



April 23, 2012

Mr. Greg Bright
Cabrera Services, Inc
393 Totten Pond Rd
Ste. 102
Waltham, Massachusetts 02451

Re: New Haven CT Site
Work Order: 302440

Dear Mr. Bright:

GEL Laboratories, LLC (GEL) appreciates the opportunity to provide the enclosed analytical results for the sample(s) we received on April 11, 2012. This original data report has been prepared and reviewed in accordance with GEL's standard operating procedures.

Our policy is to provide high quality, personalized analytical services to enable you to meet your analytical needs on time every time. We trust that you will find everything in order and to your satisfaction. If you have any questions, please do not hesitate to call me at (843) 556-8171, ext. 4505.

Sincerely,

Heather Shaffer
Project Manager

Purchase Order: 10-7030
Enclosures



Cabrera Services, Inc.
New Haven CT Site
SDG: 302440

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General Narrative

**Case Narrative
for
Cabrera Services, Inc.
SDG: 302440**

April 23, 2012

Laboratory Identification:

GEL Laboratories LLC
2040 Savage Road
Charleston, South Carolina 29407
(843) 556-8171

Summary

Sample Receipt The samples arrived at GEL Laboratories LLC, Charleston, South Carolina on April 11, 2012 for analysis. The samples were delivered with proper chain of custody documentation and signatures. All sample containers arrived without any visible signs of tampering or breakage. There are no additional comments concerning sample receipt.

Sample Identification The laboratory received the following samples:

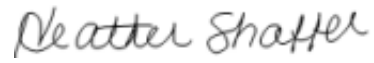
<u>Laboratory ID</u>	<u>Client ID</u>
302440001	UNC-FSS-XY-013
302440002	UNC-FSS-DR-002
302440003	UNC-FSS-DR-005
302440004	UNC-FSS-LDA-007
302440005	UNC-FSS-LDA-013
302440006	UNC-FSS-HR-004B
302440007	UNC-FSS-XY-017
302440008	UNC-FSS-XY-019
302440009	UNC-FSS-LDA-005
302440010	UNC-FSS-DR-010

Case Narrative

Sample analyses were conducted using methodology as outlined in GEL Laboratories, LLC (GEL) Standard Operating Procedures. Any technical or administrative problems during analysis, data review, and reduction are contained in the analytical case narratives in the enclosed data package.

Data Package

The enclosed data package contains the following sections: General Narrative, Chain of Custody and Supporting Documentation, and data from the following fractions: Radiochemistry.

A handwritten signature in cursive script that reads "Heather Shaffer".

Heather Shaffer
Project Manager

Chain of Custody and Supporting Documentation

GEL Chain of Custody and Analytical Request

See www.gel.com for GEL's Sample Acceptance SOP

GEL Work Order Number:

302440%

GEL Laboratories, LLC
2040 Savage Road
Charleston, SC 29407
Phone: (843) 556-8171
Fax: (843) 766-1178

Client Name: Cabrera Services
Project/Site Name: UNC New Haven Decommissioning
Address: 393 Totten Pond Rd Suite 102, Waltham, MA

Sample Analysis Requested (6) (Fill in the number of containers for each test)

Sample ID	*Date Collected (mm-dd-yy)	*Time Collected (Military) (hhmm)	QC Code (b)	Field Filtered (d)	Sample Matrix (e)	Should this sample be considered:		Total number of containers	Gamma Spec DOE HASL 300	Isotopic Uranium	Preservative Type (6)	Comments
						Radioactive	TSCA Regulated					
UNC-FSS-XY-013	3/14/2012	10:45:00	N	N	SO	No	No	1				
UNC-FSS-DR-002	2/20/2012	12:02:00	N	N	SO	No	No	1				
UNC-FSS-DR-005	2/20/2012	12:15:00	N	N	SO	No	No	1				
UNC-FSS-LDA-007	2/17/2012	13:20:00	N	N	SO	No	No	1				
UNC-FSS-LDA-013	2/17/2012	1:48:00	N	N	SO	No	No	1				
UNC-FSS-HR-004B	3/13/2012	11:15:00	N	N	SO	No	No	1				
UNC-FSS-XY-017	1/3/2012	14:45:00	N	N	SO	No	No	1				
UNC-FSS-XY-019	1/3/2012	14:45:00	N	N	SO	No	No	1				
UNC-FSS-LDA-005	2/17/2012	13:15:00	N	N	SO	No	No	1				
UNC-FSS-DR-010	2/20/2012	12:35:00	N	N	SO	No	No	1				

TAT Requested: Normal: Rush: Specify: (Subject to Surcharge) Fax Results: Yes / No / No
 Circle Deliverable: of A / QC Summary / Level 1 / Level 2 / Level 3 / Level 4

Sample Collection Time Zone: Eastern Pacific Other _____
 Mountain

Remarks: Are there any known hazards applicable to these samples? If so, please list the hazards.
 Email EDD to Greg Bright (gbright@cabreraseservices.com).

Received By (Signed)	Date	Time	Received by (signed)	Date	Time
<i>[Signature]</i>	3/14/2012	15:55	P. Ward	4/10/12	08:50
2					
3					

Sample Shipping and Delivery Details
 GEL PM: Heather Schaffner
 Method of Shipment: Fedex
 Date Shipped: 4/10/12
 Airbill #: 7934 3767 1655
 Airbill #:

For Lab Receiving Use Only
 Custody Seal Intact? YES NO
 Cooler Temp: C

1.) Chain of Custody Number = Client Determined
 2.) QC Codes: N = Normal Sample, TB = Trip Blank, FD = Field Duplicate, EB = Equipment Blank, MS = Matrix Spike Sample, MSD = Matrix Spike Duplicate Sample, G = Grab, C = Composite
 3.) Field Filtered: For liquid matrices, indicate with a - Y - for yes the sample was field filtered or - N - for sample was not field filtered
 4.) Matrix Codes: DW=Drinking Water, GW=Groundwater, SW=Surface Water, WW=Waste Water, W=Water, ML=Misc Liquid, SO=Soil, SD=Sediment, SL=Sludge, SS=Solid Waste, O=Oil, F=Filter, P=Wipe, U=Urine, F=Faecal, N
 5.) Sample Analysis Requested: Analytical method requested (i.e. 8260B, 6010B/7470A) and number of containers provided for each (i.e. 8260B - 3, 6010B/7470A - 1)
 6.) Preservative Type: HA = Hydrochloric Acid, NI = Nitric Acid, SH = Sulfuric Acid, AA = Ascorbic Acid, HX = Hexane, ST = Sodium Thiosulfate, If no preservative is added = leave field blank

SAMPLE RECEIPT & REVIEW FORM

Client: CBRA		SDG/AR/COC/Work Order: 302440	
Received By: P. Went		Date Received: April 11, 2012	
Suspected Hazard Information	Yes	No	*If Net Counts > 100cpm on samples not marked "radioactive", contact the Radiation Safety Group for further investigation.
COC/Samples marked as radioactive?		<input checked="" type="checkbox"/>	Maximum Net Counts Observed* (Observed Counts - Area Background Counts):
Classified Radioactive II or III by RSO?		<input checked="" type="checkbox"/>	If yes, Were swipes taken of sample containers < action levels?
COC/Samples marked containing PCBs?		<input checked="" type="checkbox"/>	
Shipped as a DOT Hazardous?		<input checked="" type="checkbox"/>	Hazard Class Shipped: _____ UN#: _____
Samples identified as Foreign Soil?		<input checked="" type="checkbox"/>	

Sample Receipt Criteria	Yes	NA	No	Comments/Qualifiers (Required for Non-Conforming Items)
1 Shipping containers received intact and sealed?	<input checked="" type="checkbox"/>			Circle Applicable: Seals broken Damaged container Leaking container Other (describe)
2 Samples requiring cold preservation within (0 ≤ 6 deg. C)?*	<input checked="" type="checkbox"/>			Preservation Method: <u>Ice bags</u> Blue ice Dry ice None Other (describe) *all temperatures are recorded in Celsius 12/19c
2a Daily check performed and passed on IR temperature gun?	<input checked="" type="checkbox"/>			Temperature Device Serial #: Secondary Temperature Device Serial # (If Applicable): 61524646
3 Chain of custody documents included with shipment?	<input checked="" type="checkbox"/>			
4 Sample containers intact and sealed?	<input checked="" type="checkbox"/>			Circle Applicable: Seals broken Damaged container Leaking container Other (describe)
5 Samples requiring chemical preservation at proper pH?				Sample ID's, containers affected and observed pH: If Preservation added, Lot#:
6 VOA vials free of headspace (defined as < 6mm bubble)?				Sample ID's and containers affected:
7 Are Encore containers present?				(If yes, immediately deliver to Volatiles laboratory)
8 Samples received within holding time?				ID's and tests affected:
9 Sample ID's on COC match ID's on bottles?				Sample ID's and containers affected:
10 Date & time on COC match date & time on bottles?				Sample ID's affected:
11 Number of containers received match number indicated on COC?				Sample ID's affected:
12 Are sample containers identifiable as GEL provided?				
13 COC form is properly signed in relinquished/received sections?				
14 Carrier and tracking number.				Circle Applicable: <u>FedEx Air</u> FedEx Ground UPS Field Services Courier Other 7934 3767 1655-19c 7934 3767 1725-2c 7934 3767 1563-1c

Comments (Use Continuation Form if needed):

List of current GEL Certifications as of 23 April 2012

State	Certification
Arizona	AZ0766
Arkansas	88-0651
CLIA	42D0904046
California NELAP	01151CA
Colorado	SC00012
Connecticut	PH-0169
Delaware	SC00012
DoD ELAP A2LA ISO 17025	2567.01
Florida NELAP	E87156
Foreign Soils Permit	P330-09-00191
Georgia	SC00012
Georgia SDWA	967
Hawaii	SC00012
Idaho	SC00012
Illinois NELAP	200029
Indiana	C-SC-01
Kansas NELAP	E-10332
Kentucky	90129
Louisiana NELAP	03046 (AI33904)
Louisiana SDWA	LA120008
Maryland	270
Massachusetts	M-SC012
Mississippi	SC00012
Nevada	SC000122011-1
New Hampshire NELAP	2054
New Jersey NELAP	SC002
New Mexico	SC00012
New York NELAP	11501
North Carolina	233
North Carolina SDWA	45709
Oklahoma	9904
Pennsylvania NELAP	68-00485
South Carolina Chemistry	10120001
South Carolina Radiochemi	10120002
Tennessee	TN 02934
Texas NELAP	T104704235-12-7
Utah NELAP	SC00012
Vermont	VT87156
Virginia NELAP	460202
Washington	C780
Wisconsin	999887790

Radiological Analysis

**Radiochemistry Case Narrative
Cabrera Services, Inc. (CBRA)
SDG 302440**

Method/Analysis Information

Product: Alphaspec U, Solid
Analytical Method: DOE EML HASL-300, U-02-RC Modified
Prep Method: Dry Soil Prep
Analytical Batch Number: 1206429
Prep Batch Number: 1203544

Sample ID	Client ID
302440002	UNC-FSS-DR-002
302440005	UNC-FSS-LDA-013
302440008	UNC-FSS-XY-019
1202642487	Method Blank (MB)
1202642488	302440005(UNC-FSS-LDA-013) Sample Duplicate (DUP)
1202642489	302440005(UNC-FSS-LDA-013) Matrix Spike (MS)
1202642490	Laboratory Control Sample (LCS)

The samples in this SDG were analyzed on a "dry weight" basis.

SOP Reference

Procedure for preparation, analysis and reporting of analytical data are controlled by GEL Laboratories LLC as Standard Operating Procedure (SOP). The data discussed in this narrative has been analyzed in accordance with GL-RAD-A-011 REV# 21.

Calibration Information:

Calibration Information

All initial and continuing calibration requirements have been met.

Standards Information

Standard solutions for these analysis are NIST traceable or verified with a NIST traceable standard and used before the expiration dates.

Sample Geometry

All counting sources were prepared in the same geometry as the calibration standards.

Quality Control (QC) Information:

Blank Information

The blank volume is representative of the sample volume in this batch.

Designated QC

The following sample was used for QC: 302440005 (UNC-FSS-LDA-013).

QC Information

All of the QC samples met the required acceptance limits.

Technical Information:**Holding Time**

All sample procedures for this sample set were performed within the required holding time.

Sample Re-prep/Re-analysis

Samples were re-prepped due to high relative percent difference/relative error ratio. The re-analysis is being reported. Sample 302440008 (UNC-FSS-XY-019) was given additional clean-up steps in order to improve the resolution. Sample was also re-prepped a third time with additional chemistry steps taken to try and achieve better overall resolution. Reporting the results from the second count (after the clean-up) from the second prep, with the best overall resolution. The sample results between the three preps were similar.

Miscellaneous Information:**Data Exception (DER) Documentation**

Data exception reports are generated to document any procedural anomalies that may deviate from referenced SOP or contractual documents. The following DER was generated for this SDG:

DER 1076210 was generated due to Other. 1. The U-232 tracer for sample 302440008 does not meet the resolution requirements of having a full width half maximum of 100 keV or less. 1. The tracer yield meets the client acceptance criteria. The sample has been prepped three times with similar results and given additional clean-up steps to further improve the resolution. Reporting the best overall results.

Manual Integration

Manual integration of alpha spectroscopy spectra 302440008 (UNC-FSS-XY-019) was performed to fully separate counts in Regions of Interest which would have been biased.

Additional Comments

Additional comments were not required for this sample set.

Qualifier Information

Manual qualifiers were not required.

Method/Analysis Information

Product:	Gammasec, Gamma, Solid (Standard List)
Analytical Method:	DOE HASL 300, 4.5.2.3/Ga-01-R
Prep Method:	Dry Soil Prep
Analytical Batch Number:	1203837
Prep Batch Number:	1203544

Sample ID	Client ID
302440001	UNC-FSS-XY-013
302440002	UNC-FSS-DR-002
302440003	UNC-FSS-DR-005
302440004	UNC-FSS-LDA-007
302440005	UNC-FSS-LDA-013
302440006	UNC-FSS-HR-004B
302440007	UNC-FSS-XY-017
302440008	UNC-FSS-XY-019
302440009	UNC-FSS-LDA-005
302440010	UNC-FSS-DR-010
1202635838	Method Blank (MB)
1202635839	302440001(UNC-FSS-XY-013) Sample Duplicate (DUP)
1202635840	Laboratory Control Sample (LCS)

The samples in this SDG were analyzed on a "dry weight" basis.

SOP Reference

Procedure for preparation, analysis and reporting of analytical data are controlled by GEL Laboratories LLC as Standard Operating Procedure (SOP). The data discussed in this narrative has been analyzed in accordance with GL-RAD-A-013 REV# 24.

Calibration Information:

Calibration Information

All initial and continuing calibration requirements have been met.

Standards Information

Standard solutions for these analysis are NIST traceable or verified with a NIST traceable standard and used before the expiration dates.

Sample Geometry

All counting sources were prepared in the same geometry as the calibration standards.

Quality Control (QC) Information:

Blank Information

The blank volume is representative of the sample volume in this batch.

Designated QC

The following sample was used for QC: 302440001 (UNC-FSS-XY-013).

QC Information

All of the QC samples met the required acceptance limits.

Technical Information:

Holding Time

All sample procedures for this sample set were performed within the required holding time.

Sample Re-prep/Re-analysis

None of the samples in this sample set required reprep or reanalysis.

Miscellaneous Information:

Data Exception (DER) Documentation

Data exception reports are generated to document any procedural anomalies that may deviate from referenced SOP or contractual documents. A data exception report (DER) was not generated for this SDG.

Additional Comments

Additional comments were not required for this sample set.

Qualifier Information

Qualifier	Reason	Analyte	Sample	Client Sample
UI	Data rejected due to a short half-life.	Barium-140	302440007	UNC-FSS-XY-017
			302440008	UNC-FSS-XY-019
		Cesium-136	302440007	UNC-FSS-XY-017
		Neodymium-147	302440007	UNC-FSS-XY-017
			302440008	UNC-FSS-XY-019
UI	Data rejected due to high counting uncertainty.	Thorium-234	302440004	UNC-FSS-LDA-007
		Uranium-238	302440004	UNC-FSS-LDA-007
UI	Data rejected due to interference.	Cerium-141	302440001	UNC-FSS-XY-013
			302440003	UNC-FSS-DR-005
			302440010	UNC-FSS-DR-010
UI	Data rejected due to low abundance.	Actinium-228	302440005	UNC-FSS-LDA-013
			Bismuth-212	302440001
		302440002	UNC-FSS-DR-002	
		302440003	UNC-FSS-DR-005	
		302440004	UNC-FSS-LDA-007	
		302440005	UNC-FSS-LDA-013	
		302440006	UNC-FSS-HR-004B	
		302440008	UNC-FSS-XY-019	
302440009	UNC-FSS-LDA-005			

	302440010	UNC-FSS-DR-010
	1202635839	UNC-FSS-XY-013(302440001DUP)
Cerium-141	302440002	UNC-FSS-DR-002
	302440009	UNC-FSS-LDA-005
	1202635839	UNC-FSS-XY-013(302440001DUP)
Cesium-134	302440002	UNC-FSS-DR-002
	302440003	UNC-FSS-DR-005
	302440006	UNC-FSS-HR-004B
Lead-210	302440002	UNC-FSS-DR-002
Radium-228	302440005	UNC-FSS-LDA-013
Zinc-65	302440009	UNC-FSS-LDA-005

Certification Statement

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless otherwise noted in the analytical case narrative.

GEL LABORATORIES LLC

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Qualifier Definition Report for

CBRA015 Cabrera Services, Inc.

Client SDG: 302440 GEL Work Order: 302440

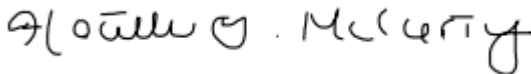
The Qualifiers in this report are defined as follows:

- * A quality control analyte recovery is outside of specified acceptance criteria
- ** Analyte is a surrogate compound
- U Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.
- UI Gamma Spectroscopy--Uncertain identification

Review/Validation

GEL requires all analytical data to be verified by a qualified data reviewer. In addition, all CLP-like deliverables receive a third level review of the fractional data package.

The following data validator verified the information presented in this data report:

Signature: 

Name: Heather McCarty

Date: 08 MAY 2012

Title: Analyst II

DATA EXCEPTION REPORT

Mo.Day Yr. 07-MAY-12	Division: Radiochemistry	Quality Criteria: Specifications	Type: Process
Instrument Type: ALPHA SPECTROMETER	Test / Method: DOE EML HASL-300, U-02-RC Modified	Matrix Type: Solid	Client Code: CBRA
Batch ID: 1206429	Sample Numbers: See Below		
Potentially affected work order(s)(SDG): 302440			
Application Issues: Other			
Specification and Requirements Exception Description:		DER Disposition:	
1. The U-232 tracer for sample 302440008 does not meet the resolution requirements of having a full width half maximum of 100 keV or less.		1. The tracer yield meets the client acceptance criteria. The sample has been prepped three times with similar results and given additional clean-up steps to further improve the resolution. Reporting the best overall results.	

Originator's Name:
Jessica Downey 07-MAY-12

Data Validator/Group Leader:
Jessica Davis 08-MAY-12

Sample Data Summary

GEL LABORATORIES LLC

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Report Date: May 8, 2012

Company : Cabrera Services, Inc
 Address : 393 Totten Pond Rd
 Ste. 102
 Waltham, Massachusetts 02451
 Contact: Mr. Greg Bright
 Project: New Haven CT Site

Client Sample ID: UNC-FSS-XY-013	Project: CBRA00110
Sample ID: 302440001	Client ID: CBRA015
Matrix: Soil	
Collect Date: 14-MAR-12 10:45	
Receive Date: 11-APR-12	
Collector: Client	

Parameter	Qualifier	Result	Uncertainty	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Rad Gamma Spec Analysis												
Gammaspac, Gamma, Solid (Standard List) "Dry Weight Corrected"												
Actinium-228		1.09	+/-0.272	0.191		pCi/g		MXR1	05/03/12	0748	1203837	1
Americium-241	U	-0.0234	+/-0.159	0.307		pCi/g						
Antimony-124	U	0.0295	+/-0.0425	0.118		pCi/g						
Antimony-125	U	0.0446	+/-0.0724	0.139		pCi/g						
Barium-133	U	0.0173	+/-0.0325	0.0562		pCi/g						
Barium-140	U	0.219	+/-1.21	2.36		pCi/g						
Beryllium-7	U	0.113	+/-0.332	0.662		pCi/g						
Bismuth-212	UI	0.00	+/-0.556	0.955		pCi/g						
Bismuth-214		0.519	+/-0.141	0.0904		pCi/g						
Cerium-139	U	-0.0229	+/-0.0313	0.0513		pCi/g						
Cerium-141	UI	0.00	+/-0.225	0.216		pCi/g						
Cerium-144	U	0.176	+/-0.187	0.355		pCi/g						
Cesium-134	U	0.0569	+/-0.0403	0.066		pCi/g						
Cesium-136	U	-0.12	+/-0.486	0.901		pCi/g						
Cesium-137	U	-0.0137	+/-0.027	0.0484	0.100	pCi/g						
Chromium-51	U	0.548	+/-0.652	1.29		pCi/g						
Cobalt-56	U	-0.0138	+/-0.0375	0.0668		pCi/g						
Cobalt-57	U	0.0276	+/-0.024	0.0463		pCi/g						
Cobalt-58	U	0.00821	+/-0.0376	0.072		pCi/g						
Cobalt-60	U	-0.00346	+/-0.0276	0.0517		pCi/g						
Europium-152	U	-0.0505	+/-0.079	0.128		pCi/g						
Europium-154	U	-0.0446	+/-0.0857	0.151		pCi/g						
Europium-155	U	0.0592	+/-0.0961	0.184		pCi/g						
Iridium-192	U	0.00631	+/-0.0364	0.0689		pCi/g						
Iron-59	U	-0.0144	+/-0.097	0.183		pCi/g						
Lead-210	U	0.0147	+/-5.56	11.0		pCi/g						
Lead-212		1.07	+/-0.150	0.0805		pCi/g						
Lead-214		0.708	+/-0.144	0.102		pCi/g						
Manganese-54	U	0.00825	+/-0.029	0.0553		pCi/g						
Mercury-203	U	0.00851	+/-0.0482	0.0918		pCi/g						
Neodymium-147	U	0.299	+/-3.57	6.89		pCi/g						
Neptunium-239	U	-0.0728	+/-0.353	0.647		pCi/g						
Niobium-94	U	0.0127	+/-0.0244	0.0477		pCi/g						
Niobium-95	U	0.0371	+/-0.0476	0.0936		pCi/g						
Potassium-40		9.19	+/-1.24	0.461		pCi/g						
Promethium-144	U	-0.0213	+/-0.0265	0.0458		pCi/g						
Promethium-146	U	0.0194	+/-0.032	0.0641		pCi/g						
Radium-226		0.519	+/-0.141	0.0904		pCi/g						

GEL LABORATORIES LLC

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Report Date: May 8, 2012

Company : Cabrera Services, Inc
Address : 393 Totten Pond Rd
Ste. 102
Waltham, Massachusetts 02451
Contact: Mr. Greg Bright
Project: New Haven CT Site

Client Sample ID: UNC-FSS-XY-013
Sample ID: 302440001

Project: CBRA00110
Client ID: CBRA015

Parameter	Qualifier	Result	Uncertainty	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Rad Gamma Spec Analysis												
Gammaspec, Gamma, Solid (Standard List) "Dry Weight Corrected"												
Radium-228		1.09	+/-0.272	0.191		pCi/g						
Ruthenium-106	U	-0.069	+/-0.231	0.426		pCi/g						
Silver-110m	U	-0.0301	+/-0.0366	0.0644		pCi/g						
Sodium-22	U	-0.0179	+/-0.0311	0.0543		pCi/g						
Thallium-208		0.337	+/-0.0664	0.047		pCi/g						
Thorium-234	U	1.05	+/-1.40	2.72		pCi/g						
Tin-113	U	-0.0342	+/-0.0398	0.0683		pCi/g						
Uranium-235		1.25	+/-0.386	0.309		pCi/g						
Uranium-238	U	1.05	+/-1.40	2.72		pCi/g						
Yttrium-88	U	-0.0172	+/-0.0349	0.0627		pCi/g						
Zinc-65	U	0.0232	+/-0.0725	0.125		pCi/g						
Zirconium-95	U	0.0968	+/-0.0812	0.166		pCi/g						

The following Prep Methods were performed:

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GL-RAD-A-021	CXC1	04/11/12	1537	1203544

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	DOE HASL 300, 4.5.2.3/Ga-01-R	

GEL LABORATORIES LLC

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Certificate of Analysis

Report Date: May 8, 2012

Company : Cabrera Services, Inc
 Address : 393 Totten Pond Rd
 Ste. 102
 Waltham, Massachusetts 02451
 Contact: Mr. Greg Bright
 Project: New Haven CT Site

Client Sample ID: UNC-FSS-DR-002	Project: CBRA00110
Sample ID: 302440002	Client ID: CBRA015
Matrix: Soil	
Collect Date: 20-FEB-12 12:02	
Receive Date: 11-APR-12	
Collector: Client	

Parameter	Qualifier	Result	Uncertainty	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Rad Alpha Spec Analysis												
Alphaspec U, Solid "Dry Weight Corrected"												
Uranium-233/234		6.07	+/-0.777	0.255	1.00	pCi/g		JXD2	04/28/12	1131	1206429	1
Uranium-235/236		0.330	+/-0.207	0.185	1.00	pCi/g						
Uranium-238		0.560	+/-0.234	0.0763	1.00	pCi/g						
Rad Gamma Spec Analysis												
Gammasppec, Gamma, Solid (Standard List) "Dry Weight Corrected"												
Actinium-228		1.36	+/-0.384	0.214		pCi/g		MXR1	05/03/12	0756	1203837	2
Americium-241	U	0.0358	+/-0.162	0.322		pCi/g						
Antimony-124	U	-0.0193	+/-0.119	0.225		pCi/g						
Antimony-125	U	0.0272	+/-0.0736	0.141		pCi/g						
Barium-133	U	-0.00224	+/-0.036	0.059		pCi/g						
Barium-140	U	-0.247	+/-4.96	9.16		pCi/g						
Beryllium-7	U	0.486	+/-0.521	1.03		pCi/g						
Bismuth-212	UI	0.00	+/-0.731	1.08		pCi/g						
Bismuth-214		0.878	+/-0.176	0.103		pCi/g						
Cerium-139	U	0.00348	+/-0.0386	0.0631		pCi/g						
Cerium-141	UI	0.00	+/-0.228	0.403		pCi/g						
Cerium-144	U	-0.0983	+/-0.206	0.381		pCi/g						
Cesium-134	UI	0.00	+/-0.0525	0.0672		pCi/g						
Cesium-136	U	0.804	+/-1.55	3.03		pCi/g						
Cesium-137	U	-0.0122	+/-0.0309	0.0546	0.100	pCi/g						
Chromium-51	U	0.111	+/-1.44	2.39		pCi/g						
Cobalt-56	U	0.00391	+/-0.0423	0.0814		pCi/g						
Cobalt-57	U	0.0163	+/-0.0259	0.0501		pCi/g						
Cobalt-58	U	-0.0313	+/-0.0488	0.0875		pCi/g						
Cobalt-60	U	-0.0115	+/-0.028	0.0494		pCi/g						
Europium-152	U	0.0471	+/-0.107	0.159		pCi/g						
Europium-154	U	-0.0844	+/-0.0944	0.157		pCi/g						
Europium-155	U	0.0194	+/-0.0938	0.181		pCi/g						
Iridium-192	U	0.0293	+/-0.047	0.0923		pCi/g						
Iron-59	U	-0.039	+/-0.152	0.276		pCi/g						
Lead-210	UI	0.00	+/-4.37	9.25		pCi/g						
Lead-212		1.56	+/-0.198	0.0825		pCi/g						
Lead-214		1.16	+/-0.190	0.110		pCi/g						
Manganese-54	U	0.0198	+/-0.035	0.0677		pCi/g						
Mercury-203	U	-0.00435	+/-0.0863	0.143		pCi/g						
Neodymium-147	U	-5.05	+/-17.9	32.4		pCi/g						
Neptunium-239	U	-0.315	+/-0.339	0.621		pCi/g						

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Certificate of Analysis

Report Date: May 8, 2012

Company : Cabrera Services, Inc
 Address : 393 Totten Pond Rd
 Ste. 102
 Waltham, Massachusetts 02451
 Contact: Mr. Greg Bright
 Project: New Haven CT Site

Client Sample ID: UNC-FSS-DR-002	Project: CBRA00110
Sample ID: 302440002	Client ID: CBRA015

Parameter	Qualifier	Result	Uncertainty	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Rad Gamma Spec Analysis												
Gammaspec, Gamma, Solid (Standard List) "Dry Weight Corrected"												
Niobium-94	U	-0.00898	+/-0.0253	0.0469		pCi/g						
Niobium-95	U	0.0425	+/-0.0613	0.121		pCi/g						
Potassium-40		13.5	+/-1.53	0.433		pCi/g						
Promethium-144	U	0.0096	+/-0.0285	0.0555		pCi/g						
Promethium-146	U	0.0307	+/-0.0331	0.0641		pCi/g						
Radium-226		0.878	+/-0.176	0.103		pCi/g						
Radium-228		1.36	+/-0.384	0.214		pCi/g						
Ruthenium-106	U	-0.102	+/-0.273	0.487		pCi/g						
Silver-110m	U	-0.0164	+/-0.041	0.0747		pCi/g						
Sodium-22	U	-0.031	+/-0.0342	0.0568		pCi/g						
Thallium-208		0.463	+/-0.0803	0.0493		pCi/g						
Thorium-234	U	0.161	+/-1.32	2.61		pCi/g						
Tin-113	U	0.0112	+/-0.0498	0.0952		pCi/g						
Uranium-235		1.08	+/-0.390	0.320		pCi/g						
Uranium-238	U	0.161	+/-1.32	2.61		pCi/g						
Yttrium-88	U	-0.0206	+/-0.0391	0.0696		pCi/g						
Zinc-65	U	0.00273	+/-0.0827	0.132		pCi/g						
Zirconium-95	U	0.0565	+/-0.104	0.204		pCi/g						

The following Prep Methods were performed:

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GL-RAD-A-021	CXC1	04/11/12	1537	1203544

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	DOE EML HASL-300, U-02-RC Modified	
2	DOE HASL 300, 4.5.2.3/Ga-01-R	

Surrogate/Tracer Recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
Uranium-232 Tracer	Alphaspec U, Solid "Dry Weight Corrected"			97.4	(15%-125%)

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Certificate of Analysis

Report Date: May 8, 2012

Company : Cabrera Services, Inc
 Address : 393 Totten Pond Rd
 Ste. 102
 Waltham, Massachusetts 02451
 Contact: Mr. Greg Bright
 Project: New Haven CT Site

Client Sample ID: UNC-FSS-DR-005	Project: CBRA00110
Sample ID: 302440003	Client ID: CBRA015
Matrix: Soil	
Collect Date: 20-FEB-12 12:15	
Receive Date: 11-APR-12	
Collector: Client	

Parameter	Qualifier	Result	Uncertainty	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Rad Gamma Spec Analysis												
Gammaspac, Gamma, Solid (Standard List) "Dry Weight Corrected"												
Actinium-228		1.04	+/-0.232	0.168		pCi/g		MXR1	05/03/12	0824	1203837	1
Americium-241	U	1.43E-05	+/-0.140	0.254		pCi/g						
Antimony-124	U	-0.011	+/-0.104	0.204		pCi/g						
Antimony-125	U	0.00873	+/-0.0684	0.128		pCi/g						
Barium-133	U	0.0213	+/-0.0322	0.0562		pCi/g						
Barium-140	U	0.738	+/-4.06	7.93		pCi/g						
Beryllium-7	U	0.267	+/-0.479	0.918		pCi/g						
Bismuth-212	UI	0.00	+/-0.863	0.937		pCi/g						
Bismuth-214		0.612	+/-0.134	0.0897		pCi/g						
Cerium-139	U	-0.0432	+/-0.0284	0.0484		pCi/g						
Cerium-141	UI	0.00	+/-0.315	0.260		pCi/g						
Cerium-144	U	0.0743	+/-0.152	0.293		pCi/g						
Cesium-134	UI	0.00	+/-0.0568	0.0633		pCi/g						
Cesium-136	U	1.33	+/-1.32	2.78		pCi/g						
Cesium-137	U	-0.0174	+/-0.0278	0.0496	0.100	pCi/g						
Chromium-51	U	-0.0553	+/-0.961	1.83		pCi/g						
Cobalt-56	U	-0.00563	+/-0.0432	0.0794		pCi/g						
Cobalt-57	U	0.00453	+/-0.020	0.0385		pCi/g						
Cobalt-58	U	-0.00255	+/-0.0442	0.0823		pCi/g						
Cobalt-60	U	0.0025	+/-0.0277	0.0527		pCi/g						
Europium-152	U	-0.0115	+/-0.0763	0.131		pCi/g						
Europium-154	U	-0.02	+/-0.0831	0.151		pCi/g						
Europium-155	U	0.0501	+/-0.0752	0.149		pCi/g						
Iridium-192	U	-0.0105	+/-0.037	0.0693		pCi/g						
Iron-59	U	-0.0776	+/-0.145	0.258		pCi/g						
Lead-210	U	3.74	+/-3.62	7.74		pCi/g						
Lead-212		1.15	+/-0.146	0.0715		pCi/g						
Lead-214		0.901	+/-0.172	0.0965		pCi/g						
Manganese-54	U	-0.0183	+/-0.028	0.0485		pCi/g						
Mercury-203	U	0.101	+/-0.0645	0.121		pCi/g						
Neodymium-147	U	6.12	+/-14.1	28.0		pCi/g						
Neptunium-239	U	-0.0713	+/-0.267	0.506		pCi/g						
Niobium-94	U	0.0211	+/-0.0239	0.0475		pCi/g						
Niobium-95	U	0.110	+/-0.0563	0.118		pCi/g						
Potassium-40		7.84	+/-1.04	0.429		pCi/g						
Promethium-144	U	-0.000763	+/-0.0265	0.0496		pCi/g						
Promethium-146	U	0.00669	+/-0.0293	0.0552		pCi/g						
Radium-226		0.612	+/-0.134	0.0897		pCi/g						

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Certificate of Analysis

Report Date: May 8, 2012

Company : Cabrera Services, Inc
Address : 393 Totten Pond Rd
Ste. 102
Waltham, Massachusetts 02451
Contact: Mr. Greg Bright
Project: New Haven CT Site

Client Sample ID: UNC-FSS-DR-005 Project: CBRA00110
Sample ID: 302440003 Client ID: CBRA015

Parameter	Qualifier	Result	Uncertainty	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Rad Gamma Spec Analysis												
Gammaspec, Gamma, Solid (Standard List) "Dry Weight Corrected"												
Radium-228		1.04	+/-0.232	0.168		pCi/g						
Ruthenium-106	U	-0.0372	+/-0.248	0.466		pCi/g						
Silver-110m	U	0.00284	+/-0.0342	0.0648		pCi/g						
Sodium-22	U	-0.00735	+/-0.0302	0.0549		pCi/g						
Thallium-208		0.291	+/-0.0644	0.0425		pCi/g						
Thorium-234	U	0.829	+/-2.14	2.08		pCi/g						
Tin-113	U	-0.0388	+/-0.0449	0.0786		pCi/g						
Uranium-235		0.425	+/-0.299	0.237		pCi/g						
Uranium-238	U	0.829	+/-2.14	2.08		pCi/g						
Yttrium-88	U	0.00334	+/-0.0361	0.0724		pCi/g						
Zinc-65	U	-0.000367	+/-0.0787	0.128		pCi/g						
Zirconium-95	U	0.0171	+/-0.0879	0.168		pCi/g						

The following Prep Methods were performed:

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GL-RAD-A-021	CXC1	04/11/12	1537	1203544

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	DOE HASL 300, 4.5.2.3/Ga-01-R	

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Certificate of Analysis

Report Date: May 8, 2012

Company : Cabrera Services, Inc
 Address : 393 Totten Pond Rd
 Ste. 102
 Waltham, Massachusetts 02451
 Contact: Mr. Greg Bright
 Project: New Haven CT Site

Client Sample ID: UNC-FSS-LDA-007	Project: CBRA00110
Sample ID: 302440004	Client ID: CBRA015
Matrix: Soil	
Collect Date: 17-FEB-12 13:20	
Receive Date: 11-APR-12	
Collector: Client	

Parameter	Qualifier	Result	Uncertainty	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Rad Gamma Spec Analysis												
Gammaspac, Gamma, Solid (Standard List) "Dry Weight Corrected"												
Actinium-228		0.744	+/-0.227	0.148		pCi/g		MXR1	05/03/12	0857	1203837	1
Americium-241	U	0.0956	+/-0.119	0.224		pCi/g						
Antimony-124	U	0.0211	+/-0.0981	0.201		pCi/g						
Antimony-125	U	0.0364	+/-0.0585	0.115		pCi/g						
Barium-133	U	0.00192	+/-0.0279	0.0467		pCi/g						
Barium-140	U	2.73	+/-4.55	9.05		pCi/g						
Beryllium-7	U	-0.159	+/-0.435	0.781		pCi/g						
Bismuth-212	UI	0.00	+/-0.723	0.821		pCi/g						
Bismuth-214		0.596	+/-0.123	0.0788		pCi/g						
Cerium-139	U	-0.0102	+/-0.0258	0.0464		pCi/g						
Cerium-141	U	0.0655	+/-0.149	0.280		pCi/g						
Cerium-144	U	-0.0418	+/-0.146	0.268		pCi/g						
Cesium-134	U	0.0476	+/-0.0296	0.0578		pCi/g						
Cesium-136	U	-0.0873	+/-1.54	2.85		pCi/g						
Cesium-137	U	-0.0124	+/-0.0211	0.0383	0.100	pCi/g						
Chromium-51	U	0.281	+/-0.983	1.92		pCi/g						
Cobalt-56	U	-0.0153	+/-0.0411	0.0743		pCi/g						
Cobalt-57	U	-0.0113	+/-0.0181	0.0329		pCi/g						
Cobalt-58	U	-0.0198	+/-0.0409	0.0735		pCi/g						
Cobalt-60	U	-0.00098	+/-0.0237	0.0453		pCi/g						
Europium-152	U	-0.11	+/-0.0743	0.103		pCi/g						
Europium-154	U	-0.0243	+/-0.0647	0.119		pCi/g						
Europium-155	U	0.0511	+/-0.0673	0.133		pCi/g						
Iridium-192	U	0.00825	+/-0.0386	0.0744		pCi/g						
Iron-59	U	-0.117	+/-0.127	0.219		pCi/g						
Lead-210	U	2.44	+/-3.38	7.06		pCi/g						
Lead-212		0.974	+/-0.129	0.0703		pCi/g						
Lead-214		0.626	+/-0.141	0.091		pCi/g						
Manganese-54	U	-0.0202	+/-0.0298	0.0519		pCi/g						
Mercury-203	U	-0.0209	+/-0.0588	0.110		pCi/g						
Neodymium-147	U	-8.21	+/-15.6	28.9		pCi/g						
Neptunium-239	U	-0.13	+/-0.254	0.466		pCi/g						
Niobium-94	U	0.00417	+/-0.0207	0.040		pCi/g						
Niobium-95	U	0.0379	+/-0.0489	0.0982		pCi/g						
Potassium-40		8.47	+/-1.07	0.355		pCi/g						
Promethium-144	U	0.00189	+/-0.0242	0.0462		pCi/g						
Promethium-146	U	0.0136	+/-0.0263	0.0512		pCi/g						
Radium-226		0.596	+/-0.123	0.0788		pCi/g						

GEL LABORATORIES LLC

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Certificate of Analysis

Report Date: May 8, 2012

Company : Cabrera Services, Inc
Address : 393 Totten Pond Rd
Ste. 102
Waltham, Massachusetts 02451
Contact: Mr. Greg Bright
Project: New Haven CT Site

Client Sample ID: UNC-FSS-LDA-007
Sample ID: 302440004

Project: CBRA00110
Client ID: CBRA015

Parameter	Qualifier	Result	Uncertainty	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Rad Gamma Spec Analysis												
Gammaspec, Gamma, Solid (Standard List) "Dry Weight Corrected"												
Radium-228		0.744	+/-0.227	0.148		pCi/g						
Ruthenium-106	U	-0.0646	+/-0.216	0.405		pCi/g						
Silver-110m	U	-0.0247	+/-0.0353	0.061		pCi/g						
Sodium-22	U	-0.00886	+/-0.0235	0.0433		pCi/g						
Thallium-208		0.258	+/-0.0581	0.0407		pCi/g						
Thorium-234	UI	0.00	+/-2.22	1.81		pCi/g						
Tin-113	U	-0.0171	+/-0.0401	0.0727		pCi/g						
Uranium-235	U	-0.00707	+/-0.134	0.245		pCi/g						
Uranium-238	UI	0.00	+/-2.22	1.81		pCi/g						
Yttrium-88	U	-0.00864	+/-0.0306	0.0594		pCi/g						
Zinc-65	U	-0.00104	+/-0.0675	0.112		pCi/g						
Zirconium-95	U	0.0271	+/-0.0784	0.155		pCi/g						

The following Prep Methods were performed:

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GL-RAD-A-021	CXC1	04/11/12	1537	1203544

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	DOE HASL 300, 4.5.2.3/Ga-01-R	

GEL LABORATORIES LLC

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Report Date: May 8, 2012

Company : Cabrera Services, Inc
 Address : 393 Totten Pond Rd
 Ste. 102
 Waltham, Massachusetts 02451
 Contact: Mr. Greg Bright
 Project: New Haven CT Site

Client Sample ID: UNC-FSS-LDA-013	Project: CBRA00110
Sample ID: 302440005	Client ID: CBRA015
Matrix: Soil	
Collect Date: 17-FEB-12 01:48	
Receive Date: 11-APR-12	
Collector: Client	

Parameter	Qualifier	Result	Uncertainty	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Rad Alpha Spec Analysis												
Alphaspec U, Solid "Dry Weight Corrected"												
Uranium-233/234		0.600	+/-0.302	0.359	1.00	pCi/g		JXD2	04/28/12	1131	1206429	1
Uranium-235/236	U	-0.035	+/-0.0957	0.300	1.00	pCi/g						
Uranium-238		0.721	+/-0.315	0.335	1.00	pCi/g						
Rad Gamma Spec Analysis												
Gammasppec, Gamma, Solid (Standard List) "Dry Weight Corrected"												
Actinium-228	UI	0.00	+/-0.206	0.278		pCi/g		MXR1	05/03/12	0858	1203837	2
Americium-241	U	0.0301	+/-0.0999	0.205		pCi/g						
Antimony-124	U	-0.00683	+/-0.0854	0.160		pCi/g						
Antimony-125	U	0.0391	+/-0.046	0.0916		pCi/g						
Barium-133	U	0.0106	+/-0.0218	0.0382		pCi/g						
Barium-140	U	-4.3	+/-3.91	6.16		pCi/g						
Beryllium-7	U	-0.138	+/-0.331	0.606		pCi/g						
Bismuth-212	UI	0.00	+/-0.549	0.620		pCi/g						
Bismuth-214		0.598	+/-0.108	0.0645		pCi/g						
Cerium-139	U	0.00982	+/-0.0204	0.0409		pCi/g						
Cerium-141	U	0.0235	+/-0.125	0.235		pCi/g						
Cerium-144	U	0.0114	+/-0.137	0.230		pCi/g						
Cesium-134	U	0.0388	+/-0.0221	0.0454		pCi/g						
Cesium-136	U	-0.615	+/-1.32	2.38		pCi/g						
Cesium-137	U	-0.00449	+/-0.0184	0.0342	0.100	pCi/g						
Chromium-51	U	-0.149	+/-0.841	1.54		pCi/g						
Cobalt-56	U	-0.0121	+/-0.0336	0.0603		pCi/g						
Cobalt-57	U	-0.00602	+/-0.0158	0.0294		pCi/g						
Cobalt-58	U	0.00238	+/-0.0345	0.0644		pCi/g						
Cobalt-60	U	0.0236	+/-0.0207	0.0419		pCi/g						
Europium-152	U	-0.0148	+/-0.0592	0.0857		pCi/g						
Europium-154	U	-0.0451	+/-0.0596	0.101		pCi/g						
Europium-155	U	0.0792	+/-0.0596	0.121		pCi/g						
Iridium-192	U	0.00711	+/-0.0305	0.0574		pCi/g						
Iron-59	U	-0.0895	+/-0.110	0.190		pCi/g						
Lead-210	U	1.66	+/-2.76	5.89		pCi/g						
Lead-212		0.950	+/-0.116	0.0524		pCi/g						
Lead-214		0.691	+/-0.115	0.0669		pCi/g						
Manganese-54	U	0.0227	+/-0.0214	0.0422		pCi/g						
Mercury-203	U	-0.00425	+/-0.0501	0.0933		pCi/g						
Neodymium-147	U	3.74	+/-12.9	24.4		pCi/g						
Neptunium-239	U	0.0401	+/-0.211	0.407		pCi/g						

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Certificate of Analysis

Report Date: May 8, 2012

Company : Cabrera Services, Inc
 Address : 393 Totten Pond Rd
 Ste. 102
 Waltham, Massachusetts 02451
 Contact: Mr. Greg Bright
 Project: New Haven CT Site

Client Sample ID: UNC-FSS-LDA-013	Project: CBRA00110
Sample ID: 302440005	Client ID: CBRA015

Parameter	Qualifier	Result	Uncertainty	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Rad Gamma Spec Analysis												
Gammaspac, Gamma, Solid (Standard List) "Dry Weight Corrected"												
Niobium-94	U	0.0034	+/-0.0168	0.032		pCi/g						
Niobium-95	U	0.0605	+/-0.0422	0.0847		pCi/g						
Potassium-40		8.37	+/-1.09	0.316		pCi/g						
Promethium-144	U	0.00415	+/-0.0195	0.0371		pCi/g						
Promethium-146	U	-0.011	+/-0.0205	0.0373		pCi/g						
Radium-226		0.598	+/-0.108	0.0645		pCi/g						
Radium-228	UI	0.00	+/-0.206	0.278		pCi/g						
Ruthenium-106	U	-0.0368	+/-0.165	0.311		pCi/g						
Silver-110m	U	0.0102	+/-0.0267	0.0511		pCi/g						
Sodium-22	U	-0.0166	+/-0.0216	0.0367		pCi/g						
Thallium-208		0.245	+/-0.0432	0.0315		pCi/g						
Thorium-234	U	0.271	+/-0.875	1.76		pCi/g						
Tin-113	U	-0.00119	+/-0.0303	0.058		pCi/g						
Uranium-235	U	0.103	+/-0.109	0.209		pCi/g						
Uranium-238	U	0.271	+/-0.875	1.76		pCi/g						
Yttrium-88	U	0.00881	+/-0.0239	0.0493		pCi/g						
Zinc-65	U	-0.00324	+/-0.0616	0.0965		pCi/g						
Zirconium-95	U	-0.0371	+/-0.0674	0.121		pCi/g						

The following Prep Methods were performed:

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GL-RAD-A-021	CXC1	04/11/12	1537	1203544

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	DOE EML HASL-300, U-02-RC Modified	
2	DOE HASL 300, 4.5.2.3/Ga-01-R	

Surrogate/Tracer Recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
Uranium-232 Tracer	Alphaspec U, Solid "Dry Weight Corrected"			98.2	(15%-125%)

GEL LABORATORIES LLC

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Certificate of Analysis

Report Date: May 8, 2012

Company : Cabrera Services, Inc
 Address : 393 Totten Pond Rd
 Ste. 102
 Waltham, Massachusetts 02451
 Contact: Mr. Greg Bright
 Project: New Haven CT Site

Client Sample ID: UNC-FSS-HR-004B	Project: CBRA00110
Sample ID: 302440006	Client ID: CBRA015
Matrix: Soil	
Collect Date: 13-MAR-12 11:15	
Receive Date: 11-APR-12	
Collector: Client	

Parameter	Qualifier	Result	Uncertainty	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Rad Gamma Spec Analysis												
Gammaspac, Gamma, Solid (Standard List) "Dry Weight Corrected"												
Actinium-228		1.33	+/-0.291	0.171		pCi/g		MXR1	05/03/12	0858	1203837	1
Americium-241	U	0.037	+/-0.128	0.245		pCi/g						
Antimony-124	U	-0.0166	+/-0.0938	0.178		pCi/g						
Antimony-125	U	0.00865	+/-0.067	0.127		pCi/g						
Barium-133	U	0.00363	+/-0.0288	0.0492		pCi/g						
Barium-140	U	-0.757	+/-1.39	2.53		pCi/g						
Beryllium-7	U	0.0226	+/-0.351	0.657		pCi/g						
Bismuth-212	UI	0.00	+/-0.703	1.00		pCi/g						
Bismuth-214		0.826	+/-0.156	0.0913		pCi/g						
Cerium-139	U	0.0163	+/-0.0227	0.0446		pCi/g						
Cerium-141	U	-0.0196	+/-0.0851	0.162		pCi/g						
Cerium-144	U	-0.0618	+/-0.141	0.266		pCi/g						
Cesium-134	UI	0.00	+/-0.0439	0.0664		pCi/g						
Cesium-136	U	0.184	+/-0.475	0.941		pCi/g						
Cesium-137	U	0.0298	+/-0.026	0.0537	0.100	pCi/g						
Chromium-51	U	-0.279	+/-0.566	1.06		pCi/g						
Cobalt-56	U	-0.0172	+/-0.0392	0.0695		pCi/g						
Cobalt-57	U	0.00234	+/-0.018	0.0355		pCi/g						
Cobalt-58	U	-0.0106	+/-0.0409	0.0743		pCi/g						
Cobalt-60	U	0.0019	+/-0.0271	0.0517		pCi/g						
Europium-152	U	0.0554	+/-0.0634	0.128		pCi/g						
Europium-154	U	0.0355	+/-0.0869	0.170		pCi/g						
Europium-155	U	0.0175	+/-0.0669	0.134		pCi/g						
Iridium-192	U	0.00394	+/-0.0311	0.0605		pCi/g						
Iron-59	U	-0.0581	+/-0.0929	0.165		pCi/g						
Lead-210	U	3.09	+/-4.08	8.14		pCi/g						
Lead-212		1.34	+/-0.162	0.0714		pCi/g						
Lead-214		1.03	+/-0.171	0.0786		pCi/g						
Manganese-54	U	-0.00449	+/-0.0316	0.0575		pCi/g						
Mercury-203	U	0.0407	+/-0.0449	0.0909		pCi/g						
Neodymium-147	U	-1.32	+/-3.88	7.32		pCi/g						
Neptunium-239	U	-0.0791	+/-0.243	0.470		pCi/g						
Niobium-94	U	-0.00646	+/-0.0245	0.0451		pCi/g						
Niobium-95	U	0.0206	+/-0.0439	0.0851		pCi/g						
Potassium-40		10.5	+/-1.28	0.364		pCi/g						
Promethium-144	U	0.00294	+/-0.0267	0.0507		pCi/g						
Promethium-146	U	0.0363	+/-0.0289	0.0588		pCi/g						
Radium-226		0.826	+/-0.156	0.0913		pCi/g						

GEL LABORATORIES LLC

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Certificate of Analysis

Report Date: May 8, 2012

Company : Cabrera Services, Inc
Address : 393 Totten Pond Rd
Ste. 102
Waltham, Massachusetts 02451
Contact: Mr. Greg Bright
Project: New Haven CT Site

Client Sample ID: UNC-FSS-HR-004B
Sample ID: 302440006

Project: CBRA00110
Client ID: CBRA015

Parameter	Qualifier	Result	Uncertainty	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Rad Gamma Spec Analysis												
Gammaspec, Gamma, Solid (Standard List) "Dry Weight Corrected"												
Radium-228		1.33	+/-0.291	0.171		pCi/g						
Ruthenium-106	U	0.0948	+/-0.228	0.451		pCi/g						
Silver-110m	U	-0.00197	+/-0.0361	0.067		pCi/g						
Sodium-22	U	0.0179	+/-0.0304	0.0606		pCi/g						
Thallium-208		0.379	+/-0.0787	0.0444		pCi/g						
Thorium-234	U	0.356	+/-1.13	2.15		pCi/g						
Tin-113	U	0.0166	+/-0.0374	0.0729		pCi/g						
Uranium-235	U	0.0593	+/-0.130	0.252		pCi/g						
Uranium-238	U	0.356	+/-1.13	2.15		pCi/g						
Yttrium-88	U	0.0218	+/-0.0324	0.071		pCi/g						
Zinc-65	U	0.00495	+/-0.0779	0.127		pCi/g						
Zirconium-95	U	-0.0282	+/-0.0705	0.128		pCi/g						

The following Prep Methods were performed:

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GL-RAD-A-021	CXC1	04/11/12	1537	1203544

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	DOE HASL 300, 4.5.2.3/Ga-01-R	

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2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Report Date: May 8, 2012

Company : Cabrera Services, Inc
Address : 393 Totten Pond Rd
Ste. 102
Waltham, Massachusetts 02451
Contact: Mr. Greg Bright
Project: New Haven CT Site

Client Sample ID: UNC-FSS-XY-017 Project: CBRA00110
Sample ID: 302440007 Client ID: CBRA015
Matrix: Soil
Collect Date: 03-JAN-12 14:45
Receive Date: 11-APR-12
Collector: Client

Parameter	Qualifier	Result	Uncertainty	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Rad Gamma Spec Analysis												
Gammaspac, Gamma, Solid (Standard List) "Dry Weight Corrected"												
Actinium-228		0.613	+/-0.192	0.125		pCi/g		MXR1	05/03/12	1001	1203837	1
Americium-241	U	0.0469	+/-0.0739	0.138		pCi/g						
Antimony-124	U	0.0674	+/-0.136	0.302		pCi/g						
Antimony-125	U	-0.0537	+/-0.0555	0.0963		pCi/g						
Barium-133	U	-0.0126	+/-0.0248	0.0395		pCi/g						
Barium-140	UI	0.00	+/-45.6	0.00		pCi/g						
Beryllium-7	U	0.821	+/-0.765	1.54		pCi/g						
Bismuth-212	U	0.550	+/-0.306	0.650		pCi/g						
Bismuth-214		0.314	+/-0.0904	0.0724		pCi/g						
Cerium-139	U	-0.00993	+/-0.0279	0.051		pCi/g						
Cerium-141	U	0.441	+/-0.349	0.636		pCi/g						
Cerium-144	U	-0.0574	+/-0.138	0.255		pCi/g						
Cesium-134	U	0.0196	+/-0.0254	0.0517		pCi/g						
Cesium-136	UI	0.00	+/-15.7	0.00		pCi/g						
Cesium-137	U	-0.0179	+/-0.0219	0.0397	0.100	pCi/g						
Chromium-51	U	-0.575	+/-2.77	5.27		pCi/g						
Cobalt-56	U	-0.0286	+/-0.0578	0.104		pCi/g						
Cobalt-57	U	0.00458	+/-0.0179	0.0346		pCi/g						
Cobalt-58	U	-0.0321	+/-0.0578	0.104		pCi/g						
Cobalt-60	U	-0.00473	+/-0.0205	0.039		pCi/g						
Europium-152	U	-0.0684	+/-0.0544	0.094		pCi/g						
Europium-154	U	0.0234	+/-0.070	0.140		pCi/g						
Europium-155	U	0.0187	+/-0.0555	0.109		pCi/g						
Iridium-192	U	-0.000197	+/-0.0491	0.0948		pCi/g						
Iron-59	U	-0.079	+/-0.270	0.486		pCi/g						
Lead-210	U	-1.18	+/-1.45	2.81		pCi/g						
Lead-212		0.557	+/-0.0865	0.0537		pCi/g						
Lead-214		0.403	+/-0.108	0.0741		pCi/g						
Manganese-54	U	0.00214	+/-0.0242	0.0468		pCi/g						
Mercury-203	U	0.00444	+/-0.0991	0.193		pCi/g						
Neodymium-147	UI	0.00	+/-230	0.00		pCi/g						
Neptunium-239	U	-0.236	+/-0.203	0.362		pCi/g						
Niobium-94	U	-0.000162	+/-0.0182	0.0351		pCi/g						
Niobium-95	U	0.00221	+/-0.0688	0.132		pCi/g						
Potassium-40		8.19	+/-1.06	0.283		pCi/g						
Promethium-144	U	0.0155	+/-0.0231	0.047		pCi/g						
Promethium-146	U	0.00688	+/-0.0246	0.0474		pCi/g						
Radium-226		0.314	+/-0.0904	0.0724		pCi/g						

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Certificate of Analysis

Report Date: May 8, 2012

Company : Cabrera Services, Inc
 Address : 393 Totten Pond Rd
 Ste. 102
 Waltham, Massachusetts 02451
 Contact: Mr. Greg Bright
 Project: New Haven CT Site

Client Sample ID: UNC-FSS-XY-017	Project: CBRA00110
Sample ID: 302440007	Client ID: CBRA015

Parameter	Qualifier	Result	Uncertainty	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Rad Gamma Spec Analysis												
Gammaspac, Gamma, Solid (Standard List) "Dry Weight Corrected"												
Radium-228		0.613	+/-0.192	0.125		pCi/g						
Ruthenium-106	U	0.228	+/-0.193	0.403		pCi/g						
Silver-110m	U	-0.00917	+/-0.0337	0.0626		pCi/g						
Sodium-22	U	0.00907	+/-0.0261	0.0522		pCi/g						
Thallium-208		0.144	+/-0.0385	0.0354		pCi/g						
Thorium-234	U	0.470	+/-1.28	1.17		pCi/g						
Tin-113	U	-0.0365	+/-0.046	0.082		pCi/g						
Uranium-235		0.399	+/-0.240	0.193		pCi/g						
Uranium-238	U	0.470	+/-1.28	1.17		pCi/g						
Yttrium-88	U	-0.00809	+/-0.0279	0.0547		pCi/g						
Zinc-65	U	0.0465	+/-0.0688	0.124		pCi/g						
Zirconium-95	U	0.00821	+/-0.107	0.210		pCi/g						

The following Prep Methods were performed:

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GL-RAD-A-021	CXC1	04/11/12	1537	1203544

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	DOE HASL 300, 4.5.2.3/Ga-01-R	

GEL LABORATORIES LLC

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Report Date: May 8, 2012

Company : Cabrera Services, Inc
 Address : 393 Totten Pond Rd
 Ste. 102
 Waltham, Massachusetts 02451
 Contact: Mr. Greg Bright
 Project: New Haven CT Site

Client Sample ID: UNC-FSS-XY-019	Project: CBRA00110
Sample ID: 302440008	Client ID: CBRA015
Matrix: Soil	
Collect Date: 03-JAN-12 14:45	
Receive Date: 11-APR-12	
Collector: Client	

Parameter	Qualifier	Result	Uncertainty	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Rad Alpha Spec Analysis												
Alphaspec U, Solid "Dry Weight Corrected"												
Uranium-233/234		1.07	+/-0.425	0.394	1.00	pCi/g		JXD2	05/03/12	1251	1206429	1
Uranium-235/236		0.230	+/-0.201	0.138	1.00	pCi/g						
Uranium-238		0.873	+/-0.370	0.296	1.00	pCi/g						
Rad Gamma Spec Analysis												
Gammasppec, Gamma, Solid (Standard List) "Dry Weight Corrected"												
Actinium-228		1.38	+/-0.309	0.197		pCi/g		MXR1	05/03/12	1002	1203837	2
Americium-241	U	-0.0907	+/-0.134	0.239		pCi/g						
Antimony-124	U	-0.0628	+/-0.189	0.350		pCi/g						
Antimony-125	U	-0.0342	+/-0.0868	0.158		pCi/g						
Barium-133	U	-0.00866	+/-0.0431	0.0694		pCi/g						
Barium-140	UI	0.00	+/-70.5	0.00		pCi/g						
Beryllium-7	U	0.858	+/-1.11	2.15		pCi/g						
Bismuth-212	UI	0.00	+/-0.772	1.11		pCi/g						
Bismuth-214		1.21	+/-0.177	0.116		pCi/g						
Cerium-139	U	0.00164	+/-0.0449	0.0835		pCi/g						
Cerium-141	U	0.291	+/-0.534	1.02		pCi/g						
Cerium-144	U	-0.0614	+/-0.224	0.417		pCi/g						
Cesium-134	U	0.0331	+/-0.039	0.077		pCi/g						
Cesium-136	U	-6.13	+/-19.3	0.00		pCi/g						
Cesium-137	U	-0.00332	+/-0.034	0.0609	0.100	pCi/g						
Chromium-51	U	-0.676	+/-4.85	8.61		pCi/g						
Cobalt-56	U	-0.00283	+/-0.0817	0.152		pCi/g						
Cobalt-57	U	-0.00816	+/-0.0281	0.0527		pCi/g						
Cobalt-58	U	-0.0289	+/-0.0944	0.172		pCi/g						
Cobalt-60	U	-0.00857	+/-0.0228	0.0425		pCi/g						
Europium-152	U	-0.00153	+/-0.102	0.167		pCi/g						
Europium-154	U	0.0404	+/-0.0956	0.182		pCi/g						
Europium-155	U	0.0847	+/-0.0922	0.181		pCi/g						
Iridium-192	U	0.0405	+/-0.0849	0.156		pCi/g						
Iron-59	U	-0.201	+/-0.364	0.630		pCi/g						
Lead-210	U	2.22	+/-3.12	5.80		pCi/g						
Lead-212		1.72	+/-0.210	0.0942		pCi/g						
Lead-214		1.36	+/-0.216	0.123		pCi/g						
Manganese-54	U	-0.0293	+/-0.0412	0.0723		pCi/g						
Mercury-203	U	0.102	+/-0.180	0.332		pCi/g						
Neodymium-147	UI	0.00	+/-382	0.00		pCi/g						
Neptunium-239	U	0.0761	+/-0.345	0.659		pCi/g						

GEL LABORATORIES LLC

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Certificate of Analysis

Report Date: May 8, 2012

Company : Cabrera Services, Inc
 Address : 393 Totten Pond Rd
 Ste. 102
 Waltham, Massachusetts 02451
 Contact: Mr. Greg Bright
 Project: New Haven CT Site

Client Sample ID: UNC-FSS-XY-019	Project: CBRA00110
Sample ID: 302440008	Client ID: CBRA015

Parameter	Qualifier	Result	Uncertainty	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Rad Gamma Spec Analysis												
Gammaspac, Gamma, Solid (Standard List) "Dry Weight Corrected"												
Niobium-94	U	0.0317	+/-0.0321	0.0613		pCi/g						
Niobium-95	U	0.125	+/-0.116	0.231		pCi/g						
Potassium-40		6.09	+/-0.946	0.507		pCi/g						
Promethium-144	U	-0.0277	+/-0.0392	0.0664		pCi/g						
Promethium-146	U	-0.000911	+/-0.037	0.0687		pCi/g						
Radium-226		1.21	+/-0.177	0.116		pCi/g						
Radium-228		1.38	+/-0.309	0.197		pCi/g						
Ruthenium-106	U	-0.061	+/-0.326	0.585		pCi/g						
Silver-110m	U	-0.00427	+/-0.0538	0.0997		pCi/g						
Sodium-22	U	0.0103	+/-0.0361	0.0678		pCi/g						
Thallium-208		0.537	+/-0.0834	0.0518		pCi/g						
Thorium-234	U	1.03	+/-1.22	2.27		pCi/g						
Tin-113	U	0.0799	+/-0.0773	0.151		pCi/g						
Uranium-235	U	-0.0549	+/-0.187	0.340		pCi/g						
Uranium-238	U	1.03	+/-1.22	2.27		pCi/g						
Yttrium-88	U	0.0275	+/-0.0558	0.115		pCi/g						
Zinc-65	U	-0.0823	+/-0.0935	0.125		pCi/g						
Zirconium-95	U	0.104	+/-0.199	0.386		pCi/g						

The following Prep Methods were performed:

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GL-RAD-A-021	CXC1	04/11/12	1537	1203544

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	DOE EML HASL-300, U-02-RC Modified	
2	DOE HASL 300, 4.5.2.3/Ga-01-R	

Surrogate/Tracer Recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
Uranium-232 Tracer	Alphaspec U, Solid "Dry Weight Corrected"			89.0	(15%-125%)

GEL LABORATORIES LLC

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Report Date: May 8, 2012

Company : Cabrera Services, Inc
Address : 393 Totten Pond Rd
Ste. 102
Waltham, Massachusetts 02451
Contact: Mr. Greg Bright
Project: New Haven CT Site

Client Sample ID: UNC-FSS-LDA-005
Sample ID: 302440009
Matrix: Soil
Collect Date: 17-FEB-12 13:15
Receive Date: 11-APR-12
Collector: Client

Project: CBRA00110
Client ID: CBRA015

Parameter	Qualifier	Result	Uncertainty	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Rad Gamma Spec Analysis												
Gammaspac, Gamma, Solid (Standard List) "Dry Weight Corrected"												
Actinium-228		0.764	+/-0.204	0.164		pCi/g		MXR1	05/03/12	1002	1203837	1
Americium-241	U	0.0977	+/-0.091	0.168		pCi/g						
Antimony-124	U	0.0824	+/-0.103	0.208		pCi/g						
Antimony-125	U	0.0103	+/-0.0578	0.109		pCi/g						
Barium-133	U	0.0231	+/-0.0288	0.048		pCi/g						
Barium-140	U	1.81	+/-4.56	8.42		pCi/g						
Beryllium-7	U	0.130	+/-0.443	0.829		pCi/g						
Bismuth-212	UI	0.00	+/-0.481	0.705		pCi/g						
Bismuth-214		0.523	+/-0.114	0.0809		pCi/g						
Cerium-139	U	-0.017	+/-0.0279	0.0507		pCi/g						
Cerium-141	UI	0.00	+/-0.186	0.333		pCi/g						
Cerium-144	U	-0.00289	+/-0.150	0.285		pCi/g						
Cesium-134	U	0.022	+/-0.0277	0.0522		pCi/g						
Cesium-136	U	-0.666	+/-1.54	2.69		pCi/g						
Cesium-137	U	0.0235	+/-0.0227	0.0444	0.100	pCi/g						
Chromium-51	U	-0.665	+/-1.08	1.92		pCi/g						
Cobalt-56	U	-0.00225	+/-0.0448	0.080		pCi/g						
Cobalt-57	U	0.0144	+/-0.0212	0.0389		pCi/g						
Cobalt-58	U	-0.0175	+/-0.0442	0.0776		pCi/g						
Cobalt-60	U	0.00432	+/-0.0223	0.0418		pCi/g						
Europium-152	U	0.0175	+/-0.0925	0.117		pCi/g						
Europium-154	U	0.0104	+/-0.0763	0.140		pCi/g						
Europium-155	U	0.0986	+/-0.0706	0.135		pCi/g						
Iridium-192	U	-0.0163	+/-0.0388	0.0698		pCi/g						
Iron-59	U	-0.061	+/-0.129	0.223		pCi/g						
Lead-210	U	-0.0423	+/-1.91	3.44		pCi/g						
Lead-212		0.891	+/-0.116	0.0677		pCi/g						
Lead-214		0.714	+/-0.137	0.0832		pCi/g						
Manganese-54	U	0.0105	+/-0.0256	0.0473		pCi/g						
Mercury-203	U	0.0268	+/-0.0614	0.116		pCi/g						
Neodymium-147	U	-3.2	+/-16.3	29.4		pCi/g						
Neptunium-239	U	-0.317	+/-0.278	0.473		pCi/g						
Niobium-94	U	0.0225	+/-0.021	0.0405		pCi/g						
Niobium-95	U	0.0316	+/-0.0516	0.0965		pCi/g						
Potassium-40		8.30	+/-1.08	0.378		pCi/g						
Promethium-144	U	-0.00192	+/-0.0241	0.0439		pCi/g						
Promethium-146	U	-0.00619	+/-0.0273	0.0498		pCi/g						
Radium-226		0.523	+/-0.114	0.0809		pCi/g						

GEL LABORATORIES LLC

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Report Date: May 8, 2012

Company : Cabrera Services, Inc
Address : 393 Totten Pond Rd
Ste. 102
Waltham, Massachusetts 02451
Contact: Mr. Greg Bright
Project: New Haven CT Site

Client Sample ID: UNC-FSS-LDA-005
Sample ID: 302440009

Project: CBRA00110
Client ID: CBRA015

Parameter	Qualifier	Result	Uncertainty	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Rad Gamma Spec Analysis												
Gammaspec, Gamma, Solid (Standard List) "Dry Weight Corrected"												
Radium-228		0.764	+/-0.204	0.164		pCi/g						
Ruthenium-106	U	-0.028	+/-0.226	0.401		pCi/g						
Silver-110m	U	-0.0197	+/-0.0366	0.0625		pCi/g						
Sodium-22	U	0.00423	+/-0.0276	0.0509		pCi/g						
Thallium-208		0.239	+/-0.0529	0.0403		pCi/g						
Thorium-234	U	0.767	+/-1.49	1.45		pCi/g						
Tin-113	U	0.015	+/-0.041	0.0752		pCi/g						
Uranium-235		0.438	+/-0.255	0.249		pCi/g						
Uranium-238	U	0.767	+/-1.49	1.45		pCi/g						
Yttrium-88	U	-0.0274	+/-0.0373	0.0624		pCi/g						
Zinc-65	UI	0.00	+/-0.0767	0.129		pCi/g						
Zirconium-95	U	0.0054	+/-0.0853	0.156		pCi/g						

The following Prep Methods were performed:

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GL-RAD-A-021	CXC1	04/11/12	1537	1203544

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	DOE HASL 300, 4.5.2.3/Ga-01-R	

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Certificate of Analysis

Report Date: May 8, 2012

Company : Cabrera Services, Inc
 Address : 393 Totten Pond Rd
 Ste. 102
 Waltham, Massachusetts 02451
 Contact: Mr. Greg Bright
 Project: New Haven CT Site

Client Sample ID: UNC-FSS-DR-010	Project: CBRA00110
Sample ID: 302440010	Client ID: CBRA015
Matrix: Soil	
Collect Date: 20-FEB-12 12:35	
Receive Date: 11-APR-12	
Collector: Client	

Parameter	Qualifier	Result	Uncertainty	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Rad Gamma Spec Analysis												
Gammaspac, Gamma, Solid (Standard List) "Dry Weight Corrected"												
Actinium-228		1.31	+/-0.364	0.262		pCi/g		MXR1	05/03/12	1003	1203837	1
Americium-241	U	-0.0047	+/-0.0635	0.115		pCi/g						
Antimony-124	U	-0.0593	+/-0.111	0.204		pCi/g						
Antimony-125	U	-0.0608	+/-0.088	0.155		pCi/g						
Barium-133	U	-0.00467	+/-0.0406	0.0671		pCi/g						
Barium-140	U	-3.63	+/-5.55	9.97		pCi/g						
Beryllium-7	U	0.448	+/-0.624	1.23		pCi/g						
Bismuth-212	UI	0.00	+/-1.07	1.15		pCi/g						
Bismuth-214		0.875	+/-0.187	0.121		pCi/g						
Cerium-139	U	0.0254	+/-0.0366	0.0641		pCi/g						
Cerium-141	UI	0.00	+/-0.374	0.317		pCi/g						
Cerium-144	U	-0.0754	+/-0.178	0.332		pCi/g						
Cesium-134	U	0.0312	+/-0.0447	0.0886		pCi/g						
Cesium-136	U	1.29	+/-1.79	3.77		pCi/g						
Cesium-137	U	-0.0221	+/-0.0366	0.0659	0.100	pCi/g						
Chromium-51	U	0.292	+/-1.39	2.70		pCi/g						
Cobalt-56	U	-0.0147	+/-0.0649	0.119		pCi/g						
Cobalt-57	U	0.00778	+/-0.0232	0.0452		pCi/g						
Cobalt-58	U	-0.0215	+/-0.0662	0.120		pCi/g						
Cobalt-60	U	0.0473	+/-0.0391	0.0846		pCi/g						
Europium-152	U	-0.054	+/-0.0919	0.154		pCi/g						
Europium-154	U	-0.0637	+/-0.101	0.175		pCi/g						
Europium-155	U	0.0795	+/-0.0831	0.167		pCi/g						
Iridium-192	U	-0.00243	+/-0.0487	0.0935		pCi/g						
Iron-59	U	-0.0173	+/-0.185	0.353		pCi/g						
Lead-210		1.95	+/-1.19	0.989		pCi/g						
Lead-212		1.20	+/-0.178	0.0914		pCi/g						
Lead-214		1.03	+/-0.224	0.123		pCi/g						
Manganese-54	U	0.0115	+/-0.0407	0.0783		pCi/g						
Mercury-203	U	0.106	+/-0.0835	0.171		pCi/g						
Neodymium-147	U	-4.34	+/-18.5	35.5		pCi/g						
Neptunium-239	U	0.000172	+/-0.304	0.586		pCi/g						
Niobium-94	U	0.0143	+/-0.0343	0.0669		pCi/g						
Niobium-95	U	-0.0317	+/-0.0804	0.145		pCi/g						
Potassium-40		7.78	+/-1.19	0.629		pCi/g						
Promethium-144	U	-0.00702	+/-0.0369	0.0688		pCi/g						
Promethium-146	U	-0.00821	+/-0.0407	0.0746		pCi/g						
Radium-226		0.875	+/-0.187	0.121		pCi/g						

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Certificate of Analysis

Report Date: May 8, 2012

Company : Cabrera Services, Inc
Address : 393 Totten Pond Rd
Ste. 102
Waltham, Massachusetts 02451
Contact: Mr. Greg Bright
Project: New Haven CT Site

Client Sample ID: UNC-FSS-DR-010
Sample ID: 302440010

Project: CBRA00110
Client ID: CBRA015

Parameter	Qualifier	Result	Uncertainty	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Rad Gamma Spec Analysis												
Gammaspec, Gamma, Solid (Standard List) "Dry Weight Corrected"												
Radium-228		1.31	+/-0.364	0.262		pCi/g						
Ruthenium-106	U	-0.0229	+/-0.348	0.662		pCi/g						
Silver-110m	U	-0.0321	+/-0.0515	0.0893		pCi/g						
Sodium-22	U	-0.0243	+/-0.0363	0.063		pCi/g						
Thallium-208		0.371	+/-0.0981	0.0695		pCi/g						
Thorium-234		1.72	+/-1.60	1.11		pCi/g						
Tin-113	U	-0.0697	+/-0.0596	0.102		pCi/g						
Uranium-235		0.836	+/-0.368	0.310		pCi/g						
Uranium-238		1.72	+/-1.60	1.11		pCi/g						
Yttrium-88	U	0.047	+/-0.0569	0.127		pCi/g						
Zinc-65	U	-0.00349	+/-0.096	0.158		pCi/g						
Zirconium-95	U	0.129	+/-0.123	0.256		pCi/g						

The following Prep Methods were performed:

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GL-RAD-A-021	CXC1	04/11/12	1537	1203544

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	DOE HASL 300, 4.5.2.3/Ga-01-R	

Quality Control Data

GEL LABORATORIES LLC

2040 Savage Road Charleston, SC 29407 - (843) 556-8171 - www.gel.com

QC Summary

Report Date: May 8, 2012
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Cabrera Services, Inc
393 Totten Pond Rd
Ste. 102
Waltham, Massachusetts

Contact: Mr. Greg Bright

Workorder: 302440

Parname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
Rad Alpha Spec											
Batch	1206429										
QC1202642488	302440005	DUP									
Uranium-233/234		0.600	U	0.485	pCi/g	5.92		(0% - 100%)	JXD2	04/28/12	11:31
	Uncertainty	+/-0.302		+/-0.378							
Uranium-235/236	U	-0.035	U	-0.119	pCi/g	0.00		N/A			
	Uncertainty	+/-0.0957		+/-0.139							
Uranium-238		0.721	U	0.437	pCi/g	47.9		(0% - 100%)			
	Uncertainty	+/-0.315		+/-0.320							
QC1202642490	LCS										
Uranium-233/234				19.6	pCi/g					04/28/12	11:31
	Uncertainty			+/-1.37							
Uranium-235/236				0.808	pCi/g						
	Uncertainty			+/-0.321							
Uranium-238		22.4		20.5	pCi/g		91.5	(75%-125%)			
	Uncertainty			+/-1.40							
QC1202642487	MB										
Uranium-233/234			U	0.0032	pCi/g					04/28/12	11:31
	Uncertainty			+/-0.140							
Uranium-235/236			U	0.0453	pCi/g						
	Uncertainty			+/-0.0892							
Uranium-238			U	0.00	pCi/g						
	Uncertainty			+/-0.048							
QC1202642489	302440005	MS									
Uranium-233/234		0.600		21.6	pCi/g					04/28/12	11:31
	Uncertainty	+/-0.302		+/-1.64							
Uranium-235/236	U	-0.035		1.22	pCi/g						
	Uncertainty	+/-0.0957		+/-0.442							
Uranium-238		22.4		23.6	pCi/g		102	(75%-125%)			
	Uncertainty	+/-0.315		+/-1.69							
Rad Gamma Spec											
Batch	1203837										
QC1202635839	302440001	DUP									
Actinium-228		1.09		1.06	pCi/g	2.60		(0% - 20%)	MXR1	05/03/12	11:07
	Uncertainty	+/-0.272		+/-0.212							
Americium-241	U	-0.0234	U	0.0264	pCi/g	0.00		N/A			
	Uncertainty	+/-0.159		+/-0.123							
Antimony-124	U	0.0295	U	-0.0086	pCi/g	0.00		N/A			
	Uncertainty	+/-0.0425		+/-0.065							
Antimony-125	U	0.0446	U	0.0216	pCi/g	0.00		N/A			
	Uncertainty	+/-0.0724		+/-0.0497							
Barium-133	U	0.0173	U	0.0189	pCi/g	0.00		N/A			
	Uncertainty	+/-0.0325		+/-0.0251							

GEL LABORATORIES LLC

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QC Summary

Workorder: 302440

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Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
Rad Gamma Spec											
Batch	1203837										
Barium-140	U	0.219	U	0.0293	pCi/g	0.00		N/A			
	Uncertainty	+/-1.21		+/-0.988							
Beryllium-7	U	0.113	U	0.019	pCi/g	0.00		N/A	MXR1	05/03/12	11:07
	Uncertainty	+/-0.332		+/-0.278							
Bismuth-212	UI	0.00	UI	0.00	pCi/g	0.00		N/A			
	Uncertainty	+/-0.556		+/-0.570							
Bismuth-214		0.519		0.618	pCi/g	17.4		(0% - 20%)			
	Uncertainty	+/-0.141		+/-0.112							
Cerium-139	U	-0.0229	U	0.0191	pCi/g	0.00		N/A			
	Uncertainty	+/-0.0313		+/-0.0238							
Cerium-141	UI	0.00	UI	0.00	pCi/g	0.00		N/A			
	Uncertainty	+/-0.225		+/-0.117							
Cerium-144	U	0.176	U	0.0437	pCi/g	0.00		N/A			
	Uncertainty	+/-0.187		+/-0.145							
Cesium-134	U	0.0569	U	0.0406	pCi/g	0.00		N/A			
	Uncertainty	+/-0.0403		+/-0.025							
Cesium-136	U	-0.12	U	-0.251	pCi/g	0.00		N/A			
	Uncertainty	+/-0.486		+/-0.384							
Cesium-137	U	-0.0137	U	-0.0251	pCi/g	0.00		N/A			
	Uncertainty	+/-0.027		+/-0.0187							
Chromium-51	U	0.548	U	-0.0949	pCi/g	0.00		N/A			
	Uncertainty	+/-0.652		+/-0.511							
Cobalt-56	U	-0.0138	U	0.0207	pCi/g	0.00		N/A			
	Uncertainty	+/-0.0375		+/-0.0301							
Cobalt-57	U	0.0276	U	-0.0102	pCi/g	0.00		N/A			
	Uncertainty	+/-0.024		+/-0.0194							
Cobalt-58	U	0.00821	U	-0.0154	pCi/g	0.00		N/A			
	Uncertainty	+/-0.0376		+/-0.0306							
Cobalt-60	U	-0.00346	U	0.0157	pCi/g	0.00		N/A			
	Uncertainty	+/-0.0276		+/-0.0213							
Europium-152	U	-0.0505	U	0.043	pCi/g	0.00		N/A			
	Uncertainty	+/-0.079		+/-0.061							
Europium-154	U	-0.0446	U	-0.0259	pCi/g	0.00		N/A			
	Uncertainty	+/-0.0857		+/-0.0635							
Europium-155	U	0.0592	U	0.0647	pCi/g	0.00		N/A			
	Uncertainty	+/-0.0961		+/-0.0807							
Iridium-192	U	0.00631	U	-0.00374	pCi/g	0.00		N/A			
	Uncertainty	+/-0.0364		+/-0.0272							
Iron-59	U	-0.0144	U	0.0164	pCi/g	0.00		N/A			
	Uncertainty	+/-0.097		+/-0.0794							
Lead-210	U	0.0147	U	0.632	pCi/g	0.00		N/A			
	Uncertainty	+/-5.56		+/-3.50							
Lead-212		1.07		1.05	pCi/g	1.42		(0% - 20%)			
	Uncertainty	+/-0.150		+/-0.125							
Lead-214		0.708		0.745	pCi/g	5.06		(0% - 20%)			

GEL LABORATORIES LLC

2040 Savage Road Charleston, SC 29407 - (843) 556-8171 - www.gel.com

QC Summary

Workorder: 302440

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Parname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
Rad Gamma Spec											
Batch	1203837										
		Uncertainty									
Manganese-54	U	+/-0.144	U	+/-0.124	pCi/g	0.00		N/A	MXR1	05/03/12	11:07
		Uncertainty									
Mercury-203	U	+/-0.029	U	+/-0.0224	pCi/g	0.00		N/A			
		Uncertainty									
Neodymium-147	U	+/-0.0482	U	+/-0.0389	pCi/g	0.00		N/A			
		Uncertainty									
Neptunium-239	U	0.299	U	-0.566	pCi/g	0.00		N/A			
		Uncertainty									
Niobium-94	U	+/-3.57	U	+/-2.68	pCi/g	0.00		N/A			
		Uncertainty									
Niobium-95	U	-0.0728	U	0.118	pCi/g	0.00		N/A			
		Uncertainty									
Niobium-94	U	+/-0.353	U	+/-0.284	pCi/g	0.00		N/A			
		Uncertainty									
Niobium-95	U	0.0127	U	0.00223	pCi/g	0.00		N/A			
		Uncertainty									
Niobium-95	U	+/-0.0244	U	+/-0.0177	pCi/g	0.00		N/A			
		Uncertainty									
Potassium-40		9.19		10.3	pCi/g	11.8		(0% - 20%)			
		Uncertainty									
Promethium-144	U	+/-1.24	U	+/-1.29	pCi/g	0.00		N/A			
		Uncertainty									
Promethium-146	U	-0.0213	U	0.00303	pCi/g	0.00		N/A			
		Uncertainty									
Promethium-146	U	+/-0.0265	U	+/-0.0205	pCi/g	0.00		N/A			
		Uncertainty									
Radium-226		0.0194		0.0078	pCi/g	0.00		N/A			
		Uncertainty									
Radium-226		+/-0.032		+/-0.0223	pCi/g	0.00		N/A			
		Uncertainty									
Radium-228		0.519		0.618	pCi/g	17.4		(0% - 20%)			
		Uncertainty									
Radium-228		+/-0.141		+/-0.112	pCi/g	2.60		(0% - 20%)			
		Uncertainty									
Ruthenium-106	U	1.09	U	1.06	pCi/g	2.60		(0% - 20%)			
		Uncertainty									
Ruthenium-106	U	+/-0.272	U	+/-0.212	pCi/g	0.00		N/A			
		Uncertainty									
Silver-110m	U	-0.069	U	0.0656	pCi/g	0.00		N/A			
		Uncertainty									
Silver-110m	U	+/-0.231	U	+/-0.189	pCi/g	0.00		N/A			
		Uncertainty									
Sodium-22	U	-0.0301	U	0.0114	pCi/g	0.00		N/A			
		Uncertainty									
Sodium-22	U	+/-0.0366	U	+/-0.0278	pCi/g	0.00		N/A			
		Uncertainty									
Sodium-22	U	-0.0179	U	-0.00725	pCi/g	0.00		N/A			
		Uncertainty									
Sodium-22	U	+/-0.0311	U	+/-0.023	pCi/g	0.00		N/A			
		Uncertainty									
Thallium-208		0.337		0.284	pCi/g	17.3		(0% - 20%)			
		Uncertainty									
Thallium-208		+/-0.0664		+/-0.0521	pCi/g	17.3		(0% - 20%)			
		Uncertainty									
Thorium-234	U	1.05	U	0.366	pCi/g	0.00		N/A			
		Uncertainty									
Thorium-234	U	+/-1.40	U	+/-2.01	pCi/g	0.00		N/A			
		Uncertainty									
Tin-113	U	-0.0342	U	0.0196	pCi/g	0.00		N/A			
		Uncertainty									
Tin-113	U	+/-0.0398	U	+/-0.0291	pCi/g	0.00		N/A			
		Uncertainty									
Uranium-235		1.25		1.47	pCi/g	15.9		(0% - 20%)			
		Uncertainty									
Uranium-235		+/-0.386		+/-0.377	pCi/g	15.9		(0% - 20%)			
		Uncertainty									
Uranium-238	U	1.05	U	0.366	pCi/g	0.00		N/A			
		Uncertainty									
Uranium-238	U	+/-1.40	U	+/-2.01	pCi/g	0.00		N/A			
		Uncertainty									
Yttrium-88	U	-0.0172	U	-0.00289	pCi/g	0.00		N/A			
		Uncertainty									
Yttrium-88	U	+/-0.0349	U	+/-0.0243	pCi/g	0.00		N/A			
		Uncertainty									
Zinc-65	U	0.0232	U	-0.0105	pCi/g	0.00		N/A			
		Uncertainty									
Zinc-65	U	+/-0.0725	U	+/-0.0624	pCi/g	0.00		N/A			
		Uncertainty									
Zirconium-95	U	0.0968	U	0.0185	pCi/g	0.00		N/A			

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QC Summary

Workorder: 302440

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Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
Rad Gamma Spec											
Batch	1203837										
	Uncertainty										
QC1202635840	LCS	+/-0.0812		+/-0.0569							
Actinium-228			U	-0.979	pCi/g				MXR1	05/03/12	11:05
	Uncertainty			+/-2.23							
Americium-241	537			613	pCi/g		114	(75%-125%)			
	Uncertainty			+/-62.0							
Antimony-124			U	0.224	pCi/g						
	Uncertainty			+/-0.549							
Antimony-125			U	0.874	pCi/g						
	Uncertainty			+/-1.11							
Barium-133			U	0.128	pCi/g						
	Uncertainty			+/-0.468							
Barium-140			U	-0.124	pCi/g						
	Uncertainty			+/-4.21							
Beryllium-7			U	-1.83	pCi/g						
	Uncertainty			+/-4.53							
Bismuth-212			U	-1.06	pCi/g						
	Uncertainty			+/-5.72							
Bismuth-214			U	0.939	pCi/g						
	Uncertainty			+/-0.753							
Cerium-139				1.10	pCi/g						
	Uncertainty			+/-0.359							
Cerium-141			U	0.0608	pCi/g						
	Uncertainty			+/-0.589							
Cerium-144			U	0.446	pCi/g						
	Uncertainty			+/-1.89							
Cesium-134			U	-0.0914	pCi/g						
	Uncertainty			+/-0.532							
Cesium-136			U	-0.786	pCi/g						
	Uncertainty			+/-2.24							
Cesium-137	197			194	pCi/g		98.6	(75%-125%)			
	Uncertainty			+/-15.8							
Chromium-51			U	-2.2	pCi/g						
	Uncertainty			+/-4.64							
Cobalt-56			U	0.0472	pCi/g						
	Uncertainty			+/-0.583							
Cobalt-57				10.2	pCi/g						
	Uncertainty			+/-1.04							
Cobalt-58			U	-0.0758	pCi/g						
	Uncertainty			+/-0.540							
Cobalt-60	235			231	pCi/g		98.3	(75%-125%)			
	Uncertainty			+/-23.9							
Europium-152			U	-1.05	pCi/g						
	Uncertainty			+/-1.06							

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QC Summary

Workorder: 302440

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Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
Rad Gamma Spec											
Batch	1203837										
Europium-154			U	-0.184	pCi/g						
	Uncertainty			+/-0.828							
Europium-155			U	-0.0467	pCi/g				MXR1	05/03/12	11:05
	Uncertainty			+/-0.888							
Iridium-192			U	0.0443	pCi/g						
	Uncertainty			+/-0.390							
Iron-59			U	0.171	pCi/g						
	Uncertainty			+/-1.55							
Lead-210				7340	pCi/g						
	Uncertainty			+/-745							
Lead-212			U	-0.436	pCi/g						
	Uncertainty			+/-0.538							
Lead-214			U	0.262	pCi/g						
	Uncertainty			+/-0.808							
Manganese-54			U	0.0443	pCi/g						
	Uncertainty			+/-0.487							
Mercury-203			U	0.291	pCi/g						
	Uncertainty			+/-0.419							
Neodymium-147			U	8.70	pCi/g						
	Uncertainty			+/-9.62							
Neptunium-239			U	-1.24	pCi/g						
	Uncertainty			+/-4.01							
Niobium-94			U	-0.0764	pCi/g						
	Uncertainty			+/-0.366							
Niobium-95			U	0.583	pCi/g						
	Uncertainty			+/-0.530							
Potassium-40			U	-0.323	pCi/g						
	Uncertainty			+/-1.98							
Promethium-144			U	-0.000468	pCi/g						
	Uncertainty			+/-0.380							
Promethium-146			U	0.237	pCi/g						
	Uncertainty			+/-0.548							
Radium-226			U	0.939	pCi/g						
	Uncertainty			+/-0.753							
Radium-228			U	-0.979	pCi/g						
	Uncertainty			+/-2.23							
Ruthenium-106			U	-2.69	pCi/g						
	Uncertainty			+/-3.61							
Silver-110m			U	0.747	pCi/g						
	Uncertainty			+/-0.782							
Sodium-22			U	-0.074	pCi/g						
	Uncertainty			+/-0.293							
Thallium-208			U	0.0332	pCi/g						
	Uncertainty			+/-0.390							
Thorium-234			U	-37.9	pCi/g						

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QC Summary

Workorder: 302440

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Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
Rad Gamma Spec											
Batch	1203837										
	Uncertainty			+/-16.9							
Tin-113			U	0.401	pCi/g				MXR1	05/03/12	11:05
	Uncertainty			+/-0.556							
Uranium-235			U	0.485	pCi/g						
	Uncertainty			+/-1.64							
Uranium-238			U	-37.9	pCi/g						
	Uncertainty			+/-16.9							
Yttrium-88				0.616	pCi/g						
	Uncertainty			+/-0.281							
Zinc-65			U	-0.198	pCi/g						
	Uncertainty			+/-1.28							
Zirconium-95			U	-0.308	pCi/g						
	Uncertainty			+/-0.937							
QC1202635838	MB										
Actinium-228			U	0.0368	pCi/g					05/03/12	10:16
	Uncertainty			+/-0.0573							
Americium-241			U	0.0287	pCi/g						
	Uncertainty			+/-0.0816							
Antimony-124			U	-0.0334	pCi/g						
	Uncertainty			+/-0.0482							
Antimony-125			U	0.00483	pCi/g						
	Uncertainty			+/-0.045							
Barium-133			U	-0.00792	pCi/g						
	Uncertainty			+/-0.0205							
Barium-140			U	-0.0704	pCi/g						
	Uncertainty			+/-0.166							
Beryllium-7			U	0.0603	pCi/g						
	Uncertainty			+/-0.167							
Bismuth-212			U	-0.264	pCi/g						
	Uncertainty			+/-0.260							
Bismuth-214			U	-0.027	pCi/g						
	Uncertainty			+/-0.0393							
Cerium-139			U	0.00496	pCi/g						
	Uncertainty			+/-0.0129							
Cerium-141			U	-0.0262	pCi/g						
	Uncertainty			+/-0.0329							
Cerium-144			U	-0.0499	pCi/g						
	Uncertainty			+/-0.0865							
Cesium-134			U	0.00671	pCi/g						
	Uncertainty			+/-0.0196							
Cesium-136			U	-0.00876	pCi/g						
	Uncertainty			+/-0.0637							
Cesium-137			U	0.0237	pCi/g						
	Uncertainty			+/-0.0161							

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QC Summary

Workorder: 302440

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Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
Rad Gamma Spec											
Batch	1203837										
Chromium-51			U	0.0559	pCi/g						
	Uncertainty			+/-0.211							
Cobalt-56			U	0.0114	pCi/g				MXR1	05/03/12	10:16
	Uncertainty			+/-0.0191							
Cobalt-57			U	0.00207	pCi/g						
	Uncertainty			+/-0.0101							
Cobalt-58			U	-0.00975	pCi/g						
	Uncertainty			+/-0.0181							
Cobalt-60			U	-0.00514	pCi/g						
	Uncertainty			+/-0.0172							
Europium-152			U	-0.0169	pCi/g						
	Uncertainty			+/-0.0446							
Europium-154			U	-0.0227	pCi/g						
	Uncertainty			+/-0.0522							
Europium-155			U	-0.00724	pCi/g						
	Uncertainty			+/-0.0389							
Iridium-192			U	0.00952	pCi/g						
	Uncertainty			+/-0.0191							
Iron-59			U	0.0105	pCi/g						
	Uncertainty			+/-0.0399							
Lead-210			U	0.590	pCi/g						
	Uncertainty			+/-2.50							
Lead-212			U	0.0505	pCi/g						
	Uncertainty			+/-0.0621							
Lead-214			U	-0.0217	pCi/g						
	Uncertainty			+/-0.0408							
Manganese-54			U	-0.00401	pCi/g						
	Uncertainty			+/-0.016							
Mercury-203			U	0.00127	pCi/g						
	Uncertainty			+/-0.0171							
Neodymium-147			U	-0.143	pCi/g						
	Uncertainty			+/-0.360							
Neptunium-239			U	0.0537	pCi/g						
	Uncertainty			+/-0.154							
Niobium-94			U	0.0245	pCi/g						
	Uncertainty			+/-0.0169							
Niobium-95			U	0.00647	pCi/g						
	Uncertainty			+/-0.0172							
Potassium-40			U	-0.159	pCi/g						
	Uncertainty			+/-0.212							
Promethium-144			U	0.00884	pCi/g						
	Uncertainty			+/-0.0181							
Promethium-146			U	-0.0126	pCi/g						
	Uncertainty			+/-0.0182							
Radium-226			U	-0.027	pCi/g						

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QC Summary

Workorder: 302440

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Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
Rad Gamma Spec											
Batch	1203837										
	Uncertainty										
				+/-0.0393							
Radium-228			U	0.0368	pCi/g				MXR1	05/03/12	10:16
	Uncertainty			+/-0.0573							
Ruthenium-106			U	0.011	pCi/g						
	Uncertainty			+/-0.105							
Silver-110m			U	0.00309	pCi/g						
	Uncertainty			+/-0.0209							
Sodium-22			U	-0.00815	pCi/g						
	Uncertainty			+/-0.0185							
Thallium-208			U	-0.00228	pCi/g						
	Uncertainty			+/-0.0217							
Thorium-234			U	0.299	pCi/g						
	Uncertainty			+/-1.63							
Tin-113			U	-0.00743	pCi/g						
	Uncertainty			+/-0.0222							
Uranium-235			U	-0.0429	pCi/g						
	Uncertainty			+/-0.0933							
Uranium-238			U	0.299	pCi/g						
	Uncertainty			+/-1.63							
Yttrium-88			U	0.0104	pCi/g						
	Uncertainty			+/-0.0197							
Zinc-65			U	0.000402	pCi/g						
	Uncertainty			+/-0.0382							
Zirconium-95			U	-0.00447	pCi/g						
	Uncertainty			+/-0.027							

Notes:

The Qualifiers in this report are defined as follows:

- ** Analyte is a surrogate compound
- < Result is less than value reported
- > Result is greater than value reported
- A The TIC is a suspected aldol-condensation product
- B For General Chemistry and Organic analysis the target analyte was detected in the associated blank.
- BD Results are either below the MDC or tracer recovery is low
- C Analyte has been confirmed by GC/MS analysis
- D Results are reported from a diluted aliquot of the sample
- F Estimated Value
- H Analytical holding time was exceeded
- J Value is estimated
- K Analyte present. Reported value may be biased high. Actual value is expected to be lower.

