerance : 1.50 Half life ratio : 8.00
Errors propagated: Yes Systematic Error : 5.00 %
Efficiency type : Empirical Efficiencies at : Peak Energy
Abundance limit : 80.00 WTM error limit : 3.00

Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Activity (PCI/GRAM)	Act error	MDA (PCI/GRAM)	MDA error	Act/MDA
K-40	2.553E+01	1.647E+00	1.273E-01	5.030E-03	200.518
TL-208	4.543E-01	2.969E-02	1.494E-02	4.946E-04	30.408
BI-212	1.565E+00	1.626E-01	2.149E-01	9.521E-03	7.284
PB-212	1.420E+00	9.020E-02	2.503E-02	9.336E-04	56.719
BI-214	1.122E+00	7.080E-02	2.830E-02	9.392E-04	39.634
PB-214	1.255E+00	8.100E-02	3.001E-02	1.084E-03	41.832
RA-223	4.627E-01	5.402E-02	8.082E-02	3.062E-03	5.725
RA-224DA	1.487E+00	9.449E-02	2.622E-02	9.780E-04	56.719
RA-226DA	1.122E+00	7.081E-02	2.830E-02	9.393E-04	39.634
AC-228	1.417E+00	1.106E-01	5.454E-02	2.822E-03	25.987
RA-228DA	1.439E+00	1.123E-01	5.539E-02	2.866E-03	25.987
TH-228DA	1.325E+00	8.658E-02	4.357E-02	1.442E-03	30.408
TH-232DA	1.325E+00	9.926E-02	9.332E-02	3.460E-03	14.198
U-234DA	1.248E+00	8.609E-02	5.694E-02	2.172E-03	21.922
U-238DA	1.255E+00	8.100E-02	3.001E-02	1.084E-03	41.832
U-238DHP	1.057E+00	3.416E-01	8.479E-01	3.515E-02	1.246

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

Nuclide	Key-Line Activity (PCI/GRAM)	K.L. Ided	Act error	MDA (PCI/GRAM)	MDA error	Act/MDA
BE-7	-2.282E-02		6.279E-02	2.079E-01	6.843E-03	-0.110
NA-22	-1.220E-03		6.128E-03	2.061E-02	7.877E-04	-0.059
SC-46	3.112E-01	+	2.645E-02	5.108E-02	1.986E-03	6.092
CR-51	-1.490E-01		1.098E-01	3.581E-01	1.367E-02	-0.416
MN-54	1.689E-02		5.594E-03	1.915E-02	8.941E-04	0.882
CO-57	-9.378E-03		3.309E-02	1.071E-01	3.929E-03	-0.088
CO-58	-6.981E-03		6.785E-03	2.240E-02	1.000E-03	-0.312
FE-59	-5.971E-03		2.059E-02	6.851E-02	2.779E-03	-0.087
CO-60	-4.249E-04		5.137E-03	1.733E-02	7.007E-04	-0.025
ZN-65	-1.101E-02		1.582E-02	4.346E-02	1.707E-03	-0.253
SE-75	7.452E-03		7.071E-03	2.410E-02	9.115E-04	0.309
SR-85	1.497E-02		6.991E-03	2.104E-02	6.859E-04	0.711

Sample ID : J479K1AA Acquisition date : 12-SEP-2007 05:37:51

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

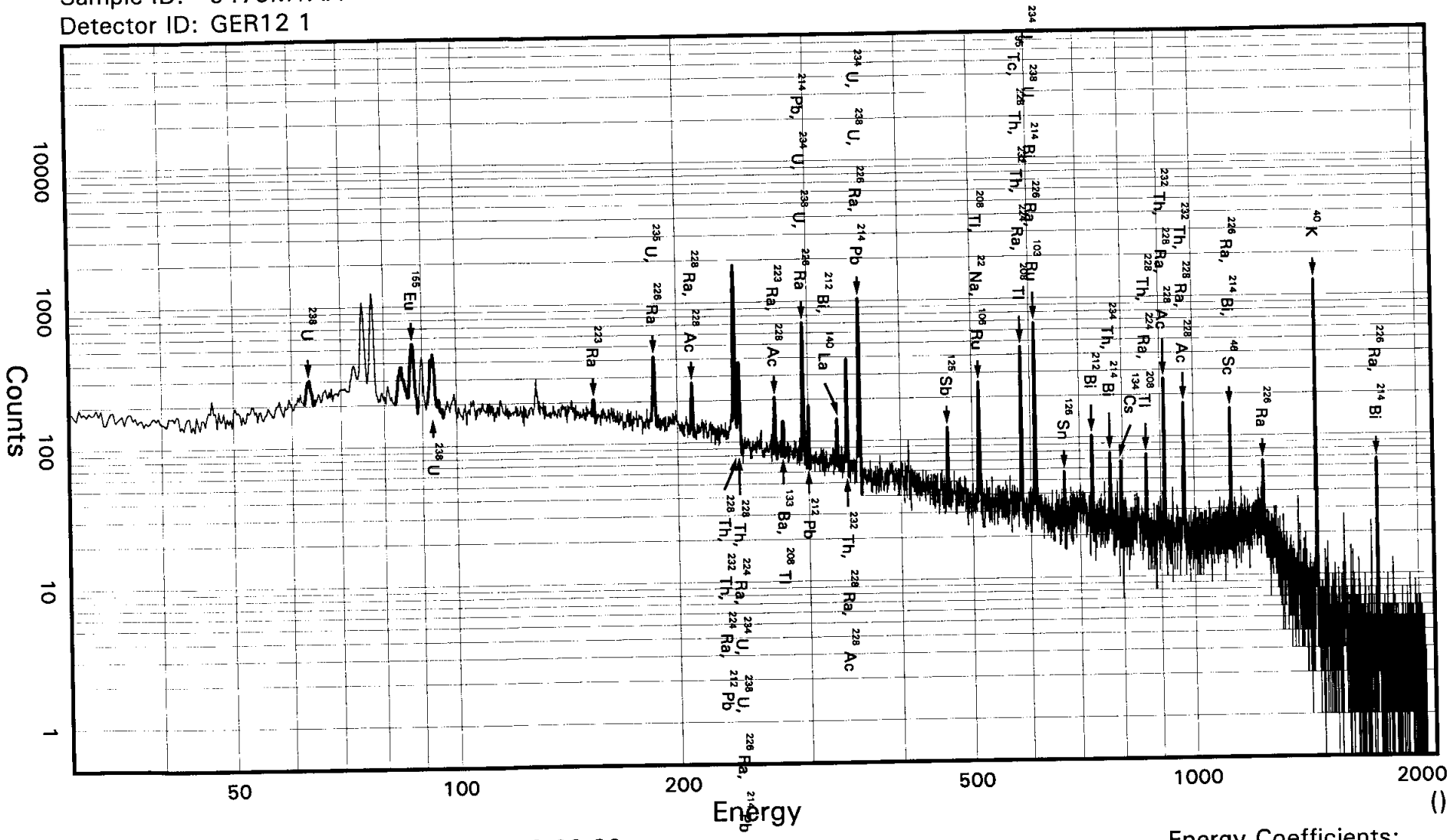
Nuclide	Key-Line Activity (PCI/GRAM)	K.L. Ided	Act error	MDA (PCI/GRAM)	MDA error	Act/MDA
Y-88	1.585E-02		5.143E-03	1.946E-02	6.217E-04	0.815
NB-94	-3.316E-03		4.280E-03	1.410E-02	7.030E-04	-0.235
NB-95	2.167E-02		1.457E-02	4.264E-02	1.747E-03	0.508
TC-95M	9.425E-03		8.576E-03	2.856E-02	1.039E-03	0.330
ZR-95	1.508E-02		1.321E-02	4.536E-02	1.826E-03	0.332
ZRNB-95	3.138E-02		1.917E-02	5.623E-02	2.304E-03	0.558
RH-101	1.662E-02		4.894E-03	1.632E-02	5.909E-04	1.018
RH-102M	-4.223E-03		3.815E-03	1.248E-02	4.110E-04	-0.338
RU-103	1.131E-02		8.977E-03	3.025E-02	9.913E-04	0.374
RU-106DA	3.193E-02		4.235E-02	1.436E-01	4.770E-03	0.222
AG-108M	-2.126E-04		3.690E-03	1.240E-02	4.093E-04	-0.017
AG-110M	-3.679E-04		6.878E-03	2.296E-02	1.172E-03	-0.016
SN-113DA	-1.461E-02		6.900E-03	2.262E-02	7.426E-04	-0.646
SB-124	7.151E-03		6.931E-03	2.360E-02	7.828E-04	0.303
SB-125	-4.801E-03		1.202E-02	4.022E-02	1.328E-03	-0.119
SN-126DA	1.770E-02		4.279E-03	1.466E-02	4.914E-04	1.207
I-131	8.639E-02		2.197E-01	7.537E-01	2.652E-02	0.115
BA-133	-1.800E-03		5.901E-03	1.785E-02	6.398E-04	-0.101
CS-134	7.524E-02	+	1.093E-02	2.299E-02	9.980E-04	3.273
CS-137DA	6.390E-03		5.206E-03	1.757E-02	5.830E-04	0.364
LA-138	4.303E-03		6.881E-03	2.404E-02	9.558E-04	0.179
CE-139	2.850E-03		4.823E-03	1.633E-02	5.799E-04	0.175
BA-140	-2.032E-01		1.772E-01	5.923E-01	1.944E-02	-0.343
BALA-140	1.653E-02		1.179E-01	3.429E-01	1.289E-02	0.048
CE-141	-3.973E-02		1.717E-02	5.691E-02	2.052E-03	-0.698
CE-144	-2.872E-03		3.240E-02	1.052E-01	3.892E-03	-0.027
CEPR-144	-7.511E-03		6.479E-02	2.104E-01	7.780E-03	-0.036
PM-144	-9.242E-04		4.299E-03	1.438E-02	4.775E-04	-0.064
PM-146	8.386E-03		5.483E-03	1.863E-02	6.150E-04	0.450
EU-152	-3.396E-03		1.262E-02	4.154E-02	1.523E-03	-0.082
EU-154	2.018E-03		1.678E-02	5.677E-02	2.169E-03	0.036
EU-155	7.518E-02		1.707E-02	5.650E-02	2.232E-03	1.331
HF-181	3.374E-03		9.222E-03	3.082E-02	1.014E-03	0.109
BI-207	-2.865E-04		3.879E-03	1.311E-02	4.331E-04	-0.022
BI-210M	3.687E-03		7.011E-03	2.210E-02	8.361E-04	0.167
AC-227DA	6.248E-02		3.672E-02	1.048E-01	3.905E-03	0.596
TH-234DA	1.794E+00		7.883E-01	2.731E+00	1.289E-01	0.657
U-235HP	5.838E-02		3.073E-02	1.004E-01	3.630E-03	0.581
NP-237DA	2.241E-03		8.950E-03	2.992E-02	1.143E-03	0.075
AM-241HP	2.542E-02		3.494E-02	1.142E-01	4.535E-03	0.223

STL Richland WA.

BRC SOIL

Sample ID: J479M1AA
Detector ID: GER12 1

Batch ID: 7233482



Acquisition Start: 12-SEP-2007 05:38:09.82
Preset Live Time: 0 10:00:00.00
Elapsed Live Time: 0 10:00:00.00

Energy Coefficients:
Offset: 1.13963E+01
Slope: 2.47616E-01
Quadrature: 1.43361E-09

SAMPLE IDENTIFICATION: J479M1AA

CONFIGURATION ID: GER12:J479M1AA_120970538
TITLE : BRC SOIL
SAMPLE ID : J479M1AA

REPORT DATE: 12-SEP-07
ACQUIRE DATE: 12-SEP-07 05:38:09
ELAPSED LIVE TIME: 36000.0 Sec
PRESET LIVE TIME: 0 10:00:00

SAMPLE DATE: 27-JUL-2007 16:15:00.00
CALIB DATE: 12-SEP-2007 05:08:22.36
ELAPSED LIVE TIME: 0 10:00:00
ELAPSED REAL TIME: 0 10:00:18

SAMPLE QUANTITY: 3.7390E+02
SAMPLE GEOMETRY: S200

UNITS: GRAMS
SAMPLE TYPE:

ENERGY OFFSET: 1.1396E+01 keV
ENERGY SLOPE: 2.4762E-01 keV/C
ENERGY Q COEFF: 1.4336E-09 keV/C^^2
PEAK SENSITIVITY: 5.000

FWHM OFFSET: 4.6370E-01 keV
FWHM SLOPE: 3.3190E-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 12-SEP-2007 16:56:48

Configuration : $DISK1:[GER12.SAMPLE]J479M1AA_120970538.CNF;1
Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6
Sample title : BRC SOIL
Sample date : 27-JUL-2007 16:15:00 Acquisition date : 12-SEP-2007 05:38:09
Sample ID : J479M1AA Sample quantity : 373.90 GRAMS
Sample type : Sample geometry : S200
Elapsed live time: 0 10:00:00.00 Elapsed real time: 0 10:00:18.75 0.1%
Start energy : 11.64 End energy : 2039.96
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	320	1914	0.84	209.34	206	9	8.89E-03	25.3	
2	1	72.88*	260	2508	0.82	248.30	242	30	7.23E-03	38.1	5.94E+00
3	1	74.81*	2412	2406	0.83	256.11	242	30	6.70E-02	4.6	
4	1	77.09	3488	2258	0.83	265.30	242	30	9.69E-02	3.1	
5	8	84.44*	765	2841	1.52	294.97	288	25	2.13E-02	15.8	1.37E+00
6	8	87.17*	1482	2584	1.08	306.02	288	25	4.12E-02	7.9	
7	0	89.85	940	1930	0.90	316.84	312	10	2.61E-02	9.3	
8	0	93.08	1739	3534	1.45	329.86	323	20	4.83E-02	8.7	
9	0	128.97	326	1805	0.73	474.84	470	10	9.05E-03	25.0	
10	0	154.16	188	1432	0.99	576.54	573	9	5.21E-03	37.2	
11	0	185.99	1364	2279	1.14	705.09	698	16	3.79E-02	8.3	
12	0	209.20	645	1512	0.96	798.82	792	13	1.79E-02	13.0	
13	6	238.65	7199	1506	1.02	917.76	909	30	2.00E-01	1.6	4.86E+00
14	6	241.71	2095	1647	1.74	930.11	909	30	5.82E-02	5.3	
15	0	270.32	593	1171	0.97	1045.67	1039	14	1.65E-02	12.9	
16	0	277.13	356	1029	1.47	1073.16	1067	13	9.90E-03	19.3	
17	0	295.18	2971	1136	1.04	1146.06	1138	16	8.25E-02	3.1	
18	0	300.08	461	811	0.98	1165.86	1160	12	1.28E-02	13.2	
19	0	327.83	394	1267	0.98	1277.91	1270	19	1.09E-02	22.2	
20	0	338.32	1429	1146	0.97	1320.29	1312	17	3.97E-02	6.0	
21	0	351.90*	4845	1189	1.11	1375.13	1365	19	1.35E-01	2.3	
22	0	409.29	266	680	1.03	1606.90	1600	15	7.38E-03	22.2	
23	0	462.73	497	676	0.95	1822.71	1812	19	1.38E-02	13.3	
24	0	510.91*	825	1030	1.69	2017.27	2004	28	2.29E-02	13.2	
25	0	583.16	2276	723	1.21	2309.04	2300	19	6.32E-02	3.5	
26	0	609.20*	3651	912	1.35	2414.22	2402	27	1.01E-01	2.9	
27	0	666.16	67	312	1.61	2644.25	2640	11	1.86E-03	53.1	
28	0	727.23	583	758	1.58	2890.85	2877	31	1.62E-02	14.6	
29	0	768.28	328	437	1.18	3056.62	3047	19	9.11E-03	16.2	
30	0	794.71	250	424	1.00	3163.36	3155	19	6.95E-03	20.7	
31	0	860.45	379	389	1.32	3428.84	3419	21	1.05E-02	14.0	
32	0	911.11	1655	516	1.64	3633.45	3623	23	4.60E-02	4.3	
33	0	933.77	229	373	2.18	3724.92	3716	23	6.36E-03	22.8	
34	0	969.63	582	1044	1.22	3869.76	3851	26	1.62E-02	13.4	
35	0	1120.18	835	553	1.33	4477.71	4465	26	2.32E-02	7.4	
36	0	1238.10	259	563	1.36	4953.94	4944	21	7.18E-03	20.5	
37	0	1377.61	235	203	1.96	5517.29	5504	26	6.54E-03	15.4	
38	0	1460.59*	10601	693	1.93	5852.40	5836	33	2.94E-01	1.2	
39	0	1588.03	126	101	1.30	6367.02	6356	18	3.49E-03	18.4	
40	0	1630.50	87	75	1.52	6538.54	6525	25	2.42E-03	25.0	
41	0	1729.34	204	85	2.45	6937.66	6921	41	5.67E-03	14.7	
42	0	1764.04	598	124	2.07	7077.81	7062	28	1.66E-02	6.0	

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

VMS Nuclide Identification Report V3.0 Generated 12-SEP-2007 16:56:48

Configuration : $DISK1:[GER12.SAMPLE]J479M1AA_120970538.CNF;1
Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.3
Sample title : BRC SOIL
Sample date : 27-JUL-2007 16:15:00 Acquisition date : 12-SEP-2007 05:38:09
Sample ID : J479M1AA Sample quantity : 373.90 GRAMS
Sample type : Sample geometry : S200
Elapsed live time: 0 10:00:00.00 Elapsed real time: 0 10:00:18.75 0.1%
Energy tolerance : 2.00 Half life ratio : 8.00
Errors propagated: Yes Systematic Error : 5.00 %
Efficiency type : Empirical Efficiencies at : Peak Energy
Abundance limit : 80.00

Nuclide Line Activity Report

Nuclide Type: NP

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected PCI/GRAM	Decay Corr PCI/GRAM	1-Sigma %Error
K-40	1460.81	10601	10.67*	8.870E-01	2.249E+01	2.249E+01	10.07
TL-208	277.35	356	6.80	3.061E+00	3.437E-01	3.437E-01	20.38
	510.84	825	21.60	2.026E+00	3.784E-01	3.784E-01	14.49
	583.14	2276	84.20*	1.844E+00	2.943E-01	2.943E-01	6.97
	860.37	379	12.46	1.377E+00	4.428E-01	4.428E-01	16.15
PB-212	238.63	7199	44.60*	3.357E+00	9.653E-01	9.653E-01	6.91
	300.09	461	3.41	2.908E+00	9.333E-01	9.333E-01	14.70
BI-214	609.31	3651	46.30*	1.787E+00	8.861E-01	8.861E-01	6.72
	768.36	328	5.04	1.504E+00	8.690E-01	8.690E-01	17.70
	1120.29	835	15.10	1.112E+00	9.982E-01	9.982E-01	10.17
	1764.49	598	15.80	7.551E-01	1.007E+00	1.007E+00	9.20
PB-214	241.98	2095	7.49	3.332E+00	1.685E+00	1.685E+00	8.56
	295.21	2971	19.20	2.940E+00	1.057E+00	1.057E+00	7.21
	351.92	4845	37.20*	2.617E+00	9.991E-01	9.991E-01	6.72
	785.91	------	1.10	1.478E+00	------ Line Not Found		------
RA-223	154.21	188	5.58	4.129E+00	1.634E-01	1.641E-01	37.82
	269.46	593	13.60*	3.110E+00	2.816E-01	2.827E-01	14.53
	323.87	------	3.88	2.766E+00	------ Line Not Found		------
RA-224DA	238.63	7199	44.60*	3.357E+00	9.653E-01	1.011E+00	6.91
	240.98	2095	3.95	3.332E+00	3.196E+00	3.348E+00	8.56
	583.14	2276	30.25	1.844E+00	8.192E-01	8.582E-01	6.97
	860.37	379	4.48	1.377E+00	1.232E+00	1.290E+00	16.15
RA-226DA	186.21	1364	3.50	3.841E+00	2.037E+00	2.037E+00	10.74
	241.98	2095	7.49	3.332E+00	1.685E+00	1.686E+00	8.56
	295.22	2971	19.20	2.940E+00	1.057E+00	1.057E+00	7.21
	351.92	4845	37.20	2.617E+00	9.991E-01	9.991E-01	6.72
	609.32	3651	46.30*	1.787E+00	8.861E-01	8.862E-01	6.72
	1120.28	835	15.10	1.112E+00	9.982E-01	9.982E-01	10.17
	1238.11	259	5.94	1.022E+00	8.551E-01	8.551E-01	22.04
	1764.49	598	15.80	7.551E-01	1.007E+00	1.007E+00	9.20
AC-228	209.28	645	4.40	3.619E+00	8.138E-01	8.138E-01	14.69
	270.23	593	3.60	3.110E+00	1.064E+00	1.064E+00	14.53
	338.32	1429	11.40	2.687E+00	9.364E-01	9.364E-01	8.76
	911.07	1655	27.70*	1.316E+00	9.113E-01	9.113E-01	9.52
	969.11	582	16.60	1.252E+00	5.627E-01	5.627E-01	15.67
RA-228DA	209.28	645	4.40	3.619E+00	8.138E-01	8.264E-01	14.69

Nuclide Line Activity Report (continued)
Sample ID : J479M1AA
Acquisition date : 12-SEP-2007 05:38:09