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QC Summary

Workorder: 302440

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Parname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
L		Analyte present. Reported value may be biased low. Actual value is expected to be higher.									
M		M if above MDC and less than LLD									
M		Matrix Related Failure									
N/A		RPD or %Recovery limits do not apply.									
N1		See case narrative									
ND		Analyte concentration is not detected above the detection limit									
NJ		Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier									
Q		One or more quality control criteria have not been met. Refer to the applicable narrative or DER.									
R		Sample results are rejected									
U		Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.									
UI		Gamma Spectroscopy--Uncertain identification									
UJ		Gamma Spectroscopy--Uncertain identification									
UL		Not considered detected. The associated number is the reported concentration, which may be inaccurate due to a low bias.									
X		Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier									
Y		QC Samples were not spiked with this compound									
^		RPD of sample and duplicate evaluated using +/-RL. Concentrations are <5X the RL. Qualifier Not Applicable for Radiochemistry.									
h		Preparation or preservation holding time was exceeded									

N/A indicates that spike recovery limits do not apply when sample concentration exceeds spike conc. by a factor of 4 or more.

^ The Relative Percent Difference (RPD) obtained from the sample duplicate (DUP) is evaluated against the acceptance criteria when the sample is greater than five times (5X) the contract required detection limit (RL). In cases where either the sample or duplicate value is less than 5X the RL, a control limit of +/- the RL is used to evaluate the DUP result.

* Indicates that a Quality Control parameter was not within specifications.

For PS, PSD, and SDILT results, the values listed are the measured amounts, not final concentrations.

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless qualified on the QC Summary.

Alpha Spectroscopy Raw Data

Batch# 1206429 Product: U Date: 5/3/12

Criteria:	Yes	No	Comments
Sample Solids are less than or equal to 100 mg for GAB.			N/A
Samples have been blank corrected (if required). Blank correction reported included (if required).			N/A
If activity less than 10x MDA/MDC, error is less than or equal to 150% of sample activity. If greater than 10* MDA/ MDC, error is 40% or less. If below the MDA/ MDC, error is okay.	/		
Instrument source check is within limits.	/		
Instrument bkg check is within limits.	/		
Method RDL/ LLD has been met.	/		
If duplicate activities are: Less than 5* MDA/ MDC, then RPD is 100% or less, If greater 5* MDA/ MDC, then RPD 20% or less, If below the MDA/ MDC, the RPD is 0%, Or meets the client's required RER acceptance criteria.	/		
Tracer yield is 15-125% . Carrier yield 25-125%. (Or meets the client's contract acceptance criteria).	/		
Method blank is less than the RDL/ LLD. (If rad samples, < 5% of lowest activity)	/		
Sample was run within hold time.	/		
Sample was correctly preserved if required.			N/A
Smears Taken for Radioactive batches.			N/A
Method Spike and LCS are within 75-125% (or meets the client's contract acceptance criteria).	/		
No blank spaces on data forms. All line outs initialed and dated. No transcription errors are apparent.	/		
Aux data is correct.			N/A
Client Special requirements page has been checked.	/		
Raw Data and/ or spectrum are included and properly stasured.	/		
MS, LCS, and Duplicate RPD/RER values uploaded to LIMS and values verified	/		
Hit notification complete (if necessary)			N/A
Batch entered into Case Narrative.	/		
Batch Data Exception Reports (DER) completed, if applicable.	✓		N/A ^{AD 5/3/12} DER# 1076210
Batch Data Exception Reports (DER) second reviewed. Disposition verified to be completed.	✓		N/A DER# 1076210
Aliquot Correction completed if required.			N/A
Review sample historical results if available (If REMF, results above MDC have been verified by historical results, recount or re-analysis.)	/		

Primary Review Performed By: Denise Smalls 5/3/12 Qua 5/7/12

Secondary Review Performed By: Jessie Davis 05/08/12

5/9
CBZA

Uranium Que Sheet

07-MAY-12

Que sheet rechecked for clarity. JDS/SLA

Batch #: 1206429 Analyst: PRO First Client Due Date: 09-MAY-12 Internal Due Date: 03-MAY-12
 Tracer Isotope: U-232/U-236 Tracer Code: 1444-L Expiration Date: 2/9/13 Vol: 0.1ml
 LCS Isotope: U-238 LCS Code: 1476-f Expiration Date: 2/9/13 Vol: 0.1ml
 Spike Isotope: U-238 Spike Code: 1476-f Expiration Date: 2/9/13 Vol: 0.1ml
 Prep Date: 4/26/12 Initials: JCH Pipet ID: 181008E Balance ID: 50410222 Witness: HAKB 4/26/12

Sample ID	Client Description	Type	Hazard Code	Min CRDL	Matrix	Client	Collection Date	Pos.	Label #	Wet/Dry Aliquot (g/l/l)	U Det #
302440002-3	UNC-FSS-DR-002	SAMPLE		1 pCi/g	SOIL	CBRA015	20-FEB-12	1	1	0.110	6
302440005-3	UNC-FSS-LDA-013	SAMPLE		1 pCi/g	SOIL	CBRA015	17-FEB-12	2	2	0.103	7
302440008-3	UNC-FSS-XY-019	SAMPLE		1 pCi/g	SOIL	CBRA015	03-JAN-12	3	3	0.102	168
302440008-4	UNC-FSS-XY-019	SAMPLE		1 pCi/g	SOIL	CBRA015	03-JAN-12	4	4	0.119	9
1202642487-1	MB for batch 1206429	MB		UCF pCi/g to pCi	SOIL	QC ACCOUNT	17-FEB-12	5	5	0.104	10
1202642488-3	UNC-FSS-LDA-013(302440005DUP)	DUP		1 pCi/g	SOIL	QC ACCOUNT	17-FEB-12	6	6	0.119	11
1202642489-3	UNC-FSS-LDA-013(302440005MS)	MS		1 pCi/g	SOIL	QC ACCOUNT	17-FEB-12	7	7	0.119	12
1202642490-1	LCS for batch 1206429	LCS		UCF pCi/g to pCi	SOIL	QC ACCOUNT		8	8		

JDS/SLA

NO SLA

Choose SOP used: GE-RAD-A-011

Solid Sample Dissolution by: LEACH or DIGESTION
 Circle One

JDS/SLA

Data Reviewed By:

GEL Laboratories LLC
ALPHA SPECTROSCOPY REPORT

BATCH NUMBER : 1206429
 SAMPLE ID : S0302440008_UU
 SAMPLE QTY : 0.102 G +/-3.166 %
 SAMPLE DATE : 03-Jan-2012 00:00:00
 ANALYST : JXD2
 % YIELD : 85.9 +/-6.789 %

CHAMBER : 168
 DETECTOR S/N : 72547
 AVERAGE %EFFICIENCY : 26.4250
 AVERAGE %EFF ERROR : 0.5102
 COUNT DATE : 03-May-2012 12:51:17
 ELAPSED LIVE TIME(SEC) : 30300.00

LIB FILE : UU
 BKG FILE : B168.CNF;413
 BKG DATE : 29-Apr-2012
 BKG LIVE TIME(SEC) : 60000.00
 EFF FILE : W168.CNF;121
 CAL DATE : 24-Apr-2012

TRACER ID : 1444-L
 NUCLIDE : U-232
 NOMINAL : 4.8946E+00 dpm
 RESULTS : 4.2024E+00 dpm

NUCLIDE ACTIVITY SUMMARY

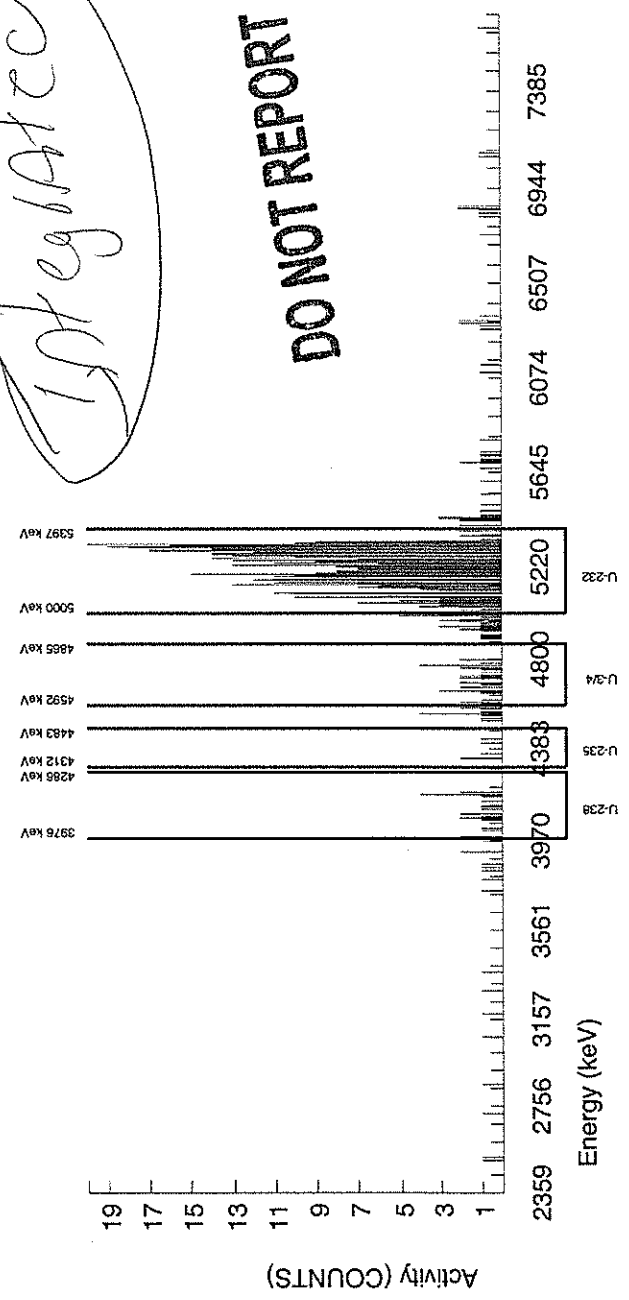
NUCLIDE	LIBRARY ENERGY	PEAK ENERGY	PEAK FWHM	GROSS AREA	NET AREA	BKG AREA	BKG SDEV	%ABUN	ACTIVITY pCi/G	TPU TPU-SIGMA	MDA pCi/G	Lc pCi/G	UNC pCi/G
U-232	5302.100	5216.900	216.989	567.000	558.920	8.080	2.8425	100.000	2.16E+01	1.96-SIGMA 3.74E+00	5.60E-01	2.22E-01	1.81E+00
U-234	4763.020	4709.404	113.426	34.000	28.748	3.535	1.8802	100.000	1.11E+00	4.72E-01	4.08E-01	1.46E-01	4.41E-01
U-235	4391.000	4386.887	4.932	5.000	5.000	0.000	0.0000	80.900	2.38E-01	2.12E-01	1.43E-01	0.00E+00	2.09E-01
U-238	4184.730	4109.245	5.753	25.000	23.485	1.515	1.2309	100.000	9.05E-01	4.07E-01	3.07E-01	9.57E-02	3.83E-01

NOTES:

* Correction made to the following net area due to tracer impurity:
U-3/4

Integrated

DO NOT REPORT



GEL Laboratories LLC
ALPHA SPECTROSCOPY REPORT

Instrument SOP: GL-RAD-I-009
Analytical SOP: GL-RAD-A-011

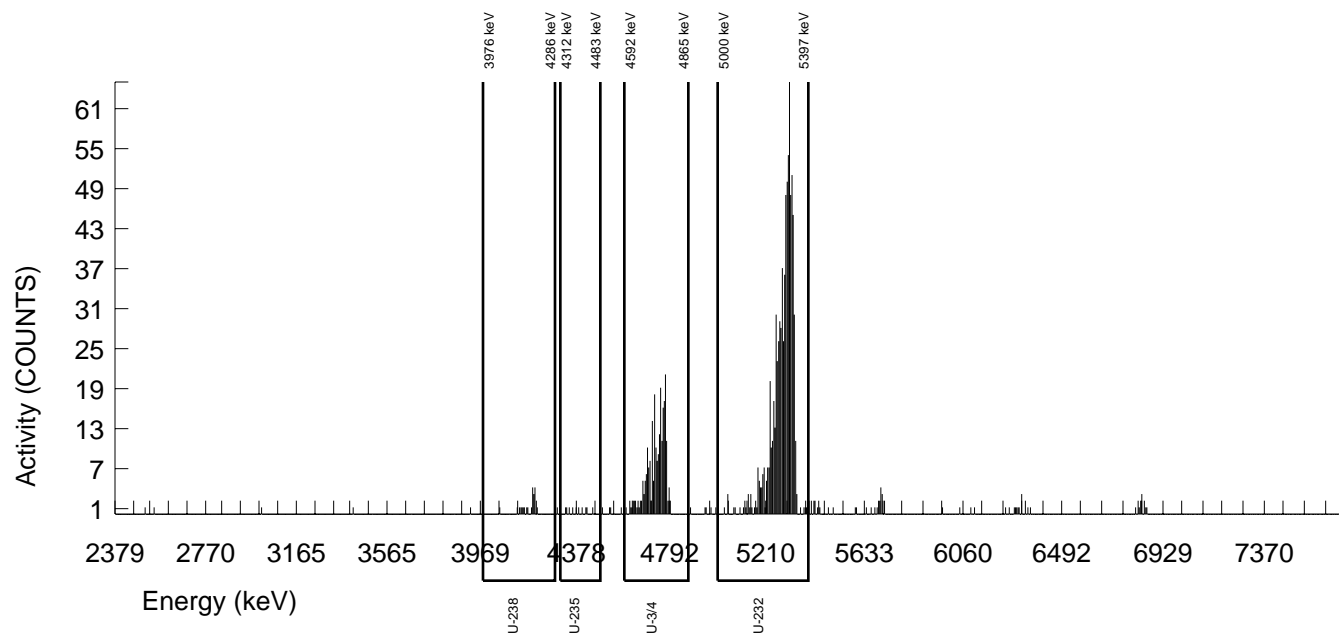
BATCH NUMBER : 1206429 SAMPLE ID : S0302440002_UU SAMPLE QTY : 0.110 G +/-2.937 % SAMPLE DATE : 20-Feb-2012 00:00:00 ANALYST : JXD2 % YIELD : 97.4 +/-6.377 %	CHAMBER : 006 DETECTOR S/N : 79455 AVERAGE %EFFICIENCY : 32.7276 AVERAGE %EFF ERROR : 0.6290 COUNT DATE : 28-Apr-2012 11:31:03 ELAPSED LIVE TIME(SEC) : 30300.00	LIB FILE : UU BKG FILE : B006.CNF;1354 BKG DATE : 22-Apr-2012 BKG LIVE TIME(SEC) : 59999.99 EFF FILE : W006.CNF;427 CAL DATE : 04-Apr-2012
TRACER ID : 1444-L NUCLIDE : U-232 NOMINAL : 4.8881E+00 dpm RESULTS : 4.7613E+00 dpm		

NUCLIDE ACTIVITY SUMMARY

NUCLIDE	LIBRARY ENERGY	PEAK ENERGY	PEAK FWHM	GROSS AREA	NET AREA	BKG AREA	BKG StDev	%ABUN	ACTIVITY pCi/G	TPU 1.96-SIGMA	MDA pCi/G	Lc pCi/G	UNC pCi/G
U-232	5302.100	5285.691	50.154	792.000	785.435	6.565	2.5622	100.000	2.00E+01	3.18E+00	3.40E-01	1.32E-01	1.41E+00
U-3/4	4763.020	4735.346	59.928	244.000	238.557	3.030	1.7407	100.000	6.07E+00	1.16E+00	2.55E-01	8.94E-02	7.77E-01
U-235	4391.000	4387.630	140.754	11.000	10.495	0.505	0.7106	80.900	3.30E-01	2.12E-01	1.85E-01	4.51E-02	2.07E-01
U-238	4184.730	4179.926	15.370	22.000	22.000	0.000	0.0000	100.000	5.60E-01	2.47E-01	7.63E-02	0.00E+00	2.34E-01

NOTES:

* Correction made to the following net area due to tracer impurity:
U-3/4



GEL Laboratories LLC
ALPHA SPECTROSCOPY REPORT

Instrument SOP: GL-RAD-I-009
Analytical SOP: GL-RAD-A-011

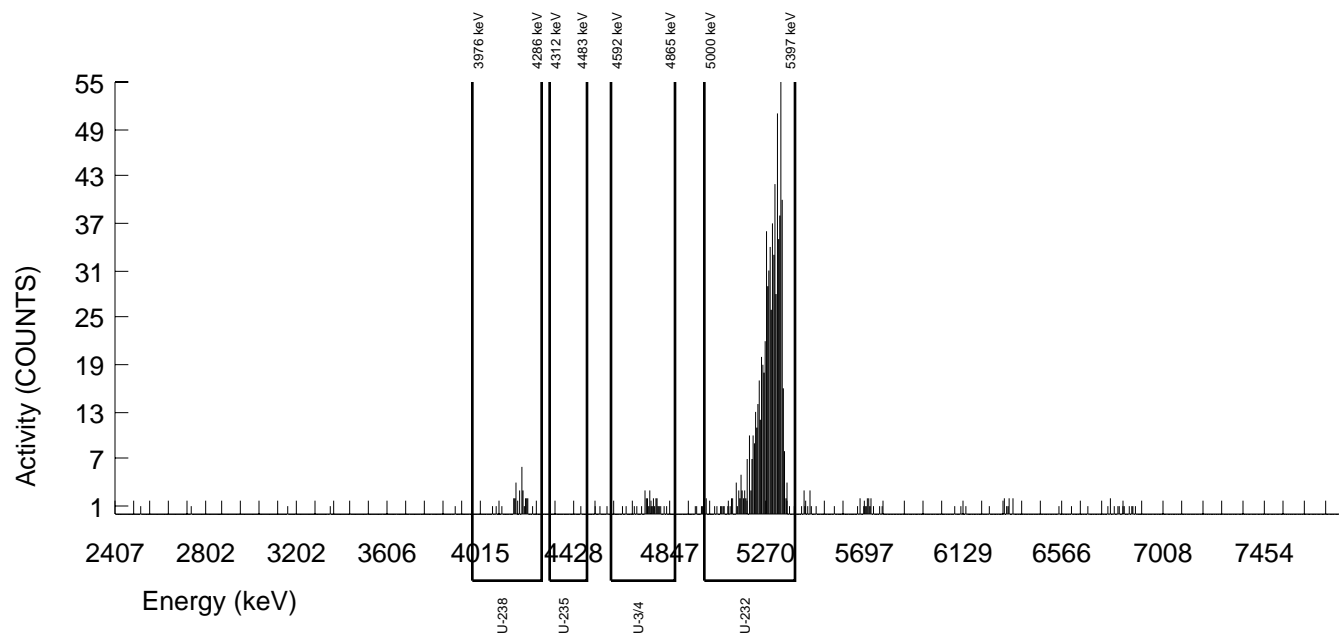
BATCH NUMBER : 1206429 SAMPLE ID : S0302440005_UU SAMPLE QTY : 0.103 G +/-3.136 % SAMPLE DATE : 17-Feb-2012 00:00:00 ANALYST : JXD2 % YIELD : 98.2 +/-6.410 %	CHAMBER : 007 DETECTOR S/N : 50-066Z1 AVERAGE %EFFICIENCY : 31.7446 AVERAGE %EFF ERROR : 0.6105 COUNT DATE : 28-Apr-2012 11:31:04 ELAPSED LIVE TIME(SEC) : 30299.99	LIB FILE : UU BKG FILE : B007.CNF;1351 BKG DATE : 22-Apr-2012 BKG LIVE TIME(SEC) : 59999.99 EFF FILE : W007.CNF;381 CAL DATE : 04-Apr-2012
TRACER ID : 1444-L NUCLIDE : U-232 NOMINAL : 4.8885E+00 dpm RESULTS : 4.7995E+00 dpm		

NUCLIDE ACTIVITY SUMMARY

NUCLIDE	LIBRARY ENERGY	PEAK ENERGY	PEAK FWHM	GROSS AREA	NET AREA	BKG AREA	BKG StDev	%ABUN	ACTIVITY pCi/G	TPU 1.96-SIGMA	MDA pCi/G	Lc pCi/G	UNC pCi/G
U-232	5302.100	5287.028	69.339	779.000	767.890	11.110	3.3332	100.000	2.14E+01	3.45E+00	4.58E-01	1.87E-01	1.53E+00
U-3/4	4763.020	4760.582	53.987	30.000	21.581	6.060	2.4617	100.000	6.00E-01	3.14E-01	3.59E-01	1.38E-01	3.02E-01
U-235	4391.000	4459.643	4.908	1.000	-1.020	2.020	1.4213	80.900	-3.50E-02	9.58E-02	3.00E-01	9.85E-02	9.57E-02
U-238	4184.730	4187.368	31.901	31.000	25.950	5.050	2.2472	100.000	7.21E-01	3.32E-01	3.35E-01	1.26E-01	3.15E-01

NOTES:

* Correction made to the following net area due to tracer impurity:
U-3/4



GEL Laboratories LLC
ALPHA SPECTROSCOPY REPORT

Instrument SOP: GL-RAD-I-009
Analytical SOP: GL-RAD-A-011

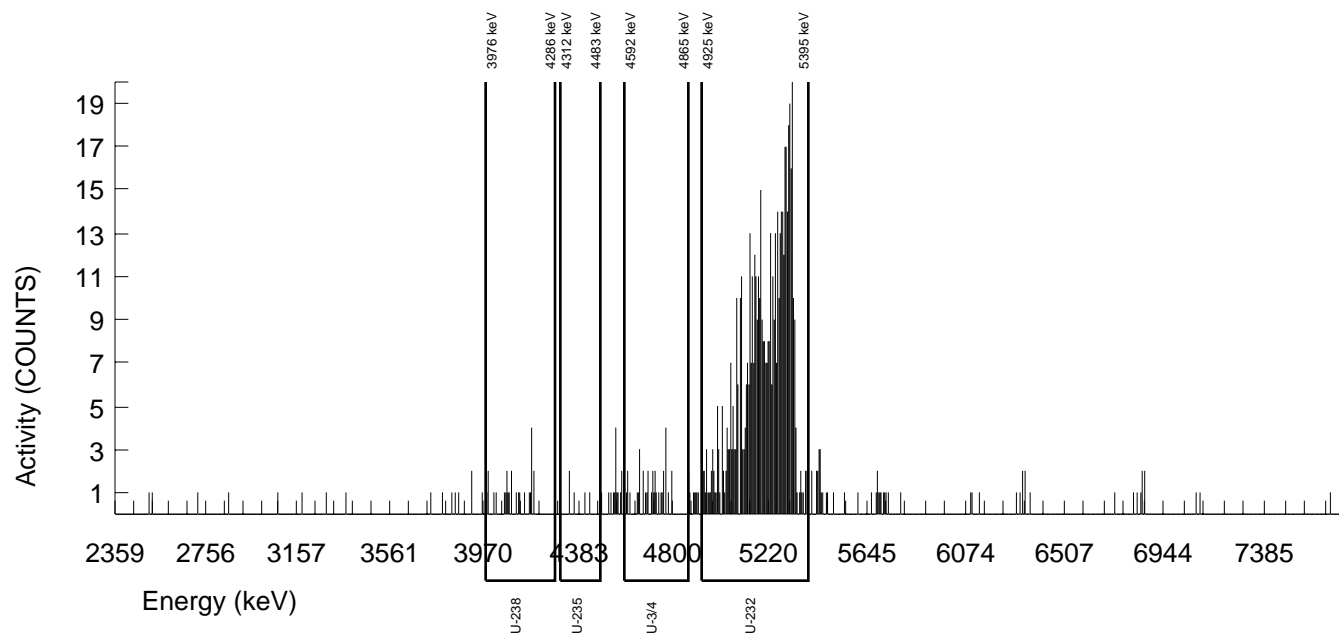
BATCH NUMBER : 1206429 SAMPLE ID : S0302440008_UU SAMPLE QTY : 0.102 G +/-3.166 % SAMPLE DATE : 03-Jan-2012 00:00:00 ANALYST : JXD2 % YIELD : 89.0 +/-6.742 %	CHAMBER : 168 DETECTOR S/N : 72547 AVERAGE %EFFICIENCY : 26.4250 AVERAGE %EFF ERROR : 0.5102 COUNT DATE : 03-May-2012 12:51:17 ELAPSED LIVE TIME(SEC) : 30300.00	LIB FILE : UU BKG FILE : B168.CNF;413 BKG DATE : 29-Apr-2012 BKG LIVE TIME(SEC) : 60000.00 EFF FILE : W168.CNF;121 CAL DATE : 24-Apr-2012
TRACER ID : 1444-L NUCLIDE : U-232 NOMINAL : 4.8946E+00 dpm RESULTS : 4.3565E+00 dpm		

NUCLIDE ACTIVITY SUMMARY

NUCLIDE	LIBRARY ENERGY	PEAK ENERGY	PEAK FWHM	GROSS AREA	NET AREA	BKG AREA	BKG StDev	%ABUN	ACTIVITY pCi/G	TPU 1.96-SIGMA	MDA pCi/G	Lc pCi/G	UNC pCi/G
U-232	5302.100	5207.767	216.989	588.000	579.415	8.585	2.9300	100.000	2.16E+01	3.71E+00	5.53E-01	2.21E-01	1.78E+00
U-3/4	4763.020	4709.404	113.426	34.000	28.685	3.535	1.8802	100.000	1.07E+00	4.54E-01	3.94E-01	1.41E-01	4.25E-01
U-235	4391.000	4386.887	4.932	5.000	5.000	0.000	0.0000	80.900	2.30E-01	2.04E-01	1.38E-01	0.00E+00	2.01E-01
U-238	4184.730	4109.245	5.753	25.000	23.485	1.515	1.2309	100.000	8.73E-01	3.93E-01	2.96E-01	9.24E-02	3.70E-01

NOTES:

* Correction made to the following net area due to tracer impurity:
U-3/4



GEL Laboratories LLC
ALPHA SPECTROSCOPY REPORT

Instrument SOP: GL-RAD-I-009
Analytical SOP: GL-RAD-A-011

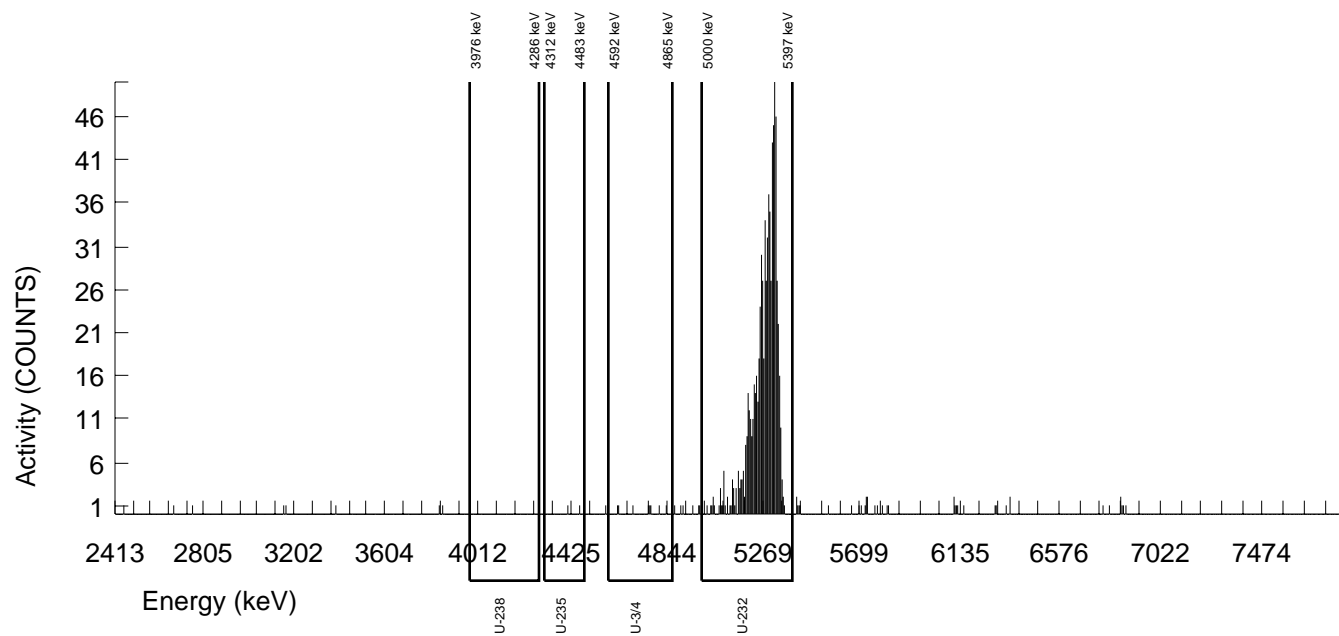
BATCH NUMBER : 1206429 SAMPLE ID : S1202642487_UU SAMPLE QTY : 0.119 G +/-2.715 % SAMPLE DATE : 26-Apr-2012 00:00:00 ANALYST : JXD2 % YIELD : 87.2 +/-6.426 %	CHAMBER : 009 DETECTOR S/N : 72528 AVERAGE %EFFICIENCY : 35.0851 AVERAGE %EFF ERROR : 0.6734 COUNT DATE : 28-Apr-2012 11:31:04 ELAPSED LIVE TIME(SEC) : 30299.99	LIB FILE : UU BKG FILE : B009.CNF;1342 BKG DATE : 22-Apr-2012 BKG LIVE TIME(SEC) : 59999.99 EFF FILE : W009.CNF;390 CAL DATE : 04-Apr-2012
TRACER ID : 1444-L NUCLIDE : U-232 NOMINAL : 4.8793E+00 dpm RESULTS : 4.2525E+00 dpm		

NUCLIDE ACTIVITY SUMMARY

NUCLIDE	LIBRARY ENERGY	PEAK ENERGY	PEAK FWHM	GROSS AREA	NET AREA	BKG AREA	BKG StDev	%ABUN	ACTIVITY pCi/G	TPU 1.96-SIGMA	MDA pCi/G	Lc pCi/G	UNC pCi/G
U-232	5302.100	5281.597	69.138	763.000	753.405	9.595	3.0976	100.000	1.85E+01	2.94E+00	3.80E-01	1.53E-01	1.33E+00
U-3/4	4763.020	4746.406	204.014	8.000	0.130	5.555	2.3569	100.000	3.20E-03	1.40E-01	3.07E-01	1.17E-01	1.40E-01
U-235	4391.000	4441.061	53.432	2.000	1.495	0.505	0.7106	80.900	4.53E-02	8.94E-02	1.78E-01	4.35E-02	8.92E-02
U-238	4184.730	4130.722	0.000	0.000	0.000	0.000	0.0000	100.000	0.00E+00	4.82E-02	7.35E-02	0.00E+00	4.80E-02

NOTES:

* Correction made to the following net area due to tracer impurity:
U-3/4



GEL Laboratories LLC
ALPHA SPECTROSCOPY REPORT

Instrument SOP: GL-RAD-I-009
Analytical SOP: GL-RAD-A-011

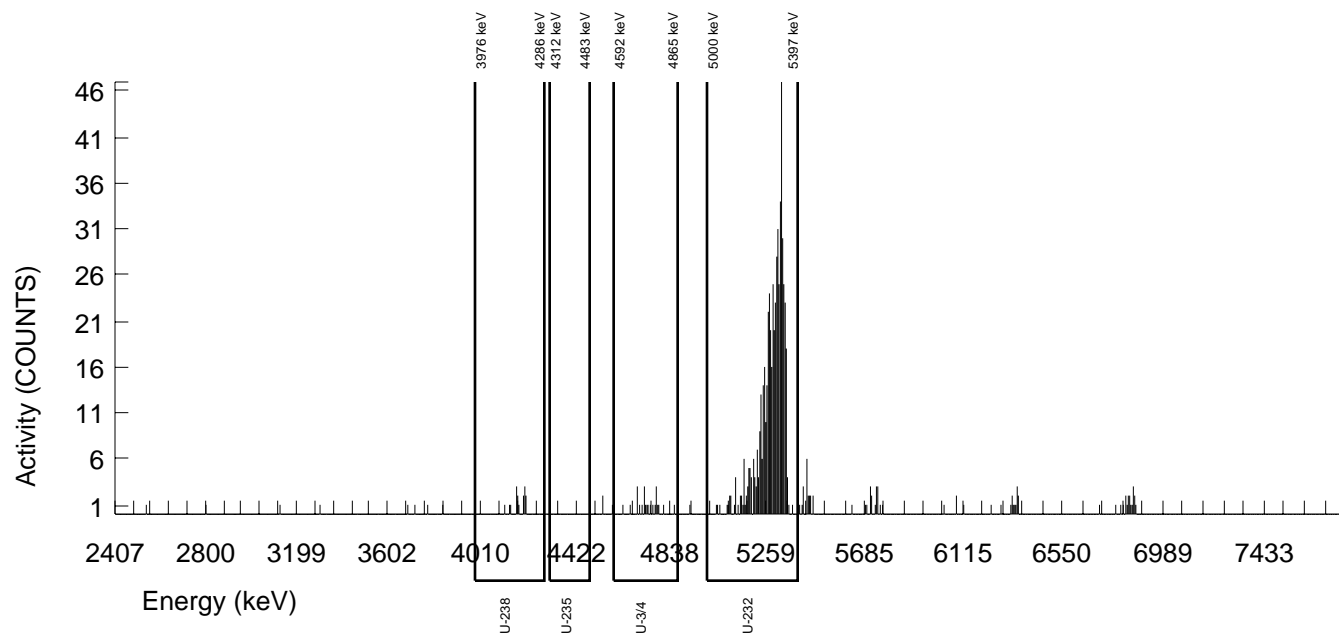
BATCH NUMBER : 1206429 SAMPLE ID : S1202642488_UU SAMPLE QTY : 0.104 G +/-3.106 % SAMPLE DATE : 17-Feb-2012 00:00:00 ANALYST : JXD2 % YIELD : 73.2 +/-6.822 %	CHAMBER : 010 DETECTOR S/N : 72529 AVERAGE %EFFICIENCY : 30.7378 AVERAGE %EFF ERROR : 0.5915 COUNT DATE : 28-Apr-2012 11:31:04 ELAPSED LIVE TIME(SEC) : 30299.99	LIB FILE : UU BKG FILE : B010.CNF;1360 BKG DATE : 22-Apr-2012 BKG LIVE TIME(SEC) : 59999.99 EFF FILE : W010.CNF;396 CAL DATE : 04-Apr-2012
TRACER ID : 1444-L NUCLIDE : U-232 NOMINAL : 4.8885E+00 dpm RESULTS : 3.5783E+00 dpm		

NUCLIDE ACTIVITY SUMMARY

NUCLIDE	LIBRARY ENERGY	PEAK ENERGY	PEAK FWHM	GROSS AREA	NET AREA	BKG AREA	BKG StDev	%ABUN	ACTIVITY pCi/G	TPU 1.96-SIGMA	MDA pCi/G	Lc pCi/G	UNC pCi/G
U-232	5302.100	5286.433	63.647	569.000	554.355	14.645	3.8269	100.000	2.12E+01	3.68E+00	7.05E-01	2.95E-01	1.80E+00
U-3/4	4763.020	4743.633	84.455	23.000	12.712	8.585	2.9300	100.000	4.85E-01	3.85E-01	5.65E-01	2.25E-01	3.78E-01
U-235	4391.000	4397.175	0.000	0.000	-2.525	2.525	1.5890	80.900	-1.19E-01	1.39E-01	4.44E-01	1.51E-01	1.39E-01
U-238	4184.730	4178.996	42.839	16.000	11.455	4.545	2.1319	100.000	4.37E-01	3.26E-01	4.42E-01	1.64E-01	3.20E-01

NOTES:

* Correction made to the following net area due to tracer impurity:
U-3/4



GEL Laboratories LLC
ALPHA SPECTROSCOPY REPORT

Instrument SOP: GL-RAD-I-009
Analytical SOP: GL-RAD-A-011

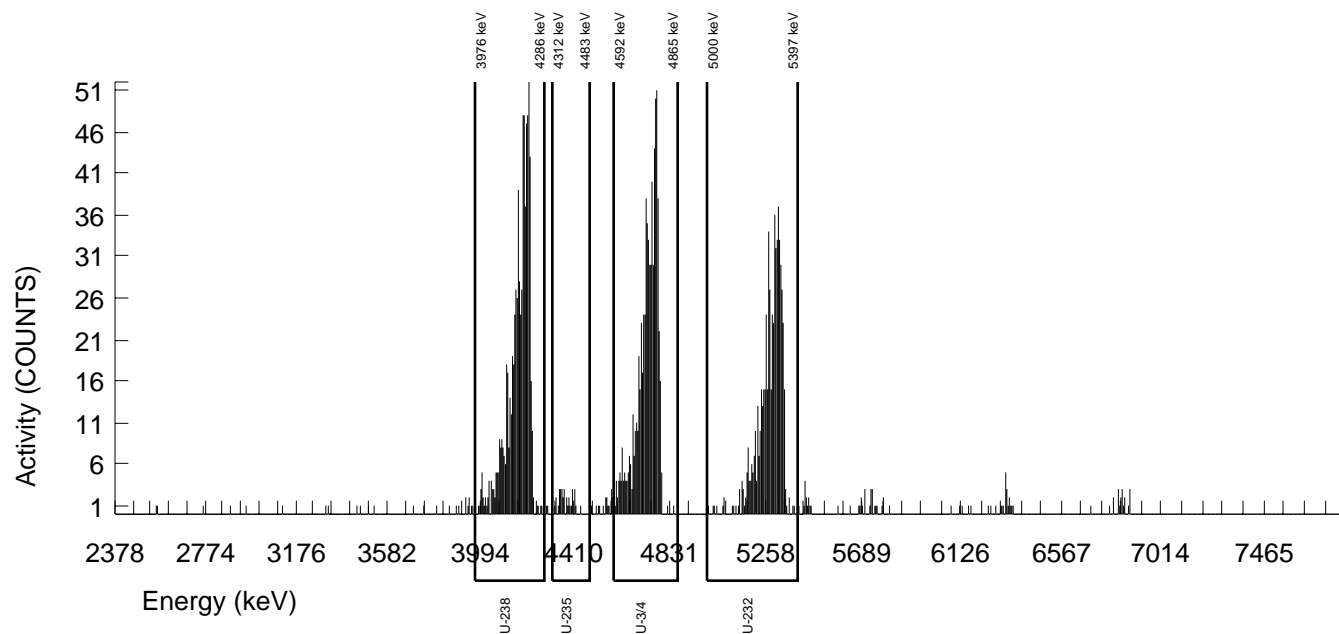
BATCH NUMBER : 1206429 SAMPLE ID : S1202642489_UU SAMPLE QTY : 0.119 G +/-2.715 % SAMPLE DATE : 17-Feb-2012 00:00:00 ANALYST : JXD2 % YIELD : 85.9 +/-6.737 %	CHAMBER : 011 DETECTOR S/N : 72531 AVERAGE %EFFICIENCY : 27.7800 AVERAGE %EFF ERROR : 0.5357 COUNT DATE : 28-Apr-2012 11:31:04 ELAPSED LIVE TIME(SEC) : 30299.99	LIB FILE : UU BKG FILE : B011.CNF;1352 BKG DATE : 22-Apr-2012 BKG LIVE TIME(SEC) : 59999.99 EFF FILE : W011.CNF;388 CAL DATE : 09-Apr-2012
TRACER ID : 1444-L NUCLIDE : U-232 NOMINAL : 4.8885E+00 dpm RESULTS : 4.1987E+00 dpm	MS ID : 1476-F NUCLIDE : U-238 NOMINAL (pCi/G) : 2.2428E+01 % RECOVERY : 101.904	

NUCLIDE ACTIVITY SUMMARY

NUCLIDE	LIBRARY ENERGY	PEAK ENERGY	PEAK FWHM	GROSS AREA	NET AREA	BKG AREA	BKG StDev	%ABUN	ACTIVITY pCi/G	TPU 1.96-SIGMA	MDA pCi/G	Lc pCi/G	UNC pCi/G
U-232	5302.100	5284.929	74.694	601.000	587.870	13.130	3.6235	100.000	1.85E+01	3.12E+00	5.55E-01	2.30E-01	1.52E+00
U-3/4	4763.020	4741.160	57.467	704.000	689.064	13.130	3.6235	100.000	2.16E+01	3.59E+00	5.54E-01	2.30E-01	1.64E+00
U-235	4391.000	4380.027	84.915	33.000	31.485	1.515	1.2309	80.900	1.22E+00	4.78E-01	3.09E-01	9.65E-02	4.42E-01
U-238	4184.730	4170.481	63.812	753.000	750.475	2.525	1.5890	100.000	2.36E+01	3.86E+00	2.96E-01	1.01E-01	1.69E+00

NOTES:

* Correction made to the following net area due to tracer impurity:
U-3/4



GEL Laboratories LLC
ALPHA SPECTROSCOPY REPORT

Instrument SOP: GL-RAD-I-009
Analytical SOP: GL-RAD-A-011

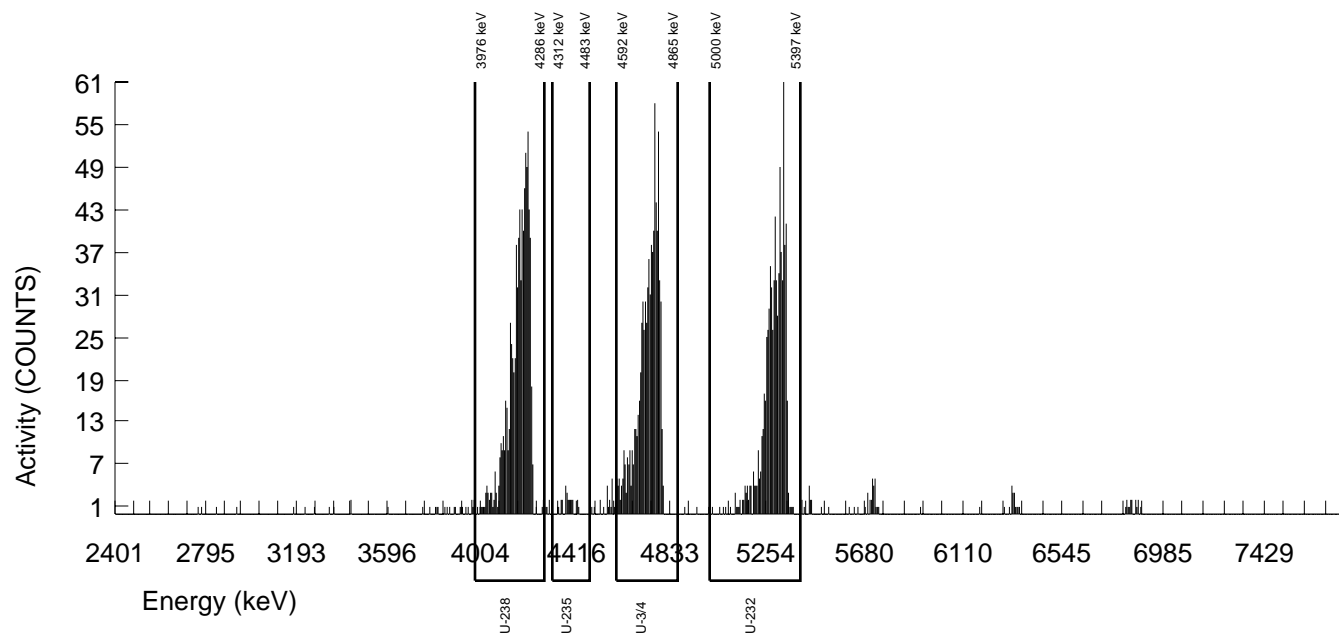
BATCH NUMBER : 1206429 SAMPLE ID : S1202642490_UU SAMPLE QTY : 0.119 G +/-2.715 % SAMPLE DATE : 26-Apr-2012 00:00:00 ANALYST : JXD2 % YIELD : 99.0 +/-6.435 %	CHAMBER : 012 DETECTOR S/N : 80054 AVERAGE %EFFICIENCY : 30.6836 AVERAGE %EFF ERROR : 0.5905 COUNT DATE : 28-Apr-2012 11:31:04 ELAPSED LIVE TIME(SEC) : 30299.99	LIB FILE : UU BKG FILE : B012.CNF;1356 BKG DATE : 22-Apr-2012 BKG LIVE TIME(SEC) : 59999.99 EFF FILE : W012.CNF;381 CAL DATE : 04-Apr-2012
TRACER ID : 1444-L NUCLIDE : U-232 NOMINAL : 4.8793E+00 dpm RESULTS : 4.8303E+00 dpm	LCS ID : 1476-F NUCLIDE : U-238 NOMINAL (pCi/G) : 2.2428E+01 % RECOVERY : 91.536	

NUCLIDE ACTIVITY SUMMARY

NUCLIDE	LIBRARY ENERGY	PEAK ENERGY	PEAK FWHM	GROSS AREA	NET AREA	BKG AREA	BKG StDev	%ABUN	ACTIVITY pCi/G	TPU 1.96-SIGMA	MDA pCi/G	Lc pCi/G	UNC pCi/G
U-232	5302.100	5290.094	69.325	758.000	748.405	9.595	3.0976	100.000	1.85E+01	2.94E+00	3.83E-01	1.54E-01	1.34E+00
U-3/4	4763.020	4739.075	75.288	804.000	796.146	5.555	2.3569	100.000	1.96E+01	3.11E+00	3.09E-01	1.17E-01	1.37E+00
U-235	4391.000	4383.826	12.231	28.000	26.485	1.515	1.2309	80.900	8.08E-01	3.41E-01	2.43E-01	7.58E-02	3.21E-01
U-238	4184.730	4172.760	64.867	836.000	831.960	4.040	2.0100	100.000	2.05E+01	3.23E+00	2.74E-01	1.00E-01	1.40E+00

NOTES:

* Correction made to the following net area due to tracer impurity:
U-3/4



Continuing Calibration Data

Bank 1 through bank 25 (detectors 1 through 208)

DETECTORS NOT LISTED HAVE PASSED ALL QUALITY ASSURANCE PARAMETERS

	Detector	Parameter	Flag
28-APR-2012	23	PSFWHM-5000	Below
28-APR-2012	23	PSENERGY-5000	Above
28-APR-2012	23	PSCENTRD-5000	Above
28-APR-2012	23	PSCTSS-5000	Below
28-APR-2012	27	PSENERGY-5000	Above
28-APR-2012	31	PSFWHM-5000	Below
28-APR-2012	31	PSCENTRD-5000	Below
28-APR-2012	32	PSFWHM-5000	Below
28-APR-2012	32	PSENERGY-5000	Above
28-APR-2012	32	PSCENTRD-5000	Below
28-APR-2012	32	PSCTSS-5000	Below
28-APR-2012	34	PSFWHM-5000	Below
28-APR-2012	34	PSENERGY-5000	Below
28-APR-2012	34	PSCENTRD-5000	Below
28-APR-2012	34	PSCTSS-5000	Below
28-APR-2012	35	PSFWHM-5000	Below
28-APR-2012	35	PSCENTRD-5000	Below
28-APR-2012	35	PSCTSS-5000	Below
28-APR-2012	69	PSENERGY-5000	Above
28-APR-2012	69	PSCENTRD-5000	Above
28-APR-2012	76	PSFWHM-5000	Below
28-APR-2012	76	PSENERGY-5000	Above
28-APR-2012	76	PSCENTRD-5000	Below
28-APR-2012	76	PSCTSS-5000	Below
28-APR-2012	77	PSFWHM-5000	Below
28-APR-2012	77	PSENERGY-5000	Above
28-APR-2012	77	PSCTSS-5000	Below
28-APR-2012	98	PSFWHM-5000	Below
28-APR-2012	98	PSCTSS-5000	Below
28-APR-2012	100	PSENERGY-5000	Above
28-APR-2012	100	PSCENTRD-5000	Above
28-APR-2012	105	PSFWHM-5000	Below
28-APR-2012	105	PSENERGY-5000	Below
28-APR-2012	105	PSCENTRD-5000	Below
28-APR-2012	105	PSCTSS-5000	Below

28-APR-2012	107	PSFWMH-5000	Below
28-APR-2012	107	PSCTSS-5000	Below
28-APR-2012	112	PSFWMH-5000	Below
28-APR-2012	112	PSENERGY-5000	Below
28-APR-2012	112	PSCTSS-5000	Below
28-APR-2012	192	PSENERGY-5000	Above
28-APR-2012	192	PSCENTRD-5000	Below
28-APR-2012	192	PSCTSS-5000	Below

The following detectors that may not have properly transferred to the QA file

28-APR-2012	191	may not have run since 28-APR-2012	} 33 HOUR COUNTS ON THESE DETECTORS. ALLIES NOT ABLE TO COUNT AVE TO LONG COUNT. <i>f/valin</i>
28-APR-2012	197	may not have run since 28-APR-2012	
28-APR-2012	198	may not have run since 28-APR-2012	

APPROVAL DATE: *4/28/12*

APPROVAL TIME: *0915*

APPROVED BY: *[Signature]*

PROCEDURE # GL-RAD-I-009

Report completed at 28-APR-2012 08:52:59.67

Bank 1 through bank 25 (detectors 1 through 208)

DETECTORS NOT LISTED HAVE PASSED ALL QUALITY ASSURANCE PARAMETERS

	Detector	Parameter	Flag
3-MAY-2012	23	PSFWHM-5000	Below
3-MAY-2012	23	PSENERGY-5000	Above
3-MAY-2012	23	PSCENTRD-5000	Above
3-MAY-2012	23	PSCTSS-5000	Below
3-MAY-2012	27	PSENERGY-5000	Above
3-MAY-2012	29	PSENERGY-5000	Above
3-MAY-2012	31	PSFWHM-5000	Below
3-MAY-2012	31	PSCENTRD-5000	Below
3-MAY-2012	32	PSFWHM-5000	Below
3-MAY-2012	32	PSENERGY-5000	Above
3-MAY-2012	32	PSCENTRD-5000	Below
3-MAY-2012	32	PSCTSS-5000	Below
3-MAY-2012	34	PSFWHM-5000	Below
3-MAY-2012	34	PSENERGY-5000	Below
3-MAY-2012	34	PSCENTRD-5000	Below
3-MAY-2012	34	PSCTSS-5000	Below
3-MAY-2012	35	PSFWHM-5000	Below
3-MAY-2012	35	PSENERGY-5000	Above
3-MAY-2012	35	PSCENTRD-5000	Below
3-MAY-2012	35	PSCTSS-5000	Below
3-MAY-2012	69	PSENERGY-5000	Above
3-MAY-2012	69	PSCENTRD-5000	Above
3-MAY-2012	76	PSFWHM-5000	Below
3-MAY-2012	76	PSENERGY-5000	Above
3-MAY-2012	76	PSCENTRD-5000	Below
3-MAY-2012	76	PSCTSS-5000	Below
3-MAY-2012	77	PSENERGY-5000	Above
3-MAY-2012	77	PSCENTRD-5000	Above
3-MAY-2012	77	PSCTSS-5000	Below
3-MAY-2012	98	PSFWHM-5000	Below
3-MAY-2012	98	PSCTSS-5000	Below
3-MAY-2012	100	PSENERGY-5000	Above
3-MAY-2012	100	PSCENTRD-5000	Above
3-MAY-2012	105	PSFWHM-5000	Below
3-MAY-2012	105	PSENERGY-5000	Below


3-MAY-2012	105	PSCENTRD-5000	Below
3-MAY-2012	105	PSCTSS-5000	Below
3-MAY-2012	107	PSFWM-5000	Below
3-MAY-2012	107	PSCTSS-5000	Below
3-MAY-2012	112	PSFWM-5000	Below
3-MAY-2012	112	PSENERGY-5000	Below
3-MAY-2012	112	PSCTSS-5000	Below
3-MAY-2012	121	PSENERGY-5000	Above
3-MAY-2012	192	PSFWM-5000	Below
3-MAY-2012	192	PSCENTRD-5000	Below
3-MAY-2012	192	PSCTSS-5000	Below

The following detectors that may not have properly transfered to the QA file

3-MAY-2012	183	may not have run since 3-MAY-2012	} out of service
3-MAY-2012	184	may not have run since 3-MAY-2012	

APPROVAL DATE: 5/3/12

APPROVAL TIME: 16:04

APPROVED BY: 

PROCEDURE # GL-RAD-I-009

Report completed at 3-MAY-2012 16:02:13.30

Runlogs

Instrument Run Log

Instrument Type: ALPHA SPECTROMETER

Batch ID: 1206429

Sample ID	Sample Type	Analyst	Instrument	Run Date	Status	Geometry	Calibration Date
302440002	SAMPLE	JXD2	1006	APR-28-12 11:31:03	DONE		04-APR-12 09:19
302440005	SAMPLE	JXD2	1007	APR-28-12 11:31:04	DONE		04-APR-12 09:19
302440008	SAMPLE	JXD2	1008	APR-28-12 11:31:04	DUSE		04-APR-12 09:19
1202642487	MB	JXD2	1009	APR-28-12 11:31:04	DONE		04-APR-12 09:19
1202642488	DUP	JXD2	1010	APR-28-12 11:31:04	DONE		04-APR-12 09:20
1202642489	MS	JXD2	1011	APR-28-12 11:31:04	DONE		10-APR-12 08:24
1202642490	LCS	JXD2	1012	APR-28-12 11:31:04	DONE		04-APR-12 09:20
302440008	SAMPLE	JXD2	1168	MAY-03-12 12:51:17	DONE		24-APR-12 15:24

Gamma Spectroscopy Raw Data

07-May-2012

Gamma Solid

Batch# 1203837

Product: CBRA

Date: 05/07/2012

Criteria:	Yes	No	Comments
Sample Solids are less than or equal to 100 mg for GAB.			n/a
Samples have been blank corrected (if required). Blank correction reported included (if required).			n/a
If activity less than 10x MDA/MDC, error is less than or equal to 150% of sample activity. If greater than 10* MDA/ MDC, error is 40% or less. If below the MDA/ MDC, error is okay.	✓		
Instrument source check is within limits.	✓		
Instrument bkg check is within limits.	✓		
Method RDL/ LLD has been met.	✓		
If duplicate activities are: Less than 5* MDA/ MDC, then RPD is 100% or less, If greater 5* MDA/ MDC, then RPD 20% or less, If below the MDA/ MDC, the RPD is 0%, Or meets the client's required RER acceptance criteria.	✓		
Tracer yield is 15-125% . Carrier yield 25-125%. (Or meets the client's contract acceptance criteria).			n/a
Method blank is less than the RDL/ LLD. (If rad samples, < 5% of lowest activity)	✓		
Sample was run within hold time.	✓		
Sample was correctly preserved if required.	✓		
Smears Taken for Radioactive batches.			n/a
Method Spike and LCS are within 75-125% (or meets the client's contract acceptance criteria).	✓		
No blank spaces on data forms. All line outs initialed and dated. No transcription errors are apparent.	✓		
Aux data is correct.	✓		
Client Special requirements page has been checked.	✓		
Raw Data and/ or spectrum are included and properly stasured.	✓		
MS, LCS, and Duplicate RPD/RER values uploaded to LIMS and values verified	✓		
Hit notification complete (if necessary)	✓		
Batch entered into Case Narrative.	✓		
Batch Data Exception Reports (DER) completed, if applicable.			n/a
Batch Data Exception Reports (DER) second reviewed. Disposition verified to be completed.			n/a
Aliquot Correction completed if required.			n/a
Review sample historical results if available (If REMP, results above MDC have been verified by historical results, recount or re-analysis.)	✓		

Primary Review Performed By: *[Signature]* 5/7/12

Secondary Review Performed By: *[Signature]* 5/7/12

Gamma Spec Queue Sheet

1.6. = 5/3/12

Batch #: 1203837 Analyst: MXRI First Client Due Date: 05/09/2012 Internal Due Date: 04/28/2012
 Gamma LCS Isotope: Mixed Gamma LCS Code: 1364 Expiration Date: 4/17/12 Vol: 10
 Initials: ML Prep Date: 4/12/12 Library: SOLID Balance ID: De

Sample ID	Client Description / Container ID	Type	Hazard Code	Client	Matrix	Collect Date	Geometry	Aliquot (1 g/F)	Detector	Sealing Date/Time (if Applicable)
302440001-1	UNC-FSS-XY-013	SAMPLE		CBRA015	SOIL	14-MAR-12 10:45:00 <u>RF</u>	PLAN	166.68 g	8	4/12/12
302440002-1	UNC-FSS-DR-002	SAMPLE		CBRA015	SOIL	20-FEB-12 12:02:00 <u>RF</u>		177.19 g	12	
302440003-1	UNC-FSS-DR-005	SAMPLE		CBRA015	SOIL	20-FEB-12 12:15:00 <u>RF</u>		174.8 g	2	
302440004-1	UNC-FSS-LDA-007	SAMPLE		CBRA015	SOIL	17-FEB-12 13:20:00 <u>RF</u>		173.11 g	33	
302440005-1	UNC-FSS-LDA-013	SAMPLE		CBRA015	SOIL	17-FEB-12 01:48:00 <u>RF</u>		177.04 g	18	
302440006-1	UNC-FSS-HR-004B	SAMPLE		CBRA015	SOIL	13-MAR-12 11:15:00 <u>RF</u>		179.05 g	23	
302440007-1	UNC-FSS-XY-017	SAMPLE		CBRA015	SOIL	03-JAN-12 14:45:00 <u>RF</u>		163.87 g	11	
302440008-1	UNC-FSS-XY-019	SAMPLE		CBRA015	SOIL	03-JAN-12 14:45:00 <u>RF</u>		149.13 g	19	
302440009-1	UNC-FSS-LDA-005	SAMPLE		CBRA015	SOIL	17-FEB-12 13:15:00 <u>RF</u>		147.56 g	22	
302440010-1	UNC-FSS-DR-010	SAMPLE		CBRA015	SOIL	20-FEB-12 12:35:00 <u>RF</u>		170.47 g	31	
1202635838-1	MB	MB		QC ACCOUNT	SOIL	4/12/12 <u>RF</u>		179.05	8	
1202635839-1	DUP UNC-FSS-XY-013(302440001)	DUP		QC ACCOUNT	SOIL	14-MAR-12 10:45:00 <u>RF</u>		164.68	18	
1202635840-1	LCS	LCS		QC ACCOUNT	SOIL	4/12/12 <u>RF</u>		115	9	

Data Reviewed By: B. Williams 5/7/12
 Page 1 of 1

VAX/VMS Nuclide Identification Report Generated 3-MAY-2012 09:48:47.82

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*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29407                            *
*****
Configuration   : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G302440001.CNF;1
Background file  : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]BKG_GAM08.CNF;87
Background date  : 29-APR-2012 14:30:58
Sample date      : 14-MAR-2012 10:45:00 Acquisition date : 3-MAY-2012 07:48:16.
Sample ID       : G302440001 Sample quantity  : 1.66680E+02 GRAM
Detector name   : GAM08 Detector geometry: CAN
Elapsed live time: 0 02:00:00.00 Elapsed real time: 0 02:00:01.72 0.0%
Energy tolerance: 1.50000 keV Analyst Initials : MXR1
Abundance limit : 75.00000 Sensitivity    : 5.00000
Batch ID       : 1203837 Detector SN#   :
Matrix Spike ID : LCS ID       : 1364
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Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	2	74.99	225	294	1.24	149.83	144	16	3.12E-02	14.6	2.89E+00
2	2	77.23*	319	290	1.18	154.33	144	16	4.42E-02	10.9	
3	3	84.36*	185	363	1.36	168.59	165	30	2.57E-02	18.9	1.84E+00
4	3	87.41	134	348	1.40	174.70	165	30	1.86E-02	25.5	
5	3	90.13	150	248	0.95	180.15	165	30	2.08E-02	18.6	
6	3	93.05*	196	273	1.21	186.00	165	30	2.73E-02	17.3	
7	0	143.97*	262	295	1.32	287.90	284	8	3.64E-02	13.2	
8	0	163.24	145	256	1.30	326.47	322	10	2.01E-02	22.3	
9	0	185.87*	1450	312	1.30	371.76	365	13	2.01E-01	3.7	
10	0	206.11	146	492	4.80	412.26	404	22	2.03E-02	39.4	
11	4	238.81*	698	144	1.15	477.72	473	17	9.69E-02	4.9	1.61E+00
12	4	241.90*	193	139	1.89	483.90	473	17	2.68E-02	19.4	
13	0	270.97	87	123	1.01	542.08	537	11	1.21E-02	27.0	
14	4	295.44	219	91	1.30	591.05	587	19	3.04E-02	10.1	1.37E+00
15	4	300.12	64	142	1.99	600.42	587	19	8.89E-03	38.5	
16	0	328.01	24	129	1.16	656.25	652	10	3.35E-03	91.1	
17	0	338.42	151	114	0.90	677.08	672	11	2.10E-02	15.9	
18	0	352.19*	298	96	1.20	704.63	700	11	4.14E-02	8.8	
19	0	463.52	54	106	1.58	927.44	922	16	7.52E-03	43.7	
20	0	511.36*	96	79	1.71	1023.17	1015	17	1.34E-02	27.8	
21	0	583.58*	248	39	1.61	1167.71	1162	14	3.45E-02	8.9	
22	0	609.60*	199	94	1.66	1219.78	1214	15	2.76E-02	12.9	
23	0	727.66*	49	40	1.09	1456.06	1451	11	6.84E-03	27.9	
24	0	795.17	33	27	1.35	1591.15	1585	11	4.52E-03	35.8	
25	0	911.58	178	33	1.82	1824.12	1818	15	2.47E-02	10.3	
26	0	969.14	97	23	1.39	1939.29	1935	11	1.35E-02	14.1	
27	0	1120.96	75	42	2.47	2243.11	2234	22	1.04E-02	25.3	
28	0	1460.94*	431	17	1.99	2923.43	2914	17	5.98E-02	5.4	
29	0	1764.69	51	6	1.88	3531.21	3524	13	7.11E-03	17.3	

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

VAX/VMS Nuclide Identification Report Generated

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*****
*
*           GEL Laboratories LLC
*           2040 Savage Road
*           Charleston, SC 29407
*****
*
*           DETECTOR DATA
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G302440001.CNF;1
* Acquisition date   : 3-MAY-2012 07:48:16 Detector SN#      :
* Detector ID        : GAM08 Sensitivity                    : 5.000
* Geometry           : CAN Energy tolerance                : 1.500
* Elapsed live time  : 0 02:00:00.00 Abundance limit      : 75.000
* Elapsed real time  : 0 02:00:01.72 Half life ratio       : 8.000
*****
*
*           SAMPLE DATA
*
* Sample date        : 14-MAR-2012 10:45:00 Nuclide Library  : SOLID
* Sample ID          : G302440001 Analyst initials       : MXR1
* Batch Number       : 1203837 Sample Quantity       : 1.6668E+02 GRAM
* Recovery           : 1.00000 Carrier Weight          : 0.00000
*****
*
*           QC DATA
*
* Standard Weight    : 0.00000
* CALIB. DATE/TIME  : 29-SEP-2011 11:08:39 MS Isotope      :
* MSD DPM            : 0.000 MSD Isotope                  :
* LCS DPM            : 0.000 LCS Isotope                 :
* LCSD DPM           : 0.000 LCSD Isotope                 :
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Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act error (1.96-sigma)	MDA (pCi/GRAM)	
K-40	9.188E+00	1.235E+00	4.611E-01	0.000E+00
CD-109	2.552E+00	1.310E+00	1.310E+00	0.000E+00
SN-126	2.368E-01	1.216E-01	1.224E-01	0.000E+00
CE-141	8.222E-01	2.254E-01	2.155E-01	0.000E+00
TL-208	3.374E-01	6.643E-02	4.699E-02	0.000E+00
BI-211	1.952E+00	3.822E-01	2.904E-01	0.000E+00
PB-212	1.067E+00	1.500E-01	8.049E-02	0.000E+00
BI-214	5.192E-01	1.410E-01	9.044E-02	0.000E+00
PB-214	7.084E-01	1.439E-01	1.024E-01	0.000E+00
RA-224	3.167E+00	1.238E+00	8.628E-01	0.000E+00
RA-226	5.192E-01	1.410E-01	9.044E-02	0.000E+00
AC-228	1.090E+00	2.715E-01	1.905E-01	0.000E+00
RA-228	1.090E+00	2.715E-01	1.905E-01	0.000E+00
TH-228	1.067E+00	1.500E-01	8.049E-02	0.000E+00
TH-229	-2.595E-01	3.957E-01	7.382E-01	0.000E+00
TH-230	5.192E-01	1.384E-01	9.044E-02	0.000E+00
PA-231	5.767E-01	1.082E+00	2.102E+00	0.000E+00
TH-232	1.090E+00	2.715E-01	1.905E-01	0.000E+00
U-235	1.250E+00	3.859E-01	3.090E-01	0.000E+00
AM-243	2.938E-01	8.946E-02	9.032E-02	0.000E+00
ANH-511	1.024E-01	5.656E-02	3.569E-02	0.000E+00

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Act error (1.96-sigma)	MDA (pCi/GRAM)	
BE-7	1.125E-01	3.318E-01	6.618E-01	0.000E+00 NOT IDENT.
NA-22	-1.785E-02	3.113E-02	5.432E-02	0.000E+00 NOT IDENT.
NA-24	0.000E+00	2.886E+22	0.000E+00	0.000E+00 SHORT HLIF
SC-46	-3.226E-03	3.805E-02	7.285E-02	0.000E+00 FAIL ABUN
V-48	3.661E-03	2.048E-01	3.980E-01	0.000E+00 NOT IDENT.
CR-51	5.478E-01	6.523E-01	1.288E+00	0.000E+00 NOT IDENT.

MN-54	8.254E-03	2.904E-02	5.525E-02	0.000E+00	NOT IDENT.
CO-56	-1.375E-02	3.747E-02	6.675E-02	0.000E+00	NOT IDENT.
CO-57	2.764E-02	2.396E-02	4.631E-02	0.000E+00	NOT IDENT.
CO-58	8.206E-03	3.755E-02	7.197E-02	0.000E+00	NOT IDENT.
FE-59	-1.443E-02	9.700E-02	1.831E-01	0.000E+00	NOT IDENT.
CO-60	-3.462E-03	2.762E-02	5.169E-02	0.000E+00	NOT IDENT.
ZN-65	2.319E-02	7.251E-02	1.249E-01	0.000E+00	NOT IDENT.
SE-75	-2.476E-02	4.158E-02	7.300E-02	0.000E+00	NOT IDENT.
SR-85	0.000E+00	4.604E-02	9.493E-02	0.000E+00	NOT IDENT.
Y-88	-1.718E-02	3.487E-02	6.273E-02	0.000E+00	NOT IDENT.
Y-91	1.182E+01	2.303E+01	4.531E+01	0.000E+00	NOT IDENT.
NB-94	1.269E-02	2.441E-02	4.774E-02	0.000E+00	NOT IDENT.
NB-95	3.708E-02	4.762E-02	9.359E-02	0.000E+00	NOT IDENT.
NB-95M	-1.006E-01	1.585E-01	2.521E-01	0.000E+00	NOT IDENT.
ZR-95	9.676E-02	8.121E-02	1.658E-01	0.000E+00	NOT IDENT.
MO-99	0.000E+00	4.864E+04	0.000E+00	0.000E+00	SHORT HLIF
TC-99M	0.000E+00	1.077E+41	0.000E+00	0.000E+00	SHORT HLIF
RU-103	-2.125E-02	5.445E-02	1.014E-01	0.000E+00	FAIL ABUN
RH-106	-6.898E-02	2.307E-01	4.262E-01	0.000E+00	NOT IDENT.
RU-106	-6.898E-02	2.306E-01	4.262E-01	0.000E+00	NOT IDENT.
AG-108M	4.974E-04	2.222E-02	4.091E-02	0.000E+00	NOT IDENT.
AG-110M	-3.014E-02	3.655E-02	6.441E-02	0.000E+00	NOT IDENT.
SN-113	-3.423E-02	3.981E-02	6.827E-02	0.000E+00	NOT IDENT.
CD-115	0.000E+00	3.999E+05	0.000E+00	0.000E+00	SHORT HLIF
SN-117M	1.140E-01	2.791E-01	4.922E-01	0.000E+00	NOT IDENT.
TE-123M	-1.865E-04	3.119E-02	5.369E-02	0.000E+00	NOT IDENT.
SB-124	2.949E-02	4.254E-02	1.180E-01	0.000E+00	NOT IDENT.
SB-125	4.458E-02	7.241E-02	1.391E-01	0.000E+00	FAIL ABUN
TE-125M	1.576E+01	1.343E+01	2.594E+01	0.000E+00	NOT IDENT.
I-126	-2.576E-01	1.013E+00	1.862E+00	0.000E+00	NOT IDENT.
SB-126	6.123E-01	7.773E-01	1.483E+00	0.000E+00	NOT IDENT.
SB-127	0.000E+00	4.963E+02	0.000E+00	0.000E+00	SHORT HLIF
I-131	1.222E+00	1.603E+00	3.169E+00	0.000E+00	NOT IDENT.
TE-132	0.000E+00	1.061E+03	0.000E+00	0.000E+00	SHORT HLIF
BA-133	1.727E-02	3.254E-02	5.618E-02	0.000E+00	NOT IDENT.
I-133	0.000E+00	5.104E+15	0.000E+00	0.000E+00	SHORT HLIF
CS-134	5.691E-02	4.034E-02	6.596E-02	0.000E+00	FAIL ABUN
CS-135	9.995E-02	1.263E-01	2.231E-01	0.000E+00	NOT IDENT.
I-135	0.000E+00	6.614E+40	0.000E+00	0.000E+00	SHORT HLIF
CS-136	-1.196E-01	4.859E-01	9.009E-01	0.000E+00	NOT IDENT.
BA-137M	-1.296E-02	2.556E-02	4.585E-02	0.000E+00	NOT IDENT.
CS-137	-1.369E-02	2.700E-02	4.843E-02	0.000E+00	NOT IDENT.
CE-139	-2.287E-02	3.131E-02	5.131E-02	0.000E+00	NOT IDENT.
BA-140	2.192E-01	1.210E+00	2.357E+00	0.000E+00	FAIL ABUN
LA-140	-3.886E-01	3.937E-01	6.445E-01	0.000E+00	FAIL ABUN
CE-143	0.000E+00	5.592E+09	0.000E+00	0.000E+00	SHORT HLIF
CE-144	1.755E-01	1.872E-01	3.546E-01	0.000E+00	NOT IDENT.
PM-144	-2.131E-02	2.654E-02	4.579E-02	0.000E+00	NOT IDENT.
PR-144	-1.628E+00	2.023E+00	3.489E+00	0.000E+00	NOT IDENT.
PM-146	1.935E-02	3.195E-02	6.411E-02	0.000E+00	NOT IDENT.
ND-147	2.986E-01	3.566E+00	6.893E+00	0.000E+00	FAIL ABUN
PM-149	0.000E+00	3.620E+06	0.000E+00	0.000E+00	SHORT HLIF
EU-152	-5.046E-02	7.902E-02	1.280E-01	0.000E+00	NOT IDENT.
GD-153	4.720E-02	8.546E-02	1.478E-01	0.000E+00	NOT IDENT.
EU-154	-4.463E-02	8.570E-02	1.507E-01	0.000E+00	NOT IDENT.
EU-155	5.916E-02	9.608E-02	1.835E-01	0.000E+00	FAIL ABUN
TB-160	2.851E-02	1.303E-01	2.497E-01	0.000E+00	FAIL ABUN
HO-166M	2.879E-03	4.354E-02	8.215E-02	0.000E+00	FAIL ABUN
HF-181	9.194E-03	5.219E-02	1.025E-01	0.000E+00	NOT IDENT.
TA-182	-1.392E-02	1.543E-01	2.874E-01	0.000E+00	FAIL ABUN
IR-192	6.308E-03	3.636E-02	6.892E-02	0.000E+00	FAIL ABUN
HG-203	8.513E-03	4.818E-02	9.182E-02	0.000E+00	NOT IDENT.
BI-207	-1.465E-03	2.978E-02	5.770E-02	0.000E+00	FAIL ABUN
PB-210	1.470E-02	5.561E+00	1.102E+01	0.000E+00	NOT IDENT.
PB-211	-4.036E-02	5.301E-01	9.711E-01	0.000E+00	NOT IDENT.
BI-212	0.000E+00	5.555E-01	9.550E-01	0.000E+00	FAIL ABUN
RN-219	-1.437E-01	2.970E-01	5.255E-01	0.000E+00	FAIL ABUN
RA-223	-2.569E-01	5.647E-01	8.804E-01	0.000E+00	FAIL ABUN
AC-227	-2.246E-01	2.015E-01	3.537E-01	0.000E+00	FAIL ABUN
TH-227	-2.246E-01	2.019E-01	3.537E-01	0.000E+00	FAIL ABUN
TH-231	-2.569E-01	5.647E-01	8.804E-01	0.000E+00	FAIL ABUN
PA-233	-5.157E-04	4.935E-02	9.243E-02	0.000E+00	FAIL ABUN
PA-234	-6.616E-02	2.146E-01	3.990E-01	0.000E+00	NOT IDENT.
PA-234M	-5.169E-01	3.223E+00	6.041E+00	0.000E+00	NOT IDENT.
TH-234	1.050E+00	1.397E+00	2.723E+00	0.000E+00	FAIL ABUN
NP-237	-5.157E-04	4.935E-02	9.243E-02	0.000E+00	FAIL ABUN
U-238	1.050E+00	1.397E+00	2.723E+00	0.000E+00	FAIL ABUN
NP-239	-7.283E-02	3.527E-01	6.474E-01	0.000E+00	NOT IDENT.

AM-241	-2.342E-02	1.587E-01	3.074E-01	0.000E+00	NOT IDENT.
CM-247	-1.904E-02	2.758E-02	4.794E-02	0.000E+00	NOT IDENT.
CF-249	2.789E-02	2.806E-02	5.606E-02	0.000E+00	NOT IDENT.
CF-251	-6.862E-02	1.057E-01	1.986E-01	0.000E+00	NOT IDENT.

Gamma Spectroscopy Auxillary Report

Sample:G302440001

Nuclide	TPU	LLD	EFF	FWHM	TArea	TBack	TCounts
BE-7	0.332E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
NA-22	0.311E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
NA-24	0.196E+17	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
K-40	0.123E+01	0.104E+03	0.966E-02	0.199E+01	0.420E+03	0.109E+03	0.529E+03
SC-46	0.381E-01	0.102E+03	0.000E+00	0.000E+00	0.758E+02	0.424E+02	0.118E+03
V-48	0.205E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
CR-51	0.652E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
MN-54	0.290E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
CO-56	0.375E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
CO-57	0.240E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
CO-58	0.376E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
FE-59	0.970E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
CO-60	0.276E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
ZN-65	0.725E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
SE-75	0.416E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
SR-85	0.460E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Y-88	0.349E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Y-91	0.230E+02	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
NB-94	0.244E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
NB-95	0.476E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
NB-95M	0.159E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
ZR-95	0.812E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
MO-99	0.486E+05	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
TC-99M	0.196E+17	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
RU-103	0.545E-01	0.980E+02	0.000E+00	0.000E+00	0.217E+03	0.184E+03	0.402E+03
RH-106	0.231E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
RU-106	0.231E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
AG-108M	0.222E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
CD-109	0.131E+01	0.890E+02	0.466E-01	0.140E+01	0.181E+03	0.471E+03	0.653E+03
AG-110M	0.366E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
SN-113	0.398E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
CD-115	0.400E+06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
SN-117M	0.279E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
TE-123M	0.312E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
SB-124	0.425E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
SB-125	0.724E-01	0.822E+02	0.000E+00	0.000E+00	0.611E+02	0.120E+03	0.181E+03
TE-125M	0.134E+02	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
I-126	0.101E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
SB-126	0.777E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
SN-126	0.122E+00	0.890E+02	0.466E-01	0.140E+01	0.363E+03	0.942E+03	0.131E+04
SB-127	0.496E+03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
I-131	0.160E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
TE-132	0.106E+04	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
BA-133	0.325E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
I-133	0.510E+16	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
CS-134	0.403E-01	0.617E+02	0.167E-01	0.135E+01	0.344E+02	0.290E+02	0.634E+02
CS-135	0.126E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
I-135	0.196E+17	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
CS-136	0.486E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
BA-137M	0.256E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
CS-137	0.270E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
CE-139	0.313E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
BA-140	0.121E+01	0.656E+02	0.000E+00	0.000E+00	0.184E+03	0.326E+03	0.509E+03
LA-140	0.394E+00	0.720E+02	0.000E+00	0.000E+00	0.284E+02	0.152E+03	0.180E+03
CE-141	0.225E+00	0.684E+02	0.555E-01	0.132E+01	0.338E+03	0.504E+03	0.842E+03
CE-143	0.559E+10	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
CE-144	0.187E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
PM-144	0.265E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
PR-144	0.202E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
PM-146	0.319E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
ND-147	0.357E+01	0.824E+02	0.000E+00	0.000E+00	0.202E+03	0.118E+04	0.138E+04
PM-149	0.362E+07	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
EU-152	0.790E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
GD-153	0.855E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
EU-154	0.857E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
EU-155	0.961E-01	0.890E+02	0.000E+00	0.000E+00	0.181E+03	0.471E+03	0.653E+03
TB-160	0.130E+00	0.890E+02	0.000E+00	0.000E+00	0.181E+03	0.471E+03	0.653E+03
HO-166M	0.435E-01	0.836E+02	0.000E+00	0.000E+00	0.182E+04	0.929E+03	0.275E+04
HF-181	0.522E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
TA-182	0.154E+00	0.102E+03	0.000E+00	0.000E+00	0.758E+02	0.424E+02	0.118E+03

IR-192	0.364E-01	0.563E+02	0.000E+00	0.000E+00	0.260E+03	0.108E+03	0.368E+03
HG-203	0.482E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
BI-207	0.298E-01	0.112E+03	0.000E+00	0.000E+00	0.309E+03	0.593E+03	0.902E+03
TL-208	0.664E-01	0.795E+02	0.214E-01	0.161E+01	0.273E+03	0.346E+03	0.619E+03
PB-210	0.556E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
BI-211	0.382E+00	0.692E+02	0.310E-01	0.120E+01	0.348E+03	0.228E+03	0.575E+03
PB-211	0.530E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
BI-212	0.556E+00	0.771E+02	0.180E-01	0.109E+01	0.526E+02	0.125E+03	0.178E+03
PB-212	0.150E+00	0.870E+02	0.412E-01	0.115E+01	0.167E+04	0.226E+04	0.394E+04
BI-214	0.141E+00	0.897E+02	0.207E-01	0.166E+01	0.342E+03	0.232E+03	0.574E+03
PB-214	0.144E+00	0.733E+02	0.310E-01	0.120E+01	0.159E+04	0.183E+04	0.342E+04
RN-219	0.297E+00	0.618E+02	0.000E+00	0.000E+00	0.105E+03	0.147E+03	0.252E+03
RA-223	0.565E+00	0.917E+02	0.000E+00	0.000E+00	0.767E+03	0.125E+04	0.202E+04
RA-224	0.124E+01	0.641E+02	0.408E-01	0.189E+01	0.235E+03	0.314E+03	0.549E+03
RA-226	0.141E+00	0.897E+02	0.207E-01	0.166E+01	0.342E+03	0.232E+03	0.574E+03
AC-227	0.201E+00	0.712E+02	0.000E+00	0.000E+00	0.760E+02	0.168E+03	0.244E+03
TH-227	0.202E+00	0.712E+02	0.000E+00	0.000E+00	0.760E+02	0.168E+03	0.244E+03
AC-228	0.272E+00	0.714E+02	0.148E-01	0.182E+01	0.462E+03	0.191E+03	0.653E+03
RA-228	0.272E+00	0.714E+02	0.148E-01	0.182E+01	0.462E+03	0.191E+03	0.653E+03
TH-228	0.150E+00	0.870E+02	0.412E-01	0.115E+01	0.167E+04	0.226E+04	0.394E+04
TH-229	0.396E+00	0.922E+02	0.000E+00	0.000E+00	0.433E+03	0.108E+04	0.152E+04
TH-230	0.138E+00	0.897E+02	0.207E-01	0.166E+01	0.342E+03	0.232E+03	0.574E+03
PA-231	0.108E+01	0.712E+02	0.000E+00	0.000E+00	0.760E+02	0.168E+03	0.244E+03
TH-231	0.565E+00	0.917E+02	0.000E+00	0.000E+00	0.767E+03	0.125E+04	0.202E+04
TH-232	0.272E+00	0.714E+02	0.148E-01	0.182E+01	0.462E+03	0.191E+03	0.653E+03
PA-233	0.493E-01	0.712E+02	0.000E+00	0.000E+00	0.760E+02	0.168E+03	0.244E+03
PA-234	0.215E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
PA-234M	0.322E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
TH-234	0.140E+01	0.825E+02	0.000E+00	0.000E+00	0.264E+03	0.122E+04	0.148E+04
U-235	0.386E+00	0.816E+02	0.555E-01	0.132E+01	0.299E+04	0.477E+04	0.775E+04
NP-237	0.493E-01	0.712E+02	0.000E+00	0.000E+00	0.760E+02	0.168E+03	0.244E+03
U-238	0.140E+01	0.825E+02	0.000E+00	0.000E+00	0.264E+03	0.122E+04	0.148E+04
NP-239	0.353E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
AM-241	0.159E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
AM-243	0.895E-01	0.112E+03	0.353E-01	0.124E+01	0.309E+03	0.593E+03	0.902E+03
CM-247	0.276E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
CF-249	0.281E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
CF-251	0.106E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
ANH-511	0.566E-01	0.125E+03	0.237E-01	0.171E+01	0.108E+03	0.135E+04	0.146E+04

VMS Peak Search Report V1.9 Generated 3-MAY-2012 09:48:46

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Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G302440001.CNF;1
Analyses by       : PEAK V16.9
Sample title      : MXR1
Sample date       : 14-MAR-2012 10:45:00 Acquisition date : 3-MAY-2012 07:48:16
Sample ID         : G302440001 Sample quantity   : 166.68 GRAM
Sample type       : SOLID Sample geometry    :
Detector name     : GAMMA8 Detector geometry: CAN
Elapsed live time: 0 02:00:00.00 Elapsed real time: 0 02:00:01.72 0.0%
Start energy      : 0.62 keV End energy       : 2046.96 keV
Sensitivity       : 5.00 Gaussian           : 10.00
Critical level    : No
    
```

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	2	74.99	225	294	1.24	149.83	144	16	3.12E-02	14.6	2.89E+00
2	2	77.23	341	290	1.18	154.33	144	16	4.74E-02	10.1	
3	3	84.36	200	363	1.36	168.59	165	30	2.77E-02	17.3	1.84E+00
4	3	87.41	134	348	1.40	174.70	165	30	1.86E-02	25.5	
5	3	90.13	150	248	0.95	180.15	165	30	2.08E-02	18.6	
6	3	93.05	298	273	1.21	186.00	165	30	4.14E-02	11.1	
7	0	143.97	277	295	1.32	287.90	284	8	3.85E-02	12.3	
8	0	163.24	145	256	1.30	326.47	322	10	2.01E-02	22.3	
9	0	185.87	1515	312	1.30	371.76	365	13	2.10E-01	3.5	
10	0	206.11	146	492	4.80	412.26	404	22	2.03E-02	39.4	
11	4	238.81	787	144	1.15	477.72	473	17	1.09E-01	4.3	1.61E+00
12	4	241.90	210	139	1.89	483.90	473	17	2.92E-02	17.6	
13	0	270.97	87	123	1.01	542.08	537	11	1.21E-02	27.0	
14	4	295.44	219	91	1.30	591.05	587	19	3.04E-02	10.1	1.37E+00
15	4	300.12	64	142	1.99	600.42	587	19	8.89E-03	38.5	
16	0	328.01	24	129	1.16	656.25	652	10	3.35E-03	91.1	
17	0	338.42	151	114	0.90	677.08	672	11	2.10E-02	15.9	
18	0	352.19	312	96	1.20	704.63	700	11	4.33E-02	8.4	
19	0	463.52	54	106	1.58	927.44	922	16	7.52E-03	43.7	
20	0	511.36	248	79	1.71	1023.17	1015	17	3.44E-02	10.4	
21	0	583.58	285	39	1.61	1167.71	1162	14	3.96E-02	7.6	
22	0	609.60	209	94	1.66	1219.78	1214	15	2.90E-02	12.1	
23	0	727.66	59	40	1.09	1456.06	1451	11	8.22E-03	22.8	
24	0	795.17	33	27	1.35	1591.15	1585	11	4.52E-03	35.8	
25	0	911.58	178	33	1.82	1824.12	1818	15	2.47E-02	10.3	
26	0	969.14	97	23	1.39	1939.29	1935	11	1.35E-02	14.1	
27	0	1120.96	75	42	2.47	2243.11	2234	22	1.04E-02	25.3	
28	0	1460.94	442	17	1.99	2923.43	2914	17	6.14E-02	5.2	
29	0	1764.69	51	6	1.88	3531.21	3524	13	7.11E-03	17.3	

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*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29407                          *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G302440001.CNF;1
Sample date        : 14-MAR-2012 10:45:00 Acquisition date : 3-MAY-2012 07:48:16.
Sample ID          : G302440001          Sample quantity  : 1.66680E+02 GRAM
Detector name      : GAM08              Detector geometry: CAN
Elapsed live time  : 0 02:00:00.00      Elapsed real time: 0 02:00:01.72  0.0%
Energy tolerance  : 1.50000 keV        Analyst Initials  : MXR1
Abundance limit   : 75.00000          Sensitivity       : 5.00000
Batch ID          : 1203837            Detector SN#      :
Matrix Spike ID   :                    LCS ID           : 1364
*****

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Summary of Nuclide Activity

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Total number of lines in spectrum      29
Number of unidentified lines           0
Number of lines tentatively identified by NID 29      100.00%

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Nuclide Type :

Nuclide	Hlife	Decay	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
K-40	1.25E+09Y	1.00	9.188E+00	9.188E+00	1.260E+00	13.71	
CD-109	461.40D	1.08	2.368E+00	2.552E+00	1.337E+00	52.38	
SN-126	2.30E+05Y	1.00	2.368E-01	2.368E-01	1.240E-01	52.38	
CE-141	32.51D	2.90	2.836E-01	8.222E-01	2.300E-01	27.97	
TL-208	1.41E+10Y	1.00	3.374E-01	3.374E-01	0.678E-01	20.09	
BI-211	7.04E+08Y	1.00	1.952E+00	1.952E+00	0.390E+00	19.98	
PB-212	1.41E+10Y	1.00	1.067E+00	1.067E+00	0.153E+00	14.34	
BI-214	1600.00Y	1.00	5.192E-01	5.192E-01	1.439E-01	27.71	
PB-214	1600.00Y	1.00	7.084E-01	7.084E-01	1.468E-01	20.73	
RA-224	1.41E+10Y	1.00	3.167E+00	3.167E+00	1.264E+00	39.91	
RA-226	1600.00Y	1.00	5.192E-01	5.192E-01	1.439E-01	27.71	
AC-228	1.41E+10Y	1.00	1.090E+00	1.090E+00	0.277E+00	25.41	
RA-228	1.41E+10Y	1.00	1.090E+00	1.090E+00	0.277E+00	25.41	
TH-228	1.41E+10Y	1.00	1.067E+00	1.067E+00	0.153E+00	14.34	
TH-229	7340.00Y	1.00	3.651E-01	3.651E-01	1.912E-01	52.38	K
TH-230	7.54E+04Y	1.00	5.192E-01	5.192E-01	1.413E-01	27.21	
PA-231	7.04E+08Y	1.00	9.184E-01	9.184E-01	7.155E-01	77.91	K
TH-232	1.41E+10Y	1.00	1.090E+00	1.090E+00	0.277E+00	25.41	
U-235	7.04E+08Y	1.00	1.250E+00	1.250E+00	0.394E+00	31.51	
AM-243	7370.00Y	1.00	2.938E-01	2.938E-01	0.913E-01	31.07	
ANH-511	1.00E+09Y	1.00	1.024E-01	1.024E-01	0.577E-01	56.36	
Total Activity :			2.813E+01	2.886E+01			

Grand Total Activity : 2.813E+01 2.886E+01

Flags: "K" = Keyline not found "M" = Manually accepted
 "E" = Manually edited "A" = Nuclide specific abn. limit

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
0	270.97	105	147	1.01	542.08	537	11	1.21E-02	54.0	3.76E+00	T
0	328.01	28	152	1.16	656.25	652	10	3.35E-03	****	3.27E+00	T
0	463.52	61	120	1.58	927.44	922	16	7.52E-03	87.4	2.54E+00	T
0	727.66	53	43	1.09	1456.06	1451	11	6.84E-03	55.8	1.80E+00	T
0	795.17	34	29	1.35	1591.15	1585	11	4.52E-03	71.5	1.67E+00	T

Flags: "T" = Tentatively associated

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
K-40	1460.82	420	10.66*	9.657E-01	9.188E+00	9.188E+00	13.71
CD-109	88.03	181	3.70*	4.661E+00	2.368E+00	2.552E+00	52.38
SN-126	64.28	-----	9.60	2.239E+00	-----	Line Not Found	-----
	86.94	181	8.90	4.661E+00	9.845E-01	9.845E-01	66.18
	87.57	181	37.00*	4.661E+00	2.368E-01	2.368E-01	52.38
CE-141	145.44	338	48.29*	5.553E+00	2.836E-01	8.222E-01	27.97
TL-208	277.37	-----	6.60	3.692E+00	-----	Line Not Found	-----
	583.19	273	85.00*	2.143E+00	3.374E-01	3.374E-01	20.09
	860.56	-----	12.50	1.557E+00	-----	Line Not Found	-----
BI-211	72.87	-----	1.23	3.289E+00	-----	Line Not Found	-----
	351.06	348	12.92*	3.103E+00	1.952E+00	1.952E+00	19.98
PB-212	74.82	309	10.28	3.526E+00	1.920E+00	1.920E+00	32.56
	77.11	437	17.10	3.766E+00	1.527E+00	1.527E+00	24.40
	238.63	851	43.60*	4.117E+00	1.067E+00	1.067E+00	14.34
	300.09	76	3.30	3.486E+00	1.489E+00	1.489E+00	77.79
BI-214	609.32	217	45.49*	2.072E+00	5.192E-01	5.192E-01	27.71
	1120.29	76	14.92	1.224E+00	9.343E-01	9.344E-01	53.06
	1764.49	49	15.30	8.398E-01	8.520E-01	8.520E-01	35.50
PB-214	74.82	309	5.80	3.526E+00	3.404E+00	3.404E+00	32.07
	77.11	437	9.70	3.766E+00	2.692E+00	2.692E+00	25.76
	242.00	235	7.25	4.079E+00	1.791E+00	1.791E+00	40.32
	295.22	260	18.42	3.526E+00	9.026E-01	9.027E-01	23.19
	351.93	348	35.60*	3.103E+00	7.084E-01	7.084E-01	20.73
RA-224	240.99	235	4.10*	4.079E+00	3.167E+00	3.167E+00	39.91
RA-226	609.32	217	45.49*	2.072E+00	5.192E-01	5.192E-01	27.71
	1120.29	76	14.92	1.224E+00	9.343E-01	9.344E-01	53.06
	1764.49	49	15.30	8.398E-01	8.520E-01	8.520E-01	35.50
AC-228	338.32	177	11.27	3.194E+00	1.109E+00	1.109E+00	52.48
	911.20	185	25.80*	1.479E+00	1.090E+00	1.090E+00	25.41
	968.97	100	15.80	1.400E+00	1.020E+00	1.020E+00	38.64
RA-228	338.32	177	11.27	3.194E+00	1.109E+00	1.109E+00	52.48
	911.20	185	25.80*	1.479E+00	1.090E+00	1.090E+00	25.41
	968.97	100	15.80	1.400E+00	1.020E+00	1.020E+00	38.64
TH-228	74.82	309	10.28	3.526E+00	1.920E+00	1.920E+00	31.10
	77.11	437	17.10	3.766E+00	1.527E+00	1.527E+00	24.40
	238.63	851	43.60*	4.117E+00	1.067E+00	1.067E+00	14.34
	300.09	76	3.30	3.486E+00	1.489E+00	1.489E+00	98.42
TH-229	85.43	252	14.70	4.427E+00	8.719E-01	8.719E-01	39.49
	88.47	181	24.00	4.661E+00	3.651E-01	3.651E-01	52.38
	193.51	-----	4.41*	4.762E+00	-----	Line Not Found	-----
	210.85	-----	2.80	4.495E+00	-----	Line Not Found	-----
TH-230	609.32	217	45.49*	2.072E+00	5.192E-01	5.192E-01	27.21
	1120.29	76	14.92	1.224E+00	9.343E-01	9.344E-01	52.64
	1764.49	49	15.30	8.398E-01	8.520E-01	8.520E-01	35.50
PA-231	283.69	-----	1.70*	3.632E+00	-----	Line Not Found	-----
	301.36	76	5.35	3.486E+00	9.184E-01	9.184E-01	77.91
TH-232	338.32	177	11.27	3.194E+00	1.109E+00	1.109E+00	32.98
	911.20	185	25.80*	1.479E+00	1.090E+00	1.090E+00	25.41
	968.97	100	15.80	1.400E+00	1.020E+00	1.020E+00	38.64

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
U-235	89.96	202	3.47	4.847E+00	2.709E+00	2.709E+00	45.21
	93.35	264	5.60	5.021E+00	2.115E+00	2.115E+00	42.17
	143.76	338	10.96*	5.553E+00	1.250E+00	1.250E+00	31.51
	163.33	184	5.08	5.262E+00	1.548E+00	1.548E+00	48.04
	185.72	1816	57.20	4.886E+00	1.464E+00	1.464E+00	11.58
	205.31	181	5.01	4.566E+00	1.785E+00	1.785E+00	80.96
AM-243	43.53	-----	5.90	2.262E-01	-----	Line Not Found	-----
	74.66	309	67.20*	3.526E+00	2.938E-01	2.938E-01	31.07
ANH-511	511.00	108	100.00*	2.368E+00	1.024E-01	1.024E-01	56.36

Flag: "*" = Keyline

Nuclide	Half-life	Half-Life Ratio	Energy	%Abund	Activity (pCi/GRAM)	2-Sigma %Error	Rejected by
SC-46	83.79D	0.60	889.28*	99.98	---	Not Found	---
			1120.55	99.99	2.107E-01	52.64	Abun.
			% Abundances Found =		50.00		
RU-103	39.26D	1.27	497.08*	91.00	---	Not Found	---
			610.33	5.76	9.899E+00	30.55	Abun.
			% Abundances Found =		5.95		
SB-125	2.76Y	0.05	427.87*	29.80	---	Not Found	---
			463.37	10.56	5.302E-01	87.93	Abun.
			600.60	17.77	---	Not Found	---
			635.95	11.29	---	Not Found	---
% Abundances Found =		15.21					
CS-134	2.07Y	0.07	563.25	8.34	---	Not Found	---
			569.33	15.37	---	Not Found	---
			604.72	97.62	---	Not Found	---
			795.86*	85.46	5.691E-02	72.32	Abun.
			801.95	8.69	---	Not Found	---
% Abundances Found =		39.11					
BA-140	12.75D	3.92	162.66	6.22	1.907E+01	45.50	Abun.
			304.85	4.29	---	Not Found	---
			423.72	3.15	---	Not Found	---
			537.26*	24.39	---	Not Found	---
% Abundances Found =		16.35					
LA-140	12.75D	3.92	328.76	20.30	1.455E+00	182.52	Abun.
			487.02	45.50	---	Not Found	---
			815.77	23.28	---	Not Found	---
			1596.21*	95.40	---	Not Found	---
% Abundances Found =		11.00					
ND-147	10.98D	4.55	91.11	27.90	7.872E+00	39.06	Abun.
			319.41	1.95	---	Not Found	---
			531.02*	13.10	---	Not Found	---
% Abundances Found =		64.96					
EU-155	4.75Y	0.03	86.55	30.70	2.912E-01	52.39	Abun.
			105.31*	21.10	---	Not Found	---
% Abundances Found =		59.27					
TB-160	72.30D	0.69	86.79	13.30	1.063E+00	52.38	Abun.
			197.04	4.90	---	Not Found	---
			215.65	3.71	---	Not Found	---
			298.57	27.10	---	Not Found	---
			879.36*	28.50	---	Not Found	---
			962.29	9.00	---	Not Found	---
			966.15	24.20	---	Not Found	---
			1177.93	14.40	---	Not Found	---
% Abundances Found =		10.07					

Nuclide	Half-life	Half-Life Ratio	Energy	%Abund	Activity (pCi/GRAM)	2-Sigma %Error	Rejected by
HO-166M	1203.00Y	0.00	80.57	11.97	---	Not Found	---
			184.41	72.00	1.163E+00	11.58	Abun.
			280.46	29.36	---	Not Found	---
			410.95	11.20	---	Not Found	---
			711.68*	54.10	---	Not Found	---
			752.31	12.10	---	Not Found	---
			810.29	56.90	---	Not Found	---
% Abundances Found =			29.08				
TA-182	114.43D	0.44	67.75	41.20	---	Not Found	---
			100.11	14.10	---	Not Found	---
			152.43	6.93	---	Not Found	---
			222.11	7.49	---	Not Found	---
			1121.30	34.90	5.405E-01	52.64	Abun.
			1189.05	16.20	---	Not Found	---
			1221.41*	27.00	---	Not Found	---
1231.02	11.44	---	Not Found	---			
% Abundances Found =			21.91				
IR-192	73.83D	0.68	295.96	28.72	9.250E-01	22.28	Abun.
			308.46	29.68	---	Not Found	---
			316.51*	82.71	---	Not Found	---
			468.07	47.81	---	Not Found	---
% Abundances Found =			15.20				
BI-207	32.90Y	0.00	72.81	21.40	---	Not Found	---
			74.97	35.70	5.546E-01	31.07	Abun.
			569.70	97.76	---	Not Found	---
			1063.66*	74.60	---	Not Found	---
			1770.23	6.87	---	Not Found	---
% Abundances Found =			15.11				
BI-212	1.41E+10Y	0.00	727.33*	6.67	9.882E-01	57.36	Abun.
			785.37	1.10	---	Not Found	---
			1620.50	1.47	---	Not Found	---
% Abundances Found =			72.19				
RN-219	7.04E+08Y	0.00	271.23	10.80	5.832E-01	55.16	Abun.
			401.81*	6.60	---	Not Found	---
% Abundances Found =			62.07				
RA-223	7.04E+08Y	0.00	81.07	15.00	---	Not Found	---
			83.79	24.70	5.189E-01	39.49	Abun.
			94.56	8.67	---	Not Found	---
			144.24	3.27	4.189E+00	28.25	
			154.21	5.70	---	Not Found	---
			269.46	13.90	---	Not Found	---
			323.87*	3.99	---	Not Found	---
338.28	2.84	4.400E+00	34.05				
% Abundances Found =			39.46				
AC-227	7.04E+08Y	0.00	79.69	2.64	---	Not Found	---
% Abundances Found =							

Nuclide	Half-life	Half-Life Ratio	Energy	%Abund	Activity (pCi/GRAM)	2-Sigma %Error	Rejected by
AC-227	7.04E+08Y	0.00	235.96	17.50	---	Not Found	Abun.
			256.23*	9.50	---	Not Found	
			299.98	3.00	1.638E+00	78.11	
			304.50	1.56	---	Not Found	
			334.37	1.54	---	Not Found	
% Abundances Found =			8.39				
TH-227	7.04E+08Y	0.00	79.69	2.64	---	Not Found	Abun.
			235.96	17.50	---	Not Found	
			256.23*	9.50	---	Not Found	
			299.98	3.00	1.638E+00	78.11	
			304.50	1.56	---	Not Found	
% Abundances Found =			8.39				
TH-231	7.04E+08Y	0.00	81.07	15.00	---	Not Found	Abun.
			83.79	24.70	5.189E-01	39.49	
			94.87	5.69	---	Not Found	
			144.24	3.27	4.189E+00	28.25	
			154.21	5.70	---	Not Found	
			269.46	13.90	---	Not Found	
			323.87*	3.99	---	Not Found	
338.28	2.84	4.400E+00	34.05				
% Abundances Found =			41.03				
PA-233	2.14E+06Y	0.00	300.13	6.63	7.411E-01	78.48	Abun.
			311.90*	38.50	---	Not Found	
			340.48	4.45	---	Not Found	
% Abundances Found =			13.37				
TH-234	4.47E+09Y	0.00	63.29*	3.70	---	Not Found	Abun.
			92.59	4.23	2.800E+00	41.63	
% Abundances Found =			53.34				
NP-237	2.14E+06Y	0.00	94.65	10.56	---	Not Found	Abun.
			98.43	16.90	---	Not Found	
			300.13	6.63	7.411E-01	78.08	
			311.90*	38.50	---	Not Found	
			340.48	4.45	---	Not Found	
% Abundances Found =			8.61				
U-238	4.47E+09Y	0.00	63.29*	3.70	---	Not Found	Abun.
			92.59	4.23	2.800E+00	36.33	
% Abundances Found =			53.34				

Flag: "*" = Keyline

 * GEL Laboratories LLC *
 * 2040 Savage Road *
 * Charleston, SC 29407 *
 * GAMMA SPECTROSCOPY BACKGROUND REPORT *

ENERGY	MDA COUNTS
43.53	224.0060
46.54	218.3701
49.72	0.0000
57.36	0.0000
57.53	228.9774
59.54	230.1427
63.29	247.2852
63.29	247.2852
64.28	260.9174
67.75	303.5095
69.67	288.0768
70.83	307.1632
72.81	311.5825
72.87	287.0614
72.87	287.0614
74.66	311.2960
74.82	311.4038
74.82	311.4038
74.82	311.4038
74.97	311.5040
77.11	312.9280
77.11	312.9280
77.11	312.9280
79.69	319.8088
79.69	319.8088
80.12	293.0716
80.19	293.1146
80.57	293.3427
81.00	293.6008
81.07	293.6439
81.07	293.6439
83.79	354.9406
83.79	354.9406
85.43	311.9793
86.55	312.6651
86.79	312.8117
86.94	312.9038
87.57	313.2875
88.03	313.5670
88.47	313.8329
89.96	314.7286
91.11	315.4160
92.59	316.2936
92.59	316.2936
93.35	316.7423
94.56	317.4523
94.65	317.5052
94.67	317.5157
94.87	317.6336
97.43	236.9202
98.43	247.0340
98.44	247.0387
99.53	239.4307
100.11	221.5402
103.18	290.9031
103.37	290.9985
105.31	278.8997
106.12	283.6490
109.28	268.7127
111.00	311.2787
111.76	0.0000
116.30	0.0000
117.23	275.5501
121.12	236.9969
121.78	243.9538
122.06	229.5062
123.07	250.0470

131.20	301.9342
133.02	249.2488
133.52	234.6230
136.00	284.6159
136.47	253.9256
140.51	0.0000
140.51	0.0000
143.76	253.0762
144.24	253.2433
144.24	253.2433
145.44	283.1981
152.43	237.6481
153.25	229.1257
154.21	232.0534
154.21	232.0534
156.02	242.2972
158.56	209.3282
159.00	232.0884
162.66	205.2726
163.33	205.4471
165.86	231.2613
176.60	235.9438
177.52	240.7276
181.07	0.0000
184.41	213.4872
185.72	213.8121
193.51	196.3529
197.04	161.9570
205.31	174.6291
210.85	177.3500
215.65	190.0741
222.11	166.3096
227.38	163.3719
228.16	0.0000
228.18	136.7295
235.69	192.6453
235.96	192.6956
235.96	192.6956
238.63	150.6918
238.63	150.6918
240.99	151.0322
242.00	151.1786
244.70	124.3613
252.40	0.0000
252.80	142.9268
256.23	161.0540
256.23	161.0540
260.90	0.0000
264.66	126.6602
268.22	104.8250
269.46	114.4793
269.46	114.4793
271.23	107.4924
273.65	129.2638
276.40	103.9778
277.37	94.9150
277.60	94.9339
278.00	106.1229
279.20	118.2593
279.54	118.2935
280.46	138.4517
283.69	105.6329
284.31	115.7545
285.41	102.7642
285.90	0.0000
287.50	111.0205
293.27	0.0000
295.22	98.5289
295.96	98.5896
298.57	98.7998
299.98	98.9138
299.98	98.9138
300.09	98.9227
300.09	98.9227
300.13	98.9256
300.13	98.9256
301.36	109.4361
302.85	112.8393

304.50	96.6139
304.50	96.6139
304.85	99.9173
308.46	118.0708
311.90	105.0101
311.90	105.0101
316.51	98.1572
319.41	95.2723
320.08	83.9255
323.87	111.3957
323.87	111.3957
328.76	101.7997
333.37	83.7329
334.37	94.2709
334.37	94.2709
338.28	92.4459
338.28	92.4459
338.32	92.4486
338.32	92.4486
338.32	92.4486
340.48	72.3935
340.48	72.3935
340.55	84.1821
344.28	99.8900
345.93	96.5904
351.06	98.4046
351.93	92.3127
356.01	66.4047
364.49	61.0235
366.42	0.0000
383.85	83.5420
388.16	58.7576
388.63	65.3073
391.69	83.9814
400.66	71.3139
401.81	80.1512
402.40	84.5759
404.85	78.1102
410.95	77.3134
414.70	75.2850
423.72	82.3952
427.09	73.6427
427.87	69.2126
433.94	69.4728
453.88	67.1402
463.37	48.3567
468.07	71.6666
473.00	0.0000
476.78	57.0087
477.60	50.5957
482.18	54.4173
487.02	61.0395
492.35	0.0000
497.08	69.7540
511.00	50.6075
514.00	39.1123
527.90	0.0000
529.87	0.0000
531.02	54.9400
537.26	50.3681
546.56	0.0000
563.25	55.8590
569.33	54.0969
569.50	56.0332
569.70	54.1064
583.19	52.5221
600.60	52.9664
602.73	50.4957
604.72	50.7774
609.32	52.2016
609.32	52.2016
609.32	52.2016
610.33	52.2262
614.28	54.2977
618.01	38.3224
621.93	49.5386
621.93	49.5386
633.25	55.7730

635.95	56.8400
636.99	53.8734
645.85	44.0741
657.76	42.2953
661.66	55.4834
661.66	55.4834
664.57	0.0000
666.33	52.5649
666.50	46.5031
677.62	51.8093
685.70	0.0000
695.00	50.1508
696.49	58.3749
696.51	58.3763
697.00	57.3631
702.65	46.2063
706.68	56.5697
711.68	46.3821
720.70	40.0896
721.93	0.0000
722.78	46.5963
722.91	46.5985
723.31	44.8800
724.19	56.9833
727.33	45.6457
733.00	43.3258
735.93	31.2319
739.50	0.0000
747.24	39.7414
752.31	51.3495
753.82	45.0891
756.73	37.7930
763.94	56.8516
765.81	48.4651
766.42	49.5301
777.92	0.0000
778.90	45.5363
783.70	0.0000
785.37	39.2809
795.86	19.5418
801.95	34.7233
810.29	35.3687
810.76	33.2312
815.77	33.2932
818.51	39.7777
832.01	57.2661
834.85	40.0198
836.80	0.0000
846.77	38.0215
856.80	65.4170
860.56	25.1102
871.09	25.2051
873.19	32.9004
875.33	0.0000
879.36	28.5759
880.51	27.4878
883.24	35.7690
884.68	39.4569
889.28	39.5208
898.04	44.2510
911.20	37.9695
911.20	37.9695
911.20	37.9695
926.50	40.0291
937.49	47.6517
944.13	33.7112
946.00	38.4175
949.00	41.2697
962.29	48.9870
964.08	32.3179
966.15	35.5735
968.97	43.4292
968.97	43.4292
968.97	43.4292
983.53	27.5085
996.26	37.1457
1001.03	29.5708
1004.73	33.4256

1037.84	30.8776
1038.76	0.0000
1048.07	36.7816
1050.41	30.9961
1050.41	30.9961
1063.66	21.3958
1085.87	33.2875
1099.45	26.5397
1112.07	22.1988
1115.54	27.0882
1120.29	22.7454
1120.29	22.7454
1120.29	22.7454
1120.55	22.7473
1121.30	22.7520
1131.51	0.0000
1173.23	38.1484
1177.93	34.1771
1189.05	29.2407
1204.77	32.4049
1221.41	31.5348
1231.02	35.6950
1235.36	45.9467
1238.28	37.8085
1260.41	0.0000
1271.85	31.9587
1274.44	29.9169
1274.54	30.9485
1291.59	19.6873
1298.22	0.0000
1312.11	24.9990
1332.49	20.9399
1365.19	21.1100
1368.63	0.0000
1384.29	20.1481
1408.01	21.3306
1457.56	0.0000
1460.82	15.1182
1489.16	13.0430
1505.03	16.8304
1596.21	18.1259
1620.50	8.6309
1678.03	0.0000
1690.97	0.9732
1764.49	6.9138
1764.49	6.9138
1764.49	6.9138
1770.23	15.5737
1771.35	45.4962
1791.20	0.0000
1836.06	13.0199

VAX/VMS Nuclide Identification Report Generated 3-MAY-2012 09:56:27.75

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*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                                 *
*                               Charleston, SC 29407                          *
*****
Configuration   : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G302440002.CNF;1
Background file  : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]BKG_GAM12.CNF;240
Background date  : 29-APR-2012 14:31:14
Sample date     : 20-FEB-2012 12:02:00 Acquisition date : 3-MAY-2012 07:56:01.
Sample ID      : G302440002 Sample quantity   : 1.77190E+02 GRAM
Detector name   : GAM12 Detector geometry: CAN
Elapsed live time: 0 02:00:00.00 Elapsed real time: 0 02:00:01.66 0.0%
Energy tolerance: 1.50000 keV Analyst Initials : MXR1
Abundance limit : 75.00000 Sensitivity    : 5.00000
Batch ID       : 1203837 Detector SN#   :
Matrix Spike ID : LCS ID          : 1364
*****

```

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	10	35.55*	324	49	3.21	70.79	65	34	4.49E-02	10.0	4.81E+00
2	10	40.57	207	318	3.25	80.82	65	34	2.88E-02	25.1	
3	0	73.68	71	703	0.92	147.02	147	6	9.84E-03	59.6	
4	0	77.28	426	585	1.33	154.21	152	8	5.91E-02	11.2	
5	7	87.26	117	592	1.22	174.18	169	22	1.63E-02	33.1	6.27E+00
6	7	90.07	112	581	1.31	179.79	169	22	1.56E-02	38.0	
7	7	92.87*	184	486	1.33	185.39	169	22	2.55E-02	24.4	
8	0	143.78	260	412	1.48	287.19	283	11	3.61E-02	16.3	
9	0	163.44	87	362	1.43	326.50	322	9	1.21E-02	41.0	
10	0	185.72*	829	388	1.45	371.05	366	11	1.15E-01	5.9	
11	0	205.14	43	455	1.38	409.88	403	13	5.97E-03	103.4	
12	0	208.99	111	178	1.44	417.59	415	6	1.54E-02	21.2	
13	4	238.45*	1191	234	1.31	476.50	471	19	1.65E-01	3.8	1.46E+00
14	4	241.47	282	312	2.17	482.54	471	19	3.92E-02	18.8	
15	0	270.49	129	261	1.64	540.58	534	12	1.80E-02	26.6	
16	0	277.00	36	191	1.18	553.59	548	9	4.94E-03	72.4	
17	0	294.95	342	187	1.49	589.49	584	11	4.75E-02	9.5	
18	0	299.58	83	175	1.67	598.74	595	9	1.16E-02	30.5	
19	0	327.45	124	207	1.30	654.48	647	15	1.73E-02	26.7	
20	0	338.19	207	213	1.25	675.96	670	12	2.88E-02	15.7	
21	0	351.56	566	162	1.45	702.71	697	12	7.86E-02	6.2	
22	0	462.48	153	92	1.45	924.55	917	16	2.12E-02	16.2	
23	0	510.50*	88	143	1.54	1020.60	1014	16	1.22E-02	36.6	
24	0	567.97	146	144	2.51	1135.56	1128	16	2.03E-02	20.4	
25	0	582.84*	397	101	1.64	1165.32	1158	14	5.52E-02	7.4	
26	0	609.01	392	144	1.76	1217.66	1209	19	5.45E-02	8.9	
27	0	727.27	132	62	1.60	1454.25	1447	13	1.84E-02	15.0	
28	0	794.60	53	55	1.67	1588.96	1582	14	7.40E-03	32.7	
29	0	860.29	77	60	2.71	1720.41	1711	17	1.06E-02	25.8	
30	0	911.34	266	110	1.83	1822.56	1813	19	3.70E-02	11.1	
31	2	964.12	62	52	2.31	1928.17	1921	23	8.55E-03	27.7	1.24E+00
32	2	968.69	165	39	2.21	1937.34	1921	23	2.29E-02	11.4	
33	0	1120.09	85	46	1.89	2240.33	2232	13	1.18E-02	19.7	
34	0	1408.26	21	13	2.30	2817.18	2812	9	2.96E-03	37.6	
35	0	1460.24	784	33	2.20	2921.26	2912	16	1.09E-01	3.9	
36	0	1729.39	30	8	0.99	3460.20	3451	16	4.17E-03	27.9	

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
37	0	1763.72	76	5	2.49	3528.95	3519	17	1.06E-02	13.1	

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

VAX/VMS Nuclide Identification Report Generated

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*****
*
*               GEL Laboratories LLC
*               2040 Savage Road
*               Charleston, SC 29407
*****
*
*               DETECTOR DATA
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G302440002.CNF;1
* Acquisition date   : 3-MAY-2012 07:56:01 Detector SN#      :
* Detector ID        : GAM12                               Sensitivity       : 5.000
* Geometry           : CAN                                 Energy tolerance  : 1.500
* Elapsed live time  : 0 02:00:00.00                     Abundance limit  : 75.000
* Elapsed real time  : 0 02:00:01.66                     Half life ratio  : 8.000
*****
*
*               SAMPLE DATA
*
* Sample date        : 20-FEB-2012 12:02:00 Nuclide Library  : SOLID
* Sample ID          : G302440002                          Analyst initials  : MXR1
* Batch Number       : 1203837                             Sample Quantity  : 1.7719E+02 GRAM
* Recovery           : 1.00000                             Carrier Weight   : 0.00000
*****
*
*               QC DATA
*
* Standard Weight    : 0.00000
* CALIB. DATE/TIME  : 2-MAR-2012 07:23:37 MS Isotope       :
* MSD DPM            : 0.000                               MSD Isotope      :
* LCS DPM            : 0.000                               LCS Isotope      :
* LCSD DPM           : 0.000                               LCSD Isotope     :
*****

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Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act error (1.96-sigma)	MDA (pCi/GRAM)	
K-40	1.351E+01	1.534E+00	4.326E-01	0.000E+00
CD-109	2.023E+00	1.328E+00	1.459E+00	0.000E+00
SN-126	1.813E-01	1.190E-01	1.316E-01	0.000E+00
TL-208	4.627E-01	8.029E-02	4.926E-02	0.000E+00
BI-211	3.187E+00	4.934E-01	3.034E-01	0.000E+00
PB-212	1.564E+00	1.977E-01	8.249E-02	0.000E+00
BI-214	8.775E-01	1.764E-01	1.026E-01	0.000E+00
PB-214	1.157E+00	1.897E-01	1.103E-01	0.000E+00
RA-224	3.967E+00	1.510E+00	8.838E-01	0.000E+00
RA-226	8.775E-01	1.764E-01	1.026E-01	0.000E+00
AC-228	1.364E+00	3.844E-01	2.137E-01	0.000E+00
RA-228	1.364E+00	3.844E-01	2.137E-01	0.000E+00
TH-228	1.564E+00	1.977E-01	8.249E-02	0.000E+00
TH-230	8.775E-01	1.704E-01	1.026E-01	0.000E+00
TH-232	1.364E+00	3.844E-01	2.137E-01	0.000E+00
U-235	1.082E+00	3.896E-01	3.195E-01	0.000E+00
AM-243	8.188E-02	9.597E-02	1.027E-01	0.000E+00
ANH-511	8.037E-02	5.812E-02	3.921E-02	0.000E+00

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Act error (1.96-sigma)	MDA (pCi/GRAM)	
BE-7	4.859E-01	5.213E-01	1.030E+00	0.000E+00 NOT IDENT.
NA-22	-3.101E-02	3.419E-02	5.675E-02	0.000E+00 NOT IDENT.
NA-24	0.000E+00	3.679E+33	0.000E+00	0.000E+00 SHORT HLIF
SC-46	-1.221E-02	4.646E-02	8.563E-02	0.000E+00 FAIL ABUN
V-48	-3.265E-01	5.981E-01	1.063E+00	0.000E+00 NOT IDENT.
CR-51	1.110E-01	1.439E+00	2.394E+00	0.000E+00 NOT IDENT.
MN-54	1.977E-02	3.497E-02	6.772E-02	0.000E+00 NOT IDENT.
CO-56	3.909E-03	4.228E-02	8.142E-02	0.000E+00 NOT IDENT.
CO-57	1.631E-02	2.589E-02	5.008E-02	0.000E+00 NOT IDENT.

CO-58	-3.133E-02	4.881E-02	8.747E-02	0.000E+00	NOT IDENT.
FE-59	-3.902E-02	1.522E-01	2.764E-01	0.000E+00	NOT IDENT.
CO-60	-1.146E-02	2.800E-02	4.943E-02	0.000E+00	NOT IDENT.
ZN-65	2.733E-03	8.265E-02	1.320E-01	0.000E+00	NOT IDENT.
SE-75	-4.380E-03	5.751E-02	9.576E-02	0.000E+00	NOT IDENT.
SR-85	5.158E-02	5.886E-02	1.020E-01	0.000E+00	NOT IDENT.
Y-88	-2.058E-02	3.914E-02	6.960E-02	0.000E+00	NOT IDENT.
Y-91	1.088E+00	2.971E+01	5.472E+01	0.000E+00	NOT IDENT.
NB-94	-8.980E-03	2.526E-02	4.686E-02	0.000E+00	NOT IDENT.
NB-95	4.254E-02	6.134E-02	1.205E-01	0.000E+00	NOT IDENT.
NB-95M	0.000E+00	2.593E-01	4.707E-01	0.000E+00	NOT IDENT.
ZR-95	5.645E-02	1.040E-01	2.042E-01	0.000E+00	NOT IDENT.
MO-99	0.000E+00	1.846E+07	0.000E+00	0.000E+00	SHORT HLIF
TC-99M	0.000E+00	2.123E+41	0.000E+00	0.000E+00	SHORT HLIF
RU-103	-3.734E-02	8.745E-02	1.579E-01	0.000E+00	FAIL ABUN
RH-106	-1.024E-01	2.734E-01	4.874E-01	0.000E+00	NOT IDENT.
RU-106	-1.024E-01	2.732E-01	4.874E-01	0.000E+00	NOT IDENT.
AG-108M	-3.640E-03	2.296E-02	4.270E-02	0.000E+00	NOT IDENT.
AG-110M	-1.643E-02	4.102E-02	7.474E-02	0.000E+00	NOT IDENT.
SN-113	1.121E-02	4.984E-02	9.518E-02	0.000E+00	NOT IDENT.
CD-115	0.000E+00	6.036E+08	0.000E+00	0.000E+00	SHORT HLIF
SN-117M	-9.773E-01	1.091E+00	1.690E+00	0.000E+00	NOT IDENT.
TE-123M	-2.341E-02	4.113E-02	6.493E-02	0.000E+00	NOT IDENT.
SB-124	-1.926E-02	1.186E-01	2.252E-01	0.000E+00	NOT IDENT.
SB-125	2.723E-02	7.364E-02	1.414E-01	0.000E+00	FAIL ABUN
TE-125M	4.133E-01	1.719E+01	3.281E+01	0.000E+00	NOT IDENT.
I-126	1.847E+00	3.931E+00	7.408E+00	0.000E+00	NOT IDENT.
SB-126	-2.625E+00	3.265E+00	4.879E+00	0.000E+00	NOT IDENT.
SB-127	0.000E+00	3.436E+04	0.000E+00	0.000E+00	SHORT HLIF
I-131	0.000E+00	1.302E+01	0.000E+00	0.000E+00	SHORT HLIF
TE-132	0.000E+00	1.608E+05	0.000E+00	0.000E+00	SHORT HLIF
BA-133	-2.237E-03	3.596E-02	5.902E-02	0.000E+00	FAIL ABUN
I-133	0.000E+00	5.528E+23	0.000E+00	0.000E+00	SHORT HLIF
CS-134	0.000E+00	5.247E-02	6.715E-02	0.000E+00	FAIL ABUN
CS-135	2.797E-01	1.565E-01	2.816E-01	0.000E+00	NOT IDENT.
I-135	0.000E+00	5.616E+41	0.000E+00	0.000E+00	SHORT HLIF
CS-136	8.039E-01	1.551E+00	3.032E+00	0.000E+00	NOT IDENT.
BA-137M	-1.154E-02	2.921E-02	5.166E-02	0.000E+00	NOT IDENT.
CS-137	-1.219E-02	3.086E-02	5.457E-02	0.000E+00	NOT IDENT.
CE-139	3.479E-03	3.859E-02	6.307E-02	0.000E+00	NOT IDENT.
BA-140	-2.466E-01	4.961E+00	9.158E+00	0.000E+00	FAIL ABUN
LA-140	-1.275E+00	1.369E+00	2.294E+00	0.000E+00	FAIL ABUN
CE-141	0.000E+00	2.282E-01	4.031E-01	0.000E+00	NOT IDENT.
CE-143	0.000E+00	1.501E+15	0.000E+00	0.000E+00	SHORT HLIF
CE-144	-9.831E-02	2.064E-01	3.814E-01	0.000E+00	NOT IDENT.
PM-144	9.598E-03	2.849E-02	5.551E-02	0.000E+00	NOT IDENT.
PR-144	7.367E-01	2.198E+00	4.281E+00	0.000E+00	NOT IDENT.
PM-146	3.069E-02	3.309E-02	6.406E-02	0.000E+00	NOT IDENT.
ND-147	-5.050E+00	1.786E+01	3.241E+01	0.000E+00	FAIL ABUN
PM-149	0.000E+00	5.290E+09	0.000E+00	0.000E+00	SHORT HLIF
EU-152	4.708E-02	1.065E-01	1.592E-01	0.000E+00	FAIL ABUN
GD-153	1.353E-01	9.449E-02	1.689E-01	0.000E+00	NOT IDENT.
EU-154	-8.435E-02	9.437E-02	1.565E-01	0.000E+00	NOT IDENT.
EU-155	1.937E-02	9.377E-02	1.805E-01	0.000E+00	FAIL ABUN
TB-160	-4.024E-02	1.733E-01	3.211E-01	0.000E+00	FAIL ABUN
HO-166M	-6.634E-02	4.417E-02	7.367E-02	0.000E+00	FAIL ABUN
HF-181	1.407E-02	9.039E-02	1.702E-01	0.000E+00	NOT IDENT.
TA-182	-1.747E-01	2.133E-01	3.601E-01	0.000E+00	FAIL ABUN
IR-192	2.927E-02	4.700E-02	9.227E-02	0.000E+00	FAIL ABUN
HG-203	-4.345E-03	8.631E-02	1.432E-01	0.000E+00	FAIL ABUN
BI-207	-1.350E-02	3.673E-02	6.608E-02	0.000E+00	FAIL ABUN
PB-210	0.000E+00	4.366E+00	9.247E+00	0.000E+00	NOT IDENT.
PB-211	-1.770E-01	6.057E-01	1.107E+00	0.000E+00	NOT IDENT.
BI-212	0.000E+00	7.306E-01	1.077E+00	0.000E+00	FAIL ABUN
RN-219	-1.925E-01	3.254E-01	5.891E-01	0.000E+00	FAIL ABUN
RA-223	1.313E-01	5.620E-01	9.460E-01	0.000E+00	FAIL ABUN
AC-227	-5.858E-02	2.001E-01	3.804E-01	0.000E+00	FAIL ABUN
TH-227	-5.858E-02	2.001E-01	3.804E-01	0.000E+00	FAIL ABUN
TH-229	2.942E-02	4.561E-01	8.434E-01	0.000E+00	FAIL ABUN
PA-231	7.302E-01	1.186E+00	2.323E+00	0.000E+00	NOT IDENT.
TH-231	1.313E-01	5.620E-01	9.460E-01	0.000E+00	FAIL ABUN
PA-233	-3.961E-02	5.071E-02	9.271E-02	0.000E+00	FAIL ABUN
PA-234	-7.889E-02	2.202E-01	3.993E-01	0.000E+00	NOT IDENT.
PA-234M	2.349E+00	3.253E+00	6.421E+00	0.000E+00	NOT IDENT.
TH-234	1.611E-01	1.320E+00	2.606E+00	0.000E+00	FAIL ABUN
NP-237	-3.961E-02	5.077E-02	9.271E-02	0.000E+00	FAIL ABUN
U-238	1.611E-01	1.320E+00	2.606E+00	0.000E+00	FAIL ABUN
NP-239	-3.151E-01	3.392E-01	6.208E-01	0.000E+00	FAIL ABUN

AM-241	3.581E-02	1.622E-01	3.219E-01	0.000E+00	NOT IDENT.
CM-247	-2.348E-02	3.036E-02	5.441E-02	0.000E+00	FAIL ABUN
CF-249	-1.689E-02	3.229E-02	5.902E-02	0.000E+00	NOT IDENT.
CF-251	1.205E-02	1.120E-01	2.086E-01	0.000E+00	NOT IDENT.

Gamma Spectroscopy Auxillary Report

Sample:G302440002

Nuclide	TPU	LLD	EFF	FWHM	TArea	TBack	TCounts
BE-7	0.521E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
NA-22	0.342E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
NA-24	0.196E+17	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
K-40	0.153E+01	0.964E+02	0.113E-01	0.220E+01	0.769E+03	0.325E+02	0.802E+03
SC-46	0.465E-01	0.925E+02	0.000E+00	0.000E+00	0.866E+02	0.472E+02	0.134E+03
V-48	0.598E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
CR-51	0.144E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
MN-54	0.350E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
CO-56	0.423E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
CO-57	0.259E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
CO-58	0.488E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
FE-59	0.152E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
CO-60	0.280E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
ZN-65	0.827E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
SE-75	0.575E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
SR-85	0.589E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Y-88	0.391E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Y-91	0.297E+02	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
NB-94	0.253E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
NB-95	0.613E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
NB-95M	0.259E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
ZR-95	0.104E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
MO-99	0.185E+08	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
TC-99M	0.196E+17	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
RU-103	0.874E-01	0.104E+03	0.000E+00	0.000E+00	0.438E+03	0.160E+03	0.598E+03
RH-106	0.273E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
RU-106	0.273E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
AG-108M	0.230E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
CD-109	0.133E+01	0.106E+03	0.524E-01	0.122E+01	0.166E+03	0.837E+03	0.100E+04
AG-110M	0.410E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
SN-113	0.498E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
CD-115	0.604E+09	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
SN-117M	0.109E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
TE-123M	0.411E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
SB-124	0.119E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
SB-125	0.736E-01	0.693E+02	0.000E+00	0.000E+00	0.177E+03	0.107E+03	0.284E+03
TE-125M	0.172E+02	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
I-126	0.393E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
SB-126	0.327E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
SN-126	0.119E+00	0.106E+03	0.524E-01	0.122E+01	0.332E+03	0.167E+04	0.201E+04
SB-127	0.344E+05	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
I-131	0.130E+02	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
TE-132	0.161E+06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
BA-133	0.360E-01	0.705E+02	0.000E+00	0.000E+00	0.440E+02	0.237E+03	0.281E+03
I-133	0.196E+17	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
CS-134	0.525E-01	0.809E+02	0.189E-01	0.167E+01	0.221E+03	0.221E+03	0.443E+03
CS-135	0.157E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
I-135	0.196E+17	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
CS-136	0.155E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
BA-137M	0.292E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
CS-137	0.309E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
CE-139	0.386E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
BA-140	0.496E+01	0.707E+02	0.000E+00	0.000E+00	0.115E+03	0.477E+03	0.592E+03
LA-140	0.137E+01	0.821E+02	0.000E+00	0.000E+00	0.151E+03	0.250E+03	0.401E+03
CE-141	0.228E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
CE-143	0.150E+16	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
CE-144	0.206E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
PM-144	0.285E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
PR-144	0.220E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
PM-146	0.331E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
ND-147	0.179E+02	0.106E+03	0.000E+00	0.000E+00	0.158E+03	0.158E+04	0.173E+04
PM-149	0.529E+10	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
EU-152	0.107E+00	0.700E+02	0.000E+00	0.000E+00	0.854E+02	0.666E+02	0.152E+03
GD-153	0.945E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
EU-154	0.944E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
EU-155	0.938E-01	0.106E+03	0.000E+00	0.000E+00	0.166E+03	0.837E+03	0.100E+04
TB-160	0.173E+00	0.824E+02	0.000E+00	0.000E+00	0.268E+03	0.105E+04	0.132E+04
HO-166M	0.442E-01	0.823E+02	0.000E+00	0.000E+00	0.108E+04	0.993E+03	0.207E+04
HF-181	0.904E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
TA-182	0.213E+00	0.925E+02	0.000E+00	0.000E+00	0.866E+02	0.472E+02	0.134E+03

IR-192	0.470E-01	0.728E+02	0.000E+00	0.000E+00	0.419E+03	0.230E+03	0.649E+03
HG-203	0.863E-01	0.155E+03	0.000E+00	0.000E+00	0.102E+03	0.101E+04	0.111E+04
BI-207	0.367E-01	0.155E+03	0.000E+00	0.000E+00	0.204E+03	0.202E+04	0.223E+04
TL-208	0.803E-01	0.869E+02	0.240E-01	0.164E+01	0.571E+03	0.491E+03	0.106E+04
PB-210	0.437E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
BI-211	0.493E+00	0.831E+02	0.349E-01	0.145E+01	0.781E+03	0.121E+04	0.199E+04
PB-211	0.606E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
BI-212	0.731E+00	0.773E+02	0.203E-01	0.160E+01	0.144E+03	0.671E+02	0.211E+03
PB-212	0.198E+00	0.985E+02	0.466E-01	0.131E+01	0.231E+04	0.275E+04	0.506E+04
BI-214	0.176E+00	0.893E+02	0.232E-01	0.176E+01	0.597E+03	0.212E+03	0.809E+03
PB-214	0.190E+00	0.884E+02	0.349E-01	0.145E+01	0.216E+04	0.267E+04	0.483E+04
RN-219	0.325E+00	0.809E+02	0.000E+00	0.000E+00	0.160E+03	0.323E+03	0.484E+03
RA-223	0.562E+00	0.801E+02	0.000E+00	0.000E+00	0.758E+03	0.113E+04	0.189E+04
RA-224	0.151E+01	0.821E+02	0.462E-01	0.217E+01	0.355E+03	0.393E+03	0.748E+03
RA-226	0.176E+00	0.893E+02	0.232E-01	0.176E+01	0.597E+03	0.212E+03	0.809E+03
AC-227	0.200E+00	0.710E+02	0.000E+00	0.000E+00	0.102E+03	0.214E+03	0.316E+03
TH-227	0.200E+00	0.710E+02	0.000E+00	0.000E+00	0.102E+03	0.214E+03	0.316E+03
AC-228	0.384E+00	0.100E+03	0.169E-01	0.183E+01	0.703E+03	0.412E+03	0.112E+04
RA-228	0.384E+00	0.100E+03	0.169E-01	0.183E+01	0.703E+03	0.412E+03	0.112E+04
TH-228	0.198E+00	0.985E+02	0.466E-01	0.131E+01	0.231E+04	0.275E+04	0.506E+04
TH-229	0.456E+00	0.106E+03	0.000E+00	0.000E+00	0.166E+03	0.837E+03	0.100E+04
TH-230	0.170E+00	0.893E+02	0.232E-01	0.176E+01	0.597E+03	0.212E+03	0.809E+03
PA-231	0.119E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
TH-231	0.562E+00	0.801E+02	0.000E+00	0.000E+00	0.758E+03	0.113E+04	0.189E+04
TH-232	0.384E+00	0.100E+03	0.169E-01	0.183E+01	0.703E+03	0.412E+03	0.112E+04
PA-233	0.507E-01	0.710E+02	0.000E+00	0.000E+00	0.102E+03	0.214E+03	0.316E+03
PA-234	0.220E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
PA-234M	0.325E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
TH-234	0.132E+01	0.947E+02	0.000E+00	0.000E+00	0.258E+03	0.144E+04	0.170E+04
U-235	0.390E+00	0.825E+02	0.621E-01	0.148E+01	0.201E+04	0.562E+04	0.763E+04
NP-237	0.508E-01	0.710E+02	0.000E+00	0.000E+00	0.102E+03	0.214E+03	0.316E+03
U-238	0.132E+01	0.947E+02	0.000E+00	0.000E+00	0.258E+03	0.144E+04	0.170E+04
NP-239	0.339E+00	0.705E+02	0.000E+00	0.000E+00	0.440E+02	0.237E+03	0.281E+03
AM-241	0.162E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
AM-243	0.960E-01	0.155E+03	0.393E-01	0.923E+00	0.102E+03	0.101E+04	0.111E+04
CM-247	0.304E-01	0.705E+02	0.000E+00	0.000E+00	0.440E+02	0.237E+03	0.281E+03
CF-249	0.323E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
CF-251	0.112E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
ANH-511	0.581E-01	0.130E+03	0.265E-01	0.154E+01	0.101E+03	0.149E+04	0.159E+04


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Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G302440002.CNF;1
Analyses by       : PEAK V16.9
Sample title      : MXR1
Sample date       : 20-FEB-2012 12:02:00 Acquisition date : 3-MAY-2012 07:56:01
Sample ID         : G302440002 Sample quantity   : 177.19 GRAM
Sample type       : SOLID Sample geometry    :
Detector name     : GAMMA12 Detector geometry: CAN
Elapsed live time: 0 02:00:00.00 Elapsed real time: 0 02:00:01.66 0.0%
Start energy      : 0.64 keV End energy      : 2046.81 keV
Sensitivity       : 5.00 Gaussian           : 10.00
Critical level    : No
    
```

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	10	35.55	377	49	3.21	70.79	65	34	5.24E-02	8.4	4.81E+00
2	10	40.57	207	318	3.25	80.82	65	34	2.88E-02	25.1	
3	0	73.68	71	703	0.92	147.02	147	6	9.84E-03	59.6	
4	0	77.28	426	585	1.33	154.21	152	8	5.91E-02	11.2	
5	7	87.26	117	592	1.22	174.18	169	22	1.63E-02	33.1	6.27E+00
6	7	90.07	112	581	1.31	179.79	169	22	1.56E-02	38.0	
7	7	92.87	275	486	1.33	185.39	169	22	3.81E-02	16.1	
8	0	143.78	260	412	1.48	287.19	283	11	3.61E-02	16.3	
9	0	163.44	87	362	1.43	326.50	322	9	1.21E-02	41.0	
10	0	185.72	888	388	1.45	371.05	366	11	1.23E-01	5.5	
11	0	205.14	43	455	1.38	409.88	403	13	5.97E-03	103.4	
12	0	208.99	111	178	1.44	417.59	415	6	1.54E-02	21.2	
13	4	238.45	1237	234	1.31	476.50	471	19	1.72E-01	3.6	1.46E+00
14	4	241.47	282	312	2.17	482.54	471	19	3.92E-02	18.8	
15	0	270.49	129	261	1.64	540.58	534	12	1.80E-02	26.6	
16	0	277.00	36	191	1.18	553.59	548	9	4.94E-03	72.4	
17	0	294.95	342	187	1.49	589.49	584	11	4.75E-02	9.5	
18	0	299.58	83	175	1.67	598.74	595	9	1.16E-02	30.5	
19	0	327.45	124	207	1.30	654.48	647	15	1.73E-02	26.7	
20	0	338.19	207	213	1.25	675.96	670	12	2.88E-02	15.7	
21	0	351.56	566	162	1.45	702.71	697	12	7.86E-02	6.2	
22	0	462.48	153	92	1.45	924.55	917	16	2.12E-02	16.2	
23	0	510.50	247	143	1.54	1020.60	1014	16	3.43E-02	12.6	
24	0	567.97	146	144	2.51	1135.56	1128	16	2.03E-02	20.4	
25	0	582.84	407	101	1.64	1165.32	1158	14	5.65E-02	7.2	
26	0	609.01	392	144	1.76	1217.66	1209	19	5.45E-02	8.9	
27	0	727.27	132	62	1.60	1454.25	1447	13	1.84E-02	15.0	
28	0	794.60	53	55	1.67	1588.96	1582	14	7.40E-03	32.7	
29	0	860.29	77	60	2.71	1720.41	1711	17	1.06E-02	25.8	
30	0	911.34	266	110	1.83	1822.56	1813	19	3.70E-02	11.1	
31	2	964.12	62	52	2.31	1928.17	1921	23	8.55E-03	27.7	1.24E+00
32	2	968.69	165	39	2.21	1937.34	1921	23	2.29E-02	11.4	
33	0	1120.09	85	46	1.89	2240.33	2232	13	1.18E-02	19.7	
34	0	1408.26	21	13	2.30	2817.18	2812	9	2.96E-03	37.6	
35	0	1460.24	784	33	2.20	2921.26	2912	16	1.09E-01	3.9	
36	0	1729.39	30	8	0.99	3460.20	3451	16	4.17E-03	27.9	
37	0	1763.72	76	5	2.49	3528.95	3519	17	1.06E-02	13.1	

```

*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29407                           *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G302440002.CNF;1
Sample date        : 20-FEB-2012 12:02:00 Acquisition date : 3-MAY-2012 07:56:01.
Sample ID          : G302440002          Sample quantity  : 1.77190E+02 GRAM
Detector name      : GAM12              Detector geometry: CAN
Elapsed live time  : 0 02:00:00.00      Elapsed real time: 0 02:00:01.66  0.0%
Energy tolerance  : 1.50000 keV        Analyst Initials  : MXR1
Abundance limit   : 75.00000          Sensitivity       : 5.00000
Batch ID          : 1203837            Detector SN#      :
Matrix Spike ID   :                    LCS ID            : 1364
*****
    
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Summary of Nuclide Activity

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Total number of lines in spectrum      37
Number of unidentified lines           4
Number of lines tentatively identified by NID 33      89.19%
    
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Nuclide Type :

Nuclide	Hlife	Decay	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
K-40	1.25E+09Y	1.00	1.351E+01	1.351E+01	0.157E+01	11.58	
CD-109	461.40D	1.12	1.813E+00	2.023E+00	1.355E+00	66.97	
SN-126	2.30E+05Y	1.00	1.813E-01	1.813E-01	1.214E-01	66.97	
TL-208	1.41E+10Y	1.00	4.627E-01	4.627E-01	0.819E-01	17.71	
BI-211	7.04E+08Y	1.00	3.187E+00	3.187E+00	0.504E+00	15.80	
PB-212	1.41E+10Y	1.00	1.564E+00	1.564E+00	0.202E+00	12.90	
BI-214	1600.00Y	1.00	8.775E-01	8.775E-01	1.800E-01	20.51	
PB-214	1600.00Y	1.00	1.157E+00	1.157E+00	0.194E+00	16.73	
RA-224	1.41E+10Y	1.00	3.967E+00	3.967E+00	1.541E+00	38.85	
RA-226	1600.00Y	1.00	8.775E-01	8.775E-01	1.800E-01	20.51	
AC-228	1.41E+10Y	1.00	1.364E+00	1.364E+00	0.392E+00	28.77	
RA-228	1.41E+10Y	1.00	1.364E+00	1.364E+00	0.392E+00	28.77	
TH-228	1.41E+10Y	1.00	1.564E+00	1.564E+00	0.202E+00	12.90	
TH-230	7.54E+04Y	1.00	8.775E-01	8.775E-01	1.739E-01	19.82	
TH-232	1.41E+10Y	1.00	1.364E+00	1.364E+00	0.392E+00	28.77	
U-235	7.04E+08Y	1.00	1.082E+00	1.082E+00	0.398E+00	36.75	
AM-243	7370.00Y	1.00	8.188E-02	8.188E-02	9.793E-02	119.60	
ANH-511	1.00E+09Y	1.00	8.037E-02	8.037E-02	5.931E-02	73.79	
Total Activity :			3.538E+01	3.559E+01			

Grand Total Activity : 3.538E+01 3.559E+01

Flags: "K" = Keyline not found "M" = Manually accepted
 "E" = Manually edited "A" = Nuclide specific abn. limit

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
10	35.55	502	75	3.21	70.79	65	34	4.49E-02	20.0	6.36E-02	
10	40.57	318	487	3.25	80.82	65	34	2.88E-02	50.3	2.18E-01	
0	208.99	142	228	1.44	417.59	415	6	1.54E-02	42.5	5.11E+00	
0	270.49	160	323	1.64	540.58	534	12	1.80E-02	53.1	4.25E+00	T
0	327.45	151	250	1.30	654.48	647	15	1.73E-02	53.4	3.68E+00	T
0	462.48	177	107	1.45	924.55	917	16	2.12E-02	32.4	2.85E+00	T
0	567.97	164	162	2.51	1135.56	1128	16	2.03E-02	40.7	2.45E+00	T
0	727.27	144	67	1.60	1454.25	1447	13	1.84E-02	30.0	2.03E+00	T
0	794.60	57	59	1.67	1588.96	1582	14	7.40E-03	65.5	1.89E+00	T
2	964.12	64	54	2.31	1928.17	1921	23	8.55E-03	55.3	1.61E+00	T
0	1408.26	21	13	2.30	2817.18	2812	9	2.96E-03	75.3	1.17E+00	T
0	1729.39	29	8	0.99	3460.20	3451	16	4.17E-03	55.8	9.87E-01	

Flags: "T" = Tentatively associated

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
K-40	1460.82	769	10.66*	1.131E+00	1.351E+01	1.351E+01	11.58
CD-109	88.03	166	3.70*	5.240E+00	1.813E+00	2.023E+00	66.97
SN-126	64.28	-----	9.60	2.727E+00	-----	Line Not Found	-----
	86.94	166	8.90	5.240E+00	7.539E-01	7.539E-01	78.24
	87.57	166	37.00*	5.240E+00	1.813E-01	1.813E-01	66.97
TL-208	277.37	44	6.60	4.175E+00	3.381E-01	3.381E-01	145.36
	583.19	446	85.00*	2.401E+00	4.627E-01	4.627E-01	17.71
	860.56	81	12.50	1.772E+00	7.772E-01	7.772E-01	53.85
BI-211	72.87	102	1.23	3.929E+00	4.473E+00	4.473E+00	119.60
	351.06	679	12.92*	3.494E+00	3.187E+00	3.187E+00	15.80
PB-212	74.82	102	10.28	3.929E+00	5.353E-01	5.353E-01	119.99
	77.11	610	17.10	4.333E+00	1.744E+00	1.744E+00	24.19
	238.63	1500	43.60*	4.660E+00	1.564E+00	1.564E+00	12.90
	300.09	102	3.30	3.938E+00	1.666E+00	1.666E+00	62.04
BI-214	609.32	438	45.49*	2.323E+00	8.775E-01	8.775E-01	20.51
	1120.29	87	14.92	1.420E+00	8.663E-01	8.663E-01	42.43
	1764.49	73	15.30	9.723E-01	1.033E+00	1.033E+00	27.44
PB-214	74.82	102	5.80	3.929E+00	9.487E-01	9.488E-01	119.86
	77.11	610	9.70	4.333E+00	3.074E+00	3.074E+00	25.56
	242.00	355	7.25	4.618E+00	2.244E+00	2.244E+00	39.28
	295.22	419	18.42	3.984E+00	1.210E+00	1.210E+00	22.21
	351.93	679	35.60*	3.494E+00	1.157E+00	1.157E+00	16.73
RA-224	240.99	355	4.10*	4.618E+00	3.967E+00	3.967E+00	38.85
RA-226	609.32	438	45.49*	2.323E+00	8.775E-01	8.775E-01	20.51
	1120.29	87	14.92	1.420E+00	8.663E-01	8.663E-01	42.43
	1764.49	73	15.30	9.723E-01	1.033E+00	1.033E+00	27.44
AC-228	338.32	250	11.27	3.597E+00	1.308E+00	1.308E+00	52.36
	911.20	281	25.80*	1.690E+00	1.364E+00	1.364E+00	28.77
	968.97	172	15.80	1.607E+00	1.437E+00	1.437E+00	36.07
RA-228	338.32	250	11.27	3.597E+00	1.308E+00	1.308E+00	52.36
	911.20	281	25.80*	1.690E+00	1.364E+00	1.364E+00	28.77
	968.97	172	15.80	1.607E+00	1.437E+00	1.437E+00	36.07
TH-228	74.82	102	10.28	3.929E+00	5.353E-01	5.353E-01	119.60
	77.11	610	17.10	4.333E+00	1.744E+00	1.744E+00	24.19
	238.63	1500	43.60*	4.660E+00	1.564E+00	1.564E+00	12.90
	300.09	102	3.30	3.938E+00	1.666E+00	1.666E+00	86.52
TH-230	609.32	438	45.49*	2.323E+00	8.775E-01	8.775E-01	19.82
	1120.29	87	14.92	1.420E+00	8.663E-01	8.663E-01	41.89
	1764.49	73	15.30	9.723E-01	1.033E+00	1.033E+00	27.44
TH-232	338.32	250	11.27	3.597E+00	1.308E+00	1.308E+00	32.80
	911.20	281	25.80*	1.690E+00	1.364E+00	1.364E+00	28.77
	968.97	172	15.80	1.607E+00	1.437E+00	1.437E+00	36.07
U-235	89.96	158	3.47	5.438E+00	1.772E+00	1.772E+00	79.92
	93.35	258	5.60	5.612E+00	1.740E+00	1.740E+00	54.20
	143.76	348	10.96*	6.215E+00	1.082E+00	1.082E+00	36.75
	163.33	115	5.08	5.909E+00	8.081E-01	8.081E-01	83.93
	185.72	1076	57.20	5.512E+00	7.232E-01	7.232E-01	14.75
	205.31	55	5.01	5.175E+00	4.507E-01	4.507E-01	207.61
AM-243	43.53	-----	5.90	3.779E-01	-----	Line Not Found	-----

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
	74.66	102	67.20*	3.929E+00	8.188E-02	8.188E-02	119.60
ANH-511	511.00	101	100.00*	2.651E+00	8.037E-02	8.037E-02	73.79

Flag: "*" = Keyline

Nuclide	Half-life	Half-Life Ratio	Energy	%Abund	Activity (pCi/GRAM)	2-Sigma %Error	Rejected by
SC-46	83.79D	0.87	889.28*	99.98	---	Not Found	---
			1120.55	99.99	2.362E-01	41.89	Abun.
			% Abundances Found =		50.00		
RU-103	39.26D	1.86	497.08*	91.00	---	Not Found	---
			610.33	5.76	2.509E+01	24.21	Abun.
			% Abundances Found =		5.95		
SB-125	2.76Y	0.07	427.87*	29.80	---	Not Found	---
			463.37	10.56	1.308E+00	33.89	Abun.
			600.60	17.77	---	Not Found	---
			635.95	11.29	---	Not Found	---
% Abundances Found =		15.21					
BA-133	10.52Y	0.02	81.00	34.10	---	Not Found	---
			276.40	7.16	3.158E-01	145.50	Abun.
			302.85	18.33	---	Not Found	---
			356.01*	62.05	---	Not Found	---
% Abundances Found =		5.48					
CS-134	2.07Y	0.10	563.25	8.34	---	Not Found	---
			569.33	15.37	9.887E-01	41.74	Abun.
			604.72	97.62	---	Not Found	---
			795.86*	85.46	8.026E-02	66.71	Abun.
			801.95	8.69	---	Not Found	---
% Abundances Found =		46.15					
BA-140	12.75D	5.72	162.66	6.22	3.468E+01	82.50	Abun.
			304.85	4.29	---	Not Found	---
			423.72	3.15	---	Not Found	---
			537.26*	24.39	---	Not Found	---
% Abundances Found =		16.35					
LA-140	12.75D	5.72	328.76	20.30	2.242E+01	54.37	Abun.
			487.02	45.50	---	Not Found	---
			815.77	23.28	---	Not Found	---
			1596.21*	95.40	---	Not Found	---
% Abundances Found =		11.00					
ND-147	10.98D	6.64	91.11	27.90	2.193E+01	76.61	Abun.
			319.41	1.95	---	Not Found	---
			531.02*	13.10	---	Not Found	---
% Abundances Found =		64.96					
EU-152	13.54Y	0.01	121.78	28.67	---	Not Found	---
			244.70	7.61	---	Not Found	---
			344.28*	26.60	---	Not Found	---
			778.90	12.96	---	Not Found	---
			964.08	14.65	5.829E-01	57.67	Abun.
% Abundances Found =		10.24					

Nuclide	Half-life	Half-Life Ratio	Energy	%Abund	Activity (pCi/GRAM)	2-Sigma %Error	Rejected by
EU-152	13.54Y	0.01	1112.07	13.69	---	Not Found	---
			1408.01	21.07	1.833E-01	75.70	Abun.
			% Abundances Found =		26.36		
EU-155	4.75Y	0.04	86.55	30.70	2.250E-01	66.98	Abun.
			105.31*	21.10	---	Not Found	---
			% Abundances Found =		59.27		
TB-160	72.30D	1.01	86.79	13.30	1.014E+00	66.97	Abun.
			197.04	4.90	---	Not Found	---
			215.65	3.71	---	Not Found	---
			298.57	27.10	4.080E-01	61.75	
			879.36*	28.50	---	Not Found	---
			962.29	9.00	---	Not Found	---
			966.15	24.20	---	Not Found	---
			1177.93	14.40	---	Not Found	---
			1271.85	7.00	---	Not Found	---
% Abundances Found =		30.58					
HO-166M	1203.00Y	0.00	80.57	11.97	---	Not Found	---
			184.41	72.00	5.746E-01	14.75	Abun.
			280.46	29.36	---	Not Found	---
			410.95	11.20	---	Not Found	---
			711.68*	54.10	---	Not Found	---
			752.31	12.10	---	Not Found	---
810.29	56.90	---	Not Found	---			
% Abundances Found =		29.08					
TA-182	114.43D	0.64	67.75	41.20	---	Not Found	---
			100.11	14.10	---	Not Found	---
			152.43	6.93	---	Not Found	---
			222.11	7.49	---	Not Found	---
			1121.30	34.90	5.758E-01	41.89	
			1189.05	16.20	---	Not Found	---
			1221.41*	27.00	---	Not Found	---
1231.02	11.44	---	Not Found	---			
% Abundances Found =		21.91					
IR-192	73.83D	0.99	295.96	28.72	1.539E+00	21.26	Abun.
			308.46	29.68	---	Not Found	---
			316.51*	82.71	---	Not Found	---
			468.07	47.81	---	Not Found	---
% Abundances Found =		15.20					
HG-203	46.59D	1.56	70.83	3.69	---	Not Found	---
			72.87	6.19	2.628E+00	120.29	Abun.
			279.20*	81.56	---	Not Found	---
% Abundances Found =		6.77					
BI-207	32.90Y	0.01	72.81	21.40	2.582E-01	119.60	Abun.
			74.97	35.70	1.548E-01	119.60	
			569.70	97.76	---	Not Found	---

Nuclide	Half-life	Half-Life Ratio	Energy	%Abund	Activity (pCi/GRAM)	2-Sigma %Error	Rejected by
BI-207	32.90Y	0.01	1063.66*	74.60	---	Not Found	Abun.
			1770.23	6.87	---	Not Found	
			% Abundances Found =		24.16		
BI-212	1.41E+10Y	0.00	727.33*	6.67	2.257E+00	33.03	Abun.
			785.37	1.10	---	Not Found	
			1620.50	1.47	---	Not Found	
% Abundances Found =		72.19					
RN-219	7.04E+08Y	0.00	271.23	10.80	7.407E-01	54.29	Abun.
			401.81*	6.60	---	Not Found	
			% Abundances Found =		62.07		
RA-223	7.04E+08Y	0.00	81.07	15.00	---	Not Found	Abun.
			83.79	24.70	---	Not Found	
			94.56	8.67	---	Not Found	
			144.24	3.27	3.626E+00	33.99	
			154.21	5.70	---	Not Found	
			269.46	13.90	5.755E-01	54.03	
			323.87*	3.99	---	Not Found	
338.28	2.84	5.189E+00	33.87				
% Abundances Found =		25.63					
AC-227	7.04E+08Y	0.00	79.69	2.64	---	Not Found	Abun.
			235.96	17.50	---	Not Found	
			256.23*	9.50	---	Not Found	
			299.98	3.00	1.833E+00	62.45	
			304.50	1.56	---	Not Found	
			334.37	1.54	---	Not Found	
% Abundances Found =		8.39					
TH-227	7.04E+08Y	0.00	79.69	2.64	---	Not Found	Abun.
			235.96	17.50	---	Not Found	
			256.23*	9.50	---	Not Found	
			299.98	3.00	1.833E+00	62.45	
			304.50	1.56	---	Not Found	
			334.37	1.54	---	Not Found	
% Abundances Found =		8.39					
TH-229	7340.00Y	0.00	85.43	14.70	---	Not Found	Abun.
			88.47	24.00	2.796E-01	66.97	
			193.51*	4.41	---	Not Found	
			210.85	2.80	---	Not Found	
% Abundances Found =		52.28					
TH-231	7.04E+08Y	0.00	81.07	15.00	---	Not Found	Abun.
			83.79	24.70	---	Not Found	
			94.87	5.69	---	Not Found	
			144.24	3.27	3.626E+00	33.99	
			154.21	5.70	---	Not Found	
			269.46	13.90	5.755E-01	54.03	
			323.87*	3.99	---	Not Found	

Nuclide	Half-life	Half-Life Ratio	Energy	%Abund	Activity (pCi/GRAM)	2-Sigma %Error	Rejected by
TH-231	7.04E+08Y	0.00	338.28	2.84	5.189E+00	33.87	Abun.
		% Abundances	Found =	26.65			
PA-233	2.14E+06Y	0.00	300.13	6.63	8.294E-01	62.91	Abun.
			311.90*	38.50	---	Not Found	---
			340.48	4.45	---	Not Found	---
		% Abundances	Found =	13.37			
TH-234	4.47E+09Y	0.00	63.29*	3.70	---	Not Found	---
			92.59	4.23	2.303E+00	53.77	Abun.
		% Abundances	Found =	53.34			
NP-237	2.14E+06Y	0.00	94.65	10.56	---	Not Found	---
			98.43	16.90	---	Not Found	---
			300.13	6.63	8.294E-01	62.41	Abun.
			311.90*	38.50	---	Not Found	---
			340.48	4.45	---	Not Found	---
		% Abundances	Found =	8.61			
U-238	4.47E+09Y	0.00	63.29*	3.70	---	Not Found	---
			92.59	4.23	2.303E+00	49.78	Abun.
		% Abundances	Found =	53.34			
NP-239	7370.00Y	0.00	99.53	14.00	---	Not Found	---
			103.37	22.20	---	Not Found	---
			106.12	26.30	---	Not Found	---
			117.23*	5.26	---	Not Found	---
			228.18	11.14	---	Not Found	---
			277.60	14.44	1.545E-01	145.07	Abun.
		% Abundances	Found =	15.47			
CM-247	1.56E+07Y	0.00	278.00	3.40	6.562E-01	145.07	Abun.
			287.50	2.00	---	Not Found	---
			402.40*	72.00	---	Not Found	---
		% Abundances	Found =	4.39			

Flag: "*" = Keyline

 * GEL Laboratories LLC *
 * 2040 Savage Road *
 * Charleston, SC 29407 *
 * GAMMA SPECTROSCOPY BACKGROUND REPORT *

ENERGY	MDA COUNTS
43.53	174.4661
46.54	175.3839
49.72	0.0000
57.36	0.0000
57.53	399.4666
59.54	427.7668
63.29	433.0251
63.29	433.0251
64.28	432.6605
67.75	496.4459
69.67	532.9503
70.83	476.6924
72.81	479.5218
72.87	479.5607
72.87	479.5607
74.66	604.0142
74.82	604.1401
74.82	604.1401
74.82	604.1401
74.97	646.9659
77.11	721.7043
77.11	721.7043
77.11	721.7043
79.69	537.8664
79.69	537.8664
80.12	587.5127
80.19	0.0000
80.57	617.3109
81.00	640.2200
81.07	640.2739
81.07	640.2739
83.79	639.7388
83.79	639.7388
85.43	557.6708
86.55	511.4786
86.79	511.6226
86.94	511.7140
87.57	512.0953
88.03	512.3716
88.47	512.6362
89.96	513.5253
91.11	514.2081
92.59	515.0778
92.59	515.0778
93.35	515.5233
94.56	409.7430
94.65	409.7831
94.67	409.7924
94.87	409.8850
97.43	333.0674
98.43	354.5786
98.44	354.5826
99.53	388.7950
100.11	382.9307
103.18	398.5009
103.37	398.5827
105.31	392.2322
106.12	414.0906
109.28	410.3089
111.00	378.0670
111.76	0.0000
116.30	0.0000
117.23	385.6174
121.12	362.1102
121.78	371.7120
122.06	370.7700
123.07	400.3198

131.20	411.7866
133.02	449.2993
133.52	426.3451
136.00	430.4681
136.47	426.4266
140.51	0.0000
140.51	0.0000
143.76	378.1875
144.24	378.3451
144.24	378.3451
145.44	376.1829
152.43	391.6953
153.25	367.3318
154.21	344.0454
154.21	344.0454
156.02	393.9387
158.56	423.3711
159.00	402.8645
162.66	378.1573
163.33	343.3751
165.86	332.3836
176.60	370.9593
177.52	330.8214
181.07	0.0000
184.41	347.6819
185.72	321.8748
193.51	320.3935
197.04	312.3425
205.31	322.6272
210.85	284.4939
215.65	291.7016
222.11	293.8576
227.38	249.6466
228.16	0.0000
228.18	238.9165
235.69	228.8532
235.96	242.5342
235.96	242.5342
238.63	227.7588
238.63	227.7588
240.99	228.0960
242.00	228.2394
244.70	211.8568
252.40	0.0000
252.80	223.3260
256.23	219.1825
256.23	219.1825
260.90	0.0000
264.66	211.3365
268.22	216.4144
269.46	204.1956
269.46	204.1956
271.23	218.3417
273.65	172.1254
276.40	189.0370
277.37	214.4486
277.60	214.4767
278.00	223.8545
279.20	222.4512
279.54	222.4949
280.46	211.7114
283.69	190.8889
284.31	0.0000
285.41	200.4395
285.90	0.0000
287.50	183.3763
293.27	0.0000
295.22	169.5103
295.96	169.5784
298.57	169.8201
299.98	174.6705
299.98	174.6705
300.09	174.6818
300.09	174.6818
300.13	165.2417
300.13	165.2417
301.36	173.2267
302.85	206.4625

304.50	186.1371
304.50	186.1371
304.85	171.9735
308.46	150.8054
311.90	178.6367
311.90	178.6367
316.51	151.4459
319.41	168.1303
320.08	165.4051
323.87	151.3869
323.87	151.3869
328.76	146.9750
333.37	211.3687
334.37	185.8426
334.37	185.8426
338.28	164.6960
338.28	164.6960
338.32	164.7002
338.32	164.7002
338.32	164.7002
340.48	167.1274
340.48	167.1274
340.55	188.0255
344.28	161.8076
345.93	165.9668
351.06	154.1069
351.93	154.1729
356.01	129.5410
364.49	0.0000
366.42	0.0000
383.85	129.9359
388.16	147.9456
388.63	133.1807
391.69	128.4258
400.66	137.8716
401.81	142.9031
402.40	150.8830
404.85	153.0337
410.95	138.4995
414.70	150.7032
423.72	142.2739
427.09	115.3875
427.87	109.4045
433.94	113.7118
453.88	86.8099
463.37	83.5245
468.07	91.8457
473.00	0.0000
476.78	113.6707
477.60	85.0243
482.18	104.6770
487.02	96.6495
492.35	0.0000
497.08	106.3168
511.00	88.2036
514.00	88.3032
527.90	0.0000
529.87	0.0000
531.02	107.6798
537.26	98.4958
546.56	0.0000
563.25	116.3406
569.33	67.1262
569.50	67.1309
569.70	67.1355
583.19	83.0711
600.60	84.1766
602.73	108.9963
604.72	109.0708
609.32	97.7761
609.32	97.7761
609.32	97.7761
610.33	97.8095
614.28	66.3684
618.01	95.4413
621.93	86.3164
621.93	86.3164
633.25	75.8071

635.95	70.4542
636.99	0.0000
645.85	80.4660
657.76	86.2288
661.66	95.0777
661.66	95.0777
664.57	0.0000
666.33	82.0844
666.50	82.0880
677.62	73.5855
685.70	0.0000
695.00	80.0527
696.49	76.4059
696.51	76.4059
697.00	72.7349
702.65	87.6168
706.68	61.8679
711.68	89.7041
720.70	89.0176
721.93	0.0000
722.78	87.4817
722.91	87.4855
723.31	85.9043
724.19	70.0145
727.33	41.4103
733.00	59.0281
735.93	47.5023
739.50	0.0000
747.24	71.0212
752.31	58.0228
753.82	65.5381
756.73	69.3404
763.94	104.2251
765.81	77.9746
766.42	80.8070
777.92	0.0000
778.90	62.2335
783.70	0.0000
785.37	63.8921
795.86	64.9637
801.95	66.9027
810.29	65.6295
810.76	64.6866
815.77	56.2008
818.51	51.4764
832.01	73.6679
834.85	78.5116
836.80	0.0000
846.77	45.1430
856.80	42.9229
860.56	51.0904
871.09	53.1638
873.19	49.3232
875.33	0.0000
879.36	56.1828
880.51	51.3545
883.24	48.4812
884.68	56.2595
889.28	59.2390
898.04	69.1034
911.20	73.2391
911.20	73.2391
911.20	73.2391
926.50	48.0310
937.49	67.8194
944.13	54.1462
946.00	58.1105
949.00	43.3689
962.29	62.7201
964.08	57.3758
966.15	57.4053
968.97	47.5391
968.97	47.5391
968.97	47.5391
983.53	51.6794
996.26	58.8127
1001.03	44.9075
1004.73	60.9268

1037.84	37.2379
1038.76	0.0000
1048.07	41.3604
1050.41	46.4286
1050.41	46.4286
1063.66	50.6165
1085.87	51.8820
1099.45	47.9562
1112.07	52.6172
1115.54	49.1465
1120.29	50.9543
1120.29	50.9543
1120.29	50.9543
1120.55	50.9563
1121.30	45.6941
1131.51	0.0000
1173.23	40.4219
1177.93	52.9113
1189.05	66.5521
1204.77	53.2039
1221.41	76.4130
1231.02	70.2660
1235.36	55.6332
1238.28	59.8667
1260.41	0.0000
1271.85	44.4045
1274.44	56.0645
1274.54	56.0645
1291.59	44.5754
1298.22	0.0000
1312.11	39.4239
1332.49	34.2292
1365.19	19.3718
1368.63	0.0000
1384.29	28.0810
1408.01	27.8927
1457.56	0.0000
1460.82	21.3519
1489.16	18.8644
1505.03	26.4824
1596.21	25.9321
1620.50	13.5000
1678.03	0.0000
1690.97	18.5288
1764.49	10.3572
1764.49	10.3572
1764.49	10.3572
1770.23	15.5495
1771.35	41.4712
1791.20	0.0000
1836.06	17.9473

VAX/VMS Nuclide Identification Report Generated 3-MAY-2012 10:25:11.18

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*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                                 *
*                               Charleston, SC 29407                            *
*****
Configuration   : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G302440003.CNF;1
Background file  : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]BKG_GAM02.CNF;267
Background date  : 29-APR-2012 14:28:09
Sample date     : 20-FEB-2012 12:15:00 Acquisition date : 3-MAY-2012 08:24:37.
Sample ID      : G302440003 Sample quantity   : 1.74800E+02 GRAM
Detector name   : GAM02 Detector geometry: CAN
Elapsed live time: 0 02:00:00.00 Elapsed real time: 0 02:00:00.73 0.0%
Energy tolerance: 1.50000 keV Analyst Initials : MXR1
Abundance limit : 75.00000 Sensitivity    : 5.00000
Batch ID       : 1203837 Detector SN#   :
Matrix Spike ID : LCS ID      : 1364
*****

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Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	63.28*	25	328	0.92	124.81	121	7	3.47E-03	131.6	
2	2	74.92*	220	342	0.92	148.07	144	12	3.06E-02	15.3	1.23E+00
3	2	77.19	409	287	1.02	152.62	144	12	5.69E-02	8.4	
4	4	84.23*	143	349	1.40	166.70	163	27	1.98E-02	24.5	9.05E-01
5	4	87.31	195	331	1.33	172.86	163	27	2.70E-02	17.8	
6	4	89.89	182	316	1.34	178.02	163	27	2.52E-02	19.0	
7	4	92.69*	308	293	1.35	183.62	163	27	4.28E-02	12.8	
8	0	143.94*	104	324	0.98	286.13	282	10	1.44E-02	34.9	
9	0	185.71*	552	308	1.05	369.68	365	11	7.67E-02	7.9	
10	5	238.58*	884	124	1.07	475.43	470	18	1.23E-01	4.0	1.46E+00
11	5	241.55	243	187	1.96	481.37	470	18	3.38E-02	18.0	
12	0	269.99	83	173	1.76	538.26	533	11	1.15E-02	32.8	
13	0	277.63	94	99	1.08	553.54	549	9	1.31E-02	21.8	
14	0	295.09	239	165	1.03	588.46	583	11	3.31E-02	12.3	
15	0	300.16	40	121	1.20	598.60	595	8	5.60E-03	50.2	
16	0	338.19	186	136	1.32	674.68	670	10	2.59E-02	13.9	
17	0	351.84*	441	175	1.11	701.98	695	14	6.13E-02	8.1	
18	0	510.67*	79	177	1.74	1019.68	1011	19	1.10E-02	46.2	
19	0	582.96*	247	88	1.17	1164.29	1159	12	3.43E-02	10.3	
20	0	609.23*	270	90	1.27	1216.85	1211	13	3.75E-02	9.9	
21	0	728.04	65	105	1.83	1454.53	1445	17	8.99E-03	38.5	
22	0	796.24	50	51	1.97	1590.96	1583	18	6.99E-03	36.9	
23	0	860.45	63	24	2.07	1719.41	1714	12	8.72E-03	20.7	
24	0	910.89*	197	22	1.65	1820.32	1815	13	2.73E-02	9.1	
25	2	964.40	55	40	2.26	1927.36	1918	34	7.64E-03	29.8	2.44E+00
26	2	968.57	119	40	2.07	1935.70	1918	34	1.65E-02	13.9	
27	0	1119.94	74	33	1.43	2238.53	2232	13	1.03E-02	19.6	
28	0	1460.05*	432	9	2.12	2919.00	2909	18	5.99E-02	5.3	
29	0	1763.87*	44	7	2.81	3526.91	3519	16	6.11E-03	23.2	

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

VAX/VMS Nuclide Identification Report Generated

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*****
*
*           GEL Laboratories LLC
*           2040 Savage Road
*           Charleston, SC 29407
*****
*
*           DETECTOR DATA
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G302440003.CNF;1
* Acquisition date   : 3-MAY-2012 08:24:37 Detector SN#      :
* Detector ID        : GAM02                               Sensitivity       : 5.000
* Geometry           : CAN                                 Energy tolerance  : 1.500
* Elapsed live time  : 0 02:00:00.00                      Abundance limit  : 75.000
* Elapsed real time  : 0 02:00:00.73                      Half life ratio  : 8.000
*****
*
*           SAMPLE DATA
*
* Sample date        : 20-FEB-2012 12:15:00 Nuclide Library  : SOLID
* Sample ID          : G302440003                          Analyst initials  : MXR1
* Batch Number       : 1203837                              Sample Quantity  : 1.7480E+02 GRAM
* Recovery           : 1.00000                              Carrier Weight    : 0.00000
*****
*
*           QC DATA
*
* Standard Weight    : 0.00000
* CALIB. DATE/TIME  : 13-OCT-2011 14:44:41 MS Isotope      :
* MSD DPM            : 0.000                               MSD Isotope      :
* LCS DPM            : 0.000                               LCS Isotope      :
* LCSD DPM          : 0.000                               LCSD Isotope     :
*****

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Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act error (1.96-sigma)	MDA (pCi/GRAM)	
K-40	7.836E+00	1.039E+00	4.286E-01	0.000E+00
CD-109	3.330E+00	1.207E+00	1.051E+00	0.000E+00
SN-126	2.985E-01	1.082E-01	9.480E-02	0.000E+00
CE-141	4.566E-01	3.147E-01	2.598E-01	0.000E+00
TL-208	2.911E-01	6.443E-02	4.249E-02	0.000E+00
BI-211	2.482E+00	4.554E-01	2.654E-01	0.000E+00
PB-212	1.153E+00	1.457E-01	7.150E-02	0.000E+00
BI-214	6.115E-01	1.336E-01	8.971E-02	0.000E+00
PB-214	9.007E-01	1.723E-01	9.654E-02	0.000E+00
RA-224	3.402E+00	1.238E+00	7.666E-01	0.000E+00
RA-226	6.115E-01	1.336E-01	8.971E-02	0.000E+00
AC-228	1.039E+00	2.321E-01	1.683E-01	0.000E+00
RA-228	1.039E+00	2.321E-01	1.683E-01	0.000E+00
TH-228	1.153E+00	1.457E-01	7.150E-02	0.000E+00
TH-229	2.485E-01	3.643E-01	6.906E-01	0.000E+00
TH-230	6.115E-01	1.298E-01	8.971E-02	0.000E+00
PA-231	3.172E-01	9.586E-01	1.870E+00	0.000E+00
TH-232	1.039E+00	2.321E-01	1.683E-01	0.000E+00
TH-234	8.291E-01	2.143E+00	2.076E+00	0.000E+00
U-235	4.253E-01	2.993E-01	2.365E-01	0.000E+00
U-238	8.291E-01	2.143E+00	2.076E+00	0.000E+00
AM-243	2.460E-01	7.713E-02	7.471E-02	0.000E+00
ANH-511	7.274E-02	6.616E-02	3.532E-02	0.000E+00

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L.	Act error (1.96-sigma)	MDA (pCi/GRAM)	
BE-7	2.670E-01		4.787E-01	9.181E-01	0.000E+00 NOT IDENT.
NA-22	-7.345E-03		3.019E-02	5.492E-02	0.000E+00 NOT IDENT.
NA-24	0.000E+00		3.127E+33	0.000E+00	0.000E+00 SHORT HLIF
SC-46	8.885E-03		3.806E-02	7.303E-02	0.000E+00 FAIL ABUN

V-48	1.821E-01	5.437E-01	1.080E+00	0.000E+00	NOT IDENT.
CR-51	-5.530E-02	9.611E-01	1.829E+00	0.000E+00	NOT IDENT.
MN-54	-1.834E-02	2.802E-02	4.845E-02	0.000E+00	NOT IDENT.
CO-56	-5.628E-03	4.324E-02	7.940E-02	0.000E+00	NOT IDENT.
CO-57	4.530E-03	1.995E-02	3.847E-02	0.000E+00	NOT IDENT.
CO-58	-2.548E-03	4.423E-02	8.228E-02	0.000E+00	NOT IDENT.
FE-59	-7.762E-02	1.447E-01	2.583E-01	0.000E+00	NOT IDENT.
CO-60	2.500E-03	2.774E-02	5.266E-02	0.000E+00	NOT IDENT.
ZN-65	-3.672E-04	7.874E-02	1.275E-01	0.000E+00	NOT IDENT.
SE-75	-2.550E-02	4.630E-02	7.520E-02	0.000E+00	NOT IDENT.
SR-85	0.000E+00	5.237E-02	1.033E-01	0.000E+00	NOT IDENT.
Y-88	3.344E-03	3.606E-02	7.235E-02	0.000E+00	NOT IDENT.
Y-91	8.176E+00	2.640E+01	5.097E+01	0.000E+00	NOT IDENT.
NB-94	2.106E-02	2.385E-02	4.753E-02	0.000E+00	NOT IDENT.
NB-95	1.095E-01	5.627E-02	1.181E-01	0.000E+00	NOT IDENT.
NB-95M	7.099E-02	1.605E-01	2.827E-01	0.000E+00	NOT IDENT.
ZR-95	1.712E-02	8.794E-02	1.679E-01	0.000E+00	NOT IDENT.
MO-99	0.000E+00	1.726E+07	0.000E+00	0.000E+00	SHORT HLIF
TC-99M	0.000E+00	6.360E+41	0.000E+00	0.000E+00	SHORT HLIF
RU-103	1.361E-02	7.260E-02	1.428E-01	0.000E+00	FAIL ABUN
RH-106	-3.717E-02	2.483E-01	4.657E-01	0.000E+00	NOT IDENT.
RU-106	-3.717E-02	2.483E-01	4.657E-01	0.000E+00	NOT IDENT.
AG-108M	-1.958E-02	2.083E-02	3.569E-02	0.000E+00	NOT IDENT.
AG-110M	2.835E-03	3.422E-02	6.475E-02	0.000E+00	NOT IDENT.
SN-113	-3.877E-02	4.491E-02	7.860E-02	0.000E+00	NOT IDENT.
CD-115	0.000E+00	4.802E+08	0.000E+00	0.000E+00	SHORT HLIF
SN-117M	-5.618E-01	7.216E-01	1.293E+00	0.000E+00	NOT IDENT.
TE-123M	-3.165E-02	2.756E-02	4.829E-02	0.000E+00	NOT IDENT.
SB-124	-1.103E-02	1.044E-01	2.038E-01	0.000E+00	NOT IDENT.
SB-125	8.734E-03	6.838E-02	1.278E-01	0.000E+00	NOT IDENT.
TE-125M	8.333E+00	1.363E+01	2.682E+01	0.000E+00	NOT IDENT.
I-126	1.178E+00	3.493E+00	6.736E+00	0.000E+00	NOT IDENT.
SB-126	8.388E-01	2.987E+00	4.996E+00	0.000E+00	NOT IDENT.
SB-127	0.000E+00	2.870E+04	0.000E+00	0.000E+00	SHORT HLIF
I-131	0.000E+00	1.192E+01	0.000E+00	0.000E+00	SHORT HLIF
TE-132	0.000E+00	1.344E+05	0.000E+00	0.000E+00	SHORT HLIF
BA-133	2.129E-02	3.220E-02	5.620E-02	0.000E+00	FAIL ABUN
I-133	0.000E+00	4.493E+23	0.000E+00	0.000E+00	SHORT HLIF
CS-134	0.000E+00	5.677E-02	6.331E-02	0.000E+00	FAIL ABUN
CS-135	1.326E-01	1.155E-01	2.105E-01	0.000E+00	NOT IDENT.
I-135	0.000E+00	4.218E+41	0.000E+00	0.000E+00	SHORT HLIF
CS-136	1.328E+00	1.316E+00	2.777E+00	0.000E+00	NOT IDENT.
BA-137M	-1.648E-02	2.627E-02	4.692E-02	0.000E+00	NOT IDENT.
CS-137	-1.741E-02	2.775E-02	4.957E-02	0.000E+00	NOT IDENT.
CE-139	-4.319E-02	2.841E-02	4.841E-02	0.000E+00	NOT IDENT.
BA-140	7.377E-01	4.061E+00	7.927E+00	0.000E+00	NOT IDENT.
LA-140	-6.080E-01	1.308E+00	2.387E+00	0.000E+00	NOT IDENT.
CE-143	0.000E+00	7.229E+14	0.000E+00	0.000E+00	SHORT HLIF
CE-144	7.427E-02	1.517E-01	2.933E-01	0.000E+00	NOT IDENT.
PM-144	-7.625E-04	2.648E-02	4.959E-02	0.000E+00	NOT IDENT.
PR-144	-6.987E-02	2.042E+00	3.822E+00	0.000E+00	NOT IDENT.
PM-146	6.685E-03	2.929E-02	5.515E-02	0.000E+00	NOT IDENT.
ND-147	6.121E+00	1.408E+01	2.802E+01	0.000E+00	FAIL ABUN
PM-149	0.000E+00	4.434E+09	0.000E+00	0.000E+00	SHORT HLIF
EU-152	-1.153E-02	7.625E-02	1.314E-01	0.000E+00	FAIL ABUN
GD-153	1.415E-02	7.282E-02	1.283E-01	0.000E+00	NOT IDENT.
EU-154	-1.998E-02	8.311E-02	1.512E-01	0.000E+00	NOT IDENT.
EU-155	5.007E-02	7.519E-02	1.489E-01	0.000E+00	FAIL ABUN
TB-160	1.200E-01	1.532E-01	3.081E-01	0.000E+00	FAIL ABUN
HO-166M	9.113E-03	3.817E-02	7.364E-02	0.000E+00	FAIL ABUN
HF-181	-6.148E-02	7.811E-02	1.339E-01	0.000E+00	NOT IDENT.
TA-182	1.711E-02	1.885E-01	3.522E-01	0.000E+00	FAIL ABUN
IR-192	-1.053E-02	3.698E-02	6.934E-02	0.000E+00	FAIL ABUN
HG-203	1.009E-01	6.449E-02	1.210E-01	0.000E+00	NOT IDENT.
BI-207	1.164E-03	3.309E-02	6.338E-02	0.000E+00	FAIL ABUN
PB-210	3.740E+00	3.617E+00	7.737E+00	0.000E+00	NOT IDENT.
PB-211	-6.783E-01	5.707E-01	7.832E-01	0.000E+00	NOT IDENT.
BI-212	0.000E+00	8.629E-01	9.365E-01	0.000E+00	FAIL ABUN
RN-219	3.460E-02	2.581E-01	4.886E-01	0.000E+00	FAIL ABUN
RA-223	-1.661E-01	4.158E-01	7.689E-01	0.000E+00	FAIL ABUN
AC-227	-3.040E-02	1.638E-01	3.137E-01	0.000E+00	FAIL ABUN
TH-227	-3.040E-02	1.638E-01	3.137E-01	0.000E+00	FAIL ABUN
TH-231	-1.661E-01	4.158E-01	7.689E-01	0.000E+00	FAIL ABUN
PA-233	-8.273E-03	4.125E-02	7.779E-02	0.000E+00	FAIL ABUN
PA-234	2.088E-02	1.854E-01	3.624E-01	0.000E+00	NOT IDENT.
PA-234M	9.100E-01	3.258E+00	6.225E+00	0.000E+00	NOT IDENT.
NP-237	-8.273E-03	4.126E-02	7.779E-02	0.000E+00	FAIL ABUN
NP-239	-7.134E-02	2.669E-01	5.055E-01	0.000E+00	FAIL ABUN

AM-241	1.431E-05	1.398E-01	2.540E-01	0.000E+00	NOT IDENT.
CM-247	1.604E-03	2.373E-02	4.468E-02	0.000E+00	FAIL ABUN
CF-249	-3.951E-03	2.663E-02	4.939E-02	0.000E+00	NOT IDENT.
CF-251	-4.169E-02	8.826E-02	1.591E-01	0.000E+00	NOT IDENT.