Nuclide Type: NP

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected PCI/GRAM	Decay Corr PCI/GRAM	1-Sigma %Error
	338.32	1429	11.40	2.687E+00	9.364E-01	9.510E-01	8.76
	911.07	1655	27.70*	1.316E+00	9.113E-01	9.254E-01	9.52
	964.60	------	5.20	1.257E+00	------ Line Not Found		------
	969.11	582	16.60	1.252E+00	5.627E-01	5.714E-01	15.67
TH-228DA	238.63	7199	44.60	3.357E+00	9.653E-01	1.011E+00	6.91
	240.98	2095	3.95	3.332E+00	3.196E+00	3.348E+00	8.56
	583.14	2276	30.25*	1.844E+00	8.192E-01	8.582E-01	6.97
	860.37	379	4.48	1.377E+00	1.232E+00	1.290E+00	16.15
TH-232DA	238.63	7199	44.60	3.357E+00	9.653E-01	9.653E-01	6.91
	338.32	1429	12.40*	2.687E+00	8.609E-01	8.609E-01	8.76
	583.14	2276	30.25	1.844E+00	8.192E-01	8.192E-01	6.97
	911.07	1655	27.70	1.316E+00	9.113E-01	9.113E-01	9.52
	964.60	------	5.20	1.257E+00	------ Line Not Found		------
	969.11	582	16.60	1.252E+00	5.627E-01	5.627E-01	15.67
U-234DA	241.98	2095	7.49	3.332E+00	1.685E+00	1.685E+00	8.56
	295.22	2971	19.20*	2.940E+00	1.057E+00	1.057E+00	7.21
	351.92	4845	37.20	2.617E+00	9.991E-01	9.991E-01	6.72
	609.31	3651	46.30	1.787E+00	8.861E-01	8.861E-01	6.72
U-238DA	241.98	2095	7.49	3.332E+00	1.685E+00	1.685E+00	8.56
	295.22	2971	19.20	2.940E+00	1.057E+00	1.057E+00	7.21
	351.92	4845	37.20*	2.617E+00	9.991E-01	9.991E-01	6.72
	609.31	3651	46.30	1.787E+00	8.861E-01	8.861E-01	6.72
U-238DHP	63.28	320	3.80*	2.172E+00	7.785E-01	7.785E-01	26.03
	92.59	1739	5.41	3.852E+00	1.676E+00	1.676E+00	11.19

Flag: "*" = Keyline

Unidentified Energy Lines
Sample ID : J479M1AA

Acquisition date : 12-SEP-2007 05:38:09

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
1	72.88	260	2508	0.82	248.30	242	30	7.23E-03	38.1	2.89E+00	
1	74.81	2412	2406	0.83	256.11	242	30	6.70E-02	4.6	3.02E+00	
1	77.09	3488	2258	0.83	265.30	242	30	9.69E-02	3.1	3.15E+00	
8	84.44	765	2841	1.52	294.97	288	25	2.13E-02	15.8	3.53E+00	
8	87.17	1482	2584	1.08	306.02	288	25	4.12E-02	7.9	3.65E+00	T
0	89.85	940	1930	0.90	316.84	312	10	2.61E-02	9.3	3.75E+00	
0	128.97	326	1805	0.73	474.84	470	10	9.05E-03	25.0	4.26E+00	
0	327.83	394	1267	0.98	1277.91	1270	19	1.09E-02	22.2	2.74E+00	T
0	409.29	266	680	1.03	1606.90	1600	15	7.38E-03	22.2	2.36E+00	
0	462.73	497	676	0.95	1822.71	1812	19	1.38E-02	13.3	2.17E+00	T
0	666.16	67	312	1.61	2644.25	2640	11	1.86E-03	53.1	1.67E+00	T
0	727.23	583	758	1.58	2890.85	2877	31	1.62E-02	14.6	1.57E+00	T
0	794.71	250	424	1.00	3163.36	3155	19	6.95E-03	20.7	1.47E+00	T
0	933.77	229	373	2.18	3724.92	3716	23	6.36E-03	22.8	1.29E+00	
0	1377.61	235	203	1.96	5517.29	5504	26	6.54E-03	15.4	9.33E-01	
0	1588.03	126	101	1.30	6367.02	6356	18	3.49E-03	18.4	8.26E-01	
0	1630.50	87	75	1.52	6538.54	6525	25	2.42E-03	25.0	8.07E-01	
0	1729.34	204	85	2.45	6937.66	6921	41	5.67E-03	14.7	7.68E-01	

Flags: "T" = Tentatively associated

Sample ID : J479M1AA Acquisition date : 12-SEP-2007 05:38:09

Nuclide	Half-life	Half-Life Ratio	Energy	%Abund	Activity (PCI/GRAM)	1-Sigma %Error	Rejected by
NA-22	2.60Y	0.05	511.00	179.68	4.707E-02	14.49	Abun.
			1274.54*	99.94	--- Not Found ---		
		% Abundances Found =		64.26			
SC-46	83.85D	0.56	889.25	99.98	--- Not Found ---		Abun.
			1120.51*	99.99	2.219E-01	10.17	
		% Abundances Found =		50.00			
TC-95M	61.00D	0.77	204.12*	66.20	--- Not Found ---		Abun.
			582.07	29.30	1.439E+00	6.97	
			835.13	26.10	--- Not Found ---		
		% Abundances Found =		24.10			
RU-103	39.35D	1.19	497.08*	89.00	--- Not Found ---		Abun.
			610.33	5.60	1.670E+01	6.72	
		% Abundances Found =		5.92			
RU-106DA	368.20D	0.13	511.85	20.60	4.333E-01	14.49	Abun.
			621.84*	9.80	--- Not Found ---		
		% Abundances Found =		67.76			
SB-125	2.77Y	0.05	176.33	6.89	--- Not Found ---		Abun.
			427.89*	29.33	--- Not Found ---		
			463.38	10.35	4.586E-01	14.66	
			600.56	17.80	--- Not Found ---		
			635.90	11.32	--- Not Found ---		
		% Abundances Found =		13.67			
SN-126DA	1.00E+05Y	0.00	414.70	97.66	--- Not Found ---		Abun.
			666.33*	99.95	8.031E-03	53.49	
			695.00	99.95	--- Not Found ---		
		% Abundances Found =		33.59			
BA-133	10.50Y	0.01	81.00	33.00	--- Not Found ---		Abun.
			276.40	6.90	3.416E-01	20.38	
			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	0.06	569.31	15.43	--- Not Found ---		Abun.
			604.70	97.60	--- Not Found ---		
			795.84*	85.40	4.193E-02	21.94	
			801.93	8.73	--- Not Found ---		
		% Abundances Found =		41.22			
LA-140	40.22H	27.91	328.77	20.50	3.530E+07	23.12	Decay,Abun.
			487.03	45.50	--- Not Found ---		
			815.85	23.50	--- Not Found ---		
			1596.49*	95.49	--- Not Found ---		
		% Abundances Found =		11.08			

Sample ID : J479M1AA Acquisition date : 12-SEP-2007 05:38:09

Nuclide	Half-life	Half-Life Ratio	Energy	%Abund	Activity (PCI/GRAM)	1-Sigma %Error	Rejected by
EU-155	4.96Y	0.03	42.90	21.16	--- Not Found ---		Abun.
			86.54	30.90	2.690E-01	10.68	
			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	2.072E+01	24.44	
			452.83	0.31	--- Not Found ---		
			727.33*	6.58	1.134E+00	16.19	
			785.37	1.10	--- Not Found ---		
			893.41	0.38	--- Not Found ---		
			952.12	0.17	--- Not Found ---		
			1078.62	0.56	--- Not Found ---		
			1512.70	0.29	--- Not Found ---		
			1620.50	1.49	--- Not Found ---		
			1806.00	0.09	--- Not Found ---		
		% Abundances Found =		58.84			
TH-234DA	4.47E+09Y	0.00	766.41	0.21	2.086E+01	17.70	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	1.320E-01	10.74	
			205.31	4.70	--- Not Found ---		
		% Abundances Found =		78.03			

Flag: "*" = Keyline

VMS Nuclide Identification Report V3.0 Generated 12-SEP-2007 16:56:50

Configuration : $DISK1:[GER12.SAMPLE]J479M1AA_120970538.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 : 27-JUL-2007 16:15:00 Acquisition date : 12-SEP-2007 05:38:09
Sample ID : J479M1AA Sample quantity : 373.90 GRAMS
Sample type : Sample geometry : S200
Elapsed live time: 0 10:00:00.00 Elapsed real time: 0 10:00:18.75 0.1%
Peak Width (FWHM): 3.00 Confidence level : 5.00 %
Energy tolerance : 2.00 Half life ratio : 8.00
Errors propagated: Yes Systematic Error : 5.00 %
Efficiency type : Empirical Efficiencies at : Peak Energy
Abundance limit : 80.00 WTM error limit : 3.00

Combined Activity-MDA Report

---- Identified Nuclides ----

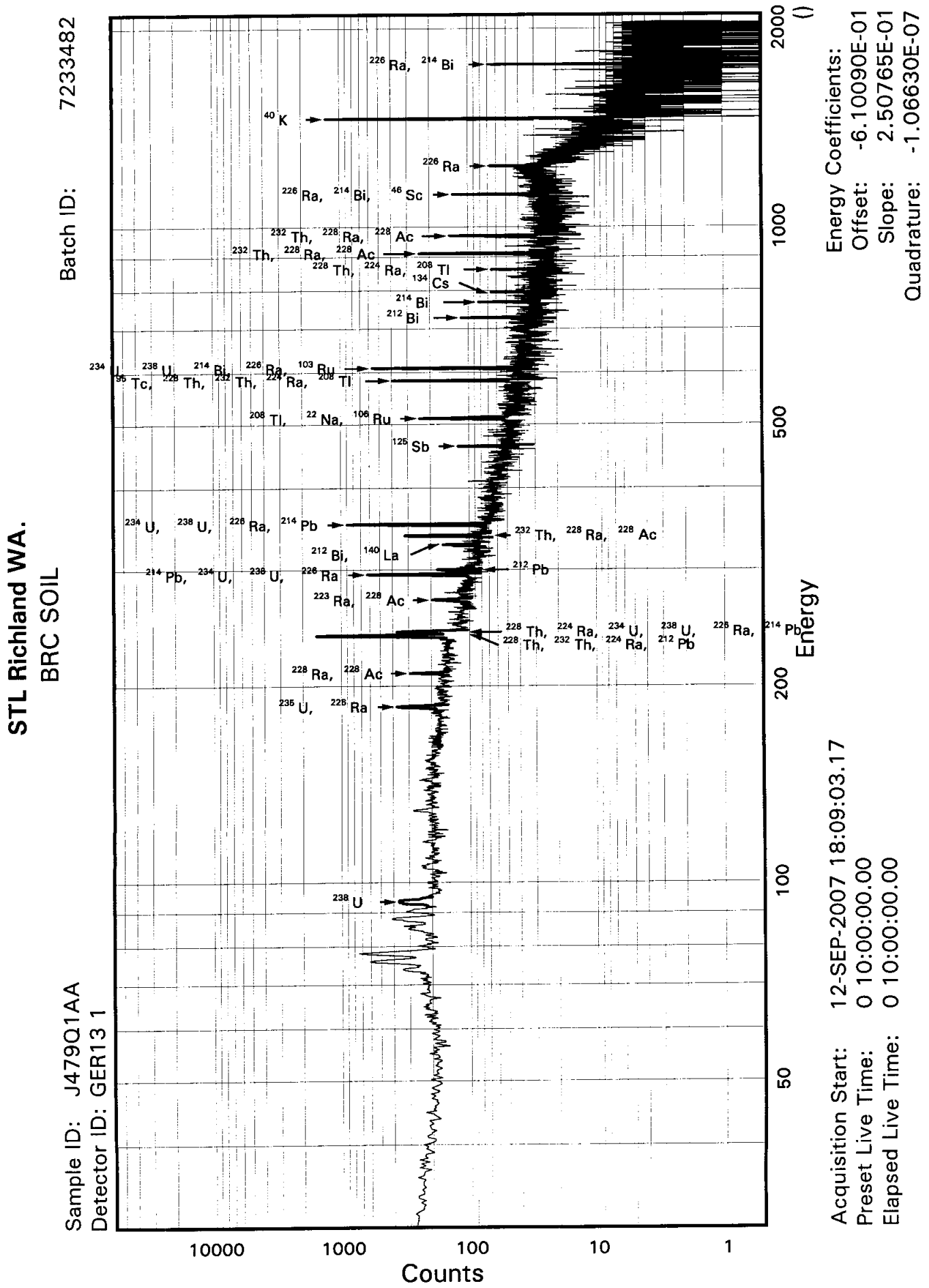
Nuclide	Activity (PCI/GRAM)	Act error	MDA (PCI/GRAM)	MDA error	Act/MDA
K-40	2.249E+01	2.264E+00	1.793E-01	1.552E-02	125.412
TL-208	2.943E-01	2.051E-02	1.466E-02	4.874E-04	20.078
PB-212	9.653E-01	6.670E-02	2.312E-02	1.040E-03	41.760
BI-214	8.861E-01	5.953E-02	2.736E-02	9.275E-04	32.390
PB-214	9.991E-01	6.714E-02	2.755E-02	1.065E-03	36.258
RA-223	2.827E-01	4.109E-02	7.580E-02	3.284E-03	3.730
RA-224DA	1.011E+00	6.988E-02	2.422E-02	1.089E-03	41.760
RA-226DA	8.862E-01	5.953E-02	2.736E-02	9.276E-04	32.389
AC-228	9.113E-01	8.672E-02	5.385E-02	3.678E-03	16.922
RA-228DA	9.254E-01	8.807E-02	5.469E-02	3.735E-03	16.922
TH-228DA	8.582E-01	5.980E-02	4.274E-02	1.421E-03	20.078
TH-232DA	8.609E-01	7.539E-02	8.304E-02	3.225E-03	10.368
U-234DA	1.057E+00	7.617E-02	5.487E-02	2.271E-03	19.266
U-238DA	9.991E-01	6.714E-02	2.755E-02	1.065E-03	36.258
U-238DHP	7.785E-01	2.026E-01	5.141E-01	1.968E-02	1.514

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

Nuclide	Key-Line Activity (PCI/GRAM)	K.L. Ided	Act error	MDA (PCI/GRAM)	MDA error	Act/MDA
BE-7	5.609E-02		5.650E-02	1.914E-01	6.462E-03	0.293
NA-22	3.158E-03		5.468E-03	1.872E-02	1.431E-03	0.169
SC-46	2.219E-01	+	2.257E-02	4.385E-02	2.148E-03	5.061
CR-51	-1.097E-01		1.026E-01	3.331E-01	1.299E-02	-0.329
MN-54	4.945E-03		4.835E-03	1.670E-02	9.861E-04	0.296
CO-57	-6.440E-04		2.995E-02	9.906E-02	3.941E-03	-0.007
CO-58	-7.837E-03		6.088E-03	2.033E-02	1.126E-03	-0.386
FE-59	7.998E-03		1.817E-02	6.118E-02	3.145E-03	0.131
CO-60	8.812E-04		4.595E-03	1.569E-02	1.532E-03	0.056
ZN-65	-1.162E-02		1.428E-02	4.038E-02	2.001E-03	-0.288
SE-75	2.226E-03		6.559E-03	2.195E-02	9.576E-04	0.101
SR-85	2.624E-02		6.902E-03	2.057E-02	6.453E-04	1.276
Y-88	1.890E-03		4.513E-03	1.597E-02	5.935E-04	0.118

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

Nuclide	Key-Line Activity (PCI/GRAM)	K.L. Ided	Act error	MDA (PCI/GRAM)	MDA error	Act/MDA
NB-94	3.559E-04		3.829E-03	1.310E-02	8.483E-04	0.027
NB-95	1.901E-02		1.224E-02	3.567E-02	1.742E-03	0.533
TC-95M	2.398E-03		7.559E-03	2.564E-02	1.181E-03	0.094
ZR-95	1.684E-02		1.172E-02	3.996E-02	1.901E-03	0.421
ZRNB-95	2.645E-02		1.609E-02	4.697E-02	2.294E-03	0.563
RH-101	-1.503E-03		4.784E-03	1.468E-02	6.783E-04	-0.102
RH-102M	-6.937E-03		3.552E-03	1.145E-02	3.884E-04	-0.606
RU-103	-7.912E-03		8.197E-03	2.689E-02	8.751E-04	-0.294
RU-106DA	2.109E-02		3.869E-02	1.324E-01	4.529E-03	0.159
AG-108M	4.541E-03		3.550E-03	1.211E-02	4.366E-04	0.375
AG-110M	-1.076E-02		6.226E-03	2.034E-02	1.362E-03	-0.529
SN-113DA	-1.175E-02		6.536E-03	2.148E-02	8.084E-04	-0.547
SB-124	7.338E-03		6.746E-03	2.207E-02	7.446E-04	0.333
SB-125	6.832E-03		1.118E-02	3.791E-02	1.377E-03	0.180
SN-126DA	8.031E-03	+	4.296E-03	1.321E-02	4.716E-04	0.608
I-131	-1.209E-01		2.041E-01	6.889E-01	2.645E-02	-0.176
BA-133	5.292E-03		5.515E-03	1.634E-02	6.303E-04	0.324
CS-134	4.193E-02	+	9.198E-03	1.989E-02	1.058E-03	2.108
CS-137DA	-7.969E-03		4.575E-03	1.407E-02	4.943E-04	-0.566
LA-138	-4.262E-03		5.954E-03	1.981E-02	1.762E-03	-0.215
CE-139	-6.066E-03		4.651E-03	1.497E-02	7.014E-04	-0.405
BA-140	3.258E-01		1.696E-01	5.759E-01	1.844E-02	0.566
BALA-140	-2.930E-01		9.672E-02	2.903E-01	2.079E-02	-1.010
CE-141	-1.454E-02		1.642E-02	5.361E-02	2.278E-03	-0.271
CE-144	-5.106E-02		2.962E-02	9.605E-02	3.742E-03	-0.532
CEPR-144	-1.029E-01		5.924E-02	1.921E-01	7.481E-03	-0.536
PM-144	-3.683E-03		3.996E-03	1.335E-02	4.554E-04	-0.276
PM-146	2.094E-02		5.213E-03	1.790E-02	6.281E-04	1.170
EU-152	1.680E-02		1.142E-02	3.946E-02	1.530E-03	0.426
EU-154	7.846E-03		1.501E-02	5.134E-02	3.922E-03	0.153
EU-155	2.863E-02		1.429E-02	4.830E-02	2.030E-03	0.593
HF-181	5.727E-03		8.513E-03	2.869E-02	9.612E-04	0.200
BI-207	2.356E-03		3.533E-03	1.217E-02	4.002E-04	0.194
BI-210M	-3.911E-03		6.580E-03	2.012E-02	8.761E-04	-0.194
BI-212	1.134E+00	+	1.836E-01	2.824E-01	1.388E-02	4.016
AC-227DA	1.575E-01		3.513E-02	1.022E-01	4.609E-03	1.541
TH-234DA	2.500E-01		6.852E-01	2.325E+00	1.423E-01	0.108
U-235HP	7.667E-02		2.836E-02	9.411E-02	3.949E-03	0.815
NP-237DA	-6.051E-03		8.568E-03	2.802E-02	1.116E-03	-0.216
AM-241HP	-3.344E-02		1.851E-02	5.900E-02	2.111E-03	-0.567


STL Richland WA.
BRC SOIL
Batch ID: 7233482
Sample ID: J479Q1AA
Detector ID: GER13 1
Energy Coefficients:
Offset: -6.10090E-01
Slope: 2.50765E-01
Quadrature: -1.06630E-07
Acquisition Start: 12-SEP-2007 18:09:03.17
Preset Live Time: 0 10:00:00.00
Elapsed Live Time: 0 10:00:00.00
Counts
Energy
10000
1000
100
10
1
50
100
200
500
1000
2000
226 Ra, 214 Bi
40 K
226 Ra
226 Ra, 214 Bi, 46 Sc
232 Th, 228 Ra, 228 Ac
232 Th, 228 Ra, 228 Ac
228 Th, 224 Ra, 208 Tl
134 Cs
214 Bi
212 Bi
234 U, 238 U, 214 Bi, 226 Ra, 103 Ru
95 Tc, 228 Th, 232 Th, 224 Ra, 208 Tl
208 Tl, 22 Na, 106 Ru
125 Sb
234 U, 238 U, 226 Ra, 214 Pb
232 Th, 228 Ra, 228 Ac
212 Bi, 140 La
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

SAMPLE IDENTIFICATION: J479Q1AA

CONFIGURATION ID: GER13:J479Q1AA_120971809
TITLE : BRC SOIL
SAMPLE ID : J479Q1AA

REPORT DATE: 13-SEP-07
ACQUIRE DATE: 12-SEP-07 18:09:03
ELAPSED LIVE TIME: 36000.0 Sec
PRESET LIVE TIME: 0 10:00:00

SAMPLE DATE: 27-JUL-2007 15:15:00.00
CALIB DATE: 12-SEP-2007 05:08:01.49
ELAPSED LIVE TIME: 0 10:00:00
ELAPSED REAL TIME: 0 10:00:19

SAMPLE QUANTITY: 3.9660E+02
SAMPLE GEOMETRY: S200

UNITS: GRAMS
SAMPLE TYPE:

ENERGY OFFSET: -.6101E+00 keV
ENERGY SLOPE: 2.5076E-01 keV/C
ENERGY Q COEFF: -.1066E-06 keV/C^^2
PEAK SENSITIVITY: 5.000

FWHM OFFSET: 4.0643E-01 keV
FWHM SLOPE: 4.2975E-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 13-SEP-2007 21:12:51

Configuration : $DISK1:[GER13.SAMPLE]J479Q1AA_120971809.CNF;1
Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6
Sample title : BRC SOIL
Sample date : 27-JUL-2007 15:15:00 Acquisition date : 12-SEP-2007 18:09:03
Sample ID : J479Q1AA Sample quantity : 396.60 GRAMS
Sample type : Sample geometry : S200
Elapsed live time: 0 10:00:00.00 Elapsed real time: 0 10:00:19.56 0.1%
Start energy : 19.45 End energy : 2046.50
Sensitivity : 5.00 Gaussian : 50.00
Critical level : No

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	3	73.90*	369	2622	1.03	297.19	291	29	1.02E-02	29.7	1.19E+00
2	3	75.89*	1459	2563	1.04	305.10	291	29	4.05E-02	7.9	
3	3	78.03	2190	2489	1.03	313.65	291	29	6.08E-02	5.1	
4	0	88.09*	825	2632	1.25	353.76	347	12	2.29E-02	13.4	
5	0	90.56	586	2008	1.29	363.63	359	10	1.63E-02	14.9	
6	0	93.55	986	2900	1.53	375.55	370	14	2.74E-02	12.0	
7	0	129.31	449	2273	1.09	518.19	513	12	1.25E-02	21.8	
8	0	186.06	972	2351	1.27	744.65	738	13	2.70E-02	10.8	
9	0	209.13	527	1817	0.87	836.71	831	12	1.47E-02	16.7	
10	5	238.52*	6239	1900	1.12	953.97	946	28	1.73E-01	2.0	2.26E+00
11	5	241.53	1766	1842	1.73	966.02	946	28	4.91E-02	6.1	
12	0	269.95	671	1688	1.59	1079.45	1071	17	1.86E-02	14.6	
13	0	295.05*	2355	1394	1.11	1179.61	1171	15	6.54E-02	4.3	
14	0	299.90	491	925	1.22	1198.98	1194	11	1.36E-02	12.8	
15	0	327.65	410	1344	1.72	1309.78	1301	16	1.14E-02	20.6	
16	0	338.24	1477	1611	1.29	1352.04	1343	22	4.10E-02	7.4	
17	0	351.71*	3985	1310	1.24	1405.83	1397	17	1.11E-01	2.8	
18	0	463.11	343	1020	1.18	1850.68	1840	20	9.53E-03	23.5	
19	0	510.79*	549	1296	1.97	2041.13	2030	22	1.52E-02	20.3	
20	0	583.19*	1904	837	1.38	2330.39	2320	21	5.29E-02	4.8	
21	0	593.69	13	577	2.15	2372.34	2363	15	3.62E-04	403.4	
22	0	609.17*	3074	851	1.36	2434.21	2422	25	8.54E-02	3.3	
23	0	727.20	507	599	1.30	2905.94	2897	19	1.41E-02	10.8	
24	0	767.94	359	577	1.55	3068.85	3058	21	9.97E-03	15.2	
25	0	794.79	358	560	1.52	3176.19	3165	24	9.94E-03	15.7	
26	0	861.06	279	564	1.44	3441.21	3430	23	7.75E-03	19.7	
27	0	911.16*	1504	814	1.77	3641.61	3625	36	4.18E-02	6.0	
28	0	967.97*	1185	760	1.91	3868.86	3849	35	3.29E-02	7.0	
29	0	1120.29*	735	765	1.59	4478.46	4463	32	2.04E-02	10.6	
30	0	1238.16	308	647	2.25	4950.39	4939	23	8.56E-03	19.1	
31	0	1377.55	209	247	1.92	5508.73	5494	26	5.81E-03	18.7	
32	0	1460.47*	11363	500	2.23	5841.00	5822	36	3.16E-01	1.1	
33	0	1508.99	91	108	1.28	6035.47	6023	22	2.52E-03	24.7	
34	0	1587.96	110	121	2.52	6352.05	6340	22	3.06E-03	21.6	
35	0	1729.49	147	101	1.69	6919.65	6904	34	4.09E-03	17.9	
36	0	1763.89*	503	154	2.16	7057.64	7040	41	1.40E-02	8.7	

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

VMS Nuclide Identification Report V3.0 Generated 13-SEP-2007 21:12:51

Configuration : $DISK1:[GER13.SAMPLE]J479Q1AA_120971809.CNF;1
Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.3
Sample title : BRC SOIL
Sample date : 27-JUL-2007 15:15:00 Acquisition date : 12-SEP-2007 18:09:03
Sample ID : J479Q1AA Sample quantity : 396.60 GRAMS
Sample type : Sample geometry : S200
Elapsed live time: 0 10:00:00.00 Elapsed real time: 0 10:00:19.56 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	11363	10.67*	7.699E-01	2.618E+01	2.618E+01	6.53
TL-208	277.35	------	6.80	2.834E+00	------ Line Not Found		------
	510.84	549	21.60	1.898E+00	2.533E-01	2.533E-01	21.14
	583.14	1904	84.20*	1.721E+00	2.487E-01	2.487E-01	7.66
	860.37	279	12.46	1.246E+00	3.400E-01	3.400E-01	21.00
PB-212	238.63	6239	44.60*	3.094E+00	8.557E-01	8.557E-01	6.69
	300.09	491	3.41	2.702E+00	1.009E+00	1.009E+00	14.31
BI-214	609.31	3074	46.30*	1.665E+00	7.550E-01	7.550E-01	6.84
	768.36	359	5.04	1.378E+00	9.782E-01	9.782E-01	16.53
	1120.29	735	15.10	9.770E-01	9.431E-01	9.431E-01	12.45
	1764.49	503	15.80	6.731E-01	8.946E-01	8.946E-01	10.57
PB-214	241.98	1766	7.49	3.073E+00	1.452E+00	1.452E+00	8.80
	295.21	2355	19.20	2.729E+00	8.507E-01	8.507E-01	7.66
	351.92	3985	37.20*	2.443E+00	8.301E-01	8.301E-01	6.78
	785.91	------	1.10	1.351E+00	------ Line Not Found		------
RA-224DA	238.63	6239	44.60*	3.094E+00	8.557E-01	8.969E-01	6.69
	240.98	1766	3.95	3.073E+00	2.754E+00	2.887E+00	8.80
	583.14	1904	30.25	1.721E+00	6.923E-01	7.256E-01	7.66
	860.37	279	4.48	1.246E+00	9.457E-01	9.912E-01	21.00
RA-226DA	186.21	972	3.50	3.492E+00	1.505E+00	1.505E+00	12.53
	241.98	1766	7.49	3.073E+00	1.452E+00	1.453E+00	8.80
	295.22	2355	19.20	2.729E+00	8.507E-01	8.508E-01	7.66
	351.92	3985	37.20	2.443E+00	8.301E-01	8.302E-01	6.78
	609.32	3074	46.30*	1.665E+00	7.550E-01	7.550E-01	6.84
	1120.28	735	15.10	9.770E-01	9.431E-01	9.432E-01	12.45
	1238.11	308	5.94	8.902E-01	1.103E+00	1.103E+00	20.08
	1764.49	503	15.80	6.731E-01	8.946E-01	8.946E-01	10.57
AC-228	209.28	527	4.40	3.316E+00	6.843E-01	6.843E-01	17.91
	270.23	671	3.60	2.880E+00	1.224E+00	1.224E+00	15.89
	338.32	1477	11.40	2.505E+00	9.791E-01	9.791E-01	9.70
	911.07	1504	27.70*	1.184E+00	8.682E-01	8.682E-01	9.61
	969.11	1185	16.60	1.120E+00	1.206E+00	1.206E+00	10.10
RA-228DA	209.28	527	4.40	3.316E+00	6.843E-01	6.951E-01	17.91
	338.32	1477	11.40	2.505E+00	9.791E-01	9.945E-01	9.70
	911.07	1504	27.70*	1.184E+00	8.682E-01	8.819E-01	9.61
	964.60	------	5.20	1.124E+00	------ Line Not Found		------

Sample ID : J479Q1AA Acquisition date : 12-SEP-2007 18:09:03

Nuclide Type: NP

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected PCI/GRAM	Decay Corr PCI/GRAM	1-Sigma %Error
	969.11	1185	16.60	1.120E+00	1.206E+00	1.225E+00	10.10
TH-228DA	238.63	6239	44.60	3.094E+00	8.557E-01	8.969E-01	6.69
	240.98	1766	3.95	3.073E+00	2.754E+00	2.887E+00	8.80
	583.14	1904	30.25*	1.721E+00	6.923E-01	7.256E-01	7.66
	860.37	279	4.48	1.246E+00	9.457E-01	9.912E-01	21.00
TH-232DA	238.63	6239	44.60	3.094E+00	8.557E-01	8.557E-01	6.69
	338.32	1477	12.40*	2.505E+00	9.001E-01	9.001E-01	9.70
	583.14	1904	30.25	1.721E+00	6.923E-01	6.923E-01	7.66
	911.07	1504	27.70	1.184E+00	8.682E-01	8.682E-01	9.61
	964.60	------	5.20	1.124E+00	------ Line Not Found		------
	969.11	1185	16.60	1.120E+00	1.206E+00	1.206E+00	10.10
U-234DA	241.98	1766	7.49	3.073E+00	1.452E+00	1.452E+00	8.80
	295.22	2355	19.20*	2.729E+00	8.507E-01	8.507E-01	7.66
	351.92	3985	37.20	2.443E+00	8.301E-01	8.301E-01	6.78
	609.31	3074	46.30	1.665E+00	7.550E-01	7.550E-01	6.84
U-238DA	241.98	1766	7.49	3.073E+00	1.452E+00	1.452E+00	8.80
	295.22	2355	19.20	2.729E+00	8.507E-01	8.507E-01	7.66
	351.92	3985	37.20*	2.443E+00	8.301E-01	8.301E-01	6.78
	609.31	3074	46.30	1.665E+00	7.550E-01	7.550E-01	6.84

Flag: "*" = Keyline

Sample ID : J479Q1AA Acquisition date : 12-SEP-2007 18:09:03

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
3	73.90	369	2622	1.03	297.19	291	29	1.02E-02	29.7	1.62E+00	
3	75.89	1459	2563	1.04	305.10	291	29	4.05E-02	7.9	1.75E+00	
3	78.03	2190	2489	1.03	313.65	291	29	6.08E-02	5.1	1.90E+00	
0	88.09	825	2632	1.25	353.76	347	12	2.29E-02	13.4	2.51E+00	
0	90.56	586	2008	1.29	363.63	359	10	1.63E-02	14.9	2.64E+00	
0	93.55	986	2900	1.53	375.55	370	14	2.74E-02	12.0	2.78E+00	T
0	129.31	449	2273	1.09	518.19	513	12	1.25E-02	21.8	3.65E+00	
0	327.65	410	1344	1.72	1309.78	1301	16	1.14E-02	20.6	2.56E+00	T
0	463.11	343	1020	1.18	1850.68	1840	20	9.53E-03	23.5	2.03E+00	T
0	593.69	13	577	2.15	2372.34	2363	15	3.62E-04	****	1.70E+00	
0	727.20	507	599	1.30	2905.94	2897	19	1.41E-02	10.8	1.44E+00	T
0	794.79	358	560	1.52	3176.19	3165	24	9.94E-03	15.7	1.34E+00	T
0	1377.55	209	247	1.92	5508.73	5494	26	5.81E-03	18.7	8.09E-01	
0	1508.99	91	108	1.28	6035.47	6023	22	2.52E-03	24.7	7.50E-01	
0	1587.96	110	121	2.52	6352.05	6340	22	3.06E-03	21.6	7.21E-01	
0	1729.49	147	101	1.69	6919.65	6904	34	4.09E-03	17.9	6.81E-01	

Flags: "T" = Tentatively associated

Sample ID : J479Q1AA
Acquisition date : 12-SEP-2007 18:09:03

Nuclide	Half-life	Half-Life Ratio	Energy	%Abund	Activity (PCI/GRAM)	1-Sigma %Error	Rejected by
NA-22	2.60Y	0.05	511.00	179.68	3.152E-02	21.14	Abun.
			1274.54*	99.94	--- Not Found ---		
		% Abundances Found =		64.26			
SC-46	83.85D	0.56	889.25	99.98	--- Not Found ---		Abun.
			1120.51*	99.99	2.106E-01	12.45	
		% Abundances Found =		50.00			
TC-95M	61.00D	0.78	204.12*	66.20	--- Not Found ---		Abun.
			582.07	29.30	1.224E+00	7.66	
			835.13	26.10	--- Not Found ---		
		% Abundances Found =		24.10			
RU-103	39.35D	1.20	497.08*	89.00	--- Not Found ---		Abun.
			610.33	5.60	1.437E+01	6.84	
		% Abundances Found =		5.92			
RU-106DA	368.20D	0.13	511.85	20.60	2.904E-01	21.14	Abun.
			621.84*	9.80	--- Not Found ---		
		% Abundances Found =		67.76			
SB-125	2.77Y	0.05	176.33	6.89	--- Not Found ---		Abun.
			427.89*	29.33	--- Not Found ---		
			463.38	10.35	3.189E-01	24.25	
			600.56	17.80	--- Not Found ---		
			635.90	11.32	--- Not Found ---		
		% Abundances Found =		13.67			
CS-134	2.06Y	0.06	569.31	15.43	--- Not Found ---		Abun.
			604.70	97.60	--- Not Found ---		
			795.84*	85.40	6.196E-02	17.10	
			801.93	8.73	--- Not Found ---		
		% Abundances Found =		41.22			
LA-140	40.22H	28.24	328.77	20.50	4.694E+07	21.55	Decay,Abun.
			487.03	45.50	--- Not Found ---		
			815.85	23.50	--- Not Found ---		
			1596.49*	95.49	--- Not Found ---		
		% Abundances Found =		11.08			
BI-212	1.41E+10Y	0.00	288.07	0.31	--- Not Found ---		Abun.
			327.96	0.14	2.183E+01	22.96	
			452.83	0.31	--- Not Found ---		
			727.33*	6.58	1.010E+00	12.75	
			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 : J479Q1AA
Acquisition date : 12-SEP-2007 18:09:03

Nuclide	Half-life	Half-Life Ratio	Energy	%Abund	Activity (PCI/GRAM)	1-Sigma %Error	Rejected by
RA-223	21.77Y	0.01	154.21	5.58	--- Not Found ---		Abun.
			269.46*	13.60	3.254E-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	9.756E-02	12.53	
			205.31	4.70	--- Not Found ---		
		% Abundances Found =		78.03			
U-238DHP	4.47E+09Y	0.00	63.28*	3.80	--- Not Found ---		Abun.
			92.59	5.41	1.239E+00	13.71	
		% Abundances Found =		58.74			

Flag: "*" = Keyline

VMS Nuclide Identification Report V3.0 Generated 13-SEP-2007 21:12:53

Configuration : $DISK1:[GER13.SAMPLE]J479Q1AA_120971809.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 : 27-JUL-2007 15:15:00 Acquisition date : 12-SEP-2007 18:09:03
Sample ID : J479Q1AA Sample quantity : 396.60 GRAMS
Sample type : Sample geometry : S200
Elapsed live time: 0 10:00:00.00 Elapsed real time: 0 10:00:19.56 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 ----

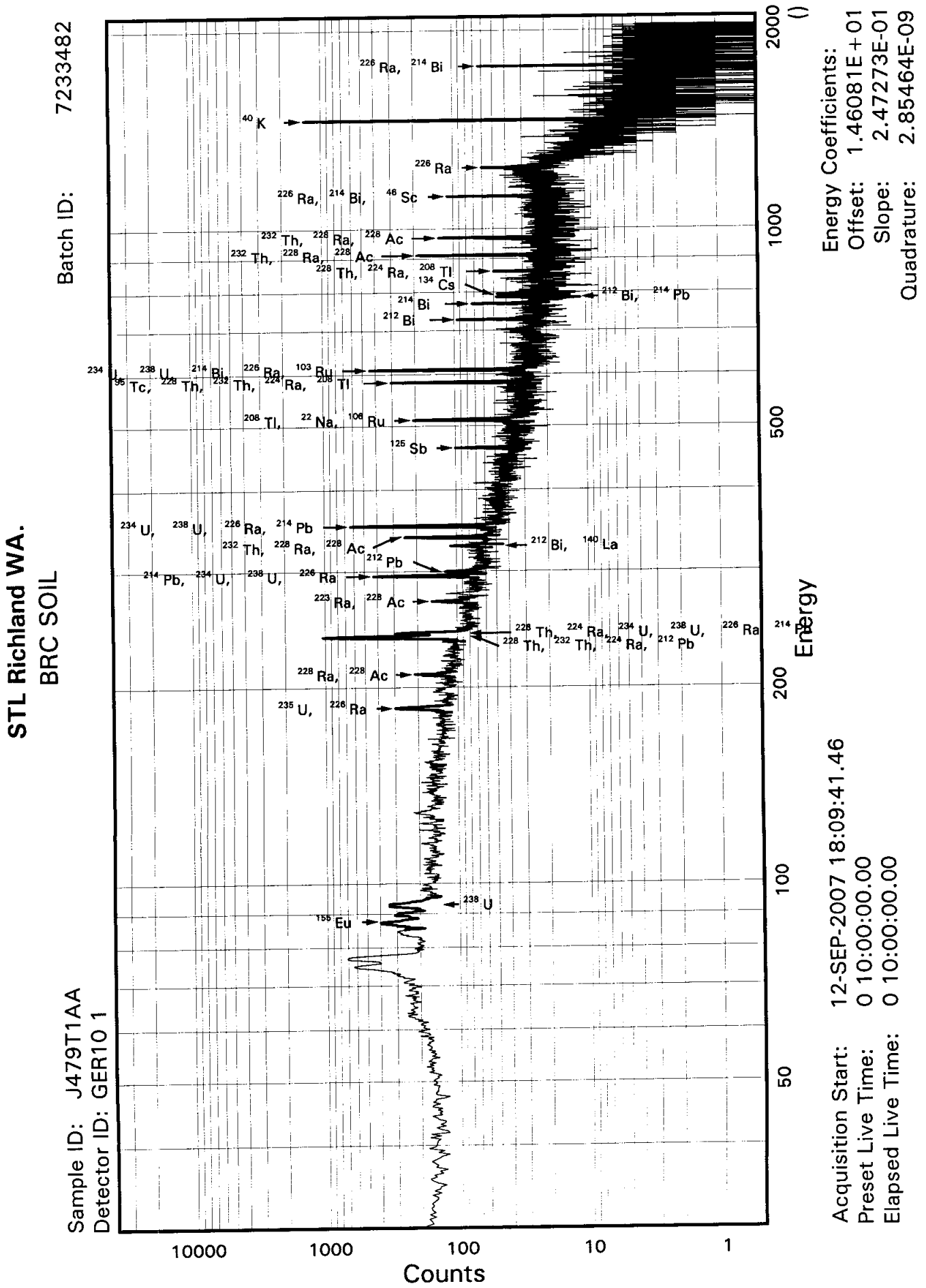
Nuclide	Activity (PCI/GRAM)	Act error	MDA (PCI/GRAM)	MDA error	Act/MDA
K-40	2.618E+01	1.711E+00	1.701E-01	6.897E-03	153.904
TL-208	2.487E-01	1.906E-02	1.635E-02	5.327E-04	15.208
PB-212	8.557E-01	5.727E-02	2.762E-02	1.094E-03	30.979
BI-214	7.550E-01	5.163E-02	2.925E-02	9.632E-04	25.815
PB-214	8.301E-01	5.626E-02	3.213E-02	1.164E-03	25.839
RA-224DA	8.969E-01	6.003E-02	2.895E-02	1.146E-03	30.979
RA-226DA	7.550E-01	5.163E-02	2.925E-02	9.633E-04	25.815
AC-228	8.682E-01	8.342E-02	6.315E-02	3.560E-03	13.748
RA-228DA	8.819E-01	8.474E-02	6.415E-02	3.616E-03	13.748
TH-228DA	7.256E-01	5.559E-02	4.771E-02	1.554E-03	15.208
TH-232DA	9.001E-01	8.732E-02	9.975E-02	3.737E-03	9.024
U-234DA	8.507E-01	6.514E-02	5.937E-02	2.341E-03	14.330
U-238DA	8.301E-01	5.626E-02	3.213E-02	1.164E-03	25.839

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

Nuclide	Key-Line Activity (PCI/GRAM)	K.L. Ided	Act error	MDA (PCI/GRAM)	MDA error	Act/MDA
BE-7	-5.409E-02		6.751E-02	2.237E-01	7.122E-03	-0.242
NA-22	3.138E-03		6.819E-03	2.338E-02	9.198E-04	0.134
SC-46	2.106E-01	+	2.622E-02	4.988E-02	2.042E-03	4.223
CR-51	1.268E-01		1.194E-01	4.022E-01	1.566E-02	0.315
MN-54	-2.195E-03		5.642E-03	1.895E-02	9.482E-04	-0.116
CO-57	-3.087E-02		3.707E-02	1.198E-01	4.372E-03	-0.258
CO-58	-9.741E-03		7.658E-03	2.538E-02	1.206E-03	-0.384
FE-59	3.660E-02		2.317E-02	7.955E-02	3.416E-03	0.460
CO-60	5.484E-03		5.582E-03	1.938E-02	8.050E-04	0.283
ZN-65	4.352E-03		1.745E-02	4.961E-02	2.055E-03	0.088
SE-75	4.008E-03		7.728E-03	2.529E-02	1.003E-03	0.159
SR-85	4.387E-02		8.745E-03	2.565E-02	8.058E-04	1.711
Y-88	6.700E-03		5.278E-03	1.904E-02	6.145E-04	0.352
NB-94	-8.840E-03		4.948E-03	1.607E-02	8.676E-04	-0.550
NB-95	4.749E-02		1.458E-02	4.372E-02	1.880E-03	1.086

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

Nuclide	Key-Line Activity (PCI/GRAM)	K.L. Ided	Act error	MDA (PCI/GRAM)	MDA error	Act/MDA
TC-95M	3.818E-03		9.165E-03	3.049E-02	1.196E-03	0.125
ZR-95	1.872E-02		1.394E-02	4.821E-02	2.031E-03	0.388
ZRNB-95	6.328E-02		1.907E-02	5.721E-02	2.460E-03	1.106
RH-101	-6.185E-03		5.477E-03	1.670E-02	6.540E-04	-0.370
RH-102M	-1.443E-03		4.094E-03	1.366E-02	4.352E-04	-0.106
RU-103	6.852E-03		9.951E-03	3.350E-02	1.060E-03	0.205
RU-106DA	-1.503E-03		4.598E-02	1.553E-01	5.139E-03	-0.010
AG-108M	-4.822E-04		4.087E-03	1.378E-02	4.418E-04	-0.035
AG-110M	4.616E-03		7.816E-03	2.652E-02	1.472E-03	0.174
SN-113DA	-2.258E-02		7.535E-03	2.439E-02	7.802E-04	-0.926
SB-124	6.667E-03		8.040E-03	2.526E-02	8.296E-04	0.264
SB-125	1.376E-02		1.299E-02	4.434E-02	1.422E-03	0.310
SN-126DA	5.558E-03		4.469E-03	1.521E-02	5.161E-04	0.366
I-131	1.209E-01		2.616E-01	8.698E-01	3.044E-02	0.139
BA-133	7.347E-03		6.478E-03	1.925E-02	6.900E-04	0.382
CS-134	6.196E-02	+	1.060E-02	2.284E-02	1.050E-03	2.713
CS-137DA	-3.923E-03		5.183E-03	1.721E-02	5.774E-04	-0.228
LA-138	-6.386E-03		7.529E-03	2.509E-02	1.024E-03	-0.254
CE-139	1.738E-03		5.281E-03	1.782E-02	6.966E-04	0.098
BA-140	1.122E-01		2.065E-01	6.900E-01	2.197E-02	0.163
BALA-140	-1.441E-01		1.233E-01	3.983E-01	1.531E-02	-0.362
CE-141	-6.057E-03		1.893E-02	6.411E-02	2.395E-03	-0.094
CE-144	1.672E-02		3.584E-02	1.174E-01	4.258E-03	0.142
CEPR-144	3.332E-02		7.169E-02	2.348E-01	8.516E-03	0.142
PM-144	-3.447E-03		4.506E-03	1.506E-02	4.977E-04	-0.229
PM-146	7.589E-03		6.002E-03	2.042E-02	6.534E-04	0.372
EU-152	8.553E-03		1.468E-02	4.602E-02	1.700E-03	0.186
EU-154	4.489E-03		1.878E-02	6.416E-02	2.525E-03	0.070
EU-155	8.027E-02		1.919E-02	6.349E-02	2.441E-03	1.264
HF-181	-1.219E-02		1.012E-02	3.330E-02	1.059E-03	-0.366
BI-207	3.937E-03		4.225E-03	1.450E-02	4.695E-04	0.271
BI-210M	4.727E-03		7.949E-03	2.320E-02	9.202E-04	0.204
BI-212	1.010E+00	+	1.288E-01	3.138E-01	1.427E-02	3.218
RA-223	3.254E-01	+	5.172E-02	1.008E-01	3.998E-03	3.228
AC-227DA	2.296E-01		4.301E-02	1.208E-01	4.782E-03	1.900
TH-234DA	2.958E+00		8.573E-01	2.980E+00	1.517E-01	0.992
U-235HP	9.529E-02		3.255E-02	1.110E-01	4.124E-03	0.859
NP-237DA	3.087E-02		9.977E-03	3.375E-02	1.321E-03	0.915
U-238DHP	-5.574E-01		3.556E-01	1.128E+00	5.479E-02	-0.494
AM-241HP	-1.675E-03		4.754E-02	1.545E-01	7.414E-03	-0.011