Gamma Spectroscopy Auxillary Report

Sample:G302440003

Nuclide	TPU	LLD	EFF	FWHM	TArea	TBack	TCounts
BE-7	0.479E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
NA-22	0.302E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
NA-24	0.196E+17	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
K-40	0.104E+01	0.982E+02	0.109E-01	0.212E+01	0.423E+03	0.195E+03	0.618E+03
SC-46	0.381E-01	0.801E+02	0.000E+00	0.000E+00	0.759E+02	0.332E+02	0.109E+03
V-48	0.544E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
CR-51	0.961E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
MN-54	0.280E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
CO-56	0.432E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
CO-57	0.199E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
CO-58	0.442E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
FE-59	0.145E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
CO-60	0.277E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
ZN-65	0.787E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
SE-75	0.463E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
SR-85	0.524E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Y-88	0.361E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Y-91	0.264E+02	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
NB-94	0.239E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
NB-95	0.563E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
NB-95M	0.161E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
ZR-95	0.879E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
MO-99	0.173E+08	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
TC-99M	0.196E+17	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
RU-103	0.726E-01	0.938E+02	0.000E+00	0.000E+00	0.300E+03	0.340E+03	0.640E+03
RH-106	0.248E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
RU-106	0.248E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
AG-108M	0.208E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
CD-109	0.121E+01	0.800E+02	0.530E-01	0.133E+01	0.273E+03	0.700E+03	0.972E+03
AG-110M	0.342E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
SN-113	0.449E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
CD-115	0.480E+09	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
SN-117M	0.722E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
TE-123M	0.276E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
SB-124	0.104E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
SB-125	0.684E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
TE-125M	0.136E+02	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
I-126	0.349E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
SB-126	0.299E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
SN-126	0.108E+00	0.971E+02	0.530E-01	0.133E+01	0.581E+03	0.260E+04	0.318E+04
SB-127	0.287E+05	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
I-131	0.119E+02	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
TE-132	0.134E+06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
BA-133	0.322E-01	0.499E+02	0.000E+00	0.000E+00	0.116E+03	0.121E+03	0.237E+03
I-133	0.196E+17	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
CS-134	0.568E-01	0.758E+02	0.186E-01	0.197E+01	0.539E+02	0.542E+02	0.108E+03
CS-135	0.116E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
I-135	0.196E+17	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
CS-136	0.132E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
BA-137M	0.263E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
CS-137	0.277E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
CE-139	0.284E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
BA-140	0.406E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
LA-140	0.131E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
CE-141	0.315E+00	0.649E+02	0.632E-01	0.981E+00	0.137E+03	0.692E+03	0.830E+03
CE-143	0.723E+15	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
CE-144	0.152E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
PM-144	0.265E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
PR-144	0.204E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
PM-146	0.293E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
ND-147	0.141E+02	0.885E+02	0.000E+00	0.000E+00	0.254E+03	0.215E+04	0.240E+04
PM-149	0.443E+10	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
EU-152	0.762E-01	0.782E+02	0.000E+00	0.000E+00	0.573E+02	0.414E+02	0.987E+02
GD-153	0.728E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
EU-154	0.831E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
EU-155	0.752E-01	0.800E+02	0.000E+00	0.000E+00	0.273E+03	0.700E+03	0.972E+03
TB-160	0.153E+00	0.800E+02	0.000E+00	0.000E+00	0.273E+03	0.700E+03	0.972E+03
HO-166M	0.382E-01	0.793E+02	0.000E+00	0.000E+00	0.711E+03	0.158E+04	0.229E+04
HF-181	0.781E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
TA-182	0.188E+00	0.801E+02	0.000E+00	0.000E+00	0.759E+02	0.332E+02	0.109E+03

IR-192	0.370E-01	0.674E+02	0.000E+00	0.000E+00	0.291E+03	0.202E+03	0.492E+03
HG-203	0.645E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
BI-207	0.331E-01	0.107E+03	0.000E+00	0.000E+00	0.313E+03	0.743E+03	0.106E+04
TL-208	0.644E-01	0.773E+02	0.240E-01	0.117E+01	0.458E+03	0.318E+03	0.776E+03
PB-210	0.362E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
BI-211	0.455E+00	0.827E+02	0.352E-01	0.111E+01	0.526E+03	0.408E+03	0.934E+03
PB-211	0.571E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
BI-212	0.863E+00	0.102E+03	0.200E-01	0.183E+01	0.701E+02	0.114E+03	0.184E+03
PB-212	0.146E+00	0.706E+02	0.472E-01	0.107E+01	0.205E+04	0.192E+04	0.397E+04
BI-214	0.134E+00	0.918E+02	0.231E-01	0.127E+01	0.417E+03	0.510E+03	0.927E+03
PB-214	0.172E+00	0.802E+02	0.352E-01	0.111E+01	0.201E+04	0.225E+04	0.426E+04
RN-219	0.258E+00	0.649E+02	0.000E+00	0.000E+00	0.102E+03	0.214E+03	0.315E+03
RA-223	0.416E+00	0.769E+02	0.000E+00	0.000E+00	0.663E+03	0.179E+04	0.246E+04
RA-224	0.124E+01	0.624E+02	0.468E-01	0.196E+01	0.304E+03	0.233E+03	0.537E+03
RA-226	0.134E+00	0.918E+02	0.231E-01	0.127E+01	0.417E+03	0.510E+03	0.927E+03
AC-227	0.164E+00	0.583E+02	0.000E+00	0.000E+00	0.490E+02	0.147E+03	0.196E+03
TH-227	0.164E+00	0.583E+02	0.000E+00	0.000E+00	0.490E+02	0.147E+03	0.196E+03
AC-228	0.232E+00	0.714E+02	0.165E-01	0.165E+01	0.553E+03	0.328E+03	0.882E+03
RA-228	0.232E+00	0.714E+02	0.165E-01	0.165E+01	0.553E+03	0.328E+03	0.882E+03
TH-228	0.146E+00	0.706E+02	0.472E-01	0.107E+01	0.205E+04	0.192E+04	0.397E+04
TH-229	0.364E+00	0.824E+02	0.000E+00	0.000E+00	0.473E+03	0.143E+04	0.190E+04
TH-230	0.130E+00	0.918E+02	0.231E-01	0.127E+01	0.417E+03	0.510E+03	0.927E+03
PA-231	0.959E+00	0.583E+02	0.000E+00	0.000E+00	0.490E+02	0.147E+03	0.196E+03
TH-231	0.416E+00	0.769E+02	0.000E+00	0.000E+00	0.663E+03	0.179E+04	0.246E+04
TH-232	0.232E+00	0.714E+02	0.165E-01	0.165E+01	0.553E+03	0.328E+03	0.882E+03
PA-233	0.413E-01	0.583E+02	0.000E+00	0.000E+00	0.490E+02	0.147E+03	0.196E+03
PA-234	0.185E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
PA-234M	0.326E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
TH-234	0.214E+01	0.128E+03	0.253E-01	0.923E+00	0.465E+03	0.331E+04	0.378E+04
U-235	0.299E+00	0.779E+02	0.632E-01	0.981E+00	0.153E+04	0.654E+04	0.807E+04
NP-237	0.413E-01	0.583E+02	0.000E+00	0.000E+00	0.490E+02	0.147E+03	0.196E+03
U-238	0.214E+01	0.128E+03	0.253E-01	0.923E+00	0.465E+03	0.331E+04	0.378E+04
NP-239	0.267E+00	0.499E+02	0.000E+00	0.000E+00	0.116E+03	0.121E+03	0.237E+03
AM-241	0.140E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
AM-243	0.771E-01	0.107E+03	0.407E-01	0.925E+00	0.313E+03	0.743E+03	0.106E+04
CM-247	0.237E-01	0.499E+02	0.000E+00	0.000E+00	0.116E+03	0.121E+03	0.237E+03
CF-249	0.266E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
CF-251	0.883E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
ANH-511	0.662E-01	0.136E+03	0.265E-01	0.174E+01	0.899E+02	0.147E+04	0.156E+04

```

Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G302440003.CNF;1
Analyses by       : PEAK V16.9
Sample title      : MXR1
Sample date       : 20-FEB-2012 12:15:00 Acquisition date : 3-MAY-2012 08:24:37
Sample ID         : G302440003 Sample quantity   : 174.80 GRAM
Sample type       : SOLID Sample geometry    :
Detector name     : GAMMA2 Detector geometry: CAN
Elapsed live time : 0 02:00:00.00 Elapsed real time: 0 02:00:00.73 0.0%
Start energy      : 1.39 keV End energy       : 2048.27 keV
Sensitivity       : 5.00 Gaussian           : 10.00
Critical level    : No
    
```

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	63.28	112	328	0.92	124.81	121	7	1.55E-02	28.5	
2	2	74.92	251	342	0.92	148.07	144	12	3.49E-02	13.1	1.23E+00
3	2	77.19	409	287	1.02	152.62	144	12	5.69E-02	8.4	
4	4	84.23	171	349	1.40	166.70	163	27	2.38E-02	20.0	9.05E-01
5	4	87.31	195	331	1.33	172.86	163	27	2.70E-02	17.8	
6	4	89.89	182	316	1.34	178.02	163	27	2.52E-02	19.0	
7	4	92.69	513	293	1.35	183.62	163	27	7.12E-02	7.5	
8	0	143.94	135	324	0.98	286.13	282	10	1.88E-02	26.3	
9	0	185.71	694	308	1.05	369.68	365	11	9.64E-02	6.2	
10	5	238.58	909	124	1.07	475.43	470	18	1.26E-01	3.8	1.46E+00
11	5	241.55	243	187	1.96	481.37	470	18	3.38E-02	18.0	
12	0	269.99	83	173	1.76	538.26	533	11	1.15E-02	32.8	
13	0	277.63	94	99	1.08	553.54	549	9	1.31E-02	21.8	
14	0	295.09	239	165	1.03	588.46	583	11	3.31E-02	12.3	
15	0	300.16	40	121	1.20	598.60	595	8	5.60E-03	50.2	
16	0	338.19	186	136	1.32	674.68	670	10	2.59E-02	13.9	
17	0	351.84	465	175	1.11	701.98	695	14	6.46E-02	7.6	
18	0	510.67	232	177	1.74	1019.68	1011	19	3.22E-02	15.4	
19	0	582.96	256	88	1.17	1164.29	1159	12	3.56E-02	9.8	
20	0	609.23	299	90	1.27	1216.85	1211	13	4.15E-02	8.8	
21	0	728.04	65	105	1.83	1454.53	1445	17	8.99E-03	38.5	
22	0	796.24	50	51	1.97	1590.96	1583	18	6.99E-03	36.9	
23	0	860.45	63	24	2.07	1719.41	1714	12	8.72E-03	20.7	
24	0	910.89	209	22	1.65	1820.32	1815	13	2.90E-02	8.4	
25	2	964.40	55	40	2.26	1927.36	1918	34	7.64E-03	29.8	2.44E+00
26	2	968.57	119	40	2.07	1935.70	1918	34	1.65E-02	13.9	
27	0	1119.94	74	33	1.43	2238.53	2232	13	1.03E-02	19.6	
28	0	1460.05	454	9	2.12	2919.00	2909	18	6.31E-02	4.9	
29	0	1763.87	60	7	2.81	3526.91	3519	16	8.27E-03	16.7	

```

*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29407                          *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G302440003.CNF;1
Sample date        : 20-FEB-2012 12:15:00 Acquisition date : 3-MAY-2012 08:24:37.
Sample ID          : G302440003          Sample quantity  : 1.74800E+02 GRAM
Detector name     : GAM02                Detector geometry: CAN
Elapsed live time : 0 02:00:00.00        Elapsed real time: 0 02:00:00.73  0.0%
Energy tolerance  : 1.50000 keV         Analyst Initials  : MXR1
Abundance limit   : 75.00000           Sensitivity       : 5.00000
Batch ID          : 1203837             Detector SN#      :
Matrix Spike ID   :                    LCS ID           : 1364
*****
    
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Summary of Nuclide Activity

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Total number of lines in spectrum      29
Number of unidentified lines           0
Number of lines tentatively identified by NID 29      100.00%
    
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Nuclide Type :

Nuclide	Hlife	Decay	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
K-40	1.25E+09Y	1.00	7.836E+00	7.836E+00	1.060E+00	13.53	
CD-109	461.40D	1.12	2.985E+00	3.330E+00	1.232E+00	36.99	
SN-126	2.30E+05Y	1.00	2.985E-01	2.985E-01	1.104E-01	36.99	
CE-141	32.51D	4.73	9.653E-02	4.566E-01	3.211E-01	70.32	
TL-208	1.41E+10Y	1.00	2.911E-01	2.911E-01	0.657E-01	22.58	
BI-211	7.04E+08Y	1.00	2.482E+00	2.482E+00	0.465E+00	18.72	
PB-212	1.41E+10Y	1.00	1.153E+00	1.153E+00	0.149E+00	12.89	
BI-214	1600.00Y	1.00	6.115E-01	6.115E-01	1.363E-01	22.29	
PB-214	1600.00Y	1.00	9.007E-01	9.007E-01	1.758E-01	19.52	
RA-224	1.41E+10Y	1.00	3.402E+00	3.402E+00	1.264E+00	37.15	
RA-226	1600.00Y	1.00	6.115E-01	6.115E-01	1.363E-01	22.29	
AC-228	1.41E+10Y	1.00	1.039E+00	1.039E+00	0.237E+00	22.79	
RA-228	1.41E+10Y	1.00	1.039E+00	1.039E+00	0.237E+00	22.79	
TH-228	1.41E+10Y	1.00	1.153E+00	1.153E+00	0.149E+00	12.89	
TH-229	7340.00Y	1.00	4.601E-01	4.601E-01	1.702E-01	36.99	K
TH-230	7.54E+04Y	1.00	6.115E-01	6.115E-01	1.325E-01	21.66	
PA-231	7.04E+08Y	1.00	4.952E-01	4.952E-01	5.002E-01	101.01	K
TH-232	1.41E+10Y	1.00	1.039E+00	1.039E+00	0.237E+00	22.79	
TH-234	4.47E+09Y	1.00	8.291E-01	8.291E-01	21.87E-01	263.80	
U-235	7.04E+08Y	1.00	4.253E-01	4.253E-01	3.054E-01	71.80	
U-238	4.47E+09Y	1.00	8.291E-01	8.291E-01	21.87E-01	263.80	
AM-243	7370.00Y	1.00	2.460E-01	2.460E-01	0.787E-01	32.00	
ANH-511	1.00E+09Y	1.00	7.274E-02	7.274E-02	6.751E-02	92.80	

Total Activity : 2.891E+01 2.961E+01

Grand Total Activity : 2.891E+01 2.961E+01

Flags: "K" = Keyline not found "M" = Manually accepted
 "E" = Manually edited "A" = Nuclide specific abn. limit

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
0	269.99	102	214	1.76	538.26	533	11	1.15E-02	65.6	4.30E+00	T
0	728.04	70	114	1.83	1454.53	1445	17	8.99E-03	77.1	2.00E+00	T
0	796.24	54	54	1.97	1590.96	1583	18	6.99E-03	73.7	1.86E+00	T
2	964.40	57	41	2.26	1927.36	1918	34	7.64E-03	59.6	1.57E+00	T

Flags: "T" = Tentatively associated

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
K-40	1460.82	423	10.66*	1.087E+00	7.836E+00	7.836E+00	13.53
CD-109	88.03	273	3.70*	5.300E+00	2.985E+00	3.330E+00	36.99
SN-126	64.28	36	9.60	2.535E+00	3.195E-01	3.195E-01	263.60
	86.94	273	8.90	5.300E+00	1.241E+00	1.241E+00	54.81
	87.57	273	37.00*	5.300E+00	2.985E-01	2.985E-01	36.99
CE-141	145.44	137	48.29*	6.324E+00	9.653E-02	4.566E-01	70.32
TL-208	277.37	116	6.60	4.215E+00	8.930E-01	8.930E-01	45.42
	583.19	276	85.00*	2.396E+00	2.911E-01	2.911E-01	22.58
	860.56	66	12.50	1.739E+00	6.563E-01	6.563E-01	42.85
BI-211	72.87	-----	1.23	3.821E+00	-----	Line Not Found	-----
	351.06	526	12.92*	3.523E+00	2.482E+00	2.482E+00	18.72
PB-212	74.82	313	10.28	4.071E+00	1.608E+00	1.608E+00	33.44
	77.11	581	17.10	4.334E+00	1.684E+00	1.684E+00	19.16
	238.63	1105	43.60*	4.718E+00	1.153E+00	1.153E+00	12.89
	300.09	49	3.30	3.974E+00	8.029E-01	8.029E-01	100.91
BI-214	609.32	300	45.49*	2.314E+00	6.115E-01	6.115E-01	22.29
	1120.29	76	14.92	1.376E+00	7.934E-01	7.935E-01	41.98
	1764.49	42	15.30	9.366E-01	6.277E-01	6.278E-01	47.04
PB-214	74.82	313	5.80	4.071E+00	2.850E+00	2.850E+00	32.96
	77.11	581	9.70	4.334E+00	2.968E+00	2.968E+00	20.86
	242.00	304	7.25	4.676E+00	1.924E+00	1.924E+00	37.60
	295.22	291	18.42	4.025E+00	8.420E-01	8.421E-01	27.01
	351.93	526	35.60*	3.523E+00	9.007E-01	9.007E-01	19.52
RA-224	240.99	304	4.10*	4.676E+00	3.402E+00	3.402E+00	37.15
RA-226	609.32	300	45.49*	2.314E+00	6.115E-01	6.115E-01	22.29
	1120.29	76	14.92	1.376E+00	7.934E-01	7.935E-01	41.98
	1764.49	42	15.30	9.366E-01	6.277E-01	6.278E-01	47.04
AC-228	338.32	223	11.27	3.630E+00	1.172E+00	1.172E+00	50.13
	911.20	207	25.80*	1.655E+00	1.039E+00	1.039E+00	22.79
	968.97	124	15.80	1.568E+00	1.072E+00	1.072E+00	37.91
RA-228	338.32	223	11.27	3.630E+00	1.172E+00	1.172E+00	50.13
	911.20	207	25.80*	1.655E+00	1.039E+00	1.039E+00	22.79
	968.97	124	15.80	1.568E+00	1.072E+00	1.072E+00	37.91
TH-228	74.82	313	10.28	4.071E+00	1.608E+00	1.608E+00	32.02
	77.11	581	17.10	4.334E+00	1.684E+00	1.684E+00	19.16
	238.63	1105	43.60*	4.718E+00	1.153E+00	1.153E+00	12.89
	300.09	49	3.30	3.974E+00	8.029E-01	8.029E-01	117.56
TH-229	85.43	201	14.70	5.042E+00	5.820E-01	5.820E-01	49.95
	88.47	273	24.00	5.300E+00	4.601E-01	4.601E-01	36.99
	193.51	-----	4.41*	5.455E+00	-----	Line Not Found	-----
	210.85	-----	2.80	5.152E+00	-----	Line Not Found	-----
TH-230	609.32	300	45.49*	2.314E+00	6.115E-01	6.115E-01	21.66
	1120.29	76	14.92	1.376E+00	7.934E-01	7.934E-01	41.45
	1764.49	42	15.30	9.366E-01	6.277E-01	6.277E-01	47.04
PA-231	283.69	-----	1.70*	4.147E+00	-----	Line Not Found	-----
	301.36	49	5.35	3.974E+00	4.952E-01	4.952E-01	101.01
TH-232	338.32	223	11.27	3.630E+00	1.172E+00	1.172E+00	29.11
	911.20	207	25.80*	1.655E+00	1.039E+00	1.039E+00	22.79
	968.97	124	15.80	1.568E+00	1.072E+00	1.072E+00	37.91

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
TH-234	63.29	36	3.70*	2.535E+00	8.291E-01	8.291E-01	263.80
	92.59	429	4.23	5.677E+00	3.834E+00	3.834E+00	34.17
U-235	89.96	254	3.47	5.493E+00	2.859E+00	2.859E+00	45.49
	93.35	429	5.60	5.677E+00	2.896E+00	2.896E+00	34.84
	143.76	137	10.96*	6.324E+00	4.253E-01	4.253E-01	71.80
	163.33	-----	5.08	6.010E+00	-----	Line Not Found	-----
	185.72	711	57.20	5.597E+00	4.767E-01	4.767E-01	17.96
U-238	205.31	-----	5.01	5.246E+00	-----	Line Not Found	-----
	63.29	36	3.70*	2.535E+00	8.291E-01	8.291E-01	263.80
AM-243	92.59	429	4.23	5.677E+00	3.834E+00	3.834E+00	27.46
	43.53	-----	5.90	3.317E-01	-----	Line Not Found	-----
ANH-511	74.66	313	67.20*	4.071E+00	2.460E-01	2.460E-01	32.00
	511.00	90	100.00*	2.655E+00	7.274E-02	7.274E-02	92.80

Flag: "*" = Keyline

Nuclide	Half-life	Half-Life Ratio	Energy	%Abund	Activity (pCi/GRAM)	2-Sigma %Error	Rejected by
SC-46	83.79D	0.87	889.28*	99.98	---	Not Found	---
			1120.55	99.99	2.164E-01	41.45	Abun.
			% Abundances Found =		50.00		
RU-103	39.26D	1.86	497.08*	91.00	---	Not Found	---
			610.33	5.76	1.749E+01	25.73	Abun.
			% Abundances Found =		5.95		
BA-133	10.52Y	0.02	81.00	34.10	---	Not Found	---
			276.40	7.16	8.341E-01	45.88	Abun.
			302.85	18.33	---	Not Found	---
			356.01*	62.05	---	Not Found	---
			383.85	8.94	---	Not Found	---
% Abundances Found =		5.48					
CS-134	2.07Y	0.10	563.25	8.34	---	Not Found	---
			569.33	15.37	---	Not Found	---
			604.72	97.62	---	Not Found	---
			795.86*	85.46	7.785E-02	74.41	Abun.
			801.95	8.69	---	Not Found	---
% Abundances Found =		39.11					
ND-147	10.98D	6.64	91.11	27.90	3.541E+01	39.38	Abun.
			319.41	1.95	---	Not Found	---
			531.02*	13.10	---	Not Found	---
% Abundances Found =		64.96					
EU-152	13.54Y	0.01	121.78	28.67	---	Not Found	---
			244.70	7.61	---	Not Found	---
			344.28*	26.60	---	Not Found	---
			778.90	12.96	---	Not Found	---
			964.08	14.65	5.392E-01	60.77	Abun.
			1085.87	10.24	---	Not Found	---
			1112.07	13.69	---	Not Found	---
% Abundances Found =		10.81					
EU-155	4.75Y	0.04	86.55	30.70	3.703E-01	37.01	Abun.
			105.31*	21.10	---	Not Found	---
% Abundances Found =		59.27					
TB-160	72.30D	1.01	86.79	13.30	1.670E+00	36.99	Abun.
			197.04	4.90	---	Not Found	---
			215.65	3.71	---	Not Found	---
			298.57	27.10	---	Not Found	---
			879.36*	28.50	---	Not Found	---
			962.29	9.00	---	Not Found	---
			966.15	24.20	---	Not Found	---
			% Abundances Found =		10.07		

Nuclide	Half-life	Half-Life Ratio	Energy	%Abund	Activity (pCi/GRAM)	2-Sigma %Error	Rejected by
HO-166M	1203.00Y	0.00	80.57	11.97	---	Not Found	---
			184.41	72.00	3.788E-01	17.96	Abun.
			280.46	29.36	---	Not Found	---
			410.95	11.20	---	Not Found	---
			711.68*	54.10	---	Not Found	---
			752.31	12.10	---	Not Found	---
			810.29	56.90	---	Not Found	---
% Abundances Found =			29.08				
TA-182	114.43D	0.64	67.75	41.20	---	Not Found	---
			100.11	14.10	---	Not Found	---
			152.43	6.93	---	Not Found	---
			222.11	7.49	---	Not Found	---
			1121.30	34.90	5.274E-01	41.45	Abun.
			1189.05	16.20	---	Not Found	---
			1221.41*	27.00	---	Not Found	---
1231.02	11.44	---	Not Found	---			
% Abundances Found =			21.91				
IR-192	73.83D	0.99	295.96	28.72	1.070E+00	26.24	Abun.
			308.46	29.68	---	Not Found	---
			316.51*	82.71	---	Not Found	---
			468.07	47.81	---	Not Found	---
% Abundances Found =			15.20				
BI-207	32.90Y	0.01	72.81	21.40	---	Not Found	---
			74.97	35.70	4.650E-01	32.00	Abun.
			569.70	97.76	---	Not Found	---
			1063.66*	74.60	---	Not Found	---
			1770.23	6.87	---	Not Found	---
% Abundances Found =			15.11				
BI-212	1.41E+10Y	0.00	727.33*	6.67	1.127E+00	78.14	Abun.
			785.37	1.10	---	Not Found	---
			1620.50	1.47	---	Not Found	---
% Abundances Found =			72.19				
RN-219	7.04E+08Y	0.00	271.23	10.80	4.697E-01	66.44	Abun.
			401.81*	6.60	---	Not Found	---
% Abundances Found =			62.07				
RA-223	7.04E+08Y	0.00	81.07	15.00	---	Not Found	---
			83.79	24.70	3.464E-01	49.95	Abun.
			94.56	8.67	---	Not Found	---
			144.24	3.27	1.426E+00	70.43	
			154.21	5.70	---	Not Found	---
			269.46	13.90	3.649E-01	66.23	
			323.87*	3.99	---	Not Found	---
338.28	2.84	4.649E+00	30.31				
% Abundances Found =			57.27				
AC-227	7.04E+08Y	0.00	79.69	2.64	---	Not Found	---
						Abun.	

Nuclide	Half-life	Half-Life Ratio	Energy	%Abund	Activity (pCi/GRAM)	2-Sigma %Error	Rejected by
AC-227	7.04E+08Y	0.00	235.96	17.50	---	Not Found	Abun.
			256.23*	9.50	---	Not Found	
			299.98	3.00	8.832E-01	101.16	
			304.50	1.56	---	Not Found	
			334.37	1.54	---	Not Found	
% Abundances Found =			8.39				
TH-227	7.04E+08Y	0.00	79.69	2.64	---	Not Found	Abun.
			235.96	17.50	---	Not Found	
			256.23*	9.50	---	Not Found	
			299.98	3.00	8.832E-01	101.16	
			304.50	1.56	---	Not Found	
% Abundances Found =			8.39				
TH-231	7.04E+08Y	0.00	81.07	15.00	---	Not Found	Abun.
			83.79	24.70	3.464E-01	49.95	
			94.87	5.69	---	Not Found	
			144.24	3.27	1.426E+00	70.43	
			154.21	5.70	---	Not Found	
			269.46	13.90	3.649E-01	66.23	
% Abundances Found =			59.54				
PA-233	2.14E+06Y	0.00	300.13	6.63	3.996E-01	101.45	Abun.
			311.90*	38.50	---	Not Found	
			340.48	4.45	---	Not Found	
% Abundances Found =			13.37				
NP-237	2.14E+06Y	0.00	94.65	10.56	---	Not Found	Abun.
			98.43	16.90	---	Not Found	
			300.13	6.63	3.996E-01	101.13	
			311.90*	38.50	---	Not Found	
% Abundances Found =			8.61				
NP-239	7370.00Y	0.00	99.53	14.00	---	Not Found	Abun.
			103.37	22.20	---	Not Found	
			106.12	26.30	---	Not Found	
			117.23*	5.26	---	Not Found	
			228.18	11.14	---	Not Found	
% Abundances Found =			15.47				
CM-247	1.56E+07Y	0.00	278.00	3.40	1.734E+00	44.50	Abun.
			287.50	2.00	---	Not Found	
			402.40*	72.00	---	Not Found	
% Abundances Found =			4.39				

Flag: "*" = Keyline

 * GEL Laboratories LLC *
 * 2040 Savage Road *
 * Charleston, SC 29407 *
 * GAMMA SPECTROSCOPY BACKGROUND REPORT *

ENERGY	MDA COUNTS
43.53	212.6040
46.54	183.2662
49.72	0.0000
57.36	0.0000
57.53	247.8125
59.54	246.6590
63.29	279.2360
63.29	279.2360
64.28	275.9570
67.75	291.9397
69.67	313.7228
70.83	307.3231
72.81	333.9954
72.87	334.0485
72.87	334.0485
74.66	306.7139
74.82	306.8411
74.82	306.8411
74.82	306.8411
74.97	306.9599
77.11	308.6433
77.11	308.6433
77.11	308.6433
79.69	279.4843
79.69	279.4843
80.12	260.8782
80.19	0.0000
80.57	241.2959
81.00	275.6513
81.07	291.8048
81.07	291.8048
83.79	258.4444
83.79	258.4444
85.43	259.4520
86.55	260.1342
86.79	260.2790
86.94	260.3713
87.57	260.7531
88.03	261.0302
88.47	261.2949
89.96	262.1867
91.11	262.8703
92.59	263.7429
92.59	263.7429
93.35	264.1881
94.56	224.3289
94.65	224.3732
94.67	211.1847
94.87	211.2770
97.43	231.6335
98.43	218.8226
98.44	218.8271
99.53	221.3112
100.11	218.6147
103.18	235.9471
103.37	236.0405
105.31	244.9782
106.12	262.4078
109.28	247.9456
111.00	271.0357
111.76	0.0000
116.30	0.0000
117.23	234.3800
121.12	237.1126
121.78	229.1430
122.06	229.2604
123.07	231.7519

131.20	279.2075
133.02	215.8564
133.52	214.9882
136.00	251.8800
136.47	230.8954
140.51	0.0000
140.51	0.0000
143.76	205.8242
144.24	205.9844
144.24	205.9844
145.44	214.4467
152.43	232.5887
153.25	251.3850
154.21	233.2309
154.21	233.2309
156.02	222.9507
158.56	245.7565
159.00	250.3097
162.66	197.5930
163.33	197.7897
165.86	263.9611
176.60	204.9685
177.52	213.1249
181.07	0.0000
184.41	223.6831
185.72	217.8050
193.51	187.7989
197.04	187.5004
205.31	224.5586
210.85	176.6388
215.65	177.6672
222.11	196.9362
227.38	151.3118
228.16	0.0000
228.18	163.1709
235.69	162.9305
235.96	184.8073
235.96	184.8073
238.63	169.6694
238.63	169.6694
240.99	170.1121
242.00	170.3009
244.70	126.3587
252.40	0.0000
252.80	156.5524
256.23	145.0342
256.23	145.0342
260.90	0.0000
264.66	145.5592
268.22	125.0046
269.46	130.0615
269.46	130.0615
271.23	135.9580
273.65	124.9323
276.40	142.3576
277.37	130.1454
277.60	130.1747
278.00	124.7117
279.20	100.4969
279.54	105.1003
280.46	114.3420
283.69	126.1750
284.31	0.0000
285.41	123.5121
285.90	0.0000
287.50	153.5034
293.27	0.0000
295.22	149.9948
295.96	139.2693
298.57	162.8782
299.98	110.2805
299.98	110.2805
300.09	124.2734
300.09	124.2734
300.13	124.2773
300.13	124.2773
301.36	124.4199
302.85	126.1492

304.50	85.7871
304.50	85.7871
304.85	101.4181
308.46	112.5153
311.90	109.9219
311.90	109.9219
316.51	102.4940
319.41	96.8306
320.08	96.8875
323.87	115.0672
323.87	115.0672
328.76	118.5461
333.37	108.8166
334.37	132.9337
334.37	132.9337
338.28	120.5219
338.28	120.5219
338.32	120.5255
338.32	120.5255
338.32	120.5255
340.48	107.8657
340.48	107.8657
340.55	107.8723
344.28	126.5152
345.93	124.5328
351.06	115.7238
351.93	115.8056
356.01	92.9534
364.49	0.0000
366.42	0.0000
383.85	88.5603
388.16	93.0334
388.63	95.1573
391.69	114.2441
400.66	71.7509
401.81	79.2046
402.40	80.2954
404.85	105.8426
410.95	96.7472
414.70	79.9530
423.72	92.2726
427.09	103.2480
427.87	92.5429
433.94	98.3399
453.88	75.5877
463.37	78.2705
468.07	91.7818
473.00	0.0000
476.78	77.8453
477.60	71.2109
482.18	83.6952
487.02	64.9234
492.35	0.0000
497.08	70.2914
511.00	69.0796
514.00	56.1534
527.90	0.0000
529.87	0.0000
531.02	61.6348
537.26	65.5537
546.56	0.0000
563.25	61.8524
569.33	54.5407
569.50	58.3082
569.70	58.3142
583.19	58.7501
600.60	71.7407
602.73	62.2467
604.72	78.2891
609.32	71.1130
609.32	71.1130
609.32	71.1130
610.33	59.2924
614.28	72.2626
618.01	63.7151
621.93	70.6172
621.93	70.6172
633.25	58.3799

635.95	52.6144
636.99	0.0000
645.85	57.7756
657.76	60.0901
661.66	80.9330
661.66	80.9330
664.57	0.0000
666.33	66.2803
666.50	66.2852
677.62	47.7457
685.70	0.0000
695.00	52.1562
696.49	64.2375
696.51	64.2375
697.00	74.2927
702.65	57.3771
706.68	63.5368
711.68	47.5106
720.70	59.2135
721.93	0.0000
722.78	66.0442
722.91	66.0474
723.31	62.6724
724.19	62.6980
727.33	67.2004
733.00	40.8320
735.93	51.1084
739.50	0.0000
747.24	56.5039
752.31	52.5128
753.82	47.3971
756.73	47.4577
763.94	71.4123
765.81	42.4684
766.42	43.5155
777.92	0.0000
778.90	47.9182
783.70	0.0000
785.37	48.0518
795.86	38.8229
801.95	47.3379
810.29	48.5594
810.76	43.2892
815.77	42.3223
818.51	43.4294
832.01	41.5403
834.85	55.4506
836.80	0.0000
846.77	43.9319
856.80	44.8252
860.56	43.0967
871.09	31.3747
873.19	41.1459
875.33	0.0000
879.36	30.3912
880.51	27.1466
883.24	39.1333
884.68	31.5410
889.28	31.5977
898.04	36.0768
911.20	40.6521
911.20	40.6521
911.20	40.6521
926.50	31.3092
937.49	51.7777
944.13	34.2938
946.00	36.1729
949.00	47.3549
962.29	38.2532
964.08	38.2782
966.15	38.3065
968.97	38.3449
968.97	38.3449
968.97	38.3449
983.53	33.8438
996.26	48.1611
1001.03	34.9984
1004.73	54.9331

1037.84	32.5695
1038.76	0.0000
1048.07	23.0693
1050.41	30.7839
1050.41	30.7839
1063.66	35.7504
1085.87	35.0391
1099.45	43.0135
1112.07	35.3350
1115.54	42.1125
1120.29	57.3608
1120.29	57.3608
1120.29	57.3608
1120.55	53.9911
1121.30	55.6898
1131.51	0.0000
1173.23	46.0187
1177.93	39.0714
1189.05	49.2552
1204.77	36.3589
1221.41	47.7019
1231.02	55.9802
1235.36	50.9542
1238.28	39.7792
1260.41	0.0000
1271.85	32.9544
1274.44	36.0710
1274.54	36.0724
1291.59	23.8189
1298.22	0.0000
1312.11	31.2463
1332.49	27.2314
1365.19	19.0203
1368.63	0.0000
1384.29	25.4893
1408.01	21.3729
1457.56	0.0000
1460.82	18.5693
1489.16	17.7661
1505.03	29.1003
1596.21	19.1888
1620.50	11.5781
1678.03	0.0000
1690.97	12.7443
1764.49	1.7432
1764.49	1.7432
1764.49	1.7432
1770.23	13.9629
1771.35	32.9206
1791.20	0.0000
1836.06	11.1235

VAX/VMS Nuclide Identification Report Generated 3-MAY-2012 10:58:28.81

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*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29407                           *
*****
Configuration   : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G302440004.CNF;1
Background file : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]BKG_GAM33.CNF;20
Background date : 29-APR-2012 14:48:24
Sample date     : 17-FEB-2012 13:20:00 Acquisition date : 3-MAY-2012 08:57:37.
Sample ID      : G302440004 Sample quantity   : 1.73110E+02 GRAM
Detector name  : GAM33 Detector geometry   : CAN
Elapsed live time: 0 02:00:00.00 Elapsed real time: 0 02:00:01.10 0.0%
Energy tolerance : 1.50000 keV Analyst Initials : MXR1
Abundance limit : 75.00000 Sensitivity : 5.00000
Batch ID       : 1203837 Detector SN# :
Matrix Spike ID : LCS ID : 1364
*****

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Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	63.88*	60	285	0.94	127.48	123	10	8.34E-03	56.4	
2	3	74.98	153	296	0.99	149.66	146	19	2.13E-02	18.4	1.83E+00
3	3	77.40	269	220	0.96	154.50	146	19	3.73E-02	10.9	
4	4	84.50	119	179	1.52	168.71	165	13	1.65E-02	21.1	2.23E+00
5	4	87.31	169	202	1.25	174.32	165	13	2.35E-02	15.7	
6	0	92.95*	47	301	1.34	185.60	182	8	6.57E-03	72.9	
7	0	185.82*	98	230	1.82	371.27	366	11	1.36E-02	34.3	
8	4	238.65*	734	115	1.05	476.90	472	16	1.02E-01	4.5	4.35E-01
9	4	241.66	169	169	1.83	482.92	472	16	2.35E-02	22.3	
10	0	270.10	63	161	1.10	539.79	535	10	8.72E-03	40.0	
11	0	295.00	234	116	1.28	589.57	585	10	3.25E-02	10.7	
12	0	328.43	35	124	0.68	656.40	651	10	4.92E-03	61.3	
13	0	338.44	158	143	1.45	676.42	669	14	2.19E-02	18.0	
14	0	351.93*	305	139	1.26	703.39	697	13	4.23E-02	10.0	
15	0	463.27	54	60	1.46	926.01	921	10	7.56E-03	30.2	
16	0	511.03*	38	112	1.29	1021.50	1016	13	5.30E-03	73.1	
17	0	583.14*	222	65	1.29	1165.66	1160	13	3.09E-02	10.4	
18	0	609.16*	267	66	1.52	1217.70	1210	14	3.71E-02	9.1	
19	0	727.66	77	64	1.65	1454.63	1446	18	1.06E-02	27.5	
20	0	794.75	32	23	1.66	1588.76	1585	7	4.37E-03	31.2	
21	0	911.07*	145	49	1.68	1821.31	1815	14	2.01E-02	13.8	
22	0	968.86	117	42	1.45	1936.86	1931	12	1.62E-02	14.7	
23	0	1120.37	52	66	1.40	2239.78	2232	16	7.28E-03	36.9	
24	0	1460.23*	485	10	1.98	2919.30	2911	19	6.74E-02	4.9	
25	0	1764.33	47	15	1.15	3527.28	3519	15	6.55E-03	23.1	

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

VAX/VMS Nuclide Identification Report Generated

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*****
*
*           GEL Laboratories LLC
*           2040 Savage Road
*           Charleston, SC 29407
*****
*
*           DETECTOR DATA
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G302440004.CNF;1
* Acquisition date   : 3-MAY-2012 08:57:37 Detector SN#      :
* Detector ID        : GAM33                               Sensitivity       : 5.000
* Geometry           : CAN                                 Energy tolerance  : 1.500
* Elapsed live time  : 0 02:00:00.00                     Abundance limit  : 75.000
* Elapsed real time  : 0 02:00:01.10                     Half life ratio  : 8.000
*****
*
*           SAMPLE DATA
*
* Sample date        : 17-FEB-2012 13:20:00 Nuclide Library  : SOLID
* Sample ID          : G302440004                         Analyst initials  : MXR1
* Batch Number       : 1203837                            Sample Quantity  : 1.7311E+02 GRAM
* Recovery           : 1.00000                            Carrier Weight   : 0.00000
*****
*
*           QC DATA
*
* Standard Weight    : 0.00000
* CALIB. DATE/TIME  : 9-JAN-2012 14:21:39 MS Isotope      :
* MSD DPM            : 0.000                               MSD Isotope      :
* LCS DPM            : 0.000                               LCS Isotope      :
* LCSD DPM           : 0.000                               LCSD Isotope     :
*****

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Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act error (1.96-sigma)	MDA (pCi/GRAM)	
K-40	8.468E+00	1.069E+00	3.554E-01	0.000E+00
CD-109	2.966E+00	9.551E-01	1.188E+00	0.000E+00
SN-126	2.646E-01	8.522E-02	1.090E-01	0.000E+00
TL-208	2.580E-01	5.805E-02	4.066E-02	0.000E+00
BI-211	1.724E+00	3.773E-01	2.502E-01	0.000E+00
PB-212	9.743E-01	1.290E-01	7.030E-02	0.000E+00
BI-214	5.960E-01	1.226E-01	7.883E-02	0.000E+00
PB-214	6.258E-01	1.411E-01	9.099E-02	0.000E+00
RA-224	2.408E+00	1.073E+00	7.533E-01	0.000E+00
RA-226	5.960E-01	1.226E-01	7.883E-02	0.000E+00
AC-228	7.439E-01	2.268E-01	1.482E-01	0.000E+00
RA-228	7.439E-01	2.268E-01	1.482E-01	0.000E+00
TH-228	9.743E-01	1.290E-01	7.030E-02	0.000E+00
TH-229	-2.734E-02	3.271E-01	6.371E-01	0.000E+00
TH-230	5.960E-01	1.186E-01	7.882E-02	0.000E+00
TH-232	7.439E-01	2.268E-01	1.482E-01	0.000E+00
TH-234	1.982E+00	2.219E+00	1.811E+00	0.000E+00
U-238	1.982E+00	2.219E+00	1.811E+00	0.000E+00
AM-243	1.748E-01	6.472E-02	7.138E-02	0.000E+00
ANH-511	3.479E-02	4.996E-02	3.849E-02	0.000E+00

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L.	Act error (1.96-sigma)	MDA (pCi/GRAM)	
BE-7	-1.594E-01		4.350E-01	7.806E-01	0.000E+00 NOT IDENT.
NA-22	-8.856E-03		2.354E-02	4.330E-02	0.000E+00 NOT IDENT.
NA-24	0.000E+00		7.726E+34	0.000E+00	0.000E+00 SHORT HLIF
SC-46	-9.976E-03		3.328E-02	6.107E-02	0.000E+00 FAIL ABUN
V-48	-2.288E-01		5.665E-01	1.008E+00	0.000E+00 NOT IDENT.
CR-51	2.811E-01		9.834E-01	1.915E+00	0.000E+00 NOT IDENT.
MN-54	-2.016E-02		2.978E-02	5.186E-02	0.000E+00 NOT IDENT.

CO-56	-1.526E-02	4.107E-02	7.428E-02	0.000E+00	NOT IDENT.
CO-57	-1.131E-02	1.810E-02	3.291E-02	0.000E+00	NOT IDENT.
CO-58	-1.982E-02	4.089E-02	7.345E-02	0.000E+00	NOT IDENT.
FE-59	-1.167E-01	1.272E-01	2.187E-01	0.000E+00	NOT IDENT.
CO-60	-9.800E-04	2.366E-02	4.534E-02	0.000E+00	NOT IDENT.
ZN-65	-1.040E-03	6.754E-02	1.119E-01	0.000E+00	NOT IDENT.
SE-75	-5.116E-03	4.242E-02	7.115E-02	0.000E+00	NOT IDENT.
SR-85	5.811E-02	5.803E-02	1.011E-01	0.000E+00	NOT IDENT.
Y-88	-8.637E-03	3.064E-02	5.936E-02	0.000E+00	NOT IDENT.
Y-91	-9.697E-01	2.437E+01	4.632E+01	0.000E+00	NOT IDENT.
NB-94	4.168E-03	2.073E-02	4.002E-02	0.000E+00	NOT IDENT.
NB-95	3.791E-02	4.887E-02	9.823E-02	0.000E+00	NOT IDENT.
NB-95M	1.150E-01	1.650E-01	2.929E-01	0.000E+00	NOT IDENT.
ZR-95	2.712E-02	7.842E-02	1.547E-01	0.000E+00	NOT IDENT.
MO-99	0.000E+00	3.458E+07	0.000E+00	0.000E+00	SHORT HLIF
TC-99M	0.000E+00	1.922E+41	0.000E+00	0.000E+00	SHORT HLIF
RU-103	2.473E-03	6.991E-02	1.302E-01	0.000E+00	FAIL ABUN
RH-106	-6.458E-02	2.164E-01	4.051E-01	0.000E+00	NOT IDENT.
RU-106	-6.458E-02	2.163E-01	4.051E-01	0.000E+00	NOT IDENT.
AG-108M	6.097E-03	1.727E-02	3.338E-02	0.000E+00	NOT IDENT.
AG-110M	-2.468E-02	3.533E-02	6.099E-02	0.000E+00	NOT IDENT.
SN-113	-1.710E-02	4.007E-02	7.268E-02	0.000E+00	NOT IDENT.
CD-115	0.000E+00	1.056E+09	0.000E+00	0.000E+00	SHORT HLIF
SN-117M	1.676E-01	7.661E-01	1.432E+00	0.000E+00	NOT IDENT.
TE-123M	6.406E-03	2.539E-02	4.756E-02	0.000E+00	NOT IDENT.
SB-124	2.105E-02	9.812E-02	2.007E-01	0.000E+00	NOT IDENT.
SB-125	3.635E-02	5.846E-02	1.146E-01	0.000E+00	FAIL ABUN
TE-125M	7.705E+00	1.305E+01	2.539E+01	0.000E+00	NOT IDENT.
I-126	2.108E+00	3.024E+00	6.214E+00	0.000E+00	NOT IDENT.
SB-126	2.438E+00	2.809E+00	5.182E+00	0.000E+00	NOT IDENT.
SB-127	0.000E+00	4.333E+04	0.000E+00	0.000E+00	SHORT HLIF
I-131	0.000E+00	1.245E+01	0.000E+00	0.000E+00	SHORT HLIF
TE-132	0.000E+00	2.395E+05	0.000E+00	0.000E+00	SHORT HLIF
BA-133	1.917E-03	2.793E-02	4.674E-02	0.000E+00	NOT IDENT.
I-133	0.000E+00	4.352E+24	0.000E+00	0.000E+00	SHORT HLIF
CS-134	4.758E-02	2.955E-02	5.779E-02	0.000E+00	FAIL ABUN
CS-135	1.775E-01	1.135E-01	2.110E-01	0.000E+00	NOT IDENT.
I-135	0.000E+00	4.717E+41	0.000E+00	0.000E+00	SHORT HLIF
CS-136	-8.733E-02	1.543E+00	2.848E+00	0.000E+00	NOT IDENT.
BA-137M	-1.170E-02	2.001E-02	3.629E-02	0.000E+00	NOT IDENT.
CS-137	-1.236E-02	2.114E-02	3.834E-02	0.000E+00	NOT IDENT.
CE-139	-1.024E-02	2.582E-02	4.643E-02	0.000E+00	NOT IDENT.
BA-140	2.731E+00	4.547E+00	9.048E+00	0.000E+00	NOT IDENT.
LA-140	-1.413E+00	1.473E+00	2.355E+00	0.000E+00	FAIL ABUN
CE-141	6.552E-02	1.488E-01	2.795E-01	0.000E+00	NOT IDENT.
CE-143	0.000E+00	4.036E+15	0.000E+00	0.000E+00	SHORT HLIF
CE-144	-4.178E-02	1.455E-01	2.677E-01	0.000E+00	NOT IDENT.
PM-144	1.891E-03	2.420E-02	4.623E-02	0.000E+00	NOT IDENT.
PR-144	1.716E-01	1.872E+00	3.579E+00	0.000E+00	NOT IDENT.
PM-146	1.358E-02	2.634E-02	5.115E-02	0.000E+00	NOT IDENT.
ND-147	-8.210E+00	1.555E+01	2.890E+01	0.000E+00	NOT IDENT.
PM-149	0.000E+00	1.127E+10	0.000E+00	0.000E+00	SHORT HLIF
EU-152	-1.097E-01	7.433E-02	1.033E-01	0.000E+00	NOT IDENT.
GD-153	-5.136E-03	7.033E-02	1.194E-01	0.000E+00	NOT IDENT.
EU-154	-2.433E-02	6.470E-02	1.189E-01	0.000E+00	NOT IDENT.
EU-155	5.114E-02	6.734E-02	1.327E-01	0.000E+00	FAIL ABUN
TB-160	6.719E-02	1.664E-01	3.224E-01	0.000E+00	FAIL ABUN
HO-166M	9.504E-04	3.510E-02	6.721E-02	0.000E+00	FAIL ABUN
HF-181	4.531E-02	7.221E-02	1.413E-01	0.000E+00	NOT IDENT.
TA-182	5.509E-02	1.545E-01	3.048E-01	0.000E+00	FAIL ABUN
IR-192	8.250E-03	3.855E-02	7.436E-02	0.000E+00	FAIL ABUN
HG-203	-2.088E-02	5.882E-02	1.101E-01	0.000E+00	NOT IDENT.
BI-207	1.483E-02	2.887E-02	5.911E-02	0.000E+00	FAIL ABUN
PB-210	2.444E+00	3.377E+00	7.058E+00	0.000E+00	NOT IDENT.
PB-211	-2.075E-01	4.463E-01	7.848E-01	0.000E+00	NOT IDENT.
BI-212	0.000E+00	7.230E-01	8.214E-01	0.000E+00	FAIL ABUN
RN-219	1.261E-02	2.612E-01	4.902E-01	0.000E+00	FAIL ABUN
RA-223	-1.869E-01	4.489E-01	7.159E-01	0.000E+00	FAIL ABUN
AC-227	-5.097E-02	1.432E-01	2.707E-01	0.000E+00	NOT IDENT.
TH-227	-5.097E-02	1.432E-01	2.707E-01	0.000E+00	NOT IDENT.
PA-231	8.733E-01	9.501E-01	1.893E+00	0.000E+00	NOT IDENT.
TH-231	-1.869E-01	4.489E-01	7.159E-01	0.000E+00	FAIL ABUN
PA-233	-1.394E-02	4.118E-02	7.657E-02	0.000E+00	NOT IDENT.
PA-234	2.823E-02	1.795E-01	3.418E-01	0.000E+00	NOT IDENT.
PA-234M	-1.872E+00	3.206E+00	5.792E+00	0.000E+00	NOT IDENT.
U-235	-7.067E-03	1.339E-01	2.453E-01	0.000E+00	FAIL ABUN
NP-237	-1.394E-02	4.119E-02	7.657E-02	0.000E+00	NOT IDENT.
NP-239	-1.298E-01	2.538E-01	4.659E-01	0.000E+00	NOT IDENT.

AM-241	9.555E-02	1.194E-01	2.235E-01	0.000E+00	NOT IDENT.
CM-247	5.054E-03	2.333E-02	4.442E-02	0.000E+00	NOT IDENT.
CF-249	1.254E-02	2.540E-02	4.934E-02	0.000E+00	NOT IDENT.
CF-251	-5.782E-05	7.694E-02	1.516E-01	0.000E+00	NOT IDENT.

Gamma Spectroscopy Auxillary Report

Sample:G302440004

Nuclide	TPU	LLD	EFF	FWHM	TArea	TBack	TCounts
BE-7	0.435E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
NA-22	0.235E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
NA-24	0.196E+17	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
K-40	0.107E+01	0.781E+02	0.114E-01	0.198E+01	0.475E+03	0.113E+03	0.587E+03
SC-46	0.333E-01	0.109E+03	0.000E+00	0.000E+00	0.533E+02	0.668E+02	0.120E+03
V-48	0.566E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
CR-51	0.983E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
MN-54	0.298E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
CO-56	0.411E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
CO-57	0.181E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
CO-58	0.409E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
FE-59	0.127E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
CO-60	0.237E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
ZN-65	0.675E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
SE-75	0.424E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
SR-85	0.580E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Y-88	0.306E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Y-91	0.244E+02	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
NB-94	0.207E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
NB-95	0.489E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
NB-95M	0.165E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
ZR-95	0.784E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
MO-99	0.346E+08	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
TC-99M	0.196E+17	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
RU-103	0.699E-01	0.747E+02	0.000E+00	0.000E+00	0.296E+03	0.179E+03	0.475E+03
RH-106	0.216E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
RU-106	0.216E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
AG-108M	0.173E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
CD-109	0.955E+00	0.615E+02	0.522E-01	0.125E+01	0.236E+03	0.281E+03	0.517E+03
AG-110M	0.353E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
SN-113	0.401E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
CD-115	0.106E+10	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
SN-117M	0.766E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
TE-123M	0.254E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
SB-124	0.981E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
SB-125	0.585E-01	0.547E+02	0.000E+00	0.000E+00	0.624E+02	0.683E+02	0.131E+03
TE-125M	0.131E+02	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
I-126	0.302E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
SB-126	0.281E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
SN-126	0.852E-01	0.788E+02	0.522E-01	0.125E+01	0.557E+03	0.144E+04	0.199E+04
SB-127	0.433E+05	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
I-131	0.125E+02	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
TE-132	0.239E+06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
BA-133	0.279E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
I-133	0.196E+17	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
CS-134	0.295E-01	0.487E+02	0.192E-01	0.166E+01	0.336E+02	0.240E+02	0.577E+02
CS-135	0.113E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
I-135	0.196E+17	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
CS-136	0.154E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
BA-137M	0.200E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
CS-137	0.211E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
CE-139	0.258E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
BA-140	0.455E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
LA-140	0.147E+01	0.628E+02	0.000E+00	0.000E+00	0.424E+02	0.148E+03	0.190E+03
CE-141	0.149E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
CE-143	0.404E+16	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
CE-144	0.146E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
PM-144	0.242E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
PR-144	0.187E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
PM-146	0.263E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
ND-147	0.156E+02	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
PM-149	0.113E+11	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
EU-152	0.743E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
GD-153	0.703E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
EU-154	0.647E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
EU-155	0.673E-01	0.615E+02	0.000E+00	0.000E+00	0.236E+03	0.281E+03	0.517E+03
TB-160	0.166E+00	0.615E+02	0.000E+00	0.000E+00	0.236E+03	0.281E+03	0.517E+03
HO-166M	0.351E-01	0.703E+02	0.000E+00	0.000E+00	0.126E+03	0.125E+04	0.138E+04
HF-181	0.722E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
TA-182	0.155E+00	0.109E+03	0.000E+00	0.000E+00	0.533E+02	0.668E+02	0.120E+03

IR-192	0.386E-01	0.567E+02	0.000E+00	0.000E+00	0.284E+03	0.141E+03	0.424E+03
HG-203	0.588E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
BI-207	0.289E-01	0.978E+02	0.000E+00	0.000E+00	0.217E+03	0.419E+03	0.636E+03
TL-208	0.581E-01	0.717E+02	0.245E-01	0.129E+01	0.247E+03	0.173E+03	0.421E+03
PB-210	0.338E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
BI-211	0.377E+00	0.719E+02	0.352E-01	0.126E+01	0.362E+03	0.249E+03	0.611E+03
PB-211	0.446E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
BI-212	0.723E+00	0.773E+02	0.206E-01	0.165E+01	0.828E+02	0.695E+02	0.152E+03
PB-212	0.129E+00	0.665E+02	0.466E-01	0.105E+01	0.151E+04	0.113E+04	0.264E+04
BI-214	0.123E+00	0.811E+02	0.237E-01	0.152E+01	0.394E+03	0.260E+03	0.654E+03
PB-214	0.141E+00	0.699E+02	0.352E-01	0.126E+01	0.145E+04	0.133E+04	0.278E+04
RN-219	0.261E+00	0.631E+02	0.000E+00	0.000E+00	0.770E+02	0.198E+03	0.275E+03
RA-223	0.449E+00	0.620E+02	0.000E+00	0.000E+00	0.431E+03	0.618E+03	0.105E+04
RA-224	0.107E+01	0.600E+02	0.462E-01	0.183E+01	0.210E+03	0.210E+03	0.420E+03
RA-226	0.123E+00	0.811E+02	0.237E-01	0.152E+01	0.394E+03	0.260E+03	0.654E+03
AC-227	0.143E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
TH-227	0.143E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
AC-228	0.227E+00	0.809E+02	0.172E-01	0.168E+01	0.461E+03	0.359E+03	0.820E+03
RA-228	0.227E+00	0.809E+02	0.172E-01	0.168E+01	0.461E+03	0.359E+03	0.820E+03
TH-228	0.129E+00	0.665E+02	0.466E-01	0.105E+01	0.151E+04	0.113E+04	0.264E+04
TH-229	0.327E+00	0.612E+02	0.000E+00	0.000E+00	0.401E+03	0.531E+03	0.932E+03
TH-230	0.119E+00	0.811E+02	0.237E-01	0.152E+01	0.394E+03	0.260E+03	0.654E+03
PA-231	0.950E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
TH-231	0.449E+00	0.620E+02	0.000E+00	0.000E+00	0.431E+03	0.618E+03	0.105E+04
TH-232	0.227E+00	0.809E+02	0.172E-01	0.168E+01	0.461E+03	0.359E+03	0.820E+03
PA-233	0.412E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
PA-234	0.179E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
PA-234M	0.321E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
TH-234	0.222E+01	0.119E+03	0.255E-01	0.944E+00	0.152E+03	0.263E+04	0.278E+04
U-235	0.134E+00	0.714E+02	0.000E+00	0.000E+00	0.191E+03	0.301E+04	0.320E+04
NP-237	0.412E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
U-238	0.222E+01	0.119E+03	0.255E-01	0.944E+00	0.152E+03	0.263E+04	0.278E+04
NP-239	0.254E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
AM-241	0.119E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
AM-243	0.647E-01	0.978E+02	0.400E-01	0.991E+00	0.217E+03	0.419E+03	0.636E+03
CM-247	0.233E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
CF-249	0.254E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
CF-251	0.769E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
ANH-511	0.500E-01	0.123E+03	0.269E-01	0.129E+01	0.432E+02	0.156E+04	0.160E+04

```

Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G302440004.CNF;1
Analyses by       : PEAK V16.9
Sample title      : MXR1
Sample date       : 17-FEB-2012 13:20:00 Acquisition date : 3-MAY-2012 08:57:37
Sample ID         : G302440004 Sample quantity   : 173.11 GRAM
Sample type       : SOLID Sample geometry    :
Detector name    : GAMMA33 Detector geometry: CAN
Elapsed live time: 0 02:00:00.00 Elapsed real time: 0 02:00:01.10 0.0%
Start energy     : 0.62 keV End energy       : 2048.78 keV
Sensitivity      : 5.00 Gaussian           : 10.00
Critical level   : No
    
```

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	63.88	116	285	0.94	127.48	123	10	1.61E-02	29.0	
2	3	74.98	153	296	0.99	149.66	146	19	2.13E-02	18.4	1.83E+00
3	3	77.40	269	220	0.96	154.50	146	19	3.73E-02	10.9	
4	4	84.50	119	179	1.52	168.71	165	13	1.65E-02	21.1	2.23E+00
5	4	87.31	169	202	1.25	174.32	165	13	2.35E-02	15.7	
6	0	92.95	209	301	1.34	185.60	182	8	2.90E-02	16.1	
7	0	185.82	213	230	1.82	371.27	366	11	2.96E-02	15.4	
8	4	238.65	765	115	1.05	476.90	472	16	1.06E-01	4.2	4.35E-01
9	4	241.66	169	169	1.83	482.92	472	16	2.35E-02	22.3	
10	0	270.10	63	161	1.10	539.79	535	10	8.72E-03	40.0	
11	0	295.00	234	116	1.28	589.57	585	10	3.25E-02	10.7	
12	0	328.43	35	124	0.68	656.40	651	10	4.92E-03	61.3	
13	0	338.44	158	143	1.45	676.42	669	14	2.19E-02	18.0	
14	0	351.93	315	139	1.26	703.39	697	13	4.37E-02	9.6	
15	0	463.27	54	60	1.46	926.01	921	10	7.56E-03	30.2	
16	0	511.03	210	112	1.29	1021.50	1016	13	2.91E-02	12.7	
17	0	583.14	234	65	1.29	1165.66	1160	13	3.26E-02	9.7	
18	0	609.16	280	66	1.52	1217.70	1210	14	3.89E-02	8.6	
19	0	727.66	77	64	1.65	1454.63	1446	18	1.06E-02	27.5	
20	0	794.75	32	23	1.66	1588.76	1585	7	4.37E-03	31.2	
21	0	911.07	156	49	1.68	1821.31	1815	14	2.17E-02	12.6	
22	0	968.86	117	42	1.45	1936.86	1931	12	1.62E-02	14.7	
23	0	1120.37	52	66	1.40	2239.78	2232	16	7.28E-03	36.9	
24	0	1460.23	498	10	1.98	2919.30	2911	19	6.91E-02	4.7	
25	0	1764.33	47	15	1.15	3527.28	3519	15	6.55E-03	23.1	


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*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29407                          *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G302440004.CNF;1
Sample date        : 17-FEB-2012 13:20:00 Acquisition date : 3-MAY-2012 08:57:37.
Sample ID          : G302440004          Sample quantity  : 1.73110E+02 GRAM
Detector name      : GAM33              Detector geometry: CAN
Elapsed live time  : 0 02:00:00.00      Elapsed real time: 0 02:00:01.10  0.0%
Energy tolerance  : 1.50000 keV        Analyst Initials  : MXR1
Abundance limit   : 75.00000          Sensitivity       : 5.00000
Batch ID          : 1203837           Detector SN#      :
Matrix Spike ID   :                   LCS ID             : 1364
*****

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Summary of Nuclide Activity

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Total number of lines in spectrum      25
Number of unidentified lines           0
Number of lines tentatively identified by NID 25      100.00%

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Nuclide Type :

Nuclide	Hlife	Decay	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
K-40	1.25E+09Y	1.00	8.468E+00	8.468E+00	1.090E+00	12.88	
CD-109	461.40D	1.12	2.646E+00	2.966E+00	0.975E+00	32.86	
SN-126	2.30E+05Y	1.00	2.646E-01	2.646E-01	0.870E-01	32.86	
TL-208	1.41E+10Y	1.00	2.580E-01	2.580E-01	0.592E-01	22.96	
BI-211	7.04E+08Y	1.00	1.724E+00	1.724E+00	0.385E+00	22.33	
PB-212	1.41E+10Y	1.00	9.743E-01	9.743E-01	1.316E-01	13.51	
BI-214	1600.00Y	1.00	5.960E-01	5.960E-01	1.251E-01	20.99	
PB-214	1600.00Y	1.00	6.257E-01	6.258E-01	1.440E-01	23.00	
RA-224	1.41E+10Y	1.00	2.408E+00	2.408E+00	1.095E+00	45.46	
RA-226	1600.00Y	1.00	5.960E-01	5.960E-01	1.251E-01	20.99	
AC-228	1.41E+10Y	1.00	7.439E-01	7.439E-01	2.314E-01	31.11	
RA-228	1.41E+10Y	1.00	7.439E-01	7.439E-01	2.314E-01	31.11	
TH-228	1.41E+10Y	1.00	9.743E-01	9.743E-01	1.316E-01	13.51	
TH-229	7340.00Y	1.00	4.080E-01	4.080E-01	1.341E-01	32.86	K
TH-230	7.54E+04Y	1.00	5.960E-01	5.960E-01	1.210E-01	20.31	
TH-232	1.41E+10Y	1.00	7.439E-01	7.439E-01	2.314E-01	31.11	
TH-234	4.47E+09Y	1.00	1.982E+00	1.982E+00	2.264E+00	114.21	
U-238	4.47E+09Y	1.00	1.982E+00	1.982E+00	2.264E+00	114.21	
AM-243	7370.00Y	1.00	1.748E-01	1.748E-01	0.660E-01	37.77	
ANH-511	1.00E+09Y	1.00	3.479E-02	3.479E-02	5.098E-02	146.51	
Total Activity :			2.695E+01	2.727E+01			

Grand Total Activity : 2.695E+01 2.727E+01

Flags: "K" = Keyline not found "M" = Manually accepted
 "E" = Manually edited "A" = Nuclide specific abn. limit

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
0	185.82	126	295	1.82	371.27	366	11	1.36E-02	68.6	5.50E+00	T
0	270.10	77	198	1.10	539.79	535	10	8.72E-03	79.9	4.26E+00	T
0	328.43	42	148	0.68	656.40	651	10	4.92E-03	****	3.70E+00	T
0	463.27	62	68	1.46	926.01	921	10	7.56E-03	60.4	2.89E+00	T
0	727.66	83	70	1.65	1454.63	1446	18	1.06E-02	55.0	2.06E+00	T
0	794.75	34	24	1.66	1588.76	1585	7	4.37E-03	62.5	1.92E+00	T

Flags: "T" = Tentatively associated

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
K-40	1460.82	475	10.66*	1.140E+00	8.468E+00	8.468E+00	12.88
CD-109	88.03	236	3.70*	5.215E+00	2.646E+00	2.966E+00	32.86
SN-126	64.28	86	9.60	2.551E+00	7.641E-01	7.641E-01	113.74
	86.94	236	8.90	5.215E+00	1.100E+00	1.100E+00	52.11
	87.57	236	37.00*	5.215E+00	2.646E-01	2.646E-01	32.86
TL-208	277.37	-----	6.60	4.181E+00	-----	Line Not Found	-----
	583.19	247	85.00*	2.445E+00	2.580E-01	2.580E-01	22.96
	860.56	-----	12.50	1.800E+00	-----	Line Not Found	-----
BI-211	72.87	-----	1.23	3.746E+00	-----	Line Not Found	-----
	351.06	362	12.92*	3.521E+00	1.724E+00	1.724E+00	22.33
PB-212	74.82	217	10.28	4.002E+00	1.143E+00	1.143E+00	39.00
	77.11	378	17.10	4.279E+00	1.121E+00	1.121E+00	23.39
	238.63	912	43.60*	4.657E+00	9.743E-01	9.743E-01	13.51
	300.09	-----	3.30	3.950E+00	-----	Line Not Found	-----
BI-214	609.32	296	45.49*	2.367E+00	5.960E-01	5.960E-01	20.99
	1120.29	53	14.92	1.434E+00	5.402E-01	5.403E-01	75.36
	1764.49	45	15.30	9.883E-01	6.429E-01	6.430E-01	46.85
PB-214	74.82	217	5.80	4.002E+00	2.026E+00	2.026E+00	38.59
	77.11	378	9.70	4.279E+00	1.977E+00	1.977E+00	24.80
	242.00	210	7.25	4.616E+00	1.362E+00	1.362E+00	45.82
	295.22	284	18.42	3.999E+00	8.350E-01	8.351E-01	24.40
	351.93	362	35.60*	3.521E+00	6.257E-01	6.258E-01	23.00
RA-224	240.99	210	4.10*	4.616E+00	2.408E+00	2.408E+00	45.46
RA-226	609.32	296	45.49*	2.367E+00	5.960E-01	5.960E-01	20.99
	1120.29	53	14.92	1.434E+00	5.402E-01	5.403E-01	75.36
	1764.49	45	15.30	9.883E-01	6.429E-01	6.430E-01	46.85
AC-228	338.32	188	11.27	3.621E+00	9.985E-01	9.985E-01	55.26
	911.20	152	25.80*	1.716E+00	7.439E-01	7.439E-01	31.11
	968.97	121	15.80	1.628E+00	1.022E+00	1.022E+00	39.29
RA-228	338.32	188	11.27	3.621E+00	9.985E-01	9.985E-01	55.26
	911.20	152	25.80*	1.716E+00	7.439E-01	7.439E-01	31.11
	968.97	121	15.80	1.628E+00	1.022E+00	1.022E+00	39.29
TH-228	74.82	217	10.28	4.002E+00	1.143E+00	1.143E+00	37.79
	77.11	378	17.10	4.279E+00	1.121E+00	1.121E+00	23.39
	238.63	912	43.60*	4.657E+00	9.743E-01	9.743E-01	13.51
	300.09	-----	3.30	3.950E+00	-----	Line Not Found	-----
TH-229	85.43	166	14.70	4.984E+00	4.909E-01	4.909E-01	43.24
	88.47	236	24.00	5.215E+00	4.080E-01	4.080E-01	32.86
	193.51	-----	4.41*	5.366E+00	-----	Line Not Found	-----
	210.85	-----	2.80	5.074E+00	-----	Line Not Found	-----
TH-230	609.32	296	45.49*	2.367E+00	5.960E-01	5.960E-01	20.31
	1120.29	53	14.92	1.434E+00	5.402E-01	5.402E-01	75.06
	1764.49	45	15.30	9.883E-01	6.429E-01	6.429E-01	46.85
TH-232	338.32	188	11.27	3.621E+00	9.985E-01	9.985E-01	37.26
	911.20	152	25.80*	1.716E+00	7.439E-01	7.439E-01	31.11
	968.97	121	15.80	1.628E+00	1.022E+00	1.022E+00	39.29
TH-234	63.29	86	3.70*	2.551E+00	1.982E+00	1.982E+00	114.21
	92.59	65	4.23	5.604E+00	5.977E-01	5.977E-01	147.59
U-238	63.29	86	3.70*	2.551E+00	1.982E+00	1.982E+00	114.21

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
	92.59	65	4.23	5.604E+00	5.977E-01	5.977E-01	146.19
AM-243	43.53	-----	5.90	3.072E-01	-----	Line Not Found	-----
	74.66	217	67.20*	4.002E+00	1.748E-01	1.748E-01	37.77
ANH-511	511.00	43	100.00*	2.694E+00	3.479E-02	3.479E-02	146.51

Flag: "*" = Keyline

Nuclide	Half-life	Half-Life Ratio	Energy	%Abund	Activity (pCi/GRAM)	2-Sigma %Error	Rejected by
SC-46	83.79D	0.91	889.28*	99.98	---	Not Found	---
			1120.55	99.99	1.510E-01	75.06	Abun.
			% Abundances Found =		50.00		
RU-103	39.26D	1.93	497.08*	91.00	---	Not Found	---
			610.33	5.76	1.796E+01	24.61	Abun.
			% Abundances Found =		5.95		
SB-125	2.76Y	0.08	427.87*	29.80	---	Not Found	---
			463.37	10.56	4.668E-01	61.28	Abun.
			600.60	17.77	---	Not Found	---
			635.95	11.29	---	Not Found	---
% Abundances Found =		15.21					
CS-134	2.07Y	0.10	563.25	8.34	---	Not Found	---
			569.33	15.37	---	Not Found	---
			604.72	97.62	---	Not Found	---
			795.86*	85.46	4.758E-02	63.36	Abun.
			801.95	8.69	---	Not Found	---
% Abundances Found =		39.11					
LA-140	12.75D	5.95	328.76	20.30	7.564E+00	123.04	Abun.
			487.02	45.50	---	Not Found	---
			815.77	23.28	---	Not Found	---
			1596.21*	95.40	---	Not Found	---
% Abundances Found =		11.00					
EU-155	4.75Y	0.04	86.55	30.70	3.288E-01	32.88	Abun.
			105.31*	21.10	---	Not Found	---
% Abundances Found =		59.27					
TB-160	72.30D	1.05	86.79	13.30	1.524E+00	32.86	Abun.
			197.04	4.90	---	Not Found	---
			215.65	3.71	---	Not Found	---
			298.57	27.10	---	Not Found	---
			879.36*	28.50	---	Not Found	---
			962.29	9.00	---	Not Found	---
			966.15	24.20	---	Not Found	---
			1177.93	14.40	---	Not Found	---
% Abundances Found =		10.07					
HO-166M	1203.00Y	0.00	80.57	11.97	---	Not Found	---
			184.41	72.00	6.878E-02	69.14	Abun.
			280.46	29.36	---	Not Found	---
			410.95	11.20	---	Not Found	---
			711.68*	54.10	---	Not Found	---
			752.31	12.10	---	Not Found	---
% Abundances Found =		29.08					

Nuclide	Half-life	Half-Life Ratio	Energy	%Abund	Activity (pCi/GRAM)	2-Sigma %Error	Rejected by
TA-182	114.43D	0.66	67.75	41.20	---	Not Found	---
			100.11	14.10	---	Not Found	---
			152.43	6.93	---	Not Found	---
			222.11	7.49	---	Not Found	---
			1121.30	34.90	3.657E-01	75.06	
			1189.05	16.20	---	Not Found	---
			1221.41*	27.00	---	Not Found	---
			1231.02	11.44	---	Not Found	---
			% Abundances Found =			21.91	
IR-192	73.83D	1.03	295.96	28.72	1.092E+00	23.54	Abun.
			308.46	29.68	---	Not Found	---
			316.51*	82.71	---	Not Found	---
			468.07	47.81	---	Not Found	---
			% Abundances Found =			15.20	
BI-207	32.90Y	0.01	72.81	21.40	---	Not Found	---
			74.97	35.70	3.306E-01	37.77	Abun.
			569.70	97.76	---	Not Found	---
			1063.66*	74.60	---	Not Found	---
			1770.23	6.87	---	Not Found	---
% Abundances Found =			15.11				
BI-212	1.41E+10Y	0.00	727.33*	6.67	1.305E+00	56.54	Abun.
			785.37	1.10	---	Not Found	---
			1620.50	1.47	---	Not Found	---
			% Abundances Found =			72.19	
RN-219	7.04E+08Y	0.00	271.23	10.80	3.626E-01	80.69	Abun.
			401.81*	6.60	---	Not Found	---
			% Abundances Found =			62.07	
RA-223	7.04E+08Y	0.00	81.07	15.00	---	Not Found	---
			83.79	24.70	2.921E-01	43.24	Abun.
			94.56	8.67	---	Not Found	---
			144.24	3.27	---	Not Found	---
			154.21	5.70	---	Not Found	---
			269.46	13.90	2.817E-01	80.51	
			323.87*	3.99	---	Not Found	---
			338.28	2.84	3.962E+00	38.20	
% Abundances Found =			53.08				
TH-231	7.04E+08Y	0.00	81.07	15.00	---	Not Found	---
			83.79	24.70	2.921E-01	43.24	Abun.
			94.87	5.69	---	Not Found	---
			144.24	3.27	---	Not Found	---
			154.21	5.70	---	Not Found	---
			269.46	13.90	2.817E-01	80.51	
			323.87*	3.99	---	Not Found	---
			338.28	2.84	3.962E+00	38.20	
% Abundances Found =			55.19				

Nuclide	Half-life	Half-Life Ratio	Energy	%Abund	Activity (pCi/GRAM)	2-Sigma %Error	Rejected by
U-235	7.04E+08Y	0.00	89.96	3.47	---	Not Found	---
			93.35	5.60	4.515E-01	147.75	Abun.
			143.76*	10.96	---	Not Found	---
			163.33	5.08	---	Not Found	---
			185.72	57.20	8.656E-02	69.14	
			205.31	5.01	---	Not Found	---
		% Abundances Found =		71.92			

Flag: "*" = Keyline

 * GEL Laboratories LLC *
 * 2040 Savage Road *
 * Charleston, SC 29407 *
 * GAMMA SPECTROSCOPY BACKGROUND REPORT *

ENERGY	MDA COUNTS
43.53	177.3465
46.54	134.8044
49.72	0.0000
57.36	0.0000
57.53	168.9374
59.54	143.5633
63.29	195.9927
63.29	195.9927
64.28	196.4108
67.75	239.5311
69.67	251.0656
70.83	234.9786
72.81	280.0472
72.87	280.0809
72.87	280.0809
74.66	264.2621
74.82	264.3453
74.82	264.3453
74.82	264.3453
74.97	264.4218
77.11	265.5127
77.11	265.5127
77.11	265.5127
79.69	266.8082
79.69	266.8082
80.12	267.0220
80.19	0.0000
80.57	267.2451
81.00	148.4158
81.07	148.4348
81.07	148.4348
83.79	149.1738
83.79	149.1738
85.43	288.3173
86.55	288.8917
86.79	289.0131
86.94	289.0907
87.57	331.6495
88.03	317.3037
88.47	266.3643
89.96	267.0530
91.11	267.5809
92.59	286.1390
92.59	286.1390
93.35	184.8602
94.56	174.1527
94.65	174.1787
94.67	174.1846
94.87	199.5868
97.43	197.2504
98.43	184.8263
98.44	184.8290
99.53	163.8733
100.11	173.6120
103.18	192.6581
103.37	199.1396
105.31	176.1185
106.12	189.2433
109.28	193.4023
111.00	211.2371
111.76	0.0000
116.30	0.0000
117.23	198.9727
121.12	186.8912
121.78	184.8643
122.06	184.9377
123.07	152.1286

131.20	217.3735
133.02	210.0791
133.52	193.4459
136.00	171.6425
136.47	168.3807
140.51	0.0000
140.51	0.0000
143.76	197.1572
144.24	179.1355
144.24	179.1355
145.44	173.7281
152.43	167.2115
153.25	161.6457
154.21	162.9799
154.21	162.9799
156.02	195.5405
158.56	173.0560
159.00	168.5288
162.66	178.5246
163.33	180.9828
165.86	181.5096
176.60	168.6886
177.52	166.2068
181.07	0.0000
184.41	163.8806
185.72	173.9188
193.51	176.2358
197.04	159.7256
205.31	197.4476
210.85	170.1575
215.65	147.0483
222.11	153.4935
227.38	161.6767
228.16	0.0000
228.18	160.8650
235.69	146.7942
235.96	154.3215
235.96	154.3215
238.63	156.7536
238.63	156.7536
240.99	157.0798
242.00	157.2199
244.70	123.8078
252.40	0.0000
252.80	111.1800
256.23	107.6911
256.23	107.6911
260.90	0.0000
264.66	107.4900
268.22	106.2627
269.46	115.6201
269.46	115.6201
271.23	98.8047
273.65	133.0271
276.40	100.7659
277.37	96.9650
277.60	100.8611
278.00	97.0123
279.20	122.3528
279.54	139.8691
280.46	146.7743
283.69	107.1936
284.31	0.0000
285.41	123.9265
285.90	0.0000
287.50	116.3090
293.27	0.0000
295.22	105.2024
295.96	127.4939
298.57	116.7072
299.98	131.0391
299.98	131.0391
300.09	112.1023
300.09	112.1023
300.13	112.1058
300.13	112.1058
301.36	107.2428
302.85	126.5742

304.50	124.7503
304.50	124.7503
304.85	124.7830
308.46	103.2700
311.90	107.5139
311.90	107.5139
316.51	94.8898
319.41	97.0903
320.08	80.1123
323.87	99.6087
323.87	99.6087
328.76	114.4632
333.37	92.9981
334.37	105.2013
334.37	105.2013
338.28	82.1581
338.28	82.1581
338.32	82.1606
338.32	82.1606
338.32	82.1606
340.48	91.0178
340.48	91.0178
340.55	91.0219
344.28	118.9565
345.93	83.2000
351.06	100.2670
351.93	100.3253
356.01	73.9094
364.49	0.0000
366.42	0.0000
383.85	66.8877
388.16	75.4508
388.63	72.3281
391.69	82.9683
400.66	82.3692
401.81	81.3696
402.40	75.0562
404.85	79.4025
410.95	66.9423
414.70	77.7418
423.72	72.8010
427.09	58.9989
427.87	61.1722
433.94	56.0014
453.88	57.7229
463.37	50.7989
468.07	63.2215
473.00	0.0000
476.78	57.3423
477.60	63.9871
482.18	51.9778
487.02	64.3066
492.35	0.0000
497.08	54.6136
511.00	84.1896
514.00	75.5482
527.90	0.0000
529.87	0.0000
531.02	62.5852
537.26	53.6791
546.56	0.0000
563.25	67.2470
569.33	53.5820
569.50	60.0536
569.70	60.0583
583.19	54.8559
600.60	62.4740
602.73	46.8994
604.72	67.2837
609.32	55.5041
609.32	55.5041
609.32	55.5041
610.33	48.6267
614.28	67.5689
618.01	47.2180
621.93	56.7583
621.93	56.7583
633.25	43.7281

635.95	56.1508
636.99	0.0000
645.85	64.0344
657.76	37.4604
661.66	50.0284
661.66	50.0284
664.57	0.0000
666.33	33.7388
666.50	40.4886
677.62	35.8320
685.70	0.0000
695.00	51.6879
696.49	54.6465
696.51	54.6465
697.00	46.8492
702.65	51.8458
706.68	57.8073
711.68	44.1771
720.70	34.4813
721.93	0.0000
722.78	50.9414
722.91	50.9439
723.31	57.5273
724.19	41.1041
727.33	39.5078
733.00	41.2445
735.93	42.4700
739.50	0.0000
747.24	44.7858
752.31	58.8315
753.82	43.8990
756.73	35.9569
763.94	56.0834
765.81	42.0913
766.42	40.0967
777.92	0.0000
778.90	47.3305
783.70	0.0000
785.37	38.3572
795.86	35.4631
801.95	48.7418
810.29	41.7567
810.76	40.7451
815.77	34.6948
818.51	28.5995
832.01	48.2335
834.85	65.7453
836.80	0.0000
846.77	42.2913
856.80	48.6455
860.56	36.2715
871.09	30.1604
873.19	40.5891
875.33	0.0000
879.36	40.6729
880.51	32.3419
883.24	32.3714
884.68	41.7891
889.28	28.2505
898.04	37.7754
911.20	32.6688
911.20	32.6688
911.20	32.6688
926.50	29.6522
937.49	42.5088
944.13	31.9482
946.00	33.0321
949.00	39.4625
962.29	35.6991
964.08	30.3615
966.15	48.2520
968.97	61.1720
968.97	61.1720
968.97	61.1720
983.53	33.4173
996.26	45.4494
1001.03	35.7618
1004.73	47.7351

1037.84	26.2934
1038.76	0.0000
1048.07	31.8646
1050.41	30.7863
1050.41	30.7863
1063.66	25.7533
1085.87	26.8418
1099.45	36.2340
1112.07	30.7670
1115.54	33.5962
1120.29	33.6401
1120.29	33.6401
1120.29	33.6401
1120.55	33.6416
1121.30	33.6489
1131.51	0.0000
1173.23	40.7569
1177.93	44.6037
1189.05	38.0713
1204.77	34.4033
1221.41	31.6720
1231.02	41.3711
1235.36	37.5638
1238.28	30.8438
1260.41	0.0000
1271.85	25.2721
1274.44	25.2880
1274.54	25.2880
1291.59	20.5112
1298.22	0.0000
1312.11	28.4655
1332.49	22.6865
1365.19	17.8923
1368.63	0.0000
1384.29	26.9572
1408.01	21.0812
1457.56	0.0000
1460.82	13.2052
1489.16	11.2430
1505.03	16.4102
1596.21	20.9090
1620.50	5.2533
1678.03	0.0000
1690.97	9.5892
1764.49	3.7049
1764.49	3.7049
1764.49	3.7049
1770.23	12.9814
1771.35	18.3945
1791.20	0.0000
1836.06	10.3248

VAX/VMS Nuclide Identification Report Generated 3-MAY-2012 10:59:35.53

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*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29407                            *
*****
Configuration   : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G302440005.CNF;1
Background file : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]BKG_GAM18.CNF;278
Background date : 29-APR-2012 10:50:24
Sample date     : 17-FEB-2012 01:48:00 Acquisition date : 3-MAY-2012 08:58:01.
Sample ID      : G302440005 Sample quantity   : 1.77040E+02 GRAM
Detector name  : GAM18 Detector geometry   : CAN
Elapsed live time: 0 02:00:00.00 Elapsed real time: 0 02:00:01.21 0.0%
Energy tolerance : 1.50000 keV Analyst Initials : MXR1
Abundance limit : 75.00000 Sensitivity   : 5.00000
Batch ID       : 1203837 Detector SN#   :
Matrix Spike ID : LCS ID           : 1364
*****

```

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	74.86	148	345	1.03	149.19	147	5	2.06E-02	20.4	
2	0	77.49	210	484	0.74	154.44	151	7	2.92E-02	19.2	
3	6	84.23	121	297	1.72	167.89	164	28	1.68E-02	25.6	1.51E+00
4	6	87.36	209	285	1.34	174.15	164	28	2.90E-02	15.6	
5	6	89.97	145	307	1.51	179.36	164	28	2.02E-02	24.4	
6	6	92.69*	181	294	1.57	184.79	164	28	2.51E-02	21.0	
7	0	128.49	107	326	1.05	256.30	251	11	1.49E-02	34.1	
8	0	186.04*	84	272	1.34	371.25	367	9	1.17E-02	39.5	
9	0	209.55	86	225	1.07	418.22	414	9	1.20E-02	33.1	
10	3	238.70*	1011	170	1.28	476.45	469	21	1.40E-01	4.0	1.40E+00
11	3	241.68	263	205	1.76	482.41	469	21	3.66E-02	15.2	
12	0	270.45	54	213	1.15	539.86	535	11	7.46E-03	54.5	
13	0	295.30*	287	185	1.38	589.50	583	11	3.99E-02	11.2	
14	0	300.23	36	168	0.90	599.35	596	9	5.03E-03	67.3	
15	0	338.25	259	192	1.32	675.30	668	15	3.60E-02	13.2	
16	0	351.96*	506	133	1.54	702.69	696	13	7.03E-02	6.6	
17	0	409.44	37	113	1.17	817.50	812	11	5.15E-03	57.8	
18	0	463.28	83	78	1.21	925.05	920	11	1.16E-02	23.4	
19	0	511.16*	95	140	2.08	1020.70	1012	18	1.31E-02	37.3	
20	0	583.36*	335	72	1.51	1164.92	1159	11	4.65E-02	7.7	
21	0	609.48*	428	113	1.65	1217.10	1209	17	5.94E-02	7.8	
22	0	727.90	126	84	3.78	1453.67	1445	20	1.74E-02	20.1	
23	0	860.80	72	53	0.95	1719.17	1711	15	9.93E-03	25.1	
24	0	911.46*	257	100	1.75	1820.38	1812	18	3.57E-02	11.3	
25	0	970.94	79	190	1.91	1939.21	1929	20	1.10E-02	45.5	
26	0	1121.22	114	73	2.19	2239.45	2227	19	1.58E-02	20.1	
27	0	1152.95	48	60	13.68	2302.84	2287	30	6.65E-03	49.4	
28	0	1460.97*	795	52	2.26	2918.26	2907	23	1.10E-01	4.3	
29	0	1589.16	29	18	1.18	3174.41	3165	18	4.02E-03	39.1	
30	0	1765.63*	63	28	2.31	3527.02	3518	17	8.71E-03	24.6	

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

VAX/VMS Nuclide Identification Report Generated

 * GEL Laboratories LLC *
 * 2040 Savage Road *
 * Charleston, SC 29407 *

DETECTOR DATA

* Configuration : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G302440005.CNF;1 *
 * Acquisition date : 3-MAY-2012 08:58:01 Detector SN# : *
 * Detector ID : GAM18 Sensitivity : 5.000 *
 * Geometry : CAN Energy tolerance: 1.500 *
 * Elapsed live time: 0 02:00:00.00 Abundance limit : 75.000 *
 * Elapsed real time: 0 02:00:01.21 Half life ratio : 8.000 *

SAMPLE DATA

* Sample date : 17-FEB-2012 01:48:00 Nuclide Library : SOLID *
 * Sample ID : G302440005 Analyst initials: MXR1 *
 * Batch Number : 1203837 Sample Quantity : 1.7704E+02 GRAM *
 * Recovery : 1.00000 Carrier Weight : 0.00000 *

QC DATA

* Standard Weight : 0.00000 *
 * CALIB. DATE/TIME : 7-MAY-2011 13:46:32 MS Isotope : *
 * MSD DPM : 0.000 MSD Isotope : *
 * LCS DPM : 0.000 LCS Isotope : *
 * LCSD DPM : 0.000 LCSD Isotope : *

Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act error (1.96-sigma)	MDA (pCi/GRAM)	
K-40	8.373E+00	1.094E+00	3.163E-01	0.000E+00
CD-109	2.968E+00	9.488E-01	8.276E-01	0.000E+00
SN-126	2.646E-01	8.460E-02	7.427E-02	0.000E+00
TL-208	2.450E-01	4.319E-02	3.148E-02	0.000E+00
BI-211	1.903E+00	2.981E-01	1.847E-01	0.000E+00
PB-212	9.498E-01	1.159E-01	5.241E-02	0.000E+00
BI-214	5.984E-01	1.084E-01	6.449E-02	0.000E+00
PB-214	6.907E-01	1.145E-01	6.687E-02	0.000E+00
RA-224	2.645E+00	8.177E-01	5.609E-01	0.000E+00
RA-226	5.984E-01	1.084E-01	6.449E-02	0.000E+00
TH-228	9.498E-01	1.159E-01	5.241E-02	0.000E+00
TH-229	-1.590E-01	2.723E-01	5.148E-01	0.000E+00
TH-230	5.983E-01	1.039E-01	6.448E-02	0.000E+00
PA-231	1.416E-02	6.945E-01	1.305E+00	0.000E+00
U-235	1.034E-01	1.086E-01	2.087E-01	0.000E+00
AM-243	1.379E-01	5.638E-02	7.356E-02	0.000E+00
ANH-511	5.483E-02	4.035E-02	2.477E-02	0.000E+00

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L.	Act error (1.96-sigma)	MDA (pCi/GRAM)	
BE-7	-1.378E-01		3.312E-01	6.057E-01	0.000E+00 NOT IDENT.
NA-22	-1.664E-02		2.164E-02	3.665E-02	0.000E+00 NOT IDENT.
NA-24	0.000E+00		1.036E+35	0.000E+00	0.000E+00 SHORT HLIF
SC-46	-1.387E-02		3.301E-02	5.842E-02	0.000E+00 FAIL ABUN
V-48	-3.012E-01		4.433E-01	7.902E-01	0.000E+00 NOT IDENT.
CR-51	-1.486E-01		8.413E-01	1.542E+00	0.000E+00 NOT IDENT.
MN-54	2.266E-02		2.138E-02	4.220E-02	0.000E+00 NOT IDENT.
CO-56	-1.211E-02		3.364E-02	6.026E-02	0.000E+00 NOT IDENT.
CO-57	-6.018E-03		1.580E-02	2.943E-02	0.000E+00 NOT IDENT.
CO-58	2.382E-03		3.445E-02	6.436E-02	0.000E+00 NOT IDENT.

FE-59	-8.949E-02	1.101E-01	1.900E-01	0.000E+00	NOT IDENT.
CO-60	2.363E-02	2.074E-02	4.185E-02	0.000E+00	NOT IDENT.
ZN-65	-3.236E-03	6.155E-02	9.646E-02	0.000E+00	NOT IDENT.
SE-75	1.024E-03	3.236E-02	5.678E-02	0.000E+00	NOT IDENT.
SR-85	0.000E+00	4.675E-02	9.128E-02	0.000E+00	NOT IDENT.
Y-88	8.811E-03	2.387E-02	4.926E-02	0.000E+00	NOT IDENT.
Y-91	1.895E+00	1.933E+01	3.593E+01	0.000E+00	NOT IDENT.
NB-94	3.397E-03	1.684E-02	3.198E-02	0.000E+00	NOT IDENT.
NB-95	6.046E-02	4.218E-02	8.467E-02	0.000E+00	NOT IDENT.
NB-95M	1.574E-01	1.364E-01	2.425E-01	0.000E+00	NOT IDENT.
ZR-95	-3.711E-02	6.739E-02	1.205E-01	0.000E+00	NOT IDENT.
MO-99	0.000E+00	2.887E+07	0.000E+00	0.000E+00	SHORT HLIF
TC-99M	0.000E+00	1.801E+41	0.000E+00	0.000E+00	SHORT HLIF
RU-103	3.139E-02	5.519E-02	1.073E-01	0.000E+00	FAIL ABUN
RH-106	-3.679E-02	1.654E-01	3.114E-01	0.000E+00	NOT IDENT.
RU-106	-3.679E-02	1.654E-01	3.114E-01	0.000E+00	NOT IDENT.
AG-108M	-1.164E-03	1.489E-02	2.808E-02	0.000E+00	NOT IDENT.
AG-110M	1.019E-02	2.674E-02	5.113E-02	0.000E+00	NOT IDENT.
SN-113	-1.192E-03	3.027E-02	5.798E-02	0.000E+00	NOT IDENT.
CD-115	0.000E+00	1.004E+09	0.000E+00	0.000E+00	SHORT HLIF
SN-117M	1.225E-01	6.591E-01	1.227E+00	0.000E+00	NOT IDENT.
TE-123M	3.406E-03	2.165E-02	4.022E-02	0.000E+00	NOT IDENT.
SB-124	-6.825E-03	8.536E-02	1.596E-01	0.000E+00	NOT IDENT.
SB-125	3.907E-02	4.597E-02	9.161E-02	0.000E+00	FAIL ABUN
TE-125M	4.920E-02	1.105E+01	2.120E+01	0.000E+00	NOT IDENT.
I-126	9.597E-02	2.877E+00	5.449E+00	0.000E+00	NOT IDENT.
SB-126	1.593E-01	2.531E+00	4.109E+00	0.000E+00	NOT IDENT.
SB-127	0.000E+00	3.804E+04	0.000E+00	0.000E+00	SHORT HLIF
I-131	0.000E+00	1.024E+01	0.000E+00	0.000E+00	SHORT HLIF
TE-132	0.000E+00	2.152E+05	0.000E+00	0.000E+00	SHORT HLIF
BA-133	1.057E-02	2.175E-02	3.821E-02	0.000E+00	NOT IDENT.
I-133	0.000E+00	5.216E+24	0.000E+00	0.000E+00	SHORT HLIF
CS-134	3.878E-02	2.211E-02	4.537E-02	0.000E+00	NOT IDENT.
CS-135	3.470E-02	8.847E-02	1.499E-01	0.000E+00	NOT IDENT.
I-135	0.000E+00	1.485E+42	0.000E+00	0.000E+00	SHORT HLIF
CS-136	-6.152E-01	1.324E+00	2.382E+00	0.000E+00	NOT IDENT.
BA-137M	-4.247E-03	1.737E-02	3.233E-02	0.000E+00	NOT IDENT.
CS-137	-4.486E-03	1.835E-02	3.416E-02	0.000E+00	NOT IDENT.
CE-139	9.819E-03	2.037E-02	4.092E-02	0.000E+00	NOT IDENT.
BA-140	-4.299E+00	3.907E+00	6.156E+00	0.000E+00	NOT IDENT.
LA-140	8.521E-01	1.281E+00	2.314E+00	0.000E+00	NOT IDENT.
CE-141	2.348E-02	1.254E-01	2.351E-01	0.000E+00	NOT IDENT.
CE-143	0.000E+00	3.543E+15	0.000E+00	0.000E+00	SHORT HLIF
CE-144	1.137E-02	1.367E-01	2.300E-01	0.000E+00	NOT IDENT.
PM-144	4.151E-03	1.948E-02	3.707E-02	0.000E+00	NOT IDENT.
PR-144	3.095E-01	1.505E+00	2.862E+00	0.000E+00	NOT IDENT.
PM-146	-1.104E-02	2.046E-02	3.727E-02	0.000E+00	NOT IDENT.
ND-147	3.737E+00	1.288E+01	2.444E+01	0.000E+00	FAIL ABUN
PM-149	0.000E+00	9.896E+09	0.000E+00	0.000E+00	SHORT HLIF
EU-152	-1.481E-02	5.918E-02	8.569E-02	0.000E+00	NOT IDENT.
GD-153	3.360E-03	5.696E-02	9.939E-02	0.000E+00	NOT IDENT.
EU-154	-4.510E-02	5.958E-02	1.009E-01	0.000E+00	NOT IDENT.
EU-155	7.922E-02	5.963E-02	1.205E-01	0.000E+00	FAIL ABUN
TB-160	1.761E-02	1.126E-01	2.117E-01	0.000E+00	FAIL ABUN
HO-166M	2.361E-03	3.052E-02	5.753E-02	0.000E+00	NOT IDENT.
HF-181	4.853E-03	5.723E-02	1.082E-01	0.000E+00	NOT IDENT.
TA-182	8.087E-02	1.382E-01	2.629E-01	0.000E+00	FAIL ABUN
IR-192	7.106E-03	3.051E-02	5.739E-02	0.000E+00	FAIL ABUN
HG-203	-4.248E-03	5.006E-02	9.327E-02	0.000E+00	NOT IDENT.
BI-207	1.155E-02	2.444E-02	4.757E-02	0.000E+00	FAIL ABUN
PB-210	1.655E+00	2.757E+00	5.890E+00	0.000E+00	NOT IDENT.
PB-211	-4.313E-01	4.562E-01	6.143E-01	0.000E+00	NOT IDENT.
BI-212	0.000E+00	5.486E-01	6.198E-01	0.000E+00	FAIL ABUN
RN-219	9.271E-02	2.051E-01	3.912E-01	0.000E+00	FAIL ABUN
RA-223	-1.344E-01	3.414E-01	6.134E-01	0.000E+00	FAIL ABUN
AC-227	7.062E-02	1.307E-01	2.533E-01	0.000E+00	FAIL ABUN
TH-227	7.062E-02	1.308E-01	2.533E-01	0.000E+00	FAIL ABUN
AC-228	0.000E+00	2.064E-01	2.784E-01	0.000E+00	FAIL ABUN
RA-228	0.000E+00	2.064E-01	2.784E-01	0.000E+00	FAIL ABUN
TH-231	-1.344E-01	3.414E-01	6.134E-01	0.000E+00	FAIL ABUN
TH-232	0.000E+00	2.064E-01	2.784E-01	0.000E+00	FAIL ABUN
PA-233	-1.653E-02	3.431E-02	6.172E-02	0.000E+00	FAIL ABUN
PA-234	-9.193E-02	1.453E-01	2.484E-01	0.000E+00	NOT IDENT.
PA-234M	1.124E-01	2.307E+00	4.243E+00	0.000E+00	NOT IDENT.
TH-234	2.705E-01	8.751E-01	1.756E+00	0.000E+00	FAIL ABUN
NP-237	-1.653E-02	3.433E-02	6.172E-02	0.000E+00	FAIL ABUN
U-238	2.705E-01	8.751E-01	1.756E+00	0.000E+00	FAIL ABUN
NP-239	4.006E-02	2.114E-01	4.065E-01	0.000E+00	NOT IDENT.

AM-241	3.010E-02	9.989E-02	2.054E-01	0.000E+00	NOT IDENT.
CM-247	4.011E-03	1.936E-02	3.540E-02	0.000E+00	NOT IDENT.
CF-249	9.036E-03	1.940E-02	3.817E-02	0.000E+00	NOT IDENT.
CF-251	8.580E-03	6.546E-02	1.289E-01	0.000E+00	NOT IDENT.

Gamma Spectroscopy Auxillary Report

Sample:G302440005

Nuclide	TPU	LLD	EFF	FWHM	TArea	TBack	TCounts
BE-7	0.331E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
NA-22	0.216E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
NA-24	0.196E+17	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
K-40	0.109E+01	0.836E+02	0.185E-01	0.226E+01	0.780E+03	0.172E+03	0.952E+03
SC-46	0.330E-01	0.721E+02	0.000E+00	0.000E+00	0.116E+03	0.746E+02	0.191E+03
V-48	0.443E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
CR-51	0.841E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
MN-54	0.214E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
CO-56	0.336E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
CO-57	0.158E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
CO-58	0.344E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
FE-59	0.110E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
CO-60	0.207E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
ZN-65	0.616E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
SE-75	0.324E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
SR-85	0.467E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Y-88	0.239E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Y-91	0.193E+02	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
NB-94	0.168E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
NB-95	0.422E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
NB-95M	0.136E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
ZR-95	0.674E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
MO-99	0.289E+08	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
TC-99M	0.196E+17	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
RU-103	0.552E-01	0.656E+02	0.000E+00	0.000E+00	0.477E+03	0.427E+03	0.904E+03
RH-106	0.165E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
RU-106	0.165E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
AG-108M	0.149E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
CD-109	0.949E+00	0.600E+02	0.639E-01	0.134E+01	0.295E+03	0.402E+03	0.698E+03
AG-110M	0.267E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
SN-113	0.303E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
CD-115	0.100E+10	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
SN-117M	0.659E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
TE-123M	0.216E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
SB-124	0.854E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
SB-125	0.460E-01	0.408E+02	0.000E+00	0.000E+00	0.963E+02	0.900E+02	0.186E+03
TE-125M	0.111E+02	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
I-126	0.288E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
SB-126	0.253E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
SN-126	0.846E-01	0.600E+02	0.639E-01	0.134E+01	0.590E+03	0.805E+03	0.140E+04
SB-127	0.380E+05	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
I-131	0.102E+02	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
TE-132	0.215E+06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
BA-133	0.217E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
I-133	0.196E+17	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
CS-134	0.221E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
CS-135	0.885E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
I-135	0.196E+17	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
CS-136	0.132E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
BA-137M	0.174E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
CS-137	0.183E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
CE-139	0.204E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
BA-140	0.391E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
LA-140	0.128E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
CE-141	0.125E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
CE-143	0.354E+16	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
CE-144	0.137E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
PM-144	0.195E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
PR-144	0.150E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
PM-146	0.205E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
ND-147	0.129E+02	0.654E+02	0.000E+00	0.000E+00	0.204E+03	0.112E+04	0.132E+04
PM-149	0.990E+10	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
EU-152	0.592E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
GD-153	0.570E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
EU-154	0.596E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
EU-155	0.596E-01	0.600E+02	0.000E+00	0.000E+00	0.295E+03	0.402E+03	0.698E+03
TB-160	0.113E+00	0.600E+02	0.000E+00	0.000E+00	0.295E+03	0.402E+03	0.698E+03
HO-166M	0.305E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
HF-181	0.572E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
TA-182	0.138E+00	0.721E+02	0.000E+00	0.000E+00	0.116E+03	0.746E+02	0.191E+03

IR-192	0.305E-01	0.509E+02	0.000E+00	0.000E+00	0.352E+03	0.319E+03	0.671E+03
HG-203	0.501E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
BI-207	0.244E-01	0.874E+02	0.000E+00	0.000E+00	0.213E+03	0.495E+03	0.708E+03
TL-208	0.432E-01	0.514E+02	0.383E-01	0.151E+01	0.452E+03	0.354E+03	0.806E+03
PB-210	0.276E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
BI-211	0.298E+00	0.507E+02	0.524E-01	0.154E+01	0.607E+03	0.438E+03	0.105E+04
PB-211	0.456E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
BI-212	0.549E+00	0.561E+02	0.326E-01	0.378E+01	0.137E+03	0.919E+02	0.228E+03
PB-212	0.116E+00	0.641E+02	0.651E-01	0.128E+01	0.183E+04	0.199E+04	0.382E+04
BI-214	0.108E+00	0.675E+02	0.371E-01	0.165E+01	0.653E+03	0.597E+03	0.125E+04
PB-214	0.114E+00	0.593E+02	0.524E-01	0.154E+01	0.180E+04	0.258E+04	0.438E+04
RN-219	0.205E+00	0.511E+02	0.000E+00	0.000E+00	0.666E+02	0.264E+03	0.331E+03
RA-223	0.341E+00	0.594E+02	0.000E+00	0.000E+00	0.551E+03	0.917E+03	0.147E+04
RA-224	0.818E+00	0.514E+02	0.647E-01	0.176E+01	0.331E+03	0.635E+03	0.966E+03
RA-226	0.108E+00	0.675E+02	0.371E-01	0.165E+01	0.653E+03	0.597E+03	0.125E+04
AC-227	0.131E+00	0.478E+02	0.000E+00	0.000E+00	0.443E+02	0.205E+03	0.250E+03
TH-227	0.131E+00	0.478E+02	0.000E+00	0.000E+00	0.443E+02	0.205E+03	0.250E+03
AC-228	0.206E+00	0.714E+02	0.273E-01	0.175E+01	0.584E+03	0.518E+03	0.110E+04
RA-228	0.206E+00	0.714E+02	0.273E-01	0.175E+01	0.584E+03	0.518E+03	0.110E+04
TH-228	0.116E+00	0.641E+02	0.651E-01	0.128E+01	0.183E+04	0.199E+04	0.382E+04
TH-229	0.272E+00	0.608E+02	0.000E+00	0.000E+00	0.577E+03	0.111E+04	0.169E+04
TH-230	0.104E+00	0.675E+02	0.371E-01	0.165E+01	0.653E+03	0.597E+03	0.125E+04
PA-231	0.695E+00	0.478E+02	0.000E+00	0.000E+00	0.443E+02	0.205E+03	0.250E+03
TH-231	0.341E+00	0.594E+02	0.000E+00	0.000E+00	0.551E+03	0.917E+03	0.147E+04
TH-232	0.206E+00	0.714E+02	0.273E-01	0.175E+01	0.584E+03	0.518E+03	0.110E+04
PA-233	0.343E-01	0.478E+02	0.000E+00	0.000E+00	0.443E+02	0.205E+03	0.250E+03
PA-234	0.145E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
PA-234M	0.231E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
TH-234	0.875E+00	0.620E+02	0.000E+00	0.000E+00	0.254E+03	0.110E+04	0.135E+04
U-235	0.109E+00	0.550E+02	0.000E+00	0.000E+00	0.567E+03	0.319E+04	0.375E+04
NP-237	0.343E-01	0.478E+02	0.000E+00	0.000E+00	0.443E+02	0.205E+03	0.250E+03
U-238	0.875E+00	0.620E+02	0.000E+00	0.000E+00	0.254E+03	0.110E+04	0.135E+04
NP-239	0.211E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
AM-241	0.999E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
AM-243	0.564E-01	0.874E+02	0.487E-01	0.103E+01	0.213E+03	0.495E+03	0.708E+03
CM-247	0.194E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
CF-249	0.194E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
CF-251	0.655E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
ANH-511	0.404E-01	0.948E+02	0.418E-01	0.208E+01	0.108E+03	0.241E+04	0.252E+04

VMS Peak Search Report V1.9 Generated 3-MAY-2012 10:59:34

```

Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G302440005.CNF;1
Analyses by       : PEAK V16.9
Sample title      : MXR1
Sample date       : 17-FEB-2012 01:48:00 Acquisition date : 3-MAY-2012 08:58:01
Sample ID         : G302440005 Sample quantity : 177.04 GRAM
Sample type       : SOLID Sample geometry :
Detector name     : GAMMA18 Detector geometry: CAN
Elapsed live time: 0 02:00:00.00 Elapsed real time: 0 02:00:01.21 0.0%
Start energy      : 0.67 keV End energy : 2050.36 keV
Sensitivity       : 5.00 Gaussian : 10.00
Critical level    : No
    
```

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	74.86	148	345	1.03	149.19	147	5	2.06E-02	20.4	
2	0	77.49	210	484	0.74	154.44	151	7	2.92E-02	19.2	
3	6	84.23	121	297	1.72	167.89	164	28	1.68E-02	25.6	1.51E+00
4	6	87.36	209	285	1.34	174.15	164	28	2.90E-02	15.6	
5	6	89.97	145	307	1.51	179.36	164	28	2.02E-02	24.4	
6	6	92.69	263	294	1.57	184.79	164	28	3.66E-02	13.9	
7	0	128.49	107	326	1.05	256.30	251	11	1.49E-02	34.1	
8	0	186.04	158	272	1.34	371.25	367	9	2.19E-02	20.5	
9	0	209.55	86	225	1.07	418.22	414	9	1.20E-02	33.1	
10	3	238.70	1056	170	1.28	476.45	469	21	1.47E-01	3.8	1.40E+00
11	3	241.68	263	205	1.76	482.41	469	21	3.66E-02	15.2	
12	0	270.45	54	213	1.15	539.86	535	11	7.46E-03	54.5	
13	0	295.30	298	185	1.38	589.50	583	11	4.14E-02	10.6	
14	0	300.23	36	168	0.90	599.35	596	9	5.03E-03	67.3	
15	0	338.25	259	192	1.32	675.30	668	15	3.60E-02	13.2	
16	0	351.96	540	133	1.54	702.69	696	13	7.50E-02	6.2	
17	0	409.44	37	113	1.17	817.50	812	11	5.15E-03	57.8	
18	0	463.28	83	78	1.21	925.05	920	11	1.16E-02	23.4	
19	0	511.16	364	140	2.08	1020.70	1012	18	5.06E-02	9.2	
20	0	583.36	361	72	1.51	1164.92	1159	11	5.02E-02	6.9	
21	0	609.48	464	113	1.65	1217.10	1209	17	6.44E-02	7.0	
22	0	727.90	126	84	3.78	1453.67	1445	20	1.74E-02	20.1	
23	0	860.80	72	53	0.95	1719.17	1711	15	9.93E-03	25.1	
24	0	911.46	279	100	1.75	1820.38	1812	18	3.88E-02	10.3	
25	0	970.94	79	190	1.91	1939.21	1929	20	1.10E-02	45.5	
26	0	1121.22	114	73	2.19	2239.45	2227	19	1.58E-02	20.1	
27	0	1152.95	48	60	13.68	2302.84	2287	30	6.65E-03	49.4	
28	0	1460.97	810	52	2.26	2918.26	2907	23	1.12E-01	4.2	
29	0	1589.16	29	18	1.18	3174.41	3165	18	4.02E-03	39.1	
30	0	1765.63	71	28	2.31	3527.02	3518	17	9.85E-03	21.2	

```

*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29407                           *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G302440005.CNF;1
Sample date        : 17-FEB-2012 01:48:00 Acquisition date : 3-MAY-2012 08:58:01.
Sample ID          : G302440005          Sample quantity  : 1.77040E+02 GRAM
Detector name      : GAM18              Detector geometry: CAN
Elapsed live time  : 0 02:00:00.00      Elapsed real time: 0 02:00:01.21  0.0%
Energy tolerance  : 1.50000 keV         Analyst Initials  : MXR1
Abundance limit   : 75.00000           Sensitivity       : 5.00000
Batch ID          : 1203837             Detector SN#      :
Matrix Spike ID   :                    LCS ID            : 1364
*****
    
```

Summary of Nuclide Activity

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Total number of lines in spectrum      30
Number of unidentified lines           5
Number of lines tentatively identified by NID 25      83.33%
    
```

Nuclide Type :

Nuclide	Hlife	Decay	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
K-40	1.25E+09Y	1.00	8.373E+00	8.373E+00	1.117E+00	13.33	
CD-109	461.40D	1.12	2.646E+00	2.968E+00	0.968E+00	32.62	
SN-126	2.30E+05Y	1.00	2.646E-01	2.646E-01	0.863E-01	32.62	
TL-208	1.41E+10Y	1.00	2.450E-01	2.450E-01	0.441E-01	17.99	
BI-211	7.04E+08Y	1.00	1.903E+00	1.903E+00	0.304E+00	15.99	
PB-212	1.41E+10Y	1.00	9.498E-01	9.498E-01	1.183E-01	12.46	
BI-214	1600.00Y	1.00	5.983E-01	5.984E-01	1.106E-01	18.49	
PB-214	1600.00Y	1.00	6.906E-01	6.907E-01	1.168E-01	16.91	
RA-224	1.41E+10Y	1.00	2.645E+00	2.645E+00	0.834E+00	31.54	
RA-226	1600.00Y	1.00	5.983E-01	5.984E-01	1.106E-01	18.49	
TH-228	1.41E+10Y	1.00	9.498E-01	9.498E-01	1.183E-01	12.46	
TH-229	7340.00Y	1.00	4.080E-01	4.080E-01	1.331E-01	32.62	K
TH-230	7.54E+04Y	1.00	5.983E-01	5.983E-01	1.060E-01	17.72	
PA-231	7.04E+08Y	1.00	3.063E-01	3.063E-01	4.134E-01	135.00	K
U-235	7.04E+08Y	1.00	5.483E-02	5.483E-02	4.356E-02	79.44	K
AM-243	7370.00Y	1.00	1.379E-01	1.379E-01	0.575E-01	41.72	
ANH-511	1.00E+09Y	1.00	5.483E-02	5.483E-02	4.118E-02	75.10	
Total Activity :			2.142E+01	2.175E+01			

Grand Total Activity : 2.142E+01 2.175E+01

Flags: "K" = Keyline not found "M" = Manually accepted
 "E" = Manually edited "A" = Nuclide specific abn. limit

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
0	128.49	145	441	1.05	256.30	251	11	1.49E-02	68.3	8.05E+00	
0	270.45	67	264	1.15	539.86	535	11	7.46E-03	****	6.08E+00	T
0	338.25	312	231	1.32	675.30	668	15	3.60E-02	26.4	5.36E+00	T
0	409.44	44	133	1.17	817.50	812	11	5.15E-03	****	4.79E+00	
0	463.28	96	90	1.21	925.05	920	11	1.16E-02	46.9	4.44E+00	T
0	727.90	137	92	3.78	1453.67	1445	20	1.74E-02	40.1	3.26E+00	T
0	911.46	271	105	1.75	1820.38	1812	18	3.57E-02	22.6	2.73E+00	T
0	970.94	83	198	1.91	1939.21	1929	20	1.10E-02	91.0	2.59E+00	
0	1152.95	49	61	13.68	2302.84	2287	30	6.65E-03	98.7	2.24E+00	
0	1589.16	28	18	1.18	3174.41	3165	18	4.02E-03	78.3	1.75E+00	

Flags: "T" = Tentatively associated

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
K-40	1460.82	780	10.66*	1.853E+00	8.373E+00	8.373E+00	13.33
CD-109	88.03	295	3.70*	6.391E+00	2.646E+00	2.968E+00	32.62
SN-126	64.28	-----	9.60	3.198E+00	-----	Line Not Found	-----
	86.94	295	8.90	6.391E+00	1.100E+00	1.100E+00	51.96
	87.57	295	37.00*	6.391E+00	2.646E-01	2.646E-01	32.62
TL-208	277.37	-----	6.60	5.998E+00	-----	Line Not Found	-----
	583.19	376	85.00*	3.827E+00	2.450E-01	2.450E-01	17.99
	860.56	76	12.50	2.860E+00	4.503E-01	4.503E-01	51.13
BI-211	72.87	-----	1.23	4.577E+00	-----	Line Not Found	-----
	351.06	607	12.92*	5.237E+00	1.903E+00	1.903E+00	15.99
PB-212	74.82	213	10.28	4.872E+00	9.014E-01	9.014E-01	42.84
	77.11	301	17.10	5.239E+00	7.115E-01	7.115E-01	39.27
	238.63	1272	43.60*	6.514E+00	9.498E-01	9.498E-01	12.46
	300.09	44	3.30	5.737E+00	4.965E-01	4.965E-01	134.93
BI-214	609.32	477	45.49*	3.714E+00	5.983E-01	5.984E-01	18.49
	1120.29	116	14.92	2.292E+00	7.216E-01	7.217E-01	41.64
	1764.49	60	15.30	1.650E+00	5.016E-01	5.016E-01	49.93
PB-214	74.82	213	5.80	4.872E+00	1.598E+00	1.598E+00	42.46
	77.11	301	9.70	5.239E+00	1.254E+00	1.254E+00	40.13
	242.00	331	7.25	6.470E+00	1.496E+00	1.496E+00	32.07
	295.22	352	18.42	5.791E+00	6.998E-01	6.998E-01	24.78
	351.93	607	35.60*	5.237E+00	6.906E-01	6.907E-01	16.91
RA-224	240.99	331	4.10*	6.470E+00	2.645E+00	2.645E+00	31.54
RA-226	609.32	477	45.49*	3.714E+00	5.983E-01	5.984E-01	18.49
	1120.29	116	14.92	2.292E+00	7.216E-01	7.217E-01	41.64
	1764.49	60	15.30	1.650E+00	5.016E-01	5.016E-01	49.93
TH-228	74.82	213	10.28	4.872E+00	9.014E-01	9.014E-01	41.73
	77.11	301	17.10	5.239E+00	7.115E-01	7.115E-01	39.27
	238.63	1272	43.60*	6.514E+00	9.498E-01	9.498E-01	12.46
	300.09	44	3.30	5.737E+00	4.965E-01	4.965E-01	147.79
TH-229	85.43	172	14.70	6.065E+00	4.082E-01	4.082E-01	52.05
	88.47	295	24.00	6.391E+00	4.080E-01	4.080E-01	32.62
	193.51	-----	4.41*	7.239E+00	-----	Line Not Found	-----
	210.85	111	2.80	6.968E+00	1.201E+00	1.202E+00	66.64
TH-230	609.32	477	45.49*	3.714E+00	5.983E-01	5.983E-01	17.72
	1120.29	116	14.92	2.292E+00	7.216E-01	7.216E-01	41.10
	1764.49	60	15.30	1.650E+00	5.016E-01	5.016E-01	49.93
PA-231	283.69	-----	1.70*	5.923E+00	-----	Line Not Found	-----
	301.36	44	5.35	5.737E+00	3.063E-01	3.063E-01	135.00
U-235	89.96	204	3.47	6.634E+00	1.883E+00	1.883E+00	54.75
	93.35	254	5.60	6.862E+00	1.400E+00	1.400E+00	47.95
	143.76	-----	10.96*	7.994E+00	-----	Line Not Found	-----
	163.33	-----	5.08	7.744E+00	-----	Line Not Found	-----
	185.72	109	57.20	7.367E+00	5.483E-02	5.483E-02	79.44
	205.31	-----	5.01	7.039E+00	-----	Line Not Found	-----
AM-243	43.53	-----	5.90	3.946E-01	-----	Line Not Found	-----
	74.66	213	67.20*	4.872E+00	1.379E-01	1.379E-01	41.72
ANH-511	511.00	108	100.00*	4.177E+00	5.483E-02	5.483E-02	75.10

Flag: "*" = Keyline

Nuclide	Half-life	Half-Life Ratio	Energy	%Abund	Activity (pCi/GRAM)	2-Sigma %Error	Rejected by
SC-46	83.79D	0.91	889.28*	99.98	---	Not Found	---
			1120.55	99.99	2.025E-01	41.10	Abun.
			% Abundances Found =		50.00		
RU-103	39.26D	1.94	497.08*	91.00	---	Not Found	---
			610.33	5.76	1.819E+01	22.52	Abun.
			% Abundances Found =		5.95		
SB-125	2.76Y	0.08	427.87*	29.80	---	Not Found	---
			463.37	10.56	4.585E-01	47.74	Abun.
			600.60	17.77	---	Not Found	---
			635.95	11.29	---	Not Found	---
% Abundances Found =		15.21					
ND-147	10.98D	6.95	91.11	27.90	2.901E+01	49.80	Abun.
			319.41	1.95	---	Not Found	---
			531.02*	13.10	---	Not Found	---
% Abundances Found =		64.96					
EU-155	4.75Y	0.04	86.55	30.70	3.288E-01	32.65	Abun.
			105.31*	21.10	---	Not Found	---
% Abundances Found =		59.27					
TB-160	72.30D	1.06	86.79	13.30	1.531E+00	32.62	Abun.
			197.04	4.90	---	Not Found	---
			215.65	3.71	---	Not Found	---
			298.57	27.10	---	Not Found	---
			879.36*	28.50	---	Not Found	---
			962.29	9.00	---	Not Found	---
			966.15	24.20	---	Not Found	---
			1177.93	14.40	---	Not Found	---
1271.85	7.00	---	Not Found	---			
% Abundances Found =		10.07					
TA-182	114.43D	0.67	67.75	41.20	---	Not Found	---
			100.11	14.10	---	Not Found	---
			152.43	6.93	---	Not Found	---
			222.11	7.49	---	Not Found	---
			1121.30	34.90	4.899E-01	41.10	Abun.
			1189.05	16.20	---	Not Found	---
			1221.41*	27.00	---	Not Found	---
1231.02	11.44	---	Not Found	---			
% Abundances Found =		21.91					
IR-192	73.83D	1.03	295.96	28.72	9.190E-01	23.94	Abun.
			308.46	29.68	---	Not Found	---
			316.51*	82.71	---	Not Found	---
			468.07	47.81	---	Not Found	---
% Abundances Found =		15.20					
BI-207	32.90Y	0.01	72.81	21.40	---	Not Found	---
			74.97	35.70	2.607E-01	41.72	Abun.

Nuclide	Half-life	Half-Life Ratio	Energy	%Abund	Activity (pCi/GRAM)	2-Sigma %Error	Rejected by
BI-207	32.90Y	0.01	569.70	97.76	---	Not Found	---
			1063.66*	74.60	---	Not Found	---
			1770.23	6.87	---	Not Found	---
			% Abundances Found =		15.11		
BI-212	1.41E+10Y	0.00	727.33*	6.67	1.330E+00	42.08	Abun.
			785.37	1.10	---	Not Found	---
			1620.50	1.47	---	Not Found	---
			% Abundances Found =		72.19		
RN-219	7.04E+08Y	0.00	271.23	10.80	2.149E-01	109.45	Abun.
			401.81*	6.60	---	Not Found	---
			% Abundances Found =		62.07		
RA-223	7.04E+08Y	0.00	81.07	15.00	---	Not Found	---
			83.79	24.70	2.429E-01	52.05	Abun.
			94.56	8.67	---	Not Found	---
			144.24	3.27	---	Not Found	---
			154.21	5.70	---	Not Found	---
			269.46	13.90	1.670E-01	109.32	
			323.87*	3.99	---	Not Found	---
			338.28	2.84	4.353E+00	28.96	
% Abundances Found =		53.08					
AC-227	7.04E+08Y	0.00	79.69	2.64	---	Not Found	---
			235.96	17.50	---	Not Found	---
			256.23*	9.50	---	Not Found	---
			299.98	3.00	5.462E-01	135.11	Abun.
			304.50	1.56	---	Not Found	---
			334.37	1.54	---	Not Found	---
% Abundances Found =		8.39					
TH-227	7.04E+08Y	0.00	79.69	2.64	---	Not Found	---
			235.96	17.50	---	Not Found	---
			256.23*	9.50	---	Not Found	---
			299.98	3.00	5.462E-01	135.11	Abun.
			304.50	1.56	---	Not Found	---
			334.37	1.54	---	Not Found	---
% Abundances Found =		8.39					
AC-228	1.41E+10Y	0.00	338.32	11.27	1.097E+00	49.33	Abun.
			911.20*	25.80	8.164E-01	25.80	
			968.97	15.80	---	Not Found	---
% Abundances Found =		70.12					
RA-228	1.41E+10Y	0.00	338.32	11.27	1.097E+00	49.33	Abun.
			911.20*	25.80	8.164E-01	25.80	
			968.97	15.80	---	Not Found	---
% Abundances Found =		70.12					
TH-231	7.04E+08Y	0.00	81.07	15.00	---	Not Found	---
			83.79	24.70	2.429E-01	52.05	Abun.

Nuclide	Half-life	Half-Life Ratio	Energy	%Abund	Activity (pCi/GRAM)	2-Sigma %Error	Rejected by
TH-231	7.04E+08Y	0.00	94.87	5.69	---	Not Found	---
			144.24	3.27	---	Not Found	---
			154.21	5.70	---	Not Found	---
			269.46	13.90	1.670E-01	109.32	
			323.87*	3.99	---	Not Found	---
			338.28	2.84	4.353E+00	28.96	
% Abundances Found =			55.19				
TH-232	1.41E+10Y	0.00	338.32	11.27	1.097E+00	27.70	Abun.
			911.20*	25.80	8.164E-01	25.80	
			968.97	15.80	---	Not Found	---
% Abundances Found =			70.12				
PA-233	2.14E+06Y	0.00	300.13	6.63	2.471E-01	135.33	Abun.
			311.90*	38.50	---	Not Found	---
			340.48	4.45	---	Not Found	---
% Abundances Found =			13.37				
TH-234	4.47E+09Y	0.00	63.29*	3.70	---	Not Found	---
			92.59	4.23	1.854E+00	47.47	Abun.
% Abundances Found =			53.34				
NP-237	2.14E+06Y	0.00	94.65	10.56	---	Not Found	---
			98.43	16.90	---	Not Found	---
			300.13	6.63	2.471E-01	135.09	
			311.90*	38.50	---	Not Found	---
			340.48	4.45	---	Not Found	---
% Abundances Found =			8.61				
U-238	4.47E+09Y	0.00	63.29*	3.70	---	Not Found	---
			92.59	4.23	1.854E+00	42.89	Abun.
% Abundances Found =			53.34				

Flag: "*" = Keyline

 * GEL Laboratories LLC *
 * 2040 Savage Road *
 * Charleston, SC 29407 *
 * GAMMA SPECTROSCOPY BACKGROUND REPORT *

ENERGY	MDA COUNTS
43.53	186.0981
46.54	164.5476
49.72	0.0000
57.36	0.0000
57.53	215.1581
59.54	222.2665
63.29	247.2356
63.29	247.2356
64.28	251.8000
67.75	218.3846
69.67	284.5955
70.83	275.0106
72.81	242.4524
72.87	242.5025
72.87	242.5025
74.66	440.0473
74.82	440.2877
74.82	440.2877
74.82	440.2877
74.97	434.8662
77.11	307.1728
77.11	307.1728
77.11	307.1728
79.69	252.4199
79.69	252.4199
80.12	224.0477
80.19	0.0000
80.57	230.1257
81.00	253.4888
81.07	253.5452
81.07	253.5452
83.79	233.4565
83.79	233.4565
85.43	234.6467
86.55	235.4533
86.79	235.6237
86.94	235.7328
87.57	236.1826
88.03	236.5099
88.47	236.8225
89.96	237.8755
91.11	238.6833
92.59	239.7142
92.59	239.7142
93.35	240.2400
94.56	184.5563
94.65	184.6032
94.67	184.6136
94.87	184.7187
97.43	208.7425
98.43	165.3337
98.44	165.3387
99.53	212.9982
100.11	206.2256
103.18	222.2769
103.37	222.3906
105.31	214.2609
106.12	252.9092
109.28	240.4053
111.00	223.6851
111.76	0.0000
116.30	0.0000
117.23	215.4665
121.12	215.3281
121.78	226.3908
122.06	229.7598
123.07	217.9248

131.20	212.1052
133.02	222.8584
133.52	223.1014
136.00	220.4215
136.47	235.0581
140.51	0.0000
140.51	0.0000
143.76	220.6615
144.24	216.3711
144.24	216.3711
145.44	240.6260
152.43	221.0928
153.25	221.4482
154.21	220.7109
154.21	220.7109
156.02	231.8665
158.56	217.9258
159.00	219.2676
162.66	234.7965
163.33	222.8081
165.86	214.1545
176.60	235.3666
177.52	217.7468
181.07	0.0000
184.41	203.9348
185.72	233.5801
193.51	239.3624
197.04	215.6255
205.31	195.8395
210.85	214.2109
215.65	216.1339
222.11	226.8728
227.38	192.5980
228.16	0.0000
228.18	194.7647
235.69	188.9399
235.96	204.7611
235.96	204.7611
238.63	177.8453
238.63	177.8453
240.99	178.4152
242.00	178.6583
244.70	188.0712
252.40	0.0000
252.80	180.2195
256.23	163.8268
256.23	163.8268
260.90	0.0000
264.66	139.0090
268.22	157.6945
269.46	131.6133
269.46	131.6133
271.23	156.6317
273.65	224.8914
276.40	139.6435
277.37	160.9175
277.60	160.9601
278.00	161.0381
279.20	175.8362
279.54	177.9902
280.46	177.1413
283.69	138.0727
284.31	0.0000
285.41	176.0852
285.90	0.0000
287.50	133.4376
293.27	0.0000
295.22	199.2968
295.96	178.2462
298.57	200.0569
299.98	200.3754
299.98	200.3754
300.09	200.3983
300.09	200.3983
300.13	200.4069
300.13	200.4069
301.36	148.5924
302.85	148.8409

304.50	157.6848
304.50	157.6848
304.85	147.4577
308.46	150.6299
311.90	160.9180
311.90	160.9180
316.51	126.9904
319.41	150.2489
320.08	131.8342
323.87	160.8082
323.87	160.8082
328.76	149.5386
333.37	153.7899
334.37	155.7188
334.37	155.7188
338.28	123.2524
338.28	123.2524
338.32	123.2575
338.32	123.2575
338.32	123.2575
340.48	117.5182
340.48	117.5182
340.55	117.5270
344.28	125.1182
345.93	105.1834
351.06	127.0888
351.93	126.0718
356.01	103.9745
364.49	0.0000
366.42	0.0000
383.85	135.5152
388.16	112.7507
388.63	113.7316
391.69	112.1763
400.66	108.3628
401.81	114.2365
402.40	117.9657
404.85	138.7103
410.95	117.2630
414.70	87.4358
423.72	104.7675
427.09	87.7130
427.87	95.4869
433.94	115.3553
453.88	106.3903
463.37	97.2619
468.07	84.6669
473.00	0.0000
476.78	95.2609
477.60	95.3201
482.18	93.6357
487.02	89.9343
492.35	0.0000
497.08	80.4244
511.00	87.4083
514.00	79.0082
527.90	0.0000
529.87	0.0000
531.02	83.4336
537.26	105.7886
546.56	0.0000
563.25	93.7922
569.33	89.8857
569.50	88.8258
569.70	88.8359
583.19	86.3730
600.60	117.3419
602.73	116.5859
604.72	136.7920
609.32	98.7693
609.32	98.7693
609.32	98.7693
610.33	98.8308
614.28	77.0547
618.01	78.4549
621.93	84.7844
621.93	84.7844
633.25	56.5980

635.95	93.8615
636.99	0.0000
645.85	76.6481
657.76	96.0027
661.66	91.4999
661.66	91.4999
664.57	0.0000
666.33	89.8511
666.50	91.7525
677.62	80.9067
685.70	0.0000
695.00	91.2987
696.49	91.3722
696.51	91.3722
697.00	94.2835
702.65	90.7144
706.68	99.6157
711.68	87.2772
720.70	81.8501
721.93	0.0000
722.78	90.3020
722.91	90.3076
723.31	97.0173
724.19	100.4088
727.33	70.4033
733.00	63.8878
735.93	70.7197
739.50	0.0000
747.24	80.0261
752.31	74.2905
753.82	60.4688
756.73	81.4078
763.94	95.6543
765.81	75.7974
766.42	84.7994
777.92	0.0000
778.90	80.3076
783.70	0.0000
785.37	75.5295
795.86	58.7092
801.95	82.2310
810.29	66.2523
810.76	67.2877
815.77	81.7546
818.51	55.2557
832.01	78.2621
834.85	65.9922
836.80	0.0000
846.77	72.5777
856.80	67.8518
860.56	52.1678
871.09	56.6093
873.19	59.8099
875.33	0.0000
879.36	51.5571
880.51	57.9004
883.24	50.5918
884.68	50.6240
889.28	71.8626
898.04	67.8958
911.20	62.9492
911.20	62.9492
911.20	62.9492
926.50	61.2131
937.49	72.2862
944.13	46.5221
946.00	64.9646
949.00	69.6926
962.29	60.4976
964.08	80.1768
966.15	81.8832
968.97	97.4365
968.97	97.4365
968.97	97.4365
983.53	57.4875
996.26	66.3049
1001.03	53.1445
1004.73	51.3209

1037.84	59.6862
1038.76	0.0000
1048.07	67.6514
1050.41	52.2353
1050.41	52.2353
1063.66	50.5509
1085.87	52.9302
1099.45	65.0148
1112.07	65.8065
1115.54	71.0894
1120.29	67.4901
1120.29	67.4901
1120.29	67.4901
1120.55	67.4948
1121.30	64.2870
1131.51	0.0000
1173.23	59.6523
1177.93	56.7109
1189.05	52.8597
1204.77	54.1609
1221.41	64.7380
1231.02	113.3915
1235.36	85.6806
1238.28	73.3649
1260.41	0.0000
1271.85	65.8059
1274.44	57.4976
1274.54	57.4995
1291.59	53.6059
1298.22	0.0000
1312.11	34.9083
1332.49	34.0636
1365.19	36.6863
1368.63	0.0000
1384.29	58.6548
1408.01	23.8159
1457.56	0.0000
1460.82	31.9144
1489.16	31.1924
1505.03	49.9308
1596.21	19.6158
1620.50	14.1312
1678.03	0.0000
1690.97	23.6296
1764.49	33.4639
1764.49	33.4639
1764.49	33.4639
1770.23	16.7544
1771.35	18.6214
1791.20	0.0000
1836.06	14.1768

VAX/VMS Nuclide Identification Report Generated 3-MAY-2012 11:00:40.07

```

*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29407                          *
*****
Configuration   : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G302440006.CNF;1
Background file : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]BKG_GAM23.CNF;35
Background date : 29-APR-2012 10:52:02
Sample date     : 13-MAR-2012 11:15:00 Acquisition date : 3-MAY-2012 08:58:24.
Sample ID      : G302440006 Sample quantity   : 1.79050E+02 GRAM
Detector name  : GAM23 Detector geometry: CAN
Elapsed live time: 0 02:00:00.00 Elapsed real time: 0 02:00:01.15 0.0%
Energy tolerance : 1.50000 keV Analyst Initials : MXR1
Abundance limit : 75.00000 Sensitivity : 5.00000
Batch ID       : 1203837 Detector SN# :
Matrix Spike ID : LCS ID : 1364
*****

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Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	2	74.89	242	283	0.89	149.65	146	13	3.36E-02	12.0	2.33E+00
2	2	77.14	340	249	0.83	154.16	146	13	4.73E-02	8.9	
3	5	87.25*	170	200	1.10	174.37	172	20	2.36E-02	14.6	3.08E+00
4	5	89.91	143	332	1.45	179.70	172	20	1.99E-02	25.0	
5	5	93.02*	181	291	1.46	185.92	172	20	2.52E-02	20.6	
6	0	185.79*	92	265	1.07	371.50	368	9	1.28E-02	35.1	
7	0	209.23	113	202	1.06	418.38	413	9	1.58E-02	24.5	
8	4	238.63*	990	121	1.01	477.19	470	19	1.38E-01	3.7	1.64E+00
9	4	241.58	229	169	1.72	483.09	470	19	3.18E-02	15.3	
10	0	269.81	79	176	1.15	539.56	534	11	1.09E-02	34.5	
11	3	295.22	253	87	0.99	590.37	586	22	3.52E-02	8.5	1.07E+00
12	3	299.64	78	129	1.67	599.23	586	22	1.09E-02	30.2	
13	0	328.44	71	144	1.21	656.82	651	12	9.82E-03	36.0	
14	0	338.39	187	114	1.08	676.74	672	9	2.59E-02	12.7	
15	0	351.89	487	119	1.23	703.73	697	14	6.76E-02	6.6	
16	0	409.60	65	51	2.15	819.16	815	8	9.06E-03	22.7	
17	0	463.07	58	83	1.09	926.10	921	10	8.08E-03	32.6	
18	0	510.96*	40	94	1.70	1021.88	1016	11	5.50E-03	61.6	
19	0	583.30*	308	106	1.51	1166.57	1159	16	4.28E-02	9.5	
20	0	609.29*	350	93	1.32	1218.54	1211	16	4.86E-02	8.2	
21	0	727.28	76	73	1.40	1454.50	1449	12	1.06E-02	25.0	
22	0	794.58	64	28	2.99	1589.08	1581	14	8.89E-03	21.5	
23	0	861.12	48	41	1.71	1722.13	1716	11	6.70E-03	30.0	
24	0	911.21	240	44	1.63	1822.30	1817	13	3.33E-02	8.7	
25	0	969.91	82	93	1.70	1939.68	1931	13	1.13E-02	27.2	
26	0	1121.01	92	43	1.84	2241.79	2235	17	1.27E-02	19.4	
27	0	1237.01	62	42	2.99	2473.69	2464	19	8.56E-03	28.4	
28	0	1460.68	549	21	2.12	2920.85	2912	15	7.63E-02	4.6	
29	0	1765.25*	38	21	2.30	3529.62	3522	14	5.29E-03	31.1	

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

VAX/VMS Nuclide Identification Report Generated

```

*****
*
*           GEL Laboratories LLC
*           2040 Savage Road
*           Charleston, SC 29407
*****
*
*           DETECTOR DATA
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G302440006.CNF;1
* Acquisition date   : 3-MAY-2012 08:58:24 Detector SN#      :
* Detector ID        : GAM23                               Sensitivity       : 5.000
* Geometry           : CAN                                 Energy tolerance  : 1.500
* Elapsed live time  : 0 02:00:00.00                      Abundance limit   : 75.000
* Elapsed real time  : 0 02:00:01.15                      Half life ratio   : 8.000
*****
*
*           SAMPLE DATA
*
* Sample date        : 13-MAR-2012 11:15:00 Nuclide Library  : SOLID
* Sample ID          : G302440006                          Analyst initials  : MXR1
* Batch Number       : 1203837                              Sample Quantity  : 1.7905E+02 GRAM
* Recovery           : 1.00000                              Carrier Weight    : 0.00000
*****
*
*           QC DATA
*
* Standard Weight    : 0.00000
* CALIB. DATE/TIME  : 14-OCT-2011 11:45:05 MS Isotope      :
* MSD DPM            : 0.000                               MSD Isotope       :
* LCS DPM            : 0.000                               LCS Isotope       :
* LCSD DPM           : 0.000                               LCSD Isotope      :
*****

```

Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act error (1.96-sigma)	MDA (pCi/GRAM)	
K-40	1.045E+01	1.281E+00	3.639E-01	0.000E+00
CD-109	3.009E+00	9.072E-01	9.934E-01	0.000E+00
SN-126	2.787E-01	8.403E-02	9.263E-02	0.000E+00
TL-208	3.785E-01	7.868E-02	4.441E-02	0.000E+00
BI-211	2.848E+00	4.460E-01	2.162E-01	0.000E+00
PB-212	1.344E+00	1.622E-01	7.136E-02	0.000E+00
BI-214	8.255E-01	1.564E-01	9.130E-02	0.000E+00
PB-214	1.034E+00	1.713E-01	7.864E-02	0.000E+00
RA-224	3.333E+00	1.042E+00	7.652E-01	0.000E+00
RA-226	8.255E-01	1.564E-01	9.130E-02	0.000E+00
AC-228	1.325E+00	2.909E-01	1.709E-01	0.000E+00
RA-228	1.325E+00	2.909E-01	1.709E-01	0.000E+00
TH-228	1.344E+00	1.622E-01	7.136E-02	0.000E+00
TH-230	8.254E-01	1.505E-01	9.130E-02	0.000E+00
TH-232	1.325E+00	2.909E-01	1.709E-01	0.000E+00
U-235	5.926E-02	1.300E-01	2.518E-01	0.000E+00
AM-243	2.931E-01	7.322E-02	7.403E-02	0.000E+00
ANH-511	3.793E-02	4.590E-02	4.074E-02	0.000E+00

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L.	Act error (1.96-sigma)	MDA (pCi/GRAM)	
BE-7	2.264E-02		3.509E-01	6.565E-01	0.000E+00 NOT IDENT.
NA-22	1.791E-02		3.043E-02	6.062E-02	0.000E+00 NOT IDENT.
NA-24	0.000E+00		8.394E+22	0.000E+00	0.000E+00 SHORT HLIF
SC-46	-3.413E-02		3.615E-02	5.965E-02	0.000E+00 FAIL ABUN
V-48	-2.387E-02		2.184E-01	4.165E-01	0.000E+00 NOT IDENT.
CR-51	-2.789E-01		5.655E-01	1.056E+00	0.000E+00 NOT IDENT.
MN-54	-4.489E-03		3.160E-02	5.751E-02	0.000E+00 NOT IDENT.
CO-56	-1.722E-02		3.917E-02	6.952E-02	0.000E+00 FAIL ABUN
CO-57	2.344E-03		1.803E-02	3.545E-02	0.000E+00 NOT IDENT.

CO-58	-1.059E-02	4.086E-02	7.427E-02	0.000E+00	NOT IDENT.
FE-59	-5.807E-02	9.286E-02	1.645E-01	0.000E+00	NOT IDENT.
CO-60	1.897E-03	2.714E-02	5.170E-02	0.000E+00	NOT IDENT.
ZN-65	4.947E-03	7.788E-02	1.273E-01	0.000E+00	NOT IDENT.
SE-75	9.211E-04	3.822E-02	6.629E-02	0.000E+00	NOT IDENT.
SR-85	5.243E-02	4.638E-02	8.204E-02	0.000E+00	NOT IDENT.
Y-88	2.179E-02	3.239E-02	7.099E-02	0.000E+00	NOT IDENT.
Y-91	-3.023E+00	2.322E+01	4.265E+01	0.000E+00	NOT IDENT.
NB-94	-6.464E-03	2.449E-02	4.508E-02	0.000E+00	NOT IDENT.
NB-95	2.064E-02	4.391E-02	8.507E-02	0.000E+00	NOT IDENT.
NB-95M	6.774E-02	1.367E-01	2.303E-01	0.000E+00	NOT IDENT.
ZR-95	-2.824E-02	7.048E-02	1.277E-01	0.000E+00	NOT IDENT.
MO-99	0.000E+00	6.330E+04	0.000E+00	0.000E+00	SHORT HLIF
TC-99M	0.000E+00	3.533E+41	0.000E+00	0.000E+00	SHORT HLIF
RU-103	-7.451E-03	5.388E-02	9.851E-02	0.000E+00	FAIL ABUN
RH-106	9.476E-02	2.278E-01	4.507E-01	0.000E+00	NOT IDENT.
RU-106	9.476E-02	2.276E-01	4.507E-01	0.000E+00	NOT IDENT.
AG-108M	-1.298E-03	2.221E-02	4.128E-02	0.000E+00	NOT IDENT.
AG-110M	-1.972E-03	3.613E-02	6.703E-02	0.000E+00	NOT IDENT.
SN-113	1.660E-02	3.737E-02	7.286E-02	0.000E+00	NOT IDENT.
CD-115	0.000E+00	5.715E+05	0.000E+00	0.000E+00	SHORT HLIF
SN-117M	2.085E-02	2.190E-01	4.196E-01	0.000E+00	NOT IDENT.
TE-123M	-4.751E-03	2.253E-02	4.249E-02	0.000E+00	NOT IDENT.
SB-124	-1.662E-02	9.375E-02	1.783E-01	0.000E+00	NOT IDENT.
SB-125	8.651E-03	6.701E-02	1.266E-01	0.000E+00	FAIL ABUN
TE-125M	3.164E+00	9.349E+00	1.874E+01	0.000E+00	NOT IDENT.
I-126	-4.717E-01	1.068E+00	1.951E+00	0.000E+00	NOT IDENT.
SB-126	-1.105E-01	8.102E-01	1.366E+00	0.000E+00	NOT IDENT.
SB-127	0.000E+00	5.874E+02	0.000E+00	0.000E+00	SHORT HLIF
I-131	-2.396E-02	1.731E+00	3.294E+00	0.000E+00	NOT IDENT.
TE-132	0.000E+00	1.226E+03	0.000E+00	0.000E+00	SHORT HLIF
BA-133	3.632E-03	2.883E-02	4.919E-02	0.000E+00	NOT IDENT.
I-133	0.000E+00	1.213E+16	0.000E+00	0.000E+00	SHORT HLIF
CS-134	0.000E+00	4.394E-02	6.642E-02	0.000E+00	FAIL ABUN
CS-135	1.087E-01	1.151E-01	2.106E-01	0.000E+00	NOT IDENT.
I-135	0.000E+00	3.649E+41	0.000E+00	0.000E+00	SHORT HLIF
CS-136	1.838E-01	4.752E-01	9.409E-01	0.000E+00	NOT IDENT.
BA-137M	2.821E-02	2.462E-02	5.080E-02	0.000E+00	NOT IDENT.
CS-137	2.980E-02	2.601E-02	5.366E-02	0.000E+00	NOT IDENT.
CE-139	1.629E-02	2.268E-02	4.458E-02	0.000E+00	NOT IDENT.
BA-140	-7.574E-01	1.385E+00	2.531E+00	0.000E+00	NOT IDENT.
LA-140	-4.484E-01	4.002E-01	6.351E-01	0.000E+00	FAIL ABUN
CE-141	-1.961E-02	8.513E-02	1.618E-01	0.000E+00	NOT IDENT.
CE-143	0.000E+00	1.002E+10	0.000E+00	0.000E+00	SHORT HLIF
CE-144	-6.179E-02	1.407E-01	2.664E-01	0.000E+00	NOT IDENT.
PM-144	2.937E-03	2.666E-02	5.067E-02	0.000E+00	NOT IDENT.
PR-144	2.204E-01	2.033E+00	3.862E+00	0.000E+00	NOT IDENT.
PM-146	3.631E-02	2.892E-02	5.884E-02	0.000E+00	NOT IDENT.
ND-147	-1.322E+00	3.875E+00	7.320E+00	0.000E+00	FAIL ABUN
PM-149	0.000E+00	4.319E+06	0.000E+00	0.000E+00	SHORT HLIF
EU-152	5.540E-02	6.337E-02	1.279E-01	0.000E+00	NOT IDENT.
GD-153	-5.452E-02	6.454E-02	1.094E-01	0.000E+00	NOT IDENT.
EU-154	3.552E-02	8.693E-02	1.695E-01	0.000E+00	NOT IDENT.
EU-155	1.753E-02	6.689E-02	1.341E-01	0.000E+00	FAIL ABUN
TB-160	-2.837E-02	1.290E-01	2.351E-01	0.000E+00	FAIL ABUN
HO-166M	3.631E-03	4.185E-02	7.966E-02	0.000E+00	FAIL ABUN
HF-181	-2.312E-02	5.359E-02	9.598E-02	0.000E+00	NOT IDENT.
TA-182	-1.746E-01	1.835E-01	3.076E-01	0.000E+00	FAIL ABUN
IR-192	3.943E-03	3.107E-02	6.050E-02	0.000E+00	FAIL ABUN
HG-203	4.072E-02	4.493E-02	9.094E-02	0.000E+00	NOT IDENT.
BI-207	9.925E-03	3.508E-02	6.878E-02	0.000E+00	FAIL ABUN
PB-210	3.086E+00	4.076E+00	8.139E+00	0.000E+00	NOT IDENT.
PB-211	2.958E-01	5.724E-01	9.632E-01	0.000E+00	NOT IDENT.
BI-212	0.000E+00	7.028E-01	1.002E+00	0.000E+00	FAIL ABUN
RN-219	-1.516E-02	2.925E-01	5.482E-01	0.000E+00	FAIL ABUN
RA-223	1.110E-01	4.462E-01	7.741E-01	0.000E+00	FAIL ABUN
AC-227	-1.747E-01	1.624E-01	2.975E-01	0.000E+00	FAIL ABUN
TH-227	-1.747E-01	1.628E-01	2.975E-01	0.000E+00	FAIL ABUN
TH-229	1.887E-01	3.613E-01	6.921E-01	0.000E+00	FAIL ABUN
PA-231	-4.932E-01	9.309E-01	1.752E+00	0.000E+00	NOT IDENT.
TH-231	1.110E-01	4.462E-01	7.741E-01	0.000E+00	FAIL ABUN
PA-233	2.778E-03	4.001E-02	7.788E-02	0.000E+00	FAIL ABUN
PA-234	-7.360E-02	2.038E-01	3.785E-01	0.000E+00	NOT IDENT.
PA-234M	3.374E+00	3.067E+00	6.404E+00	0.000E+00	NOT IDENT.
TH-234	3.555E-01	1.131E+00	2.150E+00	0.000E+00	FAIL ABUN
NP-237	2.778E-03	4.002E-02	7.788E-02	0.000E+00	FAIL ABUN
U-238	3.555E-01	1.131E+00	2.150E+00	0.000E+00	FAIL ABUN
NP-239	-7.910E-02	2.428E-01	4.698E-01	0.000E+00	NOT IDENT.

AM-241	3.697E-02	1.277E-01	2.445E-01	0.000E+00	NOT IDENT.
CM-247	1.770E-02	2.639E-02	5.184E-02	0.000E+00	NOT IDENT.
CF-249	4.870E-03	2.736E-02	5.241E-02	0.000E+00	NOT IDENT.
CF-251	-3.906E-02	8.611E-02	1.585E-01	0.000E+00	NOT IDENT.

Gamma Spectroscopy Auxillary Report

Sample:G302440006

Nuclide	TPU	LLD	EFF	FWHM	TArea	TBack	TCounts
BE-7	0.351E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
NA-22	0.304E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
NA-24	0.196E+17	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
K-40	0.128E+01	0.985E+02	0.102E-01	0.212E+01	0.540E+03	0.802E+02	0.620E+03
SC-46	0.362E-01	0.980E+02	0.000E+00	0.000E+00	0.937E+02	0.435E+02	0.137E+03
V-48	0.218E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
CR-51	0.566E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
MN-54	0.316E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
CO-56	0.392E-01	0.106E+03	0.000E+00	0.000E+00	0.621E+02	0.427E+02	0.105E+03
CO-57	0.180E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
CO-58	0.409E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
FE-59	0.929E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
CO-60	0.271E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
ZN-65	0.779E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
SE-75	0.382E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
SR-85	0.464E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Y-88	0.324E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Y-91	0.232E+02	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
NB-94	0.245E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
NB-95	0.439E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
NB-95M	0.137E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
ZR-95	0.705E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
MO-99	0.633E+05	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
TC-99M	0.196E+17	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
RU-103	0.539E-01	0.941E+02	0.000E+00	0.000E+00	0.391E+03	0.202E+03	0.594E+03
RH-106	0.228E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
RU-106	0.228E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
AG-108M	0.222E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
CD-109	0.907E+00	0.666E+02	0.492E-01	0.110E+01	0.242E+03	0.363E+03	0.605E+03
AG-110M	0.361E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
SN-113	0.374E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
CD-115	0.572E+06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
SN-117M	0.219E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
TE-123M	0.225E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
SB-124	0.938E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
SB-125	0.670E-01	0.692E+02	0.000E+00	0.000E+00	0.677E+02	0.963E+02	0.164E+03
TE-125M	0.935E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
I-126	0.107E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
SB-126	0.810E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
SN-126	0.840E-01	0.666E+02	0.492E-01	0.110E+01	0.484E+03	0.725E+03	0.121E+04
SB-127	0.587E+03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
I-131	0.173E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
TE-132	0.123E+04	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
BA-133	0.288E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
I-133	0.121E+17	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
CS-134	0.439E-01	0.600E+02	0.175E-01	0.299E+01	0.690E+02	0.302E+02	0.992E+02
CS-135	0.115E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
I-135	0.196E+17	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
CS-136	0.475E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
BA-137M	0.246E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
CS-137	0.260E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
CE-139	0.227E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
BA-140	0.139E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
LA-140	0.400E+00	0.718E+02	0.000E+00	0.000E+00	0.860E+02	0.176E+03	0.262E+03
CE-141	0.851E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
CE-143	0.100E+11	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
CE-144	0.141E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
PM-144	0.267E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
PR-144	0.203E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
PM-146	0.289E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
ND-147	0.387E+01	0.875E+02	0.000E+00	0.000E+00	0.203E+03	0.111E+04	0.132E+04
PM-149	0.432E+07	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
EU-152	0.634E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
GD-153	0.645E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
EU-154	0.869E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
EU-155	0.669E-01	0.666E+02	0.000E+00	0.000E+00	0.242E+03	0.363E+03	0.605E+03
TB-160	0.129E+00	0.647E+02	0.000E+00	0.000E+00	0.338E+03	0.522E+03	0.860E+03
HO-166M	0.418E-01	0.689E+02	0.000E+00	0.000E+00	0.197E+03	0.858E+03	0.105E+04
HF-181	0.536E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
TA-182	0.184E+00	0.980E+02	0.000E+00	0.000E+00	0.937E+02	0.435E+02	0.137E+03

IR-192	0.311E-01	0.518E+02	0.000E+00	0.000E+00	0.312E+03	0.108E+03	0.420E+03
HG-203	0.449E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
BI-207	0.351E-01	0.104E+03	0.000E+00	0.000E+00	0.351E+03	0.410E+03	0.761E+03
TL-208	0.787E-01	0.930E+02	0.226E-01	0.151E+01	0.399E+03	0.227E+03	0.626E+03
PB-210	0.408E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
BI-211	0.446E+00	0.685E+02	0.335E-01	0.123E+01	0.587E+03	0.143E+03	0.731E+03
PB-211	0.572E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
BI-212	0.703E+00	0.901E+02	0.189E-01	0.140E+01	0.834E+02	0.793E+02	0.163E+03
PB-212	0.162E+00	0.702E+02	0.449E-01	0.101E+01	0.219E+04	0.118E+04	0.337E+04
BI-214	0.156E+00	0.974E+02	0.218E-01	0.132E+01	0.521E+03	0.297E+03	0.819E+03
PB-214	0.171E+00	0.696E+02	0.335E-01	0.123E+01	0.203E+04	0.133E+04	0.336E+04
RN-219	0.292E+00	0.692E+02	0.000E+00	0.000E+00	0.982E+02	0.220E+03	0.318E+03
RA-223	0.446E+00	0.686E+02	0.000E+00	0.000E+00	0.324E+03	0.358E+03	0.683E+03
RA-224	0.104E+01	0.646E+02	0.445E-01	0.172E+01	0.290E+03	0.311E+03	0.600E+03
RA-226	0.156E+00	0.974E+02	0.218E-01	0.132E+01	0.521E+03	0.297E+03	0.819E+03
AC-227	0.162E+00	0.637E+02	0.000E+00	0.000E+00	0.962E+02	0.159E+03	0.255E+03
TH-227	0.163E+00	0.637E+02	0.000E+00	0.000E+00	0.962E+02	0.159E+03	0.255E+03
AC-228	0.291E+00	0.935E+02	0.155E-01	0.163E+01	0.565E+03	0.283E+03	0.848E+03
RA-228	0.291E+00	0.935E+02	0.155E-01	0.163E+01	0.565E+03	0.283E+03	0.848E+03
TH-228	0.162E+00	0.702E+02	0.449E-01	0.101E+01	0.219E+04	0.118E+04	0.337E+04
TH-229	0.361E+00	0.666E+02	0.000E+00	0.000E+00	0.242E+03	0.363E+03	0.605E+03
TH-230	0.151E+00	0.974E+02	0.218E-01	0.132E+01	0.521E+03	0.297E+03	0.819E+03
PA-231	0.931E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
TH-231	0.446E+00	0.686E+02	0.000E+00	0.000E+00	0.324E+03	0.358E+03	0.683E+03
TH-232	0.291E+00	0.935E+02	0.155E-01	0.163E+01	0.565E+03	0.283E+03	0.848E+03
PA-233	0.400E-01	0.637E+02	0.000E+00	0.000E+00	0.962E+02	0.159E+03	0.255E+03
PA-234	0.204E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
PA-234M	0.307E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
TH-234	0.113E+01	0.795E+02	0.000E+00	0.000E+00	0.256E+03	0.106E+04	0.131E+04
U-235	0.130E+00	0.734E+02	0.000E+00	0.000E+00	0.579E+03	0.297E+04	0.355E+04
NP-237	0.400E-01	0.637E+02	0.000E+00	0.000E+00	0.962E+02	0.159E+03	0.255E+03
U-238	0.113E+01	0.795E+02	0.000E+00	0.000E+00	0.256E+03	0.106E+04	0.131E+04
NP-239	0.243E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
AM-241	0.128E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
AM-243	0.732E-01	0.104E+03	0.373E-01	0.890E+00	0.351E+03	0.410E+03	0.761E+03
CM-247	0.264E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
CF-249	0.274E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
CF-251	0.861E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
ANH-511	0.459E-01	0.124E+03	0.251E-01	0.170E+01	0.454E+02	0.141E+04	0.146E+04

```

Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G302440006.CNF;1
Analyses by       : PEAK V16.9
Sample title      : MXR1
Sample date       : 13-MAR-2012 11:15:00 Acquisition date : 3-MAY-2012 08:58:24
Sample ID        : G302440006 Sample quantity : 179.05 GRAM
Sample type      : SOLID Sample geometry :
Detector name    : GAMMA23 Detector geometry: CAN
Elapsed live time: 0 02:00:00.00 Elapsed real time: 0 02:00:01.15 0.0%
Start energy     : 0.58 keV End energy : 2048.65 keV
Sensitivity      : 5.00 Gaussian : 10.00
Critical level   : No
    
```

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	2	74.89	242	283	0.89	149.65	146	13	3.36E-02	12.0	2.33E+00
2	2	77.14	340	249	0.83	154.16	146	13	4.73E-02	8.9	
3	5	87.25	179	200	1.10	174.37	172	20	2.49E-02	13.7	3.08E+00
4	5	89.91	143	332	1.45	179.70	172	20	1.99E-02	25.0	
5	5	93.02	258	291	1.46	185.92	172	20	3.59E-02	14.2	
6	0	185.79	146	265	1.07	371.50	368	9	2.03E-02	21.7	
7	0	209.23	113	202	1.06	418.38	413	9	1.58E-02	24.5	
8	4	238.63	1002	121	1.01	477.19	470	19	1.39E-01	3.6	1.64E+00
9	4	241.58	229	169	1.72	483.09	470	19	3.18E-02	15.3	
10	0	269.81	79	176	1.15	539.56	534	11	1.09E-02	34.5	
11	3	295.22	253	87	0.99	590.37	586	22	3.52E-02	8.5	1.07E+00
12	3	299.64	78	129	1.67	599.23	586	22	1.09E-02	30.2	
13	0	328.44	71	144	1.21	656.82	651	12	9.82E-03	36.0	
14	0	338.39	187	114	1.08	676.74	672	9	2.59E-02	12.7	
15	0	351.89	487	119	1.23	703.73	697	14	6.76E-02	6.6	
16	0	409.60	65	51	2.15	819.16	815	8	9.06E-03	22.7	
17	0	463.07	58	83	1.09	926.10	921	10	8.08E-03	32.6	
18	0	510.96	196	94	1.70	1021.88	1016	11	2.73E-02	11.9	
19	0	583.30	316	106	1.51	1166.57	1159	16	4.39E-02	9.2	
20	0	609.29	361	93	1.32	1218.54	1211	16	5.02E-02	7.9	
21	0	727.28	76	73	1.40	1454.50	1449	12	1.06E-02	25.0	
22	0	794.58	64	28	2.99	1589.08	1581	14	8.89E-03	21.5	
23	0	861.12	48	41	1.71	1722.13	1716	11	6.70E-03	30.0	
24	0	911.21	240	44	1.63	1822.30	1817	13	3.33E-02	8.7	
25	0	969.91	82	93	1.70	1939.68	1931	13	1.13E-02	27.2	
26	0	1121.01	92	43	1.84	2241.79	2235	17	1.27E-02	19.4	
27	0	1237.01	62	42	2.99	2473.69	2464	19	8.56E-03	28.4	
28	0	1460.68	549	21	2.12	2920.85	2912	15	7.63E-02	4.6	
29	0	1765.25	42	21	2.30	3529.62	3522	14	5.81E-03	27.9	

```

*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29407                          *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G302440006.CNF;1
Sample date        : 13-MAR-2012 11:15:00 Acquisition date : 3-MAY-2012 08:58:24.
Sample ID          : G302440006          Sample quantity  : 1.79050E+02 GRAM
Detector name     : GAM23                Detector geometry: CAN
Elapsed live time : 0 02:00:00.00        Elapsed real time: 0 02:00:01.15  0.0%
Energy tolerance  : 1.50000 keV          Analyst Initials  : MXR1
Abundance limit   : 75.00000             Sensitivity       : 5.00000
Batch ID          : 1203837              Detector SN#      :
Matrix Spike ID   :                      LCS ID           : 1364
*****
    
```

Summary of Nuclide Activity

```

Total number of lines in spectrum      29
Number of unidentified lines           1
Number of lines tentatively identified by NID 28          96.55%
    
```

Nuclide Type :

Nuclide	Hlife	Decay	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
K-40	1.25E+09Y	1.00	1.045E+01	1.045E+01	0.131E+01	12.51	
CD-109	461.40D	1.08	2.787E+00	3.009E+00	0.926E+00	30.76	
SN-126	2.30E+05Y	1.00	2.787E-01	2.787E-01	0.857E-01	30.76	
TL-208	1.41E+10Y	1.00	3.785E-01	3.785E-01	0.803E-01	21.21	
BI-211	7.04E+08Y	1.00	2.848E+00	2.848E+00	0.455E+00	15.98	
PB-212	1.41E+10Y	1.00	1.344E+00	1.344E+00	0.166E+00	12.32	
BI-214	1600.00Y	1.00	8.254E-01	8.255E-01	1.596E-01	19.34	
PB-214	1600.00Y	1.00	1.034E+00	1.034E+00	0.175E+00	16.91	
RA-224	1.41E+10Y	1.00	3.333E+00	3.333E+00	1.063E+00	31.90	
RA-226	1600.00Y	1.00	8.254E-01	8.255E-01	1.596E-01	19.34	
AC-228	1.41E+10Y	1.00	1.325E+00	1.325E+00	0.297E+00	22.40	
RA-228	1.41E+10Y	1.00	1.325E+00	1.325E+00	0.297E+00	22.40	
TH-228	1.41E+10Y	1.00	1.344E+00	1.344E+00	0.166E+00	12.32	
TH-230	7.54E+04Y	1.00	8.254E-01	8.254E-01	1.536E-01	18.61	
TH-232	1.41E+10Y	1.00	1.325E+00	1.325E+00	0.297E+00	22.40	
U-235	7.04E+08Y	1.00	8.274E-02	8.274E-02	5.845E-02	70.64	K
AM-243	7370.00Y	1.00	2.930E-01	2.931E-01	0.747E-01	25.50	
ANH-511	1.00E+09Y	1.00	3.793E-02	3.793E-02	4.684E-02	123.49	
Total Activity :			3.066E+01	3.088E+01			

Grand Total Activity : 3.066E+01 3.088E+01

Flags: "K" = Keyline not found "M" = Manually accepted
 "E" = Manually edited "A" = Nuclide specific abn. limit

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
0	209.23	146	259	1.06	418.38	413	9	1.58E-02	49.0	4.93E+00	
0	269.81	98	220	1.15	539.56	534	11	1.09E-02	69.1	4.10E+00	T
0	328.44	86	176	1.21	656.82	651	12	9.82E-03	72.0	3.53E+00	T
0	409.60	77	60	2.15	819.16	815	8	9.06E-03	45.5	2.98E+00	T
0	463.07	68	96	1.09	926.10	921	10	8.08E-03	65.2	2.71E+00	T
0	727.28	83	79	1.40	1454.50	1449	12	1.06E-02	50.0	1.89E+00	T
0	794.58	69	30	2.99	1589.08	1581	14	8.89E-03	43.1	1.75E+00	T
0	1237.01	62	43	2.99	2473.69	2464	19	8.56E-03	56.9	1.18E+00	T

Flags: "T" = Tentatively associated

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
K-40	1460.82	540	10.66*	1.016E+00	1.045E+01	1.045E+01	12.51
CD-109	88.03	242	3.70*	4.923E+00	2.787E+00	3.009E+00	30.76
SN-126	64.28	-----	9.60	2.411E+00	-----	Line Not Found	-----
	86.94	242	8.90	4.923E+00	1.159E+00	1.159E+00	50.82
	87.57	242	37.00*	4.923E+00	2.787E-01	2.787E-01	30.76
TL-208	277.37	-----	6.60	4.011E+00	-----	Line Not Found	-----
	583.19	347	85.00*	2.262E+00	3.785E-01	3.785E-01	21.21
	860.56	51	12.50	1.633E+00	5.281E-01	5.281E-01	61.19
BI-211	72.87	-----	1.23	3.498E+00	-----	Line Not Found	-----
	351.06	587	12.92*	3.345E+00	2.848E+00	2.848E+00	15.98
PB-212	74.82	351	10.28	3.734E+00	1.916E+00	1.916E+00	27.29
	77.11	492	17.10	3.985E+00	1.513E+00	1.513E+00	19.89
	238.63	1254	43.60*	4.487E+00	1.344E+00	1.344E+00	12.32
	300.09	96	3.30	3.782E+00	1.616E+00	1.616E+00	61.33
BI-214	609.32	391	45.49*	2.185E+00	8.254E-01	8.255E-01	19.34
	1120.29	94	14.92	1.287E+00	1.023E+00	1.023E+00	41.55
	1764.49	36	15.30	8.772E-01	5.666E-01	5.666E-01	62.77
PB-214	74.82	351	5.80	3.734E+00	3.395E+00	3.396E+00	26.70
	77.11	492	9.70	3.985E+00	2.666E+00	2.667E+00	21.54
	242.00	290	7.25	4.447E+00	1.885E+00	1.885E+00	32.42
	295.22	312	18.42	3.825E+00	9.288E-01	9.289E-01	20.27
	351.93	587	35.60*	3.345E+00	1.034E+00	1.034E+00	16.91
RA-224	240.99	290	4.10*	4.447E+00	3.333E+00	3.333E+00	31.90
RA-226	609.32	391	45.49*	2.185E+00	8.254E-01	8.255E-01	19.34
	1120.29	94	14.92	1.287E+00	1.023E+00	1.023E+00	41.55
	1764.49	36	15.30	8.772E-01	5.666E-01	5.666E-01	62.77
AC-228	338.32	226	11.27	3.447E+00	1.221E+00	1.221E+00	48.83
	911.20	253	25.80*	1.553E+00	1.325E+00	1.325E+00	22.40
	968.97	85	15.80	1.468E+00	7.722E-01	7.722E-01	60.21
RA-228	338.32	226	11.27	3.447E+00	1.221E+00	1.221E+00	48.83
	911.20	253	25.80*	1.553E+00	1.325E+00	1.325E+00	22.40
	968.97	85	15.80	1.468E+00	7.722E-01	7.722E-01	60.21
TH-228	74.82	351	10.28	3.734E+00	1.916E+00	1.916E+00	25.52
	77.11	492	17.10	3.985E+00	1.513E+00	1.513E+00	19.89
	238.63	1254	43.60*	4.487E+00	1.344E+00	1.344E+00	12.32
	300.09	96	3.30	3.782E+00	1.616E+00	1.616E+00	86.01
TH-230	609.32	391	45.49*	2.185E+00	8.254E-01	8.254E-01	18.61
	1120.29	94	14.92	1.287E+00	1.023E+00	1.023E+00	41.01
	1764.49	36	15.30	8.772E-01	5.666E-01	5.666E-01	62.77
TH-232	338.32	226	11.27	3.447E+00	1.221E+00	1.221E+00	26.80
	911.20	253	25.80*	1.553E+00	1.325E+00	1.325E+00	22.40
	968.97	85	15.80	1.468E+00	7.722E-01	7.722E-01	60.21
U-235	89.96	203	3.47	5.118E+00	2.395E+00	2.395E+00	55.80
	93.35	256	5.60	5.319E+00	1.804E+00	1.804E+00	47.30
	143.76	-----	10.96*	5.997E+00	-----	Line Not Found	-----
	163.33	-----	5.08	5.707E+00	-----	Line Not Found	-----
	185.72	120	57.20	5.319E+00	8.274E-02	8.274E-02	70.64
	205.31	-----	5.01	4.989E+00	-----	Line Not Found	-----
AM-243	43.53	-----	5.90	2.767E-01	-----	Line Not Found	-----

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
	74.66	351	67.20*	3.734E+00	2.930E-01	2.931E-01	25.50
ANH-511	511.00	45	100.00*	2.511E+00	3.793E-02	3.793E-02	123.49

Flag: "*" = Keyline

Nuclide	Half-life	Half-Life Ratio	Energy	%Abund	Activity (pCi/GRAM)	2-Sigma %Error	Rejected by
SC-46	83.79D	0.61	889.28*	99.98	---	Not Found	---
			1120.55	99.99	2.326E-01	41.01	Abun.
			% Abundances Found =		50.00		
CO-56	77.23D	0.66	846.77*	99.94	---	Not Found	---
			1037.84	14.17	---	Not Found	---
			1238.28	66.90	2.615E-01	57.58	Abun.
			1771.35	15.47	---	Not Found	---
% Abundances Found =		34.05					
RU-103	39.26D	1.30	497.08*	91.00	---	Not Found	---
			610.33	5.76	1.603E+01	23.22	Abun.
			% Abundances Found =		5.95		
SB-125	2.76Y	0.05	427.87*	29.80	---	Not Found	---
			463.37	10.56	5.133E-01	65.83	Abun.
			600.60	17.77	---	Not Found	---
			635.95	11.29	---	Not Found	---
% Abundances Found =		15.21					
CS-134	2.07Y	0.07	563.25	8.34	---	Not Found	---
			569.33	15.37	---	Not Found	---
			604.72	97.62	---	Not Found	---
			795.86*	85.46	1.012E-01	44.28	Abun.
			801.95	8.69	---	Not Found	---
			1365.19	3.02	---	Not Found	---
% Abundances Found =		39.11					
LA-140	12.75D	4.00	328.76	20.30	4.017E+00	72.58	Abun.
			487.02	45.50	---	Not Found	---
			815.77	23.28	---	Not Found	---
			1596.21*	95.40	---	Not Found	---
% Abundances Found =		11.00					
ND-147	10.98D	4.64	91.11	27.90	7.428E+00	50.95	Abun.
			319.41	1.95	---	Not Found	---
			531.02*	13.10	---	Not Found	---
% Abundances Found =		64.96					
EU-155	4.75Y	0.03	86.55	30.70	3.428E-01	30.79	Abun.
			105.31*	21.10	---	Not Found	---
% Abundances Found =		59.27					
TB-160	72.30D	0.70	86.79	13.30	1.264E+00	30.76	Abun.
			197.04	4.90	---	Not Found	---
			215.65	3.71	---	Not Found	---
			298.57	27.10	3.207E-01	61.03	Abun.
			879.36*	28.50	---	Not Found	---
			962.29	9.00	---	Not Found	---
			966.15	24.20	---	Not Found	---
			1177.93	14.40	---	Not Found	---
1271.85	7.00	---	Not Found	---			
% Abundances Found =		30.58					

Nuclide	Half-life	Half-Life Ratio	Energy	%Abund	Activity (pCi/GRAM)	2-Sigma %Error	Rejected by
HO-166M	1203.00Y	0.00	80.57	11.97	---	Not Found	---
			184.41	72.00	6.574E-02	70.64	Abun.
			280.46	29.36	---	Not Found	---
			410.95	11.20	4.846E-01	46.24	
			711.68*	54.10	---	Not Found	---
			752.31	12.10	---	Not Found	---
			810.29	56.90	---	Not Found	---
			% Abundances Found =			33.60	
TA-182	114.43D	0.45	67.75	41.20	---	Not Found	---
			100.11	14.10	---	Not Found	---
			152.43	6.93	---	Not Found	---
			222.11	7.49	---	Not Found	---
			1121.30	34.90	5.954E-01	41.01	Abun.
			1189.05	16.20	---	Not Found	---
			1221.41*	27.00	---	Not Found	---
			1231.02	11.44	---	Not Found	---
% Abundances Found =			21.91				
IR-192	73.83D	0.69	295.96	28.72	9.611E-01	19.22	Abun.
			308.46	29.68	---	Not Found	---
			316.51*	82.71	---	Not Found	---
			468.07	47.81	---	Not Found	---
% Abundances Found =			15.20				
BI-207	32.90Y	0.00	72.81	21.40	---	Not Found	---
			74.97	35.70	5.532E-01	25.50	Abun.
			569.70	97.76	---	Not Found	---
			1063.66*	74.60	---	Not Found	---
			1770.23	6.87	---	Not Found	---
% Abundances Found =			15.11				
BI-212	1.41E+10Y	0.00	727.33*	6.67	1.388E+00	51.67	Abun.
			785.37	1.10	---	Not Found	---
			1620.50	1.47	---	Not Found	---
% Abundances Found =			72.19				
RN-219	7.04E+08Y	0.00	271.23	10.80	4.654E-01	69.86	Abun.
			401.81*	6.60	---	Not Found	---
% Abundances Found =			62.07				
RA-223	7.04E+08Y	0.00	81.07	15.00	---	Not Found	---
			83.79	24.70	---	Not Found	---
			94.56	8.67	---	Not Found	---
			144.24	3.27	---	Not Found	---
			154.21	5.70	---	Not Found	---
			269.46	13.90	3.616E-01	69.66	Abun.
			323.87*	3.99	---	Not Found	---
			338.28	2.84	4.847E+00	28.10	
% Abundances Found =			21.44				
AC-227	7.04E+08Y	0.00	79.69	2.64	---	Not Found	---
						Abun.	

Nuclide	Half-life	Half-Life Ratio	Energy	%Abund	Activity (pCi/GRAM)	2-Sigma %Error	Rejected by
AC-227	7.04E+08Y	0.00	235.96	17.50	---	Not Found	Abun.
			256.23*	9.50	---	Not Found	
			299.98	3.00	1.777E+00	61.74	
			304.50	1.56	---	Not Found	
			334.37	1.54	---	Not Found	
% Abundances Found =			8.39				
TH-227	7.04E+08Y	0.00	79.69	2.64	---	Not Found	Abun.
			235.96	17.50	---	Not Found	
			256.23*	9.50	---	Not Found	
			299.98	3.00	1.777E+00	61.74	
			304.50	1.56	---	Not Found	
% Abundances Found =			8.39				
TH-229	7340.00Y	0.00	85.43	14.70	---	Not Found	Abun.
			88.47	24.00	4.297E-01	30.76	
			193.51*	4.41	---	Not Found	
			210.85	2.80	---	Not Found	
% Abundances Found =			52.28				
TH-231	7.04E+08Y	0.00	81.07	15.00	---	Not Found	Abun.
			83.79	24.70	---	Not Found	
			94.87	5.69	---	Not Found	
			144.24	3.27	---	Not Found	
			154.21	5.70	---	Not Found	
			269.46	13.90	3.616E-01	69.66	
			323.87*	3.99	---	Not Found	
338.28	2.84	4.847E+00	28.10				
% Abundances Found =			22.29				
PA-233	2.14E+06Y	0.00	300.13	6.63	8.043E-01	62.21	Abun.
			311.90*	38.50	---	Not Found	
			340.48	4.45	---	Not Found	
% Abundances Found =			13.37				
TH-234	4.47E+09Y	0.00	63.29*	3.70	---	Not Found	Abun.
			92.59	4.23	2.388E+00	46.81	
% Abundances Found =			53.34				
NP-237	2.14E+06Y	0.00	94.65	10.56	---	Not Found	Abun.
			98.43	16.90	---	Not Found	
			300.13	6.63	8.043E-01	61.70	
			311.90*	38.50	---	Not Found	
% Abundances Found =			8.61				
U-238	4.47E+09Y	0.00	63.29*	3.70	---	Not Found	Abun.
			92.59	4.23	2.388E+00	42.17	
% Abundances Found =			53.34				

Rejected Report (continued)
Sample ID : G302440006

Page : 8
Acquisition date : 3-MAY-2012 08:58:24

Flag: "*" = Keyline

 * GEL Laboratories LLC *
 * 2040 Savage Road *
 * Charleston, SC 29407 *
 * GAMMA SPECTROSCOPY BACKGROUND REPORT *

ENERGY	MDA COUNTS
43.53	148.1802
46.54	133.6912
49.72	0.0000
57.36	0.0000
57.53	187.2713
59.54	175.0592
63.29	207.3154
63.29	207.3154
64.28	189.6288
67.75	208.6990
69.67	228.6845
70.83	263.6468
72.81	258.8240
72.87	258.8716
72.87	258.8716
74.66	261.5742
74.82	261.7006
74.82	261.7006
74.82	261.7006
74.97	261.8177
77.11	263.4837
77.11	263.4837
77.11	263.4837
79.69	245.7485
79.69	245.7485
80.12	248.6825
80.19	248.7316
80.57	260.8584
81.00	278.3235
81.07	278.3799
81.07	278.3799
83.79	249.9270
83.79	249.9270
85.43	251.0530
86.55	297.3572
86.79	293.5260
86.94	293.6463
87.57	222.0620
88.03	222.3344
88.47	222.5955
89.96	223.4709
91.11	224.1433
92.59	225.0010
92.59	225.0010
93.35	225.4387
94.56	169.5984
94.65	169.6372
94.67	169.6457
94.87	169.7318
97.43	214.9011
98.43	177.8685
98.44	173.4541
99.53	204.9329
100.11	193.2045
103.18	192.7664
103.37	189.1272
105.31	195.6058
106.12	202.5385
109.28	194.5667
111.00	205.7531
111.76	0.0000
116.30	0.0000
117.23	188.4016
121.12	189.9657
121.78	198.9639
122.06	203.9363
123.07	190.7413

131.20	235.4579
133.02	214.4597
133.52	217.6500
136.00	218.6970
136.47	235.8872
140.51	0.0000
140.51	0.0000
143.76	190.5034
144.24	195.7427
144.24	195.7427
145.44	206.3391
152.43	199.6796
153.25	194.8140
154.21	199.2708
154.21	199.2708
156.02	211.2922
158.56	191.4140
159.00	195.7205
162.66	188.5565
163.33	190.8645
165.86	168.4993
176.60	184.3002
177.52	197.4429
181.07	0.0000
184.41	206.6037
185.72	199.9510
193.51	182.4929
197.04	201.1139
205.31	182.8049
210.85	153.7916
215.65	164.4363
222.11	168.1414
227.38	155.4785
228.16	0.0000
228.18	161.4036
235.69	160.6224
235.96	160.6757
235.96	160.6757
238.63	158.5835
238.63	158.5835
240.99	159.0475
242.00	159.2450
244.70	121.4614
252.40	0.0000
252.80	137.2667
256.23	150.3511
256.23	150.3511
260.90	0.0000
264.66	117.1237
268.22	123.4056
269.46	125.3952
269.46	125.3952
271.23	119.4525
273.65	169.4404
276.40	137.3566
277.37	130.1717
277.60	129.2873
278.00	120.1700
279.20	128.5947
279.54	127.7249
280.46	157.2858
283.69	127.3788
284.31	120.0739
285.41	107.2703
285.90	0.0000
287.50	119.5596
293.27	0.0000
295.22	112.1301
295.96	112.2162
298.57	112.5220
299.98	112.6868
299.98	112.6868
300.09	112.6996
300.09	112.6996
300.13	112.7032
300.13	112.7032
301.36	112.8461
302.85	106.9923

304.50	108.6820
304.50	108.6820
304.85	108.7207
308.46	89.9859
311.90	96.0005
311.90	96.0005
316.51	99.3059
319.41	103.4203
320.08	102.5297
323.87	90.7917
323.87	90.7917
328.76	103.3967
333.37	77.6465
334.37	126.9422
334.37	126.9422
338.28	104.3338
338.28	104.3338
338.32	104.3371
338.32	104.3371
338.32	104.3371
340.48	117.2516
340.48	117.2516
340.55	117.2589
344.28	84.3269
345.93	100.5594
351.06	70.0520
351.93	70.1073
356.01	77.7002
364.49	94.8652
366.42	0.0000
383.85	82.2471
388.16	89.6785
388.63	98.8886
391.69	82.7884
400.66	106.0537
401.81	99.9691
402.40	86.6135
404.85	82.6526
410.95	63.1240
414.70	84.6941
423.72	92.2875
427.09	85.1689
427.87	87.3250
433.94	95.1320
453.88	57.9378
463.37	82.9723
468.07	60.7048
473.00	0.0000
476.78	73.0809
477.60	69.8486
482.18	73.3579
487.02	63.7180
492.35	0.0000
497.08	75.2217
511.00	87.0960
514.00	75.1862
527.90	0.0000
529.87	0.0000
531.02	80.5519
537.26	85.4193
546.56	0.0000
563.25	61.8818
569.33	51.9135
569.50	50.0647
569.70	50.0713
583.19	59.8266
600.60	65.0593
602.73	70.9186
604.72	93.0902
609.32	68.3402
609.32	68.3402
609.32	68.3402
610.33	68.3807
614.28	55.5263
618.01	66.7717
621.93	54.4923
621.93	54.4923
633.25	58.6872

635.95	63.5927
636.99	53.9875
645.85	48.4387
657.76	60.4530
661.66	47.8767
661.66	47.8767
664.57	0.0000
666.33	69.5457
666.50	69.5526
677.62	60.1079
685.70	0.0000
695.00	74.5715
696.49	64.6779
696.51	64.6794
697.00	65.6906
702.65	69.8718
706.68	65.0143
711.68	55.1504
720.70	56.1196
721.93	0.0000
722.78	70.5811
722.91	65.5443
723.31	55.4713
724.19	53.8138
727.33	55.5814
733.00	45.6031
735.93	38.5641
739.50	0.0000
747.24	39.7969
752.31	41.9399
753.82	47.0882
756.73	51.2549
763.94	66.8583
765.81	55.5939
766.42	60.7588
777.92	0.0000
778.90	38.3261
783.70	0.0000
785.37	48.4839
795.86	33.0590
801.95	51.1794
810.29	52.5403
810.76	54.6533
815.77	49.5095
818.51	37.9679
832.01	63.6592
834.85	65.8629
836.80	0.0000
846.77	52.3245
856.80	48.2607
860.56	60.1535
871.09	32.3694
873.19	36.7177
875.33	0.0000
879.36	38.9786
880.51	41.1645
883.24	28.1969
884.68	37.9805
889.28	47.8382
898.04	42.5553
911.20	38.3966
911.20	38.3966
911.20	38.3966
926.50	31.2753
937.49	42.4989
944.13	31.4945
946.00	44.4961
949.00	38.0513
962.29	35.1837
964.08	52.8124
966.15	65.6669
968.97	53.3123
968.97	53.3123
968.97	53.3123
983.53	37.6213
996.26	49.1425
1001.03	30.2962
1004.73	47.4030

1037.84	33.5887
1038.76	0.0000
1048.07	34.6758
1050.41	31.8130
1050.41	31.8130
1063.66	34.8691
1085.87	49.7839
1099.45	33.3456
1112.07	34.2789
1115.54	42.2642
1120.29	45.7188
1120.29	45.7188
1120.29	45.7188
1120.55	38.5271
1121.30	38.5366
1131.51	0.0000
1173.23	48.2539
1177.93	44.3008
1189.05	37.3854
1204.77	47.7306
1221.41	64.3151
1231.02	56.1719
1235.36	30.7605
1238.28	30.7874
1260.41	0.0000
1271.85	26.9585
1274.44	31.1304
1274.54	28.0184
1291.59	31.2915
1298.22	0.0000
1312.11	33.5807
1332.49	24.2812
1365.19	17.0508
1368.63	0.0000
1384.29	19.2861
1408.01	23.7277
1457.56	0.0000
1460.82	11.4886
1489.16	20.7884
1505.03	26.5684
1596.21	21.3639
1620.50	12.6998
1678.03	0.0000
1690.97	15.8968
1764.49	14.1475
1764.49	14.1475
1764.49	14.1475
1770.23	15.9362
1771.35	23.0245
1791.20	0.0000
1836.06	8.2137

VAX/VMS Nuclide Identification Report Generated 3-MAY-2012 12:02:23.40

```

*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29407                          *
*****
Configuration   : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G302440007.CNF;1
Background file  : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]BKG_GAM11.CNF;282
Background date  : 29-APR-2012 14:31:09
Sample date      : 3-JAN-2012 14:45:00. Acquisition date : 3-MAY-2012 10:01:54.
Sample ID        : G302440007. Sample quantity : 1.63870E+02 GRAM
Detector name    : GAM11. Detector geometry: CAN
Elapsed live time: 0 02:00:00.00. Elapsed real time: 0 02:00:00.91 0.0%
Energy tolerance : 1.50000 keV. Analyst Initials : MXR1
Abundance limit  : 75.00000. Sensitivity : 5.00000
Batch ID         : 1203837. Detector SN# :
Matrix Spike ID  :. LCS ID : 1364
*****

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Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	63.14*	22	261	0.89	126.07	123	8	2.99E-03	139.2	
2	2	74.94	156	196	0.88	149.68	145	27	2.17E-02	15.3	1.67E+00
3	2	77.15	198	179	0.79	154.11	145	27	2.75E-02	12.3	
4	0	87.20	95	187	0.94	174.21	172	6	1.32E-02	25.0	
5	3	89.88	82	129	0.97	179.58	178	13	1.14E-02	22.4	5.58E-01
6	3	92.79*	124	197	1.06	185.40	178	13	1.73E-02	22.3	
7	0	143.59*	107	226	1.18	287.01	282	11	1.49E-02	29.5	
8	0	185.78*	339	231	1.02	371.40	366	11	4.70E-02	10.7	
9	0	209.17	45	157	0.93	418.20	415	8	6.28E-03	49.9	
10	3	238.71*	468	104	0.97	477.29	473	15	6.50E-02	5.9	1.18E+00
11	3	241.77	144	96	1.50	483.42	473	15	2.00E-02	16.7	
12	0	270.47	80	140	1.42	540.83	534	14	1.11E-02	33.4	
13	0	295.33	131	103	1.13	590.54	586	10	1.82E-02	16.9	
14	0	338.75	66	109	0.97	677.41	671	10	9.12E-03	32.3	
15	0	352.00*	216	122	1.00	703.91	698	12	3.00E-02	12.6	
16	0	463.13	48	52	1.40	926.17	921	10	6.63E-03	31.9	
17	0	511.22*	45	75	2.43	1022.37	1016	14	6.21E-03	55.4	
18	0	583.31*	133	39	1.13	1166.55	1162	10	1.85E-02	12.8	
19	0	609.66*	150	59	1.39	1219.25	1213	14	2.09E-02	13.8	
20	0	911.51*	126	36	1.39	1822.88	1818	13	1.75E-02	13.8	
21	0	969.41	64	38	1.78	1938.66	1932	12	8.83E-03	23.3	
22	0	1120.64	42	47	1.27	2241.05	2235	14	5.86E-03	37.3	
23	0	1318.20	15	8	1.10	2636.05	2630	10	2.14E-03	41.9	
24	0	1461.20*	494	17	1.69	2921.93	2915	16	6.86E-02	4.9	
25	0	1510.37	12	5	1.48	3020.22	3016	9	1.60E-03	44.4	
26	0	1765.29	43	4	1.88	3529.78	3521	16	5.95E-03	18.5	

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

VAX/VMS Nuclide Identification Report Generated

```

*****
*
*           GEL Laboratories LLC
*           2040 Savage Road
*           Charleston, SC 29407
*****
*
*           DETECTOR DATA
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G302440007.CNF;1
* Acquisition date   : 3-MAY-2012 10:01:54 Detector SN#      :
* Detector ID        : GAM11                               Sensitivity       : 5.000
* Geometry           : CAN                                 Energy tolerance  : 1.500
* Elapsed live time  : 0 02:00:00.00                     Abundance limit  : 75.000
* Elapsed real time  : 0 02:00:00.91                     Half life ratio  : 8.000
*****
*
*           SAMPLE DATA
*
* Sample date        : 3-JAN-2012 14:45:00 Nuclide Library  : SOLID
* Sample ID          : G302440007 Analyst initials      : MXR1
* Batch Number       : 1203837 Sample Quantity       : 1.6387E+02 GRAM
* Recovery           : 1.00000 Carrier Weight        : 0.00000
*****
*
*           QC DATA
*
* Standard Weight    : 0.00000
* CALIB. DATE/TIME  : 17-NOV-2011 07:49:23 MS Isotope      :
* MSD DPM            : 0.000 MSD Isotope                  :
* LCS DPM            : 0.000 LCS Isotope                 :
* LCSD DPM           : 0.000 LCSD Isotope                  :
*****

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Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act error (1.96-sigma)	MDA (pCi/GRAM)	
K-40	8.192E+00	1.057E+00	2.830E-01	0.000E+00
CD-109	1.430E+00	7.130E-01	8.064E-01	0.000E+00
SN-126	1.193E-01	5.947E-02	6.058E-02	0.000E+00
TL-208	1.444E-01	3.845E-02	3.535E-02	0.000E+00
BI-211	1.110E+00	2.926E-01	2.038E-01	0.000E+00
PB-212	5.574E-01	8.653E-02	5.374E-02	0.000E+00
BI-214	3.135E-01	9.037E-02	7.235E-02	0.000E+00
PB-214	4.028E-01	1.084E-01	7.411E-02	0.000E+00
RA-224	1.833E+00	6.251E-01	5.759E-01	0.000E+00
RA-226	3.135E-01	9.037E-02	7.235E-02	0.000E+00
AC-228	6.129E-01	1.915E-01	1.254E-01	0.000E+00
RA-228	6.129E-01	1.915E-01	1.254E-01	0.000E+00
TH-228	5.574E-01	8.653E-02	5.374E-02	0.000E+00
TH-230	3.134E-01	8.889E-02	7.234E-02	0.000E+00
TH-232	6.129E-01	1.915E-01	1.254E-01	0.000E+00
TH-234	4.697E-01	1.284E+00	1.168E+00	0.000E+00
U-235	3.994E-01	2.398E-01	1.928E-01	0.000E+00
U-238	4.697E-01	1.284E+00	1.168E+00	0.000E+00
AM-243	1.312E-01	4.085E-02	4.824E-02	0.000E+00
ANH-511	3.776E-02	4.112E-02	3.056E-02	0.000E+00

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L.	Act error (1.96-sigma)	MDA (pCi/GRAM)	
BE-7	8.210E-01		7.653E-01	1.544E+00	0.000E+00 NOT IDENT.
NA-22	9.072E-03		2.610E-02	5.217E-02	0.000E+00 NOT IDENT.
NA-24	0.000E+00		3.090E+41	0.000E+00	0.000E+00 SHORT HLIF
SC-46	5.119E-02		5.228E-02	1.088E-01	0.000E+00 FAIL ABUN
V-48	6.142E-01		3.259E+00	6.420E+00	0.000E+00 NOT IDENT.
CR-51	-5.746E-01		2.774E+00	5.270E+00	0.000E+00 NOT IDENT.
MN-54	2.142E-03		2.422E-02	4.679E-02	0.000E+00 NOT IDENT.

CO-56	-2.860E-02	5.784E-02	1.044E-01	0.000E+00	NOT IDENT.
CO-57	4.583E-03	1.794E-02	3.464E-02	0.000E+00	NOT IDENT.
CO-58	-3.212E-02	5.776E-02	1.042E-01	0.000E+00	NOT IDENT.
FE-59	-7.895E-02	2.703E-01	4.860E-01	0.000E+00	NOT IDENT.
CO-60	-4.731E-03	2.047E-02	3.903E-02	0.000E+00	NOT IDENT.
ZN-65	4.647E-02	6.876E-02	1.235E-01	0.000E+00	NOT IDENT.
SE-75	-1.544E-02	4.538E-02	7.593E-02	0.000E+00	NOT IDENT.
SR-85	1.450E-01	7.641E-02	1.472E-01	0.000E+00	NOT IDENT.
Y-88	-8.085E-03	2.791E-02	5.468E-02	0.000E+00	NOT IDENT.
Y-91	9.638E+00	3.931E+01	7.478E+01	0.000E+00	NOT IDENT.
NB-94	-1.624E-04	1.822E-02	3.508E-02	0.000E+00	NOT IDENT.
NB-95	2.206E-03	6.878E-02	1.324E-01	0.000E+00	NOT IDENT.
NB-95M	-5.054E-02	2.412E-01	3.822E-01	0.000E+00	NOT IDENT.
ZR-95	8.208E-03	1.070E-01	2.101E-01	0.000E+00	NOT IDENT.
MO-99	0.000E+00	2.254E+12	0.000E+00	0.000E+00	SHORT HLIF
TC-99M	0.000E+00	3.124E+41	0.000E+00	0.000E+00	SHORT HLIF
RU-103	-2.420E-02	1.375E-01	2.544E-01	0.000E+00	FAIL ABUN
RH-106	2.276E-01	1.942E-01	4.029E-01	0.000E+00	NOT IDENT.
RU-106	2.276E-01	1.929E-01	4.029E-01	0.000E+00	NOT IDENT.
AG-108M	3.906E-03	1.620E-02	3.127E-02	0.000E+00	NOT IDENT.
AG-110M	-9.166E-03	3.365E-02	6.257E-02	0.000E+00	NOT IDENT.
SN-113	-3.648E-02	4.604E-02	8.198E-02	0.000E+00	NOT IDENT.
CD-115	0.000E+00	1.192E+15	0.000E+00	0.000E+00	SHORT HLIF
SN-117M	0.000E+00	6.097E+00	0.000E+00	0.000E+00	SHORT HLIF
TE-123M	-1.050E-02	2.742E-02	5.025E-02	0.000E+00	NOT IDENT.
SB-124	6.740E-02	1.355E-01	3.017E-01	0.000E+00	NOT IDENT.
SB-125	-5.372E-02	5.552E-02	9.625E-02	0.000E+00	FAIL ABUN
TE-125M	1.082E+01	1.811E+01	3.575E+01	0.000E+00	NOT IDENT.
I-126	0.000E+00	3.118E+01	0.000E+00	0.000E+00	SHORT HLIF
SB-126	0.000E+00	2.485E+01	0.000E+00	0.000E+00	SHORT HLIF
SB-127	0.000E+00	1.280E+08	0.000E+00	0.000E+00	SHORT HLIF
I-131	0.000E+00	5.738E+02	0.000E+00	0.000E+00	SHORT HLIF
TE-132	0.000E+00	3.499E+09	0.000E+00	0.000E+00	SHORT HLIF
BA-133	-1.256E-02	2.479E-02	3.947E-02	0.000E+00	NOT IDENT.
I-133	0.000E+00	1.568E+40	0.000E+00	0.000E+00	SHORT HLIF
CS-134	1.956E-02	2.538E-02	5.169E-02	0.000E+00	NOT IDENT.
CS-135	4.544E-02	8.437E-02	1.521E-01	0.000E+00	NOT IDENT.
I-135	0.000E+00	1.573E+41	0.000E+00	0.000E+00	SHORT HLIF
CS-136	0.000E+00	1.571E+01	0.000E+00	0.000E+00	SHORT HLIF
BA-137M	-1.698E-02	2.073E-02	3.758E-02	0.000E+00	NOT IDENT.
CS-137	-1.793E-02	2.190E-02	3.970E-02	0.000E+00	NOT IDENT.
CE-139	-9.931E-03	2.790E-02	5.100E-02	0.000E+00	NOT IDENT.
BA-140	0.000E+00	4.559E+01	0.000E+00	0.000E+00	SHORT HLIF
LA-140	0.000E+00	1.546E+01	0.000E+00	0.000E+00	SHORT HLIF
CE-141	4.405E-01	3.491E-01	6.358E-01	0.000E+00	NOT IDENT.
CE-143	0.000E+00	1.216E+25	0.000E+00	0.000E+00	SHORT HLIF
CE-144	-5.735E-02	1.381E-01	2.554E-01	0.000E+00	NOT IDENT.
PM-144	1.552E-02	2.314E-02	4.702E-02	0.000E+00	NOT IDENT.
PR-144	8.623E-01	1.861E+00	3.717E+00	0.000E+00	NOT IDENT.
PM-146	6.879E-03	2.463E-02	4.742E-02	0.000E+00	NOT IDENT.
ND-147	0.000E+00	2.302E+02	0.000E+00	0.000E+00	SHORT HLIF
PM-149	0.000E+00	1.220E+16	0.000E+00	0.000E+00	SHORT HLIF
EU-152	-6.842E-02	5.437E-02	9.397E-02	0.000E+00	NOT IDENT.
GD-153	-3.414E-03	6.291E-02	1.089E-01	0.000E+00	NOT IDENT.
EU-154	2.341E-02	6.997E-02	1.397E-01	0.000E+00	NOT IDENT.
EU-155	1.869E-02	5.545E-02	1.087E-01	0.000E+00	FAIL ABUN
TB-160	-5.900E-02	1.795E-01	3.333E-01	0.000E+00	FAIL ABUN
HO-166M	-1.549E-02	3.179E-02	5.857E-02	0.000E+00	FAIL ABUN
HF-181	-6.468E-02	1.391E-01	2.502E-01	0.000E+00	NOT IDENT.
TA-182	-1.343E-02	1.999E-01	3.647E-01	0.000E+00	FAIL ABUN
IR-192	-1.974E-04	4.911E-02	9.479E-02	0.000E+00	FAIL ABUN
HG-203	4.435E-03	9.910E-02	1.925E-01	0.000E+00	NOT IDENT.
BI-207	1.236E-02	2.469E-02	5.010E-02	0.000E+00	FAIL ABUN
PB-210	-1.175E+00	1.454E+00	2.805E+00	0.000E+00	NOT IDENT.
PB-211	1.469E-01	3.659E-01	7.082E-01	0.000E+00	NOT IDENT.
BI-212	5.502E-01	3.057E-01	6.502E-01	0.000E+00	NOT IDENT.
RN-219	-1.932E-01	1.927E-01	3.316E-01	0.000E+00	FAIL ABUN
RA-223	7.101E-02	3.309E-01	6.467E-01	0.000E+00	FAIL ABUN
AC-227	-2.098E-02	1.198E-01	2.324E-01	0.000E+00	NOT IDENT.
TH-227	-2.098E-02	1.198E-01	2.324E-01	0.000E+00	NOT IDENT.
TH-229	-1.544E-01	2.719E-01	4.844E-01	0.000E+00	FAIL ABUN
PA-231	3.364E-01	7.558E-01	1.504E+00	0.000E+00	NOT IDENT.
TH-231	7.101E-02	3.309E-01	6.467E-01	0.000E+00	FAIL ABUN
PA-233	8.091E-03	3.241E-02	6.385E-02	0.000E+00	NOT IDENT.
PA-234	2.103E-02	1.568E-01	3.035E-01	0.000E+00	NOT IDENT.
PA-234M	-1.194E+00	2.309E+00	4.079E+00	0.000E+00	NOT IDENT.
NP-237	8.091E-03	3.241E-02	6.385E-02	0.000E+00	NOT IDENT.
NP-239	-2.363E-01	2.025E-01	3.615E-01	0.000E+00	NOT IDENT.

AM-241	4.687E-02	7.394E-02	1.383E-01	0.000E+00	NOT IDENT.
CM-247	-1.356E-02	1.761E-02	3.135E-02	0.000E+00	NOT IDENT.
CF-249	1.212E-02	2.096E-02	4.173E-02	0.000E+00	NOT IDENT.
CF-251	-3.804E-02	6.677E-02	1.199E-01	0.000E+00	NOT IDENT.