STL Richland WA.
BRC SOIL
Batch ID: 7233482
Sample ID: J479T1AA
Detector ID: GER10 1
Energy Coefficients:
Offset: 1.46081E+01
Slope: 2.47273E-01
Quadrature: 2.85464E-09
Acquisition Start: 12-SEP-2007 18:09:41.46
Preset Live Time: 0 10:00:00.00
Elapsed Live Time: 0 10:00:00.00
Counts
Energy
10000
1000
100
10
1
50
100
200
500
1000
2000
226 Ra, 214 Bi
40 K
226 Ra
226 Ra, 214 Bi, 46 Sc
232 Th, 228 Ra, 228 Ac
232 Th, 228 Ra, 228 Ac
228 Th, 224 Ra, 208 Tl
134 Cs
212 Bi, 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 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

SAMPLE IDENTIFICATION: J479T1AA

CONFIGURATION ID: GER10:J479T1AA_120971809
TITLE : BRC SOIL
SAMPLE ID : J479T1AA

REPORT DATE: 13-SEP-07
ACQUIRE DATE: 12-SEP-07 18:09:41
ELAPSED LIVE TIME: 36000.0 Sec
PRESET LIVE TIME: 0 10:00:00

SAMPLE DATE: 27-JUL-2007 15:15:00.00
CALIB DATE: 12-SEP-2007 05:22:30.78
ELAPSED LIVE TIME: 0 10:00:00
ELAPSED REAL TIME: 0 10:00:15

SAMPLE QUANTITY: 3.8930E+02
SAMPLE GEOMETRY: S200

UNITS: GRAMS
SAMPLE TYPE:

ENERGY OFFSET: 1.4608E+01 keV
ENERGY SLOPE: 2.4727E-01 keV/C
ENERGY Q COEFF: 2.8546E-09 keV/C^^2
PEAK SENSITIVITY: 5.000

FWHM OFFSET: 1.1564E+00 keV
FWHM SLOPE: 2.4319E-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 13-SEP-2007 21:13:59

Configuration : $DISK1:[GER10.SAMPLE]J479T1AA_120971809.CNF;1
Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6
Sample title : BRC SOIL
Sample date : 27-JUL-2007 15:15:00 Acquisition date : 12-SEP-2007 18:09:41
Sample ID : J479T1AA Sample quantity : 389.30 GRAMS
Sample type : Sample geometry : S200
Elapsed live time: 0 10:00:00.00 Elapsed real time: 0 10:00:15.62 0.0%
Start energy : 17.08 End energy : 2040.46
Sensitivity : 5.00 Gaussian : 20.00
Critical level : No

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	1	74.83*	2194	3868	1.50	243.55	231	42	6.10E-02	7.4	4.07E+00
2	1	76.98	3308	3456	1.44	252.26	231	42	9.19E-02	4.6	
3	0	87.61	562	3716	0.97	295.22	285	15	1.56E-02	24.1	
4	2	89.84	529	1670	1.12	304.23	300	29	1.47E-02	13.5	1.37E+00
5	2	92.97	1197	3484	1.68	316.91	300	29	3.33E-02	12.7	
6	0	186.01	1235	2682	1.54	693.17	682	22	3.43E-02	9.5	
7	0	209.35	522	2050	1.29	787.57	779	18	1.45E-02	17.9	
8	2	238.62	5885	1783	1.47	905.91	891	39	1.63E-01	1.9	1.00E+00
9	2	241.71	1579	2014	1.86	918.41	891	39	4.39E-02	7.6	
10	0	270.13	412	1597	1.57	1033.35	1024	19	1.15E-02	20.4	
11	0	295.22	2166	1486	1.45	1134.83	1124	21	6.02E-02	4.3	
12	0	300.21	497	1207	1.42	1155.00	1145	20	1.38E-02	15.2	
13	0	328.01	327	1033	1.32	1267.42	1259	17	9.08E-03	20.0	
14	0	338.14	1267	1253	1.67	1308.39	1297	22	3.52E-02	6.7	
15	0	351.89*	4101	1436	1.58	1364.00	1349	30	1.14E-01	2.8	
16	0	463.07	403	826	1.55	1813.59	1802	24	1.12E-02	16.7	
17	0	510.72*	687	1084	2.29	2006.28	1990	33	1.91E-02	15.3	
18	0	583.00	2046	857	1.65	2298.58	2283	31	5.68E-02	4.2	
19	0	609.29*	3183	809	1.81	2404.88	2391	29	8.84E-02	2.9	
20	0	727.18	429	596	1.38	2881.64	2870	24	1.19E-02	13.6	
21	0	768.29	390	484	1.33	3047.86	3036	22	1.08E-02	13.2	
22	0	786.35	130	452	1.21	3120.91	3110	20	3.62E-03	35.1	
23	0	795.29	304	382	2.54	3157.03	3147	24	8.44E-03	15.5	
24	0	860.51	203	481	1.67	3420.77	3412	23	5.63E-03	24.8	
25	0	911.07	1420	509	1.94	3625.24	3612	27	3.95E-02	4.6	
26	0	934.09	127	341	1.69	3718.32	3709	18	3.52E-03	30.5	
27	0	967.96	1060	749	1.74	3855.28	3836	35	2.94E-02	7.4	
28	0	1120.16	720	517	1.79	4470.76	4456	28	2.00E-02	8.4	
29	0	1238.09	277	524	1.61	4947.62	4937	22	7.70E-03	17.1	
30	0	1460.66*	11974	241	2.12	5847.59	5829	37	3.33E-01	1.0	
31	0	1587.89	125	95	2.05	6362.08	6352	20	3.46E-03	17.1	
32	0	1729.42	143	60	1.30	6934.34	6921	28	3.98E-03	14.1	
33	0	1764.55	542	123	2.31	7076.39	7057	32	1.50E-02	6.2	

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

VMS Nuclide Identification Report V3.0 Generated 13-SEP-2007 21:14:00

Configuration : $DISK1:[GER10.SAMPLE]J479T1AA_120971809.CNF;1
Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.3
Sample title : BRC SOIL
Sample date : 27-JUL-2007 15:15:00 Acquisition date : 12-SEP-2007 18:09:41
Sample ID : J479T1AA Sample quantity : 389.30 GRAMS
Sample type : Sample geometry : S200
Elapsed live time: 0 10:00:00.00 Elapsed real time: 0 10:00:15.62 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	11974	10.67*	8.324E-01	2.600E+01	2.600E+01	6.32
TL-208	277.35	------	6.80	2.752E+00	------ Line Not Found		------
	510.84	687	21.60	1.868E+00	3.286E-01	3.286E-01	16.37
	583.14	2046	84.20*	1.705E+00	2.749E-01	2.749E-01	7.30
	860.37	203	12.46	1.273E+00	2.464E-01	2.464E-01	25.80
PB-212	238.63	5885	44.60*	3.006E+00	8.465E-01	8.465E-01	6.71
	300.09	497	3.41	2.623E+00	1.072E+00	1.072E+00	16.49
BI-214	609.31	3183	46.30*	1.652E+00	8.025E-01	8.025E-01	6.66
	768.36	390	5.04	1.391E+00	1.073E+00	1.073E+00	14.71
	1120.29	720	15.10	1.028E+00	8.949E-01	8.949E-01	10.49
	1764.49	542	15.80	7.321E-01	9.032E-01	9.032E-01	8.66
PB-214	241.98	1579	7.49	2.984E+00	1.363E+00	1.363E+00	9.98
	295.21	2166	19.20	2.650E+00	8.210E-01	8.210E-01	7.66
	351.92	4101	37.20*	2.378E+00	8.942E-01	8.942E-01	6.73
	785.91	130	1.10	1.366E+00	1.673E+00	1.673E+00	35.69
RA-224DA	238.63	5885	44.60*	3.006E+00	8.465E-01	8.873E-01	6.71
	240.98	1579	3.95	2.984E+00	2.584E+00	2.708E+00	9.98
	583.14	2046	30.25	1.705E+00	7.652E-01	8.021E-01	7.30
	860.37	203	4.48	1.273E+00	6.852E-01	7.182E-01	25.80
RA-226DA	186.21	1235	3.50	3.433E+00	1.982E+00	1.982E+00	11.48
	241.98	1579	7.49	2.984E+00	1.363E+00	1.363E+00	9.98
	295.22	2166	19.20	2.650E+00	8.210E-01	8.210E-01	7.66
	351.92	4101	37.20	2.378E+00	8.942E-01	8.943E-01	6.73
	609.32	3183	46.30*	1.652E+00	8.025E-01	8.025E-01	6.66
	1120.28	720	15.10	1.028E+00	8.949E-01	8.950E-01	10.49
	1238.11	277	5.94	9.474E-01	9.500E-01	9.501E-01	18.19
	1764.49	542	15.80	7.321E-01	9.032E-01	9.033E-01	8.66
AC-228	209.28	522	4.40	3.233E+00	7.079E-01	7.079E-01	19.02
	270.23	412	3.60	2.795E+00	7.902E-01	7.902E-01	21.37
	338.32	1267	11.40	2.438E+00	8.791E-01	8.791E-01	9.07
	911.07	1420	27.70*	1.216E+00	8.129E-01	8.129E-01	8.45
	969.11	1060	16.60	1.158E+00	1.063E+00	1.063E+00	10.14
RA-228DA	209.28	522	4.40	3.233E+00	7.079E-01	7.190E-01	19.02
	338.32	1267	11.40	2.438E+00	8.791E-01	8.930E-01	9.07
	911.07	1420	27.70*	1.216E+00	8.129E-01	8.257E-01	8.45
	964.60	------	5.20	1.162E+00	------ Line Not Found		------

Sample ID : J479T1AA Acquisition date : 12-SEP-2007 18:09:41

Nuclide Type: NP

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected PCI/GRAM	Decay Corr PCI/GRAM	1-Sigma %Error
	969.11	1060	16.60	1.158E+00	1.063E+00	1.079E+00	10.14
TH-228DA	238.63	5885	44.60	3.006E+00	8.465E-01	8.873E-01	6.71
	240.98	1579	3.95	2.984E+00	2.584E+00	2.708E+00	9.98
	583.14	2046	30.25*	1.705E+00	7.652E-01	8.021E-01	7.30
	860.37	203	4.48	1.273E+00	6.852E-01	7.182E-01	25.80
TH-232DA	238.63	5885	44.60	3.006E+00	8.465E-01	8.465E-01	6.71
	338.32	1267	12.40*	2.438E+00	8.082E-01	8.082E-01	9.07
	583.14	2046	30.25	1.705E+00	7.652E-01	7.652E-01	7.30
	911.07	1420	27.70	1.216E+00	8.129E-01	8.129E-01	8.45
	964.60	------	5.20	1.162E+00	------ Line Not Found		------
	969.11	1060	16.60	1.158E+00	1.063E+00	1.063E+00	10.14
U-234DA	241.98	1579	7.49	2.984E+00	1.363E+00	1.363E+00	9.98
	295.22	2166	19.20*	2.650E+00	8.210E-01	8.210E-01	7.66
	351.92	4101	37.20	2.378E+00	8.942E-01	8.942E-01	6.73
	609.31	3183	46.30	1.652E+00	8.025E-01	8.025E-01	6.66
U-238DA	241.98	1579	7.49	2.984E+00	1.363E+00	1.363E+00	9.98
	295.22	2166	19.20	2.650E+00	8.210E-01	8.210E-01	7.66
	351.92	4101	37.20*	2.378E+00	8.942E-01	8.942E-01	6.73
	609.31	3183	46.30	1.652E+00	8.025E-01	8.025E-01	6.66

Flag: "*" = Keyline

Unidentified Energy Lines
Page : 3
Sample ID : J479T1AA
Acquisition date : 12-SEP-2007 18:09:41

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
1	74.83	2194	3868	1.50	243.55	231	42	6.10E-02	7.4	2.87E+00	
1	76.98	3308	3456	1.44	252.26	231	42	9.19E-02	4.6	2.99E+00	
0	87.61	562	3716	0.97	295.22	285	15	1.56E-02	24.1	3.44E+00	T
2	89.84	529	1670	1.12	304.23	300	29	1.47E-02	13.5	3.51E+00	
2	92.97	1197	3484	1.68	316.91	300	29	3.33E-02	12.7	3.60E+00	T
0	328.01	327	1033	1.32	1267.42	1259	17	9.08E-03	20.0	2.48E+00	T
0	463.07	403	826	1.55	1813.59	1802	24	1.12E-02	16.7	1.99E+00	T
0	727.18	429	596	1.38	2881.64	2870	24	1.19E-02	13.6	1.45E+00	T
0	795.29	304	382	2.54	3157.03	3147	24	8.44E-03	15.5	1.35E+00	T
0	934.09	127	341	1.69	3718.32	3709	18	3.52E-03	30.5	1.19E+00	
0	1587.89	125	95	2.05	6362.08	6352	20	3.46E-03	17.1	7.84E-01	
0	1729.42	143	60	1.30	6934.34	6921	28	3.98E-03	14.1	7.41E-01	

Flags: "T" = Tentatively associated

Sample ID : J479T1AA
Acquisition date : 12-SEP-2007 18:09:41

Nuclide	Half-life	Half-Life Ratio	Energy	%Abund	Activity (PCI/GRAM)	1-Sigma %Error	Rejected by
NA-22	2.60Y	0.05	511.00	179.68	4.089E-02	16.37	Abun.
			1274.54*	99.94	--- Not Found ---		
		% Abundances Found =		64.26			
SC-46	83.85D	0.56	889.25	99.98	--- Not Found ---		Abun.
			1120.51*	99.99	1.999E-01	10.49	
		% Abundances Found =		50.00			
TC-95M	61.00D	0.78	204.12*	66.20	--- Not Found ---		Abun.
			582.07	29.30	1.353E+00	7.30	
			835.13	26.10	--- Not Found ---		
		% Abundances Found =		24.10			
RU-103	39.35D	1.20	497.08*	89.00	--- Not Found ---		Abun.
			610.33	5.60	1.527E+01	6.66	
		% Abundances Found =		5.92			
RU-106DA	368.20D	0.13	511.85	20.60	3.766E-01	16.37	Abun.
			621.84*	9.80	--- Not Found ---		
		% Abundances Found =		67.76			
SB-125	2.77Y	0.05	176.33	6.89	--- Not Found ---		Abun.
			427.89*	29.33	--- Not Found ---		
			463.38	10.35	3.893E-01	17.73	
			600.56	17.80	--- Not Found ---		
			635.90	11.32	--- Not Found ---		
		% Abundances Found =		13.67			
CS-134	2.06Y	0.06	569.31	15.43	--- Not Found ---		Abun.
			604.70	97.60	--- Not Found ---		
			795.84*	85.40	5.288E-02	16.87	
			801.93	8.73	--- Not Found ---		
		% Abundances Found =		41.22			
LA-140	40.22H	28.24	328.77	20.50	3.926E+07	20.97	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	0.03	42.90	21.16	--- Not Found ---		Abun.
			86.54	30.90	1.037E-01	24.87	
			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	1.826E+01	22.42	
			452.83	0.31	--- Not Found ---		
			727.33*	6.58	8.677E-01	15.16	
			785.37	1.10	1.673E+00	35.80	
			893.41	0.38	--- Not Found ---		
			952.12	0.17	--- Not Found ---		

Sample ID : J479T1AA Acquisition date : 12-SEP-2007 18:09:41

Nuclide	Half-life	Half-Life Ratio	Energy	%Abund	Activity (PCI/GRAM)	1-Sigma %Error	Rejected by
BI-212	1.41E+10Y	0.00	1078.62	0.56	--- Not Found ---		Abun.
			1512.70	0.29	--- Not Found ---		
			1620.50	1.49	--- Not Found ---		
			1806.00	0.09	--- Not Found ---		
		% Abundances Found =		68.47			
RA-223	21.77Y	0.01	154.21	5.58	--- Not Found ---		Abun.
			269.46*	13.60	2.100E-01	21.37	
			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	1.284E-01	11.48	
			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	1.186E+00	14.16	
		% Abundances Found =		58.74			

Flag: "*" = Keyline

VMS Nuclide Identification Report V3.0 Generated 13-SEP-2007 21:14:02

Configuration : $DISK1:[GER10.SAMPLE]J479T1AA_120971809.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 : 27-JUL-2007 15:15:00 Acquisition date : 12-SEP-2007 18:09:41
Sample ID : J479T1AA Sample quantity : 389.30 GRAMS
Sample type : Sample geometry : S200
Elapsed live time: 0 10:00:00.00 Elapsed real time: 0 10:00:15.62 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	2.600E+01	1.644E+00	1.315E-01	4.922E-03	197.731
TL-208	2.749E-01	2.006E-02	1.603E-02	5.250E-04	17.146
PB-212	8.465E-01	5.680E-02	2.896E-02	1.167E-03	29.232
BI-214	8.025E-01	5.342E-02	3.039E-02	1.010E-03	26.403
PB-214	8.942E-01	6.017E-02	3.328E-02	1.162E-03	26.867
RA-224DA	8.873E-01	5.953E-02	3.035E-02	1.223E-03	29.232
RA-226DA	8.025E-01	5.343E-02	3.039E-02	1.010E-03	26.403
AC-228	8.129E-01	6.870E-02	5.657E-02	2.858E-03	14.371
RA-228DA	8.257E-01	6.979E-02	5.746E-02	2.903E-03	14.371
TH-228DA	8.021E-01	5.852E-02	4.678E-02	1.532E-03	17.146
TH-232DA	8.082E-01	7.329E-02	1.041E-01	3.736E-03	7.763
U-234DA	8.210E-01	6.288E-02	6.593E-02	2.534E-03	12.453
U-238DA	8.942E-01	6.017E-02	3.328E-02	1.162E-03	26.867

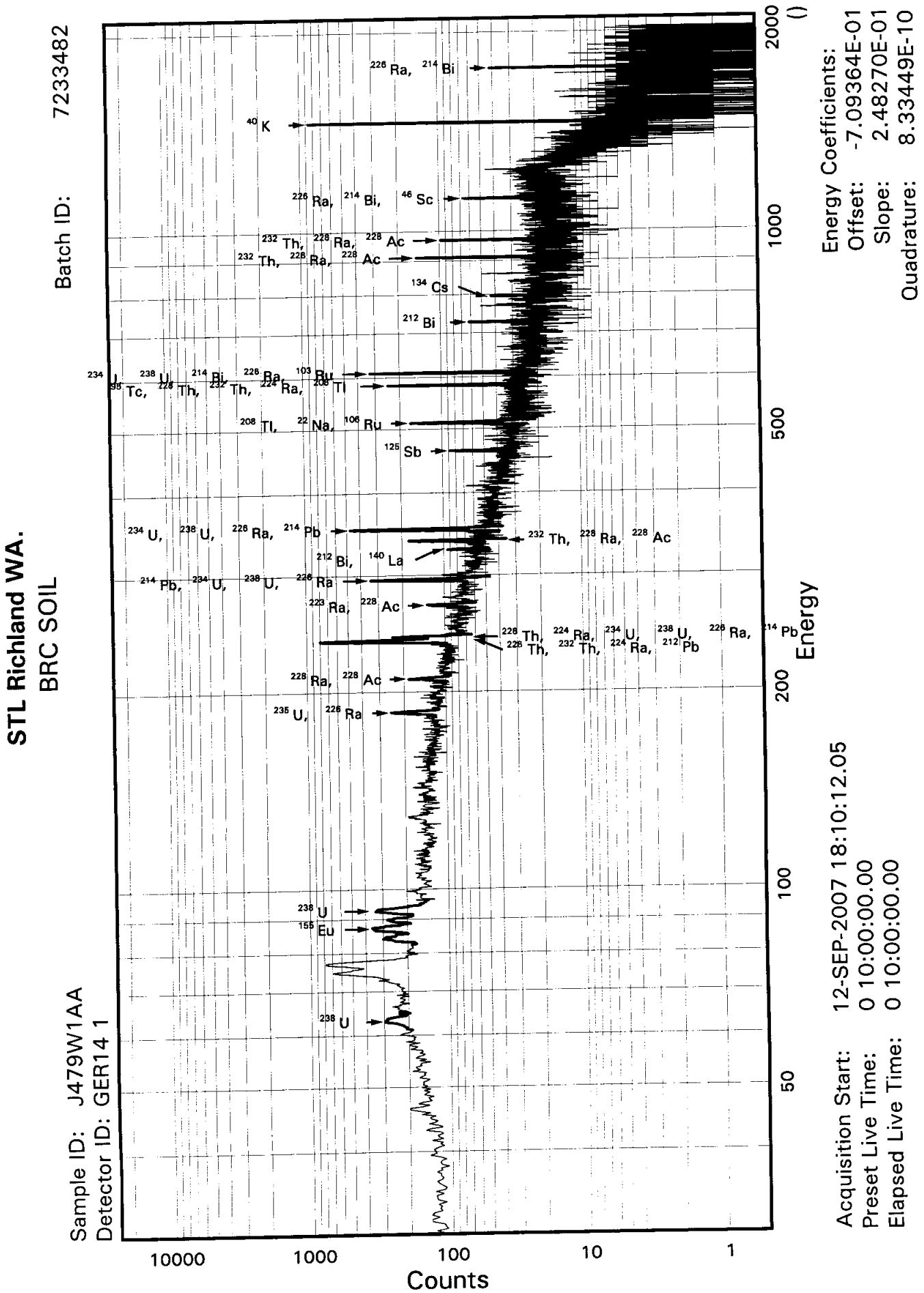
---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (PCI/GRAM)	K.L. Ided	Act error	MDA (PCI/GRAM)	MDA error	Act/MDA
BE-7	-2.266E-02		6.818E-02	2.266E-01	7.158E-03	-0.100
NA-22	-4.001E-03		6.294E-03	2.091E-02	7.661E-04	-0.191
SC-46	1.999E-01	+	2.096E-02	4.471E-02	1.705E-03	4.471
CR-51	-4.394E-02		1.266E-01	4.251E-01	1.574E-02	-0.103
MN-54	-6.305E-03		5.605E-03	1.839E-02	8.494E-04	-0.343
CO-57	6.412E-03		3.862E-02	1.295E-01	4.581E-03	0.050
CO-58	-5.586E-03		7.300E-03	2.418E-02	1.073E-03	-0.231
FE-59	-5.965E-02		2.104E-02	6.671E-02	2.649E-03	-0.894
CO-60	-5.733E-03		5.238E-03	1.722E-02	6.572E-04	-0.333
ZN-65	-2.928E-02		1.622E-02	4.364E-02	1.681E-03	-0.671
SE-75	-1.271E-02		9.682E-03	2.717E-02	1.077E-03	-0.468
SR-85	9.593E-02		1.034E-02	2.868E-02	8.978E-04	3.345
Y-88	1.802E-03		4.492E-03	1.591E-02	5.021E-04	0.113
NB-94	8.730E-04		4.559E-03	1.533E-02	7.503E-04	0.057
NB-95	9.519E-02		1.540E-02	4.549E-02	1.871E-03	2.092

Sample ID : J479T1AA Acquisition date : 12-SEP-2007 18:09:41

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

Nuclide	Key-Line Activity (PCI/GRAM)	K.L. Ided	Act error	MDA (PCI/GRAM)	MDA error	Act/MDA
TC-95M	4.133E-03		1.144E-02	3.316E-02	1.344E-03	0.125
ZR-95	3.005E-02		1.381E-02	4.748E-02	1.923E-03	0.633
ZRNB-95	1.269E-01		2.021E-02	5.963E-02	2.453E-03	2.128
RH-101	8.080E-03		6.312E-03	1.889E-02	7.656E-04	0.428
RH-102M	5.222E-04		4.070E-03	1.362E-02	4.304E-04	0.038
RU-103	-1.687E-02		9.965E-03	3.231E-02	1.016E-03	-0.522
RU-106DA	1.182E-02		4.436E-02	1.510E-01	5.050E-03	0.078
AG-108M	-6.375E-03		4.285E-03	1.403E-02	4.445E-04	-0.455
AG-110M	-1.094E-02		7.400E-03	2.402E-02	1.201E-03	-0.455
SN-113DA	-3.564E-03		7.768E-03	2.592E-02	8.166E-04	-0.138
SB-124	-1.306E-02		9.207E-03	2.544E-02	8.422E-04	-0.513
SB-125	7.753E-03		1.351E-02	4.551E-02	1.442E-03	0.170
SN-126DA	9.187E-03		4.401E-03	1.517E-02	5.217E-04	0.606
I-131	5.716E-02		2.649E-01	8.931E-01	3.029E-02	0.064
BA-133	-2.492E-03		6.998E-03	1.975E-02	6.832E-04	-0.126
CS-134	5.288E-02	+	8.922E-03	2.128E-02	9.214E-04	2.485
CS-137DA	1.259E-03		5.086E-03	1.725E-02	5.881E-04	0.073
LA-138	-1.864E-03		6.501E-03	2.230E-02	8.393E-04	-0.084
CE-139	4.392E-03		5.842E-03	1.956E-02	7.898E-04	0.225
BA-140	-2.891E-01		2.063E-01	6.705E-01	2.133E-02	-0.431
BALA-140	-1.920E-01		1.166E-01	3.726E-01	1.339E-02	-0.515
CE-141	5.357E-02		2.114E-02	7.101E-02	2.643E-03	0.754
CE-144	-1.419E-01		3.908E-02	1.246E-01	4.336E-03	-1.139
CEPR-144	-2.827E-01		7.816E-02	2.492E-01	8.674E-03	-1.134
PM-144	-4.781E-03		4.542E-03	1.496E-02	4.994E-04	-0.320
PM-146	8.229E-04		5.870E-03	1.966E-02	6.230E-04	0.042
EU-152	-2.892E-02		1.843E-02	4.739E-02	1.681E-03	-0.610
EU-154	-1.102E-02		1.733E-02	5.758E-02	2.109E-03	-0.191
EU-155	2.738E-02		1.837E-02	6.222E-02	2.122E-03	0.440
HF-181	2.971E-03		1.026E-02	3.434E-02	1.084E-03	0.087
BI-207	2.274E-04		4.215E-03	1.432E-02	4.653E-04	0.016
BI-210M	-3.096E-03		9.075E-03	2.509E-02	9.939E-04	-0.123
BI-212	8.677E-01	+	1.315E-01	2.991E-01	1.337E-02	2.901
RA-223	2.100E-01	+	4.488E-02	1.073E-01	4.240E-03	1.957
AC-227DA	1.075E+00		8.433E-02	1.637E-01	6.599E-03	6.567
TH-234DA	2.271E+00		8.174E-01	2.845E+00	1.310E-01	0.798
U-235HP	6.673E-02		3.550E-02	1.194E-01	4.402E-03	0.559
NP-237DA	-1.087E-02		1.018E-02	3.393E-02	1.273E-03	-0.321
U-238DHP	6.065E-01		2.088E-01	6.899E-01	2.471E-02	0.879
AM-241HP	-7.882E-02		2.448E-02	7.763E-02	2.872E-03	-1.015


STL Richland WA.
BRC SOIL
Batch ID: 7233482
Sample ID: J479W1AA
Detector ID: GER14 1
Energy Coefficients:
Offset: -7.09364E-01
Slope: 2.48270E-01
Quadrature: 8.33449E-10
Acquisition Start: 12-SEP-2007 18:10:12.05
Preset Live Time: 0 10:00:00.00
Elapsed Live Time: 0 10:00:00.00
Counts
Energy
10000
1000
100
10
1
50
100
200
500
1000
2000
40 K
226 Ra, 214 Bi
226 Ra, 214 Bi, 46 Sc
232 Th, 228 Ra, 228 Ac
232 Th, 228 Ra, 228 Ac
134 Cs
212 Bi
234 U, 238 U, 214 Bi, 226 Ra, 103 Ru
95 Tc, 228 Th, 232 Th, 224 Ra, 208 Tl
208 Tl, 22 Na, 106 Ru
125 Sb
234 U, 238 U, 226 Ra, 214 Pb
232 Th, 228 Ra, 228 Ac
212 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: J479W1AA

CONFIGURATION ID: GER14:J479W1AA_120971810
TITLE : BRC SOIL
SAMPLE ID : J479W1AA

REPORT DATE: 13-SEP-07
ACQUIRE DATE: 12-SEP-07 18:10:12
ELAPSED LIVE TIME: 36000.0 Sec
PRESET LIVE TIME: 0 10:00:00

SAMPLE DATE: 27-JUL-2007 14:30:00.00
CALIB DATE: 12-SEP-2007 05:09:03.58
ELAPSED LIVE TIME: 0 10:00:00
ELAPSED REAL TIME: 0 10:00:15

SAMPLE QUANTITY: 3.7660E+02
SAMPLE GEOMETRY: S200

UNITS: GRAMS
SAMPLE TYPE:

ENERGY OFFSET: -.7094E+00 keV
ENERGY SLOPE: 2.4827E-01 keV/C
ENERGY Q COEFF: 8.3345E-10 keV/C^^2
PEAK SENSITIVITY: 5.000

FWHM OFFSET: 1.1180E+00 keV
FWHM SLOPE: 2.5747E-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 13-SEP-2007 04:10:31

Configuration : $DISK1:[GER14.SAMPLE]J479W1AA_120971810.CNF;1
Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6
Sample title : BRC SOIL
Sample date : 27-JUL-2007 14:30:00 Acquisition date : 12-SEP-2007 18:10:12
Sample ID : J479W1AA Sample quantity : 376.60 GRAMS
Sample type : Sample geometry : S200
Elapsed live time: 0 10:00:00.00 Elapsed real time: 0 10:00:15.75 0.0%
Start energy : 19.15 End energy : 2033.17
Sensitivity : 5.00 Gaussian : 10.00
Critical level : No

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	46.30	256	1961	0.67	189.33	183	14	7.10E-03	37.3	
2	0	62.99	552	3249	1.26	256.57	249	16	1.53E-02	23.5	
3	2	74.84*	1843	4030	1.37	304.32	297	28	5.12E-02	8.2	1.50E+00
4	2	77.11	3289	3609	1.33	313.43	297	28	9.14E-02	4.7	
5	2	84.50*	560	3247	1.52	343.22	334	53	1.56E-02	24.7	1.14E+00
6	2	87.18	1290	3479	1.64	354.01	334	53	3.58E-02	11.6	
7	2	89.80	726	3028	1.53	364.55	334	53	2.02E-02	18.6	
8	2	92.87	1234	3225	1.65	376.92	334	53	3.43E-02	11.9	
9	0	186.12	816	2246	1.52	752.53	744	19	2.27E-02	14.4	
10	0	209.43	402	1996	0.99	846.40	837	19	1.12E-02	23.3	
11	2	238.68	4430	1508	1.43	964.21	951	35	1.23E-01	2.3	1.59E+00
12	2	241.71	1248	1583	1.84	976.43	951	35	3.47E-02	8.0	
13	0	270.19	450	1218	1.61	1091.15	1083	18	1.25E-02	16.2	
14	0	295.30	1775	1371	1.61	1192.29	1182	22	4.93E-02	5.1	
15	0	327.92	119	810	1.13	1323.68	1317	14	3.29E-03	44.8	
16	0	338.26	897	998	1.64	1365.32	1354	19	2.49E-02	7.9	
17	0	352.00*	2877	1132	1.59	1420.67	1408	26	7.99E-02	3.4	
18	0	463.09	282	713	1.19	1868.09	1858	21	7.84E-03	21.0	
19	0	511.01*	662	1079	2.14	2061.12	2045	39	1.84E-02	16.3	
20	0	583.32	1489	621	1.52	2352.38	2340	26	4.14E-02	4.7	
21	0	609.31*	2143	597	1.77	2457.08	2445	26	5.95E-02	3.5	
22	0	727.30	301	454	1.41	2932.30	2922	23	8.36E-03	16.6	
23	0	795.77	93	403	1.23	3208.10	3195	19	2.59E-03	45.2	
24	0	911.10	982	387	1.66	3672.60	3661	25	2.73E-02	5.6	
25	0	969.07	558	347	1.66	3906.11	3896	20	1.55E-02	8.2	
26	0	1120.16*	425	367	2.24	4514.66	4501	25	1.18E-02	12.0	
27	0	1460.73*	7484	162	2.12	5886.37	5868	37	2.08E-01	1.3	
28	0	1764.50	379	68	2.04	7109.87	7093	32	1.05E-02	7.1	

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

VMS Nuclide Identification Report V3.0 Generated 13-SEP-2007 04:10:31

Configuration : $DISK1:[GER14.SAMPLE]J479W1AA_120971810.CNF;1
Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.3
Sample title : BRC SOIL
Sample date : 27-JUL-2007 14:30:00 Acquisition date : 12-SEP-2007 18:10:12
Sample ID : J479W1AA Sample quantity : 376.60 GRAMS
Sample type : Sample geometry : S200
Elapsed live time: 0 10:00:00.00 Elapsed real time: 0 10:00:15.75 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	7484	10.67*	5.514E-01	2.536E+01	2.536E+01	6.11
TL-208	277.35	------	6.80	2.084E+00	------ Line Not Found		------
	510.84	662	21.60	1.291E+00	4.734E-01	4.734E-01	17.31
	583.14	1489	84.20*	1.159E+00	3.042E-01	3.042E-01	7.62
	860.37	------	12.46	8.432E-01	------ Line Not Found		------
PB-212	238.63	4430	44.60*	2.316E+00	8.550E-01	8.550E-01	6.64
	300.09	------	3.41	1.967E+00	------ Line Not Found		------
BI-214	609.31	2143	46.30*	1.118E+00	8.252E-01	8.252E-01	7.03
	768.36	------	5.04	9.246E-01	------ Line Not Found		------
	1120.29	425	15.10	6.816E-01	8.228E-01	8.228E-01	13.50
	1764.49	379	15.80	4.738E-01	1.009E+00	1.009E+00	9.22
PB-214	241.98	1248	7.49	2.296E+00	1.447E+00	1.447E+00	10.14
	295.21	1775	19.20	1.991E+00	9.259E-01	9.259E-01	7.93
	351.92	2877	37.20*	1.741E+00	8.852E-01	8.852E-01	6.89
	785.91	------	1.10	9.077E-01	------ Line Not Found		------
RA-224DA	238.63	4430	44.60*	2.316E+00	8.550E-01	8.962E-01	6.64
	240.98	1248	3.95	2.296E+00	2.743E+00	2.875E+00	10.14
	583.14	1489	30.25	1.159E+00	8.468E-01	8.876E-01	7.62
	860.37	------	4.48	8.432E-01	------ Line Not Found		------
RA-226DA	186.21	816	3.50	2.706E+00	1.718E+00	1.718E+00	15.69
	241.98	1248	7.49	2.296E+00	1.447E+00	1.447E+00	10.14
	295.22	1775	19.20	1.991E+00	9.259E-01	9.260E-01	7.93
	351.92	2877	37.20	1.741E+00	8.852E-01	8.853E-01	6.89
	609.32	2143	46.30*	1.118E+00	8.252E-01	8.252E-01	7.03
	1120.28	425	15.10	6.816E-01	8.228E-01	8.228E-01	13.50
	1238.11	------	5.94	6.292E-01	------ Line Not Found		------
	1764.49	379	15.80	4.738E-01	1.009E+00	1.009E+00	9.22
AC-228	209.28	402	4.40	2.522E+00	7.221E-01	7.221E-01	24.10
	270.23	450	3.60	2.124E+00	1.174E+00	1.174E+00	17.33
	338.32	897	11.40	1.796E+00	8.734E-01	8.734E-01	9.92
	911.07	982	27.70*	8.050E-01	8.782E-01	8.782E-01	8.55
	969.11	558	16.60	7.658E-01	8.751E-01	8.751E-01	10.38
RA-228DA	209.28	402	4.40	2.522E+00	7.221E-01	7.334E-01	24.10
	338.32	897	11.40	1.796E+00	8.734E-01	8.872E-01	9.92
	911.07	982	27.70*	8.050E-01	8.782E-01	8.921E-01	8.55
	964.60	------	5.20	7.687E-01	------ Line Not Found		------

Sample ID : J479W1AA Acquisition date : 12-SEP-2007 18:10:12

Nuclide Type: NP

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected PCI/GRAM	Decay Corr PCI/GRAM	1-Sigma %Error
	969.11	558	16.60	7.658E-01	8.751E-01	8.889E-01	10.38
TH-228DA	238.63	4430	44.60	2.316E+00	8.550E-01	8.962E-01	6.64
	240.98	1248	3.95	2.296E+00	2.743E+00	2.875E+00	10.14
	583.14	1489	30.25*	1.159E+00	8.468E-01	8.876E-01	7.62
	860.37	------	4.48	8.432E-01	------ Line Not Found		------
TH-232DA	238.63	4430	44.60	2.316E+00	8.550E-01	8.550E-01	6.64
	338.32	897	12.40*	1.796E+00	8.030E-01	8.030E-01	9.92
	583.14	1489	30.25	1.159E+00	8.468E-01	8.468E-01	7.62
	911.07	982	27.70	8.050E-01	8.782E-01	8.782E-01	8.55
	964.60	------	5.20	7.687E-01	------ Line Not Found		------
	969.11	558	16.60	7.658E-01	8.751E-01	8.751E-01	10.38
U-234DA	241.98	1248	7.49	2.296E+00	1.447E+00	1.447E+00	10.14
	295.22	1775	19.20*	1.991E+00	9.259E-01	9.259E-01	7.93
	351.92	2877	37.20	1.741E+00	8.852E-01	8.852E-01	6.89
	609.31	2143	46.30	1.118E+00	8.252E-01	8.252E-01	7.03
U-238DA	241.98	1248	7.49	2.296E+00	1.447E+00	1.447E+00	10.14
	295.22	1775	19.20	1.991E+00	9.259E-01	9.259E-01	7.93
	351.92	2877	37.20*	1.741E+00	8.852E-01	8.852E-01	6.89
	609.31	2143	46.30	1.118E+00	8.252E-01	8.252E-01	7.03
U-238DHP	63.28	552	3.80*	3.307E+00	8.756E-01	8.756E-01	24.21
	92.59	1234	5.41	3.455E+00	1.316E+00	1.316E+00	13.39

Flag: "*" = Keyline

Sample ID : J479W1AA Acquisition date : 12-SEP-2007 18:10:12

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
0	46.30	256	1961	0.67	189.33	183	14	7.10E-03	37.3	2.82E+00	
2	74.84	1843	4030	1.37	304.32	297	28	5.12E-02	8.2	3.44E+00	
2	77.11	3289	3609	1.33	313.43	297	28	9.14E-02	4.7	3.45E+00	
2	84.50	560	3247	1.52	343.22	334	53	1.56E-02	24.7	3.47E+00	
2	87.18	1290	3479	1.64	354.01	334	53	3.58E-02	11.6	3.47E+00	T
2	89.80	726	3028	1.53	364.55	334	53	2.02E-02	18.6	3.46E+00	
0	327.92	119	810	1.13	1323.68	1317	14	3.29E-03	44.8	1.84E+00	T
0	463.09	282	713	1.19	1868.09	1858	21	7.84E-03	21.0	1.40E+00	T
0	727.30	301	454	1.41	2932.30	2922	23	8.36E-03	16.6	9.67E-01	T
0	795.77	93	403	1.23	3208.10	3195	19	2.59E-03	45.2	8.99E-01	T

Flags: "T" = Tentatively associated

Rejected Report
Sample ID : J479W1AA
Acquisition date : 12-SEP-2007 18:10:12

Nuclide	Half-life	Half-Life Ratio	Energy	%Abund	Activity (PCI/GRAM)	1-Sigma %Error	Rejected by
NA-22	2.60Y	0.05	511.00	179.68	5.891E-02	17.31	Abun.
			1274.54*	99.94	--- Not Found ---		
		% Abundances Found =		64.26			
SC-46	83.85D	0.56	889.25	99.98	--- Not Found ---		Abun.
			1120.51*	99.99	1.838E-01	13.50	
		% Abundances Found =		50.00			
TC-95M	61.00D	0.78	204.12*	66.20	--- Not Found ---		Abun.
			582.07	29.30	1.497E+00	7.62	
			835.13	26.10	--- Not Found ---		
		% Abundances Found =		24.10			
RU-103	39.35D	1.20	497.08*	89.00	--- Not Found ---		Abun.
			610.33	5.60	1.571E+01	7.03	
		% Abundances Found =		5.92			
RU-106DA	368.20D	0.13	511.85	20.60	5.426E-01	17.31	Abun.
			621.84*	9.80	--- Not Found ---		
		% Abundances Found =		67.76			
SB-125	2.77Y	0.05	176.33	6.89	--- Not Found ---		Abun.
			427.89*	29.33	--- Not Found ---		
			463.38	10.35	4.011E-01	21.78	
			600.56	17.80	--- Not Found ---		
			635.90	11.32	--- Not Found ---		
		% Abundances Found =		13.67			
CS-134	2.06Y	0.06	569.31	15.43	--- Not Found ---		Abun.
			604.70	97.60	--- Not Found ---		
			795.84*	85.40	2.533E-02	45.64	
			801.93	8.73	--- Not Found ---		
		% Abundances Found =		41.22			
LA-140	40.22H	28.26	328.77	20.50	2.015E+07	45.16	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	0.03	42.90	21.16	--- Not Found ---		Abun.
			86.54	30.90	2.445E-01	13.06	
			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	9.247E+00	45.85	
			452.83	0.31	--- Not Found ---		
			727.33*	6.58	9.430E-01	17.91	
			785.37	1.10	--- Not Found ---		
			893.41	0.38	--- Not Found ---		
			952.12	0.17	--- Not Found ---		

Sample ID : J479W1AA Acquisition date : 12-SEP-2007 18:10:12

Nuclide	Half-life	Half-Life Ratio	Energy	%Abund	Activity (PCI/GRAM)	1-Sigma %Error	Rejected by
BI-212	1.41E+10Y	0.00	1078.62	0.56	--- Not Found ---		Abun.
			1512.70	0.29	--- Not Found ---		
			1620.50	1.49	--- Not Found ---		
			1806.00	0.09	--- Not Found ---		
		% Abundances Found =		58.84			
RA-223	21.77Y	0.01	154.21	5.58	--- Not Found ---		Abun.
			269.46*	13.60	3.121E-01	17.33	
			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	1.113E-01	15.69	
			205.31	4.70	--- Not Found ---		
		% Abundances Found =		78.03			