Gamma Spectroscopy Auxillary Report

Sample:G302440007

Nuclide	TPU	LLD	EFF	FWHM	TArea	TBack	TCounts
BE-7	0.765E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
NA-22	0.261E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
NA-24	0.196E+17	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
K-40	0.106E+01	0.732E+02	0.126E-01	0.169E+01	0.481E+03	0.728E+02	0.554E+03
SC-46	0.523E-01	0.832E+02	0.000E+00	0.000E+00	0.425E+02	0.471E+02	0.897E+02
V-48	0.326E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
CR-51	0.277E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
MN-54	0.242E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
CO-56	0.578E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
CO-57	0.179E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
CO-58	0.578E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
FE-59	0.270E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
CO-60	0.205E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
ZN-65	0.688E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
SE-75	0.454E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
SR-85	0.764E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Y-88	0.279E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Y-91	0.393E+02	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
NB-94	0.182E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
NB-95	0.688E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
NB-95M	0.241E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
ZR-95	0.107E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
MO-99	0.225E+13	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
TC-99M	0.196E+17	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
RU-103	0.137E+00	0.656E+02	0.000E+00	0.000E+00	0.163E+03	0.201E+03	0.364E+03
RH-106	0.194E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
RU-106	0.193E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
AG-108M	0.162E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
CD-109	0.713E+00	0.475E+02	0.659E-01	0.942E+00	0.127E+03	0.394E+03	0.521E+03
AG-110M	0.336E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
SN-113	0.460E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
CD-115	0.119E+16	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
SN-117M	0.610E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
TE-123M	0.274E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
SB-124	0.136E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
SB-125	0.555E-01	0.451E+02	0.000E+00	0.000E+00	0.535E+02	0.587E+02	0.112E+03
TE-125M	0.181E+02	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
I-126	0.312E+02	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
SB-126	0.248E+02	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
SN-126	0.595E-01	0.563E+02	0.659E-01	0.942E+00	0.284E+03	0.154E+04	0.183E+04
SB-127	0.128E+09	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
I-131	0.574E+03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
TE-132	0.350E+10	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
BA-133	0.248E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
I-133	0.196E+17	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
CS-134	0.254E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
CS-135	0.844E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
I-135	0.196E+17	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
CS-136	0.157E+02	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
BA-137M	0.207E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
CS-137	0.219E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
CE-139	0.279E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
BA-140	0.456E+02	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
LA-140	0.155E+02	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
CE-141	0.349E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
CE-143	0.196E+17	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
CE-144	0.138E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
PM-144	0.231E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
PR-144	0.186E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
PM-146	0.246E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
ND-147	0.230E+03	0.462E+02	0.000E+00	0.000E+00	0.110E+03	0.954E+03	0.106E+04
PM-149	0.122E+17	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
EU-152	0.544E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
GD-153	0.629E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
EU-154	0.700E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
EU-155	0.554E-01	0.475E+02	0.000E+00	0.000E+00	0.127E+03	0.394E+03	0.521E+03
TB-160	0.179E+00	0.475E+02	0.000E+00	0.000E+00	0.127E+03	0.394E+03	0.521E+03
HO-166M	0.318E-01	0.570E+02	0.000E+00	0.000E+00	0.420E+03	0.829E+03	0.125E+04
HF-181	0.139E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
TA-182	0.200E+00	0.832E+02	0.000E+00	0.000E+00	0.425E+02	0.471E+02	0.897E+02

IR-192	0.491E-01	0.461E+02	0.000E+00	0.000E+00	0.155E+03	0.121E+03	0.276E+03
HG-203	0.991E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
BI-207	0.247E-01	0.566E+02	0.000E+00	0.000E+00	0.212E+03	0.266E+03	0.478E+03
TL-208	0.384E-01	0.524E+02	0.271E-01	0.113E+01	0.145E+03	0.147E+03	0.293E+03
PB-210	0.145E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
BI-211	0.293E+00	0.593E+02	0.400E-01	0.100E+01	0.250E+03	0.245E+03	0.495E+03
PB-211	0.366E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
BI-212	0.306E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
PB-212	0.865E-01	0.482E+02	0.533E-01	0.968E+00	0.105E+04	0.890E+03	0.194E+04
BI-214	0.904E-01	0.629E+02	0.262E-01	0.139E+01	0.246E+03	0.252E+03	0.499E+03
PB-214	0.108E+00	0.531E+02	0.400E-01	0.100E+01	0.106E+04	0.990E+03	0.205E+04
RN-219	0.193E+00	0.508E+02	0.000E+00	0.000E+00	0.950E+02	0.167E+03	0.262E+03
RA-223	0.331E+00	0.503E+02	0.000E+00	0.000E+00	0.308E+03	0.715E+03	0.102E+04
RA-224	0.625E+00	0.389E+02	0.528E-01	0.150E+01	0.173E+03	0.115E+03	0.289E+03
RA-226	0.904E-01	0.629E+02	0.262E-01	0.139E+01	0.246E+03	0.252E+03	0.499E+03
AC-227	0.120E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
TH-227	0.120E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
AC-228	0.192E+00	0.650E+02	0.188E-01	0.139E+01	0.272E+03	0.278E+03	0.549E+03
RA-228	0.192E+00	0.650E+02	0.188E-01	0.139E+01	0.272E+03	0.278E+03	0.549E+03
TH-228	0.865E-01	0.482E+02	0.533E-01	0.968E+00	0.105E+04	0.890E+03	0.194E+04
TH-229	0.272E+00	0.475E+02	0.000E+00	0.000E+00	0.127E+03	0.394E+03	0.521E+03
TH-230	0.889E-01	0.629E+02	0.262E-01	0.139E+01	0.246E+03	0.252E+03	0.499E+03
PA-231	0.756E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
TH-231	0.331E+00	0.503E+02	0.000E+00	0.000E+00	0.308E+03	0.715E+03	0.102E+04
TH-232	0.192E+00	0.650E+02	0.188E-01	0.139E+01	0.272E+03	0.278E+03	0.549E+03
PA-233	0.324E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
PA-234	0.157E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
PA-234M	0.231E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
TH-234	0.128E+01	0.739E+02	0.392E-01	0.891E+00	0.195E+03	0.180E+04	0.199E+04
U-235	0.240E+00	0.547E+02	0.714E-01	0.118E+01	0.831E+03	0.325E+04	0.408E+04
NP-237	0.324E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
U-238	0.128E+01	0.739E+02	0.392E-01	0.891E+00	0.195E+03	0.180E+04	0.199E+04
NP-239	0.203E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
AM-241	0.739E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
AM-243	0.408E-01	0.566E+02	0.551E-01	0.879E+00	0.212E+03	0.266E+03	0.478E+03
CM-247	0.176E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
CF-249	0.210E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
CF-251	0.668E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
ANH-511	0.411E-01	0.100E+03	0.301E-01	0.243E+01	0.496E+02	0.145E+04	0.150E+04

```

Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G302440007.CNF;1
Analyses by       : PEAK V16.9
Sample title      : MXR1
Sample date       : 3-JAN-2012 14:45:00   Acquisition date : 3-MAY-2012 10:01:54
Sample ID        : G302440007           Sample quantity  : 163.87 GRAM
Sample type      : SOLID                 Sample geometry  :
Detector name    : GAMMA11              Detector geometry: CAN
Elapsed live time: 0 02:00:00.00         Elapsed real time: 0 02:00:00.91   0.0%
Start energy     : 0.62 keV              End energy      : 2048.59 keV
Sensitivity      : 5.00                  Gaussian        : 10.00
Critical level   : No
    
```

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	63.14	69	261	0.89	126.07	123	8	9.57E-03	42.3	
2	2	74.94	156	196	0.88	149.68	145	27	2.17E-02	15.3	1.67E+00
3	2	77.15	198	179	0.79	154.11	145	27	2.75E-02	12.3	
4	0	87.20	95	187	0.94	174.21	172	6	1.32E-02	25.0	
5	3	89.88	82	129	0.97	179.58	178	13	1.14E-02	22.4	5.58E-01
6	3	92.79	218	197	1.06	185.40	178	13	3.03E-02	12.2	
7	0	143.59	123	226	1.18	287.01	282	11	1.71E-02	25.3	
8	0	185.78	404	231	1.02	371.40	366	11	5.61E-02	8.8	
9	0	209.17	45	157	0.93	418.20	415	8	6.28E-03	49.9	
10	3	238.71	499	104	0.97	477.29	473	15	6.93E-02	5.4	1.18E+00
11	3	241.77	144	96	1.50	483.42	473	15	2.00E-02	16.7	
12	0	270.47	80	140	1.42	540.83	534	14	1.11E-02	33.4	
13	0	295.33	131	103	1.13	590.54	586	10	1.82E-02	16.9	
14	0	338.75	66	109	0.97	677.41	671	10	9.12E-03	32.3	
15	0	352.00	229	122	1.00	703.91	698	12	3.18E-02	11.7	
16	0	463.13	48	52	1.40	926.17	921	10	6.63E-03	31.9	
17	0	511.22	209	75	2.43	1022.37	1016	14	2.90E-02	11.3	
18	0	583.31	146	39	1.13	1166.55	1162	10	2.02E-02	11.3	
19	0	609.66	167	59	1.39	1219.25	1213	14	2.31E-02	12.2	
20	0	911.51	135	36	1.39	1822.88	1818	13	1.87E-02	12.6	
21	0	969.41	64	38	1.78	1938.66	1932	12	8.83E-03	23.3	
22	0	1120.64	42	47	1.27	2241.05	2235	14	5.86E-03	37.3	
23	0	1318.20	15	8	1.10	2636.05	2630	10	2.14E-03	41.9	
24	0	1461.20	501	17	1.69	2921.93	2915	16	6.96E-02	4.8	
25	0	1510.37	12	5	1.48	3020.22	3016	9	1.60E-03	44.4	
26	0	1765.29	43	4	1.88	3529.78	3521	16	5.95E-03	18.5	

```

*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29407                           *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G302440007.CNF;1
Sample date        : 3-JAN-2012 14:45:00. Acquisition date : 3-MAY-2012 10:01:54.
Sample ID          : G302440007          Sample quantity   : 1.63870E+02 GRAM
Detector name      : GAM11              Detector geometry  : CAN
Elapsed live time  : 0 02:00:00.00      Elapsed real time : 0 02:00:00.91  0.0%
Energy tolerance  : 1.50000 keV        Analyst Initials  : MXR1
Abundance limit   : 75.00000          Sensitivity       : 5.00000
Batch ID          : 1203837           Detector SN#      :
Matrix Spike ID   :                    LCS ID            : 1364
*****

```

Summary of Nuclide Activity

```

Total number of lines in spectrum      26
Number of unidentified lines           3
Number of lines tentatively identified by NID 23      88.46%

```

Nuclide Type :

Nuclide	Hlife	Decay	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
K-40	1.25E+09Y	1.00	8.192E+00	8.192E+00	1.078E+00	13.16	
CD-109	461.40D	1.20	1.193E+00	1.430E+00	0.728E+00	50.88	
SN-126	2.30E+05Y	1.00	1.193E-01	1.193E-01	0.607E-01	50.88	
TL-208	1.41E+10Y	1.00	1.444E-01	1.444E-01	0.392E-01	27.16	
BI-211	7.04E+08Y	1.00	1.110E+00	1.110E+00	0.299E+00	26.91	
PB-212	1.41E+10Y	1.00	5.574E-01	5.574E-01	0.883E-01	15.84	
BI-214	1600.00Y	1.00	3.134E-01	3.135E-01	0.922E-01	29.41	
PB-214	1600.00Y	1.00	4.027E-01	4.028E-01	1.106E-01	27.47	
RA-224	1.41E+10Y	1.00	1.833E+00	1.833E+00	0.638E+00	34.80	
RA-226	1600.00Y	1.00	3.134E-01	3.135E-01	0.922E-01	29.41	
AC-228	1.41E+10Y	1.00	6.129E-01	6.129E-01	1.954E-01	31.88	
RA-228	1.41E+10Y	1.00	6.129E-01	6.129E-01	1.954E-01	31.88	
TH-228	1.41E+10Y	1.00	5.574E-01	5.574E-01	0.883E-01	15.84	
TH-230	7.54E+04Y	1.00	3.134E-01	3.134E-01	0.907E-01	28.94	
TH-232	1.41E+10Y	1.00	6.129E-01	6.129E-01	1.954E-01	31.88	
TH-234	4.47E+09Y	1.00	4.697E-01	4.697E-01	13.10E-01	278.94	
U-235	7.04E+08Y	1.00	3.994E-01	3.994E-01	2.447E-01	61.26	
U-238	4.47E+09Y	1.00	4.697E-01	4.697E-01	13.10E-01	278.94	
AM-243	7370.00Y	1.00	1.312E-01	1.312E-01	0.417E-01	31.77	
ANH-511	1.00E+09Y	1.00	3.776E-02	3.776E-02	4.196E-02	111.12	
Total Activity :			1.840E+01	1.863E+01			

Grand Total Activity : 1.840E+01 1.863E+01

Flags: "K" = Keyline not found "M" = Manually accepted
 "E" = Manually edited "A" = Nuclide specific abn. limit

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
0	209.17	55	192	0.93	418.20	415	8	6.28E-03	99.9	5.84E+00	
0	270.47	95	167	1.42	540.83	534	14	1.11E-02	66.9	4.87E+00	T
0	463.13	54	59	1.40	926.17	921	10	6.63E-03	63.8	3.25E+00	T
0	1318.20	15	7	1.10	2636.05	2630	10	2.14E-03	83.7	1.37E+00	
0	1510.37	11	4	1.48	3020.22	3016	9	1.60E-03	88.9	1.23E+00	

Flags: "T" = Tentatively associated

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
K-40	1460.82	481	10.66*	1.261E+00	8.192E+00	8.192E+00	13.16
CD-109	88.03	127	3.70*	6.592E+00	1.193E+00	1.430E+00	50.88
SN-126	64.28	30	9.60	3.916E+00	1.810E-01	1.810E-01	278.75
	86.94	127	8.90	6.592E+00	4.958E-01	4.958E-01	65.00
	87.57	127	37.00*	6.592E+00	1.193E-01	1.193E-01	50.88
TL-208	277.37	-----	6.60	4.781E+00	-----	Line Not Found	-----
	583.19	145	85.00*	2.714E+00	1.444E-01	1.444E-01	27.16
	860.56	-----	12.50	1.977E+00	-----	Line Not Found	-----
BI-211	72.87	-----	1.23	5.267E+00	-----	Line Not Found	-----
	351.06	250	12.92*	4.001E+00	1.110E+00	1.110E+00	26.91
PB-212	74.82	212	10.28	5.508E+00	8.575E-01	8.575E-01	33.23
	77.11	269	17.10	5.746E+00	6.259E-01	6.259E-01	26.17
	238.63	566	43.60*	5.331E+00	5.574E-01	5.574E-01	15.84
	300.09	-----	3.30	4.510E+00	-----	Line Not Found	-----
BI-214	609.32	163	45.49*	2.621E+00	3.134E-01	3.135E-01	29.41
	1120.29	43	14.92	1.578E+00	4.138E-01	4.139E-01	76.57
	1764.49	41	15.30	1.093E+00	5.567E-01	5.568E-01	37.97
PB-214	74.82	212	5.80	5.508E+00	1.520E+00	1.520E+00	32.75
	77.11	269	9.70	5.746E+00	1.103E+00	1.104E+00	27.44
	242.00	173	7.25	5.283E+00	1.037E+00	1.037E+00	35.28
	295.22	155	18.42	4.564E+00	4.222E-01	4.222E-01	35.79
	351.93	250	35.60*	4.001E+00	4.027E-01	4.028E-01	27.47
RA-224	240.99	173	4.10*	5.283E+00	1.833E+00	1.833E+00	34.80
RA-226	609.32	163	45.49*	2.621E+00	3.134E-01	3.135E-01	29.41
	1120.29	43	14.92	1.578E+00	4.138E-01	4.139E-01	76.57
	1764.49	41	15.30	1.093E+00	5.567E-01	5.568E-01	37.97
AC-228	338.32	76	11.27	4.119E+00	3.767E-01	3.767E-01	77.01
	911.20	130	25.80*	1.883E+00	6.129E-01	6.129E-01	31.88
	968.97	65	15.80	1.787E+00	5.290E-01	5.290E-01	53.87
RA-228	338.32	76	11.27	4.119E+00	3.767E-01	3.767E-01	77.01
	911.20	130	25.80*	1.883E+00	6.129E-01	6.129E-01	31.88
	968.97	65	15.80	1.787E+00	5.290E-01	5.290E-01	53.87
TH-228	74.82	212	10.28	5.508E+00	8.575E-01	8.575E-01	31.80
	77.11	269	17.10	5.746E+00	6.259E-01	6.259E-01	26.17
	238.63	566	43.60*	5.331E+00	5.574E-01	5.574E-01	15.84
	300.09	-----	3.30	4.510E+00	-----	Line Not Found	-----
TH-230	609.32	163	45.49*	2.621E+00	3.134E-01	3.134E-01	28.94
	1120.29	43	14.92	1.578E+00	4.138E-01	4.138E-01	76.28
	1764.49	41	15.30	1.093E+00	5.567E-01	5.567E-01	37.97
TH-232	338.32	76	11.27	4.119E+00	3.767E-01	3.767E-01	65.30
	911.20	130	25.80*	1.883E+00	6.129E-01	6.129E-01	31.88
	968.97	65	15.80	1.787E+00	5.290E-01	5.290E-01	53.87
TH-234	63.29	30	3.70*	3.916E+00	4.697E-01	4.697E-01	278.94
	92.59	165	4.23	6.909E+00	1.296E+00	1.296E+00	49.87
U-235	89.96	110	3.47	6.756E+00	1.072E+00	1.072E+00	51.28
	93.35	165	5.60	6.909E+00	9.790E-01	9.790E-01	50.32
	143.76	136	10.96*	7.137E+00	3.994E-01	3.994E-01	61.26
	163.33	-----	5.08	6.756E+00	-----	Line Not Found	-----
	185.72	420	57.20	6.293E+00	2.672E-01	2.672E-01	23.11

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
	205.31	-----	5.01	5.910E+00	-----	Line Not Found	-----
U-238	63.29	30	3.70*	3.916E+00	4.697E-01	4.697E-01	278.94
	92.59	165	4.23	6.909E+00	1.296E+00	1.296E+00	45.53
AM-243	43.53	-----	5.90	9.137E-01	-----	Line Not Found	-----
	74.66	212	67.20*	5.508E+00	1.312E-01	1.312E-01	31.77
ANH-511	511.00	50	100.00*	3.009E+00	3.776E-02	3.776E-02	111.12

Flag: "*" = Keyline

Nuclide	Half-life	Half-Life Ratio	Energy	%Abund	Activity (pCi/GRAM)	2-Sigma %Error	Rejected by
SC-46	83.79D	1.44	889.28*	99.98	---	Not Found	---
			1120.55	99.99	1.678E-01	76.28	Abun.
			% Abundances Found =		50.00		
RU-103	39.26D	3.08	497.08*	91.00	---	Not Found	---
			610.33	5.76	2.090E+01	32.10	Abun.
			% Abundances Found =		5.95		
SB-125	2.76Y	0.12	427.87*	29.80	---	Not Found	---
			463.37	10.56	3.885E-01	64.40	Abun.
			600.60	17.77	---	Not Found	---
			635.95	11.29	---	Not Found	---
% Abundances Found =		15.21					
ND-147	10.98D	11.01	91.11	27.90	2.743E+02	45.97	Decay, Abun.
			319.41	1.95	---	Not Found	---
			531.02*	13.10	---	Not Found	---
% Abundances Found =		64.96					
EU-155	4.75Y	0.07	86.55	30.70	1.508E-01	50.90	Abun.
			105.31*	21.10	---	Not Found	---
% Abundances Found =		59.27					
TB-160	72.30D	1.67	86.79	13.30	1.057E+00	50.88	Abun.
			197.04	4.90	---	Not Found	---
			215.65	3.71	---	Not Found	---
			298.57	27.10	---	Not Found	---
			879.36*	28.50	---	Not Found	---
			962.29	9.00	---	Not Found	---
			966.15	24.20	---	Not Found	---
			1177.93	14.40	---	Not Found	---
% Abundances Found =		10.07					
HO-166M	1203.00Y	0.00	80.57	11.97	---	Not Found	---
			184.41	72.00	2.123E-01	23.11	Abun.
			280.46	29.36	---	Not Found	---
			410.95	11.20	---	Not Found	---
			711.68*	54.10	---	Not Found	---
			752.31	12.10	---	Not Found	---
			810.29	56.90	---	Not Found	---
% Abundances Found =		29.08					
TA-182	114.43D	1.06	67.75	41.20	---	Not Found	---
			100.11	14.10	---	Not Found	---
			152.43	6.93	---	Not Found	---
			222.11	7.49	---	Not Found	---
			1121.30	34.90	3.679E-01	76.28	Abun.
			1189.05	16.20	---	Not Found	---
			1221.41*	27.00	---	Not Found	---
% Abundances Found =		21.91					

Nuclide	Half-life	Half-Life Ratio	Energy	%Abund	Activity (pCi/GRAM)	2-Sigma %Error	Rejected by
IR-192	73.83D	1.64	295.96	28.72	8.420E-01	35.21	Abun.
			308.46	29.68	---	Not Found	---
			316.51*	82.71	---	Not Found	---
			468.07	47.81	---	Not Found	---
% Abundances Found =			15.20				
BI-207	32.90Y	0.01	72.81	21.40	---	Not Found	---
			74.97	35.70	2.486E-01	31.77	Abun.
			569.70	97.76	---	Not Found	---
			1063.66*	74.60	---	Not Found	---
% Abundances Found =			15.11				
RN-219	7.04E+08Y	0.00	271.23	10.80	4.136E-01	67.85	Abun.
			401.81*	6.60	---	Not Found	---
% Abundances Found =			62.07				
RA-223	7.04E+08Y	0.00	81.07	15.00	---	Not Found	---
			83.79	24.70	---	Not Found	---
			94.56	8.67	---	Not Found	---
			144.24	3.27	1.339E+00	59.65	Abun.
			154.21	5.70	---	Not Found	---
			269.46	13.90	3.213E-01	67.65	
			323.87*	3.99	---	Not Found	---
% Abundances Found =			25.63				
TH-229	7340.00Y	0.00	85.43	14.70	---	Not Found	---
			88.47	24.00	1.839E-01	50.88	Abun.
			193.51*	4.41	---	Not Found	---
			210.85	2.80	---	Not Found	---
% Abundances Found =			52.28				
TH-231	7.04E+08Y	0.00	81.07	15.00	---	Not Found	---
			83.79	24.70	---	Not Found	---
			94.87	5.69	---	Not Found	---
			144.24	3.27	1.339E+00	59.65	Abun.
			154.21	5.70	---	Not Found	---
			269.46	13.90	3.213E-01	67.65	
			323.87*	3.99	---	Not Found	---
% Abundances Found =			26.65				

Flag: "*" = Keyline

 * GEL Laboratories LLC *
 * 2040 Savage Road *
 * Charleston, SC 29407 *
 * GAMMA SPECTROSCOPY BACKGROUND REPORT *

ENERGY	MDA COUNTS
43.53	144.1293
46.54	148.0007
49.72	0.0000
57.36	0.0000
57.53	175.5894
59.54	155.8617
63.29	190.7127
63.29	190.7127
64.28	205.1977
67.75	230.1194
69.67	209.0986
70.83	184.8062
72.81	245.1589
72.87	245.1913
72.87	245.1913
74.66	209.9729
74.82	210.0431
74.82	210.0431
74.82	210.0431
74.97	210.1100
77.11	211.0500
77.11	211.0500
77.11	211.0500
79.69	212.1663
79.69	212.1663
80.12	212.3507
80.19	0.0000
80.57	212.5431
81.00	212.7274
81.07	212.7562
81.07	212.7562
83.79	213.9048
83.79	213.9048
85.43	170.5334
86.55	170.9015
86.79	170.9793
86.94	208.0850
87.57	145.5488
88.03	182.8091
88.47	182.9609
89.96	192.0740
91.11	0.0000
92.59	175.7259
92.59	175.7259
93.35	175.9698
94.56	169.1283
94.65	169.1560
94.67	169.1623
94.87	169.2230
97.43	169.9978
98.43	161.0793
98.44	161.0827
99.53	148.7510
100.11	145.0084
103.18	192.7375
103.37	181.0555
105.31	160.0485
106.12	173.0477
109.28	163.0824
111.00	173.4512
111.76	0.0000
116.30	0.0000
117.23	173.1760
121.12	143.0003
121.78	136.0876
122.06	167.4083
123.07	171.7051

131.20	184.0009
133.02	159.8848
133.52	176.4092
136.00	165.7103
136.47	166.8499
140.51	0.0000
140.51	0.0000
143.76	155.0128
144.24	155.1144
144.24	155.1144
145.44	139.2024
152.43	139.9704
153.25	0.0000
154.21	145.5679
154.21	145.5679
156.02	0.0000
158.56	0.0000
159.00	152.8301
162.66	0.0000
163.33	145.1239
165.86	164.8454
176.60	0.0000
177.52	141.1124
181.07	0.0000
184.41	147.7098
185.72	146.8338
193.51	135.9576
197.04	127.6062
205.31	124.2619
210.85	128.3613
215.65	131.2588
222.11	119.5872
227.38	125.9354
228.16	0.0000
228.18	120.3061
235.69	140.2248
235.96	140.2607
235.96	140.2607
238.63	107.6325
238.63	107.6325
240.99	107.8728
242.00	107.9749
244.70	111.7383
252.40	0.0000
252.80	98.5016
256.23	89.9846
256.23	89.9846
260.90	0.0000
264.66	92.4377
268.22	82.7406
269.46	83.0083
269.46	83.0083
271.23	83.1346
273.65	0.0000
276.40	87.6339
277.37	91.4026
277.60	87.3124
278.00	83.6171
279.20	105.3029
279.54	108.0341
280.46	127.9378
283.69	88.5344
284.31	0.0000
285.41	111.2792
285.90	0.0000
287.50	86.0966
293.27	0.0000
295.22	87.5537
295.96	87.6064
298.57	84.8647
299.98	89.3540
299.98	89.3540
300.09	89.3614
300.09	89.3614
300.13	89.3644
300.13	89.3644
301.36	91.1282
302.85	111.0318

304.50	88.2056
304.50	88.2056
304.85	0.0000
308.46	77.4208
311.90	73.9331
311.90	73.9331
316.51	82.5439
319.41	0.0000
320.08	87.4193
323.87	78.3450
323.87	78.3450
328.76	0.0000
333.37	84.1641
334.37	52.6410
334.37	52.6410
338.28	73.5332
338.28	73.5332
338.32	73.5344
338.32	73.5344
338.32	73.5344
340.48	80.0719
340.48	80.0719
340.55	0.0000
344.28	100.3665
345.93	71.2883
351.06	77.0684
351.93	77.1166
356.01	74.8566
364.49	0.0000
366.42	0.0000
383.85	81.7467
388.16	59.5331
388.63	0.0000
391.69	80.2145
400.66	67.8924
401.81	62.0339
402.40	60.0878
404.85	55.2489
410.95	63.3867
414.70	0.0000
423.72	0.0000
427.09	71.0303
427.87	79.0711
433.94	59.2719
453.88	59.9804
463.37	58.8814
468.07	37.7203
473.00	0.0000
476.78	56.6550
477.60	54.6199
482.18	63.0263
487.02	0.0000
492.35	0.0000
497.08	52.0882
511.00	58.7792
514.00	47.0986
527.90	0.0000
529.87	0.0000
531.02	0.0000
537.26	0.0000
546.56	0.0000
563.25	46.3646
569.33	35.6889
569.50	32.4472
569.70	32.4509
583.19	45.7299
600.60	48.3076
602.73	39.5640
604.72	61.6021
609.32	51.8122
609.32	51.8122
609.32	51.8122
610.33	51.8365
614.28	17.6790
618.01	55.3421
621.93	26.6118
621.93	26.6118
633.25	42.3534

635.95	43.5215
636.99	0.0000
645.85	35.8682
657.76	55.8893
661.66	47.8592
661.66	47.8592
664.57	0.0000
666.33	0.0000
666.50	0.0000
677.62	40.9164
685.70	0.0000
695.00	0.0000
696.49	41.2449
696.51	44.9123
697.00	0.0000
702.65	46.8650
706.68	49.7048
711.68	45.1958
720.70	0.0000
721.93	0.0000
722.78	51.8889
722.91	51.8916
723.31	59.3141
724.19	58.4073
727.33	33.4187
733.00	48.3818
735.93	29.8086
739.50	0.0000
747.24	37.4297
752.31	29.0663
753.82	0.0000
756.73	30.0562
763.94	41.4434
765.81	41.4734
766.42	47.1411
777.92	0.0000
778.90	31.2630
783.70	0.0000
785.37	28.4912
795.86	35.2792
801.95	39.1832
810.29	34.5120
810.76	38.3535
815.77	0.0000
818.51	0.0000
832.01	41.5534
834.85	34.8249
836.80	0.0000
846.77	42.7475
856.80	0.0000
860.56	34.1711
871.09	33.3185
873.19	26.4786
875.33	0.0000
879.36	26.5353
880.51	30.4785
883.24	26.5715
884.68	30.5232
889.28	25.6407
898.04	27.6965
911.20	24.8401
911.20	24.8401
911.20	24.8401
926.50	27.9645
937.49	30.0710
944.13	29.1324
946.00	28.1456
949.00	28.1729
962.29	30.3164
964.08	18.5374
966.15	26.9818
968.97	35.4452
968.97	35.4452
968.97	35.4452
983.53	21.3666
996.26	22.4743
1001.03	26.6005
1004.73	22.5339

1037.84	28.9748
1038.76	0.0000
1048.07	0.0000
1050.41	35.3165
1050.41	35.3165
1063.66	18.7717
1085.87	26.2439
1099.45	35.8328
1112.07	35.9640
1115.54	22.9415
1120.29	40.2896
1120.29	40.2896
1120.29	40.2896
1120.55	40.2934
1121.30	40.3026
1131.51	0.0000
1173.23	35.5121
1177.93	42.0240
1189.05	29.1819
1204.77	29.3071
1221.41	34.8891
1231.02	30.6059
1235.36	0.0000
1238.28	30.6646
1260.41	0.0000
1271.85	23.9370
1274.44	26.7167
1274.54	26.7179
1291.59	17.5813
1298.22	0.0000
1312.11	17.5397
1332.49	19.6320
1365.19	19.7900
1368.63	0.0000
1384.29	26.5086
1408.01	8.5690
1457.56	0.0000
1460.82	8.6752
1489.16	15.5228
1505.03	11.6836
1596.21	0.0000
1620.50	10.9816
1678.03	0.0000
1690.97	6.0779
1764.49	7.1957
1764.49	7.1957
1764.49	7.1957
1770.23	3.5283
1771.35	5.2937
1791.20	0.0000
1836.06	5.2112

VAX/VMS Nuclide Identification Report Generated 3-MAY-2012 12:03:04.32

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*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                                   *
*                               Charleston, SC 29407                             *
*****
Configuration   : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G302440008.CNF;1
Background file  : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]BKG_GAM19.CNF;324
Background date  : 29-APR-2012 10:50:37
Sample date     : 3-JAN-2012 14:45:00. Acquisition date : 3-MAY-2012 10:02:17.
Sample ID      : G302440008. Sample quantity   : 1.49130E+02 GRAM
Detector name   : GAM19. Detector geometry: CAN
Elapsed live time: 0 02:00:00.00. Elapsed real time: 0 02:00:01.39 0.0%
Energy tolerance : 1.50000 keV. Analyst Initials : MXR1
Abundance limit  : 75.00000. Sensitivity       : 5.00000
Batch ID        : 1203837. Detector SN#      :
Matrix Spike ID :. LCS ID                   : 1364
*****

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Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	2	74.95	410	397	1.22	150.01	144	22	5.69E-02	9.4	1.92E+00
2	2	77.31	690	374	1.13	154.74	144	22	9.58E-02	6.2	
3	0	87.31	134	483	0.73	174.73	171	8	1.86E-02	29.9	
4	0	93.83*	181	735	1.13	187.79	181	14	2.51E-02	34.5	
5	0	186.14*	219	346	1.30	372.47	368	11	3.05E-02	18.6	
6	0	209.45	167	322	0.93	419.12	414	11	2.33E-02	22.1	
7	3	238.78*	1213	202	1.09	477.79	473	17	1.69E-01	3.5	8.32E-01
8	3	241.66	295	280	1.83	483.57	473	17	4.10E-02	15.9	
9	0	270.00	184	193	2.02	540.26	534	13	2.56E-02	17.1	
10	0	295.35	362	234	0.98	590.98	585	12	5.02E-02	10.0	
11	0	300.28	78	182	0.84	600.84	596	10	1.08E-02	34.5	
12	0	328.26	44	143	0.97	656.82	653	9	6.15E-03	51.1	
13	0	338.52	238	218	1.27	677.36	671	13	3.31E-02	14.3	
14	0	352.04	613	171	1.21	704.40	700	11	8.51E-02	5.8	
15	0	463.06	81	116	1.03	926.53	921	12	1.13E-02	28.7	
16	0	510.85*	132	172	1.82	1022.16	1013	19	1.84E-02	28.0	
17	0	569.82*	53	85	1.61	1140.14	1133	16	7.33E-03	53.6	
18	0	583.24	422	64	1.29	1166.99	1161	13	5.86E-02	6.3	
19	0	609.44	492	55	1.48	1219.41	1214	12	6.84E-02	5.4	
20	0	728.17	70	89	1.76	1456.97	1448	12	9.78E-03	29.1	
21	0	860.97	41	50	1.15	1722.68	1716	11	5.74E-03	37.1	
22	0	911.17	245	52	1.85	1823.13	1816	17	3.40E-02	9.3	
23	0	933.98	50	41	1.09	1868.76	1858	16	6.96E-03	31.6	
24	1	964.49	73	20	2.18	1929.81	1922	26	1.01E-02	17.0	7.25E-01
25	1	969.05	181	18	2.08	1938.93	1922	26	2.51E-02	8.9	
26	0	1120.48	132	29	1.82	2241.92	2233	19	1.83E-02	13.1	
27	0	1238.12	70	29	1.96	2477.31	2470	16	9.67E-03	21.6	
28	0	1377.57	40	12	1.55	2756.32	2750	12	5.56E-03	23.5	
29	0	1408.06	19	14	1.87	2817.34	2811	11	2.66E-03	44.0	
30	0	1460.74*	318	25	2.21	2922.74	2913	16	4.41E-02	6.7	
31	0	1729.09	30	3	2.10	3459.69	3452	14	4.15E-03	22.5	
32	0	1764.10	71	17	1.75	3529.75	3523	12	9.82E-03	15.2	
33	0	1849.37	17	18	0.71	3700.37	3688	18	2.39E-03	62.6	

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

VAX/VMS Nuclide Identification Report Generated

 * GEL Laboratories LLC *
 * 2040 Savage Road *
 * Charleston, SC 29407 *

DETECTOR DATA

* Configuration : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G302440008.CNF;1 *
 * Acquisition date : 3-MAY-2012 10:02:17 Detector SN# : *
 * Detector ID : GAM19 Sensitivity : 5.000 *
 * Geometry : CAN Energy tolerance: 1.500 *
 * Elapsed live time: 0 02:00:00.00 Abundance limit : 75.000 *
 * Elapsed real time: 0 02:00:01.39 Half life ratio : 8.000 *

SAMPLE DATA

* Sample date : 3-JAN-2012 14:45:00 Nuclide Library : SOLID *
 * Sample ID : G302440008 Analyst initials: MXR1 *
 * Batch Number : 1203837 Sample Quantity : 1.4913E+02 GRAM *
 * Recovery : 1.00000 Carrier Weight : 0.00000 *

QC DATA

* Standard Weight : 0.00000 *
 * CALIB. DATE/TIME : 8-MAR-2012 11:46:41 MS Isotope : *
 * MSD DPM : 0.000 MSD Isotope : *
 * LCS DPM : 0.000 LCS Isotope : *
 * LCSD DPM : 0.000 LCSD Isotope : *

Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act error (1.96-sigma)	MDA (pCi/GRAM)	
K-40	6.088E+00	9.461E-01	5.073E-01	0.000E+00
CD-109	2.443E+00	1.451E+00	1.652E+00	0.000E+00
SN-126	2.037E-01	1.210E-01	1.408E-01	0.000E+00
TL-208	5.374E-01	8.340E-02	5.178E-02	0.000E+00
BI-211	3.742E+00	5.595E-01	3.617E-01	0.000E+00
PB-212	1.723E+00	2.099E-01	9.423E-02	0.000E+00
BI-214	1.206E+00	1.771E-01	1.163E-01	0.000E+00
PB-214	1.358E+00	2.160E-01	1.228E-01	0.000E+00
RA-224	4.491E+00	1.458E+00	1.010E+00	0.000E+00
RA-226	1.206E+00	1.771E-01	1.163E-01	0.000E+00
AC-228	1.383E+00	3.086E-01	1.966E-01	0.000E+00
RA-228	1.383E+00	3.086E-01	1.966E-01	0.000E+00
TH-228	1.723E+00	2.099E-01	9.423E-02	0.000E+00
TH-230	1.206E+00	1.658E-01	1.163E-01	0.000E+00
PA-231	4.391E-01	1.371E+00	2.505E+00	0.000E+00
TH-232	1.383E+00	3.086E-01	1.966E-01	0.000E+00
AM-243	4.268E-01	8.615E-02	8.895E-02	0.000E+00
ANH-511	1.320E-01	7.337E-02	4.594E-02	0.000E+00

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L.	Act error (1.96-sigma)	MDA (pCi/GRAM)	
BE-7	8.584E-01		1.109E+00	2.149E+00	0.000E+00 NOT IDENT.
NA-22	1.026E-02		3.606E-02	6.776E-02	0.000E+00 NOT IDENT.
NA-24	0.000E+00		2.750E+41	0.000E+00	0.000E+00 SHORT HLIF
SC-46	-2.189E-02		7.629E-02	1.388E-01	0.000E+00 FAIL ABUN
V-48	2.016E+00		4.921E+00	9.594E+00	0.000E+00 NOT IDENT.
CR-51	-6.763E-01		4.853E+00	8.606E+00	0.000E+00 NOT IDENT.
MN-54	-2.931E-02		4.122E-02	7.226E-02	0.000E+00 NOT IDENT.
CO-56	-2.834E-03		8.165E-02	1.524E-01	0.000E+00 FAIL ABUN
CO-57	-8.159E-03		2.813E-02	5.271E-02	0.000E+00 NOT IDENT.

CO-58	-2.885E-02	9.437E-02	1.721E-01	0.000E+00	NOT IDENT.
FE-59	-2.011E-01	3.636E-01	6.302E-01	0.000E+00	NOT IDENT.
CO-60	-8.568E-03	2.282E-02	4.248E-02	0.000E+00	NOT IDENT.
ZN-65	-8.226E-02	9.352E-02	1.251E-01	0.000E+00	NOT IDENT.
SE-75	3.188E-02	7.858E-02	1.285E-01	0.000E+00	NOT IDENT.
SR-85	0.000E+00	1.210E-01	2.204E-01	0.000E+00	NOT IDENT.
Y-88	2.748E-02	5.579E-02	1.154E-01	0.000E+00	NOT IDENT.
Y-91	2.292E+01	5.175E+01	9.897E+01	0.000E+00	NOT IDENT.
NB-94	3.170E-02	3.213E-02	6.127E-02	0.000E+00	NOT IDENT.
NB-95	1.249E-01	1.163E-01	2.307E-01	0.000E+00	NOT IDENT.
NB-95M	4.180E-01	4.039E-01	6.770E-01	0.000E+00	NOT IDENT.
ZR-95	1.035E-01	1.992E-01	3.859E-01	0.000E+00	NOT IDENT.
MO-99	0.000E+00	3.901E+12	0.000E+00	0.000E+00	SHORT HLIF
TC-99M	0.000E+00	3.901E+41	0.000E+00	0.000E+00	SHORT HLIF
RU-103	6.900E-02	2.285E-01	4.297E-01	0.000E+00	FAIL ABUN
RH-106	-6.095E-02	3.257E-01	5.848E-01	0.000E+00	NOT IDENT.
RU-106	-6.095E-02	3.256E-01	5.848E-01	0.000E+00	NOT IDENT.
AG-108M	1.979E-02	2.851E-02	5.471E-02	0.000E+00	NOT IDENT.
AG-110M	-4.269E-03	5.377E-02	9.974E-02	0.000E+00	NOT IDENT.
SN-113	7.994E-02	7.726E-02	1.514E-01	0.000E+00	NOT IDENT.
CD-115	0.000E+00	1.945E+15	0.000E+00	0.000E+00	SHORT HLIF
SN-117M	0.000E+00	1.061E+01	0.000E+00	0.000E+00	SHORT HLIF
TE-123M	-3.270E-02	4.666E-02	8.433E-02	0.000E+00	NOT IDENT.
SB-124	-6.283E-02	1.894E-01	3.504E-01	0.000E+00	NOT IDENT.
SB-125	-3.418E-02	8.677E-02	1.575E-01	0.000E+00	FAIL ABUN
TE-125M	-8.719E+00	2.974E+01	5.603E+01	0.000E+00	NOT IDENT.
I-126	0.000E+00	5.463E+01	0.000E+00	0.000E+00	SHORT HLIF
SB-126	0.000E+00	5.798E+01	0.000E+00	0.000E+00	SHORT HLIF
SB-127	0.000E+00	2.384E+08	0.000E+00	0.000E+00	SHORT HLIF
I-131	0.000E+00	9.384E+02	0.000E+00	0.000E+00	SHORT HLIF
TE-132	0.000E+00	6.181E+09	0.000E+00	0.000E+00	SHORT HLIF
BA-133	-8.659E-03	4.307E-02	6.938E-02	0.000E+00	NOT IDENT.
I-133	0.000E+00	2.679E+40	0.000E+00	0.000E+00	SHORT HLIF
CS-134	3.308E-02	3.900E-02	7.695E-02	0.000E+00	FAIL ABUN
CS-135	2.570E-01	1.622E-01	2.801E-01	0.000E+00	NOT IDENT.
I-135	0.000E+00	2.924E+41	0.000E+00	0.000E+00	SHORT HLIF
CS-136	0.000E+00	1.930E+01	0.000E+00	0.000E+00	SHORT HLIF
BA-137M	-3.147E-03	3.217E-02	5.768E-02	0.000E+00	NOT IDENT.
CS-137	-3.324E-03	3.399E-02	6.093E-02	0.000E+00	NOT IDENT.
CE-139	1.643E-03	4.489E-02	8.352E-02	0.000E+00	NOT IDENT.
BA-140	0.000E+00	7.052E+01	0.000E+00	0.000E+00	SHORT HLIF
LA-140	0.000E+00	2.147E+01	0.000E+00	0.000E+00	SHORT HLIF
CE-141	2.907E-01	5.337E-01	1.017E+00	0.000E+00	NOT IDENT.
CE-143	0.000E+00	5.453E+25	0.000E+00	0.000E+00	SHORT HLIF
CE-144	-6.136E-02	2.237E-01	4.165E-01	0.000E+00	NOT IDENT.
PM-144	-2.772E-02	3.918E-02	6.638E-02	0.000E+00	NOT IDENT.
PR-144	-2.188E+00	3.099E+00	5.251E+00	0.000E+00	NOT IDENT.
PM-146	-9.105E-04	3.698E-02	6.865E-02	0.000E+00	NOT IDENT.
ND-147	0.000E+00	3.819E+02	0.000E+00	0.000E+00	SHORT HLIF
PM-149	0.000E+00	2.159E+16	0.000E+00	0.000E+00	SHORT HLIF
EU-152	-1.525E-03	1.021E-01	1.671E-01	0.000E+00	FAIL ABUN
GD-153	-1.203E-01	1.043E-01	1.651E-01	0.000E+00	NOT IDENT.
EU-154	4.042E-02	9.557E-02	1.823E-01	0.000E+00	NOT IDENT.
EU-155	8.474E-02	9.220E-02	1.813E-01	0.000E+00	FAIL ABUN
TB-160	-1.624E-01	3.259E-01	5.806E-01	0.000E+00	FAIL ABUN
HO-166M	-2.140E-02	5.145E-02	8.947E-02	0.000E+00	NOT IDENT.
HF-181	8.681E-02	2.161E-01	4.101E-01	0.000E+00	NOT IDENT.
TA-182	-4.150E-02	2.375E-01	4.276E-01	0.000E+00	FAIL ABUN
IR-192	4.053E-02	8.485E-02	1.562E-01	0.000E+00	FAIL ABUN
HG-203	1.022E-01	1.799E-01	3.318E-01	0.000E+00	NOT IDENT.
BI-207	-3.587E-03	8.023E-02	1.792E-01	0.000E+00	FAIL ABUN
PB-210	2.221E+00	3.116E+00	5.797E+00	0.000E+00	NOT IDENT.
PB-211	-6.976E-01	7.144E-01	1.104E+00	0.000E+00	NOT IDENT.
BI-212	0.000E+00	7.718E-01	1.110E+00	0.000E+00	FAIL ABUN
RN-219	-2.563E-02	3.532E-01	6.570E-01	0.000E+00	FAIL ABUN
RA-223	2.346E-02	6.822E-01	1.065E+00	0.000E+00	FAIL ABUN
AC-227	6.839E-02	2.409E-01	4.414E-01	0.000E+00	FAIL ABUN
TH-227	6.839E-02	2.409E-01	4.414E-01	0.000E+00	FAIL ABUN
TH-229	-9.808E-02	4.733E-01	8.629E-01	0.000E+00	FAIL ABUN
TH-231	2.346E-02	6.822E-01	1.065E+00	0.000E+00	FAIL ABUN
PA-233	-8.619E-02	5.932E-02	9.581E-02	0.000E+00	FAIL ABUN
PA-234	1.676E-02	2.291E-01	4.305E-01	0.000E+00	FAIL ABUN
PA-234M	-1.110E+00	3.446E+00	6.191E+00	0.000E+00	NOT IDENT.
TH-234	1.032E+00	1.221E+00	2.273E+00	0.000E+00	FAIL ABUN
U-235	-5.488E-02	1.867E-01	3.395E-01	0.000E+00	FAIL ABUN
NP-237	-8.619E-02	5.956E-02	9.581E-02	0.000E+00	FAIL ABUN
U-238	1.032E+00	1.221E+00	2.273E+00	0.000E+00	FAIL ABUN
NP-239	7.609E-02	3.447E-01	6.594E-01	0.000E+00	NOT IDENT.

AM-241	-9.068E-02	1.343E-01	2.393E-01	0.000E+00	NOT IDENT.
CM-247	1.274E-02	3.187E-02	6.092E-02	0.000E+00	NOT IDENT.
CF-249	1.478E-03	3.558E-02	6.668E-02	0.000E+00	NOT IDENT.
CF-251	-4.695E-02	1.200E-01	2.181E-01	0.000E+00	NOT IDENT.

Gamma Spectroscopy Auxillary Report

Sample:G302440008

Nuclide	TPU	LLD	EFF	FWHM	TArea	TBack	TCounts
BE-7	0.111E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
NA-22	0.361E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
NA-24	0.196E+17	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
K-40	0.946E+00	0.903E+02	0.119E-01	0.221E+01	0.306E+03	0.821E+02	0.388E+03
SC-46	0.763E-01	0.689E+02	0.000E+00	0.000E+00	0.130E+03	0.283E+02	0.159E+03
V-48	0.492E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
CR-51	0.485E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
MN-54	0.412E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
CO-56	0.817E-01	0.755E+02	0.000E+00	0.000E+00	0.683E+02	0.288E+02	0.971E+02
CO-57	0.281E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
CO-58	0.944E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
FE-59	0.364E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
CO-60	0.228E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
ZN-65	0.935E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
SE-75	0.786E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
SR-85	0.121E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Y-88	0.558E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Y-91	0.517E+02	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
NB-94	0.321E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
NB-95	0.116E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
NB-95M	0.404E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
ZR-95	0.199E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
MO-99	0.390E+13	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
TC-99M	0.196E+17	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
RU-103	0.228E+00	0.609E+02	0.000E+00	0.000E+00	0.519E+03	0.576E+02	0.577E+03
RH-106	0.326E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
RU-106	0.326E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
AG-108M	0.285E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
CD-109	0.145E+01	0.840E+02	0.561E-01	0.734E+00	0.168E+03	0.606E+03	0.774E+03
AG-110M	0.538E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
SN-113	0.773E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
CD-115	0.195E+16	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
SN-117M	0.106E+02	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
TE-123M	0.467E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
SB-124	0.189E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
SB-125	0.868E-01	0.735E+02	0.000E+00	0.000E+00	0.882E+02	0.125E+03	0.213E+03
TE-125M	0.297E+02	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
I-126	0.546E+02	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
SB-126	0.580E+02	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
SN-126	0.121E+00	0.840E+02	0.561E-01	0.734E+00	0.336E+03	0.121E+04	0.155E+04
SB-127	0.238E+09	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
I-131	0.938E+03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
TE-132	0.618E+10	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
BA-133	0.431E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
I-133	0.196E+17	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
CS-134	0.390E-01	0.144E+03	0.000E+00	0.000E+00	0.560E+02	0.232E+04	0.237E+04
CS-135	0.162E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
I-135	0.196E+17	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
CS-136	0.193E+02	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
BA-137M	0.322E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
CS-137	0.340E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
CE-139	0.449E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
BA-140	0.705E+02	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
LA-140	0.215E+02	0.648E+02	0.000E+00	0.000E+00	0.495E+02	0.160E+03	0.209E+03
CE-141	0.534E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
CE-143	0.196E+17	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
CE-144	0.224E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
PM-144	0.392E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
PR-144	0.310E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
PM-146	0.370E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
ND-147	0.382E+03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
PM-149	0.196E+17	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
EU-152	0.102E+00	0.546E+02	0.000E+00	0.000E+00	0.917E+02	0.331E+02	0.125E+03
GD-153	0.104E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
EU-154	0.956E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
EU-155	0.922E-01	0.840E+02	0.000E+00	0.000E+00	0.168E+03	0.606E+03	0.774E+03
TB-160	0.326E+00	0.840E+02	0.000E+00	0.000E+00	0.168E+03	0.606E+03	0.774E+03
HO-166M	0.514E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
HF-181	0.216E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
TA-182	0.237E+00	0.689E+02	0.000E+00	0.000E+00	0.130E+03	0.283E+02	0.159E+03

IR-192	0.849E-01	0.773E+02	0.000E+00	0.000E+00	0.408E+03	0.265E+03	0.673E+03
HG-203	0.180E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
BI-207	0.802E-01	0.131E+03	0.000E+00	0.000E+00	0.577E+03	0.282E+04	0.340E+04
TL-208	0.834E-01	0.655E+02	0.246E-01	0.129E+01	0.489E+03	0.119E+03	0.607E+03
PB-210	0.312E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
BI-211	0.560E+00	0.743E+02	0.354E-01	0.121E+01	0.681E+03	0.189E+03	0.870E+03
PB-211	0.714E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
BI-212	0.772E+00	0.879E+02	0.208E-01	0.176E+01	0.730E+02	0.917E+02	0.165E+03
PB-212	0.210E+00	0.738E+02	0.468E-01	0.109E+01	0.288E+04	0.155E+04	0.443E+04
BI-214	0.177E+00	0.654E+02	0.238E-01	0.148E+01	0.716E+03	0.102E+03	0.818E+03
PB-214	0.216E+00	0.782E+02	0.354E-01	0.121E+01	0.282E+04	0.189E+04	0.471E+04
RN-219	0.353E+00	0.660E+02	0.000E+00	0.000E+00	0.210E+03	0.219E+03	0.429E+03
RA-223	0.682E+00	0.798E+02	0.000E+00	0.000E+00	0.702E+03	0.206E+04	0.276E+04
RA-224	0.146E+01	0.757E+02	0.464E-01	0.183E+01	0.339E+03	0.455E+03	0.795E+03
RA-226	0.177E+00	0.654E+02	0.238E-01	0.148E+01	0.716E+03	0.102E+03	0.818E+03
AC-227	0.241E+00	0.689E+02	0.000E+00	0.000E+00	0.878E+02	0.205E+03	0.293E+03
TH-227	0.241E+00	0.689E+02	0.000E+00	0.000E+00	0.878E+02	0.205E+03	0.293E+03
AC-228	0.309E+00	0.709E+02	0.175E-01	0.185E+01	0.696E+03	0.314E+03	0.101E+04
RA-228	0.309E+00	0.709E+02	0.175E-01	0.185E+01	0.696E+03	0.314E+03	0.101E+04
TH-228	0.210E+00	0.738E+02	0.468E-01	0.109E+01	0.288E+04	0.155E+04	0.443E+04
TH-229	0.473E+00	0.827E+02	0.000E+00	0.000E+00	0.363E+03	0.981E+03	0.134E+04
TH-230	0.166E+00	0.654E+02	0.238E-01	0.148E+01	0.716E+03	0.102E+03	0.818E+03
PA-231	0.137E+01	0.689E+02	0.000E+00	0.000E+00	0.878E+02	0.205E+03	0.293E+03
TH-231	0.682E+00	0.770E+02	0.000E+00	0.000E+00	0.702E+03	0.206E+04	0.276E+04
TH-232	0.309E+00	0.709E+02	0.175E-01	0.185E+01	0.696E+03	0.314E+03	0.101E+04
PA-233	0.593E-01	0.689E+02	0.000E+00	0.000E+00	0.878E+02	0.205E+03	0.293E+03
PA-234	0.229E+00	0.119E+03	0.000E+00	0.000E+00	0.282E+03	0.391E+04	0.419E+04
PA-234M	0.345E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
TH-234	0.122E+01	0.101E+03	0.000E+00	0.000E+00	0.226E+03	0.160E+04	0.182E+04
U-235	0.187E+00	0.769E+02	0.000E+00	0.000E+00	0.484E+03	0.245E+04	0.293E+04
NP-237	0.596E-01	0.888E+02	0.000E+00	0.000E+00	0.313E+03	0.180E+04	0.211E+04
U-238	0.122E+01	0.101E+03	0.000E+00	0.000E+00	0.226E+03	0.160E+04	0.182E+04
NP-239	0.345E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
AM-241	0.134E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
AM-243	0.862E-01	0.940E+02	0.457E-01	0.122E+01	0.521E+03	0.505E+03	0.103E+04
CM-247	0.319E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
CF-249	0.356E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
CF-251	0.120E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
ANH-511	0.734E-01	0.132E+03	0.271E-01	0.182E+01	0.142E+03	0.158E+04	0.173E+04

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Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G302440008.CNF;1
Analyses by       : PEAK V16.9
Sample title      : MXR1
Sample date       : 3-JAN-2012 14:45:00   Acquisition date : 3-MAY-2012 10:02:17
Sample ID        : G302440008             Sample quantity  : 149.13 GRAM
Sample type      : SOLID                   Sample geometry  :
Detector name    : GAMMA19                 Detector geometry: CAN
Elapsed live time: 0 02:00:00.00           Elapsed real time: 0 02:00:01.39   0.0%
Start energy     : 0.47 keV                End energy      : 2047.09 keV
Sensitivity      : 5.00                     Gaussian       : 10.00
Critical level   : No
    
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Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	2	74.95	410	397	1.22	150.01	144	22	5.69E-02	9.4	1.92E+00
2	2	77.31	690	374	1.13	154.74	144	22	9.58E-02	6.2	
3	0	87.31	134	483	0.73	174.73	171	8	1.86E-02	29.9	
4	0	93.83	262	735	1.13	187.79	181	14	3.64E-02	23.7	
5	0	186.14	273	346	1.30	372.47	368	11	3.79E-02	14.6	
6	0	209.45	167	322	0.93	419.12	414	11	2.33E-02	22.1	
7	3	238.78	1229	202	1.09	477.79	473	17	1.71E-01	3.5	8.32E-01
8	3	241.66	295	280	1.83	483.57	473	17	4.10E-02	15.9	
9	0	270.00	184	193	2.02	540.26	534	13	2.56E-02	17.1	
10	0	295.35	362	234	0.98	590.98	585	12	5.02E-02	10.0	
11	0	300.28	78	182	0.84	600.84	596	10	1.08E-02	34.5	
12	0	328.26	44	143	0.97	656.82	653	9	6.15E-03	51.1	
13	0	338.52	238	218	1.27	677.36	671	13	3.31E-02	14.3	
14	0	352.04	613	171	1.21	704.40	700	11	8.51E-02	5.8	
15	0	463.06	81	116	1.03	926.53	921	12	1.13E-02	28.7	
16	0	510.85	300	172	1.82	1022.16	1013	19	4.17E-02	11.9	
17	0	569.82	320	85	1.61	1140.14	1133	16	4.44E-02	8.5	
18	0	583.24	422	64	1.29	1166.99	1161	13	5.86E-02	6.3	
19	0	609.44	492	55	1.48	1219.41	1214	12	6.84E-02	5.4	
20	0	728.17	70	89	1.76	1456.97	1448	12	9.78E-03	29.1	
21	0	860.97	41	50	1.15	1722.68	1716	11	5.74E-03	37.1	
22	0	911.17	245	52	1.85	1823.13	1816	17	3.40E-02	9.3	
23	0	933.98	50	41	1.09	1868.76	1858	16	6.96E-03	31.6	
24	1	964.49	73	20	2.18	1929.81	1922	26	1.01E-02	17.0	7.25E-01
25	1	969.05	181	18	2.08	1938.93	1922	26	2.51E-02	8.9	
26	0	1063.71	245	31	1.42	2128.33	2123	13	3.40E-02	8.0	
27	0	1120.48	132	29	1.82	2241.92	2233	19	1.83E-02	13.1	
28	0	1238.12	70	29	1.96	2477.31	2470	16	9.67E-03	21.6	
29	0	1377.57	40	12	1.55	2756.32	2750	12	5.56E-03	23.5	
30	0	1408.06	19	14	1.87	2817.34	2811	11	2.66E-03	44.0	
31	0	1460.74	325	25	2.21	2922.74	2913	16	4.51E-02	6.5	
32	0	1729.09	30	3	2.10	3459.69	3452	14	4.15E-03	22.5	
33	0	1764.10	71	17	1.75	3529.75	3523	12	9.82E-03	15.2	
34	0	1770.33	16	11	1.34	3542.22	3537	9	2.15E-03	46.2	
35	0	1849.37	17	18	0.71	3700.37	3688	18	2.39E-03	62.6	

```

*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29407                          *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G302440008.CNF;1
Sample date        : 3-JAN-2012 14:45:00. Acquisition date : 3-MAY-2012 10:02:17.
Sample ID          : G302440008          Sample quantity   : 1.49130E+02 GRAM
Detector name      : GAM19              Detector geometry  : CAN
Elapsed live time  : 0 02:00:00.00      Elapsed real time : 0 02:00:01.39  0.0%
Energy tolerance  : 1.50000 keV        Analyst Initials  : MXR1
Abundance limit   : 75.00000          Sensitivity       : 5.00000
Batch ID          : 1203837            Detector SN#      :
Matrix Spike ID   :                    LCS ID             : 1364
*****

```

Summary of Nuclide Activity

```

Total number of lines in spectrum      33
Number of unidentified lines           4
Number of lines tentatively identified by NID 29      87.88%

```

Nuclide Type :

Nuclide	Hlife	Decay	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
K-40	1.25E+09Y	1.00	6.088E+00	6.088E+00	0.965E+00	15.86	
CD-109	461.40D	1.20	2.037E+00	2.443E+00	1.481E+00	60.61	
SN-126	2.30E+05Y	1.00	2.037E-01	2.037E-01	1.235E-01	60.61	
TL-208	1.41E+10Y	1.00	5.374E-01	5.374E-01	0.851E-01	15.83	
BI-211	7.04E+08Y	1.00	3.742E+00	3.742E+00	0.571E+00	15.26	
PB-212	1.41E+10Y	1.00	1.723E+00	1.723E+00	0.214E+00	12.43	
BI-214	1600.00Y	1.00	1.206E+00	1.206E+00	0.181E+00	14.98	
PB-214	1600.00Y	1.00	1.358E+00	1.358E+00	0.220E+00	16.22	
RA-224	1.41E+10Y	1.00	4.491E+00	4.491E+00	1.488E+00	33.13	
RA-226	1600.00Y	1.00	1.206E+00	1.206E+00	0.181E+00	14.98	
AC-228	1.41E+10Y	1.00	1.383E+00	1.383E+00	0.315E+00	22.76	
RA-228	1.41E+10Y	1.00	1.383E+00	1.383E+00	0.315E+00	22.76	
TH-228	1.41E+10Y	1.00	1.723E+00	1.723E+00	0.214E+00	12.43	
TH-230	7.54E+04Y	1.00	1.206E+00	1.206E+00	0.169E+00	14.02	
PA-231	7.04E+08Y	1.00	1.040E+00	1.040E+00	0.729E+00	70.08	K
TH-232	1.41E+10Y	1.00	1.383E+00	1.383E+00	0.315E+00	22.76	
AM-243	7370.00Y	1.00	4.268E-01	4.268E-01	0.879E-01	20.60	
ANH-511	1.00E+09Y	1.00	1.320E-01	1.320E-01	0.749E-01	56.72	
Total Activity :			3.127E+01	3.168E+01			

Grand Total Activity : 3.127E+01 3.168E+01

Flags: "K" = Keyline not found "M" = Manually accepted
 "E" = Manually edited "A" = Nuclide specific abn. limit

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
0	93.83	226	917	1.13	187.79	181	14	2.51E-02	69.1	5.96E+00	T
0	186.14	258	407	1.30	372.47	368	11	3.05E-02	37.3	5.51E+00	T
0	209.45	195	374	0.93	419.12	414	11	2.33E-02	44.3	5.12E+00	T
0	270.00	210	219	2.02	540.26	534	13	2.56E-02	34.3	4.29E+00	T
0	328.26	49	160	0.97	656.82	653	9	6.15E-03	****	3.73E+00	T
0	463.06	88	125	1.03	926.53	921	12	1.13E-02	57.5	2.91E+00	T
0	569.82	56	90	1.61	1140.14	1133	16	7.33E-03	****	2.50E+00	T
0	728.17	73	92	1.76	1456.97	1448	12	9.78E-03	58.2	2.08E+00	T
0	933.98	51	41	1.09	1868.76	1858	16	6.96E-03	63.2	1.71E+00	T
1	964.49	73	20	2.18	1929.81	1922	26	1.01E-02	34.0	1.67E+00	T
0	1238.12	68	29	1.96	2477.31	2470	16	9.67E-03	43.3	1.36E+00	T
0	1377.57	39	12	1.55	2756.32	2750	12	5.56E-03	46.9	1.24E+00	T
0	1408.06	19	13	1.87	2817.34	2811	11	2.66E-03	88.0	1.22E+00	T
0	1729.09	28	3	2.10	3459.69	3452	14	4.15E-03	45.1	1.04E+00	T
0	1849.37	16	17	0.71	3700.37	3688	18	2.39E-03	****	9.98E-01	T

Flags: "T" = Tentatively associated

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
K-40	1460.82	306	10.66*	1.188E+00	6.088E+00	6.088E+00	15.86
CD-109	88.03	168	3.70*	5.608E+00	2.037E+00	2.443E+00	60.61
SN-126	64.28	-----	9.60	3.271E+00	-----	Line Not Found	-----
	86.94	168	8.90	5.608E+00	8.469E-01	8.469E-01	72.87
	87.57	168	37.00*	5.608E+00	2.037E-01	2.037E-01	60.61
TL-208	277.37	-----	6.60	4.208E+00	-----	Line Not Found	-----
	583.19	446	85.00*	2.460E+00	5.374E-01	5.374E-01	15.83
	860.56	42	12.50	1.828E+00	4.639E-01	4.639E-01	74.89
BI-211	72.87	-----	1.23	4.344E+00	-----	Line Not Found	-----
	351.06	681	12.92*	3.543E+00	3.742E+00	3.742E+00	15.26
PB-212	74.82	521	10.28	4.569E+00	2.790E+00	2.790E+00	22.78
	77.11	874	17.10	4.809E+00	2.676E+00	2.676E+00	15.19
	238.63	1397	43.60*	4.680E+00	1.723E+00	1.723E+00	12.43
	300.09	88	3.30	3.974E+00	1.686E+00	1.686E+00	69.94
BI-214	609.32	519	45.49*	2.381E+00	1.206E+00	1.206E+00	14.98
	1120.29	130	14.92	1.476E+00	1.490E+00	1.490E+00	29.50
	1764.49	67	15.30	1.030E+00	1.066E+00	1.067E+00	31.46
PB-214	74.82	521	5.80	4.569E+00	4.945E+00	4.945E+00	22.07
	77.11	874	9.70	4.809E+00	4.718E+00	4.718E+00	17.29
	242.00	339	7.25	4.640E+00	2.540E+00	2.540E+00	33.64
	295.22	408	18.42	4.022E+00	1.388E+00	1.388E+00	23.02
	351.93	681	35.60*	3.543E+00	1.358E+00	1.358E+00	16.22
RA-224	240.99	339	4.10*	4.640E+00	4.491E+00	4.491E+00	33.13
RA-226	609.32	519	45.49*	2.381E+00	1.206E+00	1.206E+00	14.98
	1120.29	130	14.92	1.476E+00	1.490E+00	1.490E+00	29.50
	1764.49	67	15.30	1.030E+00	1.066E+00	1.067E+00	31.46
AC-228	338.32	266	11.27	3.644E+00	1.629E+00	1.629E+00	50.76
	911.20	248	25.80*	1.747E+00	1.383E+00	1.383E+00	22.76
	968.97	182	15.80	1.663E+00	1.744E+00	1.744E+00	31.00
RA-228	338.32	266	11.27	3.644E+00	1.629E+00	1.629E+00	50.76
	911.20	248	25.80*	1.747E+00	1.383E+00	1.383E+00	22.76
	968.97	182	15.80	1.663E+00	1.744E+00	1.744E+00	31.00
TH-228	74.82	521	10.28	4.569E+00	2.790E+00	2.790E+00	20.63
	77.11	874	17.10	4.809E+00	2.676E+00	2.676E+00	15.19
	238.63	1397	43.60*	4.680E+00	1.723E+00	1.723E+00	12.43
	300.09	88	3.30	3.974E+00	1.686E+00	1.686E+00	92.35
TH-230	609.32	519	45.49*	2.381E+00	1.206E+00	1.206E+00	14.02
	1120.29	130	14.92	1.476E+00	1.490E+00	1.490E+00	28.73
	1764.49	67	15.30	1.030E+00	1.066E+00	1.066E+00	31.46
PA-231	283.69	-----	1.70*	4.140E+00	-----	Line Not Found	-----
	301.36	88	5.35	3.974E+00	1.040E+00	1.040E+00	70.08
TH-232	338.32	266	11.27	3.644E+00	1.629E+00	1.629E+00	30.18
	911.20	248	25.80*	1.747E+00	1.383E+00	1.383E+00	22.76
	968.97	182	15.80	1.663E+00	1.744E+00	1.744E+00	31.00
AM-243	43.53	-----	5.90	6.113E-01	-----	Line Not Found	-----
	74.66	521	67.20*	4.569E+00	4.268E-01	4.268E-01	20.60
ANH-511	511.00	142	100.00*	2.709E+00	1.320E-01	1.320E-01	56.72

Flag: "*" = Keyline

Nuclide	Half-life	Half-Life Ratio	Energy	%Abund	Activity (pCi/GRAM)	2-Sigma %Error	Rejected by
SC-46	83.79D	1.44	889.28*	99.98	---	Not Found	---
			1120.55	99.99	6.043E-01	28.73	Abun.
			% Abundances Found =		50.00		
CO-56	77.23D	1.56	846.77*	99.94	---	Not Found	---
			1037.84	14.17	---	Not Found	---
			1238.28	66.90	5.597E-01	44.17	Abun.
			1771.35	15.47	---	Not Found	---
% Abundances Found =		34.05					
RU-103	39.26D	3.08	497.08*	91.00	---	Not Found	---
			610.33	5.76	8.044E+01	19.75	Abun.
			% Abundances Found =		5.95		
SB-125	2.76Y	0.12	427.87*	29.80	---	Not Found	---
			463.37	10.56	7.853E-01	58.37	Abun.
			600.60	17.77	---	Not Found	---
			635.95	11.29	---	Not Found	---
% Abundances Found =		15.21					
CS-134	2.07Y	0.16	563.25	8.34	---	Not Found	---
			569.33	15.37	4.096E-01	107.67	Abun.
			604.72	97.62	---	Not Found	---
			795.86*	85.46	---	Not Found	---
			801.95	8.69	---	Not Found	---
1365.19	3.02	---	Not Found	---			
% Abundances Found =		7.03					
LA-140	12.75D	9.48	328.76	20.30	1.174E+02	102.67	Decay, Abun.
			487.02	45.50	---	Not Found	---
			815.77	23.28	---	Not Found	---
			1596.21*	95.40	---	Not Found	---
% Abundances Found =		11.00					
EU-152	13.54Y	0.02	121.78	28.67	---	Not Found	---
			244.70	7.61	---	Not Found	---
			344.28*	26.60	---	Not Found	---
			778.90	12.96	---	Not Found	---
			964.08	14.65	7.666E-01	35.72	Abun.
			1085.87	10.24	---	Not Found	---
			1112.07	13.69	---	Not Found	---
1408.01	21.07	1.838E-01	88.40	Abun.			
% Abundances Found =		26.36					
EU-155	4.75Y	0.07	86.55	30.70	2.577E-01	60.63	Abun.
			105.31*	21.10	---	Not Found	---
% Abundances Found =		59.27					
TB-160	72.30D	1.67	86.79	13.30	1.805E+00	60.61	Abun.
			197.04	4.90	---	Not Found	---
			215.65	3.71	---	Not Found	---
			298.57	27.10	---	Not Found	---

Nuclide	Half-life	Half-Life Ratio	Energy	%Abund	Activity (pCi/GRAM)	2-Sigma %Error	Rejected by	
TB-160	72.30D	1.67	879.36*	28.50	---	Not Found	---	
			962.29	9.00	---	Not Found	---	
			966.15	24.20	---	Not Found	---	
			1177.93	14.40	---	Not Found	---	
			1271.85	7.00	---	Not Found	---	
% Abundances Found =			10.07					
TA-182	114.43D	1.06	67.75	41.20	---	Not Found	---	
			100.11	14.10	---	Not Found	---	
			152.43	6.93	---	Not Found	---	
			222.11	7.49	---	Not Found	---	
			1121.30	34.90	1.325E+00	28.73		
			1189.05	16.20	---	Not Found	---	
			1221.41*	27.00	---	Not Found	---	
% Abundances Found =			21.91					
IR-192	73.83D	1.64	295.96	28.72	2.768E+00	22.11	Abun.	
			308.46	29.68	---	Not Found	---	
			316.51*	82.71	---	Not Found	---	
			468.07	47.81	---	Not Found	---	
% Abundances Found =			15.20					
BI-207	32.90Y	0.01	72.81	21.40	---	Not Found	---	
			74.97	35.70	8.090E-01	20.60	Abun.	
			569.70	97.76	5.805E-02	107.67		
			1063.66*	74.60	---	Not Found	---	
			1770.23	6.87	---	Not Found	---	
% Abundances Found =			56.47					
BI-212	1.41E+10Y	0.00	727.33*	6.67	1.322E+00	59.57	Abun.	
			785.37	1.10	---	Not Found	---	
			1620.50	1.47	---	Not Found	---	
% Abundances Found =			72.19					
RN-219	7.04E+08Y	0.00	271.23	10.80	1.141E+00	35.98	Abun.	
			401.81*	6.60	---	Not Found	---	
% Abundances Found =			62.07					
RA-223	7.04E+08Y	0.00	81.07	15.00	---	Not Found	---	
			83.79	24.70	---	Not Found	---	
			94.56	8.67	1.099E+00	69.72		
			144.24	3.27	---	Not Found	---	
			154.21	5.70	---	Not Found	---	
			269.46	13.90	8.866E-01	35.59		
			323.87*	3.99	---	Not Found	---	
% Abundances Found =			32.55					
AC-227	7.04E+08Y	0.00	79.69	2.64	---	Not Found	---	
			235.96	17.50	---	Not Found	---	
			256.23*	9.50	---	Not Found	---	

Nuclide	Half-life	Half-Life Ratio	Energy	%Abund	Activity (pCi/GRAM)	2-Sigma %Error	Rejected by		
AC-227	7.04E+08Y	0.00	299.98	3.00	1.854E+00	70.30	Abun.		
			304.50	1.56	---	Not Found	---		
			334.37	1.54	---	Not Found	---		
			% Abundances Found =			8.39			
TH-227	7.04E+08Y	0.00	79.69	2.64	---	Not Found	---		
			235.96	17.50	---	Not Found	---		
			256.23*	9.50	---	Not Found	---		
			299.98	3.00	1.854E+00	70.30	Abun.		
			304.50	1.56	---	Not Found	---		
TH-229	7340.00Y	0.00	85.43	14.70	---	Not Found	---		
			88.47	24.00	3.141E-01	60.61	Abun.		
			193.51*	4.41	---	Not Found	---		
			210.85	2.80	3.428E+00	45.13	Abun.		
			% Abundances Found =			58.38			
TH-231	7.04E+08Y	0.00	81.07	15.00	---	Not Found	---		
			83.79	24.70	---	Not Found	---		
			94.87	5.69	1.674E+00	69.72	Abun.		
			144.24	3.27	---	Not Found	---		
			154.21	5.70	---	Not Found	---		
			269.46	13.90	8.866E-01	35.59	Abun.		
			323.87*	3.99	---	Not Found	---		
338.28	2.84	6.466E+00	31.34	Abun.					
% Abundances Found =			29.87						
PA-233	2.14E+06Y	0.00	300.13	6.63	8.390E-01	70.72	Abun.		
			311.90*	38.50	---	Not Found	---		
			340.48	4.45	---	Not Found	---		
% Abundances Found =			13.37						
PA-234	4.47E+09Y	0.00	94.67	15.70	6.069E-01	70.29	Abun.		
			98.44	25.40	---	Not Found	---		
			111.00	11.80	---	Not Found	---		
			131.20	20.40	---	Not Found	---		
			569.50	11.00	5.123E-01	107.67	Abun.		
			733.00	8.80	---	Not Found	---		
			880.51	12.24	---	Not Found	---		
			883.24	12.00	---	Not Found	---		
			926.50	20.20	---	Not Found	---		
			946.00*	12.00	---	Not Found	---		
			949.00	8.16	---	Not Found	---		
% Abundances Found =			16.93						
TH-234	4.47E+09Y	0.00	63.29*	3.70	---	Not Found	---		
			92.59	4.23	2.252E+00	72.62	Abun.		
% Abundances Found =			53.34						
U-235	7.04E+08Y	0.00	89.96	3.47	---	Not Found	---		

Nuclide	Half-life	Half-Life Ratio	Energy	%Abund	Activity (pCi/GRAM)	2-Sigma %Error	Rejected by
U-235	7.04E+08Y	0.00	93.35	5.60	1.701E+00	72.94	Abun.
			143.76*	10.96	---	Not Found	---
			163.33	5.08	---	Not Found	---
			185.72	57.20	2.062E-01	38.21	
			205.31	5.01	---	Not Found	---
% Abundances Found =			71.92				
NP-237	2.14E+06Y	0.00	94.65	10.56	9.022E-01	69.72	Abun.
			98.43	16.90	---	Not Found	---
			300.13	6.63	8.390E-01	70.27	
			311.90*	38.50	---	Not Found	---
			340.48	4.45	---	Not Found	---
% Abundances Found =			22.31				
U-238	4.47E+09Y	0.00	63.29*	3.70	---	Not Found	---
			92.59	4.23	2.252E+00	69.72	Abun.
			% Abundances Found =			53.34	

Flag: "*" = Keyline

 * GEL Laboratories LLC *
 * 2040 Savage Road *
 * Charleston, SC 29407 *
 * GAMMA SPECTROSCOPY BACKGROUND REPORT *

ENERGY	MDA COUNTS
43.53	296.2987
46.54	233.1016
49.72	0.0000
57.36	0.0000
57.53	259.1355
59.54	323.4214
63.29	337.1967
63.29	337.1967
64.28	336.7771
67.75	369.6023
69.67	364.8022
70.83	350.3298
72.81	416.5510
72.87	416.5994
72.87	416.5994
74.66	434.0135
74.82	434.1449
74.82	434.1449
74.82	434.1449
74.97	434.2686
77.11	436.0100
77.11	436.0100
77.11	436.0100
79.69	438.0781
79.69	438.0781
80.12	438.4202
80.19	0.0000
80.57	438.7758
81.00	478.4053
81.07	478.4643
81.07	478.4643
83.79	432.0076
83.79	432.0076
85.43	433.2451
86.55	471.8926
86.79	472.0859
86.94	492.7605
87.57	511.9936
88.03	494.8490
88.47	512.7800
89.96	514.0699
91.11	0.0000
92.59	335.9631
92.59	335.9631
93.35	336.3820
94.56	337.0474
94.65	337.0966
94.67	337.1068
94.87	337.2169
97.43	309.3800
98.43	245.6123
98.44	245.6155
99.53	240.3167
100.11	252.9436
103.18	335.3690
103.37	335.4672
105.31	272.4145
106.12	293.5208
109.28	313.0550
111.00	295.6533
111.76	0.0000
116.30	0.0000
117.23	287.2944
121.12	275.0143
121.78	274.3407
122.06	284.6107
123.07	274.8256

131.20	325.5331
133.02	333.8070
133.52	300.2441
136.00	278.6133
136.47	265.5949
140.51	0.0000
140.51	0.0000
143.76	321.2511
144.24	317.6379
144.24	317.6379
145.44	298.1037
152.43	283.3280
153.25	0.0000
154.21	282.9597
154.21	282.9597
156.02	0.0000
158.56	0.0000
159.00	298.0860
162.66	0.0000
163.33	269.4068
165.86	273.0978
176.60	0.0000
177.52	294.3691
181.07	0.0000
184.41	307.2545
185.72	266.0243
193.51	263.1184
197.04	236.8342
205.31	287.7244
210.85	228.7834
215.65	229.8157
222.11	216.7371
227.38	262.3617
228.16	0.0000
228.18	239.7194
235.69	228.9883
235.96	225.6982
235.96	225.6982
238.63	225.1765
238.63	225.1765
240.99	225.6342
242.00	225.8310
244.70	205.5072
252.40	0.0000
252.80	201.3995
256.23	200.9077
256.23	200.9077
260.90	0.0000
264.66	145.5646
268.22	158.0015
269.46	145.0484
269.46	145.0484
271.23	166.9863
273.65	0.0000
276.40	175.7324
277.37	176.2268
277.60	173.0127
278.00	177.3931
279.20	192.7156
279.54	209.0117
280.46	230.8367
283.69	177.0874
284.31	0.0000
285.41	213.2206
285.90	0.0000
287.50	188.4981
293.27	0.0000
295.22	171.8398
295.96	192.9888
298.57	193.3621
299.98	168.9281
299.98	168.9281
300.09	168.9422
300.09	168.9422
300.13	168.9469
300.13	168.9469
301.36	165.5763
302.85	155.1752

304.50	167.7205
304.50	167.7205
304.85	0.0000
308.46	135.0049
311.90	173.0554
311.90	173.0554
316.51	136.8961
319.41	0.0000
320.08	155.0939
323.87	153.9392
323.87	153.9392
328.76	0.0000
333.37	162.1560
334.37	157.7585
334.37	157.7585
338.28	151.8501
338.28	151.8501
338.32	151.8542
338.32	151.8542
338.32	151.8542
340.48	120.6950
340.48	120.6950
340.55	0.0000
344.28	151.2512
345.93	158.9890
351.06	168.6431
351.93	145.9375
356.01	140.2292
364.49	0.0000
366.42	0.0000
383.85	129.3759
388.16	126.9173
388.63	0.0000
391.69	115.9669
400.66	123.1755
401.81	120.4375
402.40	109.1847
404.85	141.3922
410.95	103.1136
414.70	0.0000
423.72	0.0000
427.09	124.1284
427.87	118.4524
433.94	117.8995
453.88	96.9141
463.37	112.0225
468.07	105.7929
473.00	0.0000
476.78	101.0474
477.60	85.3868
482.18	90.5097
487.02	0.0000
492.35	0.0000
497.08	91.2049
511.00	93.8399
514.00	84.9818
527.90	0.0000
529.87	0.0000
531.02	0.0000
537.26	0.0000
546.56	0.0000
563.25	81.8867
569.33	82.1152
569.50	82.1211
569.70	82.1289
583.19	70.2379
600.60	90.5620
602.73	93.7705
604.72	106.0203
609.32	97.1755
609.32	97.1755
609.32	97.1755
610.33	85.3712
614.28	64.5739
618.01	79.7109
621.93	75.6439
621.93	75.6439
633.25	72.8408

635.95	64.4685
636.99	0.0000
645.85	84.9004
657.76	77.8530
661.66	83.3187
661.66	83.3187
664.57	0.0000
666.33	0.0000
666.50	0.0000
677.62	70.9564
685.70	0.0000
695.00	0.0000
696.49	96.4007
696.51	96.4029
697.00	0.0000
702.65	79.2610
706.68	93.5229
711.68	73.0015
720.70	0.0000
721.93	0.0000
722.78	91.1845
722.91	91.1886
723.31	87.5547
724.19	85.7593
727.33	74.9014
733.00	65.9077
735.93	73.6787
739.50	0.0000
747.24	68.0998
752.31	88.5117
753.82	0.0000
756.73	68.3392
763.94	87.0387
765.81	69.4931
766.42	78.7779
777.92	0.0000
778.90	60.5143
783.70	0.0000
785.37	60.6545
795.86	60.8806
801.95	69.4593
810.29	63.0729
810.76	67.7900
815.77	0.0000
818.51	0.0000
832.01	69.2380
834.85	81.6468
836.80	0.0000
846.77	55.2872
856.80	0.0000
860.56	65.1182
871.09	52.8538
873.19	53.8512
875.33	0.0000
879.36	62.6329
880.51	49.1614
883.24	46.3105
884.68	53.0888
889.28	55.1016
898.04	56.2276
911.20	46.7285
911.20	46.7285
911.20	46.7285
926.50	38.5702
937.49	33.6544
944.13	53.1156
946.00	44.2886
949.00	49.2544
962.29	33.9125
964.08	31.6686
966.15	31.6888
968.97	31.7155
968.97	31.7155
968.97	31.7155
983.53	33.8457
996.26	53.9594
1001.03	48.0313
1004.73	45.0787

1037.84	48.5488
1038.76	0.0000
1048.07	0.0000
1050.41	37.5570
1050.41	37.5570
1063.66	27.5098
1085.87	21.5289
1099.45	49.3926
1112.07	35.4032
1115.54	42.5223
1120.29	24.8369
1120.29	24.8369
1120.29	24.8369
1120.55	24.8389
1121.30	24.8438
1131.51	0.0000
1173.23	36.7318
1177.93	28.3700
1189.05	34.7751
1204.77	35.9728
1221.41	37.1875
1231.02	38.3423
1235.36	0.0000
1238.28	38.4111
1260.41	0.0000
1271.85	36.5774
1274.44	33.3714
1274.54	35.5258
1291.59	30.2673
1298.22	0.0000
1312.11	27.0024
1332.49	18.7116
1365.19	23.5683
1368.63	0.0000
1384.29	21.5408
1408.01	24.7495
1457.56	0.0000
1460.82	23.5959
1489.16	19.3799
1505.03	23.3345
1596.21	0.0000
1620.50	24.8919
1678.03	0.0000
1690.97	13.1238
1764.49	25.5920
1764.49	25.5920
1764.49	25.5920
1770.23	10.7600
1771.35	15.9446
1791.20	0.0000
1836.06	10.0527

VAX/VMS Nuclide Identification Report Generated 3-MAY-2012 12:03:47.05

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*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29407                           *
*****
Configuration   : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G302440009.CNF;1
Background file : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]BKG_GAM22.CNF;266
Background date : 29-APR-2012 10:51:51
Sample date     : 17-FEB-2012 13:15:00 Acquisition date : 3-MAY-2012 10:02:40.
Sample ID      : G302440009 Sample quantity : 1.47560E+02 GRAM
Detector name  : GAM22 Detector geometry: CAN
Elapsed live time: 0 02:00:00.00 Elapsed real time: 0 02:00:01.56 0.0%
Energy tolerance : 1.50000 keV Analyst Initials : MXR1
Abundance limit : 75.00000 Sensitivity : 5.00000
Batch ID      : 1203837 Detector SN# :
Matrix Spike ID : LCS ID : 1364
*****

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Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	63.41*	36	379	1.07	126.42	123	8	5.06E-03	98.9	
2	3	74.95	302	382	1.24	149.48	142	17	4.19E-02	12.3	8.00E-01
3	3	77.26*	423	364	1.11	154.09	142	17	5.87E-02	9.3	
4	0	84.33	107	292	1.14	168.22	166	6	1.48E-02	27.1	
5	0	90.07	106	277	0.93	179.69	178	5	1.47E-02	25.5	
6	0	93.03*	140	404	1.67	185.60	182	8	1.94E-02	28.9	
7	0	143.82*	138	413	1.29	287.10	283	9	1.91E-02	28.5	
8	0	185.96*	766	413	1.27	371.31	365	13	1.06E-01	6.8	
9	0	209.28	69	262	1.14	417.91	415	9	9.64E-03	43.5	
10	2	238.75*	942	213	1.36	476.81	470	17	1.31E-01	4.4	1.72E+00
11	2	241.77	211	165	1.78	482.86	470	17	2.93E-02	12.6	
12	0	270.50	82	216	1.10	540.27	536	10	1.15E-02	35.3	
13	0	295.30	314	191	1.31	589.84	585	10	4.37E-02	10.0	
14	0	328.62	92	141	1.57	656.44	652	10	1.28E-02	26.4	
15	0	338.44*	206	180	1.30	676.06	671	11	2.86E-02	14.9	
16	0	352.06*	509	236	1.63	703.28	696	16	7.07E-02	8.2	
17	0	510.88*	117	244	2.20	1020.74	1011	22	1.63E-02	39.1	
18	0	583.08*	310	124	1.87	1165.09	1158	17	4.31E-02	10.3	
19	0	609.19*	354	153	1.73	1217.27	1209	17	4.92E-02	9.9	
20	0	727.50	108	66	2.34	1453.83	1447	15	1.51E-02	19.1	
21	0	861.01	53	64	3.70	1720.79	1715	16	7.36E-03	36.4	
22	0	910.99*	229	61	1.99	1820.73	1814	17	3.18E-02	10.6	
23	0	968.23*	241	74	2.80	1935.20	1923	25	3.35E-02	12.0	
24	0	1120.01	94	60	2.85	2238.79	2232	16	1.31E-02	20.6	
25	0	1460.34*	748	32	3.08	2919.64	2906	24	1.04E-01	4.2	
26	0	1763.90*	90	19	3.24	3527.12	3515	22	1.25E-02	16.4	

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

VAX/VMS Nuclide Identification Report Generated

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*****
*
*           GEL Laboratories LLC
*           2040 Savage Road
*           Charleston, SC 29407
*****
*
*           DETECTOR DATA
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G302440009.CNF;1
* Acquisition date   : 3-MAY-2012 10:02:40 Detector SN#      :
* Detector ID        : GAM22 Sensitivity                    : 5.000
* Geometry           : CAN Energy tolerance                : 1.500
* Elapsed live time  : 0 02:00:00.00 Abundance limit       : 75.000
* Elapsed real time  : 0 02:00:01.56 Half life ratio       : 8.000
*****
*
*           SAMPLE DATA
*
* Sample date        : 17-FEB-2012 13:15:00 Nuclide Library  : SOLID
* Sample ID          : G302440009 Analyst initials       : MXR1
* Batch Number       : 1203837 Sample Quantity        : 1.4756E+02 GRAM
* Recovery           : 1.00000 Carrier Weight           : 0.00000
*****
*
*           QC DATA
*
* Standard Weight    : 0.00000
* CALIB. DATE/TIME  : 4-JAN-2012 12:17:09 MS Isotope      :
* MSD DPM            : 0.000 MSD Isotope                  :
* LCS DPM            : 0.000 LCS Isotope                  :
* LCSD DPM           : 0.000 LCSD Isotope                 :
*****

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Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act error (1.96-sigma)	MDA (pCi/GRAM)	
K-40	8.300E+00	1.076E+00	3.779E-01	0.000E+00
TL-208	2.392E-01	5.288E-02	4.026E-02	0.000E+00
BI-211	1.968E+00	3.625E-01	2.287E-01	0.000E+00
PB-212	8.906E-01	1.157E-01	6.769E-02	0.000E+00
BI-214	5.232E-01	1.142E-01	8.094E-02	0.000E+00
PB-214	7.141E-01	1.371E-01	8.316E-02	0.000E+00
RA-224	2.137E+00	5.608E-01	7.249E-01	0.000E+00
RA-226	5.232E-01	1.142E-01	8.094E-02	0.000E+00
AC-228	7.639E-01	2.036E-01	1.641E-01	0.000E+00
RA-228	7.639E-01	2.036E-01	1.641E-01	0.000E+00
TH-228	8.906E-01	1.157E-01	6.769E-02	0.000E+00
TH-230	5.232E-01	1.109E-01	8.093E-02	0.000E+00
TH-232	7.639E-01	2.036E-01	1.641E-01	0.000E+00
TH-234	7.672E-01	1.493E+00	1.453E+00	0.000E+00
U-235	4.380E-01	2.549E-01	2.488E-01	0.000E+00
U-238	7.672E-01	1.493E+00	1.453E+00	0.000E+00
AM-243	2.395E-01	6.077E-02	6.033E-02	0.000E+00
ANH-511	7.136E-02	5.497E-02	3.265E-02	0.000E+00

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L.	Act error (1.96-sigma)	MDA (pCi/GRAM)	
BE-7	1.297E-01		4.425E-01	8.285E-01	0.000E+00 NOT IDENT.
NA-22	4.234E-03		2.761E-02	5.089E-02	0.000E+00 NOT IDENT.
NA-24	0.000E+00		1.257E+35	0.000E+00	0.000E+00 SHORT HLIF
SC-46	2.648E-03		3.980E-02	7.384E-02	0.000E+00 FAIL ABUN
V-48	1.852E-01		5.739E-01	1.076E+00	0.000E+00 NOT IDENT.
CR-51	-6.646E-01		1.080E+00	1.922E+00	0.000E+00 NOT IDENT.
MN-54	1.054E-02		2.561E-02	4.730E-02	0.000E+00 NOT IDENT.
CO-56	-2.246E-03		4.484E-02	8.004E-02	0.000E+00 NOT IDENT.
CO-57	1.442E-02		2.119E-02	3.889E-02	0.000E+00 NOT IDENT.

CO-58	-1.748E-02	4.423E-02	7.755E-02	0.000E+00	NOT IDENT.
FE-59	-6.103E-02	1.286E-01	2.227E-01	0.000E+00	NOT IDENT.
CO-60	4.316E-03	2.230E-02	4.177E-02	0.000E+00	NOT IDENT.
ZN-65	0.000E+00	7.667E-02	1.289E-01	0.000E+00	NOT IDENT.
SE-75	-1.418E-02	4.278E-02	7.169E-02	0.000E+00	NOT IDENT.
SR-85	0.000E+00	6.460E-02	1.177E-01	0.000E+00	NOT IDENT.
Y-88	-2.740E-02	3.728E-02	6.238E-02	0.000E+00	NOT IDENT.
Y-91	1.775E-01	2.275E+01	4.188E+01	0.000E+00	NOT IDENT.
NB-94	2.250E-02	2.095E-02	4.051E-02	0.000E+00	NOT IDENT.
NB-95	3.161E-02	5.161E-02	9.649E-02	0.000E+00	NOT IDENT.
NB-95M	1.518E-01	1.915E-01	3.102E-01	0.000E+00	NOT IDENT.
ZR-95	5.398E-03	8.532E-02	1.559E-01	0.000E+00	NOT IDENT.
MO-99	0.000E+00	3.475E+07	0.000E+00	0.000E+00	SHORT HLIF
TC-99M	0.000E+00	2.244E+41	0.000E+00	0.000E+00	SHORT HLIF
RU-103	5.437E-02	7.502E-02	1.424E-01	0.000E+00	FAIL ABUN
RH-106	-2.798E-02	2.258E-01	4.005E-01	0.000E+00	NOT IDENT.
RU-106	-2.798E-02	2.258E-01	4.005E-01	0.000E+00	NOT IDENT.
AG-108M	-7.920E-04	1.838E-02	3.413E-02	0.000E+00	NOT IDENT.
CD-109	0.000E+00	7.646E-01	1.115E+00	0.000E+00	NOT IDENT.
AG-110M	-1.965E-02	3.655E-02	6.254E-02	0.000E+00	NOT IDENT.
SN-113	1.495E-02	4.102E-02	7.522E-02	0.000E+00	NOT IDENT.
CD-115	0.000E+00	1.136E+09	0.000E+00	0.000E+00	SHORT HLIF
SN-117M	-7.792E-02	8.032E-01	1.496E+00	0.000E+00	NOT IDENT.
TE-123M	1.240E-02	2.672E-02	5.074E-02	0.000E+00	NOT IDENT.
SB-124	8.236E-02	1.026E-01	2.081E-01	0.000E+00	NOT IDENT.
SB-125	1.034E-02	5.784E-02	1.089E-01	0.000E+00	NOT IDENT.
TE-125M	-2.383E+00	1.335E+01	2.405E+01	0.000E+00	NOT IDENT.
I-126	-2.330E-01	3.376E+00	6.205E+00	0.000E+00	NOT IDENT.
SB-126	-2.723E+00	3.280E+00	4.689E+00	0.000E+00	NOT IDENT.
SN-126	0.000E+00	6.770E-02	9.931E-02	0.000E+00	FAIL ABUN
SB-127	0.000E+00	4.253E+04	0.000E+00	0.000E+00	SHORT HLIF
I-131	0.000E+00	1.386E+01	0.000E+00	0.000E+00	SHORT HLIF
TE-132	0.000E+00	2.648E+05	0.000E+00	0.000E+00	SHORT HLIF
BA-133	2.314E-02	2.880E-02	4.804E-02	0.000E+00	NOT IDENT.
I-133	0.000E+00	5.188E+24	0.000E+00	0.000E+00	SHORT HLIF
CS-134	2.198E-02	2.766E-02	5.220E-02	0.000E+00	NOT IDENT.
CS-135	1.480E-01	1.131E-01	1.965E-01	0.000E+00	NOT IDENT.
I-135	0.000E+00	9.369E+41	0.000E+00	0.000E+00	SHORT HLIF
CS-136	-6.659E-01	1.537E+00	2.689E+00	0.000E+00	NOT IDENT.
BA-137M	2.221E-02	2.153E-02	4.200E-02	0.000E+00	NOT IDENT.
CS-137	2.346E-02	2.274E-02	4.437E-02	0.000E+00	NOT IDENT.
CE-139	-1.697E-02	2.792E-02	5.069E-02	0.000E+00	NOT IDENT.
BA-140	1.807E+00	4.555E+00	8.418E+00	0.000E+00	NOT IDENT.
LA-140	-2.609E+00	1.517E+00	2.250E+00	0.000E+00	FAIL ABUN
CE-141	0.000E+00	1.860E-01	3.333E-01	0.000E+00	NOT IDENT.
CE-143	0.000E+00	4.146E+15	0.000E+00	0.000E+00	SHORT HLIF
CE-144	-2.886E-03	1.499E-01	2.853E-01	0.000E+00	NOT IDENT.
PM-144	-1.921E-03	2.407E-02	4.386E-02	0.000E+00	NOT IDENT.
PR-144	-1.560E-01	1.859E+00	3.387E+00	0.000E+00	NOT IDENT.
PM-146	-6.192E-03	2.726E-02	4.984E-02	0.000E+00	NOT IDENT.
ND-147	-3.195E+00	1.632E+01	2.938E+01	0.000E+00	FAIL ABUN
PM-149	0.000E+00	1.098E+10	0.000E+00	0.000E+00	SHORT HLIF
EU-152	1.745E-02	9.246E-02	1.167E-01	0.000E+00	NOT IDENT.
GD-153	-2.838E-02	7.294E-02	1.170E-01	0.000E+00	NOT IDENT.
EU-154	1.041E-02	7.625E-02	1.403E-01	0.000E+00	NOT IDENT.
EU-155	9.856E-02	7.055E-02	1.350E-01	0.000E+00	NOT IDENT.
TB-160	-4.411E-02	1.489E-01	2.609E-01	0.000E+00	NOT IDENT.
HO-166M	-3.027E-02	3.815E-02	6.605E-02	0.000E+00	NOT IDENT.
HF-181	-4.830E-02	7.607E-02	1.347E-01	0.000E+00	NOT IDENT.
TA-182	7.391E-02	1.495E-01	2.831E-01	0.000E+00	FAIL ABUN
IR-192	-1.629E-02	3.875E-02	6.979E-02	0.000E+00	FAIL ABUN
HG-203	2.677E-02	6.142E-02	1.162E-01	0.000E+00	NOT IDENT.
BI-207	-6.532E-04	3.178E-02	5.743E-02	0.000E+00	FAIL ABUN
PB-210	-4.229E-02	1.912E+00	3.438E+00	0.000E+00	NOT IDENT.
PB-211	7.174E-02	4.714E-01	8.479E-01	0.000E+00	NOT IDENT.
BI-212	0.000E+00	4.809E-01	7.051E-01	0.000E+00	FAIL ABUN
RN-219	-1.284E-01	2.652E-01	4.610E-01	0.000E+00	FAIL ABUN
RA-223	-9.982E-02	4.719E-01	7.384E-01	0.000E+00	FAIL ABUN
AC-227	-2.762E-02	1.703E-01	3.000E-01	0.000E+00	NOT IDENT.
TH-227	-2.762E-02	1.703E-01	3.000E-01	0.000E+00	NOT IDENT.
TH-229	5.674E-03	3.543E-01	6.483E-01	0.000E+00	FAIL ABUN
PA-231	-1.495E-01	9.240E-01	1.705E+00	0.000E+00	NOT IDENT.
TH-231	-9.982E-02	4.719E-01	7.384E-01	0.000E+00	FAIL ABUN
PA-233	-2.386E-02	4.198E-02	7.510E-02	0.000E+00	NOT IDENT.
PA-234	1.968E-02	1.726E-01	3.203E-01	0.000E+00	NOT IDENT.
PA-234M	7.372E-01	2.710E+00	5.029E+00	0.000E+00	NOT IDENT.
NP-237	-2.386E-02	4.201E-02	7.510E-02	0.000E+00	NOT IDENT.
NP-239	-3.165E-01	2.775E-01	4.727E-01	0.000E+00	NOT IDENT.

AM-241	9.774E-02	9.095E-02	1.676E-01	0.000E+00	NOT IDENT.
CM-247	1.063E-02	2.403E-02	4.408E-02	0.000E+00	NOT IDENT.
CF-249	1.125E-02	2.573E-02	4.736E-02	0.000E+00	NOT IDENT.
CF-251	2.190E-02	8.688E-02	1.619E-01	0.000E+00	NOT IDENT.