Flag: "*" = Keyline

VMS Nuclide Identification Report V3.0 Generated 13-SEP-2007 04:10:33

Configuration : $DISK1:[GER14.SAMPLE]J479W1AA_120971810.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 : 27-JUL-2007 14:30:00
Sample ID : J479W1AA
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 : 12-SEP-2007 18:10:12
Sample quantity : 376.60 GRAMS
Sample geometry : S200
Elapsed real time: 0 10:00:15.75 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	2.536E+01	1.550E+00	1.847E-01	6.043E-03	137.314
TL-208	3.042E-01	2.320E-02	2.333E-02	7.855E-04	13.038
PB-212	8.550E-01	5.681E-02	3.682E-02	1.372E-03	23.221
BI-214	8.252E-01	5.802E-02	4.391E-02	1.512E-03	18.793
PB-214	8.852E-01	6.103E-02	4.526E-02	1.481E-03	19.559
RA-224DA	8.962E-01	5.954E-02	3.859E-02	1.438E-03	23.221
RA-226DA	8.252E-01	5.803E-02	4.391E-02	1.512E-03	18.793
AC-228	8.782E-01	7.513E-02	8.488E-02	3.526E-03	10.347
RA-228DA	8.921E-01	7.631E-02	8.621E-02	3.582E-03	10.347
TH-228DA	8.876E-01	6.767E-02	6.808E-02	2.292E-03	13.038
TH-232DA	8.030E-01	7.962E-02	1.357E-01	4.425E-03	5.919
U-234DA	9.259E-01	7.342E-02	9.196E-02	3.165E-03	10.069
U-238DA	8.852E-01	6.103E-02	4.526E-02	1.481E-03	19.559
U-238DHP	8.756E-01	2.120E-01	4.532E-01	1.483E-02	1.932

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

Nuclide	Key-Line Activity (PCI/GRAM)	K.L. Ided	Act error	MDA (PCI/GRAM)	MDA error	Act/MDA
BE-7	-1.625E-02		9.479E-02	3.167E-01	1.020E-02	-0.051
NA-22	-5.179E-03		8.835E-03	2.942E-02	9.652E-04	-0.176
SC-46	1.838E-01	+	2.481E-02	5.987E-02	2.107E-03	3.070
CR-51	4.340E-02		1.647E-01	5.590E-01	1.812E-02	0.078
MN-54	-2.328E-03		7.938E-03	2.651E-02	1.072E-03	-0.088
CO-57	-6.389E-02		4.636E-02	1.540E-01	5.728E-03	-0.415
CO-58	-3.071E-02		1.061E-02	3.330E-02	1.328E-03	-0.922
FE-59	-3.580E-02		2.967E-02	9.821E-02	3.540E-03	-0.364
CO-60	2.305E-03		7.467E-03	2.543E-02	8.291E-04	0.091
ZN-65	6.002E-02		2.193E-02	6.590E-02	2.333E-03	0.911
SE-75	-2.636E-02		1.198E-02	3.500E-02	1.268E-03	-0.753
SR-85	1.042E-01		1.227E-02	3.941E-02	1.239E-03	2.644
Y-88	2.409E-03		6.616E-03	2.355E-02	7.302E-04	0.102
NB-94	1.305E-02		6.614E-03	2.283E-02	9.412E-04	0.572

Sample ID : J479W1AA Acquisition date : 12-SEP-2007 18:10:12

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

Nuclide	Key-Line Activity (PCI/GRAM)	K.L. Ided	Act error	MDA (PCI/GRAM)	MDA error	Act/MDA
NB-95	2.602E-02		1.811E-02	6.201E-02	2.403E-03	0.420
TC-95M	2.842E-03		1.445E-02	4.205E-02	1.594E-03	0.068
ZR-95	4.956E-03		1.892E-02	6.417E-02	2.472E-03	0.077
ZRNB-95	3.323E-02		2.374E-02	8.124E-02	3.149E-03	0.409
RH-101	1.736E-02		6.949E-03	2.333E-02	8.852E-04	0.744
RH-102M	-2.283E-03		5.717E-03	1.905E-02	6.142E-04	-0.120
RU-103	1.333E-02		1.408E-02	4.763E-02	1.516E-03	0.280
RU-106DA	-1.135E-01		6.544E-02	2.155E-01	7.494E-03	-0.527
AG-108M	-2.374E-03		5.873E-03	1.961E-02	6.408E-04	-0.121
AG-110M	1.423E-02		1.085E-02	3.710E-02	1.540E-03	0.383
SN-113DA	2.159E-02		1.069E-02	3.657E-02	1.194E-03	0.590
SB-124	-1.449E-03		1.173E-02	3.517E-02	1.204E-03	-0.041
SB-125	1.288E-02		1.805E-02	6.114E-02	1.999E-03	0.211
SN-126DA	1.949E-03		6.114E-03	2.082E-02	7.489E-04	0.094
I-131	-1.321E-01		3.574E-01	1.201E+00	3.933E-02	-0.110
BA-133	6.001E-03		9.418E-03	2.713E-02	8.880E-04	0.221
CS-134	2.533E-02	+	1.156E-02	3.019E-02	1.193E-03	0.839
CS-137DA	-8.960E-03		7.323E-03	2.430E-02	8.706E-04	-0.369
LA-138	1.914E-02		8.828E-03	3.225E-02	1.055E-03	0.593
CE-139	-3.330E-03		7.220E-03	2.410E-02	9.130E-04	-0.138
BA-140	-2.540E-02		2.800E-01	9.339E-01	3.010E-02	-0.027
BALA-140	-2.807E-01		1.623E-01	5.287E-01	1.715E-02	-0.531
CE-141	4.430E-02		2.537E-02	8.582E-02	3.212E-03	0.516
CE-144	-1.322E-01		4.593E-02	1.492E-01	5.535E-03	-0.886
CEPR-144	-2.628E-01		9.185E-02	2.984E-01	1.107E-02	-0.881
PM-144	8.745E-03		6.455E-03	2.230E-02	7.733E-04	0.392
PM-146	9.275E-03		8.022E-03	2.728E-02	8.870E-04	0.340
EU-152	-3.450E-02		2.073E-02	6.316E-02	2.063E-03	-0.546
EU-154	-1.463E-02		2.426E-02	8.078E-02	2.650E-03	-0.181
EU-155	4.851E-02		2.086E-02	6.908E-02	2.413E-03	0.702
HF-181	-1.757E-02		1.437E-02	4.719E-02	1.516E-03	-0.372
BI-207	-2.235E-03		5.955E-03	1.971E-02	6.554E-04	-0.113
BI-210M	4.575E-03		1.160E-02	3.258E-02	1.178E-03	0.140
BI-212	9.430E-01	+	1.689E-01	4.031E-01	1.777E-02	2.340
RA-223	3.121E-01	+	5.409E-02	1.364E-01	4.909E-03	2.289
AC-227DA	9.431E-01		8.315E-02	1.927E-01	7.194E-03	4.894
TH-234DA	1.194E+00		1.093E+00	3.791E+00	1.493E-01	0.315
U-235HP	7.209E-02		4.294E-02	1.452E-01	5.428E-03	0.496
NP-237DA	1.362E-02		1.364E-02	4.659E-02	1.543E-03	0.292
AM-241HP	6.239E-02		1.571E-02	4.480E-02	1.481E-03	1.393

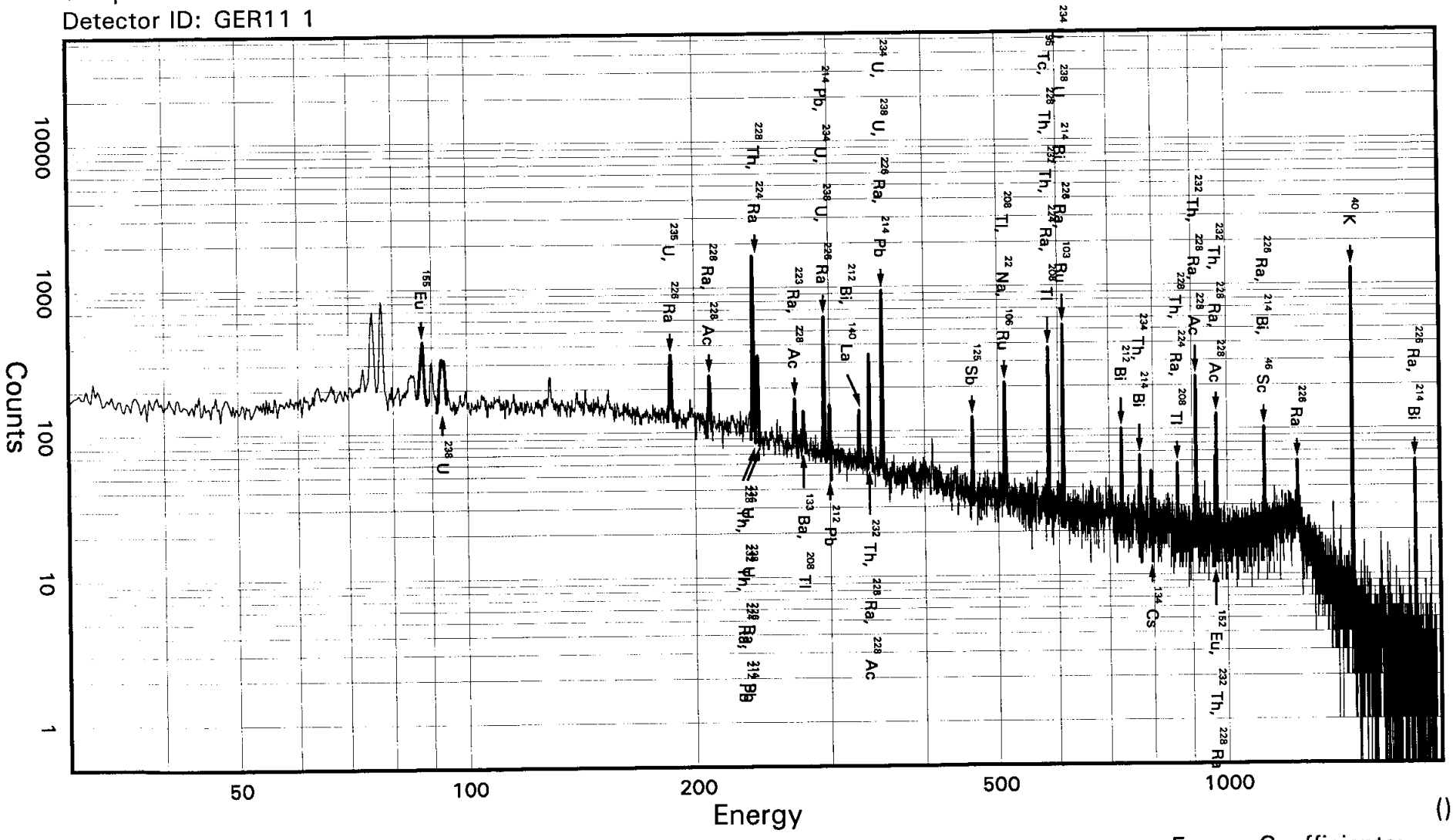
STL Richland WA.

BRC SOIL

Sample ID: J47901AA

Detector ID: GER11 1

Batch ID: 7233482



()

Acquisition Start: 12-SEP-2007 18:10:46.27

Preset Live Time: 0 10:00:00.00

Elapsed Live Time: 0 10:00:00.00

Energy Coefficients:

Offset: -1.01112E+00

Slope: 2.28546E-01

Quadrature: 3.09284E-08

SAMPLE IDENTIFICATION: J47901AA

CONFIGURATION ID: GER11:J47901AA_120971810
TITLE : BRC SOIL
SAMPLE ID : J47901AA

REPORT DATE: 13-SEP-07
ACQUIRE DATE: 12-SEP-07 18:10:46
ELAPSED LIVE TIME: 36000.0 Sec
PRESET LIVE TIME: 0 10:00:00

SAMPLE DATE: 27-JUL-2007 14:30:00.00
CALIB DATE: 12-SEP-2007 05:07:46.53
ELAPSED LIVE TIME: 0 10:00:00
ELAPSED REAL TIME: 0 10:00:33

SAMPLE QUANTITY: 3.7540E+02
SAMPLE GEOMETRY: S200

UNITS: GRAMS
SAMPLE TYPE:

ENERGY OFFSET: -.1011E+01 keV
ENERGY SLOPE: 2.2855E-01 keV/C
ENERGY Q COEFF: 3.0928E-08 keV/C^^2
PEAK SENSITIVITY: 5.000

FWHM OFFSET: 1.8231E-01 keV
FWHM SLOPE: 4.2425E-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 13-SEP-2007 21:15:01

Configuration : $DISK1:[GER11.SAMPLE]J47901AA_120971810.CNF;1
Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6
Sample title : BRC SOIL
Sample date : 27-JUL-2007 14:30:00 Acquisition date : 12-SEP-2007 18:10:46
Sample ID : J47901AA Sample quantity : 375.40 GRAMS
Sample type : Sample geometry : S200
Elapsed live time: 0 10:00:00.00 Elapsed real time: 0 10:00:33.41 0.1%
Start energy : 1.27 End energy : 1873.31
Sensitivity : 5.00 Gaussian : 40.00
Critical level : No

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	74.99*	1713	2229	0.81	332.51	327	11	4.76E-02	6.0	
2	0	77.24*	2032	1931	0.75	342.37	338	11	5.64E-02	5.0	
3	0	87.26*	935	2059	0.94	386.21	381	12	2.60E-02	10.7	
4	0	89.91*	417	1739	0.77	397.81	393	10	1.16E-02	19.9	
5	0	92.89	922	2239	1.41	410.85	404	13	2.56E-02	11.1	
6	0	129.05	235	1529	0.77	569.02	565	9	6.51E-03	30.8	
7	0	186.00	1212	1846	1.14	818.17	811	15	3.37E-02	8.2	
8	0	209.16	662	1501	0.92	919.50	912	14	1.84E-02	13.0	
9	1	238.58	6225	1015	0.86	1048.20	1041	28	1.73E-01	1.6	1.81E+00
10	1	240.89	663	1042	0.92	1058.30	1041	28	1.84E-02	11.4	
11	1	242.01	1100	1025	0.93	1063.16	1041	28	3.06E-02	7.0	
12	0	270.28	587	1272	1.36	1186.82	1179	17	1.63E-02	14.6	
13	0	277.15	346	1175	0.92	1216.87	1211	16	9.61E-03	22.8	
14	0	295.15	2475	1001	0.95	1295.60	1289	15	6.88E-02	3.4	
15	0	300.01*	382	910	1.02	1316.86	1309	14	1.06E-02	18.1	
16	0	327.85	337	744	1.02	1438.66	1433	12	9.36E-03	17.1	
17	0	338.19	1320	1016	0.95	1483.87	1475	17	3.67E-02	6.2	
18	0	351.79	4144	1000	0.97	1543.34	1534	18	1.15E-01	2.4	
19	0	462.69	445	560	1.04	2028.34	2019	16	1.24E-02	12.8	
20	0	510.62	1588	946	1.50	2237.97	2225	28	4.41E-02	6.0	
21	0	582.87	1932	769	1.22	2553.89	2545	23	5.37E-02	4.4	
22	0	608.95	3184	471	1.35	2667.92	2658	19	8.84E-02	2.4	
23	0	726.74	476	422	1.15	3182.91	3173	19	1.32E-02	11.3	
24	0	767.70	350	350	1.41	3361.95	3354	19	9.71E-03	13.9	
25	0	794.56	273	348	1.84	3479.36	3470	19	7.59E-03	15.2	
26	0	860.07	265	421	1.59	3765.73	3754	22	7.35E-03	17.9	
27	0	910.65	1513	485	1.59	3986.80	3974	26	4.20E-02	4.2	
28	0	963.66	332	393	1.53	4218.49	4205	23	9.22E-03	14.2	
29	0	968.44	883	416	1.75	4239.36	4229	25	2.45E-02	6.3	
30	0	1119.49	814	478	1.68	4899.49	4885	29	2.26E-02	7.4	
31	0	1237.35	270	532	1.90	5414.46	5404	22	7.51E-03	19.5	
32	0	1376.84	148	152	1.97	6023.86	6014	19	4.12E-03	18.8	
33	0	1459.83	12522	233	2.07	6386.35	6369	35	3.48E-01	0.9	
34	0	1763.57	617	51	2.38	7712.86	7696	35	1.71E-02	4.9	

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

VMS Nuclide Identification Report V3.0 Generated 13-SEP-2007 21:15:01

Configuration : $DISK1:[GER11.SAMPLE]J47901AA_120971810.CNF;1
Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.3
Sample title : BRC SOIL
Sample date : 27-JUL-2007 14:30:00 Acquisition date : 12-SEP-2007 18:10:46
Sample ID : J47901AA Sample quantity : 375.40 GRAMS
Sample type : Sample geometry : S200
Elapsed live time: 0 10:00:00.00 Elapsed real time: 0 10:00:33.41 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	12522	10.67*	8.391E-01	2.797E+01	2.797E+01	6.44
TL-208	277.35	346	6.80	2.957E+00	3.439E-01	3.439E-01	23.61
	510.84	1588	21.60	1.997E+00	7.365E-01	7.365E-01	8.49
	583.14	1932	84.20*	1.816E+00	2.527E-01	2.527E-01	7.43
	860.37	265	12.46	1.328E+00	3.197E-01	3.197E-01	19.18
PB-212	238.63	6225	44.60*	3.227E+00	8.650E-01	8.650E-01	6.44
	300.09	382	3.41	2.819E+00	7.943E-01	7.943E-01	19.20
BI-214	609.31	3184	46.30*	1.757E+00	7.825E-01	7.825E-01	6.47
	768.36	350	5.04	1.463E+00	9.483E-01	9.483E-01	15.29
	1120.29	814	15.10	1.051E+00	1.026E+00	1.026E+00	9.73
	1764.49	617	15.80	7.427E-01	1.051E+00	1.051E+00	7.75
PB-214	241.98	1100	7.49	3.201E+00	9.175E-01	9.175E-01	9.38
	295.21	2475	19.20	2.847E+00	9.056E-01	9.056E-01	7.17
	351.92	4144	37.20*	2.553E+00	8.725E-01	8.725E-01	6.61
	785.91	------	1.10	1.435E+00	------ Line Not Found		------
RA-224DA	238.63	6225	44.60*	3.227E+00	8.650E-01	9.067E-01	6.44
	240.98	663	3.95	3.209E+00	1.047E+00	1.097E+00	12.98
	583.14	1932	30.25	1.816E+00	7.035E-01	7.374E-01	7.43
	860.37	265	4.48	1.328E+00	8.890E-01	9.319E-01	19.18
RA-226DA	186.21	1212	3.50	3.657E+00	1.894E+00	1.894E+00	10.29
	241.98	1100	7.49	3.201E+00	9.175E-01	9.175E-01	9.38
	295.22	2475	19.20	2.847E+00	9.056E-01	9.056E-01	7.17
	351.92	4144	37.20	2.553E+00	8.725E-01	8.726E-01	6.61
	609.32	3184	46.30*	1.757E+00	7.825E-01	7.825E-01	6.47
	1120.28	814	15.10	1.051E+00	1.026E+00	1.026E+00	9.73
	1238.11	270	5.94	9.618E-01	9.461E-01	9.462E-01	20.42
	1764.49	617	15.80	7.427E-01	1.051E+00	1.052E+00	7.75
AC-228	209.28	662	4.40	3.462E+00	8.694E-01	8.694E-01	14.40
	270.23	587	3.60	3.002E+00	1.086E+00	1.086E+00	15.86
	338.32	1320	11.40	2.617E+00	8.850E-01	8.850E-01	8.77
	911.07	1513	27.70*	1.264E+00	8.643E-01	8.643E-01	8.35
	969.11	883	16.60	1.197E+00	8.894E-01	8.894E-01	9.39
RA-228DA	209.28	662	4.40	3.462E+00	8.694E-01	8.831E-01	14.40
	338.32	1320	11.40	2.617E+00	8.850E-01	8.990E-01	8.77
	911.07	1513	27.70*	1.264E+00	8.643E-01	8.779E-01	8.35
	964.60	332	5.20	1.202E+00	1.062E+00	1.079E+00	15.88

Sample ID : J47901AA Acquisition date : 12-SEP-2007 18:10:46

Nuclide Type: NP

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected PCI/GRAM	Decay Corr PCI/GRAM	1-Sigma %Error
	969.11	883	16.60	1.197E+00	8.894E-01	9.034E-01	9.39
TH-228DA	238.63	6225	44.60	3.227E+00	8.650E-01	9.067E-01	6.44
	240.98	663	3.95	3.209E+00	1.047E+00	1.097E+00	12.98
	583.14	1932	30.25*	1.816E+00	7.035E-01	7.374E-01	7.43
	860.37	265	4.48	1.328E+00	8.890E-01	9.319E-01	19.18
TH-232DA	238.63	6225	44.60	3.227E+00	8.650E-01	8.650E-01	6.44
	338.32	1320	12.40*	2.617E+00	8.136E-01	8.136E-01	8.77
	583.14	1932	30.25	1.816E+00	7.035E-01	7.035E-01	7.43
	911.07	1513	27.70	1.264E+00	8.643E-01	8.643E-01	8.35
	964.60	332	5.20	1.202E+00	1.062E+00	1.062E+00	15.88
	969.11	883	16.60	1.197E+00	8.894E-01	8.894E-01	9.39
U-234DA	241.98	1100	7.49	3.201E+00	9.175E-01	9.175E-01	9.38
	295.22	2475	19.20*	2.847E+00	9.056E-01	9.056E-01	7.17
	351.92	4144	37.20	2.553E+00	8.725E-01	8.725E-01	6.61
	609.31	3184	46.30	1.757E+00	7.825E-01	7.825E-01	6.47
U-238DA	241.98	1100	7.49	3.201E+00	9.175E-01	9.175E-01	9.38
	295.22	2475	19.20	2.847E+00	9.056E-01	9.056E-01	7.17
	351.92	4144	37.20*	2.553E+00	8.725E-01	8.725E-01	6.61
	609.31	3184	46.30	1.757E+00	7.825E-01	7.825E-01	6.47