Gamma Spectroscopy Auxillary Report

Sample:G302440009

Nuclide	TPU	LLD	EFF	FWHM	TArea	TBack	TCounts
BE-7	0.443E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
NA-22	0.276E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
NA-24	0.196E+17	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
K-40	0.108E+01	0.781E+02	0.207E-01	0.308E+01	0.720E+03	0.371E+03	0.109E+04
SC-46	0.398E-01	0.579E+02	0.000E+00	0.000E+00	0.932E+02	0.592E+02	0.152E+03
V-48	0.574E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
CR-51	0.108E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
MN-54	0.256E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
CO-56	0.448E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
CO-57	0.212E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
CO-58	0.442E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
FE-59	0.129E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
CO-60	0.223E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
ZN-65	0.767E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
SE-75	0.428E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
SR-85	0.646E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Y-88	0.373E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Y-91	0.227E+02	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
NB-94	0.210E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
NB-95	0.516E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
NB-95M	0.191E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
ZR-95	0.853E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
MO-99	0.347E+08	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
TC-99M	0.196E+17	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
RU-103	0.750E-01	0.683E+02	0.000E+00	0.000E+00	0.372E+03	0.504E+03	0.876E+03
RH-106	0.226E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
RU-106	0.226E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
AG-108M	0.184E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
CD-109	0.765E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
AG-110M	0.366E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
SN-113	0.410E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
CD-115	0.114E+10	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
SN-117M	0.803E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
TE-123M	0.267E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
SB-124	0.103E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
SB-125	0.578E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
TE-125M	0.134E+02	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
I-126	0.338E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
SB-126	0.328E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
SN-126	0.677E-01	0.107E+03	0.000E+00	0.000E+00	0.466E+02	0.986E+03	0.103E+04
SB-127	0.425E+05	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
I-131	0.139E+02	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
TE-132	0.265E+06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
BA-133	0.288E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
I-133	0.196E+17	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
CS-134	0.277E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
CS-135	0.113E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
I-135	0.196E+17	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
CS-136	0.154E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
BA-137M	0.215E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
CS-137	0.227E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
CE-139	0.279E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
BA-140	0.455E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
LA-140	0.152E+01	0.408E+02	0.000E+00	0.000E+00	0.102E+03	0.157E+03	0.259E+03
CE-141	0.186E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
CE-143	0.415E+16	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
CE-144	0.150E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
PM-144	0.241E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
PR-144	0.186E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
PM-146	0.273E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
ND-147	0.163E+02	0.560E+02	0.000E+00	0.000E+00	0.131E+03	0.166E+04	0.179E+04
PM-149	0.110E+11	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
EU-152	0.925E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
GD-153	0.729E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
EU-154	0.762E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
EU-155	0.705E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
TB-160	0.149E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
HO-166M	0.382E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
HF-181	0.761E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
TA-182	0.150E+00	0.579E+02	0.000E+00	0.000E+00	0.932E+02	0.592E+02	0.152E+03

IR-192	0.387E-01	0.447E+02	0.000E+00	0.000E+00	0.353E+03	0.214E+03	0.568E+03
HG-203	0.614E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
BI-207	0.318E-01	0.709E+02	0.000E+00	0.000E+00	0.381E+03	0.610E+03	0.991E+03
TL-208	0.529E-01	0.600E+02	0.410E-01	0.187E+01	0.382E+03	0.560E+03	0.942E+03
PB-210	0.191E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
BI-211	0.362E+00	0.579E+02	0.563E-01	0.163E+01	0.563E+03	0.514E+03	0.108E+04
PB-211	0.471E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
BI-212	0.481E+00	0.447E+02	0.352E-01	0.234E+01	0.112E+03	0.677E+02	0.180E+03
PB-212	0.116E+00	0.550E+02	0.707E-01	0.136E+01	0.199E+04	0.193E+04	0.392E+04
BI-214	0.114E+00	0.667E+02	0.398E-01	0.173E+01	0.551E+03	0.808E+03	0.136E+04
PB-214	0.137E+00	0.548E+02	0.563E-01	0.163E+01	0.207E+04	0.211E+04	0.418E+04
RN-219	0.265E+00	0.454E+02	0.000E+00	0.000E+00	0.934E+02	0.244E+03	0.338E+03
RA-223	0.472E+00	0.490E+02	0.000E+00	0.000E+00	0.620E+03	0.150E+04	0.212E+04
RA-224	0.561E+00	0.375E+02	0.702E-01	0.178E+01	0.242E+03	0.189E+03	0.431E+03
RA-226	0.114E+00	0.667E+02	0.398E-01	0.173E+01	0.551E+03	0.808E+03	0.136E+04
AC-227	0.170E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
TH-227	0.170E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
AC-228	0.204E+00	0.583E+02	0.298E-01	0.199E+01	0.702E+03	0.755E+03	0.146E+04
RA-228	0.204E+00	0.583E+02	0.298E-01	0.199E+01	0.702E+03	0.755E+03	0.146E+04
TH-228	0.116E+00	0.550E+02	0.707E-01	0.136E+01	0.199E+04	0.193E+04	0.392E+04
TH-229	0.354E+00	0.512E+02	0.000E+00	0.000E+00	0.133E+03	0.365E+03	0.499E+03
TH-230	0.111E+00	0.667E+02	0.398E-01	0.173E+01	0.551E+03	0.808E+03	0.136E+04
PA-231	0.924E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
TH-231	0.472E+00	0.490E+02	0.000E+00	0.000E+00	0.620E+03	0.150E+04	0.212E+04
TH-232	0.204E+00	0.583E+02	0.298E-01	0.199E+01	0.702E+03	0.755E+03	0.146E+04
PA-233	0.420E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
PA-234	0.173E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
PA-234M	0.271E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
TH-234	0.149E+01	0.832E+02	0.417E-01	0.107E+01	0.220E+03	0.280E+04	0.302E+04
U-235	0.255E+00	0.567E+02	0.872E-01	0.129E+01	0.137E+04	0.539E+04	0.676E+04
NP-237	0.420E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
U-238	0.149E+01	0.832E+02	0.417E-01	0.107E+01	0.220E+03	0.280E+04	0.302E+04
NP-239	0.278E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
AM-241	0.909E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
AM-243	0.608E-01	0.709E+02	0.602E-01	0.124E+01	0.381E+03	0.610E+03	0.991E+03
CM-247	0.240E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
CF-249	0.257E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
CF-251	0.869E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
ANH-511	0.550E-01	0.986E+02	0.447E-01	0.220E+01	0.125E+03	0.252E+04	0.264E+04

VMS Peak Search Report V1.9 Generated 3-MAY-2012 12:03:45

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Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G302440009.CNF;1
Analyses by       : PEAK V16.9
Sample title      : MXR1
Sample date       : 17-FEB-2012 13:15:00 Acquisition date : 3-MAY-2012 10:02:40
Sample ID         : G302440009 Sample quantity : 147.56 GRAM
Sample type       : SOLID Sample geometry :
Detector name     : GAMMA22 Detector geometry: CAN
Elapsed live time: 0 02:00:00.00 Elapsed real time: 0 02:00:01.56 0.0%
Start energy      : 0.64 keV End energy : 2048.09 keV
Sensitivity       : 5.00 Gaussian : 10.00
Critical level    : No
    
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Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	63.41	97	379	1.07	126.42	123	8	1.34E-02	36.4	
2	3	74.95	302	382	1.24	149.48	142	17	4.19E-02	12.3	8.00E-01
3	3	77.26	438	364	1.11	154.09	142	17	6.08E-02	8.9	
4	0	84.33	107	292	1.14	168.22	166	6	1.48E-02	27.1	
5	0	90.07	106	277	0.93	179.69	178	5	1.47E-02	25.5	
6	0	93.03	298	404	1.67	185.60	182	8	4.14E-02	13.2	
7	0	143.82	151	413	1.29	287.10	283	9	2.10E-02	25.5	
8	0	185.96	865	413	1.27	371.31	365	13	1.20E-01	5.9	
9	0	209.28	69	262	1.14	417.91	415	9	9.64E-03	43.5	
10	2	238.75	1000	213	1.36	476.81	470	17	1.39E-01	4.1	1.72E+00
11	2	241.77	211	165	1.78	482.86	470	17	2.93E-02	12.6	
12	0	270.50	82	216	1.10	540.27	536	10	1.15E-02	35.3	
13	0	295.30	314	191	1.31	589.84	585	10	4.37E-02	10.0	
14	0	328.62	92	141	1.57	656.44	652	10	1.28E-02	26.4	
15	0	338.44	216	180	1.30	676.06	671	11	2.99E-02	13.9	
16	0	352.06	539	236	1.63	703.28	696	16	7.49E-02	7.7	
17	0	510.88	388	244	2.20	1020.74	1011	22	5.39E-02	11.4	
18	0	583.08	354	124	1.87	1165.09	1158	17	4.92E-02	8.9	
19	0	609.19	396	153	1.73	1217.27	1209	17	5.49E-02	8.8	
20	0	727.50	108	66	2.34	1453.83	1447	15	1.51E-02	19.1	
21	0	861.01	53	64	3.70	1720.79	1715	16	7.36E-03	36.4	
22	0	910.99	252	61	1.99	1820.73	1814	17	3.50E-02	9.4	
23	0	968.23	259	74	2.80	1935.20	1923	25	3.59E-02	10.9	
24	0	1120.01	94	60	2.85	2238.79	2232	16	1.31E-02	20.6	
25	0	1460.34	789	32	3.08	2919.64	2906	24	1.10E-01	3.9	
26	0	1763.90	117	19	3.24	3527.12	3515	22	1.63E-02	12.1	

```

*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29407                          *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G302440009.CNF;1
Sample date        : 17-FEB-2012 13:15:00 Acquisition date : 3-MAY-2012 10:02:40.
Sample ID          : G302440009          Sample quantity  : 1.47560E+02 GRAM
Detector name      : GAM22              Detector geometry: CAN
Elapsed live time  : 0 02:00:00.00      Elapsed real time: 0 02:00:01.56  0.0%
Energy tolerance  : 1.50000 keV        Analyst Initials  : MXR1
Abundance limit   : 75.00000          Sensitivity       : 5.00000
Batch ID          : 1203837            Detector SN#      :
Matrix Spike ID   :                    LCS ID           : 1364
*****
    
```

Summary of Nuclide Activity

```

Total number of lines in spectrum      26
Number of unidentified lines           1
Number of lines tentatively identified by NID 25      96.15%
    
```

Nuclide Type :

Nuclide	Hlife	Decay	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
K-40	1.25E+09Y	1.00	8.300E+00	8.300E+00	1.098E+00	13.23	
TL-208	1.41E+10Y	1.00	2.392E-01	2.392E-01	0.540E-01	22.56	
BI-211	7.04E+08Y	1.00	1.968E+00	1.968E+00	0.370E+00	18.80	
PB-212	1.41E+10Y	1.00	8.906E-01	8.906E-01	1.180E-01	13.25	
BI-214	1600.00Y	1.00	5.232E-01	5.232E-01	1.165E-01	22.27	
PB-214	1600.00Y	1.00	7.141E-01	7.141E-01	1.399E-01	19.59	
RA-224	1.41E+10Y	1.00	2.137E+00	2.137E+00	0.572E+00	26.77	
RA-226	1600.00Y	1.00	5.232E-01	5.232E-01	1.165E-01	22.27	
AC-228	1.41E+10Y	1.00	7.639E-01	7.639E-01	2.078E-01	27.20	
RA-228	1.41E+10Y	1.00	7.639E-01	7.639E-01	2.078E-01	27.20	
TH-228	1.41E+10Y	1.00	8.906E-01	8.906E-01	1.180E-01	13.25	
TH-230	7.54E+04Y	1.00	5.232E-01	5.232E-01	1.132E-01	21.64	
TH-232	1.41E+10Y	1.00	7.639E-01	7.639E-01	2.078E-01	27.20	
TH-234	4.47E+09Y	1.00	7.672E-01	7.672E-01	15.24E-01	198.59	
U-235	7.04E+08Y	1.00	4.380E-01	4.380E-01	2.601E-01	59.39	
U-238	4.47E+09Y	1.00	7.672E-01	7.672E-01	15.24E-01	198.59	
AM-243	7370.00Y	1.00	2.395E-01	2.395E-01	0.620E-01	25.89	
ANH-511	1.00E+09Y	1.00	7.136E-02	7.136E-02	5.609E-02	78.61	
Total Activity :			2.128E+01	2.128E+01			

Grand Total Activity : 2.128E+01 2.128E+01

Flags: "K" = Keyline not found "M" = Manually accepted
 "E" = Manually edited "A" = Nuclide specific abn. limit

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
0	84.33	133	365	1.14	168.22	166	6	1.48E-02	54.2	7.14E+00	T
0	209.28	80	303	1.14	417.91	415	9	9.64E-03	87.1	7.58E+00	
0	270.50	93	244	1.10	540.27	536	10	1.15E-02	70.6	6.58E+00	T
0	328.62	102	157	1.57	656.44	652	10	1.28E-02	52.7	5.87E+00	T
0	727.50	112	68	2.34	1453.83	1447	15	1.51E-02	38.1	3.52E+00	T

Flags: "T" = Tentatively associated

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
K-40	1460.82	720	10.66*	2.072E+00	8.300E+00	8.300E+00	13.23
TL-208	277.37	-----	6.60	6.490E+00	-----	Line Not Found	-----
	583.19	328	85.00*	4.100E+00	2.392E-01	2.392E-01	22.56
	860.56	54	12.50	3.113E+00	3.520E-01	3.520E-01	74.22
BI-211	72.87	-----	1.23	5.722E+00	-----	Line Not Found	-----
	351.06	563	12.92*	5.633E+00	1.968E+00	1.968E+00	18.80
PB-212	74.82	381	10.28	6.019E+00	1.565E+00	1.565E+00	27.66
	77.11	532	17.10	6.328E+00	1.250E+00	1.250E+00	20.46
	238.63	1079	43.60*	7.065E+00	8.906E-01	8.906E-01	13.25
	300.09	-----	3.30	6.197E+00	-----	Line Not Found	-----
BI-214	609.32	372	45.49*	3.981E+00	5.232E-01	5.232E-01	22.27
	1120.29	93	14.92	2.543E+00	6.250E-01	6.251E-01	47.02
	1764.49	85	15.30	1.818E+00	7.780E-01	7.781E-01	33.88
PB-214	74.82	381	5.80	6.019E+00	2.775E+00	2.775E+00	27.08
	77.11	532	9.70	6.328E+00	2.204E+00	2.204E+00	22.06
	242.00	242	7.25	7.016E+00	1.209E+00	1.209E+00	27.39
	295.22	353	18.42	6.256E+00	7.797E-01	7.798E-01	22.82
	351.93	563	35.60*	5.633E+00	7.141E-01	7.141E-01	19.59
RA-224	240.99	242	4.10*	7.016E+00	2.137E+00	2.137E+00	26.77
RA-226	609.32	372	45.49*	3.981E+00	5.232E-01	5.232E-01	22.27
	1120.29	93	14.92	2.543E+00	6.250E-01	6.251E-01	47.02
	1764.49	85	15.30	1.818E+00	7.780E-01	7.781E-01	33.88
AC-228	338.32	228	11.27	5.769E+00	8.936E-01	8.936E-01	51.27
	911.20	231	25.80*	2.984E+00	7.639E-01	7.639E-01	27.20
	968.97	243	15.80	2.848E+00	1.371E+00	1.371E+00	37.16
RA-228	338.32	228	11.27	5.769E+00	8.936E-01	8.936E-01	51.27
	911.20	231	25.80*	2.984E+00	7.639E-01	7.639E-01	27.20
	968.97	243	15.80	2.848E+00	1.371E+00	1.371E+00	37.16
TH-228	74.82	381	10.28	6.019E+00	1.565E+00	1.565E+00	25.92
	77.11	532	17.10	6.328E+00	1.250E+00	1.250E+00	20.46
	238.63	1079	43.60*	7.065E+00	8.906E-01	8.906E-01	13.25
	300.09	-----	3.30	6.197E+00	-----	Line Not Found	-----
TH-230	609.32	372	45.49*	3.981E+00	5.232E-01	5.232E-01	21.64
	1120.29	93	14.92	2.543E+00	6.250E-01	6.250E-01	46.54
	1764.49	85	15.30	1.818E+00	7.780E-01	7.780E-01	33.88
TH-232	338.32	228	11.27	5.769E+00	8.936E-01	8.936E-01	31.03
	911.20	231	25.80*	2.984E+00	7.639E-01	7.639E-01	27.20
	968.97	243	15.80	2.848E+00	1.371E+00	1.371E+00	37.16
TH-234	63.29	47	3.70*	4.175E+00	7.672E-01	7.672E-01	198.59
	92.59	173	4.23	7.871E+00	1.323E+00	1.323E+00	62.01
U-235	89.96	131	3.47	7.653E+00	1.259E+00	1.259E+00	56.72
	93.35	173	5.60	7.871E+00	9.995E-01	9.995E-01	62.38
	143.76	165	10.96*	8.722E+00	4.380E-01	4.380E-01	59.39
	163.33	-----	5.08	8.430E+00	-----	Line Not Found	-----
	185.72	897	57.20	8.012E+00	4.978E-01	4.978E-01	15.88
	205.31	-----	5.01	7.648E+00	-----	Line Not Found	-----
U-238	63.29	47	3.70*	4.175E+00	7.672E-01	7.672E-01	198.59
	92.59	173	4.23	7.871E+00	1.323E+00	1.323E+00	58.58
AM-243	43.53	-----	5.90	8.682E-01	-----	Line Not Found	-----

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
	74.66	381	67.20*	6.019E+00	2.395E-01	2.395E-01	25.89
ANH-511	511.00	125	100.00*	4.470E+00	7.136E-02	7.136E-02	78.61

Flag: "*" = Keyline

Nuclide	Half-life	Half-Life Ratio	Energy	%Abund	Activity (pCi/GRAM)	2-Sigma %Error	Rejected by
SC-46	83.79D	0.91	889.28*	99.98	---	Not Found	---
			1120.55	99.99	1.748E-01	46.54	Abun.
			% Abundances Found =		50.00		
RU-103	39.26D	1.93	497.08*	91.00	---	Not Found	---
			610.33	5.76	1.578E+01	25.71	Abun.
			% Abundances Found =		5.95		
SN-126	2.30E+05Y	0.00	64.28	9.60	2.957E-01	198.32	Abun.
			86.94	8.90	---	Not Found	---
			87.57*	37.00	---	Not Found	---
% Abundances Found =		17.30					
LA-140	12.75D	5.95	328.76	20.30	1.355E+01	53.55	Abun.
			487.02	45.50	---	Not Found	---
			815.77	23.28	---	Not Found	---
			1596.21*	95.40	---	Not Found	---
% Abundances Found =		11.00					
ND-147	10.98D	6.91	91.11	27.90	1.887E+01	51.96	Abun.
			319.41	1.95	---	Not Found	---
			531.02*	13.10	---	Not Found	---
% Abundances Found =		64.96					
TA-182	114.43D	0.66	67.75	41.20	---	Not Found	---
			100.11	14.10	---	Not Found	---
			152.43	6.93	---	Not Found	---
			222.11	7.49	---	Not Found	---
			1121.30	34.90	4.232E-01	46.54	Abun.
			1189.05	16.20	---	Not Found	---
			1221.41*	27.00	---	Not Found	---
1231.02	11.44	---	Not Found	---			
% Abundances Found =		21.91					
IR-192	73.83D	1.03	295.96	28.72	1.020E+00	21.90	Abun.
			308.46	29.68	---	Not Found	---
			316.51*	82.71	---	Not Found	---
			468.07	47.81	---	Not Found	---
% Abundances Found =		15.20					
BI-207	32.90Y	0.01	72.81	21.40	---	Not Found	---
			74.97	35.70	4.528E-01	25.89	Abun.
			569.70	97.76	---	Not Found	---
			1063.66*	74.60	---	Not Found	---
			1770.23	6.87	---	Not Found	---
% Abundances Found =		15.11					
BI-212	1.41E+10Y	0.00	727.33*	6.67	1.214E+00	40.43	Abun.
			785.37	1.10	---	Not Found	---
			1620.50	1.47	---	Not Found	---
% Abundances Found =		72.19					

Nuclide	Half-life	Half-Life Ratio	Energy	%Abund	Activity (pCi/GRAM)	2-Sigma %Error	Rejected by	
RN-219	7.04E+08Y	0.00	271.23	10.80	3.341E-01	71.41	Abun.	
			401.81*	6.60	---	Not Found		---
			% Abundances Found =		62.07			
RA-223	7.04E+08Y	0.00	81.07	15.00	---	Not Found	---	Abun.
			83.79	24.70	1.925E-01	54.99		
			94.56	8.67	---	Not Found	---	
			144.24	3.27	1.468E+00	57.73		
			154.21	5.70	---	Not Found	---	
			269.46	13.90	2.596E-01	71.22		
			323.87*	3.99	---	Not Found	---	
			338.28	2.84	3.546E+00	32.16		
% Abundances Found =		57.27						
TH-229	7340.00Y	0.00	85.43	14.70	3.235E-01	54.99	Abun.	
			88.47	24.00	---	Not Found		---
			193.51*	4.41	---	Not Found		---
			210.85	2.80	---	Not Found		---
% Abundances Found =		32.02						
TH-231	7.04E+08Y	0.00	81.07	15.00	---	Not Found	---	Abun.
			83.79	24.70	1.925E-01	54.99		
			94.87	5.69	---	Not Found	---	
			144.24	3.27	1.468E+00	57.73		
			154.21	5.70	---	Not Found	---	
			269.46	13.90	2.596E-01	71.22		
			323.87*	3.99	---	Not Found	---	
			338.28	2.84	3.546E+00	32.16		
% Abundances Found =		59.54						

Flag: "*" = Keyline

 * GEL Laboratories LLC *
 * 2040 Savage Road *
 * Charleston, SC 29407 *
 * GAMMA SPECTROSCOPY BACKGROUND REPORT *

ENERGY	MDA COUNTS
43.53	201.7213
46.54	185.8084
49.72	0.0000
57.36	0.0000
57.53	218.1716
59.54	199.0065
63.29	283.2900
63.29	283.2900
64.28	287.9028
67.75	315.1866
69.67	306.7274
70.83	332.5206
72.81	335.5056
72.87	335.5948
72.87	335.5948
74.66	338.2567
74.82	338.4923
74.82	338.4923
74.82	338.4923
74.97	338.7137
77.11	341.8487
77.11	341.8487
77.11	341.8487
79.69	310.1278
79.69	310.1278
80.12	289.9670
80.19	0.0000
80.57	284.5752
81.00	305.8630
81.07	305.9510
81.07	305.9510
83.79	312.3221
83.79	312.3221
85.43	445.8265
86.55	309.6451
86.79	309.9299
86.94	310.1120
87.57	301.7192
88.03	311.4100
88.47	311.9314
89.96	588.9321
91.11	352.0961
92.59	327.6205
92.59	327.6205
93.35	339.4275
94.56	267.4132
94.65	267.4993
94.67	267.5189
94.87	267.7107
97.43	306.4834
98.43	308.6104
98.44	308.6208
99.53	277.9579
100.11	257.2505
103.18	319.0067
103.37	319.2091
105.31	254.1973
106.12	298.2523
109.28	300.2032
111.00	301.8379
111.76	0.0000
116.30	0.0000
117.23	334.5998
121.12	278.2668
121.78	306.1125
122.06	308.6380
123.07	306.1115

131.20	298.8303
133.02	346.9774
133.52	317.4609
136.00	312.4580
136.47	327.9537
140.51	0.0000
140.51	0.0000
143.76	335.0613
144.24	316.2437
144.24	316.2437
145.44	324.4688
152.43	308.0311
153.25	277.1211
154.21	297.2607
154.21	297.2607
156.02	337.7124
158.56	318.1306
159.00	300.6030
162.66	345.7492
163.33	336.7858
165.86	351.0981
176.60	294.8942
177.52	300.3575
181.07	0.0000
184.41	301.6714
185.72	284.5599
193.51	302.1115
197.04	284.8428
205.31	292.6053
210.85	272.1953
215.65	273.6911
222.11	257.6272
227.38	270.6916
228.16	0.0000
228.18	276.4330
235.69	304.9405
235.96	298.1019
235.96	298.1019
238.63	261.5339
238.63	261.5339
240.99	262.5276
242.00	237.6458
244.70	226.2906
252.40	0.0000
252.80	239.4553
256.23	231.7123
256.23	231.7123
260.90	0.0000
264.66	210.8904
268.22	199.9994
269.46	204.9476
269.46	204.9476
271.23	177.8705
273.65	232.3431
276.40	237.8898
277.37	205.3450
277.60	204.2520
278.00	206.2253
279.20	218.6688
279.54	220.6368
280.46	218.1239
283.69	213.4884
284.31	0.0000
285.41	224.3192
285.90	0.0000
287.50	208.9624
293.27	0.0000
295.22	220.6662
295.96	257.0636
298.57	184.7098
299.98	212.1744
299.98	212.1744
300.09	210.6086
300.09	210.6086
300.13	210.6194
300.13	210.6194
301.36	204.1111
302.85	229.6261

304.50	239.7506
304.50	239.7506
304.85	228.2991
308.46	195.4927
311.90	206.0737
311.90	206.0737
316.51	188.7027
319.41	186.4421
320.08	196.4185
323.87	192.4078
323.87	192.4078
328.76	184.6263
333.37	154.7124
334.37	154.8978
334.37	154.8978
338.28	185.7407
338.28	185.7407
338.32	185.7498
338.32	185.7498
338.32	185.7498
340.48	166.0897
340.48	166.0897
340.55	166.1038
344.28	175.2546
345.93	188.4226
351.06	167.1210
351.93	167.2872
356.01	131.5135
364.49	0.0000
366.42	0.0000
383.85	181.6981
388.16	150.6861
388.63	163.5009
391.69	148.0455
400.66	168.7616
401.81	167.8809
402.40	148.5993
404.85	160.8407
410.95	142.2738
414.70	156.9727
423.72	148.4604
427.09	136.9895
427.87	137.0926
433.94	142.5123
453.88	147.0482
463.37	123.5889
468.07	198.5663
473.00	0.0000
476.78	146.2140
477.60	127.0653
482.18	147.8623
487.02	120.3319
492.35	0.0000
497.08	121.3549
511.00	128.6934
514.00	139.4982
527.90	0.0000
529.87	0.0000
531.02	122.7198
537.26	112.2014
546.56	0.0000
563.25	100.0056
569.33	129.4530
569.50	127.3993
569.70	128.4527
583.19	119.2579
600.60	133.4520
602.73	107.2853
604.72	125.6425
609.32	131.0679
609.32	131.0679
609.32	131.0679
610.33	116.9933
614.28	119.1455
618.01	110.9500
621.93	115.0089
621.93	115.0089
633.25	94.2270

635.95	96.7220
636.99	0.0000
645.85	115.1409
657.76	117.9243
661.66	92.6833
661.66	92.6833
664.57	0.0000
666.33	105.2917
666.50	105.3033
677.62	82.1622
685.70	0.0000
695.00	108.1602
696.49	116.9592
696.51	116.9592
697.00	116.9951
702.65	98.9637
706.68	122.5481
711.68	121.9417
720.70	125.2950
721.93	0.0000
722.78	111.7009
722.91	111.7108
723.31	104.8605
724.19	106.6344
727.33	92.5542
733.00	79.5258
735.93	109.2946
739.50	0.0000
747.24	108.5704
752.31	90.9048
753.82	104.9799
756.73	97.1404
763.94	122.6744
765.81	108.7119
766.42	112.7754
777.92	0.0000
778.90	125.7277
783.70	0.0000
785.37	88.5263
795.86	93.1249
801.95	102.6716
810.29	94.8798
810.76	96.9654
815.77	89.9843
818.51	82.8627
832.01	109.5264
834.85	87.7500
836.80	0.0000
846.77	100.9018
856.80	97.9824
860.56	70.3849
871.09	69.5146
873.19	68.1674
875.33	0.0000
879.36	80.1270
880.51	71.6210
883.24	81.3504
884.68	89.9766
889.28	85.4819
898.04	93.3926
911.20	97.7821
911.20	97.7821
911.20	97.7821
926.50	94.6660
937.49	86.5022
944.13	79.0546
946.00	72.3690
949.00	73.4348
962.29	67.4005
964.08	62.2656
966.15	63.2980
968.97	63.3784
968.97	63.3784
968.97	63.3784
983.53	68.6980
996.26	82.9016
1001.03	77.1407
1004.73	75.2845

1037.84	86.4068
1038.76	0.0000
1048.07	77.6956
1050.41	76.7607
1050.41	76.7607
1063.66	78.2008
1085.87	80.9625
1099.45	70.0690
1112.07	58.9149
1115.54	58.9948
1120.29	91.4294
1120.29	91.4294
1120.29	91.4294
1120.55	89.3594
1121.30	101.6271
1131.51	0.0000
1173.23	91.1860
1177.93	77.5380
1189.05	84.3791
1204.77	68.6582
1221.41	69.0752
1231.02	125.1511
1235.36	66.5293
1238.28	72.3918
1260.41	0.0000
1271.85	63.4854
1274.44	72.3419
1274.54	71.3663
1291.59	43.2695
1298.22	0.0000
1312.11	46.5436
1332.49	44.8694
1365.19	49.3868
1368.63	0.0000
1384.29	80.1165
1408.01	53.1355
1457.56	0.0000
1460.82	41.1340
1489.16	44.0029
1505.03	47.3706
1596.21	56.4155
1620.50	37.2133
1678.03	0.0000
1690.97	22.9584
1764.49	25.9001
1764.49	25.9001
1764.49	25.9001
1770.23	24.0853
1771.35	20.3857
1791.20	0.0000
1836.06	37.2929

VAX/VMS Nuclide Identification Report Generated 3-MAY-2012 12:04:27.66

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*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29407                            *
*****
Configuration   : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G302440010.CNF;1
Background file : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]BKG_GAM31.CNF;65
Background date : 29-APR-2012 10:52:08
Sample date     : 20-FEB-2012 12:35:00 Acquisition date : 3-MAY-2012 10:03:01.
Sample ID      : G302440010 Sample quantity   : 1.70470E+02 GRAM
Detector name  : GAM31 Detector geometry: CAN
Elapsed live time: 0 02:00:00.00 Elapsed real time: 0 02:00:13.86 0.2%
Energy tolerance : 1.50000 keV Analyst Initials : MXR1
Abundance limit : 75.00000 Sensitivity      : 5.00000
Batch ID       : 1203837 Detector SN#    :
Matrix Spike ID : LCS ID              : 1364
*****

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Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	46.42*	136	477	1.13	92.18	88	8	1.89E-02	30.7	
2	0	53.61	153	532	1.05	106.55	103	8	2.12E-02	27.4	
3	0	63.20*	119	776	1.08	125.73	121	10	1.66E-02	46.5	
4	3	75.10	438	428	1.17	149.53	143	15	6.09E-02	9.1	3.25E+00
5	3	77.27*	538	329	0.93	153.87	143	15	7.48E-02	7.2	
6	8	84.46*	115	337	1.04	168.26	163	28	1.60E-02	27.4	2.50E+00
7	8	87.37	185	319	1.04	174.08	163	28	2.57E-02	16.5	
8	8	90.13	133	301	0.98	179.60	163	28	1.85E-02	22.3	
9	8	93.00*	195	374	1.27	185.34	163	28	2.70E-02	20.5	
10	0	144.14	151	253	0.74	287.60	284	9	2.09E-02	20.7	
11	0	163.94	87	200	1.11	327.20	323	9	1.20E-02	31.4	
12	0	186.00*	606	280	1.18	371.32	367	11	8.42E-02	7.0	
13	0	209.58	84	162	0.89	418.48	415	8	1.17E-02	28.5	
14	4	238.78*	640	116	1.05	476.87	472	18	8.89E-02	4.9	8.06E-01
15	4	241.78	175	147	1.74	482.87	472	18	2.44E-02	17.6	
16	0	271.00	58	153	0.73	541.31	535	11	8.11E-03	43.1	
17	0	295.49*	175	143	1.29	590.29	584	11	2.44E-02	15.6	
18	0	301.29	22	117	0.91	601.87	596	8	3.00E-03	89.7	
19	0	338.49	155	100	1.01	676.28	672	10	2.15E-02	14.4	
20	0	352.15*	341	148	1.18	703.60	698	13	4.74E-02	9.4	
21	0	464.28	25	68	1.44	927.83	920	9	3.51E-03	62.0	
22	0	511.22*	88	103	1.96	1021.72	1012	20	1.22E-02	34.7	
23	0	583.60*	203	98	1.10	1166.47	1160	13	2.82E-02	12.6	
24	0	609.53*	248	66	1.54	1218.31	1213	14	3.45E-02	9.6	
25	0	728.74	76	49	6.16	1456.73	1447	19	1.06E-02	25.3	
26	0	911.42*	158	48	1.71	1822.06	1816	15	2.20E-02	12.6	
27	0	969.11	71	31	1.47	1937.44	1933	10	9.84E-03	18.8	
28	0	1120.21*	59	17	1.61	2239.62	2234	15	8.20E-03	20.8	
29	0	1238.76	34	24	1.61	2476.72	2469	12	4.73E-03	33.5	
30	0	1460.87*	282	10	1.63	2920.91	2914	13	3.91E-02	6.5	
31	0	1764.19	39	3	2.21	3527.55	3520	13	5.45E-03	18.5	

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

VAX/VMS Nuclide Identification Report Generated

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*****
*
*           GEL Laboratories LLC
*           2040 Savage Road
*           Charleston, SC 29407
*****
*
*           DETECTOR DATA
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G302440010.CNF;1
* Acquisition date   : 3-MAY-2012 10:03:01 Detector SN#      :
* Detector ID        : GAM31                               Sensitivity       : 5.000
* Geometry           : CAN                                 Energy tolerance  : 1.500
* Elapsed live time  : 0 02:00:00.00                      Abundance limit  : 75.000
* Elapsed real time  : 0 02:00:13.86                      Half life ratio  : 8.000
*****
*
*           SAMPLE DATA
*
* Sample date        : 20-FEB-2012 12:35:00 Nuclide Library  : SOLID
* Sample ID          : G302440010                          Analyst initials  : MXR1
* Batch Number       : 1203837                              Sample Quantity  : 1.7047E+02 GRAM
* Recovery           : 1.00000                              Carrier Weight   : 0.00000
*****
*
*           QC DATA
*
* Standard Weight    : 0.00000
* CALIB. DATE/TIME  : 28-MAR-2012 10:41:04 MS Isotope      :
* MSD DPM            : 0.000                               MSD Isotope      :
* LCS DPM            : 0.000                               LCS Isotope      :
* LCSD DPM           : 0.000                               LCSD Isotope     :
*****

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Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act error (1.96-sigma)	MDA (pCi/GRAM)	
K-40	7.775E+00	1.188E+00	6.288E-01	0.000E+00
CD-109	2.928E+00	9.867E-01	1.008E+00	0.000E+00
SN-126	2.624E-01	8.843E-02	9.022E-02	0.000E+00
CE-141	8.983E-01	3.743E-01	3.174E-01	0.000E+00
TL-208	3.713E-01	9.808E-02	6.945E-02	0.000E+00
PB-210	1.954E+00	1.187E+00	9.892E-01	0.000E+00
BI-211	2.831E+00	5.969E-01	3.621E-01	0.000E+00
PB-212	1.195E+00	1.782E-01	9.142E-02	0.000E+00
BI-214	8.751E-01	1.870E-01	1.211E-01	0.000E+00
PB-214	1.028E+00	2.237E-01	1.227E-01	0.000E+00
RA-224	3.514E+00	1.265E+00	9.807E-01	0.000E+00
RA-226	8.751E-01	1.870E-01	1.211E-01	0.000E+00
AC-228	1.307E+00	3.642E-01	2.619E-01	0.000E+00
RA-228	1.307E+00	3.642E-01	2.619E-01	0.000E+00
TH-228	1.195E+00	1.782E-01	9.142E-02	0.000E+00
TH-229	4.646E-02	4.615E-01	8.576E-01	0.000E+00
TH-230	8.750E-01	1.814E-01	1.211E-01	0.000E+00
PA-231	-6.865E-01	1.266E+00	2.356E+00	0.000E+00
TH-232	1.307E+00	3.642E-01	2.619E-01	0.000E+00
TH-234	1.719E+00	1.595E+00	1.110E+00	0.000E+00
U-235	8.358E-01	3.680E-01	3.099E-01	0.000E+00
U-238	1.719E+00	1.595E+00	1.110E+00	0.000E+00
AM-243	3.401E-01	6.724E-02	5.454E-02	0.000E+00
ANH-511	1.237E-01	8.489E-02	4.737E-02	0.000E+00

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Act error (1.96-sigma)	MDA (pCi/GRAM)	
BE-7	4.482E-01	6.236E-01	1.234E+00	0.000E+00 NOT IDENT.
NA-22	-2.430E-02	3.632E-02	6.302E-02	0.000E+00 NOT IDENT.
NA-24	0.000E+00	5.450E+33	0.000E+00	0.000E+00 SHORT HLIF

SC-46	5.198E-03	6.001E-02	1.135E-01	0.000E+00	FAIL ABUN
V-48	5.127E-01	7.469E-01	1.562E+00	0.000E+00	NOT IDENT.
CR-51	2.917E-01	1.388E+00	2.697E+00	0.000E+00	NOT IDENT.
MN-54	1.153E-02	4.073E-02	7.828E-02	0.000E+00	NOT IDENT.
CO-56	-1.465E-02	6.493E-02	1.187E-01	0.000E+00	FAIL ABUN
CO-57	7.778E-03	2.315E-02	4.517E-02	0.000E+00	NOT IDENT.
CO-58	-2.153E-02	6.615E-02	1.202E-01	0.000E+00	NOT IDENT.
FE-59	-1.728E-02	1.846E-01	3.532E-01	0.000E+00	NOT IDENT.
CO-60	4.725E-02	3.905E-02	8.463E-02	0.000E+00	NOT IDENT.
ZN-65	-3.487E-03	9.597E-02	1.584E-01	0.000E+00	NOT IDENT.
SE-75	2.002E-02	5.649E-02	1.046E-01	0.000E+00	NOT IDENT.
SR-85	1.063E-01	7.807E-02	1.426E-01	0.000E+00	NOT IDENT.
Y-88	4.697E-02	5.687E-02	1.269E-01	0.000E+00	NOT IDENT.
Y-91	-2.412E+00	3.627E+01	6.827E+01	0.000E+00	NOT IDENT.
NB-94	1.433E-02	3.427E-02	6.688E-02	0.000E+00	NOT IDENT.
NB-95	-3.168E-02	8.042E-02	1.450E-01	0.000E+00	NOT IDENT.
NB-95M	2.616E-02	2.110E-01	3.671E-01	0.000E+00	NOT IDENT.
ZR-95	1.290E-01	1.227E-01	2.557E-01	0.000E+00	NOT IDENT.
MO-99	0.000E+00	2.886E+07	0.000E+00	0.000E+00	SHORT HLIF
TC-99M	0.000E+00	2.241E+41	0.000E+00	0.000E+00	SHORT HLIF
RU-103	-5.699E-03	1.112E-01	2.044E-01	0.000E+00	FAIL ABUN
RH-106	-2.294E-02	3.475E-01	6.621E-01	0.000E+00	NOT IDENT.
RU-106	-2.294E-02	3.475E-01	6.621E-01	0.000E+00	NOT IDENT.
AG-108M	-6.507E-03	2.813E-02	5.163E-02	0.000E+00	NOT IDENT.
AG-110M	-3.207E-02	5.151E-02	8.931E-02	0.000E+00	NOT IDENT.
SN-113	-6.969E-02	5.964E-02	1.015E-01	0.000E+00	NOT IDENT.
CD-115	0.000E+00	6.886E+08	0.000E+00	0.000E+00	SHORT HLIF
SN-117M	-2.551E-01	8.842E-01	1.556E+00	0.000E+00	NOT IDENT.
TE-123M	-1.310E-02	3.588E-02	5.856E-02	0.000E+00	NOT IDENT.
SB-124	-5.932E-02	1.109E-01	2.042E-01	0.000E+00	NOT IDENT.
SB-125	-6.082E-02	8.795E-02	1.550E-01	0.000E+00	FAIL ABUN
TE-125M	1.052E+01	1.566E+01	3.099E+01	0.000E+00	NOT IDENT.
I-126	9.573E-01	4.748E+00	9.196E+00	0.000E+00	NOT IDENT.
SB-126	-5.838E-01	3.717E+00	6.006E+00	0.000E+00	NOT IDENT.
SB-127	0.000E+00	3.997E+04	0.000E+00	0.000E+00	SHORT HLIF
I-131	0.000E+00	1.450E+01	0.000E+00	0.000E+00	SHORT HLIF
TE-132	0.000E+00	1.681E+05	0.000E+00	0.000E+00	SHORT HLIF
BA-133	-4.674E-03	4.061E-02	6.714E-02	0.000E+00	NOT IDENT.
I-133	0.000E+00	6.249E+23	0.000E+00	0.000E+00	SHORT HLIF
CS-134	3.118E-02	4.468E-02	8.863E-02	0.000E+00	NOT IDENT.
CS-135	-8.520E-02	1.560E-01	2.539E-01	0.000E+00	NOT IDENT.
I-135	0.000E+00	1.733E+41	0.000E+00	0.000E+00	SHORT HLIF
CS-136	1.285E+00	1.787E+00	3.774E+00	0.000E+00	NOT IDENT.
BA-137M	-2.094E-02	3.462E-02	6.236E-02	0.000E+00	NOT IDENT.
CS-137	-2.212E-02	3.657E-02	6.587E-02	0.000E+00	NOT IDENT.
CE-139	2.541E-02	3.657E-02	6.409E-02	0.000E+00	NOT IDENT.
BA-140	-3.634E+00	5.550E+00	9.968E+00	0.000E+00	FAIL ABUN
LA-140	-2.931E+00	1.985E+00	2.913E+00	0.000E+00	NOT IDENT.
CE-143	0.000E+00	6.382E+14	0.000E+00	0.000E+00	SHORT HLIF
CE-144	-7.542E-02	1.780E-01	3.316E-01	0.000E+00	NOT IDENT.
PM-144	-7.017E-03	3.689E-02	6.880E-02	0.000E+00	NOT IDENT.
PR-144	-5.529E-01	2.845E+00	5.303E+00	0.000E+00	NOT IDENT.
PM-146	-8.210E-03	4.066E-02	7.455E-02	0.000E+00	NOT IDENT.
ND-147	-4.341E+00	1.852E+01	3.553E+01	0.000E+00	FAIL ABUN
PM-149	0.000E+00	5.678E+09	0.000E+00	0.000E+00	SHORT HLIF
EU-152	-5.395E-02	9.194E-02	1.536E-01	0.000E+00	NOT IDENT.
GD-153	-6.306E-02	7.772E-02	1.291E-01	0.000E+00	NOT IDENT.
EU-154	-6.374E-02	1.005E-01	1.752E-01	0.000E+00	NOT IDENT.
EU-155	7.945E-02	8.313E-02	1.668E-01	0.000E+00	FAIL ABUN
TB-160	1.308E-02	2.281E-01	4.309E-01	0.000E+00	FAIL ABUN
HO-166M	2.456E-02	6.044E-02	1.184E-01	0.000E+00	NOT IDENT.
HF-181	-7.436E-02	1.047E-01	1.815E-01	0.000E+00	NOT IDENT.
TA-182	3.688E-02	2.494E-01	4.762E-01	0.000E+00	FAIL ABUN
IR-192	-2.433E-03	4.869E-02	9.350E-02	0.000E+00	FAIL ABUN
HG-203	1.063E-01	8.353E-02	1.705E-01	0.000E+00	NOT IDENT.
BI-207	7.716E-03	4.734E-02	9.283E-02	0.000E+00	FAIL ABUN
PB-211	-5.976E-01	7.359E-01	1.187E+00	0.000E+00	NOT IDENT.
BI-212	0.000E+00	1.066E+00	1.150E+00	0.000E+00	FAIL ABUN
RN-219	2.293E-01	3.550E-01	7.016E-01	0.000E+00	FAIL ABUN
RA-223	-2.421E-01	6.069E-01	1.125E+00	0.000E+00	FAIL ABUN
AC-227	1.597E-01	2.108E-01	4.264E-01	0.000E+00	FAIL ABUN
TH-227	1.597E-01	2.110E-01	4.264E-01	0.000E+00	FAIL ABUN
TH-231	-2.421E-01	6.069E-01	1.125E+00	0.000E+00	FAIL ABUN
PA-233	-2.699E-02	5.413E-02	1.005E-01	0.000E+00	FAIL ABUN
PA-234	2.819E-02	2.586E-01	4.926E-01	0.000E+00	NOT IDENT.
PA-234M	-6.837E-01	4.356E+00	8.429E+00	0.000E+00	NOT IDENT.
NP-237	-2.699E-02	5.416E-02	1.005E-01	0.000E+00	FAIL ABUN
NP-239	1.720E-04	3.037E-01	5.858E-01	0.000E+00	NOT IDENT.

AM-241	-4.698E-03	6.347E-02	1.145E-01	0.000E+00	NOT IDENT.
CM-247	2.053E-03	3.283E-02	6.228E-02	0.000E+00	NOT IDENT.
CF-249	-7.902E-03	3.762E-02	6.980E-02	0.000E+00	NOT IDENT.
CF-251	3.973E-02	1.146E-01	2.171E-01	0.000E+00	NOT IDENT.

Gamma Spectroscopy Auxillary Report

Sample:G302440010

Nuclide	TPU	LLD	EFF	FWHM	TArea	TBack	TCounts
BE-7	0.624E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
NA-22	0.363E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
NA-24	0.196E+17	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
K-40	0.119E+01	0.118E+03	0.731E-02	0.163E+01	0.275E+03	0.100E+03	0.375E+03
SC-46	0.600E-01	0.106E+03	0.000E+00	0.000E+00	0.599E+02	0.809E+02	0.141E+03
V-48	0.747E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
CR-51	0.139E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
MN-54	0.407E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
CO-56	0.649E-01	0.112E+03	0.000E+00	0.000E+00	0.340E+02	0.240E+02	0.580E+02
CO-57	0.232E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
CO-58	0.661E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
FE-59	0.185E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
CO-60	0.390E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
ZN-65	0.960E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
SE-75	0.565E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
SR-85	0.781E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Y-88	0.569E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Y-91	0.363E+02	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
NB-94	0.343E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
NB-95	0.804E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
NB-95M	0.211E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
ZR-95	0.123E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
MO-99	0.289E+08	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
TC-99M	0.196E+17	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
RU-103	0.111E+00	0.115E+03	0.000E+00	0.000E+00	0.273E+03	0.155E+03	0.429E+03
RH-106	0.348E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
RU-106	0.348E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
AG-108M	0.281E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
CD-109	0.987E+00	0.692E+02	0.578E-01	0.104E+01	0.255E+03	0.439E+03	0.694E+03
AG-110M	0.515E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
SN-113	0.596E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
CD-115	0.689E+09	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
SN-117M	0.884E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
TE-123M	0.359E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
SB-124	0.111E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
SB-125	0.879E-01	0.879E+02	0.000E+00	0.000E+00	0.288E+02	0.772E+02	0.106E+03
TE-125M	0.157E+02	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
I-126	0.475E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
SB-126	0.372E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
SN-126	0.884E-01	0.768E+02	0.578E-01	0.104E+01	0.680E+03	0.282E+04	0.350E+04
SB-127	0.400E+05	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
I-131	0.145E+02	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
TE-132	0.168E+06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
BA-133	0.406E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
I-133	0.196E+17	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
CS-134	0.447E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
CS-135	0.156E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
I-135	0.196E+17	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
CS-136	0.179E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
BA-137M	0.346E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
CS-137	0.366E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
CE-139	0.366E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
BA-140	0.555E+01	0.702E+02	0.000E+00	0.000E+00	0.112E+03	0.258E+03	0.369E+03
LA-140	0.199E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
CE-141	0.374E+00	0.735E+02	0.473E-01	0.743E+00	0.197E+03	0.330E+03	0.527E+03
CE-143	0.638E+15	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
CE-144	0.178E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
PM-144	0.369E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
PR-144	0.284E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
PM-146	0.407E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
ND-147	0.185E+02	0.779E+02	0.000E+00	0.000E+00	0.182E+03	0.154E+04	0.172E+04
PM-149	0.568E+10	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
EU-152	0.919E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
GD-153	0.777E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
EU-154	0.100E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
EU-155	0.831E-01	0.692E+02	0.000E+00	0.000E+00	0.255E+03	0.439E+03	0.694E+03
TB-160	0.228E+00	0.692E+02	0.000E+00	0.000E+00	0.255E+03	0.439E+03	0.694E+03
HO-166M	0.604E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
HF-181	0.105E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
TA-182	0.249E+00	0.106E+03	0.000E+00	0.000E+00	0.599E+02	0.809E+02	0.141E+03

IR-192	0.487E-01	0.913E+02	0.000E+00	0.000E+00	0.211E+03	0.238E+03	0.449E+03
HG-203	0.835E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
BI-207	0.473E-01	0.808E+02	0.000E+00	0.000E+00	0.612E+03	0.801E+03	0.141E+04
TL-208	0.981E-01	0.138E+03	0.157E-01	0.110E+01	0.225E+03	0.275E+03	0.499E+03
PB-210	0.119E+01	0.989E+02	0.532E-01	0.113E+01	0.199E+03	0.119E+04	0.139E+04
BI-211	0.597E+00	0.110E+03	0.242E-01	0.118E+01	0.402E+03	0.331E+03	0.733E+03
PB-211	0.736E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
BI-212	0.107E+01	0.106E+03	0.130E-01	0.616E+01	0.820E+02	0.524E+02	0.134E+03
PB-212	0.178E+00	0.757E+02	0.334E-01	0.105E+01	0.218E+04	0.201E+04	0.419E+04
BI-214	0.187E+00	0.998E+02	0.151E-01	0.154E+01	0.371E+03	0.239E+03	0.609E+03
PB-214	0.224E+00	0.959E+02	0.242E-01	0.118E+01	0.219E+04	0.247E+04	0.466E+04
RN-219	0.355E+00	0.864E+02	0.000E+00	0.000E+00	0.710E+02	0.185E+03	0.256E+03
RA-223	0.607E+00	0.739E+02	0.000E+00	0.000E+00	0.540E+03	0.115E+04	0.169E+04
RA-224	0.127E+01	0.844E+02	0.330E-01	0.174E+01	0.216E+03	0.443E+03	0.659E+03
RA-226	0.187E+00	0.998E+02	0.151E-01	0.154E+01	0.371E+03	0.239E+03	0.609E+03
AC-227	0.211E+00	0.822E+02	0.000E+00	0.000E+00	0.259E+02	0.141E+03	0.167E+03
TH-227	0.211E+00	0.822E+02	0.000E+00	0.000E+00	0.259E+02	0.141E+03	0.167E+03
AC-228	0.364E+00	0.117E+03	0.108E-01	0.171E+01	0.422E+03	0.300E+03	0.722E+03
RA-228	0.364E+00	0.117E+03	0.108E-01	0.171E+01	0.422E+03	0.300E+03	0.722E+03
TH-228	0.178E+00	0.757E+02	0.334E-01	0.105E+01	0.218E+04	0.201E+04	0.419E+04
TH-229	0.461E+00	0.709E+02	0.000E+00	0.000E+00	0.520E+03	0.134E+04	0.186E+04
TH-230	0.181E+00	0.998E+02	0.151E-01	0.154E+01	0.371E+03	0.239E+03	0.609E+03
PA-231	0.127E+01	0.822E+02	0.000E+00	0.000E+00	0.259E+02	0.141E+03	0.167E+03
TH-231	0.607E+00	0.739E+02	0.000E+00	0.000E+00	0.540E+03	0.115E+04	0.169E+04
TH-232	0.364E+00	0.117E+03	0.108E-01	0.171E+01	0.422E+03	0.300E+03	0.722E+03
PA-233	0.541E-01	0.822E+02	0.000E+00	0.000E+00	0.259E+02	0.141E+03	0.167E+03
PA-234	0.259E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
PA-234M	0.436E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
TH-234	0.159E+01	0.983E+02	0.586E-01	0.108E+01	0.435E+03	0.358E+04	0.401E+04
U-235	0.368E+00	0.918E+02	0.473E-01	0.743E+00	0.153E+04	0.474E+04	0.626E+04
NP-237	0.542E-01	0.822E+02	0.000E+00	0.000E+00	0.259E+02	0.141E+03	0.167E+03
U-238	0.159E+01	0.983E+02	0.586E-01	0.108E+01	0.435E+03	0.358E+04	0.401E+04
NP-239	0.304E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
AM-241	0.635E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
AM-243	0.672E-01	0.808E+02	0.590E-01	0.117E+01	0.612E+03	0.801E+03	0.141E+04
CM-247	0.328E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
CF-249	0.376E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
CF-251	0.115E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
ANH-511	0.849E-01	0.176E+03	0.176E-01	0.196E+01	0.987E+02	0.134E+04	0.144E+04


```

Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G302440010.CNF;1
Analyses by       : PEAK V16.9
Sample title      : MXR1
Sample date       : 20-FEB-2012 12:35:00 Acquisition date : 3-MAY-2012 10:03:01
Sample ID        : G302440010 Sample quantity   : 170.47 GRAM
Sample type      : SOLID Sample geometry    :
Detector name    : GAMMA31 Detector geometry: CAN
Elapsed live time: 0 02:00:00.00 Elapsed real time: 0 02:00:13.86 0.2%
Start energy     : 0.83 keV End energy      : 2048.42 keV
Sensitivity      : 5.00 Gaussian           : 10.00
Critical level   : No
    
```

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	46.42	195	477	1.13	92.18	88	8	2.71E-02	20.7	
2	0	53.61	153	532	1.05	106.55	103	8	2.12E-02	27.4	
3	0	63.20	220	776	1.08	125.73	121	10	3.06E-02	24.6	
4	3	75.10	438	428	1.17	149.53	143	15	6.09E-02	9.1	3.25E+00
5	3	77.27	563	329	0.93	153.87	143	15	7.82E-02	6.8	
6	8	84.46	144	337	1.04	168.26	163	28	2.00E-02	21.2	2.50E+00
7	8	87.37	185	319	1.04	174.08	163	28	2.57E-02	16.5	
8	8	90.13	133	301	0.98	179.60	163	28	1.85E-02	22.3	
9	8	93.00	329	374	1.27	185.34	163	28	4.57E-02	11.9	
10	0	144.14	151	253	0.74	287.60	284	9	2.09E-02	20.7	
11	0	163.94	87	200	1.11	327.20	323	9	1.20E-02	31.4	
12	0	186.00	681	280	1.18	371.32	367	11	9.46E-02	6.1	
13	0	209.58	84	162	0.89	418.48	415	8	1.17E-02	28.5	
14	4	238.78	671	116	1.05	476.87	472	18	9.32E-02	4.6	8.06E-01
15	4	241.78	175	147	1.74	482.87	472	18	2.44E-02	17.6	
16	0	271.00	58	153	0.73	541.31	535	11	8.11E-03	43.1	
17	0	295.49	183	143	1.29	590.29	584	11	2.55E-02	14.6	
18	0	301.29	22	117	0.91	601.87	596	8	3.00E-03	89.7	
19	0	338.49	155	100	1.01	676.28	672	10	2.15E-02	14.4	
20	0	352.15	360	148	1.18	703.60	698	13	5.00E-02	8.8	
21	0	464.28	25	68	1.44	927.83	920	9	3.51E-03	62.0	
22	0	511.22	235	103	1.96	1021.72	1012	20	3.26E-02	12.5	
23	0	583.60	223	98	1.10	1166.47	1160	13	3.10E-02	11.3	
24	0	609.53	258	66	1.54	1218.31	1213	14	3.59E-02	9.1	
25	0	728.74	76	49	6.16	1456.73	1447	19	1.06E-02	25.3	
26	0	911.42	170	48	1.71	1822.06	1816	15	2.36E-02	11.6	
27	0	969.11	71	31	1.47	1937.44	1933	10	9.84E-03	18.8	
28	0	1120.21	67	17	1.61	2239.62	2234	15	9.26E-03	17.8	
29	0	1238.76	34	24	1.61	2476.72	2469	12	4.73E-03	33.5	
30	0	1460.87	292	10	1.63	2920.91	2914	13	4.06E-02	6.2	
31	0	1764.19	39	3	2.21	3527.55	3520	13	5.45E-03	18.5	

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*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29407                          *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G302440010.CNF;1
Sample date        : 20-FEB-2012 12:35:00 Acquisition date : 3-MAY-2012 10:03:01.
Sample ID          : G302440010          Sample quantity  : 1.70470E+02 GRAM
Detector name     : GAM31                Detector geometry: CAN
Elapsed live time : 0 02:00:00.00        Elapsed real time: 0 02:00:13.86  0.2%
Energy tolerance  : 1.50000 keV         Analyst Initials  : MXR1
Abundance limit   : 75.00000           Sensitivity       : 5.00000
Batch ID          : 1203837             Detector SN#      :
Matrix Spike ID   :                     LCS ID           : 1364
*****

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Summary of Nuclide Activity

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Total number of lines in spectrum      31
Number of unidentified lines           1
Number of lines tentatively identified by NID 30          96.77%

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Nuclide Type :

Nuclide	Hlife	Decay	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
K-40	1.25E+09Y	1.00	7.775E+00	7.775E+00	1.212E+00	15.59	
CD-109	461.40D	1.12	2.624E+00	2.928E+00	1.007E+00	34.39	
SN-126	2.30E+05Y	1.00	2.624E-01	2.624E-01	0.902E-01	34.39	
CE-141	32.51D	4.74	1.897E-01	8.983E-01	3.819E-01	42.52	
TL-208	1.41E+10Y	1.00	3.713E-01	3.713E-01	1.001E-01	26.96	
PB-210	22.20Y	1.01	1.941E+00	1.954E+00	1.211E+00	61.98	
BI-211	7.04E+08Y	1.00	2.831E+00	2.831E+00	0.609E+00	21.51	
PB-212	1.41E+10Y	1.00	1.195E+00	1.195E+00	0.182E+00	15.21	
BI-214	1600.00Y	1.00	8.750E-01	8.751E-01	1.908E-01	21.80	
PB-214	1600.00Y	1.00	1.028E+00	1.028E+00	0.228E+00	22.21	
RA-224	1.41E+10Y	1.00	3.514E+00	3.514E+00	1.291E+00	36.75	
RA-226	1600.00Y	1.00	8.750E-01	8.751E-01	1.908E-01	21.80	
AC-228	1.41E+10Y	1.00	1.307E+00	1.307E+00	0.372E+00	28.42	
RA-228	1.41E+10Y	1.00	1.307E+00	1.307E+00	0.372E+00	28.42	
TH-228	1.41E+10Y	1.00	1.195E+00	1.195E+00	0.182E+00	15.21	
TH-229	7340.00Y	1.00	4.046E-01	4.046E-01	1.391E-01	34.39	K
TH-230	7.54E+04Y	1.00	8.750E-01	8.750E-01	1.851E-01	21.16	
PA-231	7.04E+08Y	1.00	3.863E-01	3.863E-01	6.947E-01	179.84	K
TH-232	1.41E+10Y	1.00	1.307E+00	1.307E+00	0.372E+00	28.42	
TH-234	4.47E+09Y	1.00	1.719E+00	1.719E+00	1.627E+00	94.64	
U-235	7.04E+08Y	1.00	8.358E-01	8.358E-01	3.755E-01	44.92	
U-238	4.47E+09Y	1.00	1.719E+00	1.719E+00	1.627E+00	94.64	
AM-243	7370.00Y	1.00	3.401E-01	3.401E-01	0.686E-01	20.17	
ANH-511	1.00E+09Y	1.00	1.237E-01	1.237E-01	0.866E-01	70.05	

Total Activity : 3.500E+01 3.603E+01

Grand Total Activity : 3.500E+01 3.603E+01

Flags: "K" = Keyline not found "M" = Manually accepted
 "E" = Manually edited "A" = Nuclide specific abn. limit

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
0	53.61	221	769	1.05	106.55	103	8	2.12E-02	54.8	5.65E+00	
0	271.00	71	185	0.73	541.31	535	11	8.11E-03	86.2	3.01E+00	T
0	464.28	29	77	1.44	927.83	920	9	3.51E-03	****	1.91E+00	T
0	728.74	82	52	6.16	1456.73	1447	19	1.06E-02	50.6	1.30E+00	T
0	1238.76	34	24	1.61	2476.72	2469	12	4.73E-03	67.0	8.38E-01	T

Flags: "T" = Tentatively associated

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
K-40	1460.82	275	10.66*	7.307E-01	7.775E+00	7.775E+00	15.59
CD-109	88.03	255	3.70*	5.784E+00	2.624E+00	2.928E+00	34.39
SN-126	64.28	169	9.60	5.864E+00	6.626E-01	6.626E-01	94.08
	86.94	255	8.90	5.784E+00	1.091E+00	1.091E+00	53.09
	87.57	255	37.00*	5.784E+00	2.624E-01	2.624E-01	34.39
CE-141	145.44	197	48.29*	4.729E+00	1.897E-01	8.983E-01	42.52
TL-208	277.37	-----	6.60	2.957E+00	-----	Line Not Found	-----
	583.19	225	85.00*	1.569E+00	3.713E-01	3.713E-01	26.96
	860.56	-----	12.50	1.131E+00	-----	Line Not Found	-----
PB-210	46.54	199	4.25*	5.321E+00	1.941E+00	1.954E+00	61.98
BI-211	72.87	-----	1.23	5.907E+00	-----	Line Not Found	-----
	351.06	402	12.92*	2.422E+00	2.831E+00	2.831E+00	21.51
PB-212	74.82	612	10.28	5.900E+00	2.223E+00	2.223E+00	22.40
	77.11	750	17.10	5.888E+00	1.641E+00	1.641E+00	16.85
	238.63	789	43.60*	3.335E+00	1.195E+00	1.195E+00	15.21
	300.09	26	3.30	2.762E+00	6.262E-01	6.262E-01	179.78
BI-214	609.32	273	45.49*	1.512E+00	8.750E-01	8.751E-01	21.80
	1120.29	60	14.92	9.099E-01	9.717E-01	9.718E-01	43.50
	1764.49	37	15.30	6.225E-01	8.623E-01	8.623E-01	37.86
PB-214	74.82	612	5.80	5.900E+00	3.940E+00	3.940E+00	21.68
	77.11	750	9.70	5.888E+00	2.892E+00	2.892E+00	18.76
	242.00	216	7.25	3.303E+00	1.987E+00	1.987E+00	37.21
	295.22	211	18.42	2.807E+00	8.986E-01	8.987E-01	33.62
	351.93	402	35.60*	2.422E+00	1.028E+00	1.028E+00	22.21
RA-224	240.99	216	4.10*	3.303E+00	3.514E+00	3.514E+00	36.75
RA-226	609.32	273	45.49*	1.512E+00	8.750E-01	8.751E-01	21.80
	1120.29	60	14.92	9.099E-01	9.717E-01	9.718E-01	43.50
	1764.49	37	15.30	6.225E-01	8.623E-01	8.623E-01	37.86
AC-228	338.32	184	11.27	2.505E+00	1.432E+00	1.432E+00	51.03
	911.20	165	25.80*	1.078E+00	1.307E+00	1.307E+00	28.42
	968.97	73	15.80	1.025E+00	9.966E-01	9.966E-01	45.28
RA-228	338.32	184	11.27	2.505E+00	1.432E+00	1.432E+00	51.03
	911.20	165	25.80*	1.078E+00	1.307E+00	1.307E+00	28.42
	968.97	73	15.80	1.025E+00	9.966E-01	9.966E-01	45.28
TH-228	74.82	612	10.28	5.900E+00	2.223E+00	2.223E+00	20.21
	77.11	750	17.10	5.888E+00	1.641E+00	1.641E+00	16.85
	238.63	789	43.60*	3.335E+00	1.195E+00	1.195E+00	15.21
	300.09	26	3.30	2.762E+00	6.262E-01	6.262E-01	189.63
TH-229	85.43	159	14.70	5.821E+00	4.101E-01	4.102E-01	55.71
	88.47	255	24.00	5.784E+00	4.046E-01	4.046E-01	34.39
	193.51	-----	4.41*	3.906E+00	-----	Line Not Found	-----
	210.85	106	2.80	3.685E+00	2.252E+00	2.252E+00	57.99
TH-230	609.32	273	45.49*	1.512E+00	8.750E-01	8.750E-01	21.16
	1120.29	60	14.92	9.099E-01	9.717E-01	9.717E-01	42.98
	1764.49	37	15.30	6.225E-01	8.623E-01	8.623E-01	37.86
PA-231	283.69	-----	1.70*	2.903E+00	-----	Line Not Found	-----
	301.36	26	5.35	2.762E+00	3.863E-01	3.863E-01	179.84
TH-232	338.32	184	11.27	2.505E+00	1.432E+00	1.432E+00	30.64
	911.20	165	25.80*	1.078E+00	1.307E+00	1.307E+00	28.42

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
	968.97	73	15.80	1.025E+00	9.966E-01	9.966E-01	45.28
TH-234	63.29	169	3.70*	5.864E+00	1.719E+00	1.719E+00	94.64
	92.59	266	4.23	5.702E+00	2.427E+00	2.427E+00	46.90
U-235	89.96	182	3.47	5.746E+00	2.014E+00	2.014E+00	51.14
	93.35	266	5.60	5.702E+00	1.834E+00	1.834E+00	47.39
	143.76	197	10.96*	4.729E+00	8.358E-01	8.358E-01	44.92
	163.33	112	5.08	4.373E+00	1.105E+00	1.105E+00	65.58
	185.72	769	57.20	4.017E+00	7.372E-01	7.372E-01	17.31
	205.31	-----	5.01	3.742E+00	-----	Line Not Found	-----
U-238	63.29	169	3.70*	5.864E+00	1.719E+00	1.719E+00	94.64
	92.59	266	4.23	5.702E+00	2.427E+00	2.427E+00	42.26
AM-243	43.53	-----	5.90	5.135E+00	-----	Line Not Found	-----
	74.66	612	67.20*	5.900E+00	3.401E-01	3.401E-01	20.17
ANH-511	511.00	99	100.00*	1.758E+00	1.237E-01	1.237E-01	70.05

Flag: "*" = Keyline

Nuclide	Half-life	Half-Life Ratio	Energy	%Abund	Activity (pCi/GRAM)	2-Sigma %Error	Rejected by
SC-46	83.79D	0.87	889.28*	99.98	---	Not Found	---
			1120.55	99.99	2.651E-01	42.98	Abun.
			% Abundances Found =		50.00		
CO-56	77.23D	0.94	846.77*	99.94	---	Not Found	---
			1037.84	14.17	---	Not Found	---
			1238.28	66.90	2.574E-01	67.55	Abun.
			1771.35	15.47	---	Not Found	---
% Abundances Found =		34.05					
RU-103	39.26D	1.86	497.08*	91.00	---	Not Found	---
			610.33	5.76	2.505E+01	25.31	Abun.
			% Abundances Found =		5.95		
SB-125	2.76Y	0.07	427.87*	29.80	---	Not Found	---
			463.37	10.56	3.303E-01	124.33	Abun.
			600.60	17.77	---	Not Found	---
			635.95	11.29	---	Not Found	---
% Abundances Found =		15.21					
BA-140	12.75D	5.72	162.66	6.22	4.760E+01	63.74	Abun.
			304.85	4.29	---	Not Found	---
			423.72	3.15	---	Not Found	---
			537.26*	24.39	---	Not Found	---
% Abundances Found =		16.35					
ND-147	10.98D	6.64	91.11	27.90	2.503E+01	45.80	Abun.
			319.41	1.95	---	Not Found	---
			531.02*	13.10	---	Not Found	---
% Abundances Found =		64.96					
EU-155	4.75Y	0.04	86.55	30.70	3.256E-01	34.41	Abun.
			105.31*	21.10	---	Not Found	---
% Abundances Found =		59.27					
TB-160	72.30D	1.01	86.79	13.30	1.469E+00	34.39	Abun.
			197.04	4.90	---	Not Found	---
			215.65	3.71	---	Not Found	---
			298.57	27.10	---	Not Found	---
			879.36*	28.50	---	Not Found	---
			962.29	9.00	---	Not Found	---
			966.15	24.20	---	Not Found	---
			1177.93	14.40	---	Not Found	---
			1271.85	7.00	---	Not Found	---
% Abundances Found =		10.07					
TA-182	114.43D	0.64	67.75	41.20	---	Not Found	---
			100.11	14.10	---	Not Found	---
			152.43	6.93	---	Not Found	---
			222.11	7.49	---	Not Found	---
			1121.30	34.90	6.462E-01	42.98	Abun.
			1189.05	16.20	---	Not Found	---

Nuclide	Half-life	Half-Life Ratio	Energy	%Abund	Activity (pCi/GRAM)	2-Sigma %Error	Rejected by
TA-182	114.43D	0.64	1221.41*	27.00	---	Not Found	Abun.
			1231.02	11.44	---	Not Found	
			% Abundances Found =		21.91		
IR-192	73.83D	0.99	295.96	28.72	1.143E+00	33.00	Abun.
			308.46	29.68	---	Not Found	
			316.51*	82.71	---	Not Found	
			468.07	47.81	---	Not Found	
% Abundances Found =		15.20					
BI-207	32.90Y	0.01	72.81	21.40	---	Not Found	Abun.
			74.97	35.70	6.428E-01	20.17	
			569.70	97.76	---	Not Found	
			1063.66*	74.60	---	Not Found	
			1770.23	6.87	---	Not Found	
% Abundances Found =		15.11					
BI-212	1.41E+10Y	0.00	727.33*	6.67	2.084E+00	52.21	Abun.
			785.37	1.10	---	Not Found	
			1620.50	1.47	---	Not Found	
% Abundances Found =		72.19					
RN-219	7.04E+08Y	0.00	271.23	10.80	4.803E-01	87.10	Abun.
			401.81*	6.60	---	Not Found	
% Abundances Found =		62.07					
RA-223	7.04E+08Y	0.00	81.07	15.00	---	Not Found	Abun.
			83.79	24.70	2.441E-01	55.71	
			94.56	8.67	---	Not Found	
			144.24	3.27	2.801E+00	42.70	
			154.21	5.70	---	Not Found	
			269.46	13.90	---	Not Found	
			323.87*	3.99	---	Not Found	
338.28	2.84	5.682E+00	31.78				
% Abundances Found =		39.46					
AC-227	7.04E+08Y	0.00	79.69	2.64	---	Not Found	Abun.
			235.96	17.50	---	Not Found	
			256.23*	9.50	---	Not Found	
			299.98	3.00	6.889E-01	179.92	
			304.50	1.56	---	Not Found	
			334.37	1.54	---	Not Found	
% Abundances Found =		8.39					
TH-227	7.04E+08Y	0.00	79.69	2.64	---	Not Found	Abun.
			235.96	17.50	---	Not Found	
			256.23*	9.50	---	Not Found	
			299.98	3.00	6.889E-01	179.92	
			304.50	1.56	---	Not Found	
			334.37	1.54	---	Not Found	
% Abundances Found =		8.39					

Nuclide	Half-life	Half-Life Ratio	Energy	%Abund	Activity (pCi/GRAM)	2-Sigma %Error	Rejected by
TH-231	7.04E+08Y	0.00	81.07	15.00	---	Not Found	---
			83.79	24.70	2.441E-01	55.71	Abun.
			94.87	5.69	---	Not Found	---
			144.24	3.27	2.801E+00	42.70	
			154.21	5.70	---	Not Found	---
			269.46	13.90	---	Not Found	---
			323.87*	3.99	---	Not Found	---
			338.28	2.84	5.682E+00	31.78	
% Abundances Found =			41.03				
PA-233	2.14E+06Y	0.00	300.13	6.63	3.117E-01	180.09	Abun.
			311.90*	38.50	---	Not Found	---
			340.48	4.45	---	Not Found	---
			% Abundances Found =			13.37	
NP-237	2.14E+06Y	0.00	94.65	10.56	---	Not Found	---
			98.43	16.90	---	Not Found	---
			300.13	6.63	3.117E-01	179.91	Abun.
			311.90*	38.50	---	Not Found	---
			340.48	4.45	---	Not Found	---
% Abundances Found =			8.61				

Flag: "*" = Keyline

 * GEL Laboratories LLC *
 * 2040 Savage Road *
 * Charleston, SC 29407 *
 * GAMMA SPECTROSCOPY BACKGROUND REPORT *

ENERGY	MDA COUNTS
43.53	297.7208
46.54	347.4376
49.72	0.0000
57.36	0.0000
57.53	376.2102
59.54	411.0114
63.29	416.1756
63.29	416.1756
64.28	459.0530
67.75	417.1942
69.67	451.5237
70.83	407.4122
72.81	386.7182
72.87	386.7817
72.87	386.7817
74.66	336.7355
74.82	336.8797
74.82	336.8797
74.82	336.8797
74.97	337.0144
77.11	338.9153
77.11	338.9153
77.11	338.9153
79.69	310.0741
79.69	310.0741
80.12	296.6770
80.19	0.0000
80.57	305.2653
81.00	311.1017
81.07	311.1569
81.07	311.1569
83.79	266.1387
83.79	266.1387
85.43	267.2051
86.55	267.9272
86.79	268.0796
86.94	268.1777
87.57	268.5806
88.03	268.8750
88.47	269.1548
89.96	270.0981
91.11	270.8218
92.59	271.7446
92.59	271.7446
93.35	272.2163
94.56	220.3611
94.65	220.4060
94.67	211.8833
94.87	211.9787
97.43	247.5300
98.43	230.5808
98.44	230.5857
99.53	196.4448
100.11	206.2872
103.18	254.9712
103.37	255.0732
105.31	215.3696
106.12	237.1122
109.28	227.8958
111.00	239.4851
111.76	0.0000
116.30	0.0000
117.23	189.7798
121.12	177.1792
121.78	186.4200
122.06	186.5175
123.07	180.8423

131.20	209.0289
133.02	186.1768
133.52	183.2682
136.00	179.9489
136.47	173.9219
140.51	0.0000
140.51	0.0000
143.76	189.6278
144.24	189.7796
144.24	189.7796
145.44	169.2592
152.43	177.5276
153.25	172.4679
154.21	158.9539
154.21	158.9539
156.02	184.9122
158.56	166.4403
159.00	164.9515
162.66	152.9935
163.33	160.1344
165.86	147.2599
176.60	161.0938
177.52	166.7912
181.07	0.0000
184.41	186.1357
185.72	170.9330
193.51	158.1603
197.04	160.0273
205.31	153.7729
210.85	123.8796
215.65	141.9247
222.11	125.5968
227.38	128.1410
228.16	0.0000
228.18	120.3548
235.69	140.3716
235.96	150.3435
235.96	150.3435
238.63	131.5957
238.63	131.5957
240.99	131.9469
242.00	132.0970
244.70	104.5641
252.40	0.0000
252.80	117.4217
256.23	99.7248
256.23	99.7248
260.90	0.0000
264.66	103.6698
268.22	132.2095
269.46	106.6384
269.46	106.6384
271.23	106.8331
273.65	124.0866
276.40	127.1490
277.37	111.2109
277.60	113.0905
278.00	110.3532
279.20	104.9167
279.54	117.0272
280.46	132.9388
283.69	115.6464
284.31	0.0000
285.41	99.0273
285.90	0.0000
287.50	96.4226
293.27	0.0000
295.22	108.6557
295.96	120.8145
298.57	113.5474
299.98	110.6674
299.98	110.6674
300.09	115.2265
300.09	115.2265
300.13	115.2311
300.13	115.2311
301.36	95.6320
302.85	91.2056

304.50	111.1396
304.50	111.1396
304.85	114.2230
308.46	80.2253
311.90	91.9775
311.90	91.9775
316.51	79.8591
319.41	82.9634
320.08	89.7702
323.87	113.3223
323.87	113.3223
328.76	87.5500
333.37	95.3289
334.37	104.7971
334.37	104.7971
338.28	82.3953
338.28	82.3953
338.32	82.3991
338.32	82.3991
338.32	82.3991
340.48	75.4758
340.48	75.4758
340.55	75.4805
344.28	89.3939
345.93	77.6716
351.06	96.7824
351.93	83.3578
356.01	74.8787
364.49	0.0000
366.42	0.0000
383.85	85.5355
388.16	83.7792
388.63	78.6989
391.69	94.2517
400.66	60.8582
401.81	59.8789
402.40	68.1682
404.85	91.0588
410.95	62.3676
414.70	72.9630
423.72	69.2468
427.09	68.3633
427.87	75.7672
433.94	71.8682
453.88	67.5124
463.37	70.7520
468.07	75.0134
473.00	0.0000
476.78	65.2899
477.60	48.9935
482.18	64.4286
487.02	53.6760
492.35	0.0000
497.08	65.0471
511.00	51.1593
514.00	55.2657
527.90	0.0000
529.87	0.0000
531.02	50.4369
537.26	56.9538
546.56	0.0000
563.25	46.8089
569.33	64.4714
569.50	68.1609
569.70	68.1700
583.19	64.9739
600.60	52.4795
602.73	59.8108
604.72	46.9604
609.32	51.7854
609.32	51.7854
609.32	51.7854
610.33	51.8136
614.28	66.0830
618.01	40.9900
621.93	55.9247
621.93	55.9247
633.25	48.6293

635.95	45.8320
636.99	0.0000
645.85	41.2678
657.76	45.3798
661.66	58.0459
661.66	58.0459
664.57	0.0000
666.33	50.4232
666.50	50.4283
677.62	45.8307
685.70	0.0000
695.00	48.1853
696.49	52.1563
696.51	52.1563
697.00	56.1066
702.65	52.3103
706.68	52.4100
711.68	46.5869
720.70	39.8164
721.93	0.0000
722.78	34.8735
722.91	34.8752
723.31	36.5431
724.19	34.8966
727.33	40.9379
733.00	50.0549
735.93	41.7684
739.50	0.0000
747.24	45.3428
752.31	45.4471
753.82	50.5310
756.73	29.3462
763.94	45.6833
765.81	58.9303
766.42	58.9459
777.92	0.0000
778.90	39.8541
783.70	0.0000
785.37	35.8682
795.86	42.2072
801.95	43.3494
810.29	37.2885
810.76	41.4395
815.77	33.2219
818.51	31.1814
832.01	43.9000
834.85	39.7655
836.80	0.0000
846.77	41.0119
856.80	47.5137
860.56	39.1264
871.09	38.2289
873.19	29.7589
875.33	0.0000
879.36	33.0276
880.51	24.5156
883.24	30.9442
884.68	34.1648
889.28	33.1562
898.04	47.2216
911.20	39.9105
911.20	39.9105
911.20	39.9105
926.50	31.4639
937.49	41.3992
944.13	22.9349
946.00	26.2295
949.00	24.0706
962.29	39.8564
964.08	39.2927
966.15	37.7494
968.97	48.6782
968.97	48.6782
968.97	48.6782
983.53	23.0825
996.26	41.7380
1001.03	31.5886
1004.73	36.2808

1037.84	26.3491
1038.76	0.0000
1048.07	18.8867
1050.41	20.7915
1050.41	20.7915
1063.66	29.4283
1085.87	26.7775
1099.45	26.8971
1112.07	30.0942
1115.54	26.4866
1120.29	20.3096
1120.29	20.3096
1120.29	20.3096
1120.55	20.3113
1121.30	20.3164
1131.51	0.0000
1173.23	20.6505
1177.93	36.4369
1189.05	25.6911
1204.77	31.7708
1221.41	34.9231
1231.02	36.0234
1235.36	37.7879
1238.28	25.7865
1260.41	0.0000
1271.85	24.3037
1274.44	25.3347
1274.54	25.3357
1291.59	22.4046
1298.22	0.0000
1312.11	32.7773
1332.49	15.4517
1365.19	21.8263
1368.63	0.0000
1384.29	27.1616
1408.01	16.8210
1457.56	0.0000
1460.82	17.0521
1489.16	15.0282
1505.03	21.5535
1596.21	24.5527
1620.50	13.2964
1678.03	0.0000
1690.97	7.7213
1764.49	5.1498
1764.49	5.1498
1764.49	5.1498
1770.23	37.3201
1771.35	31.4353
1791.20	0.0000
1836.06	7.9674

VAX/VMS Nuclide Identification Report Generated 3-MAY-2012 12:17:00.46

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*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29407                           *
*****
Configuration   : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G1202635838.CNF;1
Background file : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]BKG_GAM08.CNF;87
Background date : 29-APR-2012 14:30:58
Sample date     : 12-APR-2012 00:00:00 Acquisition date : 3-MAY-2012 10:16:28.
Sample ID      : G1202635838 Sample quantity   : 1.79050E+02 GRAM
Detector name  : GAM08 Detector geometry: CAN
Elapsed live time: 0 02:00:00.00 Elapsed real time: 0 02:00:01.28 0.0%
Energy tolerance : 1.50000 keV Analyst Initials : MXR1
Abundance limit : 75.00000 Sensitivity : 5.00000
Batch ID       : 1203837 Detector SN# :
Matrix Spike ID : LCS ID : 1364
*****

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Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	63.53*	8	108	0.83	126.90	122	10	1.07E-03	277.4	
2	0	92.95*	36	128	1.30	185.78	181	12	4.95E-03	75.4	
3	0	186.00*	24	100	1.63	372.03	368	13	3.32E-03	98.1	
4	0	239.25*	34	74	1.43	478.59	474	13	4.74E-03	62.5	
5	0	511.47*	30	31	1.91	1023.39	1015	19	4.11E-03	71.2	

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

VAX/VMS Nuclide Identification Report Generated

```

*****
*
*           GEL Laboratories LLC
*           2040 Savage Road
*           Charleston, SC 29407
*****
*
*           DETECTOR DATA
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G1202635838.CNF;1
* Acquisition date   : 3-MAY-2012 10:16:28 Detector SN#      :
* Detector ID        : GAM08 Sensitivity                    : 5.000
* Geometry           : CAN Energy tolerance                : 1.500
* Elapsed live time  : 0 02:00:00.00 Abundance limit       : 75.000
* Elapsed real time  : 0 02:00:01.28 Half life ratio       : 8.000
*****
*
*           SAMPLE DATA
*
* Sample date        : 12-APR-2012 00:00:00 Nuclide Library  : SOLID
* Sample ID          : G1202635838 Analyst initials       : MXR1
* Batch Number       : 1203837 Sample Quantity        : 1.7905E+02 GRAM
* Recovery           : 1.00000 Carrier Weight           : 0.00000
*****
*
*           QC DATA
*
* Standard Weight    : 0.00000
* CALIB. DATE/TIME  : 29-SEP-2011 11:08:39 MS Isotope      :
* MSD DPM            : 0.000 MSD Isotope                  :
* LCS DPM            : 0.000 LCS Isotope                  :
* LCSD DPM           : 0.000 LCSD Isotope                 :
*****

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Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act error (1.96-sigma)	MDA (pCi/GRAM)	
TH-234	2.993E-01	1.628E+00	1.223E+00	0.000E+00
U-238	2.993E-01	1.628E+00	1.223E+00	0.000E+00
ANH-511	3.003E-02	4.201E-02	2.186E-02	0.000E+00

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L.	Act error (1.96-sigma)	MDA (pCi/GRAM)	
BE-7	6.030E-02		1.673E-01	3.465E-01	0.000E+00 NOT IDENT.
NA-22	-8.145E-03		1.845E-02	3.376E-02	0.000E+00 NOT IDENT.
NA-24	0.000E+00		3.394E+08	0.000E+00	0.000E+00 SHORT HLIF
K-40	-1.589E-01		2.122E-01	4.036E-01	0.000E+00 NOT IDENT.
SC-46	9.205E-04		1.513E-02	3.183E-02	0.000E+00 NOT IDENT.
V-48	1.062E-02		3.634E-02	7.806E-02	0.000E+00 NOT IDENT.
CR-51	5.593E-02		2.112E-01	4.196E-01	0.000E+00 NOT IDENT.
MN-54	-4.011E-03		1.604E-02	3.002E-02	0.000E+00 NOT IDENT.
CO-56	1.142E-02		1.913E-02	4.037E-02	0.000E+00 NOT IDENT.
CO-57	2.069E-03		1.014E-02	2.008E-02	0.000E+00 NOT IDENT.
CO-58	-9.747E-03		1.811E-02	3.229E-02	0.000E+00 NOT IDENT.
FE-59	1.047E-02		3.993E-02	8.424E-02	0.000E+00 NOT IDENT.
CO-60	-5.143E-03		1.722E-02	3.261E-02	0.000E+00 NOT IDENT.
ZN-65	4.017E-04		3.816E-02	7.612E-02	0.000E+00 NOT IDENT.
SE-75	-4.813E-04		2.005E-02	3.953E-02	0.000E+00 NOT IDENT.
SR-85	0.000E+00		2.266E-02	5.276E-02	0.000E+00 NOT IDENT.
Y-88	1.044E-02		1.974E-02	4.621E-02	0.000E+00 NOT IDENT.
Y-91	-5.452E-01		8.691E+00	1.723E+01	0.000E+00 NOT IDENT.
NB-94	2.454E-02		1.694E-02	3.774E-02	0.000E+00 NOT IDENT.
NB-95	6.474E-03		1.716E-02	3.592E-02	0.000E+00 NOT IDENT.
NB-95M	-5.187E-02		6.147E-02	9.562E-02	0.000E+00 NOT IDENT.
ZR-95	-4.467E-03		2.697E-02	5.288E-02	0.000E+00 NOT IDENT.
MO-99	1.738E+01		2.423E+01	5.310E+01	0.000E+00 NOT IDENT.
TC-99M	0.000E+00		6.309E+23	0.000E+00	0.000E+00 SHORT HLIF

RU-103	-6.672E-03	2.081E-02	4.013E-02	0.000E+00	NOT IDENT.
RH-106	1.097E-02	1.049E-01	2.197E-01	0.000E+00	NOT IDENT.
RU-106	1.097E-02	1.049E-01	2.197E-01	0.000E+00	NOT IDENT.
AG-108M	-6.451E-04	1.476E-02	2.796E-02	0.000E+00	NOT IDENT.
CD-109	-2.213E-02	3.400E-01	5.974E-01	0.000E+00	NOT IDENT.
AG-110M	3.092E-03	2.087E-02	4.366E-02	0.000E+00	NOT IDENT.
SN-113	-7.431E-03	2.221E-02	4.102E-02	0.000E+00	NOT IDENT.
CD-115	0.000E+00	3.351E+01	0.000E+00	0.000E+00	SHORT HLIF
SN-117M	1.685E-03	3.067E-02	6.270E-02	0.000E+00	NOT IDENT.
TE-123M	1.540E-03	1.214E-02	2.491E-02	0.000E+00	NOT IDENT.
SB-124	-3.338E-02	4.818E-02	8.404E-02	0.000E+00	NOT IDENT.
SB-125	4.826E-03	4.496E-02	8.678E-02	0.000E+00	NOT IDENT.
TE-125M	1.462E+00	4.363E+00	8.740E+00	0.000E+00	NOT IDENT.
I-126	-1.873E-01	1.286E-01	1.931E-01	0.000E+00	NOT IDENT.
SB-126	-5.163E-02	9.920E-02	1.791E-01	0.000E+00	NOT IDENT.
SN-126	-1.865E-02	3.167E-02	5.646E-02	0.000E+00	FAIL ABUN
SB-127	-3.690E-01	1.447E+00	2.808E+00	0.000E+00	NOT IDENT.
I-131	6.950E-02	9.217E-02	1.924E-01	0.000E+00	NOT IDENT.
TE-132	1.210E-01	1.238E+00	2.478E+00	0.000E+00	NOT IDENT.
BA-133	-7.918E-03	2.045E-02	3.776E-02	0.000E+00	NOT IDENT.
I-133	0.000E+00	3.906E+05	0.000E+00	0.000E+00	SHORT HLIF
CS-134	6.714E-03	1.955E-02	3.959E-02	0.000E+00	NOT IDENT.
CS-135	4.271E-02	6.576E-02	1.371E-01	0.000E+00	NOT IDENT.
I-135	0.000E+00	2.265E+22	0.000E+00	0.000E+00	SHORT HLIF
CS-136	-8.755E-03	6.368E-02	1.256E-01	0.000E+00	NOT IDENT.
BA-137M	2.242E-02	1.519E-02	3.538E-02	0.000E+00	NOT IDENT.
CS-137	2.369E-02	1.605E-02	3.738E-02	0.000E+00	NOT IDENT.
CE-139	4.956E-03	1.285E-02	2.673E-02	0.000E+00	NOT IDENT.
BA-140	-7.041E-02	1.659E-01	3.118E-01	0.000E+00	NOT IDENT.
LA-140	-5.504E-02	6.043E-02	9.945E-02	0.000E+00	NOT IDENT.
CE-141	-2.621E-02	3.285E-02	5.444E-02	0.000E+00	NOT IDENT.
CE-143	0.000E+00	1.285E+03	0.000E+00	0.000E+00	SHORT HLIF
CE-144	-4.985E-02	8.651E-02	1.572E-01	0.000E+00	NOT IDENT.
PM-144	8.842E-03	1.811E-02	3.683E-02	0.000E+00	NOT IDENT.
PR-144	6.568E-01	1.359E+00	2.763E+00	0.000E+00	NOT IDENT.
PM-146	-1.261E-02	1.816E-02	3.378E-02	0.000E+00	NOT IDENT.
ND-147	-1.427E-01	3.604E-01	6.877E-01	0.000E+00	NOT IDENT.
PM-149	0.000E+00	2.765E+02	0.000E+00	0.000E+00	SHORT HLIF
EU-152	-1.689E-02	4.455E-02	8.286E-02	0.000E+00	NOT IDENT.
GD-153	-6.590E-03	3.870E-02	6.675E-02	0.000E+00	NOT IDENT.
EU-154	-2.270E-02	5.221E-02	9.559E-02	0.000E+00	NOT IDENT.
EU-155	-7.244E-03	3.890E-02	7.547E-02	0.000E+00	NOT IDENT.
TB-160	6.822E-03	6.934E-02	1.365E-01	0.000E+00	NOT IDENT.
HO-166M	1.915E-02	2.965E-02	6.205E-02	0.000E+00	NOT IDENT.
HF-181	4.953E-03	2.339E-02	4.775E-02	0.000E+00	NOT IDENT.
TA-182	-1.091E-02	5.519E-02	1.108E-01	0.000E+00	NOT IDENT.
IR-192	9.522E-03	1.913E-02	3.852E-02	0.000E+00	NOT IDENT.
HG-203	1.272E-03	1.705E-02	3.396E-02	0.000E+00	NOT IDENT.
BI-207	1.308E-02	1.900E-02	4.361E-02	0.000E+00	NOT IDENT.
TL-208	-2.283E-03	2.166E-02	4.497E-02	0.000E+00	NOT IDENT.
PB-210	5.904E-01	2.501E+00	5.359E+00	0.000E+00	NOT IDENT.
BI-211	-2.722E-02	1.108E-01	2.086E-01	0.000E+00	NOT IDENT.
PB-211	3.257E-01	3.629E-01	6.993E-01	0.000E+00	NOT IDENT.
BI-212	-2.636E-01	2.598E-01	4.464E-01	0.000E+00	NOT IDENT.
PB-212	5.050E-02	6.211E-02	7.490E-02	0.000E+00	FAIL ABUN
BI-214	-2.701E-02	3.932E-02	6.696E-02	0.000E+00	NOT IDENT.
PB-214	-2.169E-02	4.080E-02	7.461E-02	0.000E+00	NOT IDENT.
RN-219	-6.510E-02	1.821E-01	3.352E-01	0.000E+00	NOT IDENT.
RA-223	-3.833E-01	3.042E-01	4.976E-01	0.000E+00	NOT IDENT.
RA-224	4.965E-01	3.399E-01	6.884E-01	0.000E+00	NOT IDENT.
RA-226	-2.701E-02	3.932E-02	6.696E-02	0.000E+00	NOT IDENT.
AC-227	7.551E-02	1.197E-01	2.466E-01	0.000E+00	NOT IDENT.
TH-227	7.551E-02	1.198E-01	2.466E-01	0.000E+00	NOT IDENT.
AC-228	3.680E-02	5.730E-02	1.271E-01	0.000E+00	NOT IDENT.
RA-228	3.680E-02	5.730E-02	1.271E-01	0.000E+00	NOT IDENT.
TH-228	5.050E-02	6.211E-02	7.490E-02	0.000E+00	FAIL ABUN
TH-229	-1.402E-01	2.530E-01	4.458E-01	0.000E+00	NOT IDENT.
TH-230	-2.700E-02	3.930E-02	6.696E-02	0.000E+00	NOT IDENT.
PA-231	-2.022E-01	6.282E-01	1.196E+00	0.000E+00	NOT IDENT.
TH-231	-3.833E-01	3.042E-01	4.976E-01	0.000E+00	NOT IDENT.
TH-232	3.680E-02	5.730E-02	1.271E-01	0.000E+00	NOT IDENT.
PA-233	7.243E-03	3.256E-02	6.433E-02	0.000E+00	NOT IDENT.
PA-234	-4.884E-02	1.014E-01	1.923E-01	0.000E+00	NOT IDENT.
PA-234M	-2.224E+00	1.877E+00	2.902E+00	0.000E+00	NOT IDENT.
U-235	-4.292E-02	9.328E-02	1.604E-01	0.000E+00	FAIL ABUN
NP-237	7.243E-03	3.257E-02	6.433E-02	0.000E+00	NOT IDENT.
NP-239	5.365E-02	1.535E-01	3.092E-01	0.000E+00	NOT IDENT.
AM-241	2.871E-02	8.155E-02	1.562E-01	0.000E+00	NOT IDENT.

AM-243	-2.905E-03	2.457E-02	4.856E-02	0.000E+00	NOT IDENT.
CM-247	-1.143E-02	1.773E-02	3.138E-02	0.000E+00	NOT IDENT.
CF-249	-1.961E-04	1.944E-02	3.726E-02	0.000E+00	NOT IDENT.
CF-251	1.471E-02	5.397E-02	1.111E-01	0.000E+00	NOT IDENT.

Gamma Spectroscopy Auxillary Report

Sample:G1202635838

Nuclide	TPU	LLD	EFF	FWHM	TArea	TBack	TCounts
BE-7	0.167E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
NA-22	0.185E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
NA-24	0.339E+09	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
K-40	0.212E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
SC-46	0.151E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
V-48	0.363E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
CR-51	0.211E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
MN-54	0.160E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
CO-56	0.191E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
CO-57	0.101E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
CO-58	0.181E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
FE-59	0.399E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
CO-60	0.172E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
ZN-65	0.382E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
SE-75	0.200E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
SR-85	0.227E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Y-88	0.197E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Y-91	0.869E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
NB-94	0.169E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
NB-95	0.172E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
NB-95M	0.615E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
ZR-95	0.270E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
MO-99	0.242E+02	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
TC-99M	0.196E+17	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
RU-103	0.208E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
RH-106	0.105E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
RU-106	0.105E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
AG-108M	0.148E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
CD-109	0.340E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
AG-110M	0.209E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
SN-113	0.222E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
CD-115	0.335E+02	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
SN-117M	0.307E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
TE-123M	0.121E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
SB-124	0.482E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
SB-125	0.450E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
TE-125M	0.436E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
I-126	0.129E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
SB-126	0.992E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
SN-126	0.317E-01	0.122E+03	0.000E+00	0.000E+00	0.113E+02	0.393E+03	0.405E+03
SB-127	0.145E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
I-131	0.922E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
TE-132	0.124E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
BA-133	0.204E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
I-133	0.391E+06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
CS-134	0.196E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
CS-135	0.658E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
I-135	0.196E+17	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
CS-136	0.637E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
BA-137M	0.152E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
CS-137	0.161E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
CE-139	0.128E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
BA-140	0.166E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
LA-140	0.604E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
CE-141	0.329E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
CE-143	0.128E+04	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
CE-144	0.865E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
PM-144	0.181E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
PR-144	0.136E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
PM-146	0.182E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
ND-147	0.360E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
PM-149	0.277E+03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
EU-152	0.445E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
GD-153	0.387E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
EU-154	0.522E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
EU-155	0.389E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
TB-160	0.693E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
HO-166M	0.297E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
HF-181	0.234E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
TA-182	0.552E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

IR-192	0.191E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
HG-203	0.170E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
BI-207	0.190E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
TL-208	0.217E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
PB-210	0.250E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
BI-211	0.111E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
PB-211	0.363E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
BI-212	0.260E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
PB-212	0.621E-01	0.628E+02	0.411E-01	0.143E+01	0.432E+02	0.835E+03	0.878E+03	0.878E+03
BI-214	0.393E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
PB-214	0.408E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
RN-219	0.182E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
RA-223	0.304E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
RA-224	0.340E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
RA-226	0.393E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
AC-227	0.120E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
TH-227	0.120E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
AC-228	0.573E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
RA-228	0.573E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
TH-228	0.621E-01	0.628E+02	0.411E-01	0.143E+01	0.432E+02	0.835E+03	0.878E+03	0.878E+03
TH-229	0.253E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
TH-230	0.393E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
PA-231	0.628E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
TH-231	0.304E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
TH-232	0.573E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
PA-233	0.326E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
PA-234	0.101E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
PA-234M	0.188E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
TH-234	0.163E+01	0.912E+02	0.214E-01	0.828E+00	0.618E+02	0.142E+04	0.148E+04	0.148E+04
U-235	0.933E-01	0.555E+02	0.000E+00	0.000E+00	0.816E+02	0.170E+04	0.178E+04	0.178E+04
NP-237	0.326E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
U-238	0.163E+01	0.912E+02	0.214E-01	0.828E+00	0.618E+02	0.142E+04	0.148E+04	0.148E+04
NP-239	0.153E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
AM-241	0.816E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
AM-243	0.246E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
CM-247	0.177E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
CF-249	0.194E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
CF-251	0.540E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
ANH-511	0.420E-01	0.110E+03	0.237E-01	0.191E+01	0.339E+02	0.130E+04	0.133E+04	0.133E+04

```

Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G1202635838.CNF;1
Analyses by       : PEAK V16.9
Sample title      : MXR1
Sample date       : 12-APR-2012 00:00:00 Acquisition date : 3-MAY-2012 10:16:28
Sample ID         : G1202635838 Sample quantity : 179.05 GRAM
Sample type       : SOLID Sample geometry :
Detector name     : GAMMA8 Detector geometry: CAN
Elapsed live time: 0 02:00:00.00 Elapsed real time: 0 02:00:01.28 0.0%
Start energy      : 0.62 keV End energy : 2046.96 keV
Sensitivity       : 5.00 Gaussian : 10.00
Critical level    : No
    
```

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	63.53	36	108	0.83	126.90	122	10	4.96E-03	56.9	
2	0	92.95	137	128	1.30	185.78	181	12	1.91E-02	18.7	
3	0	186.00	88	100	1.63	372.03	368	13	1.23E-02	25.2	
4	0	239.25	123	74	1.43	478.59	474	13	1.71E-02	16.8	
5	0	511.47	181	31	1.91	1023.39	1015	19	2.51E-02	10.9	
6	0	584.10	30	38	0.93	1168.75	1162	15	4.10E-03	48.8	

```

*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29407                          *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G1202635838.CNF;1
Sample date        : 12-APR-2012 00:00:00 Acquisition date : 3-MAY-2012 10:16:28.
Sample ID          : G1202635838          Sample quantity  : 1.79050E+02 GRAM
Detector name      : GAM08                Detector geometry: CAN
Elapsed live time  : 0 02:00:00.00        Elapsed real time: 0 02:00:01.28  0.0%
Energy tolerance   : 1.50000 keV         Analyst Initials  : MXR1
Abundance limit    : 75.00000            Sensitivity       : 5.00000
Batch ID           : 1203837             Detector SN#      :
Matrix Spike ID    :                     LCS ID           : 1364
*****

```

Summary of Nuclide Activity

```

Total number of lines in spectrum      5
Number of unidentified lines           0
Number of lines tentatively identified by NID 5      100.00%

```

Nuclide Type :

Nuclide	Hlife	Decay	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
TH-234	4.47E+09Y	1.00	2.993E-01	2.993E-01	16.62E-01	555.09	
U-238	4.47E+09Y	1.00	2.993E-01	2.993E-01	16.62E-01	555.09	
ANH-511	1.00E+09Y	1.00	3.003E-02	3.003E-02	4.286E-02	142.75	
Total Activity :			6.287E-01	6.287E-01			
Grand Total Activity :			6.287E-01	6.287E-01			