Flag: "*" = Keyline

Unidentified Energy Lines

Sample ID : J47901AA
Acquisition date : 12-SEP-2007 18:10:46

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
0	74.99	1713	2229	0.81	332.51	327	11	4.76E-02	6.0	2.05E+00	
0	77.24	2032	1931	0.75	342.37	338	11	5.64E-02	5.0	2.21E+00	
0	87.26	935	2059	0.94	386.21	381	12	2.60E-02	10.7	2.84E+00	T
0	89.91	417	1739	0.77	397.81	393	10	1.16E-02	19.9	2.98E+00	
0	92.89	922	2239	1.41	410.85	404	13	2.56E-02	11.1	3.13E+00	T
0	129.05	235	1529	0.77	569.02	565	9	6.51E-03	30.8	3.91E+00	
0	327.85	337	744	1.02	1438.66	1433	12	9.36E-03	17.1	2.67E+00	T
0	462.69	445	560	1.04	2028.34	2019	16	1.24E-02	12.8	2.14E+00	T
0	726.74	476	422	1.15	3182.91	3173	19	1.32E-02	11.3	1.53E+00	T
0	794.56	273	348	1.84	3479.36	3470	19	7.59E-03	15.2	1.42E+00	T
0	1376.84	148	152	1.97	6023.86	6014	19	4.12E-03	18.8	8.79E-01	

Flags: "T" = Tentatively associated

Sample ID : J47901AA Acquisition date : 12-SEP-2007 18:10:46

Nuclide	Half-life	Half-Life Ratio	Energy	%Abund	Activity (PCI/GRAM)	1-Sigma %Error	Rejected by
NA-22	2.60Y	0.05	511.00	179.68	9.165E-02	8.49	Abun.
			1274.54*	99.94	--- Not Found ---		
		% Abundances Found =		64.26			
SC-46	83.85D	0.56	889.25	99.98	--- Not Found ---		Abun.
			1120.51*	99.99	2.291E-01	9.73	
		% Abundances Found =		50.00			
TC-95M	61.00D	0.78	204.12*	66.20	--- Not Found ---		Abun.
			582.07	29.30	1.244E+00	7.43	
			835.13	26.10	--- Not Found ---		
		% Abundances Found =		24.10			
RU-103	39.35D	1.20	497.08*	89.00	--- Not Found ---		Abun.
			610.33	5.60	1.490E+01	6.47	
		% Abundances Found =		5.92			
RU-106DA	368.20D	0.13	511.85	20.60	8.442E-01	8.49	Abun.
			621.84*	9.80	--- Not Found ---		
		% Abundances Found =		67.76			
SB-125	2.77Y	0.05	176.33	6.89	--- Not Found ---		Abun.
			427.89*	29.33	--- Not Found ---		
			463.38	10.35	4.161E-01	14.12	
			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	3.418E-01	23.61	
			302.84	17.80	--- Not Found ---		
			356.00*	62.05	--- Not Found ---		
			383.85	8.70	--- Not Found ---		
		% Abundances Found =		5.37			
CS-134	2.06Y	0.06	569.31	15.43	--- Not Found ---		Abun.
			604.70	97.60	--- Not Found ---		
			795.84*	85.40	4.701E-02	16.62	
			801.93	8.73	--- Not Found ---		
		% Abundances Found =		41.22			
LA-140	40.22H	28.26	328.77	20.50	3.958E+07	18.18	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	3.862E-01	15.88	

Sample ID : J47901AA Acquisition date : 12-SEP-2007 18:10:46

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	0.03	42.90	21.16	--- Not Found ---		Abun.
			86.54	30.90	2.166E-01	12.69	
			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	1.816E+01	19.83	
			452.83	0.31	--- Not Found ---		
			727.33*	6.58	9.446E-01	13.15	
			785.37	1.10	--- Not Found ---		
			893.41	0.38	--- Not Found ---		
			952.12	0.17	--- Not Found ---		
			1078.62	0.56	--- Not Found ---		
			1512.70	0.29	--- Not Found ---		
			1620.50	1.49	--- Not Found ---		
			1806.00	0.09	--- Not Found ---		
		% Abundances Found =		58.84			
RA-223	21.77Y	0.01	154.21	5.58	--- Not Found ---		Abun.
			269.46*	13.60	2.888E-01	15.86	
			323.87	3.88	--- Not Found ---		
		% Abundances Found =		58.98			
TH-234DA	4.47E+09Y	0.00	766.41	0.21	2.276E+01	15.29	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	1.227E-01	10.29	
			205.31	4.70	--- Not Found ---		
		% Abundances Found =		78.03			
U-238DHP	4.47E+09Y	0.00	63.28*	3.80	--- Not Found ---		Abun.
			92.59	5.41	1.090E+00	12.90	
		% Abundances Found =		58.74			

Flag: "*" = Keyline

VMS Nuclide Identification Report V3.0 Generated 13-SEP-2007 21:15:03

Configuration : $DISK1:[GER11.SAMPLE]J47901AA_120971810.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 : 27-JUL-2007 14:30:00 Acquisition date : 12-SEP-2007 18:10:46
Sample ID : J47901AA Sample quantity : 375.40 GRAMS
Sample type : Sample geometry : S200
Elapsed live time: 0 10:00:00.00 Elapsed real time: 0 10:00:33.41 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	2.797E+01	1.802E+00	1.320E-01	5.216E-03	211.841
TL-208	2.527E-01	1.877E-02	1.393E-02	4.612E-04	18.140
PB-212	8.650E-01	5.572E-02	2.236E-02	8.339E-04	38.693
BI-214	7.825E-01	5.060E-02	2.482E-02	8.239E-04	31.521
PB-214	8.725E-01	5.767E-02	2.657E-02	9.603E-04	32.833
RA-224DA	9.067E-01	5.841E-02	2.343E-02	8.741E-04	38.693
RA-226DA	7.825E-01	5.061E-02	2.483E-02	8.239E-04	31.520
AC-228	8.643E-01	7.216E-02	5.244E-02	2.714E-03	16.481
RA-228DA	8.779E-01	7.330E-02	5.327E-02	2.756E-03	16.481
TH-228DA	7.374E-01	5.476E-02	4.065E-02	1.346E-03	18.140
TH-232DA	8.136E-01	7.136E-02	7.992E-02	2.963E-03	10.180
U-234DA	9.056E-01	6.491E-02	5.133E-02	1.958E-03	17.641
U-238DA	8.725E-01	5.767E-02	2.657E-02	9.603E-04	32.833

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

Nuclide	Key-Line Activity (PCI/GRAM)	K.L. Ided	Act error	MDA (PCI/GRAM)	MDA error	Act/MDA
BE-7	-3.895E-02		5.659E-02	1.867E-01	6.143E-03	-0.209
NA-22	-1.469E-03		6.041E-03	2.031E-02	7.760E-04	-0.072
SC-46	2.291E-01	+	2.228E-02	4.391E-02	1.707E-03	5.218
CR-51	1.977E-02		9.863E-02	3.294E-01	1.258E-02	0.060
MN-54	2.450E-03		5.075E-03	1.714E-02	8.001E-04	0.143
CO-57	-1.163E-02		2.864E-02	9.267E-02	3.401E-03	-0.125
CO-58	-8.355E-03		6.343E-03	2.081E-02	9.292E-04	-0.401
FE-59	-7.523E-03		2.001E-02	6.650E-02	2.697E-03	-0.113
CO-60	-5.383E-03		4.938E-03	1.625E-02	6.570E-04	-0.331
ZN-65	2.466E-02		1.452E-02	4.237E-02	1.665E-03	0.582
SE-75	7.929E-03		6.094E-03	2.089E-02	7.901E-04	0.379
SR-85	1.313E-02		6.283E-03	1.902E-02	6.203E-04	0.690
Y-88	-2.303E-03		4.315E-03	1.482E-02	4.737E-04	-0.155
NB-94	4.006E-03		4.142E-03	1.409E-02	7.026E-04	0.284
NB-95	3.074E-02		1.313E-02	3.912E-02	1.603E-03	0.786

Sample ID : J47901AA Acquisition date : 12-SEP-2007 18:10:46

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

Nuclide	Key-Line Activity (PCI/GRAM)	K.L. Ided	Act error	MDA (PCI/GRAM)	MDA error	Act/MDA
TC-95M	4.698E-03		7.481E-03	2.492E-02	9.068E-04	0.189
ZR-95	8.350E-03		1.214E-02	4.158E-02	1.674E-03	0.201
ZRNB-95	4.169E-02		1.717E-02	5.122E-02	2.099E-03	0.814
RH-101	1.321E-02		4.275E-03	1.435E-02	5.195E-04	0.921
RH-102M	-2.626E-03		3.399E-03	1.120E-02	3.689E-04	-0.234
RU-103	-1.389E-02		8.231E-03	2.648E-02	8.679E-04	-0.525
RU-106DA	-6.563E-03		3.812E-02	1.279E-01	4.247E-03	-0.051
AG-108M	-9.954E-04		3.361E-03	1.127E-02	3.722E-04	-0.088
AG-110M	-4.590E-03		6.649E-03	2.192E-02	1.119E-03	-0.209
SN-113DA	-7.652E-03		6.127E-03	2.042E-02	6.705E-04	-0.375
SB-124	6.629E-03		6.298E-03	2.153E-02	7.141E-04	0.308
SB-125	3.743E-03		1.059E-02	3.590E-02	1.185E-03	0.104
SN-126DA	3.692E-03		3.760E-03	1.273E-02	4.265E-04	0.290
I-131	2.860E-01		2.077E-01	7.210E-01	2.536E-02	0.397
BA-133	1.013E-02		5.118E-03	1.603E-02	5.743E-04	0.632
CS-134	4.701E-02	+	7.812E-03	1.946E-02	8.450E-04	2.415
CS-137DA	-5.108E-03		4.579E-03	1.497E-02	4.967E-04	-0.341
LA-138	-8.403E-03		6.305E-03	2.094E-02	8.325E-04	-0.401
CE-139	-5.213E-03		4.213E-03	1.402E-02	4.982E-04	-0.372
BA-140	-2.926E-01		1.711E-01	5.654E-01	1.856E-02	-0.518
BALA-140	-2.495E-01		1.054E-01	3.301E-01	1.240E-02	-0.756
CE-141	-1.447E-02		1.504E-02	5.085E-02	1.833E-03	-0.285
CE-144	2.740E-02		2.826E-02	9.278E-02	3.431E-03	0.295
CEPR-144	5.471E-02		5.652E-02	1.856E-01	6.862E-03	0.295
PM-144	2.828E-03		3.867E-03	1.315E-02	4.368E-04	0.215
PM-146	9.925E-03		4.890E-03	1.676E-02	5.532E-04	0.592
EU-152	-1.508E-02		1.155E-02	3.741E-02	1.372E-03	-0.403
EU-154	-5.136E-03		1.667E-02	5.595E-02	2.138E-03	-0.092
EU-155	4.559E-02		1.444E-02	4.855E-02	1.918E-03	0.939
HF-181	-4.488E-03		8.404E-03	2.777E-02	9.132E-04	-0.162
BI-207	-2.286E-03		3.477E-03	1.166E-02	3.853E-04	-0.196
BI-210M	-1.288E-02		6.165E-03	1.864E-02	7.054E-04	-0.691
BI-212	9.446E-01	+	1.243E-01	2.766E-01	1.226E-02	3.415
RA-223	2.888E-01	+	4.580E-02	8.622E-02	3.267E-03	3.349
AC-227DA	2.401E-02		3.260E-02	9.258E-02	3.448E-03	0.259
TH-234DA	4.755E-01		7.302E-01	2.498E+00	1.179E-01	0.190
U-235HP	7.771E-04		2.738E-02	8.781E-02	3.175E-03	0.009
NP-237DA	1.142E-02		8.138E-03	2.754E-02	1.052E-03	0.415
U-238DHP	6.870E-01		2.376E-01	7.786E-01	3.228E-02	0.882
AM-241HP	6.760E-03		3.039E-02	9.913E-02	3.938E-03	0.068

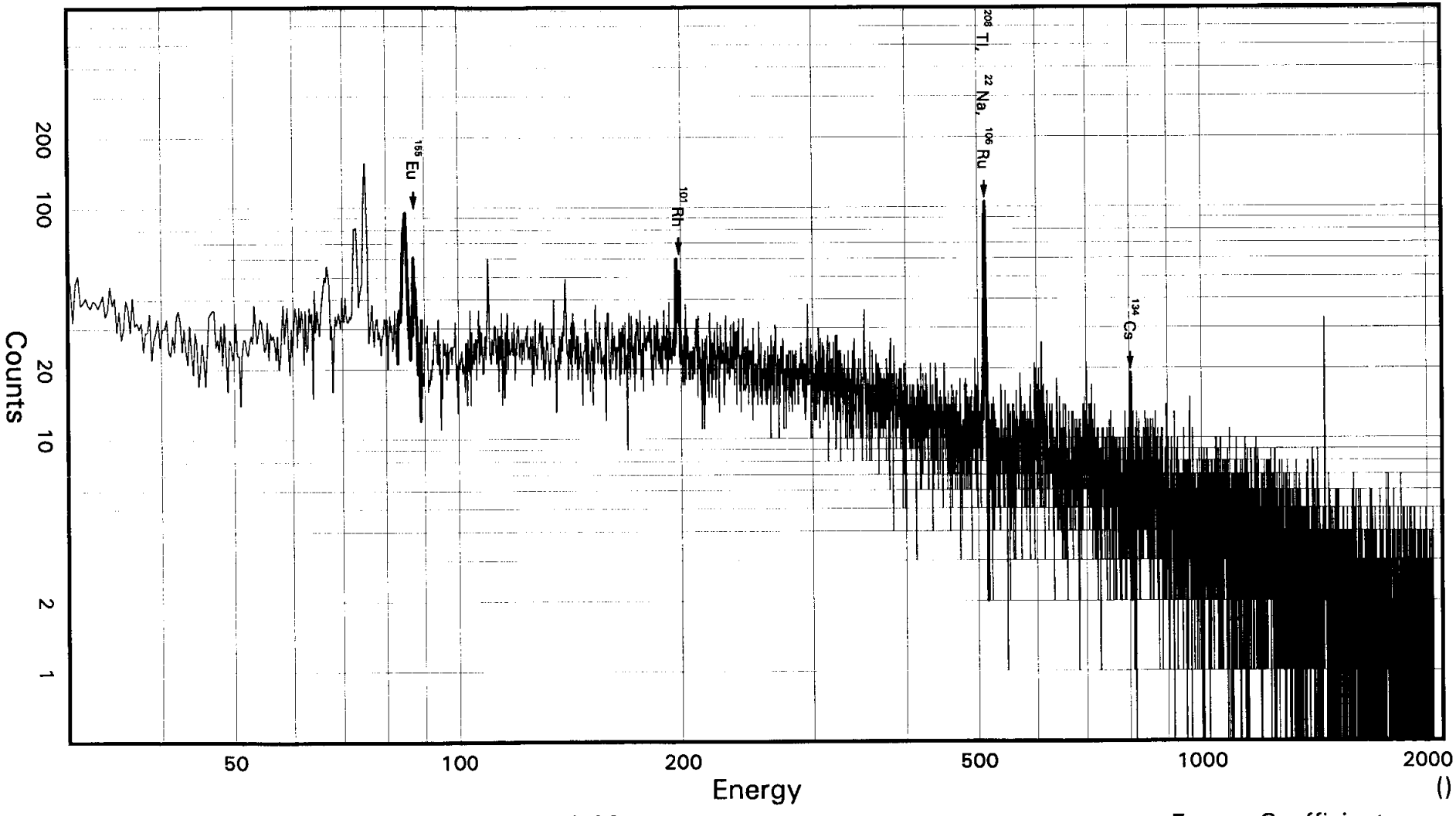
STL Richland WA.

BRC SOIL

Sample ID: J5A4G1AA

Detector ID: GER12 1

Batch ID: 7233482



Acquisition Start: 12-SEP-2007 18:11:32.98

Preset Live Time: 0 10:00:00.00

Elapsed Live Time: 0 10:00:00.00

Energy Coefficients:

Offset: 1.13963E+01

Slope: 2.47616E-01

Quadrature: 1.43361E-09

SAMPLE IDENTIFICATION: J5A4G1AA

CONFIGURATION ID: GER12:J5A4G1AA_120971811
TITLE : BRC SOIL
SAMPLE ID : J5A4G1AA

REPORT DATE: 13-SEP-07
ACQUIRE DATE: 12-SEP-07 18:11:32
ELAPSED LIVE TIME: 36000.0 Sec
PRESET LIVE TIME: 0 10:00:00

SAMPLE DATE: 28-JUL-2007 10:45:00.00
CALIB DATE: 12-SEP-2007 05:08:22.36
ELAPSED LIVE TIME: 0 10:00:00
ELAPSED REAL TIME: 0 10:00:05

SAMPLE QUANTITY: 2.0000E+02
SAMPLE GEOMETRY: 200ML

UNITS: GRAMS
SAMPLE TYPE:

ENERGY OFFSET: 1.1396E+01 keV
ENERGY SLOPE: 2.4762E-01 keV/C
ENERGY Q COEFF: 1.4336E-09 keV/C^^2
PEAK SENSITIVITY: 5.000

FWHM OFFSET: 4.6370E-01 keV
FWHM SLOPE: 3.3190E-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 13-SEP-2007 21:16:24

Configuration	: $DISK1:[GER12.SAMPLE]J5A4G1AA_120971811.CNF;1		
Analyses by	: PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6		
Sample title	: BRC SOIL		
Sample date	: 28-JUL-2007 10:45:00	Acquisition date	: 12-SEP-2007 18:11:32
Sample ID	: J5A4G1AA	Sample quantity	: 200.00 GRAMS
Sample type	:	Sample geometry	: 200ML
Elapsed live time	: 0 10:00:00.00	Elapsed real time	: 0 10:00:05.42 0.0%
Start energy	: 11.64	End energy	: 2039.96
Sensitivity	: 5.00	Gaussian	: 10.00
Critical level	: No		

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	4	72.86*	15	400	1.06	248.23	242	19	4.12E-04	344.3	1.10E+00
2	4	87.14*	2	290	1.10	305.91	289	25	5.12E-05	*****	1.89E+00
3	4	198.77*	29	253	0.92	756.72	744	18	7.96E-04	153.0	9.88E-01
4	0	511.27*	5	327	2.24	2018.72	2003	33	1.28E-04	*****	
5	0	803.11	97	62	1.26	3197.28	3186	19	2.68E-03	22.0	

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

VMS Nuclide Identification Report V3.0 Generated 13-SEP-2007 21:16:25

Configuration : $DISK1:[GER12.SAMPLE]J5A4G1AA_120971811.CNF;1
Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.3
Sample title : BRC SOIL
Sample date : 28-JUL-2007 10:45:00 Acquisition date : 12-SEP-2007 18:11:32
Sample ID : J5A4G1AA Sample quantity : 200.00 GRAMS
Sample type : Sample geometry : 200ML
Elapsed live time: 0 10:00:00.00 Elapsed real time: 0 10:00:05.42 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:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected PCI/GRAM	Decay Corr PCI/GRAM	1-Sigma %Error
RH-101	197.99	29	73.00*	3.684E+00	4.002E-03	4.110E-03	153.13

Flag: "*" = Keyline

Unidentified Energy Lines
Sample ID : J5A4G1AA Acquisition date : 12-SEP-2007 18:11:32

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
4	72.86	15	400	1.06	248.23	242	19	4.12E-04	****	3.13E+00	
4	87.14	2	290	1.10	305.91	289	25	5.12E-05	****	3.83E+00	T
0	511.27	5	327	2.24	2018.72	2003	33	1.28E-04	****	1.97E+00	T
0	803.11	97	62	1.26	3197.28	3186	19	2.68E-03	22.0	1.38E+00	T

Flags: "T" = Tentatively associated

Sample ID : J5A4G1AA Acquisition date : 12-SEP-2007 18:11:32

Nuclide	Half-life	Half-Life Ratio	Energy	%Abund	Activity (PCI/GRAM)	1-Sigma %Error	Rejected by
NA-22	2.60Y	0.05	511.00	179.68	5.047E-04	1671.21	Abun.
			1274.54*	99.94	--- Not Found ---		
		% Abundances Found =		64.26			
RU-106DA	368.20D	0.13	511.85	20.60	4.645E-03	1671.21	Abun.
			621.84*	9.80	--- Not Found ---		
		% Abundances Found =		67.76			
CS-134	2.06Y	0.06	569.31	15.43	--- Not Found ---		Abun.
			604.70	97.60	--- Not Found ---		
			795.84*	85.40	--- Not Found ---		
			801.93	8.73	3.149E-01	22.90	
		% Abundances Found =		4.21			
EU-155	4.96Y	0.03	42.90	21.16	--- Not Found ---		Abun.
			86.54	30.90	5.959E-04	2516.86	
			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	4.058E-03	1671.21	
			583.14*	84.20	--- Not Found ---		
			860.37	12.46	--- Not Found ---		
		% Abundances Found =		17.27			

Flag: "*" = Keyline

VMS Nuclide Identification Report V3.0 Generated 13-SEP-2007 21:16:27

Configuration : $DISK1:[GER12.SAMPLE]J5A4G1AA_120971811.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 : 28-JUL-2007 10:45:00 Acquisition date : 12-SEP-2007 18:11:32
Sample ID : J5A4G1AA Sample quantity : 200.00 GRAMS
Sample type : Sample geometry : 200ML
Elapsed live time: 0 10:00:00.00 Elapsed real time: 0 10:00:05.42 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
RH-101	4.110E-03	6.294E-03	1.125E-02	4.321E-04	0.365