```

Flags: "K" = Keyline not found          "M" = Manually accepted
       "E" = Manually edited            "A" = Nuclide specific abn. limit

```

Unidentified Energy Lines
Sample ID : G1202635838

Page : 2
Acquisition date : 3-MAY-2012 10:16:28

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
0	186.00	31	130	1.63	372.03	368	13	3.32E-03	****	4.88E+00	T
0	239.25	43	94	1.43	478.59	474	13	4.74E-03	****	4.11E+00	T

Flags: "T" = Tentatively associated

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
TH-234	63.29	11	3.70*	2.144E+00	2.993E-01	2.993E-01	555.09
	92.59	50	4.23	5.015E+00	4.985E-01	4.985E-01	152.46
U-238	63.29	11	3.70*	2.144E+00	2.993E-01	2.993E-01	555.09
	92.59	50	4.23	5.015E+00	4.985E-01	4.985E-01	151.10
ANH-511	511.00	34	100.00*	2.367E+00	3.003E-02	3.003E-02	142.75

Flag: "*" = Keyline

Nuclide	Half-life	Half-Life Ratio	Energy	%Abund	Activity (pCi/GRAM)	2-Sigma %Error	Rejected by
SN-126	2.30E+05Y	0.00	64.28	9.60	1.154E-01	554.99	Abun.
			86.94	8.90	---	Not Found	---
			87.57*	37.00	---	Not Found	---
			% Abundances Found =		17.30		
PB-212	1.41E+10Y	0.00	74.82	10.28	---	Not Found	---
			77.11	17.10	---	Not Found	---
			238.63*	43.60	5.050E-02	125.52	
			300.09	3.30	---	Not Found	---
% Abundances Found =		58.70					
TH-228	1.41E+10Y	0.00	74.82	10.28	---	Not Found	---
			77.11	17.10	---	Not Found	---
			238.63*	43.60	5.050E-02	125.52	
			300.09	3.30	---	Not Found	---
% Abundances Found =		58.70					
U-235	7.04E+08Y	0.00	89.96	3.47	---	Not Found	---
			93.35	5.60	3.766E-01	152.61	
			143.76*	10.96	---	Not Found	---
			163.33	5.08	---	Not Found	---
			185.72	57.20	2.339E-02	196.39	
205.31	5.01	---	Not Found	---			
% Abundances Found =		71.92					

Flag: "*" = Keyline

 * GEL Laboratories LLC *
 * 2040 Savage Road *
 * Charleston, SC 29407 *
 * GAMMA SPECTROSCOPY BACKGROUND REPORT *

ENERGY	MDA COUNTS
43.53	51.2556
46.54	48.8459
49.72	44.4608
57.36	0.0000
57.53	49.3486
59.54	52.0797
63.29	65.0750
63.29	65.0750
64.28	65.2294
67.75	63.7370
69.67	80.2754
70.83	74.3712
72.81	88.0003
72.87	89.0351
72.87	89.0351
74.66	98.6284
74.82	96.6071
74.82	96.6071
74.82	96.6071
74.97	89.4417
77.11	91.9161
77.11	91.9161
77.11	91.9161
79.69	98.6423
79.69	98.6423
80.12	95.6120
80.19	95.6260
80.57	95.7004
81.00	85.3733
81.07	85.3858
81.07	85.3858
83.79	73.2916
83.79	73.2916
85.43	82.9844
86.55	84.2196
86.79	94.7914
86.94	88.4980
87.57	84.8091
88.03	76.0162
88.47	64.9856
89.96	85.8351
91.11	76.4645
92.59	71.3524
92.59	71.3524
93.35	71.4537
94.56	71.6138
94.65	71.6257
94.67	71.6281
94.87	59.3558
97.43	70.9149
98.43	51.6672
98.44	51.6682
99.53	46.3762
100.11	55.0612
103.18	61.8712
103.37	61.8915
105.31	58.8304
106.12	66.5484
109.28	69.0975
111.00	60.4959
111.76	64.9769
116.30	51.0343
117.23	55.5545
121.12	61.4850
121.78	59.3099
122.06	59.3357
123.07	61.6708

131.20	62.4300
133.02	80.8067
133.52	79.7263
136.00	82.2986
136.47	77.7790
140.51	72.4740
140.51	0.0000
143.76	69.3359
144.24	64.7563
144.24	64.7563
145.44	69.4965
152.43	69.2775
153.25	61.4513
154.21	72.0772
154.21	72.0772
156.02	72.2486
158.56	69.8350
159.00	70.7587
162.66	81.7536
163.33	93.3850
165.86	67.8081
176.60	74.1279
177.52	65.1594
181.07	63.9794
184.41	46.7117
185.72	71.2707
193.51	81.1223
197.04	49.9753
205.31	82.1784
210.85	77.9664
215.65	62.3091
222.11	53.2191
227.38	54.4573
228.16	58.3240
228.18	58.3252
235.69	66.2700
235.96	66.2873
235.96	66.2873
238.63	49.4578
238.63	49.4578
240.99	49.3759
242.00	55.8198
244.70	49.7445
252.40	50.8864
252.80	55.8002
256.23	52.0479
256.23	52.0479
260.90	0.0000
264.66	47.4976
268.22	40.6991
269.46	36.7685
269.46	36.7685
271.23	54.7415
273.65	39.8962
276.40	35.9923
277.37	45.0275
277.60	45.0364
278.00	49.0568
279.20	40.0879
279.54	40.0995
280.46	37.1211
283.69	47.2833
284.31	44.2887
285.41	43.3222
285.90	0.0000
287.50	32.2969
293.27	0.0000
295.22	51.8039
295.96	46.7538
298.57	60.0947
299.98	53.0259
299.98	53.0259
300.09	53.0307
300.09	53.0307
300.13	44.8735
300.13	44.8735
301.36	52.0638
302.85	61.3257

304.50	44.0085
304.50	44.0085
304.85	47.0922
308.46	39.0147
311.90	50.4460
311.90	50.4460
316.51	49.5952
319.41	48.6717
320.08	45.5892
323.87	56.1135
323.87	56.1135
328.76	34.4200
333.37	39.7731
334.37	42.9456
334.37	42.9456
338.28	30.4651
338.28	30.4651
338.32	30.4660
338.32	30.4660
338.32	30.4660
340.48	37.8803
340.48	37.8803
340.55	37.8820
344.28	43.2622
345.93	40.1454
351.06	46.6573
351.93	50.9312
356.01	46.8239
364.49	29.9764
366.42	34.3052
383.85	29.2939
388.16	39.1718
388.63	37.0075
391.69	40.3547
400.66	39.4969
401.81	35.1348
402.40	41.7388
404.85	26.4034
410.95	33.1343
414.70	32.1068
423.72	43.4245
427.09	37.9372
427.87	34.6063
433.94	35.8569
453.88	33.5701
463.37	31.0213
468.07	16.4681
473.00	30.2773
476.78	30.3433
477.60	30.3574
482.18	31.3591
487.02	35.1440
492.35	0.0000
497.08	32.5519
511.00	19.6807
514.00	19.7126
527.90	0.0000
529.87	0.0000
531.02	26.5228
537.26	27.5599
546.56	0.0000
563.25	27.9295
569.33	28.0145
569.50	27.0505
569.70	26.0870
583.19	20.4253
600.60	35.3109
602.73	30.4377
604.72	38.3287
609.32	33.4878
609.32	33.4878
609.32	33.4878
610.33	33.5036
614.28	20.7319
618.01	16.8124
621.93	11.8893
621.93	11.8893
633.25	23.9027

635.95	34.9017
636.99	29.9297
645.85	29.0489
657.76	27.1898
661.66	11.0967
661.66	11.0967
664.57	0.0000
666.33	28.3042
666.50	25.2734
677.62	17.2698
685.70	14.2717
695.00	17.3993
696.49	26.6271
696.51	26.6278
697.00	29.7059
702.65	17.4557
706.68	33.9418
711.68	20.6143
720.70	27.9334
721.93	0.0000
722.78	17.6031
722.91	22.7815
723.31	21.7496
724.19	24.8654
727.33	26.9725
733.00	20.7964
735.93	17.6981
739.50	11.4681
747.24	17.7790
752.31	14.6713
753.82	18.8745
756.73	12.5977
763.94	11.5809
765.81	13.6967
766.42	16.8613
777.92	22.2305
778.90	16.9438
783.70	18.0364
785.37	14.8630
795.86	19.1865
801.95	23.5050
810.29	20.3638
810.76	19.2955
815.77	9.6658
818.51	23.6516
832.01	19.4489
834.85	18.3875
836.80	0.0000
846.77	14.1223
856.80	16.3542
860.56	12.0092
871.09	17.5340
873.19	10.9668
875.33	0.0000
879.36	16.4861
880.51	15.3932
883.24	14.6745
884.68	13.7640
889.28	11.0291
898.04	13.8284
911.20	11.1130
911.20	11.1130
911.20	11.1130
926.50	17.6873
937.49	14.0152
944.13	6.5550
946.00	11.2441
949.00	10.3174
962.29	9.4206
964.08	14.1391
966.15	12.2621
968.97	14.1617
968.97	14.1617
968.97	14.1617
983.53	10.4342
996.26	12.3819
1001.03	12.4007
1004.73	10.5052

1037.84	11.5791
1038.76	0.0000
1048.07	14.5190
1050.41	10.6549
1050.41	10.6549
1063.66	6.8077
1085.87	10.7695
1099.45	10.8125
1112.07	9.8661
1115.54	14.8138
1120.29	12.8561
1120.29	12.8561
1120.29	12.8561
1120.55	12.8572
1121.30	6.9245
1131.51	0.0000
1173.23	9.0352
1177.93	12.0625
1189.05	12.0996
1204.77	12.1519
1221.41	7.1208
1231.02	6.1191
1235.36	14.2945
1238.28	4.0874
1260.41	0.0000
1271.85	9.2783
1274.44	13.4110
1274.54	13.4110
1291.59	6.2170
1298.22	0.0000
1312.11	9.3746
1332.49	10.4700
1365.19	10.5550
1368.63	0.0000
1384.29	9.5438
1408.01	7.4657
1457.56	0.0000
1460.82	9.7189
1489.16	6.5215
1505.03	6.5452
1596.21	11.4480
1620.50	6.7129
1678.03	0.0000
1690.97	9.7318
1764.49	2.9631
1764.49	2.9631
1764.49	2.9631
1770.23	4.9440
1771.35	6.9233
1791.20	0.0000
1836.06	4.0061

VAX/VMS Nuclide Identification Report Generated 3-MAY-2012 13:08:08.79

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*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                                 *
*                               Charleston, SC 29407                            *
*****
Configuration   : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G1202635839.CNF;1
Background file : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]BKG_GAM18.CNF;278
Background date : 29-APR-2012 10:50:24
Sample date     : 14-MAR-2012 10:45:00 Acquisition date : 3-MAY-2012 11:07:45.
Sample ID      : G1202635839 Sample quantity   : 1.66680E+02 GRAM
Detector name  : GAM18 Detector geometry: CAN
Elapsed live time: 0 02:00:00.00 Elapsed real time: 0 02:00:01.36 0.0%
Energy tolerance : 1.50000 keV Analyst Initials : MXR1
Abundance limit : 75.00000 Sensitivity : 5.00000
Batch ID       : 1203837 Detector SN# :
Matrix Spike ID : LCS ID : 1364
*****

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Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	63.91*	13	449	0.88	127.30	122	8	1.87E-03	280.5	
2	0	77.50	246	718	0.93	154.46	150	8	3.41E-02	20.6	
3	0	84.11	172	448	0.83	167.66	165	7	2.39E-02	21.7	
4	0	87.09	133	360	0.95	173.61	171	6	1.85E-02	24.0	
5	0	89.81	148	366	1.34	179.05	177	6	2.06E-02	22.0	
6	0	93.13*	281	438	1.72	185.67	182	8	3.90E-02	15.0	
7	0	109.33	93	382	1.44	218.03	213	8	1.30E-02	37.7	
8	0	143.80	443	452	1.23	286.89	282	10	6.15E-02	10.1	
9	0	163.34	237	418	1.37	325.91	320	11	3.30E-02	17.9	
10	0	185.75*	2140	394	1.15	370.68	364	12	2.97E-01	2.9	
11	0	207.13	321	550	4.68	413.38	405	20	4.46E-02	18.9	
12	4	238.72*	1088	182	1.18	476.49	471	22	1.51E-01	3.7	1.01E+00
13	4	241.69	237	270	1.94	482.41	471	22	3.29E-02	18.9	
14	0	270.37	133	184	1.73	539.71	534	12	1.84E-02	22.3	
15	0	295.49*	240	236	1.22	589.88	584	11	3.33E-02	14.3	
16	0	300.48	64	159	1.53	599.85	596	9	8.82E-03	38.0	
17	0	328.91	20	254	1.36	656.65	650	12	2.80E-03	160.6	
18	0	338.62	238	209	1.31	676.03	669	15	3.30E-02	14.8	
19	0	351.98*	529	164	1.38	702.72	696	12	7.34E-02	6.7	
20	0	463.46	41	174	1.81	925.41	917	16	5.69E-03	74.0	
21	0	511.25*	58	202	1.99	1020.89	1013	19	8.05E-03	71.2	
22	0	583.33*	373	107	1.26	1164.88	1158	14	5.18E-02	8.2	
23	0	609.22*	424	119	1.87	1216.59	1208	15	5.89E-02	7.7	
24	0	727.96	79	123	1.63	1453.79	1448	15	1.10E-02	32.6	
25	4	768.46	74	55	2.93	1534.70	1528	39	1.03E-02	23.3	2.61E+00
26	4	774.04	44	56	2.93	1545.86	1528	39	6.14E-03	44.6	
27	0	861.80	42	82	1.98	1721.18	1713	12	5.78E-03	46.6	
28	0	911.33*	320	59	1.78	1820.12	1812	16	4.44E-02	8.0	
29	0	934.85	33	40	1.56	1867.12	1862	11	4.59E-03	41.4	
30	0	969.32*	128	92	1.81	1935.97	1930	11	1.77E-02	17.7	
31	0	1120.52	86	68	1.44	2238.06	2230	15	1.19E-02	23.6	
32	0	1461.05*	930	54	2.12	2918.42	2906	21	1.29E-01	3.9	
33	0	1765.07*	88	15	2.98	3525.91	3515	20	1.22E-02	16.1	

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

VAX/VMS Nuclide Identification Report Generated

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*****
*
*           GEL Laboratories LLC
*           2040 Savage Road
*           Charleston, SC 29407
*****
*
*           DETECTOR DATA
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G1202635839.CNF;1
* Acquisition date   : 3-MAY-2012 11:07:45 Detector SN#      :
* Detector ID        : GAM18                               Sensitivity       : 5.000
* Geometry           : CAN                                 Energy tolerance  : 1.500
* Elapsed live time  : 0 02:00:00.00                     Abundance limit  : 75.000
* Elapsed real time  : 0 02:00:01.36                     Half life ratio   : 8.000
*****
*
*           SAMPLE DATA
*
* Sample date        : 14-MAR-2012 10:45:00 Nuclide Library  : SOLID
* Sample ID          : G1202635839                      Analyst initials  : MXR1
* Batch Number       : 1203837                          Sample Quantity  : 1.6668E+02 GRAM
* Recovery           : 1.00000                          Carrier Weight    : 0.00000
*****
*
*           QC DATA
*
* Standard Weight    : 0.00000
* CALIB. DATE/TIME  : 7-MAY-2011 13:46:32 MS Isotope      :
* MSD DPM            : 0.000                          MSD Isotope       :
* LCS DPM            : 0.000                          LCS Isotope       :
* LCSD DPM           : 0.000                          LCSD Isotope      :
*****

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Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act error (1.96-sigma)	MDA (pCi/GRAM)	
K-40	1.034E+01	1.294E+00	3.571E-01	0.000E+00
CD-109	1.863E+00	8.947E-01	1.032E+00	0.000E+00
TE-125M	2.432E+01	1.815E+01	1.943E+01	0.000E+00
SN-126	1.728E-01	8.298E-02	9.635E-02	0.000E+00
TL-208	2.838E-01	5.209E-02	3.261E-02	0.000E+00
BI-211	2.053E+00	3.228E-01	2.063E-01	0.000E+00
PB-212	1.052E+00	1.254E-01	5.822E-02	0.000E+00
BI-214	6.180E-01	1.118E-01	7.284E-02	0.000E+00
PB-214	7.452E-01	1.239E-01	7.456E-02	0.000E+00
RA-224	2.447E+00	9.305E-01	6.232E-01	0.000E+00
RA-226	6.180E-01	1.118E-01	7.284E-02	0.000E+00
AC-228	1.062E+00	2.118E-01	1.394E-01	0.000E+00
RA-228	1.062E+00	2.118E-01	1.394E-01	0.000E+00
TH-228	1.052E+00	1.254E-01	5.822E-02	0.000E+00
TH-229	4.278E-02	3.004E-01	5.789E-01	0.000E+00
TH-230	6.179E-01	1.071E-01	7.284E-02	0.000E+00
PA-231	-2.581E-01	8.360E-01	1.519E+00	0.000E+00
TH-232	1.062E+00	2.118E-01	1.394E-01	0.000E+00
TH-234	3.657E-01	2.011E+00	1.843E+00	0.000E+00
U-235	1.466E+00	3.771E-01	2.417E-01	0.000E+00
U-238	3.657E-01	2.011E+00	1.843E+00	0.000E+00
ANH-511	3.488E-02	4.878E-02	3.228E-02	0.000E+00

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L. Act error (1.96-sigma)	MDA (pCi/GRAM)	
BE-7	1.899E-02	2.779E-01	5.189E-01	0.000E+00 NOT IDENT.
NA-22	-7.246E-03	2.301E-02	4.076E-02	0.000E+00 NOT IDENT.
NA-24	0.000E+00	2.627E+22	0.000E+00	0.000E+00 SHORT HLIF
SC-46	-9.986E-03	2.814E-02	4.983E-02	0.000E+00 FAIL ABUN
V-48	2.317E-02	1.595E-01	3.039E-01	0.000E+00 NOT IDENT.

CR-51	-9.493E-02	5.105E-01	9.230E-01	0.000E+00	NOT IDENT.
MN-54	1.348E-03	2.242E-02	4.112E-02	0.000E+00	NOT IDENT.
CO-56	2.065E-02	3.012E-02	5.777E-02	0.000E+00	NOT IDENT.
CO-57	-1.020E-02	1.940E-02	3.532E-02	0.000E+00	NOT IDENT.
CO-58	-1.541E-02	3.060E-02	5.405E-02	0.000E+00	NOT IDENT.
FE-59	1.636E-02	7.936E-02	1.496E-01	0.000E+00	NOT IDENT.
CO-60	1.571E-02	2.131E-02	4.169E-02	0.000E+00	NOT IDENT.
ZN-65	-1.046E-02	6.238E-02	9.590E-02	0.000E+00	NOT IDENT.
SE-75	1.225E-02	3.484E-02	5.829E-02	0.000E+00	NOT IDENT.
SR-85	6.919E-02	4.023E-02	7.064E-02	0.000E+00	NOT IDENT.
Y-88	-2.886E-03	2.426E-02	4.608E-02	0.000E+00	NOT IDENT.
Y-91	-9.302E+00	1.674E+01	2.910E+01	0.000E+00	NOT IDENT.
NB-94	2.231E-03	1.769E-02	3.326E-02	0.000E+00	NOT IDENT.
NB-95	6.415E-02	3.513E-02	6.541E-02	0.000E+00	NOT IDENT.
NB-95M	5.019E-02	1.141E-01	1.929E-01	0.000E+00	NOT IDENT.
ZR-95	1.851E-02	5.687E-02	1.077E-01	0.000E+00	NOT IDENT.
MO-99	0.000E+00	4.313E+04	0.000E+00	0.000E+00	SHORT HLIF
TC-99M	0.000E+00	1.369E+42	0.000E+00	0.000E+00	SHORT HLIF
RU-103	1.103E-02	4.054E-02	7.633E-02	0.000E+00	FAIL ABUN
RH-106	6.560E-02	1.891E-01	3.636E-01	0.000E+00	NOT IDENT.
RU-106	6.560E-02	1.890E-01	3.636E-01	0.000E+00	NOT IDENT.
AG-108M	4.685E-03	1.620E-02	3.091E-02	0.000E+00	NOT IDENT.
AG-110M	1.139E-02	2.778E-02	5.268E-02	0.000E+00	NOT IDENT.
SN-113	1.956E-02	2.905E-02	5.710E-02	0.000E+00	NOT IDENT.
CD-115	0.000E+00	3.096E+05	0.000E+00	0.000E+00	SHORT HLIF
SN-117M	3.336E-01	2.402E-01	4.144E-01	0.000E+00	NOT IDENT.
TE-123M	2.145E-02	2.627E-02	4.408E-02	0.000E+00	NOT IDENT.
SB-124	-8.597E-03	6.501E-02	1.207E-01	0.000E+00	NOT IDENT.
SB-125	2.157E-02	4.974E-02	9.590E-02	0.000E+00	FAIL ABUN
I-126	1.802E-02	7.384E-01	1.390E+00	0.000E+00	NOT IDENT.
SB-126	4.875E-01	5.594E-01	1.013E+00	0.000E+00	NOT IDENT.
SB-127	0.000E+00	3.674E+02	0.000E+00	0.000E+00	SHORT HLIF
I-131	8.600E-01	1.248E+00	2.470E+00	0.000E+00	NOT IDENT.
TE-132	0.000E+00	8.355E+02	0.000E+00	0.000E+00	SHORT HLIF
BA-133	1.892E-02	2.514E-02	4.418E-02	0.000E+00	NOT IDENT.
I-133	0.000E+00	4.311E+15	0.000E+00	0.000E+00	SHORT HLIF
CS-134	4.061E-02	2.497E-02	5.001E-02	0.000E+00	NOT IDENT.
CS-135	8.021E-02	1.020E-01	1.742E-01	0.000E+00	NOT IDENT.
I-135	0.000E+00	1.424E+41	0.000E+00	0.000E+00	SHORT HLIF
CS-136	-2.510E-01	3.844E-01	6.754E-01	0.000E+00	NOT IDENT.
BA-137M	-2.380E-02	1.765E-02	2.978E-02	0.000E+00	NOT IDENT.
CS-137	-2.514E-02	1.865E-02	3.146E-02	0.000E+00	NOT IDENT.
CE-139	1.905E-02	2.376E-02	4.237E-02	0.000E+00	NOT IDENT.
BA-140	2.934E-02	9.882E-01	1.818E+00	0.000E+00	FAIL ABUN
LA-140	-8.297E-02	3.476E-01	6.289E-01	0.000E+00	FAIL ABUN
CE-141	0.000E+00	1.174E-01	2.136E-01	0.000E+00	NOT IDENT.
CE-143	0.000E+00	5.606E+09	0.000E+00	0.000E+00	SHORT HLIF
CE-144	4.374E-02	1.452E-01	2.708E-01	0.000E+00	NOT IDENT.
PM-144	3.032E-03	2.048E-02	3.847E-02	0.000E+00	NOT IDENT.
PR-144	2.289E-01	1.561E+00	2.931E+00	0.000E+00	NOT IDENT.
PM-146	7.802E-03	2.233E-02	4.270E-02	0.000E+00	NOT IDENT.
ND-147	-5.660E-01	2.675E+00	4.858E+00	0.000E+00	FAIL ABUN
PM-149	0.000E+00	2.871E+06	0.000E+00	0.000E+00	SHORT HLIF
EU-152	4.299E-02	6.101E-02	9.648E-02	0.000E+00	NOT IDENT.
GD-153	-4.858E-02	7.056E-02	1.157E-01	0.000E+00	NOT IDENT.
EU-154	-2.586E-02	6.354E-02	1.115E-01	0.000E+00	NOT IDENT.
EU-155	6.466E-02	8.070E-02	1.414E-01	0.000E+00	FAIL ABUN
TB-160	-4.543E-02	9.745E-02	1.714E-01	0.000E+00	FAIL ABUN
HO-166M	1.626E-02	3.057E-02	5.925E-02	0.000E+00	FAIL ABUN
HF-181	7.983E-03	4.111E-02	7.747E-02	0.000E+00	NOT IDENT.
TA-182	-3.756E-02	1.285E-01	2.278E-01	0.000E+00	FAIL ABUN
IR-192	-3.736E-03	2.720E-02	4.942E-02	0.000E+00	FAIL ABUN
HG-203	2.179E-02	3.890E-02	7.368E-02	0.000E+00	NOT IDENT.
BI-207	1.105E-02	3.001E-02	5.692E-02	0.000E+00	NOT IDENT.
PB-210	6.317E-01	3.500E+00	7.183E+00	0.000E+00	NOT IDENT.
PB-211	-1.255E-02	3.851E-01	7.259E-01	0.000E+00	NOT IDENT.
BI-212	0.000E+00	5.696E-01	7.098E-01	0.000E+00	FAIL ABUN
RN-219	7.085E-02	2.201E-01	4.230E-01	0.000E+00	FAIL ABUN
RA-223	1.721E-01	4.349E-01	7.105E-01	0.000E+00	FAIL ABUN
AC-227	-1.023E-01	1.410E-01	2.530E-01	0.000E+00	FAIL ABUN
TH-227	-1.023E-01	1.412E-01	2.530E-01	0.000E+00	FAIL ABUN
TH-231	1.721E-01	4.349E-01	7.105E-01	0.000E+00	FAIL ABUN
PA-233	-4.660E-02	3.528E-02	5.914E-02	0.000E+00	FAIL ABUN
PA-234	2.686E-03	1.592E-01	2.894E-01	0.000E+00	NOT IDENT.
PA-234M	-8.478E-02	2.333E+00	4.244E+00	0.000E+00	NOT IDENT.
NP-237	-4.660E-02	3.540E-02	5.914E-02	0.000E+00	FAIL ABUN
NP-239	1.178E-01	2.843E-01	5.387E-01	0.000E+00	NOT IDENT.
AM-241	2.641E-02	1.232E-01	2.240E-01	0.000E+00	NOT IDENT.

AM-243	3.819E-02	5.033E-02	8.966E-02	0.000E+00	NOT IDENT.
CM-247	6.361E-03	1.996E-02	3.840E-02	0.000E+00	NOT IDENT.
CF-249	-2.016E-03	2.158E-02	4.073E-02	0.000E+00	NOT IDENT.
CF-251	1.634E-02	7.939E-02	1.542E-01	0.000E+00	NOT IDENT.

Gamma Spectroscopy Auxillary Report

Sample:G1202635839

Nuclide	TPU	LLD	EFF	FWHM	TArea	TBack	TCounts
BE-7	0.278E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
NA-22	0.230E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
NA-24	0.196E+17	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
K-40	0.129E+01	0.847E+02	0.185E-01	0.212E+01	0.907E+03	0.174E+03	0.108E+04
SC-46	0.281E-01	0.689E+02	0.000E+00	0.000E+00	0.864E+02	0.682E+02	0.155E+03
V-48	0.160E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
CR-51	0.510E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
MN-54	0.224E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
CO-56	0.301E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
CO-57	0.194E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
CO-58	0.306E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
FE-59	0.794E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
CO-60	0.213E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
ZN-65	0.624E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
SE-75	0.348E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
SR-85	0.402E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Y-88	0.243E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Y-91	0.167E+02	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
NB-94	0.177E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
NB-95	0.351E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
NB-95M	0.114E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
ZR-95	0.569E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
MO-99	0.431E+05	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
TC-99M	0.196E+17	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
RU-103	0.405E-01	0.665E+02	0.000E+00	0.000E+00	0.464E+03	0.432E+03	0.895E+03
RH-106	0.189E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
RU-106	0.189E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
AG-108M	0.162E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
CD-109	0.895E+00	0.663E+02	0.636E-01	0.954E+00	0.181E+03	0.487E+03	0.668E+03
AG-110M	0.278E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
SN-113	0.291E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
CD-115	0.310E+06	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
SN-117M	0.240E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
TE-123M	0.263E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
SB-124	0.650E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
SB-125	0.497E-01	0.603E+02	0.000E+00	0.000E+00	0.462E+02	0.197E+03	0.243E+03
TE-125M	0.182E+02	0.554E+02	0.776E-01	0.144E+01	0.124E+03	0.505E+03	0.629E+03
I-126	0.738E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
SB-126	0.559E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
SN-126	0.830E-01	0.819E+02	0.636E-01	0.954E+00	0.380E+03	0.185E+04	0.223E+04
SB-127	0.367E+03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
I-131	0.125E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
TE-132	0.835E+03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
BA-133	0.251E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
I-133	0.431E+16	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
CS-134	0.250E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
CS-135	0.102E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
I-135	0.196E+17	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
CS-136	0.384E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
BA-137M	0.177E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
CS-137	0.186E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
CE-139	0.238E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
BA-140	0.988E+00	0.569E+02	0.000E+00	0.000E+00	0.302E+03	0.530E+03	0.832E+03
LA-140	0.348E+00	0.607E+02	0.000E+00	0.000E+00	0.237E+02	0.298E+03	0.322E+03
CE-141	0.117E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
CE-143	0.561E+10	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
CE-144	0.145E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
PM-144	0.205E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
PR-144	0.156E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
PM-146	0.223E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
ND-147	0.267E+01	0.642E+02	0.000E+00	0.000E+00	0.200E+03	0.494E+03	0.694E+03
PM-149	0.287E+07	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
EU-152	0.610E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
GD-153	0.706E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
EU-154	0.635E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
EU-155	0.807E-01	0.663E+02	0.000E+00	0.000E+00	0.181E+03	0.487E+03	0.668E+03
TB-160	0.975E-01	0.663E+02	0.000E+00	0.000E+00	0.181E+03	0.487E+03	0.668E+03
HO-166M	0.306E-01	0.618E+02	0.000E+00	0.000E+00	0.268E+04	0.111E+04	0.379E+04
HF-181	0.411E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
TA-182	0.129E+00	0.689E+02	0.000E+00	0.000E+00	0.864E+02	0.682E+02	0.155E+03

IR-192	0.272E-01	0.565E+02	0.000E+00	0.000E+00	0.285E+03	0.373E+03	0.659E+03
HG-203	0.389E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
BI-207	0.300E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
TL-208	0.521E-01	0.601E+02	0.383E-01	0.126E+01	0.453E+03	0.421E+03	0.874E+03
PB-210	0.350E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
BI-211	0.323E+00	0.547E+02	0.524E-01	0.138E+01	0.617E+03	0.470E+03	0.109E+04
PB-211	0.385E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
BI-212	0.570E+00	0.671E+02	0.326E-01	0.163E+01	0.846E+02	0.131E+03	0.216E+03
PB-212	0.125E+00	0.656E+02	0.651E-01	0.118E+01	0.174E+04	0.177E+04	0.351E+04
BI-214	0.112E+00	0.646E+02	0.371E-01	0.187E+01	0.633E+03	0.582E+03	0.122E+04
PB-214	0.124E+00	0.636E+02	0.524E-01	0.138E+01	0.153E+04	0.253E+04	0.406E+04
RN-219	0.220E+00	0.468E+02	0.000E+00	0.000E+00	0.159E+03	0.222E+03	0.381E+03
RA-223	0.435E+00	0.664E+02	0.000E+00	0.000E+00	0.162E+04	0.293E+04	0.455E+04
RA-224	0.930E+00	0.571E+02	0.647E-01	0.194E+01	0.288E+03	0.706E+03	0.994E+03
RA-226	0.112E+00	0.646E+02	0.371E-01	0.187E+01	0.633E+03	0.582E+03	0.122E+04
AC-227	0.141E+00	0.459E+02	0.000E+00	0.000E+00	0.755E+02	0.189E+03	0.265E+03
TH-227	0.141E+00	0.459E+02	0.000E+00	0.000E+00	0.755E+02	0.189E+03	0.265E+03
AC-228	0.212E+00	0.661E+02	0.273E-01	0.178E+01	0.742E+03	0.699E+03	0.144E+04
RA-228	0.212E+00	0.661E+02	0.273E-01	0.178E+01	0.742E+03	0.699E+03	0.144E+04
TH-228	0.125E+00	0.656E+02	0.651E-01	0.118E+01	0.174E+04	0.177E+04	0.351E+04
TH-229	0.300E+00	0.694E+02	0.000E+00	0.000E+00	0.434E+03	0.110E+04	0.154E+04
TH-230	0.107E+00	0.646E+02	0.371E-01	0.187E+01	0.633E+03	0.582E+03	0.122E+04
PA-231	0.836E+00	0.459E+02	0.000E+00	0.000E+00	0.755E+02	0.189E+03	0.265E+03
TH-231	0.435E+00	0.654E+02	0.000E+00	0.000E+00	0.124E+04	0.166E+04	0.290E+04
TH-232	0.212E+00	0.661E+02	0.273E-01	0.178E+01	0.742E+03	0.699E+03	0.144E+04
PA-233	0.353E-01	0.459E+02	0.000E+00	0.000E+00	0.755E+02	0.189E+03	0.265E+03
PA-234	0.159E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
PA-234M	0.233E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
TH-234	0.201E+01	0.111E+03	0.314E-01	0.876E+00	0.397E+03	0.215E+04	0.255E+04
U-235	0.377E+00	0.617E+02	0.799E-01	0.123E+01	0.413E+04	0.399E+04	0.812E+04
NP-237	0.354E-01	0.459E+02	0.000E+00	0.000E+00	0.755E+02	0.189E+03	0.265E+03
U-238	0.201E+01	0.111E+03	0.314E-01	0.876E+00	0.397E+03	0.215E+04	0.255E+04
NP-239	0.284E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
AM-241	0.123E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
AM-243	0.503E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
CM-247	0.200E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
CF-249	0.216E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
CF-251	0.794E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
ANH-511	0.488E-01	0.102E+03	0.418E-01	0.199E+01	0.647E+02	0.247E+04	0.254E+04

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Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G1202635839.CNF;1
Analyses by       : PEAK V16.9
Sample title      : MXR1
Sample date       : 14-MAR-2012 10:45:00 Acquisition date : 3-MAY-2012 11:07:45
Sample ID         : G1202635839 Sample quantity   : 166.68 GRAM
Sample type       : SOLID Sample geometry    :
Detector name     : GAMMA18 Detector geometry: CAN
Elapsed live time: 0 02:00:00.00 Elapsed real time: 0 02:00:01.36 0.0%
Start energy      : 0.67 keV End energy       : 2050.36 keV
Sensitivity       : 5.00 Gaussian           : 10.00
Critical level    : No
    
```

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	63.91	44	449	0.88	127.30	122	8	6.05E-03	85.5	
2	0	77.50	246	718	0.93	154.46	150	8	3.41E-02	20.6	
3	0	84.11	172	448	0.83	167.66	165	7	2.39E-02	21.7	
4	0	87.09	133	360	0.95	173.61	171	6	1.85E-02	24.0	
5	0	89.81	148	366	1.34	179.05	177	6	2.06E-02	22.0	
6	0	93.13	363	438	1.72	185.67	182	8	5.05E-02	11.3	
7	0	109.33	93	382	1.44	218.03	213	8	1.30E-02	37.7	
8	0	143.80	443	452	1.23	286.89	282	10	6.15E-02	10.1	
9	0	163.34	237	418	1.37	325.91	320	11	3.30E-02	17.9	
10	0	185.75	2214	394	1.15	370.68	364	12	3.07E-01	2.8	
11	0	207.13	321	550	4.68	413.38	405	20	4.46E-02	18.9	
12	4	238.72	1134	182	1.18	476.49	471	22	1.57E-01	3.6	1.01E+00
13	4	241.69	237	270	1.94	482.41	471	22	3.29E-02	18.9	
14	0	270.37	133	184	1.73	539.71	534	12	1.84E-02	22.3	
15	0	295.49	251	236	1.22	589.88	584	11	3.48E-02	13.5	
16	0	300.48	64	159	1.53	599.85	596	9	8.82E-03	38.0	
17	0	328.91	20	254	1.36	656.65	650	12	2.80E-03	160.6	
18	0	338.62	238	209	1.31	676.03	669	15	3.30E-02	14.8	
19	0	351.98	562	164	1.38	702.72	696	12	7.81E-02	6.2	
20	0	463.46	41	174	1.81	925.41	917	16	5.69E-03	74.0	
21	0	511.25	328	202	1.99	1020.89	1013	19	4.55E-02	12.2	
22	0	583.33	399	107	1.26	1164.88	1158	14	5.55E-02	7.5	
23	0	609.22	461	119	1.87	1216.59	1208	15	6.40E-02	7.0	
24	0	727.96	79	123	1.63	1453.79	1448	15	1.10E-02	32.6	
25	4	768.46	74	55	2.93	1534.70	1528	39	1.03E-02	23.3	2.61E+00
26	4	774.04	44	56	2.93	1545.86	1528	39	6.14E-03	44.6	
27	0	861.80	42	82	1.98	1721.18	1713	12	5.78E-03	46.6	
28	0	911.33	342	59	1.78	1820.12	1812	16	4.75E-02	7.4	
29	0	934.85	33	40	1.56	1867.12	1862	11	4.59E-03	41.4	
30	0	969.32	141	92	1.81	1935.97	1930	11	1.96E-02	15.7	
31	0	1120.52	86	68	1.44	2238.06	2230	15	1.19E-02	23.6	
32	0	1461.05	945	54	2.12	2918.42	2906	21	1.31E-01	3.8	
33	0	1765.07	96	15	2.98	3525.91	3515	20	1.33E-02	14.2	

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*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29407                          *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G1202635839.CNF;1
Sample date        : 14-MAR-2012 10:45:00 Acquisition date : 3-MAY-2012 11:07:45.
Sample ID          : G1202635839          Sample quantity  : 1.66680E+02 GRAM
Detector name      : GAM18                Detector geometry: CAN
Elapsed live time  : 0 02:00:00.00        Elapsed real time: 0 02:00:01.36  0.0%
Energy tolerance  : 1.50000 keV          Analyst Initials  : MXR1
Abundance limit   : 75.00000             Sensitivity       : 5.00000
Batch ID          : 1203837              Detector SN#      :
Matrix Spike ID   :                      LCS ID           : 1364
*****
    
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Summary of Nuclide Activity

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Total number of lines in spectrum      33
Number of unidentified lines           4
Number of lines tentatively identified by NID 29      87.88%
    
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Nuclide Type :

Nuclide	Hlife	Decay	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
K-40	1.25E+09Y	1.00	1.034E+01	1.034E+01	0.132E+01	12.77	
CD-109	461.40D	1.08	1.728E+00	1.863E+00	0.913E+00	48.99	
TE-125M	57.40D	1.83	1.329E+01	2.432E+01	1.852E+01	76.15	
SN-126	2.30E+05Y	1.00	1.728E-01	1.728E-01	0.847E-01	48.99	
TL-208	1.41E+10Y	1.00	2.838E-01	2.838E-01	0.532E-01	18.73	
BI-211	7.04E+08Y	1.00	2.053E+00	2.053E+00	0.329E+00	16.04	
PB-212	1.41E+10Y	1.00	1.052E+00	1.052E+00	0.128E+00	12.16	
BI-214	1600.00Y	1.00	6.179E-01	6.180E-01	1.141E-01	18.46	
PB-214	1600.00Y	1.00	7.451E-01	7.452E-01	1.264E-01	16.96	
RA-224	1.41E+10Y	1.00	2.447E+00	2.447E+00	0.949E+00	38.80	
RA-226	1600.00Y	1.00	6.179E-01	6.180E-01	1.141E-01	18.46	
AC-228	1.41E+10Y	1.00	1.062E+00	1.062E+00	0.216E+00	20.34	
RA-228	1.41E+10Y	1.00	1.062E+00	1.062E+00	0.216E+00	20.34	
TH-228	1.41E+10Y	1.00	1.052E+00	1.052E+00	0.128E+00	12.16	
TH-229	7340.00Y	1.00	2.835E-01	2.835E-01	1.277E-01	45.04	K
TH-230	7.54E+04Y	1.00	6.179E-01	6.179E-01	1.093E-01	17.69	
PA-231	7.04E+08Y	1.00	5.540E-01	5.540E-01	4.256E-01	76.82	K
TH-232	1.41E+10Y	1.00	1.062E+00	1.062E+00	0.216E+00	20.34	
TH-234	4.47E+09Y	1.00	3.657E-01	3.657E-01	20.52E-01	561.20	
U-235	7.04E+08Y	1.00	1.466E+00	1.466E+00	0.385E+00	26.25	
U-238	4.47E+09Y	1.00	3.657E-01	3.657E-01	20.52E-01	561.20	
ANH-511	1.00E+09Y	1.00	3.488E-02	3.488E-02	4.977E-02	142.70	
Total Activity :			4.127E+01	5.244E+01			

Grand Total Activity : 4.127E+01 5.244E+01

Flags: "K" = Keyline not found "M" = Manually accepted
 "E" = Manually edited "A" = Nuclide specific abn. limit

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
0	207.13	397	681	4.68	413.38	405	20	4.46E-02	37.8	7.01E+00	
0	270.37	159	222	1.73	539.71	534	12	1.84E-02	44.6	6.08E+00	T
0	328.91	24	298	1.36	656.65	650	12	2.80E-03	****	5.45E+00	T
0	463.46	46	197	1.81	925.41	917	16	5.69E-03	****	4.44E+00	T
0	727.96	85	131	1.63	1453.79	1448	15	1.10E-02	65.2	3.26E+00	T
4	768.46	79	58	2.93	1534.70	1528	39	1.03E-02	46.6	3.13E+00	
4	774.04	47	59	2.93	1545.86	1528	39	6.14E-03	89.3	3.11E+00	
0	934.85	34	41	1.56	1867.12	1862	11	4.59E-03	82.7	2.67E+00	

Flags: "T" = Tentatively associated

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
K-40	1460.82	907	10.66*	1.853E+00	1.034E+01	1.034E+01	12.77
CD-109	88.03	181	3.70*	6.364E+00	1.728E+00	1.863E+00	48.99
TE-125M	109.28	124	0.27*	7.756E+00	1.329E+01	2.432E+01	76.15
SN-126	64.28	19	9.60	3.135E+00	1.409E-01	1.409E-01	561.10
	86.94	181	8.90	6.364E+00	7.186E-01	7.186E-01	63.53
	87.57	181	37.00*	6.364E+00	1.728E-01	1.728E-01	48.99
TL-208	277.37	-----	6.60	5.998E+00	-----	Line Not Found	-----
	583.19	410	85.00*	3.828E+00	2.838E-01	2.838E-01	18.73
	860.56	43	12.50	2.857E+00	2.742E-01	2.742E-01	93.82
BI-211	72.87	-----	1.23	4.577E+00	-----	Line Not Found	-----
	351.06	617	12.92*	5.237E+00	2.053E+00	2.053E+00	16.04
PB-212	74.82	-----	10.28	4.865E+00	-----	Line Not Found	-----
	77.11	337	17.10	5.241E+00	8.459E-01	8.459E-01	42.06
	238.63	1327	43.60*	6.513E+00	1.052E+00	1.052E+00	12.16
	300.09	75	3.30	5.734E+00	8.981E-01	8.981E-01	76.70
BI-214	609.32	464	45.49*	3.715E+00	6.179E-01	6.180E-01	18.46
	1120.29	86	14.92	2.293E+00	5.686E-01	5.686E-01	48.35
	1764.49	83	15.30	1.650E+00	7.418E-01	7.419E-01	33.30
PB-214	74.82	-----	5.80	4.865E+00	-----	Line Not Found	-----
	77.11	337	9.70	5.241E+00	1.491E+00	1.491E+00	42.86
	242.00	288	7.25	6.470E+00	1.384E+00	1.384E+00	39.23
	295.22	285	18.42	5.789E+00	6.024E-01	6.024E-01	30.56
	351.93	617	35.60*	5.237E+00	7.451E-01	7.452E-01	16.96
RA-224	240.99	288	4.10*	6.470E+00	2.447E+00	2.447E+00	38.80
RA-226	609.32	464	45.49*	3.715E+00	6.179E-01	6.180E-01	18.46
	1120.29	86	14.92	2.293E+00	5.686E-01	5.686E-01	48.35
	1764.49	83	15.30	1.650E+00	7.418E-01	7.419E-01	33.30
AC-228	338.32	278	11.27	5.355E+00	1.039E+00	1.039E+00	51.12
	911.20	332	25.80*	2.729E+00	1.062E+00	1.062E+00	20.34
	968.97	131	15.80	2.592E+00	7.220E-01	7.220E-01	43.15
RA-228	338.32	278	11.27	5.355E+00	1.039E+00	1.039E+00	51.12
	911.20	332	25.80*	2.729E+00	1.062E+00	1.062E+00	20.34
	968.97	131	15.80	2.592E+00	7.220E-01	7.220E-01	43.15
TH-228	74.82	-----	10.28	4.865E+00	-----	Line Not Found	-----
	77.11	337	17.10	5.241E+00	8.459E-01	8.459E-01	42.06
	238.63	1327	43.60*	6.513E+00	1.052E+00	1.052E+00	12.16
	300.09	75	3.30	5.734E+00	8.981E-01	8.981E-01	97.56
TH-229	85.43	234	14.70	6.053E+00	5.928E-01	5.928E-01	44.31
	88.47	200	24.00	6.621E+00	2.835E-01	2.835E-01	45.04
	193.51	-----	4.41*	7.239E+00	-----	Line Not Found	-----
	210.85	-----	2.80	6.947E+00	-----	Line Not Found	-----
TH-230	609.32	464	45.49*	3.715E+00	6.179E-01	6.179E-01	17.69
	1120.29	86	14.92	2.293E+00	5.686E-01	5.686E-01	47.88
	1764.49	83	15.30	1.650E+00	7.418E-01	7.418E-01	33.30
PA-231	283.69	-----	1.70*	5.923E+00	-----	Line Not Found	-----
	301.36	75	5.35	5.734E+00	5.540E-01	5.540E-01	76.82
TH-232	338.32	278	11.27	5.355E+00	1.039E+00	1.039E+00	30.78
	911.20	332	25.80*	2.729E+00	1.062E+00	1.062E+00	20.34
	968.97	131	15.80	2.592E+00	7.220E-01	7.220E-01	43.15

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
TH-234	63.29	19	3.70*	3.135E+00	3.657E-01	3.657E-01	561.20
	92.59	378	4.23	6.896E+00	2.918E+00	2.918E+00	37.32
U-235	89.96	200	3.47	6.621E+00	1.961E+00	1.961E+00	50.60
	93.35	378	5.60	6.896E+00	2.204E+00	2.204E+00	37.93
	143.76	570	10.96*	7.994E+00	1.466E+00	1.466E+00	26.25
	163.33	302	5.08	7.744E+00	1.726E+00	1.726E+00	39.98
	185.72	2681	57.20	7.372E+00	1.432E+00	1.432E+00	9.98
	205.31	-----	5.01	7.039E+00	-----	Line Not Found	-----
U-238	63.29	19	3.70*	3.135E+00	3.657E-01	3.657E-01	561.20
	92.59	378	4.23	6.896E+00	2.918E+00	2.918E+00	31.29
ANH-511	511.00	65	100.00*	4.177E+00	3.488E-02	3.488E-02	142.70

Flag: "*" = Keyline

Nuclide	Half-life	Half-Life Ratio	Energy	%Abund	Activity (pCi/GRAM)	2-Sigma %Error	Rejected by
SC-46	83.79D	0.60	889.28*	99.98	---	Not Found	---
			1120.55	99.99	1.284E-01	47.88	Abun.
			% Abundances Found =		50.00		
RU-103	39.26D	1.28	497.08*	91.00	---	Not Found	---
			610.33	5.76	1.181E+01	22.49	Abun.
			% Abundances Found =		5.95		
SB-125	2.76Y	0.05	427.87*	29.80	---	Not Found	---
			463.37	10.56	2.297E-01	148.36	Abun.
			600.60	17.77	---	Not Found	---
			635.95	11.29	---	Not Found	---
% Abundances Found =		15.21					
BA-140	12.75D	3.93	162.66	6.22	2.143E+01	36.88	Abun.
			304.85	4.29	---	Not Found	---
			423.72	3.15	---	Not Found	---
			537.26*	24.39	---	Not Found	---
% Abundances Found =		16.35					
LA-140	12.75D	3.93	328.76	20.30	7.340E-01	321.28	Abun.
			487.02	45.50	---	Not Found	---
			815.77	23.28	---	Not Found	---
			1596.21*	95.40	---	Not Found	---
% Abundances Found =		11.00					
ND-147	10.98D	4.56	91.11	27.90	5.749E+00	45.19	Abun.
			319.41	1.95	---	Not Found	---
			531.02*	13.10	---	Not Found	---
% Abundances Found =		64.96					
EU-155	4.75Y	0.03	86.55	30.70	2.125E-01	49.01	Abun.
			105.31*	21.10	---	Not Found	---
% Abundances Found =		59.27					
TB-160	72.30D	0.69	86.79	13.30	7.770E-01	48.99	Abun.
			197.04	4.90	---	Not Found	---
			215.65	3.71	---	Not Found	---
			298.57	27.10	---	Not Found	---
			879.36*	28.50	---	Not Found	---
			962.29	9.00	---	Not Found	---
			966.15	24.20	---	Not Found	---
			1177.93	14.40	---	Not Found	---
1271.85	7.00	---	Not Found	---			
% Abundances Found =		10.07					
HO-166M	1203.00Y	0.00	80.57	11.97	---	Not Found	---
			184.41	72.00	1.138E+00	9.98	Abun.
			280.46	29.36	---	Not Found	---
			410.95	11.20	---	Not Found	---
			711.68*	54.10	---	Not Found	---
752.31	12.10	---	Not Found	---			

Nuclide	Half-life	Half-Life Ratio	Energy	%Abund	Activity (pCi/GRAM)	2-Sigma %Error	Rejected by
HO-166M	1203.00Y	0.00	810.29	56.90	---	Not Found	Abun.
		% Abundances	Found =	29.08			
TA-182	114.43D	0.44	67.75	41.20	---	Not Found	Abun.
			100.11	14.10	---	Not Found	
			152.43	6.93	---	Not Found	
			222.11	7.49	---	Not Found	
			1121.30	34.90	3.292E-01	47.88	
			1189.05	16.20	---	Not Found	
			1221.41*	27.00	---	Not Found	
			1231.02	11.44	---	Not Found	
		% Abundances	Found =	21.91			
IR-192	73.83D	0.68	295.96	28.72	6.181E-01	29.88	Abun.
			308.46	29.68	---	Not Found	
			316.51*	82.71	---	Not Found	
			468.07	47.81	---	Not Found	
		% Abundances	Found =	15.20			
BI-212	1.41E+10Y	0.00	727.33*	6.67	8.757E-01	66.37	Abun.
			785.37	1.10	---	Not Found	
			1620.50	1.47	---	Not Found	
		% Abundances	Found =	72.19			
RN-219	7.04E+08Y	0.00	271.23	10.80	5.464E-01	45.75	Abun.
			401.81*	6.60	---	Not Found	
		% Abundances	Found =	62.07			
RA-223	7.04E+08Y	0.00	81.07	15.00	---	Not Found	Abun.
			83.79	24.70	3.528E-01	44.31	
			94.56	8.67	1.424E+00	31.29	
			144.24	3.27	4.913E+00	22.23	
			154.21	5.70	---	Not Found	
			269.46	13.90	4.245E-01	45.45	
			323.87*	3.99	---	Not Found	
			338.28	2.84	4.121E+00	31.92	
		% Abundances	Found =	68.37			
AC-227	7.04E+08Y	0.00	79.69	2.64	---	Not Found	Abun.
			235.96	17.50	---	Not Found	
			256.23*	9.50	---	Not Found	
			299.98	3.00	9.879E-01	77.02	
			304.50	1.56	---	Not Found	
			334.37	1.54	---	Not Found	
		% Abundances	Found =	8.39			
TH-227	7.04E+08Y	0.00	79.69	2.64	---	Not Found	Abun.
			235.96	17.50	---	Not Found	
			256.23*	9.50	---	Not Found	
			299.98	3.00	9.879E-01	77.02	
			304.50	1.56	---	Not Found	
			334.37	1.54	---	Not Found	
		% Abundances	Found =	8.39			

Nuclide	Half-life	Half-Life Ratio	Energy	%Abund	Activity (pCi/GRAM)	2-Sigma %Error	Rejected by
TH-231	7.04E+08Y	0.00	81.07	15.00	---	Not Found	---
			83.79	24.70	3.528E-01	44.31	Abun.
			94.87	5.69	---	Not Found	---
			144.24	3.27	4.913E+00	22.23	
			154.21	5.70	---	Not Found	---
			269.46	13.90	4.245E-01	45.45	
			323.87*	3.99	---	Not Found	---
			338.28	2.84	4.121E+00	31.92	
% Abundances Found =			59.54				
PA-233	2.14E+06Y	0.00	300.13	6.63	4.470E-01	77.40	Abun.
			311.90*	38.50	---	Not Found	---
			340.48	4.45	---	Not Found	---
			% Abundances Found =			13.37	
NP-237	2.14E+06Y	0.00	94.65	10.56	---	Not Found	---
			98.43	16.90	---	Not Found	---
			300.13	6.63	4.470E-01	76.99	Abun.
			311.90*	38.50	---	Not Found	---
			340.48	4.45	---	Not Found	---
			% Abundances Found =			8.61	

Flag: "*" = Keyline

 * GEL Laboratories LLC *
 * 2040 Savage Road *
 * Charleston, SC 29407 *
 * GAMMA SPECTROSCOPY BACKGROUND REPORT *

ENERGY	MDA COUNTS
43.53	251.8528
46.54	249.3399
49.72	0.0000
57.36	0.0000
57.53	232.7939
59.54	245.3822
63.29	293.2539
63.29	293.2539
64.28	312.4856
67.75	352.3516
69.67	355.7443
70.83	366.4953
72.81	515.7368
72.87	515.8435
72.87	515.8435
74.66	545.8279
74.82	546.1261
74.82	546.1261
74.82	546.1261
74.97	567.5851
77.11	488.2531
77.11	488.2531
77.11	488.2531
79.69	370.9808
79.69	370.9808
80.12	344.6887
80.19	344.7675
80.57	296.2869
81.00	342.7859
81.07	342.8622
81.07	342.8622
83.79	393.7762
83.79	393.7762
85.43	315.4587
86.55	316.5430
86.79	404.7643
86.94	404.9518
87.57	367.5041
88.03	368.0134
88.47	368.4998
89.96	417.5159
91.11	261.4622
92.59	349.1273
92.59	349.1273
93.35	342.4168
94.56	307.5938
94.65	307.6721
94.67	307.6892
94.87	307.8644
97.43	346.3915
98.43	302.3533
98.44	302.3625
99.53	308.3403
100.11	301.7192
103.18	337.0004
103.37	337.1728
105.31	305.9398
106.12	297.2974
109.28	351.2415
111.00	315.1452
111.76	0.0000
116.30	0.0000
117.23	340.7131
121.12	318.1714
121.78	326.1744
122.06	352.1552
123.07	356.2129

131.20	331.0375
133.02	321.3563
133.52	313.9946
136.00	331.1860
136.47	355.9135
140.51	0.0000
140.51	0.0000
143.76	323.1115
144.24	323.4297
144.24	323.4297
145.44	310.1026
152.43	278.3708
153.25	255.8702
154.21	295.4308
154.21	295.4308
156.02	346.0693
158.56	267.7705
159.00	292.3568
162.66	322.4071
163.33	322.8086
165.86	258.0429
176.60	282.0806
177.52	282.5310
181.07	0.0000
184.41	264.0228
185.72	264.6024
193.51	242.1349
197.04	269.5320
205.31	232.5594
210.85	209.6532
215.65	193.8192
222.11	216.2532
227.38	231.5067
228.16	0.0000
228.18	239.5606
235.69	223.5789
235.96	217.3618
235.96	217.3618
238.63	199.5820
238.63	199.5820
240.99	200.2215
242.00	200.4943
244.70	201.2202
252.40	0.0000
252.80	150.0152
256.23	192.1425
256.23	192.1425
260.90	0.0000
264.66	168.4462
268.22	179.0490
269.46	187.1376
269.46	187.1376
271.23	181.3630
273.65	233.1595
276.40	197.7131
277.37	195.1774
277.60	195.2290
278.00	182.8562
279.20	192.4834
279.54	193.6034
280.46	210.4855
283.69	183.0509
284.31	190.5118
285.41	177.1333
285.90	0.0000
287.50	151.2993
293.27	0.0000
295.22	162.8297
295.96	152.7825
298.57	187.2874
299.98	174.7955
299.98	174.7955
300.09	174.8156
300.09	174.8156
300.13	174.8231
300.13	174.8231
301.36	158.8402
302.85	176.2140

304.50	169.6825
304.50	169.6825
304.85	150.8869
308.46	142.0225
311.90	163.0780
311.90	163.0780
316.51	153.0397
319.41	175.2904
320.08	160.1622
323.87	162.7773
323.87	162.7773
328.76	170.4300
333.37	150.2545
334.37	150.4102
334.37	150.4102
338.28	125.4732
338.28	125.4732
338.32	125.4783
338.32	125.4783
338.32	125.4783
340.48	128.2017
340.48	128.2017
340.55	128.2113
344.28	107.2441
345.93	107.4214
351.06	143.9590
351.93	142.2810
356.01	120.5501
364.49	117.5897
366.42	0.0000
383.85	141.0843
388.16	133.2508
388.63	129.5795
391.69	114.0459
400.66	116.8434
401.81	125.4506
402.40	122.6843
404.85	130.5138
410.95	109.3398
414.70	141.1691
423.72	124.9520
427.09	115.6655
427.87	109.9546
433.94	115.3553
453.88	101.4648
463.37	113.1414
468.07	126.1703
473.00	0.0000
476.78	118.3241
477.60	110.3706
482.18	99.6768
487.02	98.0183
492.35	0.0000
497.08	102.8210
511.00	136.7682
514.00	137.4056
527.90	0.0000
529.87	0.0000
531.02	94.9057
537.26	102.6464
546.56	0.0000
563.25	95.9238
569.33	97.3762
569.50	99.5277
569.70	99.5391
583.19	83.1341
600.60	107.5959
602.73	96.5477
604.72	91.1947
609.32	114.1334
609.32	114.1334
609.32	114.1334
610.33	120.7932
614.28	102.2154
618.01	112.1659
621.93	99.5295
621.93	99.5295
633.25	88.1444

635.95	105.9426
636.99	87.4098
645.85	87.8649
657.76	74.3550
661.66	97.1597
661.66	97.1597
664.57	0.0000
666.33	87.9595
666.50	82.2935
677.62	80.9067
685.70	0.0000
695.00	91.2987
696.49	100.0285
696.51	100.0285
697.00	97.1698
702.65	89.7494
706.68	92.8457
711.68	71.7613
720.70	64.3108
721.93	0.0000
722.78	61.8736
722.91	61.8774
723.31	75.2720
724.19	83.6740
727.33	88.8423
733.00	92.4691
735.93	89.2416
739.50	0.0000
747.24	93.8577
752.31	78.2526
753.82	83.2686
756.73	79.4222
763.94	61.4920
765.81	56.4207
766.42	58.1482
777.92	0.0000
778.90	86.3307
783.70	0.0000
785.37	65.6027
795.86	73.8926
801.95	87.3070
810.29	85.6184
810.76	85.6389
815.77	73.5791
818.51	60.3720
832.01	72.0835
834.85	86.6147
836.80	0.0000
846.77	69.4672
856.80	80.3509
860.56	74.0782
871.09	47.1744
873.19	52.4648
875.33	0.0000
879.36	63.1311
880.51	61.0586
883.24	53.7538
884.68	55.8974
889.28	70.8058
898.04	78.5046
911.20	72.5516
911.20	72.5516
911.20	72.5516
926.50	61.8574
937.49	59.1853
944.13	67.0784
946.00	62.7991
949.00	56.6833
962.29	58.8625
964.08	75.2680
966.15	88.4339
968.97	98.3734
968.97	98.3734
968.97	98.3734
983.53	55.6026
996.26	56.8328
1001.03	47.4505
1004.73	59.8744

1037.84	67.3877
1038.76	0.0000
1048.07	82.1481
1050.41	65.7778
1050.41	65.7778
1063.66	69.9936
1085.87	52.9302
1099.45	57.1342
1112.07	64.0748
1115.54	76.2910
1120.29	66.0013
1120.29	66.0013
1120.29	66.0013
1120.55	66.0060
1121.30	64.2870
1131.51	0.0000
1173.23	80.8845
1177.93	56.7109
1189.05	72.1738
1204.77	74.5989
1221.41	79.1243
1231.02	91.7440
1235.36	69.1638
1238.28	65.0984
1260.41	0.0000
1271.85	52.2269
1274.44	55.4067
1274.54	55.4086
1291.59	51.5037
1298.22	0.0000
1312.11	49.7178
1332.49	36.1926
1365.19	29.1609
1368.63	0.0000
1384.29	48.2483
1408.01	43.8213
1457.56	0.0000
1460.82	36.7499
1489.16	31.1924
1505.03	39.1614
1596.21	39.1202
1620.50	24.2249
1678.03	0.0000
1690.97	22.6022
1764.49	18.8234
1764.49	18.8234
1764.49	18.8234
1770.23	13.0312
1771.35	16.7593
1791.20	0.0000
1836.06	21.7378

VAX/VMS Nuclide Identification Report Generated 3-MAY-2012 12:06:23.03

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*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29407                            *
*****
Configuration   : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G1202635840.CNF;1
Background file  : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]BKG_GAM09.CNF;117
Background date  : 29-APR-2012 14:31:04
Sample date      : 12-APR-2012 00:00:00 Acquisition date : 3-MAY-2012 11:05:26.
Sample ID        : G1202635840 Sample quantity : 1.15000E+02 GRAM
Detector name    : GAM09 Detector geometry: CAN
Elapsed live time: 0 01:00:00.00 Elapsed real time: 0 01:00:26.91 0.7%
Energy tolerance : 1.50000 keV Analyst Initials : MXR1
Abundance limit  : 75.00000 Sensitivity : 5.00000
Batch ID         : 1203837 Detector SN# :
Matrix Spike ID  : LCS ID : 1364
*****

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Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	46.64	20946	19152	1.02	93.33	87	11	5.82E+00	1.5	
2	0	59.72	61476	17414	1.00	119.49	113	12	1.71E+01	0.6	
3	0	88.31	39891	11086	1.01	176.65	171	12	1.11E+01	0.7	
4	0	122.36	7673	6014	0.99	244.74	240	10	2.13E+00	2.2	
5	0	136.75	997	4248	1.04	273.51	270	8	2.77E-01	11.8	
6	0	166.25	681	3684	1.11	332.50	329	8	1.89E-01	15.9	
7	0	561.83	191	1412	1.56	1123.52	1121	8	5.30E-02	34.8	
8	0	662.15	57154	3081	1.44	1324.14	1316	16	1.59E+01	0.5	
9	0	1173.92	48044	1876	1.83	2347.55	2338	19	1.33E+01	0.5	
10	0	1333.26	43353	606	1.91	2666.20	2656	21	1.20E+01	0.5	

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

VAX/VMS Nuclide Identification Report Generated

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*****
*
*               GEL Laboratories LLC
*               2040 Savage Road
*               Charleston, SC 29407
*
*****
*
*               DETECTOR DATA
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G1202635840.CNF;1
* Acquisition date   : 3-MAY-2012 11:05:26 Detector SN#      :
* Detector ID        : GAM09                               Sensitivity       : 5.000
* Geometry           : CAN                                 Energy tolerance  : 1.500
* Elapsed live time  : 0 01:00:00.00                      Abundance limit  : 75.000
* Elapsed real time  : 0 01:00:26.91                      Half life ratio   : 8.000
*****
*
*               SAMPLE DATA
*
* Sample date        : 12-APR-2012 00:00:00 Nuclide Library  : SOLID
* Sample ID          : G1202635840 Analyst initials      : MXR1
* Batch Number       : 1203837 Sample Quantity      : 1.1500E+02 GRAM
* Recovery           : 1.00000 Carrier Weight       : 0.00000
*****
*
*               QC DATA
*
* Standard Weight    : 0.00000
* CALIB. DATE/TIME  : 11-MAY-2011 13:58:10 MS Isotope      :
* MSD DPM            : 0.000 MSD Isotope                  :
* LCS DPM            : 0.000 LCS Isotope                  :
* LCSD DPM           : 0.000 LCSD Isotope                  :
*****

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Combined Activity-MDA Report

---- Identified Nuclides ----

Nuclide	Activity (pCi/GRAM)	Act error (1.96-sigma)	MDA (pCi/GRAM)	
CO-57	1.019E+01	1.035E+00	3.853E-01	0.000E+00
CO-60	2.313E+02	2.393E+01	5.131E-01	0.000E+00
CD-109	1.444E+03	1.568E+02	1.265E+01	0.000E+00
SN-126	1.398E+02	1.518E+01	1.232E+00	0.000E+00
BA-137M	1.838E+02	1.490E+01	6.962E-01	0.000E+00
CS-137	1.942E+02	1.577E+01	7.355E-01	0.000E+00
CE-139	1.104E+00	3.588E-01	4.360E-01	0.000E+00
PB-210	7.340E+03	7.452E+02	1.552E+02	0.000E+00
AM-241	6.134E+02	6.204E+01	4.062E+00	0.000E+00

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

Nuclide	Key-Line Activity (pCi/GRAM)	K.L.	Act error (1.96-sigma)	MDA (pCi/GRAM)	
BE-7	-1.825E+00		4.528E+00	7.834E+00	0.000E+00 NOT IDENT.
NA-22	-7.404E-02		2.928E-01	4.926E-01	0.000E+00 NOT IDENT.
NA-24	0.000E+00		4.673E+09	0.000E+00	0.000E+00 SHORT HLIF
K-40	-3.225E-01		1.982E+00	3.496E+00	0.000E+00 NOT IDENT.
SC-46	-2.623E-01		6.442E-01	1.104E+00	0.000E+00 NOT IDENT.
V-48	2.945E-01		1.470E+00	2.520E+00	0.000E+00 NOT IDENT.
CR-51	-2.203E+00		4.639E+00	7.829E+00	0.000E+00 NOT IDENT.
MN-54	4.434E-02		4.873E-01	8.474E-01	0.000E+00 NOT IDENT.
CO-56	4.717E-02		5.827E-01	1.012E+00	0.000E+00 NOT IDENT.
CO-58	-7.583E-02		5.398E-01	9.385E-01	0.000E+00 NOT IDENT.
FE-59	1.713E-01		1.553E+00	2.632E+00	0.000E+00 NOT IDENT.
ZN-65	-1.982E-01		1.282E+00	2.164E+00	0.000E+00 NOT IDENT.
SE-75	-2.622E-01		4.638E-01	7.929E-01	0.000E+00 FAIL ABUN
SR-85	-2.246E-01		4.346E-01	7.465E-01	0.000E+00 NOT IDENT.
Y-88	0.000E+00		2.807E-01	5.332E-01	0.000E+00 NOT IDENT.
Y-91	1.073E+02		1.902E+02	3.266E+02	0.000E+00 NOT IDENT.
NB-94	-7.636E-02		3.655E-01	6.148E-01	0.000E+00 NOT IDENT.
NB-95	5.831E-01		5.299E-01	8.981E-01	0.000E+00 NOT IDENT.

NB-95M	-6.737E-01	1.192E+00	2.055E+00	0.000E+00	NOT IDENT.
ZR-95	-3.080E-01	9.370E-01	1.561E+00	0.000E+00	NOT IDENT.
MO-99	5.042E+02	7.411E+02	1.252E+03	0.000E+00	NOT IDENT.
TC-99M	0.000E+00	1.369E+25	0.000E+00	0.000E+00	SHORT HLIF
RU-103	-1.187E-01	5.285E-01	9.142E-01	0.000E+00	NOT IDENT.
RH-106	-2.691E+00	3.620E+00	6.076E+00	0.000E+00	NOT IDENT.
RU-106	-2.691E+00	3.611E+00	6.076E+00	0.000E+00	NOT IDENT.
AG-108M	-1.382E-01	3.678E-01	6.415E-01	0.000E+00	NOT IDENT.
AG-110M	7.474E-01	7.816E-01	1.357E+00	0.000E+00	NOT IDENT.
SN-113	4.008E-01	5.563E-01	9.370E-01	0.000E+00	NOT IDENT.
CD-115	0.000E+00	9.430E+02	0.000E+00	0.000E+00	SHORT HLIF
SN-117M	-6.863E-01	6.435E-01	1.049E+00	0.000E+00	NOT IDENT.
TE-123M	-2.325E-01	2.506E-01	4.095E-01	0.000E+00	NOT IDENT.
SB-124	2.242E-01	5.485E-01	9.846E-01	0.000E+00	NOT IDENT.
SB-125	8.739E-01	1.105E+00	1.952E+00	0.000E+00	NOT IDENT.
TE-125M	-1.396E+00	8.812E+01	1.499E+02	0.000E+00	NOT IDENT.
I-126	0.000E+00	4.149E+00	6.301E+00	0.000E+00	NOT IDENT.
SB-126	-5.444E-01	2.299E+00	3.857E+00	0.000E+00	NOT IDENT.
SB-127	8.545E+00	4.566E+01	7.752E+01	0.000E+00	NOT IDENT.
I-131	-1.474E+00	2.321E+00	3.864E+00	0.000E+00	NOT IDENT.
TE-132	2.045E+01	2.841E+01	4.944E+01	0.000E+00	NOT IDENT.
BA-133	1.276E-01	4.677E-01	7.905E-01	0.000E+00	NOT IDENT.
I-133	0.000E+00	1.085E+07	0.000E+00	0.000E+00	SHORT HLIF
CS-134	-9.137E-02	5.316E-01	8.839E-01	0.000E+00	FAIL ABUN
CS-135	2.326E-01	1.519E+00	2.621E+00	0.000E+00	NOT IDENT.
I-135	0.000E+00	3.946E+23	0.000E+00	0.000E+00	SHORT HLIF
CS-136	-7.858E-01	2.237E+00	3.783E+00	0.000E+00	NOT IDENT.
BA-140	-1.243E-01	4.210E+00	7.265E+00	0.000E+00	NOT IDENT.
LA-140	-1.167E-01	7.056E-01	1.229E+00	0.000E+00	NOT IDENT.
CE-141	6.081E-02	5.885E-01	9.843E-01	0.000E+00	NOT IDENT.
CE-143	0.000E+00	2.994E+04	0.000E+00	0.000E+00	SHORT HLIF
CE-144	4.462E-01	1.887E+00	2.829E+00	0.000E+00	NOT IDENT.
PM-144	-4.677E-04	3.804E-01	6.429E-01	0.000E+00	NOT IDENT.
PR-144	-1.031E-01	2.857E+01	4.827E+01	0.000E+00	NOT IDENT.
PM-146	2.369E-01	5.484E-01	9.610E-01	0.000E+00	NOT IDENT.
ND-147	8.701E+00	9.624E+00	1.669E+01	0.000E+00	NOT IDENT.
PM-149	0.000E+00	6.818E+03	0.000E+00	0.000E+00	SHORT HLIF
EU-152	-1.047E+00	1.059E+00	1.759E+00	0.000E+00	FAIL ABUN
GD-153	2.275E-01	7.174E-01	1.233E+00	0.000E+00	NOT IDENT.
EU-154	-1.844E-01	8.279E-01	1.394E+00	0.000E+00	FAIL ABUN
EU-155	-4.668E-02	8.875E-01	1.512E+00	0.000E+00	NOT IDENT.
TB-160	-2.414E+00	2.266E+00	3.832E+00	0.000E+00	NOT IDENT.
HO-166M	6.889E-02	6.816E-01	1.152E+00	0.000E+00	NOT IDENT.
HF-181	-9.376E-02	5.999E-01	1.041E+00	0.000E+00	NOT IDENT.
TA-182	-8.432E-01	1.490E+00	2.481E+00	0.000E+00	NOT IDENT.
IR-192	4.430E-02	3.896E-01	6.637E-01	0.000E+00	NOT IDENT.
HG-203	2.907E-01	4.193E-01	7.244E-01	0.000E+00	NOT IDENT.
BI-207	-4.711E-01	7.924E-01	1.332E+00	0.000E+00	NOT IDENT.
TL-208	3.317E-02	3.898E-01	6.695E-01	0.000E+00	NOT IDENT.
BI-211	-5.385E-01	2.236E+00	3.760E+00	0.000E+00	NOT IDENT.
PB-211	-3.933E-01	8.569E+00	1.427E+01	0.000E+00	NOT IDENT.
BI-212	-1.055E+00	5.717E+00	9.589E+00	0.000E+00	NOT IDENT.
PB-212	-4.361E-01	5.380E-01	9.222E-01	0.000E+00	NOT IDENT.
BI-214	9.393E-01	7.526E-01	1.302E+00	0.000E+00	NOT IDENT.
PB-214	2.624E-01	8.084E-01	1.369E+00	0.000E+00	NOT IDENT.
RN-219	3.305E-01	4.875E+00	8.140E+00	0.000E+00	NOT IDENT.
RA-223	5.230E+00	6.842E+00	1.163E+01	0.000E+00	NOT IDENT.
RA-224	1.504E-01	5.719E+00	9.925E+00	0.000E+00	NOT IDENT.
RA-226	9.393E-01	7.526E-01	1.302E+00	0.000E+00	NOT IDENT.
AC-227	-1.413E+00	2.534E+00	4.339E+00	0.000E+00	NOT IDENT.
TH-227	-1.413E+00	2.536E+00	4.339E+00	0.000E+00	NOT IDENT.
AC-228	-9.787E-01	2.227E+00	3.805E+00	0.000E+00	NOT IDENT.
RA-228	-9.787E-01	2.227E+00	3.805E+00	0.000E+00	NOT IDENT.
TH-228	-4.361E-01	5.380E-01	9.222E-01	0.000E+00	NOT IDENT.
TH-229	5.995E-01	4.645E+00	8.192E+00	0.000E+00	FAIL ABUN
TH-230	9.392E-01	7.510E-01	1.302E+00	0.000E+00	NOT IDENT.
PA-231	-9.795E+00	1.476E+01	2.498E+01	0.000E+00	NOT IDENT.
TH-231	5.230E+00	6.842E+00	1.163E+01	0.000E+00	NOT IDENT.
TH-232	-9.787E-01	2.227E+00	3.805E+00	0.000E+00	NOT IDENT.
PA-233	6.607E-01	6.860E-01	1.177E+00	0.000E+00	NOT IDENT.
PA-234	3.591E-02	5.209E+00	8.930E+00	0.000E+00	NOT IDENT.
PA-234M	-1.753E+01	6.878E+01	1.170E+02	0.000E+00	NOT IDENT.
TH-234	-3.791E+01	1.691E+01	2.340E+01	0.000E+00	NOT IDENT.
U-235	4.845E-01	1.640E+00	2.748E+00	0.000E+00	NOT IDENT.
NP-237	6.607E-01	6.873E-01	1.177E+00	0.000E+00	NOT IDENT.
U-238	-3.791E+01	1.691E+01	2.340E+01	0.000E+00	NOT IDENT.
NP-239	-1.241E+00	4.006E+00	6.010E+00	0.000E+00	NOT IDENT.
AM-243	-5.279E-01	5.215E-01	8.929E-01	0.000E+00	NOT IDENT.

CM-247	2.372E-02	4.479E-01	7.476E-01	0.000E+00	NOT IDENT.
CF-249	-4.147E-01	4.809E-01	7.933E-01	0.000E+00	NOT IDENT.
CF-251	-6.737E-01	1.057E+00	1.857E+00	0.000E+00	NOT IDENT.
ANH-511	4.269E-01	3.354E-01	5.903E-01	0.000E+00	NOT IDENT.

Gamma Spectroscopy Auxillary Report

Sample:G1202635840

Nuclide	TPU	LLD	EFF	FWHM	TArea	TBack	TCounts
BE-7	0.453E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
NA-22	0.293E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
NA-24	0.467E+10	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
K-40	0.198E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
SC-46	0.644E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
V-48	0.147E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
CR-51	0.464E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
MN-54	0.487E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
CO-56	0.583E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
CO-57	0.103E+01	0.332E+03	0.636E-01	0.985E+00	0.908E+04	0.107E+05	0.198E+05
CO-58	0.540E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
FE-59	0.155E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
CO-60	0.239E+02	0.714E+03	0.117E-01	0.191E+01	0.868E+05	0.236E+04	0.892E+05
ZN-65	0.128E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
SE-75	0.464E+00	0.299E+03	0.000E+00	0.000E+00	0.908E+04	0.107E+05	0.198E+05
SR-85	0.435E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Y-88	0.281E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Y-91	0.190E+03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
NB-94	0.365E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
NB-95	0.530E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
NB-95M	0.119E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
ZR-95	0.937E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
MO-99	0.741E+03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
TC-99M	0.196E+17	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
RU-103	0.528E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
RH-106	0.362E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
RU-106	0.361E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
AG-108M	0.368E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
CD-109	0.157E+03	0.549E+03	0.534E-01	0.101E+01	0.424E+05	0.118E+05	0.541E+05
AG-110M	0.782E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
SN-113	0.556E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
CD-115	0.943E+03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
SN-117M	0.644E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
TE-123M	0.251E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
SB-124	0.548E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
SB-125	0.111E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
TE-125M	0.881E+02	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
I-126	0.415E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
SB-126	0.230E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
SN-126	0.152E+02	0.549E+03	0.534E-01	0.101E+01	0.847E+05	0.235E+05	0.108E+06
SB-127	0.457E+02	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
I-131	0.232E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
TE-132	0.284E+02	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
BA-133	0.468E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
I-133	0.109E+08	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
CS-134	0.532E+00	0.400E+03	0.000E+00	0.000E+00	0.188E+03	0.139E+04	0.158E+04
CS-135	0.152E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
I-135	0.196E+17	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
CS-136	0.224E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
BA-137M	0.149E+02	0.672E+03	0.221E-01	0.144E+01	0.558E+05	0.301E+04	0.588E+05
CS-137	0.158E+02	0.672E+03	0.221E-01	0.144E+01	0.558E+05	0.301E+04	0.588E+05
CE-139	0.359E+00	0.288E+03	0.581E-01	0.111E+01	0.705E+03	0.391E+04	0.461E+04
BA-140	0.421E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
LA-140	0.706E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
CE-141	0.588E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
CE-143	0.299E+05	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
CE-144	0.189E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
PM-144	0.380E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
PR-144	0.286E+02	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
PM-146	0.548E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
ND-147	0.962E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
PM-149	0.682E+04	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
EU-152	0.106E+01	0.338E+03	0.000E+00	0.000E+00	0.804E+04	0.630E+04	0.143E+05
GD-153	0.717E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
EU-154	0.828E+00	0.338E+03	0.000E+00	0.000E+00	0.804E+04	0.630E+04	0.143E+05
EU-155	0.887E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
TB-160	0.227E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
HO-166M	0.682E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
HF-181	0.600E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
TA-182	0.149E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

IR-192	0.390E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
HG-203	0.419E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
BI-207	0.792E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
TL-208	0.390E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
PB-210	0.745E+03	0.817E+04	0.478E-02	0.102E+01	0.228E+05	0.209E+05	0.437E+05
BI-211	0.224E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
PB-211	0.857E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
BI-212	0.572E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
PB-212	0.538E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
BI-214	0.753E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
PB-214	0.808E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
RN-219	0.488E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
RA-223	0.684E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
RA-224	0.572E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
RA-226	0.753E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
AC-227	0.253E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
TH-227	0.254E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
AC-228	0.223E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
RA-228	0.223E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
TH-228	0.538E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
TH-229	0.465E+01	0.549E+03	0.000E+00	0.000E+00	0.424E+05	0.118E+05	0.541E+05
TH-230	0.751E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
PA-231	0.148E+02	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
TH-231	0.684E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
TH-232	0.223E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
PA-233	0.686E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
PA-234	0.521E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
PA-234M	0.688E+02	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
TH-234	0.169E+02	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
U-235	0.164E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
NP-237	0.687E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
U-238	0.169E+02	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
NP-239	0.401E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
AM-241	0.620E+02	0.189E+04	0.197E-01	0.100E+01	0.663E+05	0.188E+05	0.851E+05
AM-243	0.521E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
CM-247	0.448E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
CF-249	0.481E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
CF-251	0.106E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
ANH-511	0.335E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

VMS Peak Search Report V1.9 Generated 3-MAY-2012 12:06:21

```

Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G1202635840.CNF;1
Analyses by       : PEAK V16.9
Sample title      : MXR1
Sample date       : 12-APR-2012 00:00:00 Acquisition date : 3-MAY-2012 11:05:26
Sample ID         : G1202635840 Sample quantity   : 115.00 GRAM
Sample type       : SOLID Sample geometry    :
Detector name    : GAMMA9 Detector geometry: CAN
Elapsed live time: 0 01:00:00.00 Elapsed real time: 0 01:00:26.91 0.7%
Start energy     : 0.47 keV End energy       : 2048.20 keV
Sensitivity      : 5.00 Gaussian           : 10.00
Critical level   : No
    
```

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	46.64	20946	19152	1.02	93.33	87	11	5.82E+00	1.5	
2	0	59.72	61476	17414	1.00	119.49	113	12	1.71E+01	0.6	
3	0	88.31	39891	11086	1.01	176.65	171	12	1.11E+01	0.7	
4	0	122.36	7673	6014	0.99	244.74	240	10	2.13E+00	2.2	
5	0	136.75	997	4248	1.04	273.51	270	8	2.77E-01	11.8	
6	0	166.25	681	3684	1.11	332.50	329	8	1.89E-01	15.9	
7	0	561.83	191	1412	1.56	1123.52	1121	8	5.30E-02	34.8	
8	0	662.15	57154	3081	1.44	1324.14	1316	16	1.59E+01	0.5	
9	0	1173.92	48044	1876	1.83	2347.55	2338	19	1.33E+01	0.5	
10	0	1333.26	43353	606	1.91	2666.20	2656	21	1.20E+01	0.5	

```

*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29407                          *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G1202635840.CNF;1
Sample date        : 12-APR-2012 00:00:00 Acquisition date : 3-MAY-2012 11:05:26.
Sample ID          : G1202635840          Sample quantity  : 1.15000E+02 GRAM
Detector name      : GAM09                Detector geometry: CAN
Elapsed live time  : 0 01:00:00.00        Elapsed real time: 0 01:00:26.91  0.7%
Energy tolerance  : 1.50000 keV          Analyst Initials  : MXR1
Abundance limit   : 75.00000            Sensitivity       : 5.00000
Batch ID          : 1203837              Detector SN#      :
Matrix Spike ID   :                      LCS ID           : 1364
*****
    
```

Summary of Nuclide Activity

```

Total number of lines in spectrum      10
Number of unidentified lines           0
Number of lines tentatively identified by NID 10      100.00%
    
```

Nuclide Type :

Nuclide	Hlife	Decay	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
CO-57	271.74D	1.06	9.642E+00	1.019E+01	0.106E+01	10.37	
CO-60	5.27Y	1.01	2.295E+02	2.313E+02	0.244E+02	10.56	
CD-109	461.40D	1.03	1.398E+03	1.444E+03	0.160E+03	11.08	
SN-126	2.30E+05Y	1.00	1.398E+02	1.398E+02	0.155E+02	11.08	
BA-137M	30.08Y	1.00	1.835E+02	1.838E+02	0.152E+02	8.27	
CS-137	30.08Y	1.00	1.939E+02	1.942E+02	0.161E+02	8.29	
CE-139	137.64D	1.11	9.907E-01	1.104E+00	0.366E+00	33.17	
PB-210	22.20Y	1.00	7.327E+03	7.340E+03	0.760E+03	10.36	
AM-241	432.60Y	1.00	6.133E+02	6.134E+02	0.633E+02	10.32	
Total Activity :			1.010E+04	1.016E+04			

Grand Total Activity : 1.010E+04 1.016E+04

Flags: "K" = Keyline not found "M" = Manually accepted
 "E" = Manually edited "A" = Nuclide specific abn. limit

Unidentified Energy Lines
Sample ID : G1202635840

Page : 2
Acquisition date : 3-MAY-2012 11:05:26

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
0	561.83	188	1389	1.56	1123.52	1121	8	5.30E-02	69.7	2.52E+00	T

Flags: "T" = Tentatively associated

Nuclide Type:

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected pCi/GRAM	Decay Corr pCi/GRAM	2-Sigma %Error
CO-57	122.06	8041	85.60*	6.360E+00	9.642E+00	1.019E+01	10.37
	136.47	1040	10.68	6.267E+00	1.014E+01	1.071E+01	25.50
CO-60	1173.23	45759	99.85	1.309E+00	2.285E+02	2.303E+02	8.21
	1332.49	41058	99.98*	1.168E+00	2.295E+02	2.313E+02	10.56
CD-109	88.03	42353	3.70*	5.345E+00	1.398E+03	1.444E+03	11.08
SN-126	64.28	-----	9.60	2.611E+00	-----	Line Not Found	-----
	86.94	42353	8.90	5.345E+00	5.813E+02	5.813E+02	41.94
	87.57	42353	37.00*	5.345E+00	1.398E+02	1.398E+02	11.08
BA-137M	661.66	55819	89.90*	2.208E+00	1.835E+02	1.838E+02	8.27
CS-137	661.66	55819	85.10*	2.208E+00	1.939E+02	1.942E+02	8.29
CE-139	165.86	705	80.00*	5.805E+00	9.907E-01	1.104E+00	33.17
PB-210	46.54	22803	4.25*	4.781E-01	7.327E+03	7.340E+03	10.36
AM-241	59.54	66285	35.90*	1.965E+00	6.133E+02	6.134E+02	10.32

Flag: "*" = Keyline

Nuclide	Half-life	Half-Life Ratio	Energy	%Abund	Activity (pCi/GRAM)	2-Sigma %Error	Rejected by	
SE-75	119.79D	0.18	121.12	17.20	5.434E+01	12.49	Abun.	
			136.00	58.30	2.103E+00	25.29		
			264.66*	58.90	---	Not Found		---
			279.54	24.99	---	Not Found		---
			400.66	11.47	---	Not Found		---
% Abundances Found =			44.19					
CS-134	2.07Y	0.03	563.25	8.34	5.945E+00	70.23	Abun.	
			569.33	15.37	---	Not Found		---
			604.72	97.62	---	Not Found		---
			795.86*	85.46	---	Not Found		---
			801.95	8.69	---	Not Found		---
% Abundances Found =			3.82					
EU-152	13.54Y	0.00	121.78	28.67	2.888E+01	11.45	Abun.	
			244.70	7.61	---	Not Found		---
			344.28*	26.60	---	Not Found		---
			778.90	12.96	---	Not Found		---
			964.08	14.65	---	Not Found		---
			1085.87	10.24	---	Not Found		---
% Abundances Found =			21.16					
EU-154	8.59Y	0.01	123.07	40.60	2.043E+01	12.72	Abun.	
			723.31	20.11	---	Not Found		---
			873.19	12.20	---	Not Found		---
			996.26	10.53	---	Not Found		---
			1004.73	17.91	---	Not Found		---
% Abundances Found =			29.78					
TH-229	7340.00Y	0.00	85.43	14.70	---	Not Found	Abun.	
			88.47	24.00	2.156E+02	11.08		
			193.51*	4.41	---	Not Found		---
			210.85	2.80	---	Not Found		---
% Abundances Found =			52.28					

Flag: "*" = Keyline

 * GEL Laboratories LLC *
 * 2040 Savage Road *
 * Charleston, SC 29407 *
 * GAMMA SPECTROSCOPY BACKGROUND REPORT *

ENERGY	MDA COUNTS
43.53	10060.6328
46.54	9688.8369
49.72	9132.1475
57.36	0.0000
57.53	11465.0781
59.54	8097.8770
63.29	5126.5957
63.29	5126.5957
64.28	5402.5645
67.75	5437.9883
69.67	5752.6802
70.83	5767.7305
72.81	5891.7988
72.87	5892.6743
72.87	5892.6743
74.66	6076.3325
74.82	6169.4600
74.82	6169.4600
74.82	6169.4600
74.97	6171.7246
77.11	6251.8950
77.11	6251.8950
77.11	6251.8950
79.69	6578.8159
79.69	6578.8159
80.12	6616.7632
80.19	6617.8291
80.57	6657.0640
81.00	6775.0420
81.07	6776.1655
81.07	6776.1655
83.79	6974.3140
83.79	6974.3140
85.43	7263.8877
86.55	7707.8623
86.79	5905.3413
86.94	5907.3330
87.57	5915.5332
88.03	5921.4785
88.47	5927.1895
89.96	3979.5471
91.11	3956.7561
92.59	3874.1733
92.59	3874.1733
93.35	3950.5898
94.56	3917.8413
94.65	3918.5674
94.67	3953.1602
94.87	3995.4944
97.43	3916.9319
98.43	3919.6340
98.44	3919.7100
99.53	3859.8467
100.11	3943.4387
103.18	3808.2927
103.37	3772.5457
105.31	3878.4233
106.12	4043.4849
109.28	3882.0945
111.00	3982.8999
111.76	3942.1458
116.30	4138.0498
117.23	4166.7456
121.12	4167.5303
121.78	4021.3306
122.06	4023.2864
123.07	4030.3455

131.20	3508.0559
133.02	3518.5461
133.52	3546.6255
136.00	3567.6426
136.47	3568.6653
140.51	3554.2549
140.51	0.0000
143.76	3488.0491
144.24	3513.4209
144.24	3513.4209
145.44	3481.1091
152.43	3434.8909
153.25	3442.5359
154.21	3453.1699
154.21	3453.1699
156.02	3381.1765
158.56	3498.3770
159.00	3476.1233
162.66	3369.9624
163.33	3404.0881
165.86	3390.7761
176.60	3483.8359
177.52	3420.9131
181.07	3431.5039
184.41	3538.6416
185.72	3612.5054
193.51	3781.7305
197.04	3772.5417
205.31	3730.6348
210.85	3901.7021
215.65	4110.2832
222.11	4054.4543
227.38	3925.0947
228.16	3931.3191
228.18	3946.6516
235.69	3777.3267
235.96	3787.0664
235.96	3787.0664
238.63	3713.1199
238.63	3713.1199
240.99	3623.9219
242.00	3680.9524
244.70	3628.3728
252.40	3557.6086
252.80	3556.1345
256.23	3515.5313
256.23	3515.5313
260.90	0.0000
264.66	3369.1003
268.22	3303.4219
269.46	3165.2688
269.46	3165.2688
271.23	3323.0254
273.65	3326.7761
276.40	3209.4685
277.37	3211.4041
277.60	3212.1382
278.00	3228.3420
279.20	3190.9019
279.54	3207.9761
280.46	3203.7266
283.69	3264.7874
284.31	3239.5017
285.41	3132.8113
285.90	0.0000
287.50	3191.4429
293.27	0.0000
295.22	3162.1143
295.96	3206.0159
298.57	3163.5186
299.98	3139.8838
299.98	3139.8838
300.09	3140.2119
300.09	3140.2119
300.13	3140.3057
300.13	3140.3057
301.36	3118.1807
302.85	3172.5449

304.50	3135.0847
304.50	3135.0847
304.85	3129.9021
308.46	3168.6519
311.90	3011.8315
311.90	3011.8315
316.51	3017.5725
319.41	3088.5081
320.08	3123.5715
323.87	3025.0439
323.87	3025.0439
328.76	3103.4565
333.37	2999.6057
334.37	3075.7949
334.37	3075.7949
338.28	3033.8831
338.28	3033.8831
338.32	3033.9707
338.32	3033.9707
338.32	3033.9707
340.48	2918.6758
340.48	2918.6758
340.55	2918.8440
344.28	3073.0662
345.93	2951.7065
351.06	3122.8049
351.93	3042.7126
356.01	3019.2795
364.49	3116.8396
366.42	3038.2598
383.85	3053.1802
388.16	3258.2515
388.63	3164.9404
391.69	3098.2354
400.66	3106.1523
401.81	3119.7632
402.40	3127.7490
404.85	3132.0598
410.95	3144.4075
414.70	3154.8579
423.72	3255.5740
427.09	3130.3865
427.87	3142.8750
433.94	3340.7385
453.88	3445.4956
463.37	3617.2322
468.07	3587.1846
473.00	3483.0054
476.78	3313.1765
477.60	3307.4070
482.18	2932.3655
487.02	2820.0332
492.35	0.0000
497.08	2620.2229
511.00	2418.3547
514.00	2536.0432
527.90	0.0000
529.87	0.0000
531.02	2175.9673
537.26	2159.5361
546.56	0.0000
563.25	1977.2115
569.33	1990.5961
569.50	2002.5969
569.70	2002.7958
583.19	2014.3378
600.60	1913.7196
602.73	2047.9982
604.72	2053.0520
609.32	1882.1438
609.32	1882.1438
609.32	1882.1438
610.33	1935.3573
614.28	1958.3909
618.01	1892.4884
621.93	1987.2152
621.93	1987.2152
633.25	1973.0342

635.95	1897.3116
636.99	1929.8373
645.85	1984.2373
657.76	1959.6943
661.66	1994.2877
661.66	1994.2877
664.57	0.0000
666.33	1766.3181
666.50	1766.4434
677.62	1727.9843
685.70	1685.4935
695.00	1691.6711
696.49	1763.0411
696.51	1763.0411
697.00	1806.4119
702.65	1759.5679
706.68	1739.6453
711.68	1738.2860
720.70	1731.5592
721.93	0.0000
722.78	1804.1781
722.91	1804.3029
723.31	1800.3940
724.19	1734.2336
727.33	1799.3373
733.00	1830.4663
735.93	1850.9423
739.50	1827.1276
747.24	1825.7677
752.31	1895.2635
753.82	1884.6935
756.73	1877.3235
763.94	1980.2410
765.81	1870.5685
766.42	1879.6758
777.92	1854.0724
778.90	1854.8230
783.70	1959.7308
785.37	1901.2048
795.86	2061.4888
801.95	2095.1018
810.29	2099.2598
810.76	2075.8401
815.77	2272.9675
818.51	2202.8230
832.01	2175.8259
834.85	2217.1487
836.80	0.0000
846.77	2304.7236
856.80	2380.9753
860.56	2472.2949
871.09	2502.9548
873.19	2471.1362
875.33	0.0000
879.36	2604.0571
880.51	2627.7949
883.24	2576.7021
884.68	2527.1338
889.28	2662.8879
898.04	2619.4382
911.20	2872.3508
911.20	2872.3508
911.20	2872.3508
926.50	2944.9585
937.49	3088.3972
944.13	3164.2505
946.00	3126.7529
949.00	3120.4539
962.29	2995.3386
964.08	2941.8621
966.15	2856.4841
968.97	2747.4131
968.97	2747.4131
968.97	2747.4131
983.53	2456.2424
996.26	2377.5569
1001.03	2389.3174
1004.73	2339.0986

1037.84	2261.4822
1038.76	0.0000
1048.07	2178.1372
1050.41	2145.8252
1050.41	2145.8252
1063.66	2221.3606
1085.87	2297.7930
1099.45	2305.6536
1112.07	2194.3813
1115.54	2132.4358
1120.29	1933.1658
1120.29	1933.1658
1120.29	1933.1658
1120.55	1954.7897
1121.30	1890.8312
1131.51	0.0000
1173.23	1224.7189
1177.93	977.2335
1189.05	847.4193
1204.77	694.0549
1221.41	608.9038
1231.02	525.0089
1235.36	485.4650
1238.28	455.1778
1260.41	0.0000
1271.85	365.4346
1274.44	367.8376
1274.54	367.8516
1291.59	327.6740
1298.22	0.0000
1312.11	365.1627
1332.49	362.1911
1365.19	172.8016
1368.63	0.0000
1384.29	178.3740
1408.01	165.2187
1457.56	0.0000
1460.82	161.6367
1489.16	151.1304
1505.03	146.8500
1596.21	142.0624
1620.50	143.8443
1678.03	0.0000
1690.97	115.6620
1764.49	114.3913
1764.49	114.3913
1764.49	114.3913
1770.23	131.0396
1771.35	133.1347
1791.20	0.0000
1836.06	115.0373

Continuing Calibration Data

Review of Gamma Spectrometer QA results (Daily calibration & background checks)
 3-MAY-2012 10:38:49.07

Run Date	Detector	Parameter	Flag
3-MAY-2012	GAM02	Bkg Check BACKRATE	Investigate OK
3-MAY-2012	GAM03	Bkg Check BACKRATE	Investigate OK
3-MAY-2012	GAM05	All Parameters Passed	
3-MAY-2012	GAM06	All Parameters Passed	
3-MAY-2012	GAM07	Bkg Check BACKRATE	Investigate OK
3-MAY-2012	GAM08	Bkg Check BACKCOUNTS	Investigate OK
3-MAY-2012	GAM09	All Parameters Passed	
-----	GAM10	Cal Check may not have run since 3-MAY-2012	locked out
-----	GAM10	Bkg Check may not have run since 3-MAY-2012	
3-MAY-2012	GAM11	All Parameters Passed	
3-MAY-2012	GAM12	Bkg Check BACKRATE	Action Below not a bkg check condition
3-MAY-2012	GAM13	Cal Check NLACTVITY-59	Action Locked out
3-MAY-2012	GAM14	All Parameters Passed	
3-MAY-2012	GAM15	All Parameters Passed	locked out
3-MAY-2012	GAM16	All Parameters Passed	
3-MAY-2012	GAM17	All Parameters Passed	
3-MAY-2012	GAM18	All Parameters Passed	
3-MAY-2012	GAM19	Bkg Check BACKRATE	Investigate OK
3-MAY-2012	GAM20	All Parameters Passed	
3-MAY-2012	GAM21	All Parameters Passed	
3-MAY-2012	GAM22	All Parameters Passed	
3-MAY-2012	GAM23	All Parameters Passed	
3-MAY-2012	GAM24	All Parameters Passed	
3-MAY-2012	GAM25	Cal Check NLACTVITY-662	Investigate OK
3-MAY-2012	GAM26	Cal Check NLACTVITY-662	Investigate OK
3-MAY-2012	GAM27	Cal Check NLACTVITY-1332	Investigate Locked out

3-MAY-2012	GAM29	Cal Check	NLACTVTY-59	Investigate	OK
3-MAY-2012	GAM30	Cal Check	NLACTVTY-59	Investigate	OK
3-MAY-2012	GAM31	All Parameters Passed			
3-MAY-2012	GAM32	All Parameters Passed			
3-MAY-2012	GAM33	All Parameters Passed			
3-MAY-2012	GAM34	All Parameters Passed			
3-MAY-2012	GAM36	All Parameters Passed			
-----	GAM39	Cal Check may not have run since 3-MAY-2012			
31-MAR-2012	GAM39	Bkg Check may not have run since 3-MAY-2012			
3-MAY-2012	XRAY2	Bkg Check	BACKRATE	Investigate	OK
3-MAY-2012	XRAY3	All Parameters Passed			
3-MAY-2012	XRAY4	Cal Check	NLACTVTY-59	Investigate	OK
3-MAY-2012	XRAY5	All Parameters Passed			

} locked out

APPROVAL DATE: 5/3/12

APPROVAL TIME: 11:19

APPROVED BY: RF

PROCEDURE # GL-RAD-I-001

Report completed at 3-MAY-2012 10:41:08.08

Runlogs

Instrument Run Log

Instrument Type: **GAMMA SPECTROMETER**

Batch ID: **1203837**

Sample ID	Sample Type	Analyst	Instrument	Run Date	Status	Geometry	Calibration Date
302440001	SAMPLE	MXR1	GAM08	MAY-03-12 07:48:16	DONE CAN		29-SEP-11 00:00
302440002	SAMPLE	MXR1	GAM12	MAY-03-12 07:56:01	DONE CAN		02-MAR-12 00:00
302440003	SAMPLE	MXR1	GAM02	MAY-03-12 08:24:37	DONE CAN		13-OCT-11 00:00
302440004	SAMPLE	MXR1	GAM33	MAY-03-12 08:57:37	DONE CAN		09-JAN-12 00:00
302440005	SAMPLE	MXR1	GAM18	MAY-03-12 08:58:01	DONE CAN		07-MAY-11 10:27
302440006	SAMPLE	MXR1	GAM23	MAY-03-12 08:58:24	DONE CAN		14-OCT-11 00:00
302440007	SAMPLE	MXR1	GAM11	MAY-03-12 10:01:54	DONE CAN		17-NOV-11 00:00
302440008	SAMPLE	MXR1	GAM19	MAY-03-12 10:02:17	DONE CAN		08-MAR-12 00:00
302440009	SAMPLE	MXR1	GAM22	MAY-03-12 10:02:40	DONE CAN		04-JAN-12 00:00
302440010	SAMPLE	MXR1	GAM31	MAY-03-12 10:03:01	DONE CAN		28-MAR-12 00:00
1202635838	MB	MXR1	GAM08	MAY-03-12 10:16:28	DONE CAN		29-SEP-11 00:00
1202635840	LCS	MXR1	GAM09	MAY-03-12 11:05:26	DONE CAN		11-MAY-11 00:00
1202635839	DUP	MXR1	GAM18	MAY-03-12 11:07:45	DONE CAN		07-MAY-11 10:27