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

Nuclide	Key-Line Activity (PCI/GRAM)	K.L. Ided	Act error	MDA (PCI/GRAM)	MDA error	Act/MDA
BE-7	-1.465E-02		5.405E-02	1.835E-01	7.176E-03	-0.080
NA-22	-2.530E-03		4.964E-03	1.711E-02	5.944E-04	-0.148
K-40	-5.370E-01		1.114E-01	3.369E-01	1.197E-02	-1.594
SC-46	5.173E-03		6.474E-03	2.363E-02	8.266E-04	0.219
CR-51	-1.969E-02		9.623E-02	3.216E-01	1.127E-02	-0.061
MN-54	1.299E-03		4.674E-03	1.651E-02	6.421E-04	0.079
CO-57	-6.118E-02		2.176E-02	6.782E-02	2.299E-03	-0.902
CO-58	-9.429E-03		5.938E-03	1.973E-02	7.494E-04	-0.478
FE-59	-4.526E-03		1.701E-02	5.814E-02	2.082E-03	-0.078
CO-60	-1.254E-03		4.644E-03	1.618E-02	5.804E-04	-0.077
ZN-65	2.306E-03		1.024E-02	3.656E-02	1.286E-03	0.063
SE-75	-3.284E-03		5.877E-03	1.971E-02	7.405E-04	-0.167
SR-85	4.677E-02		8.128E-03	2.622E-02	1.020E-03	1.784
Y-88	-6.137E-03		5.761E-03	1.934E-02	5.998E-04	-0.317
NB-94	-7.981E-04		4.099E-03	1.427E-02	5.743E-04	-0.056
NB-95	-3.771E-03		9.708E-03	3.289E-02	1.193E-03	-0.115
TC-95M	6.363E-03		6.031E-03	2.121E-02	8.143E-04	0.300
ZR-95	3.698E-03		1.140E-02	3.962E-02	1.424E-03	0.093
ZRNB-95	-4.750E-03		1.278E-02	4.331E-02	1.572E-03	-0.110
RH-102M	1.864E-03		3.153E-03	1.101E-02	4.305E-04	0.169
RU-103	-1.263E-02		9.005E-03	2.932E-02	1.144E-03	-0.431
RU-106DA	-5.268E-02		4.053E-02	1.350E-01	4.678E-03	-0.390
AG-108M	-3.013E-03		3.332E-03	1.116E-02	4.351E-04	-0.270
AG-110M	-1.829E-03		6.516E-03	2.259E-02	9.206E-04	-0.081
SN-113DA	1.448E-03		6.179E-03	2.145E-02	8.260E-04	0.067
SB-124	7.234E-03		7.280E-03	2.570E-02	9.154E-04	0.281
SB-125	-1.642E-02		1.082E-02	3.554E-02	1.384E-03	-0.462

Sample ID : J5A4G1AA Acquisition date : 12-SEP-2007 18:11:32

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

Nuclide	Key-Line Activity (PCI/GRAM)	K.L. Ided	Act error	MDA (PCI/GRAM)	MDA error	Act/MDA
SN-126DA	-4.360E-03		3.583E-03	1.190E-02	3.875E-04	-0.366
I-131	9.694E-03		2.024E-01	7.023E-01	2.616E-02	0.014
BA-133	-7.282E-03		4.694E-03	1.563E-02	5.760E-04	-0.466
CS-134	2.208E-03		5.085E-03	1.761E-02	6.588E-04	0.125
CS-137DA	1.051E-02		4.146E-03	1.533E-02	4.965E-04	0.686
LA-138	-1.658E-03		6.706E-03	2.336E-02	8.326E-04	-0.071
CE-139	1.849E-03		3.390E-03	1.146E-02	4.391E-04	0.161
BA-140	3.961E-01		1.628E-01	5.870E-01	2.244E-02	0.675
BALA-140	-7.803E-02		1.165E-01	4.047E-01	1.396E-02	-0.193
CE-141	-6.184E-03		1.125E-02	3.741E-02	1.329E-03	-0.165
CE-144	6.199E-03		2.020E-02	6.890E-02	2.301E-03	0.090
CEPR-144	1.247E-02		4.040E-02	1.378E-01	4.603E-03	0.090
PM-144	2.651E-03		4.197E-03	1.478E-02	5.151E-04	0.179
PM-146	-6.434E-03		4.984E-03	1.642E-02	6.416E-04	-0.392
EU-152	-1.708E-03		1.109E-02	3.841E-02	1.393E-03	-0.044
EU-154	-6.954E-03		1.364E-02	4.701E-02	1.634E-03	-0.148
EU-155	-7.096E-03		9.570E-03	3.229E-02	1.095E-03	-0.220
HF-181	4.970E-03		8.272E-03	2.871E-02	1.122E-03	0.173
BI-207	9.005E-03		3.762E-03	1.374E-02	5.095E-04	0.655
TL-208	5.111E-03		3.929E-03	1.420E-02	5.184E-04	0.360
BI-210M	5.694E-03		5.366E-03	1.862E-02	6.985E-04	0.306
BI-212	1.360E-01		5.393E-02	1.997E-01	8.314E-03	0.681
PB-212	2.285E-03		5.901E-03	2.031E-02	7.746E-04	0.113
BI-214	-1.302E-02		1.582E-02	3.504E-02	1.237E-03	-0.371
PB-214	-1.719E-03		1.232E-02	3.153E-02	1.156E-03	-0.055
RA-223	-2.869E-02		1.980E-02	6.476E-02	2.423E-03	-0.443
RA-224DA	2.394E-03		6.180E-03	2.127E-02	8.113E-04	0.113
RA-226DA	-1.313E-02		1.582E-02	3.503E-02	1.236E-03	-0.375
AC-227DA	-2.434E-02		2.419E-02	8.076E-02	3.084E-03	-0.301
AC-228	3.496E-02		1.539E-02	5.715E-02	2.345E-03	0.612
RA-228DA	3.550E-02		1.563E-02	5.803E-02	2.381E-03	0.612
TH-228DA	1.490E-02		1.145E-02	4.139E-02	1.511E-03	0.360
TH-232DA	-3.428E-02		2.327E-02	7.800E-02	2.806E-03	-0.440
TH-234DA	-1.076E+00		6.161E-01	1.986E+00	7.751E-02	-0.542
U-234DA	2.484E-02		1.540E-02	5.347E-02	1.946E-03	0.465
U-235HP	2.669E-02		1.932E-02	6.689E-02	2.355E-03	0.399
NP-237DA	-2.444E-03		8.263E-03	2.758E-02	9.798E-04	-0.089
U-238DA	-1.719E-03		1.232E-02	3.153E-02	1.156E-03	-0.055
U-238DHP	-9.552E-02		9.948E-02	3.225E-01	1.080E-02	-0.296
AM-241HP	-2.645E-03		1.155E-02	3.829E-02	1.287E-03	-0.069

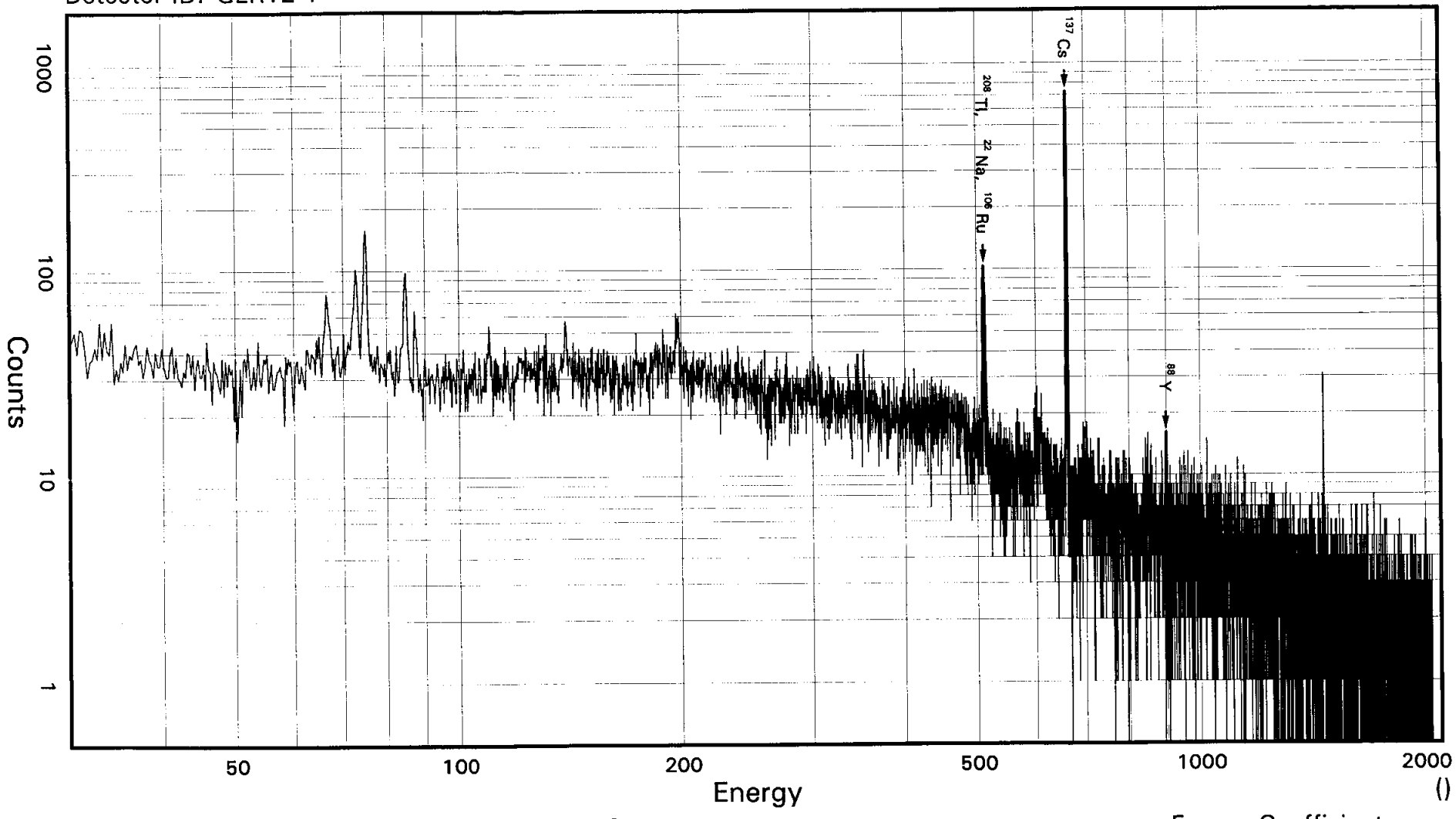
STL Richland WA.

BRC SOIL

Sample ID: J5A4G1AC

Detector ID: GER12 1

Batch ID: 7233482



Acquisition Start: 13-SEP-2007 05:26:31.53

Preset Live Time: 0 10:00:00.00

Elapsed Live Time: 0 10:00:00.00

Energy Coefficients:

Offset: 1.13995E+01

Slope: 2.47618E-01

Quadrature: 1.95627E-09

SAMPLE IDENTIFICATION: J5A4G1AC

CONFIGURATION ID: GER12:J5A4G1AC_130970526
TITLE : BRC SOIL
SAMPLE ID : J5A4G1AC

REPORT DATE: 13-SEP-07
ACQUIRE DATE: 13-SEP-07 05:26:31
ELAPSED LIVE TIME: 36000.0 Sec
PRESET LIVE TIME: 0 10:00:00

SAMPLE DATE: 13-SEP-2007 12:00:00.00
CALIB DATE: 13-SEP-2007 05:00:39.61
ELAPSED LIVE TIME: 0 10:00:00
ELAPSED REAL TIME: 0 10:00:06

SAMPLE QUANTITY: 2.0000E+02
SAMPLE GEOMETRY: 200ML

UNITS: GRAMS
SAMPLE TYPE:

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

FWHM OFFSET: 4.3244E-01 keV
FWHM SLOPE: 3.5163E-02 sqr keV
ITERATIONS: 10
GAUSSIAN SENSITIVITY: 40.00 %

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 13-SEP-2007 21:17:25

Configuration : $DISK1:[GER12.SAMPLE]J5A4G1AC_130970526.CNF;1
Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6
Sample title : BRC SOIL
Sample date : 13-SEP-2007 12:00:00 Acquisition date : 13-SEP-2007 05:26:31
Sample ID : J5A4G1AC Sample quantity : 200.00 GRAMS
Sample type : Sample geometry : 200ML
Elapsed live time: 0 10:00:00.00 Elapsed real time: 0 10:00:06.20 0.0%
Start energy : 11.65 End energy : 2040.02
Sensitivity : 5.00 Gaussian : 40.00
Critical level : No

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	66.53*	48	369	0.80	222.66	218	11	1.35E-03	97.5	
2	5	72.69*	68	497	1.18	247.52	239	27	1.88E-03	84.6	1.28E+00
3	5	74.93*	10	391	0.89	256.56	239	27	2.69E-04	526.0	
4	0	511.14*	88	415	2.86	2018.17	2004	37	2.45E-03	96.0	
5	0	661.67	4480	247	1.39	2626.07	2616	25	1.24E-01	1.8	
6	0	898.39	52	73	1.10	3581.98	3571	19	1.45E-03	41.2	

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

VMS Nuclide Identification Report V3.0 Generated 13-SEP-2007 21:17:25

Configuration : $DISK1:[GER12.SAMPLE]J5A4G1AC_130970526.CNF;1
Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.3
Sample title : BRC SOIL
Sample date : 13-SEP-2007 12:00:00
Sample ID : J5A4G1AC
Sample type :
Elapsed live time: 0 10:00:00.00
Energy tolerance : 2.00
Errors propagated: Yes
Efficiency type : Empirical
Abundance limit : 80.00

Acquisition date : 13-SEP-2007 05:26:31
Sample quantity : 200.00 GRAMS
Sample geometry : 200ML
Elapsed real time: 0 10:00:06.20 0.0%
Half life ratio : 8.00
Systematic Error : 5.00 %
Efficiencies at : Peak Energy

Nuclide Line Activity Report

Nuclide Type: FP

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected PCI/GRAM	Decay Corr PCI/GRAM	1-Sigma %Error
CS-137DA	661.65	4480	85.10*	1.614E+00	1.224E+00	1.224E+00	6.22

Flag: "*" = Keyline

Unidentified Energy Lines
Sample ID : J5A4G1AC Acquisition date : 13-SEP-2007 05:26:31

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
0	66.53	48	369	0.80	222.66	218	11	1.35E-03	97.5	2.68E+00	
5	72.69	68	497	1.18	247.52	239	27	1.88E-03	84.6	3.11E+00	
5	74.93	10	391	0.89	256.56	239	27	2.69E-04	****	3.25E+00	
0	511.14	88	415	2.86	2018.17	2004	37	2.45E-03	96.0	1.97E+00	T
0	898.39	52	73	1.10	3581.98	3571	19	1.45E-03	41.2	1.25E+00	T

Flags: "T" = Tentatively associated

Sample ID : J5A4G1AC
Acquisition date : 13-SEP-2007 05:26:31

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	9.333E-03	96.19	Abun.
			1274.54*	99.94	--- Not Found ---		
		% Abundances Found =		64.26			
Y-88	106.61D	0.00	898.02	93.40	1.678E-02	41.73	Abun.
			1836.01*	99.38	--- Not Found ---		
		% Abundances Found =		48.45			
RU-106DA	368.20D	0.00	511.85	20.60	8.140E-02	96.19	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	7.764E-02	96.19	
			583.14*	84.20	--- Not Found ---		
			860.37	12.46	--- Not Found ---		
		% Abundances Found =		17.27			

Flag: "*" = Keyline

VMS Nuclide Identification Report V3.0 Generated 13-SEP-2007 21:17:27

Configuration : $DISK1:[GER12.SAMPLE]J5A4G1AC_130970526.CNF;1
Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.3,WTMEAN/KEY V1.8
Analyses by : MINACT V2.8
Sample title : BRC SOIL
Sample date : 13-SEP-2007 12:00:00 Acquisition date : 13-SEP-2007 05:26:31
Sample ID : J5A4G1AC Sample quantity : 200.00 GRAMS
Sample type : Sample geometry : 200ML
Elapsed live time: 0 10:00:00.00 Elapsed real time: 0 10:00:06.20 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	1.224E+00	7.614E-02	1.701E-02	5.508E-04	71.961

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

Nuclide	Key-Line Activity (PCI/GRAM)	K.L. Ided	Act error	MDA (PCI/GRAM)	MDA error	Act/MDA
BE-7	9.951E-02		4.059E-02	1.424E-01	5.566E-03	0.699
NA-22	5.437E-04		4.423E-03	1.565E-02	5.438E-04	0.035
NA-24	5.430E-03		4.384E-03	1.610E-02	5.770E-04	0.337
K-40	-3.938E-01		1.097E-01	3.503E-01	1.245E-02	-1.124
SC-46	1.416E-02		5.060E-03	1.907E-02	6.673E-04	0.742
CR-51	4.355E-02		3.517E-02	1.200E-01	4.204E-03	0.363
MN-54	4.363E-03		4.205E-03	1.511E-02	5.876E-04	0.289
CO-57	-3.839E-02		2.159E-02	6.993E-02	2.370E-03	-0.549
CO-58	-3.129E-03		3.775E-03	1.288E-02	4.891E-04	-0.243
FE-59	-4.768E-03		8.074E-03	2.785E-02	9.976E-04	-0.171
CO-60	-2.618E-03		4.794E-03	1.635E-02	5.864E-04	-0.160
ZN-65	-3.031E-02		9.888E-03	3.026E-02	1.065E-03	-1.002
SE-75	4.751E-03		4.926E-03	1.698E-02	6.377E-04	0.280
SR-85	3.336E-02		5.178E-03	1.800E-02	7.006E-04	1.853
Y-88	7.760E-03		4.701E-03	1.837E-02	5.695E-04	0.423
NB-94	4.056E-03		4.112E-03	1.478E-02	5.949E-04	0.274
NB-95	-5.577E-03		3.565E-03	1.187E-02	4.307E-04	-0.470
TC-95M	2.283E-03		4.159E-03	1.442E-02	5.537E-04	0.158
ZR-95	9.911E-03		7.048E-03	2.513E-02	9.032E-04	0.394
ZRNB-95	-1.097E-02		7.141E-03	2.380E-02	8.638E-04	-0.461
MO-99	-5.803E-03		3.889E-03	9.653E-03	3.341E-04	-0.601
RH-101	7.694E-03		5.814E-03	1.574E-02	6.043E-04	0.489
RH-102M	-3.761E-03		4.535E-03	1.500E-02	5.865E-04	-0.251
RU-103	-1.010E-03		4.548E-03	1.525E-02	5.951E-04	-0.066
RU-106DA	1.375E-02		4.052E-02	1.408E-01	4.882E-03	0.098
AG-108M	-8.885E-04		4.442E-03	1.502E-02	5.854E-04	-0.059
AG-110M	-4.043E-04		5.764E-03	2.003E-02	8.163E-04	-0.020

Sample ID : J5A4G1AC Acquisition date : 13-SEP-2007 05:26:31

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

Nuclide	Key-Line Activity (PCI/GRAM)	K.L. Ided	Act error	MDA (PCI/GRAM)	MDA error	Act/MDA
SN-113DA	-7.224E-03		5.477E-03	1.818E-02	7.000E-04	-0.397
SB-124	-5.403E-03		4.606E-03	1.535E-02	5.466E-04	-0.352
SB-125	-2.344E-03		1.327E-02	4.496E-02	1.750E-03	-0.052
SN-126DA	1.888E-03		3.925E-03	1.181E-02	3.843E-04	0.160
I-131	2.727E-04		4.365E-03	1.503E-02	5.598E-04	0.018
BA-133	-8.106E-03		5.687E-03	1.897E-02	6.988E-04	-0.427
CS-134	-7.498E-03		4.313E-03	1.419E-02	5.309E-04	-0.528
LA-138	4.727E-03		6.623E-03	2.451E-02	8.736E-04	0.193
CE-139	-6.816E-03		3.035E-03	9.551E-03	3.659E-04	-0.714
BA-140	2.102E-02		1.425E-02	5.123E-02	1.959E-03	0.410
BALA-140	-1.032E-02		9.552E-03	3.212E-02	1.108E-03	-0.321
LA-140	-6.055E-03		4.666E-03	1.548E-02	5.340E-04	-0.391
CE-141	-1.116E-03		4.849E-03	1.622E-02	5.763E-04	-0.069
CE-144	-3.853E-02		2.088E-02	6.760E-02	2.258E-03	-0.570
CEPR-144	-7.772E-02		4.175E-02	1.351E-01	4.512E-03	-0.575
PM-144	-1.004E-03		4.061E-03	1.390E-02	4.845E-04	-0.072
PM-146	3.683E-03		6.523E-03	2.229E-02	8.711E-04	0.165
EU-152	1.927E-02		1.335E-02	4.708E-02	1.707E-03	0.409
EU-154	-9.580E-04		1.255E-02	4.401E-02	1.529E-03	-0.022
EU-155	4.842E-03		1.013E-02	3.510E-02	1.191E-03	0.138
HF-181	-2.949E-03		4.800E-03	1.597E-02	6.242E-04	-0.185
BI-207	1.932E-03		4.029E-03	1.410E-02	5.226E-04	0.137
TL-208	-1.700E-03		4.379E-03	1.502E-02	5.483E-04	-0.113
BI-210M	-1.796E-03		6.110E-03	2.054E-02	7.708E-04	-0.087
BI-212	4.779E-02		5.724E-02	2.015E-01	8.390E-03	0.237
PB-212	4.553E-03		6.742E-03	2.319E-02	8.847E-04	0.196
BI-214	-1.415E-02		1.613E-02	3.641E-02	1.285E-03	-0.389
PB-214	-1.380E-02		1.362E-02	3.631E-02	1.331E-03	-0.380
RA-223	3.371E-02		2.268E-02	7.852E-02	2.938E-03	0.429
RA-224DA	4.553E-03		6.742E-03	2.319E-02	8.847E-04	0.196
RA-226DA	-1.422E-02		1.613E-02	3.640E-02	1.285E-03	-0.391
AC-227DA	-5.291E-02		2.601E-02	8.450E-02	3.227E-03	-0.626
AC-228	1.593E-02		1.586E-02	5.674E-02	2.328E-03	0.281
RA-228DA	1.593E-02		1.586E-02	5.673E-02	2.328E-03	0.281
TH-228DA	-4.733E-03		1.219E-02	4.180E-02	1.526E-03	-0.113
TH-232DA	-4.401E-02		2.802E-02	9.348E-02	3.363E-03	-0.471
TH-234DA	-4.832E-01		6.925E-01	2.329E+00	9.087E-02	-0.207
U-234DA	-4.120E-03		1.764E-02	5.890E-02	2.144E-03	-0.070
U-235HP	-9.617E-03		2.286E-02	7.618E-02	2.682E-03	-0.126
NP-237DA	-7.670E-03		9.113E-03	2.992E-02	1.063E-03	-0.256
U-238DA	-1.380E-02		1.362E-02	3.631E-02	1.331E-03	-0.380
U-238DHP	9.054E-02		1.084E-01	3.545E-01	1.187E-02	0.255
AM-241HP	1.018E-02		1.171E-02	3.993E-02	1.342E-03	0.255